BOUNTIFUL CITY COUNCIL

TUESDAY, May 28, 2024

6:00 p.m. – Work Session

7:00 p.m. - Regular Session

NOTICE IS HEREBY GIVEN on the Utah Public Notice Website, the Bountiful City Website and at Bountiful City Hall not less than 24 hours prior to the meeting that the City Council of Bountiful, Utah will hold its regular Council meeting at **City Hall, 795 South Main Street, Bountiful, Utah**, at the time and on the date given above. The public is invited to all meetings. Deliberations will occur in the meetings. Persons who are disabled as defined by the Americans With Disabilities Act may request an accommodation by contacting the Bountiful City Manager at 801.298.6140. Notification at least 24 hours prior to the meeting would be appreciated.

If you are not on the agenda, the Council will not be able to discuss your item of business until another meeting. For most items it is desirable for the Council to be informed of background information prior to consideration at a Council meeting. If you wish to have an item placed on the agenda, contact the Bountiful City Manager at 801.298.6140.

The meeting is also available to view online, and the link will be available on the Bountiful City website homepage (www.bountifulutah.gov) approximately one hour prior to the start of the meeting.

AGENDA

6:00 p.m. – Work Session

1. Victim's Advocate report – Ms. Colette Rampton
2. General plan discussion – Mr. Francisco Astorga p. 3

7:00 p.m. – Regular Meeting

1. Welcome, Pledge of Allegiance and Thought/Prayer
2. Public Comment – If you wish to make a comment to the Council, please use the podium and clearly state your name and address, keeping your comments to a maximum of two minutes. Public comment is limited to no more than ten minutes per meeting. Please do not repeat positions already stated. Public comment is a time for the Council to receive new information and perspectives.
3. Consider approval of minutes of previous meeting held on April 22, 23, 24, 25 & May 14, 2024 p. 193
4. Council reports
5. Consider approval of expenditures greater than $1,000 paid on May 8 & 15, 2024 p. 223
6. Consider approval of Resolution 2024-02 allowing Bountiful City to enter into an interlocal cooperation agreement for City employee services to be provided to the South Davis Recreation District – Mr. Tyson Beck p. 227
7. Consider approval of the preliminary/final architectural and site plan application for the change of use at 175 West 500 South from a restaurant to an urgent care center – Mr. Francisco Astorga p. 239
8. Consider approval of the proposal from Gould + Architects in the amount of $24,640 for the police dispatch remodel – Mr. Lloyd Cheney p. 259
9. Consider approval of the purchase of a Rainbird IQ4 central irrigation control system in the amount of $58,610 – Mr. Brock Hill p. 261
10. Consider approval of Resolution 2024-03 amending the Personnel Policies and Procedures manual – Ms. Jessica Sims p. 263
11. Consider approval of Resolution 2024-04 which updates Bountiful City's Tier 2 Public Safety employee contribution – Ms. Jessica Sims p. 267
12. Temporarily adjourn to an RDA meeting with a separate agenda
13. Reconvene in a closed session to discuss the acquisition or sale of real property, pending litigation and/or to discuss the character and/or competency of an individual(s) (Utah Code §52-4-205).

Shawna Andrus
City Recorder

City Council
Staff Report

Subject: Work Session General Plan Direction:
Bountiful By Design Transportation and Circulation Element
Author: Francisco Astorga, AICP, Planning Director
Date: May 28, 2024

Background
The City Council has been having work session discussions led by Staff during the last few months reviewing the comprehensive general plan update. The updated general plan, Bountiful by Design, is intended to provide decision makers guidance in decision-making over the next 20 years. During the April 23, 2024, work session, Council provided direction regarding the drafted Moderate Income Housing Element. Council provided feedback and minor edits.

Analysis
Staff requests that Council review the drafted Transportation and Circulation Element. Given the City's built-out status regarding new development that would affect future transportation connections, the City should spend efforts reviewing active transportation as the City is experience redevelopment opportunities based on the age of building and developments.

As represented during the January 2024 City Council Retreat, all goals and actions of the General Plan update, including goals and actions of this element, would be reviewed by Council towards the end of the process prior to turning the review phase to the Planning Commission.

The Transportation and Circulation Element includes, as an addendum, the South Davis County Active Transportation Plan (South Davis ATP), which was prepared for Bountiful, Centerville, and North Salt Lake with funding and planning assistance from the Wasatch Front Regional Council. The South Davis ATP was intended to serve as a guide to the City on how to allocate funds and property reconstruct roadways that are conducive to multiple modes of transportation. The ATP is divided into Seven (7) sections: 01 Introduction, 02 Existing Conditions, 03 Public Input, 04 Infrastructure Improvement, 05 Policy Recommendations, 06 Implementation, and Appendices. As indicated on the plan itself: "The recommendations in this [Active Transportation 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 [ATP] should be considered a fluid document.

Department Review
This Staff Report was written by the Planning Director and reviewed by the City Manager.

Significant Impacts
None.

Recommendation
Staff requests that the Council provide input regarding the drafted Transportation and Circulation

Element.

Attachments

1. Draft of the general plan Transportation and Circulation Element
2. Bountiful Street Master Plan
3. Draft South Davis County Active Transportation Plan (2019 recommendations)

Transportation and Traffic Circulation

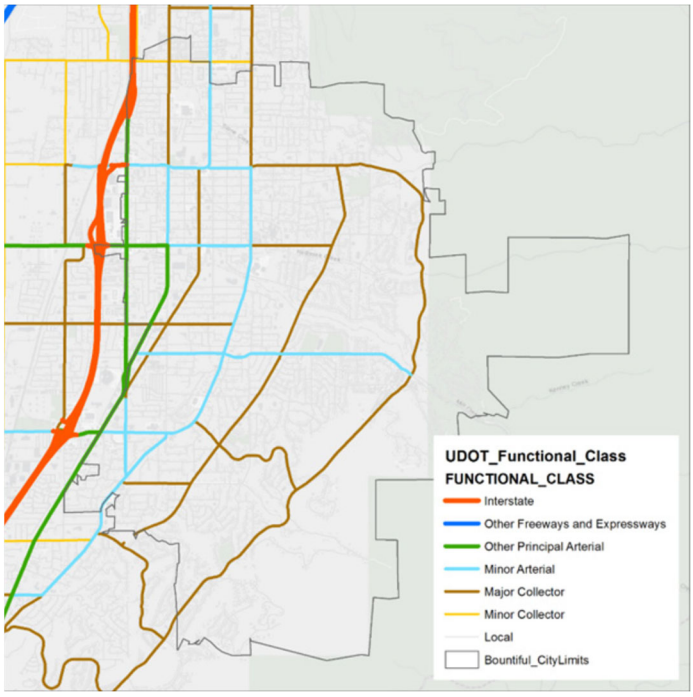
Introduction

How people move affects everyone who works, lives, and plays in Bountiful. Altogether this framework of connections represents an extremely large public investment. Regional and local connections are essential for a well-functioning city. A well-planned, safe, robust, and varied transportation system provides opportunities and choices for all modes of travel.

State Requirements Overview

The State of Utah requires cities to incorporate a transportation and traffic circulation element into a general plan per Utah Code 10-9a-403. As a city without any major transit investment corridors, Bountiful's general plan transportation element must address residential and commercial development in areas that will maintain and improve connections between housing, transportation, employment, education, recreation, and commerce. The transportation element should also correspond to the population projections, employment projections, and the land use element in the Plan.

Figure 1 Bountiful Roadways as identified by UDOT Functional Class Status



Context

Regional Connections

Bountiful has regional connections to Interstate 15. Three (3) exits/entrances service the area via 2600 South, 500 South, and 400 North/500 West. Bountiful has been included in a number of regional transportation plans including the Wasatch Front Regional Council (WFRC) 2019-2050 Regional Transportation Plan and the South Davis County Active Transportation Plan.

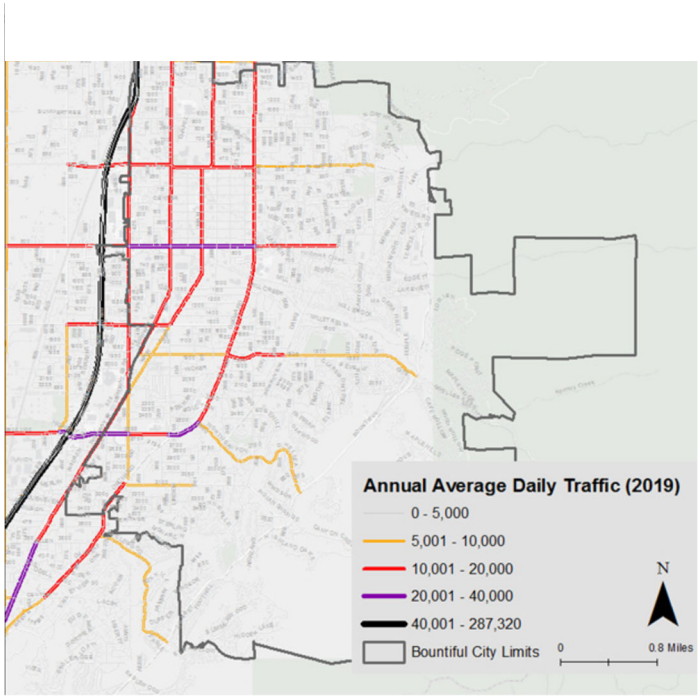
The WFRC Regional Transportation plan includes a proposed Davis-Salt Lake City Community Connector Bus Rapid Transit (BRT) which would run through and include stations in Bountiful.

The Active Transportation Plan calls for the region partner to develop a connected walking and bicycling system to increase safety, and to improve health and air quality.

Connectivity

The street network within Bountiful varies with the topography. Lower and flatter elevations generally have high levels of connectivity that provide multiple route options with regularly spaced arterial and collector roadways. The street network becomes increasingly disconnected as the topography becomes steeper, particularly east of Orchard Drive.

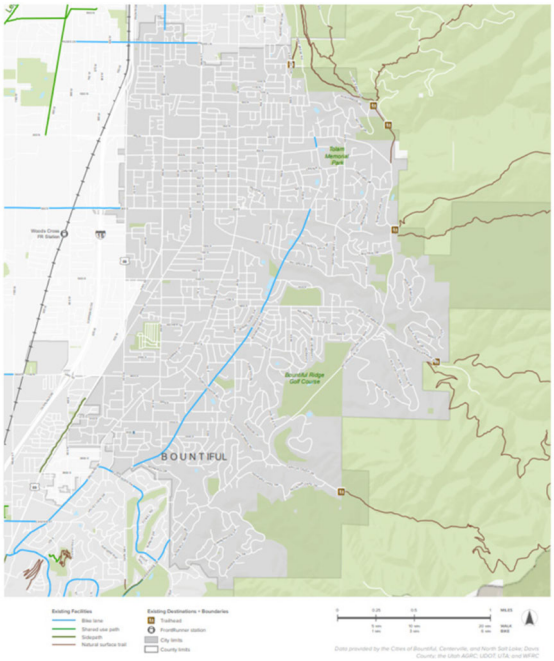
Figure 2 Traffic Average Daily Trips 2019



Public Transportation

Public transportation services are available via Utah Transportation Authority (UTA). Bountiful's current public transportation network includes two (2) all-day bus service routes (route 455 and 470), paratransit service, vanpool program, and a micro transit service (UTA On Demand). Regional commuter rail is located just beyond City limits at the Woods Cross FrontRunner station. UTA and other stakeholder Cities including Bountiful City have been working on a bus rapid transit (BRT) line through Bountiful along Main Street connecting Farmington (Station Park) to Salt Lake City (University of Utah). This new anticipated service uses specialized buses to efficiently transport large numbers of riders to their destinations. BRT service features many of the amenities of light rail, such as frequent service, traffic signal priority, ticket vending machines, shelters and benches, while providing transit at a lower-cost, connections with many other transportation lines, etc. The anticipated high-end BRT stations are to be located at 2600/Highway 89, Renaissance Towne Centre (approx.. 1600 South Main Street), and City Hall/County Library (approx. 700 South Main Street). The proposed BRT line would also have regular stops throughout the City.

Figure 3 Existing Bike Network



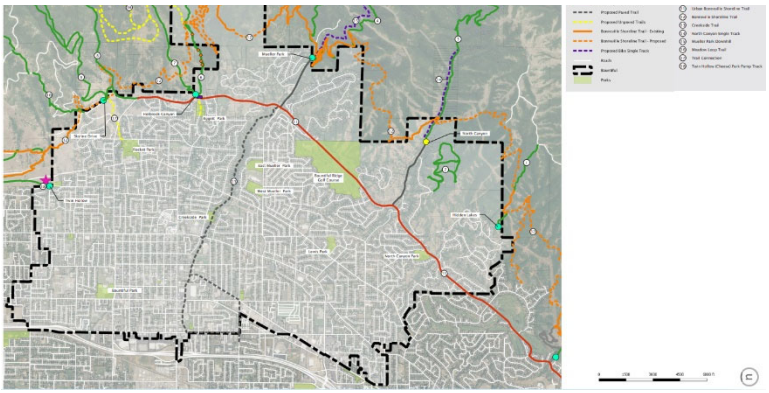
Bicycle Network

Bountiful has very limited bicycle infrastructure with less than five (5) miles in total bike lanes citywide. Most of this is a painted bike lane on Davis Boulevard which does not connect directly to other bike lanes within or outside of Bountiful. Another painted bike lane exists along 100 West from 400 North to 500 South (0.7 miles). There are currently no protected or grade separated bike lanes in the City.

Trails

Bountiful residents frequently cited *access to the outdoors* as one of the things they love about living in Bountiful. The City is settled within the foothills of the Wasatch Mountains, which has access to about forty (40) miles of existing recreational trails. These trails connect to and are anchored by a paved urban section of the Bonneville Shoreline Trail that follows Bountiful Boulevard. The 2019 Bountiful Trails Master Plan identifies additional areas for trail connections, primarily in the foothills, but also recommends an east-west paved trail that would enable direct trail access from the foothills to the west of the City. In total the current and proposed trail network would contain nearly sixty (60) miles of trails.

Figure 4 Planned Trails Network



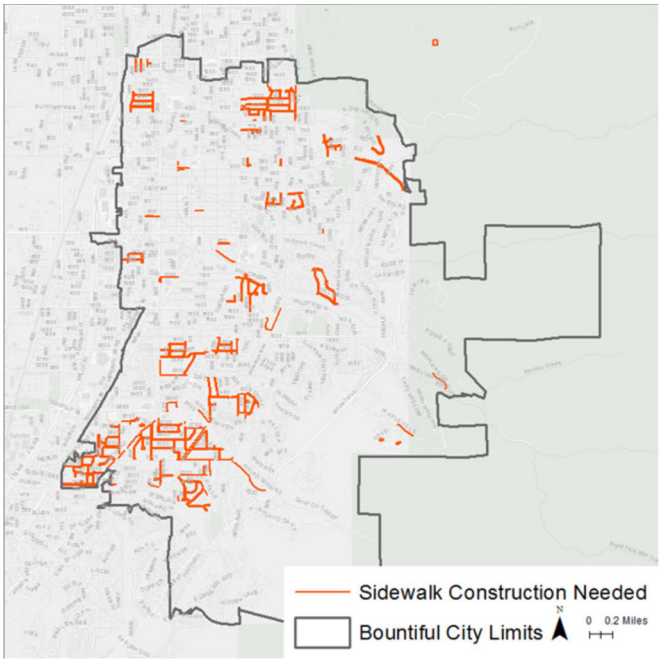
Pedestrian Network

Bountiful's downtown area provides sidewalks and clearly marked crossings. The majority of Bountiful's neighborhoods also provide sidewalks. There are some areas in the City which lack sidewalks as shown in Figure 5. Some of these areas were developed under County jurisdiction which were then annexed into the City. Walking along these neighborhoods without sidewalks may be harder for pedestrians.

Strategy

This Plan incorporates a guiding principle specifically targeted at transportation and traffic circulation: "A **Connected Community** with Complete Networks for Pedestrians, Bicycles, Transit, And Vehicles." This plan underscores the importance of providing viable options for getting around to maximize access to housing, transportation, employment, education, recreation, and commerce. The benefits of creating a more balanced network of transportation options for people throughout the City include reducing motor vehicle related incidents and pedestrian risk, improving human health, reducing traffic congestion, creating a more desirable place to live, etc. The land use strategy of this Plan encourages increasing intensity of uses in areas that

Figure 5 Areas Without Sidewalks

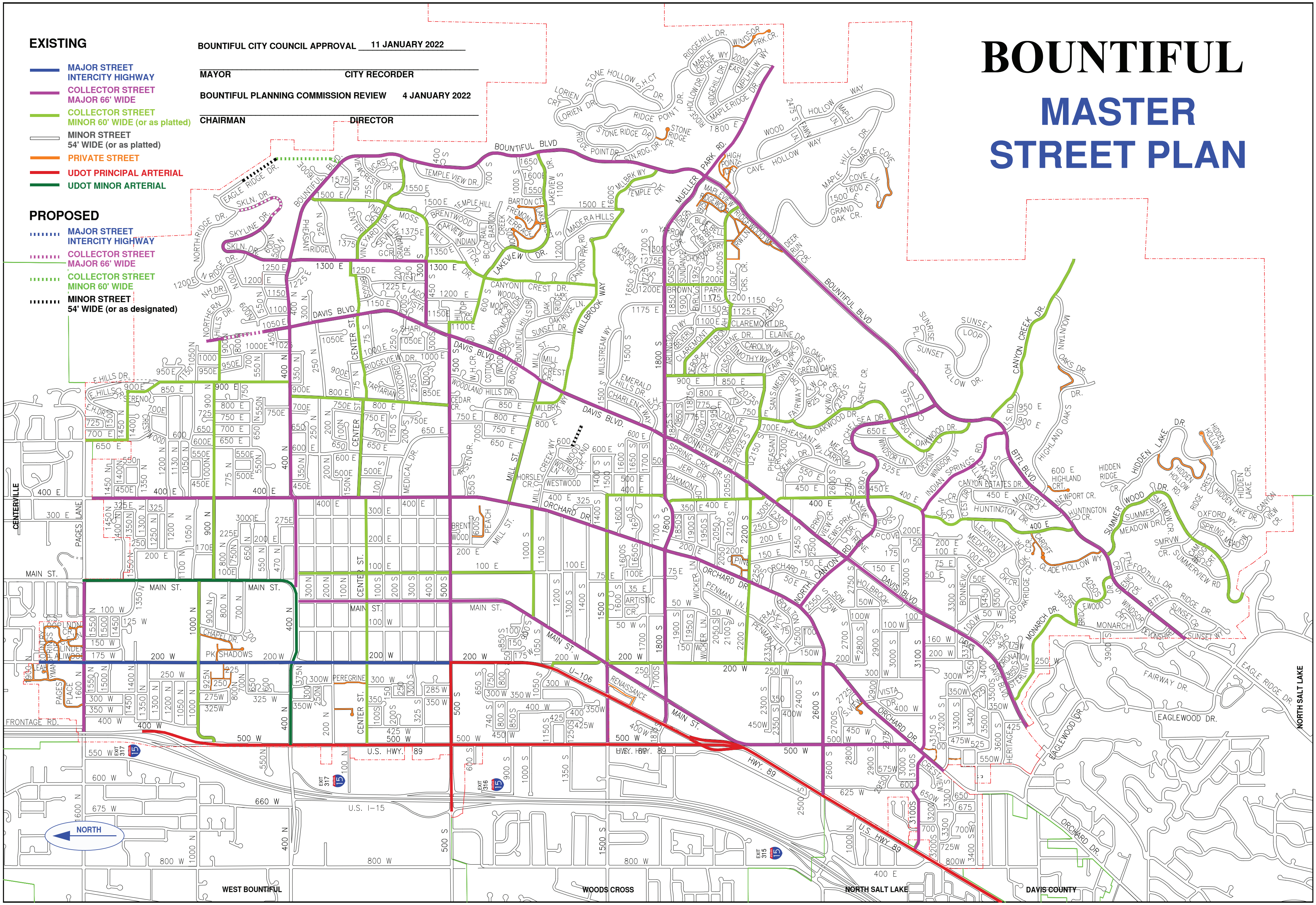


are well connected. This is intended to maximize existing infrastructure and minimize travel distances.

Related goals and strategies

The following goals and strategies are included in the Plan and describe Bountiful's efforts to further transportation and traffic circulation in the future:

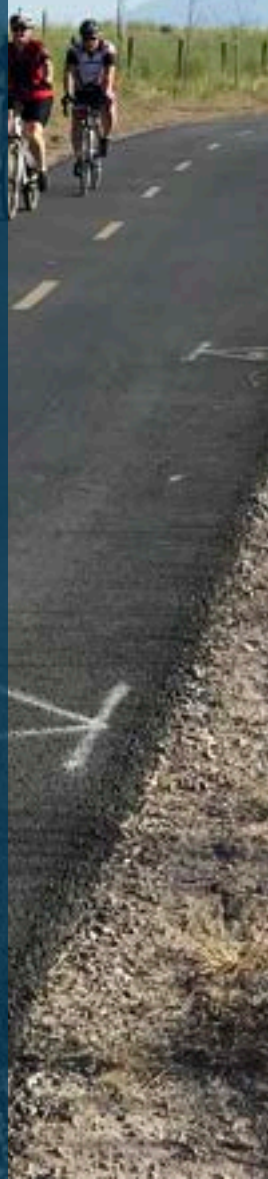
Category	Description
Guiding Principle	A **Welcoming Community** For Everyone
Goal(s)	
Action(s)	
Guiding Principle	A **Business-Friendly Community** That Serves the Community with A Variety of Locally Focused Services, Shopping and Entertainment Options
Goal(s)	
Action(s)	
Guiding Principle	A **Connected Community** with Complete Networks for Pedestrians, Bicycles, Transit, And Vehicles
Goal(s)	
Action(s)	
Guiding Principle	An **Active Community** with Diverse Outdoor Recreational Opportunities and Access to Our Mountain Backyard
Goal(s)	
Action(s)	
Guiding Principle	An **Efficient and Resilient Community** with Effective Utilities and Robust Services
Goal(s)	
Action(s)	
Guiding Principle	A **Friendly Community** with Lively Community Events, And Neighborly Connections
Goal(s)	
Action(s)	


BOUNTIFUL
MASTER
STREET PLAN
BOUNTIFUL CITY COUNCIL APPROVAL 11 JANUARY 2022
MAYOR
CITY RECORDER
BOUNTIFUL PLANNING COMMISSION REVIEW 4 JANUARY 2022
CHAIRMAN
DIRECTOR
EXISTING
MAJOR STREET INTERCITY HIGHWAY
COLLECTOR STREET MAJOR 66' WIDE
COLLECTOR STREET MINOR 60' WIDE (or as platted)
MINOR STREET 54' WIDE (or as platted)
PRIVATE STREET
UDOT PRINCIPAL ARTERIAL
UDOT MINOR ARTERIAL
PROPOSED
MAJOR STREET INTERCITY HIGHWAY
COLLECTOR STREET MAJOR 66' WIDE
COLLECTOR STREET MINOR 60' WIDE
MINOR STREET 54' WIDE (or as designated)
NORTH
CENTERVILLE
WEST BOUNTIFUL
WOODS CROSS
NORTH SALT LAKE
DAVIS COUNTY
NORTH SALT LAKE

NOV 2019
DRAFT

SOUTH DAVIS COUNTY ACTIVE TRANSPORTATION PLAN

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



BOUNTIFUL
EST. 1847

alta
PLANNING + DESIGN

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, UDOT, UTA, 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
Lloyd 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

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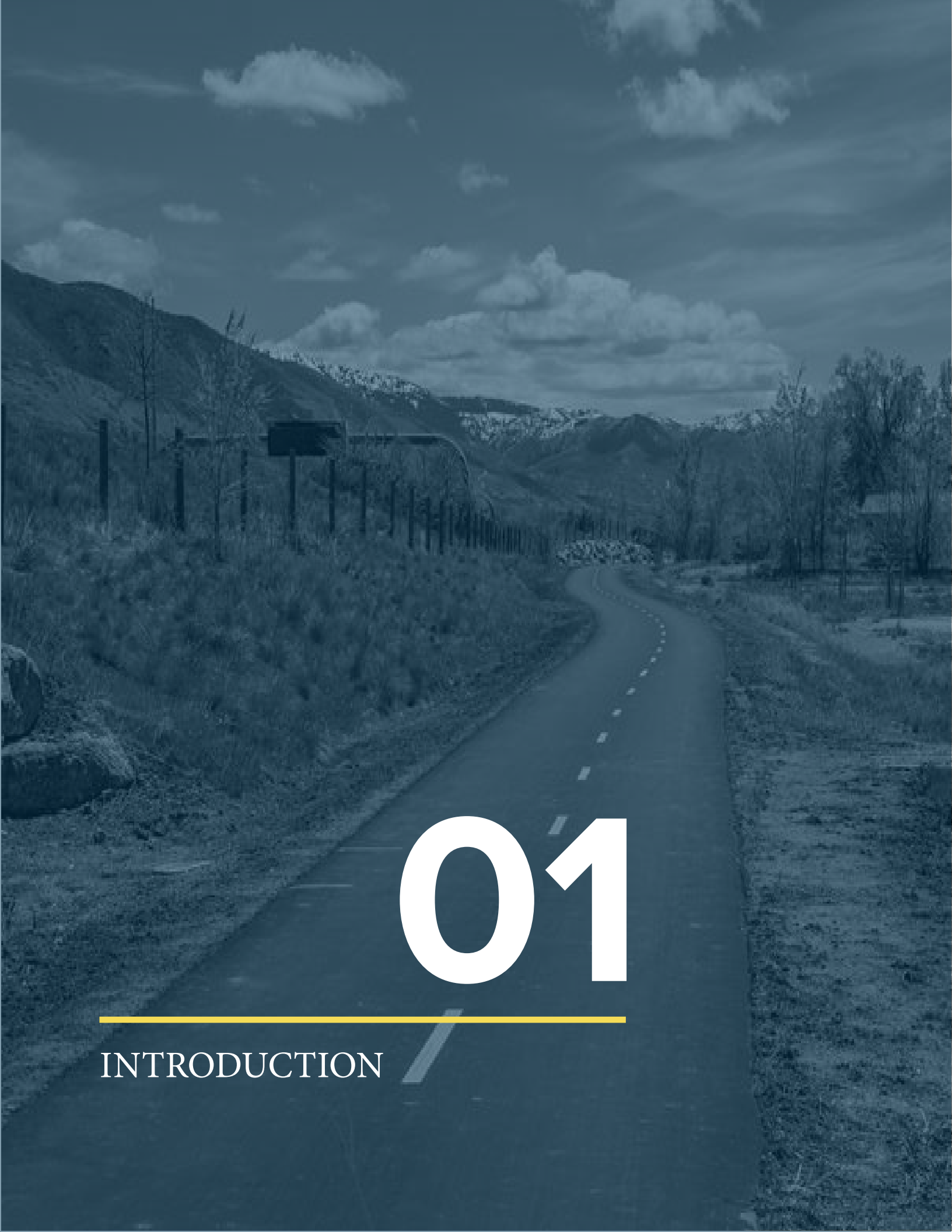


01

INTRODUCTION

ABOUT THE PLAN

The cities of Bountiful, Centerville, and North Salt Lake were collectively awarded a Transportation Land Use Connection[1] (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 (ATP) 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 ATP will further establish South Davis County as a recreation destination, promoting 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 15-month period starting in October 2018. 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

[1]The 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

Incorporating pedestiran and bicycle infrastructure improves safety by increasing predictability, slowing motor traffic speeds in some cases, increasing separation between cars and more vulnerable users, and encouraging a more deliberate and attentive use of the roadway system.[1]

Winter Air Quality

Combustion engines and industry combine with geographic constraints to create air quality concerns along the urbanized Wasatch Front, including Davis County. Replacing driving trips with walking and bicycling trips can play an important part in a comprehensive strategy to mitigate poor air quality.

Economics

Bicycling and walking can also have positive impacts on local economies in a variety of ways. Infrastructural improvements can sustain contracting jobs. Additionally, tourism, retail sales[2], property values[3] and worker productivity can all be enhanced through active transportation.

Quality of Life

People who can easily and safely walk and ride a bicycle are happier and experience a higher quality of life, including the following factors:

» Freedom of choice: Improving active transportation options opens opportunities for residents who are too young/old to drive or who otherwise are unable to drive. In general, more transportation options benefits the community by allowing people to spend less time/money on transportation or confidently allowing children to walk to school, the park, or friends’ houses.

» Health and Safety: Streets that are designed for the safety of vulnerable road users (i.e. pedestrians and bicyclists) are safe for everyone. Active transportation options also promote more active living and help residents meet physical activity guidelines for good health.

[1] Ewing, R. and Dumaugh, E. (2010). The Built Environment and Traffic Safety: A Review of Empirical Evidence, Injury Prevention 16: 211-212.

[2] Business Cycles: Catering to the Bicycling Market. (2012) Transportation Research Board. Kelly J. Clifton, Sara Morrissey, and Chloe Ritter. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.685.4497&rep=rep1&type=pdf#page=28

[3] Walking the Walk: How Walkability Raises Home Values in U.S. Cities. (2009) CEOs for CIties: https://nacto.org/docs/usdg/walking_the_walk_cortright.pdf

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 bicyclists[1] 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.

» **Enthused 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 Bus Rapid Transit (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 Deptartment 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.

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.

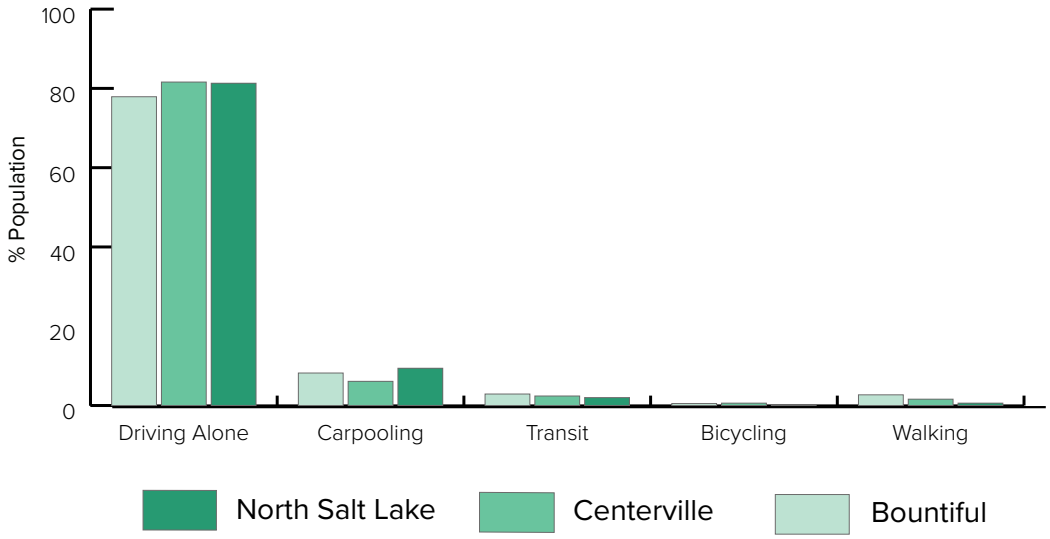
CURRENT TRENDS

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

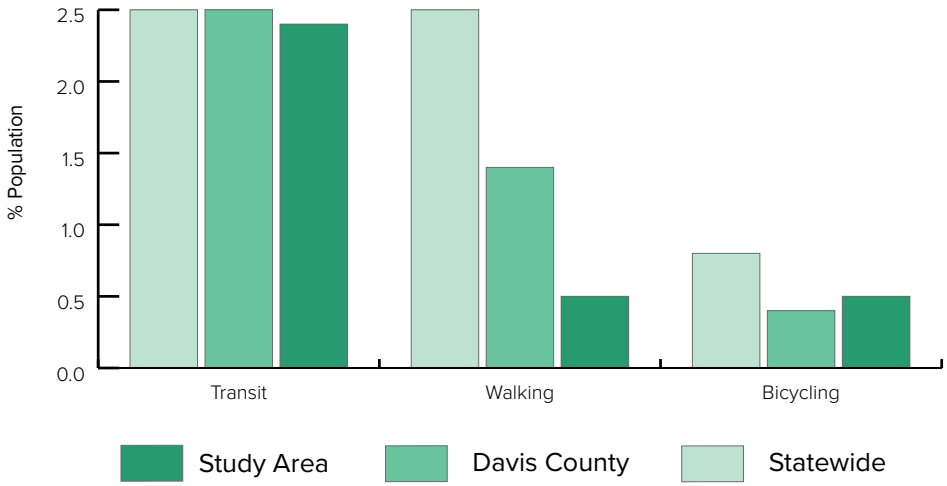
Based on 2013-2017 American Community Survey (ACS) data, the cities of Bountiful, Centerville, and North Salt Lake show the majority of residents commuting to work by driving alone (78%, 82%, and 81%, respectively), followed distantly by those carpooling (8%, 6%, and 9%, respectively). The percent of 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 indicate significant 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



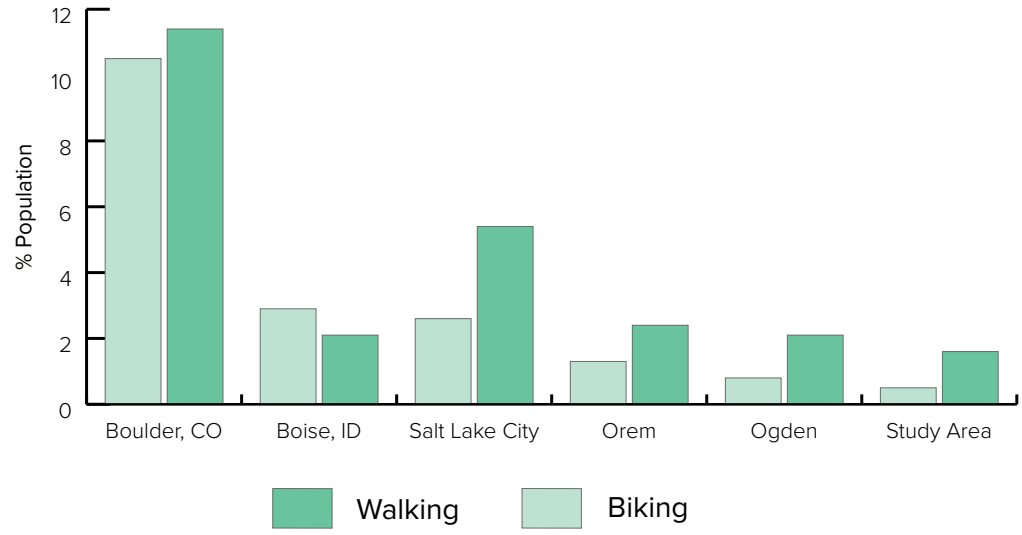
When comparing these cities' averages to state and county averages; however, it is also apparent that Bountiful, Centerville, and North Salt Lake have a lower than average number of people commuting to work by bike or foot. The population percentage using public transit within Bountiful, Centerville, 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



Comparisons with towns within the mountain west region further highlight the lack of active transportation mode share. 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 other Mt. West cities



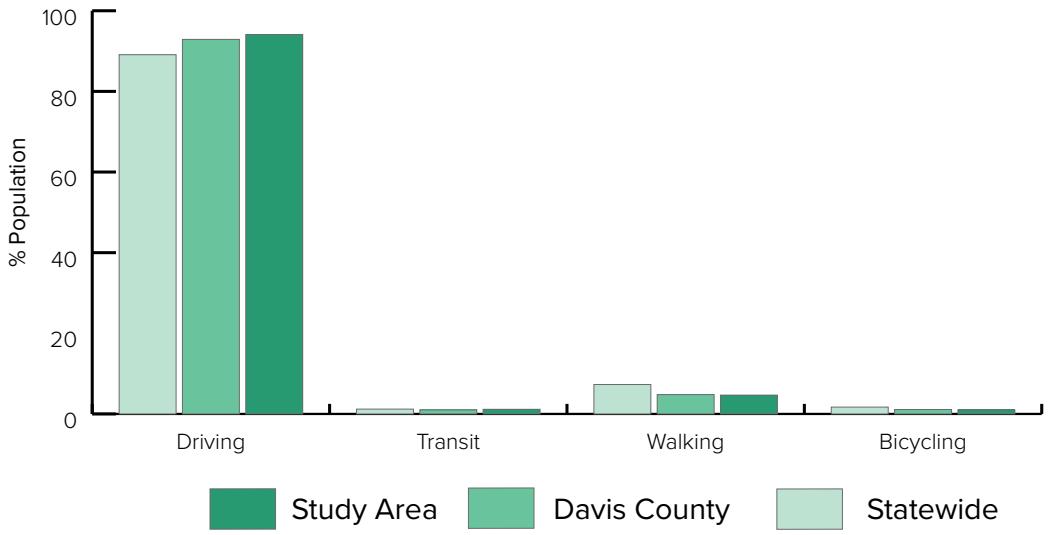
The Utah Travel Survey (2012) and National Household Travel Survey (2017)

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.

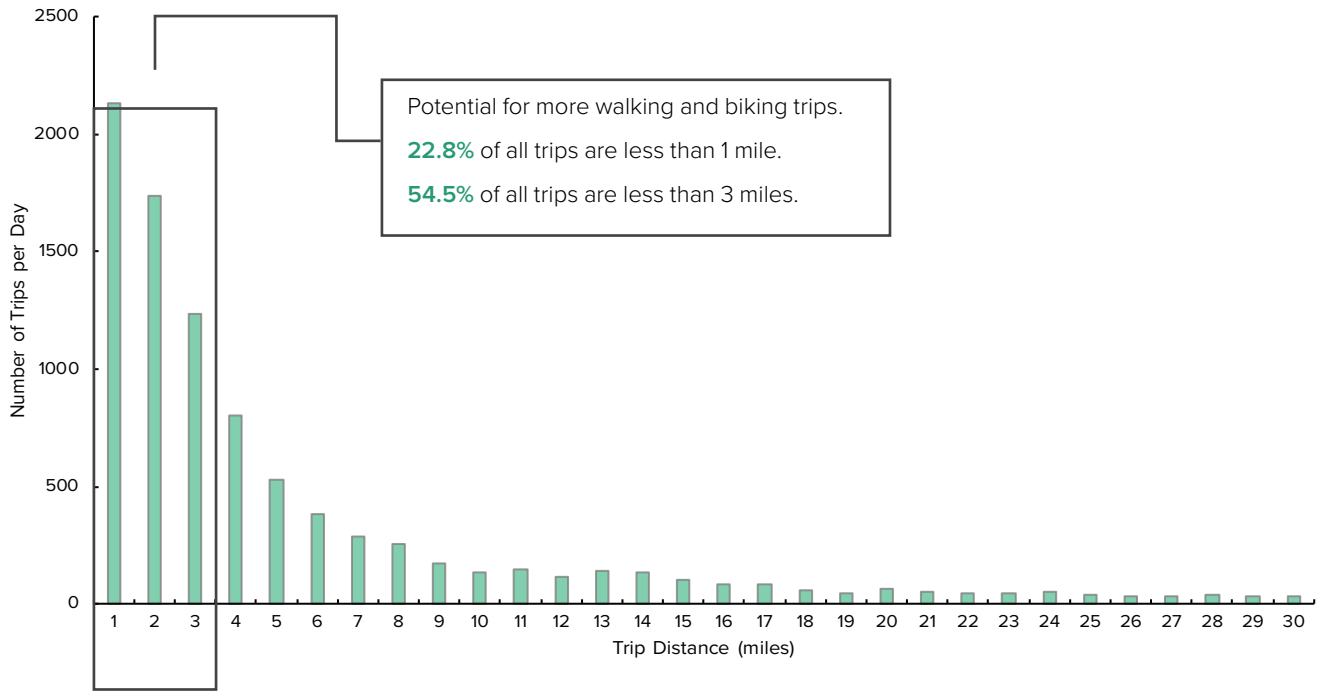
However, even when these trip variations are taken into account, Figure 2.4 still shows that the cities of Bountiful, Centerville, and North Salt Lake are again below state and county averages for percentage of trips taken by foot or bike. There are several possible reasons that could be associated with 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 ingresses 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.

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 & 2019)

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

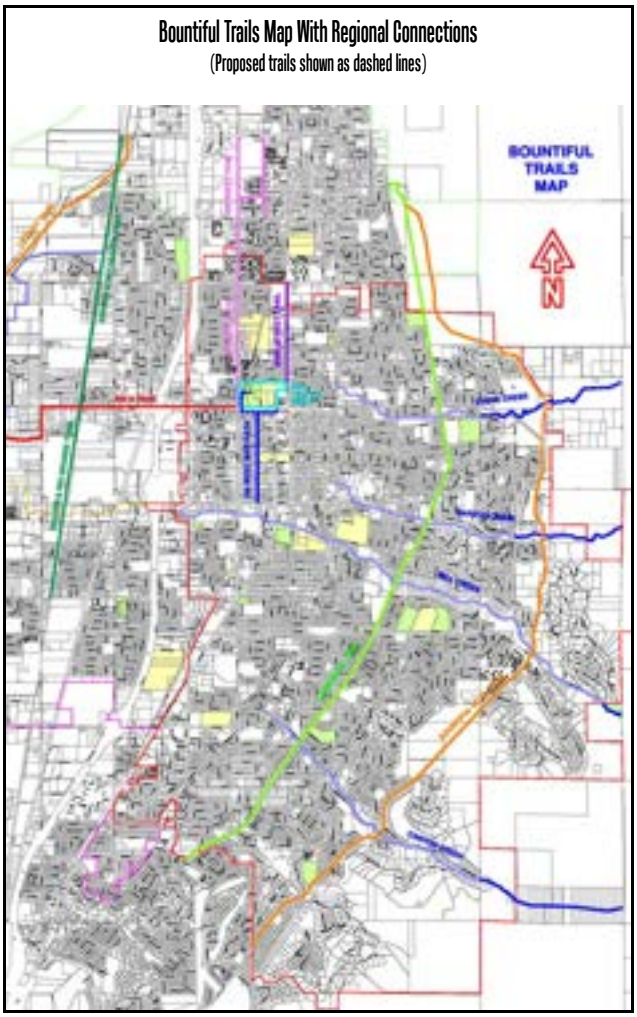
Key Recommendations Relating to Active Transportation:

» 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 as transit, bicycle, and automobile corridor (include shoulder bikeways).

» Construct parkstrips on Orchard Dr where possible to reduce obstruction of the sidewalk and provide space for waste receptacles.

» 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 limiting 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.

» Improve walking access to Main Street.

» 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 SALT 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 1100 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

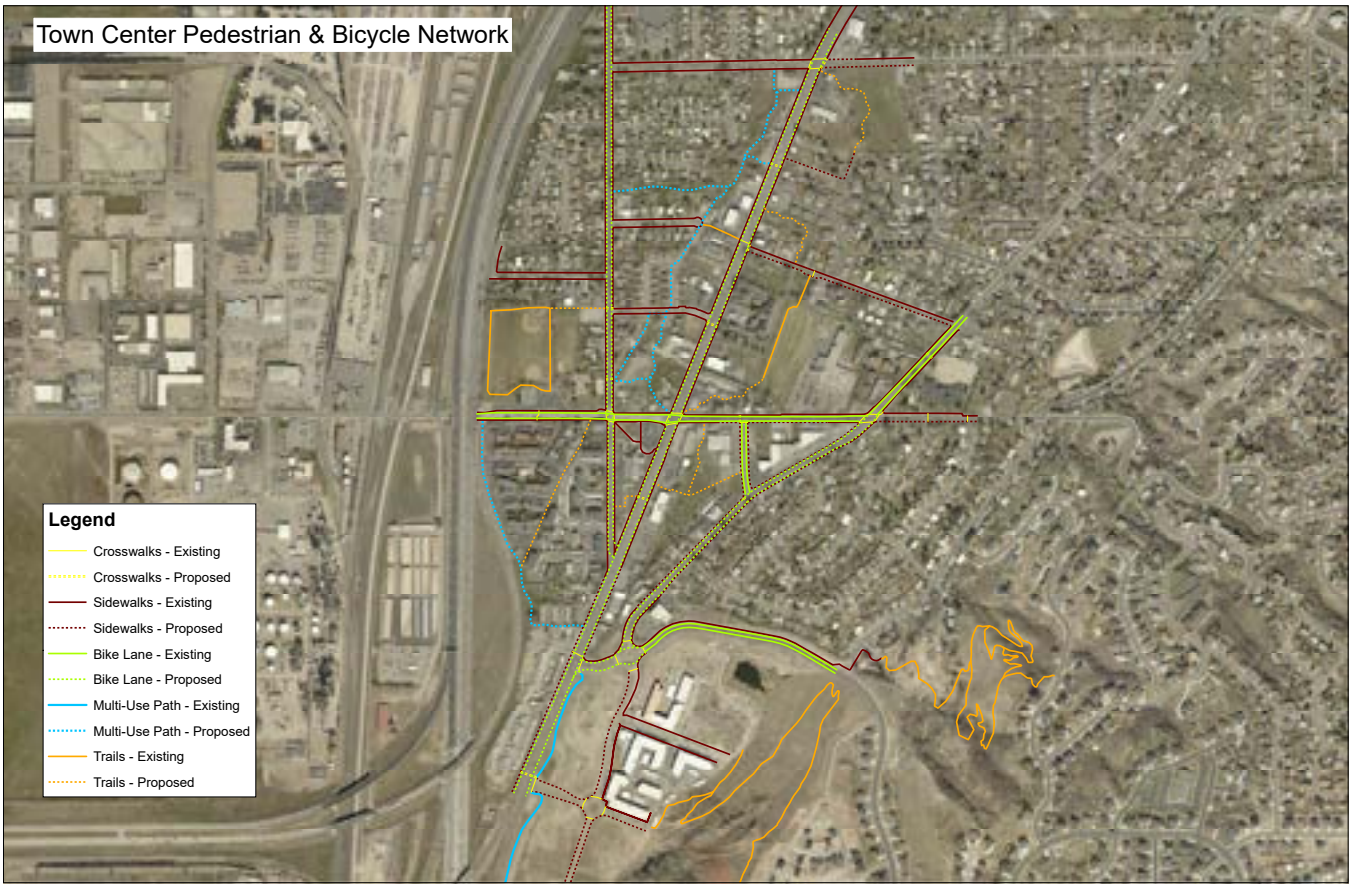
» As land becomes available, consider the use of alleys and the development of additional paths for further bicycle connections

» 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

Bountiful seriously lacks active transportation infrastructure, with only 3.9 miles of bicycle/pedestrian facilities (excluding sidewalks) city wide. However, the City displays slightly more street connectivity than its neighboring cities and thus has significant potential to become very walkable and bikeable. Davis Boulevard and Pages Lane are currently the only streets that accommodate bicyclists with dedicated infrastructure.

EXISTING FACILITY TYPES

3.9 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.

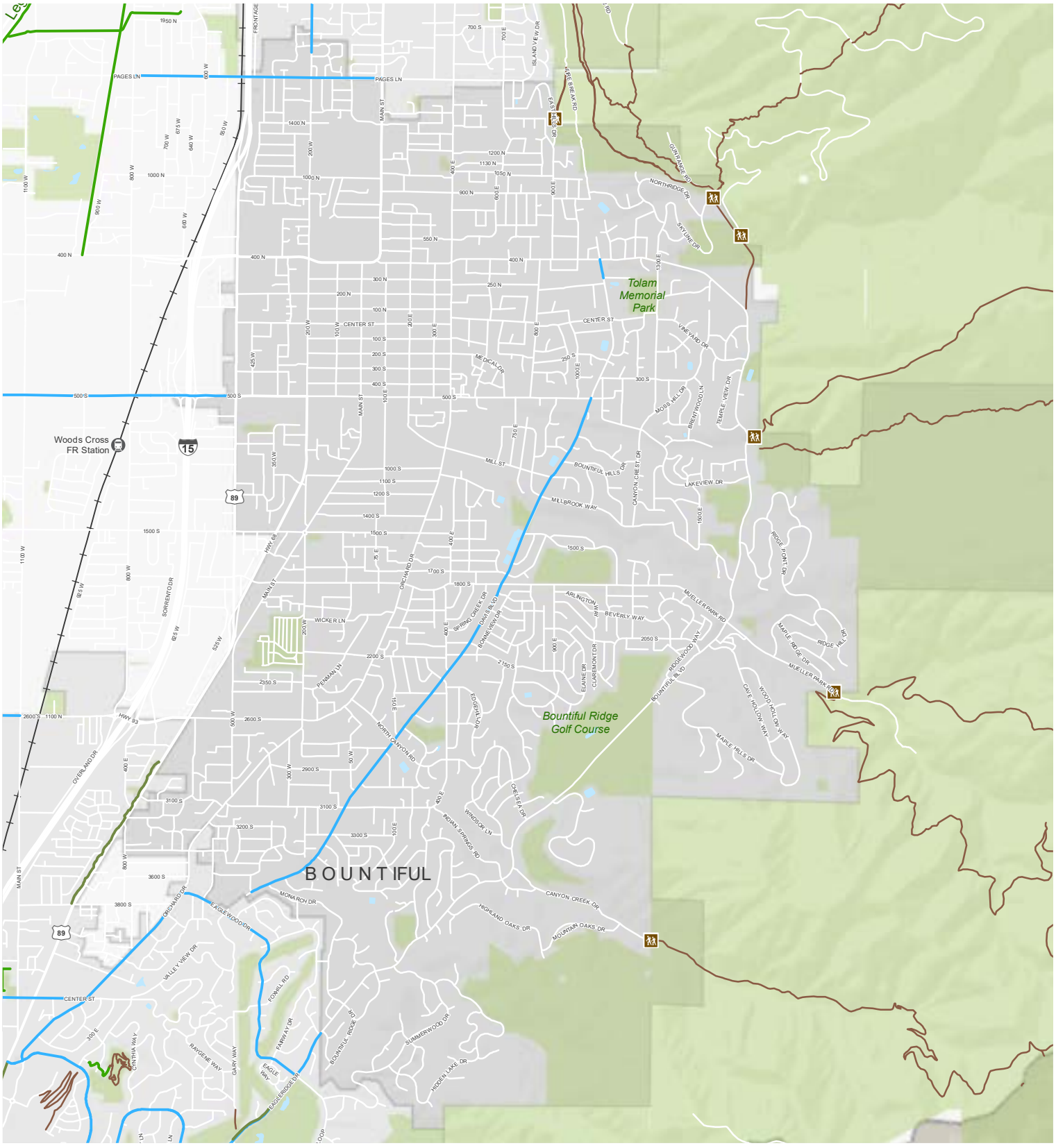
0 miles

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.

0 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.

EXISTING NETWORK - BOUNTIFUL



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

Existing Destinations + Boundaries
- Trailhead
- FrontRunner station
- City limits
- County limits

0 — 0.25 — 0.5 — 1 MILES

	5 MIN	10 MIN	20 MIN
WALK	1 MIN	3 MIN	6 MIN
BIKE			

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.

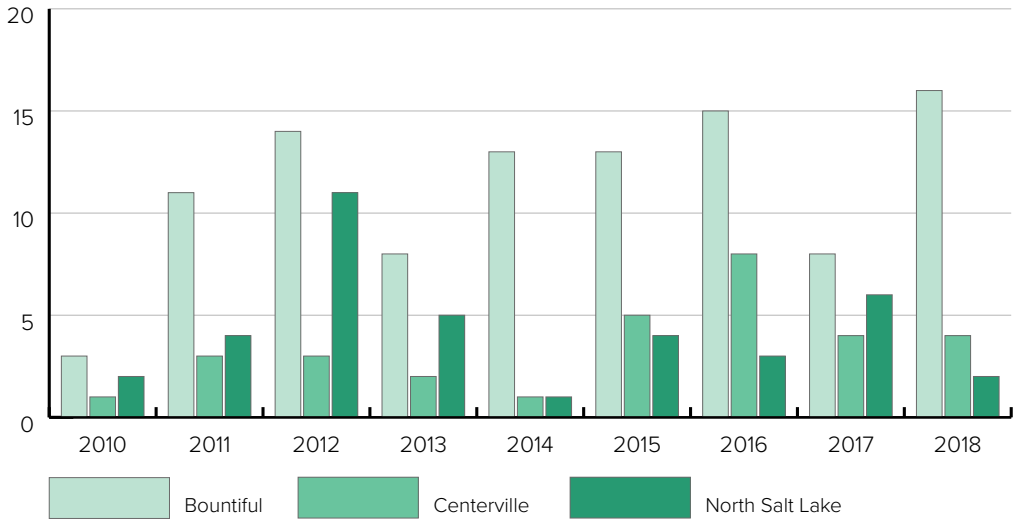
Comparing the three cities under study, percentages of crashes classified as pedestrian involved for each city are comparable on roads excluding I-15, I-215, and Highway 67 (Legacy Parkway).

