



**MEETING OF THE CITY OF CONCORD
BICYCLE, PEDESTRIAN AND SAFE ROUTES TO TRANSIT
PLAN ADVISORY COMMITTEE**

**Monday, April 25, 2016
5:30 p.m., Regular Meeting
PERMIT CENTER CONFERENCE ROOM
1950 Parkside Drive, Bldg. D**

www.cityofconcord.org/bikeandped

Plan Advisory Committee Members

Laura Hoffmeister, Chair and City Council Representative
Carlyn Obringer, Planning Commission Representative
Mark Sinclair, Parks Recreation and Open Space Committee Representative
Sergio Huerta, At-Large Representative
Clair Linder, At-Large Representative

AGENDA

PUBLIC COMMENT PERIOD - NON-AGENDA ITEMS

ADDITIONS/CONTINUANCES/WITHDRAWALS

STAFF REPORTS / DISCUSSION ITEMS

1. Introducing the draft Bicycle, Pedestrian, and Safe Routes to Transit Plan

The draft Plan is finally here! This is an introduction to familiarize the Plan Advisory Committee with the contents of the Plan. After hearing initial comments and suggestions, staff requests continuing this item to allow for further comments and discussion on the draft Plan at the next May 23, 2016 PAC meeting.

2. May 5, 2016 Community Workshop Update (15 Minutes)

Staff and the project consultant from Alta will be hosting the third and final Community Workshop to discuss the draft Plan and receive comments and feedback from the public at 5:30pm at the Concord Senior Center on May 5, 2016. Staff from Engineering/CIP will also be sharing revised striping plans from Project 2277, the Downtown Bikeways Project.

3. Next Steps (5 Minutes)

Staff will provide an overview of the extended public comment period on the draft Plan .

PUBLIC COMMENTS - AGENDA ITEMS

COMMITTEE MEMBER CONSIDERATIONS/ANNOUNCEMENTS

STAFF ANNOUNCEMENTS

- **The next PAC meeting will be held on May 23, 2016 at 5:30pm in the Permit Center Conference Room at City Hall. Staff from Alta Planning and Design will attend this PAC meeting to answer questions and receive feedback regarding the draft Plan.**
- **Community Workshop at 5:30pm, Concord Senior Center, on May 5, 2016**
- **City Council Study Session at 6:30pm on May 10, 2016**
- **PROSC Study Session, 7:00pm on May 11, 2016**
- **Planning Commission Study Session, 6:30pm on May 18, 2016**

ADJOURNMENT

NOTICE TO PUBLIC

No item will be considered after 9 P.M. Items remaining on the agenda will be rescheduled. Should the Permit Center Conference Room reach capacity, the meeting will be held in the adjacent Council Chambers. Members of the audience who wish to address the Plan Advisory Committee are requested to complete a speaker's card inclusive of their name and address. Public comments should be limited to three minutes.

The Bicycle, Pedestrian, and Safe Routes to Transit Plan Advisory Committee is a temporary ad-hoc committee. Staff will not provide written summaries of the Plan Advisory Committee's discussions on agenda items. Attendees should be prepared to take all necessary notes regarding any comments, suggestions, and directions. For additional information regarding the role of the Plan Advisory Committee, please contact the Planning Division at (925) 671-3152.

In accordance with the Americans with Disabilities Act and California Law, it is the policy of the City of Concord to offer its public programs, services and meetings in a manner that is readily accessible to everyone, including those with disabilities. If you are disabled and require a copy of a public hearing notice, or an agenda and/or agenda packet in an appropriate alternative format; or if you require other accommodation, please contact the ADA Coordinator at (925) 671-3031, at least five (5) days in advance of the hearing. Advance notification within this guideline will enable the City to make reasonable arrangements to ensure accessibility.

***BICYCLE PEDESTRIAN AND SAFE ROUTES TO TRANSIT
PLAN ADVISORY COMMITTEE MEMORANDUM***

April 25, 2016

TO: Bicycle, Pedestrian, and Safe Routes to Transit Plan
Plan Advisory Committee (PAC)

FROM: Andrew J. Mogensen, AICP, Principal Planner
Andrew.mogensen@cityofconcord.org

SUBJECT: Presenting the City's Draft Bicycle Pedestrian and Safe Routes to
Transit Plan

The draft Bicycle, Pedestrian, and Safe Routes to Transit Plan is now available for download from the project website at: www.cityofconcord.org/bikeandped. Printed copies of the draft Plan will be provided to the Plan Advisory Committee members at the meeting.

The Bicycle, Pedestrian, and Safe Routes to Transit Plan envisions Concord as a community where bicycling, walking and transit can serve the transportation needs of all users. The Plan helps make that vision a reality by outlining a strategy to further develop a safer and more comfortable walking and bicycling network. The networks are complimented by programs designed to educate and encourage their safe use. To achieve this goal, the Plan helps position the City for future funding for bicycle, pedestrian and transit access improvements by identifying community needs and addressing those needs with \$139 million of identified and prioritized capital improvement projects. The Plan also contains evaluation programs to help keep implementation on track by documenting progress towards the Plan's goals.

For future capital improvement programming, the Plan provides the City with a detailed prioritized inventory of hundreds of needed projects as well as a strategy for implementation and funding sources, with the goal of making Concord a safer and more comfortable city for walking and bicycling. The Plan developed three major City-wide capital improvement projects, preparing detailed conceptual corridor plans for potential future bicycle and pedestrian improvements on Monument Boulevard, Clayton Road, and Willow Pass Road. These conceptual corridor plans demonstrate what is possible within given roadway limitations on three of Concord's major corridors and are eligible as shelf-ready projects for grant applications. The Plan also identifies a number of challenge areas identified as "complete streets studies" that could be expanded into future transportation planning or capital improvement projects. With the prioritized project inventory and complete streets studies, the Plan will competitively position the City for future grants and funding opportunities.

As a companion to the Plan, Alta is currently finalizing a Bicycle and Pedestrian Facility Design Guidelines manual which will identify standardizations for infrastructure improvements based on

existing State and Federal engineering standards and best management practices. The guidelines were developed to take into account construction costs, durability, and identify where design flexibility is possible. They also identify where prior studies have clearly shown measurable safety improvements when the given features are constructed. The Bicycle and Pedestrian Facility Design Guidelines are still being edited by staff, but are anticipated for public release prior to the May 5, 2016 public workshop.

Next Steps – Anticipated Dates and Milestones

The public will continue to have the opportunity to comment on the draft Plan through final City Council adoption, anticipated in late July or early September. Staff will return to the PAC to further discuss the draft Plan and hear public comments again at their meeting scheduled on May 23, 2016. Staff will also be presenting the Plan to the Parks Recreation and Open Space Committee on May 11, 2016, followed by Planning Commission on May 18, 2016. The plan will return to the PAC for further comments on May 23, 2016, then be finalized and brought forward to Planning Commission for recommendation and City Council adoption in late summer.

May 5, 2016 Community Workshop

Staff will be hosting a Community Workshop to introduce and discuss the plan with the public at the Concord Senior Center on May 5, 2016 at 5:30pm. The workshop will be led by the project consultant from Alta Planning + Design. Spanish translation, food, and child care services will be provided by Monument Impact. Staff from Engineering will also be sharing and taking comments on recent plan revisions from the Downtown Bikeways Project #2277.

Key Upcoming Dates

- Community Workshop, 5:30pm, Thursday, May 5th, Concord Senior Center
- City Council study session, 6:30pm, May 10, 2016
- Parks Recreation and Open Space Committee study session, 7pm, May 11, 2016
- Planning Commission study session, 6:30pm, May 18, 2016
- Next PAC Meeting, 5:30pm, May 23, 2016

Attachments: Draft Bicycle, Pedestrian and Safe Routes to Transit Plan
Draft Bicycle, Pedestrian and Safe Routes to Transit Plan Appendices

A printed copy of these documents will be provided to the PAC members at the meeting. In the meantime, we ask that you download these attachments from the project website:

