



CITY OF NORTH SALT LAKE COMMUNITY & ECONOMIC DEVELOPMENT

10 East Center Street, North Salt Lake, Utah 84054
(801) 335-8700
(801) 335-8719 Fax

NORTH SALT LAKE PLANNING COMMISSION NOTICE & AGENDA January 14, 2020 6:30 p.m.

Notice is given of a public meeting of the North Salt Lake Planning Commission to be held on the above noted date and time in the North Salt Lake City Council chambers located at 10 East Center Street. The agenda will be as follows:

Welcome, Pledge, and Introduction

- 1) Public comments
- 2) Consideration of a request for a conditional use permit for a welding and metal fabrication business, Gusto Builds LLC at 605 North 700 West, Josh Gustaveson, applicant
- 3) Consideration of a request for a temporary use permit for a sales pavilion, Toll Brothers at 105 E. Edgcrest Lane, Reid Mosman, applicant
- 4) Public Hearing- Consideration of an update to the City's General Plan, to include an Active Transportation Plan.
- 5) Work Session-Review Draft Form Based Code with Consultant
- 6) Work Session-Draft Subdivision Code Amendments
- 7) Report on City Council actions on items recommended by Planning Commission
- 8) Approval of minutes:
 - a. November 26, 2019
 - b. December 10, 2019

Adjourn

The public is invited to attend all Planning Commission meetings. If you need special accommodations to participate in the Planning Commission meeting, please call the City offices at (801) 335-8700. Please provide at least 24 hours notice for adequate arrangements to be made. Times noted on the agenda are estimates only – the Commission may proceed faster or slower than these estimates indicate.

Notice of Posting:

I, the duly appointed recorder for the City of North Salt Lake, hereby certify that the foregoing agenda was posted on the Utah Public Notice website, at city hall, and sent to the required newspapers this 9 day of January, 2020.

Dated this 9 day of Jan, 2020.

Lynda Helrocks





CITY OF NORTH SALT LAKE COMMUNITY & ECONOMIC DEVELOPMENT

10 East Center Street, North Salt Lake, Utah 84054
(801) 335-8700
(801) 335-8719 Fax

MEMORANDUM

TO: Planning Commission
FROM: Kate Werrett, Planner
DATE: January 14, 2020
SUBJECT: Conditional Use Permit for Gusto Builds LLC at 506 North 700 West

RECOMMENDATION

The Development Review Committee (DRC) recommends approval of the conditional use permit for Gusto Builds LLC located at 506 North 700 West 190 North 640 West with the following conditions:

1. Final approval from the fire marshal prior to business license approval.

BACKGROUND

The applicant, Gusto Builds LLC, is proposing to locate a welding and metal fabrication shop at 506 North 700 West. "Fabricated metal product manufacturing" is a conditional use under "Manufacturing" in the Manufacturing-Distribution (MD) Zoning District.

There will be 3-5 employees working at this location during the highest shift. The manufacturing processes done at this site will including: welding, metal fabrication, and powder coating. An air compressor and other machinery will be used at this location. Operation hours will be 6am-3pm on weekdays.

Per the Code, manufacturing requires "1 stall per 1,000 square feet of gross floor area or 1 stall per employee on highest shift, whichever is greater". The applicant intends to rent the entire building. The building has 7,800 sf of manufacturing floor area, which requires a minimum of eight parking stalls. The location has eight parking stalls and additional paved space that could be used for parking if needed in the future.

Staff has not identified any issues with locating this business at the location requested.

The DRC noted that this use will require fire suppression systems and recommends final approval of the fire marshal as a condition of approval. The applicant has been in contact with the fire marshal and is aware of their requirements.

This conditional use permit is subject to the requirements of the City's Land Use Ordinance (10-7-1-4), requiring that every Conditional Use Permit shall expire by limitation and become null and void if the work authorized by such permit has not commenced within one (1) year, or is not completed within two (2) years from date of issue.

POSSIBLE MOTION

The Development Review Committee (DRC) recommends approval of the conditional use permit for Gusto Builds LLC located at 506 North 700 West 190 North 640 West with the following conditions:

1. Final approval from the fire marshal prior to business license approval.

Attachments

- 1) Aerial/Zoning Map



Conditional Use Permit Gusto Builds LLC – 506 North 700 West Zoning



-  Special Use Restricted (SR)
-  Residential (RM-7)
-  Residential (RM-20)
-  Residential (R1-7)
-  Residential (R1-12)
-  Residential (R1-10)
-  Natural Open Space (NOS)
-  General Industrial (MG)
-  Manufacturing-Distribution (MD)
-  Existing Uses Overlay (EUO)
-  Commercial Shopping (CS)
-  Highway Commercial (CH)
-  General Commercial (CG)
-  Planned District (P)



CITY OF NORTH SALT LAKE COMMUNITY & ECONOMIC DEVELOPMENT

10 East Center Street, North Salt Lake, Utah 84054
(801) 335-8700
(801) 335-8719 Fax

MEMORANDUM

TO: Planning Commission
FROM: Kate Werrett, Planner
DATE: January 14, 2020
SUBJECT: Conditional Use Permit for a temporary sales pavilion for Toll Brothers at 105 E. Edgecrest Lane

RECOMMENDATION

The Development Review Committee (DRC) recommends approval of the Toll Brothers temporary sales pavilion for The Ridge at 105 E. Edgecrest Lane, with the following condition(s):

1. The sales pavilion shall be removed from the site within 30 days of issuance of certificate of occupancy for the final dwelling unit for which the pavilion was utilized during construction.
2. A landscaping plan must be submitted prior to issuance of a building permit.
3. An ADA parking stall shall be located in the parking spaces closest to the pavilion.
4. After the temporary use is complete, the driveway must be relocated for the final site plan.
5. A building permit shall be obtained prior to construction on the site.

BACKGROUND

Toll Brothers, the home builder who will be constructing most of the single family homes in The Ridge, is requesting to build a temporary sales pavilion 105 E. Edgecrest Lane. The pavilion and its parking lot will be built on lots 103 and 104. The pavilion will serve as a sales office for the duration of the project. The building will be demolished and homes constructed on the lots 103 and 104 when the other lots have been sold.

There will be two sales employees at this location. They expect 20-30 potential homeowners to visit each week. A parking lot with 9 or 10 stalls will provide onsite parking for employees and prospective homeowners. The DRC recommends that an ADA parking stall be located in the parking spaces closest to the pavilion. The sales office will be open typically from 10am-6pm.

The structure will have neutral colored stucco and siding. The building will be one story and meets the setback requirements for the site. Toll Brothers intend to landscape around the pavilion and the parking lot. DRC recommends a condition of approval be that a landscape plan be submitted prior to issuance of a building permit.

Temporary uses are defined by the following code section and approved by the Planning Commission as a conditional use, delegated by the City Council:

10-1-44 Definitions:

TEMPORARY USE: Any use of land which, in the determination of the planning commission shall not extend beyond two (2) years from inception of such land use. A determination as to whether or not a land use is temporary shall be based solely upon facts submitted to the planning commission at the time of application for a conditional use permit for a temporary use. Unless found to be temporary, any use of the land shall be presumed to be permanent. Such uses include construction facilities, emergency facilities as well as interim uses of land and buildings awaiting ultimate use, i.e., pasture for a few months before construction begins, a carnival, fair, sports field, staging area, etc.

Toll Brothers plans to begin pavilion construction in late January. Per The Ridge Development Agreement, sales venues are required to be “removed from the site within 30 days of issuance of the certificate of occupancy for the final dwelling unit for which the [pavilion] was utilized during construction.” To reiterate this requirement, the DRC recommends the inclusion of a condition on the temporary use approval noting the removal timeframe. The Development Agreement timeframe allows for the presence of the pavilion to extend beyond the two year window if there are outstanding lots without certificates of occupancy. Toll Brothers expects the building will be present for about three years.

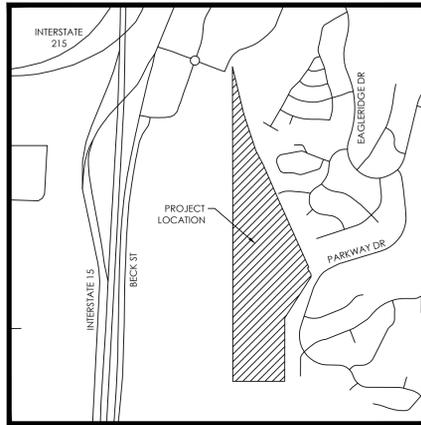
POSSIBLE MOTION

I move that the Planning Commission approve the Toll Brothers temporary sales pavilion for The Ridge at 105 E. Edgecrest Lane, with the following condition(s):

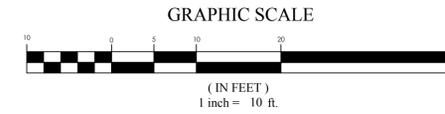
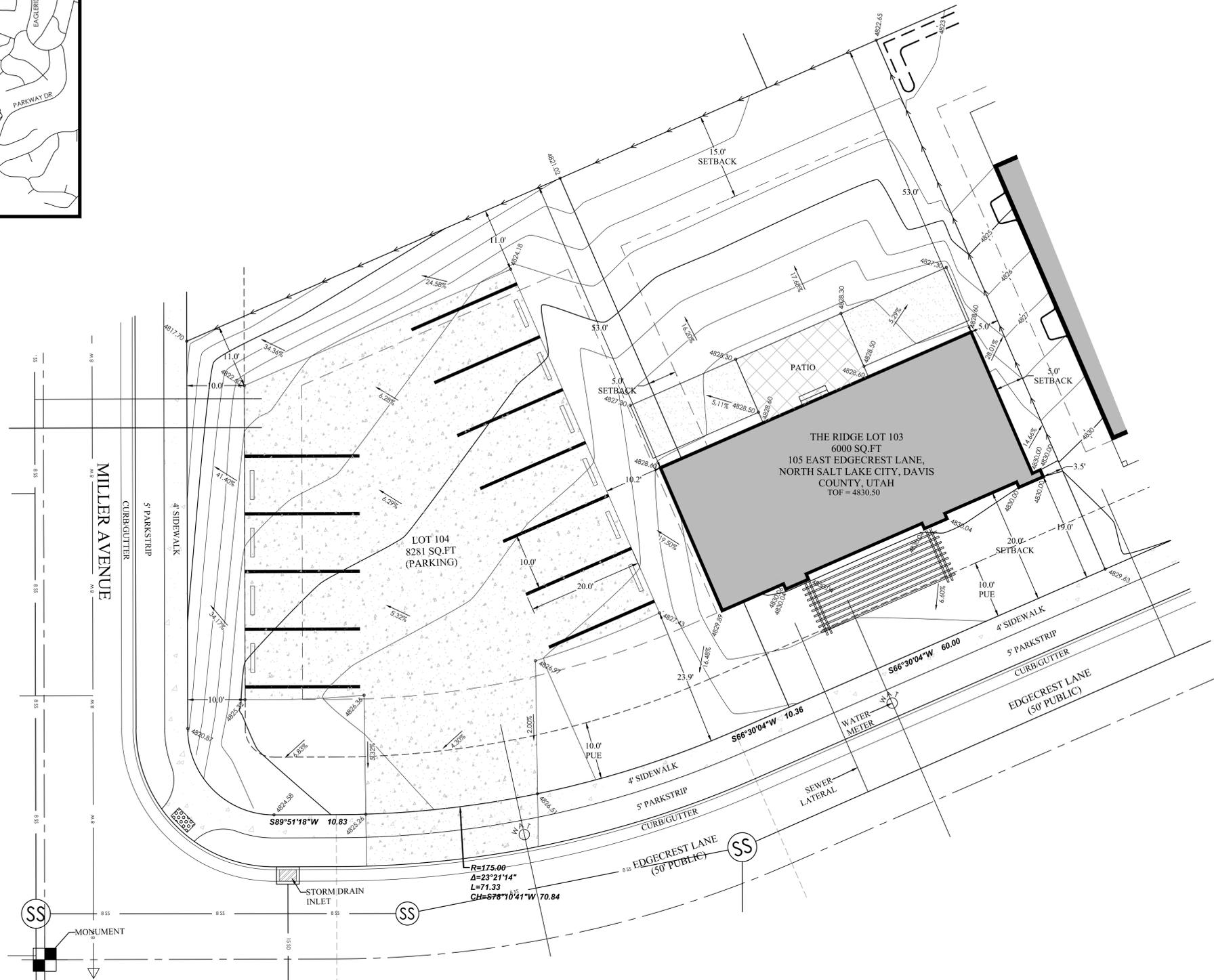
1. The sales pavilion shall be removed from the site within 30 days of issuance of certificate of occupancy for the final dwelling unit for which the pavilion was utilized during construction.
2. A landscaping plan must be submitted prior to issuance of a building permit.
3. An ADA parking stall shall be located in the parking spaces closest to the pavilion.
4. After the temporary use is complete, the driveway must be relocated for the final site plan.
5. A building permit shall be obtained prior to construction on the site.

Attachments

- 1) Site Plan
- 2) Elevations
- 3) Visualization



VICINITY MAP
NTS



NOTES:

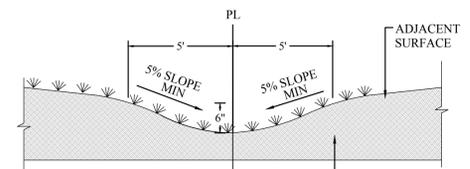
1. DRAINAGE SWALES SHALL BE INSTALLED ALONG THE SIDE AND REAR PROPERTY LINES AS REQUIRED. SWALES SHALL REMAIN UNALTERED AND BE MAINTAINED BY THE PROPERTY OWNER.
2. ALL WINDOW WELLS TO BE 6" BELOW TOP OF FOUNDATION AND A MINIMUM OF 3" ABOVE FINISHED GRADE.
3. ALL CONSTRUCTION TO BE DONE ACCORDING TO CITY STANDARDS AND SPECIFICATIONS.
4. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION, INCLUDING THE ELEVATION OF THE SEWER LATERAL.
5. THE GRADE AWAY FROM FOUNDATION WALLS SHALL FALL A MINIMUM OF 6 INCHES WITHIN THE FIRST 10 FEET (5.0%) R401.3
6. ROOF DRAINAGE TO BE CONVEYED (AS MUCH AS POSSIBLE) TO THE FRONT OF THE HOUSE AND TO THE STREET.
7. PROVIDE LANDINGS ON BOTH SIDES OF ALL EXTERIOR DOORS. LANDINGS MUST BE 36" DEEP (MIN.) R311.6.2
8. A TRASH DUMPSTER AND PORTABLE CONSTRUCTION TOILET SHALL BE PROVIDED AT ALL NEW CONSTRUCTION SITES.
9. ANY WORK IN THE PUBLIC WAY SHALL CONFORM TO APWA 2017 STANDARD PLANS AND SPECIFICATIONS
10. IT IS NOT ANTICIPATED THAT ANY CONSTRUCTION IN THE PUBLIC WAY WILL BE REQUIRED FOR THE PROJECT.
11. NOTIFY BLUE STAKES (801) 208-2100 OR BLUESTAKES.ORG

LEGEND:

- FF = FINISHED FLOOR
- TOF = TOP OF FOUNDATION
- TOP = TOP OF PORCH
- GFF = GARAGE FLOOR
- BFF = BASEMENT FINISHED FLOOR

SETBACKS:

- FRONT = 20'
- SIDE = 5'
- REAR = 15'



NOTE: DRAINAGE SWALES TO BE CREATED ALONG ENTIRE LOT LINES TO PREVENT STORM RUN-OFF FROM IMPACTING ADJACENT PROPERTIES.

DRAINAGE SWALE DETAIL 1
NTS

CONTACTS

ENGINEER & SURVEYOR
 FOCUS ENGINEERING & SURVEYING, LLC
 32 WEST CENTER STREET
 MIDVALE, UTAH 84047
 (801) 352-0075
 PROJECT MANAGER: MATHEW WANGSGAARD
 SURVEY MANAGER: SPENCER LLEWELYN

OWNER/DEVELOPER
 TOLL BROS., INC.
 14034 S. 145 E. SUITE 202
 DRAPER, UT 84020
 (385) 838-1800

KTGY GROUP, INC.
 1814 FRANKLIN STREET, SUITE 400
 OAKLAND, CA 94612
 (510) 272-2910

THE RIDGE, LOT 103
 105 EAST EDGECREST LANE
 NORTH SALT LAKE CITY, DAVIS COUNTY, UTAH
SITE PLAN

REVISION BLOCK	
#	DESCRIPTION
1	
2	
3	
4	
5	
6	

SITE PLAN

Scale: 1"=10'
 Date: 12/13/2019
 Sheet: SP-1





Architecture + Planning
 The Leamington Building
 1814 Franklin Street, Suite 400
 Oakland, CA 94612
 ktgy.com
 510.272.2910

KTGY Project No: 190983

Project Contact: Jonathan Jaeger
Email: jjaeger@ktgy.com

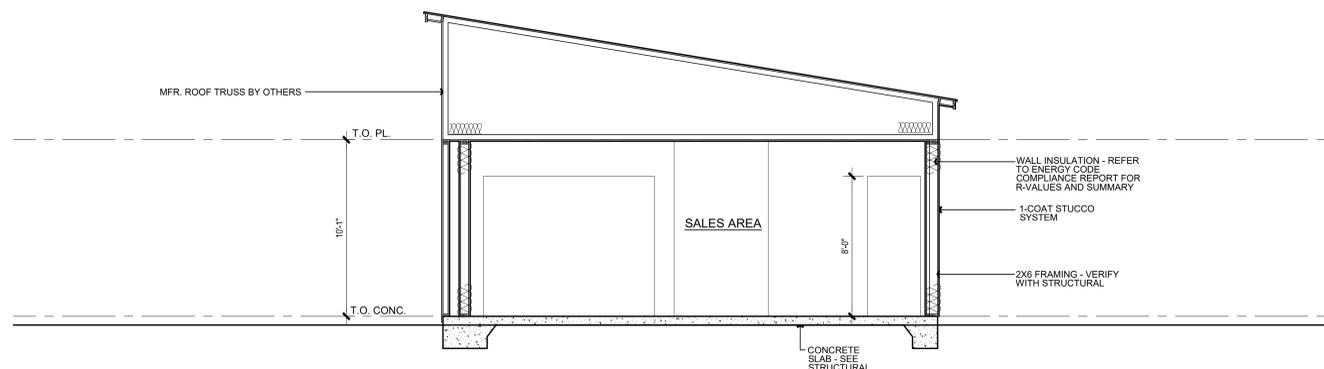
Principal: William Ramsey
Project Designer: Jim Tsai

Developer



TOLL BROTHERS
 14034 SOUTH 145 EAST, SUITE 202

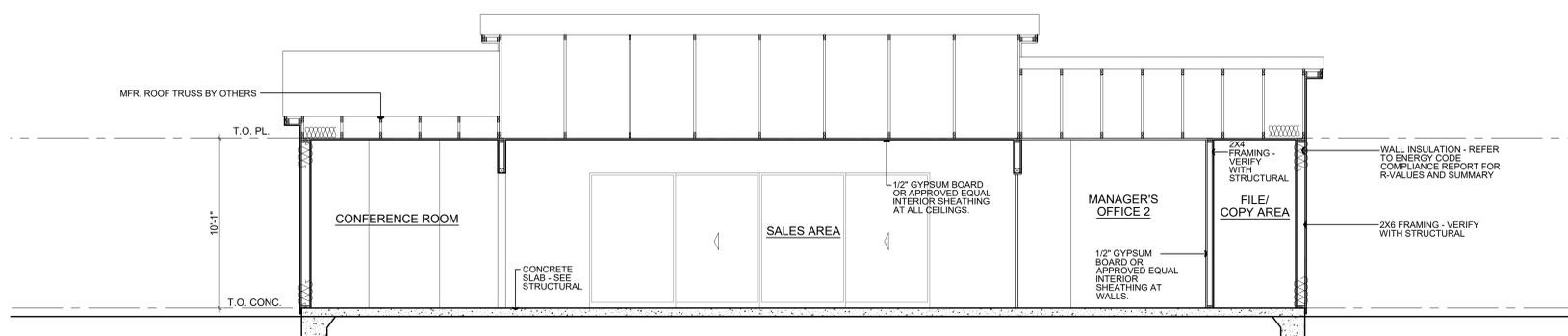
DRAPER, UTAH
PHONE NO. 480-695-2027
FAX NO. ----



SALES CENTER SECTION 2

SCALE : 1/4" = 1'-0"

2



SALES CENTER SECTION 1

SCALE : 1/4" = 1'-0"

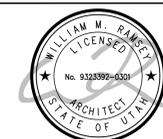
1

THE RIDGES SALES CENTER

NORTH SALT LAKE CITY, UTAH

No.	Date	Description
	12/18/2019	BD SUBMITTAL

It is the clients responsibility prior to or during construction to notify the architect in writing of any proposed errors or omissions in the plans and specifications of which a contractor thoroughly knowledgeable with the building codes and methods of construction should reasonably be aware. Written instructions addressing such proposed errors or omissions shall be received from the architect prior to the start or clients subcontractors proceeding with the work. The client will be responsible for any defects in construction if these procedures are not followed.



SALES CENTER SECTIONS

SDW-101



Architecture + Planning
 The Leamington Building
 1814 Franklin Street, Suite 400
 Oakland, CA 94612
 ktgy.com
 510.272.2910

KTGY Project No: 190983

Project Contact: Jonathan Jaeger
Email: jaeger@ktgy.com

Principal: William Ramsey
Project Designer: Jim Tsai

Developer
Toll Brothers
 America's Luxury Home Builder®

TOLL BROTHERS
 14034 SOUTH 145 EAST, SUITE 202

DRAPER, UTAH
PHONE NO. 480-695-2027
FAX NO. ----

THE RIDGES SALES CENTER

NORTH SALT LAKE CITY, UTAH

ELEVATION NOTES

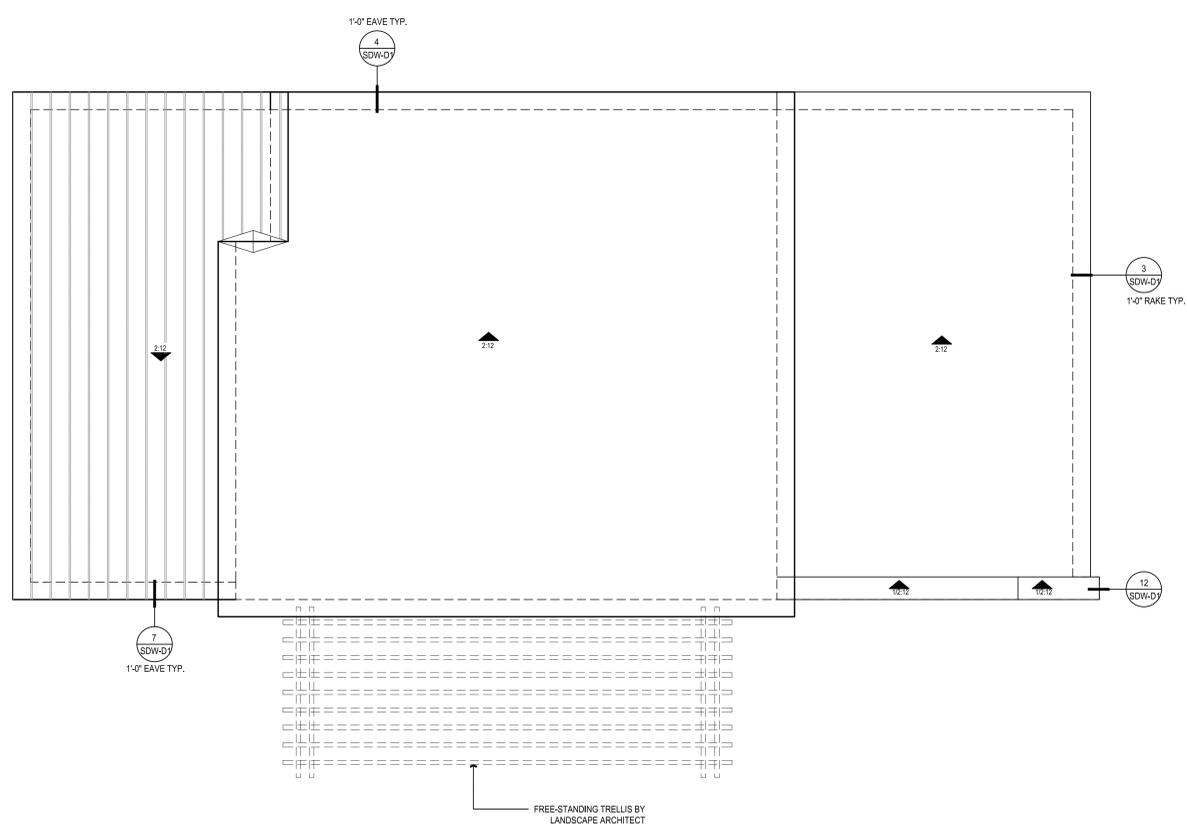
1. ALL STUD WALLS & CEILINGS EXTENDING INTO A SOFFIT WILL BE PREBOARDED WITH RATED GYP-BD PRIOR TO SOFFIT INSTALLATION.
2. DUCT TERMINATION TO OCCUR MINIMUM 10'-0" FROM WINDOW OR DOOR OPENINGS INTO DWELLING UNIT.
3. ALL VERTICAL DIMENSIONS SHOWN ARE FROM THE INTERIOR TOP OF SHEATHING AT THE FIRST OR SECOND FLOOR.
4. REFER TO DETAILS FOR MINIMUM WINDOW, DOOR AND WALL VENT MOISTURE BARRIERS INSTALLATION REQUIREMENTS.
5. PROVIDE (2) LAYERS OF GRAD 'D' BUILDING PAPER AT WOOD SHEATHED WALLS RECEIVING EXTERIOR PLASTER.
6. ALL VERTICAL PLASTER SURFACES 3" OR MORE IN DEPTH WILL RECEIVE ICE AND WATER SHIELD WEATHER BOARD LAPPED 6" MINIMUM WITH BUILDING PAPER PRIOR TO THE APPLICATION OF WIRE LATH AND PLASTER.

ROOF PLAN NOTES

1. IN 'CALIFORNIA' DOUBLE FRAMING AREAS, PROVIDE OPENINGS INTO MAIN ATTIC SPACE FOR ADEQUATE VENTILATION PER IRC.
2. ALL BOX COLUMNS AND 'POP-OUTS' SHALL REMAIN OPEN AT TOP PLATE LINE TO ALLOW FOR VENTILATION.
3. PROVIDE TWO (2) LAYERS GRADE 'D' MIN. BUILDING PAPER UNDER STUCCO WHERE WOOD SHEATHING OCCURS.
4. NO ROOF PENETRATIONS (I.E. ATTIC VENTS, CHIMNEYS, PLUMBING OR DRYER VENTS, ETC.) TO OCCUR WITHIN 1'-0" OF VALLEY, HIPS OR RIDGES.



EXTERIOR ELEVATIONS SCALE : 1/4" = 1'-0" 2



ROOF PLAN SCALE : 1/4" = 1'-0" 1

No.	Date	Description
	12/18/2019	BD SUBMITTAL

It is the clients responsibility prior to or during construction to notify the architect in writing of any proposed areas or concerns in the plans and specifications of which a contractor thoroughly knowledgeable with the building codes and methods of construction should reasonably be aware. Written instructions addressing such proposed areas or concerns shall be received from the architect prior to the start or clients subcontractors proceeding with the work. The client will be responsible for any defects in construction if those procedures are not followed.



SALES CENTER
EXTERIOR ELEVATIONS
AND ROOF PLAN

SDW-102





CITY OF NORTH SALT LAKE COMMUNITY & ECONOMIC DEVELOPMENT

10 East Center Street, North Salt Lake, Utah 84054
(801) 335-8700
(801) 335-8719 Fax

MEMORANDUM

TO: Planning Commission
FROM: Ali Avery, Long Range Planner
DATE: January 14, 2020
SUBJECT: Consideration of a General Plan update to include an Active Transportation Plan within the Transportation Element

RECOMMENDATION

City Staff recommends approval of the draft update to the Transportation Element of the General Plan, as amended, with the following findings:

1. The state legislature has determined that cities must include the general location and extent of active transportation facilities in the General Plan; and
2. The proposed draft meets the requirements of the state code to continue to allow the City to apply for Transportation Investment Fund money.

BACKGROUND

The State Code in section 10-9a-403 requires that municipalities prepare a General Plan to address the present and future needs of the city and guide future growth and development. One of the requirements in a General Plan is a transportation and traffic circulation element. The state code requires the following:

- (ii) a transportation and traffic circulation element that:
 - (A) provides the general location and extent of existing and proposed freeways, arterial and collector streets, public transit, active transportation facilities, and other modes of transportation that the planning commission considers appropriate;
 - (B) for a municipality that has access to a major transit investment corridor, addresses the municipality's plan for residential and commercial development around major transit investment corridors to maintain and improve the connections between housing, employment, education, recreation, and commerce;
 - (C) for a municipality that does not have access to a major transit investment corridor, addresses the municipality's plan for residential and commercial development in areas that will maintain and improve the connections between housing, transportation, employment, education, recreation, and commerce; and
 - (D) correlates with the population projections, the employment projections, and the proposed land use element of the general plan; and

REVIEW

The draft Active Transportation Plan meets the requirements of the state code for the Transportation and Traffic Circulation Element of the General Plan, and with its adoption, will allow the City to continue to seek Transportation Investment Fund money. Additionally, the Active Transportation Plan will guide the establishment of a cohesive network of facilities in South Davis County.

POSSIBLE MOTION

I move that the Planning Commission recommend to the City Council the proposed Active Transportation Plan as an amendment to the Transportation Element of the City's General Plan with the following findings:

1. The state legislature has determined that cities must include the general location and extent of active transportation facilities in the General Plan; and
2. The proposed draft meets the requirements of the state code to continue to allow the City to apply for Transportation Investment Fund money.

Attachments

- 1) Draft Active Transportation Plan

SOUTH DAVIS COUNTY ACTIVE TRANSPORTATION PLAN

A multi-jurisdiction plan for the Cities of
Bountiful, Centerville, and North Salt Lake



This Plan was prepared for the Cities of Bountiful, Centerville, and North Salt Lake by Alta Planning + Design and Township + Range Community Planning, with funding and planning assistance from the Wasatch Front Regional Council, Steering Committee, and local staff.





Project Team

Ali Avery, City of North Salt Lake
Mackenzie Wood, City of Centerville
Bruce Cox, City of Centerville
Curtis Poole, City of Bountiful
Alex Roy, Wasatch Front Regional Council

Steering Committee

Ali Avery, City of North Salt Lake
Curtis Poole, City of Bountiful
Mark Oligschlaege
Paul Ottoson, City of North Salt Lake
Mike Smith, City of Centerville
Jake Layton, Centerville Trails Committee
Andrea Olson, UDOT Region 1
Llyod Cheney, City of Bountiful
Mackenzie Wood, City of Centerville
Jeff Oyler, Davis County
Sherrie Llewelyn, City of North Salt Lake
Alex Roy, Wasatch Front Regional Council

Alta Planning + Design

Danielle Berger, Project Manager
Mack Drzayich, Assistant Project Manager
David Foster
Joe Gilpin
Jonathan Hilton
Emily Guffin

Township + Range

Tim Sullivan

TABLE OF CONTENTS



INTRODUCTION

01

Project Overview	2
Vision and Goals	5

EXISTING CONDITIONS

02

Existing Conditions Overview	8
Current Trends	9
Previous Planning Efforts	13
Existing Network	23
Crash and Safety Analysis	25

PUBLIC INPUT

03

Public Input Overview	30
Online Survey	31
In-Person Pop-up Events	33
Online Interactive Map	34
Stakeholder Charrettes	39

INFRASTRUCTURE RECOMMENDATIONS

04

Overview	42
All Ages and Abilities Network	43
Recommended Network	44
Walkable Activity Centers	47

POLICY RECOMMENDATIONS

05

Overview	54
Policy Recommendations	55

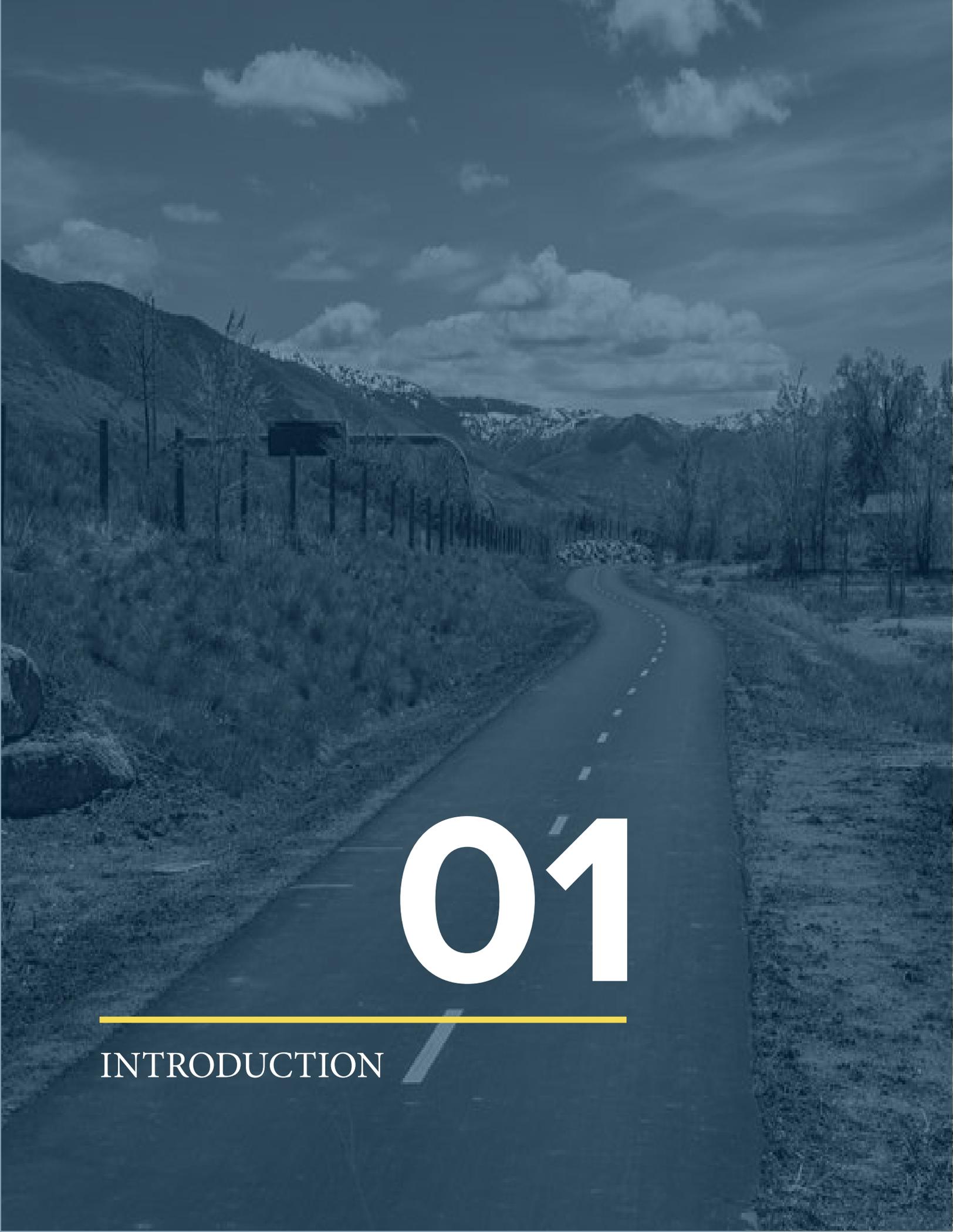
IMPLEMENTATION

06

Overview	68
Cost Estimates	69
Funding Sources	69
Project Prioritization	77

APPENDICES

Appendix A: Implementation Tables
Appendix B: Model Policies
Appendix C: Design Guidelines



01

INTRODUCTION

ABOUT THE PLAN

The Cities of Bountiful, Centerville, and North Salt Lake were collectively awarded a Transportation Land Use Connection¹ (TLC) grant through the Wasatch Front Regional Council (WFRC) in 2018. All three communities share a common goal of providing improved active transportation options for the residents in South Davis County.

The cities recognize that by providing multiple options for transportation, they will better serve our populations who do not wish to use or do not have the ability to use personal vehicles. The three cities hope to provide an active transportation network that will allow residents to recreate within their own communities, and potentially commute to work as a pedestrian or cyclist.

The South Davis County Active Transportation Plan will serve as a guide to city staff, commissions, and elected officials on how to allocate funds and properly construct (and reconstruct) roadways that are conducive to multiple modes of transportation. The Plan hopes to improve the health of residents by promoting exercise and active transportation while reducing the environmental impacts of personal vehicles on communities, specifically by improving the air quality.

Implementing the strategies of the Active Transportation Plan will further establish South Davis County as a recreation destination and promote economic development and tourism. Additionally, with the adoption of the Plan, there is the potential for grant opportunities to become available for implementation.

The recommendations in this plan and its appendices may change as the cities within the study area change, as priorities shift, and as opportunities arise to complete project. The plan should be considered a fluid document. Some of the projects may need to be implemented incrementally and specific recommendations may be altered; specific and recommended facility types are the ultimate goal, but other treatments may need to be used in the interim.

PLANNING PROCESS

The development of the South Davis County Active Transportation Plan took place over an 8-month period starting in January 2019. Key components of the process included:

- » A project kickoff meeting to review project goals and schedule
- » Development of a Steering Committee to gather input and provide updates
- » Existing conditions report summarizing current walking and bicycling challenges, policies and programs
- » Extensive public input collected through pop-up outreach events, online webmap, survey, and stakeholder interviews
- » Infrastructure Design Guide
- » Policy recommendations
- » Draft and final report

¹The Transportation and Land Use Connection (TLC) program is a partnership between the Wasatch Front Regional Council (WFRC), Salt Lake County, Utah Department of Transportation (UDOT), and Utah Transit Authority (UTA). Learn more here: <https://wfrc.org/programs/transportation-land-use-connection/>

WHAT IS ACTIVE TRANSPORTATION

Active transportation is defined as “human-powered modes of transportation, primarily walking and bicycling”. In addition to providing a low-cost and accessible form of transportation, walking and biking offers many additional benefits to communities that choose to plan and invest in developing comprehensive and connected active transportation systems.

The Cities of Bountiful, Centerville, and North Salt Lake are uniquely positioned to realize many of these benefits such as improved quality of life for residents, enhanced community health, improved air quality and even economic benefits. The South Davis County Active Transportation Plan establishes a blueprint for developing a system and culture where bicycling and walking are integral parts of everyday life.

WHY IS IT IMPORTANT?

Health

Walking and bicycling have profound effects on the health of individuals and communities. Levels of diabetes, high blood pressure, and obesity are all lower in cities with higher percentages of commuters bicycling or walking to work. Likewise, where commuters bicycle or walk to work in higher percentages, more of the population is meeting the recommended amount of weekly physical activity.

Safety

Safety also has a strong relationship with bicycling and walking levels. In cities where a higher percent of commuters walk or bicycle to work, corresponding fatality rates are generally lower. This is likely due to motorists being more accustomed to sharing the road with bicyclists and more aware of pedestrians at crossings.

Winter Air Quality

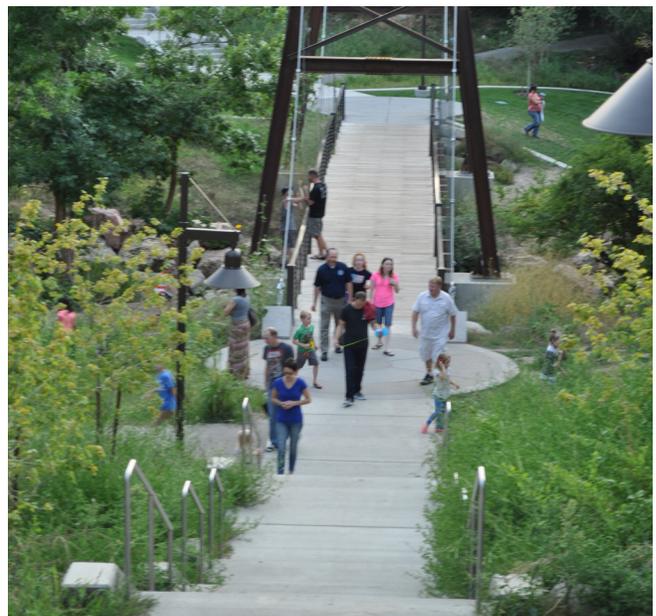
During winter inversions, Davis County suffers from poor quality which has public health and environmental implications. Encouraging biking and walking trips is one way to help mitigate this community-wide problem. Convincing South Davis County residents to bike or walk in January may seem difficult but it may actually be easier than you think. Studies have shown that commuter bicyclists can actually breathe in less harmful toxins by taking less congested routes than bus commuters. In addition, walking and biking can be quite popular in northern climates. On a statewide basis, nine of the top ten states for biking and walking activity are located in “northern” climates including Oregon and Minnesota.

Economics

Bicycling and walking can also have positive impacts on local economies in a variety of ways. Job creation through new bicycling and walking infrastructure, tourism, retail sales, property values and worker productivity can all be enhanced through active transportation.

Quality of Life

Bicycling and walking are also important ways to improve quality of life for existing and prospective Logan residents. According to the National Association of Home Builders, trails consistently rank in the top five amenities desired by prospective home buyers.



TYPES OF BICYCLISTS

It is important to consider bicyclists of all skill levels when planning a network of bikeways. Infrastructure should allow for a comfortable experience for the greatest number of users and user types as possible.

There are four general types of bicyclists¹ people identify as:

- » **Strong and fearless** bicyclists will typically ride anywhere regardless of road or weather conditions, ride faster than other user types, prefer direct routes, and will typically choose to ride on the road, even if shared with vehicles, over separate bikeways like shared use trails.
- » **Enthusied and confident** bicyclists are fairly comfortable riding in dedicated bikeways but usually choose low traffic streets or shared use trails when available.
- » **Interested but concerned** bicyclists comprise the majority of the population (approximately 60%) and are typically those who only ride on low traffic streets or shared use trails in fair weather and prefer separation from motor traffic. This demographic would like to bike more but have concerns such as safety.

- » **“No way, no how”** people will not ride a bicycle under any circumstances, either due to physical disability or overall lack of interest.

According to a survey conducted by People for Bikes, nearly half of American adults (47 percent) would like to ride a bicycle more often, and 43 percent would be more likely to ride if bikeways were physically separated from motor vehicles, confirming that the potential for higher ridership is present, but that a lack of comfortable infrastructure is a major barrier.² The South Davis County Active Transportation Plan seeks to address this issue by recommending a denser and more comfortable network of bikeways in Bountiful, Centerville, and North Salt Lake.

¹ Four Types of Cyclists. (2009). Roger Geller, City of Portland Bureau of Transportation: <https://www.portlandoregon.gov/transportation/44597?a=237507>

² U.S. Bicycling Participation Study. (2018) People for Bikes: <https://peopleforbikes.org/wp-content/uploads/2019/04/Corona-Report-for-PFB-Participation-2018-for-Website.pdf>



PROJECT VISION

Bountiful, Centerville, and North Salt Lake will work together to improve quality of life, community health, and recreational access in South Davis County by connecting neighborhoods and destinations through safe walking and bicycling facilities.



PROJECT GOALS



Connectivity - Develop a connected walking and bicycling system that can be used for a variety of trips

Increase and improve pedestrian and bicyclist access to employment centers, schools, existing and future transit, and other community destinations across Davis County.



Safety - Ensure residents feel safe and protected when walking or bicycling

Improve safety for active transportation users of all ages and abilities through the design and maintenance of sidewalks, streets, intersections, and other roadway improvements such as signage, striping, lighting, wayfinding, and landscaping.



Recreation - Increase and improve access to regional trail facilities

Develop a walking and bicycling network that provides year-round access to regional recreational facilities such as Legacy Parkway and Bonneville Shoreline Trail for all users.



Sustainability - Help improve air quality through commuting options for those who work in Davis County and neighboring cities

Provide seamless connections to existing and future transit including FrontRunner and BRT services. Provide safe, connected facilities for those who commute by bicycle to Salt Lake City and other employment areas.



Partnerships - Collaborate and maintain partnerships to realize shared interests in active transportation

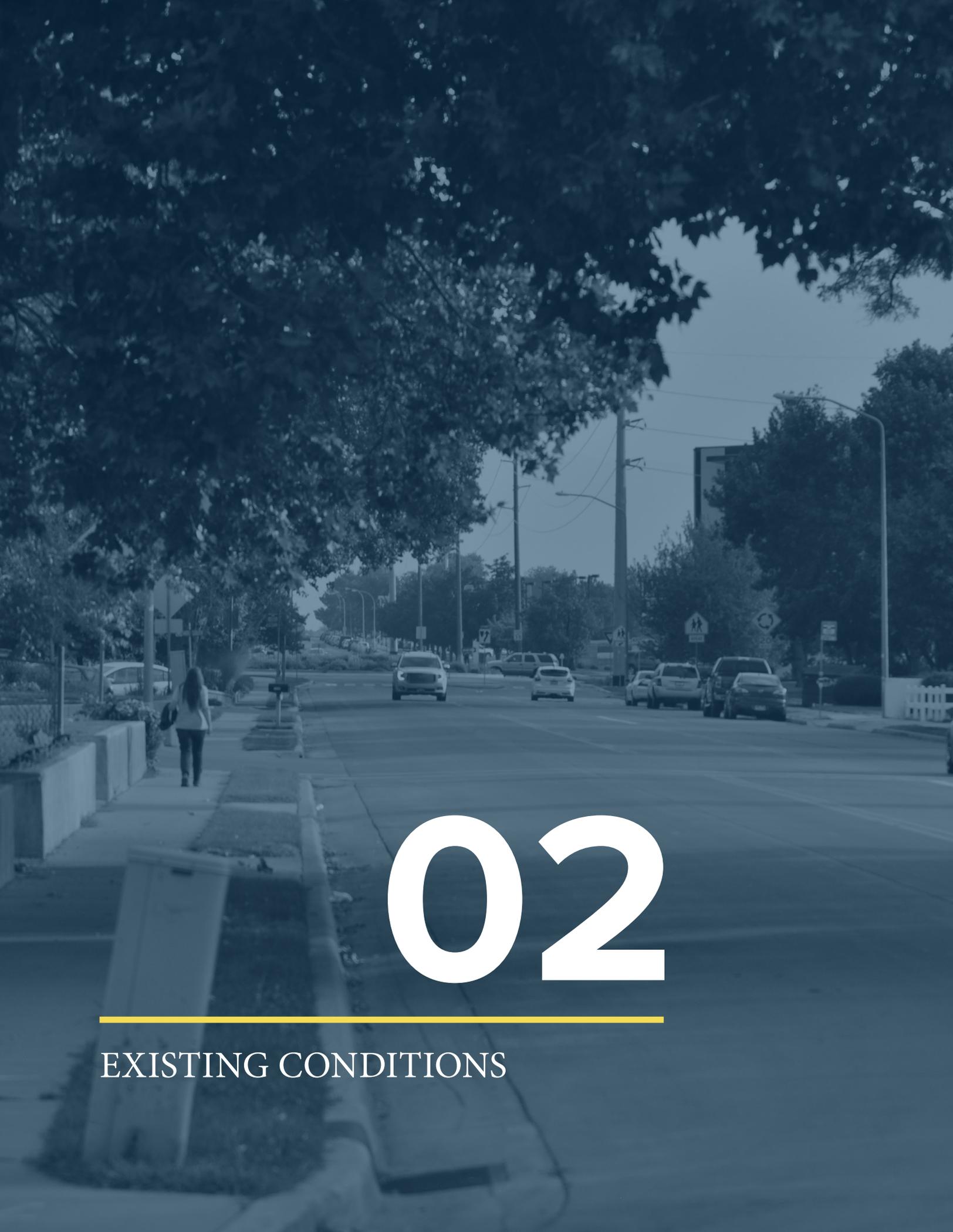
Pursue collaborative funding strategies to support implementation of new and improved walking and bicycling facilities.

Coordinate with partners to promote development of active transportation educational and encouragement programs such as Davis County Health Dept. and Davis School District.



Health - Improve community health

Provide easy and convenient opportunities to integrate exercise and physical activity into daily routines with connected walking paths and safe bicycle facilities.

A blue-tinted photograph of a city street. In the foreground, a person is walking on a sidewalk on the left. The street has several cars parked and driving. There are trees lining the street and utility poles. The overall scene is a typical urban environment.

02

EXISTING CONDITIONS



OVERVIEW

As is true for many of the communities along the Wasatch Front, the cities of Bountiful, Centerville, and North Salt Lake face a handful of related challenges in cultivating a culture of high active transportation participation. These include: past development patterns aided by and dependent upon vehicular transportation, significant topography, inclement winter weather, circuitous street network patterns, and the presence of high-volume, high-speed roads and highways that bisect neighborhoods, town centers, and communities. This section seeks to paint a picture of the current state of active transportation in South Davis County by looking at current trends in local active transportation, planning efforts to date, and existing walking and biking infrastructure.

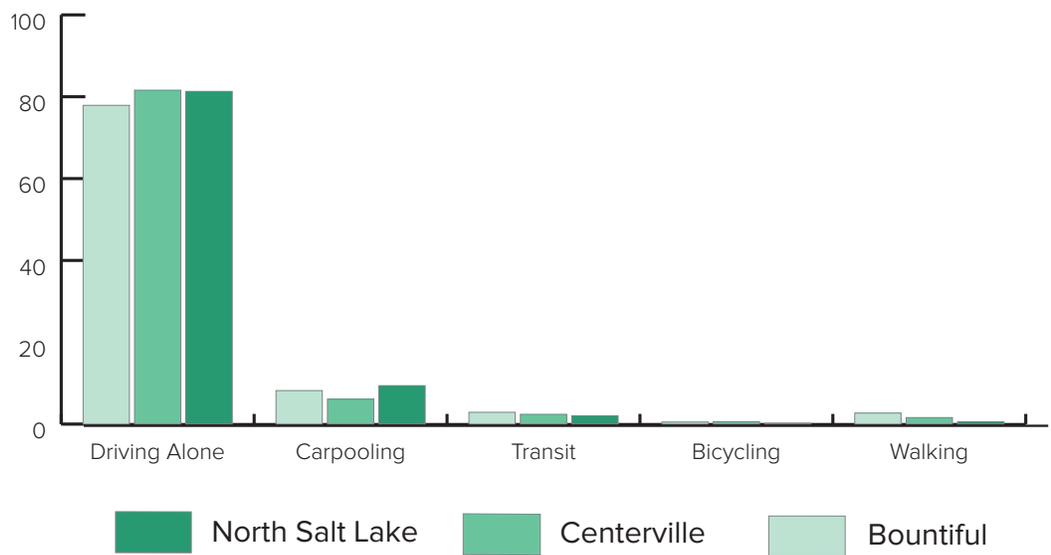
CURRENT TRENDS

As part of the existing conditions analysis, the planning team tried to understand current trends in transportation among South Davis County residents by analyzing data with regards to mode share. Mode share refers to the percentage of trips taken by a particular form of transportation (i.e. car, bus, bicycle, walk, taxi). Three data sources are used in this analysis: the American Community Survey (2017), the Utah Travel Study (2012) and the National Household Travel Survey (2017).

American Community Survey Data

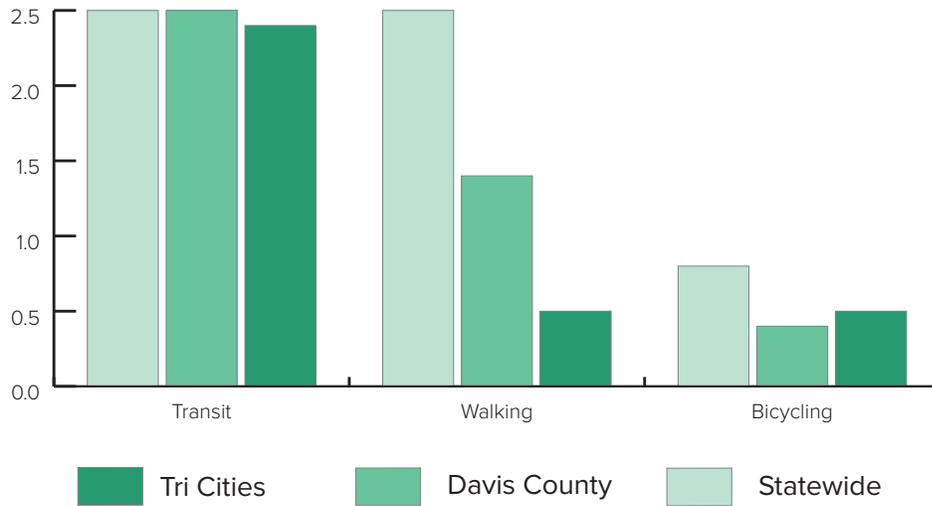
Based on 2013-2017 American Community Survey (ACS) data, the cities of Bountiful, Centerville, and North Salt Lake show the majority of residents commuting to work by driving alone (78%, 82%, and 81%, respectively), followed distantly by those carpooling (8%, 6%, and 9%, respectively). The percent of residents commuting to work by walking is very low (3%, 2% and 1%, respectively) and those commuting by bicycling even lower (less than 1% for all cities). See Figure 2.1 for a visualization of this data. While these numbers do not shine positively on active transportation use, they could be attributed to the lack of current bicycle and pedestrian infrastructure as well as the hilly topography within the area.

Figure 2.1 ACS Commute Data for Bountiful, Centerville, and North Salt Lake



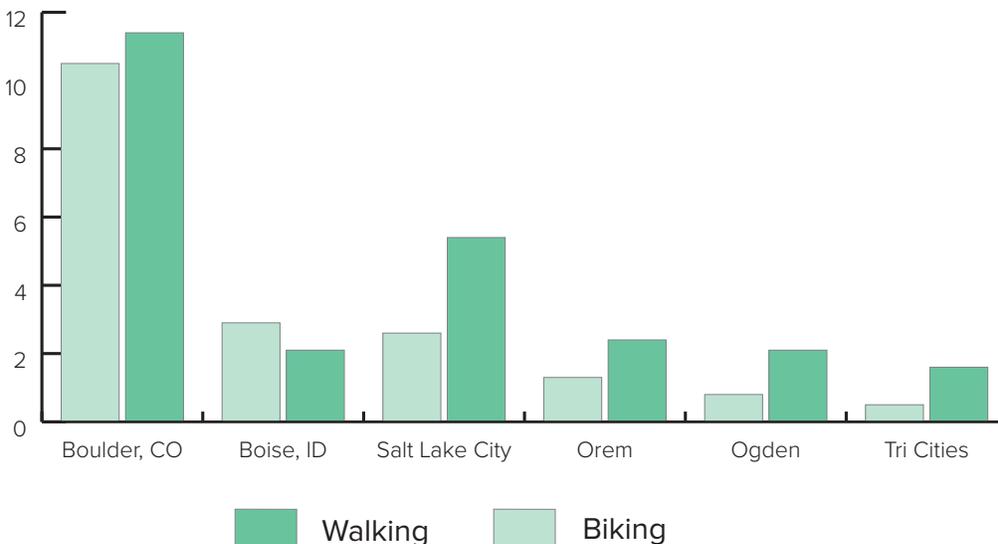
When comparing these cities' averages to state and county averages, however, it is also apparent that Bountiful, Centerville, and North Salt Lake have a lower than average number of people commuting to work by bike or foot. The percent population using public transit within Bountiful, Centerville, and North Salt Lake is comparable to the percent population in Utah and Davis County. See Figure 2.2.

Figure 2.2 ACS Commute Data for mode share comparison across the State and County



Further, comparisons with similar towns within the mountain west region illustrate an even more dire situation within Bountiful, Centerville, and North Salt Lake. Comparing these three cities to Orem, Ogden, or Salt Lake City (all fairly comparable cities), it is apparent that Bountiful, Centerville, and North Salt Lake don't have nearly the same amount of active transportation commuters. In fact, out of all of the cities, Bountiful, Centerville, and North Salt Lake show the lowest numbers of people bicycling or walking to work. Comparing these cities to more established leaders in bicycle and pedestrian planning, such as Boulder, Colorado, and Boise, Idaho, further demonstrates the work needed to develop a community committed to active transportation. See Figure 2.3 for a visualization of these comparisons.

