DUBLIN BICYCLE AND PEDESTRIAN PLAN

JANUARY 2023

ACKNOWLEDGMENTS

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EXECUTIVE SUMMARY

THE NEED FOR A BICYCLE AND PEDESTRIAN PLAN

In Dublin, residents and visitors walk and bike for transportation and recreation. People walking and biking are vulnerable road users, and the City needs a connected network of quality infrastructure and amenities to support safe travel by these sustainable modes. Walking and biking for transportation improves health and well-being and provides numerous environmental and economic benefits.

The City of Dublin's Bicycle and Pedestrian Plan (Plan) is a critical planning, policy, and implementation document that supports City efforts to improve safety and attractiveness of biking and walking as a means of transportation and recreation. This Plan builds on, updates, and replaces the 2014 Dublin Bicycle and Pedestrian Plan (2014 Plan) and makes recommendations for infrastructure, programs, and policies that support walking and biking in Dublin.

VISION STATEMENT

The City of Dublin is a vibrant place where walking and biking are safe, comfortable, and convenient ways to travel. In Dublin, walking and biking connects individuals, inclusive of all ages and abilities, to local and regional destinations.

GOAL 1

Enhance Safety

Prioritize safety in design and implementation of walking and biking facilities.

GOAL 2

Increase Walking and Biking

Support biking and walking as attractive modes of transportation.

GOAL 3

Improve Connectivity

Develop a bicycle and pedestrian network that provides well-connected facilities for users of all ages and abilities.

GOAL 4

Enhance Accessibility

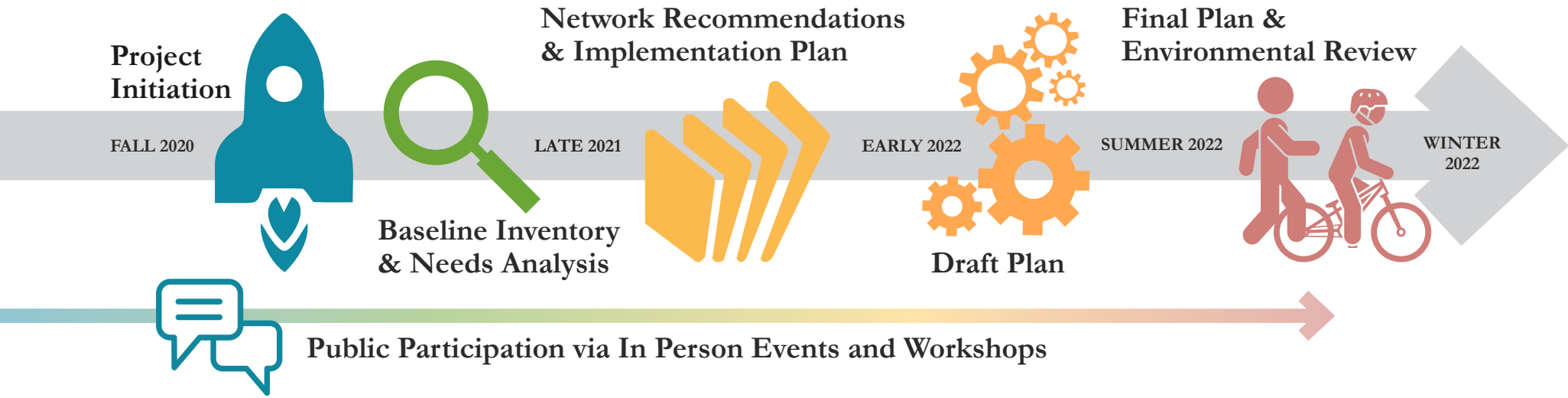
Utilize principles of universal design to make biking and walking a viable transportation option for all, including people with disabilities.

GOAL 5

Prioritize Investments

Maintain sufficient funding to provide for existing and future bicycle and pedestrian needs, including supporting programs and operation and maintenance. Leverage biking and walking projects to promote economic activity and social equity outcomes among people of all ages and abilities.

PROCESS



ORGANIZATION

The Plan document is organized in the following chapters:

1. INTRODUCTION—Outlines the project's background, vision, planning process, timeline, and goals.

2. COMMUNITY & STAKEHOLDER ENGAGEMENT—Summarizes the approach to, and findings from, community and stakeholder engagement activities.

3. WALKING & BIKING IN DUBLIN TODAY—Maps and analyzes physical and socioeconomic conditions applicable to improving walking and biking in Dublin. Evaluates bicycle level of traffic stress, collision history, high injury streets, and other barriers to walking and biking.

4. RECOMMENDED BICYCLE & PEDESTRIAN NETWORK—Summarizes the approach to developing network recommendations and presents the recommended citywide bicycle and pedestrian network.

5. RECOMMENDED PROGRAMS, POLICIES, & PRACTICES—Summarizes the approach to developing non-infrastructure recommendations and presents the program and policy recommendations.

6. IMPLEMENTATION STRATEGY—Summarizes the prioritization framework and presents a tiered list of projects for implementation that considers resource availability and funding opportunities. Presents cost estimates and identifies potential funding sources for these recommendations.

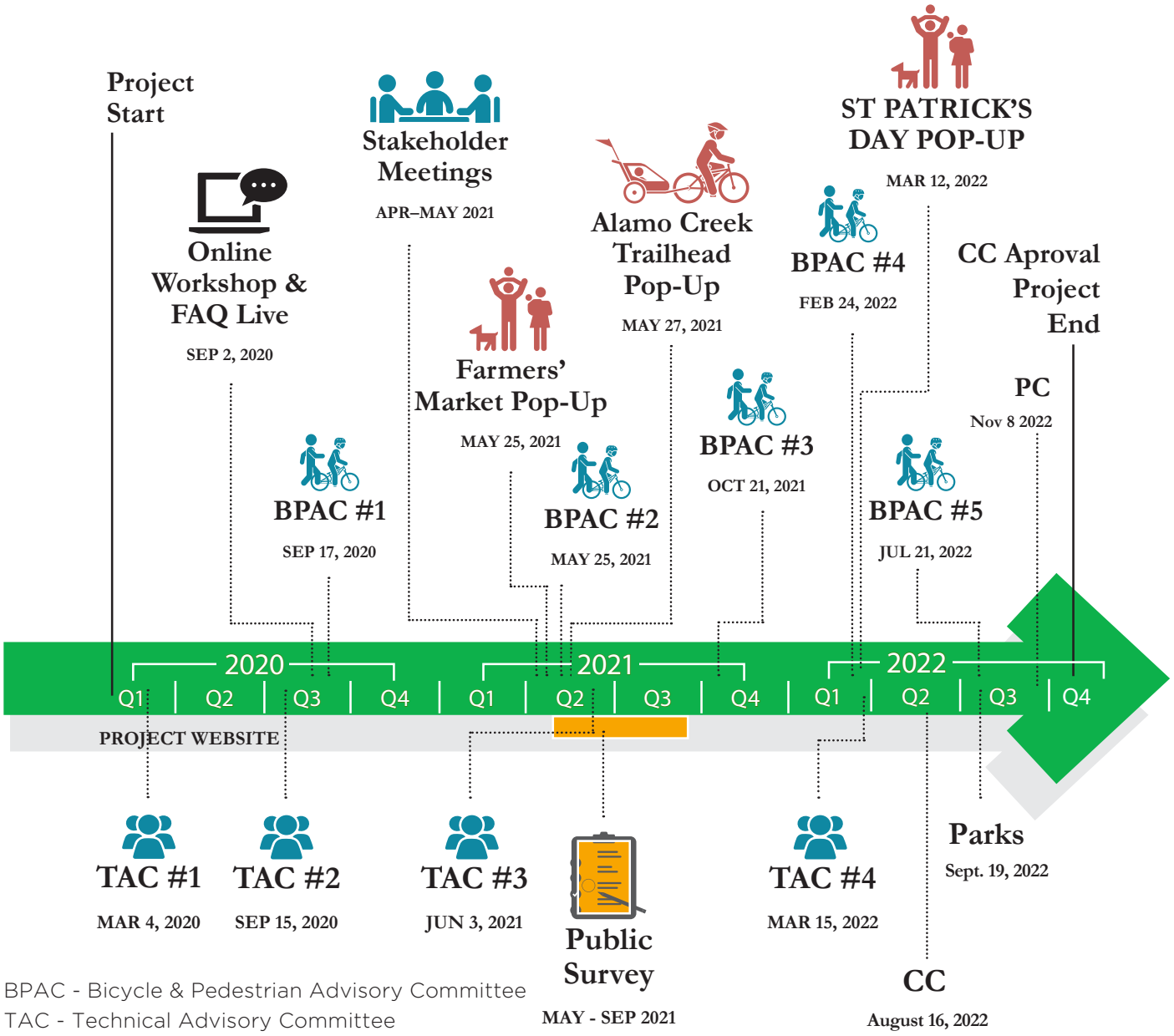
7. LOOKING AHEAD—Recaps key findings from prior chapters and discusses next steps for Plan implementation.

8. TECHNICAL APPENDIX—Includes bicycle and pedestrian facility design guidelines and provides memorandums documenting technical analysis and engagement activities.

COMMUNITY & STAKEHOLDER ENGAGEMENT

At the outset of the planning process, a community engagement plan was created to outline activities, methods, and tools that would be used for public and stakeholder engagement. Due to the outbreak of the coronavirus pandemic and subsequent stay-at-home orders, the community and stakeholder engagement effort included digital outreach. In-person events were held when it was safe to do so.

For more, see Chapter 2.



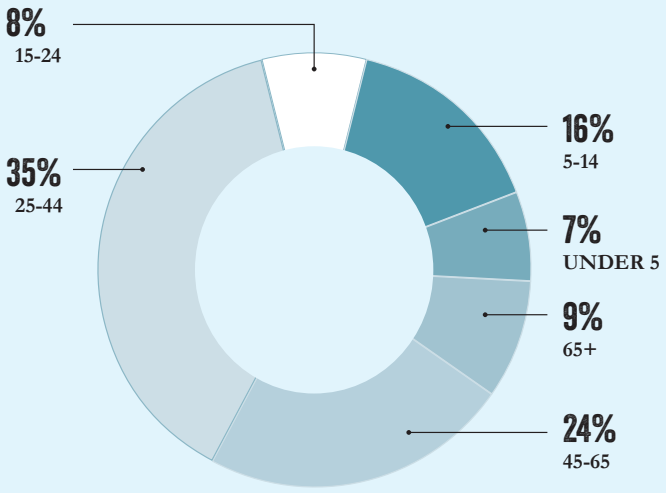
BPAC - Bicycle & Pedestrian Advisory Committee
TAC - Technical Advisory Committee
CC - City Council
PC - Planning Commission
Parks - Parks Commission

DUBLIN DEMOGRAPHIC SNAPSHOT

Dublin Population

61,240

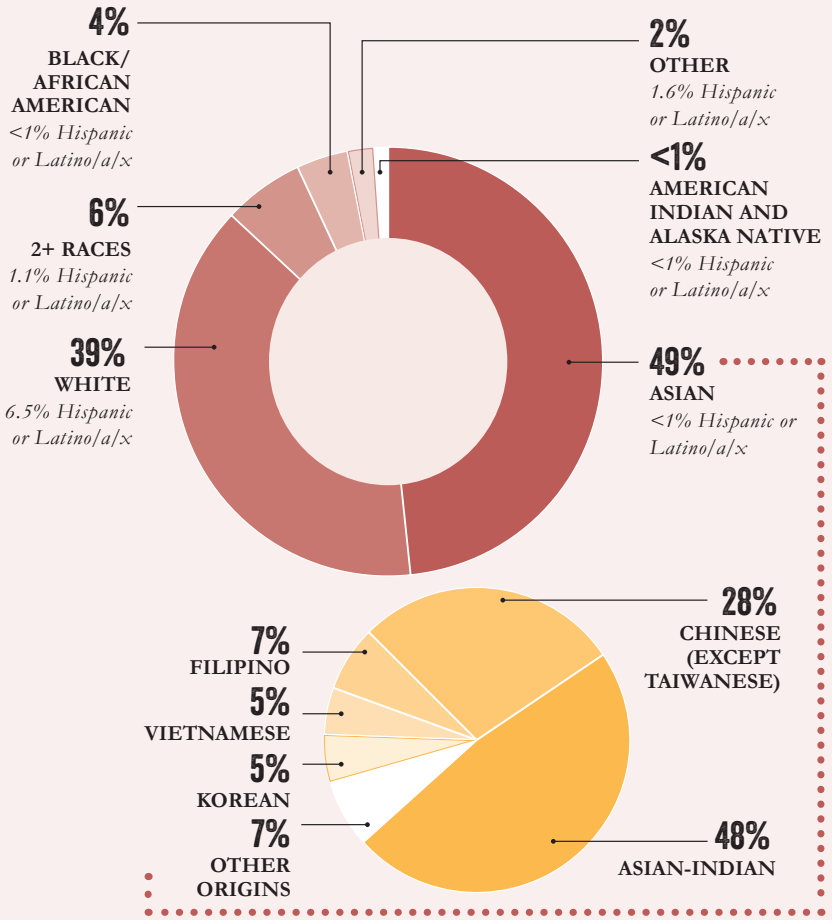
Dublin Population by Age



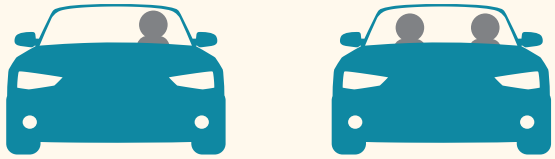
*rounded

Source: US Census American Community Survey 5-year Estimates (2015-2019)

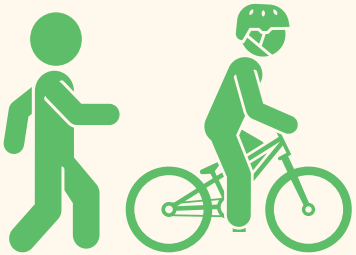
Dublin Population by Race/Ethnicity



Commute Snapshot



67% DRIVE ALONE & **9%** CARPOOL

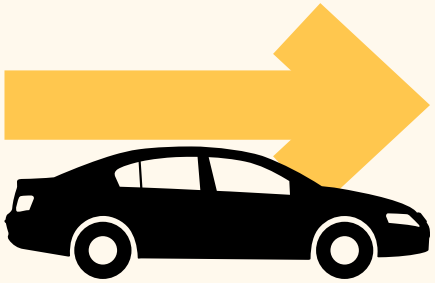


2%
EITHER WALK OR BIKE

2015-2019 American Community Survey data

15%
TAKE PUBLIC TRANSIT, CAR SHARE (E.G., GETAROUND, TURO), TRANSPORTATION NETWORK COMPANY (E.G., LYFT, UBER), OR A TAXI

MORE THAN
23,000
DUBLINERS COMMUTE OUTSIDE THE CITY FOR WORK



3%
OF HOUSEHOLDS IN DUBLIN DO NOT OWN A VEHICLE

Others worked from home or took other modes to work

PROGRAM AND POLICY NEEDS

- Additional resources, including staff dedicated to active transportation.
- Updated design guidance and standards to incorporate the innovations and changes since the 2014 Plan.
- Enhanced coordination across departments.
- Clearer processes and stronger policies related to pedestrian and bicycle project maintenance, design review, and implementation.

SAFETY AND COMFORT

COLLISION ANALYSIS FINDINGS

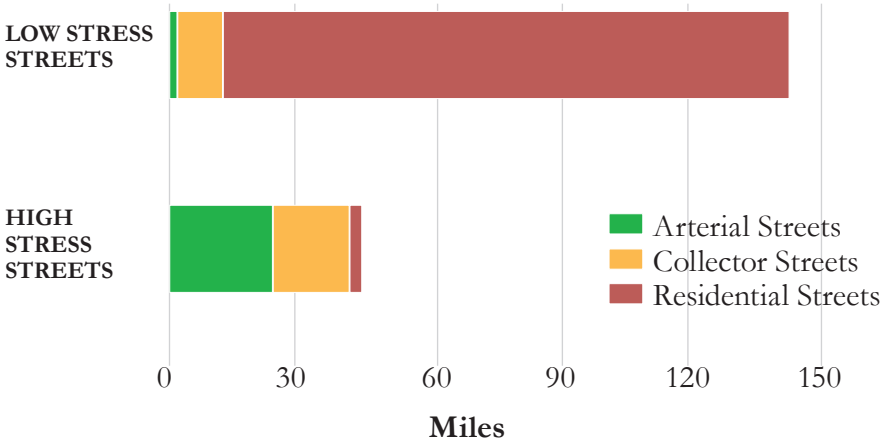
- 68 bicycle-involved collisions over the 6-year period; 3 fatal and severe injury collisions.
- 81 pedestrian-involved collisions over the 6-year period; 12 fatal and severe injury collisions.
- People 15–24 years old are overrepresented in pedestrian and bicycle collisions. They represent 25% and 18% of pedestrians and bicyclists involved in collisions, but make up just 8% of the city's population
- 62% of the pedestrian collisions occurred on just 8.4 miles of roadway that comprise the pedestrian high injury network (see Figure 25)
- 62% of the bicycle collisions occurred on just 6.7 miles of roadway that comprise the bicycle high injury network (see Figure 26).

BICYCLE LEVEL OF STRESS ANALYSIS

- Low-stress on-street facilities are typically local residential streets without dedicated bicycle facilities.
- Arterial streets, such as Dublin Boulevard, are typically higher-stress due to high vehicular speeds, high traffic volumes, or multiple travel lanes.
- Sidepaths can be high stress or low stress, depending on path width, shoulder width, and presence of wayfinding.
- Only 37 percent of collectors and 7 percent of arterials in Dublin are low stress. Many businesses and services are located on or near collectors, and these desintations can only be accessed with some travel along or across the collectors or arterials.

For more, see Chapter 3.

Figure 1. Miles of Bikeway Stress by Functional Classification



**Miles do not include paths.*

WALKING AND BIKING ACCESS

SCHOOLS

Cottonwood Creek School, Dougherty Elementary, and Kolb Elementary exhibit the highest estimated walk access with around 36 percent of students living within a 10-minute walk.

Access points on high-stress streets create a barrier and reduce the likelihood of students to bike to school.

- Dublin High,
- Frederiksen Elementary,
- Murray Elementary, and
- Wells Middle School.

BART

Approximately 11 percent of Dublin residents are within a 15-minute walk of either the Dublin/ Pleasanton or West Dublin BART stations.

Less than one percent of "interested and concerned" bicyclists have a low-stress bicycle route to BART.

JOB CENTERS

Access to job centers is limited by the distance between employment and residential uses.

Job centers are located on high-stress streets, which currently limit safe and comfortable bicycle access to these sites.

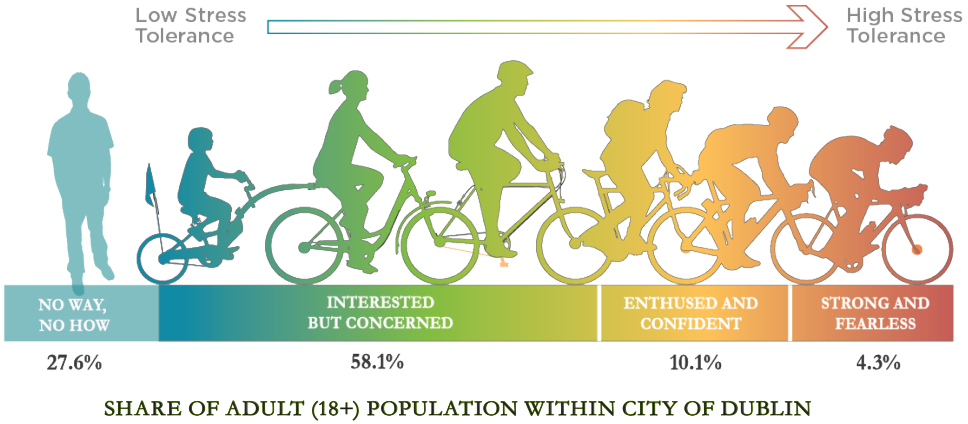
PARKS

Almost 62 percent of residents live within a 15-minute walk of a park.

Table 18. Pedestrian Typology

Age	Typology	Walking Characteristics
Under 14	Youth	Limited by multilane crossings
14 to 55	Teenage and Working Age Adults	Strong and capable, but still limited by sidewalk gaps, unsignalized crossings at major roads, and absence of midblock crossings
Over 55	Aging	The limits experienced by young adults and adults and further limited by the absence of curb ramps or long multilane crossings

Figure 2. Bicyclist Typology



Nearly 42 percent of residents have a low-stress bicycle route to a park.

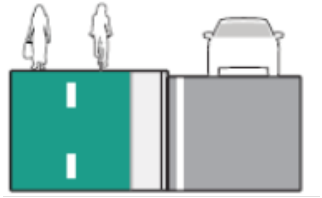
For more, see Chapter 3.

NETWORK RECOMMENDATIONS

BICYCLE FACILITIES

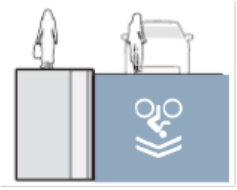
The recommended new facilities include the following:

Shared Lane (Class I): 12.8 miles

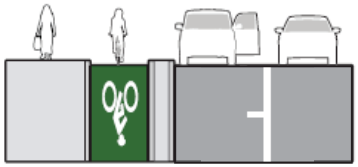


Standard or Buffered Bicycle Lane (Class II): 19.9 miles

With Shared Lane (Class III): 12.4 miles



Separated Bicycle Lane (Class IV): 10.4 miles



For more, see Chapter 4.

PEDESTRIAN FACILITIES

The recommended pedestrian and bicycle networks were developed in tandem using a complete street approach. A suite of pedestrian treatments is recommended along project corridors so that when concept designs are developed, bicycle and pedestrian improvements can be planned, designed, and implemented at the same time.

Pedestrian improvements include:

- consistent sidewalk
- buffers with street trees and green stormwater infrastructure
- high-visibility crosswalks
- accessible curb ramps
- curb extensions
- reduced corner radii
- signal improvements

SPOT IMPROVEMENTS

Intersections and mid-block locations in the city with relatively high collision frequency and severity relative to the rest of the network have been prioritized for safety enhancements. The recommendations for this Plan include 16 freeway modernization improvements, 33 intersection improvements, and 5 crossing improvements.

For more, see Chapter 4.

PROGRAM AND POLICY RECOMMENDATIONS

- Coordination and Collaboration
- Emerging Technologies
- Promotion and Encouragement
- Data Collection
- Funding and Implementation
- Supporting Infrastructure and Amenities
- Design
- Operations and Maintenance

For more, see Chapter 5

IMPLEMENTATION STRATEGY

PRIORITIZATION FACTORS

Table 1. Prioritization Factors and Variables

FACTOR	VARIABLE
Safety	High-Injury Corridors
Social Equity	Youth and Senior Population
Connectivity	Demand Analysis
	Proximity to Schools
Quality of Service	Bicycle Level of Traffic Stress
	Sidewalk Gaps
Major Barriers	Freeway Crossings
Consistency with Past Planning	Previously Identified Projects

COST ESTIMATES

TIER I
Near-Term Project Cost

$21,085,000 - $27,589,000

TIER II AND TIER III
Long-Term Investment Cost

$82,250,000- $186,580,000

For more, see Chapter 6.

PRIMARY FUNDING SOURCES

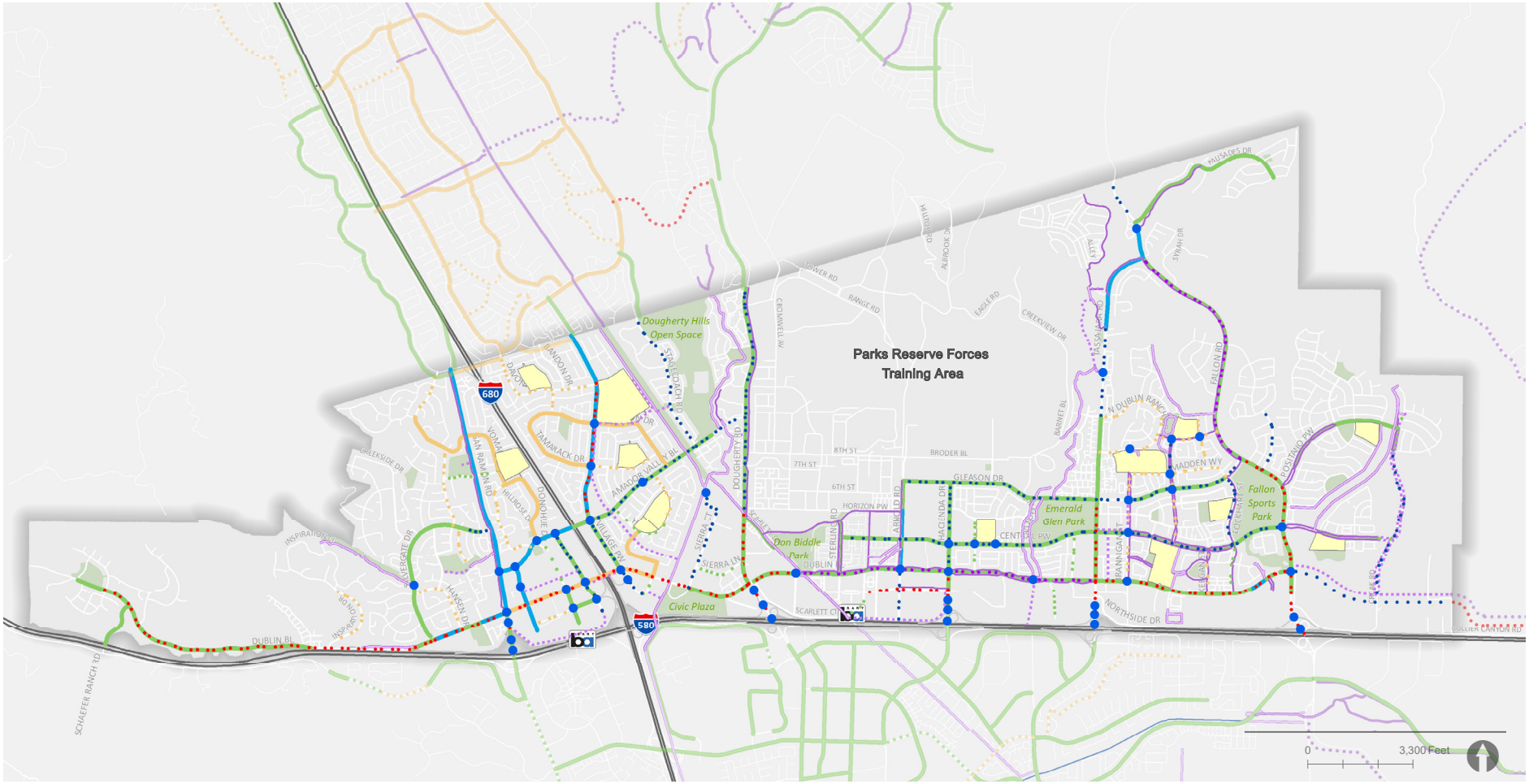
Active transportation projects in Dublin have typically been funded through a combination of ballot measure monies (e.g., Alameda County Measure B, BB, and Measure RR), the City General Fund, the Road Maintenance and Rehabilitation Account, developer-funded projects, and transportation impact fees, with some funding from state, regional, and federal grants. The Bipartisan Infrastructure Law (BIL) or Infrastructure Investment and Jobs Act (IIJA), signed into law in November 2021, established more than two dozen competitive grant programs for infrastructure initiatives. These discretionary grants and other funding sources are described in Chapter 6.

FUNDING IDENTIFIED IN CAPITAL IMPROVEMENT PROGRAM (2022-2027)

$1,879,684
for citywide bicycle and pedestrian projects.

$12,147,565
for street resurfacing.

Figure 3. Recommended Projects and Existing Facilities



Locations with identified proposed segment projects may also include pedestrian improvements such as consistent sidewalks, buffers with street trees and/or green stormwater infrastructure, high-visibility crosswalks, accessible curb ramps, curb extensions, reduced corner radii, and signal improvements.

Refer to Table 6 for detailed project descriptions.

Proposed Point Project
- Spot Improvement

Proposed Segment Project
- Shared Lane (Class III)
- Bike Lane (Class IIA)
- Buffered Bike Lane (Class IIB)
- Complete Streets Study: Separated Facility (Class I or Class IV)
- Complete Streets Study: Consider Improvements to Existing Sidepaths
- Class I Path Project

Existing Facility
- Shared Lane (Class III)
- Bike Lane (Class IIA)
- Buffered Bike Lane (Class IIB)
- Existing Class IA Shared Use Path
- Existing Class IB Sidepath

- Schools
- BART Stations
- Parks


Iron Horse Trail
VEHICLE SIGNAL
PED/BIKE SIGNAL

1. INTRODUCTION

This chapter introduces the project, including its background and need, and sets the stage for the analysis, findings, and recommendations detailed in subsequent chapters.

ABOUT THE PLAN

The City of Dublin's Bicycle and Pedestrian Plan is a critical planning, policy, and implementation document that supports the City's efforts to improve the safety and attractiveness of biking and walking as a means of transportation and recreation. This Plan updates and replaces the City's 2014 Plan by building upon the 2014 Plan's goals and recommendations and by using new guidance documents. The update will result in infrastructure and program and policy recommendations that support walking and biking in Dublin.

THE 2014 BICYCLE AND PEDESTRIAN MASTER PLAN

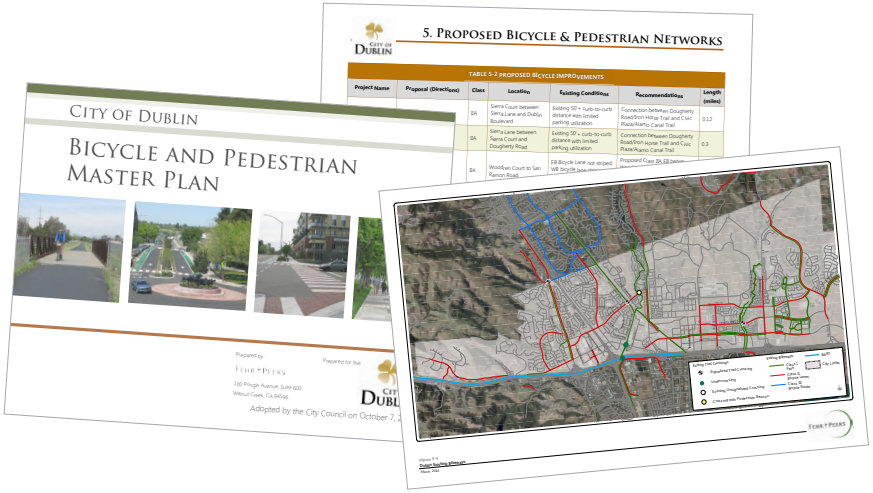
The 2014 Bicycle and Pedestrian Plan, and the following six goals included in the 2014 Plan, provides a baseline for the updated Plan.

2014 GOALS

Goal 1: Support bicycling and walking as practical, healthy, and convenient alternatives to automobile use in Dublin.

Goal 2: Implement a well-connected active transportation system to attract users of all ages and abilities.

Goal 3: Incorporate the needs and concerns of bicyclists and pedestrians in all transportation and development projects.



Goal 4: Support infrastructure investments with targeted bicycle and pedestrian education, encouragement, enforcement, and evaluation programs.

Goal 5: Maximize multi-modal connections in the transportation network.

Goal 6: Improve bicycle and pedestrian safety citywide.

NEW GUIDANCE

Since the 2014 Plan was adopted, bicycle and pedestrian planning and design guidance and standards have evolved to include innovative treatments and guidance from local and national agencies. Best-practice documents should be considered when implementing any bicycle and pedestrian facility. The latest versions of best-practice design guides developed by outside sources should be

consulted regularly to ensure information is up to date. Relevant guidance includes:

- California Manual on Uniform Traffic Control Devices (2018)
- Federal Highway Administration (FHWA) Bikeway Selection Guide (2019)
- FHWA Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts (2016)
- AC Transit Multimodal Corridor Design Guidelines (2019)
- National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide (2014)
- NACTO Transit Street Design Guide (2016)
- NACTO Urban Street Stormwater Guide (2016)

Relevant documents and additional guidance is presented in the Design Guide (appendix D).

PROGRESS SINCE THE 2014 PLAN

Since the 2014 Plan's adoption, the City and developers have built 10.8 miles of the 2014 proposal of 35.3 miles of bikeways. They have built seven of the 25 recommended pedestrian projects, and two more are in progress. The infrastructure inventory is presented in Figure 4. This Plan update reevaluates recommendations and carries forward relevant projects from the 2014 Plan.

RELATIONSHIP TO OTHER PLANS

Federal, state, and local agencies develop policies and publish plans to guide investment and set transportation priorities. Understanding how these plans and policies relate and fit together helps ensure recommendations are consistent with and build on prior planning efforts. This section describes relevant plans and policies. Table 2 presents what aspects of the most relevant existing policy and planning documents were used to guide this Plan's policies and projects.

FEDERAL POLICIES

USDOT Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations. In 2010, the United States Department of Transportation (USDOT) issued a policy directive in support of walking and bicycling. The policy encouraged transportation agencies to go beyond minimum standards and fully-integrate active transportation into projects. As part of the statement, the USDOT encouraged agencies to adopt similar policy statements in support of walking and bicycling considerations.

Americans with Disabilities Act—The Americans with Disabilities Act (ADA) Title III is legislation enacted in 1990 that provides thorough civil liberties protections to individuals with disabilities with regards to employment, state and local government services, and access to public accommodations, transportation, and telecommunications. Title III of the Act requires places of public accommodation to be accessible and usable to all people, including people with disabilities.

Figure 4. Infrastructure Inventory

INFRASTRUCTURE INVENTORY

The 2014 Dublin Bicycle and Pedestrian Plan produced a suite of infrastructure recommendations, including the following:

WALKING NETWORK PROJECT TYPES

A recommended walking network consisting of five main improvement types:

- INTERSECTION CROSSING TREATMENTS
- SIGNAL MODIFICATIONS
- SIDEWALK IMPROVEMENTS
- REMOVE BARRIERS
- ADA IMPROVEMENTS

Signalized Tassajara Creek trail crossing at Central Parkway. The 2014 Plan recommended Tassajara Creek crossing locations at Dublin Boulevard which have not yet been built.

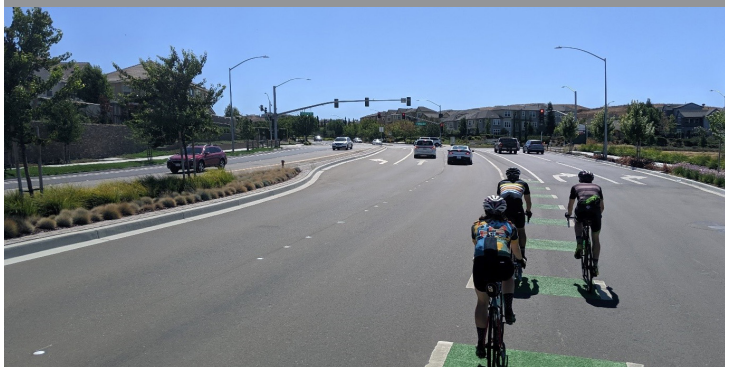
24 pedestrian infrastructure projects

BIKEWAY NETWORK PROJECT TYPES

A recommended bikeway network with the following intended focus:

- CONNECTIONS TO KEY ACTIVITY CENTERS
- COMFORT AND LOW LEVEL OF STRESS
- CONNECTIONS TO REGIONAL TRAIL SYSTEM
- CONNECTIONS TO ADJACENT CITIES

Class IIA bike lane along Tassajara Road, which was proposed in the 2014 Plan.