www.cityofconcord.org/bikeandped

RECOMMENDED BIKEWAY NETWORK

RECOMMENDED

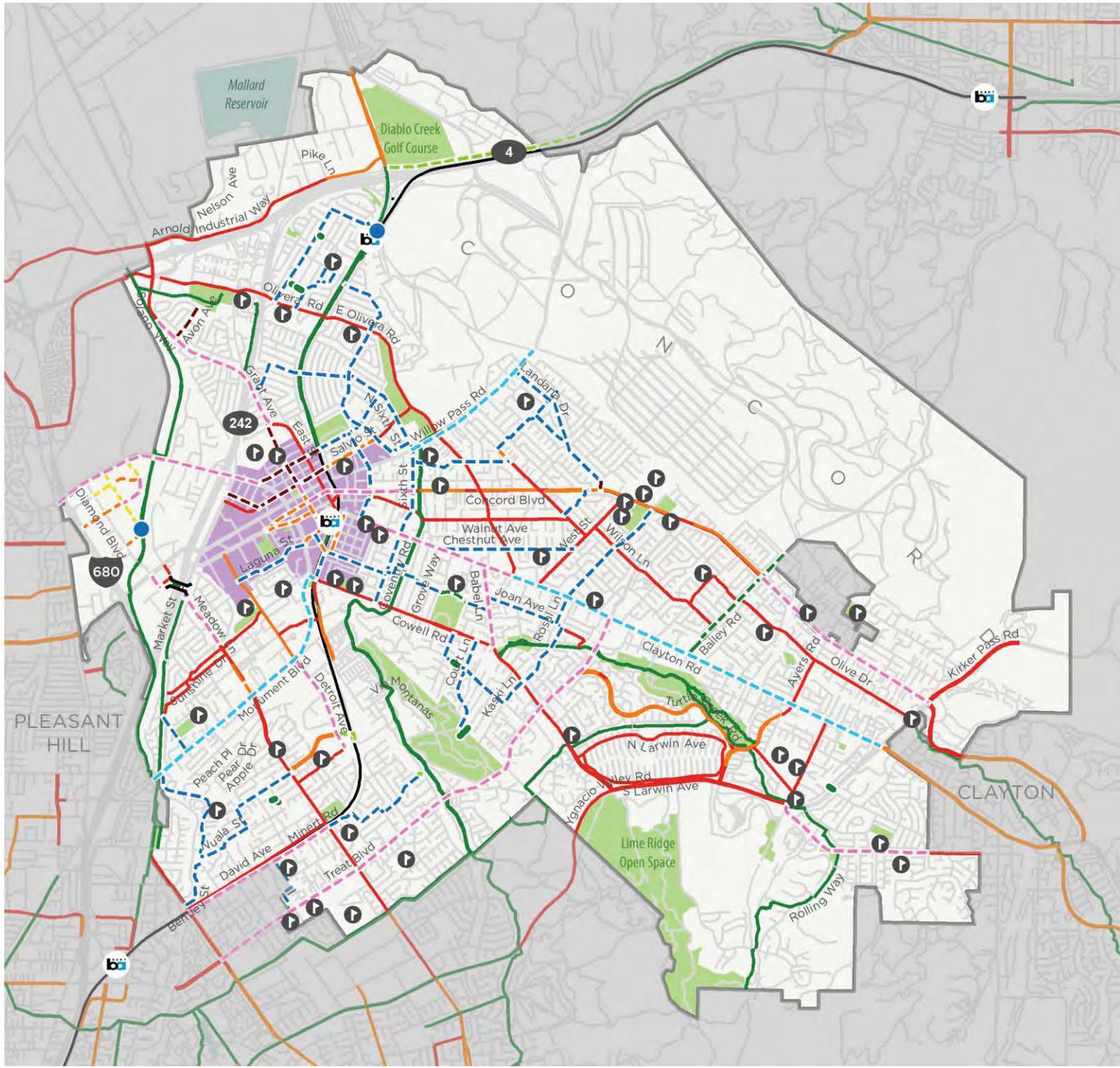
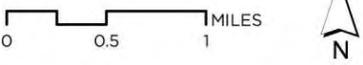
- Class I Shared Use Path
- Class II Buffered Bike Lane
- Class II Bike Lane
- Class III Bike Route
- Class III Shared Lane Marking
- Class III Bike Boulevard
- Complete Street Study
- Shared Use Path Study
- Corridor Conceptual Plan
- Bicycle Access Study

EXISTING

- Class I Shared Use Path
- Class II Bike Lane
- Class III Bike Route
- Neighborhood Connector
- Undercrossing

- School
- BART Station
- BART Track
- Downtown
- City Limit

Figure 5-5: Recommended Bikeway Network



RECOMMENDED BIKEWAY NETWORK

DOWNTOWN AREA

RECOMMENDED

- Class I Shared Use Path
- Class II Buffered Bike Lane
- Class II Bike Lane
- Class III Bike Route
- Class III Shared Lane Marking
- Class III Bike Boulevard
- Complete Street Study
- Shared Use Path Study
- Corridor Conceptual Plan

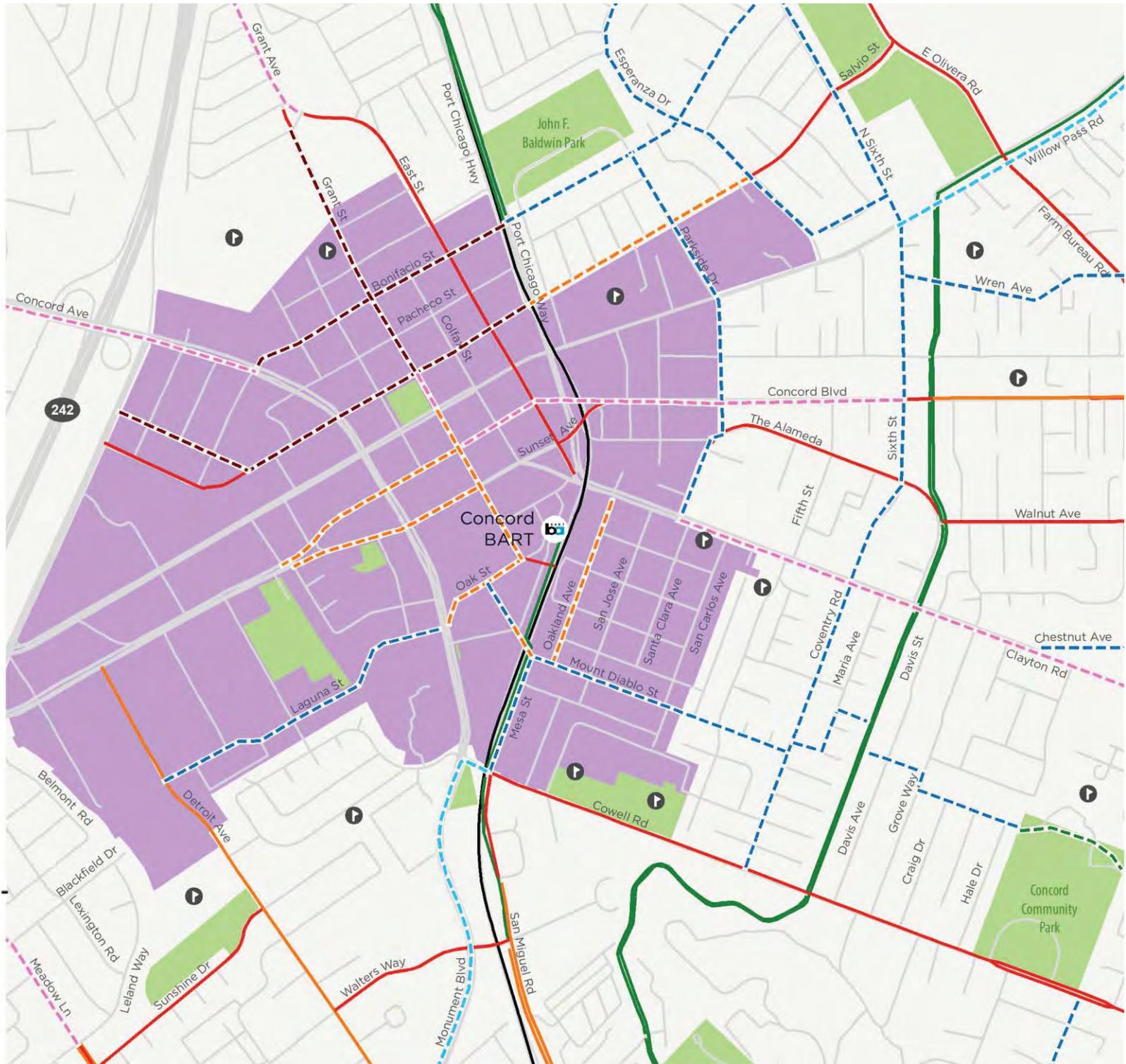
EXISTING

- Class I Shared Use Path
- Class II Bike Lane
- Class III Bike Route

- School
- BART Station
- BART Track
- Downtown

Figure 5-6:
Recommended Bikeway Network - Downtown

0 0.1 0.2 MILES



RECOMMENDED WALKING SPOT IMPROVEMENTS

- High Visibility Crosswalk
- ◆ Rectangular Rapid Flash Beacon (RRFB)
- Pedestrian Scale Lighting