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

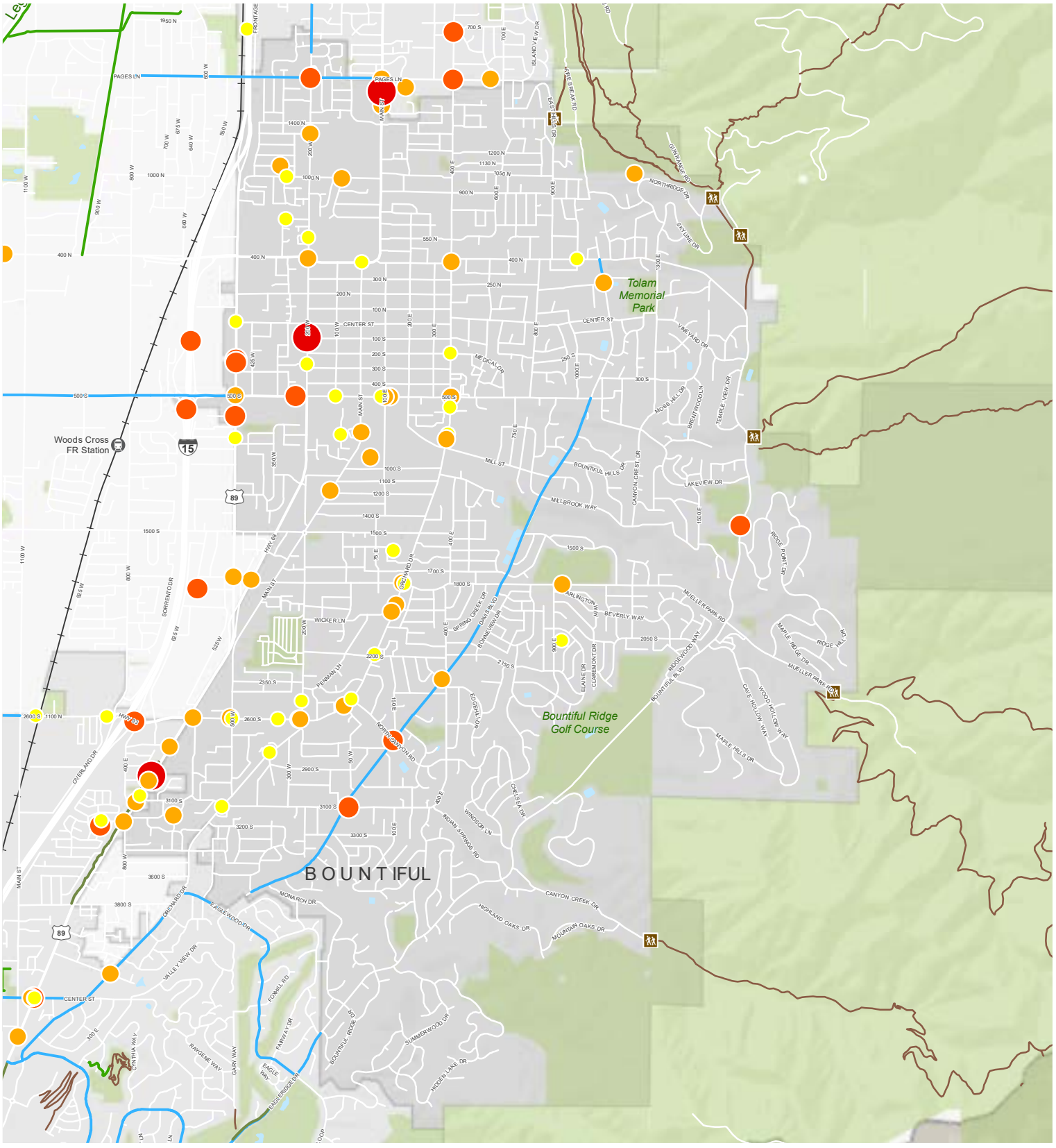
Centerville: 1,611 total crashes; **31** pedestrian involved crashes (1.9 percent)

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)



PEDESTRIAN INVOLVED CRASHES (2010-2018) - BOUNTIFUL



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

0 — 0.25 — 0.5 — 1 MILES

WALK: 5 MIN — 10 MIN — 20 MIN
BIKE: 1 MIN — 3 MIN — 6 MIN

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.

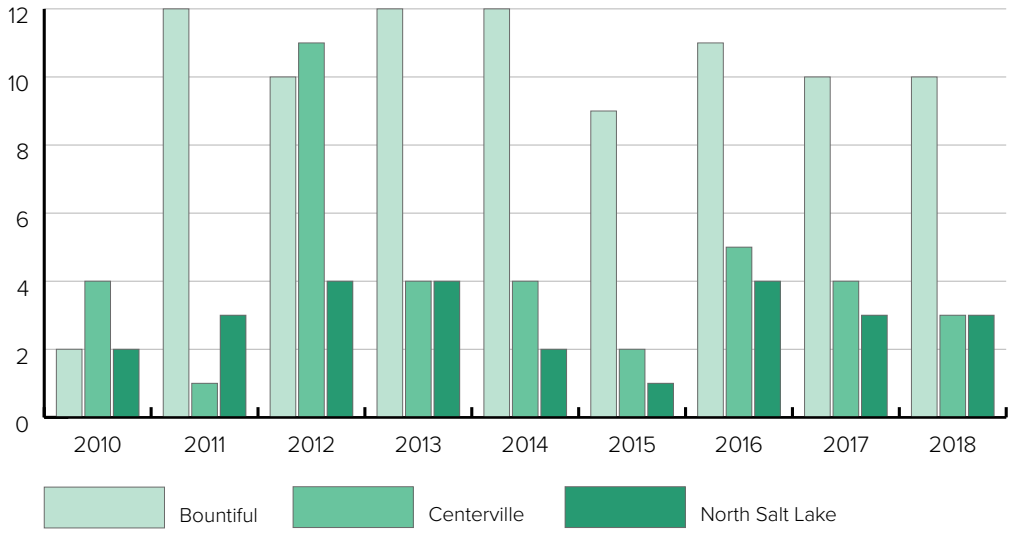
Comparing the three cities under study, percentages of crashes classified as bicyclist involved for each city are comparable on roads excluding I-15, I-215, and Highway 67 (Legacy Parkway).

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

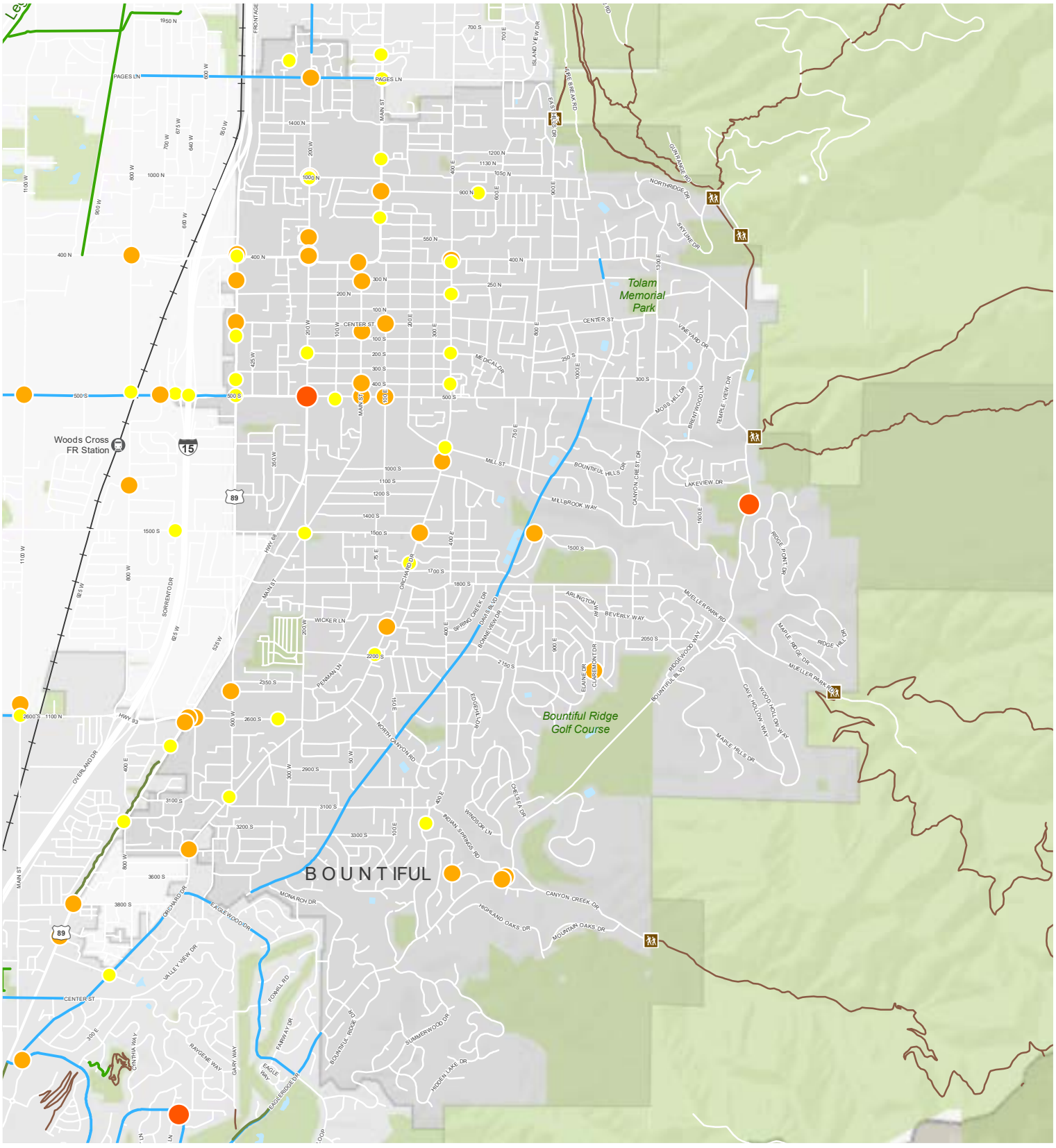
Centerville: 1,611 total crashes; **38** bicyclist involved crashes (2.4 percent)

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)



BICYCLIST INVOLVED CRASHES (2010-2018) - BOUNTIFUL



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

0 — 0.25 — 0.5 — 1 MILES

WALK: 5 MIN — 10 MIN — 20 MIN
BIKE: 1 MIN — 3 MIN — 6 MIN

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

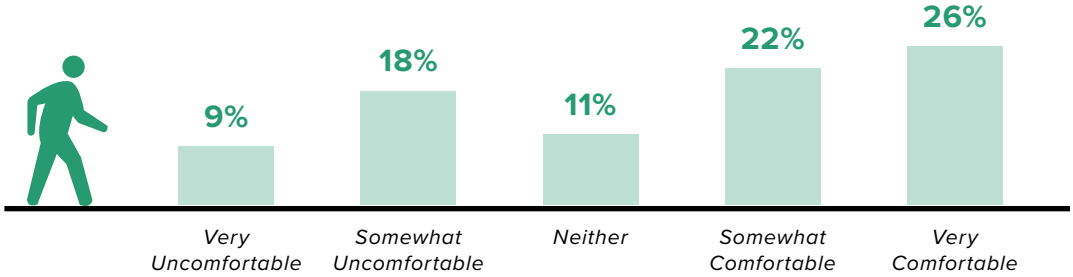
Spending Time Outdoors

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.

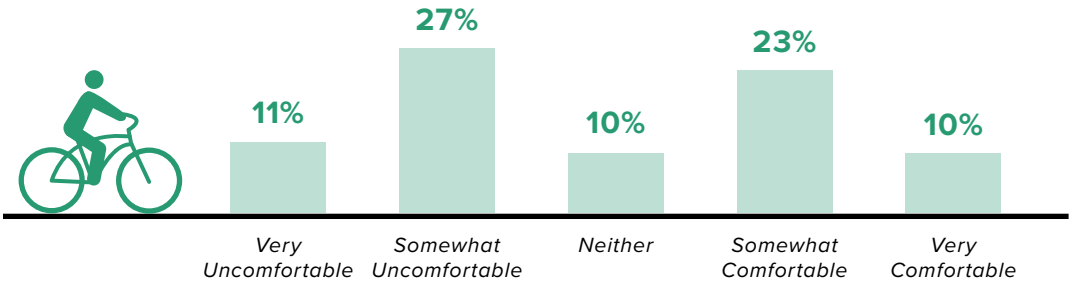
How comfortable do you feel walking in South Davis County?

MORE THAN 1/4 *of respondents feel uncomfortable walking in South Davis County*



How comfortable do you feel bicycling in South Davis County?

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



What deters you from walking and/or bicycling?

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

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

What are your top priorities for future investment?

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)

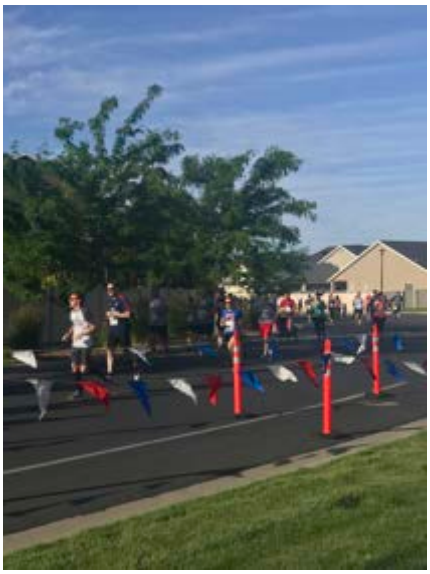
Better sidewalks (wider, landscape buffers)

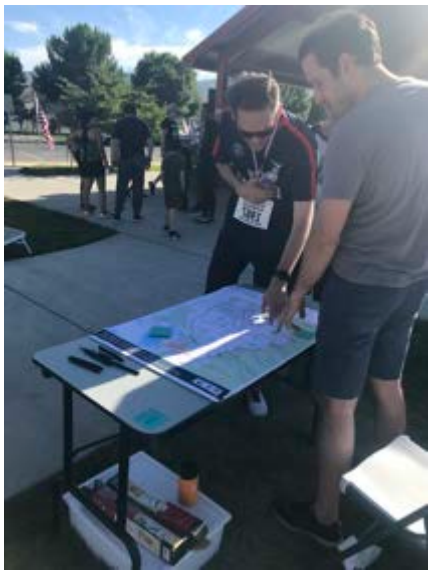
Other notable priorities from the survey included better crossings of major streets and more on-street bikeways to local destinations.

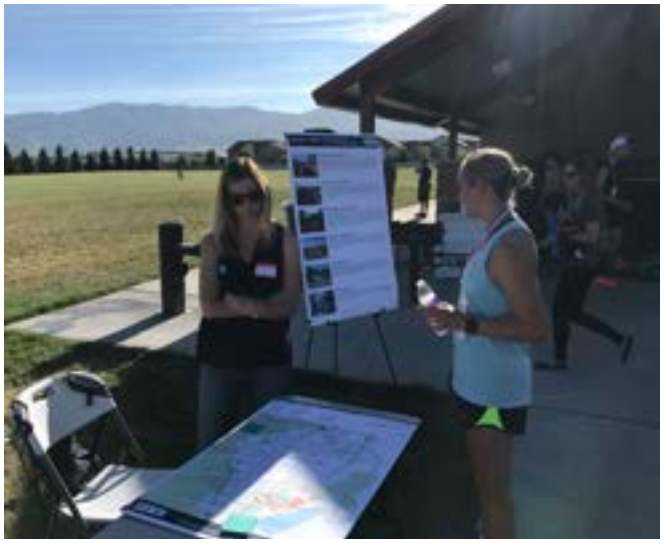
IN-PERSON POP-UP EVENTS

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

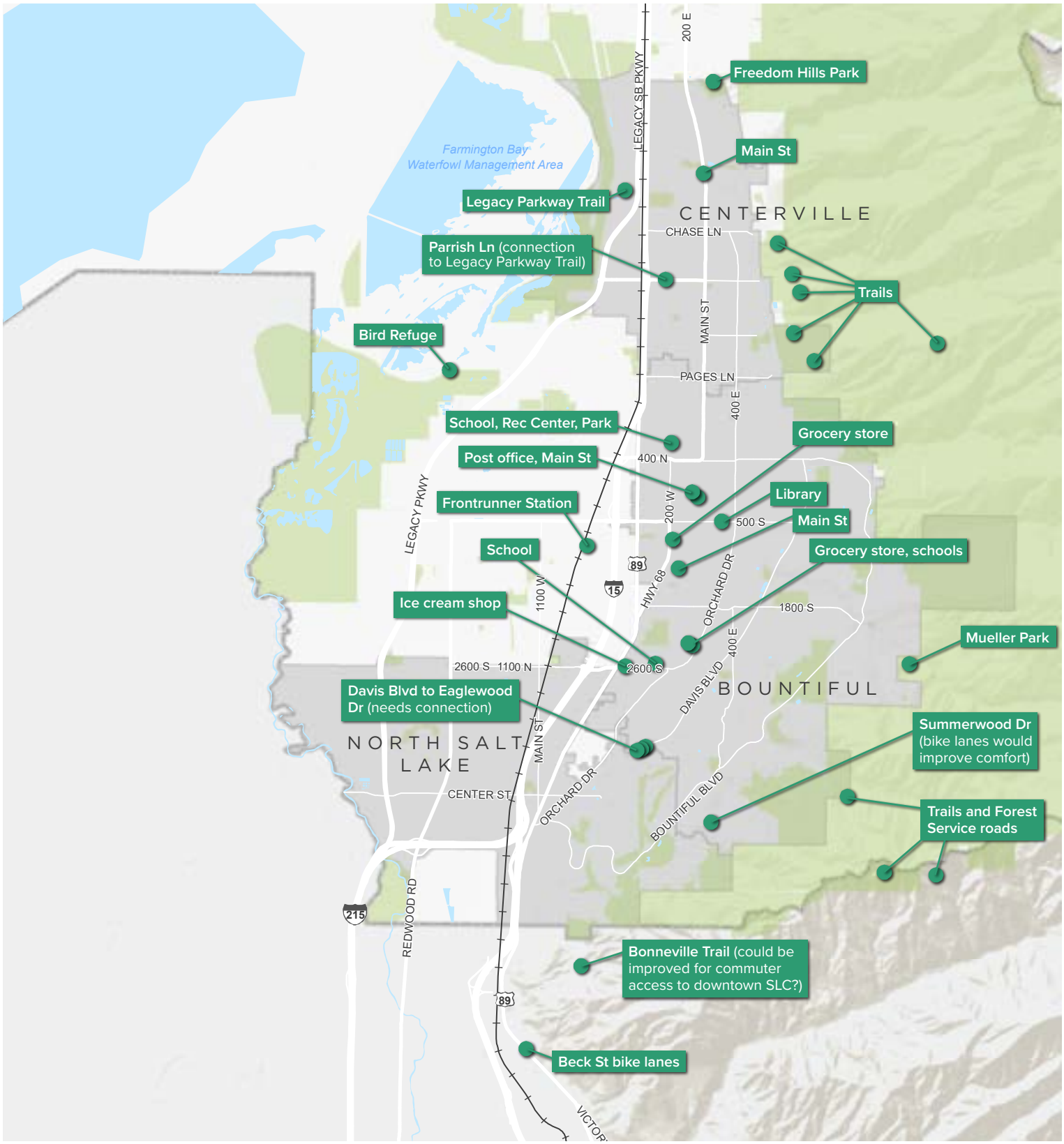
The Recommendations phase interactive web map showed the proposed active transportation network. Participants were able to like, dislike, or comment on any given recommendation and were asked to identify five "top priority" projects. The recommended route that received the most "likes" was the separated 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 in Bountiful and Centerville (23 likes) and the sidepath and bike lanes along Bountiful Boulevard in Bountiful (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

0 0.25 0.5 1 MILES

5 MIN 10 MIN 20 MIN WALK
1 MIN 3 MIN 6 MIN BIKE

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 - BARRIERS TO WALKING AND BICYCLING

Boundaries
- City limits
- County limits

Public Comment
- Barrier to walking
- Barrier to bicycling

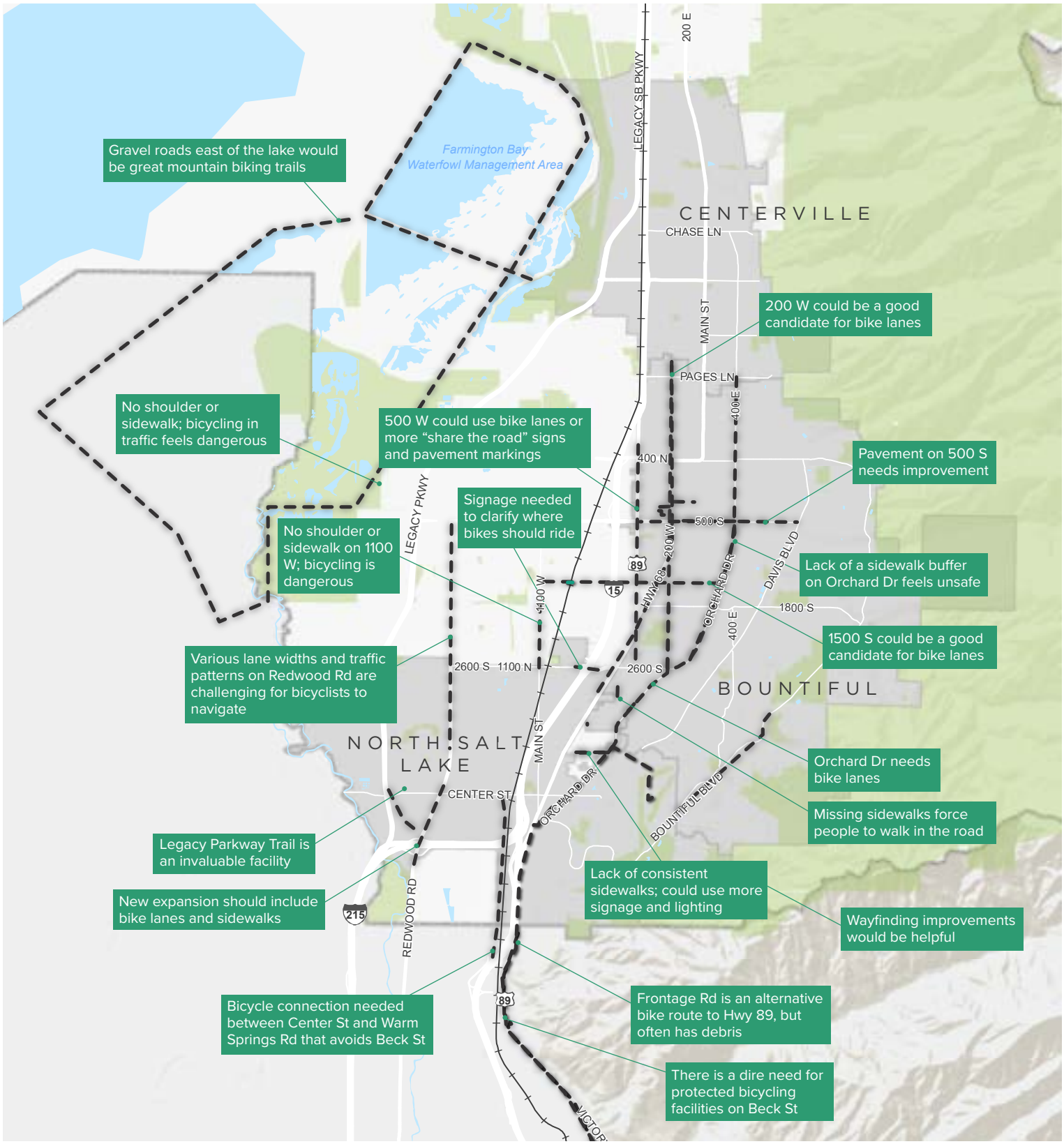
0 0.25 0.5 1 MILES

5 MIN 10 MIN 20 MIN WALK
1 MIN 3 MIN 6 MIN BIKE

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 3.3 | SOUTH DAVIS COUNTY ACTIVE TRANSPORTATION PLAN

PUBLIC INPUT PHASE 1 - WALKING/BICYCLING SUGGESTED ROUTES



Boundaries
- City limits
- County limits

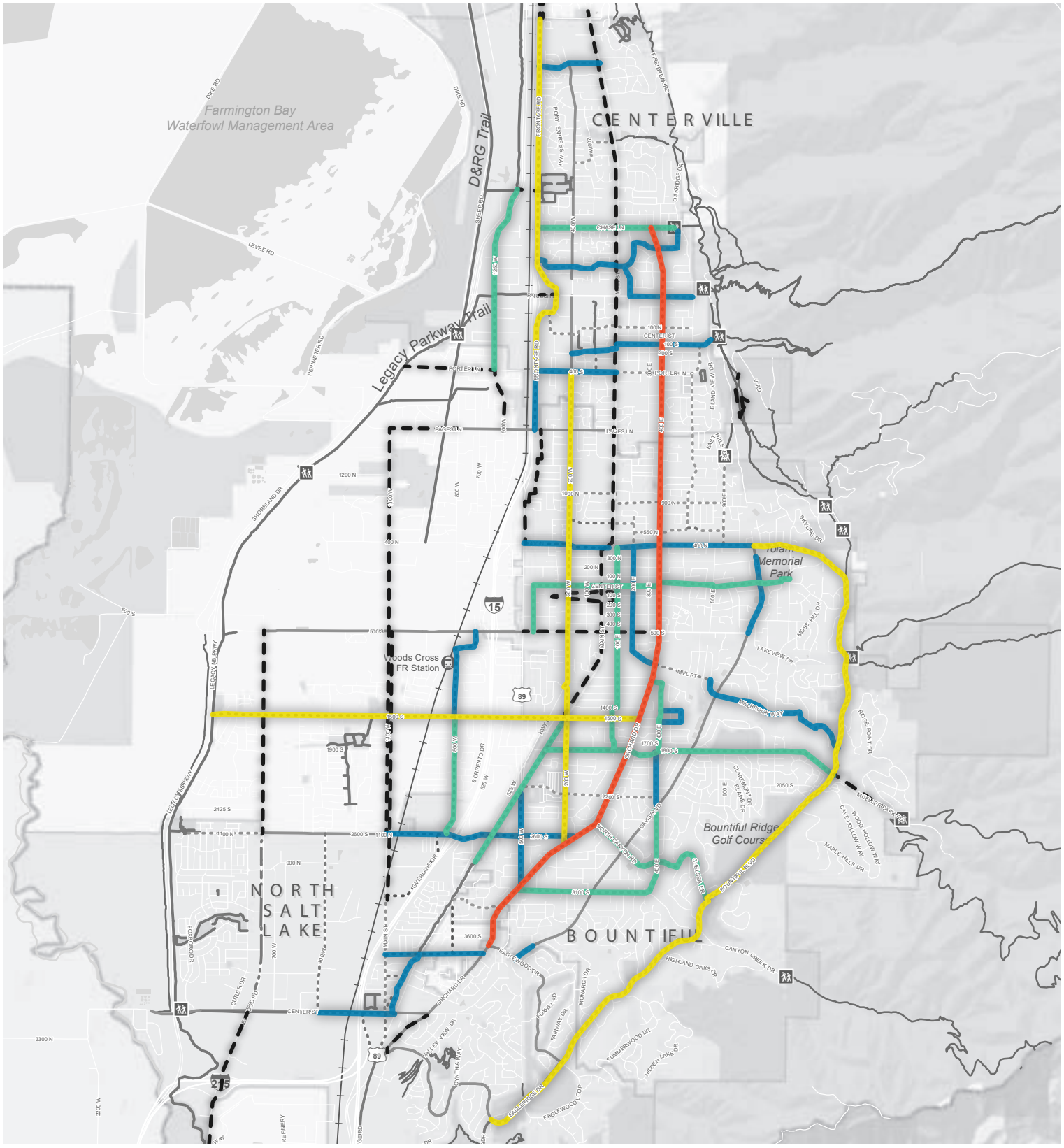
Public Comment
- Walking/bicycling suggested route

0 0.25 0.5 1 MILES

WALK: 5 MIN 10 MIN 20 MIN
BIKE: 1 MIN 3 MIN 6 MIN

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 2 - "LIKED" AND NEWLY SUGGESTED ROUTES



Boundaries
- City limits
- County limits

Total Likes
- 1-5
- 6-10
- 11-23
- 24-56

Public Comment
- Newly suggested route

0 — 0.5 — 1 — 2 MILES

10 MIN	20 MIN	40 MIN	WALK
3 MIN	6 MIN	12 MIN	BIKE

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.

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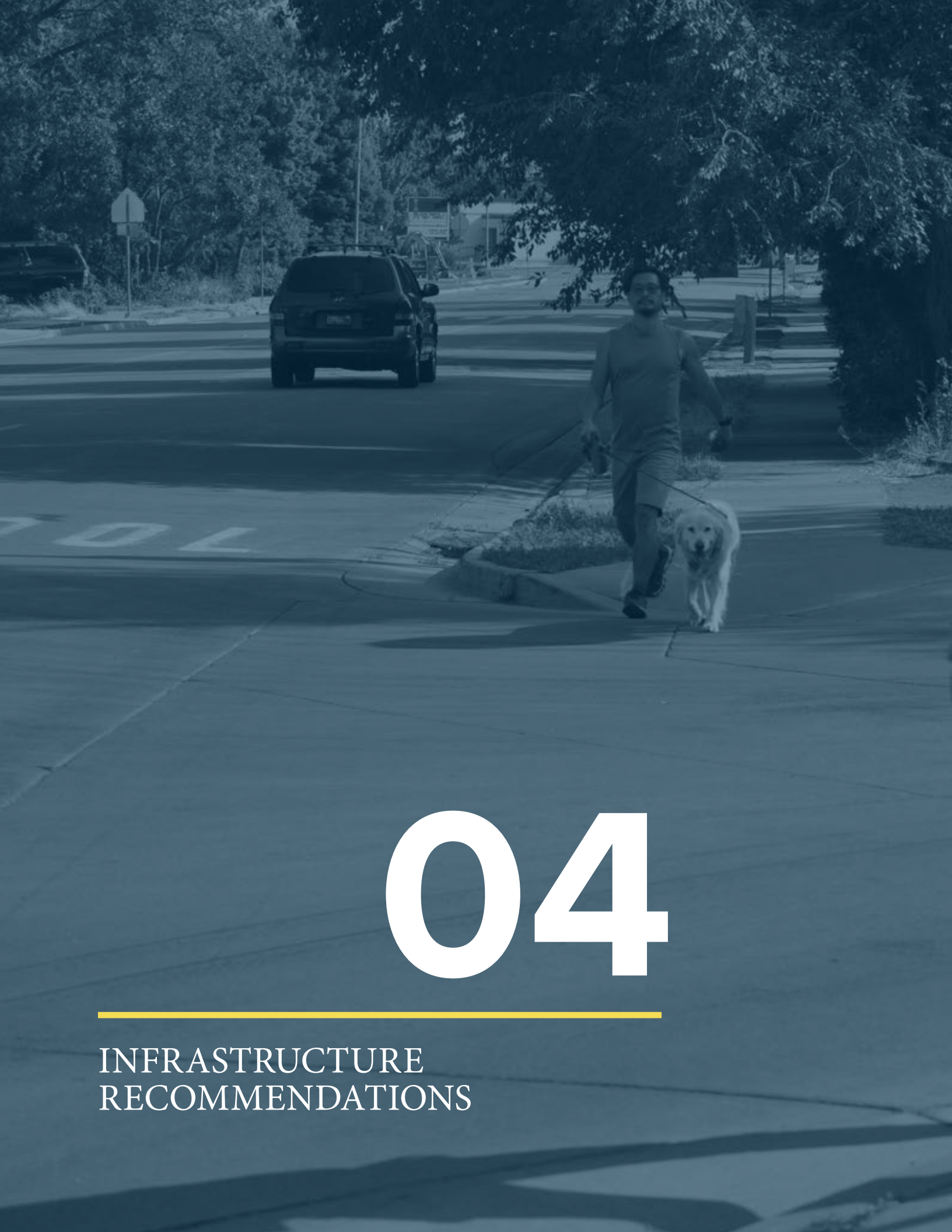
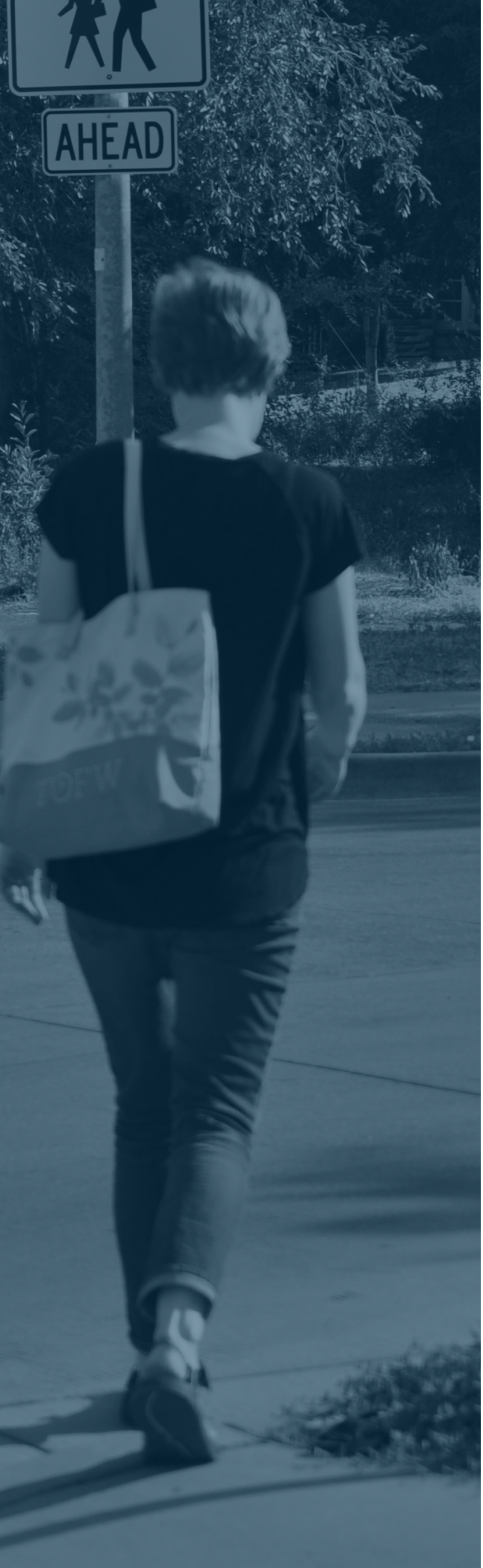


04

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.

Bountiful's 3.9 miles of existing walking and bicycling infrastructure (excluding sidewalks) are recommended to increase to a total of 43.2 miles - 39.3 miles of new active transportation infrastructure. Additionally, approximately 6.5 miles of proposed routes are labeled as "future study" and are not included in the 43.2 mile total. These recommended "future study" routes are important for network connectivity, but fall in corridors that present multiple layers of complexity (e.g. physical constraints, multi-party collaboration, etc.) that require more detailed analysis beyond the scope of this planning level study.

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 values[3], 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

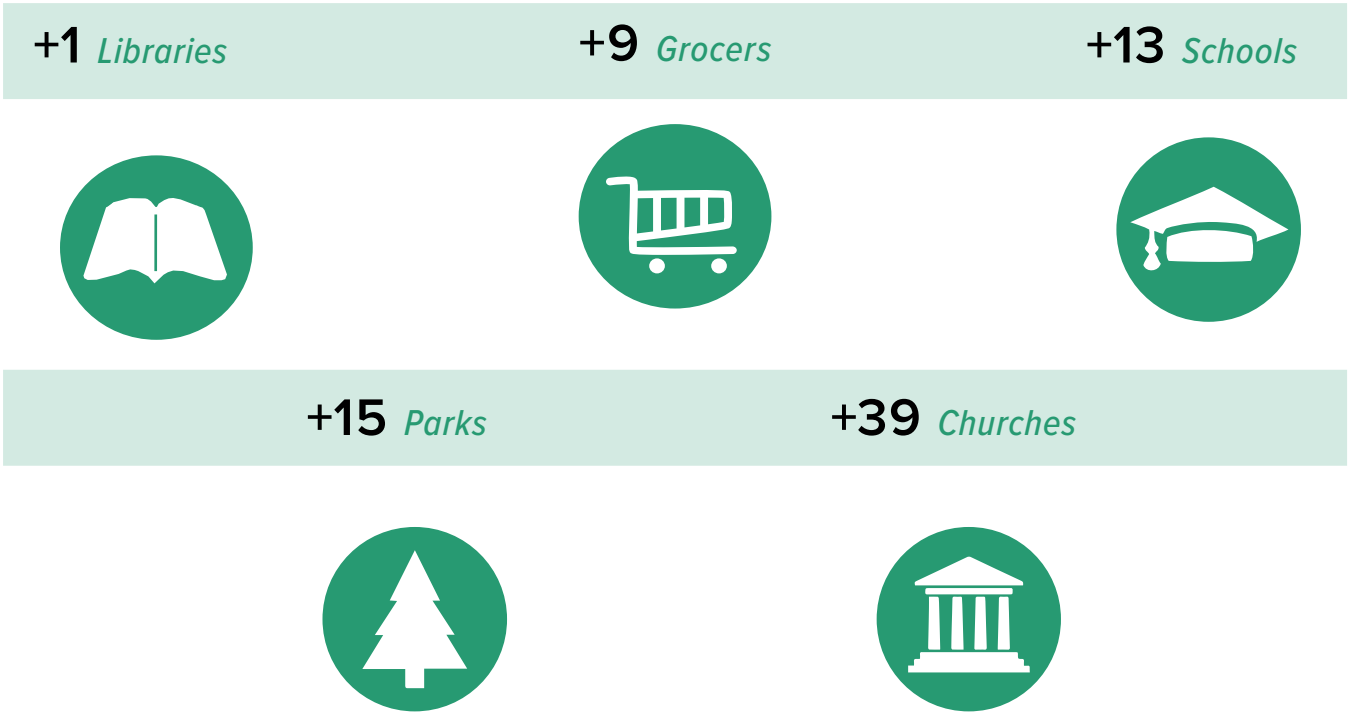
THE RECOMMENDED NETWORK

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...



RECOMMENDED FACILITY TYPES

2.8 miles

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

4.2 miles

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

14.6 miles

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

11.4 miles

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

0.4 miles

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

5.9 miles

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

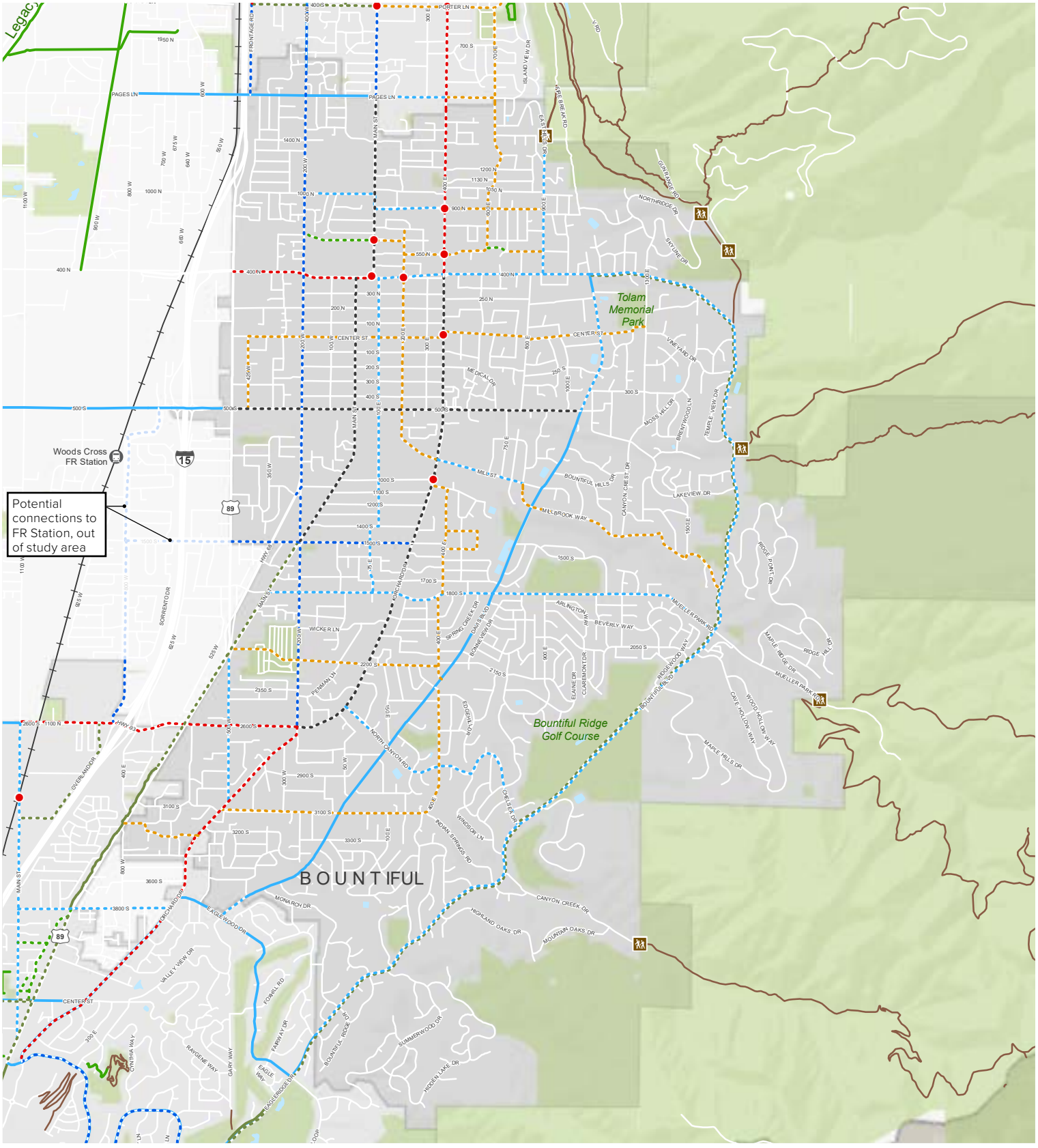
7 count

Improved Street Crossings enable pedestrians and bicyclists to safely cross major streets at key midblock locations and uncontrolled intersections

DESIGN GUIDANCE

For best practices, applications, and design guidance for specific facility types shown above, refer to Appendix C (Design Guidelines) of this plan.

NETWORK RECOMMENDATIONS - BOUNTIFUL



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
- Street crossing

0 — 0.25 — 0.5 — 1 MILES

WALK: 5 MIN / 1 MIN — 10 MIN / 3 MIN — 20 MIN / 6 MIN

BIKE

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 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.

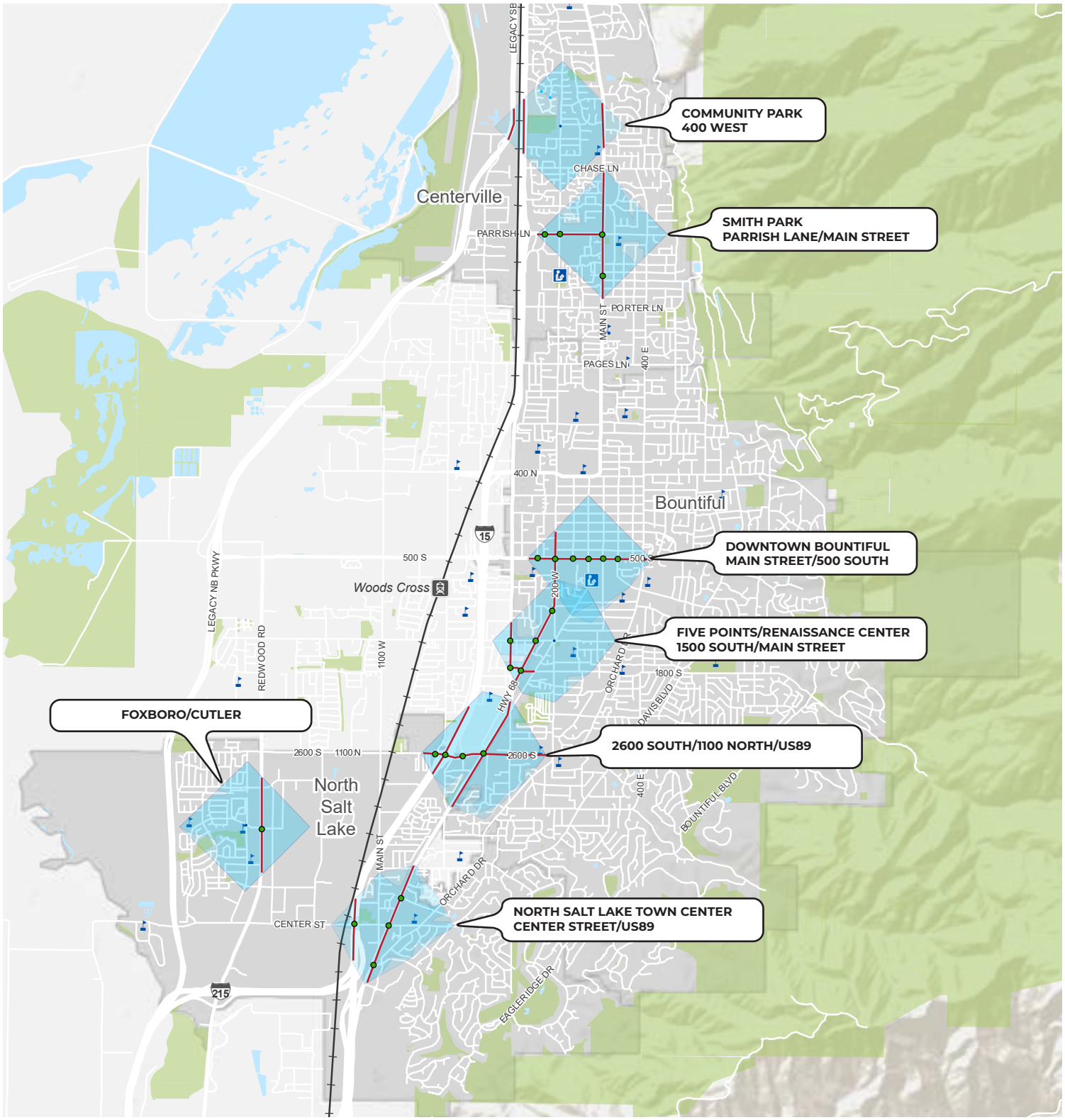
Connections to include in future development refers to where a large future development site presents an opportunity to increase pedestrian and bicyclist connectivity in the area.

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 be preserved/ enhanced, refer to connections from neighborhoods to schools.

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.

WALKSHED CONNECTIVITY ANALYSIS



Existing Destinations + Boundaries

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

Walkshed Analysis

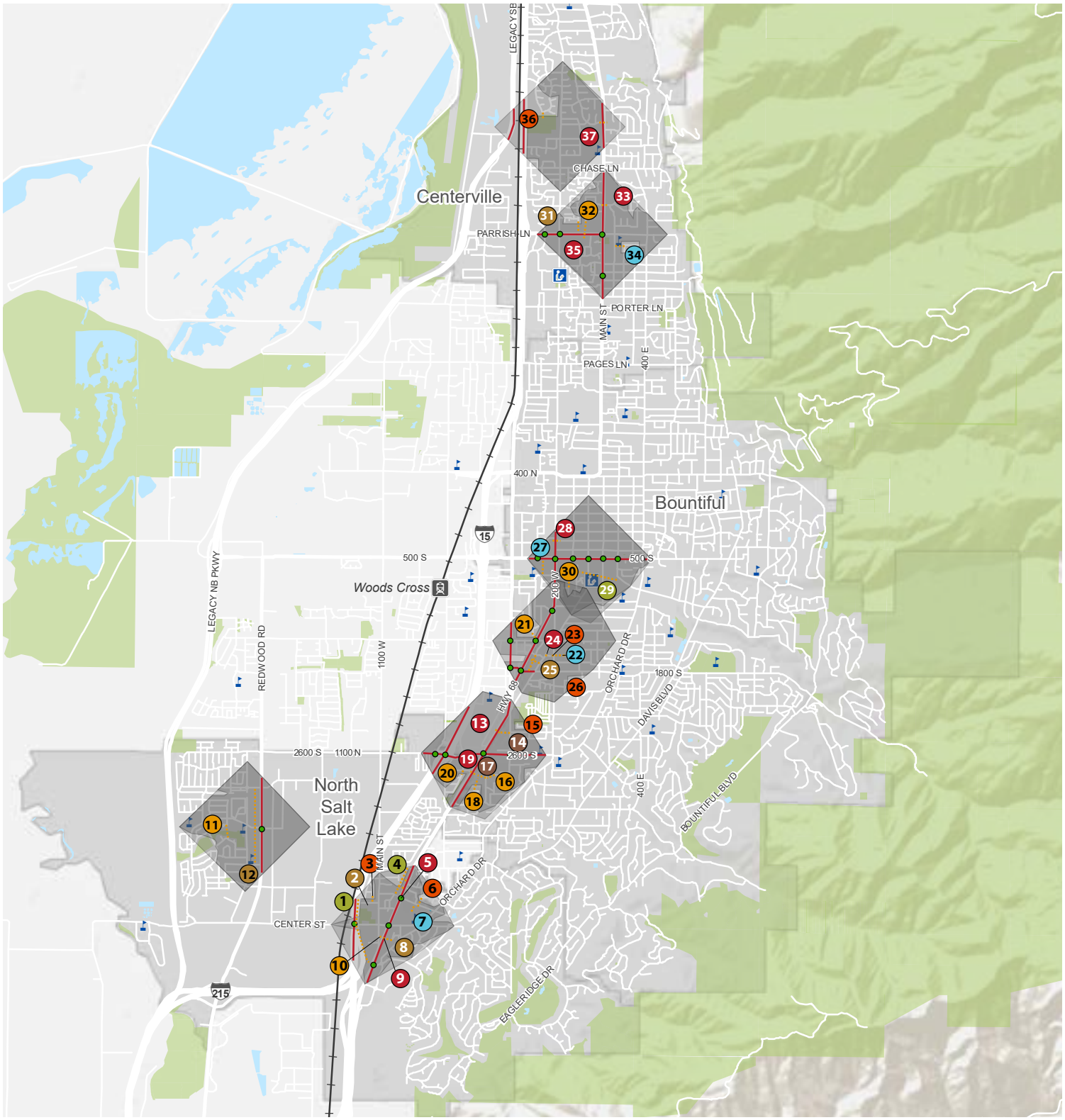
- Potential walkshed (half mile)
- Actual Walkshed (half mile)
- Barrier street
- Barrier street crossing

0 0.5 1 2 MILES

10 MIN 20 MIN 40 MIN WALK
3 MIN 6 MIN 12 MIN BIKE

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

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

0 0.5 1 2 MILES

			WALK
10 MIN	20 MIN	40 MIN	
3 MIN	6 MIN	12 MIN	BIKE

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. Enhance pathway connection from 4100 South to 100 North to create a more inviting and safe experience.
7. Preservation of pathway connection from 100 North to Orchard Elementary School; make new connection through school to Center Street.
8. Pathway connection between Orchard Drive and US 89 to better link neighborhoods to the Town Center - planned for between Walker Lane and ULGT 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 8.
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 17.
17. Pedestrian or street connection through the commercial superblock between 625 West and US 89 – ideally aligned with Connection 16.
18. Seek to leverage future redevelopment for a pathway connection of Eastpointe Drive north to US 89, preferably via the connection established in Connection 17.
19. New pedestrian street crossing of US 89 – ideally aligned with Connection 17.
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 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 due to redevelopment, future connection between 200 West potentially extended to Main Street.

DOWNTOWN BOUNTIFUL

27 Enhance pathway between 500 South and future development (former 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.

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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 "siloing" 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.

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

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.

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 people-oriented uses, 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.

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, such as those in the Wasatch Choice 2050 Vision[1], 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.

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

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.