83 bikeway infrastructure projects, **totaling 35.3 miles**

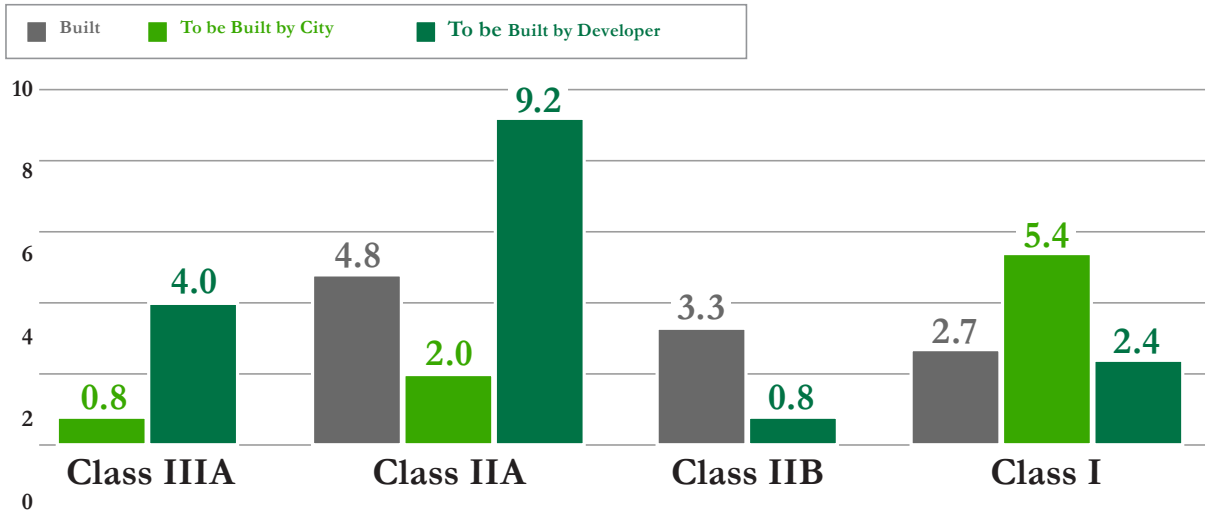
PROGRESS:

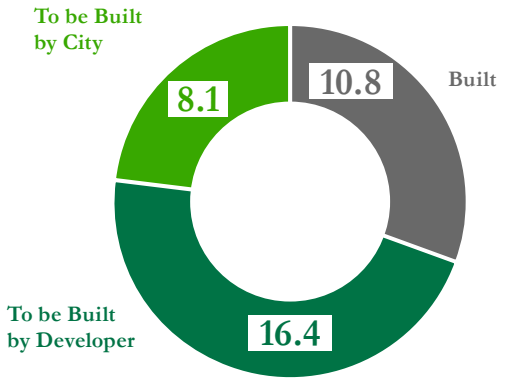
Pedestrian projects proposed and built, by project type

PEDESTRIAN IMPROVEMENT TYPE	PROPOSED	BUILT	IN PROGRESS
Intersection crossing treatments	12	2	0
Sidewalk improvements	2	0	1
ADA improvements	6	1	0
Signal modifications	4	1	0
Remove Barriers	3	3	1
Wayfinding signage	1	0	0
Total	**28**	**7**	**2**

Some projects included multiple types and are double or triple counted into all relevant categories.

Bicycle facilities proposed and built, by mileage





Proposed mixed facilities are listed by their highest proposed class (e.g., Class IIA/IIIA is listed as Class IIA)

Figure 5. 2014 Plan Proposed Bikeway Facilities

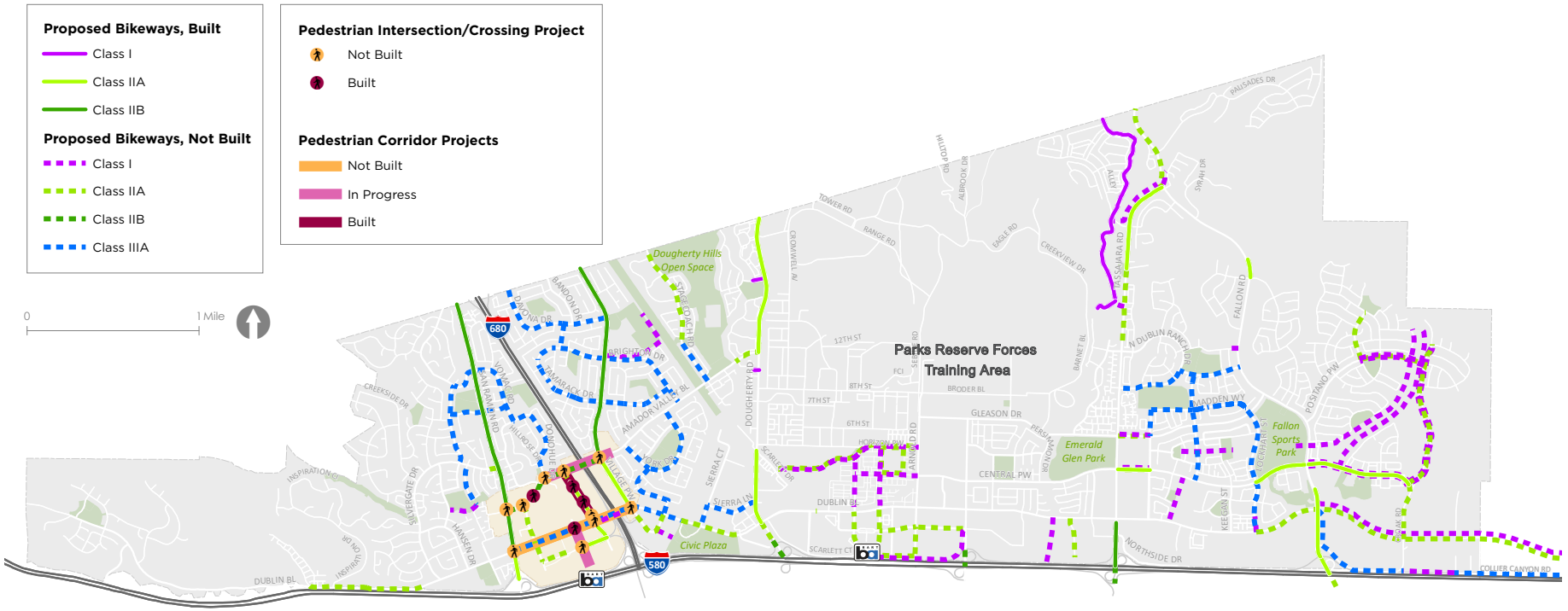


Table 2. Relevant Plans and Policies

Plan	Relevance to Current Plan					
	Bicycle Policies	Pedestrian Policies	Facility/ Network Maps	Design Guidelines	Project Recommendations or Concept Designs	Program Recommendations
STATE AND REGIONAL PLANS AND POLICIES						
California Green Building Code	●					
Caltrans Toward an Active California (2017)	●	●	●		●	●
Caltrans District 4 Bike Plan (2018)			●		●	
Caltrans District 4 Pedestrian Plan (2020)			●		●	
Alameda Countywide Active Transportation Plan (2019)	●	●				
Metropolitan Transportation Commission (MTC) Plan Bay Area 2050 (2021)	●	●	●		●	●
MTC Active Transportation Plan (in progress, anticipated 2022)	●	●	●	●	●	●
East Bay Regional Parks District Master Plan (2013)	●	●	●			
LOCAL CITY PLANS AND POLICIES						
Local Roadway Safety Plan (in progress, anticipated 2022)					●	
Americans with Disabilities Act Transition Plan (in progress, anticipated 2022)			●		●	

Plan		Relevance to Current Plan					
		Bicycle Policies	Pedestrian Policies	Facility/ Network Maps	Design Guidelines	Project Recommendations or Concept Designs	Program Recommendations
LOCAL CITY PLANS AND POLICIES CONTINUED							
Streetscape Master Plan (2009)					●		
Complete Streets Policy (City Council Resolution 199-12) (2012)		●	●				
Dublin Boulevard Bikeway Corridor and Connectivity Studies (2013)		●				●	
Pedestrian Safety Assessment (2014)							●
Bicycle and Pedestrian Plan (2014)		●	●	●	●	●	●
General Plan Land Use & Circulation (2014)	Circulation & Scenic Highways Element	●	●				
	Schools, Public Lands, & Utilities Element	●	●				
Parks and Recreation Master Plan (2022)					●		
Iron Horse Regional Trail Feasibility Study (2017)						●	
Traffic Safety Study Update (2018)						●	
Climate Action Plan 2030 and Beyond (2020)		●	●				●
Downtown Streetscape Master Plan (2020)				●	●	●	

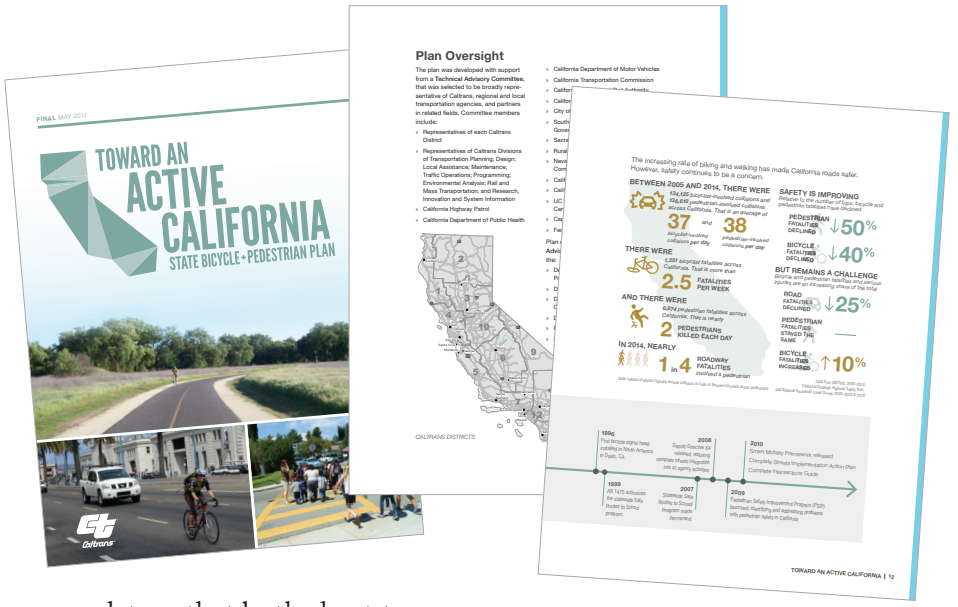
Plan		Relevance to Current Plan					
		Bicycle Policies	Pedestrian Policies	Facility/ Network Maps	Design Guidelines	Project Recommendations or Concept Designs	Program Recommendations
Green Stormwater Infrastructure Plan (2019)					●	●	
Specific Plans	Dublin Crossing (2013)			●	●	●	
	Downtown (2014)				●	●	
	Dublin Village Historic Area (2014)			●			
	Eastern Dublin (2016)	●	●			●	
FEDERAL PLANS AND POLICIES							
USDOT Policy Statement on Bicycle and Pedestrian Accomodation Regulations and Recommendations		●	●				●
Americans with Disabilities Act			●		●		●

STATE AND REGIONAL PLANS AND POLICIES

Complete Streets Act of 2008: California's Complete Streets Act of 2008 (Assembly bill 1358) requires all cities to modify the circulation element of their general plan to "plan for a balanced, multimodal transportation network that meets the needs of all users" when a substantive revision of the circulation element occurs. The law went into effect on January 1, 2011. The law also directs the Governor's Office of Planning and Research to amend its guidelines for the development of circulation elements to aid cities and counties in meeting the requirements of the Complete Streets Act.

Senate Bill 375/Assembly Bill 32: California Assembly Bill 32 requires greenhouse gas emissions to be reduced by 28 percent by the year 2020 and by 50 percent by the year 2050. Senate Bill 375 provides the implementation mechanisms for Assembly Bill 32. Senate Bill 375 requires metropolitan planning organizations and regional planning agencies to plan for these reductions by developing sustainable community strategies (SCS), which will be a regional guide for housing, land uses, and transportation and will incorporate the Regional Transportation Plan (RTP). A key component of SCS is the reduction of automobile trips and vehicle miles traveled. Planning for increases in walking, bicycling, and transit use as viable alternatives to automobile travel are important components of these SCS/RTP plans.

California Green Building Standards Code: According to Chapter 7.94 of the City of Dublin's Municipal Code, bicycle parking and support facilities in both residential and non-residential development shall conform to the California Green Building Standards Code (CALGreen). The CALGreen Code includes both mandatory and voluntary measures. For non-residential buildings, it is



mandatory that both short-term and long-term bicycle parking is provided and secure. Generally, the number of long-term bicycle parking spaces must be at least 5 percent of the number of vehicle parking spaces. Schools have additional requirements so both students and staff have access to sufficient bicycle parking.

Caltrans Toward an Active California (2017): Toward an Active California is Caltrans's first statewide policy and plan to support bicyclists and pedestrians through objectives, strategies, and actions. Toward an Active California introduces 4 new objectives, 15 strategies, and 60 actions that are specific to active transportation and serve as the basis for Plan implementation.

Caltrans District 4 Bike Plan (2018): This plan evaluates bicycle needs on and across the State transportation network and identifies priority bicycle projects. Projects are prioritized as top tier, mid tier, and low tier. The following projects are recommended for Dublin:

- **Top Tier Project**: Santa Rita Road and I-580 interchange reconstruction (ramps only); Class IIB facility
- **Mid Tier Project:** Tassajara Creek and I-580 new separated crossing; Alcosta Boulevard and I-680 minor interchange improvements (signage and striping); Class II facility
- **Low Tier Project:** Demarcus Boulevard and I-580 new separated crossing

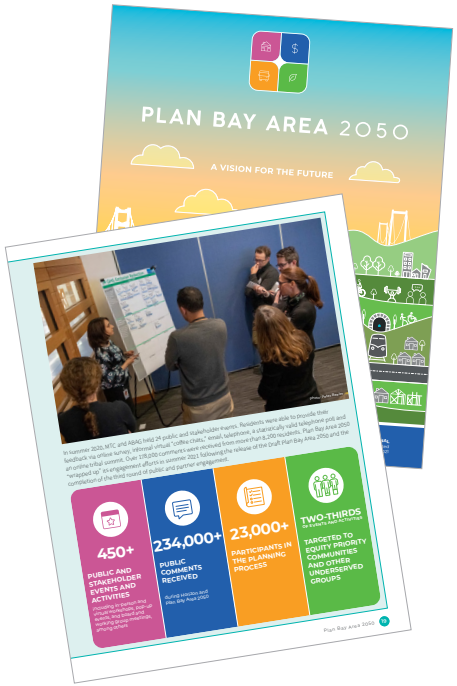
Caltrans District 4 Pedestrian Plan (2020): This plan identifies and prioritizes pedestrian needs along and across the State Highway System to inform future investments. The plan's main output is a prioritized list and map of location-based pedestrian needs and a toolkit with strategies to address those needs.

Alameda Countywide Active Transportation Plan (2019): The 2019 Countywide Active Transportation Plan (CATP) updates and combines the Countywide Bicycle Plan and the Countywide Pedestrian Plan. The CATP analyzes low-stress bike networks, identifies a countywide high injury pedestrian and bicycle network, evaluates major barriers to the bicycle and pedestrian network, and establishes a framework for prioritizing projects of countywide significance to inform decision-making about active transportation funding at the Alameda County Transportation Commission. At the local level, the CATP provides resources to member agencies to help advance projects that provide complete, safe, and connected networks for biking and walking, including better connections to the regional transit network.

Connectivity analysis presented in the CATP indicate that the east planning area, which includes the City of Dublin, generally has poor low-stress connectivity in the rural and outlying suburban areas and in the business park portions of Dublin and Pleasanton. Based on the high-injury network analysis completed in the CATP, the combined bicycle and pedestrian high-injury network miles represent less than one percent of the total countywide high-injury network.

In the east planning area, Dublin Boulevard from Arnold Road to Hacienda Drive and Village Parkway from Davona Drive to Tamarack Drive have the highest bicycle collision severity scores. Dublin Boulevard was identified as the street with the most miles on the pedestrian high-injury network.

The 2020 Countywide Transportation Plan (2020): The 2020 Countywide Transportation Plan (2020 CTP) was adopted along with the Community-Based Transportation Plan and the New Mobility Roadmap. The 2020 CTP covers transportation projects, policies, and programs out to the year 2050 for Alameda County. The Community-Based Transportation Plan is an assessment of transportation needs in the county's low-income communities and communities of color with a focus on input collected via community engagement activities. The New Mobility Roadmap provides a foundation for agency policy, advocacy, and funding decisions to advance new mobility technologies and services for the Alameda CTC and partner agencies, as well as the private sector. The 2020 CTP 10-year priority project list includes the following projects in the City of Dublin: Iron Horse Trail Crossing at Dublin Boulevard, Downtown Dublin Streetscape Plan Implementation, West Dublin/ Pleasanton BART Station Active Access Improvements, Safe Routes to School Improvements, Interchange modernizations at I-580/I-680, I-580/Fallon/El Charro, and I-580/Hacienda, widening of Dougherty Road, Dublin Boulevard, and Tassajara Road and the extension of Dublin Boulevard



North Canyons Parkway. To complement these projects, the 10-Year Priority Projects and Programs, the 2020 CTP includes a series of Strategies that reflect guiding principles, industry best practices, and a gaps analysis of areas that aren't fully covered by projects: safe system approach, complete corridors approach, partnerships to address regional and megaregional issues, transit accessibility and transportation demand management, and new mobility and an automated, low-emission and shared future.

MTC Plan Bay Area 2050 (2021): This plan from the Metropolitan Transportation Commission (MTC) is the region's long-range strategic plan. It is focused on the interrelated elements of housing, the economy, transportation, and the environment.

MTC Active Transportation Plan (in progress, anticipated 2022): This forthcoming plan will guide investments in infrastructure and the development and implementation of regional policy. The plan supports the Plan Bay Area 2050 strategy to build a complete streets network and helps to meet goals to improve safety, equity, health, resilience, and climate change.

East Bay Regional Parks District Master Plan (2013): This policy document guides future development of parks, trails, and services.

LOCAL CITY PLANS AND POLICIES

Streetscape Master Plan (2009): This master plan maximizes opportunities to craft an urban image unique to Dublin and opportunities to maintain existing amenities like street trees. Among other goals, the plan aims to coordinate improvements and responsibilities for Dublin's streets and to strengthening Dublin Boulevard's streetscape. In the context of active transportation, this plan is a valuable resource for identifying and implementing street improvements that contribute to Dublin's image.

Complete Streets Policy (City Council Resolution No. 199-12) (2012): The City of Dublin's Complete Streets Policy identifies complete streets planning as a critical contributor to:

- Increase walking, biking, and taking transit
- Reduce vehicle miles traveled
- Meet greenhouse gas reduction goals

Together, these targets aim to benefit public health. The policy emphasizes community engagement, sensitivity to land use and context, and coordination with nearby jurisdictions to connect infrastructure across city boundaries. The policy names several improvements

that should be considered to benefit all users of the street, including sidewalks, shared use paths, bike lanes and routes, and accessible curb ramps.

Dublin Boulevard Bikeway Corridor and Connectivity Studies (2013): Completed in 2013, these two studies evaluated options for improving bicycling conditions on Dublin Boulevard, particularly in Downtown Dublin. A traffic analysis determined that removing a vehicle travel lane on Dublin Boulevard would delay transit service and worsen traffic during peak periods. Community members and local business owners expressed concern that this change would be a barrier to visiting Downtown Dublin by car. Ultimately, a shared-use path running alongside Dublin Boulevard and connecting to the Alamo Canal Trail became the long-term vision for bicycling in Dublin. In the interim, the City added sharrows (a Class III facility) to Dublin Boulevard between Dublin Court and Tassajara Road and permitted riding on sidewalks to make bicycling a more comfortable experience for all skill levels.

Entrance to Iron Horse Trail

Pedestrian Safety Assessment (2014): The University of California, Berkeley Institute of Transportation Studies Technology Transfer Program prepared this assessment for the City of Dublin in 2014. The assessment authors compared different types of collisions that occurred in Dublin with other cities in California and found that Dublin has a relatively high number of collisions involving pedestrians—particularly young and old pedestrians—and collisions involving high vehicle speeds. Opportunities to improve walking conditions in Dublin include traffic calming programs, transportation demand management policies and programs, and coordination with health agencies. This assessment also included specific areas of Dublin where improvements could benefit pedestrian conditions. The updated bicycle and pedestrian plan reviewed these key areas.

Dublin Bicycle and Pedestrian Plan (2014): Adopted in 2014, Dublin's 2014 Plan established key goals and policies to maintain and improve biking and walking infrastructure. The plan's goals and policies support its vision for Dublin

The 2014 Plan inventoried the bicycle and pedestrian network and documented potential improvements to specific facilities. The plan organized infrastructure projects at key locations into four tiers by priority and intended to actualize the proposed biking and walking network. Programming opportunities to attract biking and walking trips are also identified in the 2014 Plan. In addition to listing potential funding sources for

project implementation, the 2014 Plan includes bicycle and pedestrian design guidelines that apply national resources and best practices to project implementation in Dublin.

General Plan Circulation & Scenic Highways Element and Schools, Public Lands, & Utilities Element (2014): The General Plan's Land Use & Circulation elements focus on meeting the mobility needs of all roadway users by any mode and aligns with two key documents: the City of Dublin's Complete Streets Policy and the Tri-Valley Transportation Plan (a regional plan). The element promotes the use of local and regional trails and emphasize improving experiences walking and taking transit. The elements prioritize two areas for active transportation investments: the Eastern Extended Planning Area and Downtown Dublin.

The elements' guiding policies that are the most relevant to the Plan include:

- 5.3.1.A.3—Encourage improvements in the Enhanced Pedestrian Areas to improve the walkability of these areas.
- 5.5.1.A.1—Provide safe, continuous, comfortable, and convenient bikeways throughout the city.
- 5.5.1.A.2—Improve and maintain bikeways and pedestrian facilities and support facilities in conformance with the recommendations in the Dublin Bicycle and Pedestrian Plan.
- 5.5.1.A.3—Enhance the multimodal circulation network to better accommodate alternative transportation choices including BART, bus, bicycle, and pedestrian transportation.
- 5.5.1.A.4—Provide comfortable, safe, and convenient walking routes throughout the city and, in particular, to key destinations such as Downtown Dublin, BART stations, schools, parks, and commercial centers.

Parks and Recreation Master Plan (2022): The Parks and Recreation Master Plan (PRMP) establishes goals, standards, guiding policies, and an action plan to guide the City of Dublin in the acquisition, development, and management (operations and maintenance) of Dublin's park and recreation facilities through the ultimate build-out of the City in accordance with the General Plan. This PRMP update addresses the program and facility needs of the anticipated future population growth. The development standards for new parks and facilities are intended to provide for quality parks, trails, sports fields and recreation and cultural facilities needed at build-out in a manner that is fiscally sustainable to operate and maintain. Relevant goals and objectives include exploring improving/adding bike paths and walking trails, and continuing to maintain and improve existing facilities, parks, trails, and open spaces. The standards and criteria for the City's parks and recreation facilities include requirements for bicycle parking, paving, and width.

Iron Horse Regional Trail Feasibility Study (2017): Based on a multimodal assessment and community outreach processes, this Feasibility Study arrives at several key preferred alternatives for the Iron Horse Regional Trail and its crossings on Dougherty Road, Dublin Boulevard, and the West Dublin/Pleasanton BART Station. A multi-use trail separating people walking and biking was preferred; a bicycle/pedestrian bridge was preferred for crossing Dublin Boulevard,

while an at-grade crossing was preferred for Dougherty Road. Improvements near the BART station are intended to both enhance access to transit and improve experiences for trail users passing through the station area. Improvements to the Iron Horse Regional Trail contribute to this Plan by making use of the Trail easier and more convenient.

Traffic Safety Study Update (2018): Collisions were studied in the 2018 Traffic Safety Study Update (Safety Study) to evaluate safety performance on specific street sections and intersections. Overall, collisions had increased at the time of the Safety Study, likely as a result of population increases and people living and driving in Dublin, particularly East Dublin. Recommendations in the Update include continuous bicycle lanes at Central Parkway and Tassajara Road. The collision analysis included in this Plan supplements the findings and recommendations of the Safety Study.

Climate Action Plan 2030 and Beyond (2020): The Climate Action Plan 2030 and Beyond, establishes the City's vision for reducing greenhouse gas (GHG) emissions by 2045. The CAP names transportation as the largest source of emissions in Dublin and lays a plan for Dublin to become carbon neutral by 2045. Zero-emission vehicles and mode shift to biking, walking, and transit trips are key strategies to reduce Dublin's GHG emissions and meet citywide targets. The CAP sets measures to develop plans and programs around transportation demand management, transit-oriented development, parking management, and electric vehicle infrastructure planning to support mode shift and electrification of Dublin's vehicle fleet. A shift to alternative, active, shared, and electric mobility will provide safer routes between home, transit stops, and other community amenities, reduce GHG emissions, reduce traffic congestion, improve public health outcomes, and have economic benefits.

City of Dublin Streetscape Master Plan (2020): The Downtown Streetscape Master Plan provides direction for public and private investment, specifically in regard to the development of the public realm and Downtown's identity. One of the plan's key goals is to develop pedestrian-oriented environments on Commercial Throughways and on Downtown Local Streets. On these roadways as well as on Crosstown Boulevards and Parkways, the plan also emphasizes providing safe and comfortable facilities and crossings for people walking and biking. Recommended improvements within the Downtown area are prioritized into four tiers that can be matched to project scale, budget, funding source, and other opportunities. Tier 1 and Tier 2 street and pedestrian enhancements are illustrated on Figures 24, 25, and 27 and include restriping/road diet evaluation, sidewalk widening, intersection and mid-block crossing treatments, as well as art and wayfinding opportunities. Notable guidelines include widening sidewalks to provide a minimum 12-foot sidewalk with minimum five- to six-foot clear throughway zone for walking.

Specific Plans

Four areas of Dublin have specific plans that outline guiding principles, policies, and design guidance related to active transportation: Dublin Crossing, Downtown, the Dublin Village Historic Area, and Eastern Dublin.

Dublin Crossing (2013): This Specific Plan focuses on improving east-west connectivity in the Dublin Crossing, particularly between transit stops, destinations, and trails. A relevant guiding principle in this Specific Plan is to make it easier and more convenient for people to access and use the Iron Horse Regional Trail, the West Dublin/ Pleasanton BART Station, and retail destinations without a car.

Downtown Specific Plan (2014): Guiding principles, pertinent to biking and walking in Downtown, aim to create pedestrian-friendly streets, enhance multimodal travel options, and cultivate pedestrian connections to retail destinations. Transit-oriented development and lighting should be scaled to people walking in Downtown. Pedestrian connectivity between buildings, parking, and sidewalks should be maintained throughout Downtown, and pedestrian amenities like street furniture are encouraged.

Dublin Village Historic Area (2014): Placemaking, creating a positive experience for people walking, and attracting people to this area are key goals of this Specific Plan. Creating positive experiences for people walking includes providing more crosswalks and median refuges, calming vehicle traffic, adding pedestrian amenities or a plaza, and implementing pedestrian-scale lighting and wayfinding.

Eastern Dublin (2016): A key goal in the Eastern Dublin Specific Plan is to reduce reliance on single-occupancy vehicles by planning the area's land uses to naturally promote walking, biking, taking transit, and ridesharing. Notably, development with a higher intensity is encouraged near transit corridors in Eastern Dublin. Relevant policies in this Specific Plan include:

- Providing sidewalks in the Town Center and Village Center
- Requiring development to balance pedestrian, bicycle, and automobile circulation
- Creating a north-south trail along Tassajara Creek and other streams
- Establishing a bike network that meets both travel needs and recreational opportunities
- Providing bicycle parking at key destinations

Green Stormwater Infrastructure Plan (2019): The purpose of the City's Green Stormwater Infrastructure Plan (GSI) is to describe how the City will meet requirements specified in the Municipal Regional Stormwater National Pollutant Discharge Elimination System Permit (MRP), Order No. R2-2015- 0049, NPDES Permit No. CAS612008 issued on November 19, 2015. This GSI Plan demonstrates how the City is meeting MRP requirements and intends to use GSI to enhance the urban environment.

Local Roadway Safety Plan (anticipated 2022). The Local Roadway Safety Plan (LRSP) provides a framework to identify, analyze, and prioritize roadway safety improvements on local roads.

Americans with Disabilities Act Transition Plan (anticipated 2022). The ADA Transition Plan is a formal document outlining the City's compliance with ADA.

VISION, GOALS, & PERFORMANCE MEASURES

To set a clear path forward, City staff and the Technical Advisory Committee (TAC) members outlined the City's purpose, vision, and goals for this Plan.

PROJECT VISION

This Plan sets forth the following vision:

VISION STATEMENT

The City of Dublin is a vibrant place where walking and biking are safe, comfortable, and convenient ways to travel. In Dublin, walking and biking connects individuals, inclusive of all ages and abilities, to local and regional destinations.

GOALS

This Plan establishes the following five overarching goals related to the vision that guide recommendations:

1. **Enhance Safety**
   Prioritize safety in design and implementation of walking and biking facilities.

2. **Increase Walking and Biking**
   Support biking and walking as attractive modes of transportation.

3. **Improve Connectivity**
   Develop a bicycle and pedestrian network that provides well-connected facilities for users of all ages and abilities.

4. **Enhance Accessibility**
   Utilize principles of universal design to make biking and walking a viable transportation option for all, including people with disabilities.

5. **Prioritize Investments**
   Maintain sufficient funding to provide for existing and future bicycle and pedestrian needs, including program support, operation, and maintenance. Leverage biking and walking projects to promote economic activity and social equity in the community.

PERFORMANCE MEASURES

Setting performance measures helps track progress toward goals and document the results of investments in biking, walking, and rolling. The following performance measures and desired trends have been established to track progress towards achieving the goals of this Plan:

Goal	Performance Measure (Desired Trend)*
Enhance Safety	• Decrease vehicle travel speed measured at specific locations • Decrease number of pedestrian and bicycle collisions • Reduce severity of pedestrian and bicycle collisions • Increase users' perception of safety • Decrease average crossing distances
Increase Walking and Biking	• Increase walk/bike/roll to school mode share • Increase walk/bike/roll to work mode share • Increase walk/bike/roll to transit mode share • Increase walk/bike/roll to recreational facilities
Improve Connectivity	• Reduce bicycle level of traffic stress • Decrease number and length of sidewalk gaps • Increase number of crossing opportunities • Increase length of sidewalks that exceed minimum width requirements • Increase the number of secure bike parking spaces
Enhance Accessibility	• Increase the number of traffic signals with audible cues • Increase the number of intersections with directional curb ramps and detectable warning surfaces • Decrease number and length of sidewalk gaps • Increase length of sidewalks that exceed minimum width requirements • Decrease length of sidewalks that are broken or in disrepair
Prioritize Investments	• Maintain and increase sustainable funding mechanisms and a dedicated funding source to build a complete streets network • Maintain a maintenance plan for bicycle and pedestrian facilities • Increase funding for bicycle and pedestrian projects as a percentage of total transportation infrastructure spending

**not in order of importance*


2

2. COMMUNITY & STAKEHOLDER ENGAGEMENT

Inclusive and meaningful community and stakeholder engagement is necessary to create a Bicycle and Pedestrian Plan that is community-suported and implementable. A community and stakeholder engagement plan was developed at the outset of the planning process to outline the activities, methods, and tools that would be used to engage the Dublin residents and key stakeholders. The community and stakeholder engagement plan established a framework and identified opportunities and specific milestones for sharing information, soliciting feedback, and collaborating with agency stakeholders and Dublin community members.

ENGAGEMENT AND COVID-19

Due to the outbreak of Coronavirus disease (COVID-19) and the resulting stay-at-home order initiated on March 17, 2020 in Alameda County that affected the ability to conduct in-person engagement, a hybrid approach was used. Primarily digital outreach methods were used with in-person engagement when possible to safely and effectively reach a broad audience.

ENGAGEMENT ACTIVITIES

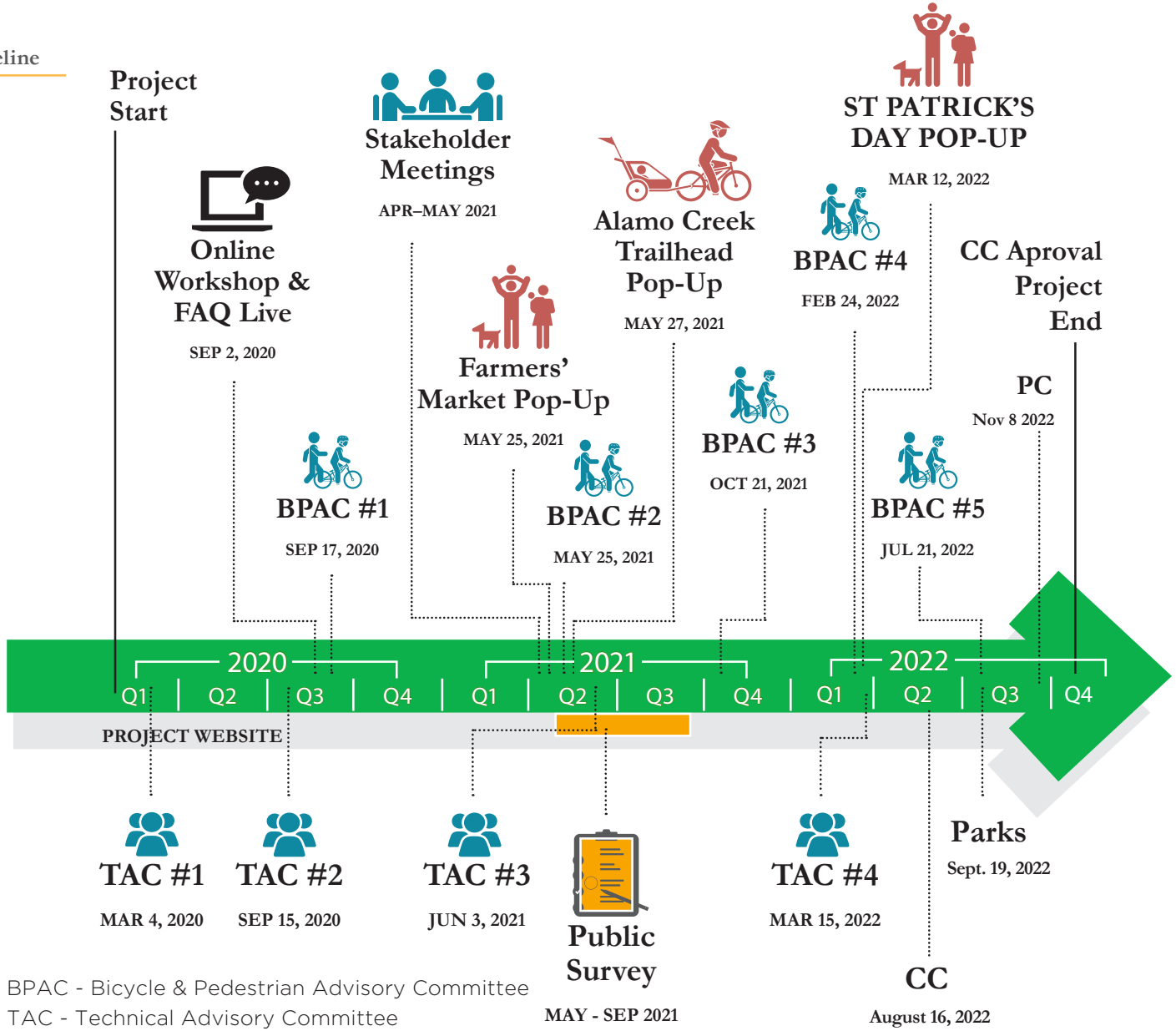
To better understand Dublin's walking and bicycling issues and opportunities, stakeholders and community members were engaged through the following methods:

The engagement timeline is shown in Figure 5, and specific activities are described in this section.

- Project website
- Interactive map
- Public survey
- Public workshop
- Pop-up events
- Stakeholder meetings
- Technical Advisory Committee meetings
- Bicycle and Pedestrian Advisory Committee meetings

Photos from pop-up events at the St Patrick's Day Festival and Alamo Creek Trailhead

Figure 6. Public Engagement Timeline



BPAC - Bicycle & Pedestrian Advisory Committee
TAC - Technical Advisory Committee
CC - City Council
PC - Planning Commission
Parks - Parks Commission

COMMUNITY FEEDBACK AND FINDINGS

Community feedback and findings are presented in this section. Select quotes from community members are presented throughout the Plan document. Supporting materials are included in appendix A.

PROJECT WEBSITE AND INTERACTIVE MAP

An interactive website was created to share key project milestones and provide information about the Plan development and events. Since going live in March 2020, the project website has received approximately 1,500 visits (with 2.7 actions per visit), 3,700 page views, and 123 data downloads.

The website also included an interactive online map on which the public could identify desired improvements, gaps, and key destinations in the existing bicycle and pedestrian network. The online map received a total of 208 comments.

Map feedback was classified into four categories: barriers, ideas, praise, and questions (Figure 7). Nearly half of responses indicated a **barrier** to walking or biking, and another third offered an **idea** to improve walking and biking conditions. The remaining responses were either **praise** for actions the City has taken to create a safe and connected active transportation network and promote sustainable transportation options or **questions** about the Plan or planning process. Responses were analyzed to identify central themes for each of the four categories.

BARRIERS

Themes for each of the response categories were generated from the subject matter of received comments to summarize the most common kinds of community input. The top five themes in the barriers category are shown in Figure 8 and listed in ranked order below.