- Ⓢ School
- bā BART Station
- BART Track
- Downtown
- City Limit

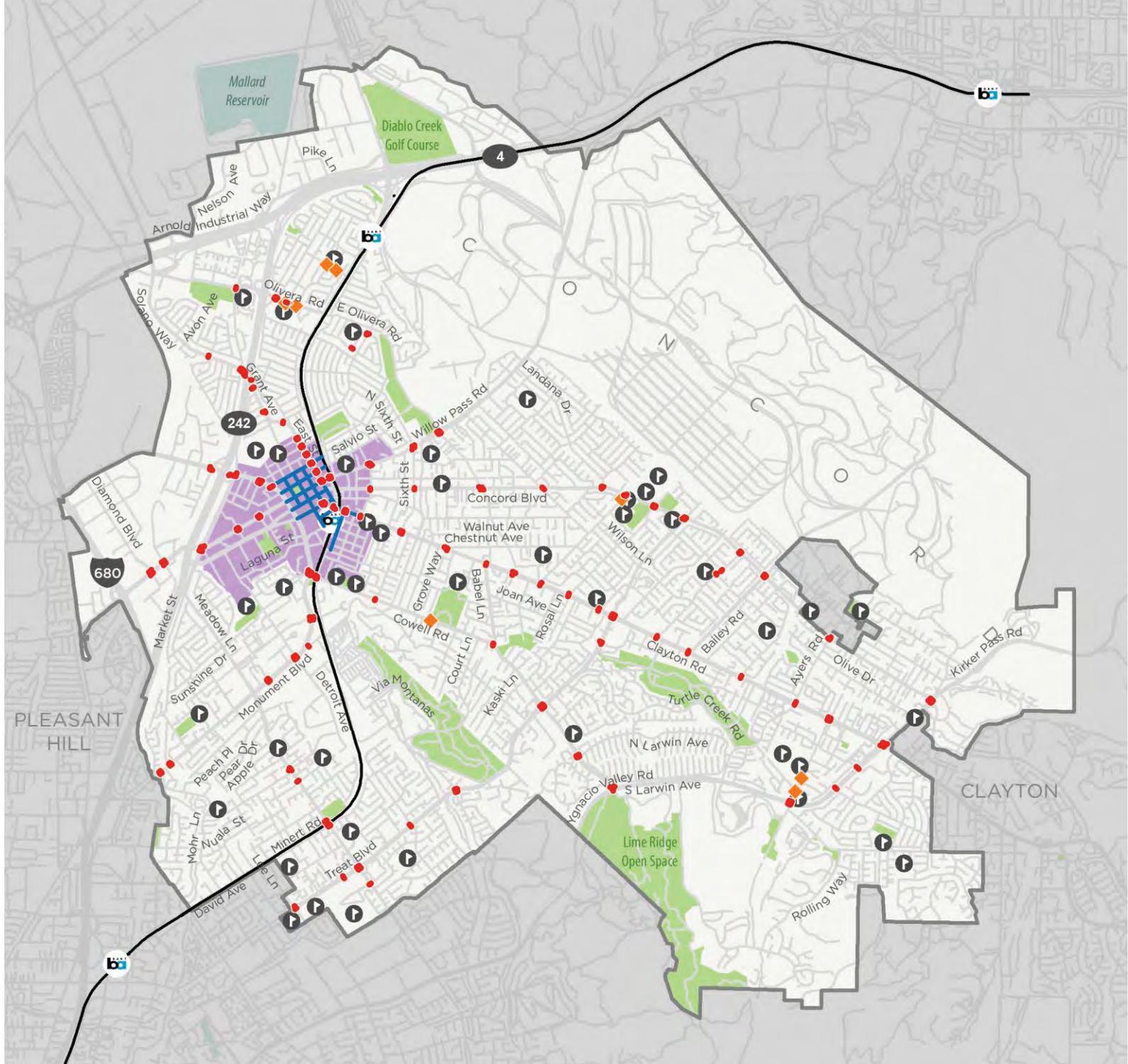


Figure 5-3:
Recommended Walking Spot Improvements



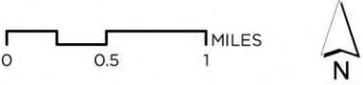
RECOMMENDED SIDEWALK PROJECTS

— Recommended Sidewalk

-  School
-  BART Station
-  BART Track
-  Downtown
-  City Limit



Figure 5-1:
Recommended Sidewalk Projects





City of Concord

Draft Bicycle, Pedestrian and Safe Routes to Transit Plan

THE DRAFT PLAN
IS HERE



Download the draft Plan online at www.cityofconcord.org/bikeandped

City of Concord
Bicycle, Pedestrian &
Safe Routes to Transit Plan

April
2016

A photograph of a park scene with people walking and a woman on a bicycle. The scene is bright and sunny, with lush green trees and a paved path. In the foreground, a woman in a pink shirt and blue jeans is riding a red bicycle away from the camera. To her left, a young boy in a teal shirt and shorts is walking on the grass. Further down the path, two women are walking away. The background shows more people and trees, suggesting a busy park environment.

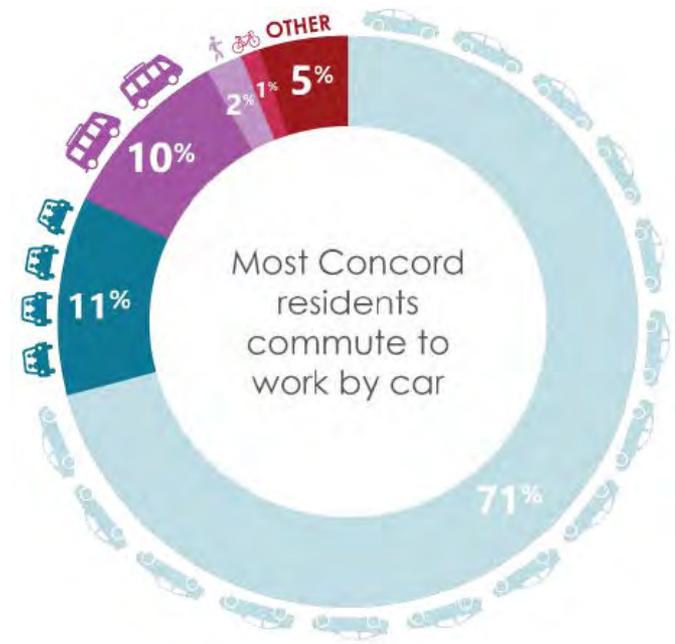
What's In the Plan?

Draft Plan

The Plan provides us with a point from which we can begin...

- Provides the City with a baseline
- Identifies areas and corridors with potential high walking and bicycling demand
- Identifies existing challenges
- Identifies the typical user

3%
COMMUTE BY ACTIVE
TRANSPORTATION



We can do better!!!

Current Conditions

- The plan provides the City with an inventory of existing bicycle facilities and missing sidewalks
- The plan identifies existing programs

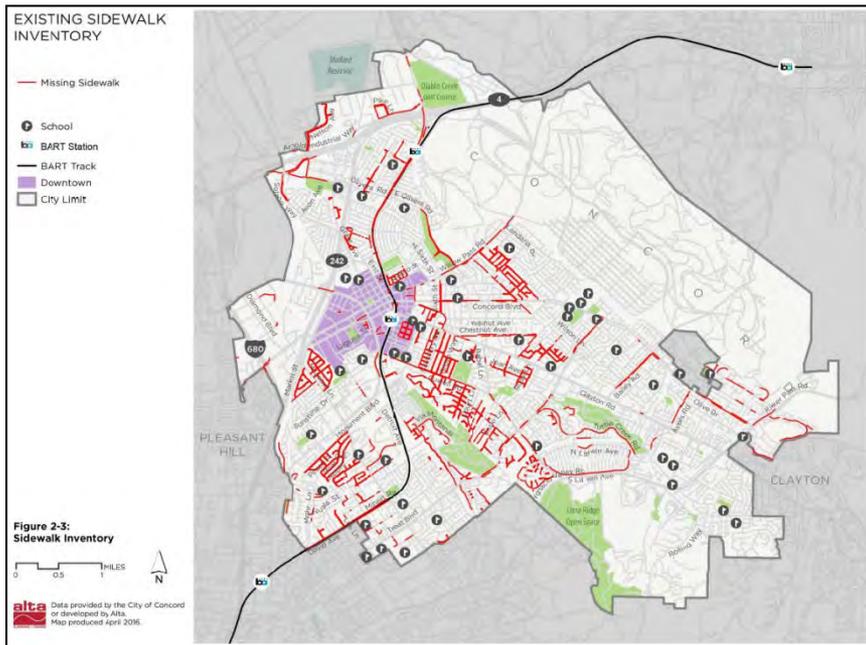


Figure 2-3, pg. 2-11

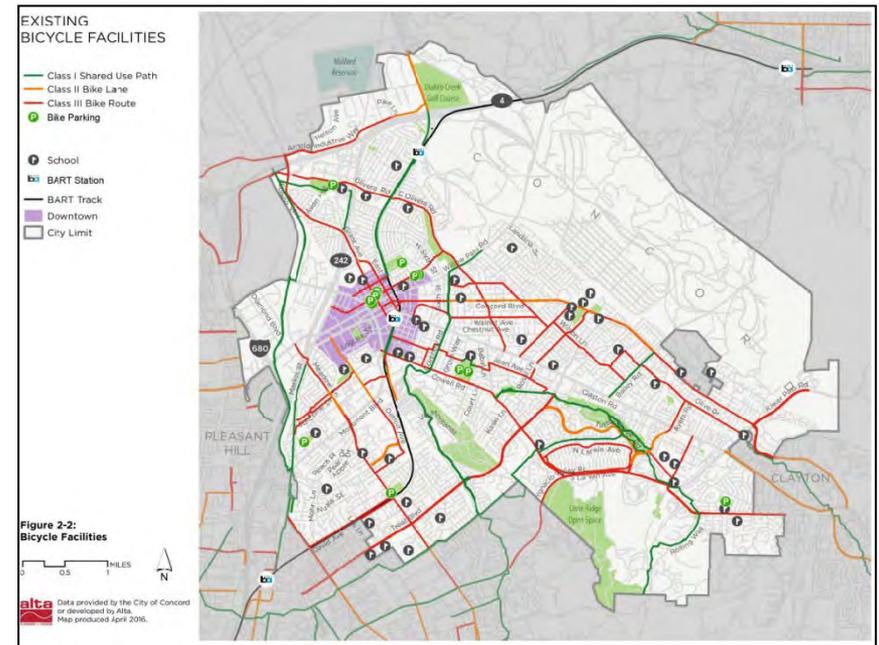


Figure 2-2, pg. 2-8

Why? Need for Improvements

CHAPTER
3



Community Needs

Walking Needs



A pedestrian network that provides connectivity between residential areas and community destinations



Additional separation between pedestrians and vehicle traffic on higher-speed or higher-volume arterials



Improved pedestrian crossings



Improved access for pedestrians with mobility impairments



Improved access to and amenities at transit stops

Bicycling Needs



A bikeway network that provides continuous dedicated bicyclist space on arterials, or key 'spokes,' with connections on low volume low stress streets.



Improved access to BART



Traffic calming on some collector and local streets



Bicycle parking at key destinations



Improved bikeway crossings at freeway ramps and intersections



Maintenance of path and debris on bikeways



Bikeway wayfinding

Program Needs

Based on the community survey, public workshop, and stakeholder interviews, needs for programs were identified:

- Educational programming for motorists, pedestrians, and bicyclists, including through schools, parks, and non-English speaking communities.
- Targeted enforcement to address challenging locations.

Vision, Goals, Objectives & Policies

The Vision, Goals, Objectives, and Policies of the City of Concord Bicycle, Pedestrian and Safe Routes to Transit Plan will guide the development and implementation of the City's active transportation network and programming for years to come.

VISION

The City of Concord envisions an environment that supports walking, bicycling and active living, and enables people of all ages and abilities to comfortably access jobs, schools, recreation, shopping and transit by foot or on bicycle as a part of daily life.

GOALS, OBJECTIVES AND POLICIES

GOAL 1

Safety

Prioritize travel safety for all modes of transportation.

Objective 1.A: Eliminate all traffic fatalities and reduce the number of bicycle and pedestrian related injuries by 50% by 2026.