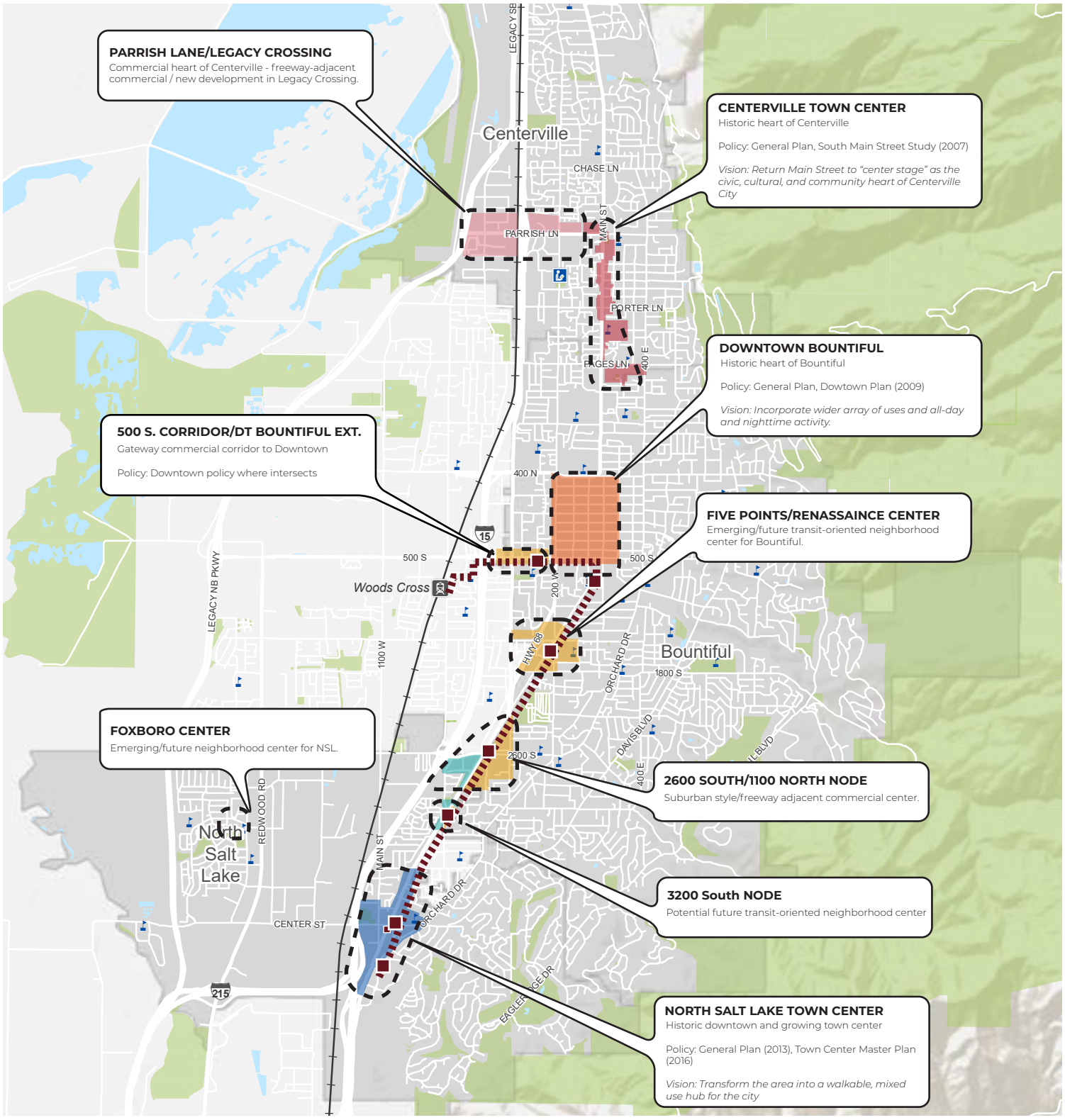
Existing walkable centers in South Davis County tend to be focused on the cities' historic downtowns. It is in these areas where the cities have focused the majority of their walkable center policy. However, there are other opportunities for South Davis communities to develop walkable centers, including 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.

[1] Wasatch Choice 2050; https://wfrc.org/vision-plans/wasatch-choice-2050/

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

0 0.5 1 2 MILES

10 MIN 20 MIN 40 MIN WALK
3 MIN 6 MIN 12 MIN BIKE

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

BOUNTIFUL

Areas with existing walkable policy

Downtown Bountiful is the largest and most intact historic center in south Davis County. It spreads in a neat grid between 500 South and 500 North, about a mile in from I-15. Main Street is its clear central spine.

Downtown Bountiful provides quality urban context with its small connected blocks, diagonal parking lane bulb-outs at corners, and other streetscape amenities. The City has done an extensive amount of planning to address the lack of activity and to increase investment in its downtown. Key existing downtown-area policies include the Downtown Plan, Downtown Height and Design Standards, and Main Street Policy.

As a result of the planning efforts, there is some new housing investment on side streets, especially to the west of Main Street. There are plans for a plaza, and the City hopes to attract some office uses to the area. Planners also want to see more connections between downtown and surrounding neighborhoods.

Potential additional areas for walkable policy

The Bountiful Transportation Plan states that “fixed transit routes can be powerful economic engines. In order to take advantage of the proposed South Davis Transit Line, Bountiful City should designate certain areas near transit stops for transit-oriented development.” One of the goals is to “Create a transit-oriented development plan for each proposed stop along the proposed South Davis Transit route.”

Consequently, areas to which to expand include those that are both likely station areas as well as existing commercial or mixed-use nodes.

» Five Points

» 500 South

» 2600 South

» 3200 South

The Plan recommends that Bountiful 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 Goals of the Bountiful Main Street Policy, including:

» Develop central gathering spaces

» Develop a district-wide sense of identity

» Fill in the gaps in the streetscape to create cohesive streets

» Ensure adequate parking in efficiently utilized shared facilities balanced with a high-quality pedestrian environment

» Reconfigure parking standards for appropriateness to a walkable, mixed-use district with frequent transit service

» Encourage residential uses in station areas

» Provide process and time certainty for development applications that mix residential and commercial.

» Improve pedestrian safety and create a pleasant walking environment

» Create a sign ordinance with the pedestrian in mind

» Enhance the building frontage character by ensuring a high level of window transparency, pedestrian-oriented signs, and building entrances should be convenient to public walking routes, and buildings come up to the street; Buildings should feature human-scaled design elements.

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). U.S. 89 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:

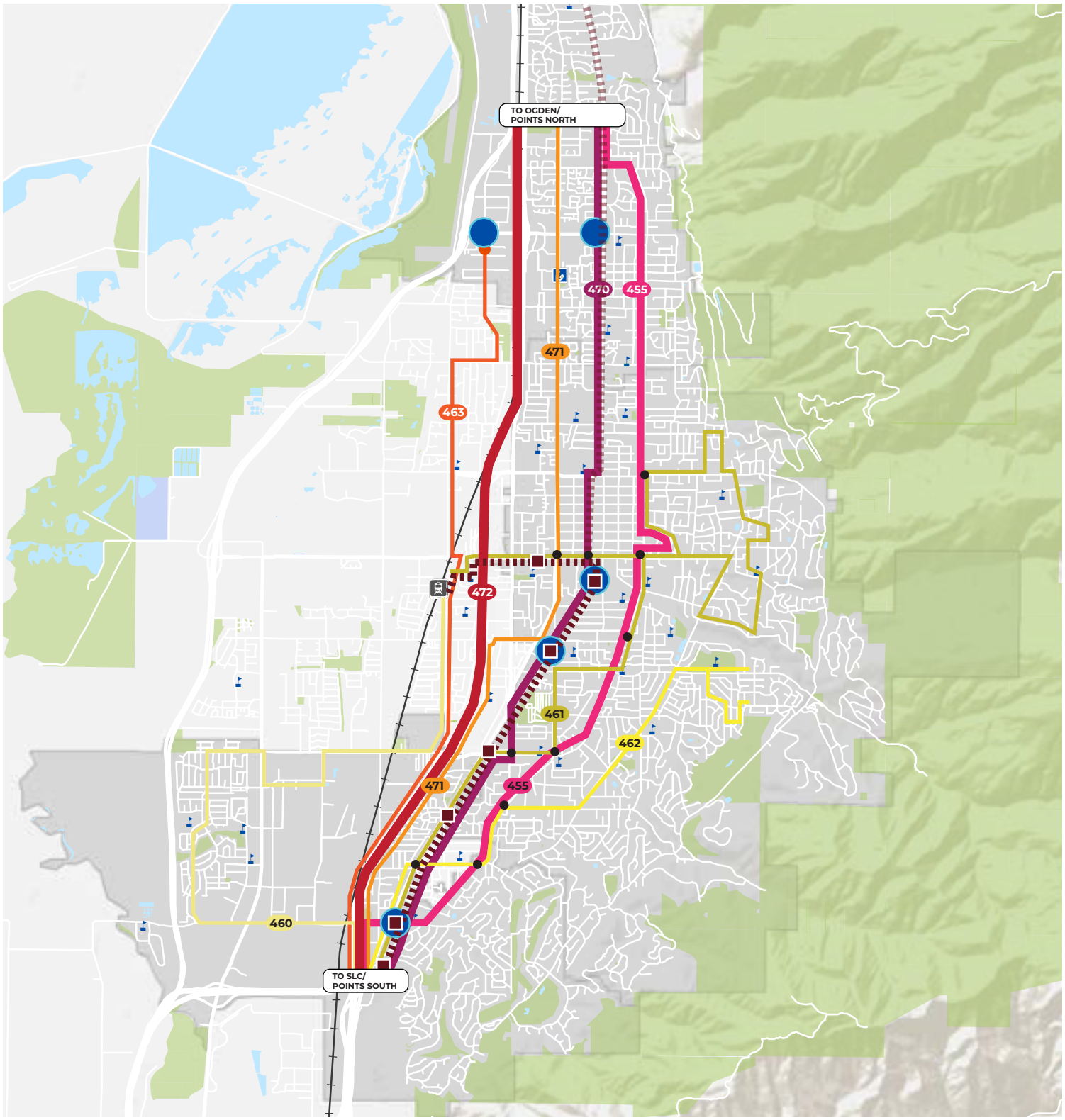
» Support for creating the option for more of a transit lifestyle in some parts of South Davis County – specifically where walkable centers and high-frequency service coincide, and to focus walkable land use patterns, walkable development frontage and a high-quality pedestrian realm – see Walkable Centers 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 transition UTA's bus system*
Right: *Sheltered seating and bicycle amenities near a gas station and bus service in Centerville*

TRANSIT NETWORK MAP



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

0 0.5 1 2 MILES

10 MIN	20 MIN	40 MIN	WALK
3 MIN	6 MIN	12 MIN	BIKE

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 the cities in this plan.

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.

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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 cost 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	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. 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.	www.fhwa.dot.gov/fastact
TRANSPORTATION ALTERNATIVES	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 theses 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. WFRC administers these funds through the WFRC Transportation Improvement Program (TIP)	**https://wfrc.org/programs/transportation-improvement-program/transportation-alternatives-program/** **Local Match: 20%**
SURFACE TRANSPORTATION BLOCK GRANT PROGRAM (STBG)	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.	https://www.fhwa.dot.gov/fastact/factsheets/stbgfs.cfm WFRC: https://wfrc.org/programs/transportation-improvement-program/surface-transportation-program/ Local Match: 6.77%
CONGESTION MITIGATION & AIR QUALITY PROGRAM (CMAQ)	For transportation projects and programs that help meet the requirements of the Clean Air Act. Funding is available to areas in nonattatinment or maintenance for ozone, carbon monoxide, and/or particulate matter. Federal CMAQ funds are administered by WFRC.	https://wfrc.org/programs/transportation-improvement-program/congestion-mitigation-air-quality-program/ Local Match: 6.77%

FEDERAL FUNDING SOURCES

SOURCE	SUMMARY	MORE INFORMATION
RECREATIONAL TRAILS	RTP 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. Recreational Trails Program funds may be used for: • 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.	https://stateparks.utah.gov/resources/grants/recreational-trails-program/ **Application Deadline:** May 1, annually **Local Match:** 50/50 sponsor match
HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)	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).	**For information specific to HSIP in the state of Utah, visit:** https://www.udot.utah.gov/main/f?p=100:pg:0:::1:T,V:2933, **Application Deadline:** Ongoing
CENTERS FOR DISEASE CONTROL AND PREVENTION GRANTS (CDC)	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.	https://www.cdc.gov/grants/ **Application Deadline:** Varies **Local Match:**

FEDERAL FUNDING SOURCES

SOURCE	SUMMARY	MORE INFORMATION
RIVERS, TRAILS, AND CONSERVATION ASSISTANCE PROGRAM	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.	https://www.nps.gov/orgs/rtca/apply.htm **Application Deadline:** June 30, annually
COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM (CDBG)	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”.	https://www.daviscountyutah.gov/ced/planning/grant-program/cdbg **Application Deadline:** Mandatory “How to Apply” workshops held annually in October/November

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%**
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

STATE FUNDING SOURCES

SOURCE	SUMMARY	MORE INFORMATION
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.	https://business.utah.gov/outdoor/uorg/ **Application Deadline:** March, annually **Local Match:** 50/50
UDOT STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM (STIP)	In addition to WFRC administered TAP and STP funds, UDOT is another source for these funds. Requirements are similar with the exception that Buy America requirements, which are excluded from UDOT STIP funds.	https://www.udot.gov/main/f?p=100:pg:0:::1:T,V:40, Application Deadline: February, annually Local Match: none
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.	https://www.udot.utah.gov/main/f?p=100:pg:0:::1:T,V:5323, **Local Match:** 40%
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 connections.	https://wfrc.org/Public-Involvement/GovernmentalAffairs/2019/SB72Transportation-GovFundRevs.pdf **Local Match:** 40%
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

1600 N to 500 S

500 S to Orchard

Buffered Bike Lanes on 200 W

Project Summary:

This project extends from the northern border of Bountiful to the junction of Orchard Drive, a length of 3.4 miles. It limits on-street parking to one side of the road, narrows travel lanes to 11', and creates two 5' bike lanes that are buffered from traffic with 18" painted buffers. The northern portion of the road is owned by Bountiful whereas the southern portion of the road is owned by UDOT, presenting a unique opportunity for multi-organizational collaboration. In addition, differing land use mixes in the 3.4 mile stretch of road present varying street cross-sections. Once completed, this project will connect to various existing bike routes extending all the way to 2025 North in Centerville, providing over 6 miles of safe and convenient access for active transportation users.

Jurisdiction: Bountiful City

Facility Type: Buffered Bike Lanes

Length: 3.4 miles

Estimated Cost: $390,636. This includes striping for bike lanes, 8" buffer hatching, and 6" parking stripe on one side of the road.

Impacts: Same as 400 West.

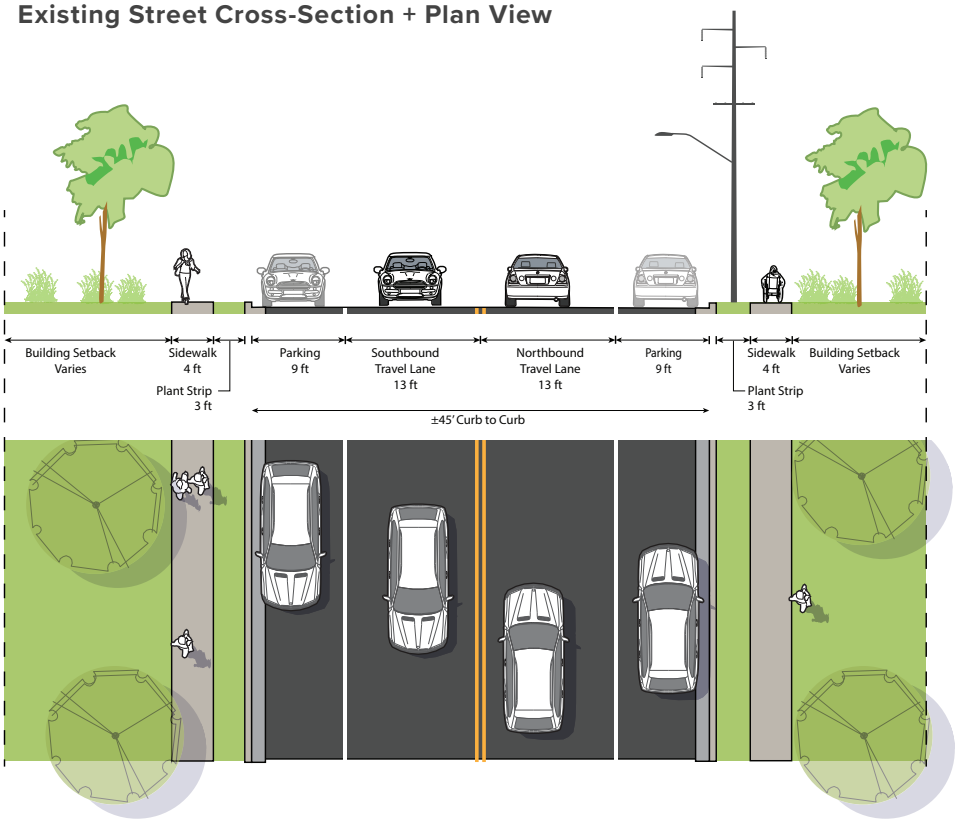
Phasing: Phasing may be required depending on coordination with UDOT for the segment south of 500 South.

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

Benefits: Benefits include slower traffic speeds, reducing the potential for high-speed bicycle-vehicle collisions. The increased roadway space for bicyclists promote a safer and more comfortable experience for active transportation users and will encourage "interested, but concerned" active transportation users to explore new routes. Enhanced bicycle facilities also have the potential to promote bicycle ridership to nearby destinations, thereby reducing traffic congestion.

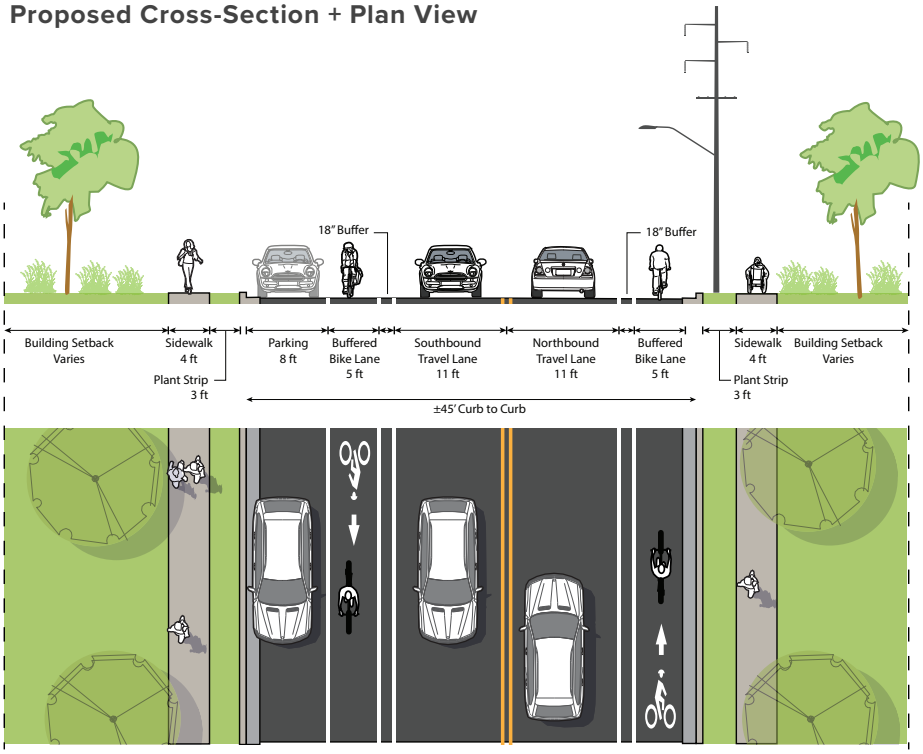
Section A - A':

Existing Street Cross-Section + Plan View



Existing configuration consists of on-street parking (both sides) and 13' travel lanes.

Proposed Cross-Section + Plan View



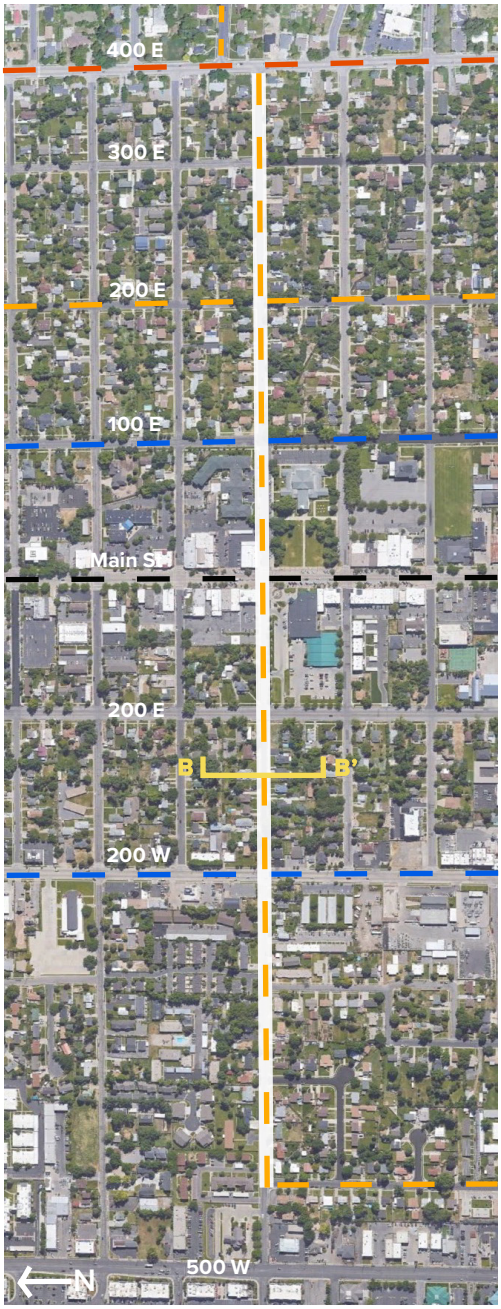
Proposed configuration consists on 5' buffered bike lanes (both sides) and 11' travel lanes. Note that on-street parking may switch side-to-side based on need.

***Option:** Narrow travel lanes to 10' and add additional painted buffer between parked cars and bike lane.

Neighborhood Byway on Center St

Project Summary:

This project extends from 500 West to 400 East in Bountiful City, a length of 0.75 miles. This low-speed, low-traffic street will provide an alternative to busier streets and a direct route for cyclists to reach destinations and other active transportation connections in the downtown area. The facility will include high visibility pavement markings and signage as well as traffic calming infrastructure to manage vehicle speed and create a corridor that prioritizes pedestrians and bicyclists.



Jurisdiction: Bountiful City

Facility Type: Neighborhood Byway

Length: 0.75 miles

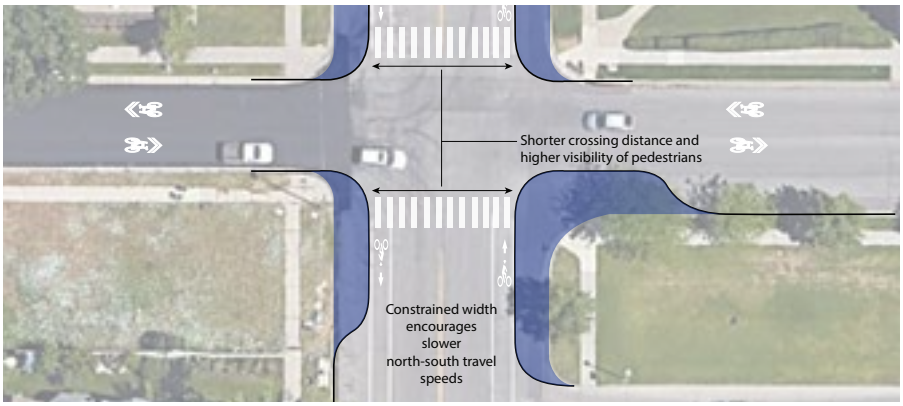
Estimated Cost: $107,760. This includes pavement markings, signage, and curb extensions at the junctions of 100 W, Main Street, 100 E, 200 E, 300 E, and 400 E.

Impacts: N/A

Phasing: None

Funding Sources: Class B & C Road Funds; UDOT Transportation Investment Funds (TIF); Highway Safety Improvement Program (HSIP); Safe Routes to School & Safe Routes Utah; Bike Utah 1,000 Miles Campaign

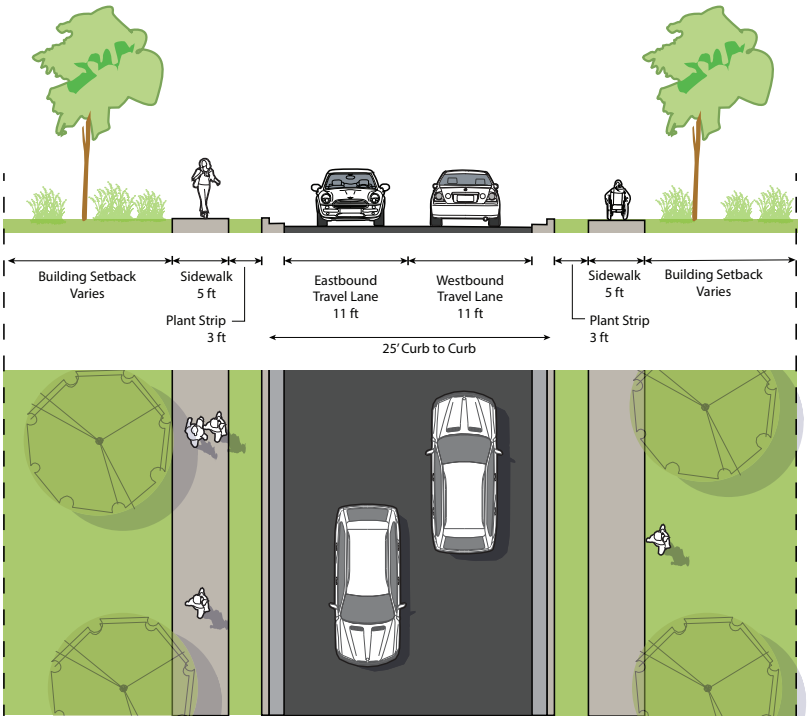
Benefits: This facility has the potential to promote more walking and bicycling to Bountiful's downtown by slowing traffic speeds, shortening pedestrian crossings, and increasing visibility of pedestrians and bicyclists.



Concept for curb extensions at Center Street and 100 W

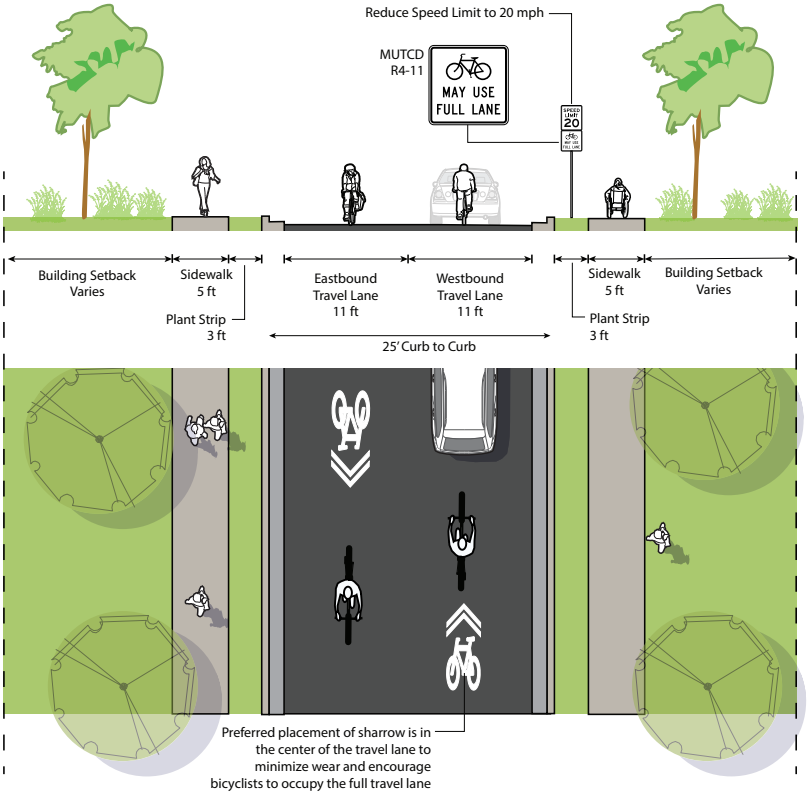
Section B - B':

Existing Street Cross-Section + Plan View



Existing configuration consists of 11' foot travel lanes. There are no pavement markings. On-street parking is allowed on both sides of street.

Proposed Cross-Section + Plan View



Proposed configuration includes adding high visibility pavement markings, signage, and traffic calming such as curb extensions to further enforce lower speeds.

Shared Street on Main Street

Project Summary:

The focus of this project is Bountiful's downtown on Main Street from 400 North to 500 South, a length of 0.65 miles. As Bountiful's downtown corridor, Main Street provides key connections to downtown destinations as well as connections to numerous active transportation routes. Focused investment on this route with increased angled on-street parking, curb extensions on all corners of intersections, high visibility pedestrian crossings, and shared roadway arrows will create a corridor that prioritizes pedestrians and bicycles. Prioritization of this corridor as a bicycle and pedestrian friendly area will promote foot-traffic through this area, decrease traffic congestion, and bring increased economic prosperity to downtown businesses.

Jurisdiction: Bountiful

Facility Type: Shared street

Length: 0.65 miles

Cost: $150,496. This includes shared lane markings, regulatory signs, and curb extensions on every corner between 400 North and 500 South.

Impacts: Reduced lane widths, addition of angled parking on blocks north of 100 N and south of 100 S, and increased pedestrian crossings.

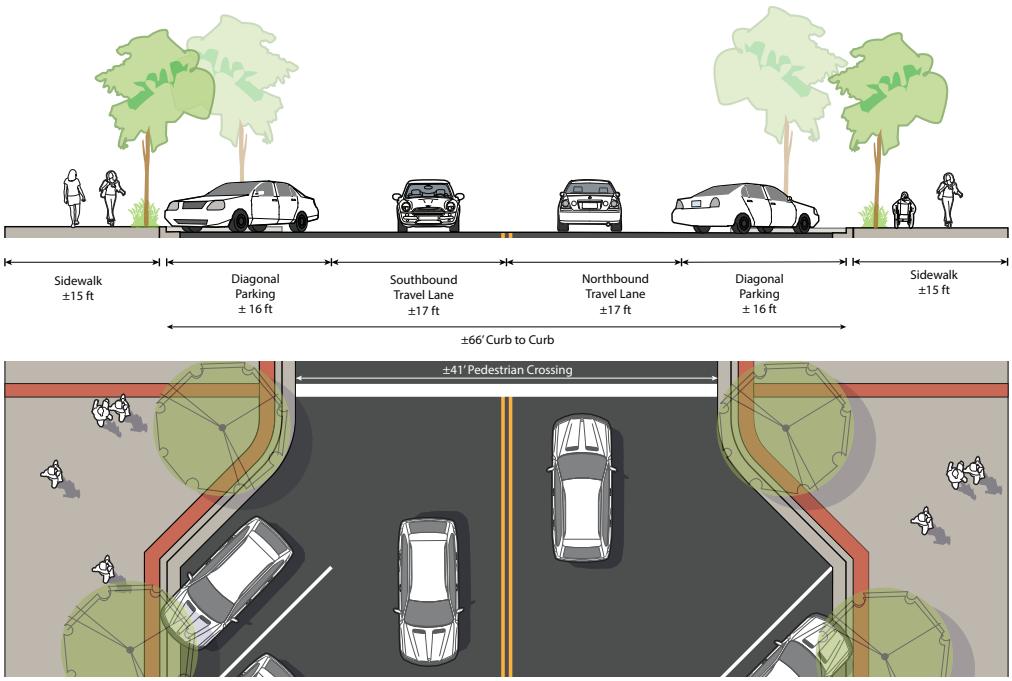
Phasing: None anticipated.

Funding Sources: Class B & C Road Funds; UDOT Transportation Investment Funds (TIF); Highway Safety Improvement Program (HSIP); Bike Utah 1,000 Miles Campaign

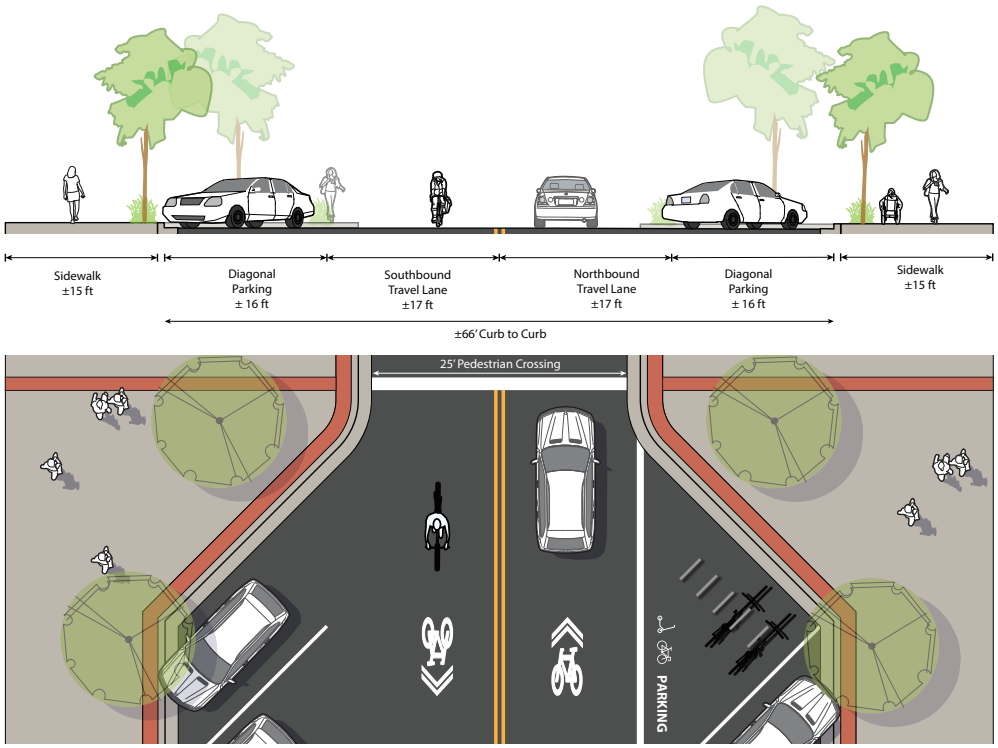
Benefits: Benefits include slower traffic speeds, reducing the potential for high-speed bicycle-vehicle collisions. Slower traffic speeds will promote a safer and more comfortable experience for active transportation users and will encourage "interested, but concerned" active transportation users to explore new routes. This facility also has the potential to promote bicycle ridership to downtown destinations, thereby reducing traffic congestion along the Main Street corridor.

Section C - C':

Existing Street Cross-Section + Plan View



Proposed Cross-Section + Plan View



Proposed configuration includes the addition of "sharrows", curb extensions at pedestrian crossings (beyond what already exists), and dedicated parking for bicycles and other micromobility devices.

Consider raised crossings at midblock to further calm traffic and prioritize pedestrians

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
100 E	Bike Lane	400 N	1800 S	1.59	Upgrade to buffered bike lane where on-street parking is not needed	$83,909
1000 N / 900 N / 900E	Bike Lane	200 W	400 E	0.77	Limit on-street parking to one side	$40,865
1400 S / 1500 S / 600 E	Neighborhood Byway	400 E	400 E	0.41	Loop to connect to Valley View Elementary; High visibility pavement markings and signage; manage speed with traffic calming	$21,774
† 1500 S	Buffered Bike Lane	500 W	Orchard Drive	0.89	Remove on-street parking; downgrade option: bike lane with on-street parking limited to one side	$47,137
1800 S	Bike Lane	Main St	Bountiful Blvd	2.27	Limit on-street parking to one side; upgrade to buffered bike lane where no on-street parking is needed	$119,640
200 E	Neighborhood Byway	400 N	Orchard Drive	1.23	High visibility pavement markings and signage; manage speed with traffic calming	$175,984
2200 S	Neighborhood Byway	500 W / Main St	400 E	1.01	High visibility pavement markings and signage; manage speed with traffic calming; utilize cemetery road	$53,551
† 2600 S	Separated Bike Lane	500 W	Orchard Drive	0.33	Proposed WFRC bike lane; suggest road reconfiguration for higher comfort facility	$17,605
* † 2600 S	Separated Bike Lane	Main St	500 W	0.21	Proposed WFRC bike lane; suggest road reconfiguration for higher comfort facility	$11,278

Street/ Corridor	Facility Type	Start	End	Length (miles)	Notes	Cost Estimate
3100 S / 400 E	Neighborhood Byway	Orchard Drive	Davis Blvd at 300 E	1.65	High visibility pavement markings and signage; manage speed with traffic calming; consider limiting on-street parking to one side to implement bike lane in uphill direction	$86,929
3300 S	Neighborhood Byway	Main St	Orchard Drive	0.40	Highly visible pavement markings and signage	$21,211
400 E	Neighborhood Byway	Davis Blvd	1800 S	0.42	High visibility pavement markings and signage; manage speed with traffic calming	$22,085
400 E	Neighborhood Byway	1800 S	Millcreek Way	0.59	High visibility pavement markings and signage; manage speed with traffic calming	$31,406
400 E / Orchard Drive	Future Study	400 N	200 W	2.47	High comfort facility, future study needed	$130,670
† 400 E / Orchard Drive	Separated Bike Lane	200 W	Eagle Ridge Drive	0.78	Street design will vary throughout corridor depending on context	$40,948
† 400 E / Orchard Drive	Separated Bike Lane	Parrish Ln	400 N (Bountiful)	0.82	Street design will vary throughout corridor depending on context	$43,391
400 N	Bike Lane	100 E	Bountiful Blvd	1.04	Limit on-street parking to one side	$54,798
* 400 N	Separated Bike Lane	500 W	100 E	0.65	Proposed WFRC bike lane; suggest road reconfiguration for higher comfort facility	$34,479
* † 400 W / 200 W	Buffered Bike Lane	Porter Lane	Orchard Drive	3.32	5' bike lanes with 1.5' painted buffers; remove on-street parking from one side (may alternate)	$175,226
* 500 S	Future Study	500 W	Davis Blvd	1.72	Future study to explore bicycle/pedestrian improvements along 500 S corridor	$90,805
500 W	Bike Lane	Orchard Dr	Main St	0.70	Proposed WFRC bike lane; Upgrade to buffered when possible	$36,699

Street/ Corridor	Facility Type	Start	End	Length (miles)	Notes	Cost Estimate
† 550 N	Neighborhood Byway	200E	Porter Ln	1.16	High visibility pavement markings and signage; manage speed with traffic calming	$157,724
550 N	Neighborhood Byway	700 E	900 E	0.15	High visibility pavement markings and signage; manage speed with traffic calming; coordinate with future extension of 550 N	$8,116
650 N	Neighborhood Byway	Main St.	200 E	0.13	High visibility pavement markings and signage; manage speed with traffic calming; consider 550 N as alternate route if Main St. sidepath connection to shared use path is feasible	$45,108
900 E	Bike Lane	400 N	Hills Dr	0.60	42'-wide road bed: limit parking on one side; 32'-wide road bed: limit parking on both sides	$31,440
900 N	Neighborhood Byway	400 E	900 E	0.47	High visibility pavement markings and signage; manage speed with traffic calming	$88,009
† Bountiful Blvd	Sidepath	Eagle-pointe Dr	Davis Blvd	5.25	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	$277,064
Bountiful Blvd	Bike Lane	Ironwood Dr	Davis Blvd	5.25	5' minimum bike lanes; would require removal of on-street parking on one side to accommodate proposed sidepath; alternative shared lane markings where on-street parking is needed on both sides (e.g. fronting houses on both sides)	$277,048
Bountiful Jr. High	Shared Use Path	200 W	Main St	0.31	Coordinate with South Davis Recreation Center and Bountiful Jr. High	$16,623
Center St/425 W	Neighborhood Byway	500 S	1300 E	2.38	High visibility pavement markings and signage; manage speed with traffic calming	$276,453

Street/ Corridor	Facility Type	Start	End	Length (miles)	Notes	Cost Estimate
Church field	Shared Use Path	600 E	700 E	0.10	Coordinate with The Church of Jesus Christ of Latter-day Saints	$5,189
Davis Blvd	Bike Lane	500 S	300 N	0.61	Fill gap in existing network	$32,117
† Davis Blvd	Bike Lane	Eaglewood Dr	425 W	0.03	Implement when Davis Blvd is extended to Eaglewood Dr	$1,535
* † Hwy 89	Sidepath	End of existing path	1500 S	0.65	Implement in conjunction with corridor redesign	$34,113
* † Main St	Future Study	1500 S	Pages Ln	2.24	Future study to explore bicycle/pedestrian improvements along Main St. corridor	$118,281
Mill St	Bike Lane	Orchard Drive	Millbrook Way	0.44	Limit on-street parking to one side	$23,079
Millbrook Way	Neighborhood Byway	Mill Street	Bountiful Blvd.	1.32	High visibility pavement markings and signage; manage speed with traffic calming; consider limiting on-street parking to one side to implement bike lane in uphill direction	$69,759
North Canyon Rd/ Chelsea Dr	Bike Lane	Orchard Drive	Bountiful Blvd	1.30	6' lanes; consider wider lanes in uphill direction	$68,469

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.

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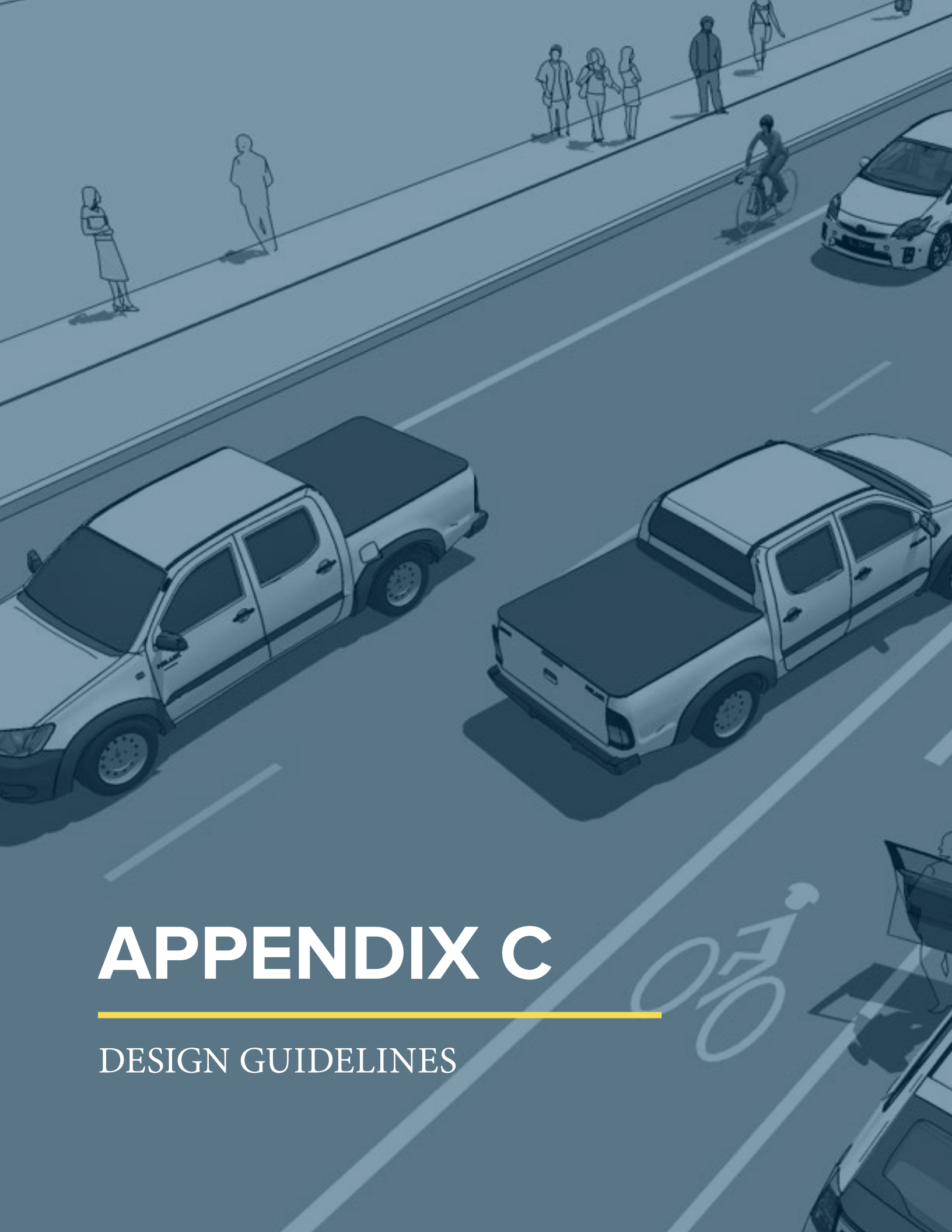


APPENDIX C

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.

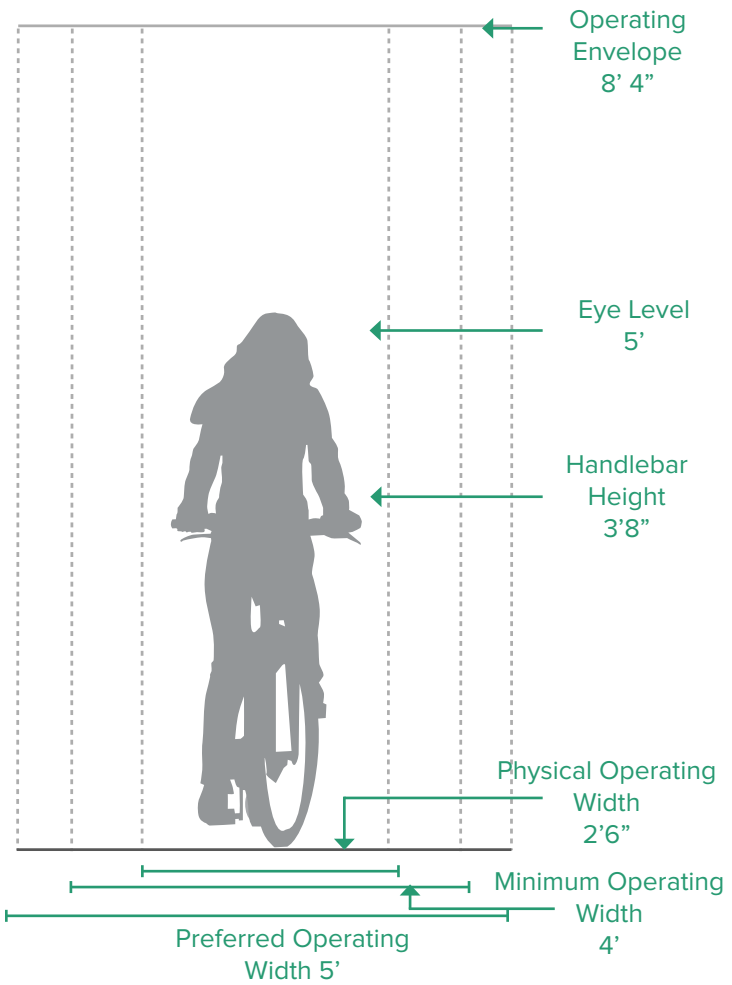
BICYCLE AS A DESIGN VEHICLE

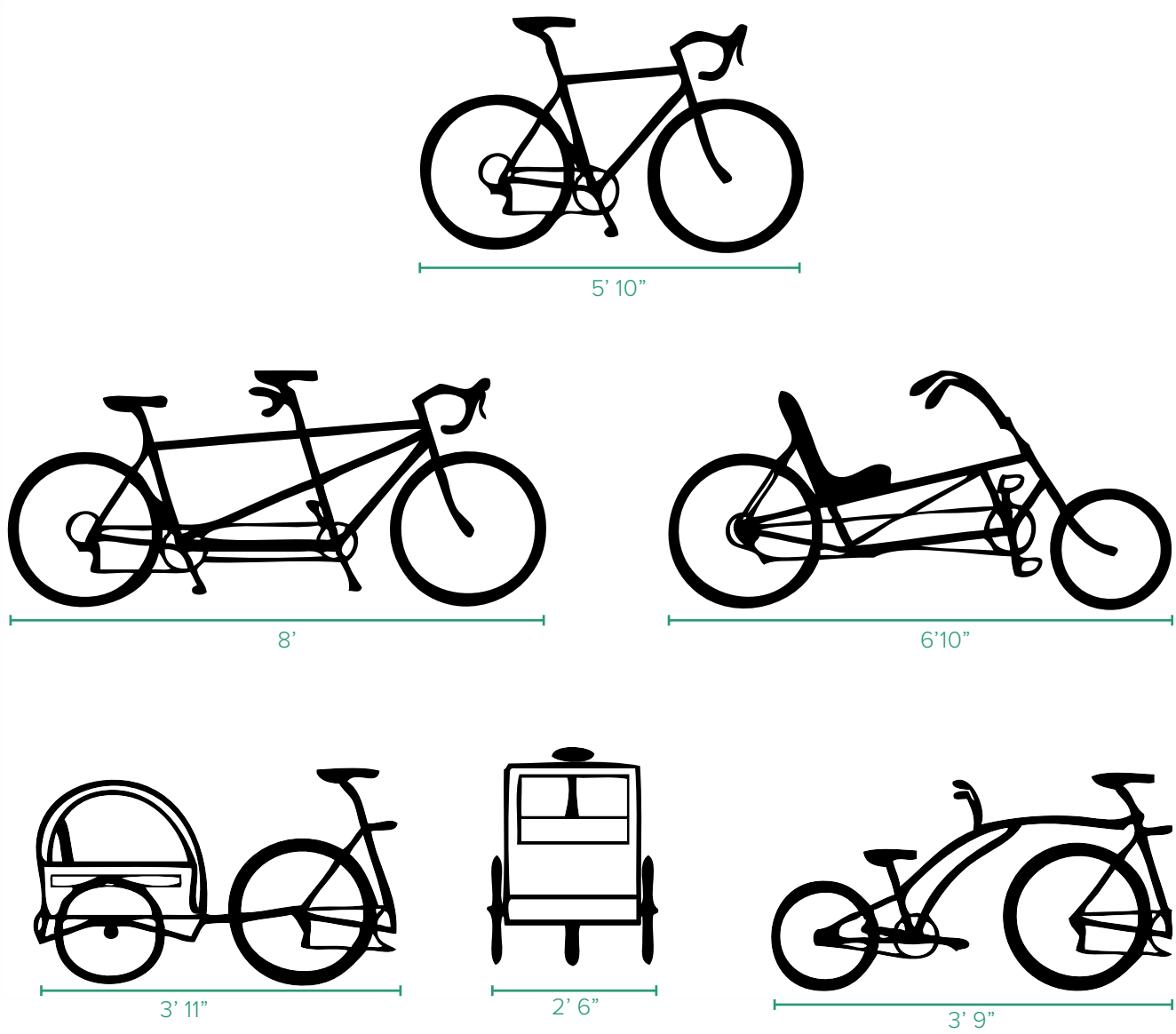
Similar to motor vehicles, bicyclists and their bicycles exist in a variety of sizes and configurations. These variations occur in the types of vehicle (such as a conventional bicycle, a recumbent bicycle or a tricycle), and behavioral characteristics (such as the comfort level of the bicyclist). The 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

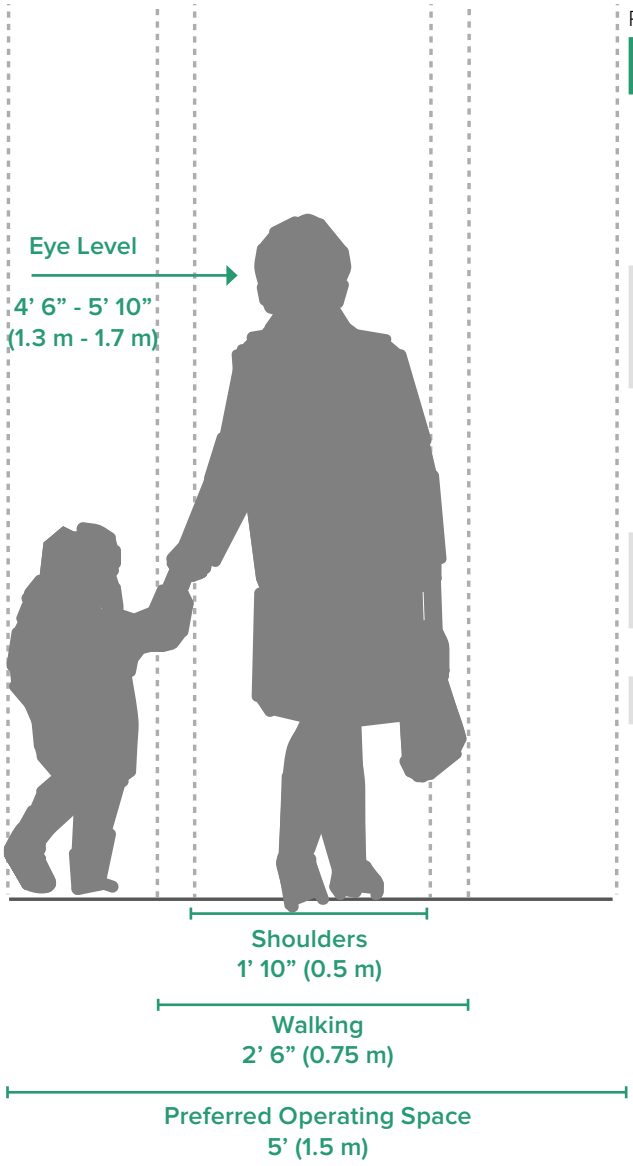
* Typical speed for causal riders per AASHTO 2013.