Figure 7. Web Map Comments by Category

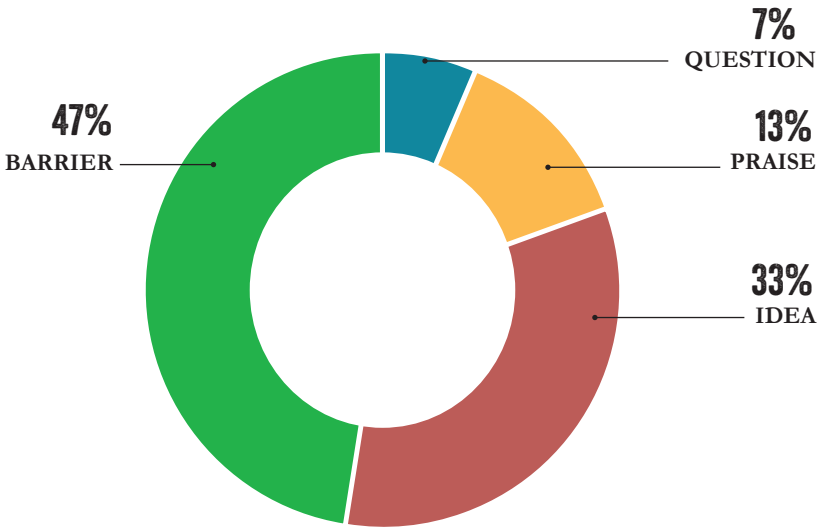
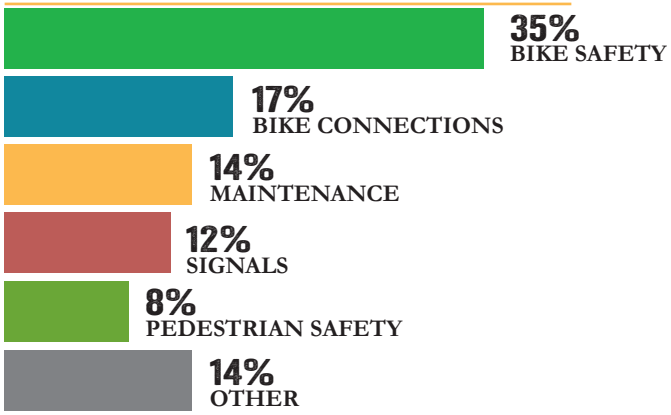
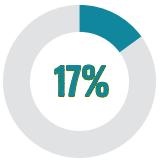


Figure 8. Barrier Themes in Comments



Bike Safety. Comments that discussed bike safety largely focused on a need for greater separation between bikes and vehicles, traffic calming, lack of bike lanes, and concerns about biking near on- and off-ramps.



Bike Connections. Comments that discussed bike connections largely focused on consistent connections to paths, across over and under passes, and main bike routes.

Maintenance. Comments that discussed maintenance largely focused on poor road conditions, debris in the road, and broken sidewalk.

Signals. Comments that discussed signals largely focused on issues with signal bike detection at intersections.

Pedestrian Safety. Comments that discussed pedestrian safety largely focused on dangerous crossings.

Other. The remaining in barriers category covered pedestrian amenities, sidewalk design and bike amenities.

MOST COMMON BARRIER LOCATIONS MENTIONED

In addition to the most common themes, there were also common locations identified by community comments. The top five locations for comments noted as barriers were:

1. DUBLIN BOULEVARD
2. TASSAJARA ROAD
3. FALLON ROAD
4. AMADOR VALLEY BOULEVARD
5. DOUGHERTY ROAD

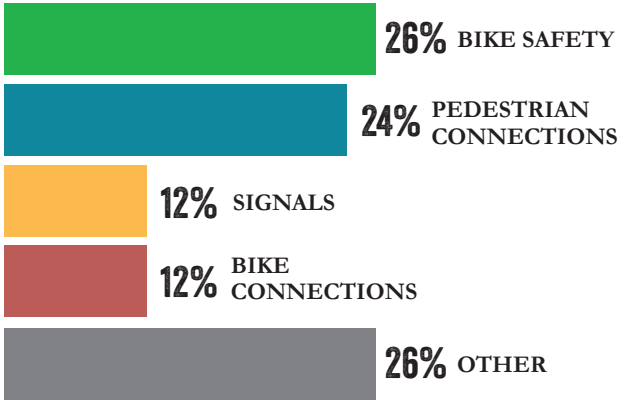
IDEAS

Community members also offered ideas. The top four themes of these ideas are shown in Figure 9 and are listed in ranked order:

Bike Safety. Comments that discussed bike lanes largely focused on a need for greater connections between important destinations and along major roads and trails.

Pedestrian Connections. Comments that discussed pedestrian connections largely focused on improving specific sidewalk connections and creating walking paths.

Figure 9. Idea Themes in Comments



Signals. Comments which discussed signals largely focused on safer intersections through changes to signals timing.

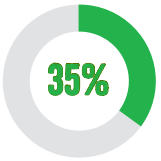
Bike Connections Comments that discussed bike connections largely focused on connecting bike trails and lanes to key destinations and each other.

Other The remaining in the ideas category covered pedestrian amenities, sidewalk design, driving, traffic calming, and bike amenities.

PRAISE

Respondents praised several key features of Dublin's existing walking and biking network as well as the City's ongoing efforts to improve it. The top three themes in the praise category are shown and listed in rank order in Figure 10.

General. Comments that were general were focused on appreciation for the City's efforts to improve bike and pedestrian facilities.



Bike Lanes. Comments that discussed bike lanes were focused on effective plastic barriers, separated bike paths, and green paint.

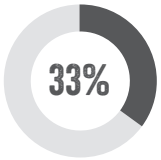
Signals. Comments that discussed signals were focused on flashing lights at intersections and well-placed crossing buttons.

Other The remaining comments in the praise category covered existing amenities and connections.

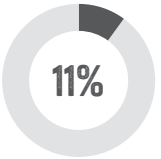
QUESTIONS

Three key question themes emerged from the online map responses; they are listed below and illustrated in Figure 11.

Planning Process. Questions about the planning process had to do with the reach of the survey, how funding is being used efficiently, and how the City plans to finish certain projects.



Connections. Comments which discussed bike and walk connections asked about projects at specific locations, including whether they were planned or if they can be added to the City's efforts.



Micromobility. Questions about micromobility focused on legal operating requirements, including whether electric scooters are allowed on bike paths.

Figure 10. Praise Themes in Comments

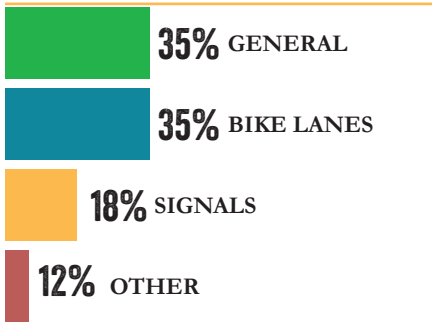
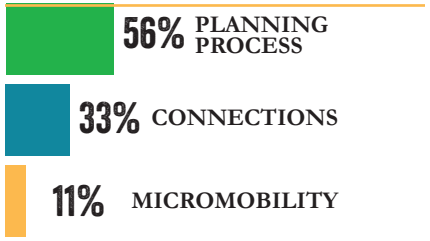


Figure 11. Question Themes in Comments



PUBLIC SURVEY

A public survey was used to collect information from the public about their personal transportation preferences, travel habits, and issues and opportunities related to walking and biking in Dublin. The public survey was distributed in Summer 2020 and was promoted on social media and posted to the website. A fact sheet with the survey link and QR code was provided at the Alamo Creek Trailhead and Farmers' Market pop-up events. Approximately 200 responses were received to the 17-question survey, which covered travel behavior and mode preference; travel to school; challenges and barriers to moving around Dublin; and priorities for investments related to walking and biking.

200
RESPONSES
were received to the 17-question survey

SURVEY RESULTS

General Travel Behavior and Mode Preferences

When asked about modes taken to work and school prior to the COVID-19 pandemic, 33 percent of respondents said they drove alone, 17 percent used a bike or scooter, and 17 percent walked. These numbers stayed relatively constant when respondents were asked about the same behaviors during COVID. The top reason (22 percent) respondents gave when asked why driving to work was the best option was that driving alone was the quickest and most convenient option. Around 10 percent of respondents indicated safety, irregular work schedules, and the need to make additional stops as reasons they chose to drive alone to work. Of respondents who use a combination of travel modes, there were a similar number of respondents across modes.

Travel to School

Approximately 38 percent of respondents had school-age children. Of those respondents, approximately 40 percent indicated that they used a personal vehicle for school drop-off/pick-up. Another 26 percent walked to school while 14 percent biked. Respondents indicated the top three factors discouraging walking or biking to school were safety concerns (35 percent), distance or travel time (18 percent), and lack of sidewalks or curb ramps (13 percent).

Barriers to Walking and Biking

When asked about barriers to walking and biking, respondents indicated that safety was a primary consideration, followed by vehicle speed. Responses were mixed on the topics of street lighting and maintenance, with a fairly even split of people indicating it was either not important, somewhat important, or very important. Most respondents were less concerned with distance to their destinations or available shade.

Investment Priorities

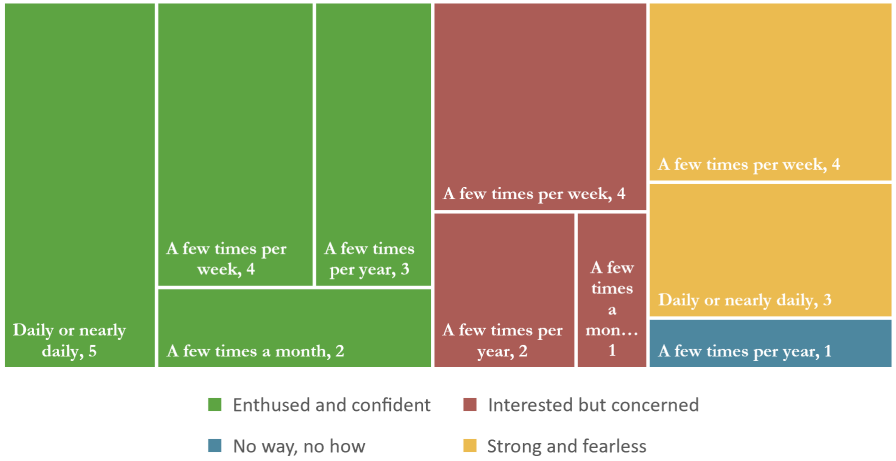
When asked what types of improvements would encourage walking or biking, 22 percent of respondents indicated better/more sidewalks and trails, 14 percent indicated better/more bicycle facilities, 11 percent indicated slower vehicles and more traffic calming, and 10 percent indicated better maintenance of existing facilities. When asked where the City should prioritize walking and biking improvements, the top three responses (about 20 percent each) were high collision locations; routes connecting people to schools, libraries, parks, and other key destinations; and, along and across busy streets.

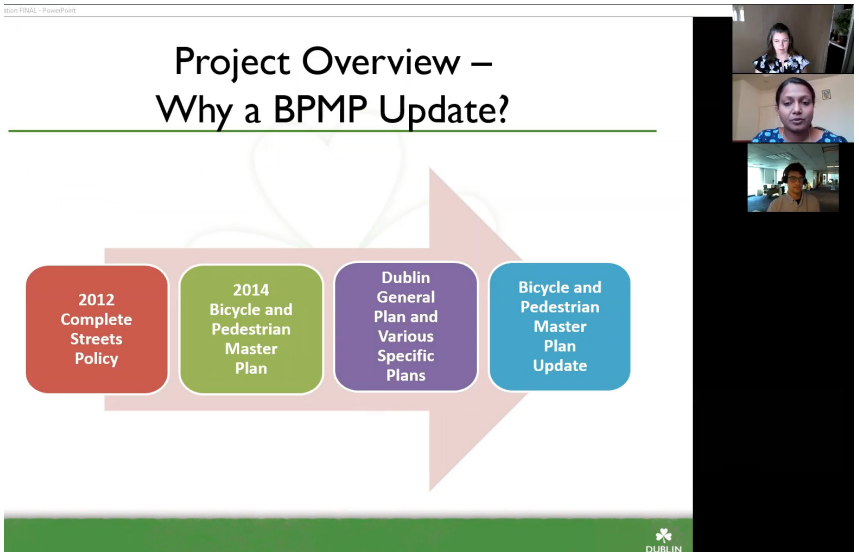
PUBLIC WORKSHOP

On September 2, 2020 a digital workshop was held via Zoom to inform the public about the Plan and gather broad community feedback. Forty-two people attended the hour-long Zoom workshop, which included a presentation and a question-and-answer period.

This workshop aimed to establish a community understanding of the planning process and to obtain feedback on the project's vision and goals. The workshop also included a poll, which asked

Figure 12. Poll Responses to Classification of Bicyclist Types by Frequency of Bicycle Use





participants questions about their experiences on public streets, their comfort with various modes of micromobility, and their demographic information.

The workshop also included a poll asking participants about their experiences walking, biking, and using micromobility on public streets, whether they feel comfortable using these modes in Dublin, and whether they would want to see bike and scooter share programs in Dublin. The poll received 30 responses. Participants of the poll were also asked how they classify themselves in terms of confidence using a bike in Dublin, as well as how often they ride a bike. Of the responses, the most common confidence level was Enthused and Confident (47 percent), followed by Interested but Concerned (27 percent), Strong and Fearless (23 percent), and No Way, No How (3 percent) (see Figure 12).

POP UP EVENTS

Feedback was gathered at three in-person events to understand where people walk and bike and what issues, concerns, ideas, and priorities they have related to walking and biking in Dublin.

FARMERS' MARKET—25 MAY, 2021

Feedback was gathered on existing conditions and needs. Approximately 40 people provided input, and participants were rewarded with Carrot Cash and giveaways.

ALAMO CREEK TRAILHEAD—27 MAY, 2021

Dublin partnered with Bike East Bay in an effort to hear from trail users at the Alamo Creek Trailhead as part of National Bike Month Activities. Feedback was gathered in real time and flyers with the public survey link were handed out.

ST. PATRICK'S DAY FESTIVAL—12 MARCH, 2022

Feedback was gathered on the draft network recommendations and additional comments on program and policy priorities for walking and biking in Dublin. The St. Patrick's Day Festival in Dublin is one of the biggest local community events of the year. This two-

day celebration brings out thousands of engaged residents and visitors per day, making it an important opportunity for the City of Dublin to communicate its plans and receive feedback. The celebration had an added importance this year as this would be the first in-person public event of this scale in Dublin since 2019, making for an excited and engaged audience. Approximately 136 community members provided feedback on possible infrastructure improvements for pedestrians and bicyclists in Dublin, and this pop-up resulted in 231 unique data points.

Alamo Creek Pop Up Event

BICYCLE AND PEDESTRIAN ADVISORY COMMITTEE MEETINGS

The Alameda County Transportation Commission (Alameda CTC) Bicycle and Pedestrian Advisory Committee (BPAC) involves interested community members in Alameda CTC's policy, planning, and implementation efforts related to bicycling and walking. The Alameda CTC BPAC includes representatives from cities in Alameda County, including Castro Valley, Dublin, Fremont, San Leandro, Berkeley, Hayward, Oakland, Albany, and Alameda and serves as Dublin's advisory body as Dublin does not currently have a local BPAC.

The Dublin Bicycle and Pedestrian Plan Update was brought to the Alameda CTC BPAC five times during the project. The group provided feedback on key items throughout the planning process, including the technical analysis approach and findings and program, policy, and project recommendations. Comments were addressed and incorporated into the Plan document. Meeting summaries and supporting materials are included in appendix A.

TECHNICAL ADVISORY COMMITTEE MEETINGS

A Technical Advisory Committee (TAC) was formed to provide key guidance on the Plan. The TAC included staff from City departments, including Planning, Economic Development, and Parks & Community Service and other agency representatives from Dublin Unified School District, Dublin Police Services, Alameda County Fire Department, San Ramon, Pleasanton, Livermore, Alameda CTC, Caltrans, BART, and LAVTA.

The team hosted five TAC meetings over the course of the project. The Plan process, community engagement, existing conditions and needs analysis, prioritization framework, and program, policy, and project recommendations were discussed during these meetings. Comments were addressed and incorporated into the Plan document. Meeting summaries and supporting materials are included in appendix B.

3

3. WALKING & BIKING IN DUBLIN TODAY

This chapter provides an overview of walking and biking in Dublin and presents results of the existing conditions and needs assessment, which includes relevant demographic data, existing walking and biking infrastructure, high injury bicycle and pedestrian network, and bicycle level of traffic stress analysis. This inventory and analysis of existing citywide conditions sets the stage for identifying strategic pedestrian and bicycle investments and informs the prioritization process and network recommendations presented in chapter 4.

Dublin Population: 61,240

Source: US Census American Community Survey Five-Year Estimates (2015-2019)

LIVING AND WORKING IN DUBLIN

This section discusses demographics and transportation data including race/ethnicity, age, gender, mode share, and worker inflow and outflow patterns. The purpose of this information is to provide background and context describing people living and working in Dublin as it relates to walking and biking.

The data presented is obtained from the California Communities Environmental Health Screening Tool (CalEnviroScreen), Longitudinal Employer-Household Data (LEHD) from 2017, and the American Community Survey five-year estimates (2015–2019) from the US Census.

RACE & ETHNICITY

The most common racial background of Dublin residents is Asian alone (49 percent) and White alone (39 percent). Approximately 6 percent of Dublin residents identify as being two or more races, and 4 percent of residents identify as Black/African American alone. Approximately 10% of Dublin residents identify as hispanic or latino/a/x. Dublin's population by race & ethnicity is illustrated in Figure 13.

GENDER

Dublin has an almost 50/50 split of people self reporting as females vs males. Note that American Community Survey data is not available for gender identity for the years covered by this Plan.

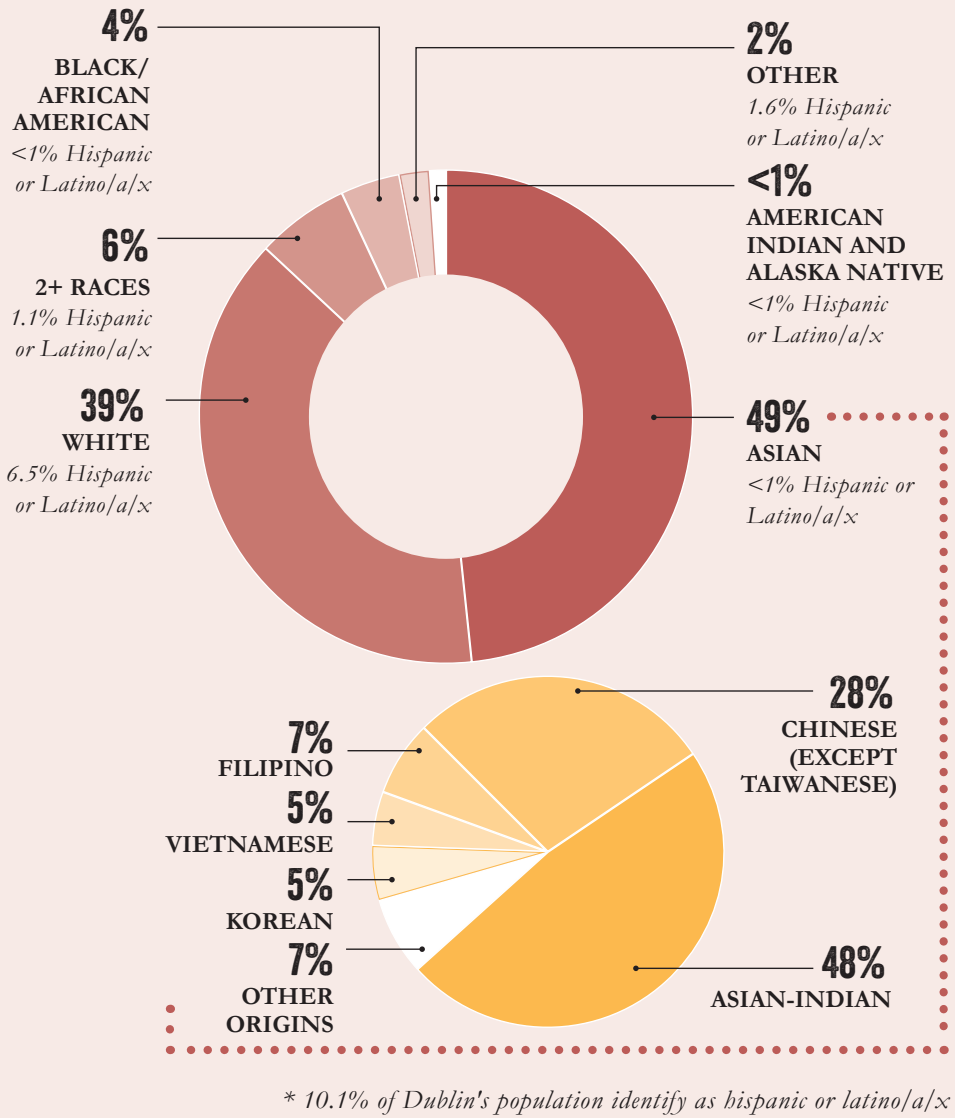
AGE

The most common ages of Dublin residents are 25–44 (40 percent) and 45–64 (24 percent). Combined, ages 25–64 make up 64 percent of the population. The Dublin population younger than 15 accounts for 24 percent of the total population, while the population over 65 makes up 9 percent. Figure 13 illustrates Dublin's population by age.

ZERO-VEHICLE HOUSEHOLDS

When compared with the surrounding Alameda County, Dublin has a lower proportion of households without vehicles. Overall in Alameda County, 10 percent of households do not have a vehicle; in Dublin, 3 percent of households do not have a vehicle.

Figure 13. Dublin Population by Race & Ethnicity



** 10.1% of Dublin's population identify as hispanic or latino/a/x*

Figure 14. Dublin Rounded Population by Age

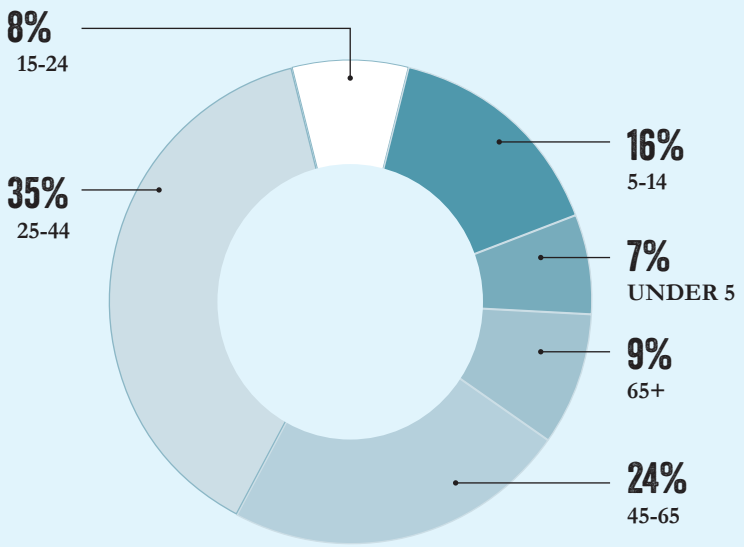


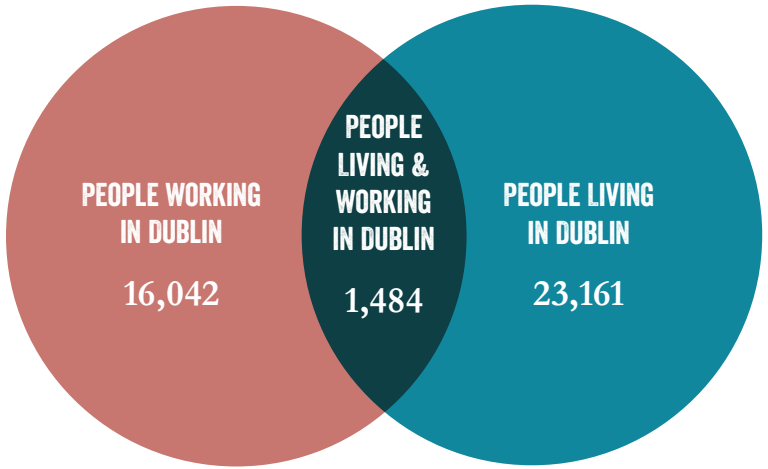
Figure 15. Dublin Population by Gender

50/50*

OF RESIDENTS FEMALE AND MALE

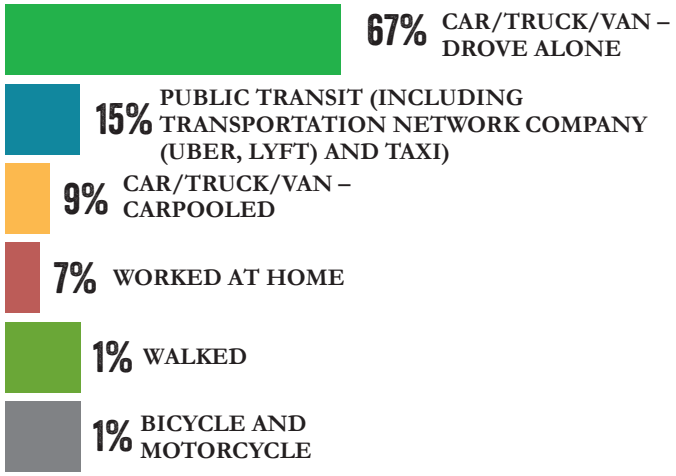
**gender identity data is not available*

Figure 16. Workers by Residence and Job Location



Source: Longitudinal Employer-Household Dynamic (LEHD), 2017.

Figure 17. Commute Mode



Source: US Census American Community Survey Five-Year Estimates (2015–2019).

WORKERS

Based on the most recent LEHD data available (2017), the net inflow and outflow of Dublin workers is the following:

- 16,042 people live elsewhere and commute into Dublin
- 23,161 people live in Dublin and commute elsewhere
- 1,484 people live and work in Dublin

Only about 6 percent of workers living in Dublin also work in Dublin.

COMMUTE MODE SHARE

Working Dublin residents use various modes to travel to work (see Figure 17). The commute data shown below provides a basic understanding of how people travel to and from work. However, because the data comes from the US Census—which only provides journey-to-work data for the primary mode of transportation—information on other trips, such as walking or biking to connect to public transit, are not represented.

Approximately 76 percent of Dublin residents commute to work by car, either alone (67 percent) or in a carpool (9 percent). Public transportation is the second most popular way to commute at 15 percent. Walking represents approximately 1 percent of commute modes. Biking and riding a motorcycle each represent less than 1 percent of all commute modes. Additionally, about 7 percent of working Dublin residents worked from home.

COMMUTING & COVID-19

The COVID-19 pandemic has drastically transformed the commuting and transportation landscape as restrictions on non-essential travel forced everyone into unplanned lifestyle changes. As we look to the future, it is unclear how COVID-19 will change commuting and teleworking patterns. Findings

from current research indicate that teleworking will increase relative to pre-COVID-19 conditions and people will be more likely to walk/bike/drive and less likely to take transit.[1]

BART STATION ACCESS

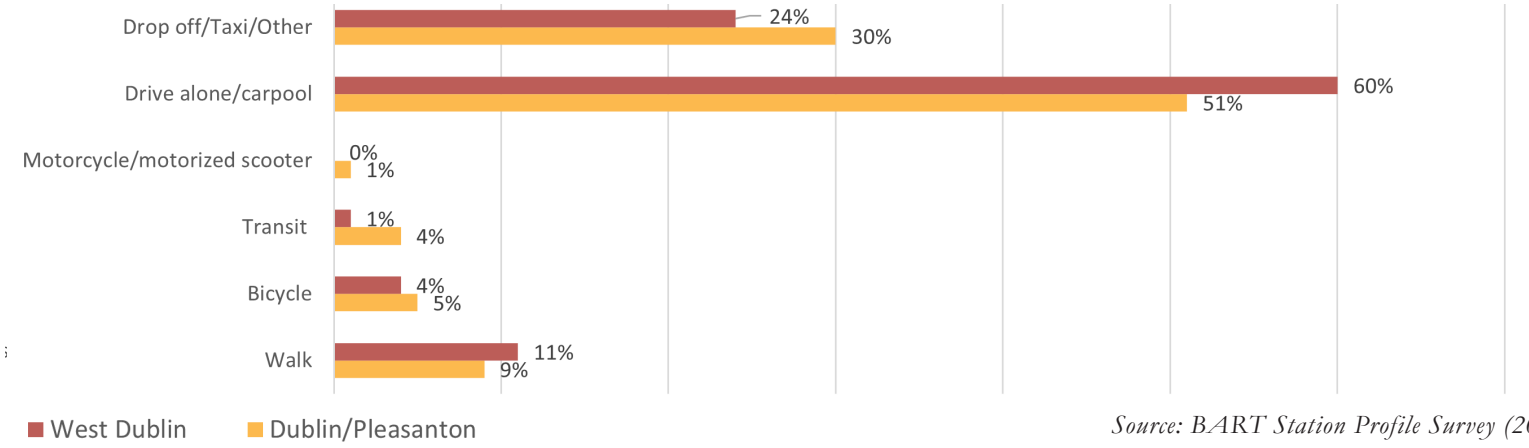
There are two BART stations in Dublin: the West Dublin/Pleasanton BART Station and the West Dublin BART Station. Based on the ridership data presented in BART's Station Profile Survey (2015), there were approximately 8,000 daily station entries at the West Dublin/Pleasanton BART Station and 3,700 daily station entries at the West Dublin BART Station. As shown in Figure 18, 9 percent of riders walk and 5 percent of riders bicycle to the West Dublin/Pleasanton BART Station; 11 percent of riders walk and 4 percent of riders bicycle to the West Dublin BART Station. A total of 68 shared-use electronic lockers operated by BikeLink are provided at the West Dublin/Pleasanton BART Station, and 56 lockers are provided at the West Dublin BART Station.

With almost 15 percent of residents using public transportation to get to work, there is an opportunity to encourage more people to walk and bike to BART. This can be accomplished by focusing on convenient, safe first-mile and last-mile connections to these stations and secure end-of-trip facilities.

PEDESTRIAN AND BICYCLIST TYPOLOGIES

People have varying abilities and tendencies to walk or bike and different sensitivities to the presence and quality of transportation infrastructure based on age, gender, physical mobility, and other factors. A person's income level, race, and availability of parking can help explain their tendency to walk or bike.

Figure 18. Mode Split for BART Station Access in Dublin



Source: BART Station Profile Survey (2015)

1 https://www.kittelson.com/ideas/will-covid-19-permanently-alter-teleworking-and-commuting-patterns-heres-what-1000-commuters-told-us/)

Pedestrian and bicyclist typologies were developed to understand the ability and propensity of people living within Dublin to walk or bike. These typologies are used to estimate the population of each walker and bicyclist type within the city's census block groups and more accurately estimate the potential for bicycle and pedestrian investments because they account for neighborhood populations rather than uniform citywide demographics.

PEDESTRIAN TYPOLOGY

The walking typology presented in Table 3 was determined based on travel behavior research and experience working on walking infrastructure. As shown in Table 3, the typology assigns walking characteristics based on age (under 14, 14–55, and over 55). For many people with disabilities and people over 55, the absence of curb ramps and presence of multi-lane crossings can be barriers to walking.

Table 3. Pedestrian Typology

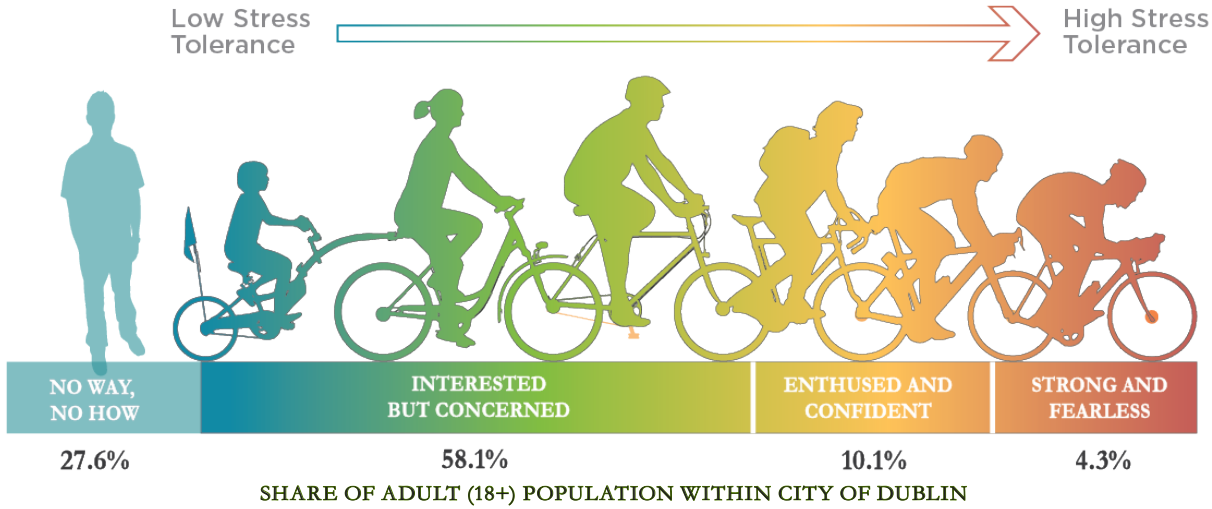
Age	Typology	Walking Characteristics
Under 14	Youth	Limited by multilane crossings
14 to 55	Teenage and Working Age Adults	Strong and capable, but still limited by sidewalk gaps, unsignalized crossings at major roads, and absence of midblock crossings
Over 55	Aging	The limits experienced by young adults and adults and further limited by the absence of curb ramps or long multilane crossings

BICYCLIST TYPOLOGY

The bicyclist typology, or "four types" categorization, was developed in Portland, Oregon in 2005 as an organizing principle for understanding people's relationship to bicycling for transportation as well as their concerns and needs related to bicycling.[2] Based on this research, bicyclists can be placed into one of four groups based on their relationship to bicycle transportation:

- **No Way, No How, or Non-Bicyclists.** People unwilling or unable to bicycle even if high-quality bicycle infrastructure is in place.
- **Interested but Concerned.** People willing to bicycle if high-quality bicycle infrastructure is in place. People in this type tend to prefer off-street, separated bicycle facilities or quiet residential streets; they may not bike at all if facilities do not meet their needs for perceived safety and comfort.

Figure 19. Bicyclist Typology



2 Roger Geller, "Four Types of Cyclists," Portland Office of Transportation (2005), https://www.portlandoregon.gov/transportation/44597?a=237507.

Table 4. Bike Group Typology— City of Dublin Population Share of Bicyclist Type by Age

Bicyclist Type	Share of Age Group					
	Under 5	6–18	18–34	35–54	55+	Dublin adult (18+)
Strong and Fearless	0%	0%	11%	2%	0%	4.1%
Enthused and Confident	0%	0%	7%	12%	7%	10.3%
Interested but Concerned	0%	100%	61%	59%	46%	58.1%
No Way, No How	100%	0%	21%	27%	47%	27.6%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	

Source: Table developed by Kittelson & Associates, Inc. from data presented by Dill and McNeil

- **Enthused and Confident.** People willing to bicycle if some bicycle-specific infrastructure is in place. People in this type generally prefer separated facilities and are also comfortable riding in bicycle lanes or on paved shoulders, if necessary.
- **Strong and Fearless, or Highly Confident.** People who are willing to bicycle alongside vehicle traffic and on roads without bike lanes.