- Policy 1.A.1: Annually review most recent available crash data, including causes, to implement ongoing improvements throughout the transportation network.*
- Policy 1.A.2: Implement an enforcement campaign targeting violations associated with severe and fatal injuries, high injury areas and corridors, schools and housing for seniors and people with disabilities.*
- Policy 1.A.3: Prioritize improvements at intersections and corridors with high numbers of injuries and fatalities.*
- Policy 1.A.4: Develop an education campaign focusing on road safety for all users and the City's objective to eliminate traffic fatalities.*

GOAL 3

Network

Identify and implement a complete and convenient active transportation network.

Objective 3.A: Implement this Plan's recommendations.

- Policy 3.A.1: Develop a 10 year and a 20 year strategy to implement this Plan's recommendations.*

Objective 3.B: Improve school and transit access.

- Policy 3.B.1: Prioritize projects that improve school and transit access.*

Objective 3.C: Implement this Plan's recommended bikeways on Downtown, Neighborhood and Community streets by 2026.

- Policy 3.C.1: Develop an implementation strategy for this Plan's recommended bikeway facilities on Downtown, Neighborhood, and Community streets by 2026.*

Objective 3.D: Implement this Plan's priority sidewalk projects by 2026.

- Policy 3.D.1: Develop an implementation strategy for this Plan's priority sidewalk projects by 2026.*

Objective 3.E: Improve pedestrian crossings.

- Policy 3.E.1: Provide marked crossings at reasonable intervals in areas with high pedestrian activity and establish vehicle speed and volume thresholds for appropriate treatments such as crossing control, curb extensions, and refuge islands.*

Objective 3.F: Provide plentiful, high quality support facilities that complement the travel network.

- Policy 3.F.1: Provide support facilities such as bicycle parking and community/bikeway wayfinding.*

Objective 3.G: Fund this Plan's recommendations.

- Policy 3.G.1: Apply for available regional and state grants to implement this Plan's recommendations.*
- Policy 3.G.2: Integrate bicycle and pedestrian facilities as part of new street design and resurfacing projects where feasible.*

GOAL 2

Design

Design active transportation projects that are accessible and comfortable for people of all ages and abilities.

Objective 2.A: Implement designs that emphasize safety and comfort for the most vulnerable road users.

- Policy 2.A.1: Utilize state of the practice & emerging designs including Design Guidelines supplemented to this plan, the California Manual on Uniform Traffic Control Devices, and national manuals such as NACTO (National Association of City Transportation Officials) guides*
- Policy 2.A.2: Implement sustainable designs, recognizing limited maintenance resources.*
- Policy 2.A.3: Implement pedestrian and bikeway designs for the needs and comfort for people of all ages and abilities, considering issues such as street design speed, hierarchy of streets, connectivity and level of stress experienced.*
- Policy 2.A.4: Strive to provide enhanced walking and bicycling facilities and separation on higher volume and higher speed roads such as Concord's Downtown, Community,*

GOAL 4

Programs

Increase awareness and support of walking and bicycling through education, encouragement, and evaluation programs.

Objective 4.A: Support educational opportunities for those who drive, bicycle, and walk about their rights and responsibilities.

- Policy 4.A.1: Support 511 Contra Costa and the Mt. Diablo Unified School District to implement Safe Routes to School programs.*
- Policy 4.A.2: Support the development of adult bicycling education programs.*
- Policy 4.A.3: Support the development of a Safe Routes to Transit program that will facilitate walking and bicycling to transit.*

Objective 4.B: Implement and support encouragement opportunities that promote walking and bicycling as viable travel choices.

- Policy 4.B.1: Incorporate messaging in all City of Concord media that promotes the benefits of active transportation and raises awareness of walking and bicycling opportunities.*
- Policy 4.B.2: Support encouragement programs sponsored by regional agencies and local employers to encourage walking or bicycling.*

Objective 4.C: Evaluate how well the City of Concord is progressing towards meet this Plan's goals.

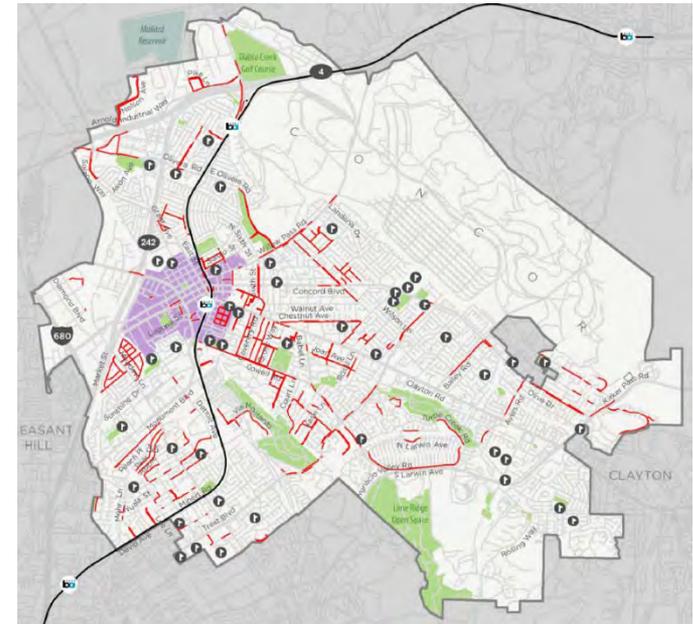
- Policy 4.C.1: Review this Plan's recommendations at regular intervals to review progress and update priorities as necessary.*

The Plan identifies our Vision, Goals, Objectives and Policies...

(on pages 4-2 & 4-3)

Recommended Projects & Studies

- Filling in Sidewalk Gaps
- High Visibility Crosswalks
- Curb Extensions
- Flashing Crossing Beacons
- Pedestrian Scale Lighting
- 16 Complete Streets Studies
- 47.6 Miles of Bicycle Network Improvements
- Over 600 Shelf-Ready Capital Improvement Projects with Detailed Cost Estimates



RECOMMENDED BIKEWAY NETWORK

RECOMMENDED

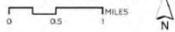
- Class I Shared Use Path
- Class II Buffered Bike Lane
- Class II Bike Lane
- Class III Bike Route
- Class III Shared Lane Marking
- Class III Bike Boulevard
- Complete Street Study
- Shared Use Path Study
- Corridor Conceptual Plan
- Bicycle Access Study

EXISTING

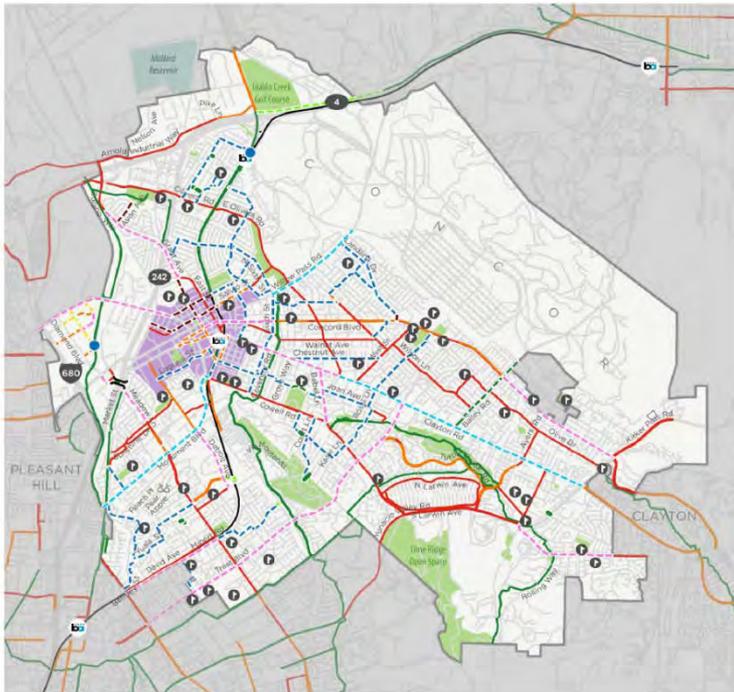
- Class I Shared Use Path
- Class II Bike Lane
- Class III Bike Route
- Neighborhood Connector
- Undercrossing

- Ⓛ School
- bx BART Station
- BART Track
- Downtown
- City Limit

Figure 5-5: Recommended Bikeway Network



alta Data provided by the City of Concord or developed by Alta. Map produced April 2016.



RECOMMENDED SHORT-TERM BICYCLE PARKING

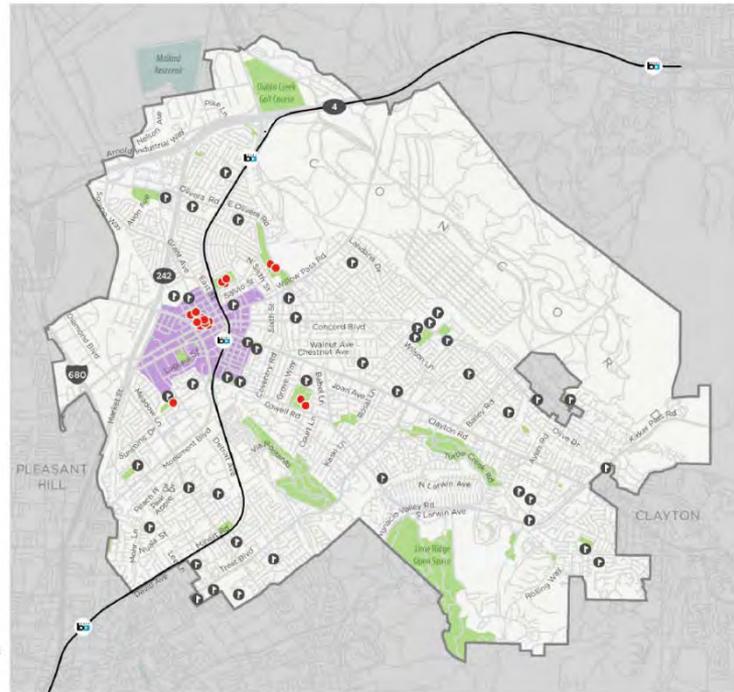
- Short-Term Bicycle Parking

- Ⓛ School
- bx BART Station
- BART Track
- Downtown
- City Limit

Figure 5-10: Recommended Short-Term Bicycle Parking Locations



alta Data provided by the City of Concord or developed by Alta. Map produced April 2016.