Figure 2.3 ACS Commute Data for comparable cities



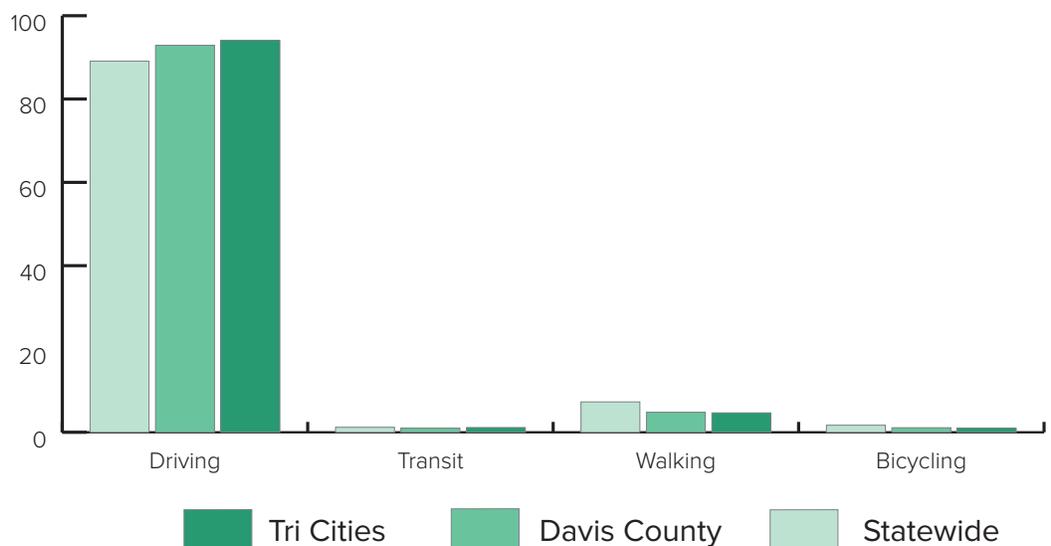
The Utah Travel Survey (2012) and National Household Travel Survey (2017)

Journey to work data from the ACS is an important and consistent data source to measure changes in mode share over time; however, this data represents only one type of trip and does not accurately reflect overall levels of bicycling and walking for all trip purposes. For example, people may choose alternative modes of transportation for trips that involve going to school, running errands, dropping family members off, and so forth.

The 2017 National Household Travel Survey was developed by the Federal Highway Administration (FHWA) and provides information on national travel behavior at the household level. It is the only source of national data that shows trends in personal and household travel, including non-work related trips by all transportation modes and characteristics of the people traveling, their household, and their vehicles. The state of Utah, in collaboration with the Utah Department of Transportation and the Utah Transit Authority, also undertook a similar study in 2012 that examined travel behavior at a more detailed level within the state of Utah. Since both of these datasets measure trips for all modes and purposes (not just journey to work), it can paint a clearer picture of current transportation habits beyond the ACS data.

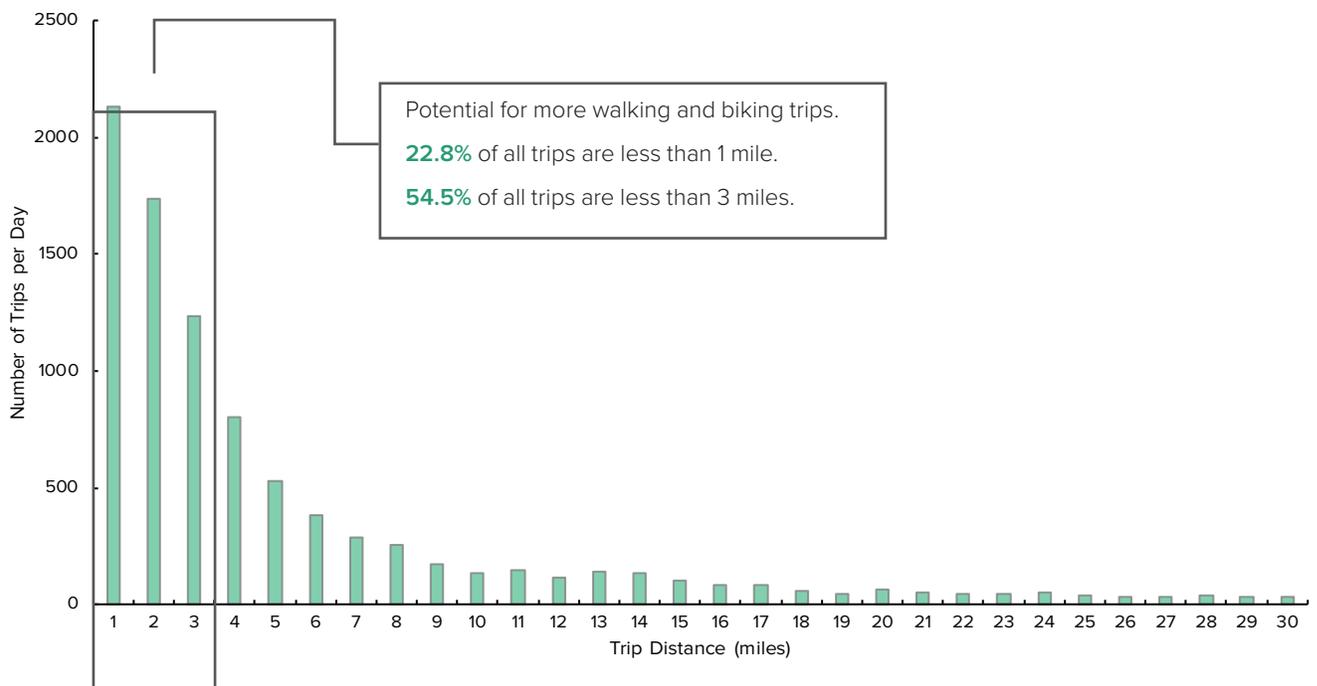
However, even when these trip variations are taken into account, Figure 2.4 still shows that the cities of Bountiful, Centerville, and North Salt Lake are again below state and county averages for percentage of trips taken by foot or bike. There are several possible reasons that could be associated with these low numbers. For example, the communities of Bountiful, Centerville, and North Salt Lake are characterized by typical suburban development with low density development, segregated land uses, numerous cul-de-sac developments and dead-end neighborhood streets, and high-speed arterials with frequent ingress and egresses for shopping plazas. This type of urban form does not provide many route options for people choosing to walk or bike to local destinations. These communities also currently do not have very much active transportation infrastructure in place; perhaps these numbers will increase as more infrastructure becomes developed.

Figure 2.4 Utah Travel Survey mode share for all trips



While these numbers do not paint a positive picture for Bountiful, Centerville, and North Salt Lake in terms of bicycle and pedestrian friendliness, there is great room for progress. As shown in Figure 2.5, the Utah Travel Study shows that 22.8 percent of all trips within Davis County are less than or equal to one mile. Further, 54.5 percent of all trips within Davis County are less than or equal to three miles. This presents a tremendous opportunity to transform many of these short trips into biking or walking trips. Many of these cities' major destinations, such as downtown areas, shopping plazas, or community gathering places, are centrally located and in normal biking or walking distance for many neighborhoods.

Figure 2.5 Utah Travel Survey - Davis County trip distances



PREVIOUS PLANNING EFFORTS

Several local and regional studies have been completed in South Davis County that directly or indirectly address active transportation. This plan seeks to build upon previous planning efforts in order to develop appropriate network recommendations and infrastructure design guidelines. The following studies have been reviewed to determine their impact on the South Davis County Active Transportation Plan and capitalize on previous lessons learned. For purposes of promoting cross-jurisdictional collaboration, plan summaries from each of the participating jurisdictions are included in this section:

BOUNTIFUL

- » **Bountiful Downtown Master Plan (2009)**
- » **Bountiful Recreation and Trails Master Plan Policies (2009)**
- » **Bountiful Transportation Master Plan (2009)**
- » **Bountiful Plat A - Main Street Goals and Policies (N.D.)**

CENTERVILLE

- » **West Centerville Neighborhood Plan (2009)**
- » **Centerville South Main Street Corridor Plan (2010)**
- » **Centerville Parks and Trails and Proposed Bike Lanes Map (2015)**
- » **Centerville General Plan (2016)**

NORTH SALT LAKE

- » **North Salt Lake Annexation Policy Plan (2003)**
- » **North Salt Lake General Plan (2013)**
- » **North Salt Lake Town Center Master Plan (2016)**

In addition to these plans, Wasatch Front Regional Council's 2019-2050 Regional Transportation Plan was referenced throughout the development of the network recommendations (see Chapter 4) to ensure synergy between regional goals and plans and local planning and implementation efforts.

BOUNTIFUL DOWNTOWN MASTER PLAN (2009)

Study Area: Local

Plan Type: Subarea Plan (subset of the Comprehensive Plan)

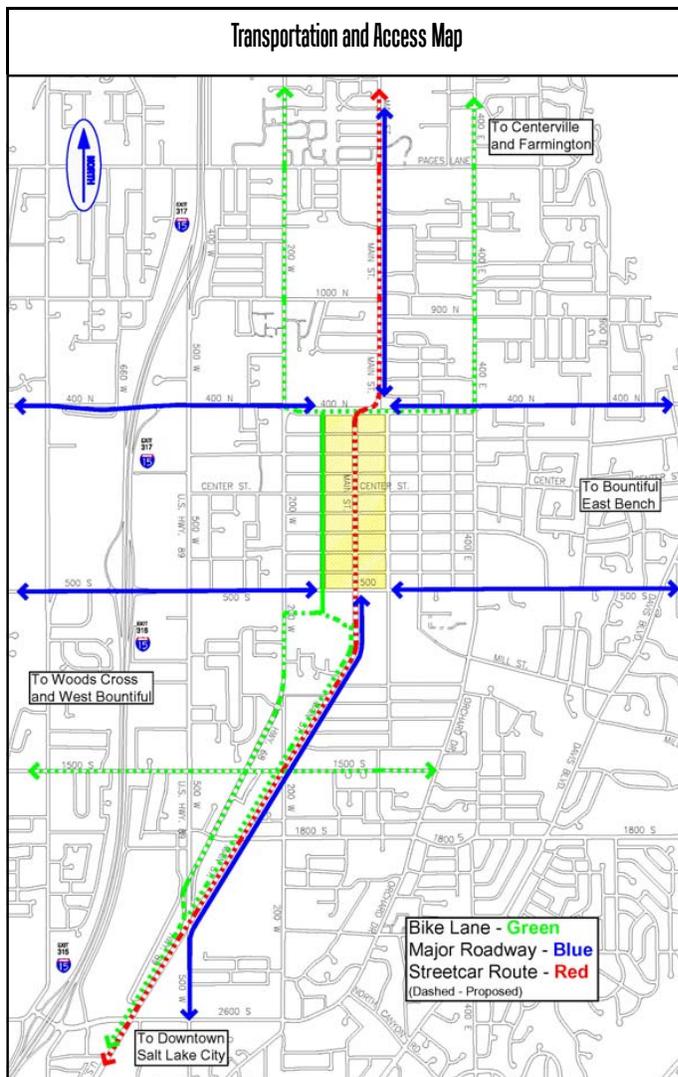
Plan Overview: The plan identifies specific issues that are affecting the viability of downtown and proposes goals and actions to address them

Plan Vision Statement: Downtown will be a unique destination that is a positive amenity of the community

Influence on ATP: Includes some recommendations for improving pedestrian and bicyclist access to downtown, including the location of potential bike lanes

Key Recommendations Relating to Active Transportation:

- » Provide additional pedestrian mid-block access between parking lots and Main St.
- » Construct bike lanes to connect adjacent neighborhoods to downtown
- » Provide bicycle parking on Main St.



Transportation and Access Map from the 2009 Bountiful Downtown Master Plan

BOUNTIFUL RECREATION AND TRAILS MASTER PLAN (2009)

Study Area: Local

Plan Type: Subarea Plan (subset of the Comprehensive Plan)

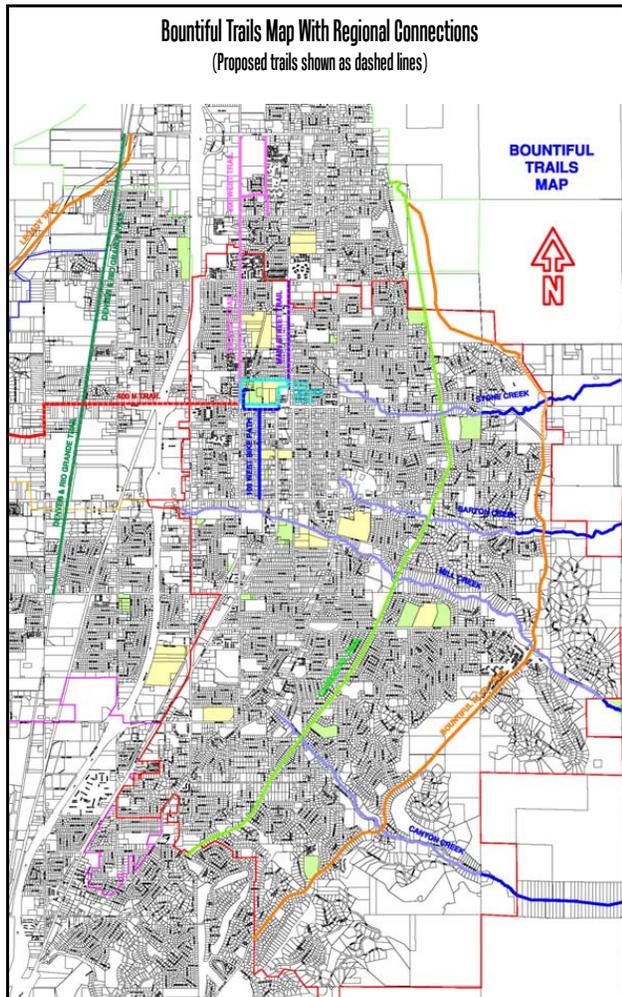
Plan Overview: The plan identifies specific issues that are affecting the recreation and trails and proposes goals and actions to address them

Plan Vision Statement: Improve residents' quality of life by providing a diverse type of recreational opportunities, including natural open space, shooting ranges, motorized trails, active parks, and natural surface trails

Influence on ATP: Establishes goals for increasing bicycle facilities, creating a citywide trail system, and improving existing trails

Key Recommendations Relating to Active Transportation:

- » Increase bicycle routes and trails by 50% by 2019; develop plan to do so
- » Establish a citywide trail system that connects destinations
- » Post a trail map at every trailhead and install trail markers every 1/8 mile
- » Establish a minimum trail improvement standard and bring all trails within the city up to the minimum standard



Trails Map from the 2009 Bountiful Recreation and Trails Master Plan

BOUNTIFUL TRANSPORTATION MASTER PLAN (2009)

Study Area: Local

Plan Type: Subarea Plan (subset of the Comprehensive Plan)

Plan Overview: The plan identifies specific issues that are affecting transportation and proposes goals and actions to address them

Plan Vision Statement: N/A

Influence on ATP: Identifies areas where certain modes of transportation should be concentrated or balanced

Key Recommendations Relating to Active Transportation:

- » Preserve the Hwy 89/500 West corridor between 2600 South and 900 North for automobile traffic and automobile oriented commercial development
- » Establish the Hwy 89 corridor from 1800 South to Salt Lake City a transit, bicycle, and automobile corridor (include shoulder bikeways).
- » Construct parkstrips on Orchard Dr reduce obstruction of the sidewalk.
- » Create trails on major north/south corridors such as Davis and Bountiful Blvds, and flatter areas west of 400 East/Orchard Dr. Develop an urban trails plan to do so.
- » Create an enhanced pedestrian corridor along Center St between 200 West and Main St. Develop a plan to do so.

BOUNTIFUL PLAT A - MAIN STREET GOALS & POLICIES (N.D.)

Study Area: Local

Plan Type: Subarea Plan

Plan Overview: Outline goals and policies for the Plat A neighborhood (also known as the Historic Downtown) and Main Street

Plan Vision Statement: Make Main Street the “heart” of Bountiful and South Davis County

Influence on ATP: Identifies areas where certain modes of transportation should be concentrated or balanced

Key Recommendations Relating to Active Transportation:

- » Improve pedestrian safety and comfort on Main St by enhancing pedestrian crossings with bulb-outs and textured surfaces and prohibiting new driveway curb-cuts on Main St between 400 North and 500 South.
- » Improve walkability on 200 West
- » Create an attractive setting for pedestrian access to transit along 200 West with sidewalk and ADA improvements, among others.
- » Increase the number of residents and employees able to access Main Street by walking.
- » Stabilize the old fort residential neighborhoods in part by installing traffic calming treatments.

CENTERVILLE GENERAL PLAN (2016)

Study Area: Local

Plan Type: Comprehensive Plan

Plan Overview: Includes general recommendations for each aspect of Centerville's planning and development; also identifies an area for potential annexation

Plan Vision Statement (relating to Active Transportation): Bicycling in the City should promote, increase, improve, and enhance riding in the City as a safe, healthy, and enjoyable means of transportation and recreation. (Section 12-450-3 Bicycle and Non-Motorized Vehicle Pathways)

Centerville City aims to create and maintain an organized network of urban trails connecting destinations within the city and adjacent communities. (Section 12-460-2 Trails)

Influence on ATP: Identifies general strategies Centerville should use to improve connectivity and conditions for pedestrians, bicyclists, and trail users. If annexed, the City will provide infrastructure and services for the area in question, potentially including active transportation facilities

Key Recommendations Relating to Active Transportation:

Bicycle and Non-motorized Vehicle Pathways (12-450-3)

- » Provide bike facilities along 1250 W, Frontage Rd, Main St, 400 E, Chase Ln, Parrish Ln, and Pages Ln
- » Create bike friendly streets with signage and pavement markings.
- » Provide enforcement and education programs to support adherence to traffic laws related to bicycling.
- » Create and maintain a city bikeways map categorizing bicycle facilities as Class I Bike Paths, Class II Bike Lanes, or Class III Bicycle Routes and Bike Friendly Streets.
- » Establish bicycle connections with neighboring jurisdictions to support regional bicycle events.
- » Adopt bicycle parking requirements for new commercial developments.

Trails (12-460-2)

- » Promote trail and bikeway use by increasing the amount of signage, maps, and trailhead kiosks.
- » Extend the Bonneville Shoreline Trail.
- » Continue existing trails education and activity program.
- » Encourage pedestrian enhancement in the Parrish Gateway and eventually develop a pedestrian plan for the area.
- » Develop a citywide bike plan.
- » Improve pedestrian and bicycle access to current and proposed trails west of I-15, including a trailhead to the Legacy Parkway Trail on 1275 North

WEST CENTERVILLE NEIGHBORHOOD PLAN (2009)

Study Area: Local

Plan Type: Subarea Plan

Plan Overview: This plan is a comprehensive guide to inform the development of the West Centerville neighborhood with the construction of the Legacy Parkway, a limited access highway that bisects the neighborhood

Influence on ATP: Includes recommendations for connecting trails and bikeways to the Legacy Nature Preserve

Key Recommendations Relating to Active Transportation:

- » Complement and support the Legacy Nature Preserve by developing a master trails plan to integrate the Legacy Parkway Trail, the UTA multiple-use corridor, and west side development.
- » Integrate the Parrish/Legacy Trailhead Park into the trail system and loop the system with east side frontage road trails between Glover's Lane and Parrish Lane.
- » Connect the Legacy Parkway trail with the Bonneville Shoreline Trail via city trails and paths.
- » Create a Class I or II bikeway that connects the east side area with the Legacy Parkway trail system

CENTERVILLE SOUTH MAIN STREET CORRIDOR PLAN (2010)

Study Area: Local

Plan Type: Subarea Plan

Plan Overview: This plan is a guide for reestablishing Centerville’s commercial core and creating a more pedestrian-friendly environment

Plan Vision Statement: To return Main Street to “center stage” as the civic, cultural, and community heart of Centerville City

Influence on ATP: Includes recommendations for connecting trails and bikeways to the Legacy Nature Preserve

Key Recommendations Relating to Active Transportation:

- » Lower the speed limit on the south Main Street Corridor to increase safety.
- » Work with UDOT to provide additional crosswalks and other pedestrians safety features on Main Street.
- » Advocate for wider sidewalks when improvements are being considered. Prioritize Safe Routes to School and the Traditional Main Street Commercial District.
- » Consider striped bike lanes, planted medians, raised intersections, bulb-outs and other improvements to preserve and enhance mobility.
- » Allow shared roadway bicycle routes to provide opportunities for bike lanes on Main Street and on surrounding neighborhood streets that connect to Main Street.
- » Connect Main Street to adjacent neighborhoods and commercial districts with new trails, bicycle routes, sidewalks, and paths.
- » Provide a safe pedestrian route from the core area to school by continue sidewalks (minimum 6’ wide) on both sides of Main Street into the Residential Boulevard District.
- » Improve existing crosswalks and identify a location for an additional crosswalk to access the school.
- » Increase pedestrian comfort and safety by widening the sidewalk to at least 6’ and the parking strip to 5’, (ideally 8’) in the Residential Boulevard District.
- » Enhance pedestrian connections to the mixed-use nodes and other areas along the Main Street corridor.

NORTH SALE LAKE GENERAL PLAN (2013)

Study Area: Local

Plan Type: Comprehensive Plan

Plan Overview: Guides the development of land use policies and provides the basis for land use decisions in North Salt Lake

Plan Vision Statement (relating to Active Transportation): North Salt Lake envisions a balanced and integrated multimodal transportation system that is bicycle and pedestrian friendly, fully accessible to all users, and provides safe connections to destinations and amenities.

Plan Goals (relating to Active Transportation):

- » Provide for and encourage transportation by walking and bicycling. (T-4)
- » Promote a walkable and bike-able community. (PR-2)

Influence on ATP: Identifies general strategies and specific actions for improving bicycle and pedestrian connectivity in North Salt Lake

Key Recommendations Relating to Active Transportation:

Chapter 4: Transportation

- » Analyze methods to balance modes on Hwy 89, potentially implementing 8' sidewalks and 5.5' bike lanes.
- » Implement a 6' pedestrian trail and 5' bike lanes on 1110 North, among other improvements.
- » Continue the 10' trail on the south side of Center St east of 400 west; maintain bike lanes where possible.
- » Prioritize the filling of gaps in the sidewalk network based on identified priority routes and proximity to bus routes, schools, parks, and higher density/small lot residential areas.
- » Develop a citywide bicycle plan for Class I multi-use trails.
- » Provide 8' minimum separation between trails and traffic, when possible.
- » Improve pedestrian and bicycle connectivity at Foxboro, particularly to Redwood Rd, 900 North and Cambridge.
- » Continue the multi-use trail on west side of Redwood Rd, maintaining 8-10' in width and at least 8' of landscaped buffer between the trail and curb. Provide 5' sidewalks on the east side of Redwood Rd.
- » Expand the Bamberger Trail from the "Linear Park" to Main St and Bamberger Station.
- » Construct a multi-use trail on Center St east of Main St.
- » Develop a high-density street grid east of Hwy 89 and construct multi-use trails on one side of the streets.
- » Develop trails through the Town Center south of Center St.
- » Improve trails on Center St between Legacy Pkwy and Hwy 89, including a 10' landscaped buffer.
- » Establish Town Center street standards for pedestrians, including a minimum width of 6' for sidewalks, with 8' separation from the curb.
- » Include a 5-6' shoulder bikeway on Hwy 89.

NORTH SALT LAKE GENERAL PLAN (2013) CONTINUED

Key Recommendations Relating to Active Transportation *(continued)*:

Chapter 6: Parks, Trails, and Recreation

- » Prioritize pedestrian and bicycle connectivity to strategic destinations.
- » Maximize connectivity to regional trails.
- » Investigate the possibility of establishing a pedestrian connection to the Town Center along the Bamberger rail corridor.
- » Promote trail safety and awareness with wayfinding strategies and facilities segregation by speed

NORTH SALT LAKE TOWN CENTER MASTER PLAN (2016)

Study Area: Local

Plan Type: Subarea Plan

Plan Overview: The plan builds upon the North Salt Lake General Plan recommendations for the development of a town center, by providing a detailed concept of the project, an illustrative plan, design guidelines, and implementation considerations

Plan Vision Statement: A Town Center will be formed by integrating what is currently three distinct neighborhoods into a single destination where the unique qualities of each sub-district are nonetheless preserved. It will be a special destination that is attractive and unique in appearance, but also a place with heart and soul.

Plan goals (relating to Active Transportation):

- » Improve the appearance and safety of the Town Center and Highway 89 corridor.
- » Establish multi-modal streets

Influence on ATP: Establishes a pedestrian-oriented town center concept for North Salt Lake that includes specific recommendations for enhancing pedestrian and bicycle safety, comfort, and access

Key Recommendations Relating to Active Transportation:

- » Accommodate BRT on Hwy 89
- » Convert Hwy 89 into a pedestrian friendly corridor that is unified with the Town Center
- » Develop new public open spaces, including pedestrian corridors
- » Make streets safe and attractive for multiple transportation modes
- » Include active transportation and transit options for district residents
- » Establish Center St as the primary east-west bicycle corridor with bike lanes
- » Stripe bike lanes on Orchard Dr.
- » Widen Hwy 89 to provide space for buffered bike lanes
- » As land becomes available, consider the use of alleys and the development of additional paths for further bicycle connections
- » Widen the pedestrian realm on Center St to establish it as the focal point for Town Center

NORTH SALT LAKE TOWN CENTER MASTER PLAN (2016) CONTINUED

Key Recommendations Relating to Active Transportation *(continued)*:

- » Construct a transit center at Center St and Hwy 89
- » Provide a safer pedestrian crossing of Hwy 89, ideally at Main St.
- » Make Main St more pedestrian-oriented as development occurs
- » Add sidewalks to Orchard Dr.
- » Utilize a Complete Streets approach



Town Center Pedestrian and Bicycle Network Map from the 2016 North Salt Lake Town Center Master Plan

EXISTING NETWORK

Much of what North Salt Lake has for active transportation facilities is fragmented and/or doesn't lead to meaningful destinations as identified in the public outreach process. Like the other cities in this study, North Salt Lake has low street connectivity and circuitous street patterns which are less conducive to active transportation, but efforts are already being made to dedicate more space to active modes on City streets. In total, the City has about 19 miles of bicycle/pedestrian facilities (excluding sidewalks), made up of bike lanes, shared use paths, and sidepaths.

EXISTING FACILITY TYPES

8.7
miles



Bike Lanes are a common facility type in many cities, designating 4-7 feet of roadway width with 6-inch striping and bike lane symbols. Bike lanes are typically comfortable only for confident cyclists, unless they're located on low-speed, low-volume streets.

5.6
miles



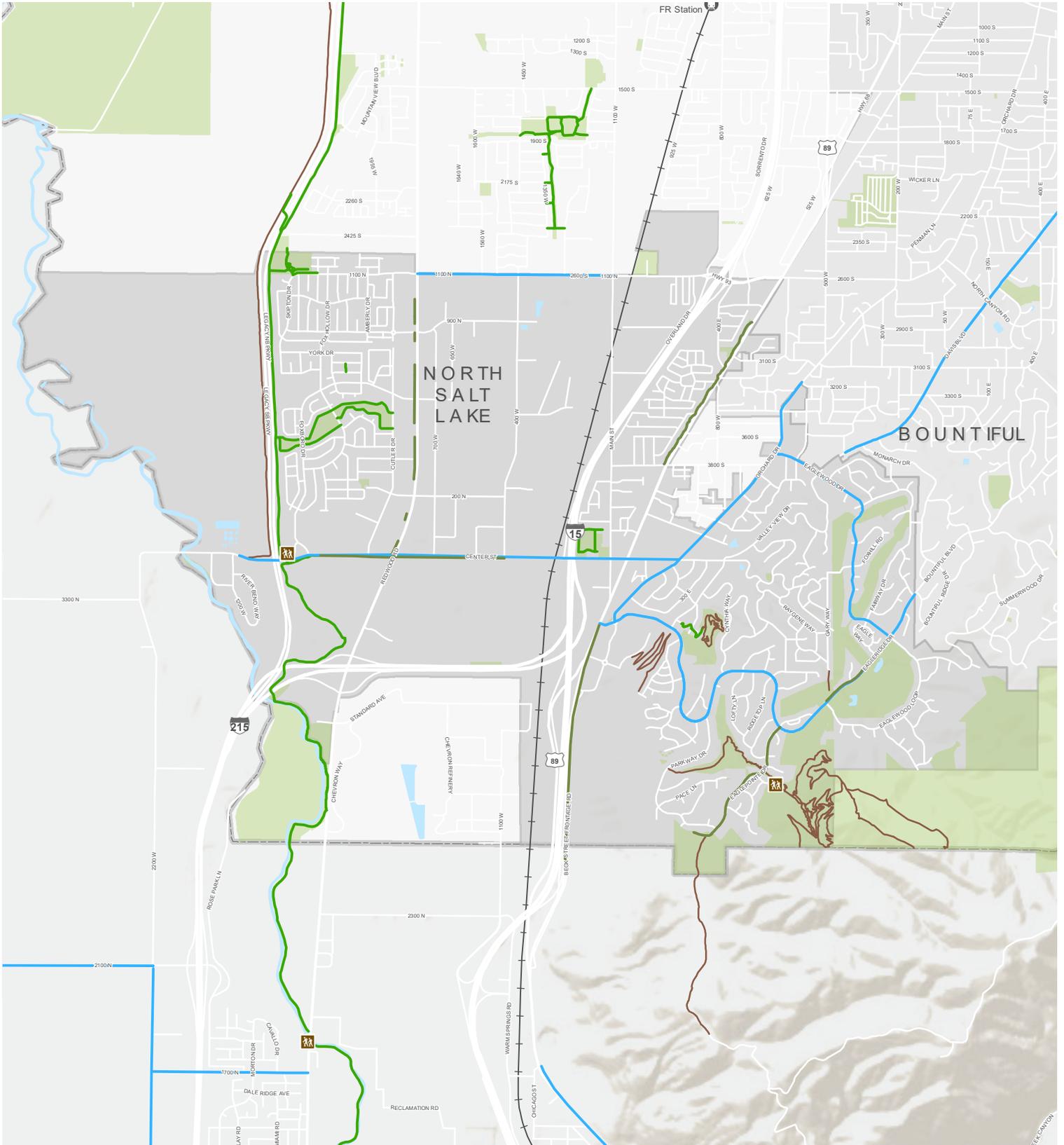
Shared Use Paths are paved paths/trails, typically 10-12' wide, constructed of asphalt or concrete, that accommodate pedestrians, bicyclists, and other non-motorized modes off street. Sometimes called trails, they're not to be confused with natural surface trails.

4.7
miles



Sidepaths function as shared use paths by accommodating both pedestrian and bicyclists off street, but are located parallel to roadways. Because of this, sidepaths come with unique challenges including frequent driveway crossings, street intersections, and fronting land uses. When designed correctly, sidepaths provide an inviting experience for users who are uncomfortable using on-street bikeways.

MAP 2.1 | SOUTH DAVIS COUNTY ACTIVE TRANSPORTATION PLAN
EXISTING NETWORK - NORTH SALT LAKE



Existing Facilities

- Bike lane
- Shared use path
- Sidepath
- Natural surface trail

Existing Destinations + Boundaries

- Trailhead
- FrontRunner station
- City limits
- County limits



Data provided by the Cities of Bountiful, Centerville, and North Salt Lake; Davis County; the Utah AGRC; UDOT; UTA; and WFRC
 Map produced August 2019 by Alta Planning + Design

CRASH AND SAFETY ANALYSIS

The most reported reason for people not using walking and bicycling for daily transportation is lack of safety, be it perceived safety, based on comfort levels associated with auto-centric street conditions, or actual safety, based on crashes involving pedestrians or bicyclists. Cities and countries across the world are adopting policies and programs aimed at eliminating all traffic-related fatalities, most commonly known as Vision Zero, the fundamental premise of which is that traffic-related deaths and serious injuries are preventable.

According to UDOT’s Numetric data, from 2010-2018, there were 30,647 total crashes reported on the roads of Davis County, excluding crashes that occurred on I-15, I-215, and Highway 67 (Legacy Parkway). Of those crashes, 1,132 (3.7 percent) of them involved pedestrians or people on bicycles. And of those 1,132 crashes, 24 have resulted in fatalities and 102 have resulted in serious injuries.

PEDESTRIAN INVOLVED CRASHES

From January 1, 2010 to December 31, 2018, there were 620 pedestrian involved crashes reported in Davis County. The graph below illustrates trends for pedestrian involved crashes for the three cities included in this plan and Map 2.2 shows pedestrian involved crashes by location and severity.

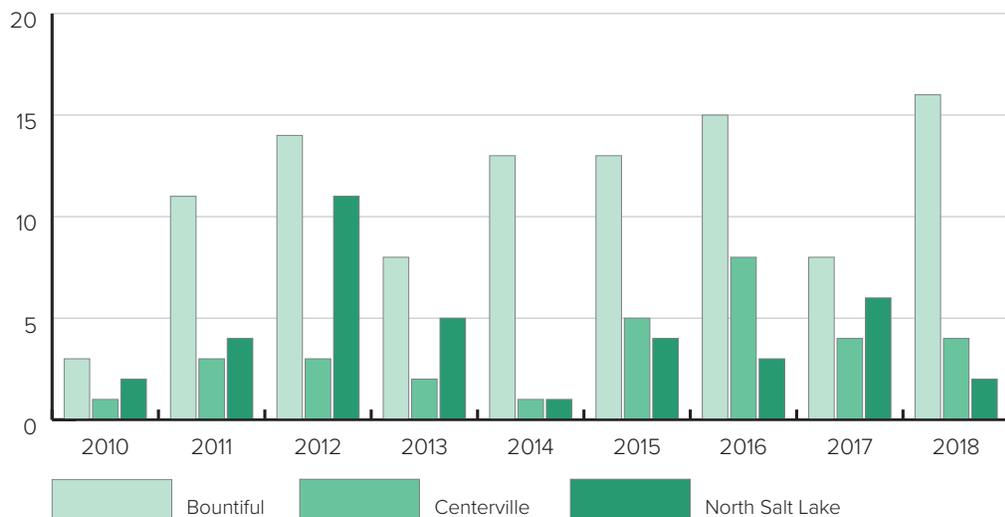
Comparing the three cities under study shows Bountiful as having the most total crashes on roads excluding I-15, I-215, and Highway 67 (Legacy Parkway), while percentages of crashes classified as pedestrian involved for each city are comparable.

Bountiful: 5,215 total crashes; **101** pedestrian involved crashes (1.9 percent)

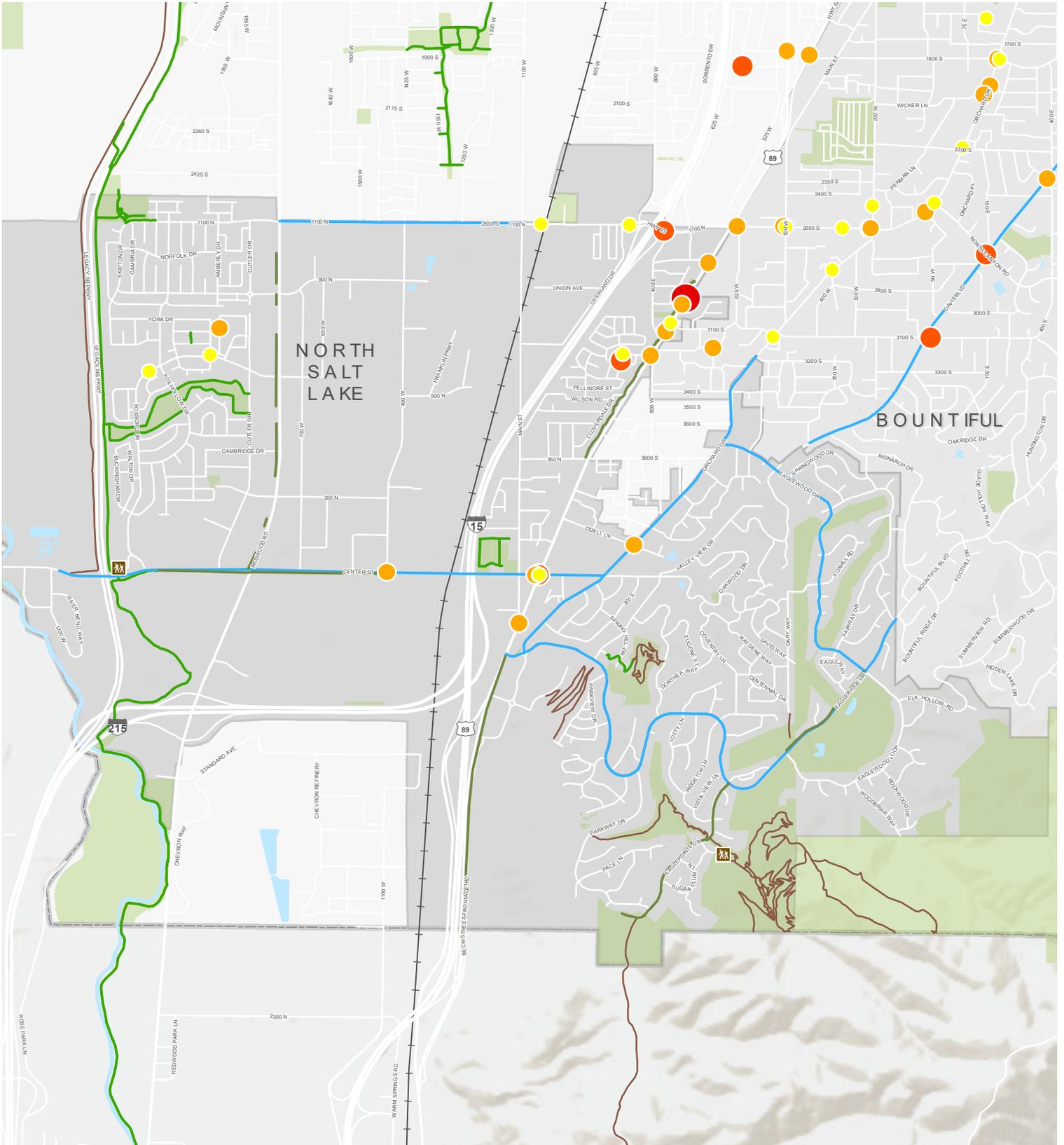
Centerville: 1,611 total crashes; **31** pedestrian involved crashes (1.9 percent)

North Salt Lake: 2,162 total crashes; **38** pedestrian involved crashes (1.7 percent)

Figure 2.6 Pedestrian involved crashes (UDOT Numetric data, 2010-2018)



MAP 2.2 | SOUTH DAVIS COUNTY ACTIVE TRANSPORTATION PLAN
PEDESTRIAN INVOLVED CRASHES (2010-2018) - NORTH SALT LAKE



Existing Facilities

- Bike lane
- Shared use path
- Sidepath
- Natural surface trail

Existing Destinations + Boundaries

- Trailhead
- FrontRunner station
- City limits
- County limits

Pedestrian Crashes (severity)

- Fatal
- Serious injury
- Minor injury
- Possible or no injury



Data provided by the Cities of Bountiful, Centerville, and North Salt Lake; Davis County; the Utah AGRC; UDOT; UTA; and WFRC
 Map produced August 2019 by Alta Planning + Design

BICYCLIST INVOLVED CRASHES

From January 1, 2010 to December 31, 2018, there were 512 bicyclist involved crashes reported in Davis County. The graph below illustrates trends for bicyclist involved crashes for the three cities included in this plan and Map 2.3 shows bicyclist involved crashes by location and severity.

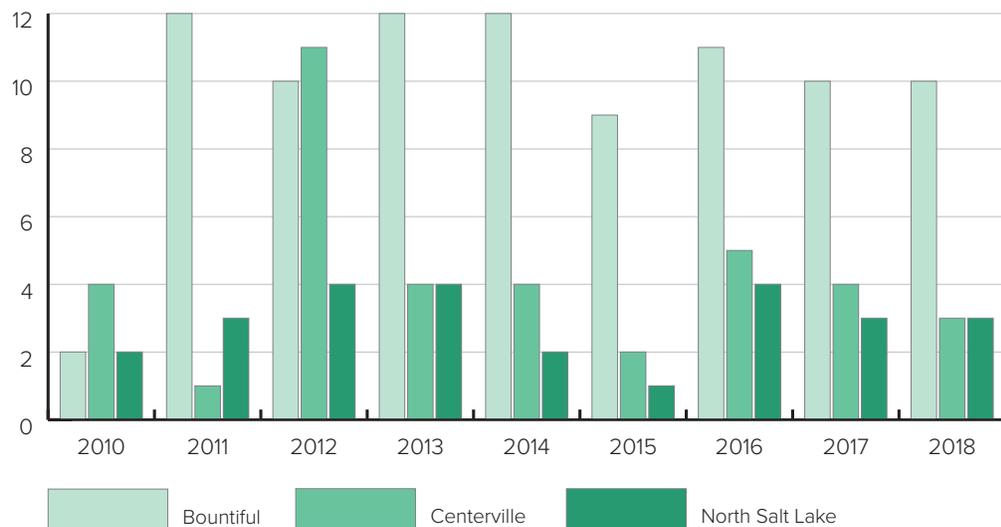
Comparing the three cities under study, Bountiful shows the most bicyclist involved crashes, and percentages of total crashes remain somewhat constant across each jurisdiction.

Bountiful: 5,215 total crashes; **88** bicyclist involved crashes (1.7 percent)

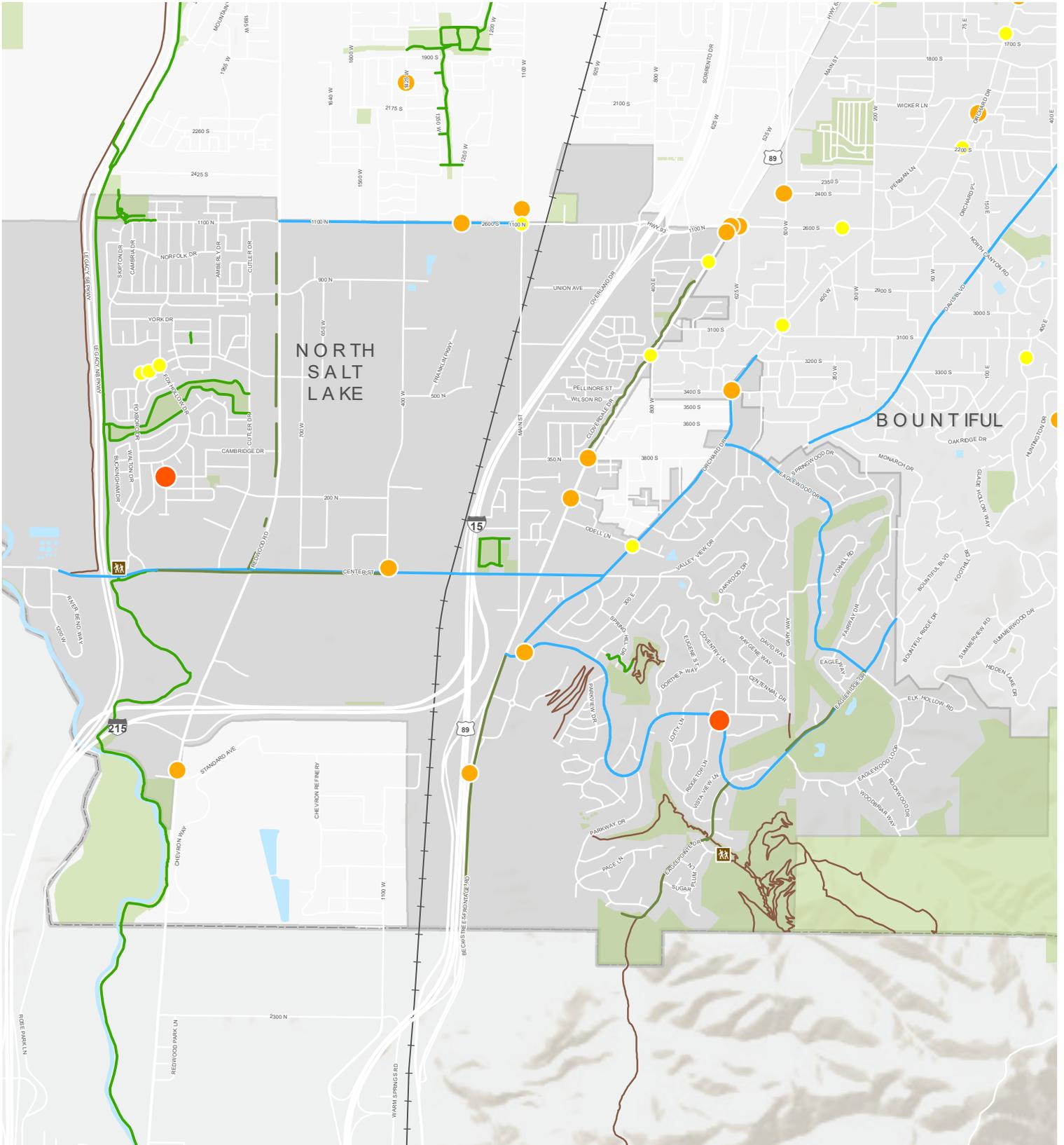
Centerville: 1,611 total crashes; **38** bicyclist involved crashes (2.4 percent)

North Salt Lake: 2,162 total crashes; **26** bicyclist involved crashes (1.2 percent)

Figure 2.7 Bicyclist involved crashes (UDOT Numetric data, 2010-2018)



MAP 2.3 | SOUTH DAVIS COUNTY ACTIVE TRANSPORTATION PLAN
BICYCLIST INVOLVED CRASHES (2010-2018) - NORTH SALT LAKE



Existing Facilities

- Bike lane
- Shared use path
- Sidepath
- Natural surface trail

Existing Destinations + Boundaries

- Trailhead
- FrontRunner station
- City limits
- County limits

Pedestrian Crashes (severity)

- Fatal
- Serious injury
- Minor injury
- Possible or no injury



Data provided by the Cities of Bountiful, Centerville, and North Salt Lake; Davis County; the Utah AGRC; UDOT; UTA; and WFRC
 Map produced August 2019 by Alta Planning + Design



03

PUBLIC INVOLVEMENT



OVERVIEW

Much of the success of this project relied on input from stakeholders and community members in order to gain an understanding of existing conditions and develop meaningful recommendations. The planning process included a variety of public outreach methods through which the planning team strove to reach as many everyday users of South Davis County's streets and trails as possible. Outreach methods included Online surveys, Online interactive maps, in-person pop-up events, and charrettes conducted with stakeholders from each of the three cities included in the Plan. In total, over 300 people participated in the development of the plan through the public process.

Efforts to get input from the public were organized into two phases. The focus of Phase 1 was to gather information concerning existing conditions and the needs of residents, including places to which people want to walk or bicycle and barriers to walking and bicycling they experience in their communities. The objective of Phase 2 input was to get feedback on proposed routes and facility types.

Results from these efforts, combined with the input given by engaged project managers from each city, the Steering Committee, and stakeholders, guided the planning team to the recommendations found in Chapter 4.

ONLINE SURVEY

Over the course of four weeks, more than 200 people responded to an Online survey targeted at understanding residents' current participation in and attitude towards active transportation in South Davis County. The thirteen-question survey included questions about obstacles to walking and bicycling as well as respondents' priorities for future investment in active transportation infrastructure. The survey was distributed by each participating City via their respective websites and social media outlets. This section summarizes survey responses and highlights key findings.

40% of respondents live in **BOUNTIFUL**

19% of respondents live in **CENTERVILLE**

27% of respondents live in **NORTH SALT LAKE**

Why do you walk or bike?

THE TOP 3 REASONS people walk or ride a bike include...



Health + Fitness



Spending Time Outdoors

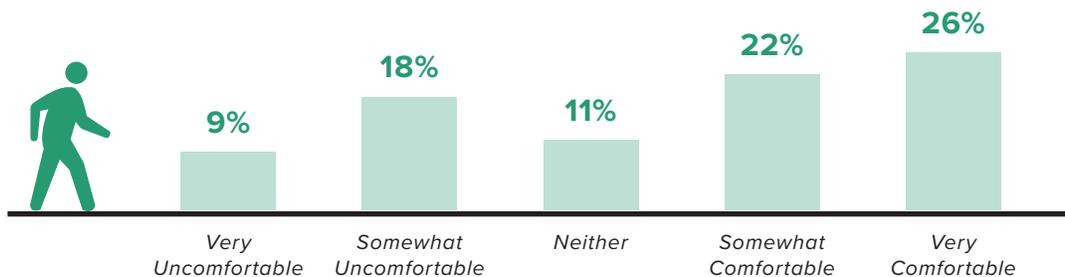


Pleasure + Fun + Socializing

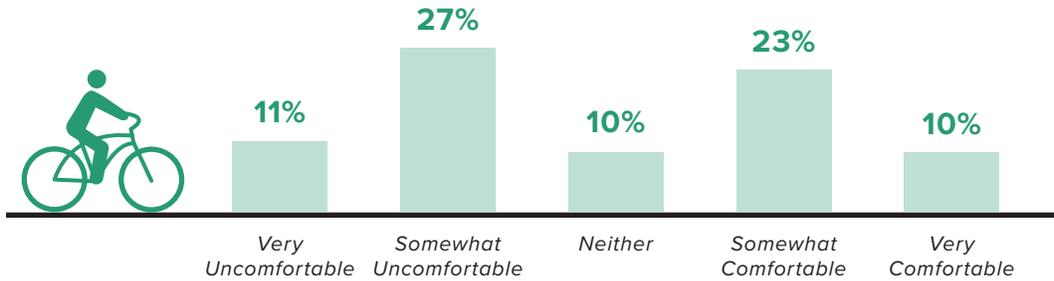
Other reasons for walking and bicycling from the survey include saving money, having less impact on the environment, and getting to transit.

How comfortable do you feel walking in South Davis County?

ALMOST 1/3 of respondents feel uncomfortable walking in South Davis County



38% of respondents feel uncomfortable riding a bicycle in South Davis County



How comfortable do you feel bicycling in South Davis County?

THE TOP 3 OBSTACLES that deter respondents from walking and/or bicycling in South Davis County are...



Aggressive drivers



Facilities don't take me where I need to go



Streets + sidewalks feel unsafe

What deters you from walking and/or bicycling?

Other notable obstacles to walking and bicycling from the survey include poorly maintained bikeways and sidewalks and unsafe street crossings.

THE TOP 3 PRIORITIES for future active transportation investment according to survey responses are...



More paved off-street paths



Better on-street bikeways (separation from traffic)



Better sidewalks (wider, landscape buffers)

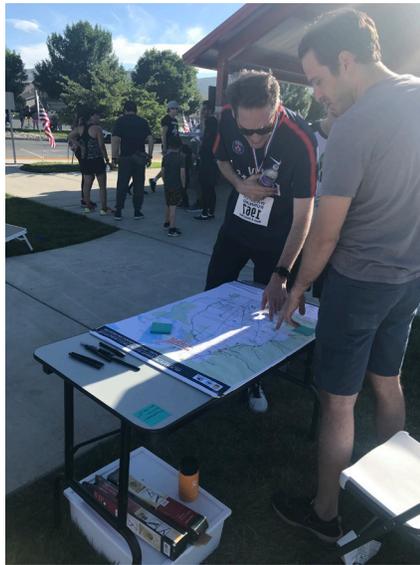
What are your top priorities for future investment?

Other notable priorities from the survey included better crossings of major streets and more on-street bikeways to local destinations.

IN-PERSON POP-UP EVENTS

An important aspect of the public input process was the in-person contact the planning team had with residents during pop-up events that took place throughout the planning process. On three occasions, once in each City, the planning team stationed a table and information about the project at well-attended events or publicly visible locations in an effort to get input from residents during both phases of public outreach. One advantage to engaging the public in person as opposed to Online is it gives the planning team an opportunity to answer questions and explain concepts and goals behind the recommendations. The planning team held in-person pop-events at the following locations/ events:

- » Megaplex Theatres at Legacy Crossing, Centerville | February 15, 2019
- » South Davis Recreation Center, Bountiful | March 1, 2019
- » Liberty Fest 5k Race, North Salt Lake | June 29, 2019



ONLINE INTERACTIVE MAP

For both phases of public outreach, South Davis County residents were invited to give input on an interactive Online map made available via each Cities' website and social media outlets. This public outreach tool enables greater participation than is typically seen during in-person events and it allows residents to give input on their own time.

PHASE 1: EXISTING CONDITIONS

During the Existing Conditions phase, participants were presented with a map consisting of existing bikeways, parks, streets, trails, and school locations on which they could draw lines and place pins to indicate barriers, important destinations, and overall improvement opportunities. In addition to destinations and barriers, participants identified missing infrastructure critical to developing a safe, convenient network. The image below shows a screenshot of the web map interface, with orange icons representing barriers, green icons representing destinations or opportunities, and black dashed lines showing desired linear improvements drawn by participants.

During the 4-week period the first Online interactive map was available to the public, almost 100 points and lines were drawn by local residents to indicate destinations for walking and bicycling, barriers to active transportation, and desired connections. Maps 3.1-3.3 present a summary of this input.

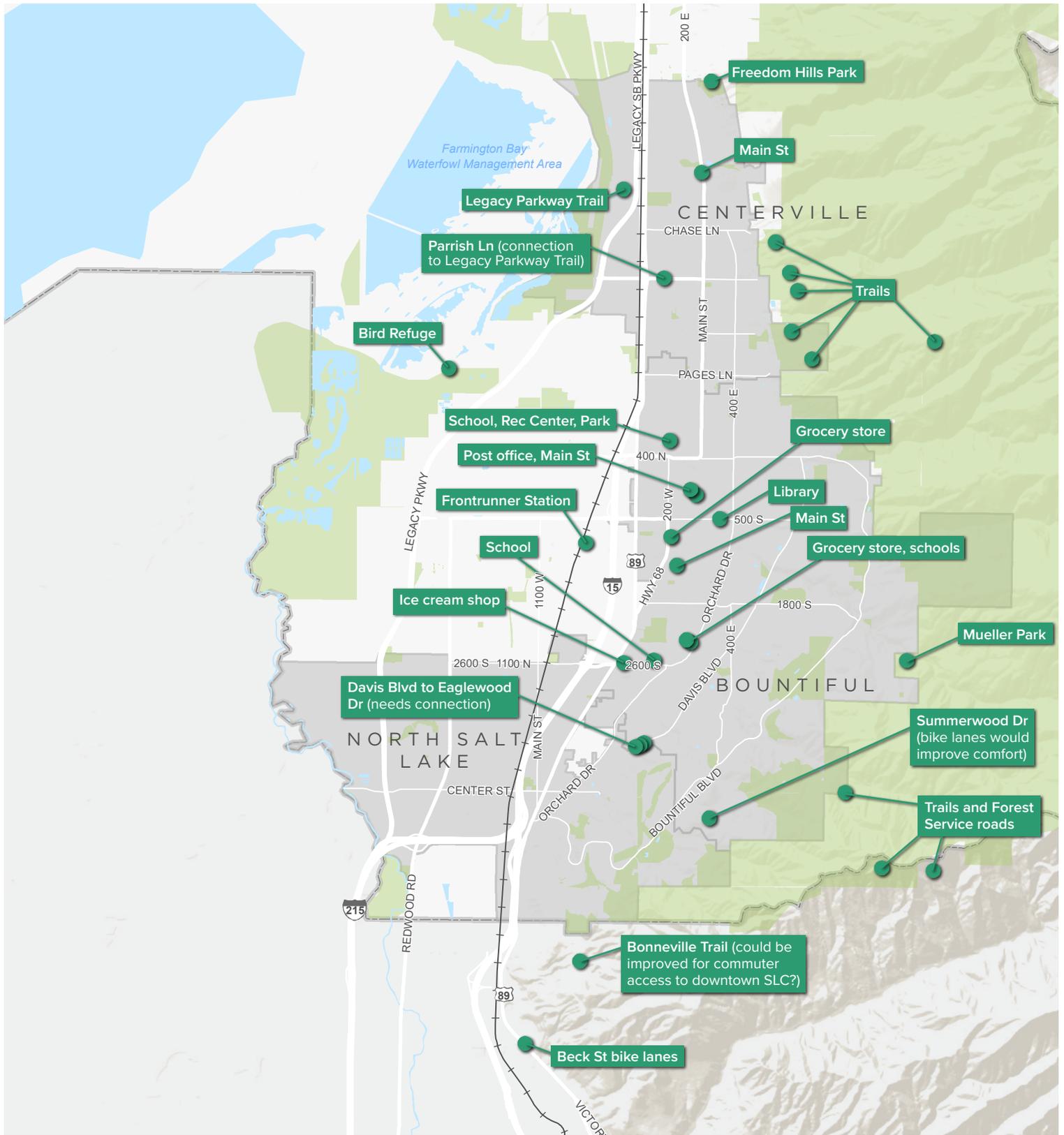
PHASE 2: RECOMMENDATIONS

The Recommendations phase interactive web map showed the proposed active transportation network. Participants were able to like, dislike, or comment on any given recommendation and were asked to identify five "top priority" projects. The recommended route that received the most "likes" was the separated bike lane proposed on Orchard Drive (56 likes), which spans all three jurisdictions and provides an important north-south connection, connecting several destinations. The next most supported recommendations were the buffered bike lanes along 400 W / 200 W (23 likes) and the sidepath and bike lanes along Bountiful Boulevard (22 likes).