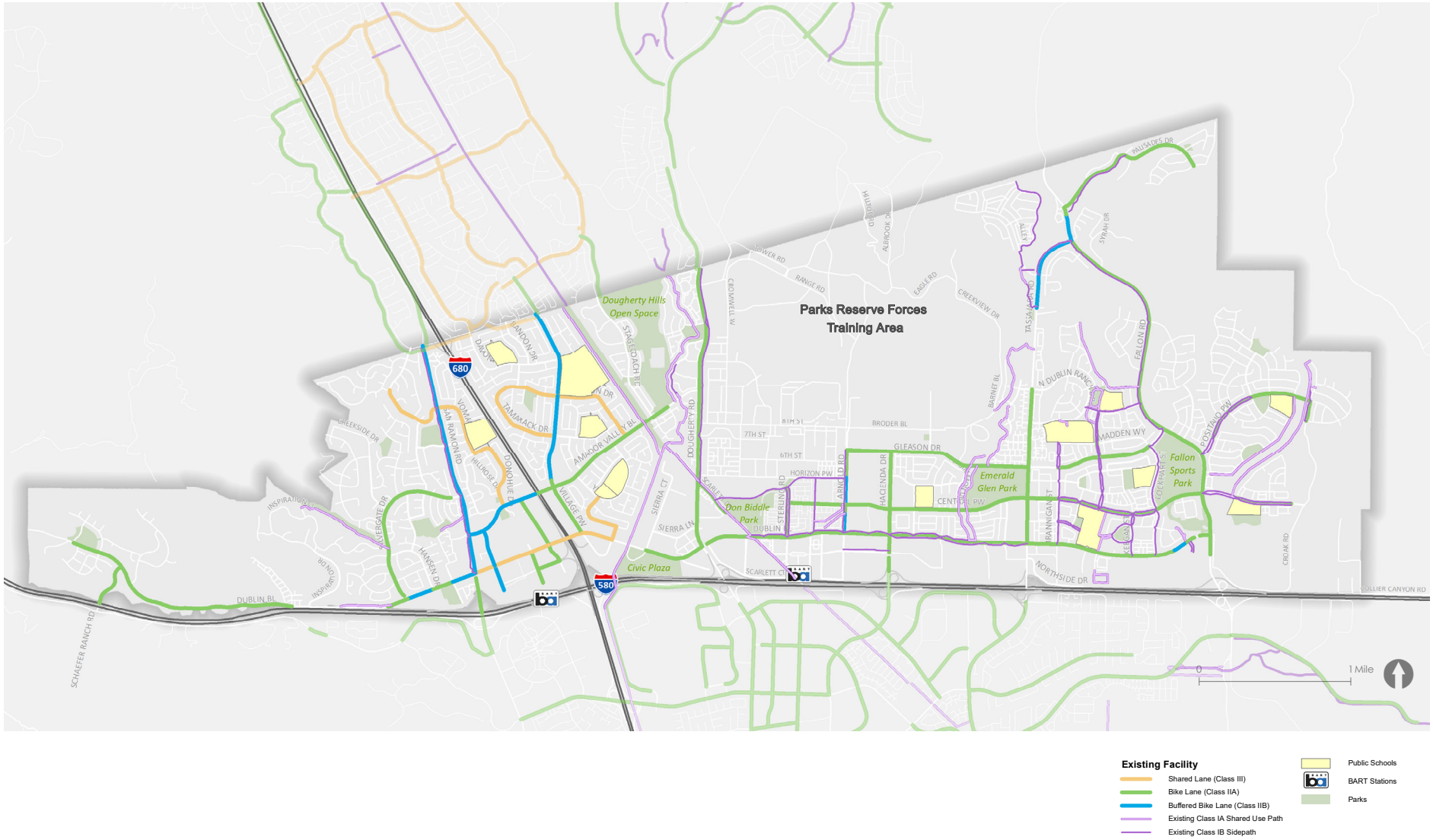
One end of the spectrum includes people who are comfortable riding with vehicle traffic, such as adult regular bike commuters. These highly confident bicyclists are willing to ride on roads with little or no bicycle infrastructure. The other end of the spectrum includes people who are not comfortable riding with or adjacent to traffic. This group often includes children, older adults, and adults who ride infrequently. Typically, these riders prefer off-street bicycle facilities or biking on low-speed, low-volume streets. If bicycle facilities do not meet their comfort preferences, they may not to bike at all. The middle of the spectrum includes bicyclists who prefer separated facilities but are willing to ride with or adjacent to traffic when vehicle volumes and speeds are low enough and separated facilities are not provided.

Table 4 shows the population share for each typology and age group. These population shares were extrapolated to the City of Dublin population to estimate the proportion of adults within the typologies illustrated in Figure 19.

EXISTING WALKING AND BIKING NETWORKS

This section defines the features, conditions, and types of walking and biking facilities in Dublin (Figure 20). It includes and explains maps of existing on-street bikeways, off-street paths, sidewalks, crossings, and supportive amenities and infrastructure—like walking- and biking-oriented wayfinding, bike parking, drinking fountains, and sidewalk benches.

Figure 20. Existing Bicycle Network Map



TYPES OF BIKEWAYS

Dublin's existing bikeway system consists of a network of bicycle paths, lanes, and routes. There are four types of bikeways as defined by chapter 1000 of the Caltrans Highway Design Manual (2017). In addition, the Alameda County Transportation Commission (CTC) has adopted a set of sub-classifications for each Caltrans classification. These sub-classifications were designed to correspond with the previously existing system and to incorporate emerging facility typologies.

Dublin Boulevard east of Tassajara Road. Person riding a bike on a Class II facility separated from right-turning traffic.

MULTI USE PATHS (CLASS I)

Multi use paths provide a separate facility designed for the exclusive use of bicycles, pedestrians, and other non-motorized uses with minimal vehicle crossflows. Generally, bicycle paths serve corridors not served by streets or are parallel to roadways where right of way is available. These paths provide bicyclists both recreational and commute routes with minimal conflicts with other road users.

Class IA Paths—Multiuse paths along a separate alignment. In Dublin, this bikeway class exists on the Iron Horse Trail and the Martin Canyon Creek Trail.

Class IB Sidepaths—Sidepaths that double as sidewalks along the side of a roadway. Examples include segments along the north side of Dublin Boulevard and the west side of San Ramon Road.

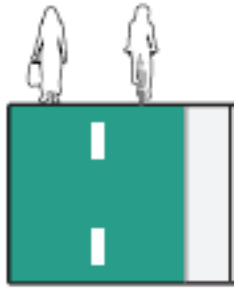


Diagram of typical Class IB path configuration

Alamo Creek Trail, Dublin, CA. Source: City of Dublin

Class IB Path on San Ramon Road, Dublin, CA. Source: Kittelson & Associates, Inc

BICYCLE LANES (CLASS II)

Bicycle lanes are on-street bikeways that provide a dedicated space for the exclusive or semi-exclusive bicycle use. Through-travel by motor vehicles or pedestrians is prohibited; vehicle parking and pedestrian- and motorist-crossflows are permitted.

Class IIA—A conventional one-way striped bicycle lane.

Class IIB—Upgraded bicycle lane with a striped buffer or green conflict markings. In Dublin, this bikeway class exists on Dublin Boulevard from Silvergate Drive to San Ramon Road and on Tassajara Road from Rutherford Drive to Fallon Road.

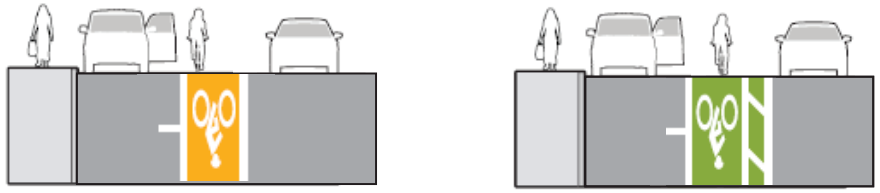


Diagram of typical Class IIB bike lane configuration

Class IIB Facility on Amador Valley Boulevard, Dublin, CA. Source: City of Dublin.

BICYCLE ROUTES (CLASS III)

Bicycle routes do not provide a dedicated space for bicycles, but instead, bikes share the lane with motorists and signs or pavement markings indicate the bike route.

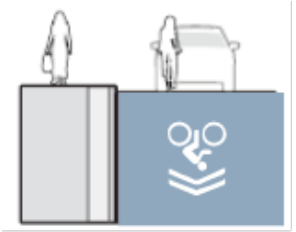


Diagram of typical Class III bike lane configuration

Class IIIA—Signage-only routes. This class of bikeway exists on Davona Drive.

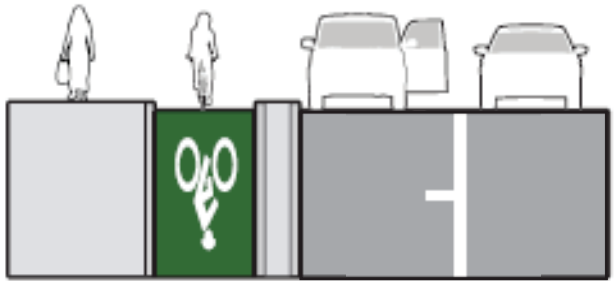
Class IIIB—Wide curb lane or shoulder that may include signage.

Class IIIC—Route with standard shared lane markings ("sharrows") that can be used to alert drivers of the shared roadway environment with bicyclists.

Class III Facility in Portland, OR. Source: Kittelson & Associates, Inc.

SEPARATED BICYCLE LANES (CLASS IV)

Separated bicycle lanes are bicycle lanes that provide vertical separation from motorists on roadways. The separation may include grade separation, flexible posts, planters, on-street parking, or other physical barriers. These bikeways provide a greater sense of comfort and security in comparison to standard Class II bike lanes. Class IV facilities are especially relevant for high-speed or high-volume roadways. Separated bike lanes can provide one-way or two-way travel.



Class IV Facility, San Diego, CA Source: Kittelson and Associates, Inc.

SUPPORTING INFRASTRUCTURE

In addition to the on- and off-street facilities, supporting infrastructure is essential to promote walking and biking as viable modes of transportation. Critical elements include end-of-trip facilities, such as bicycle parking, showers, and lockers. Other critical infrastructure elements include wayfinding, drinking fountains, seating, and shade.

BICYCLE PARKING

Secure short-term and long-term bicycle parking that can accommodate a wide range of bicycles including children's bicycles, electric bicycles, and cargo bicycles, for example, are necessary to support biking. Access to secure bicycle parking is one of the top factors determining whether someone chooses to ride a bike or not.

Bike parking should be added to new developments as well as key destinations like BART

New development provides key opportunities to ensure Dublin adequately provides both short- and long-term bicycle parking.

Bike Parking at Dublin Library Source: City of Dublin

Currently, Dublin follows parking requirements n Section 5.106.4 of the California Green Building Code. This code states that short-term parking must be provided for five percent of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack. The bicycle parking must be anchored within 200 feet of the visitors' entrance. Long-term bike parking must be provided for new buildings with tenant spaces with 10 or more tenant-occupants, also at a 5 percent of vehicle parking space rate with a minimum of one bicycle parking facility.

Short-term bicycle parking refers to traditional bike racks, which may be located on public or private property. Bike racks serve people who need to park their bikes for relatively short durations of about two hours or less. Because short-term bicycle parking does not provide additional security, locked bicycles and their accessories may be exposed to theft or vandalism. However, short-term bike racks are more numerous and conveniently located near destinations. To deter theft or vandalism, short-term parking should be within eyesight of a building or destination or located in well-traveled pedestrian areas. Dublin has short-term bicycle parking in the Downtown area as well as at many local parks and community centers.

Long-term bicycle parking is the most secure form of parking and and is necessary for most workplaces, residences, transit stations, park and ride lots, and other locations where individuals park their bikes for more than a few hours or overnight. Because long-term bike parking requires more space than short-term racks, facilities may be located farther away from the ultimate destination. Long-term parking is also often more expensive due to added security and space requirements. Long-term parking can consist of bike lockers, enclosed bike cages, bike rooms, and bike stations, each of which is discussed in the following bullets. Long term parking should also support charging for e-bikes.

- **Bike lockers** are fully enclosed and generally weather-resistant spaces where a single bicycle can be parked and secured by key or electronic lock. Shared-use electronic lockers operated by BikeLink are provided at the West Dublin/Pleasanton BART Station (68 lockers) and West Dublin BART Station (56 lockers). The BikeLink system allows users to pay by the hour for use of the lockers through a membership card.
- **Enclosed bike cages** are multiple bike racks contained by a fence. The enclosure entrance is secured with a lock or key code, but within the cage, bicycles are exposed and secured to racks with personal locks. Cages can be outdoors (ideally with a roof for weather resistance) or located in building parking garages or utility rooms. Because contents are visible through the cage and bikes inside are accessible, the security of a bike cage depends on good management of access keys or codes. Bike cages are most appropriate for closed environments such as businesses, office buildings, or multi-family developments with access limited to owners, tenants, or employees.
- **Bike rooms** are bicycle racks located within an interior locked room or a locked enclosure. Because they house bikes behind solid walls, bike rooms are more secure than bike cages, where bikes remain visible from the outside. As with bike cages, bike room security depends on access key and code management. Bike rooms are most appropriate where access is limited to owners, tenants, or employees.
- **Bike stations** are full-service bike parking facilities that offer controlled access and other supporting services like attended parking, repairs, and retail space. Bike stations can offer services such as free valet parking, 24-hour

*BikeLink lockers at the West Dublin/Pleasanton BART Station. Source: Kittelson * Associates. Inc.*

Maintenance station on a trail. Source: Kittelson & Associates, Inc.

Wayfinding signage for West Dublin/ Pleasanton BART Station. Source: Kittelson & Associates, Inc.

access-controlled parking, sales of bike accessories, bike rentals, and classes.

Other Infrastructure and Amenities

Skateboard and Scooter Lockers should be provided at key destinations with high levels of skateboard and scooter activity like schools, transit stations, parks, and trailheads.

Showers, Lockers, and Changing Rooms are important end-of-trip amenities that encourage bicycle commuting. Some places of employment in Dublin may provide showers, lockers, and changing rooms. However, the City does not inventory such facilities. The Shannon Community Center, Dublin Civic Center, and the high school and middle schools all provide showers and lockers.

Maintenance Stations for bicycles should be provided throughout the city at key destinations with high levels of bicycle activity like trailheads, employment centers, transit stations, parks, and schools. Maintenance stations may include a repair stand with tools, such as screwdrivers, flat wrenches, pressure gauges, tire pumps, and other equipment, to allow people biking the opportunity to make on-the-go repairs.

Wayfinding helps a high-quality bicycling and pedestrian network be easily navigable. Bicycle and pedestrian wayfinding helps residents, tourists, and visitors find key destinations. Modern, cohesive, multimodal sign plans and designs distinguish walking and bicycling routes, highlight specific destinations, and facilitate connections to and from public transit stops. Wayfinding can also define connections with popular hiking trails and regional trails. There is a need for a comprehensive wayfinding signage program in Dublin.

Lighting improves safety and visibility for pedestrians and bicyclists. Some routes that are convenient during the day are unusable in the dark, limiting their utility and effectiveness.

Illuminating trails and sidewalks reduces the possibility of user collisions with objects or each other and makes deformities or unevenness in the surface more visible which can also prevent falls and crashes. For example, pedestrian-scale lighting improvements on Dublin Boulevard under the I-680 overpass are needed to improve visibility of people walking along the corridor.

Pedestrian amenities are a critical part of pedestrian-focused design, which prioritizes safety, comfort, and quality of service. Amenities like planters, benches, drinking fountains, restrooms, and sidewalk trees all enhance a walking environment.

Shared mobility allows for flexible transportation options and provides bicycles and scooters to community members who would otherwise lack access to these modes. Dublin does not currently offer shared mobility options.

KEY WALKING AND BIKING DESTINATIONS

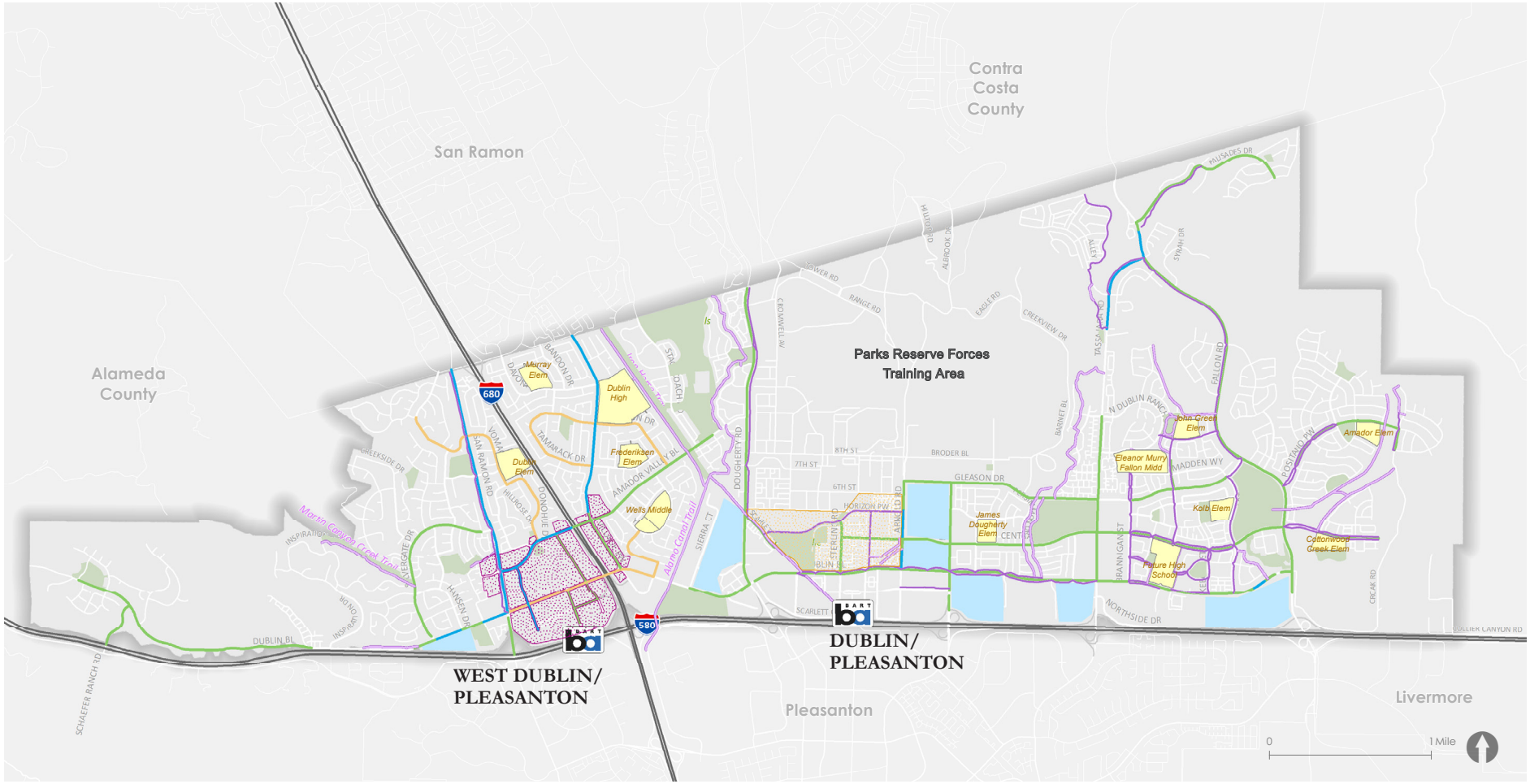
The choice and ability to walk and bike to essential destinations greatly benefits community members through increased activity and improved health. Walking and biking also benefits the broader community by reducing in greenhouse gas emissions and vehicle congestion. People have varying abilities and tendencies to walk or bike based on infrastructure presence and quality. Land-use patterns that determine the distance between origins and destinations as well as the density, diversity, and intensity of uses also shape people's walking and biking habits.

Key walking and biking destinations were mapped. Specific points of interest were selected for consistency with the Plan's goals to increase walking and biking mode share to school, transit, trailheads and parks, and work. These activity centers are shown in Figure 21 and include:

- **Schools:** All public K–12 schools within Dublin Unified School District
- **BART:** West Dublin/ Pleasanton station and Dublin/Pleasanton station
- **Job Centers:** Seven job centers that include Dublin's largest employers and concentrations of employment
- **Parks:** Neighborhood and community parks in Dublin

Person with an e-scooter waiting to cross at Dougherty Road and Amador Valley Road. Source: Kittelson & Associates. Inc.

Figure 21. Land Use, Key Destinations, and Existing Facilities Map



EXISTING PROGRAMS

As shown in Table 5, the City, the school district, the Police Services, Alameda CTC, and nonprofit organizations provide numerous programs that support walking and biking in Dublin. These programs play an important role in promoting active transportation and fostering safe walking and biking in the city. The City of Dublin recognizes the critical role that programs and policies play in complementing physical infrastructure to promote walking and biking and will continue to support and broaden the reach of these existing programs.

Table 5. Existing Bicycle and Pedestrian Programs

Program	Description	Managing Department / Organization Offering Services
Bicycle and Pedestrian Counts	Bicycle and pedestrian counts are included in the City's turning movement counts. Bike counters collect data on the Iron Horse and Alamo Canal trails. Bicycle and pedestrian count data is also provided in environmental documents and traffic studies.	Traffic and Planning
www.dublin.ca.gov/313/Bike-Pedestrian-Programs	SRTS establishes routes which maximize safety for travel to and from schools as well as educates school administrators, parents, and children about vehicle, bike, and pedestrian safety.	Dublin Unified School District (DUSD) with support from Alameda CTC; several City departments, including Police, Planning, and Traffic
	Dublin Police Services has a Bicycle Safety Program, which is offered to elementary schools in Dublin. The program supports safe bicycle riding and challenges students' riding abilities in a safe and controlled environment. Dublin Police Services promotes bicycling by educating students about riding safely and properly.	Police
	Crossing guards help children safely cross the street at key locations on the way to school. Crossing guards set an example of how to safely cross the street, and they may help parents feel more comfortable allowing their children to walk or bike to school.	Police and Traffic

Program	Description	Managing Department / Organization Offering Services
National Bike Month Activities	Sponsored by the City, National Bike Month activities encourage people to bike during the month of May. Promoted events include cycling workshops, classes, and giveaways. The City also sponsors Bike to Work (or Wherever) Day, which provides energizer stations and self-guided rides, and Bike to Market Day, which rewards bicyclists with "carrot cash" to use at the Dublin Farmers' Market.	Traffic and Environmental Programs
Walk and Roll to School Week	During October, Walk and Roll to School Week encourages the Dublin community to walk, bike, skate, and ride scooters to school. Dublin schools celebrate walking and bicycling with promotional assemblies, walking school buses and bike trains, giveaways, and prizes. Dublin's participation is partially funded by Measure B/BB.	DUSD, Traffic
Bicycle and Pedestrian Projects Workshops	The City hosts biannual bicycle and pedestrian workshops to share information about new bicycle and pedestrian projects and solicit feedback on current and future pedestrian and bicycle infrastructure.	Traffic
Traffic Safety Committee	The City's Traffic Safety Committee—comprised of representatives from Dublin Police Services' traffic unit, Public Works' transportation staff, and City maintenance staff—meets monthly to discuss public comments on potential traffic safety issues and to recommend appropriate actions. Common inquiries include requests for traffic calming devices to reduce vehicle speeds, stop sign installations, and new signs and pavement markings.	Police, Traffic, Maintenance

Program	Description	Managing Department / Organization Offering Services
Community Rides and Bike Clubs	Community rides help build both community and physical skills among new and continuing riders. They provide a guided pathway for new bicyclists to gain confidence riding and navigating the city on a bike. Regular rides foster community among riders, especially for youth looking for physical and creative outlets outside of school. During school, nonprofit organizations also lead bike clubs at middle and high schools, where staff provide bikes and safety gear and take students on group adventure rides. Community rides can be offered to the entire community or geared to women, queer-identifying, or other less-likely-to-ride demographics that are better served by a safe space that celebrates and empowers rider identity.	Cycles of Change, Bay Area Outreach and Recreation Program, Bike East Bay
Bike Education Classes	One or more sessions, bike education classes teach riders bike safety, bike mechanics, theft prevention, and other useful skills. Youth Bike Rodeos, Bike Mechanics Classes, Adult Bike Safety Classes, and Family Biking Workshops are a few examples of the variety of different bicycle classes offered by nonprofit organizations.	Cycles of Change, Bike East Bay

BARRIERS TO WALKING AND BIKING

Barriers to a safe and comfortable walking and biking network in Dublin take many forms, including

- High-stress streets with multiple vehicle travel lanes, high vehicle volumes, high vehicle speeds, and lack of separation between vehicles and other modes.
- Conflicts between bicyclists and turning or merging vehicles at intersections and interchanges.
- Linear barriers such as the two major state highway system facilities (Interstate 680 and Interstate 580) that have limited and poorly-designed crossings for people walking and biking.
- Long crossing distances and limited street connectivity (e.g., cul-de-sacs and long block lengths) for people walking.
- Lack of east-west connectivity that limits route options for people walking and biking and forces travel along high-stress arterials like Dublin Boulevard and Amador Valley Boulevard.

> **"This stretch is scary for bicycling when the lane disappears with lots of traffic." — community member**

> **"A person in a wheel chair or a parent with a stroller can't safety navigate the sidewalk." — community member**

- Incomplete or broken sidewalks, inadequate sidewalk widths, missing or outdated curb ramp designs, and a limited number of accessible pedestrian signals.

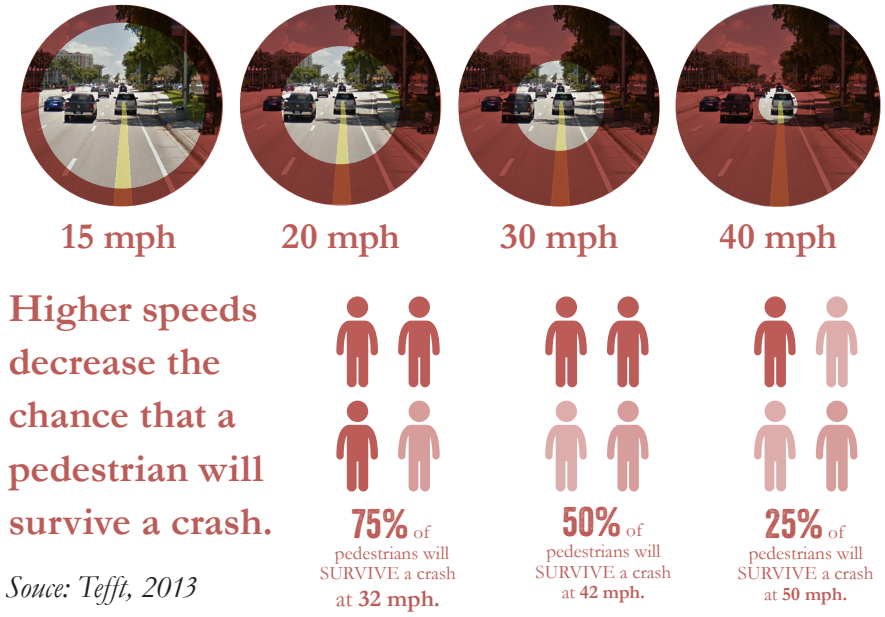
These conditions discourage walking and biking and can increase stress and discomfort for those who choose to walk and roll.

This discussion of barriers has two key parts: first, a discussion of safety barriers based on bicyclist and pedestrian collision statistics and citywide high-injury networks; and second, a discussion of pedestrian and bicycle connectivity based on the bicycle level of traffic stress (LTS) analysis and pedestrian crossing opportunities analysis.

VEHICLE SPEED & SAFETY

As vehicle speeds increase, the risk of serious injury or fatality also increase. Increased speeds also reduce the driver's visual field and peripheral vision. Managing and reducing vehicle speeds is imperative to achieving safer streets.

Figure 22. Influence of Vehicle Speed on Driver's Cone of Vision & Pedestrian Survival Rates



Souce: Tefft, 2013

Based on the Local Road Safety Analysis, which evaluates all collisions on local roads within the City of Dublin between 2016 and 2020:

Pedestrian collisions account for 28 percent of all fatal and serious injury collisions in the City—that is more than 10 percent higher than the state average.

A disproportionate share of fatal and serious injury—including pedestrian collisions—occur in dusk/dawn or dark conditions.

COLLISION ANALYSIS

Pedestrian and bicyclist collision data from 2014 to 2019 from local police reports and the Statewide Integrated Traffic Records System capture safety trends citywide. This section describes the location, severity, circumstances, and timing of collisions involving people walking and biking. Findings from this analysis will help determine streets to prioritize to make it safer for people walking and biking.

COLLISION TRENDS

Available variables in the collision data helped identify citywide trends. Pedestrian and bicycle collisions were analyzed separately based on the following characteristics:

- Lighting conditions
- Location characteristics (specifically intersection versus segment collisions)
- Primary collision factors cited by reporting officers
- Age and perceived gender of people walking and biking involved in collisions

The small size of each dataset—68 bicycle collisions and 81 pedestrian collisions over six years—limits the ability to find statistically valid trends. However, even with these limitations, the analysis revealed several patterns that reflect conditions in Dublin.

LOCATION

Table 6 and Table 7 present pedestrian and bicycle collisions based on location and severity. Intersection collisions are those reported to have occurred within a 250-foot intersection influence area—all others are considered segment collisions. A majority of both pedestrian and bicycle collisions happened at intersections, where there are more conflicts with motor vehicle traffic than at other locations along roadways.

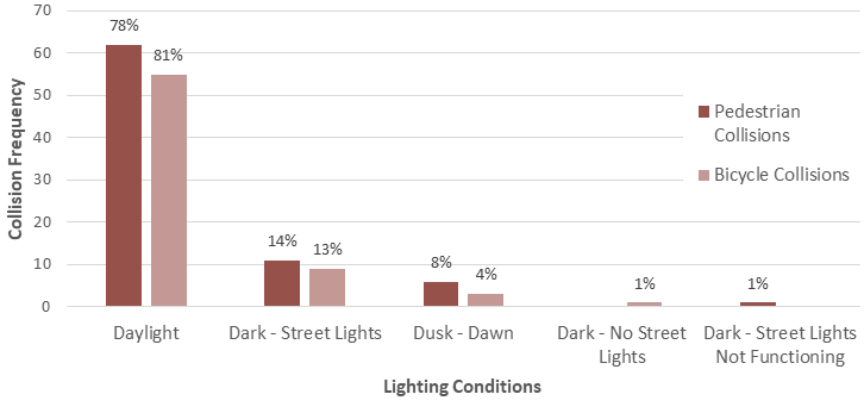
Table 6. Pedestrian Collisions by Location and Severity

Location	Fatal and Severe Injury Collisions	Other Collisions	Total Reported Collisions	Share of Total Reported
Intersection	11	63	74	91%
Segment	1	6	7	9%
Total Reported	**12**	**69**	**81**	**100%**

Table 7. Bicycle Collisions by Location and Severity

Location	Fatal and Severe Injury Collisions	Other Collisions	Total Reported Collisions	Share of Total Reported
Intersection	2	50	52	76%
Segment	1	15	16	24%
Total Reported	**3**	**65**	**68**	**100%**

Figure 23. Pedestrian and Bicycle Collisions by Lighting Conditions



NOTE: totals may not sum to 100% due to rounding

Source: 2014-2019 Statewide Integrated Traffic Record Systems collision database.

Lighting

Lighting conditions are an important factor for pedestrian and bicyclist visibility and personal security by enabling people to see each other. Figure 23 presents pedestrian and bicycle collisions by lighting conditions. The majority of bicycle and pedestrian collisions occurred in daylight conditions. All reported fatal and severe-injury bicycle collisions occurred in daylight conditions. When collisions occurred in dark conditions, they happened primarily under streetlights.

Primary Collision Factors

Primary collision factors (PCFs) are provided in the data and aggregated based on the section of the California Vehicle Code that the reporting officer records. For bicycle collisions, the PCFs were

- Automobile right of way violation (26 percent of collisions), which indicates one of several California Vehicle Violation codes regarding a failure to yield right-of-way to oncoming traffic. This action may come from either the bicyclist or motorist involved.
- Improper turning (16 percent of collisions), which indicates a motorist committed a hazardous violation while turning.
- Other hazardous movement (12 percent of collisions), an aggregated violation category that indicates a hazardous movement on the part of either the bicyclist or motorist involved.

The PCFs cited most frequently for pedestrian collisions were

- Pedestrian right of way violation (27 percent of collisions), which indicates a driver violated a pedestrian's right of way.
- Other improper driving (20 percent of collisions) represents an aggregation of motorist violations.
- Automobile right of way violation (14 percent of collisions), which indicates

one of several California Vehicle Violation codes regarding a failure to yield right of way to oncoming traffic. This action may come from either the pedestrian or motorist involved.

- Pedestrian violation (6 percent of collisions), which indicates a pedestrian violated laws regarding right of way.

Age of Parties Involved

Figure 24 compares the ages of people walking or biking involved in collisions to Dublin's population. Age data was only available for 76 percent of pedestrians and for 63 percent of bicyclists involved in collisions. This comparison reveals that people aged 15–24 are overrepresented in bicycle and pedestrian collisions. Although they make up just eight percent of the city's population, people in this age group represent 25 percent and 18 percent of pedestrians and bicyclists involved in collisions. Similarly, people aged 45–64 are underrepresented among pedestrian and bicyclist collisions (at 12 percent each), despite making up 25 percent of Dublin's population.

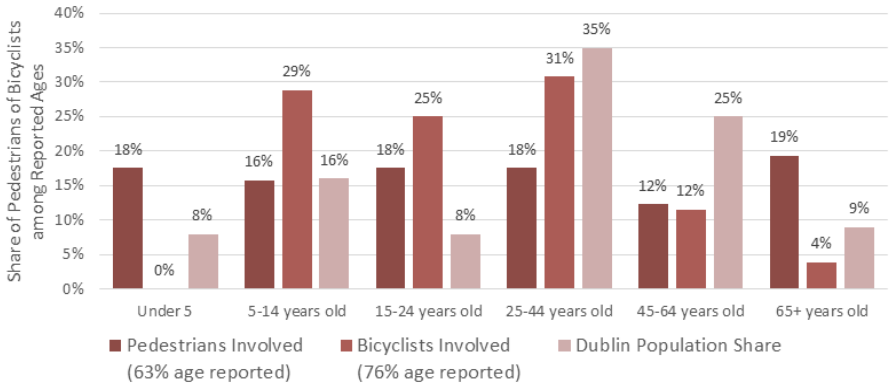
Gender of Parties Involved

Additionally, gender was recorded by the reporting officer for 78 percent of bicyclists involved in collisions and for 59 percent of pedestrians. Available data reveals that men represented approximately 60 percent of pedestrians involved in collisions and 83 percent of bicyclists involved in collisions.

HIGH-INJURY NETWORK

An analysis of the citywide roadway network was conducted to identify a set of bicycle and pedestrian high-injury streets, together called a high-injury network (HIN). This HIN constitutes the worst-performing segment locations based on collision severity and frequency of collisions involving people walking and biking.

Figure 24. Age of Parties Involved in Collisions

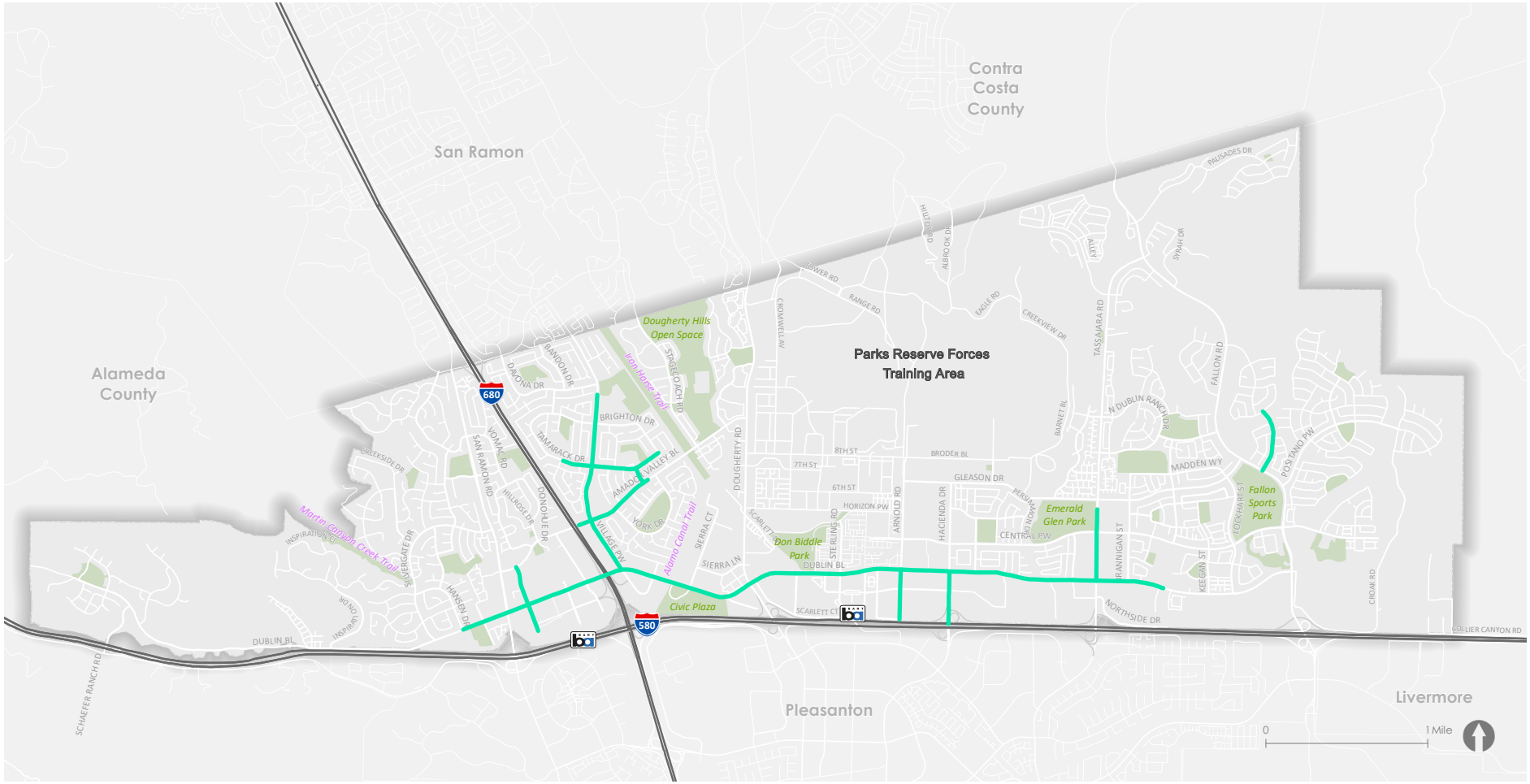


NOTE: totals may not sum to 100% due to rounding

Source: 2014-2019 Statewide Integrated Traffic Record Systems collision database.