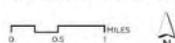


RECOMMENDED SIDEWALK PROJECTS

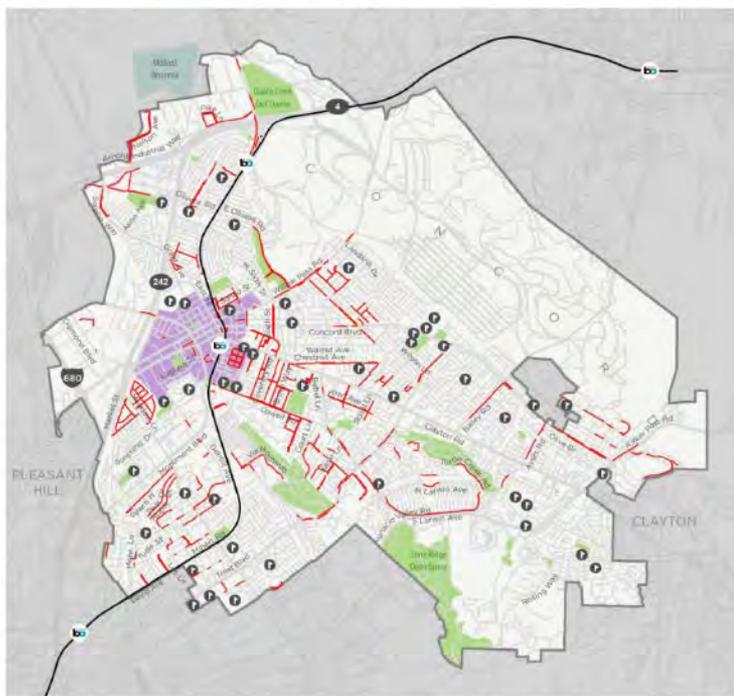
- Recommended Sidewalk

- Ⓛ School
- bx BART Station
- BART Track
- Downtown
- City Limit

Figure 5-1: Recommended Sidewalk Projects



alta Data provided by the City of Concord or developed by Alta. Map produced April 2016.



RECOMMENDED WALKING SPOT IMPROVEMENTS

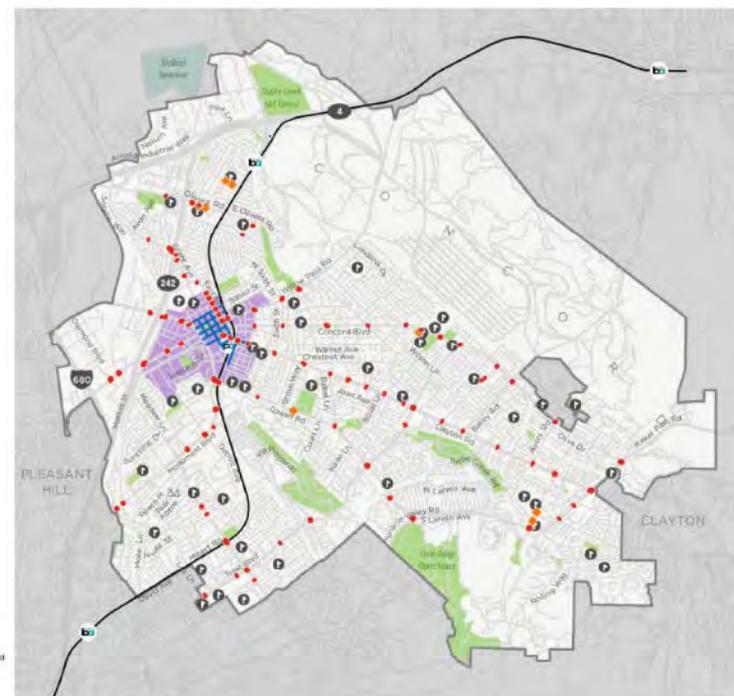
- High Visibility Crosswalk
- Rectangular Rapid Flash Beacon (RRFB)
- Pedestrian Scale Lighting

- Ⓛ School
- bx BART Station
- BART Track
- Downtown
- City Limit

Figure 5-3: Recommended Walking Spot Improvements



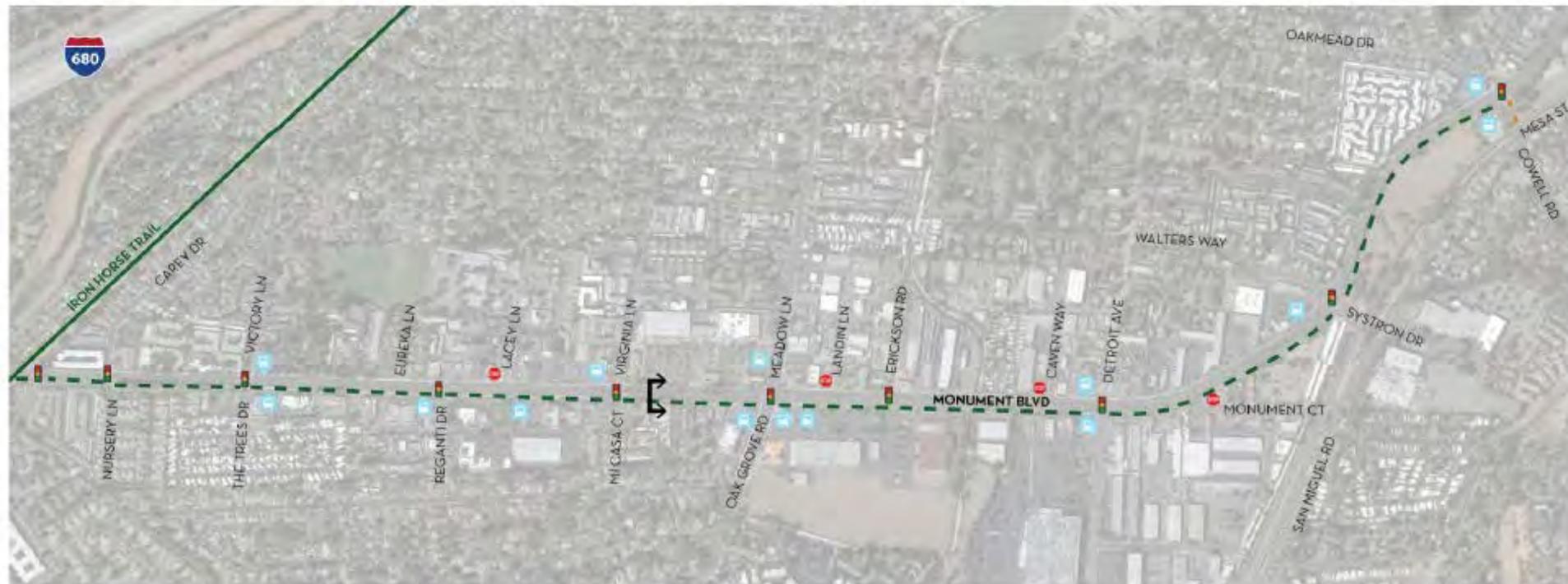
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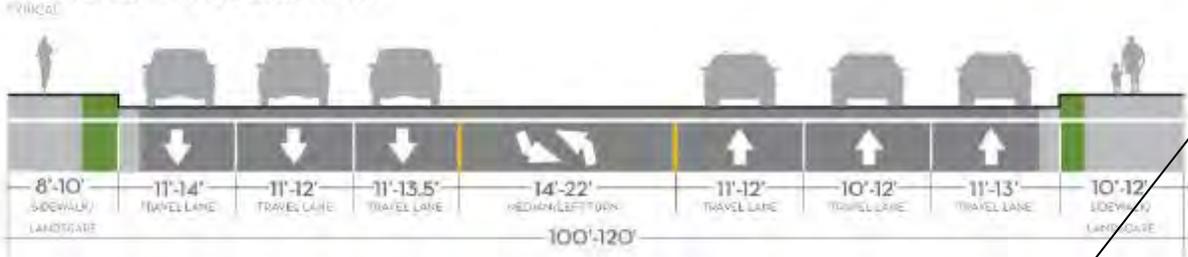
Conceptual Corridor Plans

- Three major corridors were studied in detail:
 - Clayton Road (east of Downtown)
 - Willow Pass Road
 - Monument Boulevard
- In-depth study and recommendations to potentially improve walking and bicycling
- 30% engineering-level plans were prepared
- A fourth corridor, Oak Grove Road, was not pursued further and resources diverted to focus on a design for Monument Blvd. after the corridor was found to be infeasible.