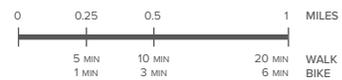
Due to hesitations among stakeholders to propose recommendations along UDOT-owned Main Street in Bountiful and Centerville and other major arterials (e.g. Parish Ln in Centerville, 500 S in Bountiful), no recommendations for these corridors were presented to the public via the Online interactive map. However, as part of the Online interactive tool, residents were able to suggest new routes that were not included in the recommendations by drawing them on the map. Other participants were then able to like, dislike, or comment on newly drawn routes. As a result, several new routes were suggested by the public, many of which fall outside of the study area. However, Main Street and 500 S were the two newly suggested routes that received the most "likes" and positive comments from other participants.

Map 3.4 summarizes and illustrates the results from the second Online interactive map, showing total "likes" and newly suggested routes.

MAP 3.1 | SOUTH DAVIS COUNTY ACTIVE TRANSPORTATION PLAN
PUBLIC INPUT PHASE 1 - WALKING/BICYCLING DESTINATIONS



- Boundaries**
- City limits
 - County limits
- Public Comment**
- Walking/bicycling destination

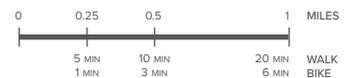


Data provided by the Cities of Bountiful, Centerville, and North Salt Lake; Davis County; the Utah AGRC; UDOT; UTA; and WFRC
 Map produced August 2019 by Alta Planning + Design



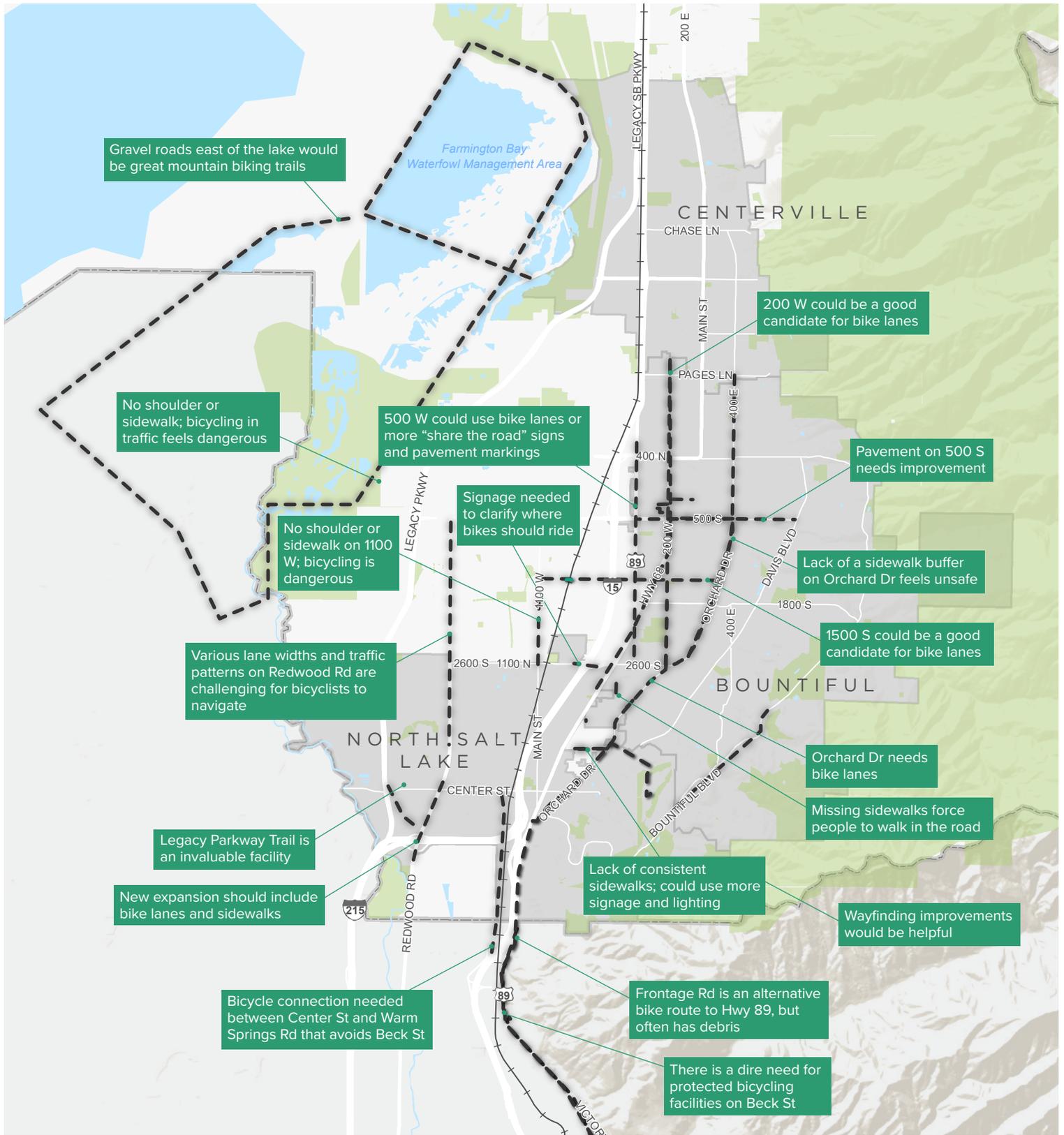
Boundaries
 City limits
 County limits

Public Comment
 Barrier to walking
 Barrier to bicycling



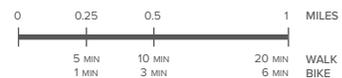
Data provided by the Cities of Bountiful, Centerville, and North Salt Lake; Davis County; the Utah AGRC; UDOT; UTA; and WFRC
 Map produced August 2019 by Alta Planning + Design

PUBLIC INPUT PHASE 1 - WALKING/BICYCLING SUGGESTED ROUTES



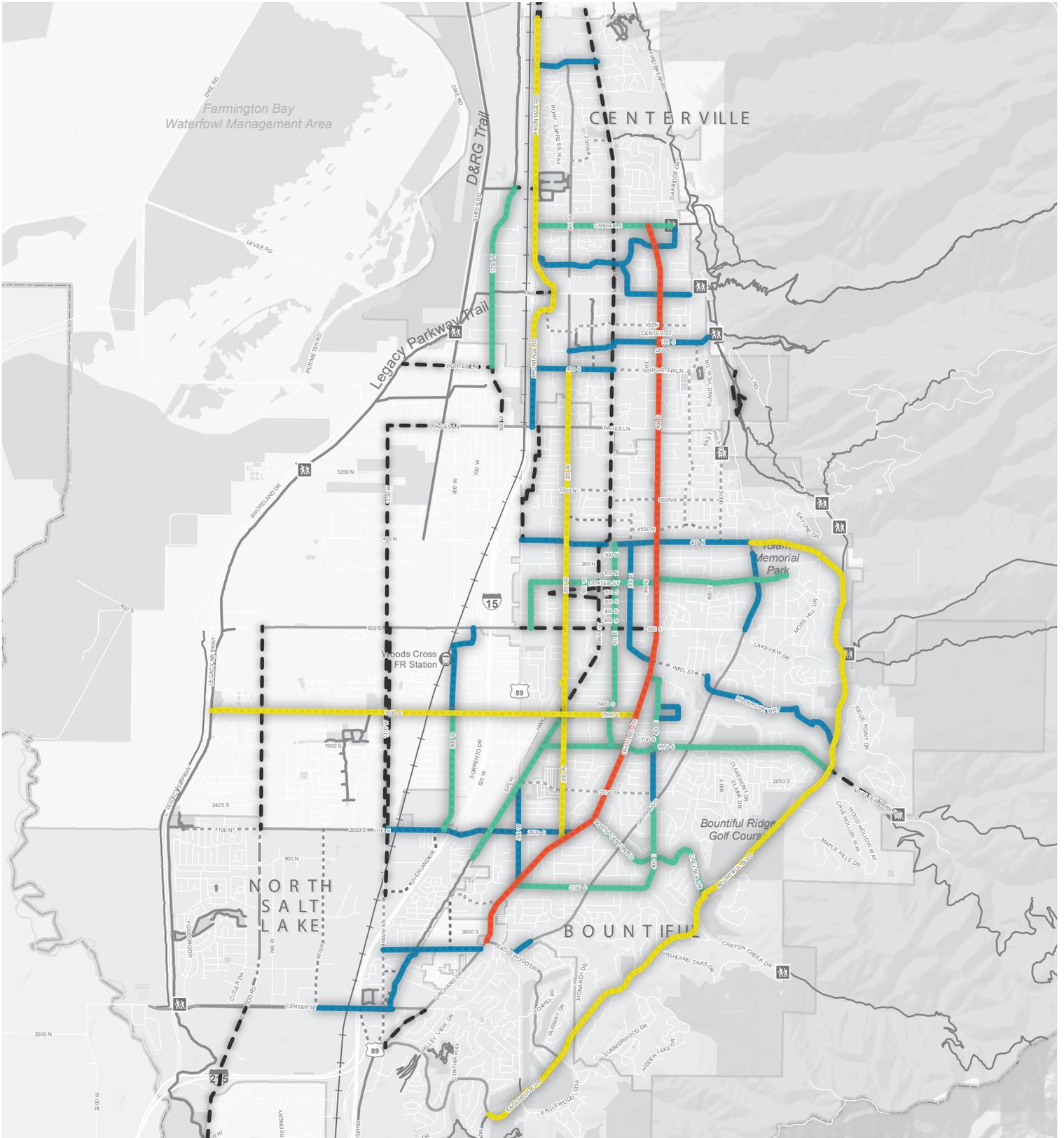
Boundaries
 City limits
 County limits

Public Comment
 Walking/bicycling suggested route



Data provided by the Cities of Bountiful, Centerville, and North Salt Lake; Davis County; the Utah AGRC; UDOT; UTA; and WFRC
 Map produced August 2019 by Alta Planning + Design

MAP 3.4 | SOUTH DAVIS COUNTY ACTIVE TRANSPORTATION PLAN
PUBLIC INPUT PHASE 2 - "LIKED" AND NEWLY SUGGESTED ROUTES



Data provided by the Cities of Bountiful, Centerville, and North Salt Lake; Davis County; the Utah AGRC; UDOT; UTA; and WFRC
Map produced August 2019 by Alta Planning + Design

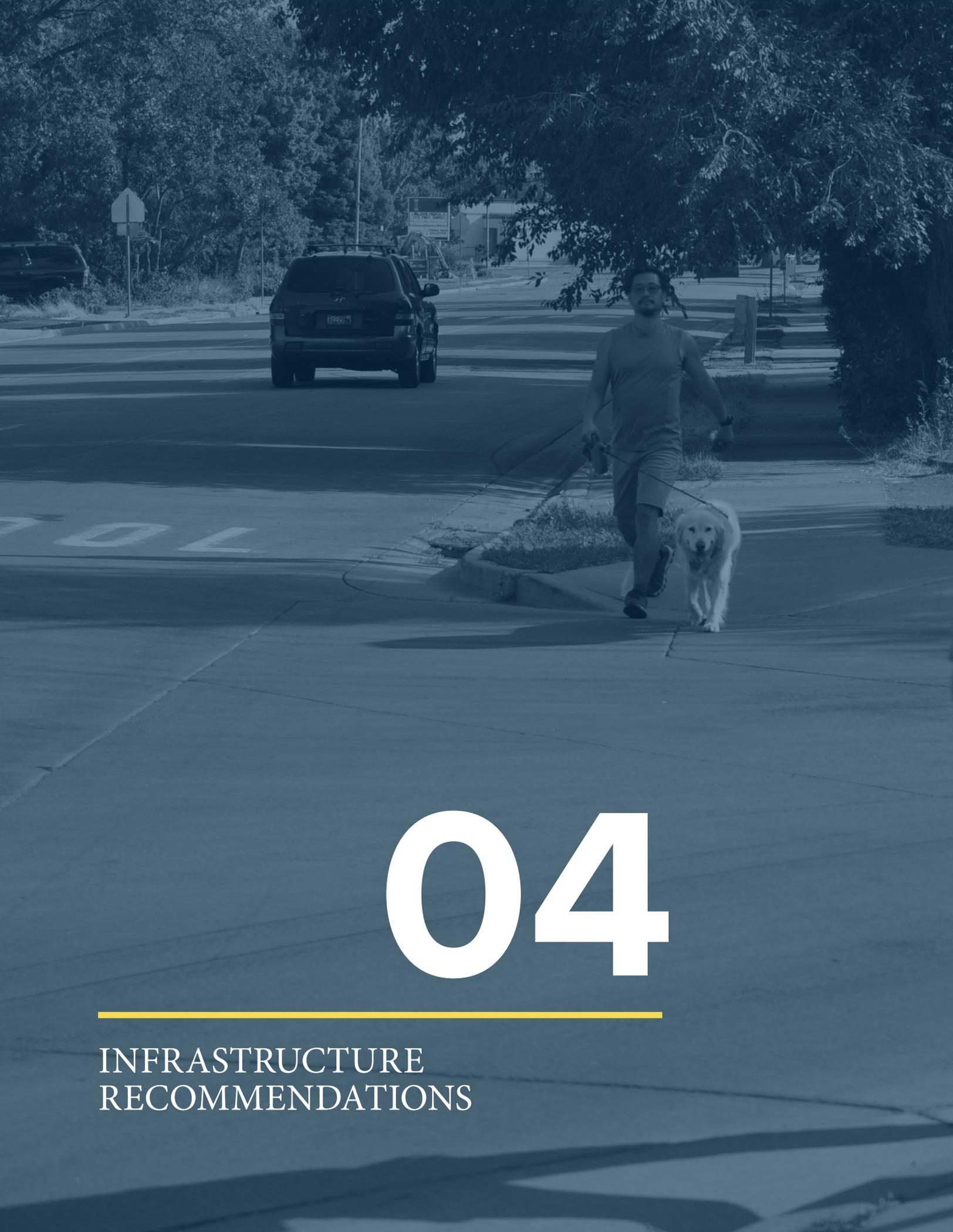
STAKEHOLDER CHARRETTES

An invaluable aspect of the public process was getting stakeholders from various backgrounds into the same room to talk about specific corridors and the constraints and opportunities they present. The planning team facilitated three charrettes - one with each City and its stakeholders. Participation varied among each City, but in general, participants included planning staff, WFRC representatives, city council members, and individuals from critical City departments such as Engineering, Public Works, and Parks. Using a large printed map of a draft recommended network and Google Earth on a large screen, stakeholders and the planning team analyzed each corridor through which improvements were being proposed and discussed opportunities and concerns not previously identified by the planning team. The result of these charrettes was a proposed network of active transportation infrastructure that was significantly improved from the original draft presented by the planning team, illustrating the value of collaboration and tapping in to local knowledge.





this page intentionally left blank



04

INFRASTRUCTURE
RECOMMENDATIONS



OVERVIEW

Developing the pedestrian and bicycle network recommendations was a multi-step process involving ongoing dialogue with stakeholders and the general public. Recommendations were informed by a combination of the existing conditions analysis, previously adopted plans, public input, and active transportation best practices.

North Salt Lake's 19 miles of existing walking and bicycling infrastructure (excluding sidewalks) are recommended to increase to a total of 34 miles - 15 miles of new active transportation infrastructure. Proposed infrastructure improvements put emphasis on creating a walking and biking network that is comfortable for all ages and abilities to make active transportation a more viable option for getting around for a wider array of people, and the future system will provide new or enhanced connections to destinations such as schools, libraries, parks, and businesses.

A NETWORK FOR ALL AGES AND ABILITIES (AAA)

The vision and goals of this plan revolve around a desire to make walking and bicycling normal, safe, everyday activities for people of all ages and abilities (AAA), not just people who are already confident and enthusiastic about active transportation. Walking and bicycling facilities like separated bike lanes, shared use paths, wide and/or buffered sidewalks (separated from curb), and neighborhood byways create an AAA network that is appropriate for the majority of South Davis County residents. These facilities are considered high comfort because of physical protection, separation from traffic, or the use of low volume, low speed streets.

Many South Davis County residents would like to walk or ride bicycles more but are discouraged from doing so because of safety concerns, lack of infrastructure, or lack of connectivity to destinations. National surveys indicate that 50-60% of people say they would ride a bicycle more (or start riding if they do not already) if they had access to facilities that provided more separation from traffic, lower traffic speeds, and/or lower traffic volumes. They are interested in bicycling more, but concerned about safety.¹

On-street bikeways that are separated or are located on traffic-calmed streets also create a better pedestrian experience by reducing traffic speeds or, in the case of separated bike lanes, increasing the physical separation between pedestrian areas and motor vehicle travel lanes. Additionally, evidence has shown that communities with higher bicycling rates tend to have lower crash rates for bicycles and all other modes, benefiting from the effect of “safety in numbers” and increased awareness.²

In addition to safety benefits, AAA infrastructure can improve retail sales in commercial areas, contribute to higher property values³, and provide more transportation choices to the average person. The latter, in turn, often leads to a more balanced mode share between different transportation modes, contributing to improved air quality, improved health outcomes, more diversified transportation investment, and greater network resiliency and effectiveness.

¹ Four Types of Cyclists. (2009). Roger Geller, City of Portland Bureau of Transportation: <https://www.portlandoregon.gov/transportation/article/264746>.

² Marshall, W., and N. Garrick, 2011- Evidence on why bike-friendly cities are safer for all road users, Environmental Practice, 13, 1.

³ “Omaha Recreational Trails: Their Effect on Property Values and Public Safety”. Rivers and Trails Conservations Assistance, National Park Service. Donald L. Greer, 2000;



Separated bike lanes create an environment that feels comfortable for people of all ages and abilities



Quiet neighborhood streets that prioritize bicycles with traffic calming infrastructure create family friendly routes

THE RECOMMENDED NETWORK

The planning team worked with each City, their respective stakeholders, and local residents to develop a recommended active transportation network that gives greater priority to pedestrians and bicyclists than is currently given. Guided by the project vision and goals from Chapter 1, each recommended project serves the purpose of filling crucial gaps in the existing network, increasing connectivity to destinations, and/or striving to provide a more comfortable experience for a wider array of people, particularly the “interested-but-concerned” user group, by proposing high-comfort facilities where possible.

COMMUNITY CONNECTIONS

In order for the pedestrian and bicycle network to be a legitimate means of transportation for residents, it needs to provide access to useful destinations in a connected and direct manner. Many people are interested in walking or biking for daily trips to work, school, parks, or running short errands, but don't feel like there's an easy and safe way to get there. The recommended network greatly expands connectivity to important destinations for people walking or biking. Not only would implementation of the proposed network enhance existing connections to common destinations, but also provide new connections via active transportation to one additional library, 9 additional grocery stores, 15 additional parks, 14 additional schools, and 39 additional places of worship.

The recommended pedestrian and bicycle network connects people of South Davis County to...

+1 Libraries



+9 Grocers



+14 Schools



+15 Parks



+39 Churches



RECOMMENDED FACILITY TYPES

2.1
miles



Separated Bike Lanes are physically separated from motor vehicle traffic, designed to create the feeling of a trail, but with on-street connectivity.

1.6
miles



Buffered Bike Lanes are visually separated from traffic and/or parking by a striped buffer, but lack any physical separation.

2.8
miles



Bike Lanes are a common facility type in many cities, designating 4-7 feet of roadway width with 6-inch striping.

0
miles



Neighborhood Byways are low-speed, low-volume streets that provide alternatives to busier streets and/or connections to destinations through neighborhoods.

2.0
miles



Shared Use Paths are paved paths/trails, typically 8-12' wide, constructed of asphalt or concrete, that accommodate pedestrians and bicyclists off street.

6.5
miles



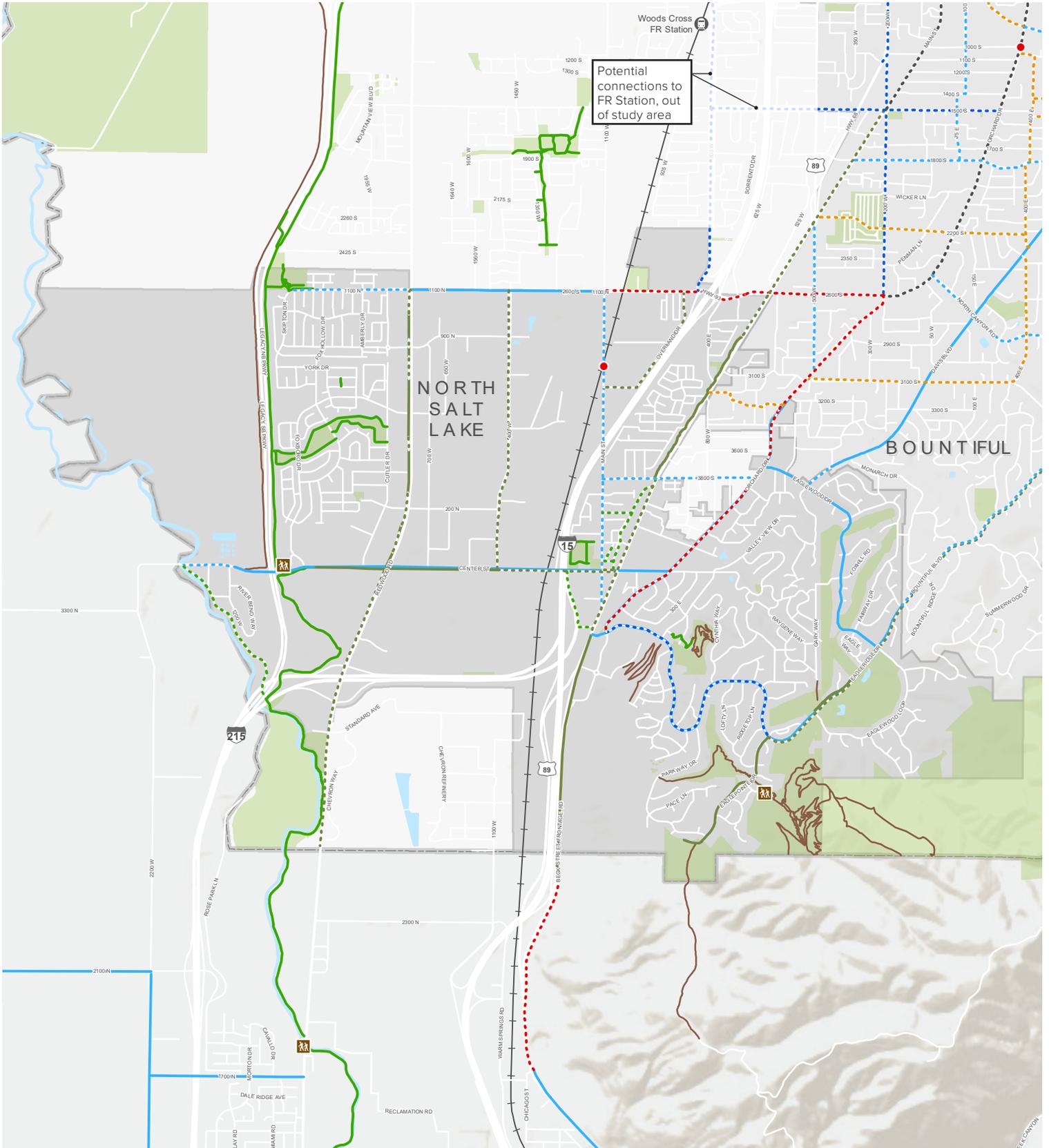
Sidepaths function as shared use paths by accommodating pedestrian and bicyclists off street, but are located parallel to roadways.

1
count



Rail Crossings require special consideration and design to safely accommodate pedestrians and bicyclists, especially when railroads cross streets at acute angles

MAP 4.1 | SOUTH DAVIS COUNTY ACTIVE TRANSPORTATION PLAN
NETWORK RECOMMENDATIONS - NORTH SALT LAKE



Existing Destinations + Boundaries

- Trailhead
- FrontRunner station
- City limits
- County limits

Existing | Proposed Facilities

- Separated bike lane
- Buffered bike lane
- Bike lane
- Neighborhood byway
- Shared use path
- Sidepath
- Future study, TBD
- Natural surface trail

Spot Improvements

- Rail crossing



Data provided by the Cities of Bountiful, Centerville, and North Salt Lake; Davis County; the Utah AGRC; UDOT; UTA; and WFRC
 Map produced August 2019 by Alta Planning + Design

WALKABLE ACTIVITY CENTERS

In collaboration with City Project Managers, seven areas were identified as walkable activity centers, based on existing and future land uses as well as specific areas that are currently designated with policies promoting pedestrian comfort and walkability. These areas are highlighted with half mile walksheds on Map 5.2. Each walkshed was analyzed for walkability based on street connectivity, major streets that present challenges for pedestrian comfort and safety, and street crossings that serve as barriers to walkability. Based on this analysis, this section recommends a series of connections in each of the seven areas analyzed. These recommendations are illustrated on Map 5.3 (Walkshed Connectivity Recommendations). There are a range of types of recommended connection improvements, including linking dead-end streets to nearby streets, pedestrian crossings of major roadways, and preservation and enhancement of existing pathways to schools.

These connections should be pursued opportunistically, through capital improvements and as part of new development. Note that some of these connections are designed to be combined to create major upgrades to the street and pathway framework – for example the linking of a cul-de-sac extension to a new roadway crossing.

TYPES OF CONNECTIONS

Near-term retrofitted street or pathway connections are opportunities to connect two streets that will significantly increase the area walk-shed and could potentially be undertaken under the existing development pattern. For example, if the connection location is vacant land.

Long-term retrofitted street or pathway connections are opportunities to connect two streets that will significantly increase the area walk-shed and likely needs a change in development pattern or redevelopment to be feasible. For example, if the connection location is an existing cul-de-sac completely surrounded by homes.

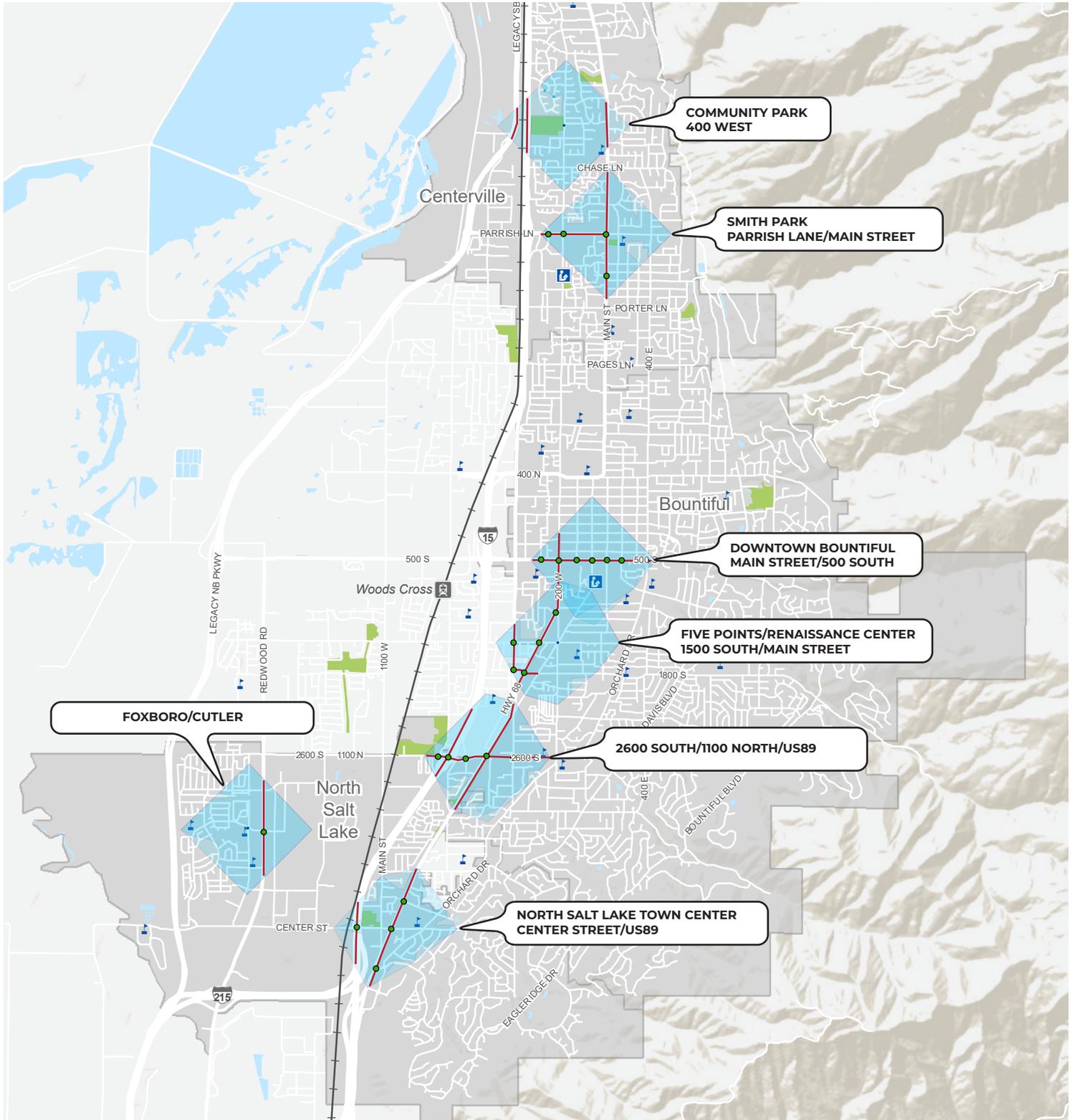
New pedestrian crossings of roadways are opportunities where a new marked and/or signalized crossing of a major roadway will significantly increase the area walk-shed.

Connections to include in future development refers to where a large future development site presents an opportunity to increase pedestrian and bicyclist connectivity in the area.

Pathways through commercial superblocks are opportunities where providing a safe and convenient active transportation link through a large commercial site such as a shopping center and its parking lots is key to connecting the greater area.

School ped/bike connections, including existing connections to preserve and enhance refer to connections from neighborhoods to schools. Many of these connections already exist and it is vital to preserve, extend, and enhance them.

Linear waterway/easement opportunities are where a linear easement such as a canal, creek, or power easement presents a unique opportunity to create an off-street active transportation (and recreation) connection.



Existing Destinations + Boundaries

- FrontRunner station
- School
- Library
- Water
- Park
- Study area

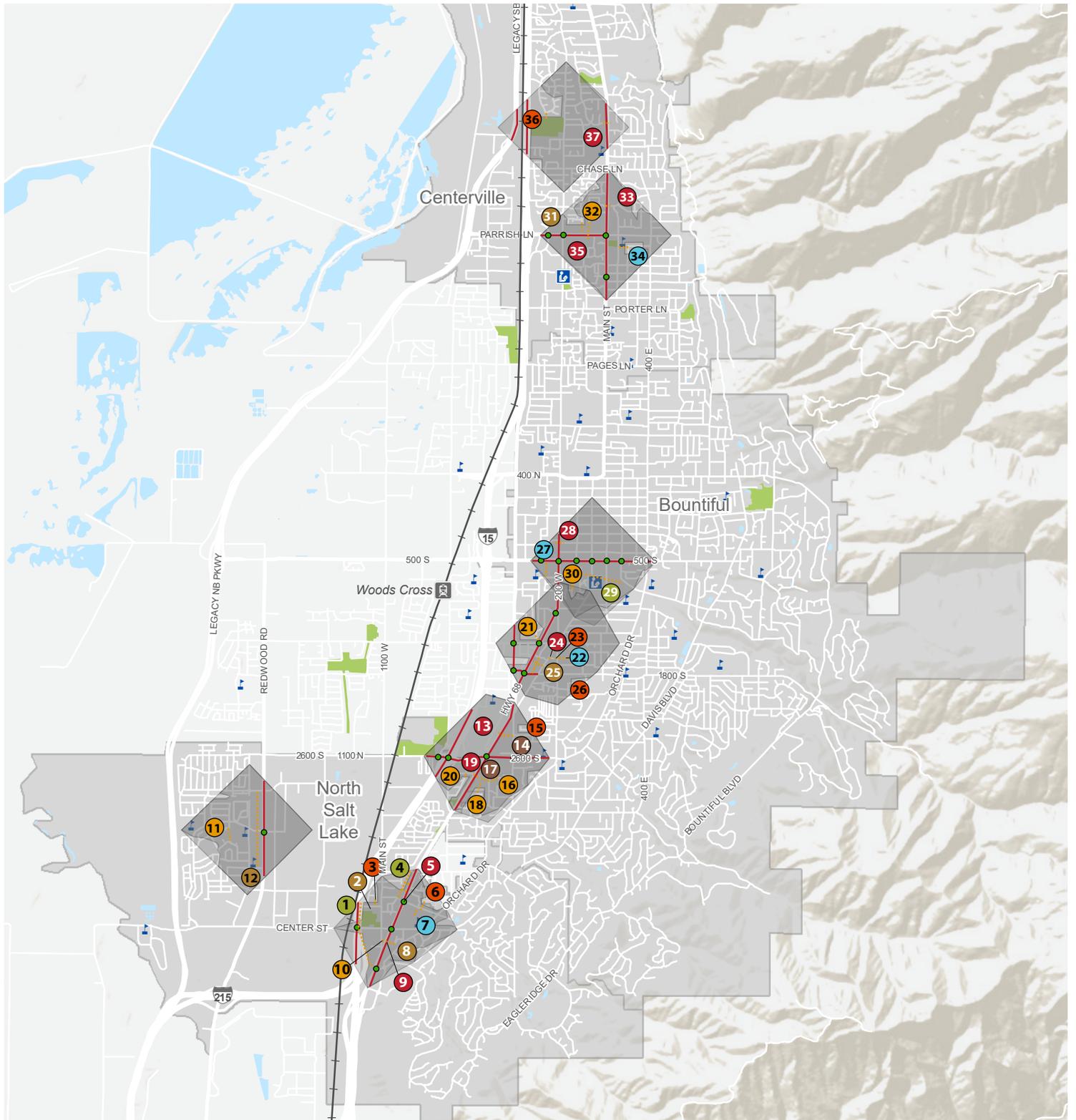
Walkshed Analysis

- Potential walkshed (half mile)
- Actual Walkshed (half mile)
- Barrier street
- Barrier street crossing



*Data provided by the Cities of Bountiful, Centerville, and North Salt Lake; Davis County; the Utah AGRC; UDOT; UTA; and WFRC
 Map produced August 2019 by Alta Planning + Design*

MAP 4.3 | SOUTH DAVIS COUNTY ACTIVE TRANSPORTATION PLAN
WALKSHED CONNECTIVITY RECOMMENDATIONS



Existing Destinations + Boundaries

- FrontRunner station
- School
- Library
- Water
- Park
- Study area

Walkshed Analysis

- Potential walkshed (half mile)
- Actual Walkshed (half mile)
- Barrier street
- Barrier street crossing

- Near-term street or pathway connections
- Long-term street or pathway connections
- New pedestrian crossings
- Connections to include in future development
- Pathways through commercial superblocks
- School connections, including preserving/enhancing existing links
- Connection as part of a planned trail corridor or trail opportunity



*Data provided by the Cities of Bountiful, Centerville, and North Salt Lake; Davis County; the Utah AGRC; UDOT; UTA; and WFRC
 Map produced August 2019 by Alta Planning + Design*

RECOMMENDED CONNECTIONS

NORTH SALT LAKE TOWN CENTER

- 1 A new pathway linking neighborhoods north and south of Hatch Park to Hatch Park and Center Street via a trail alongside I-15 - extension of planned path shown in Town Center Pedestrian/Bicycle Network.
- 2 Connection between 150 North and Hatch Park through extension of the park to 150 North.
- 3 Additional street and/or pathway connections in the neighborhood north of Hatch Park.
- 4 Street or pathway connection(s) from 300 North and/or 250 North to US 89, and improvement of the connection between US 89 and 200 North, as part of the development of the Bamberger Trail.
- 5 Exploration of improvement of the marked crosswalk at Odell Lane with a pedestrian-activated signal such as a rectangular rapid flashing beacon or HAWK.
- 6 Street or pathway connection from 4100 South to 100 North – best aligned with Connection 4.
- 7 Preservation of pathway connection from 100 North to and through Orchard Elementary School – best aligned with Connection 3.
- 8 Pathway connection between Orchard Drive and US 89 to better link neighborhoods to the Town Center - planned for between Walker Lane and Governments Trust property.
- 9 New crossing of US 89 signal or pedestrian-activated signal, especially if this is the location of the Town Center bus rapid transit (BRT) station - link with Connections 7 and 9.
- 10 Pathway connection between Main Street and US 89, likely in the form of stairs - align if possible with Connections 7 and 8.

FOXBORO/CUTLER

- 11 A pathway connection between Alton Drive and Foxboro Drive across the wetland – ideally equidistant from Cutler Drive and Fox Hollow Drive, connecting to existing trail.
- 12 Ensure a continuous north-south active transportation connection in new development between 900 North and Robinson Drive.

2600 SOUTH

- 13 New pedestrian street crossing of US 89 – ideally aligned with Connection 9.
- 14 Pedestrian connection through commercial superblock as an extension of 2400 South or 2350 South – ideally aligned with Connection 8.
- 15 Future connection of 2300 South to 500 West if the opportunity arises.
- 16 Public street connection between 500 West and 625 West – preferably at 2800 South or further south but could also use existing 2600 South connection – ideally aligned with Connection 12.
- 17 Pedestrian or street connection through the commercial superblock between 625 West and US 89 – ideally aligned with Connection 11.
- 18 Street or pathway connection of Eastpointe Drive north to US 89, preferably via the connection established in Connection 12.
- 19 New pedestrian street crossing of US 89 – ideally aligned with Connection 12.
- 20 Street or pathway connection between 500 East and US 89 or 1000 North – through the wall that separates these two streets.

FIVE POINTS

- 21 Street or pathway connection between 350 West and intersection of 300 West and 1500 South. Because of complexity of five-way intersections, a pathway is the likely connection.
- 22 Preserve and enhance pathway connecting 200 West and Bountiful Elementary.
- 23 Street or pathway connection between 200 West and Main Street, aligned with Connection 16.
- 24 New pedestrian street crossing aligned with Connections 17 and 18.
- 25 Ensure that new Renaissance Center development has connected network of streets linked as closely as possible to surrounding street grid.
- 26 If the opportunity arises, future connection between 1900 South and 200 West potentially extended to Main Street.

DOWNTOWN BOUNTIFUL

- 27 Preserve and enhance pathway between 500 South and Washington Elementary.
- 28 New pedestrian crossings of 200 West roadway to connect neighborhoods to downtown Bountiful.
- 29 Trail along Mill Creek corridor connecting Washington Elementary, Washington Park, Davis County Library, Millcreek Junior High, and commercial area.
- 30 Street or pathway connection between neighborhood and 500 South commercial area.

CENTERVILLE MAIN STREET AND PARRISH LANE

- 31 If mobile home park is redeveloped, ensure quality connections to surrounding streets and pathways.
- 32 Formalize the pathway connections between 200 West and 150 West, at the end of the dead-ends, and between 150 West and commercial center on Parrish Lane.
- 33 New pedestrian crossing of Main Street
- 34 Preserve and enhance pathway from 200 East/300 North through Centerville Elementary to 100 East/Smith Park.
- 35 New pedestrian crossing of Parrish Lane, ideally aligned with existing Bellano Way pathway along Walmart parking lot and aligned with Connection 27.

CENTERVILLE COMMUNITY PARK

- 36 Street or pathway connection between Willow Valley/550 West to Community Park.
- 37 New pedestrian crossing of Main Street at or around 1350 North.



this page intentionally left blank

A monochromatic blue-toned photograph of a cyclist riding on a paved road that stretches into the distance. The road is flanked by tall grasses and a utility pole on the left. In the background, there are rolling hills and a cloudy sky. The cyclist is wearing a helmet and dark clothing, riding away from the viewer.

05

POLICY RECOMMENDATIONS



OVERVIEW

Adopted policies play a crucial role in encouraging quality development patterns and placemaking standards that are equitable and beneficial to all road users. This section outlines foundational policies that Bountiful, Centerville, and North Salt Lake can put in place to enable active transportation improvements and programs. These tools are the big picture tools that both allow it to prioritize active transportation and to create environments supportive of active transportation. Some policy recommendations are further expounded upon with general model policy language that can be used as a starting point for cities to implement these recommendations. These model policies are found in Appendix B of this plan.

POLICY RECOMMENDATIONS

The following policies are general recommendations that can provide guidance for each City to adopt their own policies that are tailored to its specific needs. Policies in this section may already be codified in some form by one or all three of the Cities participating in this plan; regardless, existing policies should be revisited to consider up-to-date best practices and opportunities to improve conditions for active transportation.

COMPLETE STREETS

Complete streets policies establish foundational policy support for all transportation modes and other uses of the street. Complete streets policies are especially important for active transportation because they integrate a city's consideration of these often-ignored modes at a fundamental level. Establishing a complete streets policy helps multi-modal priority to endure changes in elected officials' administrations and staff.

Complete streets policies also mean a complete process. These policies help facilitate the planning, design, building, and maintenance of complete streets within a jurisdiction. Good policies help jurisdictions overcome the "siloeing" that has been at the root of much of the failure of streets to address the needs of people on foot, bikes, and other active modes.

North Salt Lake and Bountiful do not currently have a complete streets policy. The model policy draft recommended in Appendix B provide a foundation to implement the recommended network and facility designs of this plan.

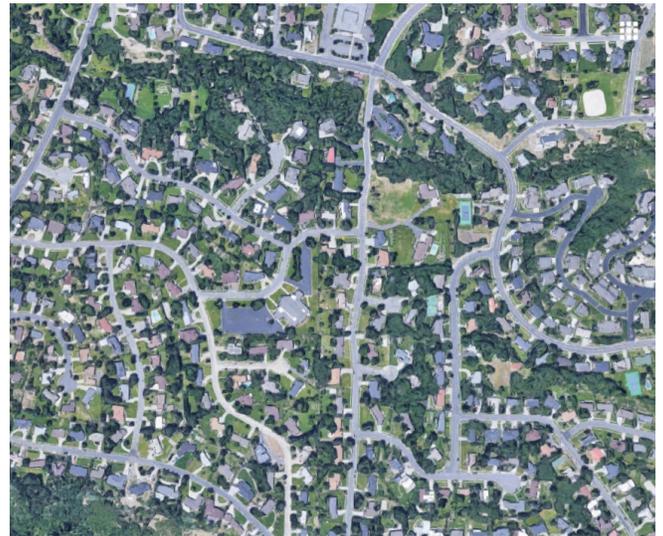
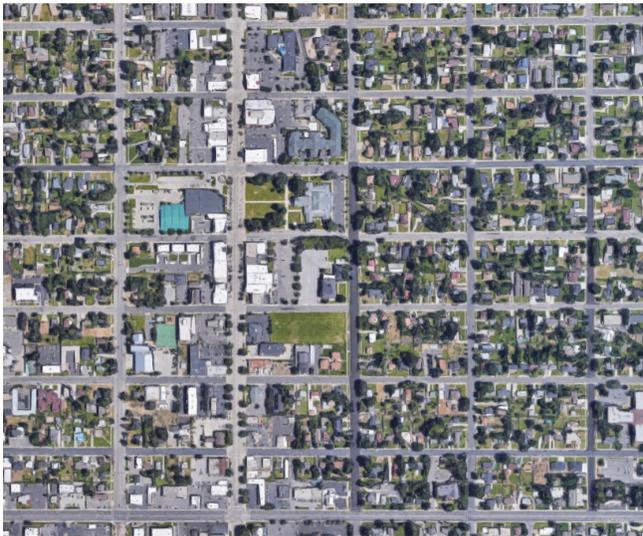
Below: Complete streets are pedestrian friendly, have strong land use connections, and accommodate multiple modes of transportation



STREET AND PATHWAY CONNECTIVITY

The most basic aspect of the active transportation experience is good street and pathway connectivity. Streets form the frame of a community and influence its basic character. For cities like North Salt Lake, Bountiful, and Centerville, much of whose growth has occurred in the last 50 years, street networks often lack connection as a result of efforts to better serve automobility and quality of life.

The two images below show an example of a well-connected network in historic Downtown Bountiful and a less connected network nearby in a newer residential area to the east.



However, a growing body of research shows the importance of reconnecting communities with improved street networks. High levels of street connectivity do a better job of achieving many of the goals established for South Davis communities – economic vitality, the effectiveness of infrastructure, health, and transportation choice.

Street connectivity is especially beneficial for people on foot, bike, and other active modes. The shortening of distances between origins and destinations make them walkable and bikeable. At the same time, connected networks disperse traffic and prevent major streets from becoming active transportation barriers.

See Appendix B for a Model Street Connectivity Policy relevant to South Davis County Communities.

Left: Connected street network in Downtown Bountiful
Right: Disconnected street network in Bountiful

WALKABLE PARKING POLICY

Automobile parking policy has a major impact on the ability for people to walk, bike, and use other active modes in an area. The prevalence of parking lots or other facilities in an area negatively affects its walkability, takes space away from space for people, and free or low-cost parking does not reflect the true cost of using space to store autos, creating uneven competition between driving and active modes. Local governmental policy can strongly influence how parking is provided through standards for the amount and design of parking. As the South Salt Lake General Plan states, “Just-enough parking. Ensure that

there is enough, but not too much parking at strategic sites. Too much parking wastes the opportunity for tax-generating development.”

Walkable parking policy addresses the four major issues with conventional parking policy: the amount of parking, the individualization of parking, the economics of parking, and the design of parking. These and other issues are addressed in the model policy for walkable parking in Appendix B.

AMENITY REQUIREMENTS

It is important to the creation of bikeable places to have quality “end-of-trip” and other supportive facilities. These include bicycle parking, showers, repair, and information.

Short term bicycle parking

Short term bicycle parking is bicycle parking for those visiting a place for up to a few hours. It mostly consists of bike racks. Users of short-term bike parking tend to be infrequent visitors, so the bike parking needs to be self-explanatory and convenient. It should be within 50 feet of the entry of the building it is serving and as weather protected as possible.

Rates for short term bike parking range from 0.5 spaces for each bedroom in multi-family dwellings, 1 space per 2,000 square feet of floor area for general food sales or groceries, 1 space per 5,000 square feet of floor area for general retail, or 1 space per 20,000 square feet of floor area for office buildings.

Long term bike parking

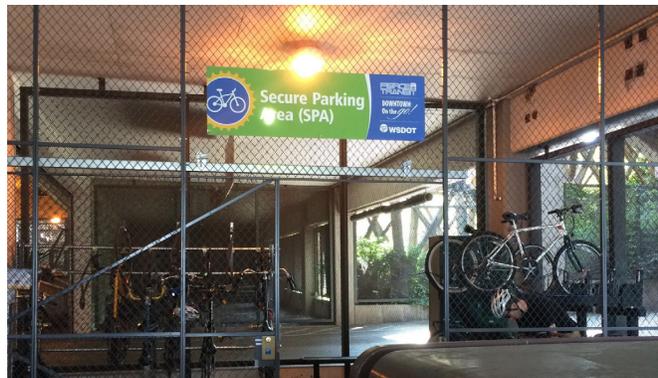
Long term bicycle parking is for those spending longer amounts of time at a place – i.e. a workday or work shift, or at a multi-family residential building. Long term bicycle parking is designed to be more secure than short term parking and provides enclosed space for one or more bikes. Types of long-term bicycle parking include lockers, cages, and bike rooms.

Rates for long term bicycle parking are generally 1 space per 10,000 square feet for office, 1 space per 12,000 square feet for general retail, or 0.5 spaces per bedroom for multi-family residential.

Encouraged bicycle amenities

- » Showers, especially for employment land uses
- » Bicycle repair and maintenance station
- » Information – maps and brochures about bike routes and destinations
- » Unified and cohesive wayfinding system for bicycle and pedestrian networks
- » Loaner bicycles for resident or employee use

*Left: Short term parking
Right: Long term, secure parking*



WALKABLE ACTIVITY CENTER POLICIES

Walkable centers are areas of activity that draw people from a neighborhood, a city, or an entire region. They are called “walkable” because the concentration of uses and activity are essential elements for communities to be accessible on foot. In addition, centers that are not walkable are serious liabilities for traffic congestion, safety, and overall regional and community health.



Walkable centers should have a network of elements that create places comfortable and compelling for people. These include a foundation of streets designed for people rather than autos, land uses that emphasize destinations, density, and mixes of uses, connected streets and small blocks, human-scale development frontage, great pedestrian realms and streetscapes, and safe, short street crossings.

Key aspects of walkable center policies are:

- » The creation of walkable land use patterns that emphasize intensive mixes of complementary uses;
- » The shaping of walkable, human scale development frontage; and
- » The shaping of a high-quality pedestrian realm and streetscape.

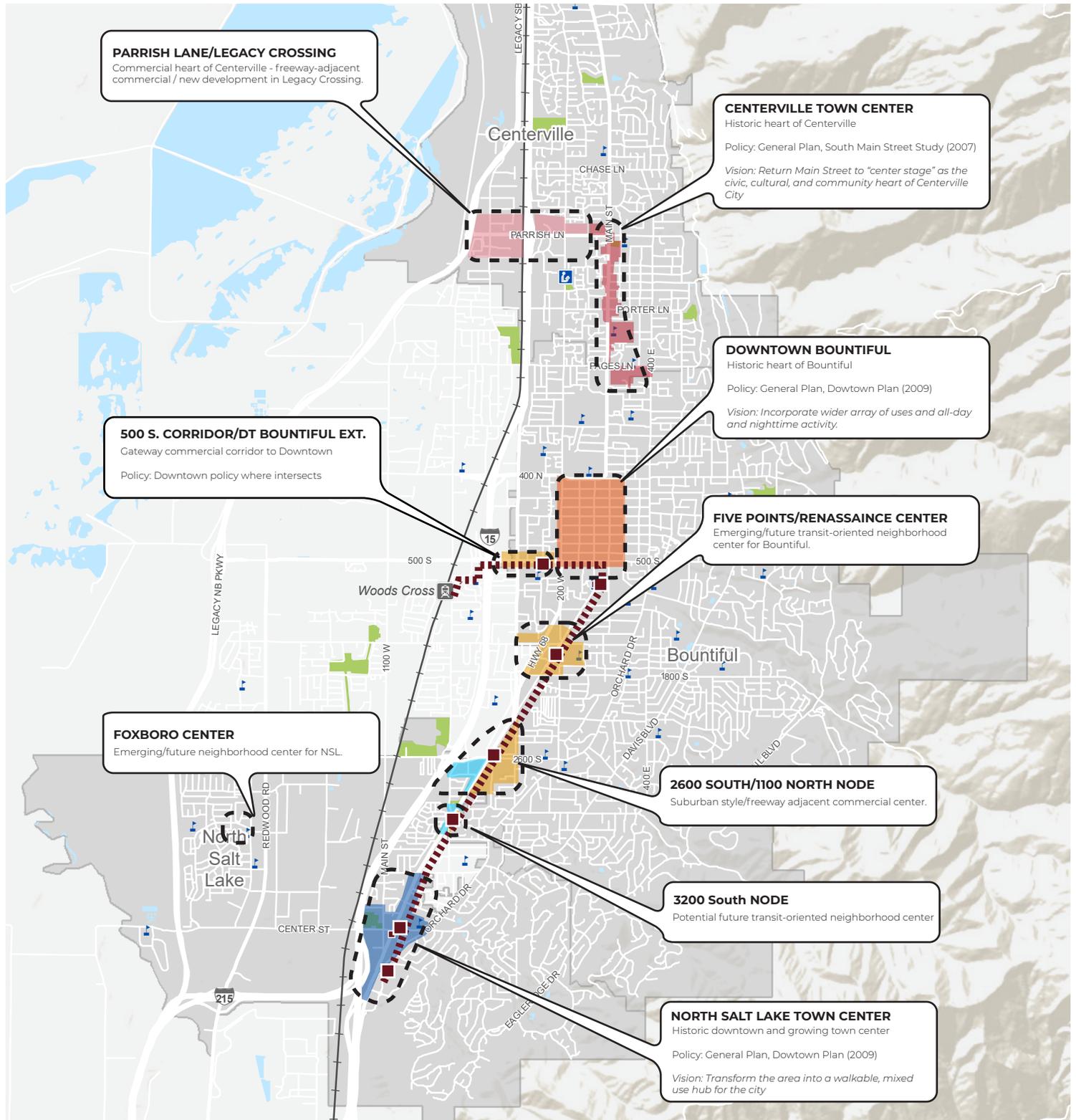
Existing walkable centers in South Davis County tend to be focused on the cities’ historic downtowns. It is in these areas where the cities have focused the majority of their walkable center policy. However, there are other opportunities for South Davis communities to develop walkable centers, including the suburban commercial centers and at planned bus rapid transit station areas. This plan recommends that the cities consider expanding and adapting their existing walkable center policies to include these additional areas.

Map 5.1 identifies areas currently with walkable center policy as well as the areas recommended for this expansion of this walkable policy. These are summarized below.

A good first step with each area recommended for walkable policy is the collaborative development of a vision for the area.

Left: Downtown Bountiful’s Main Street commercial store fronts and pedestrian realm
Right: New multi-family residential development in North Salt Lake

MAP 5.1 | SOUTH DAVIS COUNTY ACTIVE TRANSPORTATION PLAN
WALKABLE CENTERS, EXISTING AND POTENTIAL



Existing Destinations + Boundaries

- FrontRunner station
- School
- Library
- Water
- Park
- Study area

Existing + Potential Walkable Centers

- Downtown Bountiful
- Recommended area in Bountiful to expand walkable policy
- North Salt Lake Town Center
- Recommended area in North Salt Lake to expand walkable policy
- Centerville Main Street
- Recommended area in Centerville to expand walkable policy
- Planned BRT station location and alignment



Data provided by the Cities of Bountiful, Centerville, and North Salt Lake; Davis County; the Utah AGRC; UDOT; UTA; and WFRC
 Map produced August 2019 by Alta Planning + Design

NORTH SALT LAKE

Areas with existing walkable policy

The area North Salt Lake calls its Town Center is focused on US 89 and Center Street. It includes some key civic features, such as the City Hall and Hatch Park, as well as a few commercial amenities. The Town Center area is interwoven with North Salt Lake's historic neighborhoods and some newer housing developments, but it is also occupied by many land uses that do not necessarily gel with the Town Center vision, especially along US 89.

The city developed a Town Center Master Plan in 2016 that developed strategies to transform the area into a walkable, mixed use hub for the city. The Plan also recognized the area's proximity to downtown Salt Lake City and the potential for the planned BRT to spur transit-oriented redevelopment. The Plan covers most of the walkable center criteria, defining strategies to make it denser, more mixed-use, more connected, and with more walkable streets.

Thus far, the primary changes related to the Town Center Master Plan are some new higher density residential developments on US 89, as well as a potentially catalytic project breaking ground at Center Street and U.S. 89. In these new projects, one can see the City's vision of the new US 89 corridor, with a human-scale frontage and a wider pedestrian realm. The City also drafting a form-based code for town center.

Potential additional areas for walkable policy

- » 2600 South area
- » 3200 South area

This plan recommends that North Salt Lake City develop visions for each of these areas, and potentially develop a prototype of a BRT station area policy and/or plan. The City can also adapt the Town Center Master Plan Goals to these other areas, including:

- » Create a distinct and positive identity for the Town Center.
- » Encourage intensity of activity in the Town Center. The Town Center should become a center of activity and the focal point for the City as a whole.
- » Improve the appearance and enhance the safety of the Town Center and Highway 89 Corridor.
- » Establish streets that work for multiple modes of transportation.
- » Bring high-capacity transit to Highway 89.
- » Expand multi-family development options around Hatch Park by examining use of transfer of development rights (TDR).