> **"Every time I cross here, I almost get hit by a car trying to enter the freeway." — community member**

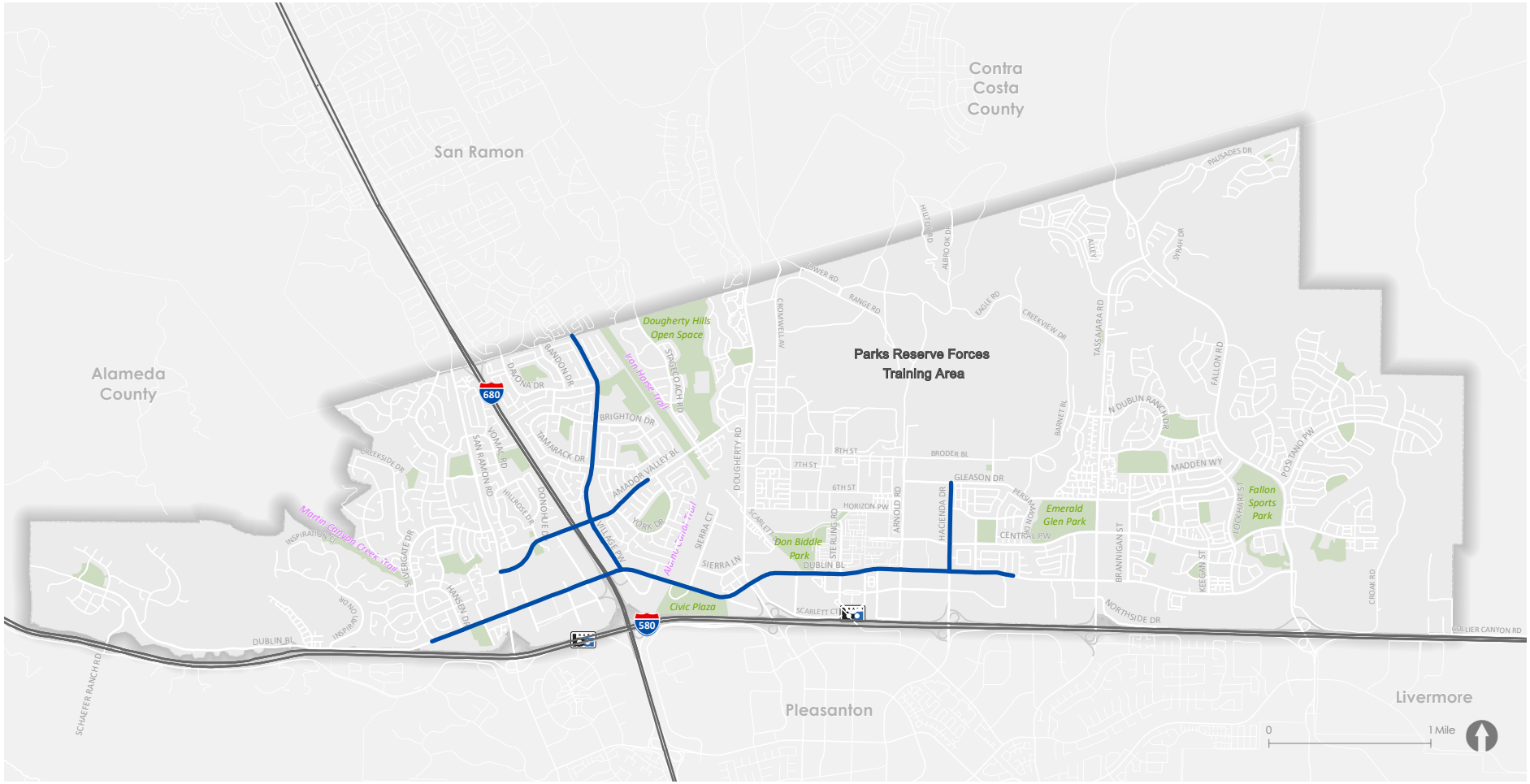
Figure 25. Pedestrian High-Injury Network Map



62 percent of pedestrian collisions occurred on 4 percent of Dublin's roads (8.4 miles)

71 percent of the pedestrian high injury streets has four or more vehicle through lanes

Figure 26. Bicycle High-Injury Network Map



62 percent of bicycle collisions occurred on 3.5 percent of Dublin's roads (6.7 miles)

88 percent of the bicycle high injury streets has four or more vehicle through lanes

Bicycle High Injury Network

Table 8. High Injury Streets

Roadway	Extents
Pedestrian High Injury Streets	
Amador Valley Boulevard	I-680 to Burton St.
Arnold Road	I-580 to Dublin Blvd.
Bent Tree Drive	Fallon Rd to Sugar Hill Terr.
Burton Street	Amador Valley Blvd. to Tamarack Dr.
Dublin Boulevard	Hansen Dr. to Grafton St.
Hacienda Drive	I-580 to Dublin Blvd.
Regional Street	Southern extents to Amador Valley Blvd.
Tamarack Drive	Canterbury Ln. to Brighton Dr.
Tassajara Road	Dublin Blvd. to Gleason Dr.
Village Parkway	Dublin Blvd. to Davona Dr.
Total Mileage: 8.4 miles	
Bicycle High Injury Streets	
Amador Valley Boulevard	San Ramon Rd. to Penn Dr.
Dublin Boulevard	Silvergate Dr. to Myrtle Dr.
Village Parkway	Dublin Blvd. to City Limits (N)
Total Mileage: 6.7 miles	

66 percent of bicycle collisions and 66 percent of pedestrian collisions occur on just 10 percent of streets in the City.

High Injury Streets

Table 8 provides the extents of each high injury street along with the total mileage (measured as centerline miles).

HIGH INJURY NETWORK CHARACTERISTICS

- 62 percent of pedestrian collisions occurred on 4 percent (8.4 miles) of Dublin's roads.
- 62 percent of the city's bicycle collisions occurred on 3.5 percent (6.7 miles) of Dublin's roads.

Dublin's pedestrian and bicycle HINs overlap for many of their segments. About 10 miles or just over 5 percent of Dublin's roadways appear in either the bicycle HIN, pedestrian HIN, or both. This means that 66 percent of Dublin's bicycle collisions and 66 percent of its pedestrian collisions occur on just 10 percent of streets in the city.

Key Characteristics of the Pedestrian HIN

- Approximately 40 percent of the pedestrian HIN has a speed limit of 35 miles per hour. Additionally, 32 percent of the HIN mileage consists of roads with speed limits of 40 or 45 miles per hour. The remainder of the HIN has speed limits of 25 or 30 miles per hour.
- Approximately 55 percent of the pedestrian HIN consists of roads classified as arterial roads; the remaining roads are collector or residential streets.
- Approximately 47 percent of the HIN has five or six vehicular through lanes. Another 24 percent of the network has four vehicular through lanes. The remainder of the HIN consists of roads with two or three lanes.

Key Characteristics of the Bicycle HIN

- Approximately 78 percent of the bicycle HIN mileage consists of roads with speed limits of 35 or 45 miles per hour. The remainder of the HIN has a speed limit of 30 miles per hour.
- The bicycle HIN is nearly evenly divided between arterial and collector roadways, with 54 and 46 percent, respectively.
- Approximately 88 percent of the HIN has four or more vehicular through lanes.

BICYCLE LEVEL OF TRAFFIC STRESS

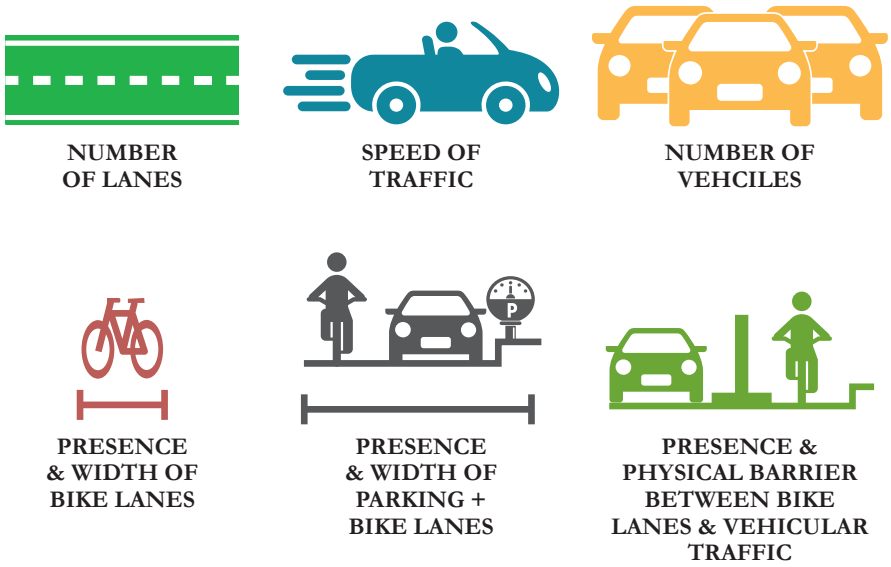
LTS METHODOLOGY

People on bikes are vulnerable street users. The presence of any one of several factors can make people feel unsafe or uncomfortable. Bicycle level of traffic stress (LTS) measures the stress imposed on bicyclists by a road segment or crossing.[3] The LTS methodology was used to classify Dublin's intersections and on-street roadway and path segments as one of four levels of traffic stress. Classifications range from LTS 1 to LTS 4, with 1 being the most comfortable/least stressful and 4 being least comfortable/most stressful.

ON-STREET ROADWAY SEGMENT LTS METHODOLOGY

The on-street roadway segment LTS methodology provides criteria for three bicycle facility types: bike lanes alongside a parking lane, bike lanes not alongside a parking lane, and mixed traffic (i.e., no bike lanes present). On-street roadway segment LTS analysis considers several factors that affect bicyclist comfort, including the number of vehicle travel lanes, vehicle volume, vehicle speed, presence and width of bike lanes, presence and width of parking lanes, and presence and type of separation between the bike lane and vehicle travel lanes (see Figure 27).

Figure 27. Roadway Characteristics Used to Calculate Bicycle LTS



Path LTS Methodology

The path LTS methodology was created to account for the various design factors that affect quality of service and bicyclists' stress on the Class IA paths and Class IB sidepaths in Dublin. The analysis considers segment characteristics, including path width, shoulder width and separation, and wayfinding. The analysis also considers intersection/crossing elements, such as traffic control, crossing distance, geometric elements, pavement markings, and signage.

3 This report uses an on-street LTS methodology developed by the Mineta Transportation Institute (MTI) and documented in the Low-Stress Bicycling and Network Connectivity report published in 2012. This methodology was further refined by Dr. Peter Furth of Northeastern University in 2017. See Mekuria, Mazza C., "Low-Stress Bicycling and Network Connectivity" (2012), All Mineta Transportation Institute Publications., Book 4. http://scholarworks.sjsu.edu/mti_all/4 and http://www.northeastern.edu/peter.furth/criteria-for-level-of-traffic-stress/, specifically "Version 2.0," published in June 2017.

Crossing LTS Methodology

A crossing LTS analysis was conducted for street and path intersections located along high-stress facilities (segments that scored LTS 3 or LTS 4) since it is likely that the characteristics of a high-stress segment can affect the bicyclist experience when crossing from a low-stress street. The crossing methodology analyzes intersections and crossings for the following situations:

- Intersection approaches for pocket bike lanes (bike lanes that are to the left of a dedicated right-turn vehicle lane)
- Intersection approaches for mixed traffic in the presence of right-turn lanes
- Intersection crossings for unsignalized crossings without a median refuge
- Intersection crossings for unsignalized crossings with a median refuge

These situations do not describe all crossing circumstances. For example, in Dublin, many Class I facilities cross at signalized intersections. These situations are covered in the path LTS methodology.

LTS RESULTS

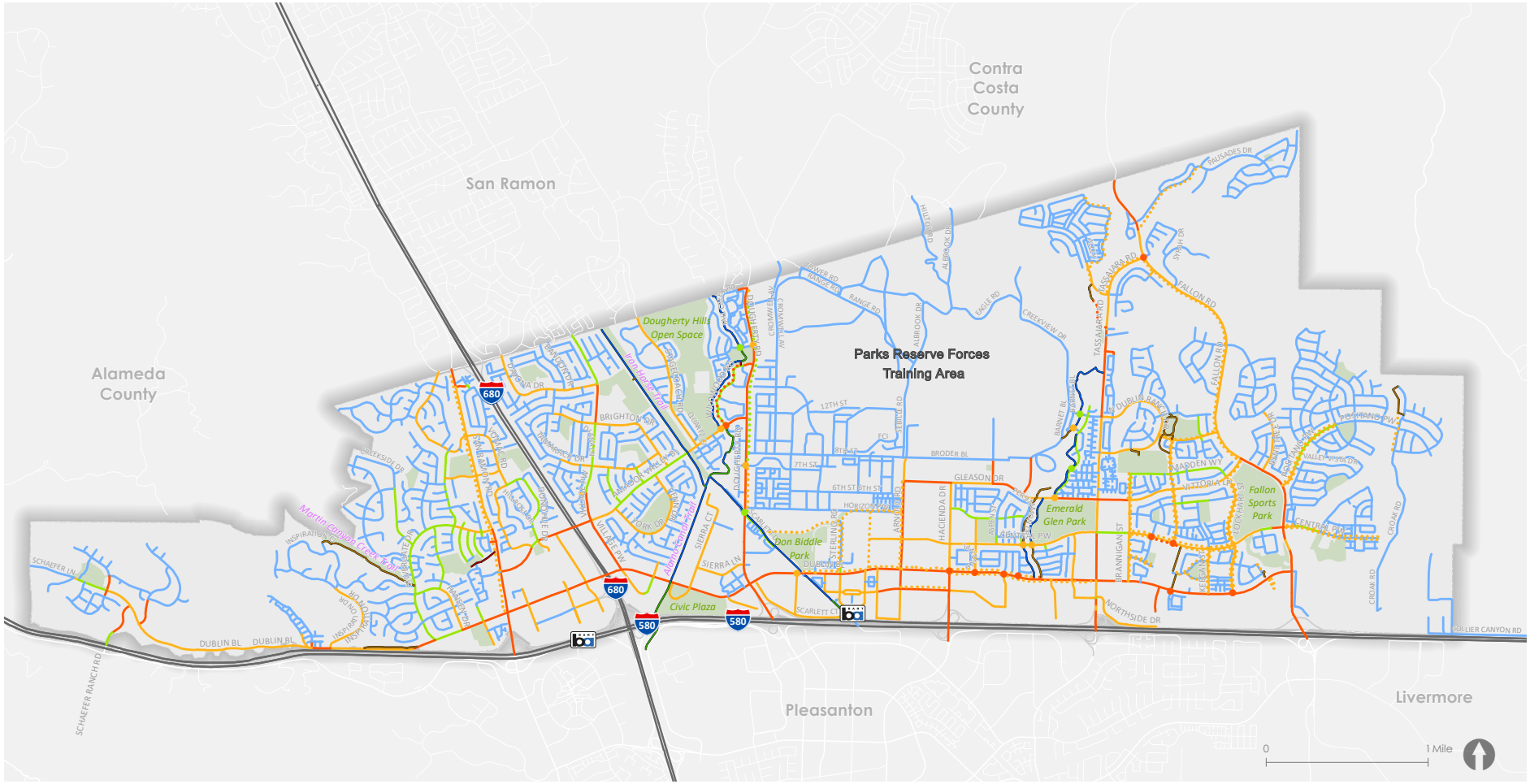
The LTS analysis was conducted using a spatial database with inputs obtained through a combination of field review, Google Earth aerial review, and City input. Assumptions were applied to fill data gaps where necessary.

The on-street and path LTS results, presented together on Figure 28, illustrate citywide bicycle level of traffic stress and network connectivity. To simplify the level of detail shown, the directionality of the on-street LTS has been suppressed. Each on-street segment is displaying its highest (i.e., worst) LTS value. Refer to appendix C for the full set of LTS maps, including directional LTS.

- **On-Street Level of Traffic Stress**. Low-stress streets in Dublin are typically local residential roads without dedicated bicycle facilities where vehicle speeds and volumes are low. Higher stress streets are often arterial roads like Dublin Boulevard, which are less comfortable for bicyclists, due to the relatively higher vehicular speeds, higher traffic volumes, and the number of vehicle travel lanes. These higher stress streets present barriers to low-stress travel where they intersect with low-stress facilities and create islands isolated by high-stress segments and crossings.
- **Path LTS**. Class IA multiuse paths most frequently score an LTS 2 given their width, shoulder, and wayfinding presence. Class IB side paths frequently score an LTS 3 with no wayfinding present along their segments. Path crossings vary, but they rarely exceed LTS 3 except at intersection crossings with high speeds, high volumes, and no crossing markings or signage. Although path LTS values were assessed for every path crossing location, only crossings with scores lower than their connecting path segments are mapped in the results. In other words, the mapped crossings are those which degrade the neighboring segment path LTS.
- **Low Stress Islands.** Figure 29 presents Dublin's network of low-stress facilities and highlights where gaps and islands exist. Fallon Road, Tassajara Road, San Ramon Road, and Dublin Boulevard are prime examples of low-stress gaps in the on-street network.

In Dublin, most streets are residential streets. Nearly all of those streets (98 percent) are low stress because of their low speeds and volumes. With generally higher speeds and volumes,

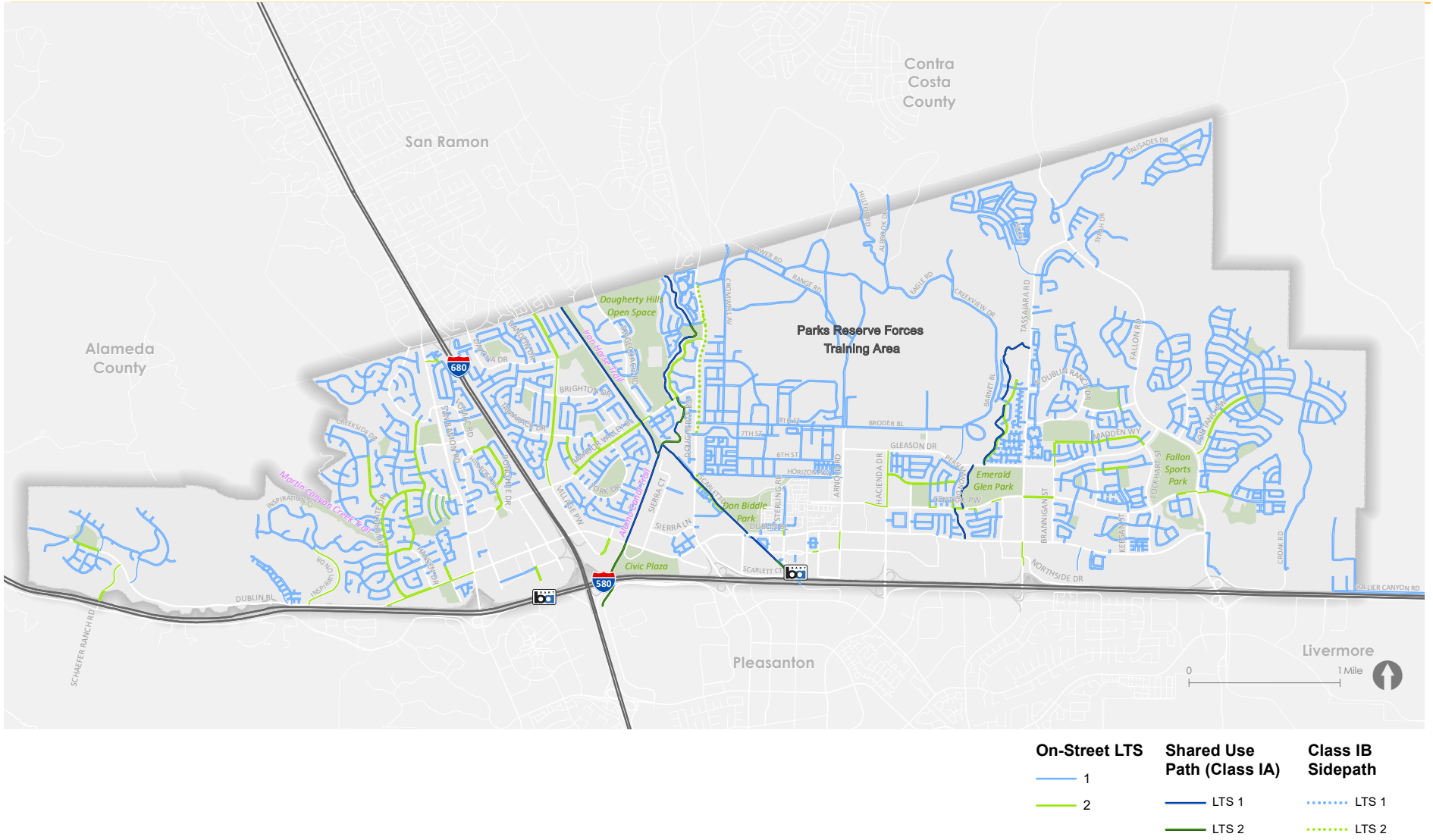
Figure 28. On Street and Path LTS Combined Map



Path LTS Scores

On-Street LTS	Shared Use Path (Class IA)	Sidepaths (Class IB)	Path Crossings
LTS 1	LTS 1	LTS 1	LTS 1
LTS 2	LTS 2	LTS 2	LTS 2
LTS 3	LTS 3	LTS 3	LTS 3
LTS 4	LTS 4	LTS 4	LTS 4

Figure 29. Low Stress Islands Map



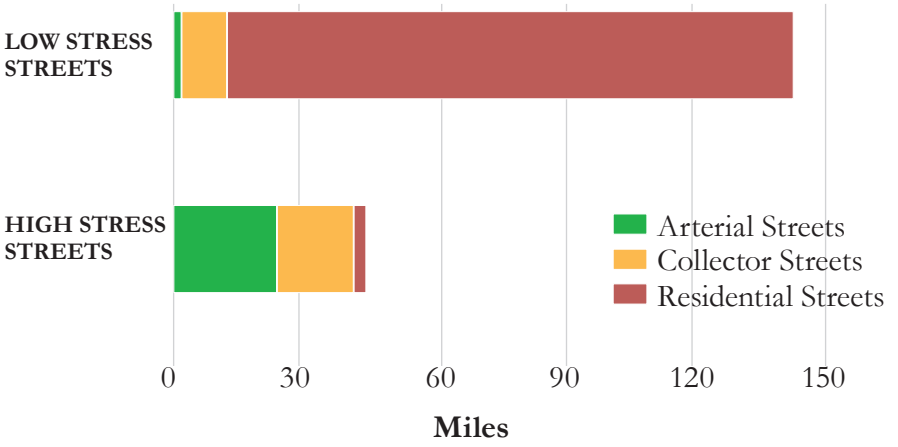
collector and arterial roadways are higher stress for bicyclists unless they have appropriate facilities. Only 37 percent of collectors and 7 percent of arterials in Dublin are low stress (see Figure 30). Many businesses and services are located on or near collectors, and these desintations can only be accessed with some travel along or across the collectors or arterials.

The goal of planning and designing a low-stress bicycle facility network is to enable people of all ages and abilities to feel safe and comfortable riding bicycles throughout the city. These LTS findings are useful for determining and locating appropriate low-stress bicycle facilities in the city. Dublin's extensive network of low-speed and low-volume local neighborhood streets already create a backbone for a low-stress biking network; however, these streets are isolated pockets throughout the city and remain separated by high-stress arterial and collector streets. By enhancing low-stress streets and adding separated bicycle facilities on targeted segments of higher-speed and higher-volume collectors and arterials, Dublin can support a more connected, low-stress bicycle network that better serves key destinations throughout the city.

PEDESTRIAN CONNECTIVITY

Sidewalk gaps and lack of safe crossing opportunities can create barriers to walking by requiring people to go out of their way to avoid the gap or by forcing people to walk in the street and increase their exposure to vehicle traffic. The current barriers to walking are mapped in Figure 31.

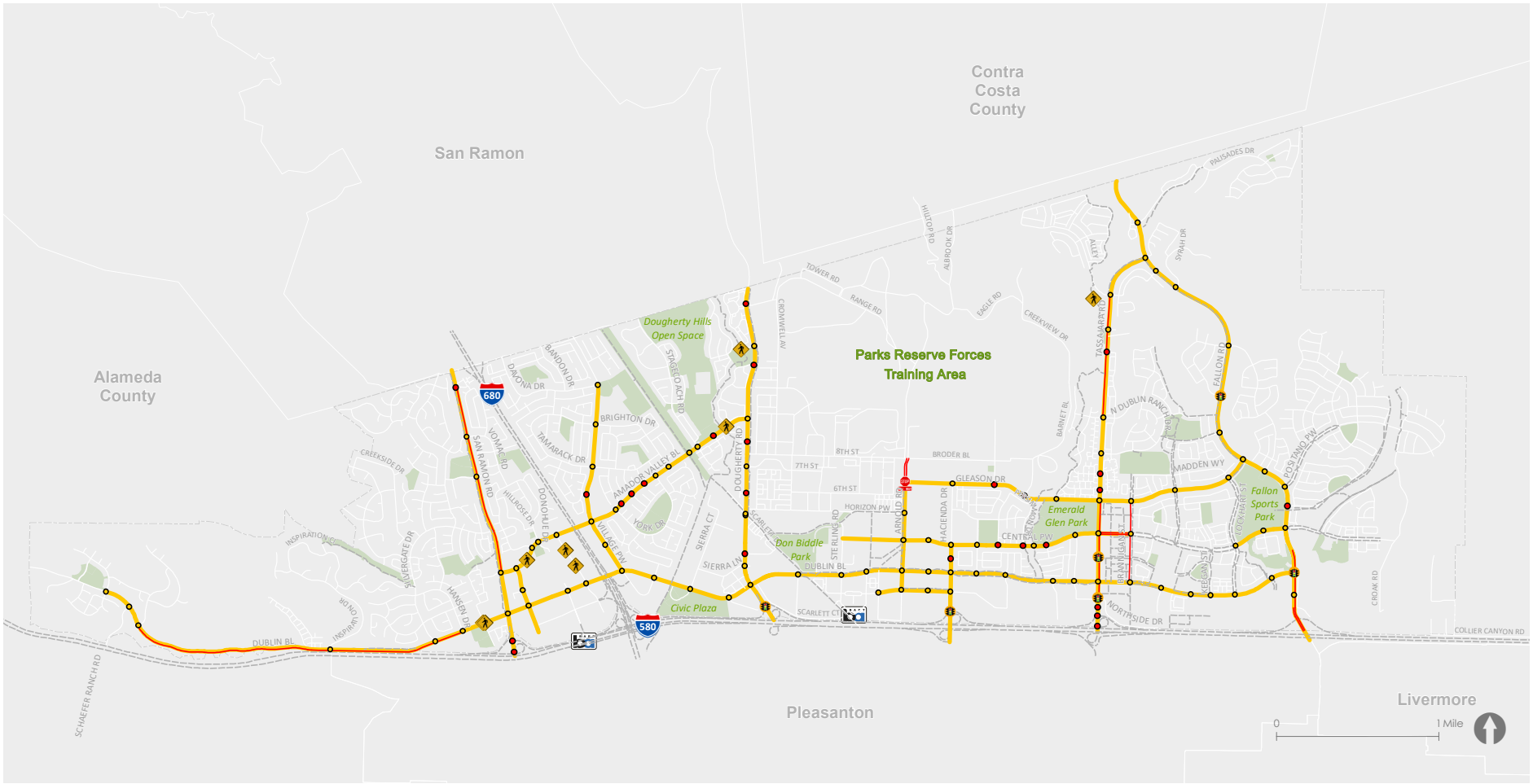
Figure 30. Miles of Bikeway Stress by Functional Classification



**Miles does not include paths.*

> "You can't use the sidewalk without tripping on a jagged piece of concrete."
> — community member

Figure 31. Pedestrian Crossing Barriers Map



WALKING AND BIKING ACCESS

The ability of people to walk or bike to key walking and biking destinations was analyzed to estimate existing access to key destinations. This analysis was used to identify barriers in the existing network and highlight locations where investments would have the greatest potential to close gaps in the network and increase access and mode share.

The share of the Dublin population that could be expected to walk or bike to each activity center was estimated based on pedestrian and bicyclist typology, distance to the destination, and the quality of available infrastructure. These estimates of walk and bike access were determined by four inputs:

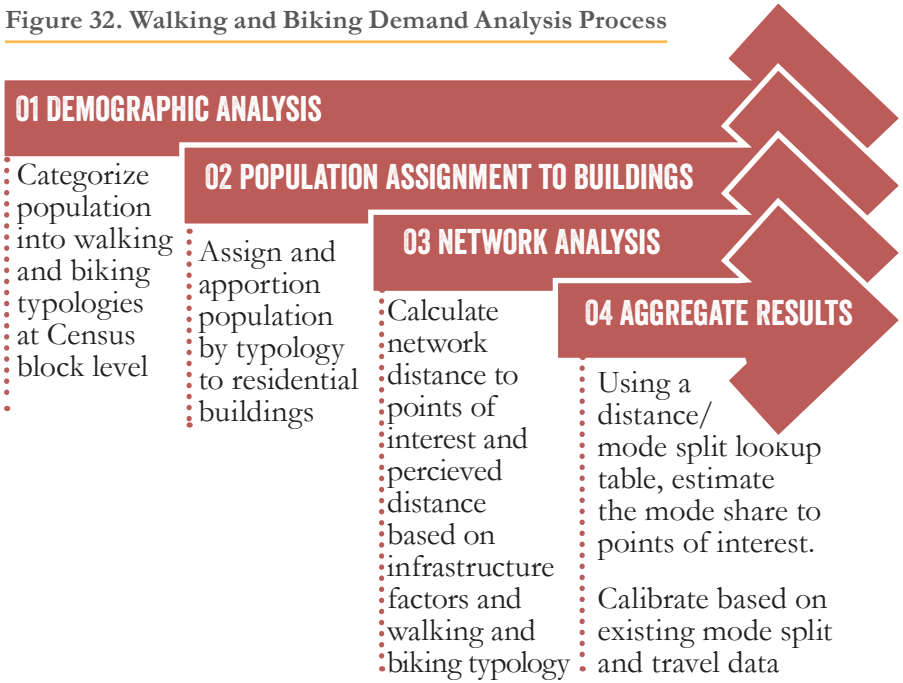
- **Demographic data:** Dublin residents were grouped into walking and biking typology groups based on age. Groups exhibit different propensities to walk or bike and respond differently to supportive infrastructure.
- **Network distance to destination:** The analysis assumed that people used the shortest available route to get to the destinations
- **Barriers and impediments:** For walking, uncontrolled crossings of major roads were identified as blocking or impeding an available walking route. For biking, a high LTS score (3 or 4) blocks or impedes available routes. Barriers block access and require a different route; impediments increase the perceived travel distance, which decreases the likelihood of walking or biking. Populations experience barriers and impediments differently. For example, uncontrolled crossings of major roads can create inaccessible routes for young children and older adults, but are merely inconvenient for teenagers and adults who are more likely to be able to cross. Pedestrian and bicyclist typologies were used to capture such differences in experiences.
- **Mode share data:** Kittelson used data from the National Household Travel Survey (NHTS), BART station profile surveys, the American Community Survey (ACS), and Safe Routes to School (SRTS) mode share surveys to estimate the percentage of people walking and biking and the relationship between mode share and destination distance. The percentage of the population estimated to walk or bike varies based on the perceived distance to the destination. For example, more people walk for a half-mile trip than a one-mile trip.

The analysis was conducted using a four-step process illustrated in Figure 32.

WALKING AND BIKING DEMAND ANALYSIS PROCESS

The methodology analyzes existing walking and biking access to key destinations using historical travel pattern and count data, demographic data, and infrastructure data. This analysis did not consider other factors that influence mode choice decisions like access or ability to ride a bicycle, income and wealth, disability, and trip chaining characteristics. This analysis indicates the magnitude of existing and potential latent demand for walking and biking based on a set of informed assumptions about the known relationship between infrastructure and mode choice. Existing demand is summarized in this section, and the detailed methodology and outcomes are presented in appendix D.

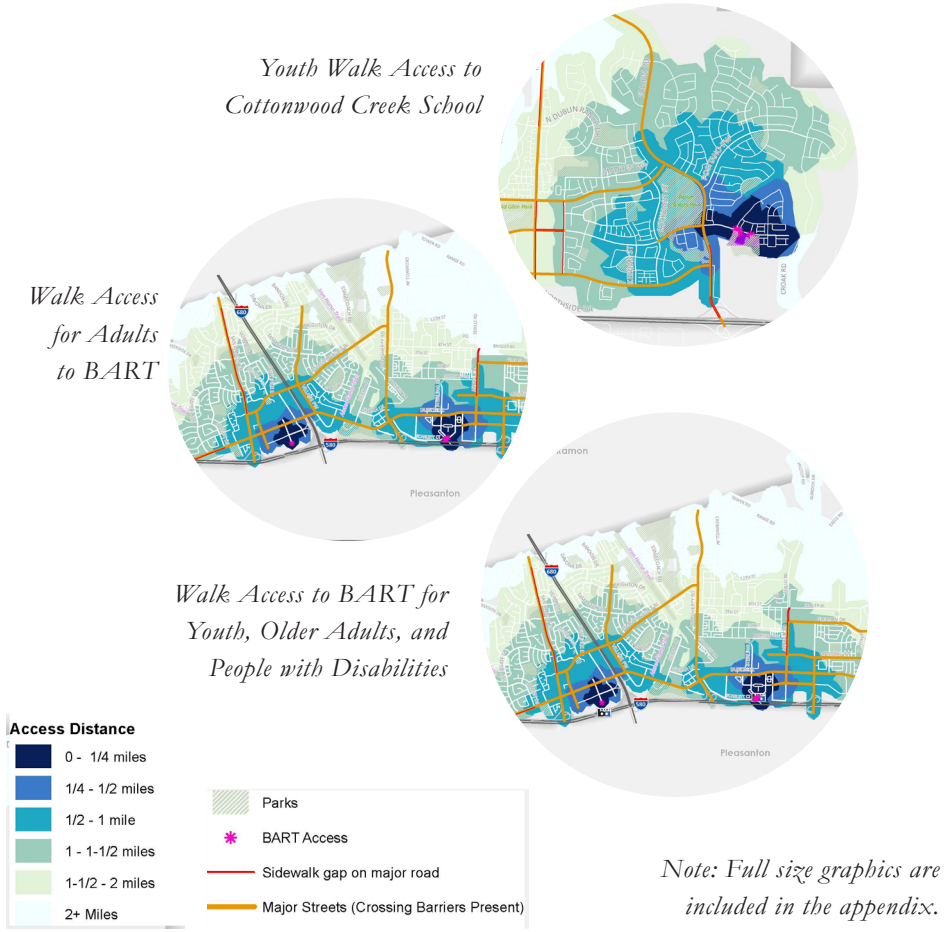
Figure 32. Walking and Biking Demand Analysis Process



WALK ACCESS

- **Schools**: Cottonwood Creek School, Dougherty Elementary, and Kolb Elementary exhibit the highest estimated walk shares with around 36 percent of students living within walking distance. Other elementary schools similarly exhibit high estimated walk shares, due in part to the localized nature of their student population compared to middle and high schools.
- **Transit**: Approximately 11 percent of Dublin residents are within a 15-minute walk of either the Dublin/Pleasanton or West Dublin BART stations. Over 40 percent of Dublin residents live more than two miles from either BART station.
- **Job Centers**: The walk share estimates range from 4 to 9 percent for each job center. The limited walkability of these sites is largely the result of the distance between the employment and residential uses.
- **Parks and Open Space:** Access for each resident was determined by the nearest City park. The analysis measured perceived distance to any park for each resident rather than to a specific park. Almost 25 percent of Dublin residents live within one-eighth of a mile from a park, and 62 percent of residents live within a one-mile perceived walking distance of a park.