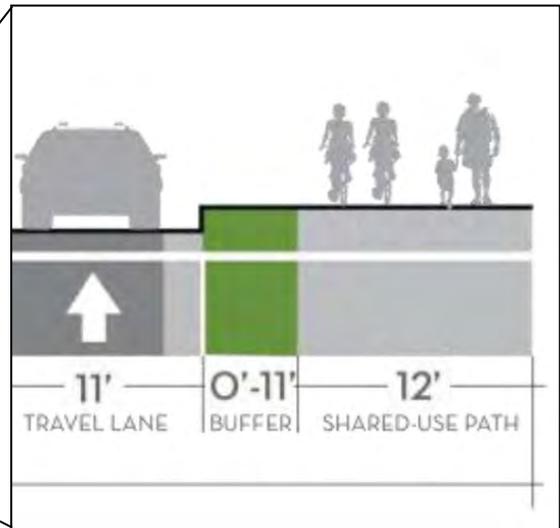
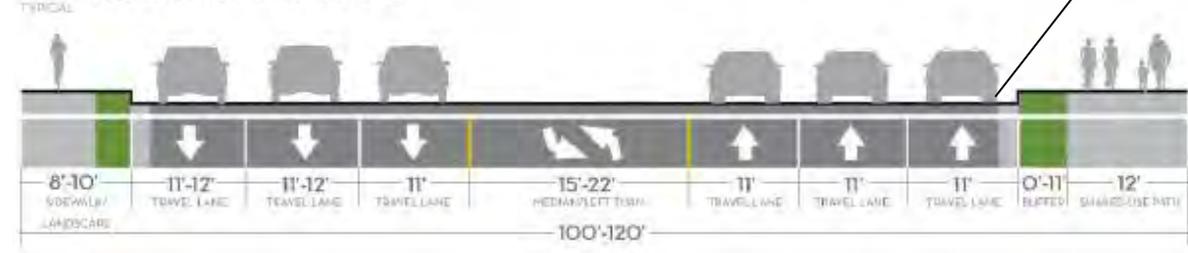
MONUMENT BOULEVARD



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CROSS SECTION - PROPOSED



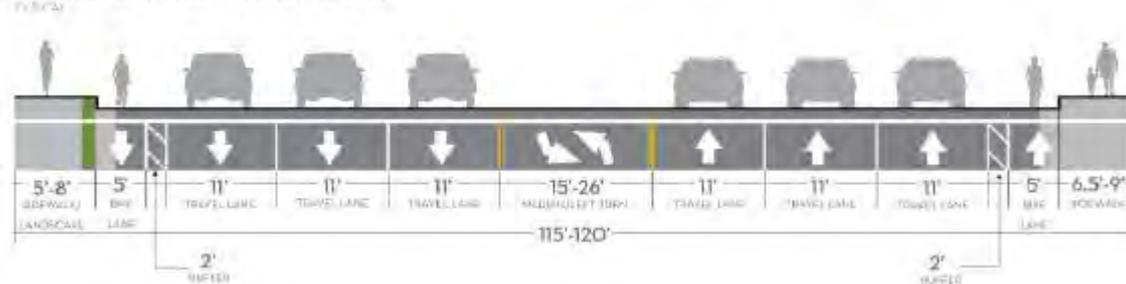
CLAYTON ROAD



CROSS SECTION - EXISTING



CROSS SECTION - PROPOSED



Clayton Road serves as a cautionary example. Developing Clayton Road with a Class II bike lane within the existing right-of-way was estimated to cost over \$22 million.

The project serves as an example of a major cost-benefit and funding challenge.

Recommended Projects

- Bicycle Parking Standards & Programs (5-19 to 5-24)
- Bicycle Valet Requirements (5-24)
- Business Bicycle Rack Request Program (5-24)
- Bicycle Wayfinding (5-25)
- Bicycle Detection Methods (5-26)
- Municipal Code Revisions (5-27)



U-Rack



Post and Loop

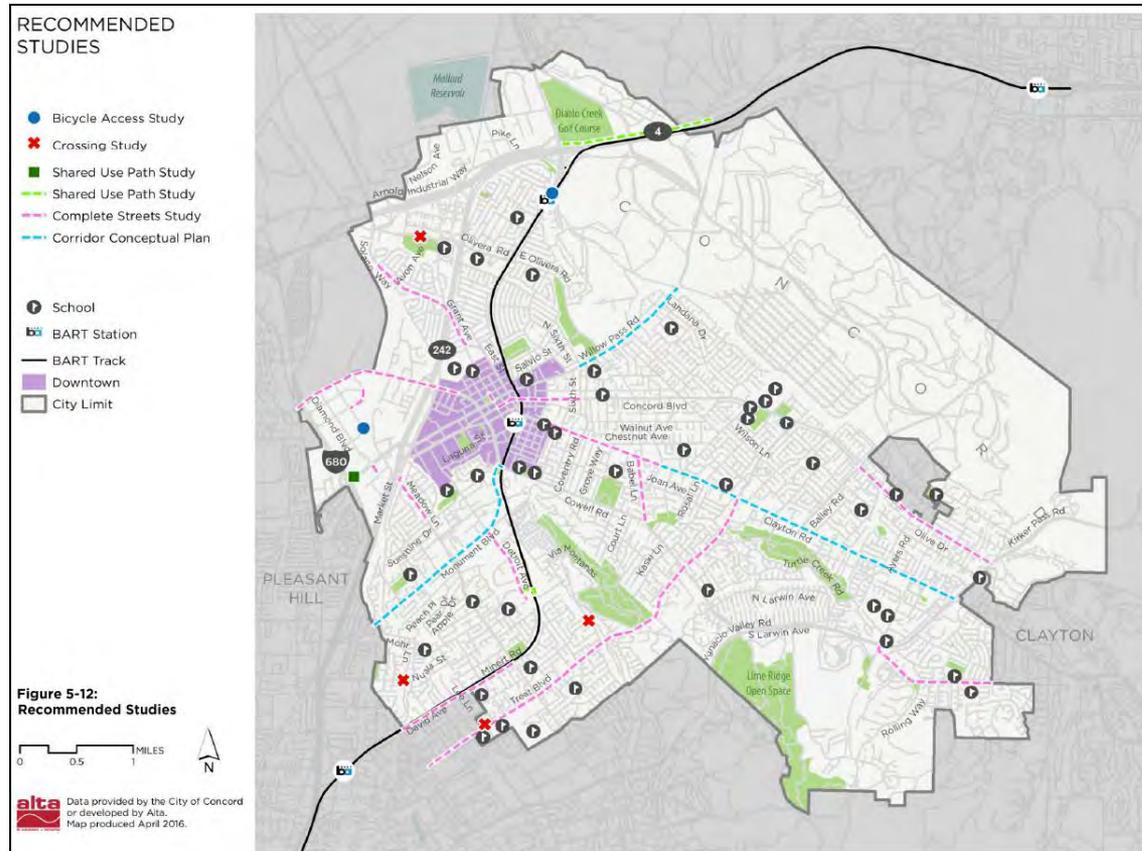


Wheelwell Secure



Complete Streets Studies

- 14 different Complete Streets Studies (Pages. 5-28 to 5-33)
- 4 Crossing Improvement Studies
- 5 Shared Use Path and Bicycle Access Studies



Program Recommendations

CHAPTER

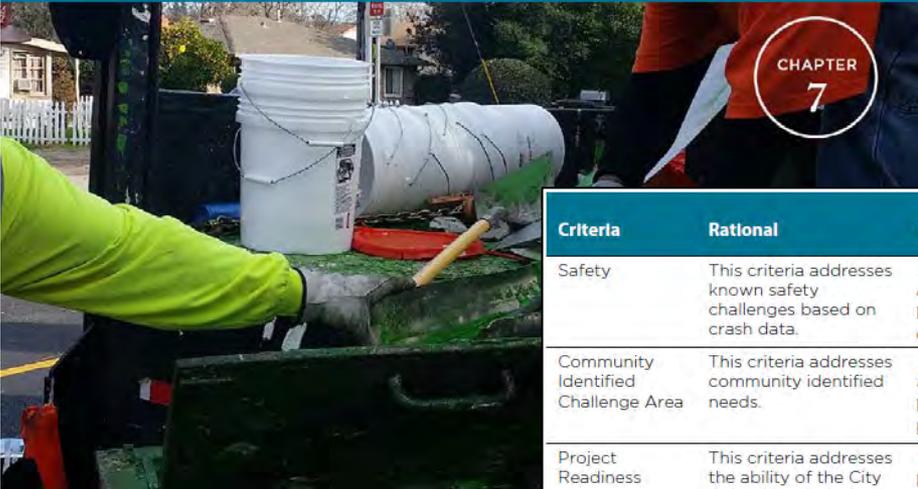
6



How many times does
Smitty appear in the Plan?

(Answer next PAC meeting)

Action Plan



CHAPTER
7

Table 7-3: Cost Estimate Summary by Project Type

Project	Total Estimated Cost
Bike Parking	\$52,000
Bikeways	\$43,617,400
Class I Shared Use Paths	
Class II Bike Lanes	
Class II Buffered Bike Lanes	
Class III Bike Routes	
Class III Bike Routes with Shared Lane Markings	
Corridor Conceptual Plan Implementation	
Signs	
Sidewalks	
Streets	

Criteria	Rational	Description	Max. Points
Safety	This criteria addresses known safety challenges based on crash data.	<i>The project addresses safety concerns identified through reported crashes, based on the most recent five years of data for bicycle or pedestrian related crashes.</i> Projects are scored on a scaled ranking from zero to twenty-five with locations with the most crashes receiving the maximum score.	25
Community Identified Challenge Area	This criteria addresses community identified needs.	<i>The project is at a location identified as challenging through the community workshop, survey, tours, or other comments submitted.</i> Projects in community identified challenge areas receive 20 points. Projects that are not in community identified challenge areas receive zero points.	20
Project Readiness	This criteria addresses the ability of the City to implement projects.	<i>This evaluation is based on known factors regarding estimated public right-of-way.</i> Projects within the public right-of-way receive 20 points. Projects that are not likely to require right-of-way receive 10 points. Projects that will require right-of-way receive zero points.	20
Activity Generator Connection	This criteria addresses connections to likely community destinations.	<i>The project improves or provides a connection to an attractor identified in the Existing Conditions memo (health care facilities, parks, community centers, top employers, shopping centers, parks, and schools).</i> Projects that directly connect to activity generators receive 15 points. Projects that directly connect to an existing facility that connects to activity generators receive 7 points. Projects that do not connect to activity generators receive zero points.	15
Transit Connection	This criteria addresses Safe Routes to Transit, a plan purpose.	<i>The project improves or provides a connection to a transit stop or station.</i> Projects that directly connect to a transit stop or station receive 15 points. Projects that directly connect to an existing facility that connects to a transit stop or station receive 7 points. Projects that do not connect to a transit stop or station receive zero points.	15
Estimated Demand	This criteria addresses potential for walking and bicycling.	<i>The project is in a location of estimated high demand based on the BPSI Demand Analysis.</i> Projects in locations that fall within areas of estimated high demand will be awarded 5 points. Projects in locations without estimated high demand receive zero points.	5
Total Possible Points			100