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.

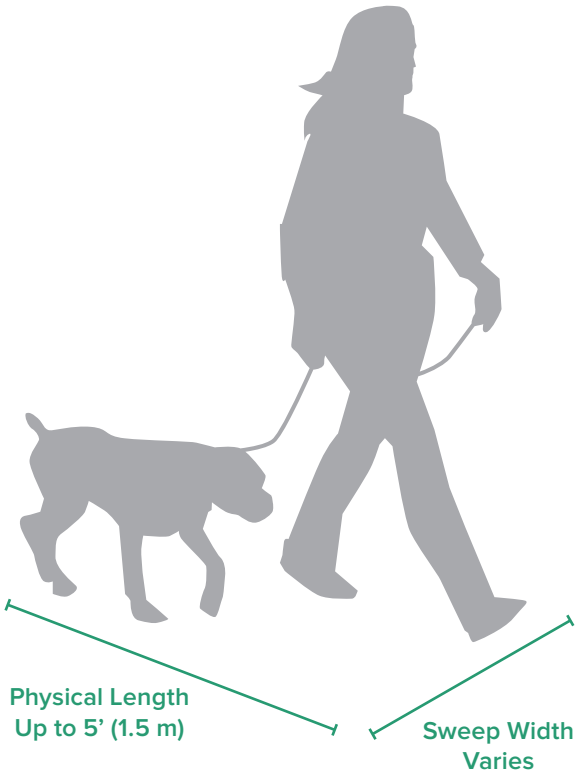
DESIGN NEEDS OF DOG WALKERS

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.

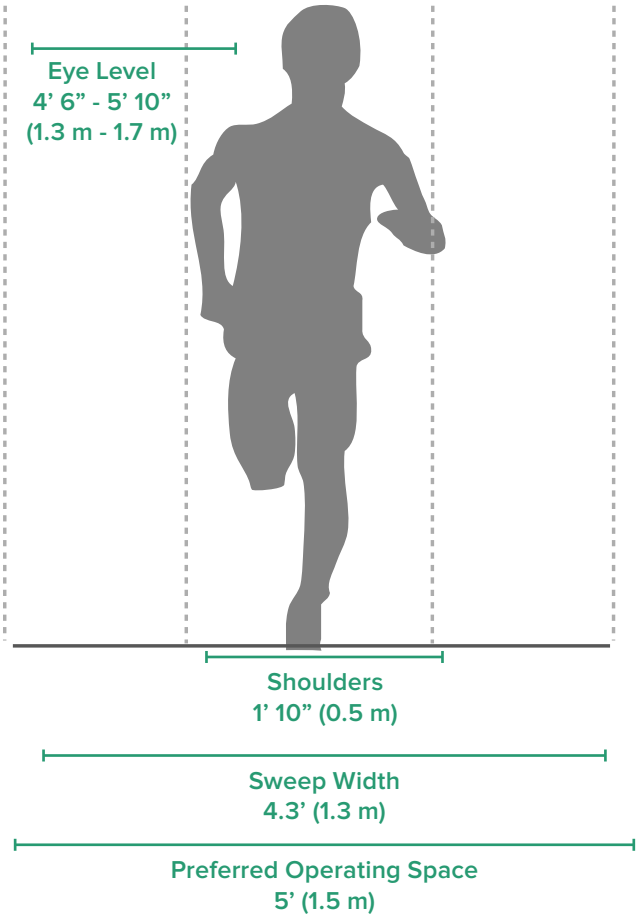
DESIGN NEEDS OF RUNNERS

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.



Runner Typical Speed

User	Typical Speed
Runner	6.2 mph



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 user 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).

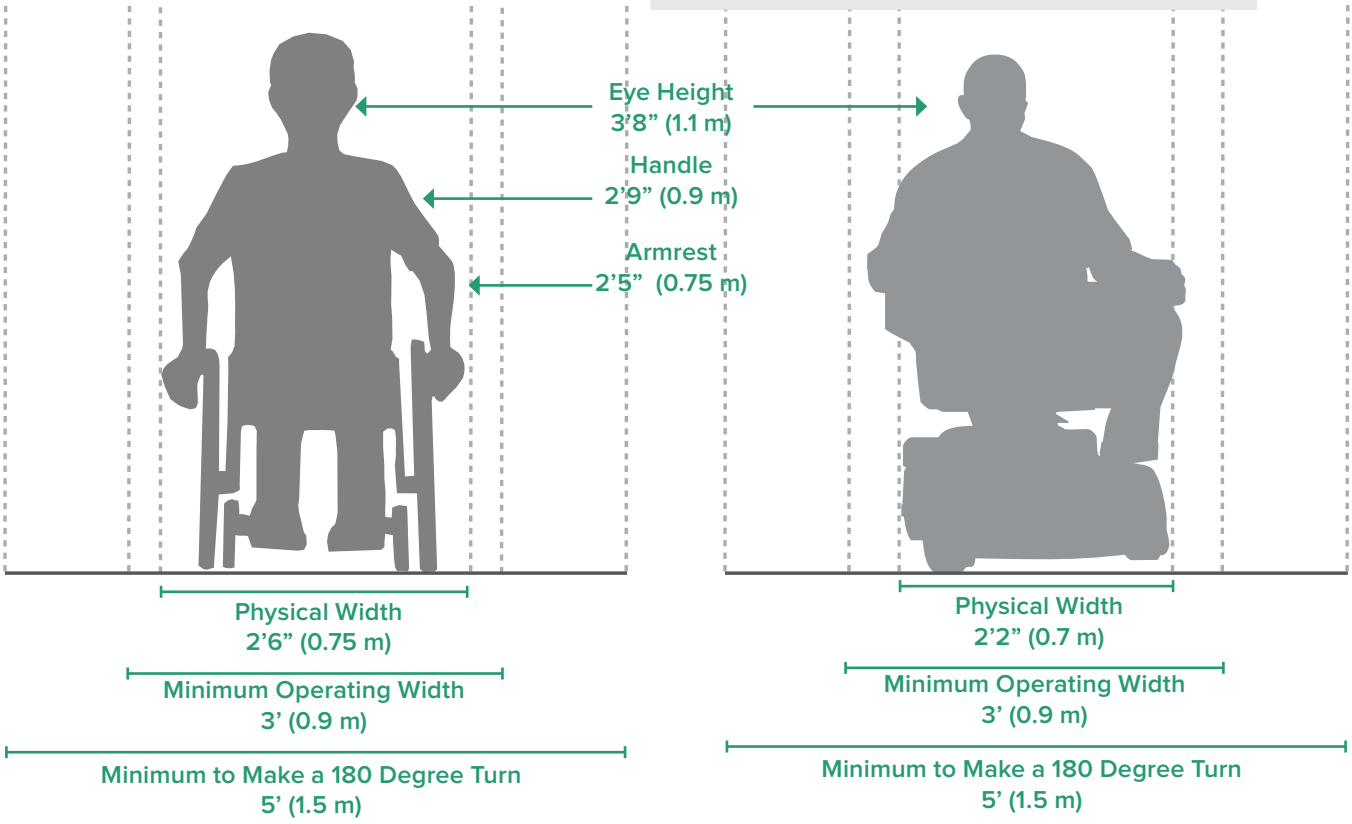
Maneuvering around a turn requires additional space for wheelchair devices. Providing adequate space for 180 degree turns at appropriate locations is an important element for accessible design.

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.



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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

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

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.

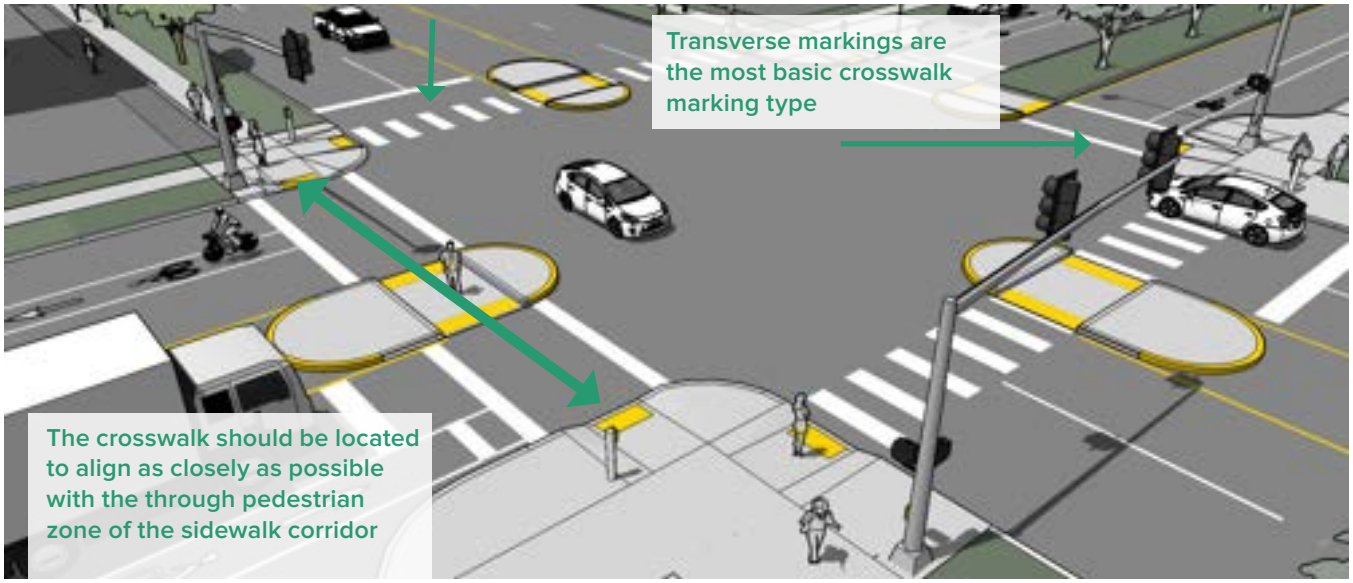
03

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

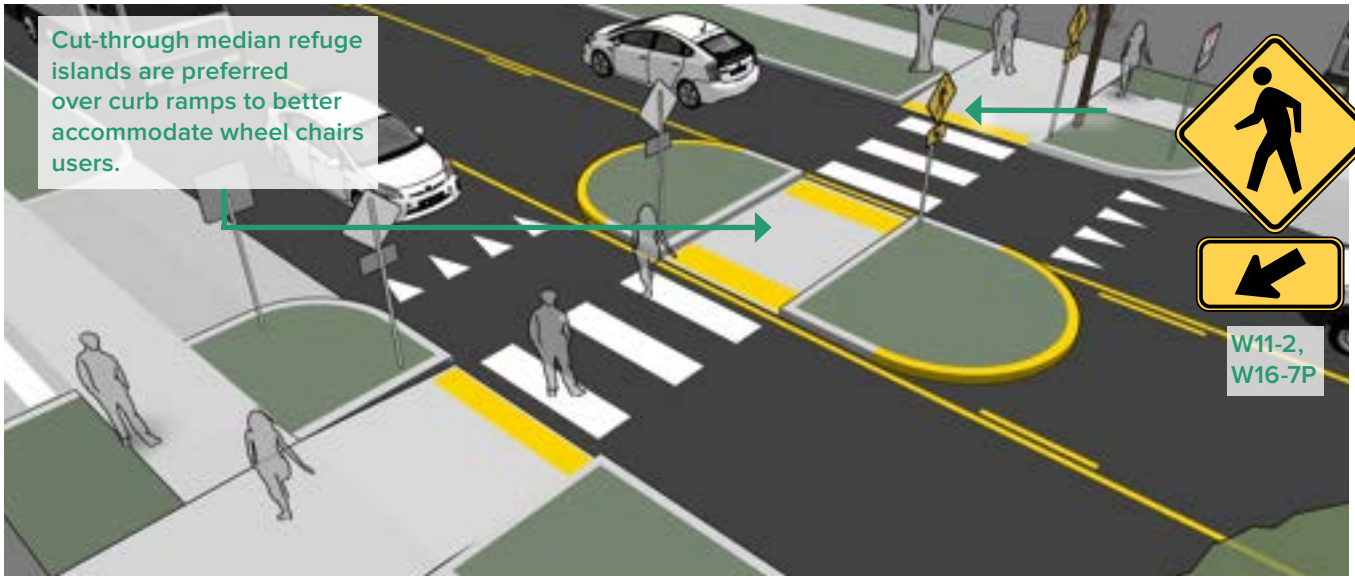
- Because the effectiveness of marked crossings depends entirely on their visibility, maintaining marked crossings should be a high priority.
- Thermoplastic markings offer increased durability than conventional paint.

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

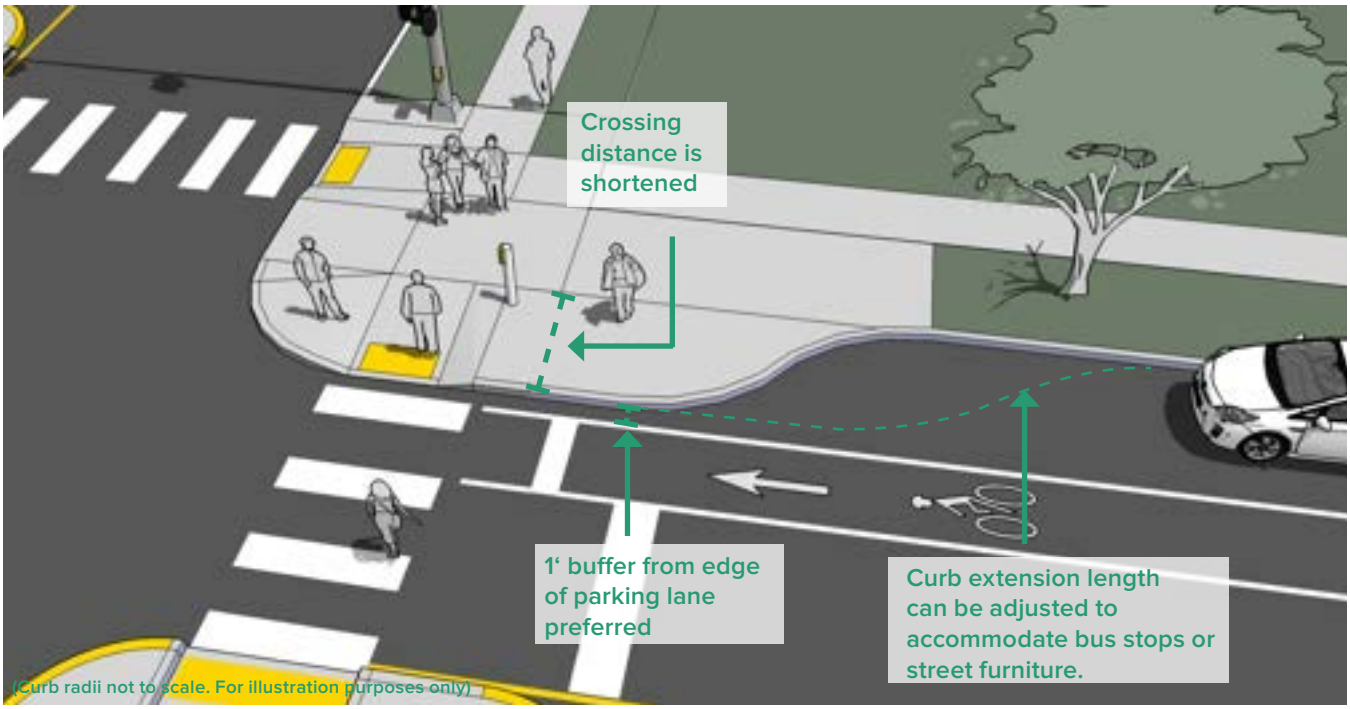
- Can be applied on any roadway with a left turn center lane or median that is at least 6 feet wide.
- Appropriate at signalized or unsignalized crosswalks.
- On multi-lane roadways, consider configuration with active warning beacons for improved yielding compliance.

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

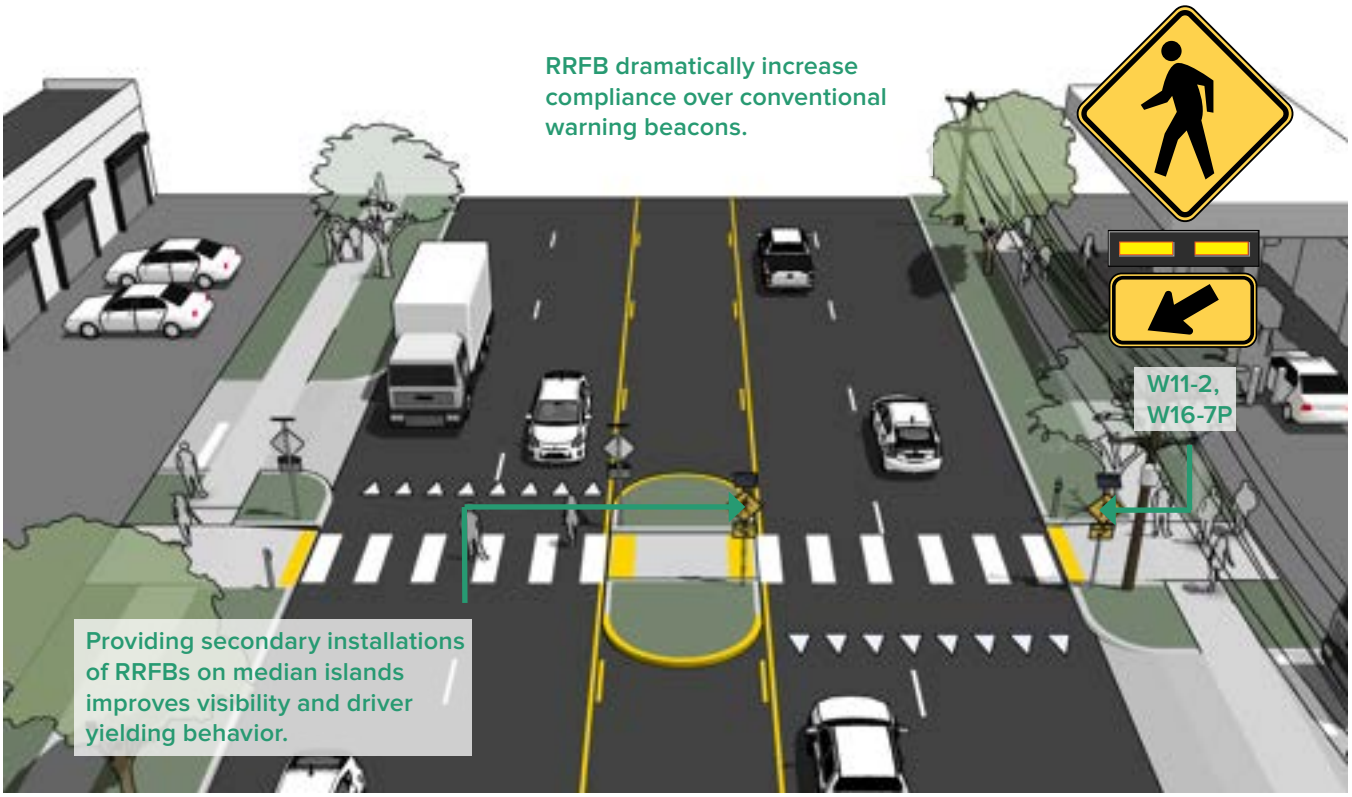
- At signalized intersections with marked crosswalks.
- At unsignalized intersections with marked crosswalks.
- At an intersection with visibility constraints, to position pedestrians where they can best be seen by oncoming traffic.
- At an intersection within a school zone on a walking route.
- Do not 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

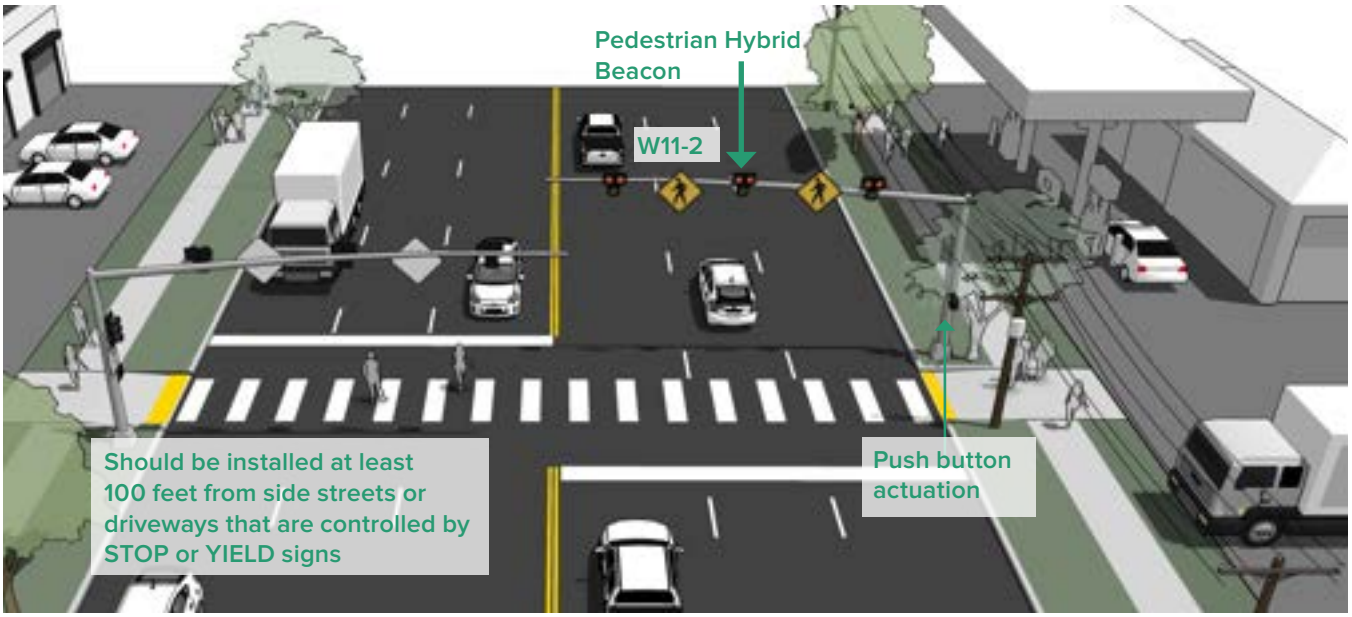
- Warning beacons shall not be used at crosswalks controlled by YIELD signs, STOP signs, or traffic signals.
- Warning beacons shall initiate operation based on pedestrian or bicyclist actuation and shall cease operation at a predetermined time after actuation or, with passive detection, after the pedestrian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

ADDITIONAL REFERENCES AND GUIDELINES

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

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.

04

BICYCLE FACILITIES

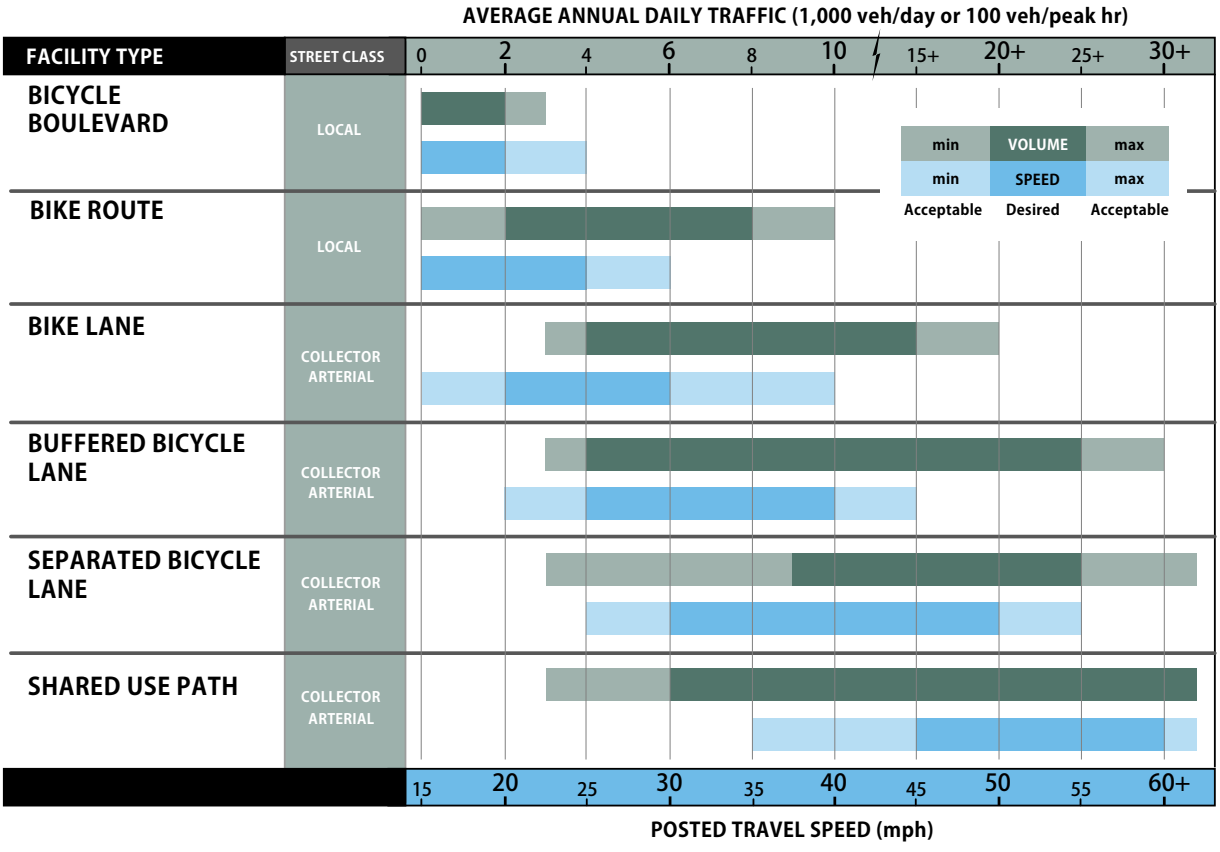
Facility Selection

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

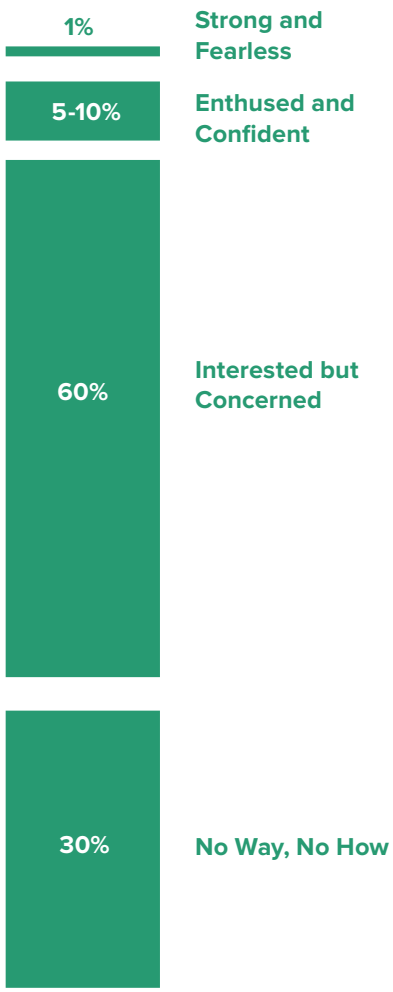
The 2012 AASHTO Guide to the Development of Bicycle Facilities encourages designers to identify their rider type based on the trip purpose (Recreational vs Transportation) and on the level of comfort and skill of the rider (Casual vs Experienced). A user-type framework for understanding a potential rider's 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.

Enthused 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 "Enthused & Confident" with encouragement, education and experience.

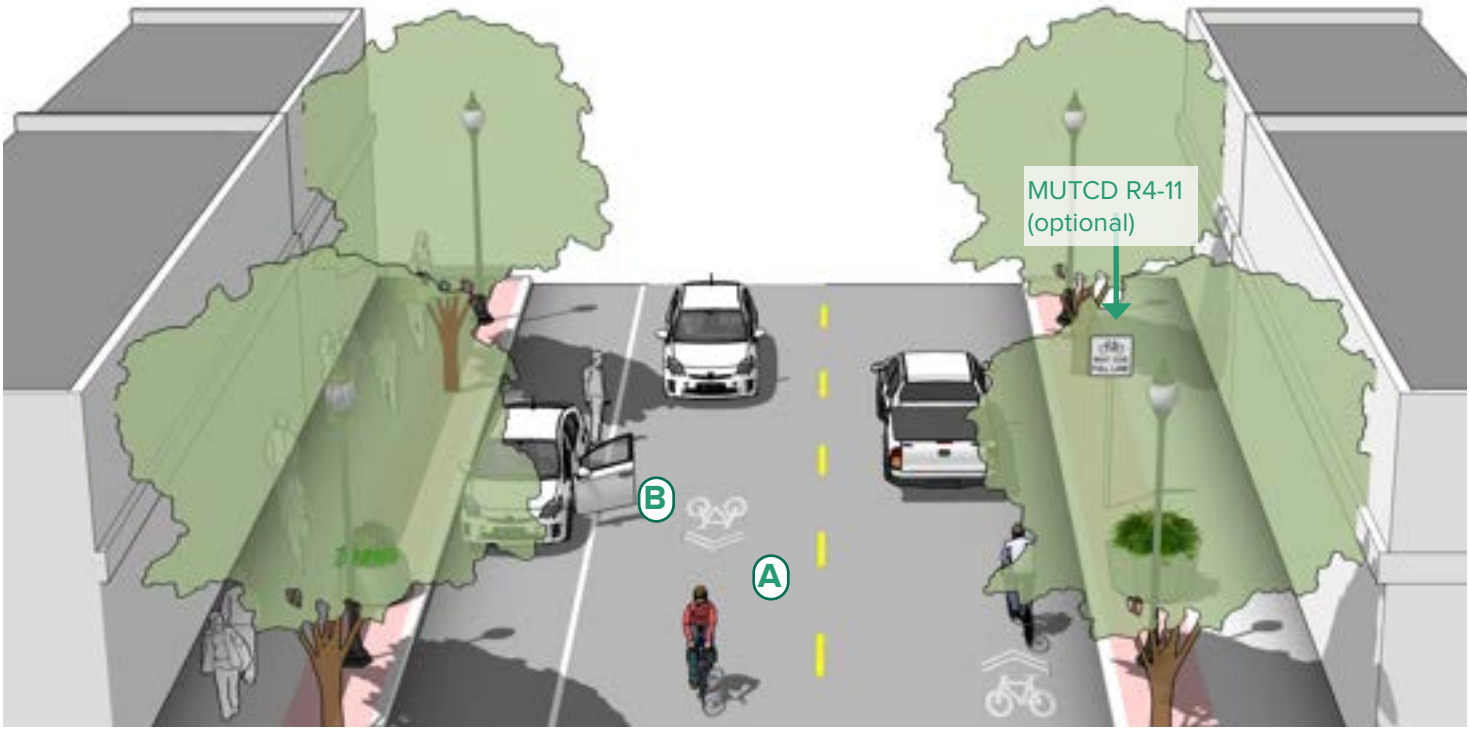
No Way, No How – Persons in this category are not bicyclists, and perceive severe safety issues with riding in traffic. Some people in this group may eventually become more regular cyclists with time and education. A significant portion of these people will not ride a bicycle under any circumstances.



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

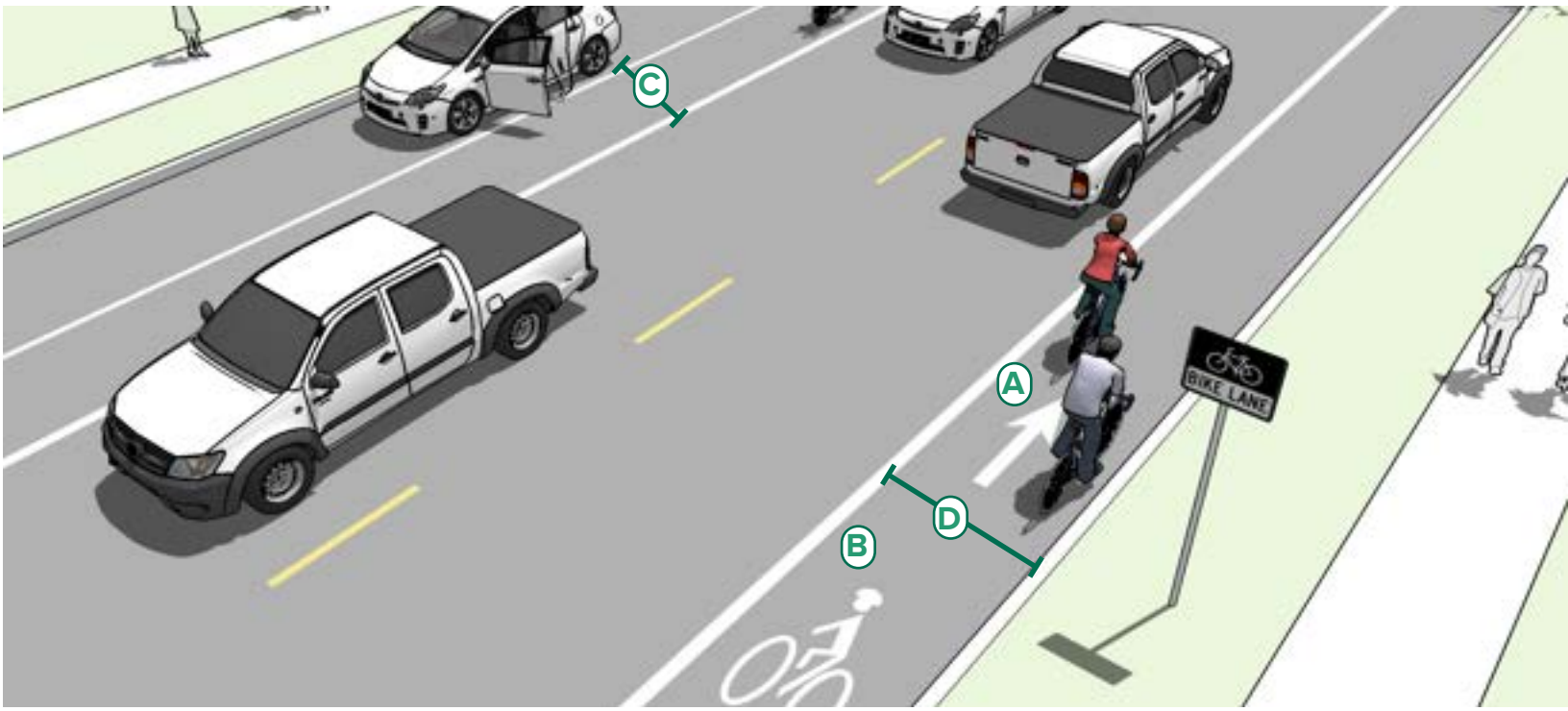
- May be used on streets with a speed limit of 35 mph or under. Lower than 30 mph speed limit preferred.

(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

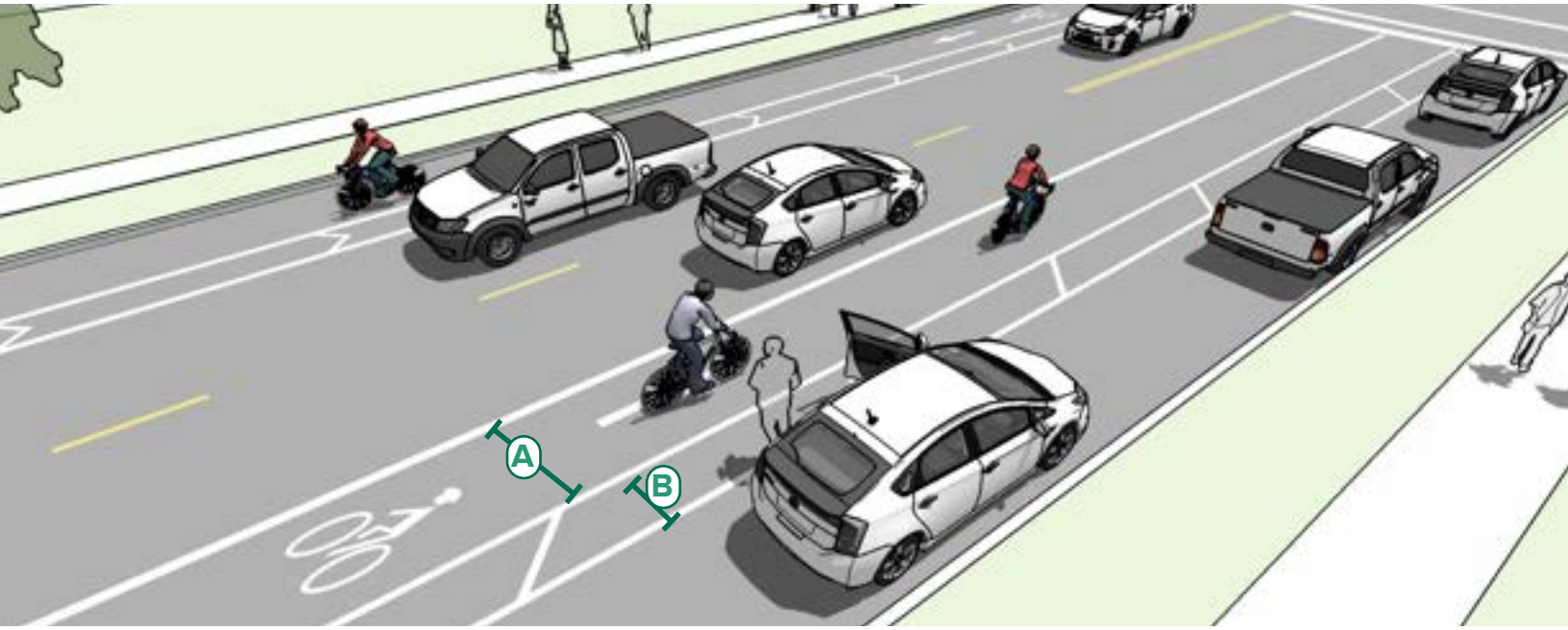
Before and after studies of bicycle lane installations show a wide range of crash reduction factors. Some studies show a crash reduction of 35 percent (CMF ID: 1719) for vehicle/bicycle collisions after bike lane installation.

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 in 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.

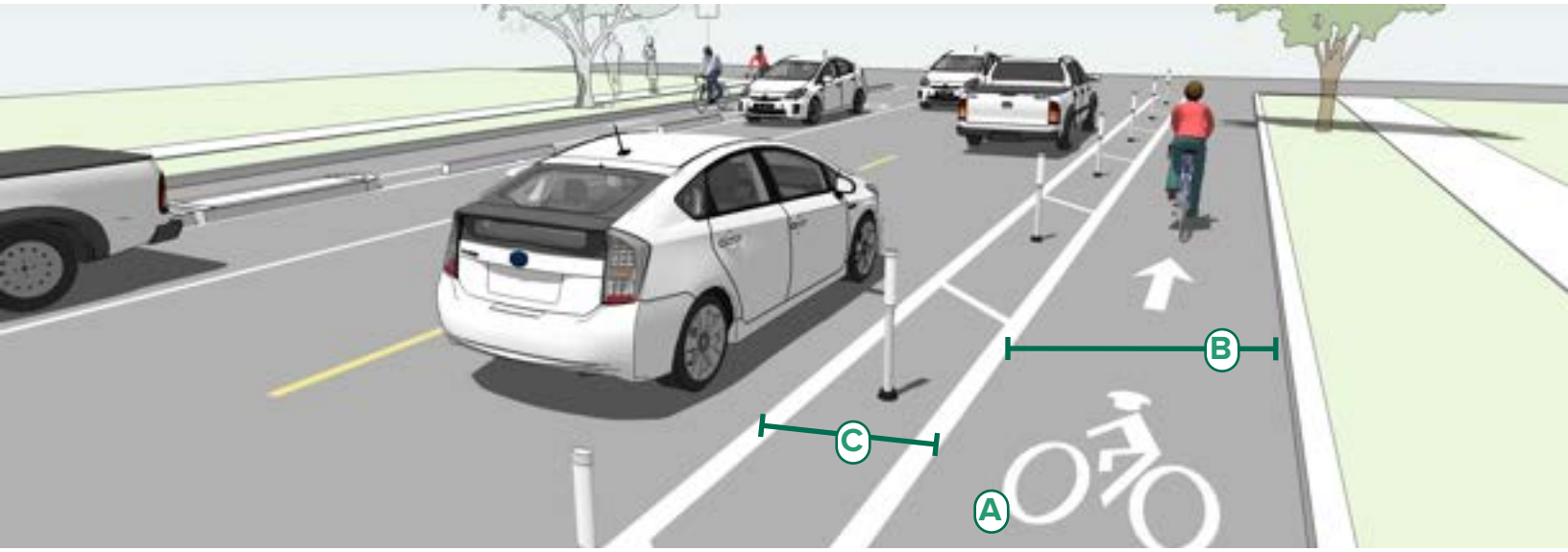
ADDITIONAL REFERENCES AND GUIDELINES

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.

One-Way Separated Bicycle Lanes

When retrofitting separated bike lanes onto existing streets, a one-way street-level design may be most appropriate. This design provides protection through physical barriers and can include flexible delineators, curbs, on-street parking or other barriers. A street level separated bike lane shares the same elevation as adjacent travel lanes.



TYPICAL APPLICATION

- Street retrofit projects with limited funds for relating curbs and drainage.
- Streets with high motor vehicle volumes and/or speeds and high bicycle volumes.
- Streets for which conflicts at intersections can be effectively mitigated using parking lane setbacks, bicycle markings through the intersection, and other signalized intersection treatments.
- Appropriate for most riders on most streets.

DESIGN FEATURES

(A) Pavement markings, symbols and/or arrow markings must be placed at the beginning of the separated bike lane and at intervals along the facility (MUTCD 9C.04).

(B) 7 feet width preferred to allow bicyclists to pass each other (5 feet minimum).

(C) 3 foot minimum buffer width adjacent to parking. 18 inch minimum adjacent to travel lanes. Channelizing devices should be placed in the buffer area (NACTO, 2012).

- If buffer area is 4 feet or wider, white chevron or diagonal markings should be used.

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.

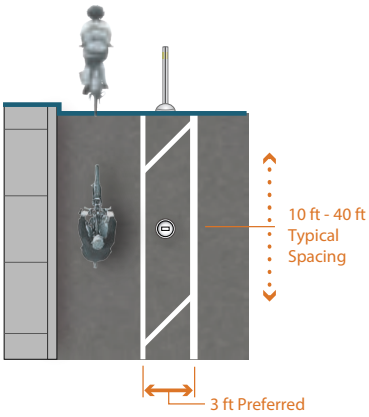
ADDITIONAL REFERENCES AND GUIDELINES

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

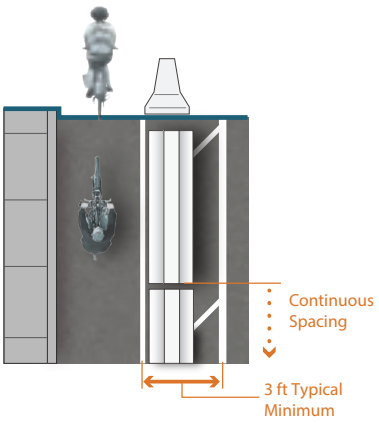
Separation Methods

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.

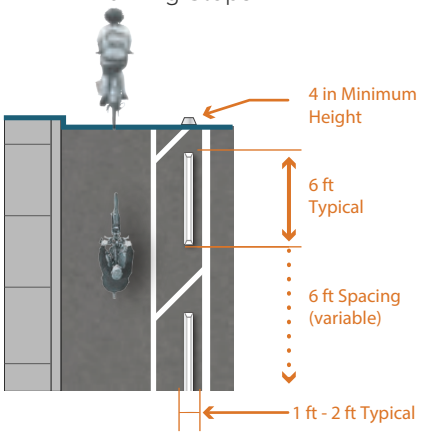
Delineator Posts



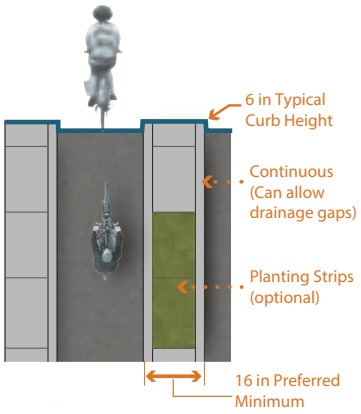
Concrete Barrier



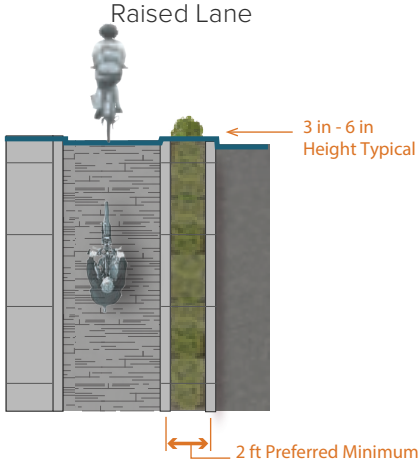
Parking Stops



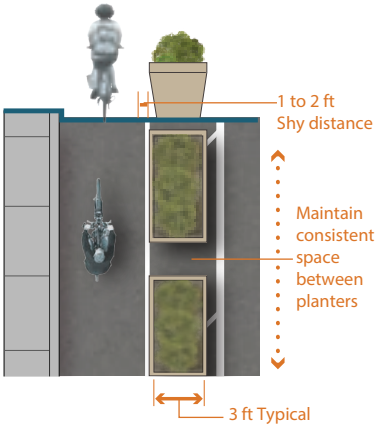
Raised Media



Raised Lane



Planters



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

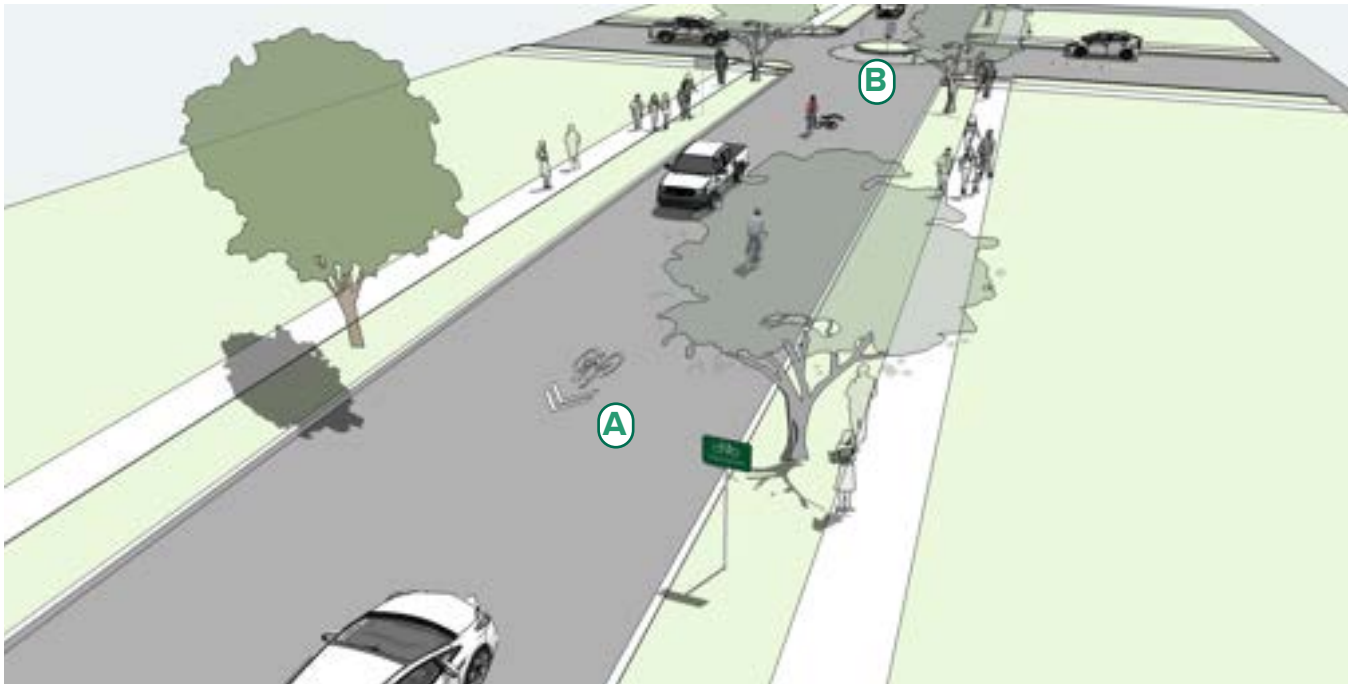
- Maximize effective operating space by placing curbs or delineator posts as far from the through bikeway space as practicable.
- Allow for adequate shy distance of 1 to 2 feet from vertical elements to maximize useful space.
- When next to parking allow for 3 feet of space in the buffer space to allow 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 Intersection crossings should be designed to enhance safety and minimize delay for bicyclists. Midblock crossings, traffic diverters, curb extensions, traffic circles, and/or signals such as RRFB's are appropriate treatments

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

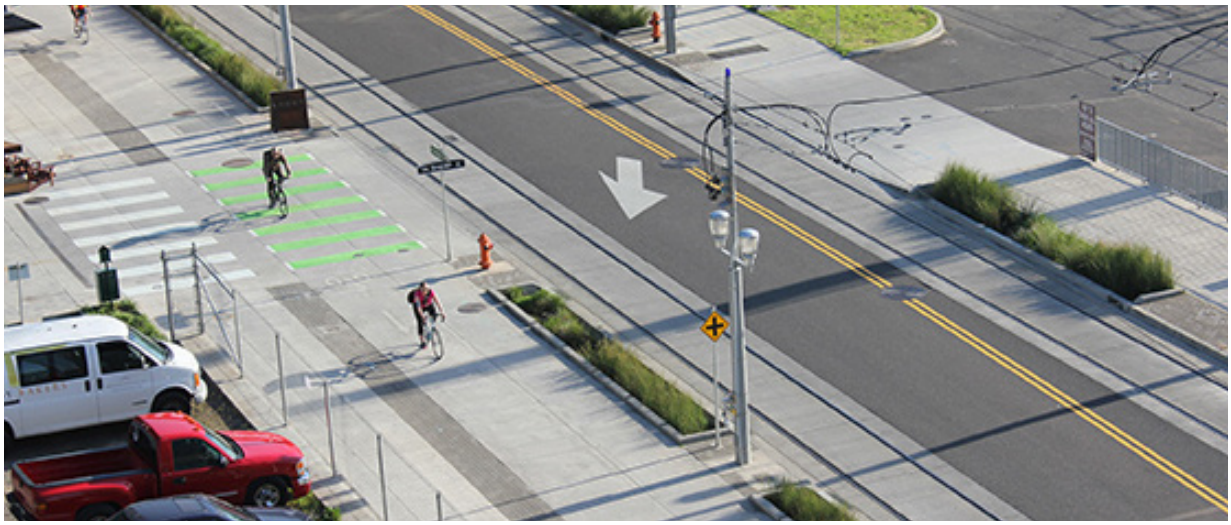
- Intersection markings should be the same width and in line with leading bike lane.