Figure 33. Walk Access



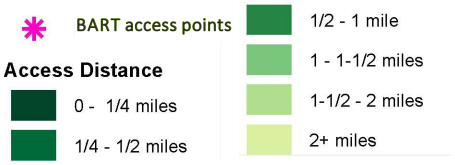
Note: Full size graphics are included in the appendix.

BIKE ACCESS

- **Schools:** Access points to Dublin High, Frederiksen Elementary, Murray Elementary, and Wells Middle School are provided on high-stress streets (streets with LTS scores of 3 or 4). High-stress streets create an access barrier and reduce the propensity of students to bike to school. Amador Elementary and Kolb Elementary exhibit the highest estimated bike share with 14 percent of students having low-stress bicycle access.
- **Transit**: Based on the bicyclist typology and available infrastructure, approximately 12 percent of Dublin residents have a bike route matching their stress tolerance and can access one of the two BART stations within an approximately 15-minute ride at a 10-mile per hour pace. Less than one percent of interested and concerned bicyclists have a low-stress bicycle route to BART.
- **Job Centers:** The share of population with an available and acceptable bicycle route varies from 18 percent to 37 percent; the resulting bike mode share estimates range between 1 and 3 percent for each job center. Limitations to bicycle access at these sites is primarily the result of being located on major arterials, which are typically high-stress streets.
- **Parks and Open Space:** Access for each resident was determined by the nearest City park. The analysis measured perceived distance to any park for each resident rather than to a specific park. In Dublin, 42 percent of Dublin residents have an acceptable bicycle route to a park. Nearly 40 percent have no available low-stress route, and the remaining residents would not choose to bike if a low-stress route were available.

Figure 34. Bike Access to BART

Bike access to BART for (left to right) "interested but concerned", "enthused and confident", and "strong and fearless" riders. Illustrates the barriers to access for the "interested and concerned" group, Dublin's largest population of bicyclists. Note: Full size graphics are included in the appendix.



Bike access to BART for "interested but concerned"

Bike access to BART for "enthused and confident"

Bike access to BART for "strong and fearless"

4

4. RECOMMENDED BICYCLE & PEDESTRIAN NETWORKS

This chapter presents the recommended citywide bicycle and pedestrian networks.

These networks represent the City's vision for walking and biking infrastructure in Dublin, with new and improved facilities to create safe and comfortable connections to key destinations for users of all ages and abilities. Public feedback and findings from the existing conditions assessment, high-injury network, bicycle level of traffic stress, pedestrian connectivity, and demand analysis contributed to developing the recommended network shown in Figure 35.

NETWORK DEVELOPMENT

The network was developed in three phases:

- Phase 1: Network Framework
- Phase 2: Network Evaluation
- Phase 3: Network Refinement

The following sections describe the process and outputs of each phase.

PHASE 1: NETWORK FRAMEWORK

The active transportation network framework includes a variety of sources of data and information including community feedback, related plans and projects, existing conditions and needs analysis, and evaluation of destinations and barriers documented in the preceding chapters.

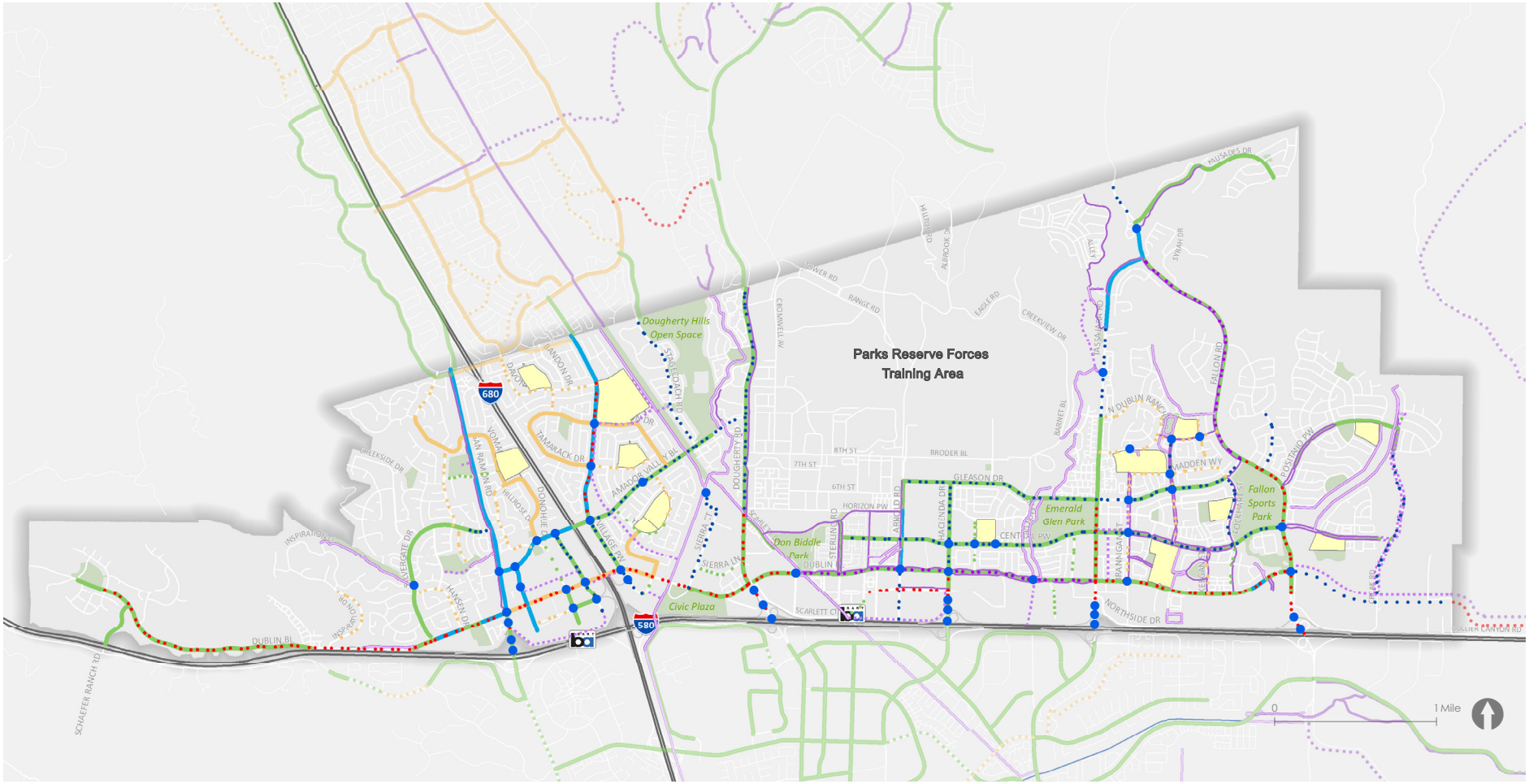
PHASE 2: NETWORK EVALUATION

The Plan's vision includes creating a safe and comfortable walking and biking network that can be enjoyed by all. Ultimately, the goal of the low-stress network is to enable a wider cross section of the city's population to feel comfortable and safe while making trips by bike and on foot. With the vision of an all ages and abilities active transportation system in mind, criteria from the Federal Highway Administration's Bikeway Selection Guide were used to select initial low-stress facility recommendations for all streets in Dublin. These initial recommendations will help the largest segment of the population to feel comfortable while walking and biking (see Figure 35). Speed and volume roadway operational characteristics were used to determine the appropriate low-stress bicycle facility type.

The identified facility types should be considered a minimum. In cases where more space is available, the City will increase the level of separation between people driving and people biking.

> **"Bike lanes and separate pedestrian path are great" — community member**

Figure 35. Recommended Projects and Existing Facilities



Locations with identified proposed segment projects may also include pedestrian improvements such as consistent sidewalks, buffers with street trees and/or green stormwater infrastructure, high-visibility crosswalks, accessible curb ramps, curb extensions, reduced corner radii, and signal improvements.

Refer to Table 6 for detailed project descriptions.

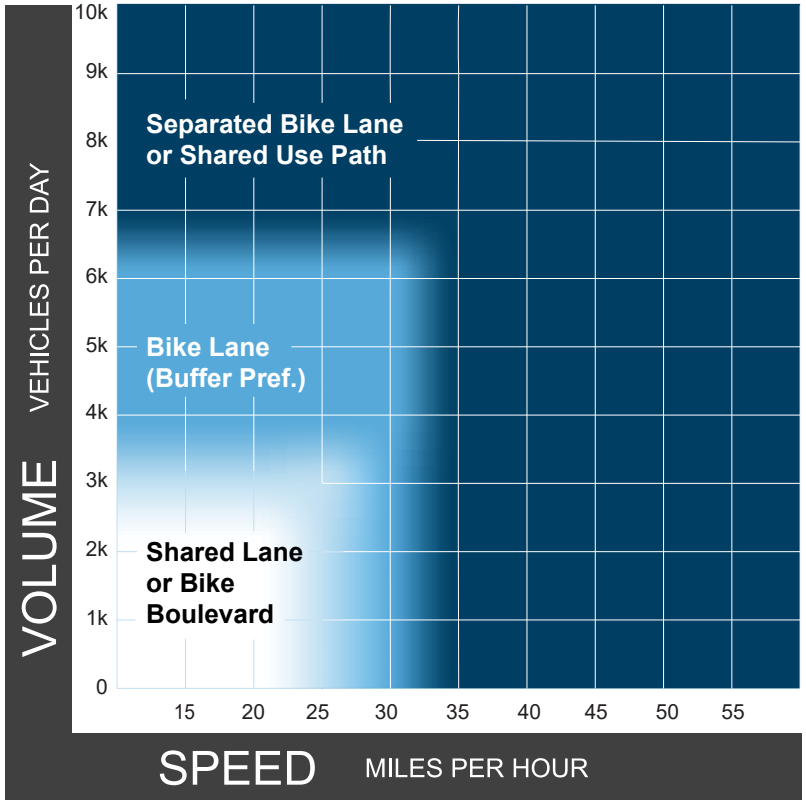
Proposed Point Project
- Spot Improvement

Proposed Segment Project
- Shared Lane (Class III)
- Bike Lane (Class IIA)
- Buffered Bike Lane (Class IIB)
- Complete Streets Study: Separated Facility (Class I or Class IV)
- Complete Streets Study: Consider Improvements to Existing Sidepaths
- Class I Path Project

Existing Facility
- Shared Lane (Class III)
- Bike Lane (Class IIA)
- Buffered Bike Lane (Class IIB)
- Existing Class IA Shared Use Path
- Existing Class IB Sidepath

- Schools
- BART Stations
- Parks

Figure 36. Preferred Bikeway Type



Notes

1 Chart assumes operating speeds are similar to posted speeds. If they differ, use operating speed rather than posted speed.

2 Advisory bike lanes may be an option where traffic volume is <3K ADT.

3 See page 32 for a discussion of alternatives if the preferred bikeway type is not feasible.

Source: US Department of Transportation Federal Highway Administration, Bikeway Selection Guide, FHWA-SA-19-077, February 2019, https://safety.fhwa.dot.gov/ped_bike/tools_solve/docs/fhwasa18077.pdf.

> **"Would love to see separated bike lanes with street trees and widened sidewalks."**
> **— community member**

PHASE 3: NETWORK REFINEMENT

Once the low-stress facility was determined, a high-level feasibility assessment of each corridor was conducted to evaluate the potential implications of installing the low-stress facility. For example, assessments considered whether vehicle parking or vehicle travel lanes would need to be removed to install a low-stress facility. For locations where implementation of the all ages and abilities low-stress facility would be more challenging, potential parallel routes were sought to provide similar quality of access as the constrained corridor. Constrained or challenging corridors were identified and recommended for further evaluation as part of a complete streets study. The resulting project list was refined to address feedback from City staff, TAC, BPAC, and community members.

NETWORK RECOMMENDATIONS

COMPLETE STREET APPROACH

A Complete Street approach was taken during the development of infrastructure recommendations. Bicycle-, and pedestrian-supportive investments are included in each corridor and crossing project and transit-supportive elements will be further considered along transit corridors as part of design development. The following list illustrates the range of treatments that may be applied to corridor and crossing projects:

- Advance yield markings
- Curb extensions
- Median refuges or crossing islands
- Centerline hardening[4]
- Intersection daylighting[5]
- Narrow vehicle travel lanes
- Traffic control modifications (e.g., stop sign, signal)
- Signal timing and phasing modifications (e.g., restrict right turn on red)
- Sidewalk widening
- Added or upgraded bike facility

The project recommendations are presented as a package, with concurrent improvements to support all three active and sustainable travel modes.

CORRIDOR PROJECTS

Corridor projects were identified on high-stress roadways that represented barriers to walking and biking.

Recommended corridor projects are summarized in Table 9 and presented by location in Table 10.

Table 9. Project Type by Length

Project Type	Miles
Shared Lane (Class III)	**12.4**
Bike Lane (Class IIA)	**3.1**
Buffered Bike Lane (Class IIB)	**17.0**
Complete Streets Study: Separated Facility (Class I or Class IV)	**10.4**
Complete Streets Study: Consider Improvements to Existing Sidepaths (Class IB)	**4.9**
Path (Class IA)	**7.9**
Speed Reduction Evaluation	**1.3**
Total	**56.8***

** Corridor projects are not double counted in this total if they represent multiple project types, like speed reduction and buffered bike lanes.*

4 Centerline Hardening. A left-turn traffic-calming treatment that features a vertical element, such as a bollard, rubber curb, or concrete curb installed along the centerline at intersection departures to force drivers to approach the turn at a steeper angle and slower speed.

5 Intersection Daylighting. A strategy to increase visibility at intersections by prohibiting parking (e.g., installing red painted curb) at least 20 feet in advance of a crossing.

Table 10. Recommend Projects by Location

Project ID	Project Location	From	To	Project Description
SEGMENT PROJECTS				
S-1	Various locations for Class III facilities/neighborhood bikeways: Tamarack Drive, Davona Drive, St. Patrick Way, Lucania Street, Brighton Drive, Grafton Street, Antone Way, South Bridgepointe Lane, and Brannigan Street			Study opportunities and create designs for traffic calming, striping, and signs to create Class III bikeways
S-2	Gleason Drive	Arnold Road	Brannigan Street	Restripe to add buffer to the Class II facilities; if possible, provide wide buffer (greater than 3') for potential to add vertical separation to convert to Class IV in the future; as a future project phase, provide a separated facility (Class I or Class IV)
S-3	Hacienda Drive	Southern City Limits	Gleason Drive	Restripe to add buffer to the Class II facilities; if possible, provide wide buffer (greater than 3') for potential to add vertical separation to convert to Class IV in the future; as a future project phase, provide a separated facility (Class I or Class IV)
S-4	Dublin Boulevard	Scarlett Drive	Tassajara Road	Restripe to add buffer to the Class II facilities; if possible, provide wide buffer (greater than 3') for potential to add vertical separation to convert to Class IV in the future; as a future project phase, provide a separated facility (Class I or Class IV)
S-5	Arnold Road	Dublin Boulevard	Altamirano Ave	Restripe to add buffer to the Class II facilities; if possible, provide wide buffer (greater than 3') for potential to add vertical separation to convert to Class IV in the future and evaluate opportunities to lower speed limit; if speeds are not lowered, as a future phase provide a separated facility (Class I or Class IV)
S-6	Grafton Street	Kohnen Way	Antone Way	Convert to a Class IIB bikeway through restriping
S-7	Tassajara Road, Dougherty Road, and Hacienda Drive	Southern City Limits	Dublin Boulveard	Convert to a Class IIB bikeway by restriping travel lanes on Tassajara, Dougherty, and Hacienda at the I-580 overcrossings
S-8	Tassajara Road	North Dublin Ranch Drive	Rutherford Drive	Restripe to add buffer to the Class II facilities; if possible, provide wide buffer (greater than 3') for potential to add vertical separation to convert to Class IV in the future; as a future project phase, provide a separated facility (Class I or Class IV)
S-9	Village Parkway	Amador Valley Boulevard	Northern City Limits	Conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment
S-10	Various locations for Class III facilities/neighborhood bikeways: Tamarack Drive, Davona Drive, St. Patrick Way, Lucania Street, Brighton Drive, Antone Way, South Bridgepointe Lane, and Brannigan Street			Implement the traffic calming, striping, and signs plans and designs created in project S-1 to create Class III bikeways
S-11	Village Parkway	Dublin Boulevard	Amador Valley Boulevard	Restripe to add buffer to the Class II facilities and evaluate opportunities to lower speed limit or provide a Class IV or Class I facility
S-12	Tassajara Road	Palisades Drive	North Dublin Ranch Drive	Evaluate opportunities to reduce speed limit along this corridor

Project ID	Project Location	From	To	Project Description
S-13	Dougherty Road	Dublin Boulevard	Southern city limits	Conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment
S-14	Amador Valley Boulevard	Stagecoach Road	Dougherty Road	Conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment
S-15	Tassajara Road	Gleason Drive	Southern City Limits	Upgrade pedestrian facility to improve comfort, especially across the I-580 overcrossing, conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate for this location, and implement the chosen separated bicycle treatment. This project is anticipated to be implemented after the lower cost solution in S-7.
S-16	Dublin Boulevard	Inspiration Drive	San Ramon Road	Conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment
S-17	Dublin Boulevard	Inspiration Drive	Western extent	Conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment
S-18	Fallon Road	Gleason Drive	Southern city limits	Upgrade pedestrian facility to improve comfort, especially across the I-580 overcrossing, conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate for this location, and implement the chosen separated bicycle treatment.
S-19	Fallon Road	Gleason Drive	Tassajara Road	Make improvements to adjacent sidepaths to provide two-way bicycle and pedestrian connectivity by evaluating needs for and implementing wayfinding, signing, and striping improvements, intersection improvements, and crossings, as needed.
S-20	Dublin Boulevard	Tassajara Road	Eastern city limits	Add buffered bike lanes along the Dublin Boulevard Extension
S-21	Tassajara Road	Palidsades Drive	Northern City Limits	Work with Contra Costa County to design and implement Class IIB facilities
S-22	Dublin Boulevard	San Ramon Road	Dougherty Road	As recommended in the 2014 plan, upgrade to separated Class I facilities providing sufficient space to reduce conflicts between people walking and biking; evaluate opportunities to improve walkability by reducing obstructions; enhance median and lighting along Dublin Boulevard under I-680; improve sidewalk connection across commercial driveway and at bus stop (east of Regional Street); add pedestrian-scale lighting under I-680 Overpass. Install barrier in median underneath overcrossing to prohibit pedestrian crossings.
S-23	Dublin Boulevard	Dougherty Road	Scarlett Drive	Conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment
S-24	Dublin Boulevard	Tassajara Road	Fallon Road	Conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment

Project ID	Project Location	From	To	Project Description
S-25	Central Parkway	Tassajara Road	Fallon Road	Upgrade to a Class IIB Bicycle lane and evaluate opportunities to lower the speed limit or provide Class IV or Class I facility
S-26	Various locations: N Dublin Ranch Drive, S Dublin Ranch Drive, Hansen Drive, Starward Drive, San Sabana Road, Southwick Drive, Hibernia Drive, Donohue Drive, Keegan Street, Peppertree Road, Madden Way, Kohnen Way, York Drive, Maple Drive, Inspiration Drive, and Vomac Road			Study opportunities, create designs, and implement traffic calming and signs to create Class III Bikeways along the identified roadways
S-27	Lockhart Street	Central Parkway	Dublin Boulevard	Add a Class IIA Bicycle Lane where no bike lane currently exists
S-28	John Monego Court	Dublin Boulevard	Southern extent	Add a Class IIA Bicycle Lane where no bike lane currently exists
S-29	Sierra Lane	Sierra Court	Dougherty Road	Add a Class IIA Bicycle Lane where no bike lane currently exists
S-30	York Drive	Amador Valley Boulevard	Poplar Way	Add a Class IIA Bicycle Lane where no bike lane currently exists
S-31	Hibernia Drive	Dublin Boulevard	Summer Glen Drive	Add a Class IIA Bicycle Lane where no bike lane currently exists
S-32	Shannon Avenue	Vomac Road	Peppertree Road	Add a Class IIA Bicycle Lane where no bike lane currently exists
S-33	Glynnis Rose Drive	Central Parkway	Dublin Boulevard	Add a Class IIA Bicycle Lane where no bike lane currently exists
S-34	Central Parkway	500' west of Croak Road	Croak Road	Extend bike lanes and sidepaths along Central Parkway to Croak Road
S-35	Croak Road/Volterra Drive	Volterra Court	Dublin Boulevard	If Croak Road is improved south of S Terracina Drive, add low stress bicycle facilities based on anticipated speeds, volumes, and FHWA Bikeway Selection Guide recommendations
S-36	Central Parkway	Iron Horse Parkway	Tassajara Road	Restripe to add buffer to the Class II facilities and evaluate opportunities to lower speed limit or provide Class IV or Class I facility
S-37	Gleason Drive	Fallon Road	Brannigan Road	Upgrade to a Class IIB Bicycle lane and evaluate opportunities to lower the speed limit or provide Class IV or Class I facility
S-38	Amador Plaza Road	Southern Extent	Amador Valley Boulevard	Upgrade to a Class IIB Bicycle lane and evaluate opportunities to lower the speed limit or provide Class IV or Class I facility
S-39	Silvergate Drive	San Ramon Road	Peppertree Road	Upgrade to a Class IIB Bicycle lane and evaluate opportunities to lower the speed limit or provide Class IV or Class I facility
S-40	Arnold Road	Dublin Boulevard	Southern city limits	Conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment
S-41	Dougherty Road	Scarlett Drive	Northern City Limits	Improve wayfinding and signage for parallel path on east side; restripe to upgrade Class IIA facilities to Class IIB facilities
S-42	Lockhart Street	Central Parkway	Gleason Drive	Add a Class IIB bike lane where no bike lane currently exists or improve adjacent sidepaths to provide two-way bicycle and pedestrian connectivity by evaluating needs for and implementing wayfinding, signing, and striping improvements, intersection improvements, and crossings, as needed.

Project ID	Project Location	From	To	Project Description
S-43	Stagecoach Road	Amador Valley Boulevard	Northern City Limits	Add a Class IIB Bicycle Lane where no bike lane currently exists
S-44	Sierra Ct	Dublin Boulevard	Northern extent	Add a Class IIB Bicycle Lane where no bike lane currently exists
S-45	Amador Valley Boulevard	Village Parkway	Stagecoach Road	Upgrade from Class IIA to Class IIB Bicycle Lane
S-46	Bent Tree Drive	Fallon Road	East Sugar Hill Terrace	Restripe to a Class IIB Bicycle Lane where no bike lane currently exists
S-47	Hacienda Drive	Gleason Road	Dublin Boulevard	As a follow up to S-3, evaluate opportunities to lower the speed limit or provide Class IV or Class I facility
S-48	Dougherty Road	Dublin Boulevard	Scarlett Drive	Conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment
S-49	Hacienda Drive	Dublin Boulevard	Southern city limits	Upgrade pedestrian facility to improve comfort, especially across the I-580 overcrossing, conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location, and implement the chosen separated bicycle treatment. This project is anticipated to be implemented after the lower cost solution in S-7.
S-50	San Ramon Road	Dublin Boulevard	Southern city limits	Upgrade pedestrian facility to improve comfort, especially across the I-580 overcrossing, and conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment
S-51	Dublin Boulevard	Scarlett Drive	Tassajara Road	Make improvements to adjacent sidepaths to provide two-way bicycle and pedestrian connectivity by evaluating needs for and implementing wayfinding, signing, and striping improvements, intersection improvements, and crossings, as needed.
S-52	Clark Ave/Village Parkway	Dublin Boulevard	Dublin Boulevard	Upgrade from Class IIB to Class IV Bicycle Lane
S-53	Martinelli Way and Iron Horse Parkway	BART Station on Iron Horse Parkway	Hacienda Drive	Add Class I facilities on both sides of the road on Martinelli Way and support the Class I facilities by adding signage, wayfinding, and crossing improvements at the intersections; connect to the BART Station by providing continuous Class I or Class IIA facilities along Iron Horse Parkway.
S-54	Golden Gate Drive	Dublin Boulevard	Amador Valley Boulevard	Add bike lanes with the implementation of the Golden Gate extension project
TRAIL PROJECTS				
T-1	Iron Horse Regional Trail			Implement Phase I and II of the Iron Horse Nature Park Master Plan to create park space and trail access and connectivity improvements
T-2	Downtown Dublin	Regional Street	Amador Plaza Road	Add trail connection from Regional Street to Amador Plaza Road
T-3	East of Tassajara approximately 500 ft	Dublin Boulevard	Central Parkway	With development, add Class I connection between Dublin Boulevard and Central Parkway, just east of Tassajara Road

Project ID	Project Location	From	To	Project Description
T-4	Dublin Creek Trail	Amador Plaza Road	San Ramon Road	Add trail connection along Dublin Creek along the Zone 7 channel, to connect at San Ramon Road
T-5	San Ramon Bike Path	Shannon Community Center	San Ramon Bike Path	Create connection to Shannon Community Center from the San Ramon Bike Path
T-6	Alamo Canal Trail	Dublin High School and Village Parkway	Alamo Canal Trail between Cedar Lane and Ebensburg Lane	Add Class I facility along east side of Village to connect to the Alamo Canal Trail
T-7	Dublin Boulevard	Amador Plaza Road	Village Parkway	As recommended in the 2014 plan, widen existing sidewalk and add signing and striping treatments to create a shared use path on the south side of Dublin Boulevard.
T-8	Alamo Canal Trail/ Civic Plaza	Village Parkway/ Clark Avenue	Alamo Canal Trail	Add a bicycle and pedestrian bridge over the canal to create Class I connection between Village Parkway/Clark Avenue at Alamo Canal Trail at the Dublin Public Safety Complex Site
T-9	Dublin Boulevard Extension	Fallon Road	Collier Canyon Park (Livermore)	Create Class I connection along the future Dublin Boulevard Extension corridor from Fallon Road to Collier Canyon Parkway (Livermore)
T-10	Brannigan Street	Central Parkway	Gleason Boulevard	Through development, add Class I facility on the west side of Brannigan St. from Central Parkway to Gleason Boulevard
T-11	Central Parkway	Emerald Glen Park/Tassajara Road	Brannigan Street	Add Class I connection and street crossing enhancements on the north side of Central Parkway from Emerald Glen Park/Tassajara Road to Brannigan Street
T-12	Dublin High School	Iron Horse Trail	Village Parkway	Add Class I connection along the south side of the school grounds and Dublin Swin Center from Iron Horse Trail to Village Parkway
T-13	Tassajara Creek	Dublin Boulevard	Pleasanton	Study options for gap closure to provide a bicycle and pedestrian overcrossing and shared use path from Tassajara Creek at Dublin Boulevard south over I-580 into Pleasanton
T-14	Nielson Elementary School	Amarillo Road	Mape Memorial Park Path	Add Class I connection along the southern edge of Nielson Elementary to connect Amarillo Road with the existing path along Mape Memorial Park to san Ramon Road
T-15	Altamirano Street	Dublin BART station	Martinelli Way	Add Class I connection along Altamirano Street between the Dublin BART station and Martinelli Way
T-16	Croak Road	Dublin Boulevard	Positano Parkway	Add Class I connections along Croak Road from Dublin Boulevard to Positano Parkway
T-17	Positano Parkway	Croak Road	La Strada Drive	Add or improve trails along Positano Parkway to connect to the trail on Croak Road
T-18	Tassajara Creek Trail	Tassajara Road Trailhead	Wallis Ranch development trails	Add Class I connection between the existing Tassajara Creek trailhead on Tassajara Road and trails in the Wallis Ranch development

POINT PROJECTS

Crossing projects were identified at locations that represented major barriers to walking and biking, including freeway crossings, high-stress trail crossings, high-stress intersections, and locations that experienced a high frequency or severity of collisions.

The recommended crossing projects are presented in Table 11 and includes:

- Interchange projects to modernize and improve multimodal access and traffic safety, lessening the barriers to walking and biking that are posed by the I-580 and I-680 freeways.
- Crossing projects to improve connections to and along existing Class I paths and trails or to provide mid-block connections across existing roadways.
- Intersection projects to improve safety for people walking and biking by modifying intersection signal timing, geometry, signing, or striping.

Table 11 outlines the recommended crossing projects by location.

Table 11. Recommended Crossing Projects by Location

Project ID	Project Location	Project Description
FREEWAY CROSSING PROJECTS		
FC-1	San Ramon Road at southbound I-580 westbound ramp entrance	Redesign interchange ramp terminal to provide safe crossings
FC-2	San Ramon Road at northbound I-580 westbound ramp entrance	Redesign interchange ramp terminal to provide safe crossings
FC-3	San Ramon Road at I-580 westbound ramp terminal	Redesign interchange ramp terminal to provide safe crossings
FC-4	St. Patrick Way at I-580 ramp terminal and entrance	Redesign interchange ramp terminal to provide safe crossings
FC-5	Dougherty Road at I-580 westbound ramp entrance	Redesign interchange ramp terminal to provide safe crossings
FC-6	Dougherty Road at I-580 westbound ramp terminal	Redesign interchange ramp terminal to provide safe crossings
FC-7	Dougherty Road at I-580 eastbound ramp entrance	Redesign interchange ramp terminal to provide safe crossings
FC-8	Hacienda Drive at I-580 westbound ramp terminal	Redesign interchange ramp terminal to provide safe crossings
FC-9	Hacienda Drive at I-580 eastbound ramp entrance	Redesign interchange ramp terminal to provide safe crossings
FC-10	Hacienda Drive at I-580 westbound ramp entrance	Redesign interchange ramp terminal to provide safe crossings
FC-11	Tassajara Road at I-580 westbound ramp entrance	Redesign interchange ramp terminal to provide safe crossings
FC-12	Tassajara Road at I-580 westbound ramp terminal	Redesign interchange ramp terminal to provide safe crossings
FC-13	Tassajara Road at I-580 eastbound ramp entrance	Redesign interchange ramp terminal to provide safe crossings
FC-14	Fallon Road at I-580 westbound ramp terminal and entrance	Redesign interchange ramp terminal to provide safe crossings
FC-15	Fallon Road at I-580 eastbound ramp entrance	Redesign interchange ramp terminal to provide safe crossings
FC-16	Village Parkway at I-680 NB ramp entrance	Redesign interchange ramp terminal to provide safe crossings
PEDESTRIAN CROSSING PROJECTS		
C-1	Regional Street between Dublin Boulevard and Amador Valley Boulevard	Provide mid-block crossing (RRFB or other actuated treatment)
C-2	Dublin Boulevard and Iron Horse Trail	Provide pedestrian and bicycle overcrossing to connect to Don Biddle Community Park
C-3	Sierra Court cul-de-sac	Add connection from Sierra Court to the Alamo Canal/Iron Horse Trail network

Project ID	Project Location	Project Description
C-4	Tassajara Creek Trail and Dublin Boulevard	Study the feasibility of improving the crossing of Tassajara Creek Trail at Dublin Boulevard by providing better connections to the existing crossing at John Monego Court. Provide wayfinding and signs to direct people biking and walking between the trail and the intersection.
C-5	Tassajara Creek Trail and Tassajara Road	Improve connections to nearby crossings or add crossing at Tassajara Road and Tassajara Creek Trail (south of Rutherford Drive) to provide access to the trailhead; improve general access to and connectivity from the trail to Tassajara Road and local destinations
INTERSECTION PROJECTS		
I-1	Central Parkway/Aspen Street	Provide crossing improvements (RRFB or other actuated treatment) to provide more visibility of people walking/biking, especially to school
I-2	Grafton Street/Antone Way	Provide crossing improvements (RRFB or other actuated treatment) to provide more visibility of people walking/biking, especially to school
I-3	Amador Valley Boulevard/ Burton Street	Provide crossing improvements (RRFB or other actuated treatment) to provide more visibility of people walking/biking, especially to school
I-4	Village Parkway/Amador Valley Boulevard	As recommended in the 2014 plan, improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements. Remove slip lanes; reduce curb radii on all corners; install curb extensions on the SE and SW corners; install directional curb ramps.
I-5	Village Parkway/Tamarack Drive	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.
I-6	Village Parkway/Brighton Drive	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.
I-7	Dublin Boulevard/Hibernia Drive	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.
I-8	Dublin Boulevard/Arnold Road	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.
I-9	Dublin Boulevard/Hacienda Drive	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.

Project ID	Project Location	Project Description
I-10	Dublin Boulevard/Village Parkway	As recommended in the 2014 plan, improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements. Reduce width of SB right-turn lane and reduce turning radii; remove NB right-turn slip lane and reduce curb radii; reduce curb radii on NE and SE corners; straighten crosswalks.
I-11	Grafton Street/Madden Way/Kohnen Way	Provide higher visibility crossing treatments, especially to support access to the school
I-12	Antone Way/Bridgepointe Lane	Provide higher visibility crossing treatments, especially to support access to the school
I-13	S Dublin Ranch Drive/ Woodshire Lane	Provide higher visibility crossing treatments, especially to support access to the school
I-14	Tassajara Road and Palisades Drive	Add Class I signage, striping, and signal changes to create visibility of people walking and biking across the existing Tassajara Road and Palisades Drive signalized crossing
I-15	Martin Canyon Creek Trail at Silvergate Drive	Provide Class I facilities on the west side of Silvergate Drive and make intersection changes at Hansen Drive and Bay Laurel Street to provide comfortable connectivity to the existing stop controlled intersection at Hansen Drive
I-16	Gleason Drive/Grafton Street	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.
I-17	Gleason Drive/Brannigan street	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.
I-18	Central Parkway/Brannigan street	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.
I-19	Dublin Boulevard/ Brannigan street	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.
I-20	Central Parkway/Hibernia Drive	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.
I-21	Central Parkway/Hacienda Drive	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.
I-22	Dublin Boulevard/Regional Street	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.

Project ID	Project Location	Project Description
I-23	Tassajara Road/Gleason Drive	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.
I-24	Fallon Road /Central Parkway	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.
I-25	Dublin Boulevard/Golden Gate Drive	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.
I-26	Fallon Road /Dublin Boulevard	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.
I-27	Dublin Boulevard/San Ramon Road	As recommended in the 2014 plan, reduce curb radii on all corners; install directional curb ramps at all corners Subject to further analysis, remove NB overlap phase; install pedestrian countdown signals and audible warning signs Stripe crosswalk on south leg subject to further analysis
I-28	San Ramon Road/Amador Valley Boulevard	Consider adding leading pedestrian intervals for all approaches; Consider removing slip lanes on NW and NE corners and add curb extensions on SW, NW, and NE corners pending additional engineering analysis; Consider striping crosswalk on south leg pending additional engineering analysis
I-29	Regional Street/Amador Valley Boulevard	Consider modifying signal to include leading pedestrian interval on EB and WB approaches; Consider protected left-turn phasing for NB and SB traffic.
I-30	Amador Valley Boulevard/ Amador Plaza	Mark crosswalk on east leg of intersection; Widen median and add median tips as feasible to provide 6' pedestrian refuge; Reduce curb radii
I-31	Dublin Boulevard/Amador Plaza Road	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements. Reduce curb radii on all corners and install directional curb ramps.
I-32	St. Patrick Way/Golden Gate Drive	Install wayfinding signage to West Dublin BART; install bulb-outs at all corners; construct directional curb ramps
I-33	Amador Valley Boulevard/ Donohue Drive	As recommended in the 2014 plan, reduce curb radii on all corners; widen medians and add median tips; install directional curb ramps on all corners

OTHER RECOMMENDATIONS

In addition to this Plan's specific recommendations for projects, there are a number of steps that the City can undertake to improve walking and biking in Dublin. The City should implement the program and policy recommendations and the best practices described in the engineering and design guide. Additionally, the City can continue to implement projects from other previous or parallel planning efforts, including those shown in Figure 37 and listed below:

- Dublin Downtown Streetscape Plan
- BART Station Access Projects
- Iron Horse Regional Trail Projects
- Dublin Safe Routes to School Projects
- Local Road Safety Plan Projects

INCREASED ACCESS TO DESTINATIONS

With implementation of the network recommendations, low-stress biking and comfortable walking and rolling access to key destinations would increase. Existing biking access to BART was compared to biking access with the implementation of the project recommendations. Bicycle access to BART with the existing network and implementation of network recommendations is summarized in Table 12 and shown in Figures 38 and 39.

As demonstrated by this analysis, network recommendations would increase potential bicycle access to BART by almost 600 percent, providing 71 percent of Dublin residents with a travel route along streets that match their stress tolerance.