Table 7-2: Unit Cost Assumptions

	Unit	Cost Assumption	Notes
High Visibility Crosswalk with Advance Stop Bar	EA	\$5,000	
Sidewalk, Curb, Gutter	LF	\$310	
Traffic Calming Study	EA	\$20,000	
Class I Shared-Use Path	EA	\$1,125,000	
Class II Bike Lanes	MI	\$80,000	By
Class II Buffered Bike Lanes	MI	\$180,000	By
Class III Bicycle Route	MI	\$20,000	By
Class III Bicycle Route with Shared Lane Markings	MI	\$31,000	By
Class III Bicycle Boulevard	MI	\$75,000	
Pedestrian Scaled Lighting	EA	\$2,500,000	
Rectangular Rapid-Flashing Beacon (RRFB)	EA	\$50,000	
Rectangular Rapid-Flashing Beacon	EA	\$185,000	
Rectangular Rapid-Flashing Beacon	EA	\$650	
Rectangular Rapid-Flashing Beacon	EA	\$1,000	
Rectangular Rapid-Flashing Beacon	EA	\$4	

- **Evaluation Strategy** is intended to measure how well a project meets this Plan's goals and objectives.
- **Plan Cost Estimates** presents the unit costs used to determine the overall project cost.
- **Priority Projects and Programs** presents a summary of the projects and programs intended for near-term implementation.
- **Maintenance** covers planning-level annual cost estimates and best practices for operations of the recommended facilities.

Table 7-3: Cost Estimate Summary by Project Type

Project	Total Estimated Cost
Bike Parking	\$52,000
Bikeways	\$43,617,400
Class I Shared Use Paths	\$1,190,600
Class II Bike Lanes	\$231,000
Class II Buffered Bike Lanes	\$144,800
Class III Bike Routes	\$2,200
Class III Bike Routes with Shared Lane Markings	\$65,200
Class III Bicycle Boulevards	\$1,534,600
Corridor Conceptual Plan Implementation	\$40,447,000
Signs	\$2,000
Sidewalks	\$83,395,200
Studies: Bicycle Access	\$70,000
Studies: Complete Streets	\$1,315,000
Studies: Crossings	\$210,000
Studies: Shared Use Paths	\$335,000
Walking Spot Improvements	\$10,260,000
High Visibility Crosswalks	\$935,000
Pedestrian Scale Lighting	\$8,924,000
Rectangular Rapid Flashing Beacons (RRFBs)	\$400,000
Signs	\$1,000
Total	\$139,254,600



Tier 1 Priority Projects

Table 7-5: Priority 1 Projects by Type Summary

Project	Number	Total Length (miles)	Total Estimated Cost
Bike Parking	6	-	\$10,400
Bikeways	22	8.91	\$12,949,700
Class II Bike Lane	8	1.96	\$156,600
Class II Buffered Bike Lane	3	0.80	\$144,800
Class III Shared Lane Marking	3	1.07	\$33,300
Class III Bike Boulevard	7	3.08	\$231,000
Corridor Conceptual Plan Implementation	1	1.99	\$12,384,000
Sidewalks	4	0.74	\$1,208,300
Studies: Complete Streets	8	8.98	\$835,000
High Visibility Crosswalks	37	-	\$185,000
Total	77	19.31	\$15,188,400



Maintenance Cost Assumptions

Maintaining the walking and bicycling environment once it has been implemented preserves the investment and will help support a high quality of life for Concord residents. Maintenance costs are a concern for most Cities, as there are grants available to build projects but not to maintain them.

Table 7-6: Maintenance Cost Assumptions

Activity	Frequency	Unit	Estimated Cost
Crosswalk restriping	Arterials: 5-7 years Minor streets: 10 years	Each	\$2,800
Sidewalk and curb ramp repair	As needed		TBD
Class I Path repair and maintenance	Ongoing, annually	Mile	\$8,750
Sign repair	As needed	Each	\$300
Class II Bike Lane restriping, replacing stencils and signs as needed	Ongoing, annually	Mile	\$2,000
Class III Bike Route sign and sharrow stencil replacement	Ongoing, annually	Mile	\$1,250



City of Concord
Bicycle, Pedestrian &
Safe Routes to Transit Plan
Appendices

April
2016



Administrative Draft Plan Appendices

Technical Appendices

Table A-2: 2013 Mode of Transportation to Work

Mode	Percent of Employed Residents
Drive Alone	70.9%
Carpool	11.5%
Transit	9.8%
Walk	1.8%
Bicycle	1.0%
Other	5.0%

Source: American Community Survey 2013 3-year estimate

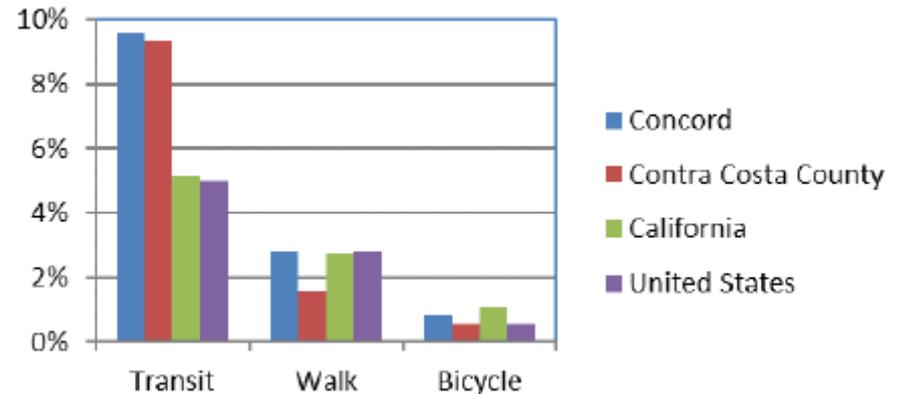
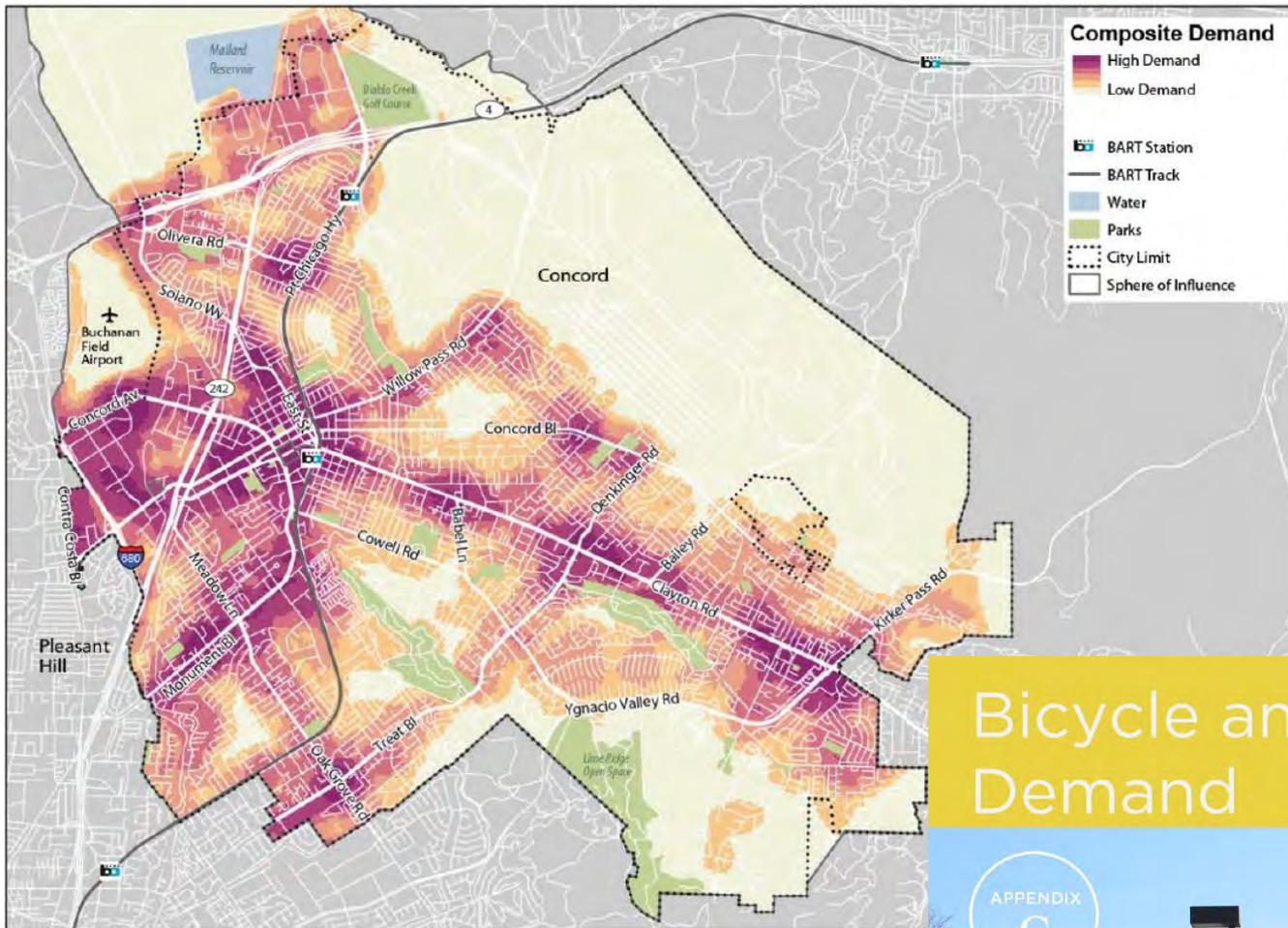


Table A-3: BART Trip Purpose

Trip Purpose	Concord Station	North Concord Station
Work	83%	82%
School	3%	7%
Work Related Activity	2%	3%
Visit Friends/Family	2%	-
Personal Errands	-	2%
Medical/Dental	-	2%
Other	10%	5%

Table A-6: Top Bicycle Collision Corridors

Street Name	Collisions
Clayton Road	41
Concord Avenue	22
Monument Boulevard	36
Willow Pass Road	34
Total	133



DEVELOPMENT OF BPSI

Demand Analysis Scoring Method

$$DC = \sum_{i=1}^n (F_i)$$

Categorical scores used in the BPSI reflect relative impact on bicycling and pedestrian activity. Scores are represented by walking distance between census blocks: scores within ¼ mile of each other. Subsequently, the BPSI scores effectively capture two important spatial considerations: distance decay - greater distances yield lower scores for features clustered away from other features; and spatial density - scores will increase in high density areas with factors that are clustered together. Scores will increase in low density areas without such activity. The density of census block corners and geographic factors, such as urban activity, BPSI categories range from 1-5.