(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-eflective (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

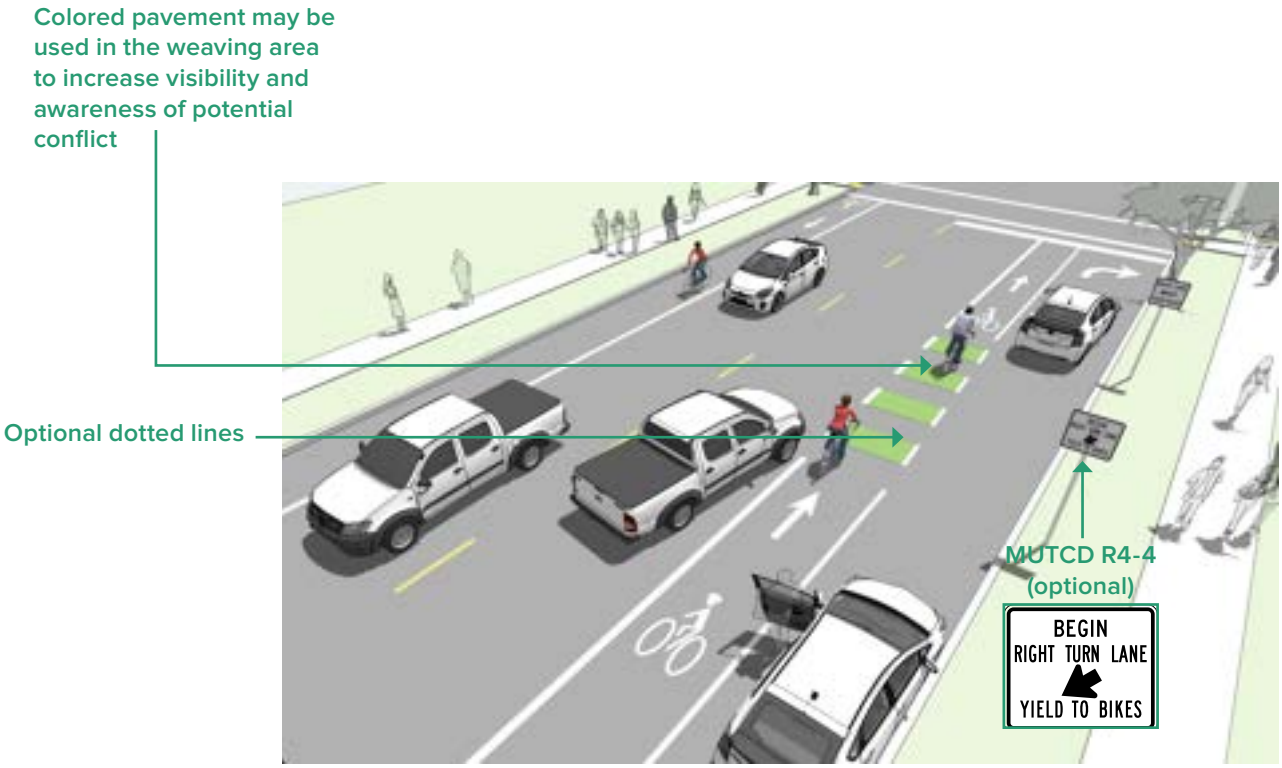
Letter to FHWA from the Bicycle Technical Committee for the MUTCD. Bicycle Lane Extensions through Intersections. June 2014.

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.



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).

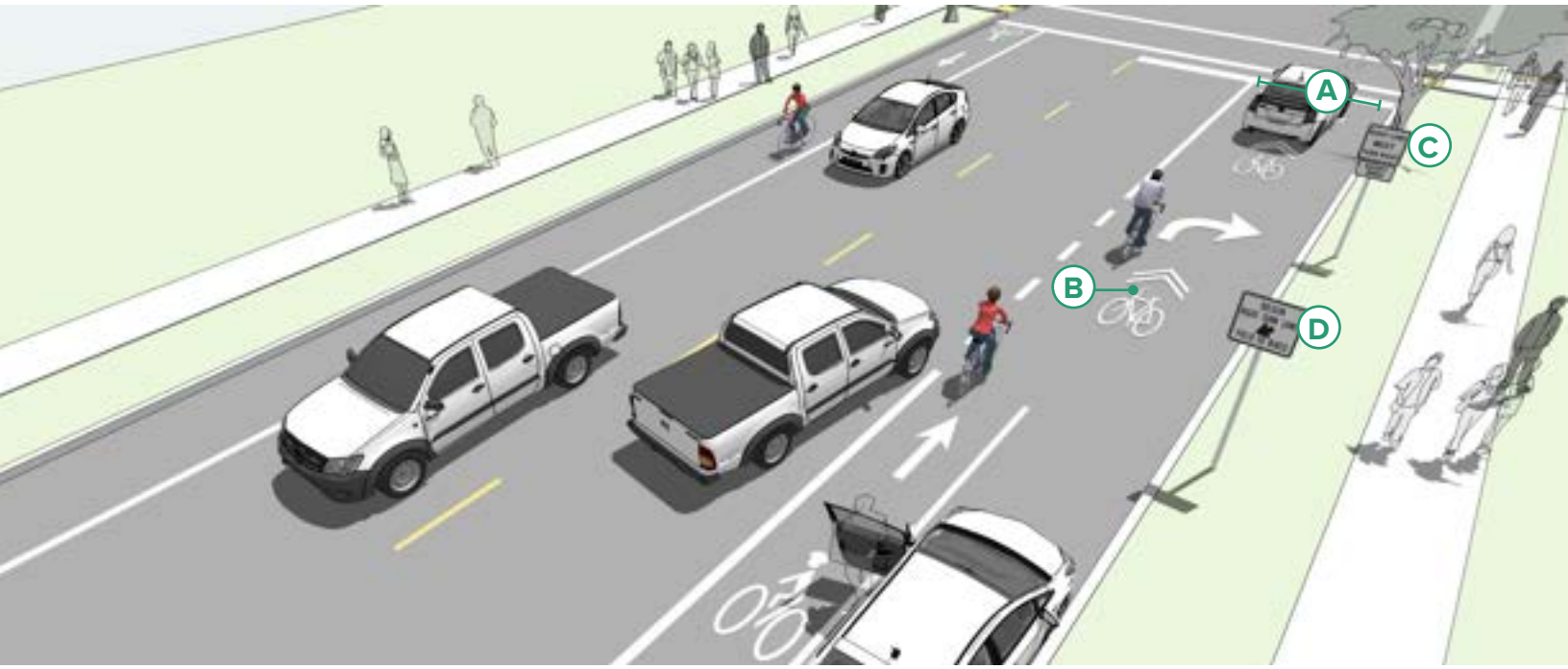
CONSTRUCTION COSTS

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.

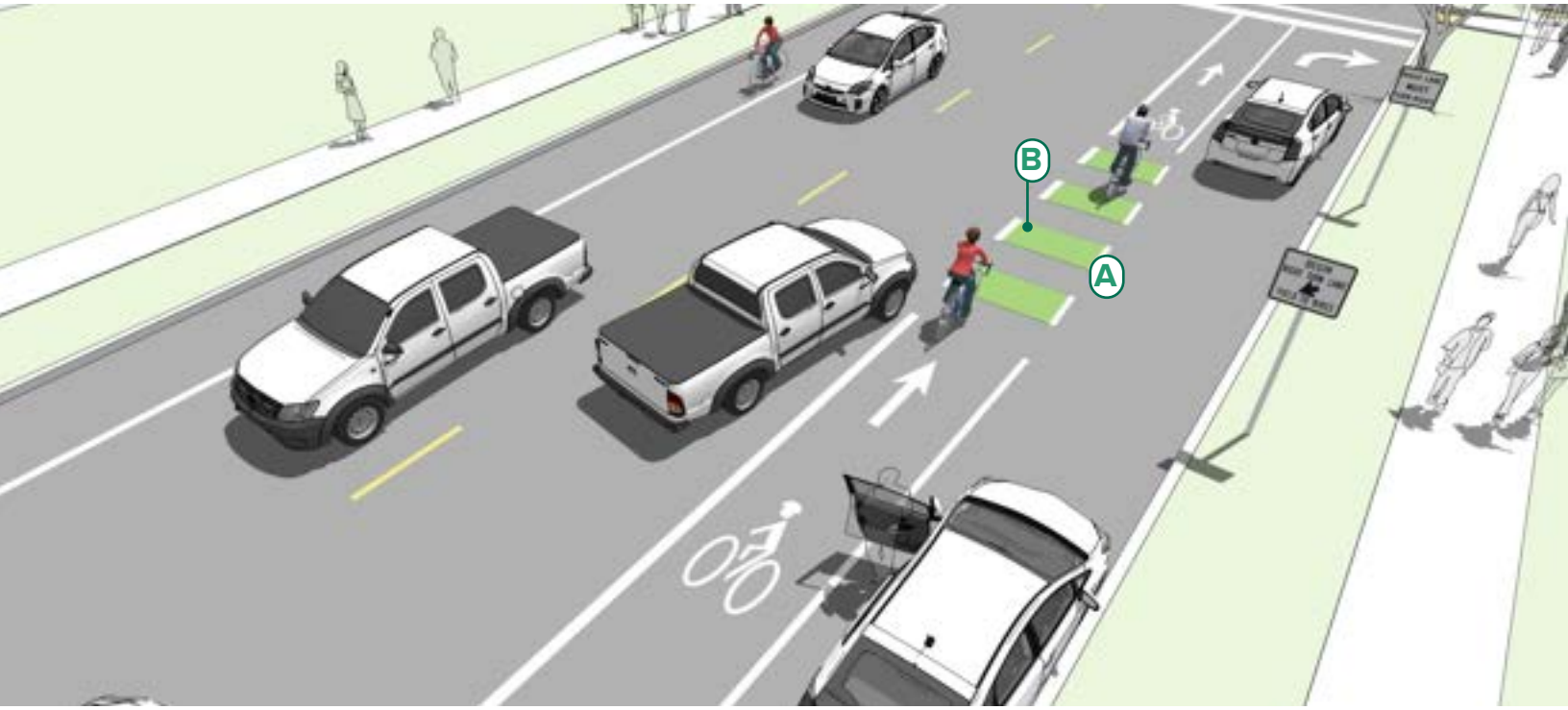
Typical costs are $16,000 per mile for restriping. Typical yield lines cost $10 per square foot or $320 each. Typical shared lane markings cost $180 each.

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

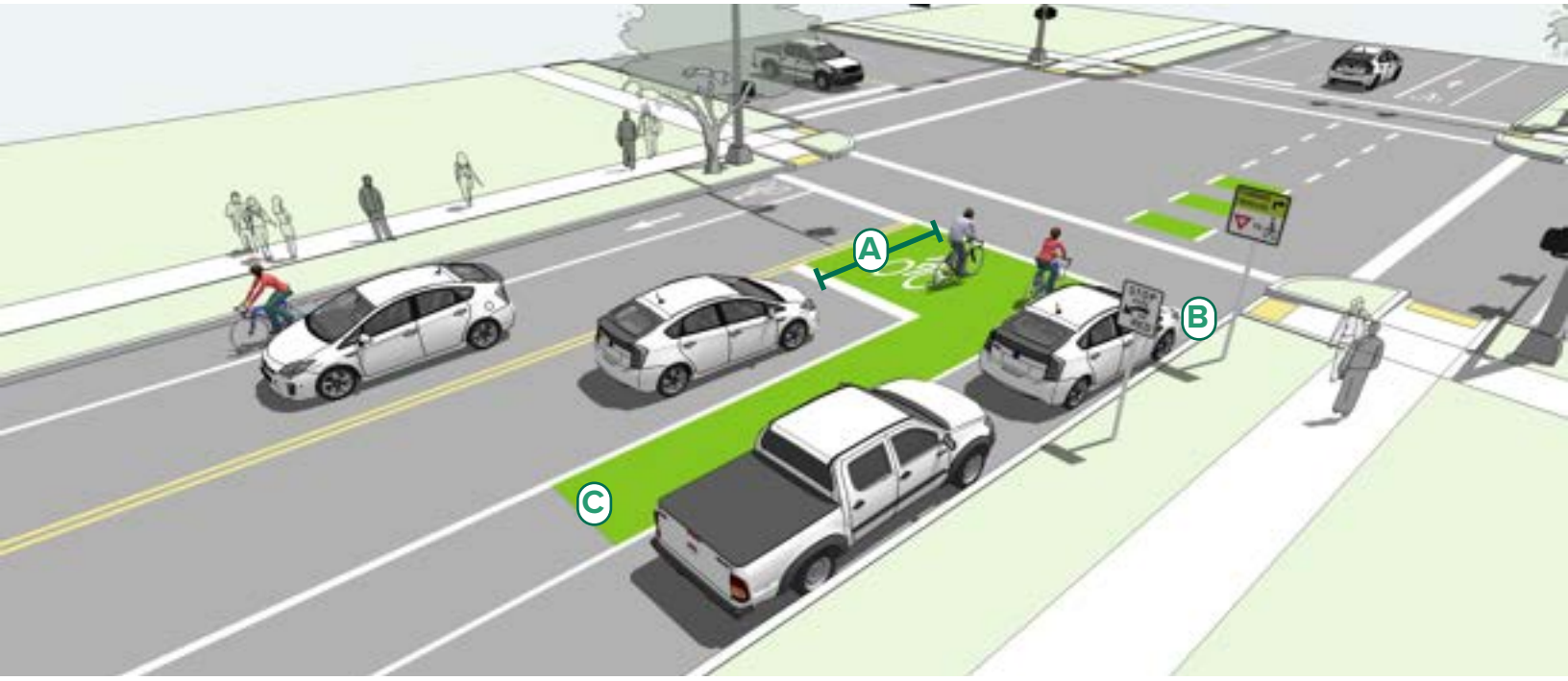
FHWA. Interim Approval for Optional Use of Green Colored Pavement for Bike Lanes (IA-14). 2011.

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.

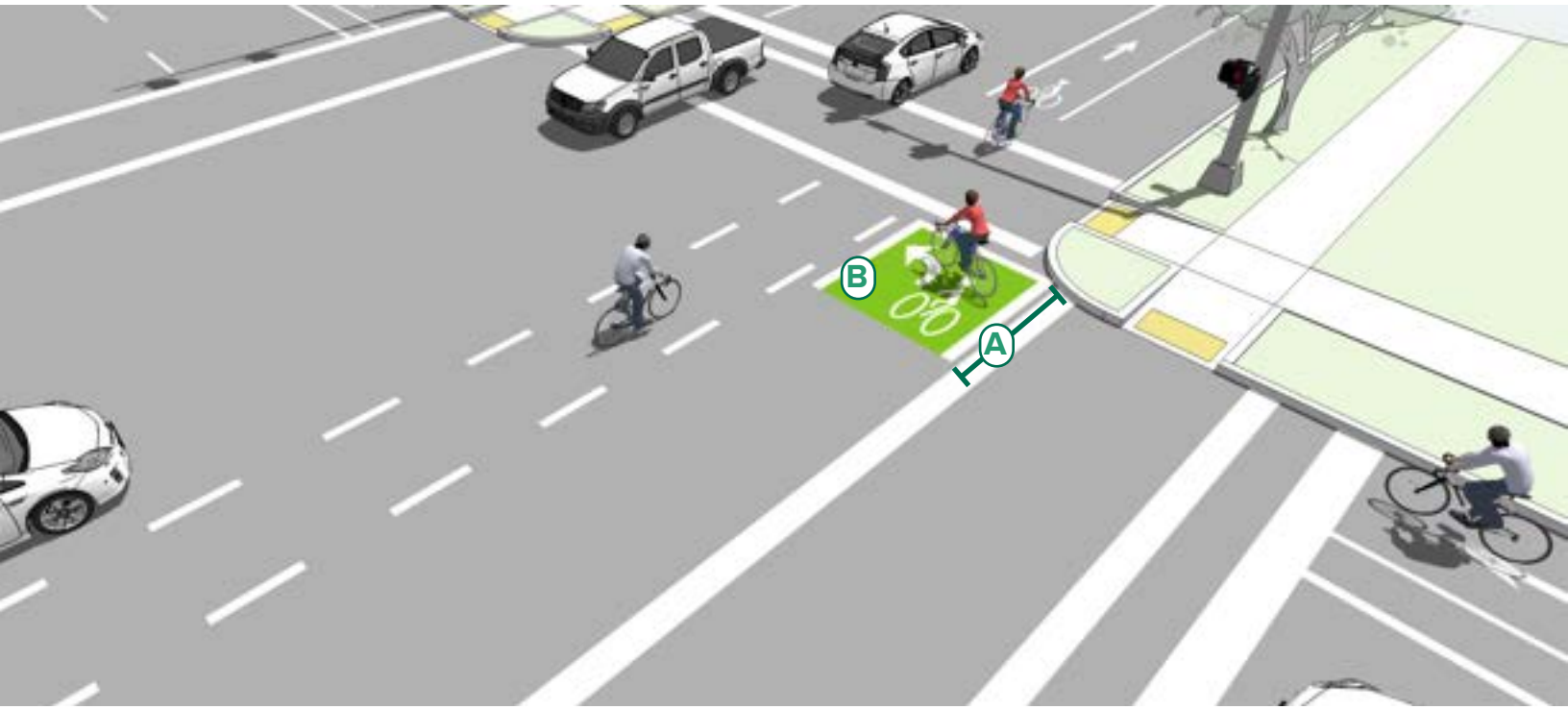
The typical cost for painting a bike box is $11.50 per sq. foot.

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.

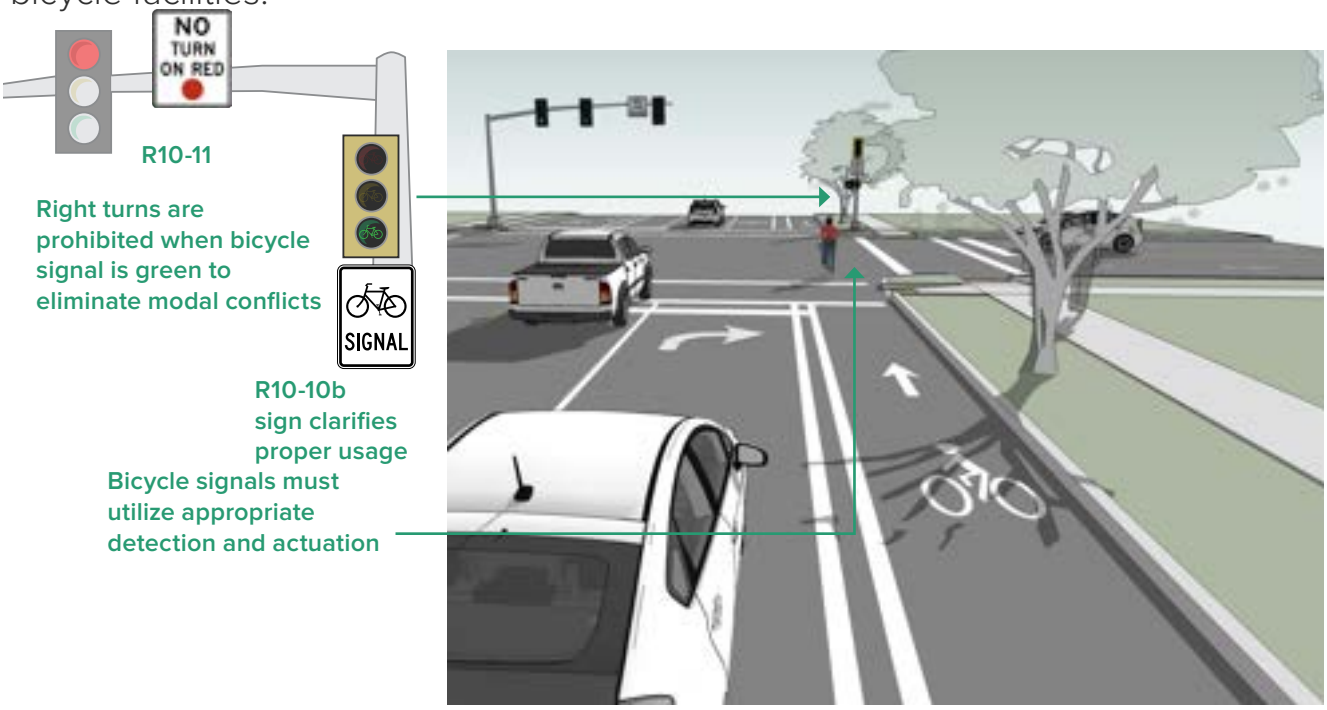
CONSTRUCTION COSTS

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:

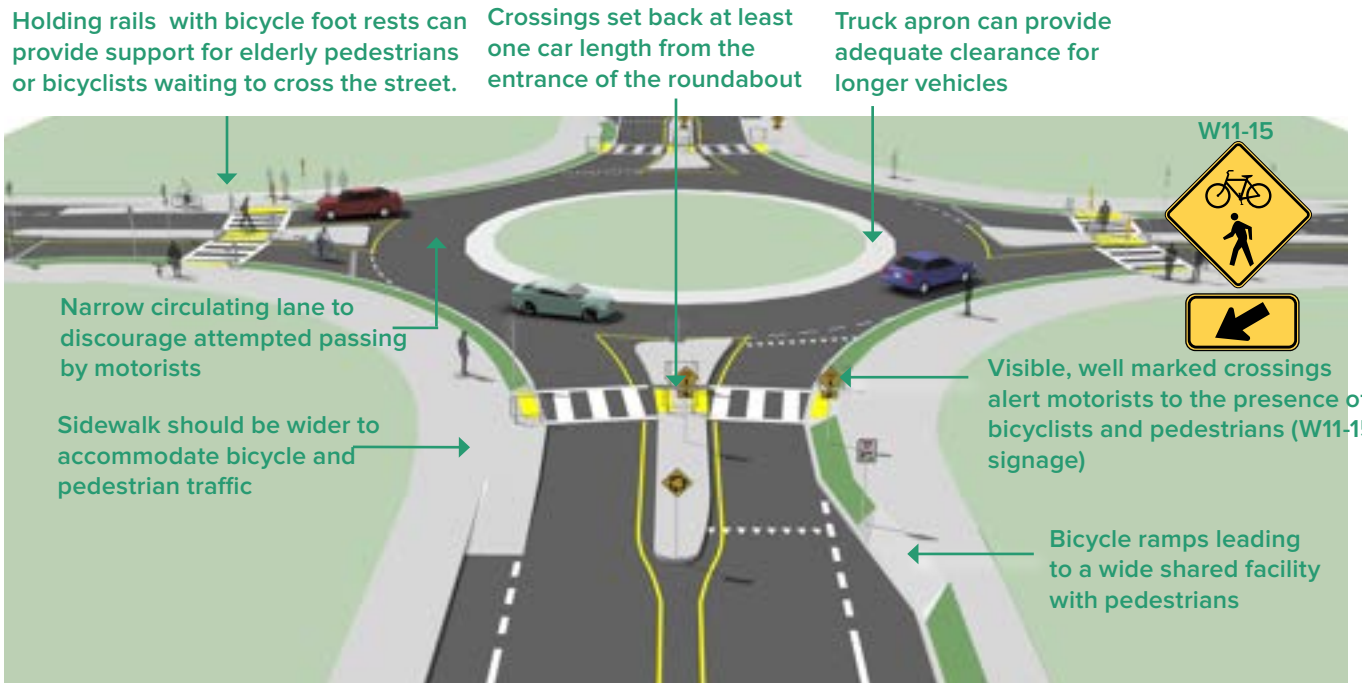
- Those with high volume of bicyclists at peak hours
- Those with high numbers of bicycle/motor vehicle crashes, especially those caused by turning vehicle movements
- At T-intersections with major bicycle movement along the top of the "T."
- At the confluence of an off-street bike path and a roadway 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.



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.

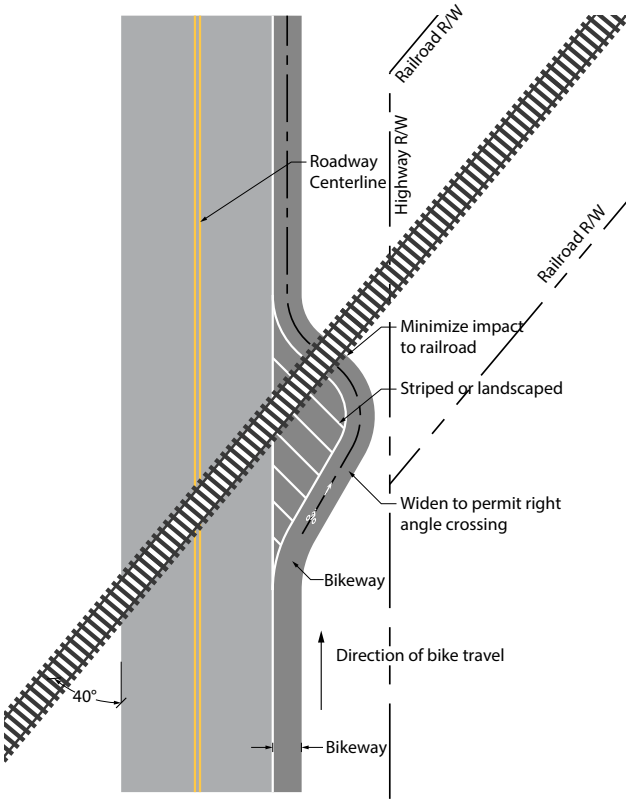
DESIGN FEATURES

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.

Railroad At-grade Crossings

Railroad tracks intersecting with bicycle facilities can be hazardous for bicyclists, people in wheelchairs, and other small-wheeled transportation devices. Rails can cause steering difficulties, wheel damage, or loss of control of the bicycle. Additionally, pavement surfaces, rails, and gaps may be uneven, causing additional obstacles for bicyclists, and metal rails can be slippery when wet.



TYPICAL APPLICATION

- Any bicycle facility on streets that intersect railroads
- Off-street facilities (shared use paths) that intersect railroads

DESIGN FEATURES

- Crossing angles should be designed as close to 90 degrees as possible, but no less than 60 degrees. The angle is important to reduce the likelihood of bicycle wheels getting stuck in the flangeway.
- Where 90 degrees cannot be achieved, pavement markings may be added to help guide bicyclists through at the correct angle
- Minimum width of bicycle facilities crossing railroad tracks is 6' to allow for lateral maneuvering if necessary
- Avoid reverse curves when possible as reverse curves require bicyclists to cross tracks when leaning
- Warning signs or markings should be used to inform bicyclists of upcoming rail crossing. Advance warning sign (MUTCD W10-1) and STOP (R1-1) or YIELD (R1-2) signs are required at all railroad crossings that are not equipped with train activated flashing lights
- Detectable warnings are required for any pedestrian facilities at railroad crossings for ADA compliance

ADDITIONAL REFERENCES AND GUIDELINES

AASHTO, Guide for the Development of Bicycle Facilities. Fourth Edition (2012).

06

BICYCLE FACILITY AMENITIES

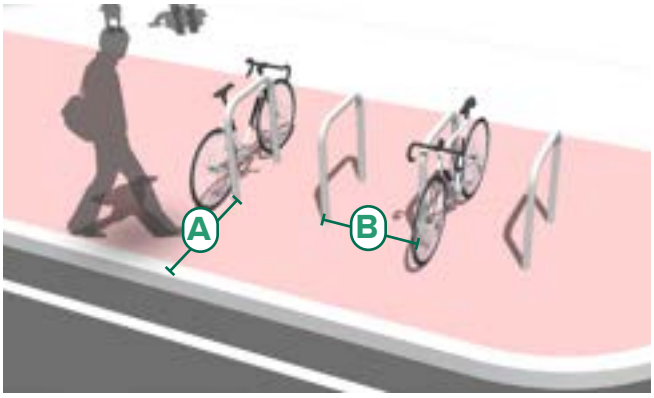
Bike Parking

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.

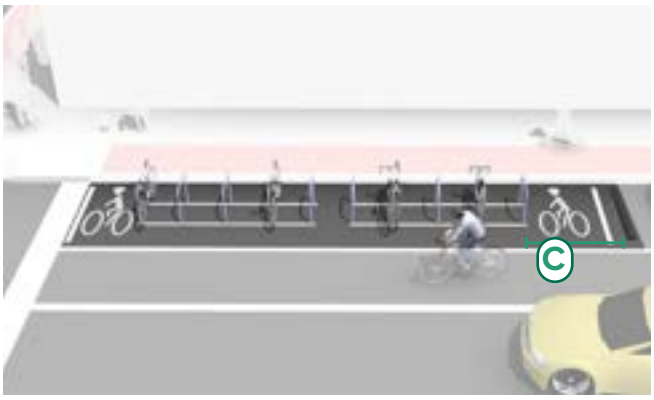
TYPICAL APPLICATION

- 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)

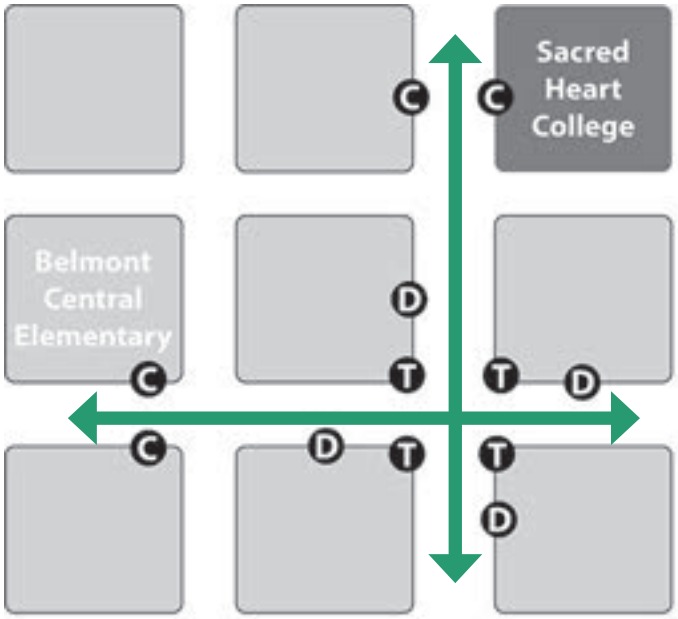
Custom street signs can also act as a type of confirmation sign, to let all users know the street is prioritized for bicyclists.

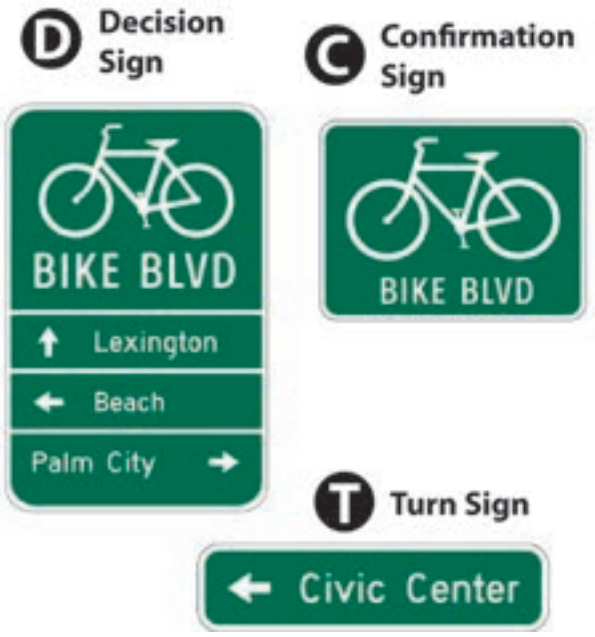
FURTHER CONSIDERATIONS

- 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 ¼ to ½ 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

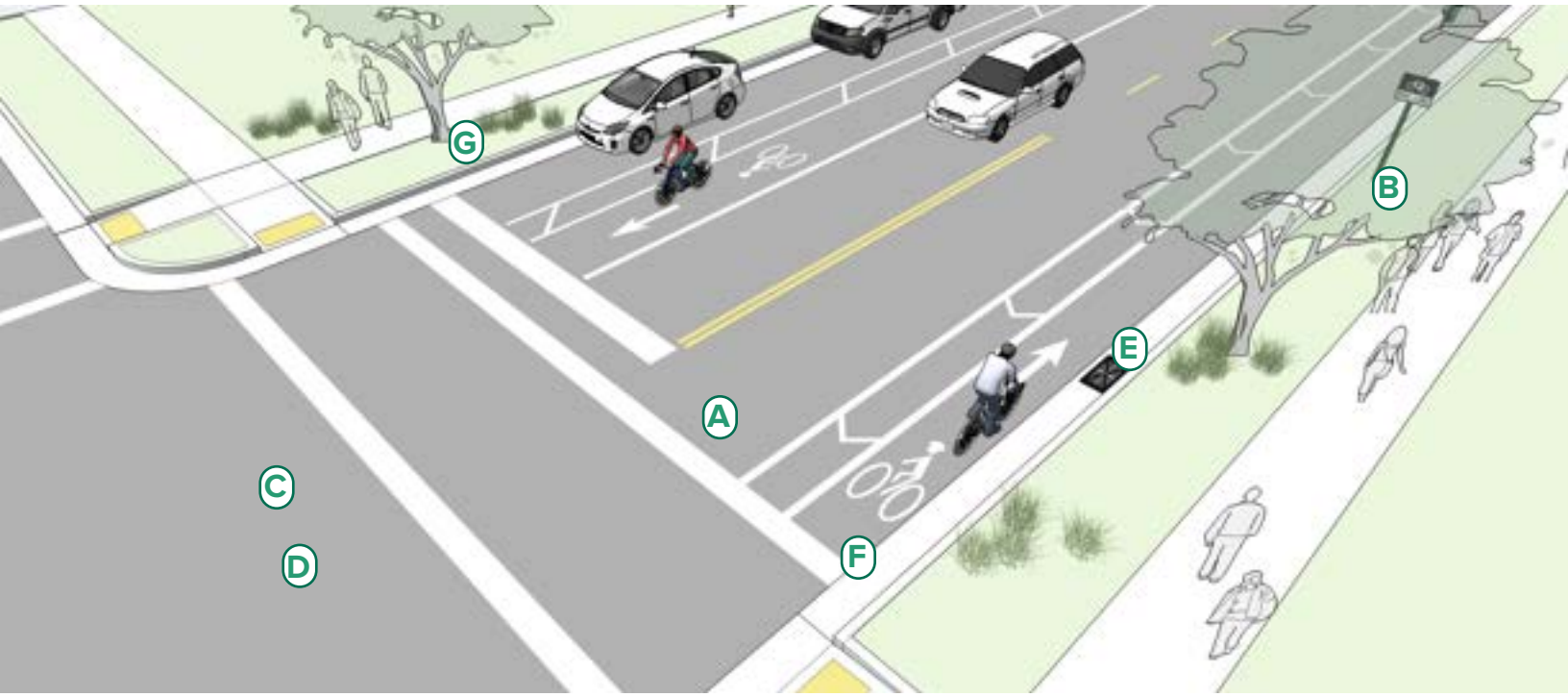
Some cities use pavement markings to indicate required turns along the bicycle route.

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.

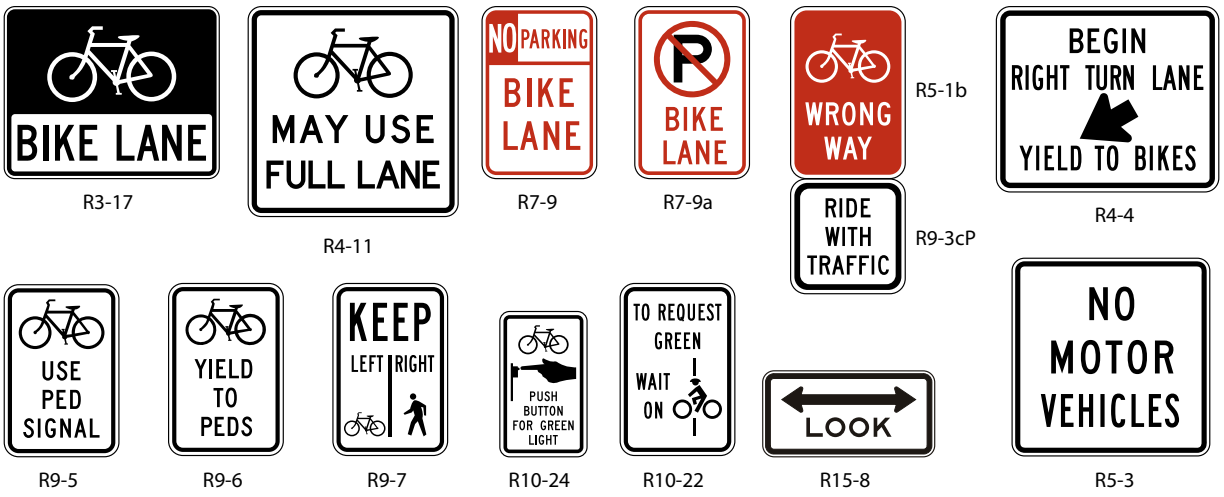
Recommended Walkway and Bikeway Maintenance Activities

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

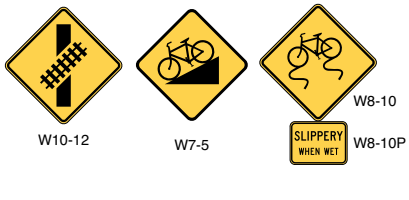
Regulatory and Warning Signs

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

Common Bicycle Oriented Regulatory Signs

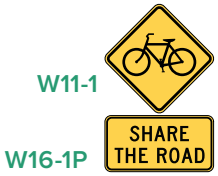


Additional Bicycle-Oriented Warning Signs



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.



Share the Road Sign

The sign serves to make motorists aware that bicyclists might be on the road, and that they have a legal right to use the roadway.

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.

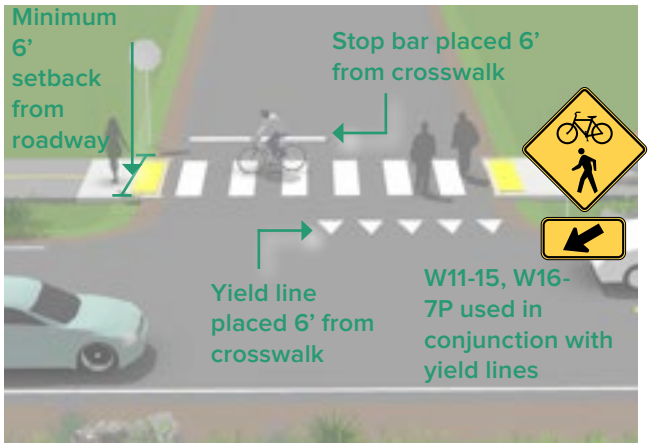
07

OFF STREET FACILITIES

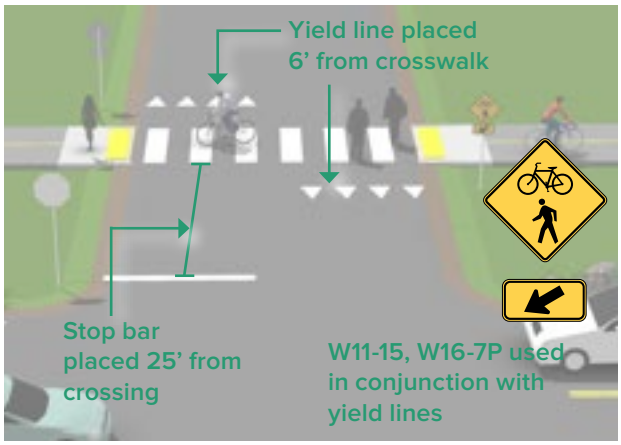
Sidepaths

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

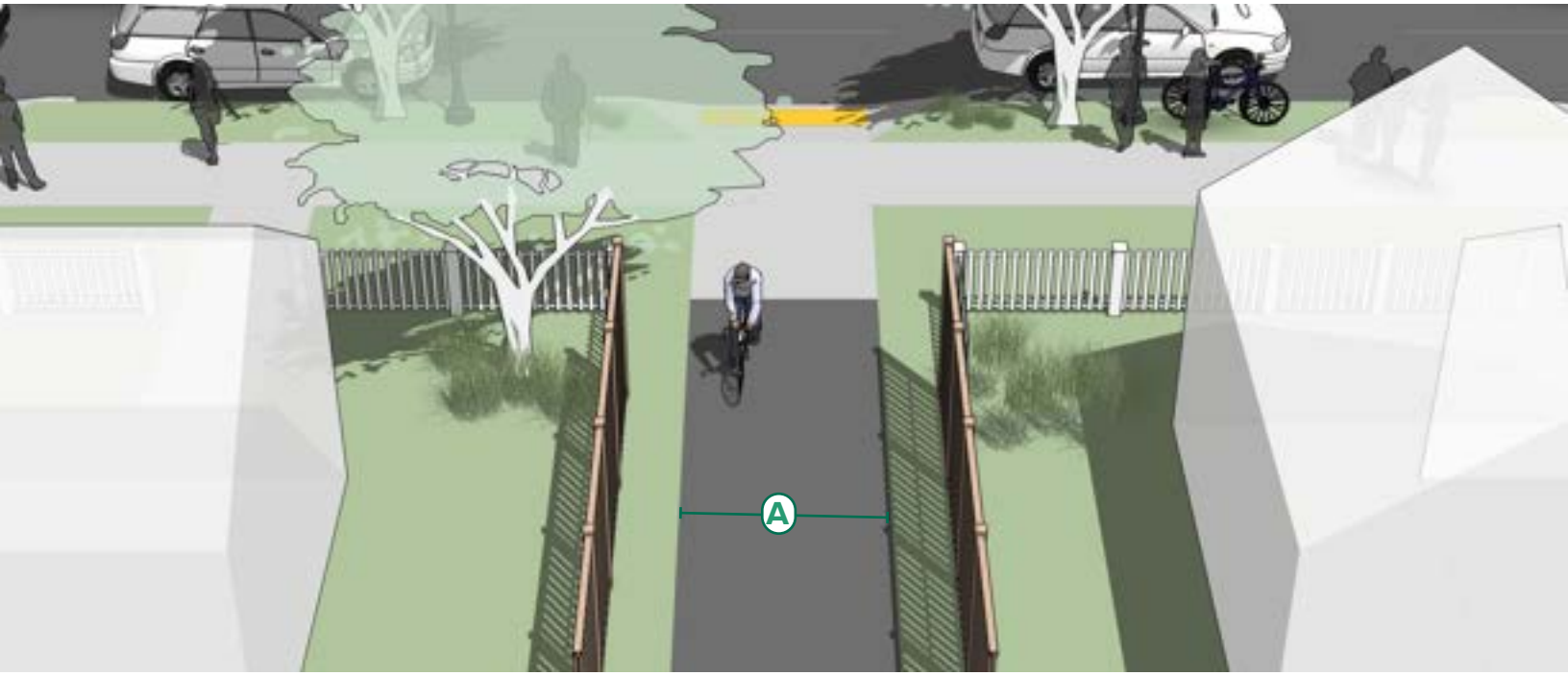
Shared use paths reduce injury rates for cyclists, pedestrians, and other nonmotorized modes by 60 percent compared with on street facilities.

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.

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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

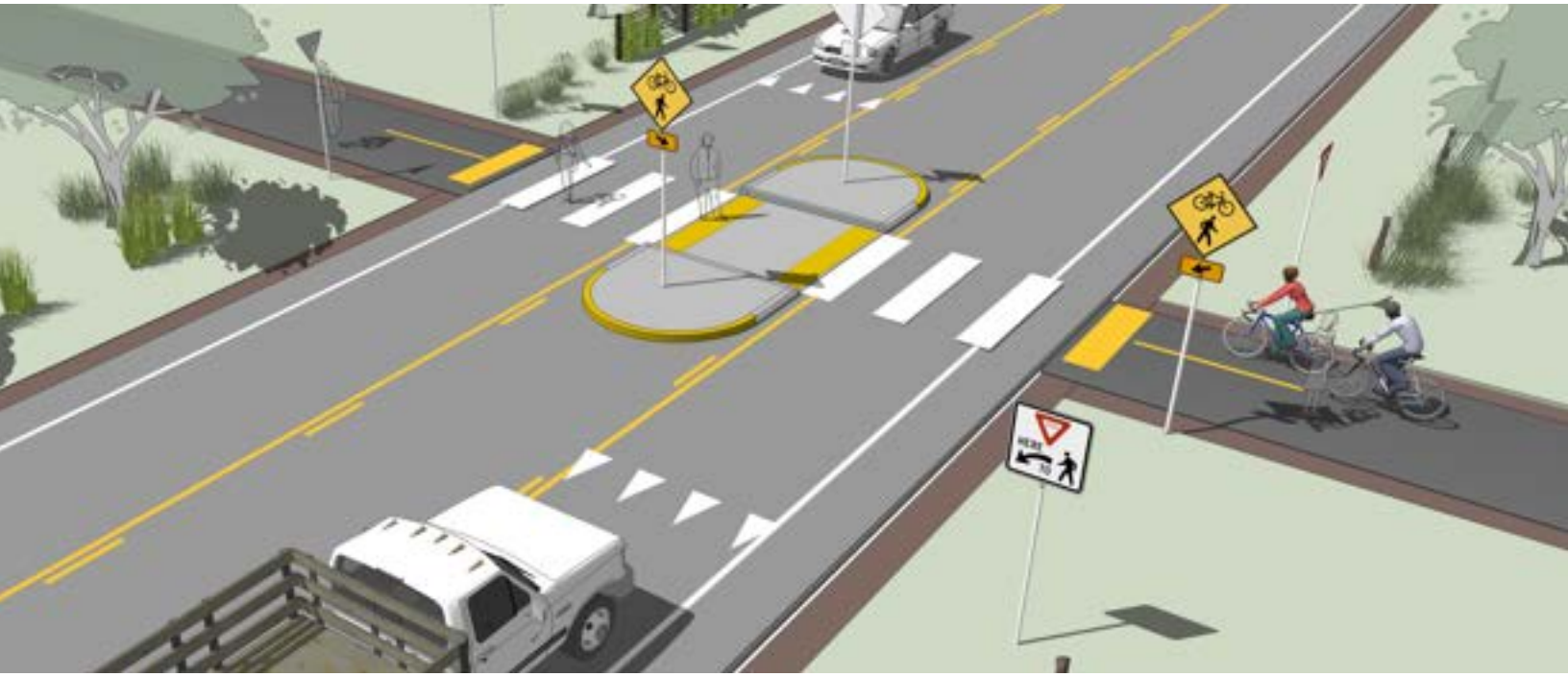
- Maximum Traffic Volumes
  - 9,000-12,000 Average Daily Traffic (ADT) volume
- Maximum travel speed of 35 MPH
- Minimum Sight Lines for motorists to yield to bicyclists. If the path has a stop sign, the below does not apply.
  - 25 MPH zone: 155 feet
  - 35 MPH zone: 250 feet
  - 45 MPH zone: 360 feet

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

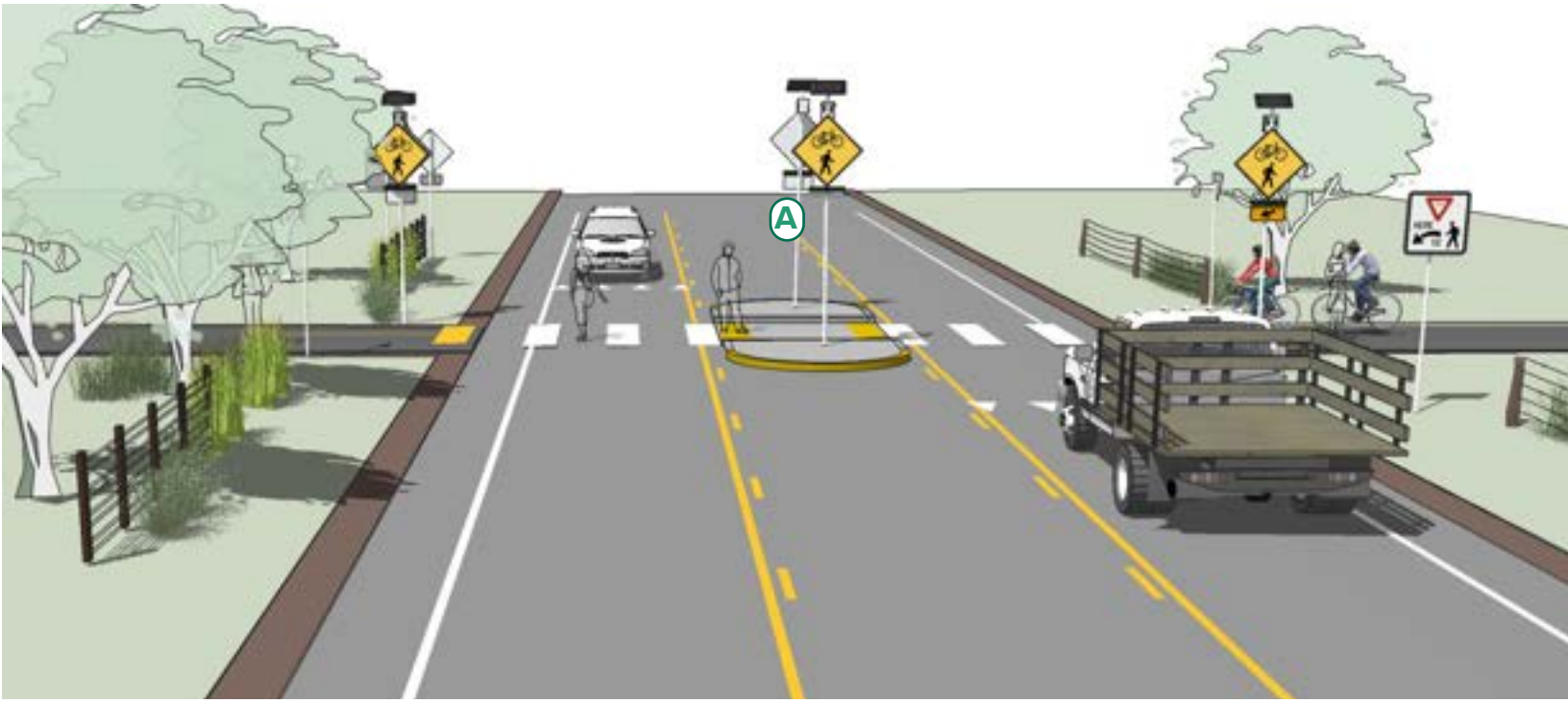
- Maximum Traffic Volumes
    - Up to 15,000 ADT on two-lane roads, preferably with a median
    - Up to 12,000 ADT on four-lane roads with median

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.

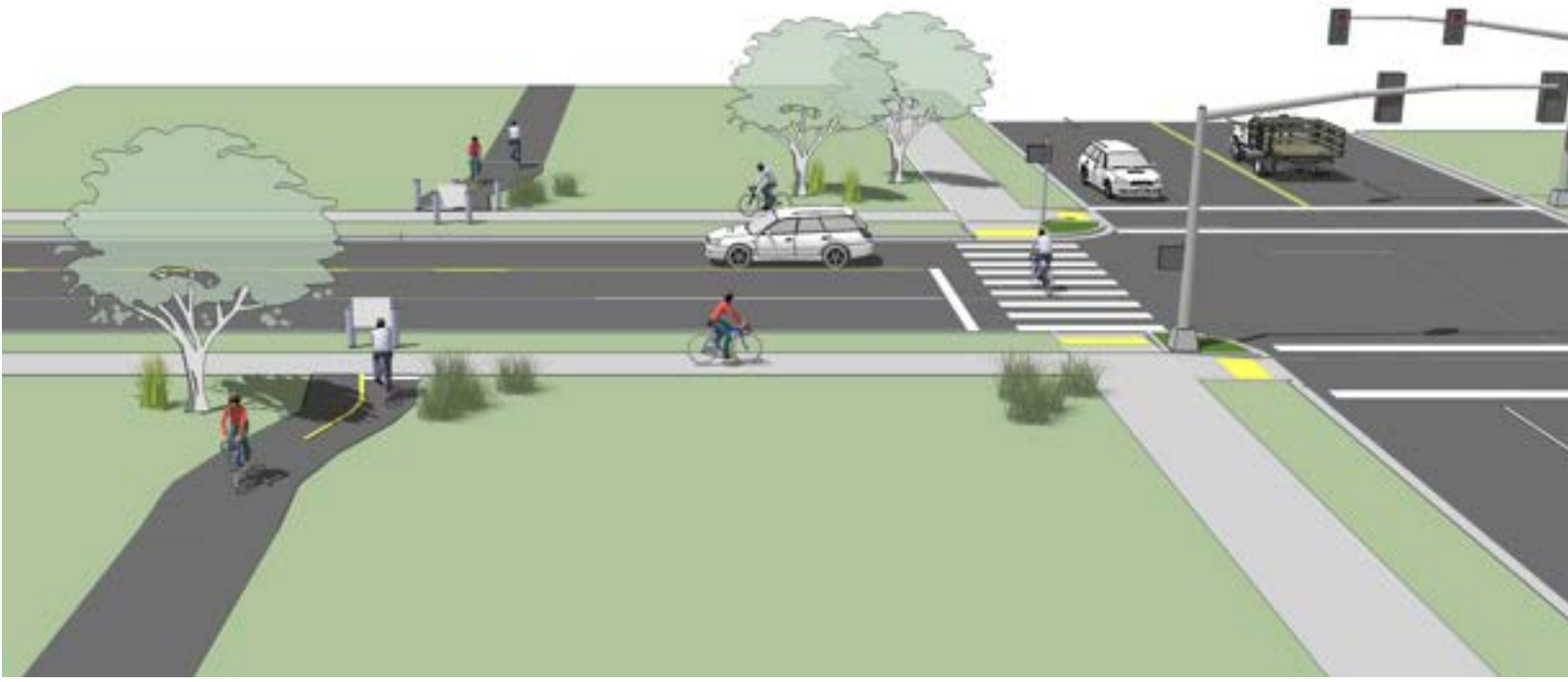
DESIGN FEATURES

(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

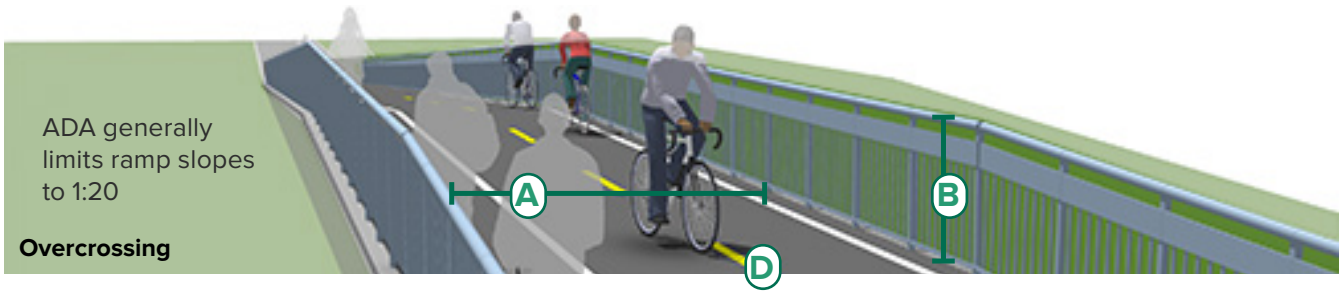
- For this restriction to be effective, barriers and signing may be needed to direct path users to the signalized crossing. If no pedestrian crossing exists at the signal, modifications should be made.
- Path crossings should not be provided within approximately 400 feet of an existing signalized intersection.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

DESIGN FEATURES

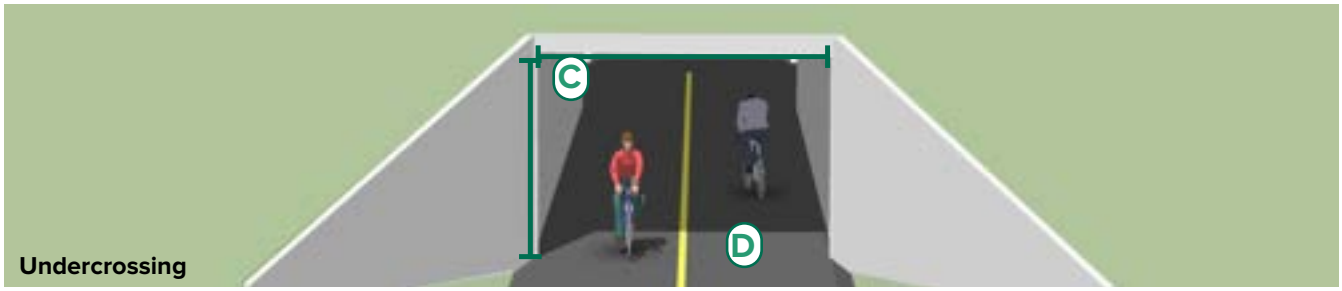
- In the US, the minimum distance a marked crossing can be from an existing signalized intersection varies from approximately 250 to 660 feet.
- Engineering judgment and the context of the location should be taken into account when choosing the appropriate allowable setback. Pedestrians are particularly 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.