Table 12. BART Access by Bicyclist Type

Bicyclist Type	Share of Bicyclist Type with Suitable Access to BART	
	Existing Network	Recommended Network
No Way, No How	0%	0%
Interested but Concerned	0%	8%
Enthused and Confident	36%	51%
Strong and Fearless	52%	52%
Total Across all Biker Types	6%	12%
Share of population with bicycle routes available that are suitable to their Traffic Stress tolerance	12%	71%

Figure 37. Recommended Projects from Other Plans Map

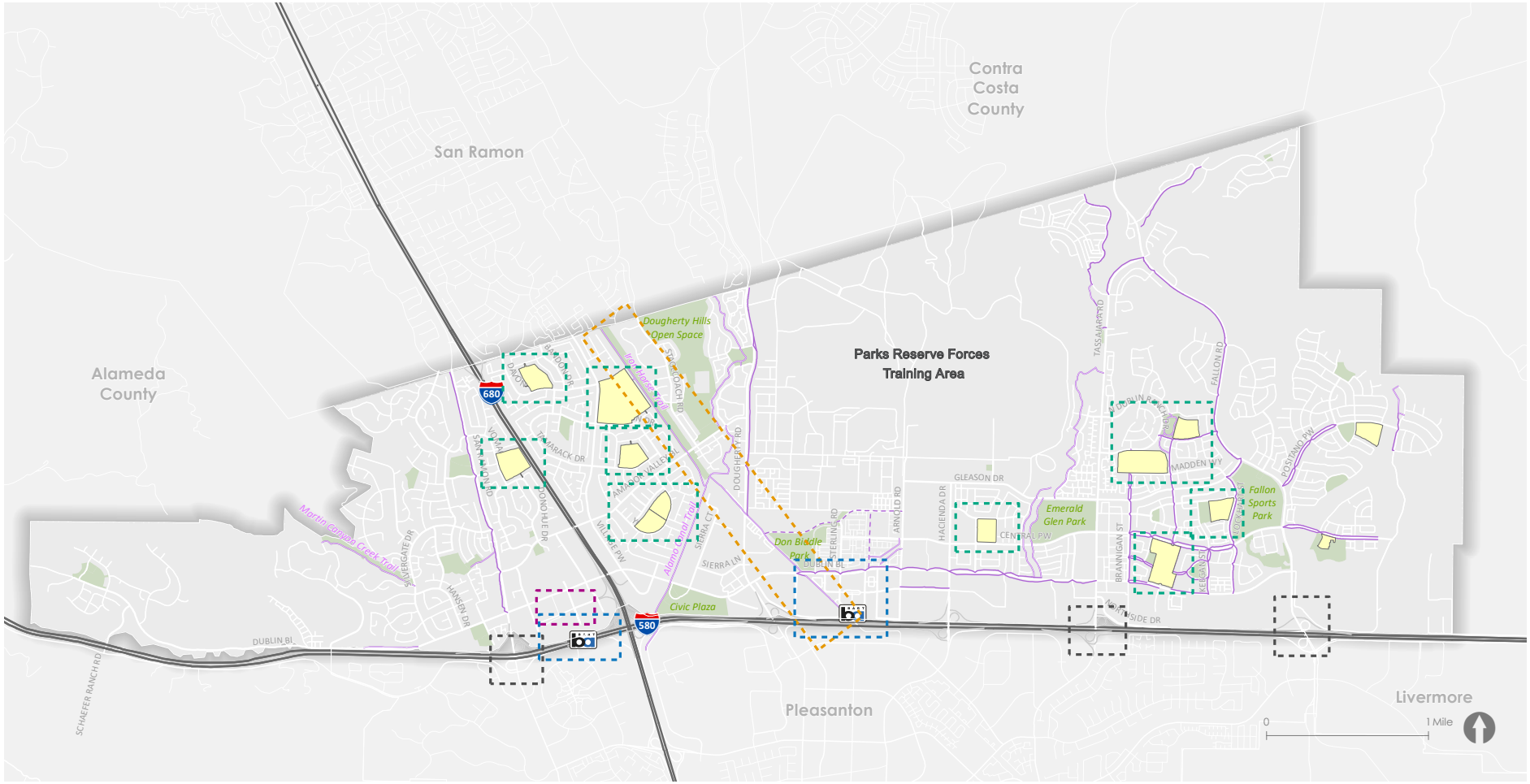


Figure 38. Existing Bike Access to BART Network

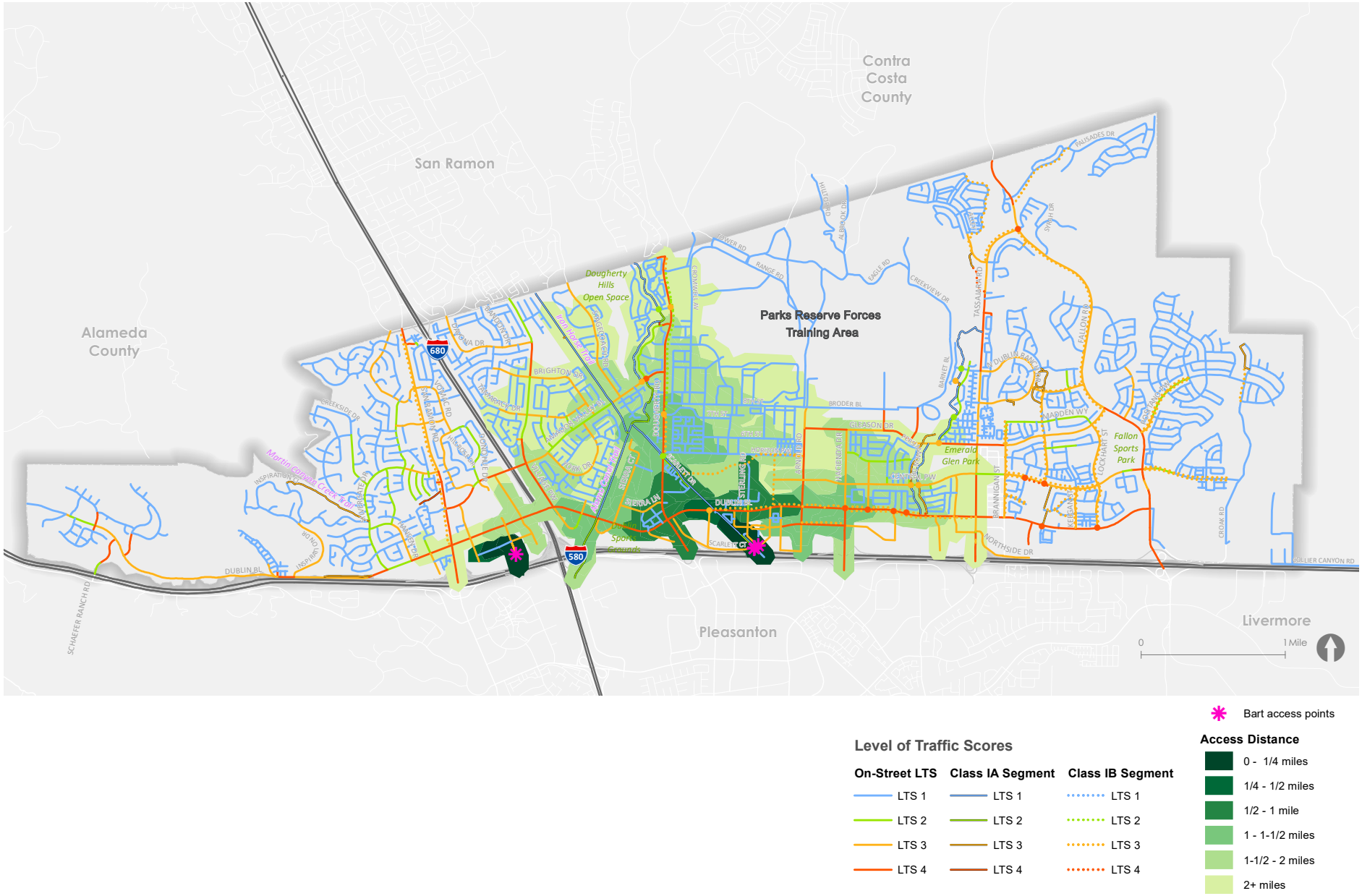
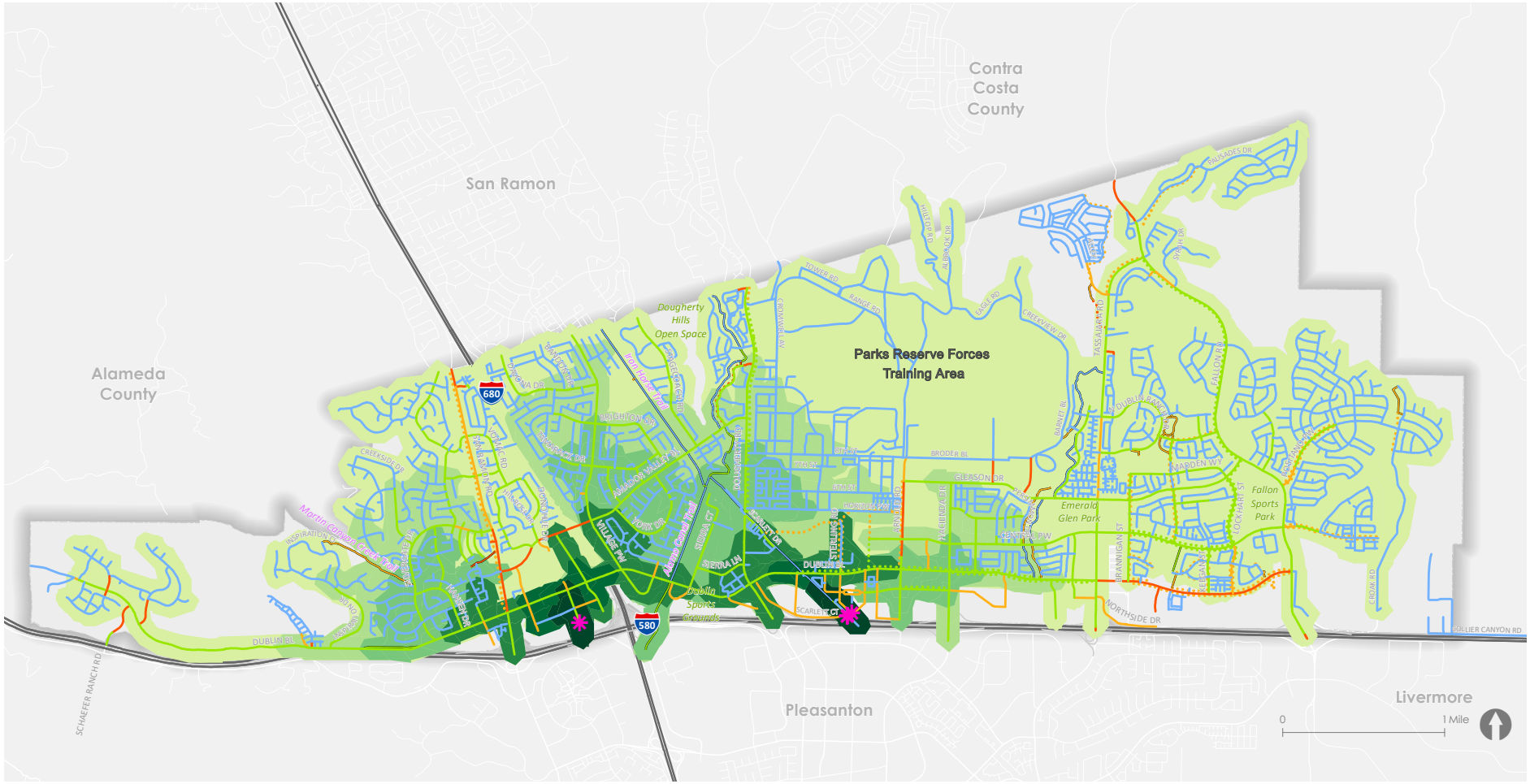


Figure 39. Recommended Bike Access to BART Network



Dublin residents with a bicycle route along streets that match their level of traffic stress tolerance would increase from 12 percent to 71 percent.

Bart access points

Level of Traffic Stress Scores

On-Street LTS	Class IA Segment	Class IB Segment
LTS 1	LTS 1	LTS 1
LTS 2	LTS 2	LTS 2
LTS 3	LTS 3	LTS 3
LTS 4	LTS 4	LTS 4

Access Distance

- 0 - 1/4 miles
- 1/4 - 1/2 miles
- 1/2 - 1 mile
- 1 - 1-1/2 miles
- 1-1/2 - 2 miles
- 2+ miles


5

5. RECOMMENDED PROGRAMS, POLICIES, AND PRACTICES

This chapter presents the Plan's recommended programs, policies, and practices. It provides recommended strategies and actions to support walking and biking in the city. It also discusses recommended policies that the City should implement as well as best practices that the City can undertake in developing programs to encourage active transportation in the city. The recommendations are organized into the following categories, which consist of focused topic areas and recommendations:

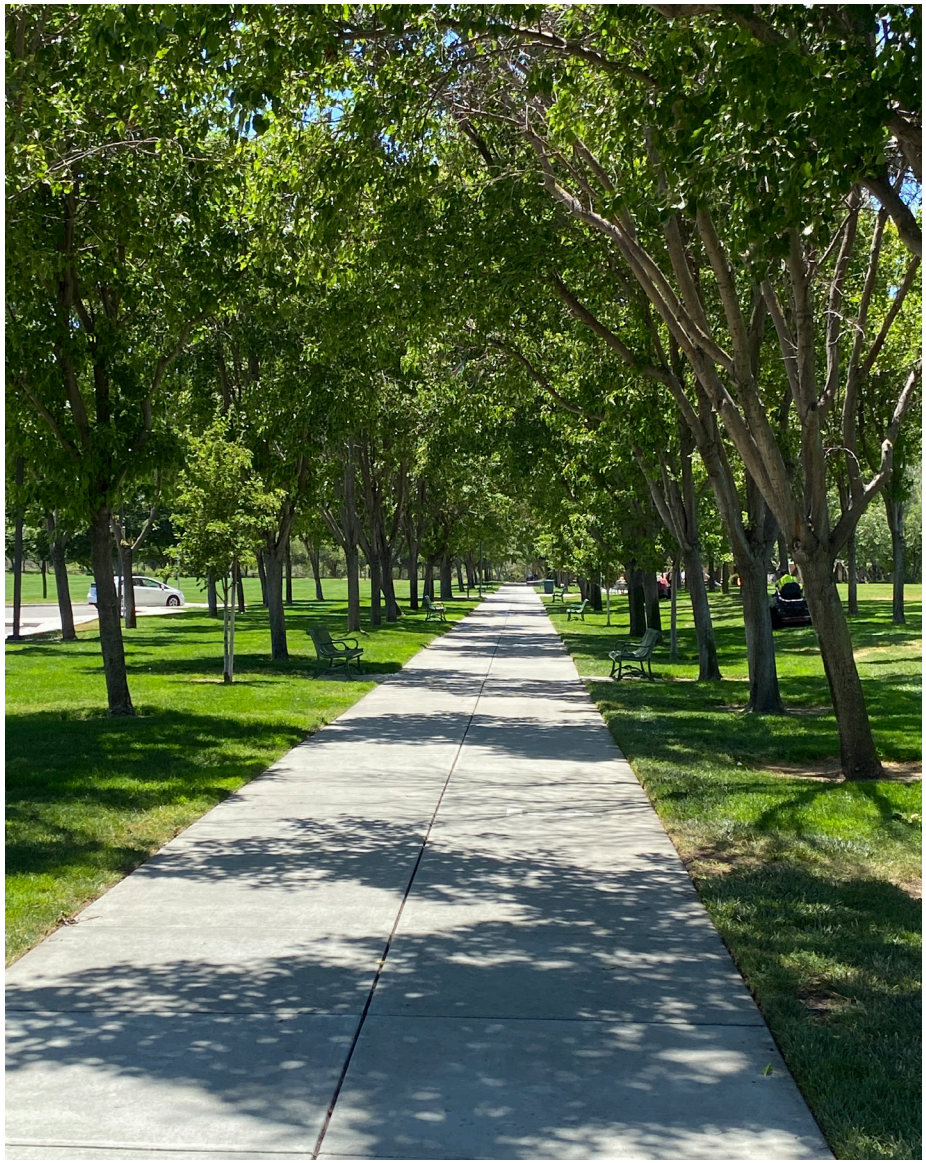
This chapter also references the Engineering and Design Guide, which was developed as part of this project, as a resource for recommended practices. The guide is included in Appendix D.

A walk- and bike-friendly Dublin requires investing in infrastructure as well as ongoing programs that encourage and support more people to choose sustainable transportation options. To advance the vision and mission of this Plan, the City of Dublin must envision new policy and program initiatives and expand existing ones.

The following program and policy recommendations are based on feedback from stakeholder interviews as well as guidance from the technical advisory committee, the bicycle and pedestrian advisory committee, a public survey, and online and in-person public engagement. Recommendations are organized into eight topic areas, each of which are supported by specific strategies and actions.

- A strategy is a high-level approach to reach an outcome that works toward larger goals.
- An action is a specific step that advances the strategy.

These strategies and their actions will guide the work of the City's bicycle and pedestrian programs and activities and complement the infrastructure recommendations presented in the previous section. Many factors contribute to the success of a specific action, or strategy—including partner agency support, funding opportunities, and alignment with technological advancement and industry change.



Dublin, CA Source: City of Dublin

COORDINATION AND COLLABORATION

Establish effective coordination processes and partnerships to advance bicycle and pedestrian projects.

The City cannot reach its goals without the support of other key agencies: those who own, operate, and manage streets and trails, those who provide transit service within the city, and the agencies who fund plans, projects, and programs that advance transportation goals and objectives. The Alameda County Transportation Commission, Metropolitan Transportation Commission, Caltrans, East Bay Regional Parks District (EBRPD), Bay Area Rapid Transit (BART), Livermore Amador Valley Transit Authority (LAVTA), Alameda County Flood Control District (ACFCD), United States Army Parks Reserve Forces Training Area (Camp Parks), Dublin Unified School District (DUSD), and adjacent jurisdictions all play critical roles in how streets and trails function. Because the reach of this Plan covers all city streets and trails regardless of ownership, the jurisdictional roles and responsibilities of agency partners at both the project and system-wide planning level are important and invaluable.

STRATEGIES AND ACTIONS

Establish protocols and procedures for coordination of bicycle and pedestrian projects with external agency stakeholders. Utilize existing regional channels, such as the Tri-Valley Transportation Council, to coordinate bicycle and pedestrian improvement projects that abut or intersect jurisdictional boundaries.

Coordinate with the East Bay Regional Park District (EBRPD) to provide park access opportunities with local trails and bike paths and promote green transportation access and compliant accessibility from public transit stops to the regional parks and trails. This is consistent with Public Access 5 and Public Access 7 in the EBRPD Master Plan.

Designate a City staff member and work with DUSD to designate a district staff person who is responsible for coordinating issues related to school connectivity and Safe Routes to School.

Develop templates for access easements and private property paths and coordinate with developers to advance completion of bicycle and pedestrian connections through and along private property. While the Plan includes specific recommendations for Class I multi-use paths, there is a larger need to highlight the opportunities that new development provides to create active transportation and greenway connections. Future developments should identify how trails can be implemented to complete connections with existing neighborhoods and across barriers. The City should consider how easements can be developed for the use of paths on private property as part of the development review process. Future development sites, especially along Dublin Boulevard, should be evaluated to include or contribute to paths that provide better linkages along and across the street.

Partner with advocacy groups and community-based organizations to increase awareness of and build support for pedestrian and bicycle projects. Advocacy groups and community-based organizations are trusted partners that can highlight and elevate community voices. These alliances promote stronger, more meaningful collaborations that can be crucial to advancing active transportation projects and improving project outcomes.

Work with Dublin Police Services to develop priorities and strategies to promote traffic safety (e.g., focused enforcement), particularly on high-injury streets and near schools.

DATA COLLECTION

Routinely collect trip and facility information to track trends, evaluate projects, and prioritize investments.

Data is crucial to make an evidence-based case for active transportation. Surveys, counts, and infrastructure data provide essential information about the built environment and user habits and experiences. This data can then help explain how projects affect neighborhoods and work toward achieving City and agency goals. By collecting location-specific data related to transportation behaviors, project design elements can be analyzed for their effectiveness and take advantage of opportunities to refine a project's design. Data can also help communicate a project's effects to the public and decision makers as well as track trends over time.

STRATEGIES AND ACTIONS

Develop a data collection plan and standard operating procedures for collection of speed survey data, especially along high-injury segments and other priority locations, such as streets near schools.

Develop a data collection plan and standard operating procedures for collection of bicycle and pedestrian counts, especially at activity centers and other priority locations, such as streets near schools.

Develop and maintain a spatial database and inventory of pedestrian and bicycle facilities and amenities, including pedestrian-oriented lighting, curb ramps, crosswalks, traffic control devices, bicycle parking, maintenance stations, and multimodal count and vehicle speed data.

Complement the City's bi-annual bicycle and pedestrian workshops with a written summary documenting progress implementing pedestrian and bicycle projects in the City. Post the written summary online, through social media channels, and provide a subscription option to facilitate distribution of information to interested community members.

Ensure that transportation impact analysis (TIA) conducted for new development adheres to the City's Current TIA Guidelines, addresses safety and comfort of people walking and biking, and includes the collection of bicycle and pedestrian counts. The safety analysis should be data-driven and generally follow best practices outlined in the FHWA's Incorporating Data-Driven Safety Analysis in Traffic Impact Analysis: A How-To Guide. https://safety.fhwa.dot.gov/rsdp/downloads/fhwasa19026.pdf.

DESIGN

Go beyond minimum design standards to incorporate safe walking and biking facilities into transportation projects.

Upcoming capital projects should be influenced by the Design Guide, which references the priority networks defined in this Plan, namely the pedestrian priority network and the all ages and abilities network (for biking and micromobility). Design decisions are often most difficult where these two priority networks overlap with major arterials, particularly when the public right of way is constrained. While challenging, these corridors, provide the greatest opportunity to make bold changes that will advance mode shift goals, reduce greenhouse gas emissions, and decrease vehicles miles travelled (VMT).

STRATEGIES AND ACTIONS

Adhere to recommendations in the Design Guide as part of the Plan. Additionally, the City should incorporate best practice design guidance coinciding with Plan updates (at a minimum) and make updates as needed to reflect changes in transportation options, local, State, and national best practices, and new information as a result of research and evaluation of available data. Require new infrastructure projects to adhere to the Design Guide established by this Plan by implementing a design review process that ensures compliance, including for construction work zones. This recommendation is consistent with Climate Action Plan 2030 Measure SM-7: Develop a Built Environment that Prioritizes Active Mobility and supporting actions that improve the pedestrian experience and create a built environment that prioritizes active mobility.

Develop design standards for the incorporation and use of pedestrian-scale lighting on new and reconstructed public streets, private streets, and within private development projects. Lighting can enhance the built environment and increase safety and security of people walking and biking. Pedestrian-oriented facility and intersection lighting helps motorists to see people walking and biking and avoid collisions. Pedestrian walkways, crosswalks, transit stops, both sides of wide streets, and streets in commercial areas should be well lit with uniform lighting levels to eliminate dark spots.

Establish a list of approved traffic calming strategies and devices to be routinely considered with restriping and other roadway improvement projects**.**

Continue to include bicycle and pedestrian considerations during review of new development. Follow best practices for site access and driveway design. example: consolidate or eliminate existing curb cuts and minimize new curb cuts; improve driveway sightlines; and, require parking ramps to include mirrors and messaging to prioritize people walking and biking. Rather than alerting people walking and biking that a car is approaching, messaging should alert drivers that a pedestrian or bicyclist is approaching.

Coordinate pedestrian and bicycle design with the City's Climate Action Plan and Green Stormwater Infrastructure Plan.

EMERGING TECHNOLOGIES AND INNOVATIONS

Leverage emerging transportation technologies to support travel by sustainable modes.

Today's rapidly advancing technology simultaneously provides opportunities for transformational change and introduces new challenges. Adapting to such change requires anticipating and keeping pace with technology and being responsive to community needs. The greatest challenge is to safely, efficiently, and equitably transition to a transportation future in which everyone benefits from transformational transportation technologies, including ride-hailing, car-sharing, micromobility options, mobile fare payment apps, multimodal trip planning apps, real-time travel information apps, e-commerce apps, and grocery or meal delivery services, just to name a few.

STRATEGIES AND ACTIONS

Develop flexible policies to support development of emerging technologies and alternative modes of transportation, including shared autonomous vehicles, connected vehicles, and micromobility-share services. Policy topics to consider include general provisions, operations, equipment and safety, parking and street design, equity, communications and community engagement, data, and metrics. Consistent with Strategy 3—Sustainable Mobility and Land Use in the Climate Action Plan 2030, the City will work with micromobility and last-mile transportation providers to allow the use of scooters and bike share programs in specific Dublin locations.

Monitor and evaluate the impact of emerging transportation technologies, such as bikeshare and scooter share, as well as prominent trends including e-bikes, on walking and biking in Dublin.

Formulate partnerships to advance implementation of innovative, ambitious, and scalable pilots, such as micromobility services and mobility hubs.

Leverage, manage, monitor, and design for new and emerging technologies that increase visibility and comfort of pedestrians and bicyclists. For example, assess digital wayfinding tools that provide real time information, explore emerging technology such as adaptive lighting, and test new technologies related to pedestrian and bicycle detection and data collection.

Build a culture of continuous improvement in knowledge, education, and communications around technologies that advance transportation options. Support and create opportunities for staff training and capacity building through payment of professional memberships and participation in conferences, webinars, and trainings.

Develop policy for use of e-bikes and personal mobility devices on multi-use paths and trails, and conduct public safety, education, and outreach campaigns to raise awareness of path etiquette.

FUNDING AND IMPLEMENTATION

Increase investment in walking and biking infrastructure and supporting programs. Identify and allocate resources to implement Plan recommendations.

Walkable and bikeable communities have considerable economic benefits. In addition to capital gains, investment in placemaking and active transportation yield intangible, societal benefits. However, investments in active transportation infrastructure and supporting programs consistently fall short of other transportation investments, and there is a demonstrated need to increase the funding and resources allocated to walking and biking.

STRATEGIES AND ACTIONS

Incorporate proposed bicycle and pedestrian projects identified in this Plan into the development review processes. Develop clear direction for City staff and the development community for implementing bicycle and pedestrian projects.

Continue to apply for local, state, and federal grants to support active transportation network improvements and programming.

Leverage potential grant and alternative funding strategies. Utilize dedicated funding for bicycle and pedestrian infrastructure projects.

Add priority bicycle and pedestrian projects identified in this Plan to the Capital Improvement Program.

Develop strategies for rapid network implementation and interim, or quick-build, design treatments. Utilize a quick-build approach, focusing on signing, striping, and markings and lower cost infrastructure modifications to implement near-term treatments that improve safety outcomes for people walking and biking.

Broaden public involvement efforts and seek to engage the community and solicit feedback on an ongoing basis. The City strongly encourages public comment, input, and involvement in a wide range of transportation issues. To increase opportunities for community engagement, the City should continue to provide multiple opportunities and various forums for feedback, provide regular/routine communication with the community, and proactively involve the public in the decision-making process.

OPERATIONS AND MAINTENANCE

Prioritize operations and maintenance of walking and biking infrastructure to make walking and biking safe and attractive options.

When people decide to walk and bike, the condition of sidewalks, crosswalks, signals, bike lanes, bikeways, and trails are key factors. Inadequately maintained sidewalks and bicycle facilities create hazardous conditions and disrupt network connectivity. Facility quality also influences travel choice and behavior. Implementation of pedestrian- and bicycle-friendly signal timing operations and maintaining good sidewalk, street, and trail conditions are critical components of an accessible bicycle and pedestrian network.

STRATEGIES AND ACTIONS

Utilize flexibility created through the passage of Assembly Bill 43 to set safe speed limits in key areas within the city. The City should implement changes authorized in AB 43 and utilize guidance outlined in City Limits from the National Association of City Transportation Officials (NACTO) to reduce default speed limits (1) on streets designated as safety corridors or high injury corridors (streets that have the highest number of serious injuries and fatalities); (2) in designated slow zones; and (3) on other designated corridors using a safe speed study. Under the provision that went into effect in January 2022, the City should move to lower speed limits by 5 miles per hour (from 25 mph to 20 mph or from 30 mph to 25 mph) in key business activity districts, streets where at least half of the property uses are dining or retail. Under the provision that goes into effect in June 2024, the City should reduce speeds by 5 mph on streets designated as safety corridors according to a definition that will be established by Caltrans's roadway standards manual.

Develop policy and guidance for modifications to traffic signal operations, including implementing leading pedestrian intervals, providing automatic recall, installing accessible pedestrian signals, implementing no right turn on red, and implementing protected-only left-turn phases.

Establish, update, and implement maintenance policies and standards for bicycle and pedestrian facilities on City right of way. Review the existing Class I Facility Maintenance Plan (2015), and develop a standard maintenance plan for bicycle facilities of all types in the city that accounts for factors such as signing and striping maintenance and sweeping protocols. Continue to collaborate with East Bay Regional Parks District to coordinate maintenance efforts for off-street facilities in the city. When deciding which facilities to maintain first, prioritize facilities with the highest ridership and those that provide access to schools, business districts, major employers, major transit centers, and other important destinations.

PROMOTION AND ENCOURAGEMENT

Encourage and promote increased use of sustainable travel modes, especially walking and biking.

Active travel, including walking and biking, benefits physical and mental health as well as the environment. To promote active travel, the City must provide convenient, safe, and connected walking and biking infrastructure. But implementing programs and campaigns that provide targeted information or incentives can also motivate people to walk or bike. The recommendations focus on non-infrastructure or programmatic elements that emphasize active travel as a convenient and healthy option.

STRATEGIES AND ACTIONS

Continue to create a digital and printed citywide pedestrian and bike network and amenities map.

Coordinate with local organizations to create programs and events that support active transportation and enhance the built environment. Sample topics include open streets, slow streets, temporary street closures, and pavement to parks, parklets, and plazas. This recommendation is consistent with the Downtown Dublin Streetscape Plan Guideline 3.2.6 Parklets and Guideline 3.2.7 Street Closures.

Continue to partner with Alameda CTC and DUSD to deliver Safe Routes to School assessments and programs. Encourage all Dublin schools to participate.

Consider steps to becoming a Bicycle Friendly Community through the League of American Bicyclists. The program provides a roadmap to improving conditions for bicycling and guidance to help make a community's vision for a better, bikeable community a reality. A Bicycle Friendly Community welcomes bicyclists by providing safe accommodations for bicycling and encouraging people to bike for transportation and recreation.

Encourage businesses to be recognized as Bicycle Friendly Businesses through the League of American Bicyclists. The program recognizes employers for their efforts to encourage a more welcoming atmosphere for bicycling employees, customers, and the community. Interested business can apply here: https://www.bikeleague.org/business.

Develop and implement a citywide transportation demand management (TDM) program to support additional transportation options, incentives to choose sustainable modes, and supplemental infrastructure improvements identified in this Plan. The TDM program should include guidance for staff on requirements for new development, including bicycle parking and policy strategies (such as density bonus for vehicle parking reductions) and vehicle parking strategies (such as shared and priced parking).

This recommendation is consistent with (1) Measure 3: Develop a Transportation Demand Management Plan in Strategy 3: Sustainable Mobility and Land Use Measure and (2) Measure ML-2: Reduce Municipal Employee Commute GHG Emissions; and (3) the Climate Action Plan 2030. The TDM Plan will identify strategies to help facilitate the move from single-occupancy vehicles to less carbon intensive transportation modes, like walking and biking.

SUPPORTING INFRASTRUCTURE AND AMENITIES

Provide supportive infrastructure and amenities to make walking and biking convenient and comfortable.

On any given street, careful and thoughtful design of the built environment affects accessibility, legibility, a sense of place, and security. The features that give a street character are often found in the frontage or amenity zones; key elements include supporting infrastructure like lighting, wayfinding, bicycle parking, benches, green stormwater infrastructure, transit stops, and mobility hubs.

STRATEGIES AND ACTIONS

Require short-term and long-term parking that accommodates various types of bicycles, skateboards, and scooters. Install new short- and long-term parking to meet the recommendations and requirements outlined in the Design Guide. For example, provide electric outlet near long-term parking to accommodate electric bicycles and provide bicycle parking spaces that allow for a footprint of 3 feet by 10 feet in a horizontal rack.

Consider adding or improving bicycle parking and providing other bicycle amenities, such as lighting, maintenance stations, shaded benches, and drinking fountains in City parks, at trailheads, community centers, transit stops, BART stations, Park and Ride lots, and in other high travel areas.

Develop a bicycle and pedestrian wayfinding plan and install wayfinding throughout the city. The plan should refer to and coordinate with recommendations identified in the Public Art Program and Downtown Dublin Streetscape Master Plan. This recommendation is consistent with the Downtown Dublin Streetscape Plan Guideline 4.2.2 Wayfinding.


6

6. IMPLEMENTATION STRATEGY

This Plan's infrastructure and programmatic recommendations provide strategies and actions to help Dublin become a more walkable and bikeable city. Implementation of these recommendations will occur over time, depending on available resources and funding sources. This chapter provides an overview and outcomes of the prioritization process, estimated project costs, and a matrix of applicable funding sources to advance implementation.

PRIORITIZATION PROCESS

The project recommendations include a total of 56.8 miles across 54 segment projects; 18 trail projects; 16 freeway crossing projects; 5 pedestrian crossing projects; and 33 intersection projects. Prioritizing these projects is essential to optimize use of staff time and resources.

The National Cooperative Highway Research Program (NCHRP) Report 803: ActiveTrans Priority Tool (APT) prioritization process was used to identify priority locations for pedestrian and bicycle projects that improve conditions for people walking, biking, and rolling in Dublin.[6] The prioritization process and outcomes are summarized in this section and additional discussion is provided in appendix F.

The APT methodology uses a standard set of terms and definitions to describe the different steps in the process. The following definitions apply within the APT:

- **Factors** are categories used to express community or agency values considered in the prioritization process and contain groups of variables with similar characteristics.
- **Weights** are the numbers used to indicate the relative importance of different factors based on community or agency values.
- **Variables** are characteristics of roadways, households, neighborhood areas, and other features that can be measured, organized under each factor. The terms *variables* and *evaluation criteria* may be used interchangeably.
- **Scaling** is the process of making two variables comparable to one another (e.g., number of collisions versus population density).

The prioritization factors and evaluation criteria (or variables) shown in Table 13 align with the Plan's goals, and they were developed in collaboration with the City, the Technical Advisory Committee and the Bicycle and Pedestrian Advisory Committee. Variables were given equal weight in the analysis.

6 Peter A. Lagerwey, et al. Pedestrian and Bicycle Transportation Along Existing Roads—*ActiveTrans Priority Tool Guidebook,* NCHRP Report 803, Project No. 07-17 (2015), http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_803.pdf.

Table 13. Prioritization Factors and Variables

FACTOR	VARIABLE	NOTES	PEDESTRIAN	BICYCLE
Safety	High-injury corridors	Prioritize locations identified along the bicycle and pedestrian high-injury networks. This variable aligns with the *goal enhance safety*.		
Social Equity	Youth and senior population	Prioritizes locations with high scores indicating where investment would promote positive outcomes for vulnerable road users (youth and senior populations). This variable aligns with the goals *improve connectivity and enhance accessibility*.		
Connectivity	Demand analysis	Prioritize locations with high potential for walking and biking to unlock latent demand. This variable aligns with the goal *improve connectivity*.		
	Proximity to schools	Prioritize locations within one mile of schools to provide increased opportunities to bike and walk to school. This variable aligns with the goal *improve connectivity*.		
Quality of Service	Bicycle level of traffic stress	Prioritize locations based on the presence of existing high-stress riding facilities. This variable aligns with the goal *increase walking and biking*.		
	Sidewalk gaps	Prioritize locations with sidewalk gaps that may create barriers for people walking. This variable aligns with the goal *improve connectivity*.		
Major Barriers	Freeway crossings	Prioritize improving safety and quality of service for ramp terminal intersection and freeway crossings. This variable aligns with the goal *improve connectivity*.		
Consistency with Past Planning	Previously identified projects	Prioritize locations of pedestrian and bicycle projects that were identified in the previous plan. This variable aligns with the goal *prioritize investments*.		

IMPLEMENTATION PLAN

After applying the evaluation criteria and conducting the prioritization analysis, three tiers of recommendations emerged.

The infrastructure projects were divided into three tiers, representing the following:

- **Tier I:** High priority projects with likely funding or implementation sources
- **Tier II:** High priority projects with no identified funding source
- **Tier III:** Lower priority investments that support a full low-stress walking, biking, and rolling network across the City

TIER I PROJECTS

Nine segment projects, one trail projects, two crossing project, and three intersection projects were identified as Tier I projects. The Tier I projects include a complete streets study, striping and signage for high-stress streets scheduled for repaving over the next three years, four new actuated crossings near schools, and a bicycle and pedestrian overcrossing bridge. Tier I projects, those most likely to be implemented in the next several years, are shown in Figure 40.