In addition, the North Salt Lake General Plan sets out a "recipe for walkability" that has three parts: ensuring the pedestrian experiences soft landscaping more than a hardscape environment; human-scaled design elements such as windows, doors, and awnings and not parking areas or garage doors; and pedestrian Safety, focused on narrowing and enclosing roadways.

MULTI-MODAL INTEGRATION RECOMMENDATIONS

For the purposes of this plan, multi-modal integration refers to ensuring that active transportation investments are coordinated and connected to the complementary networks of activity centers, transit, and other modes that may be used in an active transportation-based trip.

This section highlights the opportunities to complement the planned South Davis bicycle network with a broader network of supportive modes and places.

TRANSIT

South Davis County’s communities are served primarily by Utah Transit Authority. They include all-day buses, commuter bus routes, and FrontRunner Commuter Rail. The primary transit feature relevant to this plan is the corridor created by the 455 and 470 Routes. These routes run all day up and down a central spine of the county that includes Main Street/U.S. 89 and Orchard Drive/400 East (455). This is the corridor that the Davis-Salt Lake City Bus Rapid Transit (BRT) service is planned to run along, at least as far as Bountiful.

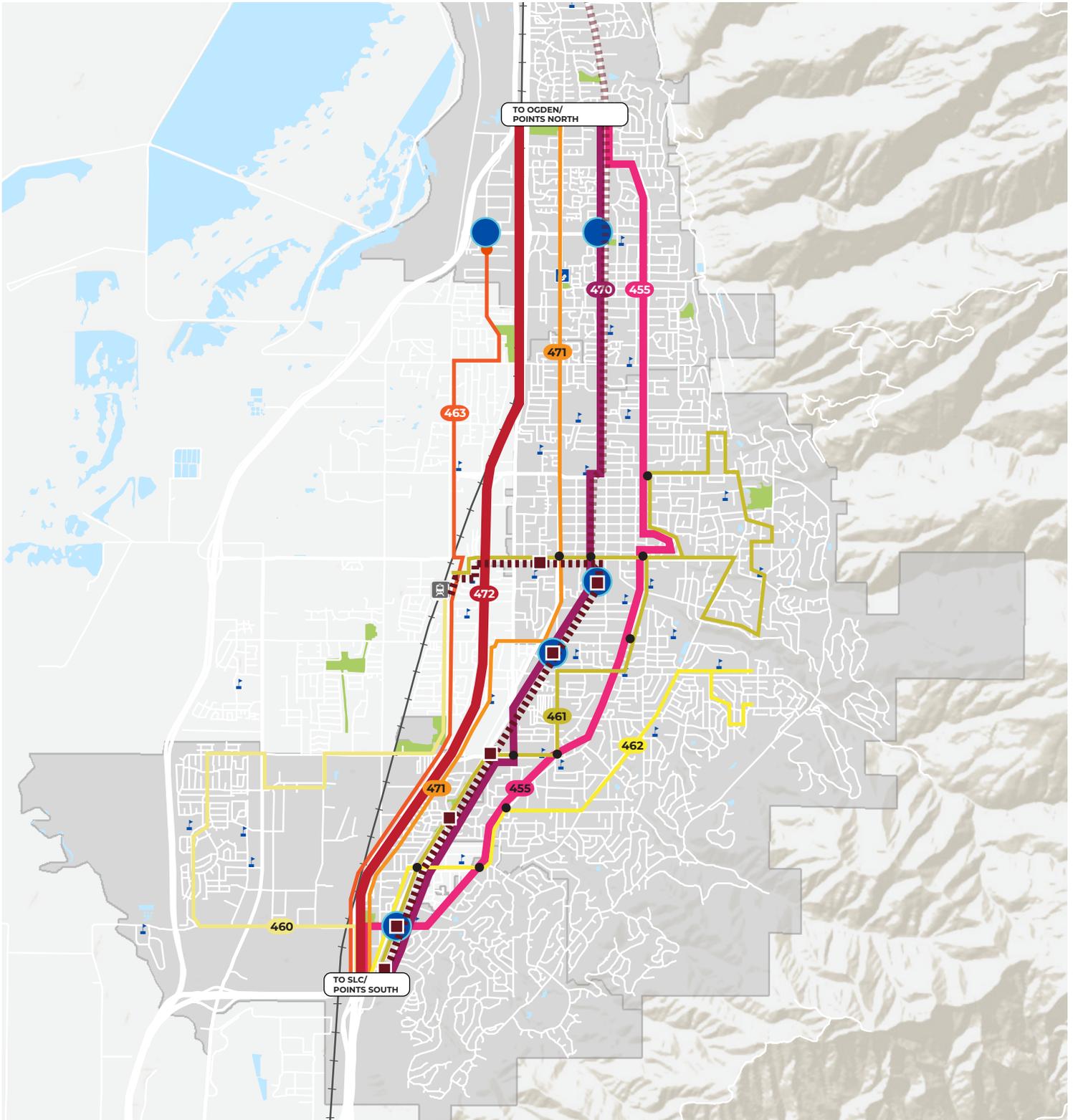
The majority of the rest of UTA’s routes in South Davis County are peak-only commuter routes that thread into residential areas. UTA is moving away from this approach, of trying to cover low-ridership areas with fixed route service, and more toward serving low-ridership areas with more flexible means, such as ride hail shuttles it refers to as “microtransit.” This allows for the concentration of more frequent service along high-ridership corridors such as the 470/455/BRT corridor.

The implications of this trend toward concentrating service along a central transit spine for active transportation in South Davis County include:

- » Support for creating the option for more of a transit lifestyle in some parts of South Davis County – specifically where walkable centers and high-frequency service coincide, and to focus walkable land use patterns, walkable development frontage and a high-quality pedestrian realm – see Walkable Centers Policy section of this Plan;
- » A greater impetus to provide high quality active transportation connections to the corridors, hubs, and centers that have high frequency service, from throughout the communities.
- » A greater ability and urgency to provide mobility hubs, even where there is not rail service. With the microtransit to high-frequency corridor model, transfer points will gain importance, as will first-last mile solutions for these hubs. UTA is supportive of the creation of these mobility hubs. See Mobility Hubs section.

*Left: Integrating active transportation and public transit UTA's bus system
Right: Sheltered seating and bicycle amenities near a gas station and bus service in Centerville*





Existing Destinations + Boundaries

-  FrontRunner station
-  School
-  Library
-  Water
-  Park
-  Study area

Existing and Future Transit

-  UTA Bus Route
-  Planned BRT station location and alignment
-  Potential community mobility hub location



*Data provided by the Cities of Bountiful, Centerville, and North Salt Lake; Davis County; the Utah AGRC; UDOT; UTA; and WFRC
 Map produced August 2019 by Alta Planning + Design*

With these implications in mind, the key recommendation for transit access and integration is to ensure that the planned network is well connected with bus stops along this central transit corridor. The bike facilities planned along Orchard Drive/400 East and U.S. 89/Main Street, many of them separated/protected, provide a good foundation for transit access.

As part of this, the planned BRT station locations are especially critical to improve active transportation connectivity. The majority of the street and pathway connectivity recommendations improve connectivity to BRT station locations. This Plan recommends that new crossings created to access BRT stations be aligned with active transportation routes and facilities.

In addition, active transportation connections to the Woods Cross FrontRunner Station are also critical. These include 500 South, to Bountiful, and 800 West, to North Salt Lake.

SHARED MOBILITY

Shared mobility encompasses emerging technology-driven options for people to use shared vehicles. These shared vehicles include cars, such as transportation network companies (TNCs) such as Uber and Lyft; vans, such as UTA's vanpools; bikes, such as Salt Lake City's GreenBike; and scooters, such as Lime and Bird, which have begun to be offered in Salt Lake Valley.

Currently, TNCs and UTA vanpools (and carpools) serve Davis County, as they do the entire Wasatch Front. But there are no shared bike or scooter services yet serving Davis County.

Even though they are not yet available, bike and scooter share offer the most opportunities of the shared mobility options for integration with active transportation planning in South Davis communities. Shared bikes and scooters present an often-ideal option for covering the "first and last mile" left between a transit stop and a destination, especially in a low-density environment like South Davis's where most transit riders' origins/destinations are far from their transit stops. These modes also need high-quality active transportation facilities.

The largest opportunities for shared bike and scooter service "hubs" in South Davis County are at the Woods Cross FrontRunner station and at high ridership 470 or 455 stops that are also planned BRT stations and are within high activity areas or the town center areas. See "Mobility Hubs".

Left: Summit County's bike share system

Right: Designated e-scooter parking



MOBILITY HUBS

Mobility hubs are places where a variety of shared transportation options are concentrated in a strategic location. In the last decade, these options have grown, and now include shared e-scooters and e-bikes and transportation network companies such as Lyft and Uber, in addition to the traditional modes of public transit, walking and bicycling. Mobility hubs provide nodes where people can easily and confidently obtain use of these modes and transfer between them. Mobility hubs especially provide places to transfer between longer distance transit service and “first-last mile” services like bikes and scooters.

Mobility hubs can provide support for active transportation in South Davis County by creating easy transfer points, providing information, and providing a convenient location for shared mobility. Proposed locations for mobility hubs are:

- » Bountiful: Renaissance Center and/or 500 South/Main Street.
- » Centerville: Leverage existing Maverick Legacy trailhead/mobility hub at Parrish Lane/1250 West, and potentially add a hub at Smith Park.
- » North Salt Lake: U.S. 89 and Center Street.

PROGRAMS AND ENFORCEMENT

In addition to adopting active transportation oriented policy, the communities of South Davis County can focus programs, campaigns, and collaboration with law enforcement to further their efforts in achieving the goals of this plan.

PROGRAMS

Formal programs adopted by schools, communities, or City staff play an integral role in educating citizens about active transportation and promoting safe streets. Below are just a few examples of programs Bountiful, Centerville, and North Salt Lake can implement or improve.

- » **Safe Routes to School:** The Safe Routes Utah program, which replaced SNAP (Student Neighborhood Access Program) helps schools and communities develop plans that inform and encourage students to walk and bike safely to school. Under Utah Law, every elementary, middle, or junior high school is required to have a Safe Routes Plan. This plan recommends each City ensure compliance with this law and that Safe Routes Plans are reviewed annually for opportunities to improve safety and increase student participation.
- » **Bike Utah’s Youth BEST Program:** The Youth Bicycle Education and Safety (BEST) Program teaches kids how to safely and confidently experience their communities by bicycle. The program is a 5-hour, in-class and on-bike program taught at schools around Utah. Bike Utah provides trained instructors, bicycles, helmets and all other equipment for the program.
- » **Regular evaluation and data collection:** One of the best ways to get support for future active transportation investments is to establish a program for regularly evaluating mode trends and infrastructure performance. Each City should make an effort to collect pre- and post-implementation data for all projects recommended in this plan. This data should include safety and crash statistics as well as active transportation participation (i.e. user counts).
- » **Maintenance:** Some people rely on active modes like walking and bicycling year round. Just as motor vehicle travel lanes are diligently maintained and kept clear of obstruction, equal emphasis should be placed on keeping pedestrian and bicycle facilities, including off-street paths, plowed in the winter and cleared of debris, including goat heads, throughout the year.

- » **Bike Month and associated Bike to Work/School Days:** Bike Month is a marketing method to encourage people to ride bicycles. Rather than one event, there are engaging activities throughout the month of May, providing people with multiple opportunities and incentives to try bikes. Activities can include safety workshops, giveaways, free breakfast for bicyclists, Bike to Work Day, and Bike to School Day. See the League of American Bicyclist's Bike Month web page for more ideas: <https://bikeleague.org/bikemonth>
- » **Open Streets events:** Open Streets events bring communities together in celebration of active and healthy lifestyles and local culture. These events temporarily close a route of one or multiple streets to motorized traffic and allow pedestrians, bicyclists, vendors, and various activities to occupy the streets. Typically, events feature an iconic street with connectivity to community destinations like retail, libraries, or parks.

ENFORCEMENT

Much of the effort to make streets safer for pedestrians and bicyclists through infrastructure and policy is nullified by lack of enforcement. One of the issues facing the communities of South Davis County is the lack of enforcement with regards to parking in bicycle lanes. Some bicycle facilities can be mistaken for parking lanes or shoulders where parking is allowed. In these cases, efforts should first be made to ensure proper signage and pavement markings, including "No Parking" signs, are properly installed and maintained. Law enforcement then plays a crucial role in educating drivers about parking laws and ensuring bicycle facilities are kept clear for their intended use.

This plan recommends that each City work with law enforcement, making sure officers are aware of bicycle laws and the initiatives of the City to promote active transportation. This can be done through seminars or educational presentations. Additionally, this plan recommends that each City consider establishing a compliance division dedicated to street safety and operations. Each City should also consider implementing a way for residents to report non-compliance via the 311 system or other communication means established by the City.



this page intentionally left blank

06

IMPLEMENTATION



OVERVIEW

Implementation strategies for active transportation projects require a blend of careful planning and opportunistic decision making. On-street projects, like bike lanes, can often be implemented quickly and efficiently when coordinated with planned roadway projects or pavement management activities like overlays or seal coatings. Conversely, shared-use path projects may require more extensive easement negotiations, permitting, or fundraising to reach construction.

This chapter outlines a brief, planning-level analysis of project costs estimates and outlines different funding sources and strategies. This section also presents the criteria for prioritizing projects recommended in this plan and provides detailed implementation strategies for the priority projects, including information on project extents, length, and any important implementation notes.

COST ESTIMATES

The cost estimates in the table on the following page give planning-level estimates for each project type in the proposed system, including linear bicycle and pedestrian facilities and spot improvements, such as crossings. The estimates are derived from industry standards and labor and material costs from similar projects in Utah and the United States. They do not include costs related to inflation, permitting, environmental impacts, engineering, design, bidding services, mobilization, traffic control, land acquisition, or any other contingencies.

FUNDING SOURCES

Many funding sources are potentially available at the federal, state, regional, and local levels for South Davis County to implement projects in the Active Transportation Plan. The majority of non-local public funds for bicycle and pedestrian projects are derived through a core group of federal and state programs. Federal funds from the Surface Transportation Block Grant Program (STBGP) are allocated to UDOT and Wasatch Front Regional Council (WFRC) and distributed by these agencies proportional to population, allowing funding to get to as many different types of communities as possible. The tables on pages 36-41 provide a list of funding sources that may be applicable to projects identified in this plan. Most of these sources are competitive and require applications. For multi-agency projects, applications may be more successful if prepared jointly with other local and regional agencies.

South Davis County should also take advantage of private contributions, if appropriate, in developing the proposed system. This could include a variety of resources, such as volunteer or in-kind labor during construction, right-of-way donations, outreach, planning and design, or monetary donations towards specific improvements.

Additionally, the County and/or individual municipalities should develop a dedicated local funding source for active transportation improvements through a general fund allocation, which will be sustainable funding that can be used to leverage other sources as well as develop projects. In addition to these funds, active transportation projects can be funded through a variety of measures at the local level: bonds financing, special improvement districts, or specified local sales taxes.

Table 6.1 General cost estimates

Facility Type	Unit	Unit Cost	Assumptions
Neighborhood Byways (per direction)	LF	\$3.00	double for two-way corridor cost
Shared lane marking	EACH	\$500.00	thermoplastic, spaced every 200'
Regulatory sign	EACH	\$300.00	spaced every 600'
Crossings and traffic calming			See individual items below
Bike Lanes (per direction)	LF	\$5.00	double for two-way corridor cost
6" white striping	LF	\$3.50	thermoplastic
Bike lane symbol pavement marking	EACH	\$500.00	thermoplastic, spaced every 500'
Sign	EACH	\$300.00	spaced every 600'
Buffered Bike Lanes (per direction)	LF	\$9.13	double for two-way corridor cost
Bike lane total cost	LF	\$5.00	
6" white striping	LF	\$3.50	thermoplastic
8" buffer hatching	LF	\$0.63	thermoplastic, 30' spacing
Separated Bike Lanes (per direction)	LF	\$74.50	double for two-way corridor cost
18" wide concrete curb	LF	\$70.00	cast in place
Bike lane symbol pavement marking	EACH	\$500.00	thermoplastic, spaced every 500'
Flex post installation	EACH	\$175.00	50' spacing
Sidepath	LF	\$160.00	
10' wide concrete path	LF	\$160.00	8" concrete, saw cut joints
Shared-Use Path	LF	\$130.00	asphalt
10' wide path - asphalt	LF	\$130.00	
10' wide path - concrete	LF	\$160.00	8" concrete, saw cut joints
Crossings and Traffic Calming			
Install RRFB with ped refuge island	EACH	\$25,000.00	mast arm mounted
Install pedestrian hybrid beacon	EACH	\$113,000.00	mast arm mounted
Curb extensions (per corner)	EACH	\$4,000.00	

Costs are estimated at a planning level. On-street bikeways assume proposed facilities can fit within the existing curb-to-curb cross section and do not require relocation of curb and gutter or pavement widening. Estimated costs do not include engineering, permitting, mobilization, street resurfacing, or removal of existing pavement striping.

FEDERAL FUNDING SOURCES

SOURCE	SUMMARY	MORE INFORMATION
FAST ACT	<p>In Utah, federal monies are administered through the Utah Department of Transportation (UDOT) and Council of Governments (COG's) or Metropolitan Planning Organizations (MPOs). Most, but not all, of these programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections. Federal funding is intended for capital improvements and safety and education programs, and projects must relate to the surface transportation system.</p> <p>There are a number of programs identified within the Fixing America's Surface Transportation Act (FAST Act) that are applicable to pedestrian and bicycle projects. These programs are discussed below.</p>	<p>www.fhwa.dot.gov/fastact</p>
TRANSPORTATION ALTERNATIVES	<p>The FAST Act recently replaced the former Transportation Alternatives Program (TAP) with set-aside funds under the Surface Transportation Block Grant Program (STBG). For administrative purposes, the Federal Highway Administration (FHWA) refers to these funds as TA Set-Aside. Projects eligible for TA Set-Aside funds include on- and off-road active transportation facilities, improvements to non-driver access to transit, recreational trails, and safe routes to school.</p>	<p>TAP: https://www.fhwa.dot.gov/map21/qandas/qatap.cfm</p> <p>STBG: https://www.fhwa.dot.gov/fastact/factsheets/stbgfs.cfm</p> <p>Application Deadline: Selection occurs every other year</p> <p>Local Match: 20%</p>
SURFACE TRANSPORTATION BLOCK GRANT PROGRAM (STBG)	<p>The FAST Act converts the long-standing Surface Transportation Program (STP) into the Surface Transportation Block Grant Program. The STGB promotes flexibility in State and local transportation decisions and provides flexible funding to best address State and local transportation needs. Eligible projects include all prior STP eligibilities; additional eligibilities can be found on FHWA's website using the link at right. The WFRC and the State are responsible for distributing the these funds, which are allocated by FHWA.</p>	<p>https://www.fhwa.dot.gov/fastact/factsheets/stbgfs.cfm</p> <p>Application Deadline:</p> <p>Local Match:</p>

FEDERAL FUNDING SOURCES

SOURCE	SUMMARY	MORE INFORMATION
RECREATIONAL TRAILS	<p>TA funds may be used to develop and maintain recreational trails and trail-related facilities for both active and motorized recreational trail uses. Examples of trail uses include hiking, bicycling, in-line skating, equestrian use, and other active and motorized uses. These funds are available for both paved and unpaved trails, but may not be used to improve roads for general passenger vehicle use or to provide shoulders or sidewalks along roads.</p> <p>Recreational Trails Program funds may be used for:</p> <ul style="list-style-type: none"> • Maintenance and restoration of existing trails • Purchase and lease of trail construction and maintenance equipment • Construction of new trails, including unpaved trails • Acquisition or easements of property for trails • State administrative costs related to this program (limited to seven percent of a state's funds) • Operation of educational programs to promote safety and environmental protection related to trails (limited to five percent of a state's funds) • Grant applications are typically due in April each year. 	<p>https://stateparks.utah.gov/resources/grants/recreational-trails-program/</p> <p>Application Deadline: May 1, annually</p> <p>Local Match: 50/50 sponsor match</p>
HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)	<p>HSIP provides \$2.4 billion nationally for projects and programs that help communities achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. Infrastructure and non-infrastructure projects are eligible for HSIP funds. Pedestrian and bicycle safety improvements, enforcement activities, traffic calming projects, and crossing treatments for active transportation users in school zones are examples of eligible projects. All HSIP projects must be consistent with the state's Strategic Highway Safety Plan (SHSP).</p>	<p>For information specific to HSIP in the state of Utah, visit: https://www.udot.utah.gov/main/f?p=100:p-g:0:::1:T,V:2933,</p> <p>Application Deadline: Ongoing</p>
CENTERS FOR DISEASE CONTROL AND PREVENTION GRANTS (CDC)	<p>The CDC provides funding opportunities for several different organization and jurisdiction types that can potentially support pedestrian and bicycle infrastructure, planning or other support programs.</p>	<p>https://www.cdc.gov/grants/</p> <p>Application Deadline: Varies</p> <p>Local Match:</p>

FEDERAL FUNDING SOURCES

SOURCE	SUMMARY	MORE INFORMATION
<p>RIVERS, TRAILS, AND CONSERVATION ASSISTANCE PROGRAM</p>	<p>The Rivers, Trails, and Conservation Assistance Program (RTCA) is a National Parks Service (NPS) program providing technical assistance via direct NPS staff involvement to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program provides only for planning assistance—there are no implementation monies available. Projects are prioritized for assistance based on criteria including conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation, and focusing on lasting accomplishments. This program may benefit trail development in the region indirectly through technical assistance, particularly for community organizations, but should not be considered a future capital funding source.</p>	<p>https://www.nps.gov/orgs/rtca/apply.htm</p> <p>Application Deadline: June 30, annually</p>
<p>COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM (CDBG)</p>	<p>The Community Development Block Grants (CDBG) program provides money for streetscape revitalization, which may be largely comprised of pedestrian improvements. Federal CDBG grantees may “use Community Development Block Grants funds for activities that include (but are not limited to): acquiring real property; reconstructing or rehabilitating housing and other property; building public facilities and improvements, such as streets, sidewalks, community and senior citizen centers and recreational facilities; paying for planning and administrative expenses, such as costs related to developing a consolidated plan and managing Community Development Block Grants funds; provide public services for youths, seniors, or the disabled; and initiatives such as neighborhood watch programs.” Trails and greenway projects that enhance accessibility are the best fit for this funding source. CDBG funds could also be used to create an ADA Transition Plan. States designate CDBG funds to “entitlement communities” – generally major cities with more than 50,000 people – and “non-entitlement communities”.</p>	<p>https://www.hud.gov/program_offices/comm_planning/</p> <p>Application Deadline: Mandatory “How to Apply” workshops held annually in October/November</p>

FEDERAL FUNDING SOURCES

SOURCE	SUMMARY	MORE INFORMATION
LAND AND WATER CONSERVATION FUND	The Land and Water Conservation Fund (LWCF) provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. Funds can be used for right-of-way acquisition and construction. The program is administered by Utah State parks as a grant program. Any projects located in future parks could benefit from planning and land acquisition funding through the LWCF. Funding is also available for new parks, and trail corridor acquisition can be funded with LWCF grants as well.	https://www.nps.gov/subjects/lwcf/stateside.htm Application Deadline: Spring, annually Local Match: 50/50 match
EPA GREEN INFRASTRUCTURE GRANTS	The EPA offers a number of grant resources that serve to improve clean water in communities such as the EPA Clean Water State Revolving Fund, EPA Clean Water Act Non point Source Grant and EPA Community Action for a Renewed Environment (CARE) Grants.	More information on these, and other funding sources can be found through the EPA's website: https://www.epa.gov/green-infrastructure/green-infrastructure-funding-opportunities
ENHANCED MOBILITY OF SENIORS & INDIVIDUALS WITH DISABILITIES	Section 5310 of the FAST ACT – Enhanced Mobility of Seniors and Individuals with Disabilities provides capital and operating costs to provide transportation services and facility improvements that exceed those required by the Americans with Disabilities Act. Examples of pedestrian/ accessibility projects funded in other rural communities include installing Accessible Pedestrian Signals (APS), enhancing transit stops to improve accessibility, and establishing regional one-click systems.	https://www.transit.dot.gov/funding/grants/enhanced-mobility-seniors-individuals-disabilities-section-5310 Application Deadline: Local Match: 20% minimum
ADDITIONAL FTA FUNDING SOURCES FOR BIKE/PED INFRASTRUCTURE	Most Federal Transit Administration (FTA) funding can be used to fund pedestrian and bicycle projects that “enhance or are related to public transportation facilities.”	https://www.transit.dot.gov/

STATE FUNDING SOURCES

SOURCE	SUMMARY	MORE INFORMATION
CLASS B & C ROAD FUNDS	Class B & C roads are all public roads which are not state or federal roads. Funds are generated from a combination of state fuel taxes, registration fees, driver license fees, and other revenue sources. County roads are financed by Class B funds, while roads owned by incorporated municipalities are financed by Class C funds. Enhancement of traffic and pedestrian safety, including sidewalks, safety features, signals, and bicycle facilities are examples of permissible uses of these funds.	Regulations Governing Class B & C Road Funds: https://www.udot.utah.gov/main/f?p=100:pg:0:::V,T:134
SAFE ROUTES TO SCHOOL (SRTS) & SAFE ROUTES UTAH	The SRTS and Safe Routes Utah programs are sources of funding for education, enforcement, evaluations, and infrastructure improvements (e.g. sidewalks, bike parking, etc.) that encourage elementary and middle school students to walk or bike to school. The Utah Department of Transportation (UDOT) administers these programs using Federal Surface Transportation Block Grant Set-Aside funds and Highway Safety Improvement Program funds.	https://www.udot.utah.gov/main/f?p=100:pg:0:::V,T:1388g:0:::V,T:1388f?p=100:pg:0:::T,V:1388 Application Deadline: July, annually
FEDERAL LANDS ACCESS PROGRAM (FLAP)	The FLAP program funds improvement to transportation facilities that provide access to Federal lands. These funds supplement State and local resources for public roads, transit systems, and other transportation facilities, with an emphasis on high-use recreation sites and economic generators. Administered by the State, funds are allocated based on road mileage, number of bridges, land area, and visitation. Projects are selected by a Programming Decision Committee (PDC) established in each state.	https://flh.fhwa.dot.gov/programs/flap/ Application Deadline: Varies.
SAFE SIDEWALK PROGRAM	The legislature of the State of Utah has recognized the need for adequate sidewalk and pedestrian safety devices. State policy declares that “pedestrian safety” considerations shall be included in all State highway engineering and planning for all projects where pedestrian traffic would be a significant factor. The Safe Sidewalks Program provides a legislative funding source for construction of new sidewalks adjacent to state routes where sidewalks do not currently exist and where major construction or reconstruction of the route, at that location, is not planned for ten or more years.	https://www.udot.utah.gov/main/f?p=100:pg:0:::1:T,V:583 , Local Match: 25%

STATE FUNDING SOURCES

SOURCE	SUMMARY	MORE INFORMATION
UDOT - MAINTENANCE PROGRAM	UDOT's routine street resurfacing can be used as an opportunity to add bikeways or buffers to existing facilities. This option does not require additional funding. The FHWA provides a handout on using routine resurfacing projects to implement bike facilities (see more information link).	https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/resurfacing/resurfacing_workbook.pdf
UTAH OUTDOOR RECREATION GRANT	The Utah Outdoor Recreation Grant is intended to improve recreational opportunities through the construction of trails, pathways, and other recreational amenities. The program is administered through the Governor's Office of Economic Development. Grant awards in 2019 may range from \$5,000 to \$250,000. A 50% match is required however 25% of the total grant award may be provided through in-kind services.	<p>https://business.utah.gov/outdoor/uorg/</p> <p>Application Deadline: March, annually</p> <p>Local Match: 50/50</p>
UDOT TRANSPORTATION INVESTMENT FUNDS (TIF)	Transportation investment funds are a relatively new funding source for active transportation projects in Utah. The program, created in 2005, has traditionally funded roadway capacity projects, however in 2018 the passage of SB 72 added standalone active transportation projects as an approved project type. Active transportation projects should help mitigate congestion and be included in an active transportation plan approved by UDOT. Projects require a 40% non-state match and can be used for design, construction, or maintenance of TIF-constructed facilities.	<p>https://wfrc.org/PublicInvolvement/GovernmentalAffairs/2019/SB-72Transportation-GovFundRevs.pdf</p> <p>Local Match: 40%</p>
UDOT TRANSIT TRANSPORTATION INVESTMENT FUNDS (TTIF)	The UDOT Transit Transportation Investment Fund (TTIF) can be used for public transit capital development of new capacity projects. This fund can also be used to aid in first mile/last mile decisions.	<p>https://wfrc.org/PublicInvolvement/GovernmentalAffairs/2019/SB-72Transportation-GovFundRevs.pdf</p> <p>Local Match: 40%</p>
BIKE UTAH 1,000 MILES CAMPAIGN	In 2017, Governor Herbert initiated the 1,000 Miles Campaign to build 1,000 miles of family-friendly bike paths, lanes, and trails by 2027. Bike Utah supports this effort by offering strategic planning, technical assistance, and connections to financial resources so that communities can begin or continue developing bicycling in their area.	https://www.bikeutah.org/1000miles/

PROJECT PRIORITIZATION

Implementation strategies for active transportation projects require a blend of careful planning and opportunistic decision making. On-street projects, like bike lanes, can often be implemented quickly and efficiently when coordinated with planned roadway projects or pavement management activities like overlays or seal coatings. Conversely, shared-use path projects may require more extensive easement negotiations, permitting, or fundraising to reach construction.

The following project prioritization methodology should serve as a general guide for prioritizing investment in the active transportation system; however, flexibility in implementation is highly encouraged when opportunities arise to share resources, achieve cost savings, or partner with other agencies. For each project identified as part of the proposed system, scoring was established based on criteria and weighting agreed upon by the project's Steering Committee.

The categories and individual criteria are outlined below.

PRIORITIZATION CRITERIA

The project prioritization framework relies upon category-based criteria. The following criteria will be applied to each facility and each recommended facility will be assigned a numeric value to the degree it meets the criteria requirements. The criteria values are outlined in Table 5.1. The criteria multipliers were determined by the Steering Committee and can be adjusted by County or municipality preference to align with South Davis County's values and priorities in the future.

Provides Access to Transit

People are much more likely to use transit if they can access it by bike or on foot. Improving connections to bus stops and park-and-ride locations will improve perceived safety and convenience as well as encourage people to use public transportation more often. Facilities that provide this connectivity to transit qualify for this criterion.

Safety

Maintaining or improving safety is a prerequisite for all bicycle and pedestrian projects. One of the goals of this plan is to establish a system that makes walking and biking safer and more comfortable for people of all ages and abilities. Pedestrian and bicycle facilities that achieve this are typically characterized by physical separation from motor traffic and/or being located on a street that experiences low traffic volumes and operating speeds. Projects that address or remedy existing safety issues for bicyclists and/or pedestrians and/or are located at the location of a crash that involved a bicyclist or pedestrian qualify for this criterion.

Access to Schools

Many parents don't feel comfortable sending their children to school on foot or bicycle due to unsafe roadways or crossings. One of the goals of this plan is to enable more students, faculty, and staff to access schools by walking or bicycling. Any recommendation that provides new or enhanced access to schools qualifies for this criterion.

Connectivity to Existing Facilities

Any transportation infrastructure is only as useful as the degree to which it connects users to their destinations. Even trails predominantly used for recreation are more attractive and more highly used as a means of utilitarian transportation when they connect to meaningful

places such as schools, parks, commercial centers, libraries, and other civic destinations. Increasing bicycle and pedestrian connectivity to these destinations will allow many trips to be converted into walking and bicycling trips. Any facilities, including spot improvements, that grant new or improved direct access to community destinations qualify for this criterion.

Public Support

Public support is an important criterion when evaluating potential bicycle and pedestrian facility improvements. Throughout the planning process for the South Davis County ATP, the project team received feedback from more than 300 people via online surveys and interactive maps as well as in-person outreach activities. Because public support can give implementation efforts the necessary momentum to reach construction, streets/locations that were identified by the public as desirable for a future pedestrian and/or bicycle improvement qualify for this criterion.

Access to Parks or Civic Centers

Any transportation infrastructure is only as useful as the degree to which it connects users to their destinations. Even trails predominantly used for recreation are more attractive and more highly used as a means of utilitarian transportation when they connect to meaningful places such as parks and other civic destinations. Increasing bicycle and pedestrian connectivity to these destinations will allow many trips to be converted. Any recommendation that provides new or enhanced access to parks or civic centers qualifies for this criterion.

Future Development Synergy

In a multi-jurisdictional effort such as the South Davis ATP, proposed facilities that connect existing bicycle and pedestrian to destinations throughout the region present opportunities for collaboration in both the planning and funding of new improvements and developments. Providing a synergistic connection between active transportation facilities and new development concept plans promotes economic growth and community development. Any proposed improvement that has strong potential to be included in future development projects qualifies for this criterion.

Access to Retail

Retail destinations act as key community gathering places for local residents. However, these destinations are often difficult to travel to due to unsafe roadways, poor street crossings, and lack of bicycle-related amenities at the destination. One of the goals of this plan is to enable more residents to access these destinations by walking or bicycling. Any recommendation that provides new or enhanced access to retail destinations qualifies for this criterion.

Access to Churches

Many families don't feel comfortable traveling to religious institutions on foot or bicycle due to unsafe roadways or crossings. One of the goals of this plan is to enable more residents to access churches by walking or bicycling. Increasing bicycle and pedestrian connectivity to these destinations will allow many trips to be converted. Any recommendation that provides new or enhanced access to one or more churches qualifies for this criterion.

Table 6.2 Project prioritization scoring table

Criteria	Score	Multiplier	Total	Description
Access to transit	2	1.80	3.60	Provides direct access to transit
	0		0	Does not provide direct access to transit
Safety	2	1.73	3.50	Addresses locations with high rates of bicycle/pedestrian crashes (multiple times)
	1		1.73	Addresses locations with moderate rates of bicycle/pedestrian crashes (once)
	0		0	Does not address locations with bike/pedestrian crashes
Access to schools	2	1.70	3.40	Provides new or enhanced access to multiple schools
	1		1.70	Provides new or enhanced access to one school
	0		0	Does not provide new or enhanced access to schools
Connectivity to existing facilities	2	1.65	3.30	Connects directly to multiple existing trails or bike facilities
	1		1.65	Connects directly to one existing trail or bike facility
	0		0	Does not connect directly to an existing trail or bike facility
Public support	2	1.60	3.20	Street/location was identified by the public as desirable for a future facility (multiple times)
	1		1.60	Street/location was identified by the public as desirable for a future facility (once)
	0		0	Was not identified by the public as desirable for a future facility
Access to parks or civic centers	2	1.58	3.16	Provides new or enhanced access to multiple parks or civic centers
	1		1.58	Provides new or enhanced access to one park or civic center
	0		0	Does not provide new or enhanced access to parks or civic centers
Future development synergy	2	1.46	2.92	Has strong potential to be included in future development projects
	0		0	Has weak potential to be included in future development projects
Access to retail	2	1.41	2.82	Provides new or enhanced access to multiple retail destinations
	1		1.41	Provides new or enhanced access to one retail destination
	0		0	Does not provide new or enhanced access to retail
Access to churches	2	1.1	2.20	Provides new or enhanced access to one or more churches
	0		0	Does not provide new or enhanced access to churches

This prioritization scoring system is intended to be a flexible tool in determining implementation priorities. Opportunistic implementation should be pursued where feasible. Changing transportation patterns, political landscapes, or other emerging trends likely will also influence the ultimate funding and implementation of specific projects.

PRIORITY PROJECT CONCEPTS

Using the prioritization scoring methodology and understanding local needs and opportunities, each City selected 2-3 projects from the recommended network that are considered high priorities for implementation. This section of the plan further explores these priority projects at a conceptual level to aid each city in developing momentum into implementation. Each project concept includes the following information:

- » Project summary, including extents and context
- » Facility type
- » Length
- » Estimated cost, based on planning level costs estimates in this chapter
- » Impacts
- » Phasing, if applicable
- » Funding sources
- » Benefits
- » Plan view and cross section illustrations of existing and proposed conditions

The following projects were selected for concept development:

Bountiful

- » Buffered bike lanes on 200 W
- » Neighborhood byway on Center Street
- » Shared street on Main Street in the downtown area

Centerville

- » Buffered bike lanes on 400 W
- » Separated bike lanes on 400 E

North Salt Lake

- » Buffered bike lanes on Eagle Ridge Drive
- » Bamberger Trail corridor



Buffered Bike Lanes on Eagle Ridge Drive

Project Summary:

Eagle Ridge Drive is a steep residential street that currently accommodates two travel lanes, bike lanes in both directions, and on-street parking on both sides of the street. To improve the safety of bicyclists from Orchard Dr to Eaglepointe Dr, this plan recommends that the bike lanes be upgraded to buffered bike lanes by rebalancing the street to limit on-street parking to one side, providing more separation between bicyclists and motor vehicles. It is recommended that on-street parking be removed from the downhill side where bicyclists are traveling significantly faster, for two reasons: 1) drivers exiting driveways will have a clearer view of fast-traveling bicyclists, and 2) downhill bicyclists have less time to maneuver around open car doors. Alternatively, the City may opt to maintain parking on both sides, convert uphill travel to a buffered bike lane, and reduce downhill travel to a shared lane, made feasible by the smaller speed differential between downhill bicyclists and cars.

Jurisdiction: North Salt Lake

Facility Type: Buffered Bike Lanes

Length: ± 1.6 miles

Estimated Cost: \$218,718 per the proposed cross section on next page

Impacts: Reduced on-street parking

Phasing: N/A

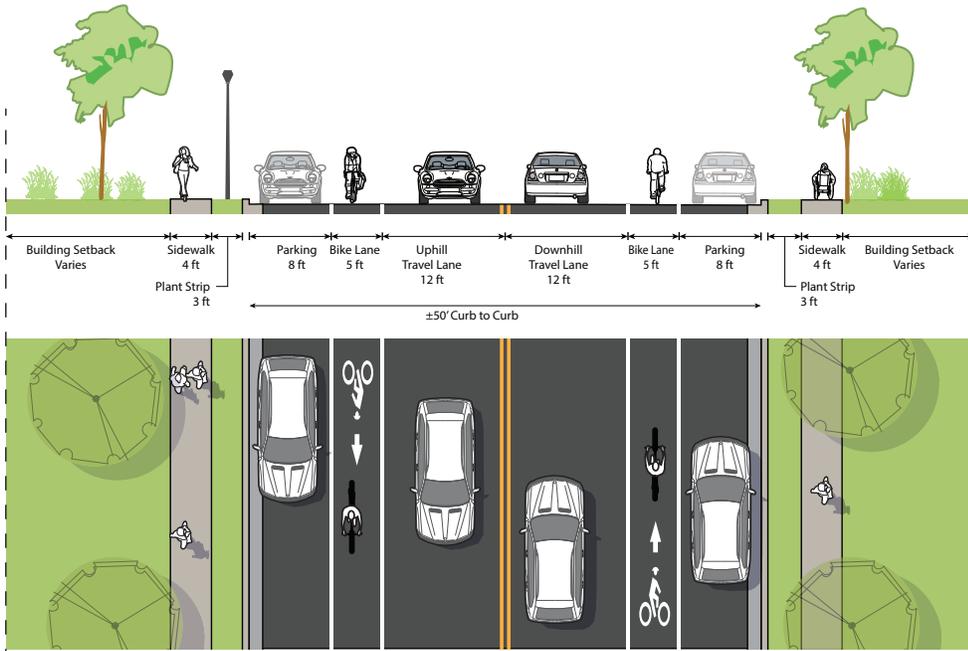
Funding Sources: Class B & C Road Funds; UDOT Transportation Investment Funds; Highway Safety Improvement Program; Safe Routes to School & Safe Routes Utah

Benefits: Allocating more space to bicyclists along this corridor increases the safety of uphill bicyclists by providing more space for slower, less direct uphill travel and downhill bicyclists by minimizing the dangers presented by on-street parking with regards to faster travel speeds and frequent driveway conflicts. While this facility, because of its steep slope, is not naturally a comfortable bikeway for all ages and abilities, these improvements have the potential to make Eagle Ridge Drive comfortable for a broader range of bicyclists.

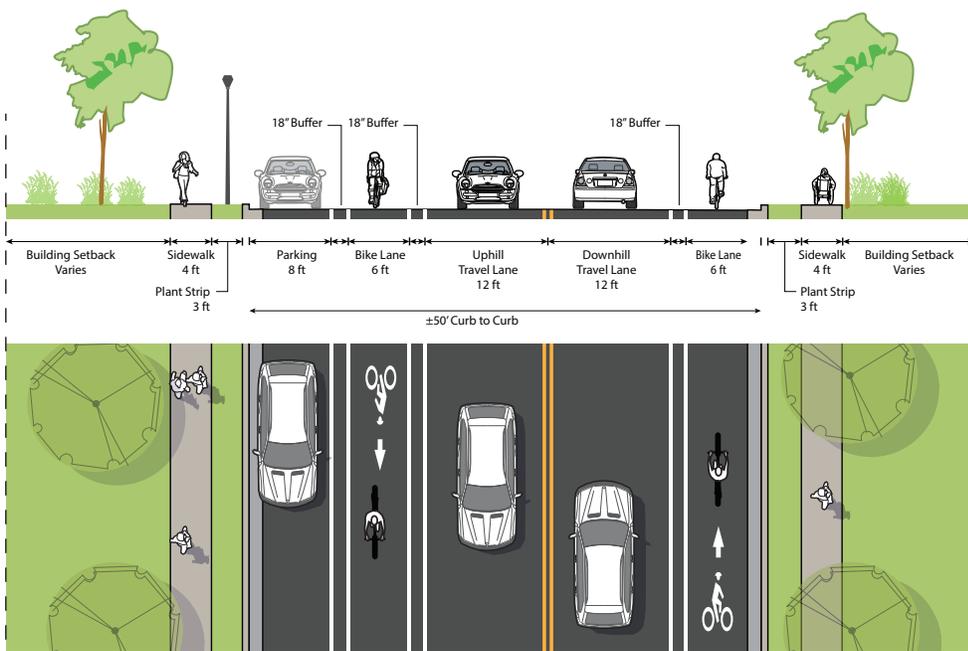


Section A - A':

Existing Street Cross-Section + Plan View



Proposed Cross-Section + Plan View



Buffered bike lanes with on-street parking on the uphill side

***Option:** Maintain on-street parking on both sides, buffered bike lane in uphill direction, shared lane in downhill direction

Bamberger Trail Corridor

Project Summary:

This project is an urban trail in North Salt Lake's town center area, extending from 350 N to Center Street, including a trail connection from the Bamberger corridor to Main Street (approximately 0.7 miles of trail in total). Primarily a shared use path, the facility type through this corridor varies based on urban context, and is meant to be flexible depending on future development plans. Once completed, this portion of the Bamberger Trail Corridor will provide better access to the Town Center area and create placemaking opportunities as the City ensures trail-oriented development.

Jurisdiction: North Salt Lake

Facility Type: Shared use path, shared street, sidepath

Length: ± 0.7 miles total

Estimated Cost: \$443,160 (assuming asphalt shared use paths); \$558,320 (assuming concrete shared use paths)

Impacts: Increased public exposure of residential neighborhood west of Town Center

Phasing: Phasing may be required depending on future development and coordination with private developers

Funding Sources: Funded by private developers, facility required as part of the rezoning and/or permitting process; Bike Utah 1,000 Miles Campaign may also be an opportunity

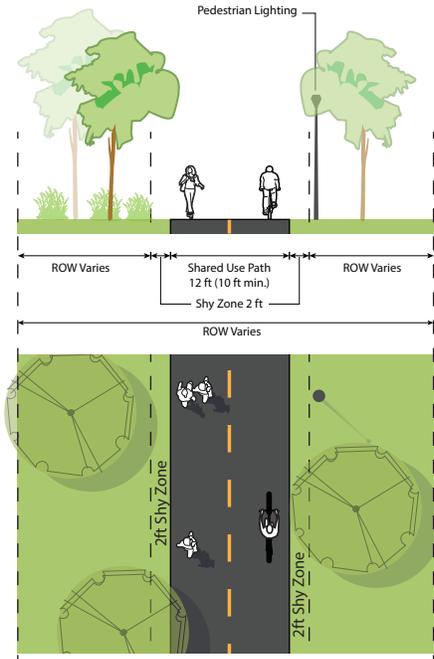
Benefits: First and foremost, this project will improve connectivity to and through North Salt Lake's Town Center, an area seeing an increase in investment from the City and private developers. A well-designed urban trail with adjacent public space and access to commercial and mixed-use developments can create a vibrant corridor of activity. When completed, this project is more likely to encourage people to access Town Center using active transportation.



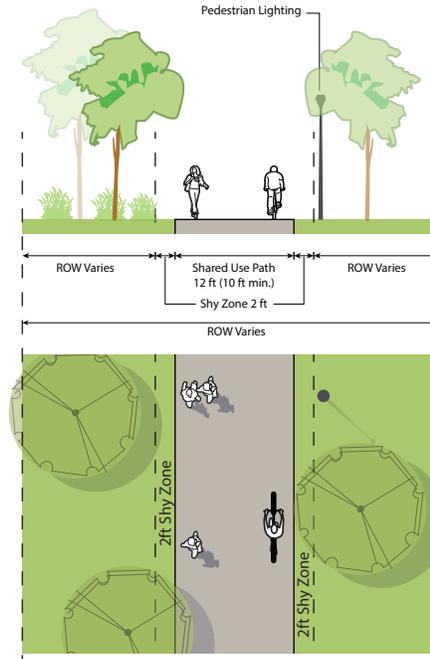
Base image source: 2016 North Salt Lake Town Center Master Plan; bikeway alignment may vary, to be coordinated with future development

Typical Shared Use Path Cross Section :

Asphalt



Concrete



Vertical object such as curbs, light posts, benches, signage, fences, trees, shrubs, etc. not to encroach 2' shy zone; Concrete joints to be saw cut, not tooled



APPENDIX A

IMPLEMENTATION TABLES



OVERVIEW

This appendix provides detailed information about each recommended facility, including the corridor/street name, extents, length, implementation notes, and planning level cost estimates.

IMPLEMENTATION TABLES

The following tables contain information for each recommended project from Map 4.1 regarding route corridor, recommended facility type, corridor extents, overall length, implementation notes, and cost estimate. The cost estimates are planning level, and were derived using general numbers from Table 6.1.

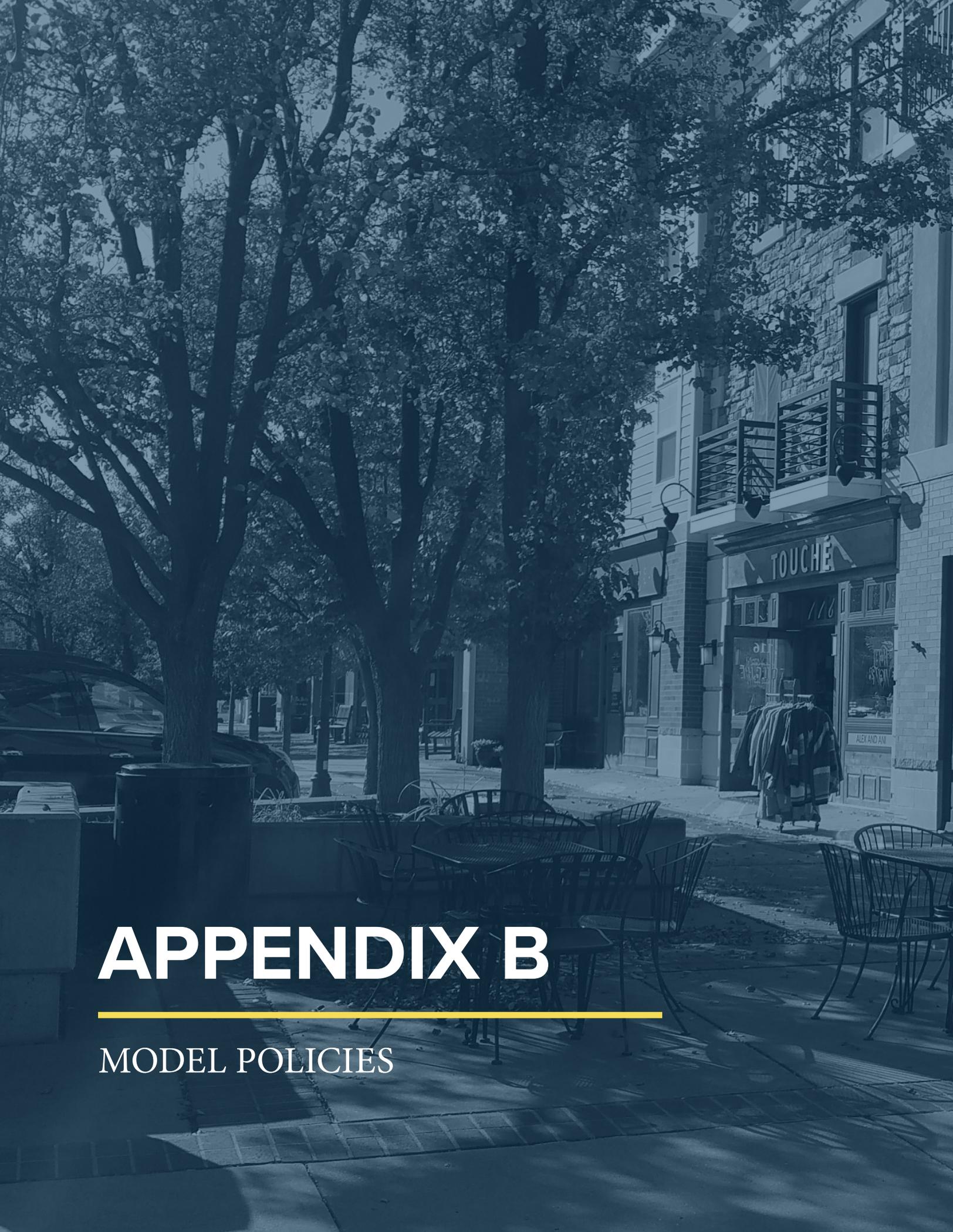
All neighborhood byway cost estimates assume curb extensions on all four corners of major intersections or intersections of through streets. Street crossings for neighborhood byways and other routes, shown as spot improvements on Map 4.1 are also included in the cost estimates below.

*** indicates corridors fully or partially owned by UDOT or that will require UDOT coordination**

† indicates projects that will require multi-jurisdictional coordination

Street/ Corridor	Facility Type	Start	End	Length (miles)	Notes	Cost Estimate
2500 S	Bike Lane	Legacy Parkway	Redwood Road	0.57	Repurpose existing parking lane	\$30,306
* † 2600 S	Separated Bike Lane	Main St	500 W	0.70	Proposed WFRC bike lane; suggest road reconfiguration for higher comfort facility	\$36,837
350 N/3800 S	Bike Lane	1100 W	Orchard Drive	0.28	Upgrade to buffered bike lane where possible	\$14,743
† 400 E/ Orchard Drive	Separated Bike Lane	200 W	Eagle Ridge Drive	1.43	Street design will vary throughout corridor depending on context	\$75,289
400 W	Sidepath	1100 N	Center St	1.36	Low priority, pending redevelopment	\$72,013
† 800 W	Buffered Bike Lane	2250 S	1100 N	0.04	Painted buffer may vary in width depending on need for on-street parking	\$1,998
Bamberger Trail	Shared Use Path	350 N	Center St	0.55	Coordinate with future development, ensure connections	\$27,232
Bamberger Trail Connection	Shared Use Path	Main St	Bamberger Trail	0.14	Through vacant lots	\$7,630
* Belt Route / Ridgeview Apts	Shared Use Path	HWY 89	Center St	0.36	Partial implementation by private developers	\$18,889

Street/ Corridor	Facility Type	Start	End	Length (miles)	Notes	Cost Estimate
† Bountiful Blvd	Sidepath	Eaglepointe Dr	Davis Blvd	0.97	10' multi-use path with 5' landscape buffer; would require curb realignment and limit on-street parking to one side; enhance existing wide sidewalks near Bountiful Temple	\$51,327
Center St / 3300 N	Bike Lane	Jordan River	1200 W	0.27	Continue Center St bike lanes to City limits	\$14,002
Center St	Sidepath	400 W	Hwy 89	0.59	Continue existing sidepath, south side	\$30,942
Center St	Sidepath	Main St	Hwy 89	0.05	North side, connect to future sidepath on Hwy 89, min. 10' wide	\$2,726
† Davis Blvd	Bike Lane	Eaglewood Dr	425 W	0.14	Implement when Davis Blvd is extended to Eaglewood Dr	\$7,428
Eagle Ridge Dr	Buffered Bike Lane	Orchard Dr	Eaglepointe Dr	1.60	See cut sheet in report (South Davis County ATP)	\$84,388
* † Hwy 89	Sidepath	End of existing path	1500 S	0.24	Implement in conjunction with corridor redesign	\$12,825
Jordan River	Shared Use Path	Center St	Jordan River Pkwy Trail at I-215	0.85	Alignment TBD based on future analysis	\$44,631
Main St	Bike Lane	Hwy 89	1100 N	1.56	From Town Center Plan; limit on-street parking to one side; ensure proper crossing of railroad, minimum 60 degrees	\$82,529
* Main St / Hwy 89	Sidepath	Eagle Ridge Dr	350 N	0.78	West side of street, in coordination with future corridor BRT implementation, 12' wide concrete path	\$41,235
Overland Rd	Sidepath	Main St	1100 N	0.71	Will require moving curb and gutter and/or land acquisition	\$37,310
* Redwood Rd	Sidepath	1100 N	Center St	0.63	Tie together existing fragments	\$33,120
* † Redwood Rd	Sidepath	Center St	Standard Ave	0.79	10' min. path with 5' min. buffer; may require downgrade to buffered bike lane over I-215 bridge	\$41,456
* † Redwood Rd	Sidepath	Standard Ave	Salt Lake County Line	0.61	10' min. path with 5' min. buffer; may require downgrade to buffered bike lane over I-215 bridge	\$32,241



APPENDIX B

MODEL POLICIES



OVERVIEW

This section builds on the policy recommendations in Chapter 5 by outlining model policies that each City can use as a starting point to develop their own policies to promote active transportation.

MODEL POLICY FOR COMPLETE STREETS

This model Complete Streets Policy lays out the key policy elements recommended for North Salt Lake and Bountiful. Complete Streets policies should have a purpose (“why”); content (“what”); and mechanisms to implement it (“how”). In this model policy, the Intent and Community Vision lay out the “why”; the Policy Elements provide the “what”; and the Applications and Implementation sections address the “how.”

Intent

- » This Complete Streets Policy establishes foundational policy support for all transportation modes and other uses within city streets. The City recognizes the need to have a safe, reliable, efficient, and integrated multi-modal streets and pathways network.
- » This policy is intended to guide the planning, design, construction, maintenance, and modification of city streets to integrate all modes and uses of the street as well as the streets’ community context. The overall purpose of the policy is to bring a holistic approach to streets, both in terms of their physical form as well as the collaborative processes and culture needed to achieve this holistic physical form.

Community Vision

- » Streets are a framework for the community, and so streets should achieve the community vision and goals as identified in other policy documents such as the General Plan.
- » Central to the community vision is the need to have a safe, reliable, efficient, and integrated multi-modal transportation network.
- » Potential goals that a complete streets policy can help achieve:
 - Maximize choice in mobility
 - Make street safer for all users
 - Make streets great places and not just conduits for mobility
 - Increase health of residents
 - Catalyze economic development
 - Display environmental stewardship
 - Maximize use of city infrastructure

Policy Elements

- » Create quality networks for all modes
 - Complete streets most importantly mean complete networks. These networks include walking, driving motor vehicles, bicycling, and other micromobility modes, public transit, and freight.
 - Critical elements of these networks are:
 - Connectivity
 - Choice
 - Facility quality
 - Access to key destinations throughout the city
 - Harmony among the networks in streets and at nodes
 - Connection and relevance to regional networks and adjacent jurisdictions
- » Consider all modes on each street
 - Each phase in the life of a roadway takes into account all transportation modes. The word “consider” is key. Streets serve different and unique purposes in the various

networks. Instead of trying to make each street perfect for every traveler, it is important to create an interwoven array of streets that emphasize different modes and provide quality accessibility for everyone.