Overcrossing



Undercrossing

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.

Minutes of the
Finance and Administration Committee Budget Meeting

Bountiful City Hall Council Work Room
April 22, 2024 (8:00 a.m.)

Present:

Committee Members:	Kendalyn Harris (Chair), Richard Higginson, Matt Murri
Other City Council Members:	Jesse Bell, Cecilee Price-Huish, Kate Bradshaw
City Manager:	Gary Hill
Assistant City Manager:	Galen Rasmussen
Department Personnel:	Tyson Beck, David Burgoyne, Francisco Astorga, Greg Martin, Dan Urban, Jessica Sims, Lloyd Cheney, Todd Christensen, Brad Jeppsen, Charles Benson

Official Notice of this meeting had been given by posting a written notice of same and an agenda at the City Hall and providing copies to the following newspapers of general circulation: Davis Journal, Standard Examiner, and the Utah Public Notice Website.

Committee chair Kendalyn Harris opened the meeting with a call to order at 8:15 a.m., and those in attendance were welcomed. Committee chair Harris asked Galen Rasmussen to provide direction on the order of budget presentations. It was also noted that voting by committee members for approval of all budgets would be made at the end of the presentations.

PRESENTATION OF BUDGETS

Finance Department

Tyson Beck was asked to review the budget request from the Finance Department which now includes the former Treasury Department budget and staff members. Fiscal priorities for the Finance Department include providing customer service for the new Fiber Fund in addition to other core priorities of the department. A question was asked by a committee member regarding plans for further City responsibilities for E911 dispatching of other agencies in Davis County. Gary Hill and Tyson Beck responded on the status of that activity. Budget increases in personnel services in the Finance budget are largely due to a 5% cost of living increase for employees and a 15% health insurance increase. Gary Hill and Jessica Sims noted that the level of increase in health insurance premiums had been reduced from 15% to 10.5% through negotiations with the City's insurance broker. Adjustments will be made to each department's health insurance budget prior to presentation of the overall City budget for final adoption in June. Operations and Maintenance categories decreased between years due to further truing up of expenses from the combination of the Finance and Treasury departments. A discussion of the Administrative Services line item ensued, and

it was noted that this line item accounts for a reimbursement from enterprise funds to the general fund for services provided.

Debt Service Fund Budget

Tyson Beck outlined the budget request of the debt service fund. This fund accounts for debt service on the general obligation debt of the city. An adjustment to decrease the debt service levy is being proposed to collect only the amount of tax necessary to meet the City's debt obligation. It was noted that the methodology followed by Davis County to assess and collect the debt service due, if unadjusted by the City, would result in an overcollection of taxes for debt service in total so an adjustment is being proposed in the budget.

Cemetery Perpetual Care Fund

Tyson Beck reviewed the budget request of the Cemetery Perpetual Care fund. This fund accounts for future funding of maintenance for the cemetery after all operations have ceased. The income for this fund is derived from lot sales and from interest income.

Landfill Closure Fund

Tyson Beck noted that this fund accounts for amounts needed to maintain the City landfill after its eventual closure. The fund accumulates interest income on deposited amounts for that future closure based on estimated life of the landfill.

Fiber Fund

Tyson Beck, Galen Rasmussen, Gary Hill, and Lloyd Cheney reviewed the budget request of the new Fiber fund. Gary Hill noted that the financial proforma developed for this Fiber project indicated a 0.8% take rate at this point in the project development. As of the end of March 2024, the city had 159 fiber connections and a 0.8% take rate. These outcomes place the project on track with the original financial proforma. Lloyd Cheney noted that the project construction rate is progressing well with B. Jackson Construction (UTOPIA subcontractor) installing 112 miles of conduit, 55 miles of fiber and 4209 handholds as of the most recent data available. The line-item budget has been developed to track with estimated construction progress and the financial proforma estimates.

Human Resources Department

Jessica Sims reviewed the Human Resources budget for those in attendance. Increases in the department mostly result from the 5% cost of living and health insurance increases. Thanks were expressed by committee members for efforts made to reduce health insurance increase impacts and for the work needed to process payroll for the South Davis Recreation District.

Information Technology Department

Greg Martin outlined the budget request from the Information Technology department and the department's fiscal priorities which are designed to aid departments in data connectivity. Greg noted that there is a looming issue with future cost increases in virtual resource management software licensing (currently the City uses software from VMware). To address this future cost increase, staff are researching opportunities with other vendors. An additional area of focus for the department is on the implementation of Cyber Security measures for compliance with external mandates from various entities such as insurance providers, data security required by the criminal justice system and other entities. Staff are also working with other departments to help assess their true costs of information technology resources per employee to aid in budgeting. The ten-year capital plan of the department was also discussed.

Computer Replacement Fund

Greg Martin reviewed the budget request of the Computer Replacement fund. This fund is used to track and account for the eventual replacement of computers and related hardware using a five-year replacement schedule. The ten-year capital plan was also reviewed.

Engineering Department

Lloyd Cheney reviewed the budget submission of the department. Fiscal year priorities include the reconstruction of 300 S and continued management of the construction of the Fiber project. Fine tuning of administrative processes is ongoing including the permitting process for encroachment (excavation) permits. The Fiber project has not been assessed encroachment permitting fees since it is a city project. Building Permits issued for the year thus far total 709 permits. Lagging projects in the city include the Renaissance Town Center area for which there are many inspections remaining which will require additional staff time to complete. Other projects with issues that staff deal with include interfacing with the School District and its projects which are largely governed by State law rather than City specific ordinances. A question was asked about staff involvement with trails development and plans for trails and the question was addressed by Todd Christensen, Brock Hill, and Lloyd Cheney.

Budget increases are largely due to cost of living and health insurance changes as noted in other budgets presented. Changes in the operations and maintenance area include training and certification for a new inspector and supporting costs for use of outside contracted inspection services as needed. Reductions in capital expenditures were due to reallocations of generator purchases throughout the city. There were also some changes in engineering fees related to application fees and a reinspection fee on third inspections.

Planning Department

Franciso Astorga outlined the budget request of the department and reviewed the related fiscal year priorities. Staff training is being provided to develop staff abilities. Committee member Higginson underscored the Council's recognition of the importance of providing the necessary training to keep staff well trained. Budget line-item changes centered on the cost of living and health insurance increases noted in other budgets. The council expressed an interest in why there was a decrease in the number of business license renewals between calendar year 2022 and 2023. A report back will be given by Planning staff at a future date to answer this question. Planning fee changes were reviewed for both license fees and development fees.

Redevelopment Agency (RDA) Fund

Francisco Astorga noted that the RDA fiscal priorities now include development of a new property downtown to be used as a restaurant. Tax increment changes and the process for tax increment were explained by Gary Hill. The valuations and tax rates applied in the RDA can change the revenue between years in a negative way. This situation is expected to ultimately result in receiving $4 million less than projected at the RDA renewal time or about $17 million instead of $23 million as originally projected.

A question was asked about when management feels that General Property tax rates will need to be increased for the City. Gary Hill noted that a projection is being made by the Finance and Executive departments and a report on this will be forthcoming this week.

RDA budget line items were reviewed for the Operating Fund (Fund 73) and the Revolving Loan Fund (Fund 72). Changes in Fund 72 were made in support of loans to be issued for the development of local business activities. Committee member Price-Huish asked a question about the 6-month estimate for improvements other than buildings in Fund 73. Gary Hill noted that this number will need to be adjusted due to an error in the budget development phase. Adjustments will appear in the final adopted budget.

Legal Department

Brad Jeppsen noted that budget changes for the Legal department came mostly from the cost of living and insurance premium increases along with changes in public defender fees from procedural changes mandated at the state level. Questions were asked about how public defenders are assigned and how the process works in the City. Brad briefly outlined the process to answer questions.

Liability Fund

Brad Jeppsen outlined the budget request of the fund. The largest budget impacts are from the number of cases and the dollar amount of claims from the current and past years along with the cost of insurance premiums for liability coverage citywide.

Workers' Compensation Fund

Brad Jeppsen outlined the budget request. Discussion was held on the typical types of claims processed and possible changes in insurance carriers to reduce costs and streamline processes. The line-item budget was reviewed with particular emphasis on claims cost.

Executive Department

Gary Hill outlined the composition of the department as noted in the organization chart. The budget of the department includes changes primarily related to the cost-of-living allowance, insurance premiums and similar categories.

Legislative Department

Gary Hill mentioned the purpose of the department and that it includes activities of the elected body of the city. Budget increases are inclusive of cost of living and insurance premium increases noted previously. The election expense change is made for accommodating a RAP Tax renewal election for November 2024.

Committee Action and Adjourn

Committee chair Harris asked for a motion to approve the budgets presented. Committee member Higginson made a motion for approval of all budgets presented. This motion was seconded by Committee member Murri. Voting was unanimous with Committee member Harris, Higginson and Murri voting aye.

The meeting adjourned at 10:25 a.m. on a motion made by Committee member Murri and seconded by Councilman Higginson. Voting was unanimous with Committee members Harris, Higginson, and Murri voting "aye".

Minutes of the
Power Committee Budget Review Meeting
(Joint Meeting with Power Commission)

Bountiful City Power Department
April 23, 2024 (8:00 a.m.)

Present:

Committee Members:	Cecilee Price-Huish (Chair), Richard Higginson, Kendalyn Harris
Other City Council Members:	Kate Bradshaw
Power Commissioners	Paul Summers (Chair), Susan Becker, Dan Bell, Jed Pitcher, David Irvine, John Marc Knight
City Manager:	Gary Hill
Assistant City Manager:	Galen Rasmussen
Department Personnel:	Allen Johnson, Alan Farnes, Jess Pearce, Tyrone Hansen, Luke Veigel, Nancy Lawrence

Official Notice of this meeting had been given by posting a written notice of same and an agenda at the City Hall and providing copies to the following newspapers of general circulation: Davis County Clipper, Standard Examiner, and on the Utah Public Notice Website. This meeting was also conducted as an electronic meeting with David Irvine joining in that forum.

Power Commission chair Paul Summers called the meeting to order at 8:00 a.m. and he welcomed those in attendance.

PRESENTATION OF BUDGET

The meeting was turned over to Allen Johnson, Light & Power Department Director, and the department staff to present the detailed budget for the Light & Power fund.

Tyrone Hansen, Light & Power Department Accountant, was asked to review key points of the power system and budget request via PowerPoint presentation.

Budget highlights for Fiscal Year 2024-2025 were presented as follows:

- Overall budget for adoption of $39,556,787
- 5% increase in power rates
- 5% increase in the Feed and Tariff rate
- Solar Net Metering buy back rate reduced to $0.075
- Annual Pole attachment fee increased from $13 to $14

- Customer Service Policies are updated
- Proposed addition of a 3 person line crew
- Services are provided to 17,300 total customers (15,652 residential; 1,647 commercial; 1 industrial)

The electrical system includes:

- 6 substations
- 42 miles of 46KV transmission lines
- 90 miles of 15KV overhead distribution lines
- 135 miles of 15KV underground distribution lines
- 75 miles of street light circuits

Power resources include:

- Colorado River Storage Project (CRSP)
- Intermountain Power Project (IPP)
- Natural gas fired central power plant
- Hydro Electric plants at Echo and Pineview Reservoirs
- Red Mesa & Steel solar projects
- Contracts with industry suppliers

Major Roles and Critical Functions were outlined as follows:

- Ensure the safety of everyone that interacts with the electrical system.
- Buy and generate electricity at economical prices.
- Deliver electricity to residential, commercial, and industrial customers.
- Provide reliable electric service.

Items need to fulfill major roles and critical functions:

- Upgrade feeders #572, #573, #574 and #576.
- Begin replacement and upgrade of Hydro control systems.
- Begin a rebuild of the Northwest Substation.
- Acquire power resources to stabilize the cost of power and increase “Green” and carbon free resources.

Jesse Pearce was asked to provide information on field operations for the department:

- The department has had over six years of no lost work time due to accidents and has received awards for their safety record.
- The five-year average system reliability rate for the Power department is 0.9999992%.
- Since the year 2000, the department staff has replaced total of 2,257 distribution poles of a total 4,938 poles in the system. This averages to 125 poles replaced per year (if the year 2020 is excluded due to the windstorm which resulted in additional pole damage that needed replacement over and above the average).
- Remaining poles in the system are approximately 50 years old and all need replacement.
- The underground system for the department is comprised of 1,261,100 feet of cable. This includes 239,122 feet of bare concentric cable that was installed between 1970 and 1986. This bare concentric cable has a life expectancy of only 20 years and is increasingly in need of replacement. Newer, jacketed, cable is being installed now at an average rate of 18,000 feet per year. This jacketed cable has a 40-year life expectancy.
- The tree trimming program is inclusive of one in-house crew and two contracted crews that are employed to mitigate tree growth impacts to system resources. Approximately 3,700 trees are trimmed or removed per year by these crews.
- Supply chain issues were noted including a 6-to-8-month delay in receiving poles and 36-to-104-week delays in receiving transformers.

Luke Veigel was asked to review the capital requests for Fiscal Year 2024-2025:

- Total capital request is $5,450,000 which is up by $3,115,000 from the current fiscal year.
- The request includes the following:
    - $290,000 for vehicles
    - $200,000 for upgrade of Feeder #573
    - $260,000 for an intertie of Feeder #572 to #574
    - $100,000 for an upgrade of Feeder #576
    - $250,000 for distribution at Renaissance Town Center
    - $200,000 for distribution work at four new business locations

Alan Farnes provided an overview of capital improvements scheduled for the Hydro locations as follows:

- $400,000 for update of controls at the Echo Hydro
- $750,000 for update of controls at Pineview Hydro

Other capital improvements included in the request are:

- $3,000,000 for the Northwest Substation.

Jess Pearce reviewed the request for a one dollar increase in the annual fees for pole attachments. The fee will rise from $13 to $14 to assist the department in funding additional maintenance and pole replacement.

Additional discussion was held on the changes proposed in customer service policies for:

- Townhomes, condominiums, and any customer with multi-gang meter bases.
- Battery and electric vehicle definitions and inverter driven systems.

Tyrone Hansen presented examples of how the electric system load is balanced during two time periods in a typical year and showed a schedule of power costs and metered sales by month. There was also a discussion between management and the commissioners regarding solar power and IPP power resources.

The proposed rate increase of 5% will result in Bountiful Power being 8.3% higher that Rocky Mountain Power rates.

The meeting concluded with a summary of the budget request which included:

- Operating revenue of $34,704,782
- Personnel Services costs at $5,979,963
- Operations and Maintenance costs at $24,847,551 and
- A net operating transfer of $1,077,349
- A total of $42,145,000 in planned capital expenses in the next 10 years

Following the discussions, Power Commission chair Paul Summers called for a motion to approve the Fiscal Year 2024-2025 budget request with all items as outlined. Commissioner Pitcher motioned to approve the budget and Commissioner Bell seconded the motion. All commissioners voted aye.

City Council Budget Committee chair Cecilee Price-Huish called for a motion on the Power Fund budget with all items as presented. The budget was passed with a motion from Committee member Price-Huish with a second from Committee member Higginson. Voting was unanimous with Committee member Price-Huish voting, Higginson, and Harris aye. The budget review portion of the meeting adjourned at 9:45 a.m. by consent of the Power Commissioners and City Council Budget Committee members.

Minutes of the
Parks, Recreation & Arts Committee Budget Review Meeting

Bountiful City Hall, Council Work Room
April 22, 2024 (4:00 p.m.)

Present:

Committee Members:	Kate Bradshaw (chair), Jesse Bell, Kendalyn Harris
Other Council Members:	Richard Higginson, Cecilee Price-Huish, Matt Murri
City Manager:	Gary Hill
Assistant City Manager:	Galen Rasmussen
Department Personnel:	Brock Hill, Lloyd Cheney, Todd Christensen, Bruce Sweeten, Kent McComb, Geno Flanary, Jessica Sims, Charles Benson

Official Notice of this meeting had been given by posting a written notice of same and an agenda at the City Hall and providing copies to the following newspapers of general circulation: Davis County Clipper, Standard Examiner, and on the Utah Public Notice Website.

Committee chair Kate Bradshaw called the meeting to order at 4:04 p.m. and welcomed those in attendance. It was noted that voting on all budget submissions would take place at the conclusion of presentations.

PRESENTATION OF BUDGETS

Recreation Arts & Parks (RAP) Tax Grant Applications

Committee Chair Bradshaw asked Galen Rasmussen to provide an overview of funding requests and available funding. A total of $134,652 in requests were received by staff with $82,500 in available funding to balance against requests. Committee members asked questions of applicants present in the meeting. A question was asked of Bountiful Philharmonia asking for a detail of other funding sources they have. A Bountiful Philharmonia representative provided a response to the question. A question on the BDAC request was asked specifically about the details of the eligible and ineligible costs (a summary was provided by staff to answer the question). One further question directed to the BDAC dealt with the reasoning for the request for funding of a strategic plan. An explanation was provided by the BDAC Executive Director.

Committee chair Bradshaw noted for those present that a decision on final funding of grants would not be made today but that a follow-up meeting would be held later to decide on funding levels.

RAP Tax Fund

Gary Hill reviewed the fund priorities and major projects for Fiscal Year 2025. Line items of the budget were reviewed with reference to RAP tax funding and how it is used per council guidelines. The RAP Tax fund has been reimbursing the Capital Fund for advance funding of eligible projects such as Creekside Park and the Bountiful Town Square. A review of the long-term capital plan for RAP Tax was made for the remaining funding authorization period and for potential projects if the RAP Tax is reauthorized by the voters.

A request by Committee Member Higginson was made for a list of completed projects to show how the RAP Tax has benefited the City and its residents. This list will be provided at a future time. Projection of funding available from a reauthorized RAP Tax is expected to total approximately $9,000,000.

Government Buildings Department

Bruce Sweeten was asked to review the fiscal year priorities of the department. The line item budget was reviewed with no extraordinary items to comment on other than cost of living and increases in health insurance. The capital budget request includes a replacement truck.

Golf Fund

Kent McComb and Brock Hill identified fiscal year priorities and recognized the recent approval provided by the Council for fee adjustments effective in March 2024. A discussion was made on how the new food concessionaire's practices are adding value at the course. A review of budget line item highlights was made including comments on the change from leasing of carts and increases from cost of living and health insurance premiums.

Cemetery Fund

Lloyd Cheney, Brock Hill and Geno Flanary reviewed operational shifts in the Cemetery including the decrease in number of burials and sale of lots. Policy changes have delivered changes in the number of lot sales for residents and non-residents but have unfortunately brought corresponding reductions in revenue for the fund and a need to balance operating expenses with declining revenues. Gary Hill provided further insights on how the policy changes affected cemetery revenues. Lloyd noted that there were 273 resident lot sales in 2023. In 2024, to date there were only 149 lot sales made. Fees, and changes to fees, were reviewed. Staff is reviewing options to address sales and expense issues.

Parks Department

Brock Hill reviewed the budget request of the Parks Department. Fiscal priorities were reviewed and focus was given to the planned automated smart controller sprinkler system. Consideration is being

given to two competing vendor offerings. Purchase and installation of at least a portion of the system will be completed in the near future. High visibility and high use locations will be prioritized for installation.

Challenges in the department center on finding employees for part-time and seasonal work. Line item budget items were reviewed with key changes between years identified. Capital request items were noted and questions were addressed.

Trails Department

Brock Hill reviewed progress on trail building by location. Questions were asked by committee members and staff provided answers. All bridges to serve trails that are now constructed, or are contracted for, in the trail system have been installed. Additional bridges will be required to serve the entire master planned trail system. The budget is set at the level necessary to support planned trail improvements in Fiscal Year 2025.

Committee Action and Adjourn

Committee member Bell made a motion to approve the budget submissions of the Golf Fund, Government Buildings Department, Cemetery Fund, Parks Department, Trails Department and RAP Tax Fund for Fiscal Year 2024-2025 as stated. The motion was seconded by Committee member Bradshaw.

The meeting adjourned at 6:17 p.m. by motion of Committee member Bell and seconded by Committee member Bradshaw.

Minutes of the
Public Safety Committee Budget Review Meeting

Bountiful City Public Safety Building
April 23, 2024 (4:00 p.m.)

Present:

Committee Members:	Jesse Bell (Chair), Cecilee Price-Huish (left at 5:02 p.m.), Matt Murri
Other Council Members:	Kendalyn Harris, Richard Higginson, Kate Bradshaw
City Manager:	Gary Hill
Assistant City Manager:	Galen Rasmussen
Police Department Staff:	Ed Biehler, David Gill, Andrew Smith, Priscilla Ipina, Cody Keith, Ryan Sanborn
Other City Staff:	Greg Martin, Jessica Sims, Charles Benson

Official Notice of this meeting had been given by posting a written notice of same and an agenda at the City Hall and providing copies to the following newspapers of general circulation: Davis Journal, Standard Examiner, and on the Utah Public Notice Website.

Committee chair Jesse Bell called the meeting to order at 4:03 p.m., welcomed those in attendance.

PRESENTATION OF SOUTH DAVIS METRO FIRE AGENCY BUDGET

Gary Hill presented the budget for the City's participation in the South Davis Metro Fire Agency. Chief Stone was unable to attend due to another commitment and was excused from attendance. Funding for the Agency comes from paramedic revenue, a property tax levy, and member entity assessments. City managers from all member agencies form an administrative budget committee of the agency. For FY2025 there is a proposed 3% increase in the member assessment ($80,812 additional from Bountiful). No major changes are proposed in the fire budget.

A question was asked as to whether increases each year will continue. Gary noted that the Fire Agency does not have any revenue sources with a natural growth rate so periodic increases in the membership assessment must be made to sustain Agency operations. Increases are usually aligned with the growth in general fund revenues of each city.

PRESENTATION OF POLICE DEPARTMENT BUDGET

Chief Ed Biehler provided an introduction of Police staff and then asked Lieutenant Andrew Smith to deliver an overview of department priorities and operations. Additionally, a handout was distributed showing Police statistics for 2021 through 2023. Chief Biehler mentioned that the statistics reported for the 2023 calendar year are not complete in some categories. This is due use of a new reporting software and the inability to retrieve 2023 statistics from the prior software platform. This condition

may result in some categories being reported artificially low. Major Offenses have dropped from 852 in calendar year 2021 to 643 in calendar year 2023. Arrests have decreased from 877 in calendar year 2021 to 446 in calendar year 2023. A discussion of other related statistics was also held. Lieutenant David Gill provided a demonstration of the software used to track the use of force and vehicle pursuits along with the related procedures for this area of practice for the police.

A review of budget line items was made by Chief Biehler with highlights on certain personnel services categories and operations and maintenance areas for each sub department. There were some adjustments in line items from the Police main budget to other smaller sub department budgets to better reflect needs for items such as training and other operations and maintenance items. A discussion was held on the effect of new legislation requiring school guardians or officers in schools. Chief Biehler noted that school districts are responsible for the decision of which option to use.

The largest budget increase for Police is within the E911 sub department. Bountiful is budgeting to dispatch for two additional Davis County cities after January 2025. The capital request of the Police department includes funding for capital needs to accommodate additional dispatching responsibilities along with other department priorities.

Committee member Murri made a motion to accept the tentative budget submission of the South Davis Metro Fire Agency and Bountiful City Police Department and forward this recommendation to the full Council for adoption as presented. Committee member Bell seconded the motion. Voting was unanimous with Committee members Bell, and Murri voting “aye”.

The meeting adjourned at 5:19 p.m. on a motion made by Committee member Murri and seconded by Committee member Bell. Voting was unanimous with Committee members Bell, and Murri voting “aye”.

Minutes of the
Streets and Sanitation Committee Budget Review Meeting

Bountiful City Streets Department
April 24, 2024 (4:00 p.m.)

Present:

Committee Members:	Richard Higginson (Chair), Cecilee Price-Huish, Kate Bradshaw
Other City Council Members:	Kendalyn Harris, Matt Murri
City Manager:	Gary Hill
Assistant City Manager:	Galen Rasmussen
Department Personnel:	Charles Benson, Sherry Steed, Damian Izatt, Lloyd Cheney, and Todd Christensen, Kraig Christensen, Brock Hill, Jessica Sims

Official Notice of this meeting had been given by posting a written notice of same and an agenda at the City Hall and providing copies to the following newspapers of general circulation: Davis Journal, Standard Examiner, and on the Utah Public Notice Website.

Committee chair Richard Higginson called the meeting to order at 4:05 p.m. and welcomed those in attendance. The meeting was turned over to Charles Benson and staff to review budgets. It was noted that one vote will be taken at the end of the meeting to approve all budgets discussed.

PRESENTATION OF BUDGET

Overview of Department Operations

A slide presentation was shown for those present to overview the various department functions within Streets, Storm Water, and the Sanitation (Refuse Collection, Recycling, and Landfill departments). Department staff members responded to 55 storm events in the last year with $286,000 being spent on road salt. Signage within the city has a $400,000 total value and department staff members replace signage throughout the year as needed. Road striping operations have a budget of $155,000 annually. Fueling operations dispensed 273,000 gallons of fuel last year for city vehicles and the South Davis Metro Fire Agency vehicles. The Maintenance shop operation serves both the city, and South Davis Metro Fire equipment with routine and major repairs. Spring and Fall Clean Up events are held annually including a Household Hazardous Waste Day in the Fall. Road rehabilitation and reconstruction work includes patching, crack sealing, overlays and full grinding and reconstruction to maintain roadways to specifications.

Street Department

Charles Benson reviewed the fiscal year priorities and line-item budget for Fiscal Year 2025 in the Street Department. Capital projects programmed for the upcoming year include acquisition of a brine plant that will be used to activate road salt faster and reduce the amount of salt used in snowplowing operations. Department performance measures were outlined as well as the long-term capital plan for the department. A discussion was held on plans for analyzing the Davis Boulevard bridge near term needs and longer-term replacement. Fees of the department were reviewed as well with only minimal changes.

Storm Water Fund

An overview of the Storm Water Fund was provided by Charles Benson including a slide presentation illustrating work completed in various areas of the city along with typical issues experienced. There are 73 miles of storm drain in the city that are under maintenance. The major roles and responsibilities and fiscal priorities for Fiscal Year 2025 were reviewed, along with the line-item budget being highlighted for notable items. The long-term capital plan was reviewed as well as the fee schedule for the fund. A question was asked by a council member regarding the need for and timing for a fee increase to support operations and to meet capital needs. Charles noted that an increase may be needed within the next two years as the reserves that have been accumulated are starting to be depleted.

Sanitation Fund (Refuse Collection Department)

Charles Benson provided an overview of the Refuse Collection department, now a part of the overall Sanitation Fund. A total of 21,127 cans are emptied weekly for residents. Household Hazardous Waste collection day last year resulted in the expenditure of $104,000 to dispose of items collected. A rate increase of $2.00 per can is being proposed (going from the current $6.00 rate to $8.00 rate per can). This increase is needed to meet future capital requirements based on increasing costs of replacement sanitation trucks and related items used by the department. The City's per can rates continue to be lower than neighboring communities.

Budget line items were reviewed with explanation provided for notable changes between budget years. The long term capital plan of the department was also outlined along with the fee schedule.

Sanitation Fund (Recycling Department)

Charles Benson reviewed the operations of the Recycling Department and addressed questions from the committee members. It was noted that there are occasional questions from the public as to how recycling materials are disposed of. Staff members regularly help to provide factual information to the public as they call to inquire. Recycling within the city started in 2008 with a contracted service.

Internal staff management of the recycling function was assumed by the Recycling Department in calendar year 2022. The major roles and fiscal priorities of the department were reviewed along with highlights of budget line items. Capital plans were reviewed as well as fees.

Sanitation Fund (Landfill Department)

Charles Benson presented a series of slides to show operations and key indicators for department activities. Landfill useful life is estimated to be as long as the year 2080 depending on how the property and fill technology is managed. A question by a committee member was asked as to when alternative options will need to be explored for when the landfill will need to be closed. Charles Benson, Todd Christensen and Lloyd Cheney provided data on operations and opinions on when decisions would need to be made. The major functions and fiscal year priorities of the department were reviewed with committee members along with highlights of budget line items with notable changes between budget years. It was noted that the department continues, like other city operations, to face supply chain issues resulting in delays for obtaining certain items for operations like parts and equipment. The long-term capital plan was also reviewed as well as the fee schedule.

A question was asked by a committee member about the status of a road study within the city. Lloyd Cheney noted that the most recent contracted study from LTAP at Utah State University was produced using a new set of methodologies that do not allow for comparability with the prior study completed. Staff are planning for an alternative road assessment approach this Fall using internal staff members to complete the study. A report will be provided when the study is completed.

Committee Action and Adjourn

Committee member Bradshaw made a motion to accept the tentative budget of the Streets, Storm Water, Sanitation Fund (Refuse Collection, Recycling and Landfill departments), as presented, and send these budgets to the full City Council for approval. Committee member Price-Huish seconded the motion. Voting was unanimous with Committee members Higginson, Price-Huish, and Bradshaw voting “aye”.

The meeting adjourned at 5:40 p.m. on a motion of Committee member Bradshaw and a second from Committee member Higginson. Voting was unanimous with Committee members Higginson, Price-Huish, and Bradshaw voting “aye”.

Minutes of the
Water Committee Budget Review Meeting

Bountiful City Water Department
April 25, 2024 (4:00 p.m.)

Present:

Committee Members:	Matt Murri (Chair), Kate Bradshaw, Jesse Bell (excused)
Other Council Members:	Kendalyn Harris, Cecilee Price-Huish, Richard Higginson (left at 6:19 p.m.)
City Manager:	Gary Hill
Assistant City Manager:	Galen Rasmussen
Other City Department Staff:	Kraig Christensen, Gerald Wilson, Tracy Hatch, Lloyd Cheney, Todd Christensen, Tyson Beck, Charles Benson, Jessica Sims, Francisco Astorga

Official Notice of this meeting had been given by posting a written notice of same and an agenda at the City Hall and providing copies to the following newspapers of general circulation: Davis Journal, Standard Examiner, and on the Utah Public Notice Website.

Committee chair Matt Murri called the meeting to order at 4:06 p.m. and welcomed those in attendance.

PRESENTATION OF BUDGET

Gary Hill showed a slide presentation outlining the Bountiful City Pay Plan Philosophy. The plan objective calls for regular moderate updates rather than large, infrequent updates to compensation of employees. The cost-of-living allowance (COLA) and market adjustments are tools that accomplish this objective for the City. Bountiful City's COLA was 17% between 2013 and 2021 when inflation was 14.1% but only 10% from 2022 to 2024 when inflation was 16.8%. This has caused the city to fall behind in meeting compensation plan objectives. Mr. Hill referred to the Council Retreat in January when this was first discussed. It was mentioned at that time that a 4%-5% COLA for two consecutive years (FY 2025 and FY 2026) would likely be necessary to bring compensation back into a competitive range with other cities.

Utah State Senate Bill 91 "Local Government Officers Compensation Amendments" was passed which now requires a notice and public hearing for any compensation adjustments for the city manager, department directors and deputy directors contemplated in the budget.

Utah State Senate Bill 140 "Tier II retirement compensation" failed to allow public entities to pick up a newly mandated 0.7% employee contribution for Tier II non-public safety employees which was allowed for public safety employees in the past. It is proposed that the City contribute the 0.7% into

the affected employees' 401k account for consistency with similar practices for Tier II public safety employees.

Gary Hill noted that the health of the city's general operations is seen in the fund balances of the general fund and capital projects fund of the city. Property tax increases are needed if the balances are projected to fall below council adopted minimum fund balance thresholds. Tyson Beck was asked to provide a presentation on the capital projects fund balance and its relation to needs for property tax increases in the future within the general fund. The fund balance of the capital projects fund has been augmented by federal funds made available during COVID-19 from ARPA and related funds. A spreadsheet showing a projection of capital projects fund balance was shown given known factors such as planned capital improvements, a reasonable estimate of sales tax growth, and a projected sharing of sales tax revenue between the general fund and the capital projects fund. An outline of the City's fiscal reserve policy was also provided. By policy, the Capital Projects fund has an emergency and a capital reserve.

In consideration of the pay plan philosophy of the City, Gary Hill proposed that the Council approve a 6% COLA instead of the previously proposed 5% COLA due in part to recent achievement of a more favorable health insurance premium change from a previous 15% increase to a 10.5% increase. This change in COLA would allow the city to remain competitive with other cities and the increase would be fiscally sustainable in the budget. Council members discussed various viewpoints they had on providing a 6% increase versus a 5%. Gary indicated that while the city could fiscally sustain a 7% COLA this is not being recommended at this time by staff. Gary asked for input from the Council on the change in the COLA. Opinions were mixed and it was requested that a poll of the Council in attendance be made at the end of the meeting.

Kraig Christensen, Water Department Director, presented an overview of the Water Department operations along with the Major Roles and Critical Functions of the department. A slide presentation showed some projects that the staff has worked on for illustration of work products. The major roles and critical functions of the Water Department include:

- Delivering the best quality water that meets industry standards.
- Quick response to calls for service.
- Maintaining city water infrastructure.
- Maintaining facilities.
- Promoting honest communications.

Fiscal Year Priorities for Fiscal Year 2024-2025 include:

- Millcreek Reservoir rehabilitation project.
- Finalize the lead and copper inventory for the EPA.

- Complete the Sanitary survey.
- Valve maintenance / replacement.
- Main line pipe replacement.

Water fund revenues are expected to exceed the budget for the year. The line-item budget request of the department was reviewed with comments being made on notable changes between budget years. Metered Water Sales and a few other line items have been revised from those in the tentative budget numbers as originally presented. A handout of changed numbers was provided to those in attendance. A committee member noted that a question was asked by a resident at a recent City Council meeting regarding the noise produced by the variable frequency (VFD) pump drives at well sites. Kraig Christensen noted that the staff is working on ways to provide further sound proofing measures to address concerns.

Performance measures of the department were reviewed and discussed with the committee. One question was asked about whether the performance measures should be adjusted down to account for extra demands on staff to respond to damage caused by fiber installation around the city. Discussion on this question ensued but no changes in performance measures were proposed. A discussion of the Millcreek water reservoir replacement project was also held for information of the committee members.

Water fees were discussed, and it was noted that a fee change was made to address water hydrant use for large scale projects like filling of a swimming pool or similar. There was also a change in a related fee for water consumption. The long-term capital plan was reviewed with major projects being highlighted and discussed.

Lloyd Cheney provided a presentation on the outlook for water rates. Rate increases have not resulted in increased sales due in part to water conservation efforts. Projected revenues and expenses in the next few years will result in the need for at least a 5% to 10% increase in water rates starting in Fiscal Year 2025-2026. Lloyd noted that it may be advisable to reconsider the reserve policy for minimum fund balance level in the Water Fund based on the unique needs of the fund at this time. In consideration of the projected outlook for rates, Committee member Bradshaw motioned for a 2% rate increase in Fiscal Year 2024-2025 and this motion was seconded by Committee member Price-Huish.

With no further comments or questions being raised, Committee member Bradshaw made a motion to accept the tentative budget of the Water fund, as presented, and send the budget recommendation to the full city council for approval. Committee member Price-Huish seconded the motion. Voting was unanimous with Committee members Murri, and Bradshaw voting “aye”.

A majority of the council present were in favor of a 6% COLA but Committee member Price-Huish expressed a willingness to entertain a 7% COLA. It was determined this could be discussed at another time if desired.

The meeting adjourned at 6:25 p.m. on a motion made by Committee member Price-Huish, and seconded by Committee member Murri. Voting was unanimous with Committee members Murri, and Bradshaw voting “aye”.

Minutes of the
BOUNTIFUL CITY COUNCIL
April 23, 2024 – 6:00 p.m.

Official notice of the City Council Meeting was given by posting an agenda at City Hall and on the Bountiful City website and the Utah Public Notice website and by providing copies to the following newspapers of general circulation: Davis County Journal and Standard Examiner.

Work Session – 6:00 p.m.
City Council Chambers

Present:	Mayor Pro Tem	Kate Bradshaw
	Councilmembers	Richard Higginson, Matt Murri
	City Manager	Gary Hill
	City Attorney	Brad Jeppsen
	City Engineer	Lloyd Cheney
	Planning Director	Francisco Astorga
	Finance Director	Tyson Beck
	Senior Planner	Amber Corbridge
	SDRD Director	Tif Miller
	Recording Secretary	Maranda Hilton
Excused:	Mayor	Kendalyn Harris
	Councilmembers	Jesse Bell, Cecilee Price-Huish

Mayor Pro Tem Bradshaw called the meeting to order at 6:01 p.m. and welcomed those in attendance.

GENERAL PLAN DISCUSSION – MR. FRANCISCO ASTORGA

Mr. Francsico Astorga went through the Moderate Income Housing element of the General Plan. The Council agreed that the strategies chosen for the plan were appropriate, but a couple of typos were found in strategy two that needed to be updated, and Councilmember Higginson suggested that the Hospital District be removed from the wording in strategy three. Councilmembers Bradshaw and Murri agreed with that suggestion. Mr. Astorga said he could do that.

Councilmember Bradshaw suggested that area types be omitted from strategy three altogether, and instead have it say, “areas that are transitioning from one area to another.” Mr. Astorga agreed and said staff will work on determining the best way to list those area types for the future.

SOUTH DAVIS RECREATION DISTRICT (SDRD) REPORT – MR. TIF MILLER

Mr. Tif Miller gave a presentation about the programs and events taking place at the South Davis Recreation District. He also went over the plan for the expansion, saying that it is being pushed into the future while the district gets its financial issues in order. He explained the changes being made to help with profitability, including certain programs being discontinued, reduced hours at the facility, staffing changes, new cost tracking measures being implemented, and an increase in the

subsidy from property taxes. The recreation district turned out a profit in 2023, which was a great improvement.

The meeting ended at 6:54 p.m.

Regular Meeting – 7:00 p.m.
City Council Chambers

Present:	Mayor Pro Tem	Kate Bradshaw
	Councilmembers	Richard Higginson, Matt Murri
	City Manager	Gary Hill
	City Attorney	Brad Jeppsen
	City Engineer	Lloyd Cheney
	Planning Director	Francisco Astorga
	Finance Director	Tyson Beck
	Recording Secretary	Maranda Hilton
Excused:	Mayor	Kendalyn Harris
	Councilmembers	Jesse Bell, Cecilee Price-Huish

WELCOME, PLEDGE OF ALLEGIANCE AND THOUGHT/PRAYER

Mayor Pro Tem Bradshaw called the meeting to order at 7:02 p.m. and welcomed those in attendance. Mr. Randy Benson led the Pledge of Allegiance and Ms. Elaine Benson, Bountiful Orchard Stake Relief Society President, offered a prayer.

PUBLIC COMMENT

The public comment section was opened at 7:05 p.m.

Mr. Grant Kerr (720 Bountiful Blvd.) said that he is concerned about a fence that was damaged and has not been repaired at the top of the dam near the Holbrook Canyon Trailhead next to his home. He feels it is a safety hazard for anyone walking near the spillway that has a steep drop off. He added that on the other side (the West) it is just as steep and perhaps the City would consider extending the fence to enclose that drop off as well.

Mr. Lynn Wall (142 West 2200 South) explained that he was there to gets some answers to the rumors surrounding the new cemetery property. He asked if telephone poles would be going up on the South side, if buildings were going to be built on the East side, and if Mr. East would still be contracted to for clearing weeds on that land.

Mr. Gary Hill answered that the only plans being made for that land are cemetery plots and other improvements, but no buildings. The City is still a couple years away from designing it. He also answered that Mr. East would still be clearing the weeds as before.

The public comment section was closed at 7:12 p.m.

CONSIDER APPROVAL OF MINUTES OF PREVIOUS MEETING HELD APRIL 9, 2024

Councilmember Higginson made a motion to approve the minutes from April 9, 2024, and Councilmember Murri seconded the motion. The motion passed with Councilmembers Bradshaw, Higginson, and Murri voting "aye."

COUNCIL REPORTS

Councilmember Murri did not have a report.

Councilmember Higginson did not have a report.

Councilmember Bradshaw reminded everyone about the upcoming Bicycle Rodeo event on April 27th in the parking lot between City Hall and the Library.

BCYC REPORT

No report was given.

CONSIDER APPROVAL OF EXPENDITURES GREATER THAN $1,000 PAID APRIL 3 & 10, 2024

Councilmember Murri made a motion to approve the expenditures paid April 3 & 10, 2024 and Councilmember Higginson seconded the motion. The motion passed with Councilmembers Bradshaw, Higginson, and Murri voting "aye."

RECOGNITION OF BOUNTIFUL HIGH GIRLS BASKETBALL STATE CHAMPIONSHIP – MAYOR PRO TEM KATE BRADSHAW

Mayor Pro Tem Bradshaw welcomed the Bountiful High girls basketball team and Coach Burton to the meeting.

Coach Burton introduced the members of the team and said how proud he is of each of them, winning the state championship two years in a row, and being excellent students and citizens in addition to that.

Mayor Pro Tem Bradshaw told them how excited she was as she watched the game and said she fully expects them to win again next year.

Councilmembers Higginson and Murri said they also watched the game and were cheering the team on.

DAVIS COUNTY COMMISSION & ANIMAL CARE REPORTS – COMMISSIONER LORENE KAMALU & MS. ASHLEIGH YOUNG, DAVIS COUNTY ANIMAL CARE DIRECTOR

Commissioner Kamalu gave an overview of the County Commissioners and their assignments on the different county boards. She explained that, in general, animal care is usually a city responsibility, but in Davis County they operate at the county level instead. She introduced the director of Animal Care, Ms. Ashleigh Young, and said what a good job she has done in the last few years.

Ms. Young went over the numbers, explaining how many animals were taken into the shelter and how many calls were resolved in 2023. She explained that the county has been working on getting a new animal care building since she started, and after an exhaustive feasibility study, the

county decided to build a new facility on their own property and will begin construction on it this year. She added that the County will be looking into a small property tax increase next year as well, to help offset increased operating costs and inflation.

Councilmemebr Higginson said he supports them building a new facility in that location and said how much he appreciates all that they do at the shelter.

Commissioner Kamalu explained that their location has so many advantages, one of which is their proximity to the foothill trails in Layton. Ms. Young added that their location allows volunteers to take the dogs out on hikes, which helps facilitate adoptions, and that they currently have about 1,000 volunteers that come to help with the animals. Their facility was recently awarded the Gold Star Volunteer award.

The Council thanked Commissioner Kamalu and Ms. Young for coming to give the update about the shelter and expressed their excitement for the new facility.

CONSIDER APPROVAL OF ORDINANCE 2024-02 REGARDING GRAFFITI REMOVAL ON PRIVATE PROPERTY – MR. FRANCISCO ASTORGA

Mr. Astorga explained that the City does not currently have an ordinance concerning graffiti removal. This ordinance would require private property owners to remove or cover graffiti when they receive a written notice from the City to do so.

Councilmember Higginson made a motion to approve Ordinance 2024-02 and Councilmember Murri seconded the motion. The motion passed with Councilmembers Bradshaw, Higginson, and Murri voting "aye."

ADJOURN

Councilmember Higginson made a motion to adjourn the meeting and Councilmember Murri seconded the motion. The motion passed with Councilmembers Bradshaw, Higginson, and Murri voting "aye."

The meeting was adjourned at 7:43 p.m.

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Mayor Kendalyn Harris

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City Recorder

Minutes of the
BOUNTIFUL CITY COUNCIL
May 14, 2024 – 7:00 p.m.

Official notice of the City Council Meeting was given by posting an agenda at City Hall and on the Bountiful City Website and the Utah Public Notice Website and by providing copies to the following newspapers of general circulation: Davis County Journal and Standard Examiner.

Regular Meeting – 7:00 p.m.
City Council Chambers

Present:	Mayor	Kendalyn Harris
	Councilmembers	Jesse Bell, Kate Bradshaw, Richard Higginson, Matt Murri, Cecilee Price-Huish
	City Manager	Gary Hill
	Asst. City Manager	Galen Rasmussen
	City Attorney	Brad Jeppsen
	City Recorder	Shawna Andrus
	Finance Director	Tyson Beck
	Police Chief	Ed Biehler
	Asst. Water Director	Jerry Wilson
	Asst. Planner	Jonah Hadlock
	Public Works Engineer	Brad Clawson
	City Treasurer	Hunter Stone
	SDMF Chief	Dane Stone
	Engineering Admin. Asst.	Holly Stone
	Streets Director	Charles Benson
	Recording Secretary	Maranda Hilton
Excused:	City Engineer	Lloyd Cheney
	Planning Director	Francisco Astorga

WELCOME, PLEDGE OF ALLEGIANCE AND THOUGHT/PRAYER

Mayor Harris called the meeting to order at 7:01 p.m. and welcomed those in attendance. Ms. Holly Stone led the Pledge of Allegiance and Ms. Barbara Novak, Chaplain at Lakeview Hospital, offered a thought and a prayer.

PUBLIC COMMENT

The public comment section was opened at 7:04 p.m.

Mr. Alex Densley (443 Jeri Drive) asked the Council to move the firework boundary from Orchard Drive up to Davis Boulevard.

The public comment section was closed at 7:05 p.m.

COUNCIL REPORTS

Councilmember Bell played the song "Angels Among Us" by Alabama, and explained how wonderful it is to live in a place like this with so many people who reach out to one another and are angels to their neighbors. He thanked his fellow Councilmembers for always trying to do what is right and not seeking recognition.

Councilmember Bradshaw said it was a pleasure to serve with Councilmember Bell and to know him and his family. She also reported that the South Davis Recreation Board met last night and reviewed the fiscal year close and the financial audit. She said the gap between expenses and revenues has narrowed significantly, and the year ended with a little bit of profit. She thanked Mr. Tyson Beck for his work on the changes that have been implemented and on the new reserve policy. She said even though there is more work to be done, she feels the ship has been turned and is heading in the right direction.

Councilmember Higginson did not have a report.

Councilmember Murri reported that "Bountiful's Got Talent" auditions have started. He also reported there will be a Memorial Day event at the Bountiful Veterans Park at 11:00 a.m. on May 27.

Councilmember Price-Huish reported that the Bike Rodeo was rescheduled and will be happening this Saturday, May 25 from 1:00-3:00 p.m. in the parking lot in front of City Hall.

Mayor Harris congratulated Councilmember Price-Huish on her recent graduation with her MPP. She thanked Councilmember Murri for attending the world record celebration at Hannah Holbrook Elementary and the Car Show kickoff planning meeting. She reported that Mayor Howard Madison of Sunset, Utah passed away. She said he will be missed; he was a public servant his entire life and had a great sense of humor. She reported that the homelessness task force for Davis County met again and is looking at the idea of using the senior center in Bountiful and two other centers as potential shelters. They will continue to study the situation and determine what impacts that would have on the community.

BCYC REPORT

Mr. Carter Black, interim BCYC Mayor, reported that the interview process for next year's BCYC applicants has commenced. Next Saturday, May 18, the BCYC will be helping with the clean-up at the "B". On May 22-24 they will be helping put flags on veterans' graves. In either May or June, they will host the "Stomp on Main" event at Town Square. On June 1 they will be helping with a Bountiful History Museum project. They will also be helping at both the Car Show and the Chalk Art Festival this summer.

Councilmember Price-Huish said what a privilege it is to serve with these students who are so involved in the community and are so willing to help.

CONSIDER APPROVAL OF:

A. EXPENDITURES GREATER THAN $1,000 PAID APRIL 17, 24 & MAY 1, 2024

B. MARCH 2024 FINANCIAL REPORT

Councilmember Bradshaw made a motion to approve the expenditures paid April 17, 24 & May 1, 2024, and the March 2024 financial report, and Councilmember Murri seconded the motion. The motion passed with Councilmembers Bell, Bradshaw, Higginson, Murri, and Price-Huish voting "aye."

CONSIDER APPROVAL OF THE APPOINTMENT OF MR. HUNTER STONE AS THE BOUNTIFUL CITY TREASURER – MR. TYSON BECK

Mr. Tyson Beck explained that 22 people applied for this position and after interviews, staff felt that Mr. Huter Stone was the best candidate for the job.

Mr. Stone was asked to introduce himself by Councilmember Bradshaw. Mr. Stone said that he grew up in North Salt Lake, played baseball at Woods Cross High School and at Utah State, and after graduating with a degree in finance & accounting, he first worked for the Department of Defense at Hill Air Force Base and then for a mortgage lender in Sandy, Utah.

Mayor Harris said they were excited he was here and hope he will stay a long time.

Councilmember Bell made a motion to approve the appointment of Mr. Hunter Stone as the Bountiful City treasurer, and Councilmember Higginson seconded the motion. The motion passed with Councilmembers Bell, Bradshaw, Higginson, Murri, and Price-Huish voting "aye."

A. SWEARING IN OF BOUNTIFUL CITY TREASURER MR. HUNTER STONE

Ms. Shawna Andrus, City Recorder, conducted the swearing-in ceremony of Mr. Stone and the Mayor officially welcomed him to the City.

CONSIDER APPROVAL OF ORDINANCE 2024-03 PROHIBITING THE DISCHARGE OF FIREWORKS EAST OF 400 EAST AND EAST OF ORCHARD DRIVE – MR. BRAD JEPPSEN

Mr. Brad Jeppsen explained that the boundary for fireworks will be set at Orchard Drive this year, at the advice of the Fire Chief. He asked if Chief Stone would stand and explain the reasons.

South Davis Metro Fire Chief Dane Stone explained that he recommends Orchard Drive as the boundary this year because since making that the boundary in years past, there has only been one fire above Orchard that was caused by fireworks. He also explained that, due to our wet spring season, there will be a lot of flash fuel growth; grasses and undergrowth that become dry and easily catch fire in the summer months.