Bicycle and Pedestrian Demand

APPENDIX
C

BPSI provides the following benefits:

- Quantify factors that impact bicycle and pedestrian activity and objectively identify areas where bicycles and pedestrians are most likely to be
- Identify network gaps that have the greatest impact on existing network connectivity and greatest potential improvement benefits for bicycles and pedestrians
- Provide a data-driven foundation for a project list that is informed by the spatial distribution of relevant demographics and demand factors
- Guide community leaders and the public on one aspect of the project prioritization process



Project List

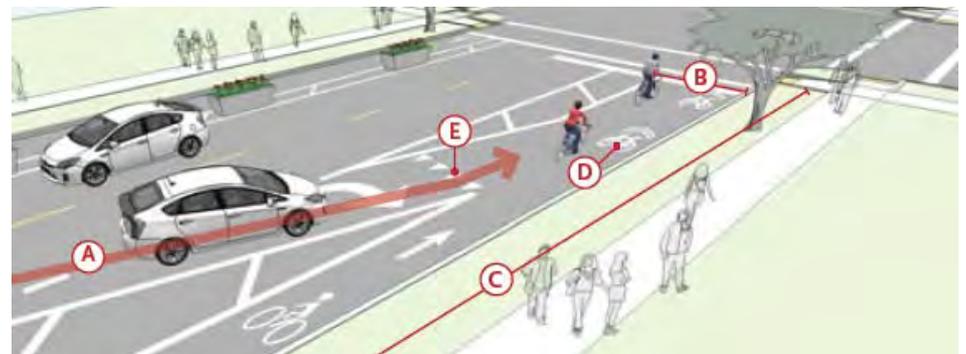
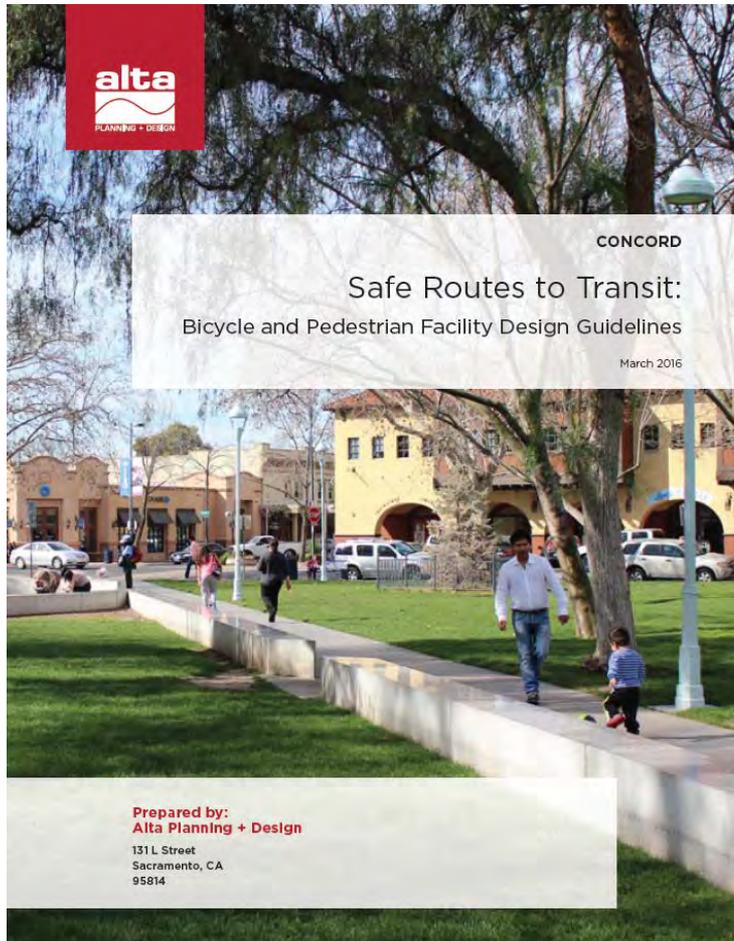


Tier 1: Intended for implementation within approximately five years of plan adoption

Tier 2: Intended for implementation within approximately five to ten years of plan adoption

Tier 3: Intended for implementation within approximately ten to twenty years of plan adoption.

Bicycle and Pedestrian Facility Design Guidelines



CLASS II: ON-STREET BICYCLE LANES

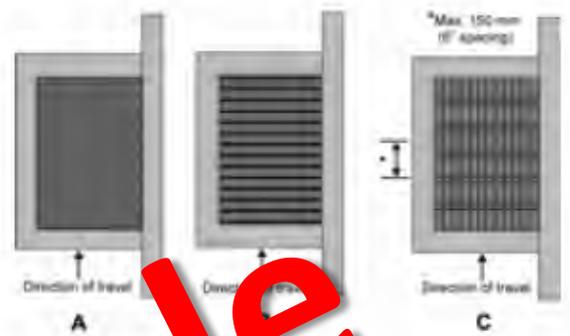


Designated exclusively for bicycle travel, on-street bicycle lanes are separated from vehicle travel lanes by striping, and can include pavement stencils and other treatments. On-street bicycle lanes are most appropriate on collector streets with single-lane of traffic in each direction where moderate traffic volumes and speeds are too high for shared-roadways.



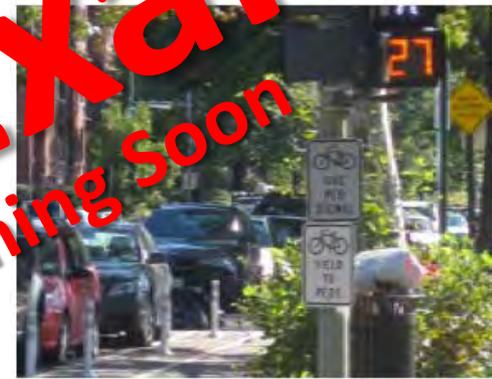
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Drainage Grates

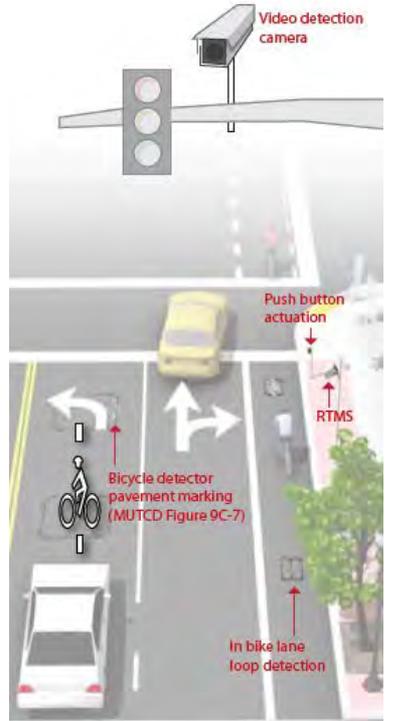


Utility infrastructure, such as manholes, water valve covers, and storm inlets within the roadway can present significant hazards to bicyclists, potentially causing a collision. Every effort should be made to avoid placing hazards within the primary travel path of bicyclists on new roadway construction.

Protect Bicyclist Signal Phase



A bicycle signal head at a signalized crossing creates a protected phase for cyclists to safely navigate an intersection.



Draft Example
Coming Soon

Crash Reduction

Studies have shown a 3% decrease in crashes at signalized intersections with exclusive right turn lanes when compared to sharing the roadway with motor vehicles. (CMF ID: 3257)



R4-11



R117 (CA)

- **Community Workshop at the Senior Center - 5:30pm on Thursday, May 5, 2016**
- **City Council Study Session, May 10, 2016**
- **Parks Rec Open Space Study Session, May 11, 2016**
- **Bike to Work Day is Thursday, May 12, 2016**
- **Planning Commission Study Session, May 18, 2016**



BAY AREA
BIKE TO WORK DAY  **MAY 12, 2016**

DOWNLOAD THE PLAN ONLINE AT
WWW.CITYOFCONCORD.ORG/BIKEANDPED

CALIFORNIA STATE BIKE & PED PLAN

- ABOUT THE CSBPP
- PARTNERS + PARTICIPATION
- PROCESS + SCHEDULE
- DOCUMENTS



WELCOME

The California State Bicycle and Pedestrian Plan (CSBPP) will be a visionary and comprehensive policy plan to promote a multi-modal transportation system that supports active modes of transportation and creates a framework to increase safe bicycling and walking.

LATEST NEWS

¡CSBPP en Español!

CSBPP website is now available in Spanish Language.

CSBPP Launched at the 2015 California Bicycle Summit

Caltrans Director Malcolm Dougherty launched the outreach effort for the California State Bicycle and Pedestrian Plan at the 2015 California Bicycle Summit, hosted by the California Bicycle Coalition.

Fact Sheet Available

A brief fact sheet provides an overview of the CSBPP. View or download it today.

[See All News](#)



Take the Survey!

Tell us your thoughts about walking and biking in your community.

[Learn More](#)



Get Involved

Participate in the planning process. We want your input!

[Learn More](#)



Sign up for Updates

Get the latest updates in your inbox.

[Learn More](#)