- Most streets should accommodate all modes. Exceptions generally lie in the extremes - for example, bicyclists or pedestrians on freeways, or motorists on pedestrian trails.
- » Enhance public space
 - All street projects in the public realm shall be approached as opportunities to enhance the city’s public spaces and the places at which these spaces are the center.
 - Examples of public space elements of streets are the “furnishing” zone of sidewalks and the “frontage” zone of sidewalks that may be occupied by sidewalk dining, bulb-outs, pocket plazas and parks.
 - The way private development fronts onto a street and the interaction between development sites and the street is a major part of the public realm.
- » Compliment community context
 - As streets are the framework of the community, streets serve different types of neighborhoods and districts, including residential neighborhoods, downtowns, commercial and mixed-use centers, educational and employment campuses, parks and open space, and industrial areas. Sensitivity to this context can help align transportation and land use planning goals, creating livable, strong neighborhoods and districts and an overall community.
 - The planning and design of streets should strongly consider the needs of the type of context the street is serving and be planned and designed in harmony with the community, with a strong sense of place.
 - In this way, street design should be flexible, innovative, and balanced to address the needs of the context.
- » Create a culture of complete streets and collaboration
 - This Complete Streets policy is applicable to every City department.
 - Complete streets are a routine part of everyday operations.
 - Complete streets planning, design, construction and maintenance should occur as collaboration among departments and partners.
- » Take initiative
 - Actively look for opportunities to repurpose rights of way to achieve this policy
- » Integrate public participation in street decisions
 - The larger community is a critical piece in ensuring complete streets

Applications (how the policy will be used)

- » The Complete Streets Policy will be applied in the following situations, including but not limited to:
 - Capital projects
 - Development review
 - Studies or projects approved or funded by the City

Implementation

Implementation of the Complete Streets Policy will occur through the development of an ongoing Complete Streets Program with the following elements:

- » Designate authority. Designate an agency for implementation, administration and

enforcement:

- » Create a Complete Streets Committee consisting of representatives of a range of City departments, with an emphasis on those planning, designing, building, modifying, and maintaining streets, but also including departments representing the complementary aspects of the community affected by and influencing the design of streets. This committee should guide the implementation and evolution of the policy.
- » Designate funding. Designate sources of funding for specific projects implementing the policy.
- » Develop a program to measure progress.
 - Develop performance measures. Examples of Complete Streets performance measures are:
 - Mode split/shift
 - Vehicle-ped and Vehicle-bike crashes or fatalities
 - Bike lane miles
 - Percentage of street miles with sidewalks
 - Missing or non-compliant curb ramps
 - Design speeds
 - Tree canopy coverage
 - New street trees planted
 - Fitness of schoolchildren
 - Sales tax revenue
 - New multi-modal LOS metric
 - Develop benchmarks for the performance measures.
 - Develop baseline data assessing performance measures and a system for re-assessing periodically.

Follow-up plans or guides

- » Street typologies system
- » Complete Streets Plan

Exemptions

- » Create a clear procedure for allowing exceptions, such as written permission from a specific person of authority.
- » Ensure that the record of exceptions is clear and publicly available.
- » Frame how exceptions are provided for emergency maintenance operations.
- » Note how excessive cost or in-feasibility of building pedestrian or bike infrastructure as part of a project could warrant an exception.

Definitions

- » It is critical that a complete streets policy create a set of definitions for key terms

MODEL POLICY FOR STREET AND PATHWAY CONNECTIVITY

Intent

- » This Street Connectivity Policy provides foundational policy support for a connected street and pathway network.
- » The intent is to use a connected street network to implement the community's vision as stated in the General Plan and other policy documents.
- » This policy is intended to guide the planning, design, construction, maintenance, and modification of city streets to provide connection. The overall purpose of the policy is to ensure that the streets in new neighborhoods have a minimum level of connectivity both within the neighborhood and outside it to existing and future developments.

Community Vision

A highly-connected street network – one where a dense set of intersections each connect to several streets, that connects a community to its key destinations, and is walkable – provides a multitude of benefits. These include regional and community mobility; transportation choice; safety; infrastructure and growth management; health; economic vitality; environment; and community access.

- » Regional and community mobility - Good street connectivity redistributes traffic among different routes in a network, providing more options and better accessibility for local traffic. This in turn frees some of the capacity on the adjacent arterial roads, which are mostly used by non-local traffic.
- » Transportation choice - Higher street connectivity provides travelers with greater choice of travel modes. In a well-connected network, active transportation modes and transit become more viable choices. This means that these types of networks are less automobile dependent.
- » Safety - In recent years, many studies have shown how built environment factors (such as street connectivity and community) affect physical activity and health.
- » Infrastructure and growth management - Higher street connectivity improves the investment in municipal infrastructure, such as utilities, and services, such as fire and emergency services.
- » Health - Street connectivity has been shown to offer indirect benefits related to health, largely stemming from the health effects of increased physical activity.
- » Economic vitality - Increasing street connectivity has been found to have an impact on a community's economic vitality. Many of the benefits are measurable in the economy or in the fiscal well-being of households and governments.
- » Environment - Street connectivity has major impacts on the environment. Shifts towards transit and active transportation modes in a connected network reduce VMTs, delays, and usage of automobiles which reduces air pollution, noise, and energy consumption.
- » Community access - At a regional or community-wide scale, connectivity improvements can reduce bottlenecks and reduce distances that residents need to travel to jobs. At a neighborhood scale, where connectivity improvements can bring a school, park, or shopping area within walking or bicycling distance to more people.

More information on each of these benefits can be found in the Utah Street Connectivity Guide – mountainland.org/Utah-street-connectivity-guide

Policy Elements: Internal Street Connections

Level of Connectivity

The most basic aspect of street connectivity is the degree to which streets are connected to one another at each intersection. One way to consider this idea is to look at how much “work” each intersection is doing. A six-point intersection is doing a lot of work, transferring traffic and other users among six different streets. But a cul-de-sac, with only one street coming originating from it, is doing the minimum amount of work. Essentially, the relative level of connection tells us how much work each intersection is doing – the more amount of work, the higher the level of connectivity.

This policy shapes high levels of connectivity by requiring a minimum connectivity index, also known as a link-node ratio. The connectivity index is the ratio of the links in a given area to the nodes in the same area. It expresses how efficient the intersections are – the foundation of a well-connected network are intersections that connect to several links. The connectivity index measures this quality.

Measuring the connectivity index is simple. Only a few points of information are needed, each of which is available using basic mapping tools. The connectivity index equals the number of links, or street segments, divided by the number of nodes, or intersections/dead ends within a given area. The connectivity index should be as high as possible.

- » Area: The area is the area of your community you are evaluating. Whether using GIS or another mapping tool, draw or identify your area boundary and measure, in square miles, your area.
- » Links: Links are lengths of street between intersections or dead ends.
- » Nodes: Nodes are points where links meet. They come in two types, each of which you will have to identify and count: intersections and dead ends (cul-de-sacs count as dead ends).

Draw the area, the links and the two kinds of nodes on a map. To calculate the connectivity index, divide the number of links by the number of nodes (combined intersections and dead ends).

Network Density

The second key aspect of street connectivity is network density. A denser network, with smaller blocks and more streets and intersections, creates more street connectivity, especially when the streets are well-connected. For example, downtown Salt Lake City’s famous historic grid system is well-connected, but its large, 660-foot blocks create a low network density and long distances between streets, and thus reduce overall connectivity, especially for those on foot, bicycles, and other active modes.

In this policy, network density is shaped by establishing maximum block lengths for different contexts. While an urban neighborhood or downtown may have maximum block lengths of 400 or even 300 feet, it probably makes for sense for a more suburban neighborhood with larger lots to have longer block lengths, perhaps 500 or 600 feet. But either standard avoids the issues of excessive block lengths that impede movement around a street network.

Cul-de-sac Management

Cul-de-sacs impede street connectivity. However, cul-de-sacs create residential environments popular with many people, and cul-de-sacs on their own do not greatly reduce street connectivity. The key to this policy is to manage cul-de-sacs by minimizing

their length, frequency, and ensuring active transportation connections through them.

- » Maximum length: Cul-de-sacs and other dead-end streets included in a subdivision are limited in their allowed length. Specific length varies by zoning category. Stub streets intended for future connections are not included in this requirement.
- » Active transportation connection for each cul-de-sac: At each internal cul-de-sac or other dead-end street terminating within reasonable proximity to another street, a shared use path should be constructed from the cul-de-sac end to the street.
- » Frequency: The number of cul-de-sacs allowed in a street network is limited by the minimum connectivity index and the maximum block size. These requirements can allow for some flexibility in including cul-de-sacs in a network.

Policy Elements: External Connections

In addition to requiring a development to be internally connected, community-wide street connectivity also depends on ensuring high-quality connections outside of a development. This includes connecting to existing adjacent neighborhoods, providing links to future adjacent developments, and providing appropriate levels and types of connectivity to major adjacent streets.

- » Connections to existing adjacent neighborhoods: New developments should connect their streets to those of adjacent existing developments. In cases where the existing adjacent development's network extends a different level of connectivity to the new development, the new development should be connected to the existing one in a way that creates the highest level of connectivity between them.
- » Creating links to future adjacent developments: Stub streets are streets that dead end against vacant or undeveloped land with the intention of connecting to development on that land in the future. In order to maintain a consistent street network that ties together different subdivisions, stub streets are required at a minimum spacing that matches the spacing of streets within a subdivision (reflected in the maximum block length requirement).
- » Connecting to major adjacent streets: Connections between developments and new or existing major streets should follow the maximum street spacing dictated by the maximum block sizes except in cases where the major street corridors have restrictions on street spacing, such as a corridor agreement with the Utah Department of Transportation. In those cases, active transportation pathways should substitute for the street connections.

Policy Elements: Master Planned Trail Networks

Developing networks of master-planned, off-street trails are an integral part of active transportation and quality of life. Designing and implementing these trails will depend on opportunities created from larger developments, citywide initiatives, and regional efforts. For each subdivision/development, the developers, the City, and other stakeholders should work together to identify opportunities for master-planned and off-street trails, both within the subdivision/development and connecting to trails outside it. Developments of over a minimum size will be required to have an off-street, master-planned trail system.

Active transportation connections should connect proposed developments to master planned trails where applicable.

Exceptions

These connectivity requirements may be reduced if the applicant provides clear and convincing evidence that it is impossible or impracticable to achieve due to the following limitations:

- » Topography;
- » Natural features including lakes, rivers, designated wetlands;
- » Existing adjacent development;
- » Rail corridors;
- » Limited access roadways.

Reductions in the required connectivity index will be reviewed on a case-by-case basis and must require recommendations from the reviewing departments.

Implementation

Each development applicant must prepare a Connectivity Plan showing adherence to the requirements stated above, and including the following information:

- » Basic information:
 - Street links
 - Nodes
 - Block length dimensions
 - Cul-de-sac length dimensions
- » Connectivity index
- » Maximum block lengths, if applicable
- » Stub streets with minimum spacing, if applicable
- » Active transportation-only links connecting cul-de-sacs or to access-management controlled major streets.

MODEL POLICY FOR WALKABLE PARKING

Walkable parking policy addresses the four major issues with conventional parking policy: the amount of parking, the individualization of parking, the economics of parking, and the design of parking. Below is an outline for a model sustainable parking policy that addresses each of these:

PARKING POLICY PROBLEM #1: THE AMOUNT

This amount of parking takes space from other, more people-focused uses of space, creates a major cost for developers, and shifts the decision of what mode to use in favor of driving rather than riding. If areas such as walkable centers are well-designed and programmed, a large portion of the area's total trips shift to walking, bicycling and transit, reducing the number of spaces needed. Most cities have minimum requirements for parking for a new development, yet many cities are beginning to question the conventional wisdom on required amounts, and even whether this type of requirement is necessary.

Solutions

Potential solutions for addressing this problem often focus on reducing the amount of parking required, as well as capping the amount of parking that can be built. These solutions include:

- » Elimination of parking minimum requirements: The simplest way to reduce parking is to allow the market to address parking needs.
- » Reductions across the board: Parking policy can simply apply a factor to all parking standards for all land uses, such as a 25 percent reduction.
- » Reductions for each land use: Reductions can target specific land uses to reduce, such as those, like office uses, most likely to attract transit, bicycling, and walking trips.

- » Reductions for proximity to transit: Reductions can be given for specific proximity of the use to a transit station or transit service. Midvale currently offers one type of reduction within 1/8 of a mile and another, smaller reduction within ¼ of a mile from a station.
- » Other types of reductions: Reductions can be provided for other specific aspects of a development, such as its walkable design or a transportation demand management program that has been set up.
- » Parking maximums: Parking policy can also reduce parking by limiting the amount of parking in developments through the use of parking maximum standards. Like the minimum requirements, these maximums are usually expressed as ratios of spaces per square foot of leasable building area.
- » Parking demand studies: Cities can allow developers to undertake a study demonstrating the demand for parking in the development and provide the appropriate number of spaces.

PARKING POLICY PROBLEM #2: INDIVIDUALIZATION

Besides creating too much parking for station areas, conventional parking policy also draws a heavy boundary around each individual development’s provision of parking spaces, typically requiring that all parking spaces are within the development. This individualizing of parking has several interrelated effects. It prevents developments and land uses with different peak periods from leveraging the efficiency of sharing parking spaces. It prevents on-street and other public parking areas from being included in parking provision, both of which lead to unnecessary amounts of space used for parking in the development. One additional negative effect of this individualized approach is that residents, employees and visitors are less likely to be out in the community walking after or before they park, reducing the opportunities for intermingling and public life that is critical to create walkability and supports other active modes.

Solutions

Potential solutions for addressing this issue focus on allowing developments to incorporate parking in the public realm, on other private property, or shared with other developments. They include:

- » Off-site parking / leverage existing resources: Parking policy can allow developments to incorporate parking spaces outside of the site on another piece of property to the minimum allowed spaces.
- » Shared parking among uses or individual developments: Policy can allow two uses within one development or among developments to share the same set of parking spaces – for example office uses and residential uses. Typically, cities ask that developers or applicants document how these uses are complementary and have different peak parking times.
- » Incorporating on-street parking: Cities can allow station area developments to claim on-street parking spaces as part of their required parking.
- » Parking management plans: Cities can allow or require developments to develop a parking management plan that incorporates several of the above strategies to demonstrate that the parking demand is being met.

PARKING POLICY PROBLEM #3: ECONOMICS

The underlying expectation with most residential developments is that the cost of parking is rolled into the cost of a housing unit; in this way, it appears to be “free.” Likewise, the norm for employers in suburban areas is that parking at the workplace is free for employees. These practices and perceptions distort the real, high costs of parking and subsidize driving alone, skewing the economic choice of what mode to take for daily trips. These costs and

the associated de facto subsidization are especially detrimental to walkable centers, where riding transit and other modes must compete with driving. And those buying or renting units are paying for a parking space even if they don't own a car, challenging housing affordability.

Solutions

Solutions for this issue seek to re-balance the economics of transportation. Most either separate the cost of parking from the cost of the real estate (“unbundling”), make alternatives to driving cheaper, or re-route the money paid to otherwise build or use the parking to benefits supportive of other transportation modes. They include:

- » Unbundling from development: Purchasers (or renters) of residential or commercial units pay for parking spaces separately from the unit. People then must make the parking economic decision separately from the primary real estate decision. While any property owner can unbundle parking from units, cities often offer reductions in the number of required spaces if the developer does so, and in some cases the unbundling is required.
- » Cash-out program: Similar to unbundling, purchasers (or renters) of units can get money back if they volunteer to not have a parking space or spaces for their unit.
- » In-lieu fee / benefit district: In lieu of building parking, developers can opt to pay a fee that contributes toward public or shared parking in a district (this solution also addresses Problem #2).
- » Public investment and partnerships: Cities and/or other public and private partners can invest in common parking resources.
- » Pricing of public parking: In popular activity centers, cities can charge for on-street and public off-street parking to create a revenue stream and incentivize trips on transit and by active transportation.
- » Transportation demand management: Transportation demand management (TDM) is the umbrella term for strategies that make more efficient use of the transportation system and seek to increase vehicle occupancy. Some of the most popular TDM programs are rideshare services, transit subsidization, guaranteed rides home, bike shares, and promotion of transit and active transportation. TDM is especially effective in employment centers, where commute trips are concentrated.

PARKING POLICY PROBLEM #4: DESIGN

This issue has to do with how parking looks and feels. In conventional parking policy, parking is encouraged to be front and center, the assumption being that the vast majority of people arrive by car and need to have a visible, convenient parking space. Especially in walkable activity centers, that assumption is flipped – most people are envisioned to be arriving on foot (or on bike), so it is the building/property entry and pleasing pedestrian-scale features that should be emphasized. Large areas of parking challenge the human scale.

Solutions

Solutions focus on placing parking in locations where it does not infringe on the human scale and the relationship of the land use with the street.

- » Requiring parking to be in the back or at side of street-fronting buildings: This is perhaps the single most important aspect of walkable design – orienting buildings and their facades and entries to the sidewalk rather to parking areas. This is easier to do well for some uses (offices, small stores) than others (grocery stores, multifamily residential).

- » Buffering surface lots from pedestrian environment: Where surface lots do sit along the street, they should be well-buffered from the pedestrian environment by landscape, trees, or another attractive buffer.
- » Reduced size of spaces: Reducing the size of spaces can help reduce the footprint of parking lots and structures.
- » Wrapping parking structures with engaging facades: Many cities require that where parking structures sit along street frontage, they contain active ground floor space or another engaging façade such as public art.

ADDRESSING THE CHALLENGES AND SIDE EFFECTS OF IMPLEMENTING ALTERNATIVES

In many cases, these initial four problems are not the only problems – there are challenges and side effects to implementing one or more of the solutions described above. These challenges and side effects, along with countermeasures, include:

Perceived or real neighborhood impacts:

Parking reductions may create the perception and potential risk that people will park in neighborhoods, creating more noise, foot traffic, and other impacts.

Potential countermeasures:

- » Neighborhood parking restrictions.
- » Require a parking management plan.
- » Delay making pedestrian connections between neighborhood and TOD area.

Perceived or real market discord:

Tenants, property owners, or other users may want or may be perceived to want a more conventional parking approach. The alternative arrangements may be or appear to be onerous for the developer, and there may be financing obstacles.

Potential countermeasures:

- » Provide education and resources to tenants, to users, to developers, and to the financial industry.
- » Help property owners / developers find tenants who want walkable development.

Potential changing conditions:

There may be risk for changing conditions, i.e. that the shared/off-site/on-street parking becomes unavailable, and an inability for shared parking to be managed sustainably.

Potential countermeasures:

- » Provide a flexible menu of choices that does not over-depend on one strategy.
- » Spell out specifics of reductions, shared parking, and other as much as possible; have as little discretionary as possible.
- » Develop standardized shared parking / off-site parking agreements.

Unsupportive urban fabric:

The built environment does not support the walkability necessary for a more transit-oriented parking approach.

Potential countermeasures:

- » Create great pedestrian connectivity within walkable areas.

- » Ensure great pedestrian connectivity from larger land uses/redevelopment sites to station.
- » Proper location of off-site, on-street, and shared parking.

Legal issues:

There may be concern about property liability issues with off-site parking.

Potential countermeasures:

- » Develop standardized shared parking / off-site parking agreements.
- » Specify location and terms of the off-site parking in a written deed, lease or contract.

Leadership and administration:

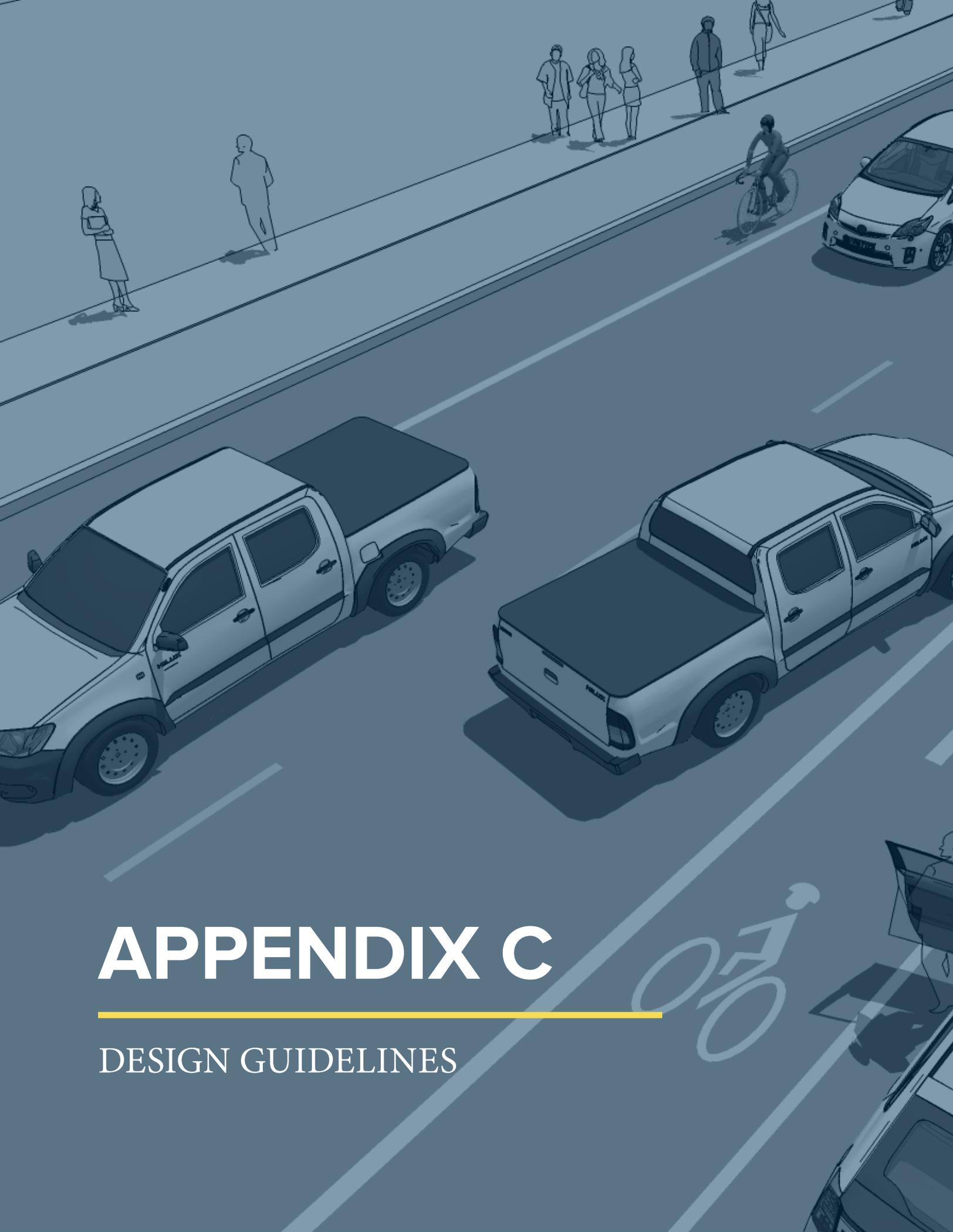
Changing the direction of a parking policy requires leadership, usually within city government. Who leads this effort and ensures it is fair? What is the funding source? How are any programs administered?

Potential countermeasures:

- » Provide a flexible menu of choices that does not over-depend on one strategy.
- » District branding that creates an underlying identity that can foster cooperative parking.
- » Identify leadership in City or other for cooperative parking such as a benefit district; shared parking; or TDM.
- » Identify funding sources for cooperative parking infrastructure.



this page intentionally left blank



APPENDIX C

DESIGN GUIDELINES



OVERVIEW

The sections that follow serve as an inventory of bicycle and trail design treatments and provide guidelines for their development. These treatments and design guidelines are important because they represent the tools for creating a safe and accessible community. The guidelines are not, however, a substitute for a more thorough evaluation by a professional engineer.



01

CONTEXT

NATIONAL GUIDANCE

The following standards and guidelines are referred to in this guide:

- The Federal Highway Administration's (FHWA) **Manual on Uniform Traffic Control Devices (MUTCD)** defines the standards used by road managers nationwide to install and maintain traffic control devices on all public streets, highways, bikeways, and private roads open to public traffic. The MUTCD is the primary source for guidance on lane striping requirements, signal warrants, and recommended signage and pavement markings.
- American Association of State Highway and Transportation Officials (AASHTO) **Guide for the Development of Bicycle Facilities** (2012) provides guidance on dimensions, use, and layout of specific bicycle facilities.
- The National Association of City Transportation Officials' (NACTO) **Urban Bikeway Design Guide** (2012) is the newest publication of nationally recognized bikeway design standards, and offers guidance on the current state of the practice designs.
- The **AASHTO A Policy on Geometric Design of Highways and Streets** (2011) commonly referred to as the "Green Book," contains the current design research and practices for highway and street geometric design.

STATE GUIDANCE

- The **UDOT's Pedestrian and Bicycle Guide** provides design guidance and maintenance best practices for pedestrian and bicycle facilities. It also includes resources on funding, education, enforcement, and UDOT's project development process.
- **UDOT's 2014 State Bike Plan** incorporated a route condition inventory and safety gap analysis for each UDOT urban region and identified a regional bicycle network that includes key connections to transit and existing bicycle facilities as a part of the Utah Collaborative Active Transportation Study.

IMPACT ON SAFETY AND CRASHES

Bicycle facilities can have a significant influence on user safety. The Federal Highway Administration Crash Modification Factor Clearinghouse (<http://www.cmfclearinghouse.org/>) is a web-based database of Crash Modification Factors (CMF) to help transportation engineers identify the most appropriate countermeasure for their safety needs. Where available and appropriate, CMFs or similar study results are included for treatments in this guide.

User Design Dimensions

The purpose of this section is to provide the facility designer with an understanding of how bicyclists operate and how their bicycle influences that operation. Bicyclists, by nature, are much more affected by poor facility design, construction, and maintenance practices than motor vehicle drivers.

Bicyclists lack the protection from the elements and roadway hazards provided by an automobile's structure and safety features. By understanding the unique characteristics and needs of bicyclists, a facility designer can provide quality facilities and minimize user risk.

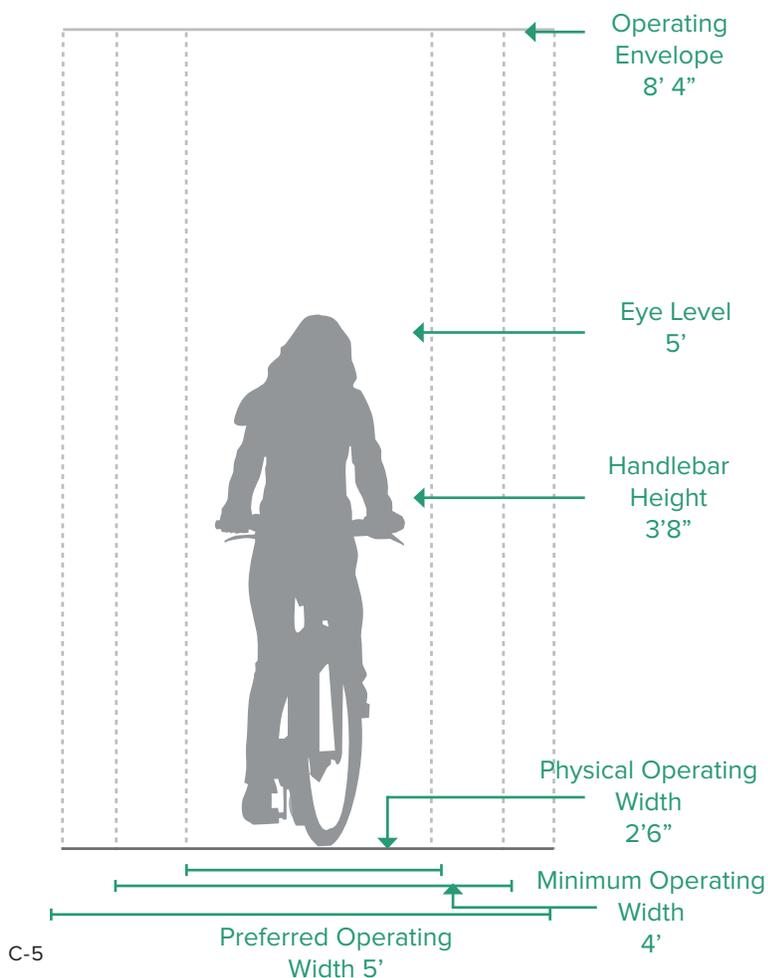
BICYCLE AS A DESIGN VEHICLE

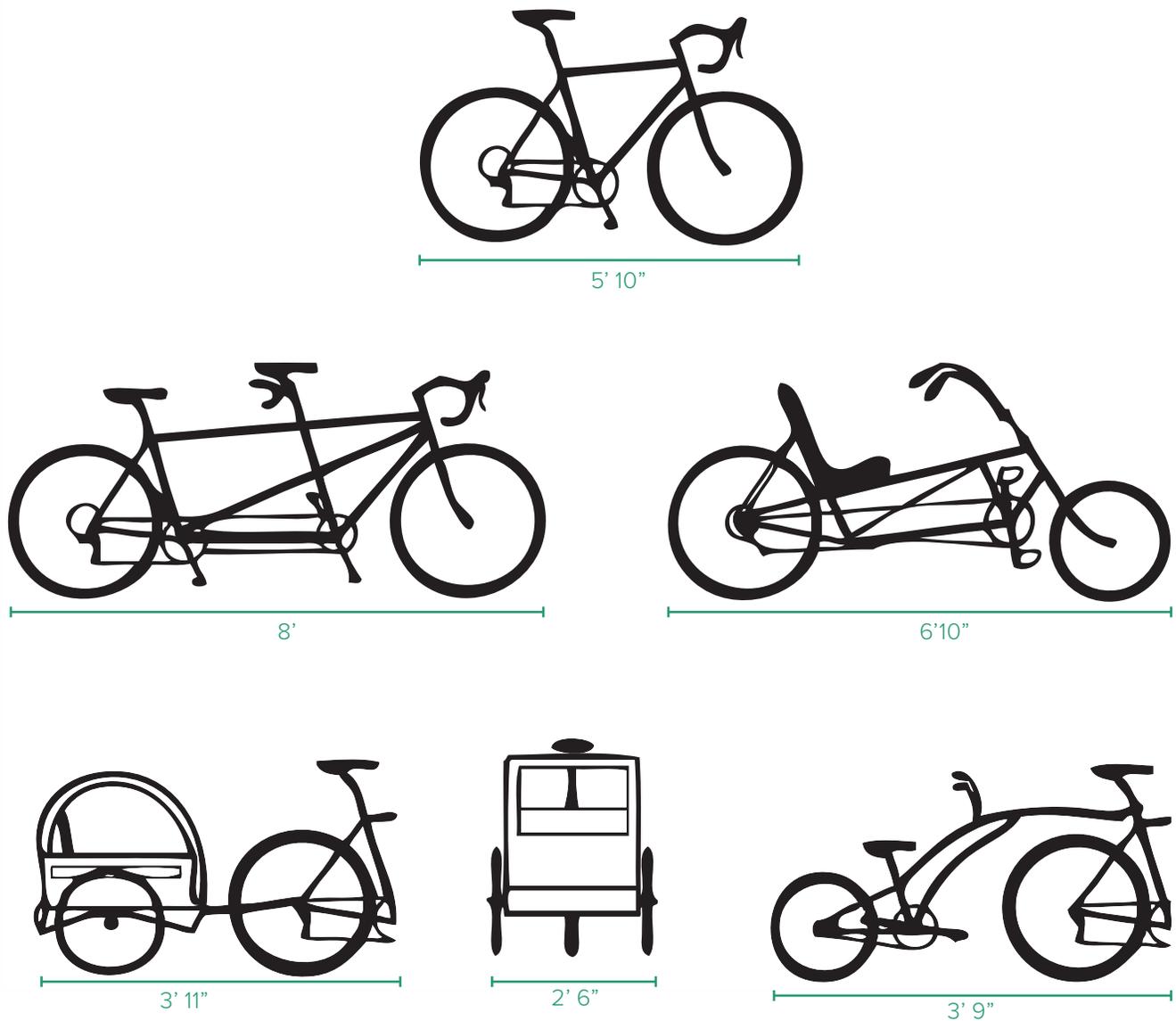
Similar to motor vehicles, bicyclists and their bicycles exist in a variety of sizes and configurations. These variations occur in the types of vehicle (such as a conventional bicycle, a recumbent bicycle or a tricycle), and behavioral characteristics (such as the comfort level of the bicyclist). The design of a bikeway should consider reasonably expected bicycle types on the facility and utilize the appropriate dimensions.

The figure to the right illustrates the operating space and physical dimensions of a typical adult bicyclist, which are the basis for typical facility design. Bicyclists require clear space to operate within a facility. This is why the minimum operating width is greater than the physical dimensions of the bicyclist. Bicyclists prefer five feet or more operating width, although four feet may be minimally acceptable.

In addition to the design dimensions of a typical bicycle, there are many other commonly used pedal-driven cycles and accessories to consider when planning and designing bicycle facilities. The most common types include tandem bicycles, recumbent bicycles, and trailer accessories. The figure to the left summarizes the typical dimensions for bicycle types.

Bicycle Rider - Typical Dimensions





Source: AASHTO *Guide for the Development of Bicycle Facilities*, 4th Edition

The expected speed that different types of bicyclists can maintain under various conditions also influences the design of facilities such as shared use paths. The table to the right provides typical bicyclist speeds for a variety of conditions.

Bicycle as Design Vehicle - Design Speed Expectations

Bicycle Type	Feature	Typical Speed
Upright Adult Bicyclist	Paved level surfacing	8-12 mph*
	Crossing Intersections	10 mph
	Downhill	30 mph
	Uphill	5 -12 mph
Recumbent Bicyclist	Paved level surfacing	18 mph

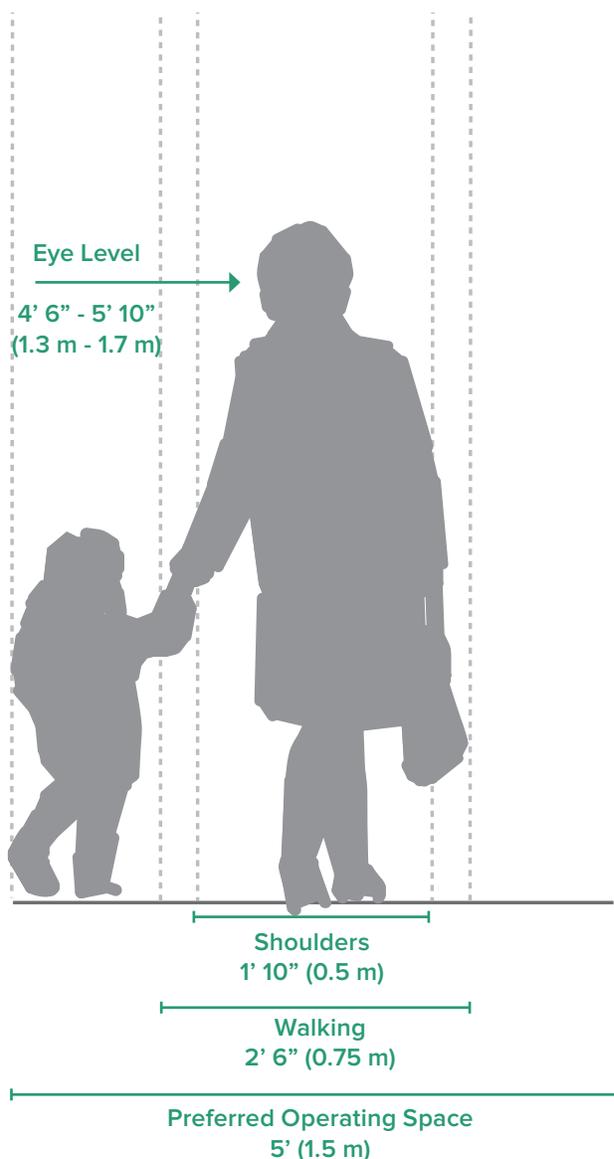
* Typical speed for causal riders per AASHTO 2013.

PEDESTRIAN DESIGN NEEDS

Types of Pedestrians

Pedestrians have a variety of characteristics and the transportation network should accommodate a variety of needs, abilities, and possible impairments. Age is one major factor that affects pedestrians' physical characteristics, walking speed, and environmental perception. Children have low eye height and walk at slower speeds than adults. They also perceive the environment differently at various stages of their cognitive development. Older adults walk more slowly and may require assistive devices for walking stability, sight, and hearing. The table below summarizes common pedestrian characteristics for various age groups.

The MUTCD recommends a normal walking speed of 3.5 feet per second when calculating the pedestrian clearance interval at traffic signals. The walking speed can drop to 3 feet per second for areas with older populations and persons with mobility impairments. While the type and degree of mobility impairment varies greatly across the population, the transportation system should accommodate these users to the greatest reasonable extent.



Pedestrian Characteristics by Age

Age	Characteristics
0-4	Learning to walk Requires constant adult supervision Developing peripheral vision and depth perception
5-8	Increasing independence, but still requires supervision Poor depth perception
9-13	Susceptible to "darting out" in roadways Insufficient judgment Sense of invulnerability
14-18	Improved awareness of traffic environment Insufficient judgment
19-40	Active, aware of traffic environment
41-65	Slowing of reflexes
65+	Difficulty crossing street Vision loss Difficulty hearing vehicles approaching from behind

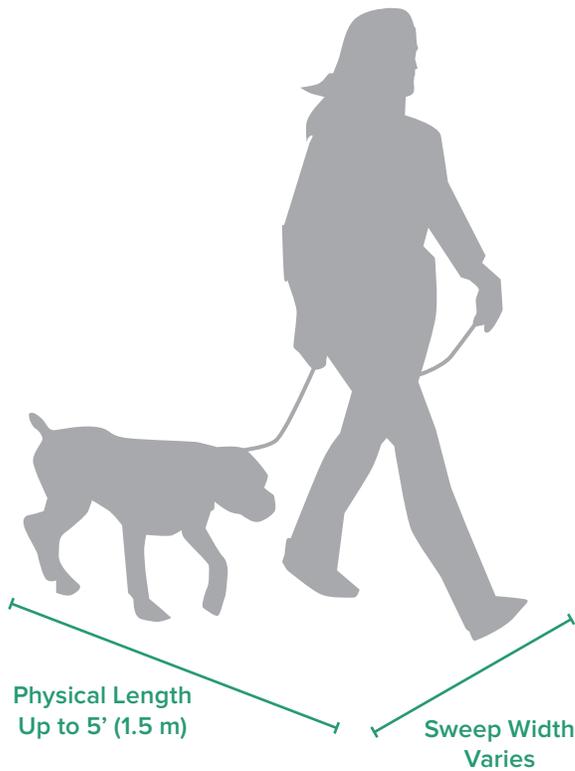
ADDITIONAL REFERENCES AND GUIDELINES

AASHTO. Guide for the Planning, Design, and Operation of Pedestrian Facilities, Exhibit 2-1. 2004.

DESIGN NEEDS OF DOG WALKERS

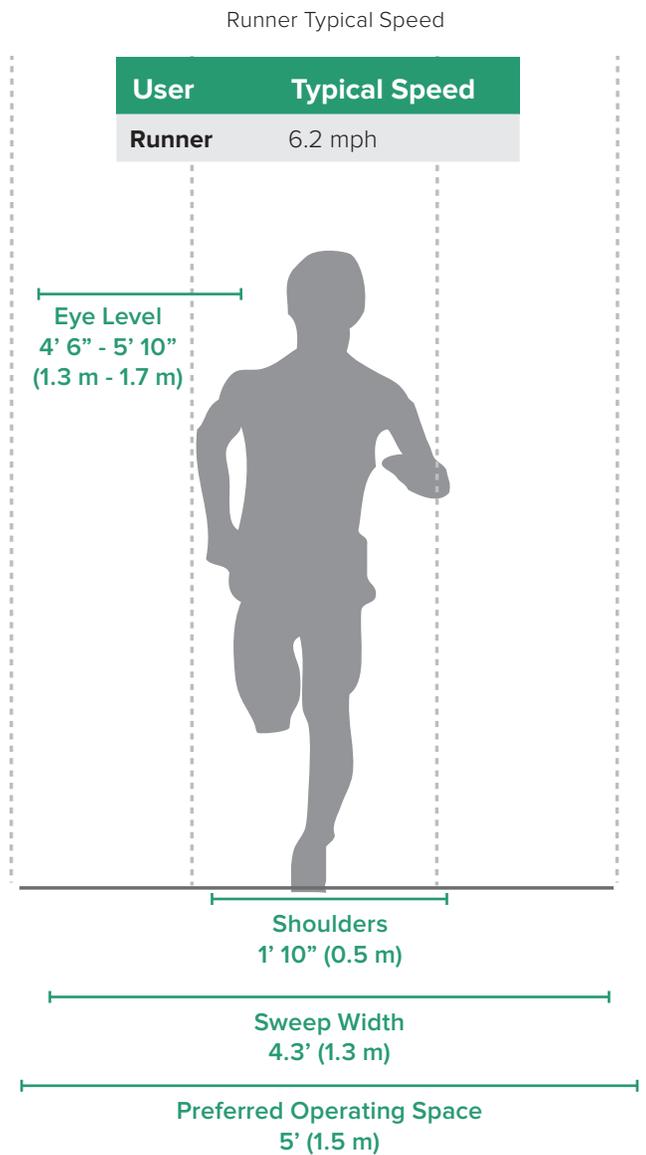
Dog walking is a common and anticipated use on shared use paths. Dog sizes vary largely, as does leash length and walking style, leading to wide variation in possible design dimensions.

Shared use paths designed to accommodate wheelchair users are likely to provide the necessary dimensions for the average dog walker. Amenities such as dog waste stations may enhance conditions for dog walkers.



DESIGN NEEDS OF RUNNERS

Running is an important recreation and fitness activity commonly performed on shared use paths. Many runners prefer softer surfaces (such as rubber, bare earth or crushed rock) to reduce impact. Runners can change their speed and direction frequently. If high volumes are expected, controlled interaction or separation of different types of users should be considered.



ADDITIONAL REFERENCES AND GUIDELINES

FHWA. Characteristics of Emerging Road and Trail Users and Their Safety. (2004).

DESIGN NEEDS OF WHEELCHAIR USERS

As the American population ages, the number of people using mobility assistive devices (such as manual wheelchairs, powered wheelchairs) increases.

Manual wheelchairs are self-propelled devices. Users propel themselves using push rims attached to the rear wheels. Braking is done through resisting wheel movement with the hands or arm. Alternatively, a second individual can control the wheelchair using handles attached to the back of the chair.

Power wheelchairs use battery power to move the wheelchair. The size and weight of power wheelchairs limit their ability to negotiate obstacles without a ramp. Various control units are available that enable users to control the wheelchair movement, based on their ability (e.g., joystick control, breath controlled, etc).

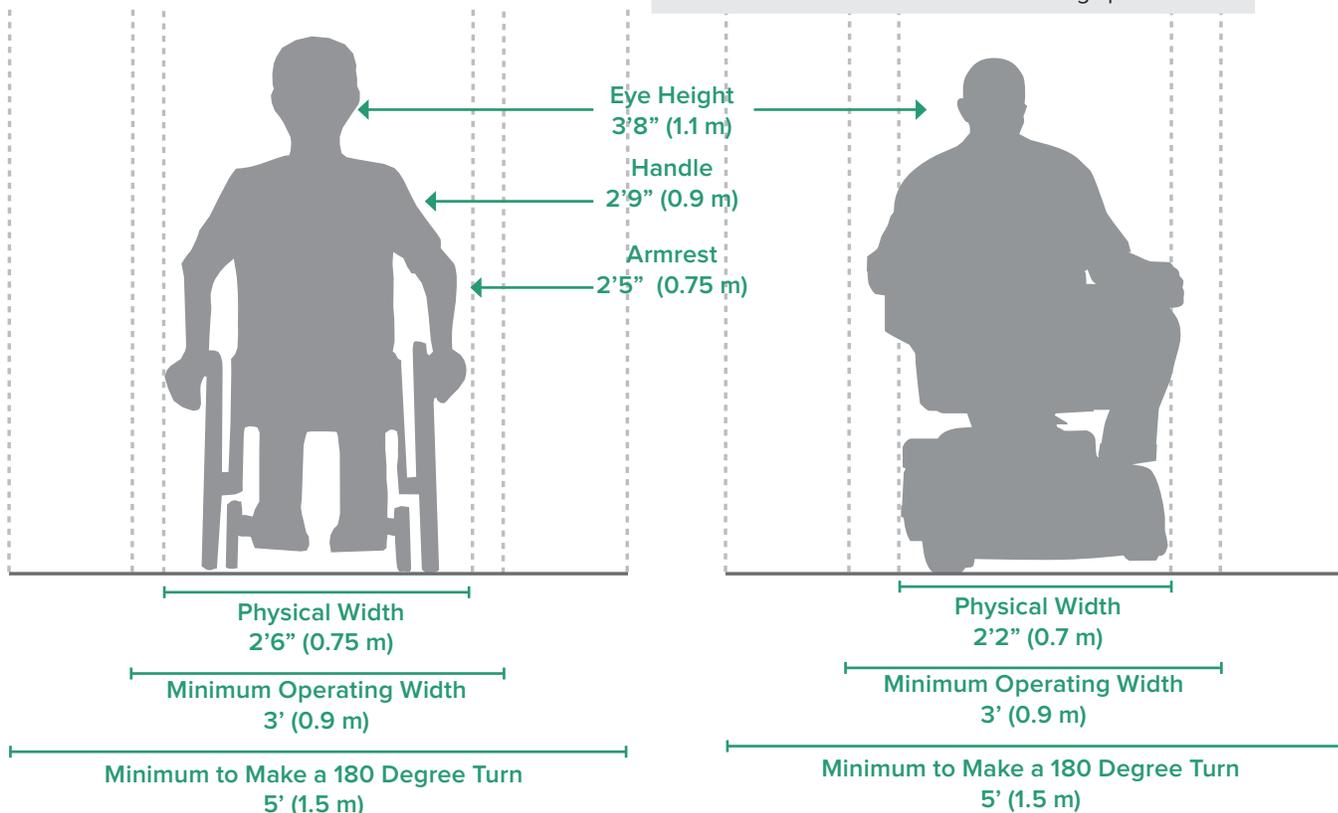
Maneuvering around a turn requires additional space for wheelchair devices. Providing adequate space for 180 degree turns at appropriate locations is an important element for accessible design.

Wheelchair User Typical Speed

User	Typical Speed
Manual Wheelchair	3.6 mph
Power Wheelchair	6.8 mph

Wheelchair User Design Considerations

Effect on Mobility	Design Solution
Difficulty propelling over uneven or soft surfaces.	Firm, stable surfaces and structures, including ramps or beveled edges.
Cross-slopes cause wheelchairs to veer downhill.	Cross-slopes of less than two percent.
Require wider path of travel.	Sufficient width and maneuvering space.



This page intentionally left blank



02

PEDESTRIAN FACILITIES

Pedestrian Crossing Location and Facility Selection

CROSSING TREATMENT SELECTION

The specific type of treatment at a crossing may range from a simple marked crosswalk to full traffic signals or grade separated crossings. Crosswalk lines should not typically be used by themselves and appropriate selection of crossing treatment enhancements should be evaluated in an engineering study.

The engineering study should consider the number of lanes, the presence of a median, the distance from adjacent signalized intersections, the pedestrian volumes and delays, the average daily traffic (ADT), the posted or statutory speed limit or 85th-percentile speed, the geometry of the location, the possible consolidation of multiple crossing points, the availability of street lighting, and other appropriate factors.

MIDBLOCK CROSSINGS

Midblock crossings are an important street design element for pedestrians. They can provide a legal crossing at locations where pedestrians want to travel, and can be safer than crossings at intersections because traffic is only moving in two directions. Locations where midblock crossings should be considered include:

- Long blocks (longer than 600 feet) with destinations on both sides of the street.
- Locations with heavy pedestrian traffic, such as schools, shopping centers.
- At midblock transit stops, where transit riders must cross the street on one leg of their journey.

PEDESTRIAN CROSSING CONTEXTUAL GUIDANCE At unsignalized locations		Local Streets 15-25 mph			Collector Streets 25-30 mph			Arterial Streets 30-45 mph						
		2 lane	3 lane	2 lane	2 lane with median refuge	3 lane	2 lane	2 lane with median refuge	3 lane	4 lane	4 lane with median refuge	5 lane	6 lane	6 lane with median refuge
1	Crosswalk Only (high visibility)	✓	✓	EJ	EJ	X	EJ	EJ	X	X	X	X	X	X
2	Crosswalk with warning signage and yield lines	EJ	✓	✓	✓	✓	EJ	EJ	EJ	X	X	X	X	X
3	Active Warning Beacon (RRFB)	X	EJ	✓	✓	✓	✓	✓	✓	X	✓	X	X	X
4	Hybrid Beacon	X	X	EJ	EJ	EJ	EJ	✓	✓	✓	✓	✓	✓	✓
5	Full Traffic Signal	X	X	EJ	EJ	EJ	EJ	EJ	EJ	✓	✓	✓	✓	✓
6	Grade separation	X	X	EJ	EJ	EJ	X	EJ	EJ	EJ	EJ	EJ	✓	✓

LEGEND	
Most Desirable	✓
Engineering Judgement	EJ
Not Recommended	X



Sidewalk Zones and Widths

Sidewalks are the most fundamental element of the walking network, as they provide an area for pedestrian travel separated from vehicle traffic. Providing adequate and accessible facilities can lead to increased numbers of people walking, improved safety, and the creation of social space.



Curbside Lane	Buffer Zone	Pedestrian Through Zone	Frontage Zone
<p>The curbside lane can act as a flexible space to further buffer the sidewalk from moving traffic., and may be used for a bike lane. Curb extensions and bike corrals may occupy this space where appropriate.</p>	<p>The buffer zone, also called the furnishing or landscaping zone, buffers pedestrians from the adjacent roadway, and is also the area where elements such as street trees, signal poles, signs, and other street furniture are properly located.</p>	<p>The through zone is the area intended for pedestrian travel. This zone should be entirely free of permanent and temporary objects. Wide through zones are needed in downtown areas or where pedestrian flows are high.</p>	<p>The frontage zone allows pedestrians a comfortable "shy" distance from the building fronts. It provides opportunities for window shopping, to place signs, planters, or chairs.</p>

In the **edge zone** there should be a 6 inch wide curb.

TYPICAL APPLICATION

- Sidewalks should be provided on both sides of urban commercial streets, and should be required in areas of moderate residential density (1-4 dwelling units per acre).
- When retrofitting gaps in the sidewalk network, locations near transit stops, schools, parks, public buildings, and other areas with high concentrations of pedestrians should be the highest priority.

DESIGN FEATURES

- It is important to provide adequate width along a sidewalk corridor. A pedestrian through zone width of six feet enables two pedestrians (including wheelchair users) to walk side-by-side, or to pass each other comfortably.
- In areas of high demand, sidewalks should contain adequate width to accommodate the high volumes and different walking speeds of pedestrians.
- Appropriate placement of street trees in the furnishing zone (minimum width 4 feet) helps buffer pedestrians from the travel lane and increases facility comfort.

CONSTRUCTION COSTS

The cost of building sidewalks vary based on the location, type of material, the scale, and whether it is part of a broader street construction project. A five-foot concrete sidewalk is approximately \$32 per linear foot on average, with the additional cost of new curbs and drainage likely to be substantially higher.



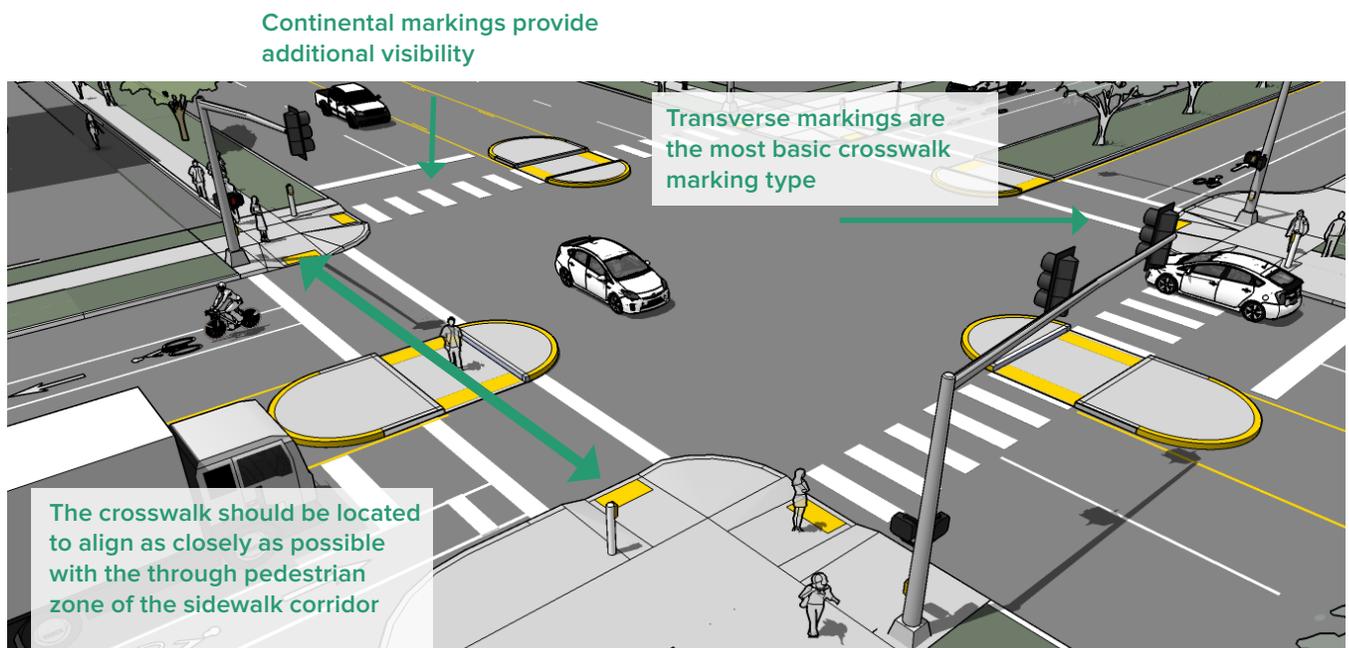
03

PEDESTRIAN FACILITIES AT
INTERSECTIONS

Marked Crosswalks

A marked crosswalk signals to motorists that they must stop for pedestrians and encourages pedestrians to cross at designated locations. Installing crosswalks alone will not necessarily make crossings safer, especially on multi-lane roadways.

At mid-block locations, crosswalks must be marked to establish a legal crossing.



TYPICAL APPLICATION

At signalized intersections, all crosswalks should be marked. At unsignalized intersections, crosswalks may be marked under the following conditions:

- At a complex intersection, to orient pedestrians in finding their way across.
- At an offset intersection, to show pedestrians the shortest route across traffic with the least exposure to vehicular traffic and traffic conflicts.
- At an intersection with visibility constraints, to position pedestrians where they can best be seen by oncoming traffic.
- At an intersection within a school zone on a walking route.