Councilmember Price-Huish asked if the City could open designated areas in the City where residents can light fireworks. Mr. Gary Hill answered that the City did that during the year of severe water restrictions when the firework boundaries were smaller and can do it again if the Council would like to. Councilmember Price-Huish said she would like that to happen again.

Councilmember Bradshaw asked Chief Stone to explain the new class of fireworks and how that is impacting fire risk. Chief Stone explained that aerial and cake fireworks both raise concerns for the fire department, because many people do not know how to operate or dispose of them safely and they can cause fires and injury.

Councilmember Price-Huish made a motion to approve Ordinance 2024-03 and Councilmember Bell seconded the motion. The motion was approved with Councilmembers Bell, Bradshaw, Higginson, Murri, and Price-Huish voting "aye."

CONSIDER APPROVAL OF THE PURCHASE OF A MOTOR FOR CALDER WELL FROM NICKERSON COMPANY IN THE AMOUNT OF $20,000 – MR. JERRY WILSON

Mr. Jerry Wilson explained that the motor they planned on using for the Calder Well rehab had bad seals, and in order to keep to the scheduled installation date, they got approval from the City Manager to purchase a replacement motor from Nickerson Company that was ready to go. The motor is currently being installed.

Councilmember Bell asked if the new motor would be a variable frequency drive (VFD) like the one at the 100 East well. Mr. Wilson said it is not a VFD. He explained that it is a submersible motor with a reduced-voltage soft-start drive, so it is much less noisy. He added that he has been working with the neighbors who complained about the noise of the VFD at 100 East. He has purchased some noise dampening materials for the well house and has made changes to the automated system so it runs at a lower speed and will not ramp up unless water demand peaks. The process of working with the neighbors at both wells has been going well.

Councilmember Bell thanked him for that report, and for working with the residents. He clarified that he does not feel controlling the noise at all costs is the position the City should take, that having water available when it is needed is the most important thing, but he was glad the City found a balance.

Councilmember Bradshaw made a motion to approve the purchase of the motor from Nickerson Company and Councilmember Bell seconded the motion. The motion was approved with Councilmembers Bell, Bradshaw, Higginson, Murri, and Price-Huish voting "aye."

CONSIDER APPROVAL OF THE PRELIMINARY AND FINAL ARCHITECTURAL AND SITE PLAN FOR A PROFESSIONAL AND MEDICAL OFFICE BUILDING LOCATED AT 370 WEST 500 SOUTH – MR. JONAH HADLOCK

Mr. Jonah Hadlock explained that the Planning Commission reviewed this application and forwarded a unanimous recommendation for approval. Medical office use is permitted in this zone, staff does not see any significant impacts from this project, and like that it will be an upgrade compared to the storage units that are currently there. There are some conditions of approval and building permits will be granted once those conditions are met.

Councilmember Price-Huish said she thinks it is a great project and voiced her concern about the safety of the location of the easements and the access points. She wants it to be safe for cars and pedestrians. Mr. Joel LaSalle, property owner, explained that they plan on working with Jack in the Box restaurant to install directional signage in the parking lot to help with the flow of traffic. They also anticipate that all medical office traffic will use the access on 450 West once people get used to the new layout, which will be safest.

Mayor Harris asked if they already have tenants lined up for the building and was told there is earnest money down on about 50% of the building spaces so far.

Councilmember Bradshaw asked Mr. LaSalle if he is planning on painting lines to help regulate traffic in the Guthrie's & Starbucks parking lot as well, to help with safety. He said they are redoing that parking lot and plan to paint ground graphics there. He added that it is in his best interest to make sure all the businesses and patrons are happy with it.

Councilmember Bell asked if the landscaping plan meets the tree ordinance for street trees. Mr. Hadlock said that the plan does meet all landscaping requirements.

Councilmember Bradshaw made a motion to approve the preliminary and final architectural and site plan for the medical office and Councilmember Higginson seconded the motion. The motion was approved with Councilmembers Bell, Bradshaw, Higginson, Murri, and Price-Huish voting "aye."

CONSIDER APPROVAL OF RELEASING THE PUBLIC UTILITY EASEMENT ON LOTS 2 AND 3 OF GRANADA HILLS NO. 6 SUBDIVISIONS – MR. BRAD CLAWSON

Councilmember Higginson made a motion to approve the release of the utility easement and Councilmember Bell seconded the motion. The motion was approved with Councilmembers Bell, Bradshaw, Higginson, Murri, and Price-Huish voting "aye."

CONSIDER APPROVAL OF FISCAL YEAR 2024-2025 TENTATIVE BUDGET AND RELATED ITEMS – MR. GALEN RASMUSSEN

Mr. Galen Rasmussen gave an overview of the budgeting process and timeline, and went over the key budget items, fund balances, transfers and rate/fee changes, etc.

Mayor Harris thanked Mr. Rasmussen for his work on preparing the budget each year and his commitment to keeping the City in a financially sound position.

A. ADOPTION OF THE FISCAL YEAR 2024-2025 TENTATIVE BUDGET

B. SETTING THE TIME, DATE, AND PLACE FOR PUBLIC HEARINGS ON THE FINAL BUDGET

Councilmember Bradshaw made a motion to approve the FY2024-2025 tentative budget, and to set the time, date and place (7:00 p.m., June 11, 2024, Council Chambers) for the public hearings on the final budget. Councilmember Murri seconded the motion. The motion was approved with Councilmembers Bell, Bradshaw, Higginson, Murri, and Price-Huish voting "aye."

ADJOURN

Councilmember Price-Huish made a motion to adjourn the meeting and Councilmember Higginson seconded the motion. The motion was approved with Councilmembers Bell, Bradshaw, Higginson, Murri, and Price-Huish voting "aye."

The regular session was adjourned at 8:16 p.m.

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Mayor Kendalyn Harris

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City Recorder

City Council Staff Report

Subject: Expenditures for Invoices > $1,000 paid May 8 & 15, 2024
Author: Tyson Beck, Finance Director
Department: Finance
Date: May 28, 2024

Background

This report is prepared following the weekly accounts payable run. It includes payments for invoices hitting expense accounts equaling or exceeding $1,000.

Payments for invoices affecting only revenue or balance sheet accounts are not included. Such payments include: those to acquire additions to inventories, salaries and wages, the remittance of payroll withholdings and taxes, employee benefits, utility deposits, construction retention, customer credit balance refunds, and performance bond refunds. Credit memos or return amounts are also not included.

Analysis

Unless otherwise noted and approved in advance, all expenditures are included in the current budget. Answers to questions or further research can be provided upon request.

Department Review

This report was prepared and reviewed by the Finance Department.

Significant Impacts

None

Recommendation

Council should review the attached expenditures.

Attachments

Weekly report of expenses/expenditures for invoices equaling or exceeding $1,000, paid May 8 & 15, 2024.

Expenditure Report for Invoices (limited to those outlined in staff report) >$1,000.00
Paid May 8, 2024

VENDOR	VENDOR NAME	DEPARTMENT	ACCOUNT		ACCOUNT DESC	AMOUNT	CHECK NO	INVOICE	DESCRIPTION
1164	ANIXTER, INC.	Light & Power	535300	448632	Distribution	1,243.72	239320	6023255-00	Misc. Parts/Supplies
15302	CARLSON INJURY LAW	Liability Insurance	636300	451150	Liability Claims/Deductible	40,000.00	239332	05012024	Settlement of Claims
2875	CURTIS BLUE LINE	Police	104210	445100	Public Safety Supplies	2,384.27	239337	INV815508	Radio Cable
9982	DIAMOND TREE EXPERTS	Light & Power	535300	448632	Distribution	10,934.80	239342	76484	Tree Trimming
9982	DIAMOND TREE EXPERTS	Light & Power	535300	448632	Distribution	11,864.80	239342	76482	Tree Trimming
8756	IRBY ELECTRICAL DIST	Light & Power	535300	431001	Blue Stake & Location	7,495.00	239364	S013912843.001	Misc. Parts/Supplies
8756	IRBY ELECTRICAL DIST	Light & Power	535300	445201	Safety Equipment	1,415.67	239364	S013934418.001	Misc. Parts/Supplies
2987	M.C. GREEN & SONS IN	Water	515100	473110	Water Mains	457,781.05	239374	5069	Bountiful Waterlines Project - App #8
15180	MINT GREEN GROUP	Golf Course	555500	448240	Items Purchased - Resale	1,658.57	239376	INV478897	Shoes - Client # C784520-US
3186	MOTOROLA	Information Technology	104136	423000	Travel & Training	1,100.00	239380	1187118986	SAA certification class
14511	ONWARD TECHNOLOGY	Computer Maintenance	616100	429200	Computer Software	10,149.66	239391	81053	Firewall Renewal
4844	OWEN EQUIPMENT	Storm Water	494900	425000	Equip Supplies & Maint	1,582.80	239392	00115972	Misc. Parts/Supplies - Acct # S1234
10033	PINETOP ENGINEERING	Streets	104410	441300	Street Signs	2,639.78	239394	5164	Bountiful City Projects
14936	REDLINE ROOFING	Light & Power	535300	448627	Echo Hydro Operating Costs	5,872.00	239400	E240117337	Project 50% deposit to schedule project
3972	SOLAR TURBINES, INC.	Light & Power	535300	448614	Power Plant Equipment Repairs	1,679.41	239407	AR570100182	Oil Cooler Motor
3972	SOLAR TURBINES, INC.	Light & Power	535300	448614	Power Plant Equipment Repairs	3,193.60	239407	AR570100725	Oil Cooler Motor
15120	STEVENSON, RITA	Storm Water	49	256110	DC.Storm Water Coalition Funds	4,600.00	239413	INVOICE114	4th grd. water lessons for Davis Co. Coalition
4229	TOM RANDALL DIST. CO	Streets	104410	425000	Equip Supplies & Maint	24,319.18	239417	0379477	Fuel - Acct # 000275
5442	TRAVIS MATHEW, LLC	Golf Course	555500	448240	Items Purchased - Resale	1,112.40	239418	91784923	Men's Wear - Acct # 1006176
					TOTAL:	591,026.71			

Expenditure Report for Invoices (limited to those outlined in staff report) >$1,000.00
Paid May 15, 2024

VENDOR	VENDOR NAME	DEPARTMENT	ACCOUNT	ACCOUNT DESC	AMOUNT	CHECK NO	INVOICE	DESCRIPTION
10715	AXIS DRIVELINE	Streets	104410 425000	Equip Supplies & Maint	1,308.88	239440	7997	Drive Lines
13765	BLIND SPOT	Police	104210 426000	Bldg & Grnd Suppl & Maint	7,031.00	239446	22021	Window Coverings
1555	CALLAWAY GOLF	Golf Course	555500 448240	Items Purchased - Resale	1,057.81	239452	937665431	Clubs - Acct # 14853
1555	CALLAWAY GOLF	Golf Course	555500 448240	Items Purchased - Resale	1,085.80	239452	937623997	Clubs - Acct # 14853
1602	CDW GOVERNMENT, INC.	Liquor Control	104218 445100	Public Safety Supplies	3,140.66	239456	QX50585	Misc. Parts/Supplies - Cust # 6530022
1707	CLEVELAND GOLF/SRIXO	Golf Course	555500 448220	Pro Shop Misc Supplies	1,215.00	239461	7826685 SO	Clubs - Bill # 80447
1707	CLEVELAND GOLF/SRIXO	Golf Course	555500 448220	Pro Shop Misc Supplies	1,215.00	239461	7844694 SO	Clubs - Bill # 80447
1707	CLEVELAND GOLF/SRIXO	Golf Course	555500 448240	Items Purchased - Resale	1,162.35	239461	7826684 SO	Golf Balls - Bill # 80447
1707	CLEVELAND GOLF/SRIXO	Golf Course	555500 448240	Items Purchased - Resale	1,489.17	239461	7830629 SO	Clubs - Bill # 80447
1707	CLEVELAND GOLF/SRIXO	Golf Course	555500 448240	Items Purchased - Resale	3,079.44	239461	7832805 SO	Golf Balls - Bill # 80447
9982	DIAMOND TREE EXPERTS	Light & Power	535300 448632	Distribution	12,060.00	239471	76485	Tree Trimming
9982	DIAMOND TREE EXPERTS	Light & Power	535300 448632	Distribution	12,060.00	239471	76488	Tree Trimming
5281	DOMINION ENERGY UTAH	Police	104210 427000	Utilities	2,496.67	239473	05012024E	Account # 3401140000
5281	DOMINION ENERGY UTAH	Streets	104410 427000	Utilities	1,432.59	239473	05012024D	Account # 2493910000
5281	DOMINION ENERGY UTAH	Light & Power	53 213100	Accounts Payable	25,336.88	239473	05012024N	Account # 6056810000
2003	DUNCAN ELECTRIC SUPP	Light & Power	535300 448633	Street Light	7,224.46	239474	218495-1	Main Street Pole & Fixtures - Acct # 021350
2164	FERGUSON ENTERPRISES	Water	515100 448400	Dist Systm Repair & Maint	1,013.97	239478	1238272-1	Misc. Supplies - Customer # 48108
2229	FRODSHAM BETTER LAWN	Parks	104510 426000	Bldg & Grnd Suppl & Maint	1,045.00	239481	101750	Bountiful City Lawn Service - Cust # 38641
2329	GORDON'S COPYPRINT	Legislative	104110 422000	Public Notices	1,409.00	239486	50129	Bountiful City Newsletter
4501	HARRIS	Light & Power	535300 448613	Power Plant Operating Costs	3,124.50	239489	SR000059412	Snow Melt Sensor - Customer # 10000570
6959	JANI-KING OF SALT LA	Light & Power	535300 424002	Office & Warehouse	1,883.10	239496	SLC05240052	May 2024 Janitorial Services - Cust # 065075
2719	JMR CONSTRUCTION INC	Streets	104410 473210	Road Recondition & Repair	13,169.16	239498	05102024	Work completed through April 2024
2719	JMR CONSTRUCTION INC	Streets	104410 473400	Concrete Repairs	7,169.84	239498	05102024	Work completed through April 2024
2719	JMR CONSTRUCTION INC	Storm Water	494900 441260	Wtrway Replcment-Concrete Rpr	22,720.11	239498	05102024	Work completed through April 2024
2719	JMR CONSTRUCTION INC	Water	515100 461300	Street Opening Expense	6,927.14	239498	05102024	Work completed through April 2024
2719	JMR CONSTRUCTION INC	Light & Power	535300 448632	Distribution	1,660.56	239498	05102024	Work completed through April 2024
2727	JOHNSON, ALLEN R	Light & Power	535300 423000	Travel & Training	5,090.00	239499	05102024	Travel&Train Expense 2024 APA Conference
2727	JOHNSON, ALLEN R	Light & Power	535300 423000	Travel & Training	6,148.31	239499	05062024	Travel & Training Expense for APPA in New Orleans
2727	JOHNSON, ALLEN R	Light & Power	535300 423002	Travel Board Members	7,034.19	239499	05102024	Travel&Train Expsense 2024 APA Conference
8137	LAKEVIEW ASPHALT PRO	Streets	104410 441200	Road Matl Patch/ Class C	1,188.00	239503	11453	Patching - Customer # BOUN02610
8137	LAKEVIEW ASPHALT PRO	Streets	104410 441200	Road Matl Patch/ Class C	1,509.84	239503	11440	Patching - Customer # BOUN02610
8137	LAKEVIEW ASPHALT PRO	Streets	104410 441200	Road Matl Patch/ Class C	1,512.54	239503	11490	Patching - Cust # BOUN02610
8137	LAKEVIEW ASPHALT PRO	Streets	104410 441200	Road Matl Patch/ Class C	2,866.32	239503	11501	Patching - Cust # BOUN02610
8137	LAKEVIEW ASPHALT PRO	Streets	104410 441200	Road Matl Patch/ Class C	3,775.14	239503	11519	Patching - Cust # BOUN02610
8137	LAKEVIEW ASPHALT PRO	Streets	104410 441200	Road Matl Patch/ Class C	22,711.86	239503	11425	Patching - Customer # BOUN02610
6326	LEXIPOL, LLC	Police	104210 429200	Computer Software	10,322.23	239509	INVLEX11235176	New Acct for Comp. Software
7644	METRON-FARNIER, LLC	Water	515100 448650	Meters	3,476.09	239516	100004378	Meter - Customer # U1292-0000
6766	MILE HIGH TURFGRASS,	Golf Course	555500 425000	Equip Supplies & Maint	1,969.12	239517	11321	Turf Supplies
3115	MILLARD, MARK	Recycle Collection Operations	585810 425000	Equip Supplies & Maint	1,950.00	239518	92555	Misc. Parts/Supplies
15180	MINT GREEN GROUP	Golf Course	555500 448240	Items Purchased - Resale	1,879.75	239519	INV470235	Men's Wear - Client # C784520-US
3271	NETWIZE	Information Technology	104136 429200	Computer Software	1,929.00	239525	25136	Security Monitoring Storage
3271	NETWIZE	Computer Maintenance	616100 429300	Computer Hardware	2,104.75	239525	25177	Computer Hardware Warrnaty
3321	NORTHERN POWER EQUIP	Light & Power	535300 448632	Distribution	1,270.00	239528	87431	Misc. Parts/ Supplies - Cust # 8012986111
5550	PARTRIDGE GROUP	Police	104210 432000	Examination & Evaluation	1,425.00	239533	5763	Direct Care Therapy
6148	PLANT, CHRISTENSEN &	Liability Insurance	636300 431000	Profess & Tech Services	1,749.43	239537	87622	Legal Fees for March 2024

VENDOR	VENDOR NAME	DEPARTMENT	ACCOUNT	ACCOUNT DESC	AMOUNT	CHECK NO	INVOICE	DESCRIPTION
6148	PLANT, CHRISTENSEN &	Liability Insurance	636300 431000	Profess & Tech Services	2,265.40	239537	87621	Legal Fees for April 2024
11144	PREMIER TRUCK GROUP	Streets	104410 425000	Equip Supplies & Maint	3,653.84	239539	775601669	Misc. Parts/Supplies - Acct # 77512206
3649	RASMUSSEN EQUIPMENT	Landfill Operations	585820 425000	Equip Supplies & Maint	1,333.24	239542	10178488	Misc. Parts/ Supplies - Acct # 09503
13120	RECYCLE IT	Landfill Operations	585820 448000	Operating Supplies	6,045.00	239545	10402	Mattress Recycling
10586	ROCKY MOUNTAIN RECYC	Recycle Collection Operations	585810 431550	Recycling Processing Fees	7,875.40	239548	NP-156586	Recycling Fees for April 2024
3812	SAFETY SUPPLY & SIGN	Streets	104410 441300	Street Signs	1,757.34	239551	189420	Misc. Parts/ Supplies - Customer ID 00330
3812	SAFETY SUPPLY & SIGN	Light & Power	535300 448632	Distribution	1,155.84	239551	189181	Road Closed Signs - Customer ID 00331
3835	SALT LAKE WHOLESALE	Police	104210 445100	Public Safety Supplies	1,861.65	239552	97545	Police supplies
3835	SALT LAKE WHOLESALE	Police	104210 445100	Public Safety Supplies	3,520.00	239552	15912	Misc. Parts/ Supplies
13267	SLATE ROCK FR LLC	Light & Power	535300 445202	Uniforms	4,780.88	239554	77177	F.R. Shirts & Jeans
4171	THATCHER COMPANY	Water	515100 448000	Operating Supplies	1,170.72	239567	2024100105961	T-Chlor - Customer # C1303
4171	THATCHER COMPANY	Water	515100 448000	Operating Supplies	6,908.25	239567	2024100106686	Chlorine Cylinders - Acct # C1303
4171	THATCHER COMPANY	Water	515100 448000	Operating Supplies	8,004.80	239567	20244100106104	T-Floc - Customer # C1303
4131	T-MOBILE	Police	104210 428000	Internet & Telephone Expense	2,809.78	239564	04212024B	Account # 992894616
4229	TOM RANDALL DIST. CO	Streets	104410 425000	Equip Supplies & Maint	23,960.05	239569	0380095	Fuel - Acct # 000275
4229	TOM RANDALL DIST. CO	Golf Course	555500 425000	Equip Supplies & Maint	2,359.92	239569	0379772	Fuel - Acct # 000276
4574	WHEELER MACHINERY CO	Landfill Operations	585820 425000	Equip Supplies & Maint	1,217.62	239587	PS001696307	Misc. Parts/Supplies - Cust # 009503
7732	WINGFOOT CORP	Police	104210 426000	Bldg & Grnd Suppl & Maint	2,363.85	239590	202430	Janitorial Services for Bountiful PD
15205	YOUNG TRUCK & TRAIL	Police	104210 425430	Service & Parts	1,373.00	239591	41677	Parts & Service
				TOTAL:	306,846.24			

City Council Staff Report

Subject: Interlocal Cooperation Agreement for Administrative Services Provided for the South Davis Recreation District
Author: Tyson Beck, Finance Director
Department: Finance
Date: May 28, 2024

Background

Since October 2007 Bountiful City (the City) employees have been contracted to provide administrative services on behalf of the South Davis Recreation District (the District) in exchange for stipulated monthly fees. These services encompass numerous activities but can be categorized as follows: accounting, finance, accounts payable, treasury, human resources, payroll and benefits, information technology, lawn care and irrigation, parking lot snow plowing and sweeping, and field maintenance and lighting.

These City-provided services were contracted through a 12-month interlocal agreement signed by both government entities in June of 2023. That agreement's term ends June 30, 2024. It is now necessary to renew this interlocal agreement.

Analysis

It is proposed that the interlocal agreement between the City and the District again be extended.

The interlocal agreement proposed would authorize the continuation of City-provided services through June 2025, extending the agreement one additional fiscal year. Upon nearing the completion of the proposed extension, it is anticipated that another interlocal would again be negotiated and brought before the City Council and District Board for approval.

The proposed agreement would entail an estimated 339 City-employee service hours per month for administrative services and additional hours for grounds maintenance. The proposed agreement would compensate the City $19,749 monthly through the end of the agreement in June of 2025. The proposed fees were updated to match the City's fiscal year 2025 budgeted payroll costs and then discounted 10% as a courtesy to a governmental entity providing recreational services to Bountiful City residents. The proposed increase in fees averages to a 3.89% increase from what is being charged in fiscal year 2024.

This proposed agreement will also be reviewed and it is anticipated to be approved by the District Board during their June 2024 Board meeting.

Department Review

This report was prepared by the Finance Director and reviewed by the City Manager.

Significant Impacts

The City and the District would enter into an interlocal cooperation agreement that would continue through June of 2025 with anticipated agreement renewals in the future that would continue these services. This interlocal agreement would provide the City's General Fund with needed revenues to help cover the long-standing personnel costs being incurred to provide these services for the District.

Recommendation

It is recommended that the City Council approve Resolution 2024-02 allowing the City to enter into this Interlocal Cooperation Agreement for City employee services to be provided to the District.

Attachments

Resolution 2024-02 Interlocal Cooperation Agreement – Bountiful City Services

Bountiful City Services Interlocal Agreement with the SDRD – July 2024 to June 2025

BOUNTIFUL

Bountiful City
Resolution No. 2024-02

A RESOLUTION APPROVING AN INTERLOCAL COOPERATION AGREEMENT FOR BOUNTIFUL CITY SERVICES PROVIDED TO THE SOUTH DAVIS RECREATION DISTRICT.

WHEREAS, the Parties, pursuant to Utah's Interlocal Cooperation Act, codified at Title 11, Chapter 13, Utah Code Ann. (the "Act"), are authorized to enter in an agreement; and

WHEREAS, the Parties desire to enter into an Agreement of Interlocal Cooperation for their mutual benefit and for the further purpose of Bountiful City (the City) employees providing services to the South Davis Recreation District (the District) as specified herein; and

WHEREAS, the City has provided these services to the District since October of 2007 and both parties desire to continue said services through June of 2025; and

Now, therefore, be it resolved by the City Council of Bountiful, Utah as follows:

Section 1. **Agreement Approved.** The Bountiful City Council hereby approves the attached Interlocal Cooperation Agreement for City services to be provided to the District.

Section 2. **Mayor Authorized to Execute.** The Mayor of Bountiful City is authorized to sign and execute the attached Interlocal Cooperation Agreement and any other documents necessary to implement the Agreement.

Section 4. **Severability Clause.** If any section, part or provision of this Resolution is held invalid or unenforceable, such invalidity or unenforceability shall not affect any other portion of this Resolution, and all sections, parts and provisions of this Resolution shall be severable.

Section 5. **Effective Date.** This Resolution shall become effective immediately upon its passage. The Agreement shall take effect as described therein.

Adopted by the City Council of Bountiful, Utah, this 28th day of May 2024.

Kendalyn Harris, Mayor

Shawna Andrus, City Recorder

INTERLOCAL COOPERATION AGREEMENT
BETWEEN
SOUTH DAVIS RECREATION DISTRICT AND BOUNTIFUL CITY

THIS AGREEMENT ("Agreement") is made and entered into as of the ____ day of -June 2024, by and between SOUTH DAVIS RECREATION DISTRICT, a special service district of the State of Utah, hereinafter referred to as the "District," and BOUNTIFUL CITY, a Utah municipal corporation, hereinafter referred to as the "City."

WITNESSETH:

WHEREAS, Title 11 Chapter 13 of the *Utah Code Annotated,* 1953, as amended, authorizes contracts between public agencies to enter into Agreements for cooperative action and to provide and/or exchange services between such agencies; and

WHEREAS, the parties to this Agreement are both governmental entities located in Davis County, State of Utah and are empowered to provide and operate recreational facilities and programs for the benefit of their citizens; and

WHEREAS, the City and District have coordinated together on various projects and in acquiring facilities and desire to cooperate in obtaining and providing fiscal and related services and to cooperate with each other in doing so; and

WHEREAS, the parties desire to reduce their respective understandings and agreements to writing;

NOW, THEREFORE, in consideration of the mutual covenants contained herein and other good and valuable consideration, the adequacy of which is hereby acknowledged, the parties hereby agree as follows:

1. The City hereby agrees to provide financial, personnel, computer, and related services to the District as more particularly set forth in the proposed scope of services attached hereto as Exhibit A and by this reference made a part hereof. In performing services for the District, the City will comply with all applicable laws, rules and regulations of any governmental entity having jurisdiction over the District.
2. In order to coordinate with the City in providing services to the District, the District will perform those functions set forth under the District's role as specified in Exhibit A attached hereto.
3. It is the intent and desire of the parties hereto to cooperate in carrying out the terms of this Agreement in order to obtain coordinated, economical financial information and related services described in Exhibit A attached hereto and to minimize unnecessary expenses for the District and the City.
4. The District will pay administrative service fees to the City in accordance with the schedule attached hereto as Exhibit B and by this reference made a part hereof. The City will provide monthly written billings to the District for services performed. The District will pay the City's invoice within 30 days of receipt of the same. The service fees in Exhibit B are based on the 2023 operations and accounting/reporting systems of the District. If the District board of governance or management expand operations to a second facility or property, increase personnel, or elect for other operational or accounting/reporting systems

changes affecting Bountiful City service levels beyond those in effect in 2023, the service fees in this agreement will be renegotiated and amended at the City's initiative. If renewed terms cannot be reached within 30 days of initial presentation to the District, City services will be terminated.

5. This Agreement shall be effective beginning July 1, 2024, through June 30, 2025, unless the same is terminated as provided herein. Either party hereto may terminate this Agreement upon giving the other party 180 days written notice prior to the date of termination. In the event of termination, the City shall be paid for all services rendered up to the effective date of such termination.
6. No separate legal entity is created by the terms of this Agreement. To the extent that this agreement requires administration other than as set forth herein, it shall be administered by the Executive Director of the District and the City Manager of the City, acting as a joint board. There shall be no real or personal property acquired jointly by the parties as a result of this Agreement.
7. This Agreement is not assignable.
8. Each party hereto shall be solely responsible for providing workers compensation, wages and benefits for its own personnel who provide any assistance under this Agreement.
9. Each party hereto shall be responsible and shall defend the actions of its own employees, negligent or otherwise, performed pursuant to the provisions of this Agreement.
10. This Agreement contains the entire agreement and understanding of the parties hereto with respect to the subject matter hereof and supersedes all prior agreements and understandings, written or oral, between the parties with respect to the subject matter hereof.
11. This Agreement shall be submitted to the authorized attorney for each party for approval as to form in accordance with Section 11-13-202.5 of the *Utah Code Annotated,* 1953, as amended.
12. If any portion of this Agreement is held to be unenforceable or invalid for any reason by a court of competent jurisdiction, the remaining provisions shall continue in full force and effect.
13. This Agreement is not intended to benefit any person or entity not named as a party hereto.
14. If either party fails to perform its obligations hereunder or to comply with the terms hereof, the non-defaulting party shall have all rights and remedies available at law and in equity.
15. This Agreement may be amended only in writing signed by the parties hereof.
16. Each of the parties hereto shall cause the governing body of that party to pass a resolution authorizing said party to enter into this Agreement and a copy of said resolution shall be attached hereto and be a part hereof by this reference.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement by and through their respective duly authorized representatives as of the day and year first hereinabove written.

SOUTH DAVIS RECREATION DISTRICT

_____

Brian Horrocks, District Board Chair
Dated:_____

ATTEST:

_____
Tyson Beck, District Clerk

Approved as to form and compliance with applicable law:

_____
Attorney for South Davis Recreation District

BOUNTIFUL CITY

_____
Kendalyn Harris, Bountiful City Mayor
Dated:_____

ATTEST:

_____
Shawna Andrus, City Recorder

Approved as to form and compliance with applicable law:

_____
Bountiful City Attorney

EXHIBIT A

Exhibit A note: any requested assistance with items outside of the Bountiful City roles described in Exhibit A, may be billed separately by Bountiful City at an agreed upon rate and depending upon the circumstances of the request.

Scope of Services and Division of Duties:

Bountiful City's Role	District's Role
<u>Human Resources / Payroll:</u> Bi-weekly payroll processing using City computer and software to include: 1. Employee set-up/maintenance. 2. Payroll tax calculations, remittance, and reporting. 3. Munis software time entry. 4. Employee benefits processing & remittances including State Retirement and 401(k) programs. 5. Payroll check and direct deposit issuance. Preparation and maintenance of new employee information packets and change forms. Creation and maintenance of permanent employee files. Assist with benefits open enrollment annually. Preparation of W -2 annually. Provision of technical assistance related to management and employee payroll and benefit questions. Aid in State retirement systems maintenance, reporting, and occasional audits. Aid in tracking Affordable Care Act hours. Preparation of annual 1095 forms. Aid with State census reporting. Aid in the annual budget process by creating payroll and benefit cost projections.	<u>Human Resources / Payroll:</u> Time sheet preparation, reviews, submission for payment to the City. Hiring, employee evaluations, job actions (promotions, reclassifications, demotions), terminations. Workers Compensation administration (including training, injury claims and reporting). Maintenance and administration of personnel policies, job descriptions, etc. Supply needed forms and envelopes.

EXHIBIT A (Continued)

Bountiful City's Role	District's Role
Accounting / Accounts Payable: Provide full general ledger accounting services using City-provided financial reporting software to include: 1. District transaction data entry into financial software (Munis). 2. Preparation of monthly journal entries. 3. Monthly reconciliations and closing of books. 4. Capital asset tracking and reporting. 5. Yearly closing of books in accordance with governmental accounting standards. 6. Preparation of yearend reconciliations, schedules, and documents necessary for independent audit. 7. Coordinate and orchestrate annual independent financial statement audit. 8. Monthly calculation and submission to State Tax Commission of sales taxes. Provide financial reporting to include: 1. Monthly detailed cash disbursement listing for management use and Board approval. 2. Monthly budget-to-actual reports for management use and Board approval. 3. Monthly revenue and expense reports from the City's financial software with graphs illustrating the prior three years of comparison data. 4. Quarterly cash/investment balances report. 5. Annual financial report analysis for management and the Board. 6. Submission of annual audited financial statements to the various State, bonding, and operational entities. 7. Quarterly and annual transparency report preparation and submission as required by the State. Provide a competent individual to act as District Clerk who attends the monthly Board meetings.	Accounting / Accounts Payable: Vendor negotiation and management. Invoice review, approval, and coding. Accounts Receivable establishment, collection, and write-offs (provide documentation as needed). Supply daily transaction and deposit reporting from the District's point-of-service software for input into the financial reporting software by the City. Supply requested operational and financial information in a timely manner to properly account for the District operations. District management review of monthly financial reporting. Supply checks, forms, and envelopes. District Clerk duties other than financial (minutes, resolutions, contracts, agreements, etc.). Overall responsibility for compliance with all State and Federal laws. Overall responsibility for selection and establishment of financial internal controls.

EXHIBIT A (Continued)

Bountiful City's Role	District's Role
Accounting / Accounts Payable (Continued): Weekly accounts payable (AP) services using City computers and software that include: 1. Input and processing of AP invoices, and issuance of checks using City computers and printers. 2. Secondary/independent internal control review over AP batches and vendor adjustments. 3. Set up and maintenance of District vendors. 4. Preparation and issuance of annual 1099's to vendors.	

EXHIBIT A (Continued)

Bountiful City's Role	District's Role
Treasury / Budget: Provide investment and cash management services that include: 1. Recording of daily and monthly revenues and investment transactions. 2. Monitoring of cash and investment balances. 3. Monthly bank account and investment reconciliations. 4. Investing of funds in accordance with approved policies and laws. Semi-annual reporting of deposits and investments with the State Treasurer. Annual reporting of Unclaimed Property to State Treasurer's Office. Prepare and file property tax certification forms with County staff. Provide budgeting assistance that includes: 1. Annually assemble a budget document with historical data for District Management to begin creation of a tentative budget to present to the District Board. 2. Prepare and submit required budget reports to Utah State Auditor. Provide a competent individual to act as District Treasurer and who is available to attend the monthly Board meetings, as requested.	Treasury / Budget: Daily cash receipting and closing. Daily deposits. Submission of daily cash/credit card reports to City staff for recording. Collection of returned checks. Correction of deposit errors from bank and reporting of corrections to City staff for recording in financial records. Annual follow-up and preparation of data for submission to the Unclaimed Property Report to the State Treasurer's Office. Prepare budget calendar in connection with City staff. Develop annual operating and capital budget. Present budget to board for tentative and final approval. Prepare budget and property tax resolutions for adoption by District board.

EXHIBIT A (Continued)

Bountiful City's Role	District's Role
Information Technology: Provide telephones and computers, necessary wiring installation and termination, network switching/routing, network firewall and unfiltered Internet services. Provide virtual or hardware-based servers as needed including backup and disaster recovery. Provide network directory services, user account maintenance, local file storage and permission management, and network printer access. Manage user accounts and periodically disable any left inactive after three or more weeks. Provide, install, and maintain end-point protection (anti-virus, anti-malware, etc.) for District workstations. Maintain operating system updates and patches. Purchase all equipment and software licensing related to the above services. Provide inquiry/reporting access to the City's financial reporting software to specific District employees. Also provide financial software support. Due to the District's extensive operating hours as compared to the City's operating hours, the City will provide best-effort support and services during off-hours to ensure critical system operability related to the above services.	Information Technology: Provide reimbursement to the City for the District's portion of the service providers' monthly billings as well as any direct purchases of equipment/software on behalf of the District. Notification of need for telecommunication and data processing moves, additions, and, deletions, and changes. Ensure its use of all information technology will comply with the City's current ratified IT policy. Responsible for all license compliance other than that software and hardware which is provided by the City. For all hardware and software not provided by the City for which the District requires City support, the District is to maintain a current support contract and valid license. Wholly responsible for its print and copy services. Notify the City of network user terminations/separations withing two business days. No installation of additional software except direct business-oriented software packages. No changes to operating system version. Establish, maintain, and provide support for the District's productivity software and licensing (currently Microsoft Office 365). Implement, maintain, and support employee security training program (e.g. KnowB4) as indicated in current City IT policy**.**

EXHIBIT B

Schedule of Services and Charges:

Admin. Services Category:	Est. FY 2025 Monthly Hrs	FY 2025 Monthly Service Fee	FY 2024 Presented for Comparison: Est. FY 2024 Monthly Hrs	FY 2024 Presented for Comparison: FY 2024 Monthly Service Fee
Human Resources/Payroll	121	$ 6,574	121	$ 6,428
Accounting	109	5,923	90	4,781
Accounts Payable	67	3,641	62	3,294
Treasury/Cash Management	14	761	34	1,806
Information Systems	28	1,521	26	1,381
Monthly Totals	339	$ 18,420	333	$ 17,690

	Estimated FY 2025 Hourly Rate	Estimated FY 2024 Hourly Rate
	$ 54.34	$ 53.12

Bountiful City Additional Monthly Services:

	FY 2025 Monthly Fee	FY 2024 Monthly Fee
Field maintenance and lighting	$ 265	$ 297
Lawn care and irrigation	$ 465	$ 447
Parking lot snowplowing and sweeping	$ 599	$ 576

	Fiscal Year 2025	Fiscal Year 2024
Total Combined Monthly Service Fee	**$ 19,749**	$ 19,010
Total Combined Annualized Service Fee	**$ 236,988**	$ 228,120

City Council
Staff Report

Subject: **Preliminary/Final Architectural and Site Plan for a Change of Use: Urgent Care Center**

Address: **175 West 500 South**
Author: **Amber Corbridge, Senior Planner**
Department: **Planning**
Date: **May 28, 2024**

Background

The applicant, Jordan Harris, with Candoo Construction, is requesting a Preliminary/Final Architectural Site Plan Approval to reuse the existing building at 175 West 500 South. The previous use of the building was a restaurant *Corner Bakery Cafe*, and now the applicant is proposing a CareNow Urgent Care Facility to occupy the space. The property is zoned C- G (General Commercial) where professional offices, including medical, are listed as permitted use. The Bountiful Land Use Code 14-6-111 states that Site Plan Approval shall be required for any new construction or change in use in the (C) Zone.

The Planning Commission reviewed this application on Tuesday, May 22, 2024. The Planning Commission forwarded a positive recommendation (5-0) to the City Council to approve with conditions noted below.

Analysis

The applicant states this proposal includes making some changes to the exterior of the building, such as removing the solarium and stairs on the south building elevation (see Image 1, below) and re-clad the exterior wall with like materials to match the existing masonry, concrete, and stucco (see Image 2, below). This area will also be landscaped to fit in with the existing landscaping, as shown in the attached plan set. The proposed use requires fifteen (15) parking stalls, and the site has at least forty-eight (48) stalls provided.

Image 1: Existing South Building Elevation – Photo Taken April 24, 2024

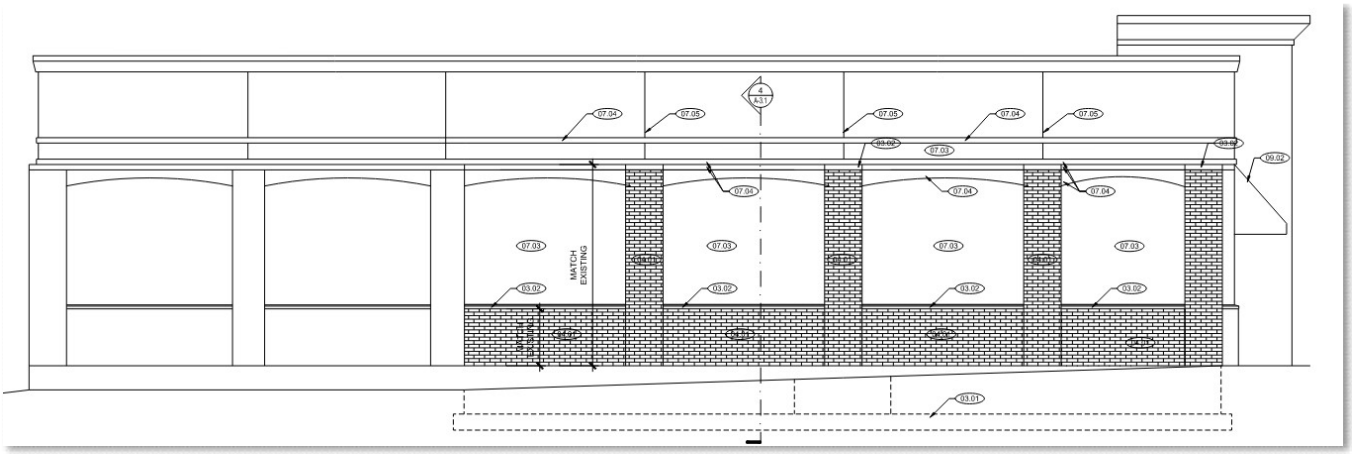


Image 2: Proposed South Building Elevation

Architectural and Site Plan Review

The City Council shall determine if the proposed architectural and site development plans submitted are consistent with the purpose and objectives of the Code (14-2-301). The purpose of the architectural and site plan review and approval process is:

1. *To determine compliance with the Land Use Code*
2. *To promote the orderly and safe development of land in the City*
3. *To implement the policies and goals established in the Bountiful City General Plan*
4. *To promote the orderly layout of site improvements.*

The architectural and site plans have been reviewed by staff, where landscaping, parking, lighting, screening, and all other applicable standards are reviewed for compliance. The applicant proposes new exterior sconces around the perimeter of the building. To meet the Land Use Code 14-16-111 (H), the sconces would need to be designed to direct light downward to avoid projecting onto adjacent properties. Staff recommends the applicant

submit the sconce or exterior light fixture design with the building permit application for review.

Department Review
This staff report was written by the Senior Planner and was reviewed by the City Engineer, City Attorney, and Planning Director.

Significant Impacts
There are minimal impacts of this proposed development on the property and surrounding uses, as the proposed use and site does not require additional parking, landscaping, or traffic flow. The existing infrastructure, such as water, sewer, culinary water, and transportation are in place to support this development.

Recommendation
The Planning Commission and Staff recommend City Council approve the Preliminary/Final Architectural and Site Plan application for the change of use at 175 West 500 South from a restaurant to an urgent care center, subject to:

1. Provide proposed exterior light fixture design with the building permit application.
2. Meet all department staff review comments.

Note: Final approval and building permits will be granted when all conditions are met and satisfied.

Attachments
1. Design Plan Set

SITE PLAN NOTES

1	SHADED AREA INDICATES EXTENT EXISTING SOLARIUM AND EXTERIOR STEPS TO BE DEMOLISHED IN LIEU OF NEW LANDSCAPING. SEE LANDSCAPE PLANS. THE AFFECTED EXTERIOR WALL WILL BE RE-CLAD WITH LIKE MATERIALS TO MATCH EXISTING FOR A CONSISTENT AESTHETIC TO THE CURRENT BUILDING SHELL.
2	EXISTING BUILDING TO REMIAN.
3	EXISTING AWNINGS TO BE REPLACED WITH SOLID COLOR (BLACK) FABRIC,
4	EXISTING BUILDING SIGNAGE TO BE REPLACED WITH NEW TENANT SIGNAGE, ALL FOR EXTERIOR FACES.
5	EXISTING ADA PARKING TO REMAIN.
6	EXISTING LANDSCAPING TO REMAIN
7	EXISTING SIDEWALK, CURB AND GUTTER TO REMAIN.
8	EXISTING EXTERIOR CONCRETE STEPS TO BE REPLACED WITH PLANTING BED TO MATCH EXISTING.
9	EXISTING PARKING AND PLANTED ISLANDS TO REMAIN.
10	EXTERIOR UTILITY SCREEN ATTACHED TO BUILDING TO REMAIN. SEE EXTERIOR PHOTOS ON A1.2

SITE PLAN SCOPE OF WORK AND ORDINANCE SUMMARY

THE SITE IS EXISTING TO REMAIN. THERE ARE NO PROPOSED CHANGES TO THE SITE THAT RELATE TO PARKING, OR PUBLIC ACCESS TO THE SITE. THE EXISTING ACCESS IS EXISTING AND MEETS ALL CODE REQUIREMENTS. THE PORTION OF THE BUILDING WITH GLASS SOLARIUM TO BE REMOVED WILL BE INFILLED WITH LANDSCAPING. SEE LANDSCAPE PLANS.

THE PROPERTY ADDRESS IS 175 W. 500 S., BOUNTIFUL, UTAH

THE PARCEL ID IS 030360115. THE LOT SIZE IS 4.22 ACRES

LEGAL DESCRIPTION: BEG N 89^44'04" E 166.96 FT & S 0^15'56" E 11.0 FT FR THE NW COR OF BLK L, NMC PLAT, BOUNTIFUL TS SURVEY & RUN TH S 0^15'56" E 174.5 FT; TH S 89^44'04" W 168.33 FT TO THE E LINE OF 200 WEST STR; TH S 0^09'34" W 93.41 FT; TH N 89^44'04" E 173.54 FT; TH S 0^09'34" W 161.09 FT TO THE S BANK OF MILLCREEK AS IT EXIST ON & BEFORE 01-01-1973; TH FOLLOWING THE S BANK OF SD CREEK N 86^28'37" E 86.97 FT & N 59^37'34" E 87.0 FT & S 67^12'26" E 88.10 FT & S 80^58'26" E 162.70 FT & N 69^34'33" E 88.28 FT, M.L. TO A PT 660.0 FT E OF THE W LINE OF BLK L; TH N 0^09'34" E 287.98 FT PARALLEL TO THE W LINE OF SD BLK; TH S 89^44'04" W 110.13 FT; TH S 0^15'56" E 5.00 FT; TH S 89^44'04" W 141.01 FT; TH N 0^15'56" W 80.55 FT; TH S 89^44'04" W 9.01 FT; TH N 0^15'56" W 67.25 FT TO THE S LINE OF 500 SOUTH STR; TH S 89^44'04" W 231.75 FT ALG THE S LINE OF SD 500 SOUTH STR TO THE POB. (BASIS OF BEARING - MONU LINE ALG 200 WEST STR S 0^09'34" WEST) CONT. 4.22 ACRES.

BOUNTIFUL CITY ZONING: C-G - GENERAL COMMERCIAL

USE
EXISTING BUILDING PREVIOUS USE: RESTAURANT - PERMITTED USE
EXISITING BUILDING PROPOSED USE: MEDICAL OFFICE - PERMITTED USE

OFF-STREET PARKING
RESTAURANT PARKING REQUIREMENT = 1/100 S.F.
MEDICAL OFFICE PARKING REQUIREMENT = 1/250 S.F.
THERE IS MORE THAN TWICE THE REQUIRED PARKING AVAILABLE FOR THE NEW USE.

LANDSCAPING IS EXISTING TO REMAIN. THE PROPERTY TO BE REMODELED IS ONE SMALL BUILDING THAT IS A PART OF THE 4.22 ACRE AREA OF A LARGER RETAIL DEVELOPMENT. THE LANDSCAPE AREAS BETWEEN THE BUILDING AND THE STREET AS WELL AS THE PARKING LOT ISLANDS ARE EXISTING TO REMAIN.

01 **EXISTING SITE PLAN**
A0.0 SCALE: 1/32" = 1'-0"

Reviewed by Planning Department
Amber Corbridge, Senior Planner
05/01/2024

PLAN REVIEW
04/24/2024 2:46:30 PM
Lloyd Cheney, Bountiful City Engineer
NO COMMENTS ON THIS SHEET

clarity design group
architecture planning interiors
5525 south 900 east, ste 340
murray, utah 84117
t. 385.247.8570

STATE OF UTAH
4959951
TROY S. ANDERSON
LICENSED ARCHITECT

consultants

CARENOW URGENT CARE CLINIC T.I.

175 W. 500 S.
BOUNTIFUL, UT
84010

PROJECT NO:	23071
DRAWN BY:	MF
CHECKED BY:	TA
ISSUE DATE:	2024/04/01

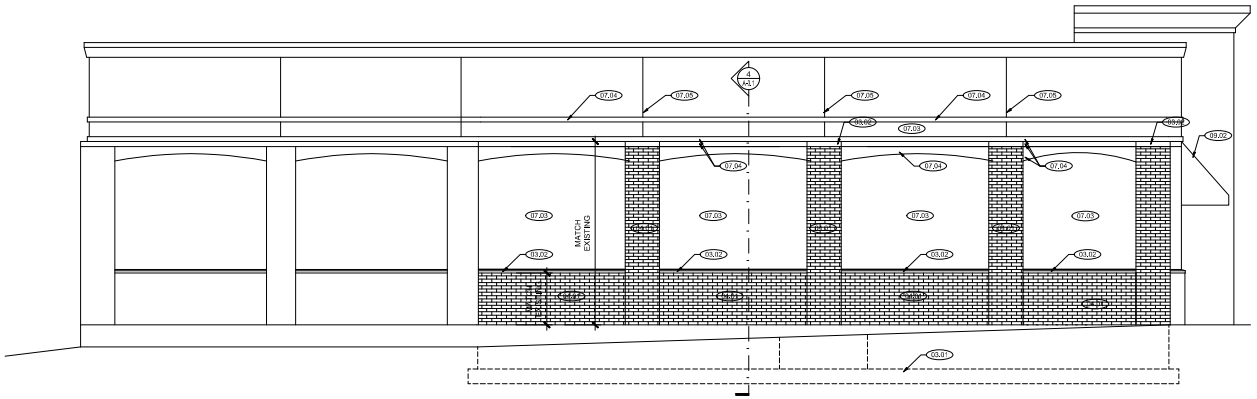
REVISION	DATE	DESCRIPTION
-	-	-

SHEET TITLE

CARENOW T.I.

EXISTING SITE PLAN

A0.0



01 **SOUTH ELEVATION**
A3.2 SCALE: 1/4" = 1'-0"

02 **EAST ELEVATION**
A3.2 SCALE: 1/4" = 1'-0"

04 **NORTH ELEVATION**
A3.2 SCALE: N.T.S.

03 **WEST ELEVATION**
A3.2 SCALE: N.T.S.

REFERENCE NOTES

01 GENERAL REQUIREMENTS
- 01.01 DIMENSIONS ARE TO FACE OF FINISH MATERIAL UNLESS NOTED OTHERWISE.

03 CONCRETE
- 03.01 CONCRETE FLOOR, FOUNDATION WALLS, AND FOOTINGS ARE ALL EXISTING TO REMAIN.
- 03.02 PRE-CAST CONCRETE SILL TO MATCH EXISTING.

04 MASONRY
- 04.01 BRICK VENEER TO MATCH EXISTING, SEALED, SEE STRUCTURAL FOR REINFORCEMENT.

05 METALS
- 05.01 FACTORY PAINTED CONTINUOUS STANDING SEAM METAL COPING, MATCH EXISTING STYLE AND COLOR.

06 WOOD, PLASTIC, COMPOSITES
- 06.01 SHEATHING. SEE STRUCTURAL DRAWINGS
- 06.02 2X6 WOOD STUD FRAMING, SEE STRUCTURAL DRAWINGS.
- 06.03 WOOD JOISTS @ 24" O.C., SEE STRUCTURAL

07 THERMAL AND MOISTURE
- 07.01 NEW MECHANICALLY FASTENED WHITE TPO, 60 MIL SINGLE-PLY ROOF MEMBRANE WITH 15 YEAR WARRANTY OVER 2 LAYERS OF 3" RIGID INSULATION BOARD (R-36) OVER WOOD SHEATHING. MECHANICALLY FASTENED. MINIMUM SLOPE OF 1/4" PER FOOT. SEE SPECS. MEMBRANE TO EXTEND UP PARAPET WALL AND UNDER PARAPET CAP, TYPICAL.
- 07.02 R-19 FOIL FACED BATT INSULATION IN 6" WOOD STUD WALL CAVITY.
- 07.03 SYNTHETIC STUCCO (EIFS) OVER 1-1/2" RIGID INSULATION BOARD OVER MOISTURE BARRIER. MOISTURE BARRIER TO BE SELF-ADHERING SHEET WATER PROOFING INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. COLOR TO MATCH EXISTING BUILDING.
- 07.04 EIFS ACCENT BANDS TO MATCH EXISTING IN SIZE AND FINISH.
- 07.05 3/4" 'V' GROOVE TO MACH EXISTING.
- 07.06 THIS HATCH INDICATES TAPERED ROOF INSULATION BOARD TO DIRECT WATER TO ROOF DRAIN LOCATIONS. SLOPE INSULATION BOARD AT 1/4" PER FOOT. ARROWS INDICATE DIRECTION OF SLOPED ROOF.
- 07.07 R-36 BATT INSULATION IN STRUCTURAL BRACE FRAMING CAVITY.

09 FINISHES
- 09.01 5/8" INTERIOR GYP. BD. TO EXTEND FROM FINISH FLOOR TO BOTTOM OF STRUCTURAL JOIST ABOVE.
- 09.02 EXISTING AWNING STRUCTURE AND LIGHTING TO BE SALVAGED. REPLACE FABRIC WITH NEW, IN SOLID COLOR (BLACK) AND STYLE AS APPROVED BY CARENOW.