TIER II PROJECTS

Ten segment projects, one crossing project, and seven intersection projects were identified as Tier II projects. Tier II projects were identified using the same prioritization criteria and framework as Tier I projects, with input from City staff and through public engagement. Tier II projects are high priority projects that may require additional feasibility analysis and concept design development prior to implementation. The list of Tier II projects is presented in Table 15 and the comprehensive prioritized list of projects is presented in Appendix C.

TIER III PROJECTS

Tier III projects include the remaining recommendations that increase the safety and comfort of people walking, biking, and rolling in the city.

While Tier III projects are not listed in the implementation plan projects in Table 15, they can be found in the full list of projects provided in Table 6 in the Recommended Bicycle and Pedestrian Networks section.

CITYWIDE POLICIES AND PROGRAMS

A total of 41 strategies and actions were recommended in one of eight policy and program topic areas. These recommendations will guide the City's bicycle and pedestrian programs and activities and complement the infrastructure recommendations.

COST ESTIMATES

The total cost of all the projects identified in this Plan is between $103 and $214 million (see Table 14). This cost includes adding bicycle facilities, upgrading bicycle facilities, updating or adding pedestrian crossings, updating pedestrian facilities, adding street trees, redesigning interchange ramps, and adding signage.

Table 14 shows the estimated cost for all projects, including planning-level costs and soft costs for engineering, design support, and contingency. Although the cost estimates vary most based on bicycle facility type and how that facility will be implemented, pedestrian and transit costs are equally important and included on a per-mile basis in each cost as well. Costs for the individual corridors can be found in the full project list in appendix G. Cost estimates' high ends consider a need to move the curb, therefore upgrading all pedestrian facilities (sidewalks, street trees, ADA ramps, etc.) while the low costs can be implemented through restriping the roadway. If all segment projects were able to be implemented through roadway reorganization, restriping, or minor additional treatments, it would cost approximately $103 million to implement the Plan. If reconstructing the curb to implement each segment project, the Plan is expected to cost about $214 million.

Planning-level cost estimates vary depending on project context, which includes type of facility, existing conditions, right of way acquisition, and desired functional and aesthetic improvements like landscaping or hardscaping. Project costs were adjusted to include variable costs for engineering, design support, and contingency. Cost estimates were calculated using a combination of inputs from the City and the Federal Highway Administration (FHWA) Pedestrian and Bicycle Safety Guide. Moving forward, the City will need to develop detailed estimates during the preliminary engineering stage to calculate more accurate project costs. These more-detailed estimates are important due to the varying costs of obtaining right of way, construction, drainage, and grading. Right of way should also be considered in preliminary engineering, as the listed cost estimates do not include right of way costs. Many projects can be implemented without purchasing additional right of way by reallocating space within the existing right of way.

Cost estimates for support programs are not provided, as the costs to implement these programs can vary greatly. Prior to implementing support programs, the City should outline the necessary element of each program and establish a cost. For example, to understand what an open streets or slow streets program would need, the City could consider questions such as how often streets would need to close and how much those closures would cost.

Table 14. Total Project Costs

PROJECT TYPE	MILES	LOW COST	HIGH COST
Shared Lane (Class III)	12.4 miles	$1,698,000	$1,698,000
Bike Lane (Class IIA)	3.1 miles	$4,177,000	$17,757,000
Buffered Bike Lane (Class IIB)	17.0 miles	$3,239,000	$39,421,000
Complete Streets Study: Separated Facility (Class I or Class IV)	10.4 miles	$13,440,000	$52,048,000
Complete Streets Study: Consider Improvements to Existing Sidepath (Class IB)	4.9 miles	$5,460,000	$8,307,000
Shared Use Path/Paved Trail (Class IA)	7.9 miles	$40,428,776	$40,550,480
Speed Reduction Evaluation (exclusively)	1.3 miles	$139,000	$2,753,000
Freeway Crossing Projects	16	$17,840,000	$17,840,000
Pedestrian Crossing Projects	5	$9,520,000	$9,520,000
Intersection Projects	33	$7,393,000	$24,274,000
Total		**$ 103,335,000**	**$ 214,168,000**

Table 15. Implementation Plan List: Tier I and Tier II Projects

PROJECT ID	TIER	PROJECT DESCRIPTION	PROJECT LOCATION	TO	FROM	LOW COST*	HIGH COST**
S-1	Tier I	Study opportunities and create designs for traffic calming, striping, and signs to create Class III bikeways	Various locations for Class III facilities/neighborhood bikeways: Tamarack Drive, Davona Drive, St. Patrick Way, Lucania Street, Brighton Drive, Grafton Street, Antone Way, South Bridgepointe Lane, and Brannigan Street			$25,000	$25,000
S-2	Tier I	Restripe to add buffer to the Class II facilities; if possible, provide wide buffer (greater than 3') for potential to add vertical separation to convert to Class IV in the future; as a future project phase, provide a separated facility (Class I or Class IV)	Gleason Drive	Arnold Road	Brannigan Street	$239,000	$176,000
S-3	Tier I	Restripe to add buffer to the Class II facilities; if possible, provide wide buffer (greater than 3') for potential to add vertical separation to convert to Class IV in the future; as a future project phase, provide a separated facility (Class I or Class IV)	Hacienda Drive	Southern City Limits	Gleason Drive	$106,000	$176,000
S-4	Tier I	Restripe to add buffer to the Class II facilities; if possible, provide wide buffer (greater than 3') for potential to add vertical separation to convert to Class IV in the future; as a future project phase, provide a separated facility (Class I or Class IV)	Dublin Boulevard	Scarlett Drive	Tassajara Road	$229,000	$176,000
S-5	Tier I	Restripe to add buffer to the Class II facilities; if possible, provide wide buffer (greater than 3') for potential to add vertical separation to convert to Class IV in the future and evaluate opportunities to lower speed limit; if speeds are not lowered, as a future phase provide a separated facility (Class I or Class IV)	Arnold Road	Dublin Boulevard	Altamirano Ave	$53,000	$176,000
S-6	Tier I	Convert to a Class IIB bikeway through restriping	Grafton Street	Kohnen Way	Antone Way	$42,000	$176,000
S-7	Tier I	Convert to a Class IIB bikeway by restriping travel lanes on Tassajara, Dougherty, and Hacienda at the I-580 overcrossings	Tassajara Road, Dougherty Road, and Hacienda Drive	Southern City Limits	Dublin Boulveard	$150,000	$176,000
S-8	Tier I	Restripe to add buffer to the Class II facilities; if possible, provide wide buffer (greater than 3') for potential to add vertical separation to convert to Class IV in the future; as a future project phase, provide a separated facility (Class I or Class IV)	Tassajara Road	North Dublin Ranch Drive	Rutherford Drive	$138,000	$5,334,000
S-9	Tier I	Conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment	Village Parkway	Amador Valley Boulevard	Northern City Limits	$945,000	$5,601,000
S-10	Tier II	Implement the traffic calming, striping, and signs plans and designs created in project S-1 to create Class III bikeways	Various locations for Class III facilities/neighborhood bikeways: Tamarack Drive, Davona Drive, St. Patrick Way, Lucania Street, Brighton Drive, Antone Way, South Bridgepointe Lane, and Brannigan Street			$135,000	$691,000
S-11	Tier II	Restripe to add buffer to the Class II facilities and evaluate opportunities to lower speed limit or provide a Class IV or Class I facility	Village Parkway	Dublin Boulevard	Amador Valley Boulevard	$91,000	$5,334,000

* Restriping ** Full Reconstruction

PROJECT ID	TIER	PROJECT DESCRIPTION	PROJECT LOCATION	TO	FROM	LOW COST*	HIGH COST**
S-12	Tier II	Evaluate opportunities to reduce speed limit along this corridor	Tassajara Road	Palisades Drive	North Dublin Ranch Drive	$18,000	$25,000
S-13	Tier II	Conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment	Dougherty Road	Dublin Boulevard	Southern city limits	$274,000	$5,601,000
S-14	Tier II	Conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment	Amador Valley Boulevard	Stagecoach Road	Dougherty Road	$331,000	$5,601,000
S-15	Tier II	Upgrade pedestrian facility to improve comfort, especially across the I-580 overcrossing, conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate for this location, and implement the chosen separated bicycle treatment. This project is anticipated to be implemented after the lower cost solution in S-7.	Tassajara Road	Gleason Drive	Southern City Limits	$505,000	$5,601,000
S-16	Tier II	Conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment	Dublin Boulevard	Inspiration Drive	San Ramon Road	$1,212,000	$5,601,000
S-17	Tier II	Conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment	Dublin Boulevard	Inspiration Drive	Western extent	$1,653,000	$5,601,000
S-18	Tier II	Upgrade pedestrian facility to improve comfort, especially across the I-580 overcrossing, conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate for this location, and implement the chosen separated bicycle treatment.	Fallon Road	Gleason Drive	Southern city limits	$1,322,000	$5,601,000
S-19	Tier II	Make improvements to adjacent sidepaths to provide two-way bicycle and pedestrian connectivity by evaluating needs for and implementing wayfinding, signing, and striping improvements, intersection improvements, and crossings, as needed.	Fallon Road	Gleason Drive	Tassajara Road	$238,000	$999,000
S-20	Tier II	Add buffered bike lanes along the Dublin Boulevard Extension	Dublin Boulevard	Tassajara Road	Eastern city limits	$259,000	$5,466,000
S-21	Tier II	Work with Contra Costa County to design and implement Class IIB facilities	Tassajara Road	Palidsades Drive	Northern City Limits	$80,000	$5,466,000
S-22	Tier II	As recommended in the 2014 plan, upgrade to separated Class I facilities providing sufficient space to reduce conflicts between people walking and biking; evaluate opportunities to improve walkability by reducing obstructions; enhance median and lighting along Dublin Boulevard under I-680; improve sidewalk connection across commercial driveway and at bus stop (east of Regional Street); add pedestrian-scale lighting under I-680 Overpass. Install barrier in median underneath overcrossing to prohibit pedestrian crossings.	Dublin Boulevard	San Ramon Road	Dougherty Road	$3,304,000	$4,596,000

* Restriping ** Full Reconstruction

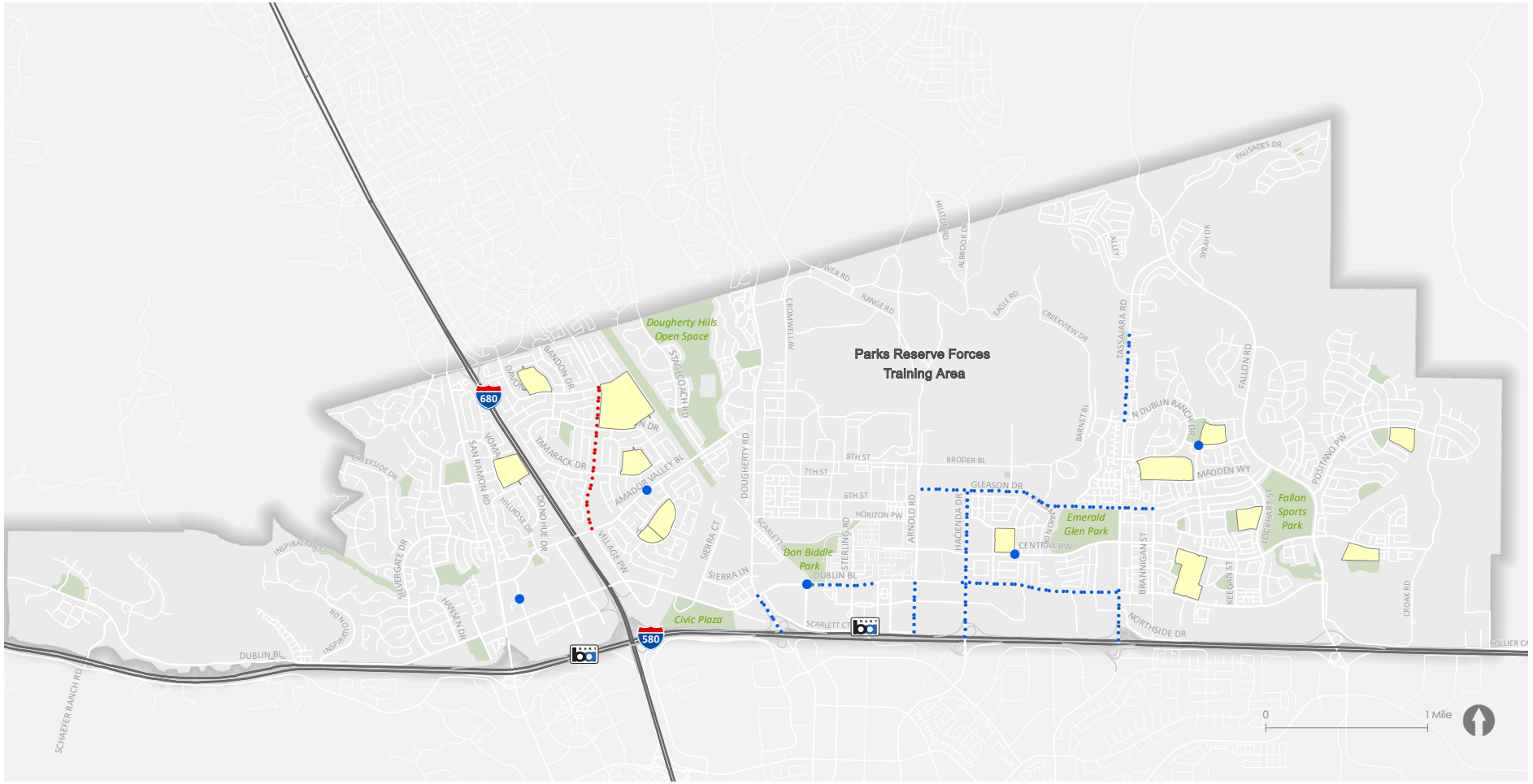
PROJECT ID	TIER	PROJECT DESCRIPTION	PROJECT LOCATION	TO	FROM	LOW COST*	HIGH COST**
S-23	Tier II	Conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment	Dublin Boulevard	Dougherty Road	Scarlett Drive	$497,000	$4,375,000
S-24	Tier II	Conduct a complete streets study to determine whether Class I or Class IV facilities are most appropriate and feasible for this location and implement the chosen separated bicycle treatment	Dublin Boulevard	Tassajara Road	Fallon Road	$1,322,000	$5,740,000
S-25	Tier II	Upgrade to a Class IIB Bicycle lane and evaluate opportunities to lower the speed limit or provide Class IV or Class I facility	Central Parkway	Tassajara Road	Fallon Road	$227,000	$4,558,000
T-1	Tier I	Implement Phase I and II of the Iron Horse Nature Park Master Plan to create park space and trail access and connectivity improvements	Iron Horse Regional Trail	0	0	$11,560,000	$11,560,000
T-2	Tier II	Add trail connection from Regional Street to Amador Plaza Road	Downtown Dublin	Regional Street	Amador Plaza Road	$765,000	$765,000
T-3	Tier II	With development, add Class I connection between Dublin Boulevard and Central Parkway, just east of Tassajara Road	East of Tassajara approximately 500 ft	Dublin Boulevard	Central Parkway	$621,000	$621,000
C-1	Tier I	Provide mid-block crossing (RRFB or other actuated treatment)	Regional Street between Dublin Boulevard and Amador Valley Boulevard			$320,000	$320,000
C-2	Tier I	Provide pedestrian and bicycle overcrossing to connect to Don Biddle Community Park	Dublin Boulevard and Iron Horse Trail			$6,318,000	$6,318,000
C-3	Tier II	Add connection from Sierra Court to the Alamo Canal/Iron Horse Trail network	Sierra Court cul-de-sac			$2,132,000	$2,132,000
I-1	Tier I	Provide crossing improvements (RRFB or other actuated treatment) to provide more visibility of people walking/biking, especially to school	Central Parkway/Aspen Street			$320,000	$320,000
I-2	Tier I	Provide crossing improvements (RRFB or other actuated treatment) to provide more visibility of people walking/biking, especially to school	Grafton Street/Antone Way			$320,000	$320,000
I-3	Tier I	Provide crossing improvements (RRFB or other actuated treatment) to provide more visibility of people walking/biking, especially to school	Amador Valley Boulevard/Burton Street			$320,000	$320,000
I-4	Tier II	As recommended in the 2014 plan, improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements. Remove slip lanes; reduce curb radii on all corners; install curb extensions on the SE and SW corners; install directional curb ramps.	Village Parkway/Amador Valley Boulevard			$123,000	$972,000

* Restriping ** Full Reconstruction

PROJECT ID	TIER	PROJECT DESCRIPTION	PROJECT LOCATION	TO	FROM	LOW COST*	HIGH COST**
I-5	Tier II	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.	Village Parkway/Tamarack Drive			$123,000	$972,000
I-6	Tier II	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.	Village Parkway/Brighton Drive			$123,000	$972,000
I-7	Tier II	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.	Dublin Boulevard/Hibernia Drive			$123,000	$972,000
I-8	Tier II	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.	Dublin Boulevard/Arnold Road			$123,000	$972,000
I-9	Tier II	Improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements.	Dublin Boulevard/Hacienda Drive			$123,000	$972,000
I-10	Tier II	As recommended in the 2014 plan, improve safety for people walking and biking by implementing strategies like protected intersection treatments, signing, bike lane skip striping through the intersection, bike boxes, leading pedestrian intervals, or by separating bicyclists and pedestrians from turning movements. Reduce width of SB right-turn lane and reduce turning radii; remove NB right-turn slip lane and reduce curb radii; reduce curb radii on NE and SE corners; straighten crosswalks.	Dublin Boulevard/Village Parkway			$123,000	$972,000
					Total Tier I	$21,085,000	$27,589,000
					Total Tier II and Tier III	$82,250,000	$186,580,000
					Total (all tiers)	$103,335,000	$ 214,169,000

* Restriping ** Full Reconstruction

Figure 40. Tier I Projects Map



Proposed Point Project
- Spot Improvement

Proposed Segment Project
- Shared Lane (Class III)
- Bike Lane (Class IIA)
- Buffered Bike Lane (Class IIB)
- Complete Streets Study: Separated Facility (Class I or Class IV)
- Complete Streets Study: Consider Improvements to Existing Sidepaths
- Class I Path Project
- Existing Class IA Shared Use Path
- Existing Class IB Sidepath

- Parks
- Public Schools
- BART Stations

FUNDING SOURCES

Active transportation projects in Dublin have typically been funded through a combination of ballot measure monies (e.g., Alameda County Measure B and BB), the City General Fund, developer-funded projects, and State, regional, and federal grants. There are many funding sources and programs available at the federal, state, regional, countywide, and local levels for pedestrian and bicycle projects. The Federal Highway Administration (FHWA) alone identifies almost 20 different sources across United States Department of Transportation (USDOT) funding programs that can be used to support active transportation improvements such as bike racks for transit vehicles and new sidewalks and separated bike lanes.

On November 15, 2021, President Joe Biden signed into law the Bipartisan Infrastructure Law (BIL), also called the Infrastructure Investment and Jobs Act (IIJA). The law authorizes $1.2 trillion for federal investments in transportation, broadband access, clean water, and electric grid renewal. The USDOT will distribute funds over five years through more than two dozen targeted competitive grant programs for initiatives like better roads and bridges, investments in public transit, and resilient infrastructure. This program and other relevant funds are summarized in Table 16 along with current funding levels, applicable project type, and limitations.

Table 16. Funding Sources

FUND NAME	PROJECT ELIGIBILITY & LIMITATIONS	FUNDING LEVELS
LOCAL		
General Fund	Capital improvements without other funding sources regularly available. Relevant projects receiving funding through the General Fund as identified in the 2022-2027 Capital Improvement Program (CIP) include Citywide Bicycle and Pedestrian Improvements, Downtown Dublin Street Grid Network, and San Ramon Trail Lighting.	Approximately $700,000 was allocated to projects that included bicycle and pedestrian enhancements in 2021-2022 and a total of $342,000 has been allocated over the 2022-2027 period, per the CIP.
Impact Fees & Developer Mitigation	Capital improvements, including streetscape enhancements, that would improve conditions for people walking and biking. Current impact fees include Eastern Dublin Transportation Impact Fee, Western Dublin Transportation Impact Fee, Dublin Crossing Transportation Fee, Tri-Valley Transportation Development Fee, and Dublin Crossing Fund.	Impact fees contributed $2,400,000 in 2021-2022 and are anticipated to fund almost $1,000,000 of pedestrian and bicycle-related projects 2022-2027. The St Patrick Way Extension is a developer-funded project (about $3,750,000) that includes pedestrian and bicycle facilities.

FUND NAME	PROJECT ELIGIBILITY & LIMITATIONS	FUNDING LEVELS
COUNTYWIDE AND REGIONAL		
Measure B and Measure BB	Bicycle and Pedestrian Program: Capital project, programs, and plans that directly address bicycle and pedestrian access, convenience, safety, and usage. Cannot be used for repaving an entire roadway or for programs that exclusively serve city staff. Local Streets and Roads Program: Capital projects, programs, maintenance, or operations that directly improve local streets and roads and local transportation. Cannot be used for programs that exclusively serve city staff.	MEASURE B: $1,400,000 allocated in 2021-2022 & $300,000 allocated in 2022-2027 to Annual Street Repaving, Citywide Bicycle and Pedestrian Improvements and the Iron Horse Trail Bridge at Dublin Boulevard. MEASURE BB: $6.5 million of Measure BB funds was allocated to bicycle and pedestrian projects in 2021-22, including $5.2 million from Measure BB Grants. Approximately $4.7 million has been allocated in 2022-27.
Measure RR	Projects are required to make the BART system safer, more reliable, and to reduce traffic.	$1,500,000 allocated to Iron Horse Bridge at Dublin Boulevard in 2021-22 and no funding is allocated to bicycle or pedestrian projects in 2022-27.
One Bay Area Grant (OBAG)	Local street and road maintenance, streetscape enhancements, bicycle and pedestrian improvements, Safe Routes to School projects, and transportation planning. Most projects must be in a priority development area (PDA) or have a connection to one.	$916 million in OBAG 2 regionwide[7] $750 million in OBAG 3 for projects from 2023-26 with additional funds anticipated through the 2021 Bipartisan Infrastructure Law.[8]
Transportation Development Act (TDA) Article 3[9]	Design and construction of walkways, bike paths, bike lanes, and safety education programs. Project must be in an adopted plan. All projects must be reviewed by Bicycle and Pedestrian Advisory Committee (BPAC).	$3 million annually every 2–3 years regionwide
STATEWIDE		
Statewide Gas Tax Revenue	Construction, engineering, and maintenance. Ineligible expenses include decorative lighting, transit facilities, park features, and new utilities.	$2 million allocated in 2021-22 and $3.7 million allocated in 2022-27.
Road Maintenance and Rehabilitation Account (RMRA)	Road maintenance and rehabilitation, safety improvements, railroad grade separations, traffic control devices, and complete streets components. If it has a pavement condition index (PCI) of 80 or more, a city may spend its RMRA funds on other transportation priorities. Dublin has a PCI greater than 80.[10]	1.8 million in 2021-22 and $5.6 million in 2022-27 for Annual Street Resurfacing and Iron Horse Bridge at Dublin Boulevard

7 https://mtc.ca.gov/funding/federal-funding/federal-highway-administration-grants/one-bay-area-grant-obag-2

8 https://mtc.ca.gov/funding/federal-funding/federal-highway-administration-grants/one-bay-area-grant-obag-3

9 https://mtc.ca.gov/our-work/fund-invest/investment-strategies-commitments/transit-21st-century/funding-sales-tax-and-0.

10 https://www.dublin.ca.gov/1955/Pavement-Management-Program

FUND NAME	PROJECT ELIGIBILITY & LIMITATIONS	FUNDING LEVELS
Active Transportation Program (ATP)[11]	Infrastructure projects and plans, including bicycle and pedestrian projects, active transportation plans, quick build projects, and Safe Routes to School Plans, as well as education and encouragement activities. Funding cannot be used for funded projects or for cost increases. Scoring criteria favors projects located in or benefiting equity priority (disadvantaged) communities.	$1.65 billion for Cycle 6 (2023) up from $223 million in Cycle 5. The State budget bill added $1 billion in June 2022 after applications were submitted. Biannual program
Sustainable Communities	Multimodal transportation and land use planning projects that further the region's Sustainable Communities Strategy. Requires 11.47 percent local match.	$29.5 million, split between statewide and regional competitive funds
Strategic Partnerships	Planning efforts that identify and address statewide, interregional, and regional transportation deficiencies on the state highway system in partnership with Caltrans. Requires 20 percent local match. Would require Dublin to apply as sub-applicant to Metropolitan Transportation Commission (MTC).	$4.5 million, $3 million of which is dedicated to projects related to transit
State Highway Operation and Protection Program (SHOPP)[12]	Repair and preservation, emergency repairs, safety improvements, and some highway operational improvements. Elements include pavement, bridges, culverts, and transportation management systems. Projects must be on the California State Highway System.	$18 billion statewide for 4 years Portfolio updated every 2 years
State Transportation Improvement Program (STIP)	Any transportation project eligible for State Highway Account or federal funds. Projects need to be nominated in Regional TIP, but MTC may nominate fund categories.	$71 million for Alameda County[13] Updated every 2 years
FEDERAL		
Active Transportation Infrastructure Investment Program	Projects that connect active transportation infrastructure.	$1 billion nationally
Highway Safety Improvement Program (HSIP)	Focuses on infrastructure treatments with known crash reduction factors, such as countermeasures at locations with documented collision and safety issues.	$263 million allocated statewide for 2022
Rebuilding American Infrastructure with Sustainability and Equity (RAISE)	Major infrastructure projects, especially with road, bridge, transit, or intermodal components. Minimum grant size of $5 million. It is possible to propose a program (or network) of projects that address the same transportation challenge.	$2.275 billion nationally
Safe Streets & Roads for All (SS4A)	Comprehensive safety action plan development and implementation.	$6 billion nationally
PROTECT Resilience Grants	Transportation resilience planning and project implementation.	$1.4 billion nationally
Reconnecting Communities	Removing or retrofitting highways to restore community connectivity.	$1 billion nationally

11 https://catc.ca.gov/programs/active-transportation-program

12 http://www.dot.ca.gov/hq/transprog/SHOPP/2018_shopp/2018-shopp-adopted-by-ctc.pdf

13 https://catc.ca.gov/-/media/ctc-media/documents/programs/stip/2022-stip/2022-adopted-stip-32522.pdf

FUND NAME	PROJECT ELIGIBILITY & LIMITATIONS	FUNDING LEVELS
SMART Grants	Demonstrating projects utilizing innovative technology to improve transportation efficiency and safety.	$1 billion nationally
National Infrastructure Project Assistance grants program (Mega)	Highway or bridge project, including grade separation or elimination project. Supports large, complex projects that are difficult to fund through other means and that are likely to generate national or regional economic, mobility, or safety benefits. Minimum grant size of $100 million. It is possible to propose a program, or network, of projects that address same transportation challenge.	$5 billion nationally (2022–2026)
Nationally Significant Multimodal Freight and Highways Projects grants program (INFRA)	Multimodal freight and highway projects of national or regional significance to improve the safety, efficiency, and reliability of the movement of freight and people in and across rural and urban areas. Minimum project size of $100 million. A network of projects can be proposed that address same transportation problem.	$7.25 billion nationally (FY 2022–2026)
Healthy Streets Program	Projects that reduce the urban heat island and improve air quality.	$500 million
Bridge Investment Program	Bridge replacement, rehab, preservation, and protection.	$15.8 billion
Congestion Management & Air Quality (CMAQ)	Transportation projects or programs that contribute to attainment of national air quality standards. Must reduce air pollution and be included in the regional transportation plan.	Estimated $2.54 billion nationally in 2022, $506 million of which apportioned to California
Surface Transportation Block Grant (STBG)	Improve conditions and performance on any federal-aid highway, bridge, or tunnel projects on a public road; includes pedestrian and bicycle infrastructure. In general, funds aren't used on local roads, but there are many exceptions to this.[14]	$13.835 billion estimated nationally in 2022; $1.2 billion of which is apportioned to California Divided into population-based and statewide funds.

14 https://www.fhwa.dot.gov/fastact/factsheets/stbgfs.cfm.

PERFORMANCE MEASURES

Setting performance measures helps track progress toward goals and document the results of investments in biking, walking, and rolling. Performance measures and monitoring also helps to identify opportunities for improvement. Table 17 presents the performance measures and desired trends that have been established to track progress toward achieving this Plan's goals.

Table 17. Goals and Performance Measures

GOAL	PERFORMANCE MEASURE AND DESIRED TREND
Enhance Safety	• Decrease vehicle travel speed measured at specific locations • Decrease number of pedestrian and bicycle collisions • Reduce severity of pedestrian and bicycle collisions • Increase users' perception of safety • Decrease average crossing distances
Increase Walking and Biking	• Increase walk/bike/roll to school mode share • Increase walk/bike/roll to work mode share • Increase walk/bike/roll to transit mode share • Increase walk/bike/roll to recreational facilities
Improve Connectivity	• Reduce bicycle level of traffic stress • Decrease number and length of sidewalk gaps • Increase number of crossing opportunities • Increase length of sidewalks that exceed minimum width requirements • Increase the number of secure bike parking spaces
Enhance Accessibility	• Increase the number of traffic signals with audible cues • Increase the number of intersections with directional curb ramps and detectable warning surfaces • Decrease number and length of sidewalk gaps • Increase length of sidewalks that exceed minimum width requirements • Decrease length of sidewalks that are broken or in disrepair
Prioritize Investments	• Maintain and increase sustainable funding mechanisms and a dedicated funding source to build a complete streets network • Maintain a maintenance plan for bicycle and pedestrian facilities • Increase funding for bicycle and pedestrian projects as a percentage of total transportation infrastructure spending

LOOKING AHEAD

Walking and biking allow residents and visitors of Dublin to travel throughout the city in a way that promotes a sustainable, healthy, and vibrant community. This Plan helps foster a safe and connected multimodal transportation network and establishes Dublin's vision and comprehensive approach to improving walking, biking, and rolling.

The ultimate goal is a universally-accessible, safe, convenient, and integrated system that promotes active and sustainable transportation as a convenient alternative to motor vehicles. The Plan's performance measures allow for the ongoing tracking of progress towards implementation of the following goals:

The Plan provides for both near-term and long-term infrastructure investments to achieve the Plan's vision and goals as well as policy and programmatic recommendations that encourage and support walking, biking, and rolling. Together, these components create a comprehensive approach that will guide, prioritize, and implement a network of quality bicycle and pedestrian facilities to improve mobility, connectivity, and public health in Dublin.

GLOSSARY

2014 PLAN. The 2014 Dublin Bicycle and Pedestrian Master Plan, which is being replaced by this plan.

ACTIVE TRANSPORTATION. Active transportation includes personal mobility devices of all kinds: bicycles, wheelchairs, scooters, rollerblades, skateboards, hoverboards, e-bikes, e-scooters, motorized wheelchairs, and more. Emerging technology and the availability of personal mobility devices complicate the definitions of bicycle and pedestrian. This Plan recognizes the high degree of overlapping policy, programmatic, and infrastructure needs among active modes and considers these a part of the bicycling and walking ecosystem. Where necessary, the Plan distinguishes electric mobility such as e-bikes and e-scooters to meet their unique requirements and needs.

ARTERIALS: Major roads that connect urbanized areas, cities, and industrial centers and generally have fewer direct access points.

BICYCLE. A bicycle (or bike) is a human-powered or motor-powered, pedal-driven vehicle with two wheels attached to a frame. Bicycles can be categorized in different ways, including by function, number of riders, general construction, gearing, or means of propulsion. The more common types include utility or commuter, mountain, road or racing, touring, hybrid, cruiser, BMX, and electric. Less common types include tandem, low-riders, tall bikes, fixed gear, folding, cargo, and recumbents. Unicycles, tricycles, and quadracycles are often referred to as bicycles though they are not strictly bicycles as they have fewer or more than two wheels.

BICYCLE LEVEL OF TRAFFIC STRESS. Bicycle level of traffic stress (LTS) is an analysis approach that quantifies the amount of comfort and level of stress that people feel when they bike on certain streets based on interactions with other travel modes, traffic control, and roadway characteristics. The methodology was developed in 2012 by the Mineta Transportation Institute and San Jose State University.

BICYCLIST TYPOLOGY. Bicyclist typology was developed in 2005 in Portland, Oregon to help understand how people used bicycles for transportation and what biking concerns and needs they had.[15] Based on this research, bicyclists tend to fall into one of four groups:

(1) **Strong and Fearless**—willing to bicycle with limited or no bicycle-specific infrastructure.

(2) **Enthused and Confident**—willing to bicycle if some bicycle-specific infrastructure is in place.

(3) **Interested but Concerned**—willing to bicycle if high-quality bicycle infrastructure is in place

(4) **No Way No How**—unwilling to bicycle even if high-quality bicycle infrastructure is in place

COLLECTORS: Major and minor streets and roads that connect local streets with arterials. Collectors are generally shorter and have lower speeds than arterials.

COMPLETE STREET. Complete Streets is an approach to planning, designing, building, operating, and maintaining streets that enables safe access for all people who need to use

15 Roger Geller, "Four Types of Cyclists," Portland Office of Transportation (2005), https://www.portlandoregon.gov/transportation/44597?a=237507.

them, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. https:/smartgrowthamerica.org/what-are-complete-streets/

COMPLETE STREET STUDY. A Complete Street Study is recommended on constrained corridors with multiple competing priorities where Class I or Class IV facilities were identified as the suitable facility to provide an all ages and abilities network. The Complete Street Study may include data collection, analysis, concept design development, and engagement and would be intended to evaluate conditions for people walking, biking, taking transit, and driving along the corridor and assist decision-makers and the public in selecting a preferred alternative for implementation.

CURBSIDE MANAGEMENT. An overarching management program and/or plan to guide allocation and regulation of the curbside for optimized mobility and safety for people using the curb space. Curb uses and users include: bicycle infrastructure, pedestrians and crossing infrastructure, vehicle storage, freight and passenger loading, parklets, food trucks and mobile vendors, among others.

ELECTRIC BICYCLE. An electric bicycle has fully operable pedals and an electric motor of less than 750 watts. According to Section 312.5 of the California Vehicle Code, there are three classifications of electric bicycles:

(1) **A Class 1 electric bicycle**, or low-speed pedal-assisted electric bicycle, has a motor that assists only when the rider is pedaling. That motor ceases to provide assistance when the bicycle reaches the speed of 20 miles per hour.

(2) **A Class 2 electric bicycl**e, or low-speed throttle-assisted electric bicycle, has a motor that can be used to propel the bicycle exclusively. The motor is not capable of assisting when the bicycle reaches the speed of 20 miles per hour.

(3) **A Class 3 electric bicycle**, or speed pedal-assisted electric bicycle, has a motor that assists only when the rider is pedaling. The motor stops assisting when the bicycle reaches the speed of 28 miles per hour. This class of electric bicycles is equipped with a speedometer.

END-OF-TRIP FACILITIES. Designated places—like secure bicycle parking, locker facilities, and changing rooms—that encourage bicyclists, joggers, and walkers to use sustainable modes to travel instead of driving.

HIGH INJURY NETWORK. The collection of worst-performing street segments based on severity and frequency of pedestrian and bicycle collisions.

MICROMOBILITY. Any small, low-speed, human or electric-powered transportation device, including bicycles, scooters, electric-assist bicycles (e-bikes), electric scooters (e-scooters), and other small, lightweight, wheeled conveyances.

PEDESTRIAN. People who travel by walking or jogging and people who use a mobility assistive device like walkers, canes, crutches, wheelchairs, or mobility scooters.

PERSONAL MOBILITY DEVICE. Various mechanical means of transportation including seated and standing traditional and electric scooters, skateboards, powered wheelchairs, bicycles, and Segways.

ROLLING. Rolling as a way to get around can mean many things, like bicycling, using a wheelchair, scooting, skateboarding, among other methods.

SHY DISTANCE. Shy distance refers to the space left between vehicles or pedestrians and bicyclists as they pass each other. The amount of shy distance required for safety tends to increase with speed.

APPENDIX

A. Community Engagement Summary

B. Existing Conditions

- **a. Program and Policy Review**
- **b. Demographic Analysis**
- **c. Collision Analysis & High Injury Network**
- **d. Level of Traffic Stress Analysis**
- **e. Demand Analysis**

C. Network Recommendations

- **a. Prioritization Framework**
- **b. Project List**
- **c. Cost Estimates**

D. Engineering & Design Guide