DESIGN FEATURES

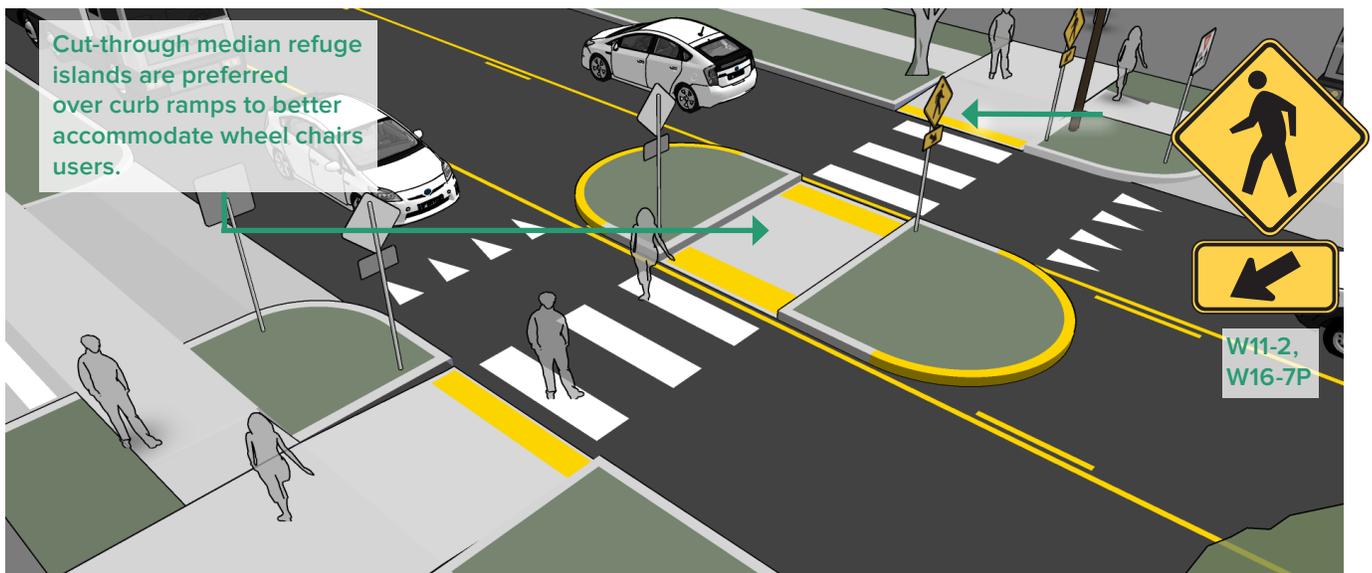
- Because the effectiveness of marked crossings depends entirely on their visibility, maintaining marked crossings should be a high priority.
- Thermoplastic markings offer increased durability than conventional paint.

ADDITIONAL REFERENCES AND GUIDELINES

FHWA. Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations. 2005.
 FHWA. Crosswalk Marking Field Visibility Study. 2010.
 NACTO. Urban Street Design Guide. 2013.

Median Refuge Island

Median refuge islands are located at the mid-point of a marked crossing and help improve pedestrian safety by allowing pedestrians to cross one direction of traffic at a time. Refuge islands minimize pedestrian exposure by shortening crossing distance and increasing the number of available gaps for crossing.



TYPICAL APPLICATION

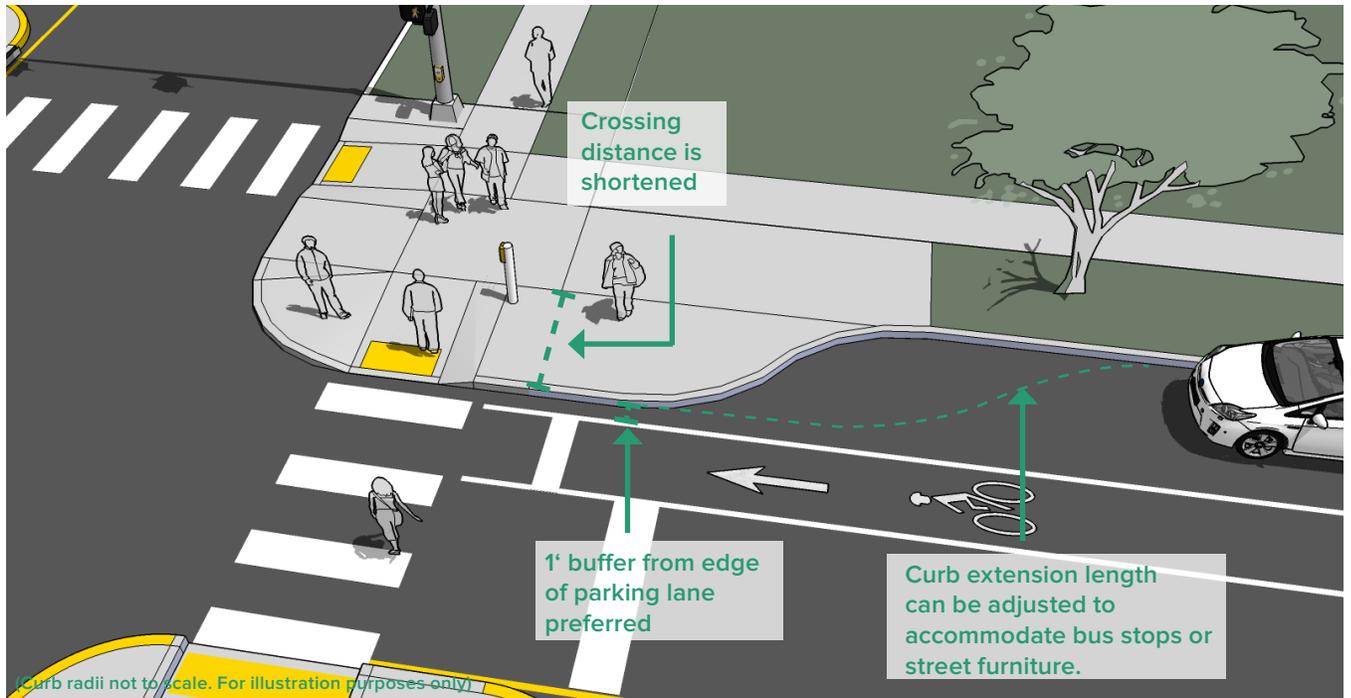
- Can be applied on any roadway with a left turn center lane or median that is at least 6 feet wide.
- Appropriate at signalized or unsignalized crosswalks.
- On multi-lane roadways, consider configuration with active warning beacons for improved yielding compliance.

DESIGN FEATURES

- The refuge island must be accessible, preferably with an at-grade passage through the island rather than ramps and landings.
- The island should be at least 6 feet wide to be a legal refuge and be wider to accommodate cargo bikes or bikes with child trailers. It should be at least 20 feet long.
- On streets with speeds higher than 25 mph there should also be double centerline marking, reflectors, and “KEEP RIGHT” signage.
- If a refuge island is landscaped, the landscaping should not compromise the visibility of pedestrians crossing in the crosswalk. Shrubs and ground plantings should be no higher than 1.5 feet.

Curb Extensions

Curb extensions minimize pedestrian exposure during crossing by shortening crossing distance and giving pedestrians a better chance to see and be seen before committing to crossing. They are appropriate for any crosswalk where it is desirable to shorten the crossing distance and there is a parking lane adjacent to the curb.



TYPICAL APPLICATION

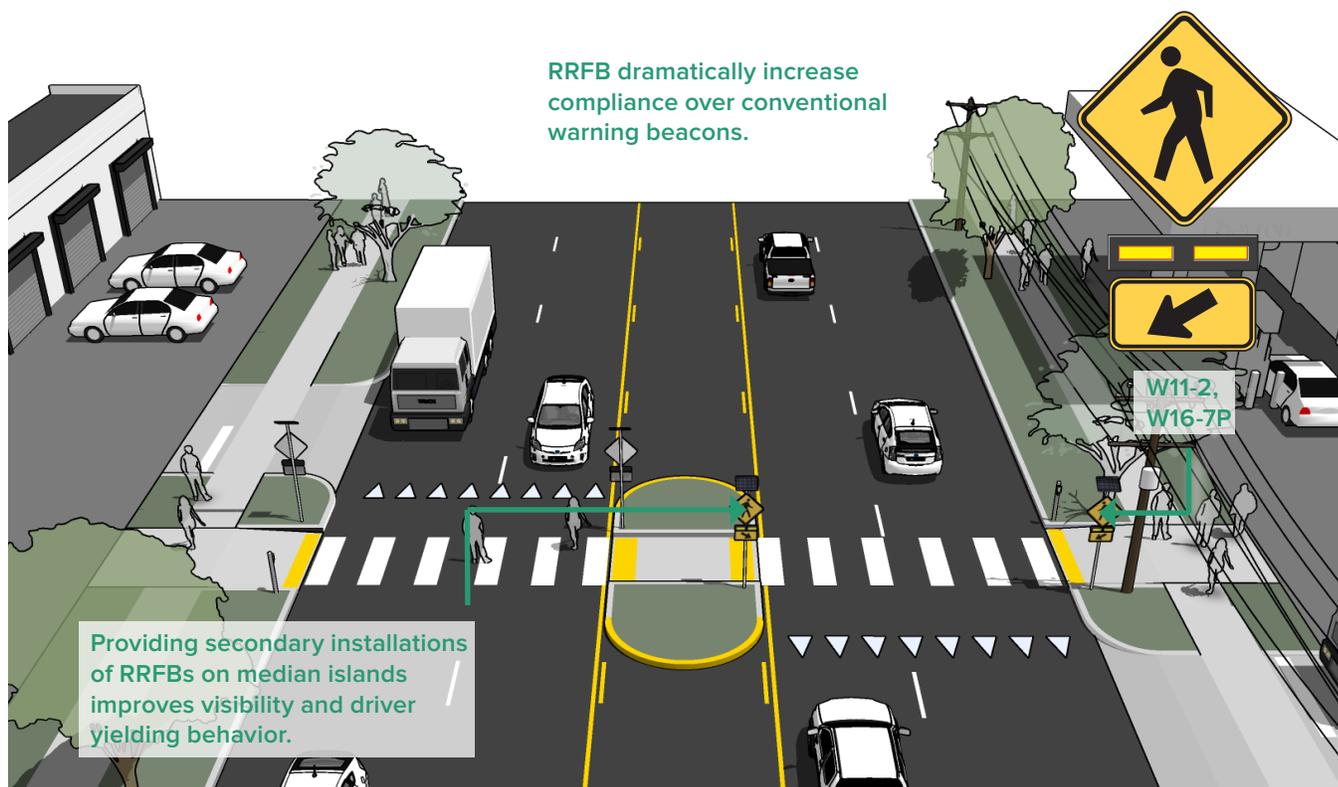
- At signalized intersections with marked crosswalks.
- At unsignalized intersections with marked crosswalks.
- At an intersection with visibility constraints, to position pedestrians where they can best be seen by oncoming traffic.
- At an intersection within a school zone on a walking route.
- Do not block bicycle lanes or shoulders being used by bicyclists with a curb extension. Turning performance by larger vehicles including buses may be impacted by curb extensions.

DESIGN FEATURES

- In most cases, the curb extensions should be designed to transition between the extended curb and the running curb in the shortest practicable distance.
- For purposes of efficient street sweeping, the minimum radius for the reverse curves of the transition is 10 feet and the two radii should be balanced to be nearly equal.
- Curb extensions should terminate 1 foot short of the parking lane to maximize bicyclist safety.
- Planted curb extensions may be designed as a bioswale, a vegetated system for stormwater management.

Active Warning Beacons (RRFBs)

Active warning beacons are user actuated illuminated devices designed to increase motor vehicle yielding compliance at crossings of multi-lane or high volume roadways. Types of active warning beacons include conventional circular yellow flashing beacons, in-roadway warning lights, or Rectangular Rapid Flash Beacons (RRFB). RRFBs are recommended as the preferred beacon treatment.



TYPICAL APPLICATION

- At marked crosswalks where increased pedestrian visibility is needed.
- RRFBs have the most increased compliance of all the warning beacon enhancement options. A study of the effectiveness of going from a no-beacon arrangement to a two-beacon RRFB installation increased yielding from 18 percent to 81 percent.

DESIGN FEATURES

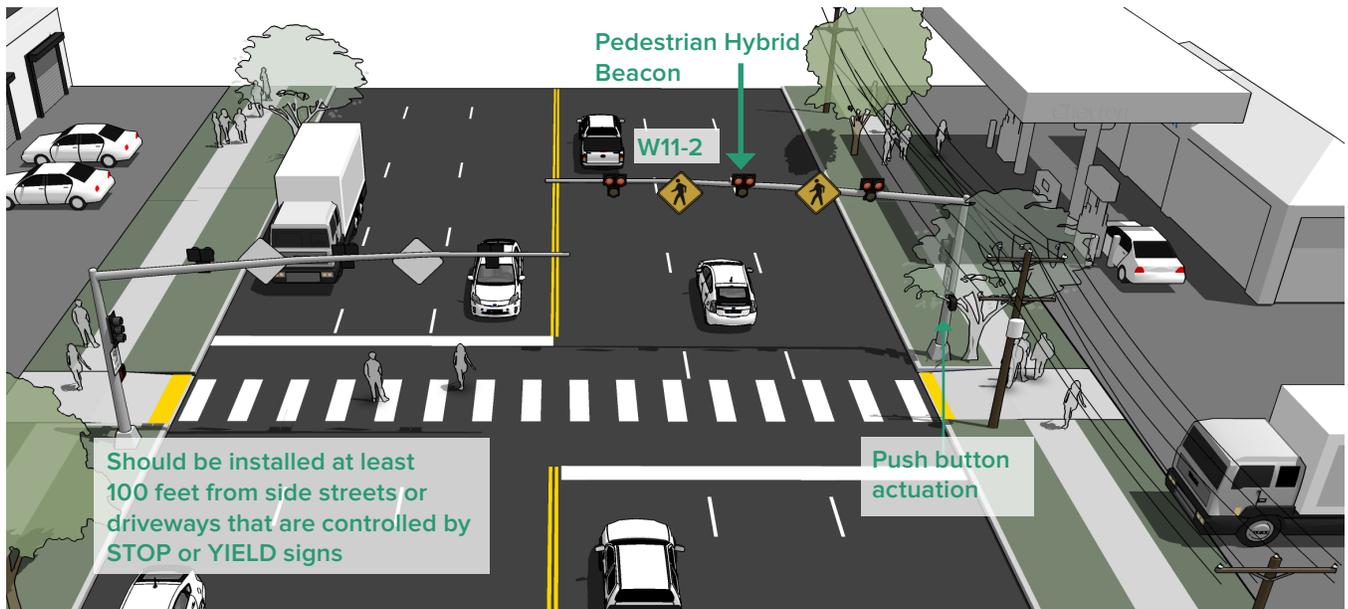
- Warning beacons shall not be used at crosswalks controlled by YIELD signs, STOP signs, or traffic signals.
- Warning beacons shall initiate operation based on pedestrian or bicyclist actuation and shall cease operation at a predetermined time after actuation or, with passive detection, after the pedestrian or bicyclist clears the crosswalk.

ADDITIONAL REFERENCES AND GUIDELINES

FHWA. MUTCD - Interim Approval for Optional Use of Rectangular Rapid Flashing Beacons (IA-21). 2018.

Pedestrian Hybrid Beacons

Hybrid beacons are used to improve non-motorized crossings of major streets. A hybrid beacon consists of a signal-head with two red lenses over a single yellow lens on the major street, and a pedestrian signal head for the crosswalk.



TYPICAL APPLICATION

- At unsignalized intersections with high volumes of pedestrians.
- At an intersection within a school zone on a walking route.
- Each crossing, regardless of traffic speed or volume, requires additional review by a registered engineer to identify sight lines, potential impacts on traffic progression, timing with adjacent signals, capacity, and safety.
- If being considered at an existing unsignalized intersection, blank out signs prohibiting conflicting vehicle turning movements with the crosswalk are recommended to be illuminate when the crossing is active.

DESIGN FEATURES

- Hybrid beacons have less stringent warrants than full signals.
- If installed within a signal system, signal engineers should evaluate the need for the hybrid signal to be coordinated with other signals.
- Parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the marked crosswalk to provide adequate sight distance.
- Hybrid beacon signals are normally activated by push buttons, but may also be triggered by infrared, microwave or video detectors. The maximum delay for activation of the signal should be two minutes, with minimum crossing times determined by the width of the street.

ADDITIONAL REFERENCES AND GUIDELINES

FHWA, Pedestrian Hybrid Beacon Guide - Recommendations and Case Study. 2014.



04

BICYCLE FACILITIES

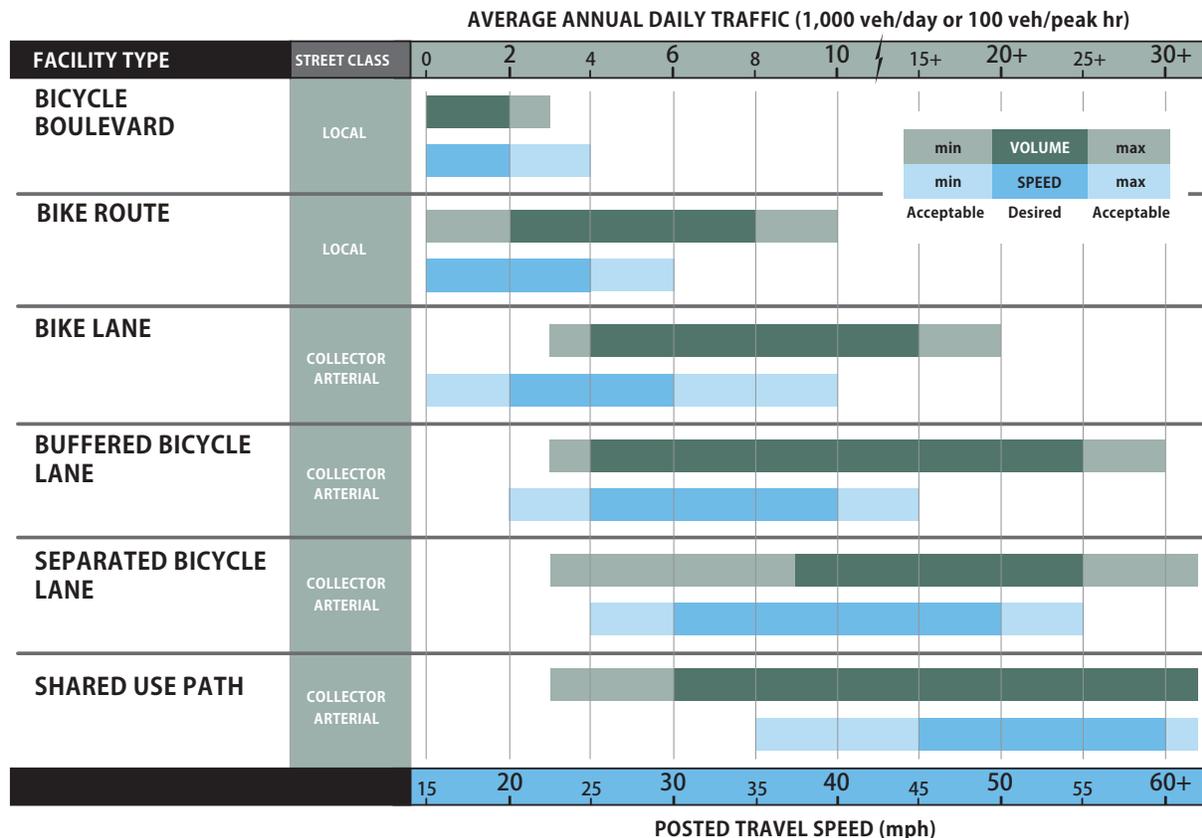
Facility Selection

Selecting the best bikeway facility type for a given roadway can be challenging, due to the range of factors that influence bicycle users' comfort and safety. There is a significant impact on bicycling comfort when the speed differential between bicyclists and motor vehicle traffic is high and motor vehicle traffic volumes are high.

Facility Selection Table

As a starting point to identify a preferred facility, the chart below can be used to determine the recommended type of bikeway to be provided in particular roadway speed and volume situations. To use this chart, identify the appropriate daily traffic volume and travel speed on the existing or proposed roadway, and locate the facility types indicated by those key variables.

Other factors beyond speed and volume which affect facility selection include traffic mix of automobiles and heavy vehicles, the presence of on-street parking, intersection density, surrounding land use, and roadway sight distance. These factors are not included in the facility selection chart below, but should always be considered in the facility selection and design process.



Bicyclist User Type

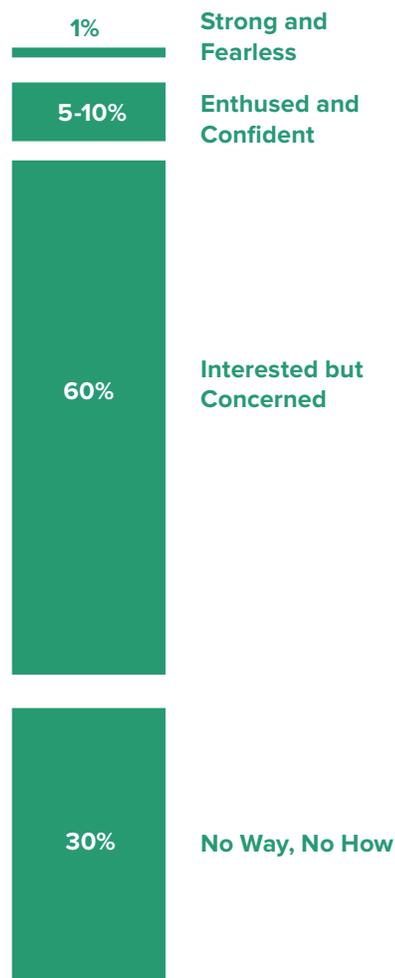
The 2012 AASHTO Guide to the Development of Bicycle Facilities encourages designers to identify their rider type based on the trip purpose (Recreational vs Transportation) and on the level of comfort and skill of the rider (Casual vs Experienced). A user-type framework for understanding a potential rider's willingness to bike is illustrated in the figure below. Developed by planners in Portland, OR and supported by research, this classification identifies four distinct types of bicyclists.

Strong and Fearless – Characterized by bicyclists that will typically ride anywhere regardless of roadway conditions or weather. These bicyclists can ride faster than other user types, prefer direct routes and will typically choose roadway connections (even if shared with vehicles) over separate bicycle facilities such as shared-use paths.

Enthusied and Confident - This user group encompasses bicyclists who are fairly comfortable riding on all types of bikeways but usually choose low traffic streets or shared-use paths when available. These bicyclists may deviate from a more direct route in favor of a preferred facility type. This group includes all kinds of bicyclists such as commuters, recreationalists, racers and utilitarian bicyclists.

Interested but Concerned – This user type comprises the bulk of the cycling population and represents bicyclists who typically only ride a bicycle on low traffic streets or shared-use paths under favorable weather conditions. These bicyclists perceive significant barriers to their increased use of cycling, specifically traffic and other safety issues. These people may become “Enthusied & Confident” with encouragement, education and experience.

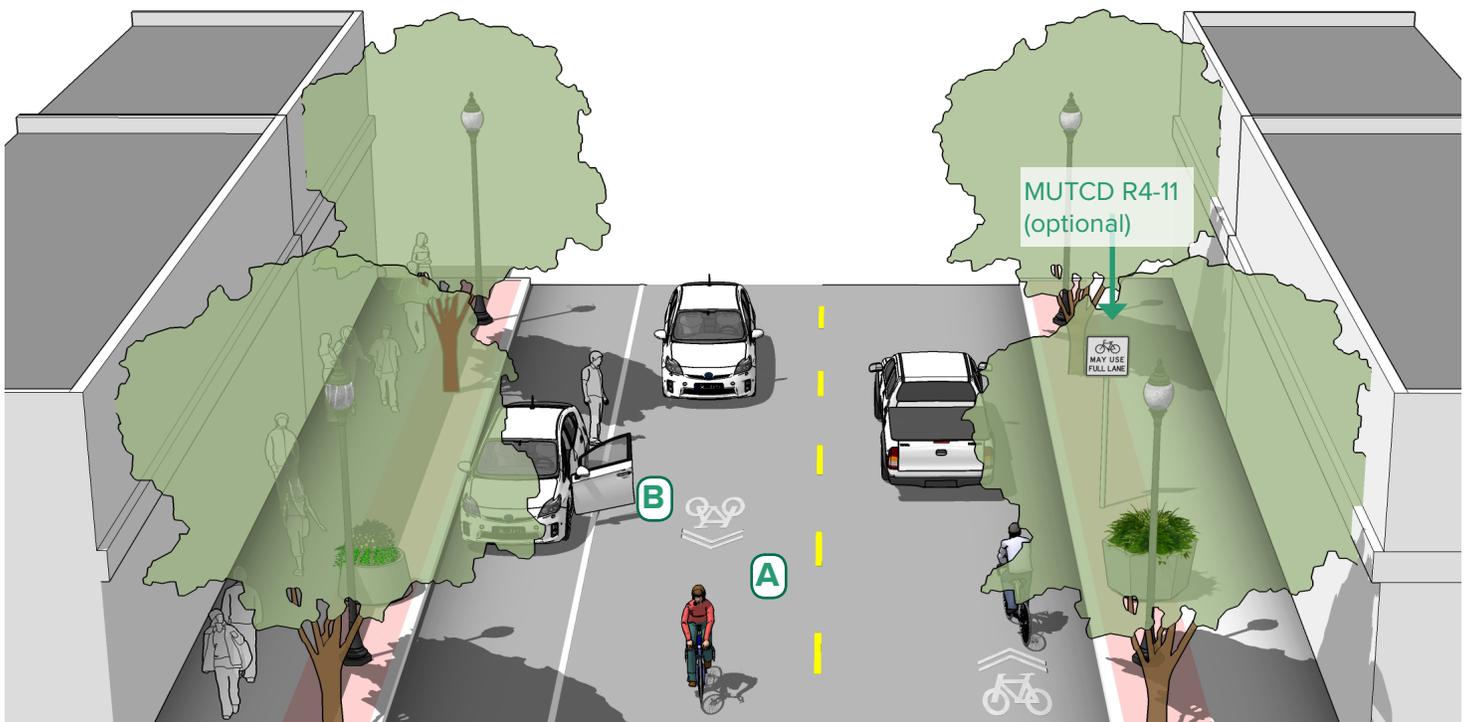
No Way, No How – Persons in this category are not bicyclists, and perceive severe safety issues with riding in traffic. Some people in this group may eventually become more regular cyclists with time and education. A significant portion of these people will not ride a bicycle under any circumstances.



Typical Distribution of Bicyclist Types

Signed & Marked Shared Roadway

Signed shared roadways are facilities shared with motor vehicles. They are typically used on roads with low speeds and traffic volumes, however can be used on higher volume roads with wide outside lanes or shoulders. A motor vehicle driver will usually have to cross over into the adjacent travel lane to pass a bicyclist, unless a wide outside lane or shoulder is provided. A marked shared roadway is a general purpose travel lane marked with shared lane markings (SLM) used to encourage bicycle travel and proper positioning within the lane.



TYPICAL APPLICATION

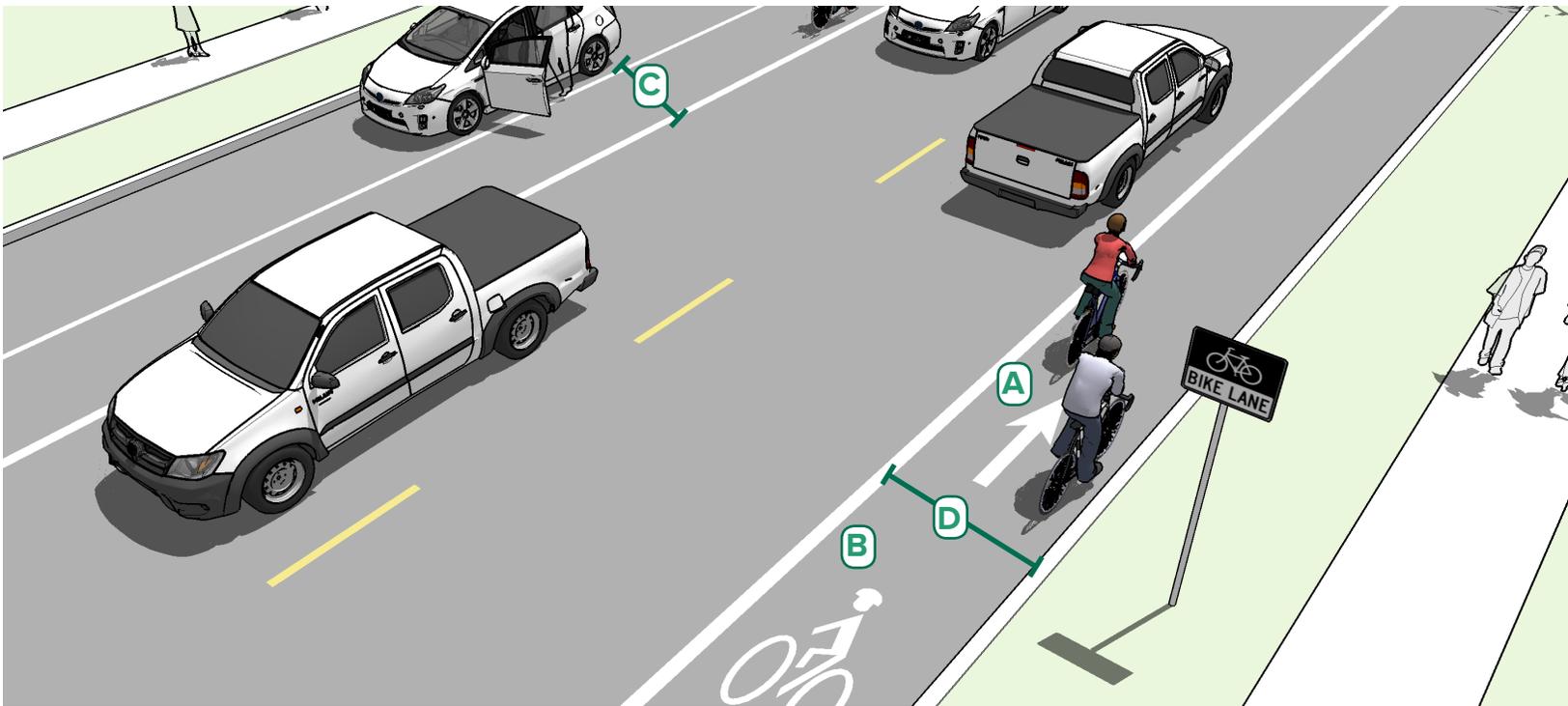
- In constrained conditions, the SLMs are placed in the middle of the lane. On a wide outside lane, the SLMs can be used to promote bicycle travel to the right of motor vehicles.
- In all conditions, SLMs should be placed outside of the door zone of parked cars.

DESIGN FEATURES

- May be used on streets with a speed limit of 35 mph or under. Lower than 30 mph speed limit preferred.
- A** In constrained conditions, preferred placement is in the center of the travel lane to minimize wear and promote single file travel.
- B** Minimum placement of SLM marking centerline is 11 feet from edge of curb where on-street parking is present, 4 feet from edge of curb with no parking. If parking lane is wider than 7.5 feet, the SLM should be moved further out accordingly.

On-Street Bicycle Lanes

On-street bike lanes designate an exclusive space for bicyclists through the use of pavement markings and signs. The bike lane is located directly adjacent to motor vehicle travel lanes and is used in the same direction as motor vehicle traffic. Bike lanes are typically on the right side of the street, between the adjacent travel lane and curb, road edge or parking lane.



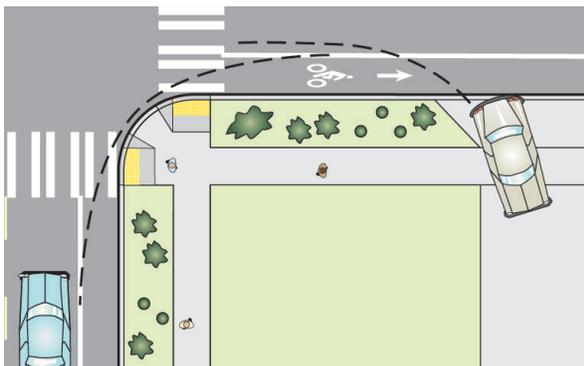
TYPICAL APPLICATION

- Bike lanes may be used on any street with adequate space, but are most effective on streets with moderate traffic volumes greater than or equal to 6,000 ADT (with a greater than 3,000 ADT min.).
- Bike lanes are most appropriate on streets with low to moderate speeds (25 mph).
- Appropriate for skilled adult riders on most streets.
- May be appropriate for children when configured as 6+ feet wide lanes on lower-speed, lower-volume streets with one lane in each direction.

DESIGN FEATURES

- A** Mark inside line with 6" stripe. Mark 4" parking lane line or "Ts".
- B** Include a bicycle lane marking (MUTCD FIGURE 9C-3) at the beginning of blocks and at regular intervals along the route (MUTCD 9C.04).
- C** 6 feet width preferred adjacent to on-street parking (5 feet min.).
- D** 6 feet preferred (5 feet min.) adjacent to curb and gutter (4 feet min.) or 4 feet more than the gutter pan width.
 - 6 feet preferred where no curb and gutter exists (4 feet minimum).

Place Bike Lane Symbols to Reduce Wear



Bike lane word, symbol, and/or arrow markings (MUTCD Figure 9C-3) shall be placed outside of the motor vehicle tread path in order to minimize wear from the motor vehicle path (NACTO 2012).

Bicycle Lane



Bicycle lanes provide an exclusive space, but may be subject to unwanted encroachment by motor vehicles.

FURTHER CONSIDERATIONS

On high speed streets (greater than or equal to 40 mph) the minimum bike lane should be 6 feet.

On streets where bicyclists passing each other is to be expected, where high volumes of bicyclists are present, or where added comfort is desired, consider providing extra wide bike lanes up to 7 feet wide, or configure as a buffered bicycle lane.

It may be desirable to reduce the width of general purpose travel lanes in order to add or widen bicycle lanes.

On multi-lane and/or high speed streets, the most appropriate bicycle facility to provide for user comfort may be buffered bicycle lanes or physically separated bicycle lanes.

Manhole Covers and Grates

Manhole surfaces should be manufactured with a shallow surface texture in the form of a tight, nonlinear pattern.

If manholes or other utility access boxes are to be located in bike lanes within 50 feet of intersections or within 20 ft of driveways or other bicycle access points, special manufactured permanent, nonstick surfaces will be required to ensure a controlled travel surface for cyclists breaking or turning.

Manholes, drainage grates, or other obstacles should be set flush with the paved roadway. Roadway surface inconsistencies pose a threat to safe riding conditions for bicyclists. Construction of manholes, access panels or other drainage elements will be constructed with no variation in the surface. The maximum allowable tolerance in vertical roadway surface will be 1/4 of an inch.

CRASH REDUCTION

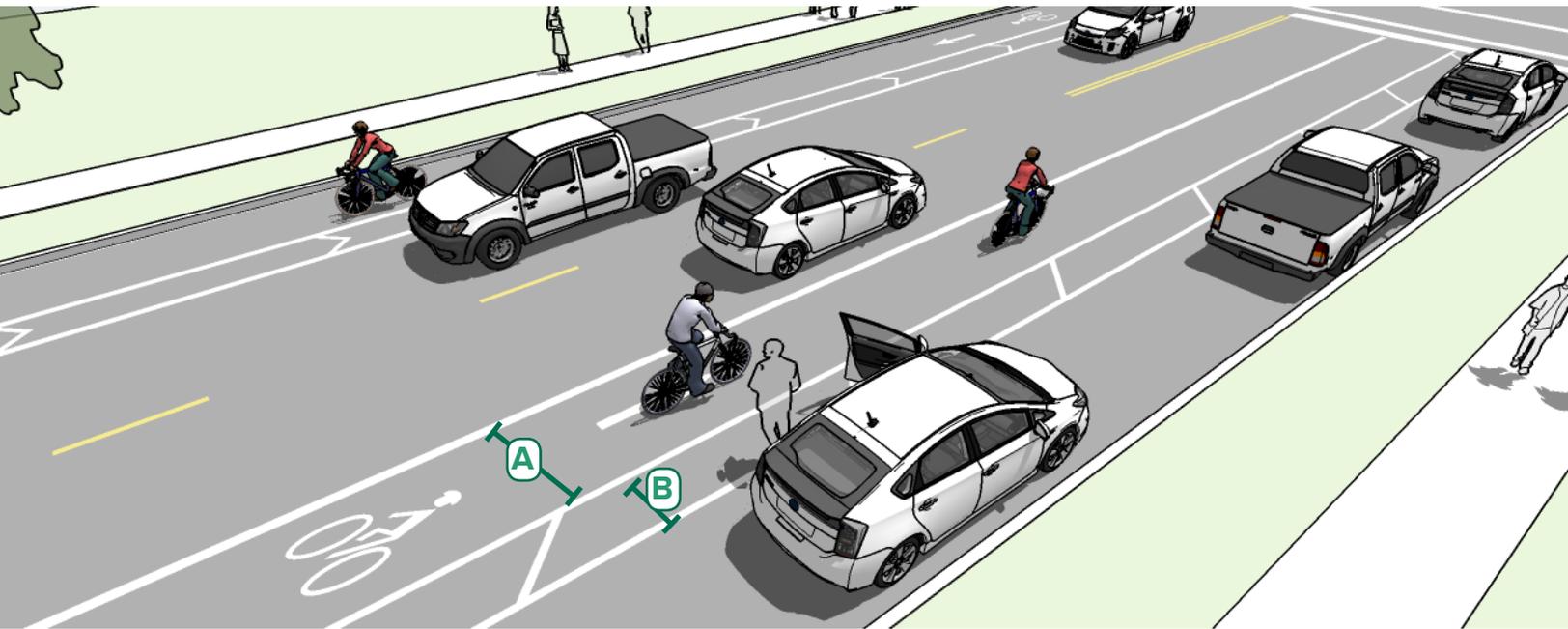
Before and after studies of bicycle lane installations show a wide range of crash reduction factors. Some studies show a crash reduction of 35 percent (CMF ID: 1719) for vehicle/bicycle collisions after bike lane installation.

CONSTRUCTION COSTS

The cost for installing bicycle lanes will depend on the implementation approach. Typical costs are \$16,000 per mile for restriping.

Buffered Bicycle Lanes

Buffered bike lanes are conventional bicycle lanes paired with a designated buffer space, separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane.



TYPICAL APPLICATION

- Anywhere a conventional bike lane is being considered.
- On streets with high speeds and high volumes or high truck volumes.
- On streets with extra lanes or lane width.
- Appropriate for skilled adult riders on most streets.

DESIGN FEATURES

- A** The minimum bicycle travel area (not including buffer) is 5 feet wide.
- B** Buffers should be at least 2 feet wide. If buffer area is 4 feet or wider, white chevron or diagonal markings should be used.
 - For clarity at driveways or minor street crossings, consider a dotted line.
 - There is no standard for whether the buffer is configured on the parking side, the travel side, or a combination of both.

Buffered Bicycle Lanes



The use of pavement markings delineates space for bicyclists to ride in a comfortable facility.



The use of pavement markings delineates space for bicyclists to ride in a comfortable facility.

FURTHER CONSIDERATIONS

- Color may be used within the lane to discourage motorists from entering the buffered lane.
- A study of buffered bicycle lanes found that, in order to make the facilities successful, there needs to also be driver education, improved signage and proper pavement markings.
- On multi-lane streets with high vehicle speeds, the most appropriate bicycle facility to provide for user comfort may be physically separated bike lanes.
- NCHRP Report #766 recommends, when space is limited, installing a buffer space between the parking lane and bicycle lane where on-street parking is permitted rather than between the bicycle lane and vehicle travel lane.

CRASH PERCEPTION

A before and after study of buffered bicycle lane installation in Portland, OR found an overwhelmingly positive response from bicyclists, with 89 percent of bicyclists feeling safer riding after installation and 91 percent expressing that the facility made bicycling easier.

CONSTRUCTION COSTS

The cost for installing buffered bicycle lanes will depend on the implementation approach. Typical costs are \$16,000 per mile for restriping. However, the cost of large-scale bicycle treatments will vary greatly due to differences in project specifications and the scale and length of the treatment.

ADDITIONAL REFERENCES AND GUIDELINES

Monsere, C.; McNeil, N.; and Dill, J., "Evaluation of Innovative Bicycle Facilities: SW Broadway Cycle Track and SW Stark/Oak Street Buffered Bike Lanes. Final Report" (2011). Urban Studies and Planning Faculty Publications and Presentations.

National Cooperative Highway Research Program. Report #766: Recommended Bicycle Lane Widths for Various Roadway Characteristics.

Separated Bicycle Lane



Separated Bicycle Lanes can be separated from the street with parking, planters, bollards, or other design elements.

FURTHER CONSIDERATIONS

- Separated bike lane buffers and barriers are covered in the MUTCD as preferential lane markings (section 3D.01) and channelizing devices (section 3H.01). Curbs may be used as a channeling device, see the section on islands (section 3I.01).
- A retrofit separated bike lane has a relatively low implementation cost compared to road reconstruction by making use of existing pavement and drainage and by using the parking lane as a barrier.
- Gutters, drainage outlets and utility covers should be designed and configured as not to impact bicycle travel.
- Special consideration should be given at transit stops to manage bicycle and pedestrian interactions.

CRASH REDUCTION

A before and after study in Montreal of physically separated bicycle lanes shows that this type of facility can result in a crash reduction of 74 percent for collisions between bicyclists and vehicles. (CMF ID: 4097) In this study, there was a parking buffer between the bike facility and vehicle travel lanes. Other studies have found a range in crash reductions due to SBL, from 8 percent (CMF ID: 4094) to 94 percent (CMF ID: 4101).

CONSTRUCTION COSTS

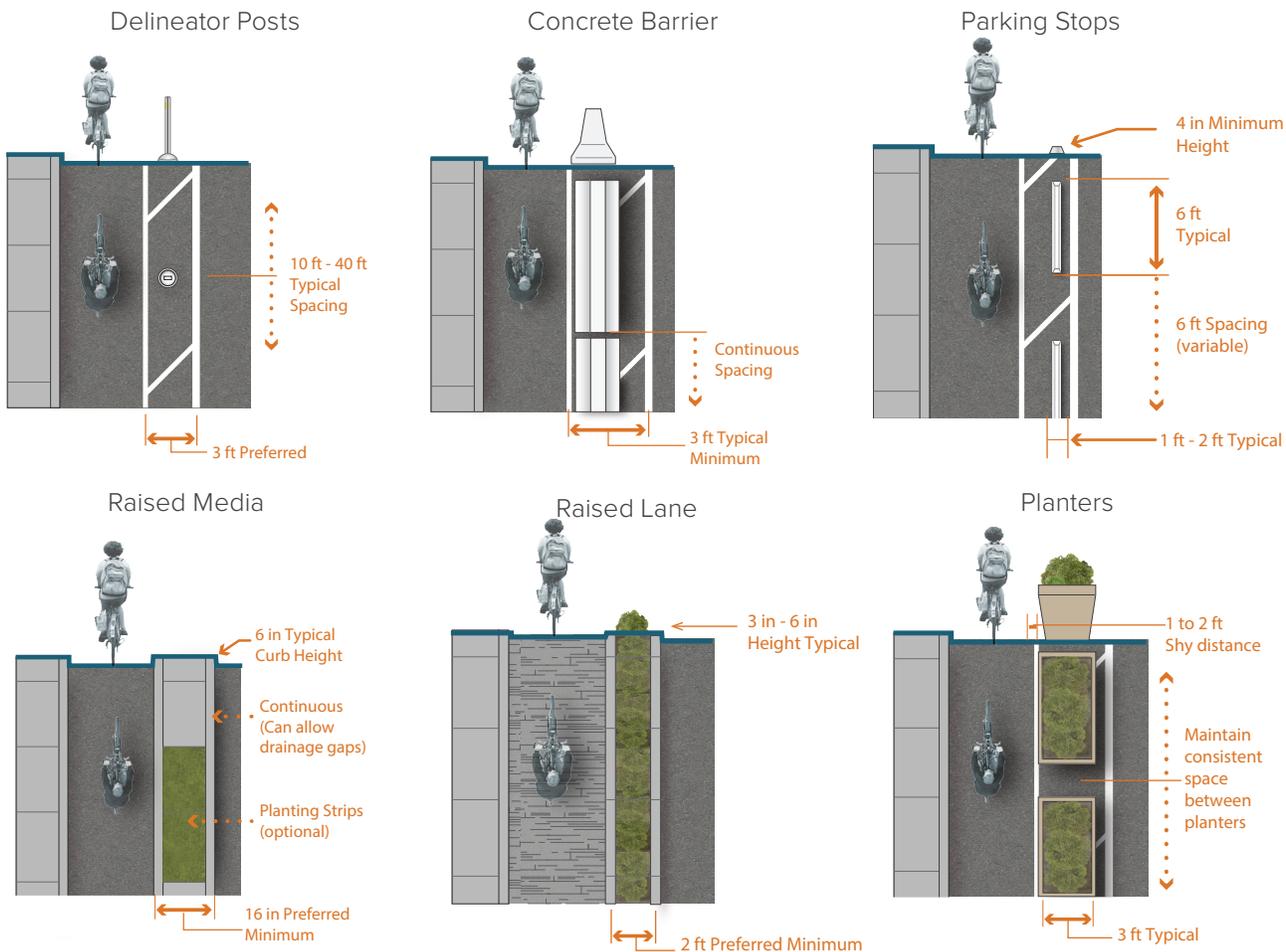
The implementation cost is low if the project uses existing pavement and drainage, but the cost significantly increases if curb lines need to be moved. A parking lane is the low-cost option for providing a barrier. Other barriers might include concrete medians, bollards, tubular markers, or planters.

ADDITIONAL REFERENCES AND GUIDELINES

FHWA. Separated Bike Lane Planning and Design Guide. 2016.

Separation Methods

Separated bikeways may use a variety of vertical elements to physically separate the bikeway from adjacent travel lanes. Barriers may be robust constructed elements such as curbs, or may be more interim in nature, such as flexible delineator posts.



TYPICAL APPLICATION

Appropriate barriers for retrofit projects:

- Parked Cars
- Flexible delineators
- Bollards
- Planters
- Parking stops

Appropriate barriers for reconstruction projects:

- Curb separation
- Medians
- Landscaped Medians
- Raised separated bike lane with vertical or mountable curb
- Pedestrian Safety Islands

Bikeway Separation Methods



Raised separated bikeways are bicycle facilities that are vertically separated from motor vehicle traffic.

DESIGN FEATURES

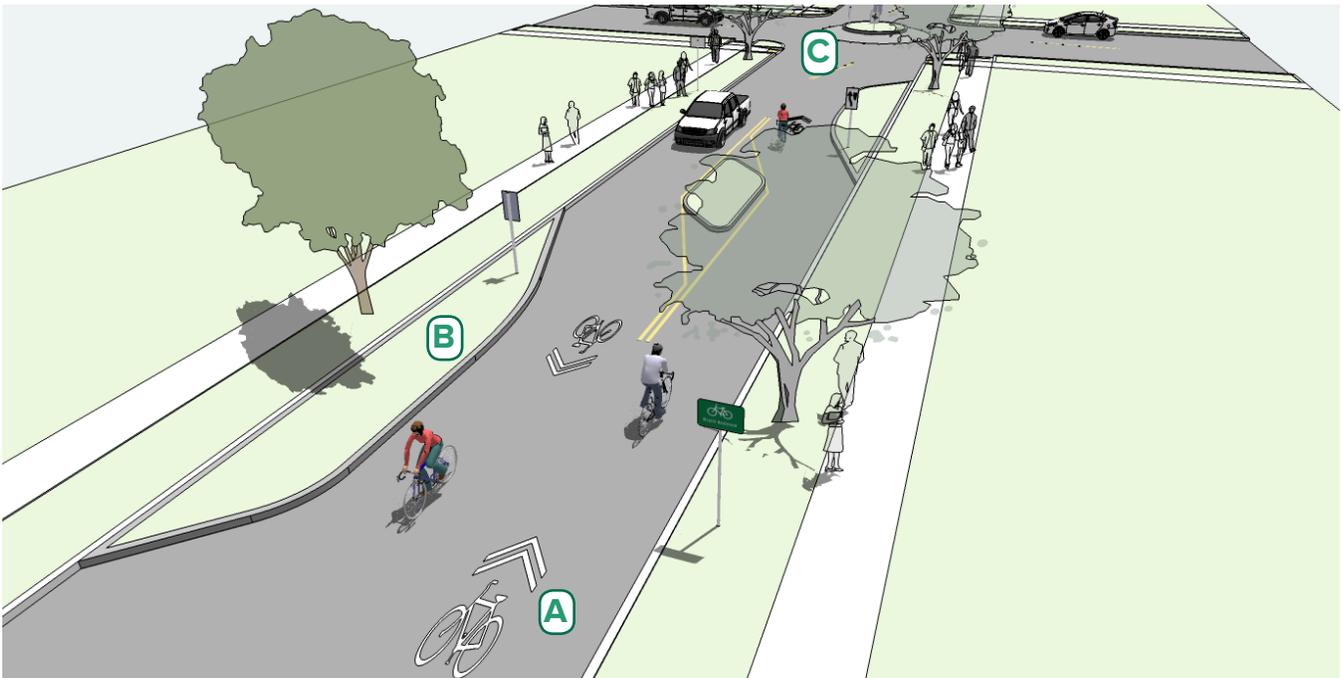
- Maximize effective operating space by placing curbs or delineator posts as far from the through bikeway space as practicable.
- Allow for adequate shy distance of 1 to 2 feet from vertical elements to maximize useful space.
- When next to parking allow for 3 feet of space in the buffer space to allow for opening doors and passenger unloading.
- The presences of landscaping in medians, planters and safety islands increases comfort for users and enhances the streetscape environment.

FURTHER CONSIDERATIONS

- Separated bikeway buffers and barriers are covered in the MUTCD as preferential lane markings (section 3D.01) and channelizing devices (section 3H.01). Curbs may be used as a channeling device, see the section on islands (section 3I.01).
- With new roadway construction a raised separated bikeway can be less expensive to construct than a wide or buffered bicycle lane, because of shallower trenching and sub-base requirements.
- Parking should be prohibited within 30 feet of the intersection to improve visibility.

Neighborhood Byways

Neighborhood byways are low-volume, low-speed streets modified to enhance bicyclist and pedestrian comfort by using treatments such as signage, pavement markings, traffic calming and/or traffic reduction, and intersection modifications. These treatments allow through movements of bicyclists while discouraging similar through-trips by non-local motorized traffic.



TYPICAL APPLICATION

- Parallel with and in close proximity to major thoroughfares (1/4 mile or less).
- Follow a desire line for bicycle travel that is ideally long and relatively continuous (2-5 miles).
- Avoid alignments with excessive zigzag or circuitous routing. The bikeway should have less than 10 percent out of direction travel compared to shortest path of primary corridor.
- Streets with travel speeds at 25 mph or less and with traffic volumes of fewer than 3,000 vehicles per day.

DESIGN FEATURES

- A** Signs and pavement markings are the minimum treatments necessary to designate a street as a bicycle boulevard.
- B** Implement volume control treatments based on the context of the bicycle boulevard, using engineering judgment. Target motor vehicle volumes range from 1,000 to 3,000 vehicles per day.
- C** Intersection crossings should be designed to enhance safety and minimize delay for bicyclists.

Bicycle Boulevards



Neighborhood byways are established on streets that improve connectivity to key destinations and provide a direct, low-stress route for bicyclists, with low motorized traffic volumes and speeds, designated and designed to give bicycle travel priority over other modes.

Traffic Calming



Streets along classified neighborhood byways may require additional traffic calming measures to discourage through trips by motor vehicles.

FURTHER CONSIDERATIONS

Neighborhood byway retrofits to local streets are typically located on streets without existing signalized accommodation at crossings of collector and arterial roadways. Without treatments for bicyclists, these intersections can become major barriers along the bicycle boulevard and compromise safety.

Traffic calming can deter motorists from driving on a street. Anticipate and monitor vehicle volumes on adjacent streets to determine whether traffic calming results in inappropriate volumes. Traffic calming can be implemented on a trial basis.

CRASH REDUCTION

In a comparison of vehicle/cyclist collision rates on traffic-calmed side streets signed and improved for cyclist use, compared to parallel and adjacent arterials with higher speeds and volumes, the bicycle boulevard as found to have a crash reduction factor of 63 percent, with rates two to eight times lower when controlling for volume (CMF ID: 3092).

CONSTRUCTION COSTS

Costs vary depending on the type of treatments proposed for the corridor. Simple treatments such as wayfinding signage and markings are most cost-effective, but more intensive treatments will have greater impact at lowering speeds and volumes, at a higher cost.

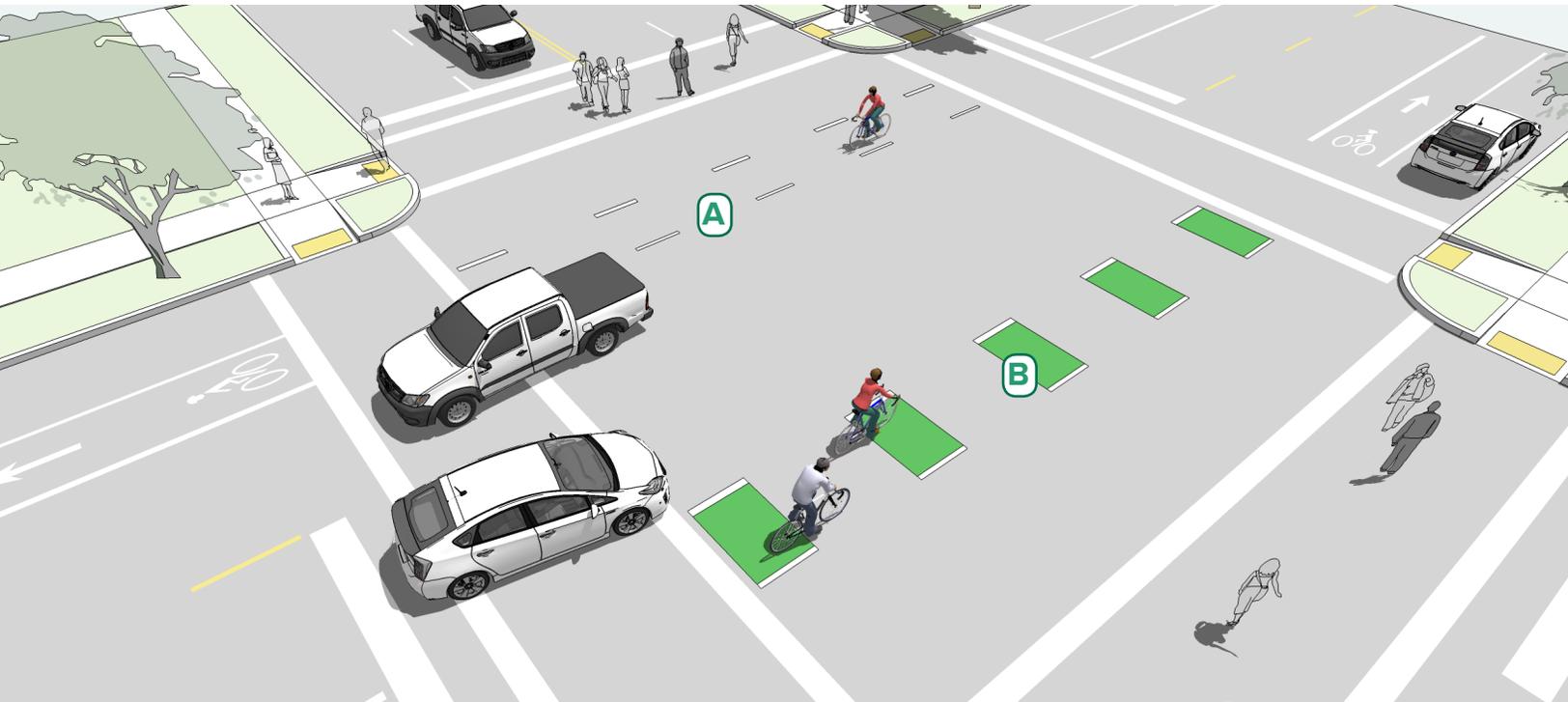


05

BICYCLE FACILITIES AT
INTERSECTIONS

Intersection Crossing Markings

Bicycle pavement markings through intersections guide bicyclists on a safe and direct path through the intersection and provide a clear boundary between the paths of through bicyclists and vehicles in the adjacent lane.



TYPICAL APPLICATION

- Streets with conventional, buffered, or separated bike lanes.
- At direct paths through intersections.
- Streets with high volumes of adjacent traffic.
- Where potential conflicts exist between through bicyclists and adjacent traffic.

DESIGN FEATURES

- Intersection markings should be the same width and in line with leading bike lane.
- A** Dotted lines should be a minimum of 6 inches wide and 4 feet long, spaced every 12 feet.
- All markings should be white, skid resistant and retro-reflective (MUTCD 9C.02.02).
- B** Green pavement markings may be used between the dotted lines to enhance visibility.

Intersection Crossing Markings



Intersection crossing markings can be used at signalized intersections or high volume minor street and driveway crossings, as illustrated above.

FURTHER CONSIDERATIONS

Dropped lanes, where a through lane transitions to the right turn lane, can be particularly challenging for bicyclists and should be avoided where practicable.

CRASH REDUCTION

A study on the safety effects of intersection crossing markings found a reduction in accidents by 10 percent and injuries by 19 percent.

A study in Portland, OR found that significantly more motorists yielded to bicyclists after the colored pavement had been installed (92 percent in the after period versus 72 percent in the before period).

CONSTRUCTION COSTS

The cost for installing intersection crossing markings will depend on the implementation approach. On roadways with adequate width for reconfiguration or restriping, costs may be negligible when provided as part of routine overlay or repaving projects.

Typical shared lane markings cost \$180 each.

Additional References and Guidelines

Letter to FHWA from the Bicycle Technical Committee for the MUTCD. Bicycle Lane Extensions through Intersections. June 2014.

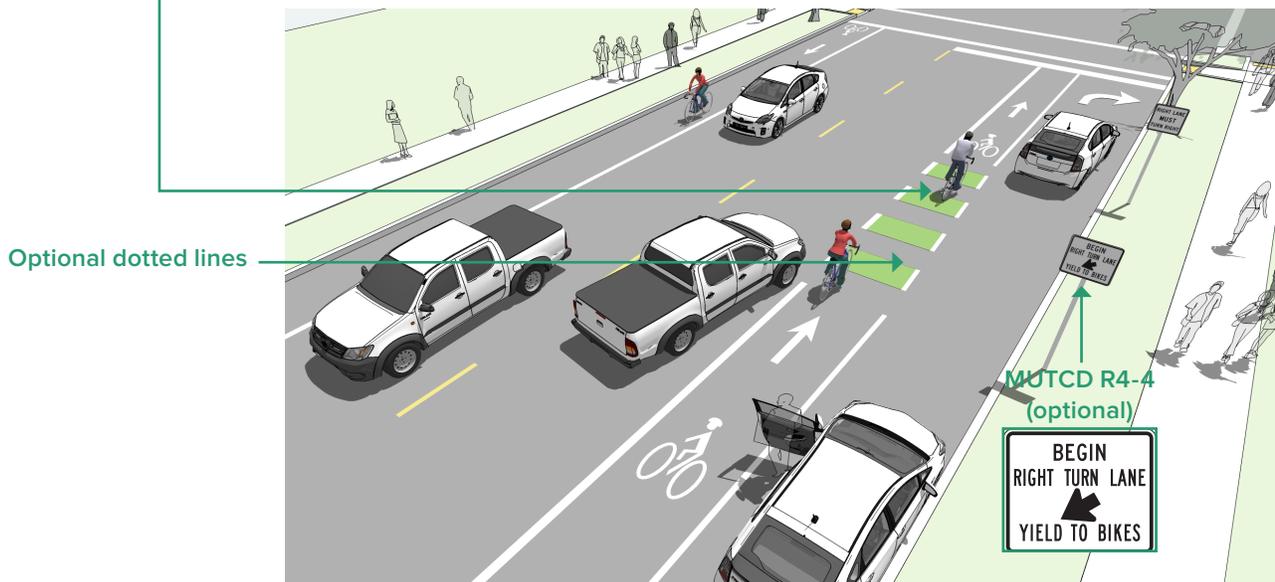
Jensen, S.U. (2008). Safety effects of blue cycle crossings: A before-after study. Accident Analysis & Prevention, 40(2), 742-750.

Hunter, W.W. et al. (2000). Evaluation of Blue Bike-Lane Treatment in Portland, Oregon. Transportation Research Record, 1705, 107-115.

Bike Lanes at Right Turns

The appropriate treatment at right-turn lanes is to place the bike lane between the right-turn lane and the right-most through lane or, where right-of-way is insufficient, to use a shared bike lane/turn lane.

Colored pavement may be used in the weaving area to increase visibility and awareness of potential conflict



TYPICAL APPLICATION & DESIGN FEATURES

At auxiliary right turn only lanes (add lane):

- Continue existing bike lane width; standard width of 5 to 6 feet or 4 feet in constrained locations.
- Use signage to indicate that motorists should yield to bicyclists through the conflict area.
- Consider using colored conflict areas to promote visibility of the mixing zone.

Where a through lane becomes a right turn only lane:

- Do not define a dotted line merging path for bicyclists.
- Drop the bicycle lane in advance of the merge area.
- Use shared lane markings to indicate shared use of the lane in the merging zone.

Bike Lanes at Right Turns



Drivers wishing to enter the right turn lane must transition across the bicycle lane in advance of the turn.

FURTHER CONSIDERATIONS

- The bicycle lane maintains a straight path, and drivers must weave across, providing clear right-of-way priority to bicyclists.
- Maintaining a straight bicycle path reinforces the priority of bicyclists over turning cars. Drivers must yield to bicyclists before crossing the bike lane to enter the turn only lane.
- Through lanes that become turn only lanes are difficult for bicyclists to navigate and should be avoided.
- The use of dual right-turn-only lanes should be avoided on streets with bike lanes (AASHTO, 2013). Where there are dual right-turn-only lanes, the bike lane should be placed to the left of both right-turn lanes, in the same manner as where there is just one right-turn-only lane.

CRASH REDUCTION

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

CONSTRUCTION COSTS

The cost for installing bicycle lanes will depend on the implementation approach. On roadways with adequate width for reconfiguration or restriping, costs may be negligible when provided as part of routine overlay or repaving projects.

Typical costs are \$16,000 per mile for restriping.

Combined Bike Lane/Turn Lane

Where there isn't room for a conventional bicycle lane and turn lane a combined bike lane/turn lane creates a shared lane where bicyclists can ride and turning motor vehicles yield to through traveling bicyclists. The combined bicycle lane/turn lane places shared lane markings within a right turn only lane.



TYPICAL APPLICATION

- Most appropriate in areas with lower posted speeds (30 MPH or less) and with lower traffic volumes (10,000 ADT or less).
- May not be appropriate for high speed arterials or intersections with long right turn lanes.
- May not be appropriate for intersections with large percentages of right-turning heavy vehicles.

DESIGN FEATURES

- A** Maximum shared turn lane width is 13 feet; narrower is preferable (NACTO, 2012).
- B** Shared Lane Markings should indicate preferred positioning of bicyclists within the combined lane.
- C** A “Right Lane Must Turn Right” (MUTCD R3-7R) sign with an “EXCEPT BIKES” plaque may be needed to permit through bicyclists to use a right turn lane.
- D** Use “Begin Right Turn Lane Yield To Bikes” signage (MUTCD R4-4) to indicate that motorists should yield to bicyclists through the conflict area.

Combined Bike Lane/Turn Lane



Shared lane markings and signs indicate that bicyclists should ride on the left side of this right turn only lane.

FURTHER CONSIDERATIONS

- This treatment is recommended at intersections lacking sufficient space to accommodate both a standard through bike lane and right turn lane.
- Not recommended at intersections with high peak motor vehicle right turn movements.
- Combined bike lane/turn lane creates safety and comfort benefits by negotiating conflicts upstream of the intersection area.

CRASH REDUCTION

A survey in Eugene, OR found that more than 17 percent of the surveyed bicyclists using the combined turn lane felt that it was safer than the comparison location with a standard-width right-turn lane, and another 55 percent felt that the combined-lane site was no different safety-wise than the standard-width location.

CONSTRUCTION COSTS

The cost for installing a combined turn lane will depend on the implementation approach. On roadways with adequate width for reconfiguration or restriping, costs may be negligible when provided as part of routine overlay or repaving projects.

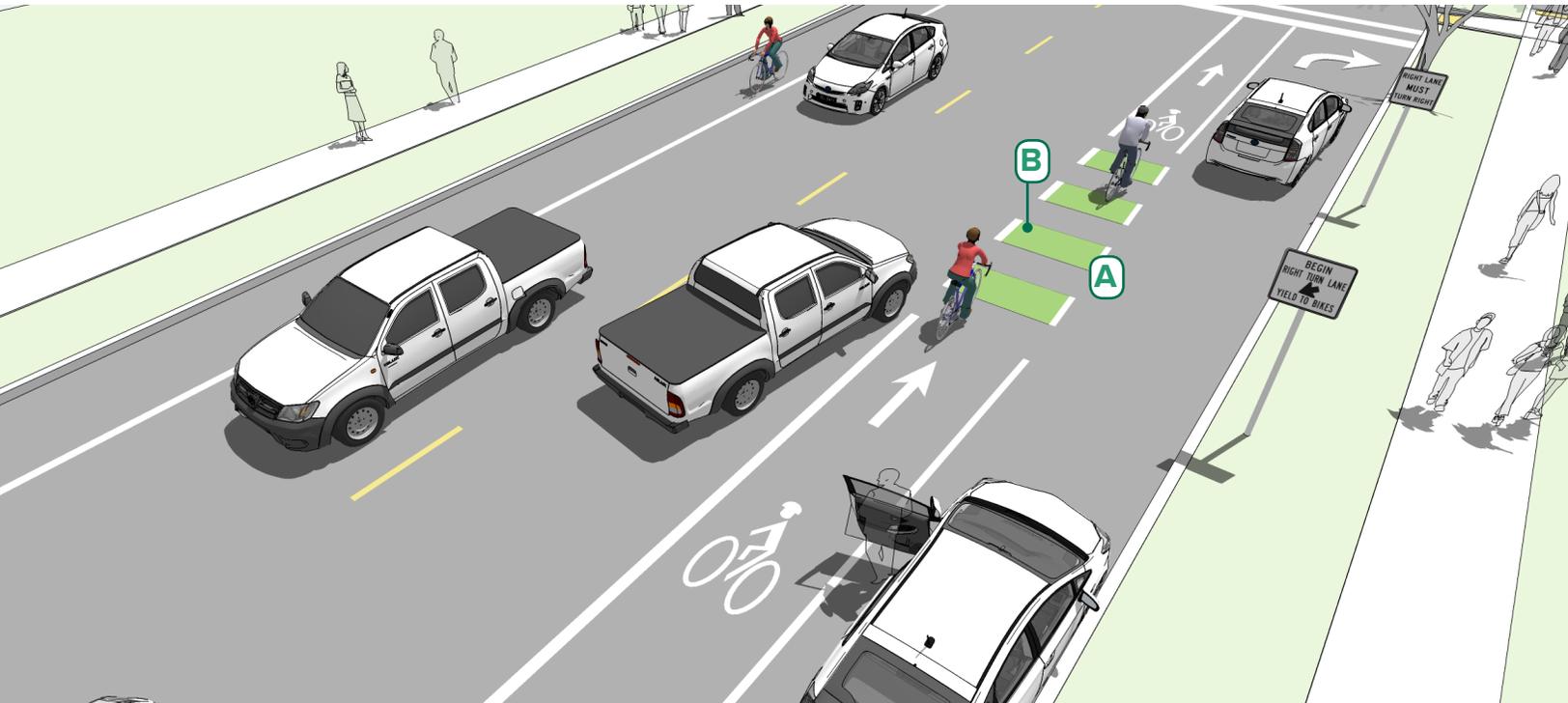
Typical costs are \$16,000 per mile for restriping. Typical yield lines cost \$10 per square foot or \$320 each. Typical shared lane markings cost \$180 each.

Additional References and Guidelines

Hunter, W.W. (2000). Evaluation of a Combined Bicycle Lane/Right-Turn Lane in Eugene, Oregon. Publication No. FHWA-RD-00-151, Federal Highway Administration, Washington, DC.

Colored Bicycle Lanes

Colored pavement within a bicycle lane may be used to increase the visibility of the bicycle facility, raise awareness of the potential to encounter bicyclists and reinforce priority of bicyclists in conflict areas.



TYPICAL APPLICATION

- Within a weaving or conflict area to identify the potential for bicyclist and motorist interactions and assert bicyclist priority.
- Across intersections, driveways and stop or yield-controlled cross-streets.

DESIGN FEATURES

- A** Typical white bike lanes (solid or dotted 6 inch stripe) are used to outline the green colored pavement.
- B** In weaving or turning conflict areas, preferred striping is dashed, to match the bicycle lane line extensions.
 - The colored surface should be skid resistant and retro-reflective (MUTCD 9C.02.02).
 - In exclusive use areas, such as bike boxes, color application should be solid green.

Colored Bicycle Lane



A colored bicycle lane on Laurel Street in Santa Cruz, CA alerts users to potential merging in advance of an intersection.

FURTHER CONSIDERATIONS

- Green colored pavement shall be used in compliance with FHWA Interim Approval (FHWA IA-14.10).
- While other colors have been used (red, blue, yellow), green is the recommended color in the US.
- The application of green colored pavement within bicycle lanes is an emerging practice. The guidance recommended here is based on best practices in cities around the county.

CRASH REDUCTION

Before and after studies of colored bicycle lane installations have found a reduction in bicycle/vehicle collisions by 38 percent and a reduction in serious injuries and fatalities of bicyclists by 71 percent. A study in Portland, OR found a 38 percent decrease in the rate of conflict between bicyclists and motorists after colored lanes were installed.

CONSTRUCTION COSTS

The cost for installing colored bicycle lanes will depend on the materials selected and implementation approach. Typical costs range from \$1.20/sq. foot installed for paint to \$14/sq. foot installed for Thermoplastic. Colored pavement is more expensive than standard asphalt installation, costing 30-50 percent more than non-colored asphalt.

Additional References and Guidelines

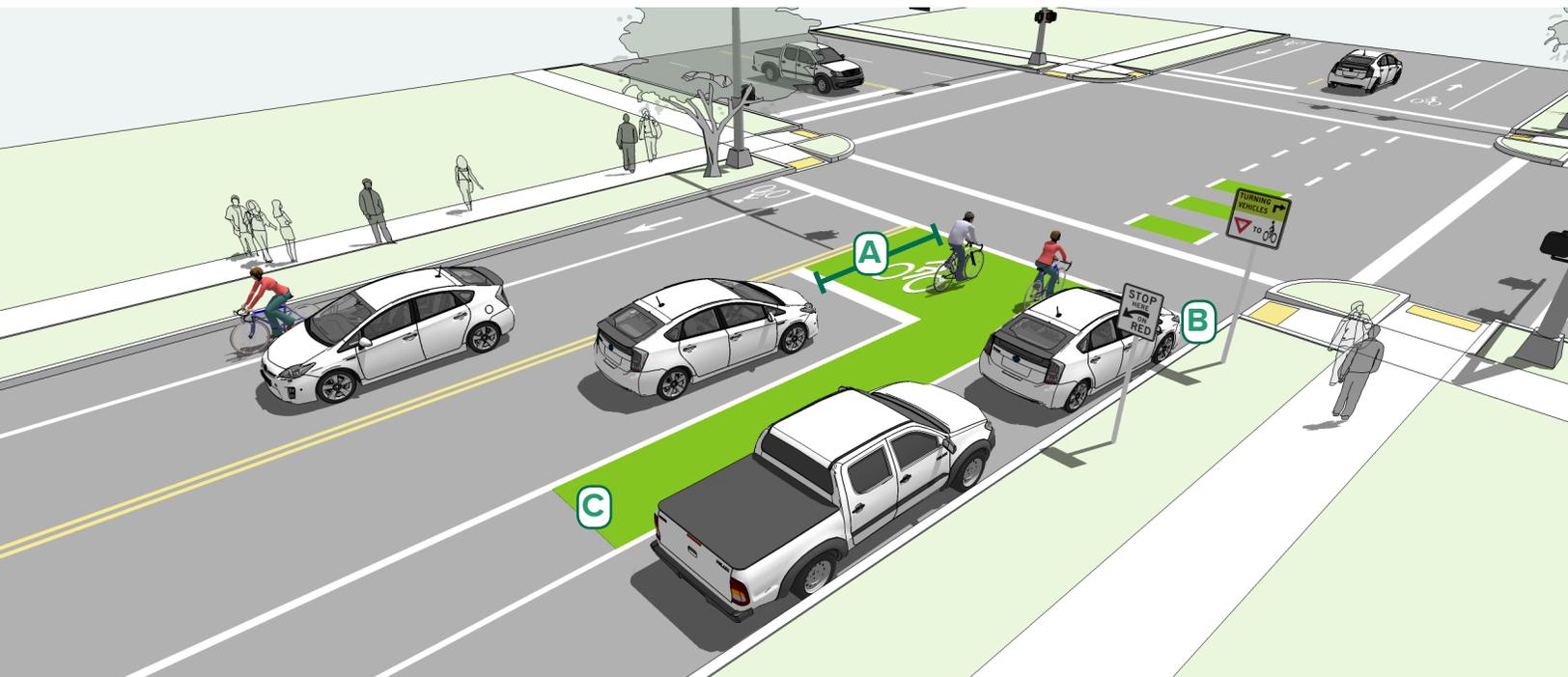
FHWA. Interim Approval for Optional Use of Green Colored Pavement for Bike Lanes (IA-14). 2011.

Jensen, S.U., et. al., "The Marking of Bicycle Crossings at Signalized Intersections," Nordic Road and Transport Research No. 1, 1997, pg. 27.

Hunter, W. W., et. al., Evaluation of the Blue Bike-Lane Treatment Used in Bicycle/Motor Vehicle Conflict Areas in Portland, Oregon, McLean, VA: FHWA, 2000, pg. 25.

Bike Box

A bike box is a designated area located at the head of a traffic lane at a signalized intersection that provides bicyclists with a safe and visible space to get in front of queuing traffic during the red signal phase. Motor vehicles must queue behind the white stop line at the rear of the bike box. On a green signal, all bicyclists can quickly clear the intersection.



TYPICAL APPLICATION

- At potential areas of conflict between bicyclists and turning vehicles, such as a right or left turn locations.
- At signalized intersections with high bicycle volumes.
- At signalized intersections with high vehicle volumes.

DESIGN FEATURES

- A** 14 foot minimum depth from back of crosswalk to motor vehicle stop bar (NACTO, 2012).
- B** A “No Turn on Red” (MUTCD R10-11) sign shall be installed overhead to prevent vehicles from entering the Bike Box. A “Stop Here on Red” (MUTCD R10-6) sign should be post mounted at the stop line to reinforce observance of the stop line.
- C** A 50 foot ingress lane should be used to provide access to the box.
 - Use of green colored pavement is optional.

Bike Box



A bike box allows for cyclists to wait in front of queuing traffic, providing high visibility, and a head start over motor vehicle traffic.

FURTHER CONSIDERATIONS

- This treatment positions bicycles together and on a green signal, all bicyclists can quickly clear the intersection, minimizing conflict and delay to transit or other traffic.
- Pedestrians also benefit from bike boxes, as they experience reduced vehicle encroachment into the crosswalk.

CRASH REDUCTION

A study of motorist/bicyclist conflicts at bike boxes indicate a 35 percent decrease in conflicts (CMF ID: 1718). A study done in Portland in 2010 found that 77 percent of bicyclists felt bicycling through intersections was safer with the bike boxes.

CONSTRUCTION COSTS

Costs will vary due to the type of paint used and the size of the bike box, as well as whether the treatment is added at the same time as other road treatments.

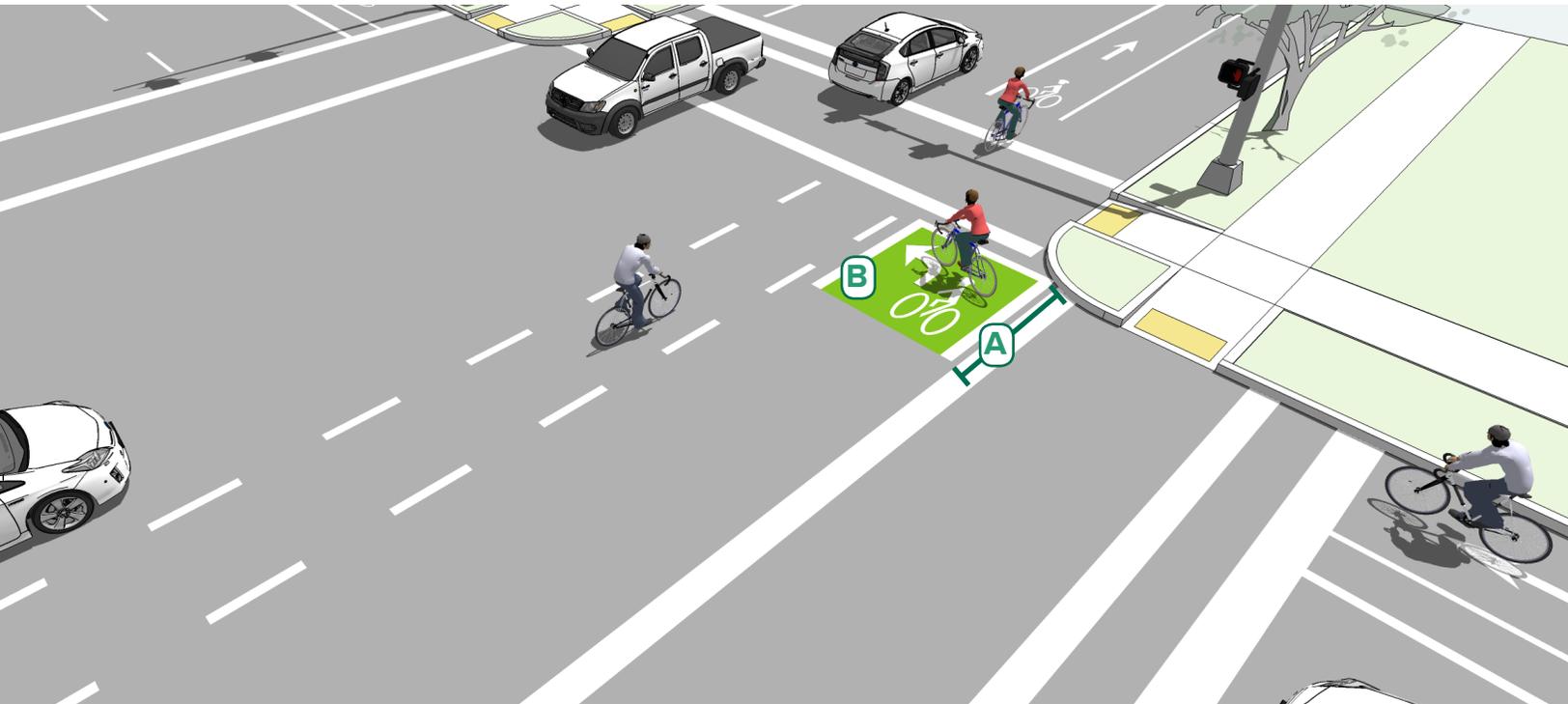
The typical cost for painting a bike box is \$11.50 per sq. foot.

Additional References and Guidelines

Monsere, C. & Dill, J. (2010). Evaluation of Bike Boxes at Signalized Intersections. Final Draft. Oregon Transportation Research and Education Consortium.

Two-Stage Turn Boxes

Two-stage turn boxes offer bicyclists a safe way to make turns at multi-lane signalized intersections from a physically separated or conventional bike lane. On physically separated bike lanes, bicyclists are often unable to merge into traffic to turn due to physical separation, making the provision of two-stage turn boxes critical.



TYPICAL APPLICATION

- Streets with high vehicle speeds and/or traffic volumes.
- At intersections locations of multi-lane roads with signalized intersections.
- At signalized intersections with a high number of bicyclists making a left turn from a right side facility.

DESIGN FEATURES

- The two-stage turn box shall be placed in a protected area. Typically this is within the shadow of an on-street parking lane or separated bike lane buffer area and should be placed in front of the crosswalk to avoid conflict with pedestrians.

- A** 8 foot by 6 foot preferred depth of bicycle storage area (6 foot by 3 foot minimum).
- B** Bicycle stencil and turn arrow pavement markings shall be used to indicate proper bicycle direction and positioning (NACTO, 2012).

Jughandle Turn Box

This MUTCD compliant design carves a jughandle out of the sidewalk to provide space for waiting bicyclists.

Separated Bike Lane Turn Box

On separated bike lanes, the two-stage turn box can be located in the protected buffer/parking area.

FURTHER CONSIDERATIONS

- Consider providing a “No Turn on Red” (MUTCD R10-11) on the cross street to prevent motor vehicles from entering the turn box.
- This design formalizes a maneuver called a “box turn” or “pedestrian style turn.”
- Some two-stage turn box designs are considered experimental by FHWA.
- Design guidance for two-stage turns apply to both bike lanes and separated bike lanes.
- Two-stage turn boxes reduce conflicts in multiple ways; from keeping bicyclists from queuing in a bike lane or crosswalk and by separating turning bicyclists from through bicyclists.
- Bicyclist capacity of a two-stage turn box is influenced by physical dimension (how many bicyclists it can contain) and signal phasing (how frequently the box clears).

CRASH REDUCTION

There are no Crash Modification Factors (CMFs) available for this treatment.

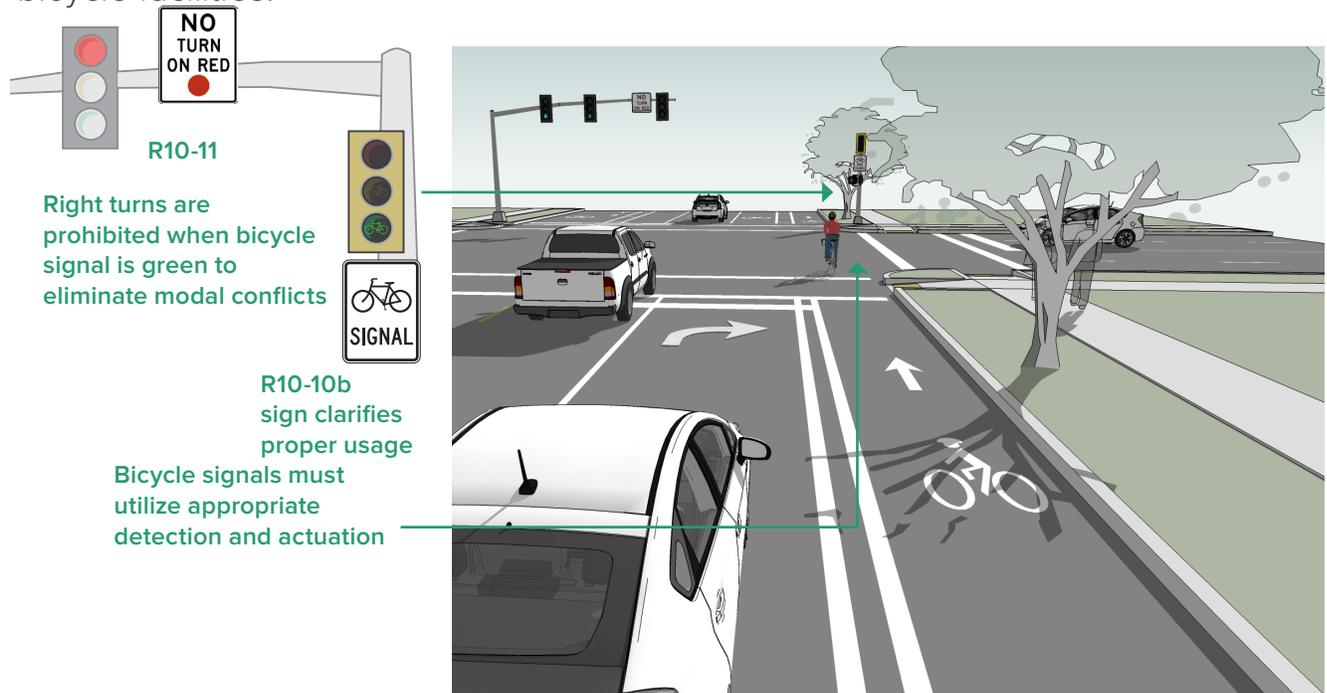
CONSTRUCTION COSTS

Costs will vary due to the type of paint used and the size of the two-stage turn box, as well as whether the treatment is added at the same time as other road treatments.

The typical cost for painting a two-stage turn box is \$11.50 per square ft.

Bike Signal Head

A bicycle signal is an electrically powered traffic control device that should only be used in combination with an existing traffic signal. Bicycle signals are typically used to improve identified safety or operational problems involving bicycle facilities.



TYPICAL APPLICATION

- Bicycle signal heads may be installed at signalized intersections to indicate bicycle signal phases and other bicycle-specific timing strategies. Bicycle signals can be actuated with bicycle sensitive loop detectors, video detection, or push buttons.
- Bicycle signals are typically used to provide guidance for bicyclists at intersections where they may have different needs from other road users (e.g. bicycle-only movements).

DESIGN FEATURES

Specific locations where bicycle signals have had a demonstrated positive effect include:

- Those with high volume of bicyclists at peak hours
- Those with high numbers of bicycle/motor vehicle crashes, especially those caused by turning vehicle movements
- At T-intersections with major bicycle movement along the top of the “T.”
- At the confluence of an off-street bike path and a roadway intersection
- Where separated bike paths run parallel to arterial streets

ADDITIONAL REFERENCES AND GUIDELINES

FHWA. MUTCD - Interim Approval for Optional Use of a Bicycle Signal Face (IA-16). 2013.

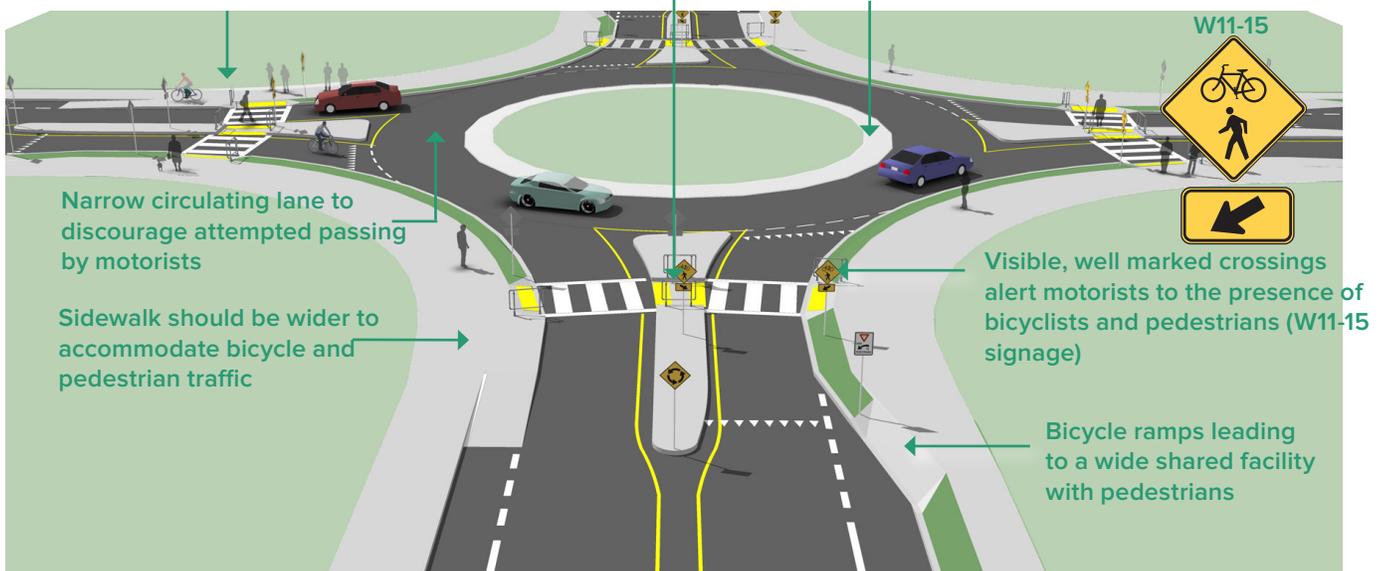
Bicyclists at Single Lane Roundabouts

Roundabouts are circular intersection designed with yield control for all entering traffic, channelized approaches and geometry to induce desirable speeds. They are used as an alternative to intersection signalization.

Holding rails with bicycle foot rests can provide support for elderly pedestrians or bicyclists waiting to cross the street.

Crossings set back at least one car length from the entrance of the roundabout

Truck apron can provide adequate clearance for longer vehicles



TYPICAL APPLICATION

- On bicycle routes a roundabout or neighborhood traffic circle is preferable to stop control as bicyclists do not like to lose their momentum due to physical effort required.
- At intersections of multi-use paths, pedestrian and bicycle only roundabouts are an excellent form of non-motorized user traffic control.

DESIGN FEATURES

It is important to indicate to motorists, bicyclists and pedestrians the right-of-way rules and correct way for them to circulate, using appropriately designed signage, pavement markings, and geometric design elements.

- 25 mph maximum circulating design speed.
- Design approaches/exits to the lowest speeds possible.
- Encourage bicyclists navigating the roundabout like motor vehicles to “take the lane.”
- Maximize yielding rate of motorists to pedestrians and bicyclists at crosswalks.
- Provide separated facilities for bicyclists who prefer not to navigate the roundabout on the roadway.



06

BICYCLE FACILITY AMENITIES

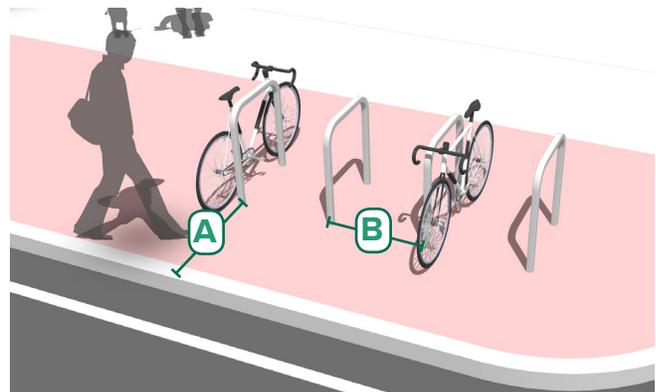
Bike Parking

Bicyclists expect a safe, convenient place to secure their bicycle when they reach their destination. This may be short-term parking of two hours or less, or long-term parking for employees, students, residents, and commuters.

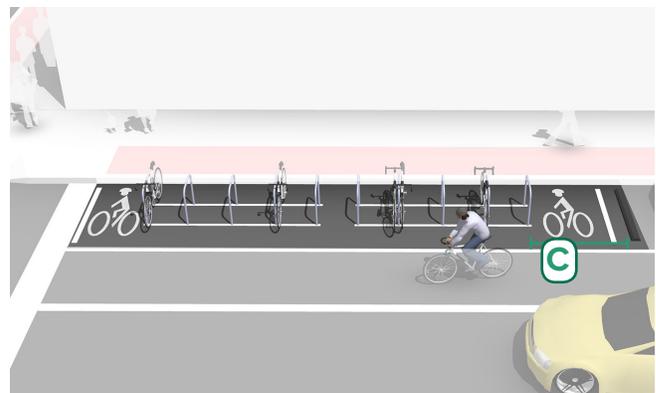
TYPICAL APPLICATION

- Bicycle parking facilities shall be located in highly visible well-lighted areas. In order to maximize security, whenever possible short-term bicycle parking facilities shall be located in areas highly visible from the street and from the interior of the building they serve (i.e. placed adjacent to windows).
- Bike racks provide short-term bicycle parking and is meant to accommodate visitors, customers, and others expected to depart within two hours. It should be an approved standard rack, appropriate location and placement, and weather protection.
- On-street bike corrals (also known as on-street bicycle parking) consist of bicycle racks grouped together in a common area within the street traditionally used for automobile parking. Bicycle corrals are reserved exclusively for bicycle parking and provide a relatively inexpensive solution to providing high-volume bicycle parking. Bicycle corrals can be implemented by converting one or two on-street motor vehicle parking spaces into on-street bicycle parking. Each motor vehicle parking space can be replaced with approximately 6-10 bicycle parking spaces.

Perpendicular Bike Racks



Bike Corral



CONSTRUCTION COSTS

Costs can vary based on the design and materials used. Bicycle rack costs can range from approximately \$60 to \$3,600, depending on design and materials used. On average the cost is approximately \$660. Bicycle lockers costs range from \$1,280 to \$2,680.

Wayfinding Sign Types

The ability to navigate through a city is informed by landmarks, natural features, and other visual cues. Signs throughout the city should indicate to bicyclists the direction of travel, the locations of destinations and the travel time/distance to those destinations. A bicycle wayfinding system consists of comprehensive signing and/or pavement markings to guide bicyclists to their destinations along preferred bicycle routes.



D11-1c



D1-1



D11-1/D1-3a

TYPICAL APPLICATION

- Wayfinding signs will increase users' comfort and accessibility to the bicycle network.
- Signage can serve both wayfinding and safety purposes including:
 - Helping to familiarize users with the bicycle network
 - Helping users identify the best routes to destinations
 - Helping to address misconceptions about time and distance
 - Helping overcome a “barrier to entry” for people who are not frequent bicyclists (e.g., “interested but concerned” bicyclists)

DESIGN FEATURES

- A** Confirmation signs indicate to bicyclists that they are on a designated bikeway. Make motorists aware of the bicycle route. Can include destinations and distance/time but do not include arrows.
- B** Turn signs indicate where a bikeway turns from one street onto another street. These can be used with pavement markings and include destinations and arrows.
- C** Decisions signs indicate the junction of two or more bikeways and inform bicyclists of the designated bike route to access key destinations. These include destinations, arrows and distances. Travel times are optional but recommended.

Community Logos on Signs



Wayfinding signs can include a local community identification logo, as this example from Oakland, CA.

Custom Street Signs (Berkeley, CA)



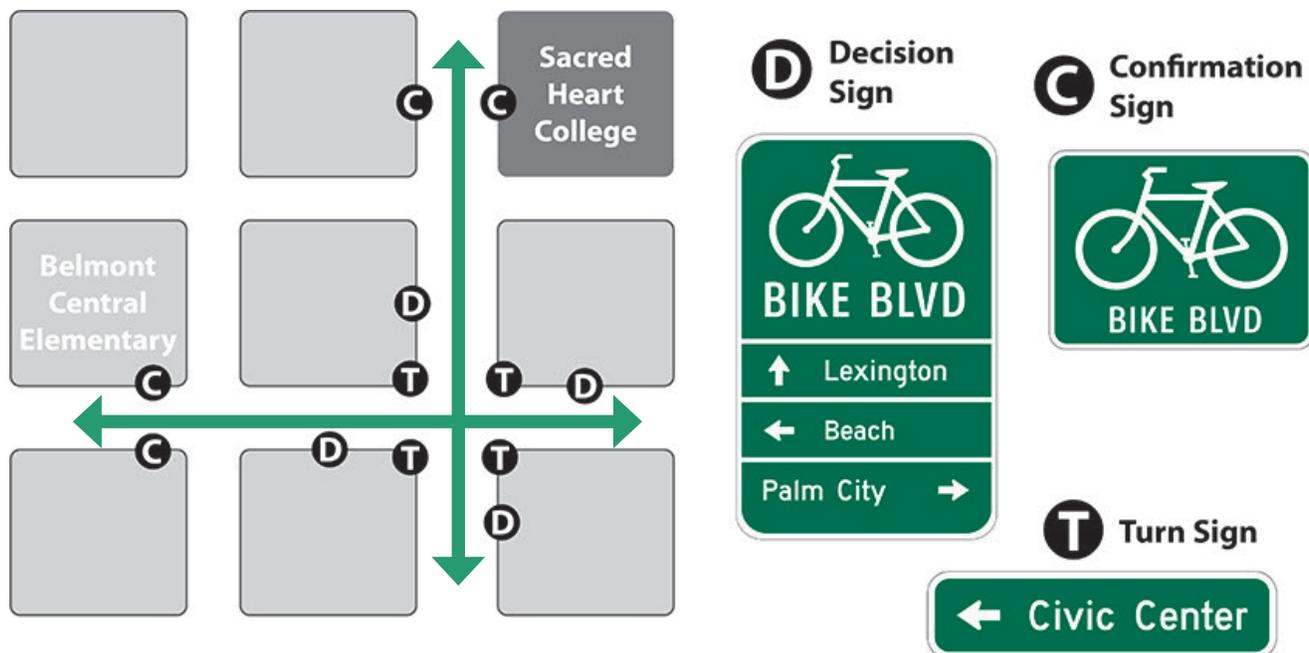
Custom street signs can also act as a type of confirmation sign, to let all users know the street is prioritized for bicyclists.

FURTHER CONSIDERATIONS

- Bicycle wayfinding signs also visually cue motorists that they are driving along a bicycle route and should use caution. Signs are typically placed at key locations leading to and along bicycle routes, including the intersection of multiple routes.
- Too many road signs tend to clutter the right-of-way, and it is recommended that these signs be posted at a level most visible to bicyclists rather than per vehicle signage standards.
- A community-wide bicycle wayfinding signage plan would identify:
 - Sign locations
 - Sign type – what information should be included and design features
 - Destinations to be highlighted on each sign – key destinations for bicyclists
 - Approximate distance and travel time to each destination
- Green is the color used for directional guidance and is the most common color of bicycle wayfinding signage in the US, including those in the MUTCD.
- Check wayfinding signage along bikeways for signs of vandalism, graffiti, or normal wear and replace signage along the bikeway network as-needed.

Wayfinding Sign Placement

Signs are placed at decision points along bicycle routes – typically at the intersection of two or more bikeways and at other key locations leading to and along bicycle routes.



TYPICAL APPLICATION

Confirmation Signs

- Placed every $\frac{1}{4}$ to $\frac{1}{2}$ mile on off-street facilities and every 2 to 3 blocks along on-street bicycle facilities, unless another type of sign is used (e.g., within 150 ft of a turn or decision sign).
- Should be placed soon after turns to confirm destination(s). Pavement markings can also act as confirmation that a bicyclist is on a preferred route.

Turn Signs

- Near-side of intersections where bike routes turn (e.g., where the street ceases to be a bicycle route or does not go through).
- Pavement markings can also indicate the need to turn to the bicyclist.

Decision Signs

- Near-side of intersections in advance of a junction with another bicycle route.
- Along a route to indicate a nearby destination.

DESIGN FEATURES

- MUTCD guidelines should be followed for wayfinding sign placement, which includes mounting height and lateral placement from edge of path or roadway.
- Pavement markings can be used to reinforce routes and directional signage.

Wayfinding Pavement Markings



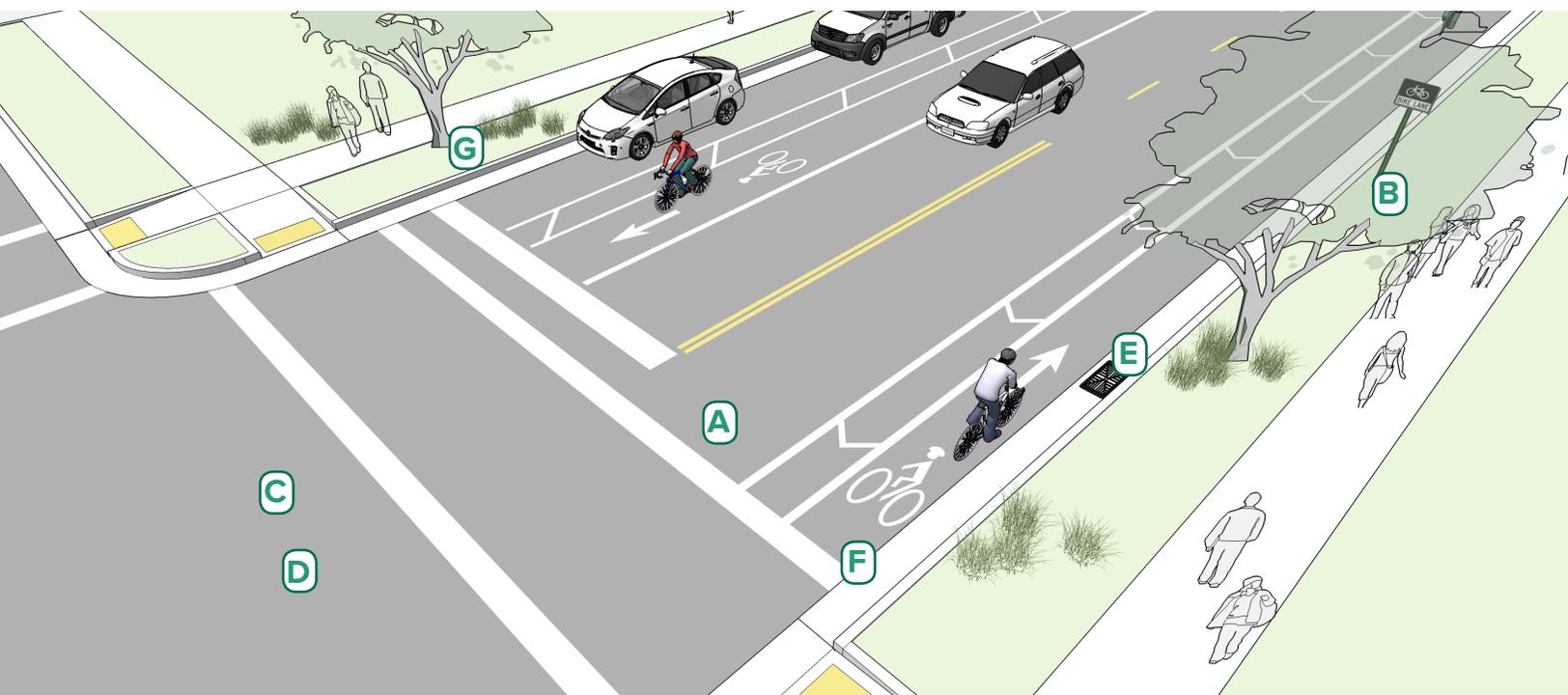
Some cities use pavement markings to indicate required turns along the bicycle route.

FURTHER CONSIDERATIONS

It can be useful to classify a list of destinations for inclusion on the signs based on their relative importance to users throughout the area. A particular destination's ranking in the hierarchy can be used to determine the physical distance from which the locations are signed. For example, primary destinations (such as the downtown area) may be included on signage up to 5 miles away. Secondary destinations (such as a transit station) may be included on signage up to two miles away. Tertiary destinations (such as a park) may be included on signage up to one mile away.

Bikeway Maintenance

Regular bicycle facility maintenance includes sweeping, maintaining a smooth roadway, ensuring that the gutter-to-pavement transition remains relatively flush, and installing bicycle-friendly drainage grates. Pavement overlays are a good opportunity to improve bicycle facilities. The following recommendations provide a menu of options to consider to enhance a maintenance regimen.



MAINTENANCE

A Sweeping

- Establish a seasonal sweeping schedule that prioritizes roadways with major bicycle routes.
- Sweep walkways and bikeways whenever there is an accumulation of debris on the facility.
- In curbed sections, sweepers should pick up debris; on open shoulders, debris can be swept onto gravel shoulders.

B Signage

- Check regulatory and wayfinding signage along bikeways for signs of vandalism, graffiti, or normal wear.
- Replace signage along the bikeway network as-needed.
- Perform a regularly-scheduled check on the status of signage with follow-up as necessary.
- Create a Maintenance Management Plan.

C Roadway Surface

- Maintain a smooth pothole-free surface.
- Ensure that on new roadway construction, the finished surface on bikeways does not vary more than ¼ inch.
- Maintain pavement so ridge buildup does not occur at the gutter-to-pavement transition or adjacent to railway crossings.
- Inspect the pavement 2 to 4 months after trenching construction activities are completed to ensure that excessive settlement has not occurred.

D Pavement Overlays

- Extend the overlay over the entire roadway surface to avoid leaving an abrupt edge.
- If the shoulder or bike lane pavement is of good quality, it may be appropriate to end the overlay at the shoulder or bike lane stripe provided no abrupt ridge remains.
- Ensure that inlet grates, manhole and valve covers are within ¼ inch of the finished pavement surface and are made or treated with slip resistant materials.

E Drainage Grates

- Require all new drainage grates be bicycle-friendly, including grates that have horizontal slats on them so that bicycle tires and assistive devices do not fall through the vertical slats.
- Create a program to inventory all existing drainage grates, and replace hazardous grates as necessary – temporary modifications such as installing rebar horizontally across the grate should not be an acceptable alternative to replacement.

F Gutter to Pavement Transition

- Ensure that gutter-to-pavement transitions have no more than a ¼ inch vertical transition.
- Examine pavement transitions during every roadway project for new construction, maintenance activities, and construction project activities that occur in streets.

G Landscaping

- Ensure that shoulder plants do not hang into or impede passage along bikeways.
- After major damage incidents, remove fallen trees or other debris from bikeways as quickly as possible.

Maintenance Management Plan

- Provide fire and police departments with map of system, along with access points to gates/bollards.
- Enforce speed limits and other rules of the road.
- Enforce all trespassing laws for people attempting to enter adjacent private properties.

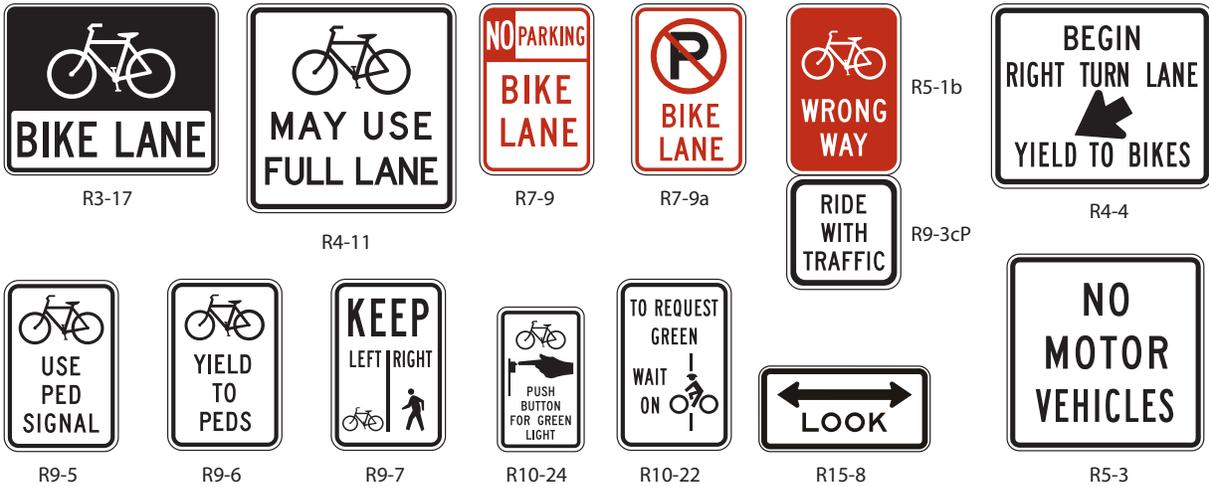
Recommended Walkway and Bikeway Maintenance Activities

Maintenance Activity	Frequency
Inspections	Seasonal – at beginning and end of Summer
Pavement sweeping/blowing	As needed, with higher frequency in the early Spring and Fall
Pavement sealing	5 - 15 years
Pothole repair	1 week – 1 month after report
Culvert and drainage grate inspection	Before Winter and after major storms
Pavement markings replacement	As needed
Signage replacement	As needed
Shoulder plant trimming (weeds, trees, brambles)	Twice a year; middle of growing season and early Fall
Tree and shrub plantings, trimming	1 – 3 years
Major damage response (washouts, fallen trees, flooding)	As soon as possible

Regulatory and Warning Signs

Regulatory signs give a direction that must be obeyed, and apply to intersection control, speed, vehicle movement and parking.

Common Bicycle Oriented Regulatory Signs



Additional Bicycle-Oriented Warning Signs



Bicycle Crossing Assembly



Additional warnings are available to call attention to unexpected conditions for people riding bicycles, such as steep grades, rail crossings, and slippery conditions. A Bicycle Crossing Assembly using W11-1 and W16-7P arrow plaque may be used at the location of a bikeway crossing to warn other road users.

TYPICAL APPLICATION

- Warning signs call attention to unexpected conditions on or adjacent to a street, and to situations that might not be readily apparent to road users.
- Warning signs alert users to conditions that might call for a reduction of speed or an action in the interest of safety and efficient traffic operations.

DESIGN FEATURES

- Small-sized signs or plaques may be used for bicycle-only traffic applications, such as along shared use paths.
- See the MUTCD 9B for a detailed list of regulatory sign application and guidance.
- Fieldwork and engineering judgment are necessary to fine-tune the placement of signs.
- The SHARE THE ROAD plaque (W16-P) shall not be used alone, and must be mounted below a W11-1 vehicular traffic warning sign. It is typically placed along roadways with high levels of bicycle usage but relatively hazardous conditions for bicyclists. The sign should not be used to designate a preferred bicycle route, but may be used along short sections of designated routes where traffic volumes are higher than desirable.

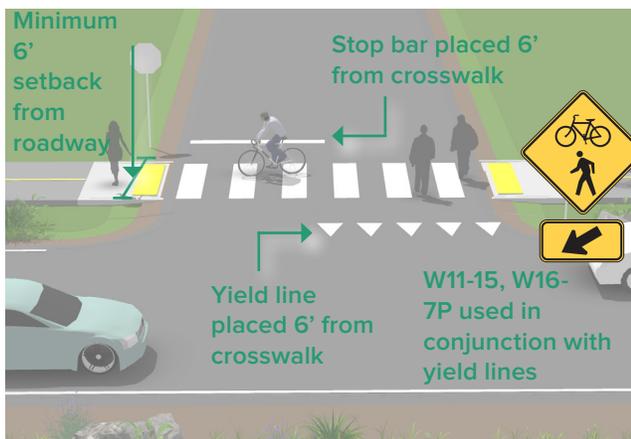


OFF STREET FACILITIES

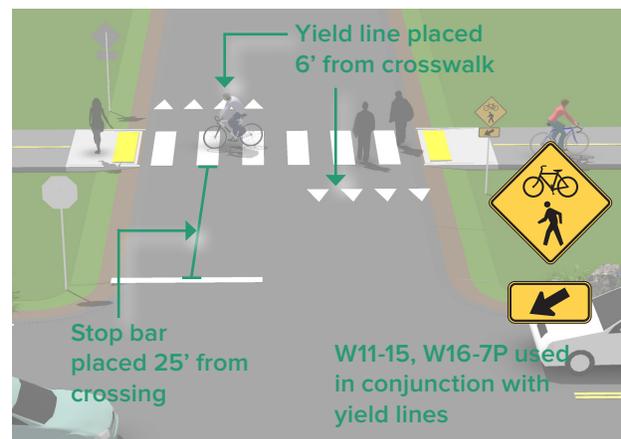
Sidepaths

Shared use paths along roadways, also called sidepaths, are a type of path that run adjacent to a street.

Adjacent Crossing - A separation of 6 feet emphasizes the conspicuous of riders at the approach to the crossing.



Setback Crossing - A set back of 25 feet separates the path crossing from merging/turning movements that may be competing for a driver's attention.



TYPICAL APPLICATION

Along roadways, these facilities create a situation where a portion of the bicycle traffic rides against the normal flow of motor vehicle traffic and can result in wrong-way riding where bicyclists enter or leave the path. The AASHTO Guide for the Development of Bicycle Facilities cautions practitioners of the use of two-way sidepaths on urban or suburban streets with many driveways and street crossings. Well designed sidepaths with logical terminations, and good driveway and local street crossings can be safe and valuable components of a transportation system.

In general, there are two approaches to crossings: adjacent and setback crossings, illustrated above.

DESIGN FEATURES

- Guidance for sidepaths should follow that for general design practices of shared use paths.
- A high number of driveway crossings and intersections create potential conflicts with turning traffic. Consider alternatives to sidepaths on streets with a high frequency of intersections or heavily used driveways.
- Where a sidepath terminates, special consideration should be given to transitions so as not to encourage unsafe wrong-way riding by bicyclists.
- Crossing design should emphasize visibility of users and clarity of expected yielding behavior. Crossings may be STOP or YIELD controlled depending on sight lines and bicycle motor vehicle volumes and speeds.

Shared Use Path

Shared use paths can serve transportation, recreation or both types of trips and are desirable for users of all skill levels preferring separation from traffic. Shared use paths use exclusive rights-of-way with minimal cross flow by motor vehicles.



TYPICAL APPLICATION

- In abandoned rail corridors (commonly referred to as Rails-to-Trails or Rail-Trails).
- In active rail corridors, trails can be built adjacent to active railroads (referred to as Rails-with-Trails).
- In utility corridors, such as powerline and sewer corridors.
- In waterway corridors, such as along canals, drainage ditches, rivers and beaches.
- Along roadways.

DESIGN FEATURES

Width

- 8 feet is the minimum allowed for a two-way bicycle path and is only recommended for low traffic situations.
- 10 feet is recommended in most situations and will be adequate for moderate to heavy use.
- 12 feet is recommended for heavy use situations with high concentrations of multiple users. A separate track (5 foot minimum) can be provided for pedestrian use.

Lateral Clearance

- A 2 foot or greater shoulder on both sides of the path should be provided. An additional ft of lateral clearance (total of 3 feet) is required by the MUTCD for the installation of signage or other furnishings.
- If bollards are used at intersections and access points, they should be colored brightly and/or supplemented with reflective materials to be visible at night.

Overhead Clearance

- Clearance to overhead obstructions should be 8 feet at minimum, with 10 feet recommended.

Striping

- When striping is desired, use a 4 inch dashed yellow centerline stripe.
- Solid centerlines can be provided on tight or blind corners, and on the approaches to roadway crossings.

Slopes

- Vertical grades should generally not exceed 5%, with no more than 30% of the entire trail length having grades in excess of 8%.

FURTHER CONSIDERATIONS

The provision of a shared use path adjacent to a road is not a substitute for the provision of on-road accommodation such as paved shoulders or bike lanes, but may be considered in some locations in addition to on-road bicycle facilities.

CRASH REDUCTION

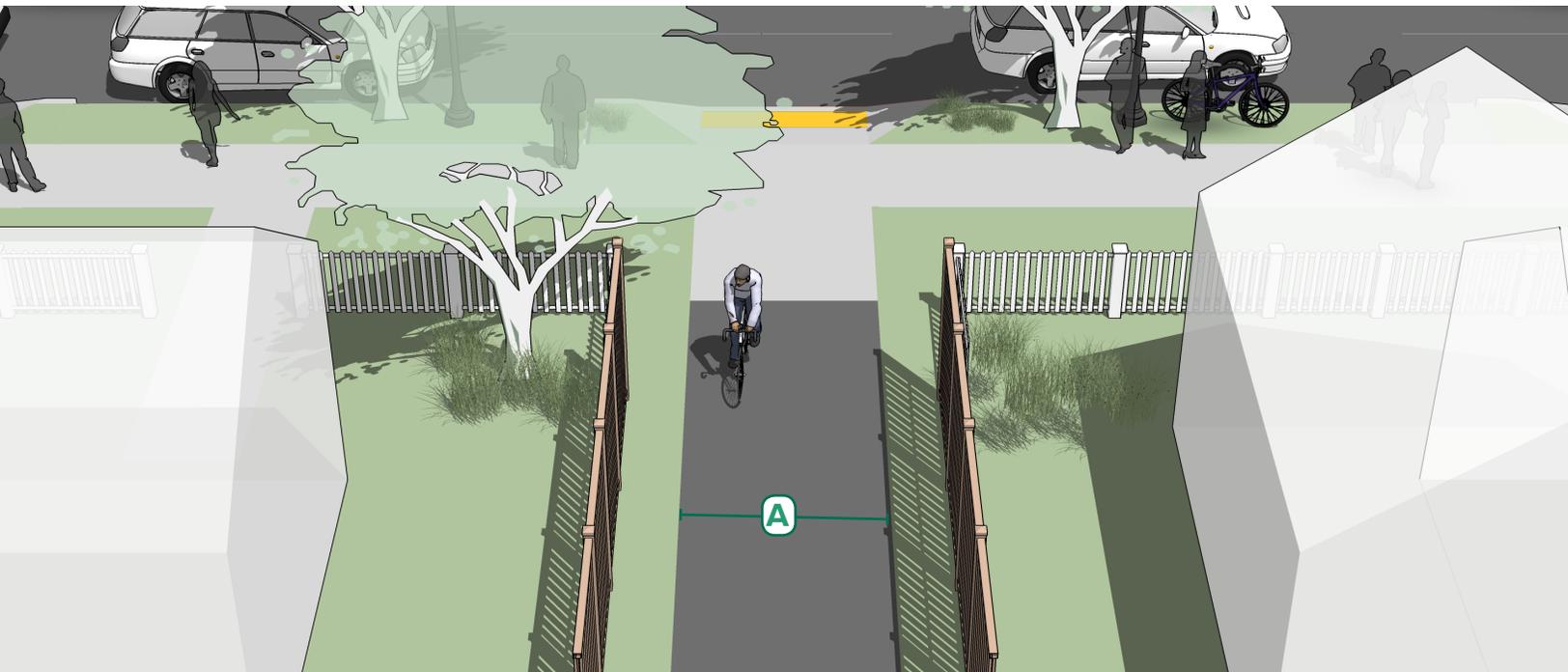
Shared use paths reduce injury rates for cyclists, pedestrians, and other nonmotorized modes by 60 percent compared with on street facilities.

CONSTRUCTION COSTS

The cost of a shared use path can vary, but typical costs are between \$65,000 per mile to \$4 million per mile.

Local Neighborhood Accessways

Neighborhood accessways provide residential areas with direct bicycle and pedestrian access to parks, trails, greenspaces, and other recreational areas. They most often serve as small connections to and from the larger network, typically having their own rights-of-way and easements.



TYPICAL APPLICATION

- Neighborhood accessways should be designed into new subdivisions at every opportunity and should be required by City/County subdivision regulations.
- For existing subdivisions, neighborhood and homeowner association groups are encouraged to identify locations where such connects would be desirable. Nearby residents and adjacent property owners should be invited to provide landscape design input.

DESIGN FEATURES

- Neighborhood accessways should remain open to the public.
- **A** Trail pavement shall be at least 8 feet wide to accommodate emergency and maintenance vehicles and be considered suitable for multi-use.
- Trail widths should be designed to be less than 8 feet wide only when necessary to protect large mature native trees over 18 inches in caliper, wetlands or other ecologically sensitive areas.

This page is intentionally blank

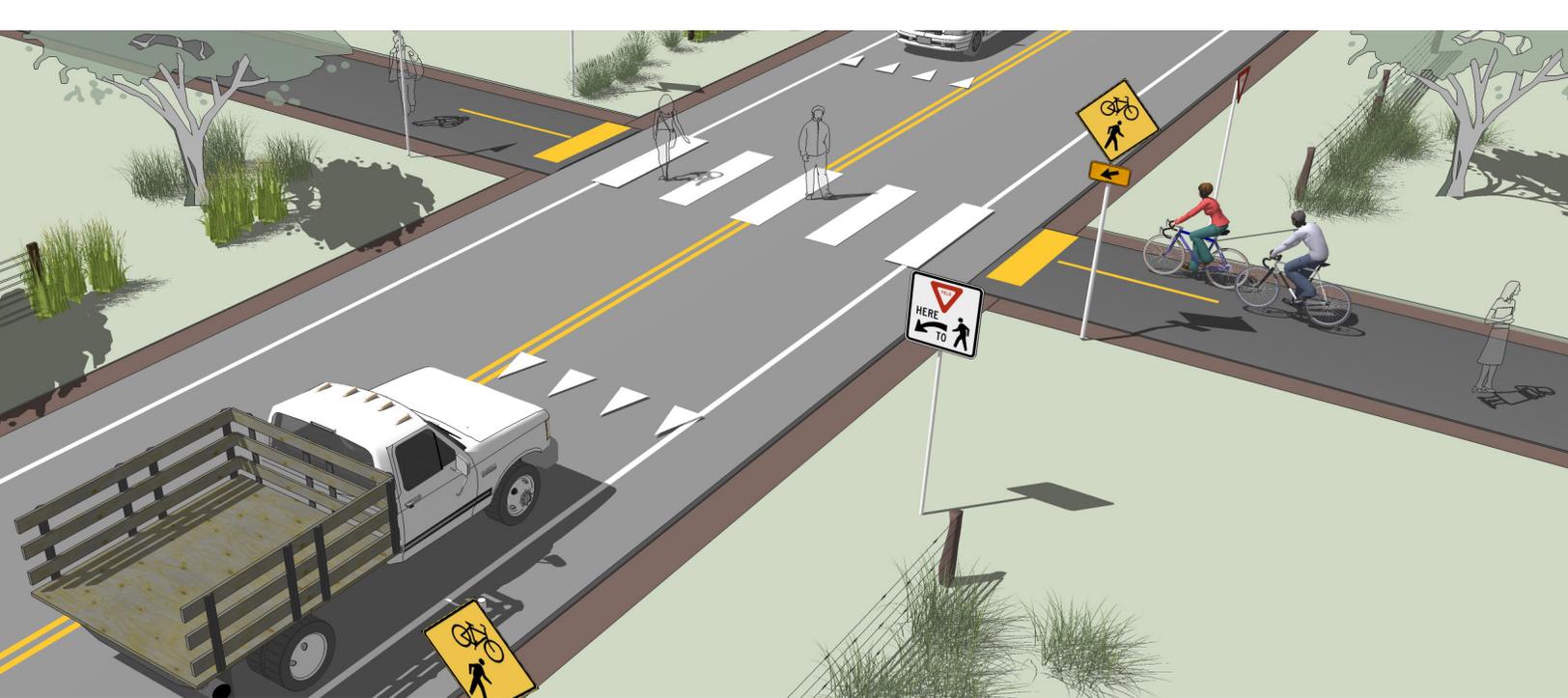


08

OFF STREET FACILITIES AT
INTERSECTIONS

Marked Crossing

A marked/unsignalized crossing typically consists of a marked crossing area, signage, and other markings to raise awareness of the crossing and to reinforce proper yielding behavior. The approach to designing crossings at mid-block locations depends on an evaluation of vehicle volume, line of sight, pathway volume, use patterns, vehicle speed, road type, road width, and other safety issues such as proximity to major attractions.



TYPICAL APPLICATION

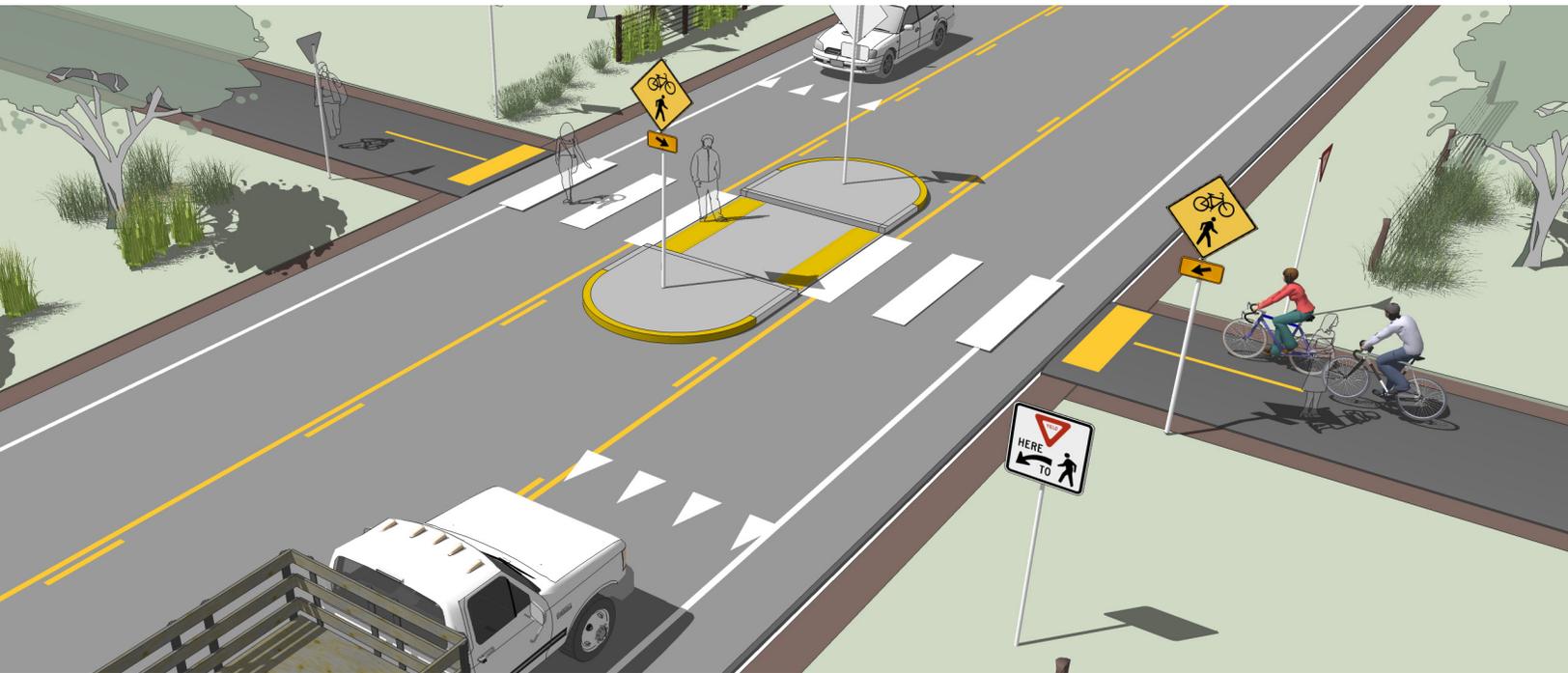
- Maximum Traffic Volumes
 - 9,000-12,000 Average Daily Traffic (ADT) volume
- Maximum travel speed of 35 MPH
- Minimum Sight Lines for motorists to yield to bicyclists. If the path has a stop sign, the below does not apply.
 - 25 MPH zone: 155 feet
 - 35 MPH zone: 250 feet
 - 45 MPH zone: 360 feet

DESIGN FEATURES

- On roadways with low to moderate traffic volumes (less than 12,000 ADT) and a need to control traffic speeds, a raised crosswalk may be the most appropriate crossing design to improve pedestrian visibility and safety.

Median Crossing

On roadways with higher volumes, higher speeds and multi-lanes of vehicular traffic, a median crossing is preferred. A median refuge island can improve user safety by providing pedestrians and bicyclists space to perform the safe crossing of one side of the street at a time.



TYPICAL APPLICATION

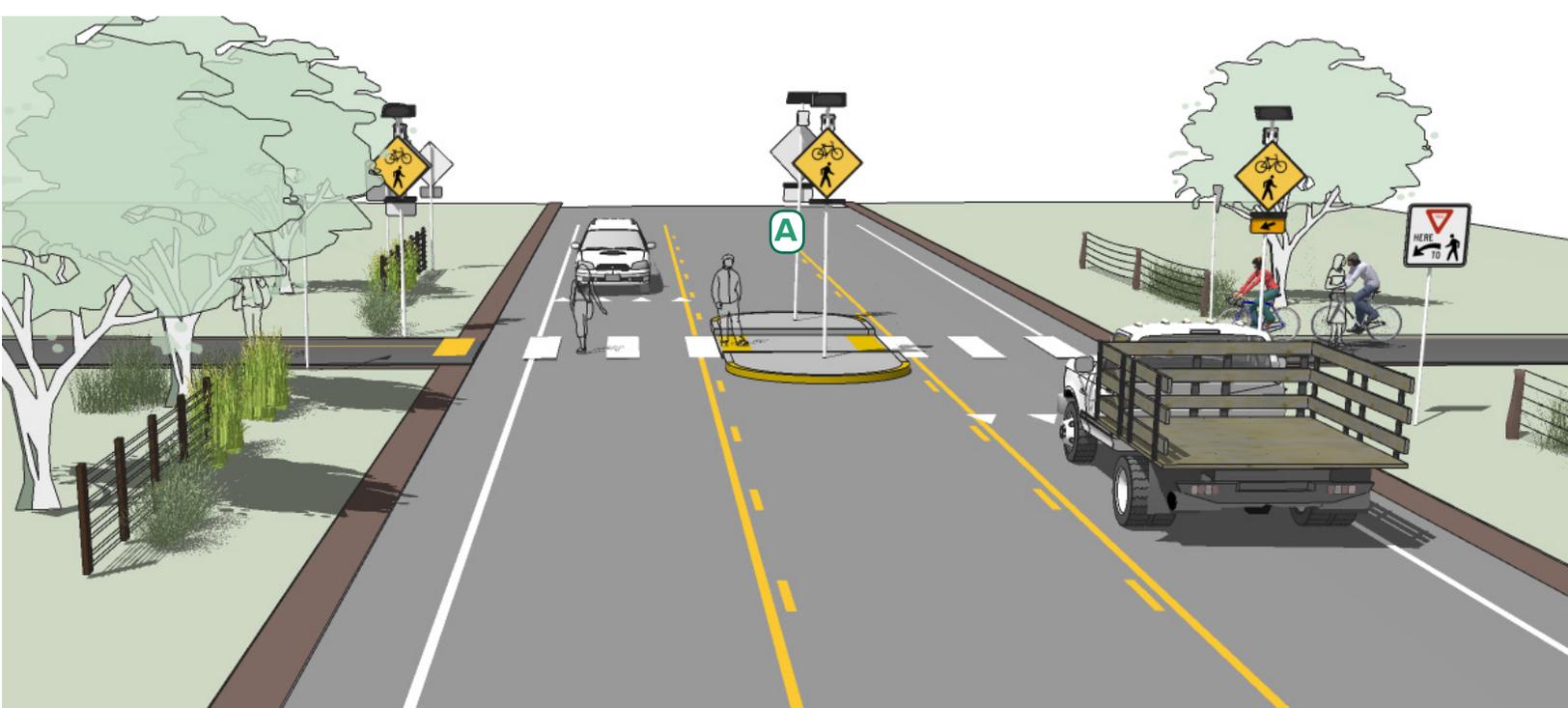
- Maximum Traffic Volumes
 - Up to 15,000 ADT on two-lane roads, preferably with a median
 - Up to 12,000 ADT on four-lane roads with median

DESIGN FEATURES

- Unsignalized crossings of multi-lane arterials over 15,000 ADT may be possible with features such as sufficient crossing gaps (more than 60 per hour), median refuges, and/or active warning devices like rectangular rapid flash beacons or in-pavement flashers, and excellent sight distance. For more information see the discussion of active warning beacons.

Active Enhanced Crossing

Active enhanced crossings are unsignalized crossings with additional treatments designed to increase motor vehicle yielding compliance on multi-lane or high volume roadways. These enhancements include pathway user or sensor actuated warning beacons and Rectangular Rapid Flash Beacons (RRFB) shown below.



TYPICAL APPLICATION

- Guidance for marked/unsignalized crossings applies.
- Warning beacons shall not be used at crosswalks controlled by YIELD signs, STOP signs, or traffic control signals.
- Warning beacons shall initiate operation based on user actuation and shall cease operation at a predetermined time after the user actuation or, with passive detection, after the user clears the crosswalk.

DESIGN FEATURES

- (A)** RRFBs are user actuated lights that supplement warning signs at unsignalized intersections or mid-block crossings.
 - RRFBs should be paired with a marked crosswalk and yield teeth.
 - Push buttons should be easy to identify and located on the right-hand side of the path. They should be positioned so that bicyclists do not have to dismount to activate.
 - Where possible, RRFBs work well as multi-beacon installations on mast arms or in median refuge island crossings to improve driver yielding behavior.

Route Users to Signalized Crossing

Path crossings within approximately 400 feet of an existing signalized intersection with pedestrian crosswalks are typically diverted to the signalized intersection to avoid traffic operation problems when located so close to an existing signal.



TYPICAL APPLICATION

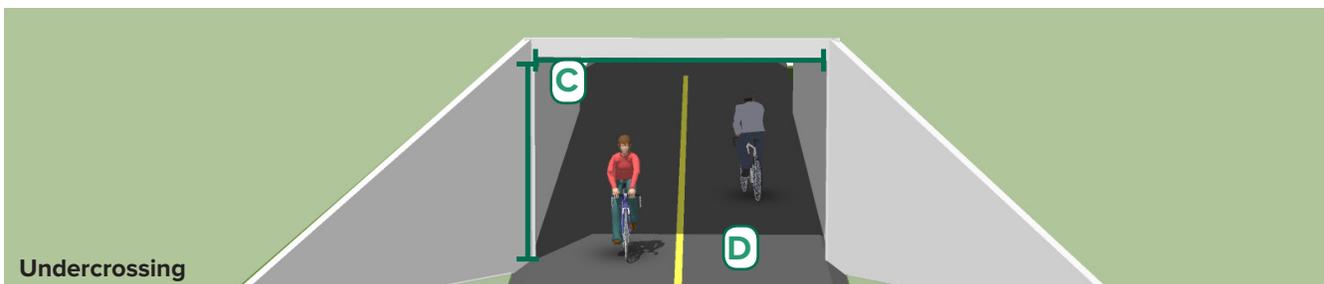
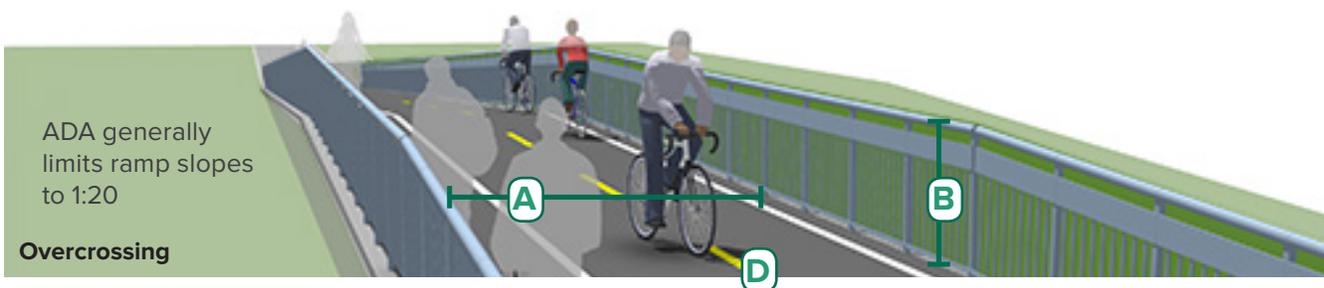
- For this restriction to be effective, barriers and signing may be needed to direct path users to the signalized crossing. If no pedestrian crossing exists at the signal, modifications should be made.
- Path crossings should not be provided within approximately 400 feet of an existing signalized intersection. If possible, route path directly to the signal.

DESIGN FEATURES

- In the US, the minimum distance a marked crossing can be from an existing signalized intersection varies from approximately 250 to 660 feet.
- Engineering judgment and the context of the location should be taken into account when choosing the appropriate allowable setback. Pedestrians are particularly sensitive to out of direction travel and undesired mid-block crossing may become prevalent if the distance is too great.

Grade-Separated Crossings

Grade-separated crossings provide critical non-motorized system links by joining areas separated by barriers such as railroads, waterways, and highway corridors. In most cases, these structures are built in response to user demand for safe crossings where they previously did not exist. There are no minimum roadway characteristics for considering grade separation.



TYPICAL APPLICATION

- Where shared-use paths cross high-speed and high-volume roadways where an at-grade signalized crossing is not feasible or desired, or where crossing railways or waterways.
- Depending on the type of facility or the desired user group, grade separation may be considered in many types of projects.

DESIGN FEATURES

- A** Overcrossings should be at least 8 feet wide with 14 feet preferred and additional width provided at scenic viewpoints.
- B** Railing height must be a minimum of 42 inches for overcrossings.
- C** Undercrossings should be designed at minimum 10 feet in height and 14 feet in width, with greater widths preferred for lengths over 60 feet.
- D** Centerline stripe is recommended for grade-separated facility.

1 CITY OF NORTH SALT LAKE
2 PLANNING COMMISSION MEETING
3 NOVEMBER 26, 2019

4
5 **DRAFT**
6

7 Commission Chair Ted Knowlton called the meeting to order at 6:46 p.m. and William Ward led
8 those present in the Pledge of Allegiance.
9

10 PRESENT: Commission Chair Ted Knowlton
11 Commissioner Kent Kirkham
12 Commissioner William Ward
13 Commissioner Brandon Tucker
14 Commissioner BreAnna Larson
15 Commissioner Natalie Gordon
16

17 EXCUSED: Commissioner Stephen Garn
18

19 STAFF PRESENT: Sherrie Llewelyn, Community Development Director; Kate Werrett,
20 Planner; Andrea Bradford, Minutes Secretary.
21

22 OTHERS PRESENT: Maria Picasso, Picasso Shutters; Dee Lalliss, Valerie Robinson, residents;
23 Brian G.M. Williams, Aaron Rodriguez, LaDiana Tortilla Factory; Colby Anderson, Anderson
24 Wahlen; Seth Ravarino.
25

26 1. PUBLIC COMMENTS
27

28 There were no public comments.
29

30 2. CONSIDERATION OF A REQUEST FOR A CONDITIONAL USE PERMIT FOR A
31 WOOD MANUFACTURING BUSINESS, PICASSO SHUTTERS AT 655 NORTH 700
32 WEST, MARIA PICASSO, APPLICANT
33

34 Kate Werrett reported that the applicant, Picasso Shutters, was proposing to locate a shutter
35 manufacturing business at 655 North 700 West. “Wood product manufacturing” is a conditional
36 use under “Manufacturing” in the Manufacturing-Distribution (MD) Zoning District. There
37 would be 48 employees working at this location, with 38 onsite during the highest shift. Services
38 will include milling, assembly, and painting of planation shutters. Onsite equipment will include:
39 forklifts, paint, paint products, wood, and cargo vans and trucks. The hours of operation hours
40 will be from 6:00am-6:00pm. Per the Code, manufacturing requires “one (1) stall per 1,000
41 square feet of gross floor area or one (1) stall per employee on highest shift, whichever is
42 greater”. While the site does not appear to have adequate parking for 38 employees, which will

43 be onsite during the highest shift, the applicant is working with an adjacent property owner to
44 lease additional parking stalls.

45
46 The applicant has stated that they intend to install a shed for outdoor storage on the property.
47 The Development Review Committee (DRC) recommended approval with two conditions
48 including confirmation that the parking and outdoor storage were in compliance with the City
49 standards and that final approval from the fire marshal, as fire sprinklers are required for this site,
50 prior to the issuance of a business license.

51
52 Maria Picasso, Picasso Shutters, clarified that there were 41 total employees with five employees
53 who would use their own cars to perform business offsite during the day. She said they would
54 only need 37 to 38 stalls for employee parking during the day.

55
56 Kate Werrett explained that they were required to have a parking stall for every employee at their
57 highest shift so this would equal 37 to 38 parking spaces. She clarified that there were currently
58 about 20-25 stalls onsite.

59
60 Maria Picasso stated that there were several additional parking stalls that currently contained
61 machinery, which would be removed and could be used for parking. She also said she was
62 waiting to hear back from the adjacent property owner on leasing additional stalls on their
63 property.

64
65 Commissioner Kirkham asked what types of paints would be used onsite. Maria Picasso replied
66 that ten years ago they switched to green products with low VOC and water based paints as they
67 began reporting to the Division on Air Quality (DAQ).

68
69 Commissioner Gordon asked regarding outdoor storage requirements in this area. Sherrie
70 Llewelyn replied that outdoor storage would need to be screened from public view with a six
71 foot sight obscuring fence. She said the applicant was only proposing to have a storage shed
72 which would not require the fencing.

73
74 Commissioner Tucker asked for clarification on the parking needs. Maria Picasso replied that
75 four to five employees would use their personal vehicles for business offsite during the day.

76
77 Commissioner Gordon explained that the City code required that there must be one parking stall
78 per employee during the busiest shift regardless if there was a car parked onsite or not.

79
80 Commissioner Larson asked if this requirement could be adjusted. Sherrie Llewelyn replied that
81 the Planning Commission could adjust the parking. She said there were approximately 23
82 parking spaces so they would be under their parking requirement.

83

84 Chair Knowlton asked what would happen if the applicant could not meet the parking demand.
85 Sherrie Llewelyn replied that the employees would park on the street or in the vacant lot next
86 door. She said during a snow storm cars could not be parked on the street or they could be
87 fined/towed.

88
89 Chair Knowlton asked Ms. Picasso what would happen if the employee vehicles were towed.
90 Maria Picasso replied that she was trying to make arrangements for additional parking on the
91 vacant lot adjacent to the proposed property. She said she would setup carpools if necessary.

92
93 Commissioner Ward explained that the conditional use approval could be conditioned on Ms.
94 Picasso obtaining an arrangement with the neighbor for an additional 17 parking stalls or the
95 Commission could approve this item with a reduced number of parking stalls to what was platted
96 and then Ms. Picasso could obtain additional parking or her employees would have to park on
97 the street.

98
99 Commissioner Gordon commented that the parking requirement was in the code for a reason and
100 stated that she was not comfortable approving the conditional use permit with less than one
101 parking stall per employee at the highest shift. She said she did not want cars parking along the
102 street.

103
104 **Commissioner Gordon moved that the Planning Commission approve the conditional use**
105 **permit for Picasso Shutters located at 655 North 700 West with the following conditions:**

- 106
107 **1) Final approval from the fire marshal prior to business license approval,**
108 **2) One parking stall per employee on the highest shift according to City code and;**
109 **3) Outdoor storage must be screened.**

110
111 **The motion died due to lack of a second.**

112
113 Commissioner Gordon said that the DRC, which included the chief of police, recommended
114 approval with the condition that the applicant must meet the City's minimum parking standards.
115 She said changing the requirement and allowing fewer parking stalls would be contrary to that
116 recommendation.

117
118 The Commission discussed allowing fewer parking stalls and the potential consequences as well
119 as how to accommodate this business.

120
121 Sherrie Llewelyn suggested that the drive aisle could be reduced from 30 feet to 20 feet, as
122 required by the fire marshal, and diagonal parking could possibly be installed to allow the
123 applicant to meet the parking requirement onsite. Maria Picasso said that they could restripe the
124 property if they were unable to obtain permission to park on the adjacent parking lot. She said
125 she did not want her employees to risk getting towed by parking on the street.

126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167

Commissioner Larson asked the applicant if reducing the drive aisle, which would create a one way drive, would be acceptable. Maria Picasso replied that she had already planned for the deliveries to enter on the north side and exit on the other side.

Commissioner Gordon moved that the Planning Commission approve the conditional use permit for Picasso Shutters located at 655 North 700 West with the following conditions:

- 1) Final approval from the fire marshal prior to business license approval,**
- 2) One parking stall per employee on the highest shift according to City code and;**
- 3) Outdoor storage must be screened.**

Commissioner Kirkham seconded the motion.

Chair Knowlton suggested that the number of employees at the highest shift be specified in the motion. The Commission discussed parking solutions, the number of stalls particularly due to the potential for additional employees in the future, and possibly making changes to the code to state that there be one parking stall per onsite employee per shift.

The motion was approved by Commissioners Knowlton, Kirkham, Ward, Tucker, Larson and Gordon. Commissioner Garn was excused.

3. CONSIDERATION OF A REQUEST FOR A CONDITIONAL USE PERMIT FOR A FOOD MANUFACTURING BUSINESS, LADIANA TORTILLA & BAKERY AT 190 NORTH 640 WEST, AARON RODRIGUEZ, APPLICANT

Kate Werrett reported that the applicant, LaDiana Tortilla and Bakery Factory, was proposing to locate a tortilla and bakery factory at 190 North 640 West. “Food manufacturing” is a conditional use under “Manufacturing” in the Manufacturing-Distribution (MD) Zoning District. There would be ten employees working at this location. The products manufactured at this location would include: tortillas, chips, and bread. Onsite equipment would be four delivery trucks, ovens, chip fryers, and plastic bag sealers. Operation hours will be 6 a.m. to 6 p.m. on weekdays, 6 a.m. to 3 p.m. on Saturdays, and 6 a.m. to noon on Sundays.

Per the Code, manufacturing requires “One (1) stall per 1,000 square feet of gross floor area or one (1) stall per employee on highest shift, whichever is greater”. The building is approximately 12,000 sf, which would require a minimum of 12 parking stalls. The location currently has about 25 designated parking stalls and significantly more area that could be used for parking if needed in the future. The applicant does not plan to have any retail at this location and it will be manufacturing only. Staff has not identified any issues with locating this business at the location requested.

168 Aaron Rodriguez, LaDiana Tortilla Factory, commented that it had taken them several years to
169 find this location as they wanted to remain in the area.

170
171 **Commissioner Tucker moved that the Planning Commission approve the conditional use**
172 **permit for LaDiana Tortilla and Bakery Factory at 190 North 640 West with no conditions.**
173 **Commissioner Gordon seconded the motion. The motion was approved by Commissioners**
174 **Knowlton, Kirkham, Ward, Tucker, Larson and Gordon. Commissioner Garn was**
175 **excused.**

176
177 4. CONSIDERATION OF A SITE PLAN DESIGN SPACE AT 147 EAST UNION
178 AVENUE, PAUL MCSHANE, APPLICANT

179
180 Sherrie Llewelyn reported that the proposed site plan was located at 147 East Union Avenue
181 behind Orbit. The site was currently an undeveloped and vacant 5.7 acre lot. Design space is a
182 mobile office and storage building leasing company and this site would be used as their branch
183 office for the area. The site would contain an office building, maintenance shop, and outdoor
184 storage of the modular units.

185
186 Mrs. Llewelyn said that the proposed site plan had been evaluated and complied with the
187 requirements for parking, circulation and traffic, as well as health, safety, lighting and noise;
188 however, the it did not meet the minimum 10% landscaping requirement. She said that often
189 times the Planning Commission would reduce the landscaping requirement if the frontage
190 landscaping was improved. She presented the proposed landscaping plan with significant
191 improvements 20 feet behind the curb and in the parking areas with islands and trees. These
192 proposed improvements were approximately 4% of the site.

193
194 As the majority of the site would be used for storage of the modular buildings the Planning
195 Commission would need to determine whether this would be classified as outdoor storage and if
196 it would need to be screened from view. The DRC did not believe that the buildings qualified as
197 equipment and materials storage that would require screening and was more of a product display
198 area.

199
200 The proposed site would be secured with chain-link fencing and three strand barbwire. Access to
201 the storage area will be limited by a gate on the west portion of the property with fencing to
202 follow the property line in the area behind the building. A trash enclosure would be installed
203 behind the maintenance building.

204
205 Sherrie Llewelyn said that the site consists of 9,885 square feet of landscaping which was
206 approximately 4% of the site with the minimum requirement being 10%. The proposed landscape
207 is a high quality and would visually improve the streetscape. Additional landscaping of native
208 grasses could be added around the detention area if required by the Planning Commission. She

209 explained that the Planning Commission had the authority to reduce the minimum landscape
210 requirement.

211
212 Lighting of the site will mainly be directed at the main entrance, driveway, parking area, and
213 walkways. The City Engineer will review the resubmitted drawings for his redline corrections
214 and any redlines that have not been addressed will be conditioned upon the approval.

215
216 Sherrie Llewelyn showed the façade of the office building to those present and said there would
217 be wainscot with a brick or stone façade. She also showed a drawing of the maintenance building
218 which would be a metal building and said that metal buildings were permitted as accessory
219 structures provided the building had a four foot wainscot finish (of material compatible to the
220 main structure) on any façade visible from a public right of way.

221
222 The DRC recommended approval with three conditions including a reduction in the minimum
223 landscaping requirement, that the outdoor area would not need to be screened from view, and the
224 completion of any engineering redlines.

225
226 Valerie Robinson asked when the public could comment on the proposed site plan. Chair
227 Knowlton explained that as this application was administrative, in that if the application met the
228 requirements of the code, that the Planning Commission was bound to provide approval.

229
230 Valerie Robinson commented that the Planning Commission could vote how they wanted
231 regardless of how the public felt. Chair Knowlton replied that the Commission was only able to
232 vote within the bounds set by the zoning code. He said the Commission did not have unbounded
233 discretion. He also explained that some items were administrative and some were legislative.

234
235 Sherrie Llewelyn stated that the Planning Commission could chose to take public comments and
236 explained how some comments were relevant, such as those related to drainage, but said the
237 Commission was not required to hold a public hearing on administrative items.

238
239 Chair Knowlton further clarified that the Planning Commission was not a political body but
240 provided technical feedback. Commissioner Tucker also said that the purpose of the Planning
241 Commission was fact finding in an effort to gather information to make recommendations to the
242 City Council. He said when the Commission solicited public comment it was to obtain
243 information and not opinion as the Commission was not an elected body and did not represent
244 the public.

245
246 **At 7:35 p.m. Chair Knowlton allowed the public to provide any additional facts on this**
247 **item.**

248

249 Dee Lalliss commented on the 10% landscaping requirement and said it would not benefit this
250 property. He said there was a drainage ditch and railroad tracks at the rear of the property and
251 felt that was proposed for the frontage was ample for this property.

252
253 Commissioner Kirkham asked if the modular buildings would be constructed onsite or just stored
254 there. Sherrie Llewelyn replied that the buildings were constructed elsewhere and stored onsite.

255
256 Colby Anderson, Anderson Wahlen, commented that they had done the civil design for the site
257 and would help with the permitting.

258
259 Commissioner Gordon commented on the condition in the motion that stated the outdoor area did
260 not need to be screened from view from the street as the storage did not include materials or
261 equipment. She asked if the storage included materials or equipment in the future if it would
262 need to be screened at that time. Sherrie Llewelyn replied that if the use changed and materials or
263 equipment was stored on the site in the future that it would need to be screened from public
264 view.

265
266 **Commissioner Larson move that the Planning Commission approve the site plan for**
267 **Design Space Site Plan at 147 East Union Avenue the following findings and conditions:**

- 268
269 **1) The minimum required landscaping is approved at a reduced requirement as shown**
270 **on the site plan;**
271 **2) The outdoor area is not required to be screened from view from the street, as the**
272 **storage does not include materials or equipment;**
273 **3) Completion of any outstanding engineering redlines.**

274
275 **Commissioner Tucker seconded the motion. The motion was approved by Commissioners**
276 **Knowlton, Kirkham, Ward, Tucker, Larson and Gordon. Commissioner Garn was**
277 **excused.**

278
279 **5. REVIEW-DRAFT FORM BASED CODE (CHAPTERS 7 & 8)**
280

281 Sherrie Llewelyn reported on Section 7 Parking and reviewed the proposed requirements for off-
282 street vehicle parking in the various subdistricts in the Town Center. She explained that the
283 requirements for all the subdistricts, minus the Core, that a studio or one bedroom units would
284 require one stall per unit plus .25 spaces per unit for guest parking, two bedroom units would
285 require 1.5 stalls per unit plus .25 spaces per unit for guest parking, and 2 stalls per unit for three
286 plus bedroom plus .25 spaces per unit for guest parking. The Core subdistrict would not require
287 the additional .25 spaces per unit for guest parking. The current code currently requires 2.25
288 spaces per unit for apartments regardless of the number of bedrooms.

289

290 Mrs. Llewelyn then reviewed the commercial parking requirements of two stalls per 1,000
291 square feet gross floor area in the Core subdistrict for retail, office, and civic uses and in
292 restaurant/café one space per four seats and one stall per unit for lodging uses. In the other five
293 subdistricts the commercial parking would require three stalls per 1,000 square feet of gross floor
294 for retail, office, and civic uses.

295
296 Sherrie Llewelyn then reviewed the shared vehicular parking table, which was determined based
297 on the hours with the highest use for entertainment, hotel, office, place of worship, restaurant,
298 and retail rather than adding up the maximum parking for each of these uses. She also explained
299 the incentives to reduce the percentages including bike lockers, transit passes, or senior housing,
300 etc.

301
302 Commissioner Tucker asked about shared parking in relation to priority such as a hotel with
303 established parking and a new use. Sherrie Llewelyn replied that some assumptions would need
304 to be made regarding land uses and some accommodations would also need to be made for new
305 uses. She said a scarcity of parking would make the area more vibrant and increase the use of
306 transit. Ms. Llewelyn said they wanted to provide adequate parking but not over parking of the
307 area.

308
309 Chair Knowlton said there were several approaches to parking including predicting the demand
310 or being land efficient and prioritizing transit and walking. He said the private market could
311 determine parking and if needed in the future, the City could price public parking spaces at a
312 level that accommodated demand.

313
314 The Commission discussed the parking tables, parking flexibility, and adjusting the shared
315 parking percentages for each use particularly in regards to restaurants and the proposed days and
316 times, and residential visitor spaces. They recommended changes to Table 7.2 (2) Shared
317 Vehicular Parking in relation to restaurant uses with reductions of the percentage from 50% for
318 midnight to 7 a.m. on a weekday to 25% and from 70% to 35% on weekends from midnight to 7
319 a.m. and increasing the percentage to 50 or 60% on weekends from 7 a.m. to 6 p.m. to
320 accommodate a restaurant such as a vibrant Denny's. They also suggested a revision of the
321 existing or addition of a new timeframe during the weekday such as 9 a.m. to 5 p.m. office and 5
322 p.m. to midnight for restaurant uses.

323
324 Valerie Robinson questioned why the Planning Commission was writing the form based code,
325 which would then also be administered by the Commission. Chair Knowlton said the City
326 Council made legislation and would be adopting the form based code and the Planning
327 Commission would just be making recommendations to the Council.

328
329 Sherrie Llewelyn clarified that the City Council was awarded a grant to hire a consultant to write
330 the form based code to implement the adopted Town Center Master Plan. She said the code was
331 written by a consultant and the Planning Commission was reviewing and making

332 recommendations. Two public open houses and a public hearing would be held and all the
333 comments from the public and Planning Commission would be reviewed and may be
334 incorporated into the draft by the consultant and prior to the form based code being presented to
335 the City Council for adoption.

336
337 Valerie Robinson asked in regards to parking if there was a plan to install meters or another
338 means of charging for parking. Chair Knowlton clarified when he referred to the price of parking
339 he meant on-street parking, such as next to a curb, and responding to that condition if there was a
340 demand for this.

341
342 Sherrie Llewelyn clarified that the Shared Vehicular Parking table and the percentages shown
343 were based on parking demand observed in North Salt Lake by the consultant.

344
345 Valerie Robinson commented that the point behind the form based code was to devise a town
346 that looked like a community. She suggested that senior housing may require a different form of
347 transportation, such as golf carts, but would still require some visitor parking. Sherrie Llewelyn
348 clarified that it would just be a reduction in parking for senior housing as there would be a lower
349 demand but not the elimination. She explained that this was a draft ordinance and there would be
350 many opportunities for public input on the entire code.

351
352 Sherrie Llewelyn said the public open houses would most likely be held on January 22nd and
353 February 19th of 2020.

354
355 Sherrie Llewelyn then spoke on Section 8 Signs and Façade Lighting and said this would be an
356 improvement from the current sign ordinance. The Commission reviewed different types of
357 signage, wall, projecting, awning, canopy, roof, window, monument, and temporary signs such
358 as A-Frame sign requirements.

359
360 Chair Knowlton suggested that there should be a review of the existing sign code related to
361 aesthetics, quality, scale, etc. on signage citywide.

362
363 Commissioner Gordon made the suggestion on Table 8.8 (1) Roof Sign Requirements that roof
364 signage be permitted in every subdistrict except Edge.

365
366 Sherrie Llewelyn then spoke on Section 2 Streets and the definition of Active Transportation
367 Corridors. She clarified that a better name and description might be Pedestrian/Bike Corridors.

368
369 The Commission also discussed connector streets, right of way, on street parking, active
370 transportation plan, pedestrian walkways, and cul-de-sacs. Sherrie Llewelyn said that there was
371 not a need for cul-de-sacs in the city center as they did not inspire connectivity.

372

373 Sherrie Llewelyn reviewed the proposed schedule for the form based code and said that at the
374 December 12th Planning Commission meeting there would be a review of the overall form based
375 code, the draft Subdivision, PUD, P District, and RM zone changes related to moratorium. The
376 proposed schedule for the code amendment work related to the moratorium and form based code
377 is as follows: a joint work session with the City Council is tentatively scheduled for January 14th
378 with a review of the form based code, other ordinance amendments, and a Main Street
379 neighborhood report; a public open house tentatively scheduled on January 22nd for the form
380 based code and Main Street neighborhood report; and a public hearing is also tentatively
381 scheduled on January 28th for the subdivision and RM zones amendments. She also said a second
382 public open house would be likely be held February 19th for the presentation of the final draft of
383 the form based code with final recommendation to the City Council on February 25th for the
384 form based code and Town Center zone.

385

386 6. REPORT ON CITY COUNCIL ACTIONS ON ITEMS RECOMMENDED BY
387 PLANNING COMMISSION

388

389 Sherrie Llewelyn reported on City Council actions and said the Council approved the Arrowhead
390 Twin Homes final plat on November 19th. She then spoke on the code enforcement case related
391 to pygmy goats and the proposed ordinance change to allow two pygmy goats on a 14,000 square
392 foot residential lot or larger.

393

394 Sherrie Llewelyn then reported on Wellington Place in Foxboro and said the Planning
395 Commission recommended approval of the final plat; however, soil contamination was found on
396 the site. The City required retesting of the soil and new reports after the contaminated soil was
397 removed. She said the City Council will potentially review this item on December 17th. She also
398 reminded the Commission of the holiday party on December 3rd.

399

400 7. APPROVAL OF MINUTES

401

402 The Planning Commission meeting minutes of November 12, 2019 were reviewed and approved.
403 **Commissioner Gordon moved to approve the minutes of November 12, 2019.**
404 **Commissioner Larson seconded the motion. The motion was approved by Commissioners**
405 **Knowlton, Kirkham, Ward, Tucker, Larson and Gordon. Commissioner Garn was**
406 **excused.**

407 8. ADJOURN

408

409 Chair Knowlton adjourned the meeting at 9:03 p.m.

410

411

412

413

414 _____
Chair

_____ Recorder

415

416

417

418

419 _____
Secretary

1 CITY OF NORTH SALT LAKE
2 PLANNING COMMISSION MEETING
3 DECEMBER 10, 2019

4
5 **DRAFT**
6

7 Commission Chair Ted Knowlton called the meeting to order at 6:30 p.m.
8

9 PRESENT: Commission Chair Ted Knowlton
10 Commissioner Stephen Garn
11 Commissioner Kent Kirkham
12 Commissioner William Ward
13 Commissioner Brandon Tucker
14 Commissioner BreAnna Larson
15 Commissioner Natalie Gordon
16

17 STAFF PRESENT: Sherrie Llewelyn, Community Development Director; Kate Werrett,
18 Planner; Andrea Bradford, Minutes Secretary.
19

20 OTHERS PRESENT: Scott Betts, Jordan Betts, Dee Lalliss, residents; Megan Townsend,
21 Wasatch Front Regional Council.
22

23 1. PUBLIC COMMENTS
24

25 There were no public comments.
26

27 2. WORK SESSION-REVIEW DRAFT FORM BASED CODE WITH CONSULTANT
28

29 Sherrie Llewelyn said that Megan Townsend with Wasatch Front Regional Council (WFRC) was
30 present to help with the revisions to the form based code.
31

32 Chair Knowlton asked for an update on the status of the previous revisions to the draft code.
33 Kate Werrett reported that she compiled the notes she had received from the Planning
34 Commissioners and had given it to Megan to incorporate into the draft. She said all the revisions
35 would be made before it was presented to the City Council.
36

37 Chair Knowlton said the form based code was well thought out and everything was clear while
38 still giving an applicant the opportunity to do what they wanted. He said this was a good starting
39 point for the process as it saved the applicant time and gave the City comprehensive code
40 backing.
41

42 Commissioner Kirkham said it was helpful for staff to have a base as well.

43 Sherrie Llewelyn asked Megan Townsend for guidance on language in Section 5 Buildings
44 related to materials and colors. This section states that the “Main building colors shall utilize any
45 historic palettes from any major paint manufacturer.” Megan Townsend commented that
46 “historic palettes” was very vague and that there may be a better way to clarify what would be
47 allowed including the addition of approved color swatches or detailing what was not permitted.

48
49 Sherrie Llewelyn suggested no fluorescent or bright patterns be allowed. Chair Knowlton said
50 the objective would be the avoidance of things that would annoy or detract from the community.

51
52 Megan Townsend said if the Commission could identify the goal she could find best practices to
53 help meet that policy.

54
55 The Commission discussed having too many textures and colors in one project, the need for
56 complimentary palettes, limiting the number of different finishes/colors on a facade, limiting
57 fluorescent and bright colors, no more than two accent colors, potential to include swatches in
58 the code, that the colors should be subjective, wording to require colored architectural
59 renderings, and when approval may be needed by the Planning Commission.

60
61 Sherrie Llewelyn then shared a presentation regarding setbacks with those present. She spoke on
62 the suggestion that the setbacks should relate to the size of the street and a potential to review
63 alternatives for a more uniform method. The first setback discussed was for the Core subdistrict
64 with front and corner setbacks from the building siting with a minimum of 0 feet to a maximum
65 of 10 feet. Additional footage would be allowed for ADA, clear views or 20 foot restaurant
66 seating with Planning Commission approval. Mrs. Llewelyn showed a rendering of the street
67 with a bus rapid transit line, a center median, 120 foot right of way, 7 foot sidewalk, and 8 foot
68 park strip in comparison with a building that had a 0 foot setback, one with a 5 foot setback, and
69 another with a 10 foot setback. The setback would be measured from the foundation wall.

70
71 Chair Knowlton asked if some of the private setback could be applied to a wider sidewalk as
72 there were no bike lanes on Highway 89. Sherrie Llewelyn said that the draft of the active
73 transportation plan did not provide bike lanes on Highway 89 as there were better routes parallel
74 to the highway.

75
76 The Commission discussed the possibility of adding bike lanes by having zero setbacks and
77 expanding the right of way along Highway 89.

78
79 Sherrie Llewelyn stated that UDOT did not want bike lanes along Highway 89 unless it was in
80 the shoulder as shown in the active transportation plan, which would be presented to the
81 Commission for review prior to City Council adoption.

82
83 Chair Knowlton suggested that eventually there may be substantial urban buildings and that a 10
84 foot setback would allow for future flexibility.

85 Commissioner Tucker asked what the downside to having a wider setback would be. Sherrie
86 Llewelyn said that having a setback that was too wide could result in the loss of vibrancy and
87 walkability.

88
89 Commissioner Gordon suggested that instead of changing the setback the sidewalk could be
90 widened from 7 feet to 10 feet or more, which would allow for the addition of a bike lane in the
91 future.

92
93 Commissioner Garn said if there were retail stores in this area that wider sidewalks would be
94 beneficial for outdoor displays, benches, or table and chairs. Sherrie Llewelyn commented that
95 that part of the issue was that the sidewalk would be public property so an allowance would have
96 to be written into the ordinance for a sidewalk café, etc.

97
98 The Commission debated whether the setback or the sidewalk should be expanded, how to
99 accommodate a bike lane, and what would be considered common space. The Commissioners
100 agreed that the setback on all of the zones along Highway 89 should be 10 feet with an exception
101 of up to 15 feet to be granted by the Planning Commission or based on building type. They also
102 discussed the setback being landscaping or sidewalk, a requirement for an access easement, and
103 conveying the intent for the use of the right of way/setback to be flexible.

104
105 Sherrie Llewelyn then reported on setbacks in the Edge subdistrict and said that yard buildings
106 would have a setback of 20 feet and row buildings would have a setback of 10 to 20 feet. She
107 showed an example of a cross section on Odell Lane that did not have a park strip but did have
108 on street parking as well as the setbacks from a row house, townhome, and single family home.

109
110 Mrs. Llewelyn reviewed the Arts and Parks subdistrict. She said for a storefront building or
111 stacked flats that it would be a minimum setback of 0 to a maximum of 5 feet for front siting
112 buildings. For row buildings with flat or pitched roofs it would be a minimum of 5 feet to a
113 maximum of 15 feet for front siting buildings. Limited bay buildings would have a setback of 0
114 feet to a maximum of 10 feet for front siting.

115
116 Commissioner Gordon commented on the reverse angled parking stalls proposed for this area
117 and asked if this would be a deterrent.

118
119 Sherrie Llewelyn recommended increasing the setback from 5 feet to a minimum of 10 feet and a
120 maximum of 15 feet. She suggested the addition of wording to allow for flexibility based on
121 criteria to accommodate topography, ADA access, or utilities, etc. per Planning Commission
122 approval.

123
124 Sherrie Llewelyn then asked if the Commission wanted to adjust the 0 foot setback. Several
125 members of the Commission agreed that the 0 setback was appropriate as there would always be
126 a park strip/buffer.

127 Sherrie Llewelyn spoke on the Center and Orchard subdistrict and said the setback for a
128 storefront building and stacked flats was 0 to 5 feet for front siting, a row building would be 10
129 to 20 feet front siting, and a limited bay building would be 0 to 10 feet front siting. The
130 Commission recommended changing the setbacks to a minimum of 10 feet to a maximum of 20
131 feet for the limited bay, stacked flats, and storefront building types on Center and Orchard Drive
132 in this subdistrict with the townhomes on Orchard to be 15 feet to 20 feet.

133
134 Sherrie Llewelyn then reported on Boulevard subdistrict, which had the same cross section as the
135 Core subdistrict, and North 89 subdistrict. She said staff and WFRC would come back with a
136 revision that would make sense with the cross section.

137
138 Sherrie Llewelyn then reported on Section 7 Parking and the previously asked question of why
139 the table did not allow shared parking with commercial and residential uses. Megan Townsend
140 said that guest parking could be shared but the need to have guaranteed stalls for residents made
141 this complicated. She said this was why the table for residential parking rate reductions was
142 included in the code.

143
144 The Commission also discussed table 7.2 (2) related to shared vehicular parking as well as table
145 7.2 (3) for residential park rate reductions and potential changes.

146
147 Megan Townsend said the parking requirements were based on parking counts from the City
148 compared to the industry standard. She said the percentages shown in the table were from the
149 current City parking code.

150
151 The Commissioners determined that there should be a review of the parking ordinance citywide.
152 They then reviewed table 7.2 (3) residential parking rate reductions and the change to clarify that
153 it was per stall and not a percentage. They also recommended increasing the numbers shown in
154 the table for the residential parking rate reduction in the Core subdistrict to be .15 for secure bike
155 lockers/indoor storage, .5 for development supplied transit passes, .25 for development
156 discounted transit passes, and .5 for senior housing for a total of .5 maximum. This adjustment
157 would be applied to every subdistrict.

158
159 The Commission then discussed Section 4 Uses and the description of the Craftsman Industrial
160 use. Megan Townsend explained that this use involved “small scale manufacturing, production,
161 assembly, and/or repair with little to no noxious by-products that includes a showroom or small
162 retail outlet. This use may also include associated facilities such as offices and small scale
163 warehousing, but distribution is limited. The maximum overall gross floor area is limited to
164 20,000 square feet, unless otherwise noted.” She gave examples of this use such as a bike shop,
165 shoe repair, coffee roaster, etc. and said it was allowed in the Core, Arts and Parks, Center and
166 Orchard, and North 89 subdistricts.

167

168 The Commission discussed whether 20,000 square feet was too much for the Craftsman
169 Industrial use and determined that it be reduced to 10,000 square feet maximum. Then they
170 reviewed square footage for neighborhood retail, which was currently 12,000 square feet be
171 reduced to 8,000 square feet maximum and general retail which was currently 12,000 square feet
172 be 8,000 square feet or more. The Commission also determined that Craftsman Industrial be
173 added as a permitted use in the Boulevard subdistrict.

174
175 Megan Townsend commented that she would review the square footage estimates with
176 comparable uses in other cities.

177
178 The Commission also discussed outdoor sales lot found in the uses table 4.1 (1) and determined
179 that as they did not want used car lots in any of these subdistricts this use would be removed
180 from the table.

181

182 3. WORK SESSION-DRAFT SUBDIVISION CODE AMENDMENTS

183

184 Sherrie Llewelyn reported on current subdivision ordinances and new draft ordinances. She
185 explained that the main goal was to organize and revise all of the current subdivision ordinances
186 into an organized manner under a new Title 13 Subdivision Regulations. She reviewed the nine
187 chapters of the new draft ordinance and provided a brief overview of what each chapter would
188 contain. Mrs. Llewelyn said that some of the changes would be update the language to match
189 State code, changes to Planned Unit Developments (PUDs) including density based on net area
190 as well as setbacks, simplifying the section on plat amendments, and the procedure for lot line
191 adjustments.

192

193 Sherrie Llewelyn said the next Planning Commission meeting would be January 14th. She said
194 this meeting would include the review of these subdivision ordinance changes.

195

196 4. APPROVAL OF MINUTES

197

198 The review and approval of the Planning Commission meeting minutes of November 26, 2019
199 were postponed until the next meeting.

200 5. ADJOURN

201

202 Chair Knowlton adjourned the meeting at 8:42 p.m.

203

204

205

206

207 _____
Chair

Recorder

208

209

210

211

212 _____
Secretary