10 SPECIALTIES
- 10.01 TENANT PROVIDED CONTRACTOR INSTALLED SIGNAGE, COORDINATE ELEC. AS REQUIRED.

22 PLUMBING
- 22.01 PRIMARY AND SECONDARY ROOF DRAIN LOCATIONS. SEE PLUMBING DRAWINGS.
- 22.02 CAST BRONZE DOWNSPOUT NOZZLE FOR OVERFLOW ROOF DRAINS AS HIGH AS POSSIBLE, SEE PLUMBING DRAWINGS

23 HVAC
- 23.01 ROOF TOP MECH. UNIT & CURB, SEE MECHANICAL AND ELECTRICAL DRAWINGS.

26 ELECTRICAL
- 26.01 PROVIDE NEW EXTERIOR SCONCE AT LOCATION OF EXISTING J-BOX, AROUND PERIMETER OF BUILDING, SEE ELEC.

Reviewed by Planning Department
Amber Corbridge, Senior Planner
05/01/2024

PLANS WILL REQUIRE PLANNING COMMISSION TO MAKE A RECOMMENDATION TO CITY COUNCIL

clarity design group
architecture planning interiors
5525 south 900 east, ste 340
murray, utah 84117
t. 385 247.8570

STATE OF UTAH 4959951 TROY S. ANDERSON LICENSED ARCHITECT

consultants

CARENOW URGENT CARE CLINIC T.I.

175 W. 500 S.
BOUNTIFUL, UT
84010

PROJECT NO:	23071
DRAWN BY:	MF
CHECKED BY:	TA
ISSUE DATE:	2024/04/01

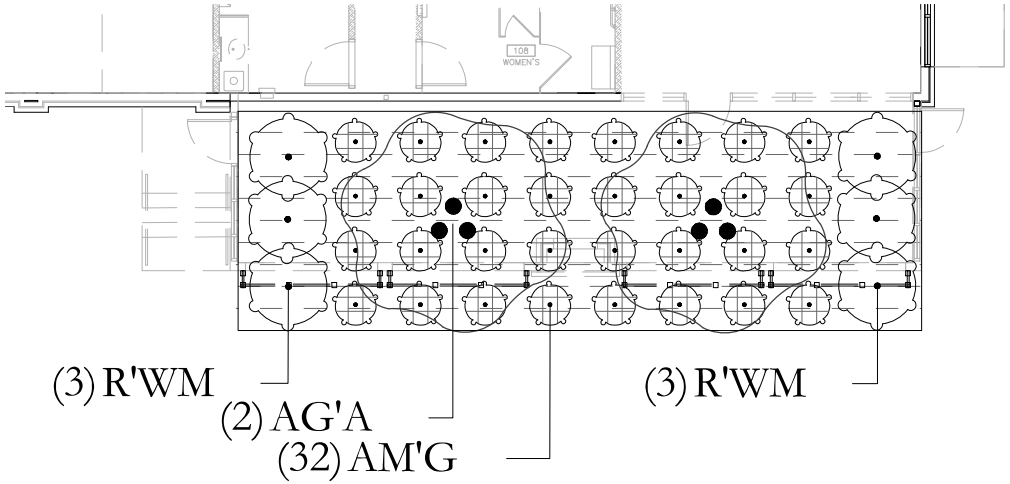
REVISION	DATE	DESCRIPTION
-	-	-

SHEET TITLE

CARENOW T.I.

EXTERIOR ELEVATIONS

A3.2



PLANT LEGEND

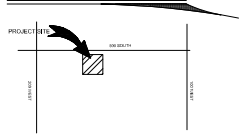
SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL
DECIDUOUS TREES					
	AG'A	2	Amelanchier x grandiflora 'Autumn Brilliance' Autumn Brilliance Serviceberry moderate; 20x15; part sun to shade; z4;Utah Lake water tolerant	B & B	Multi-trunked
SYMBOL	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**CONT**	
DECIDUOUS SHRUBS					
	AM'G	32	Aronia melanocarpa 'Ground Hug' Ground Hug Spreading Chokeberry Sel3; 14"x36"; AV28; sun to part shade; z3; Utah Lake water tolerant	5 gal	
ROSES					
	R'WM	6	Rosa x 'Meicrowhite' White Meidiland Rose Sel2; 2-3 x 6; AV 28; sun; z5; Utah Lake water tolerant	5 gal	

SITE MATERIALS LEGEND

SYMBOL	LANDSCAPE DESCRIPTION	QTY
1-14	1" MINUS TAN CRUSHED ROCK TO MATCH ADJACENT PLANTING BEDS. SUBMIT SAMPLES FOR LANDSCAPE ARCHITECT AND OWNER APPROVAL. PROVIDE 3" DEPTH OF ROCK MULCH TOP DRESSING. SEE INORGANIC MULCH LANDSCAPE NOTES FOR ADDITIONAL INFORMATION. SHEET LP-101.	696 sf

Reviewed by Planning Department
Amber Corbridge, Senior Planner
05/01/2024

VICINITY MAP



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UTILITY NOTIFICATION CENTER, INC
1-800-662-4111
www.bluestakes.org

0' 2' 4' 8' 16'
GRAPHIC SCALE: 1" = 4'

PKJ DESIGN GROUP
Landscape Architecture Planning & Visualization
3450 N. TRIUMPH BLVD. SUITE 102
LEHI, UTAH 84043 (801) 753-5644
www.pkjdesigngroup.com

clarity design group
architecture planning interiors
5525 south 900 east, ste 340
murray, utah 84117
t. 385.247.8570

consultants

CARENOW URGENT CARE CLINIC T.I.

175 W. 500 S.
BOUNTIFUL, UT

PROJECT NO:	UT-24034
DRAWN BY:	AR
CHECKED BY:	JA
ISSUE DATE:	2024/03/15

REVISION	DATE	DESCRIPTION
-	-	-

LANDSCAPE PLAN LP-100

CARENOW T.I.

LANDSCAPE PLAN

LP-100

LANDSCAPE PLAN SPECIFICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES LANDSCAPE PROCEDURES FOR THIS PROJECT INCLUDING ALL LABOR, MATERIALS, AND INSTALLATION NECESSARY, BUT NOT LIMITED TO, THE FOLLOWING:

1. SITE CONDITIONS
2. GUARANTEES
3. MAINTENANCE
4. SOIL AMENDMENTS
5. FINE GRADING
6. LANDSCAPE EDGING
7. FURNISH AND INSTALLING PLANT
8. TURF PLANTING
9. WEED BARRIER

1.2 SITE CONDITIONS

A. EXAMINATION: BEFORE SUBMITTING A BID, EACH CONTRACTOR SHALL CAREFULLY EXAMINE THE CONTRACT DOCUMENTS, SHALL VISIT THE SITE OF THE WORK, SHALL FULLY INFORM HIMSELF/ITS AS TO ALL EXISTING CONDITIONS AND LIMITATIONS; AND SHALL INCLUDE IN THE BID THE COST OF ALL ITEMS REQUIRED BY THE CONTRACT DOCUMENTS ARE AT A VARIANCE WITH THE APPLICABLE LAWS, BUILDING CODES, RULES, REGULATIONS, OR CONTAIN OBVIOUS ERRONEOUS OR UNACCOMMODATED INFORMATION, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE PROJECT REPRESENTATIVE AND THE NECESSARY CHANGES SHALL BE ACCOMPLISHED BY ADDENDUM.

B. PROTECTION: CONTRACTOR TO CONDUCT THE WORK IN SUCH A MANNER TO PROTECT ALL EXISTING UNDERGROUND UTILITIES OR STRUCTURES. CONTRACTOR TO REPAIR OR REPLACE ANY DAMAGED UTILITY OR STRUCTURE USING IDENTICAL MATERIALS TO MATCH EXISTING AT NO EXPENSE TO THE OWNER.

C. IRRIGATION SYSTEM: DO NOT BEGIN PLANTING UNTIL THE IRRIGATION SYSTEM IS COMPLETELY INSTALLED, IS ADJUSTED FOR FULL COVERAGE AND IS COMPLETELY OPERATIONAL.

1.3 PERMITS

A. BLUE STAKE'S / DIG LINE: WHEN DIGGING IS REQUIRED, "BLUE STAKE" OR "DIG LINE" THE WORK SITE AND IDENTIFY THE APPROXIMATE LOCATION OF ALL KNOWN, UNDERGROUND UTILITIES OR STRUCTURES.

1.4 PLANT DELIVERY, QUALITY, AND AVAILABILITY

A. UNAUTHORIZED SUBSTITUTIONS WILL NOT BE ACCEPTED. IF PROOF IS SUBMITTED THAT SPECIFIC PLANTS OR PLANT SIZES ARE UNOBTAINABLE, WRITTEN SUBSTITUTION REQUESTS WILL BE CONSIDERED FOR THE NEAREST EQUIVALENT PLANT OR SIZE. ALL SUBSTITUTION REQUESTS MUST BE SUBMITTED IN WRITING AND PREFERABLY BEFORE THE BID DUE DATE.

1.5 FINAL INSPECTION

A. ALL PLANTS WILL BE INSPECTED AT THE TIME OF FINAL INSPECTION PRIOR TO RECEIVING A LANDSCAPE SUBSTANTIAL COMPLETION FOR CONFORMANCE TO SPECIFIED PLANTING PROCEDURES, AND FOR GENERAL APPEARANCE AND VITALITY. ANY PLANT NOT APPROVED BY THE PROJECT REPRESENTATIVE WILL BE REJECTED AND REPLACED IMMEDIATELY.

1.6 LANDSCAPE SUBSTANTIAL COMPLETION

A. A SUBSTANTIAL COMPLETION CERTIFICATE WILL ONLY BE ISSUED BY THE PROJECT REPRESENTATIVE FOR "LANDSCAPE AND IRRIGATION" IN THEIR ENTIRETY. SUBSTANTIAL COMPLETION WILL NOT BE PROPORTIONED TO BE DESIGNATED AREAS OF A PROJECT.

1.7 MAINTENANCE

A. PLANT MATERIAL: THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL PLANTED MATERIALS IN A HEALTHY AND GROWING CONDITION FOR 90 DAYS AFTER RECEIVING A LANDSCAPE SUBSTANTIAL COMPLETION AT WHICH TIME THE GUARANTEE PERIOD COMMENCES. THIS MAINTENANCE IS TO INCLUDE MOWING, WEEDING, CULTIVATING, PRUNING, MONITORING WATER SCHEDULES, CONTROLLING INSECTS AND DISEASES, RE-GUYING AND STAKING, AND ALL OTHER OPERATIONS OF CARE NECESSARY FOR THE PROMOTION OF ROOT GROWTH AND PLANT LIFE SO THAT ALL PLANTS ARE IN A CONDITION SATISFACTORY AT THE END OF THE GUARANTEE PERIOD. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR FAILURE TO MONITOR WATERING OPERATIONS AND SHALL REPLACE ANY AND ALL PLANT MATERIAL THAT IS LOST DUE TO IMPROPER APPLICATION OF WATER.

1.8 GUARANTEE

A. GUARANTEE: A GUARANTEE PERIOD OF ONE YEAR SHALL BEGIN FROM END OF MAINTENANCE PERIOD AND FINAL ACCEPTANCE FOR TREES, SHRUBS, AND GROUND COVERS. ALL PLANTS SHALL GROW AND BE HEALTHY FOR THIS GUARANTEE PERIOD AND TREES SHALL LIVE AND GROW IN ACCEPTABLE UPRIGHT POSITION. ANY PLANT NOT ALIVE, IN POOR HEALTH, OR IN POOR CONDITION AT THE END OF THE GUARANTEE PERIOD WILL BE REPLACED IMMEDIATELY. ANY PLANT WILL ONLY NEED TO BE REPLACED ONCE DURING THE GUARANTEE PERIOD. CONTRACTOR TO PROVIDE DOCUMENTATION SHOWING WHERE EACH PLANT TO BE REPLACED IS LOCATED. ANY OUTSIDE FACTORS, SUCH AS VANDALISM OR LACK OF MAINTENANCE ON THE PART OF THE OWNER, SHALL NOT BE PART OF THE GUARANTEE.

PART II - PRODUCTS

2.1 LANDSCAPE MATERIALS

A. TREE STAKING: ALL TREES SHALL BE STAKED FOR ONE YEAR WARRANTY PERIOD. ALL TREES NOT PLUMB SHALL BE REPLACED. STAKED TREES SHALL USE VINYL TREE TIES AND TREE STAKES TWO (2) INCH BY TWO (2) BY EIGHT (8) FOOT COMMON PINE STAKES USED AS SHOWN ON THE DETAILS.

B. TREE WRAP: TREE WRAP IS NOT TO BE USED.

C. MULCH/ROCK: SEE PLANS. ALL PLANTER BEDS TO RECEIVE A MINIMUM 3" LAYER FOR TREES, SHRUBS, AND PERENNIALS AND 1" FOR GROUNDCOVERS.

D. WEED BARRIER: DEWITT 5 OZ. WEED BARRIER FABRIC. MANUFACTURED BY DEWITT COMPANY, DEWITTCOMPANY.COM OR APPROVED EQUAL.

E. TREE, SHRUB, AND GRASS BACKFILL MIXTURE: BACKFILL MIXTURE TO BE 75% NATIVE SOIL AND 25% TOPSOIL, THOROUGHLY MIXED TOGETHER PRIOR TO PLACEMENT.

F. TOPSOIL: REQUIRED FOR TURF AREAS, PLANTER BEDS AND BACKFILL MIXTURE. ACCEPTABLE TOPSOIL SHALL MEET THE FOLLOWING STANDARDS:

a. PH: 5.5-7.5

b. EC (ELECTRICAL CONDUCTIVITY): < 2.0 MMHOS PER CENTIMETER

c. SAR (SODIUM ABSORPTION RATION): < 3.0

d. % OM (PERCENT ORGANIC MATTER): > 1%

e. TEXTURE (PARTICLE SIZE PER USDA SOIL CLASSIFICATION): SAND <70%; CLAY < 30%; SILT < 70%, STONE FRAGMENTS (GRAVEL OR ANY SOIL PARTICLE GREATER THAN TWO (2) MM IN SIZE) < 5% BY VOLUME.

G. TURF SOD: ALL SOD SHALL BE 18 MONTH OLD AS SPECIFIED ON PLANS (OR APPROVED EQUAL) THAT HAS BEEN CUT FRESH THE MORNING OF INSTALLATION. ONLY SOD THAT HAS BEEN GROWN ON A COMMERCIAL SOD FARM SHALL BE USED. ONLY USE SOD FROM A SINGLE SOURCE.

H. LANDSCAPE CURB EDGING: SIX (6) INCHES BY FOUR (4) INCHES EXTRUDED CONCRETE CURB MADE UP OF THE FOLLOWING MATERIALS:

a. WASHED MORTAR SAND FREE OF ORGANIC MATERIAL

b. PORTLAND CEMENT (SEE CONCRETE SPEC. BELOW FOR TYPE)

c. REINFORCED FIBER - SPECIFICALLY PRODUCED FOR COMPATIBILITY WITH AGGRESSIVE ALKALINE ENVIRONMENT OF PORTLAND CEMENT-BASED COMPOSITES.

d. ONLY POTABLE WATER FOR MIXING.

I. LANDSCAPE METAL EDGING: 5.5" STEEL EDGING WITH 15" DOWELS INTO THE GROUND FOR STABILIZATION.

PART III - EXECUTION

3.1 GRADING

A. TOPSOIL PREPARATION: GRADES PLANTING AREAS ACCORDING TO THE GRADING PLAN. ELIMINATE UNEVEN AREAS AND LOW SPOTS. PROVIDE FOR PROPER GRADING AND DRAINAGE.

B. TOPSOIL PLACEMENT: SLOPE SURFACED AWAY FROM BUILDING AT TWO (2) PERCENT SLOPE, WITH NO POCKETS OF STANDING WATER. ESTABLISH FINISH GRADES OF ONE (1) INCHES FOR PLANTERS BELOW GRADE OF ADJACENT PAVED SURFACED. PROVIDE SMART, SMOOTH, AND UNIFORM FINISH GRADES. REMOVE DEBRIS SUB-SOIL AND TOPSOIL FROM THE SITE.

C. COMPACTION: COMPACTION UNDER HARD SURFACE AREAS (ASPHALT PATHS AND CONCRETE SURFACES) SHALL BE NINETY-FIVE (95) PERCENT. COMPACTION UNDER PLANTING AREAS SHALL BE BETWEEN EIGHTY-FIVE (85) AND NINETY (90) PERCENT.

3.2 TURF GRADING

A. THE SURFACE ON WHICH THE SOD IS TO BE LAID SHALL BE FIRM AND FREE FROM FOOTPRINTS, DEPRESSIONS, OR UNDULATIONS OF ANY KIND. THE SURFACE SHALL BE FREE OF ALL MATERIALS LARGER THAN 1/2" IN DIAMETER.

B. THE FINISH GRADE OF THE TOPSOIL ADJACENT TO ALL SIDEWALKS, CURB STRIPS, ETC. PRIOR TO THE LAYING OF SOD, SHALL BE SET SUCH THAT THE CROWN OF THE GRASS SHALL BE AT THE SAME LEVEL AS THE ADJACENT CONCRETE OR HARD SURFACE. NO EXCEPTIONS.

3.3 PLANTING OPERATIONS

A. REVIEW THE EXACT LOCATIONS OF ALL TREES AND SHRUBS WITH THE PROJECT REPRESENTATIVE FOR APPROVAL PRIOR TO THE DIGGING OF ANY HOLES. PREPARE ALL HOLES ACCORDING TO THE DETAILS ON THE DRAWINGS.

B. WATER PLANTS IMMEDIATELY UPON ARRIVAL AT THE SITE. MAINTAIN IN MOIST CONDITION UNTIL PLANTED.

C. BEFORE PLANTING, LOCATE ALL UNDERGROUND UTILITIES PRIOR TO DIGGING. DO NOT PLACE PLANTS ON OR NEAR UTILITY LINES.

D. THE TREE PLANTING HOLE SHOULD BE THE SAME DEPTH AS THE ROOT BALL, AND TWO TIMES THE DIAMETER OF THE ROOT BALL.

E. TREES MUST BE PLACED ON UNDISTURBED SOIL AT THE BOTTOM OF THE PLANTING HOLE.

F. THE TRUE HOLE DEPTH SHALL BE DETERMINED SO THAT THE TRUE MAY BE SET SLIGHTLY HIGH OF FINISH GRADE, 1"TO 2" ABOVE THE BASE OF THE TRUNK FLARE, USING THE TOP OF THE ROOT BALL AS A GUIDE.

G. PLANT IMMEDIATELY AFTER REMOVAL OF CONTAINER FOR CONTAINER PLANTS.

H. SET TREE ON SOIL AND REMOVE ALL BURLAP, WIRE BASKETS, TWINE, WRAPPINGS, ETC. BEFORE BEGINNING AND BACKFILLING OPERATIONS. DO NOT USE PLANTING STOCK IF THE BALL IS CRACKED OR BROKEN BEFORE OR DURING PLANTING OPERATION.

I. APPLY VITAMIN B-1 ROOT STIMULATOR AT THE RATE OF ONE (1) TABLESPOON PER GALLON.

J. UPON COMPLETION OF BACKFILLING OPERATION, THOROUGHLY WATER TREE TO COMPLETELY SETTLE THE SOIL AND FILL ANY VOIDS THAT MAY HAVE OCCURRED. USE A WATERING HOSE, NOT THE AREA IRRIGATION SYSTEM. IF ADDITIONAL PREPARED TOPSOIL MIXTURE NEEDS TO BE ADDED, IT SHOULD BE A COMPARABLE MIX AS REQUIRED TO ESTABLISH FINISH GRADE AS INDICATED ON THE DRAWINGS.

K. THE AMOUNT OF PRUNING SHALL BE LIMITED TO THE MINIMUM NECESSARY TO REMOVE DEAD OR INJURED TWIGS AND BRANCHES. ALL CUTS, SCARS, AND BRUISES SHALL BE PROPERLY TREATED ACCORDING TO THE DIRECTION OF THE PROJECT REPRESENTATIVE. PROPER PRUNING TECHNIQUES SHALL BE USED. DO NOT LEAVE STUBS AND DO NOT CUT THE LEADER BRANCH. IMPROPER PRUNING SHALL BE CAUSE FOR REJECTION OF THE PLANT MATERIAL.

L. PREPARE A WATERING CIRCLE OF DIAMETER AROUND THE TRUNK. FOR CONIFERS, EXTEND THE WATERING WELL TO THE DRIP LINE OF THE TREE CANOPY. PLACE MULCH AROUND THE PLANTED TREES.

4. TURF - SOD LAYING

A. TOP SOIL AMENDMENTS: PRIOR TO LAYING SOD, COMMERCIAL FERTILIZER SHALL BE APPLIED AND INCORPORATED INTO THE UPPER FOUR (4) INCHES OF THE TOPSOIL, AT A RATE OF FOUR POUNDS OF NITROGEN PER ONE THOUSAND (1,000) SQUARE FEET. ADJUST FERTILIZATION MIXTURE AND RATE OF APPLICATION AS NEEDED TO MEET RECOMMENDATIONS GIVEN BY TOPSOIL ANALYSIS. INCLUDE OTHER AMENDMENTS AS REQUIRED.

B. FERTILIZATION: THREE WEEKS AFTER SOD PLACEMENT FERTILIZE THE TURF AT A RATE OF ½ POUND OF NITROGEN PER 1000 SQUARE FEET. USE FERTILIZER SPECIFIED ABOVE. ADJUST FERTILIZATION MIXTURE AND RATES TO MEET RECOMMENDATIONS GIVEN BY TOPSOIL ANALYSIS.

C. SOD AVAILABILITY AND CONDITION: SOD IS TO BE DELIVERED TO THE SITE IN GOOD CONDITION. IT IS TO BE INSPECTED UPON ARRIVAL AND INSTALLED WITHIN 24 HOURS. SOD IS TO BE MOIST AND COOL TO ENSURE THAT DECOMPOSITION HAS NOT BEGUN AND IS TO BE FREE OF PESTS, DISEASES, OR BLEMISHES. THE CONTRACTOR SHALL SATISFY HIMSELF/ HERSELF AS TO THE EXISTING CONDITIONS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FURNISHING AND LAYING ALL SOD REQUIRED ON THE PLANS. ITS SHALL FURNISH NEW SOD AS SPECIFIED ABOVE AND LAY IT SO AS TO COMPLETELY SATISFY THE INTENT AND MEANING OF THE PLANS AND SPECIFICATIONS AT NO EXTRA COST TO THE OWNER. IN THE EAST OF ANY DISCREPANCY IN THE AMOUNT OF SOD TO BE REMOVED OR AMOUNT TO BE USED, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPORT SUCH TO THE PROJECT REPRESENTATIVE PRIOR TO COMMENCING THE WORK.

D. SOD LAYING: THE SURFACE UPON WHICH THE NEW SOD TO BE LAID WILL BE PREPARED AS SPECIFIED IN THIS DETAIL AND BE LIGHTLY WATERED BEFORE LAYING. AREAS WHERE SOD IS TO BE LAID SHALL BE CUT, TRIMMED, OR SHAPED TO RECEIVE FULL WIDTH SOD (MINIMUM TWELVE (12) INCHES). NO PARTIAL STRIPS OR PIECES WILL BE ACCEPTED.

E. SOD SHALL BE TAMPED LIGHTLY AS EACH PIECE IS SET TO ENSURE THAT GOOD CONTACT IS MADE BETWEEN EDGES AND ALSO THE GROUND. IF VOIDS OR HOLES ARE DISCOVERED, THE SOD PIECES IS (ARE) TO BE RAISED AND TOPSOIL IS TO BE USED TO FILL IN THE AREAS UNTIL LEVEL SOD LAID ON ANY SLOPED AREAS SHALL BE ANCHORED WITH WOODEN DOWELS OR OTHER MATERIALS WHICH ARE ACCEPTED BY THE GRASS SOD INDUSTRY.

F. SOD SHALL BE ROLLED WITH A ROLLER THAT IS AT LEAST 50% FULL IMMEDIATELY AFTER INSTALLATION TO ENSURE THE FULL CONTACT WITH SOIL IS MADE.

G. APPLY WATER DIRECTLY AFTER LAYING SOD. RAINFALL IS NOT ACCEPTABLE.

H. WATERING OF THE SOD SHALL BE THE COMPLETE RESPONSIBILITY OF THE CONTRACTOR BY WHATEVER MEANS NECESSARY TO ESTABLISH THE SOD IN AN ACCEPTABLE MANNER TO THE END OF THE MAINTENANCE PERIOD. IF AN IRRIGATION SYSTEM IS IN PLACE ON THE SITE, BUT FOR WHATEVER REASON, WATER IS NOT AVAILABLE IN THE SYSTEM, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO WATER THE SOD BY WHATEVER MEANS, UNTIL THE SOD IS ACCEPTED BY THE PROJECT REPRESENTATIVE.

I. PROTECTION OF THE NEWLY LAID SOD SHALL BE THE COMPLETE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE ACCEPTABLE VISUAL BARRIERS, TO INCLUDE BARRICADES SET APPROPRIATE DISTANCES WITH STRINGS OR TAPES BETWEEN BARRIERS, AS AN INDICATION OF NEW TURF. THE CONTRACTOR IS TO REPAIR OR REPLACE ANY DAMAGED AREAS CAUSED BY OTHERS (INCLUDING VEHICULAR TRAFFIC), EROSION, ETC, UNTIL SUCH TIME AS THE LAWN IS ACCEPTED BY THE OWNER.

J. ALL SOD THAT HAS NOT BEEN LAID WITHIN 24 HOURS SHALL BE DEEMED UNACCEPTABLE AND WILL BE REMOVED FROM THE SITE.

3.5 WEED BARRIER

A. FOR THE HEALTH OF THE SOIL AND THE MICROORGANISMS, WEED BARRIER IS NOT RECOMMENDED. IF USE IS REQUIRED OR REQUESTED, DO NOT PLACE IN ANNUAL OR GRASS AREAS.

B. CUT WEED BARRIER BACK TO THE EDGE OF THE PLANT ROOTBALL.

C. OVERLAP ROWS OF FABRIC MIN. 6"

D. STABILIZE FABRIC EDGES AND OVERLAPS TO GROUND.

END OF SECTION

GENERAL LANDSCAPE NOTES

GRADING AND DRAINAGE REQUIREMENTS

- AS PER CODE, ALL GRADING IS TO SLOPE AWAY FROM ANY STRUCTURE. SURFACE OF THE GROUND WITHIN 10' FEET OF THE FOUNDATION SHOULD DRAIN AWAY FROM THE STRUCTURE WITH A MINIMUM FALL OF 6".
- AS PER CODE, FINISHED GRADE WILL NOT DRAIN ON NEIGHBORING PROPERTIES
- A MINIMUM SLOPE OF 6" OF FOUNDATION WILL BE LEFT EXPOSED AT ALL CONDITIONS
- LANDSCAPE CONTRACTOR TO MAINTAIN OR IMPROVE FINAL GRADE AND PROPER DRAINAGE ESTABLISHED BY EXCAVATOR, INCLUDING BUT NOT LIMITED TO ANY MAINTENANCE, PRESERVATION, OR UNACCEPTABLE SETTLEMENTS, SWALES, AND BERMS.
- LANDSCAPE CONTRACTOR IS RESPONSIBLE TO CORRECT ANY DAMAGED OR IMPROPER WATERFLOW OF ALL SWALES, BERMS, OR GRADE.
- DOWNSPOUTS FOR CHANNELING ROOF RUN-OFF SHOULD BE INSTALLED FOR COLLECTION AND DISCHARGE OF RAINWATER AT A MINIMUM OF 10' FROM THE FOUNDATION, OR BEYOND THE LIMITS OF FOUNDATION WALL BACKFILL, WHICHEVER DISTANCE IS GREATER.

GENERAL LANDSCAPE NOTES

- LANDSCAPE CONTRACTOR SHALL HAVE ALL UTILITIES BLUE STAKED PRIOR TO DIGGING. ANY DAMAGE TO UTILITIES SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE WITH NO ADDITIONAL COST TO THE OWNER.
- DURING THE BIDDING AND INSTALLATION PROCESS, THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR VERIFYING QUANTITIES OF ALL MATERIALS. IF DISCREPANCIES EXIST, THE PLAN SHALL DICTATE QUANTITIES TO BE USED.
- ALL PLANT MATERIAL SHALL BE PLANTED ACCORDING TO ANSI STANDARDS WITH CONSIDERATION TO INDIVIDUAL SOIL AND SITE CONDITIONS, AND NURSERY CARE AND INSTALLATION INSTRUCTIONS.
- SELECTED PLANTS WILL BE ACCORDING TO THE PLANT LEGEND. IF SUBSTITUTIONS ARE NECESSARY, PROPOSED LANDSCAPE CHANGES MUST BE SUBMITTED TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO LAYING SOD.
- SHOULD THE SITE REQUIRE ADDITIONAL TOPSOIL, REFER TO SOIL TEST WHEN MATCHING EXISTING SOIL. IF A MATCHING SOIL IS NOT LOCATABLE, A 6" DEPTH OF SANDY LOAM TOPSOIL, DISKED PRIOR TO SPREADING WITH 5% ORGANIC MATTER CAN BE INCORPORATED INTO THE EXISTING SOIL USING THE FOLLOWING DIRECTIONS. SCARIFY TOP 6" OF EXISTING SUBSOIL AND INCORPORATE 3" OF NEW COMPOST UNDER 6" TOPSOIL. SPREAD REMAINING TOPSOIL TO FINISH GRADE.
- EDGING, AS INDICATED ON PLAN, IS TO BE INSTALLED BETWEEN ALL LAWN AND PLANTER AREAS. ANY TREES LOCATED IN LAWN MUST HAVE A 4-6" TREE RING OF BARK EDGING.

LAWN GRASS AREA

- SOD
  - ALL LAWN AREAS TO RECEIVE MIN. 6" DEPTH OF QUALITY TOPSOIL. IF TOPSOIL IS PRESENT ON SITE, PROVIDE SOIL TEST TO DETERMINE SOIL QUALITY FOR PROPOSED PLANTINGS. PROVIDE 2" DEPTH OF ORGANIC MULCH TOP DRESSING. KEEP MULCH AWAY FROM TOP OF ROOT BALL OF ALL PLANT MATERIAL.
  - IF REQUIRED BY CITY, INSTALL DEWITT 5OZ WEED BARRIER LANDSCAPE FABRIC UNDER ALL MULCH AREAS. KEEP WEED BARRIER 1 FOOT AWAY FROM EDGE OF ROOT BALL OF ALL PLANT MATERIAL. IF WEED BARRIER IS NOT REQUIRED OR INSTALLED, AT OWNER'S APPROVAL, USE TREFLAN TO AS A PRE-EMERGENT. APPLY ACCORDING TO LABEL DIRECTIONS BY CERTIFIED PESTICIDE APPLICATOR AFTER PLANTING AND AFTER APPLYING MULCH.
  - IF USING TREFLAN (OR WITHOUT WEED BARRIER, THIS AREA WILL ALSO NEED ANY WEEKLY MANAGEMENT PROGRAM. SUBMIT PROGRAM TO OWNER.
  - ANNUAL PLANTING AREAS AS SHOWN ON PLAN TO RECEIVE 4" OF SOIL AND MATERIAL (ORGANIC MULCH, NO MULCH SHALL BE PLACED WITHIN 12" OF THE TRUNK AND 6" WITHIN BASE OF SHRUBS AND PERENNIALS. DO NOT COVER LOW BRANCHES OF SHRUBS WITH MULCH.
- INORGANIC
  - ROCK MULCH PLANTING AREAS TO BE FREE OF WEEDS AND RECEIVE MIN. 12" DEPTH OF QUALITY TOPSOIL. IF TOPSOIL IS PRESENT ON SITE, PROVIDE SOIL TEST TO DETERMINE SOIL QUALITY FOR PROPOSED PLANTINGS. WHERE PLANTING IS SPARSE (GREATER THAN 4' DISTANCE BETWEEN PLANTS OR 24" BETWEEN GROUPINGS), ADDITIONAL TOPSOIL IS NOT NECESSARY EXCEPT FOR BACKFILLING PLANTING HOLE. PREPARE A HOLE TWICE THE WIDTH OF THE CONTAINER, WORK IN PLANT, BACKFILL WITH A 4:1 RATIO OF SOIL TO COMPOST, TAMP LIGHTLY AND WATER AGAIN. KEEP ROCK 12" AWAY FROM TRUNK OF TREES AND 6" AWAY FROM BASE OF SHRUBS AND PERENNIALS. DO NOT COVER LOW BRANCHES OF SHRUBS WITH ROCK.
  - IF REQUIRED BY CITY, INSTALL DEWITT 5OZ WEED BARRIER LANDSCAPE FABRIC UNDER ALL ROCK AREAS. KEEP WEED BARRIER 1 FOOT AWAY FROM EDGE OF ROOT BALL OF ALL PLANT MATERIAL. IF WEED BARRIER IS NOT REQUIRED OR INSTALLED, AT OWNER'S APPROVAL, USE TREFLAN TO AS A PRE-EMERGENT. APPLY ACCORDING TO LABEL DIRECTIONS BY CERTIFIED PESTICIDE APPLICATOR AFTER PLANTING AND AFTER APPLYING MULCH.
  - IF USING TREFLAN (OR WITHOUT WEED BARRIER, THIS AREA WILL ALSO NEED ANY WEEKLY MANAGEMENT PROGRAM. SUBMIT PROGRAM TO OWNER. UPON REQUEST, A PDF GUIDE IS AVAILABLE WITH OUR RECOMMENDATIONS REGARDING WEED BARRIER, PLANT CARE AND MAINTENANCE.

GENERAL IRRIGATION NOTES

- A NEW UNDERGROUND, AUTOMATIC IRRIGATION SYSTEM IS TO BE INSTALLED BY CONTRACTOR IN ALL LANDSCAPED AREAS. LAWN AREAS TO RECEIVE AT LEAST 100% HEAD TO HEAD COVERAGE, AND PLANTER AREAS TO RECEIVE A FULL DRIP SYSTEM TO EACH TREE AND SHRUB. POINT SOURCE DRIP OR IN-LINE DRIP TUBING TO BE SPACED AT CENTER OF ROOT BALL, NOT AGAINST TRUNK. SEE IRRIGATION PLAN.

INSTALLER RESPONSIBILITIES AND LIABILITIES

- THESE PLANS ARE FOR BASIC DESIGN LAYOUT AND INFORMATION. LANDSCAPE CONTRACTOR IS REQUIRED TO USE TRADE KNOWLEDGE FOR IMPLEMENTATION. OWNER ASSUMES NO LIABILITIES FOR INADEQUATE ENGINEERING CALCULATIONS, MANUFACTURER PRODUCT DEFECTS, INSTALLATION OF ANY LANDSCAPING AND COMPONENTS, OR TIME EXECUTION.
- LANDSCAPE CONTRACTOR IS RESPONSIBLE AND LIABLE FOR INSTALLATION OF ALL LANDSCAPING AND IRRIGATION SYSTEMS (NO EXCEPTIONS) PER CODE REQUIREMENTS, TIME EXECUTIONS, INSTALLED PRODUCTS AND MATERIALS.

PLANT LEGEND

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL
DECIDUOUS TREES					
	AG'A	2	Amelanchier x grandiflora 'Autumn Brilliance' Autumn Brilliance Serviceberry moderate; 20x15; part sun to shade; z4;Utah Lake water tolerant	B & B	Multi-trunked
SYMBOL	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**CONT**	
DECIDUOUS SHRUBS					
	AM'G	32	Aronia melanocarpa 'Ground Hug' Ground Hug Spreading Chokeberry Sd3; 14"x36"; AV28; sun to part shade; z3; Utah Lake water tolerant	5 gal	
ROSES					
	RW'M	6	Rosa x 'Meicoublan' White Meidiland Rose Sd2; 2-3 x 6; AV 28; sun; z5; Utah Lake water tolerant	5 gal	

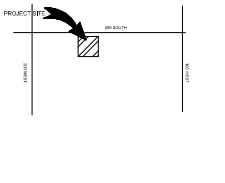
SITE MATERIALS LEGEND

SYMBOL		QTY
1-14	1 LANDSCAPE DESCRIPTION: 1" MINUS TAN CRUSHED ROCK TO MATCH ADJACENT PLANTING BEDS. SUBMIT SAMPLES FOR LANDSCAPE ARCHITECT AND OWNER APPROVAL. PROVIDE 3" DEPTH OF ROCK MULCH TOP DRESSING. SEE INORGANIC MULCH LANDSCAPE NOTES FOR ADDITIONAL INFORMATION. SHEET LP-101.	696 sf

SITE REQUIREMENT CALCULATIONS

	REQUIRED:	PROVIDED:
TREE COUNT:		
AT LEAST 1 TREE / 750 SQ.FT. OF LANDSCAPING (696 SQ. FT.)	1	2
SHRUB COUNT:	**REQUIRED:**	**PROVIDED:**
AT LEAST 1 SHRUB/200 SQ FT. OF LANDSCAPING (696 SQ. FT.)	3	38

VICINITY MAP



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murray, utah 84117
t. 385.247.8570

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CARENOW URGENT CARE CLINIC T.I.

175 W. 500 S.
BOUNTIFUL, UT

PROJECT NO:	UT-24034
DRAWN BY:	AR
CHECKED BY:	JA
ISSUE DATE:	2024/03/15

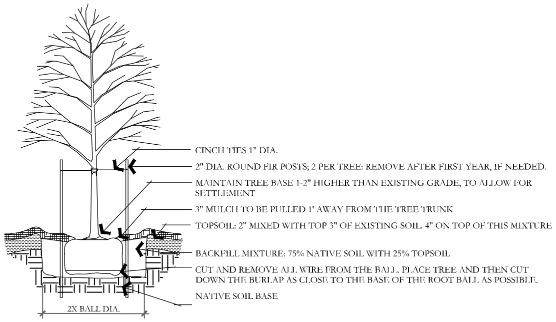
REVISION	DATE	DESCRIPTION
-	-	-

LANDSCAPE PLAN LP-101

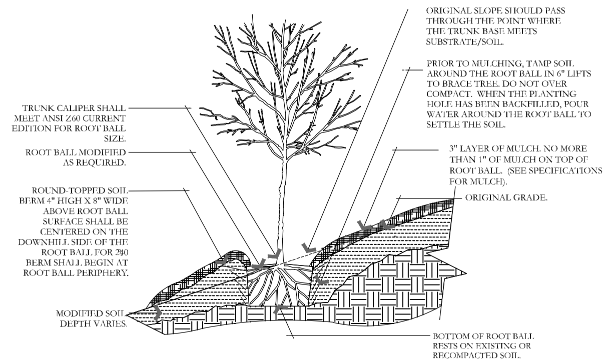
CARENOW T.I.

LANDSCAPE PLAN

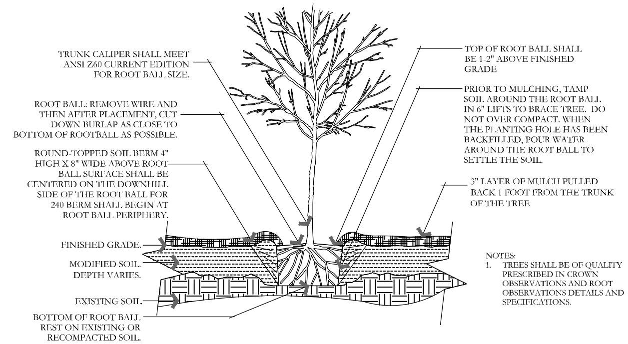
LP-101



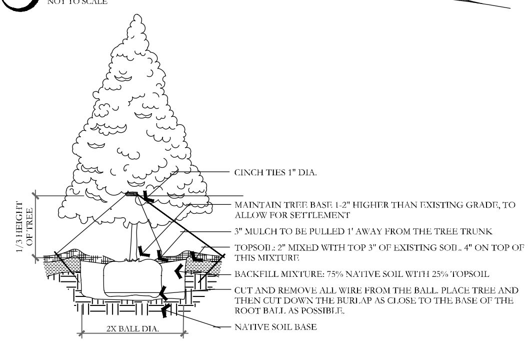
A DECIDUOUS TREE PLANTING
NOT TO SCALE
PKJ DESIGN GROUP



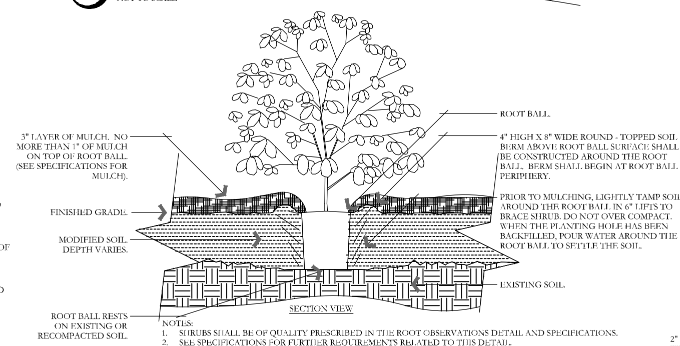
B TREE ON SLOPE 5% (20:1) TO 50% (2:1)
NOT TO SCALE
PKJ DESIGN GROUP



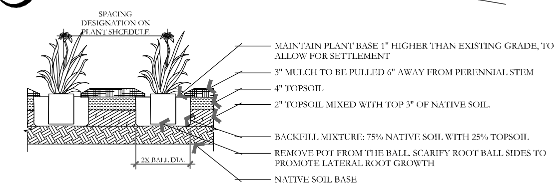
C TREE W/ BERM (EXISTING SOIL MODIFIED)
NOT TO SCALE
PKJ DESIGN GROUP



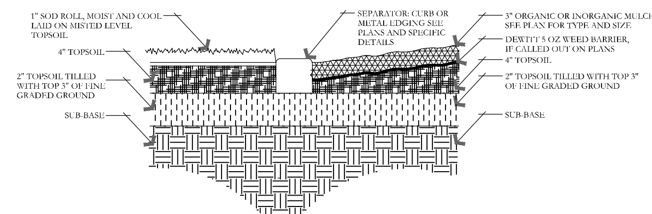
D EVERGREEN TREE PLANTING
NOT TO SCALE
PKJ DESIGN GROUP



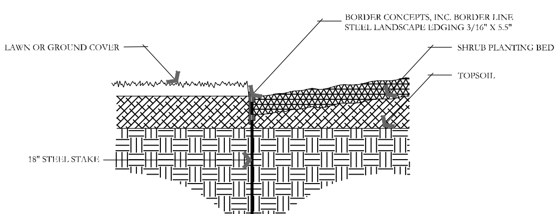
E SHRUB - MODIFIED SOIL
NOT TO SCALE
PKJ DESIGN GROUP



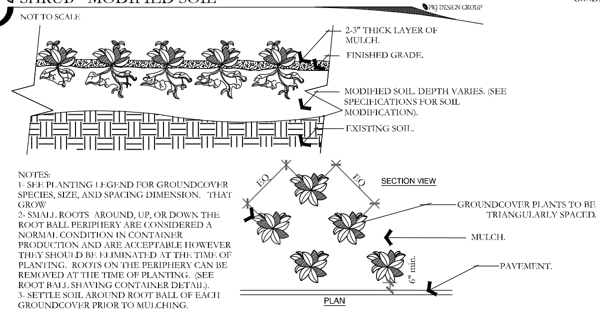
F PERENNIAL PLANTING
NOT TO SCALE
PKJ DESIGN GROUP



I SOD LAYING/MULCH DETAIL
NOT TO SCALE
PKJ DESIGN GROUP

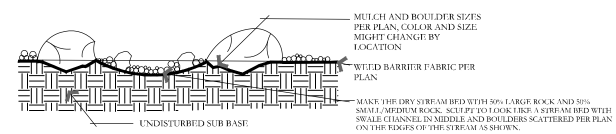


G METAL EDGING DETAIL
NOT TO SCALE
PKJ DESIGN GROUP



NOTES:
1- SEE PLANTING LEGEND FOR GROUNDCOVER SPECIES, SIZE, AND SPACING DIMENSION. THAT GROW
2- SMALL ROOTS AROUND, UP, OR DOWN THE ROOT BALL PERIPHERY ARE CONSIDERED A NORMAL CONDITION IN CONTAINER PRODUCTION AND ARE ACCEPTABLE HOWEVER THEY SHOULD BE ELIMINATED AT THE TIME OF PLANTING. ROOTS ON THE PERIPHERY CAN BE REMOVED AT THE TIME OF PLANTING. (SEE ROOT BALL SHAVING CONTAINER DETAIL).
3- SETTLE SOIL AROUND ROOT BALL OF EACH GROUNDCOVER PRIOR TO MULCHING.

H PERENNIAL/GROUNDCOVER PLANTING
NOT TO SCALE
PKJ DESIGN GROUP



J BOULDER AND DRY STREAM BED DETAIL
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murray, utah 84117
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REGISTERED LANDSCAPE ARCHITECT
JEREMY AINSWORTH
8128127-5301
3/15/2024
STATE OF UTAH

consultants

CARENOW URGENT CARE CLINIC T.I.

175 W. 500 S.
BOUNTIFUL, UT

PROJECT NO:	UT-24034
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-	-	-

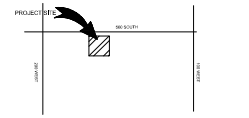
DETAILS SHEET LP-501

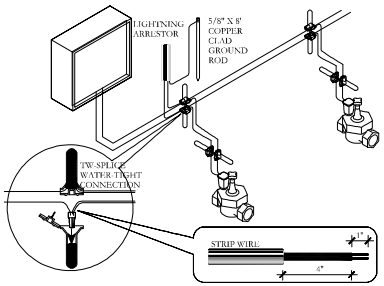
CARENOW T.I.

LANDSCAPE DETAILS

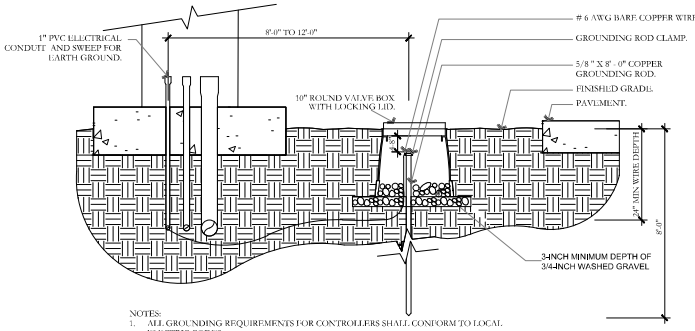
LP-501

VICINITY MAP





J 2-WIRE CONNECTION DETAIL
NOT TO SCALE
PKJ DESIGN GROUP



NOTES:
1. ALL GROUNDING REQUIREMENTS FOR CONTROLLERS SHALL CONFORM TO LOCAL ELECTRIC CODES.
2. GROUNDING ROD SHALL NOT BE LOCATED IN THE SAME TRENCH AS THE IRRIGATION MAINLINES OR LATERAL LINES.
3. VALVE BOX SHALL BE WRAPPED WITH A MINIMUM 3 MIL THICK PLASTIC AND SECURED TO THE VALVE BOX USING DUCT TAPE OR ELECTRICAL TAPE.
4. INSTALL GROUNDING ROD PER THE CONTROLLER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

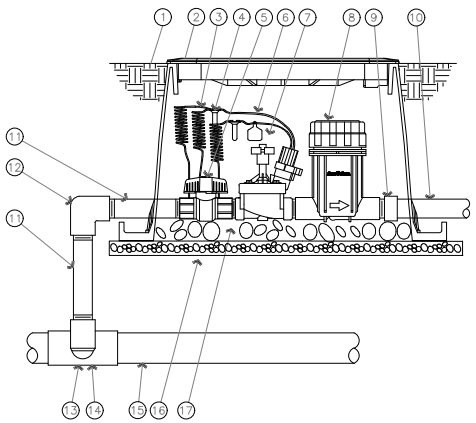
K GROUNDING ROD DETAIL
NOT TO SCALE
PKJ DESIGN GROUP

IRRIGATION LEGEND

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Rain Bird XCZ-100-PRB-COM 1" Wide Flow Drip Control Kit for Commercial Applications. 1in. Ball Valve with 1in. PESB Valve and 1in. Pressure Regulating 40psi Quick-Check Basket Filter. 5 GPM-20 GPM.	1
	Pipe Transition Point above grade Pipe transition point from PVC lateral to drip tubing with riser to above grade installation.	1
	Area to Receive Drip Emitters Rain Bird PC (2) Single Outlet, Pressure Compensating Drip Emitters with Self-Piercing Barb Inlet. Flow rate: 5 GPH=light brown; 7 GPH=violet; 10 GPH=green; 12 GPH=dark brown; 18 GPH=white; 24 GPH=orange.	688.6 s.f.

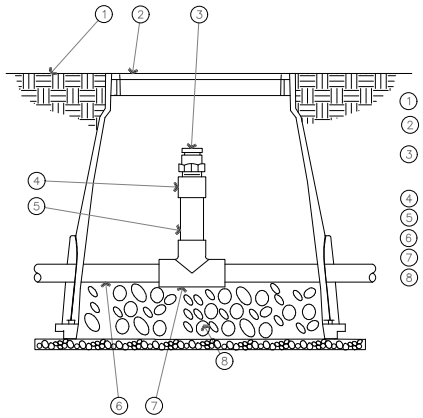
SYMBOL Existing MainLine	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Point of Connection 1"	1
	Irrigation Lateral Line: PVC Schedule 40	21.7 l.f.
— — — —	Irrigation Mainline: PVC Schedule 40	14.4 l.f.
	Pipe Sleeve: PVC Class 200 SDR 21 Typical pipe sleeve for irrigation pipe. Pipe sleeve size shall allow for irrigation piping and their related couplings to easily slide through sleeving material. Extend sleeves 18 inches beyond edges of paving or construction.	7.5 l.f.

Valve Callout
#♦ Valve Number
Valve Flow
#" Valve Size



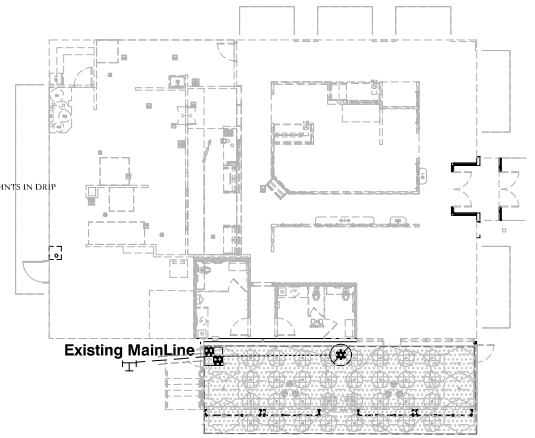
1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH COVER: RAIN BIRD VB-STD
3. 30-INCH LINEAR LENGTH OF WIRE, COILED
4. WATERPROOF CONNECTION: RAIN BIRD DB SPRTFS
5. 1-INCH BALL VALVE (INCLUDED IN XCZ-PRB-100-COM KIT)
6. ID TAG
7. REMOTE CONTROL VALVE: RAIN BIRD PESB (INCLUDED IN XCZ-PRB-100-COM KIT)
8. PRESSURE REGULATING AND FLOW INDICATING BASKET FILTER: RAIN BIRD XCZ-100-FLOW
9. PVC SCH 40 FEMALE ADAPTOR
10. LATERAL PIPE
11. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
12. PVC SCH 40 ELL
13. PVC SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND PVC SCH 40 ELL
14. PVC SCH 40 TEE OR ELL
15. MAINLINE PIPE
16. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
17. PVC SCH 80 NIPPLE, CLOSE (INCLUDED IN XCZ-PRB-100-COM KIT)

P DRIP CONTROL ZONE KIT DETAIL
NOT TO SCALE
PKJ DESIGN GROUP



1. FINISH GRADE
2. SUBTERRANEAN EMITTER BOX: RAIN BIRD SEB 7XB
3. 1/2" AIR RELIEF VALVE: RAIN BIRD ARV050 TO BE INSTALLED AT HIGH POINTS IN DRIP ZONE
4. PVC SCH 40 FEMALE ADAPTER
5. PVC SCH 80 RISER
6. PVC HEADER PIPE
7. PVC SCH 40 TEE
8. 3" MINIMUM DEPTH OF 3/4" WASHED GRAVEL

R AIR RELIEF VALVE DETAIL
NOT TO SCALE
PKJ DESIGN GROUP



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N

0' 5' 10' 20' 40'
GRAPHIC SCALE: 1" = 10'

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LICENSED LANDSCAPE ARCHITECT
JEREMY ANDREWS
8128121-5301
03/15/2024
RENEWAL DATE
STATE OF UTAH

consultants

CARENOW URGENT CARE CLINIC T.I.

175 W. 500 S.
BOUNTIFUL, UT

PROJECT NO:	UT-24034
DRAWN BY:	JA
CHECKED BY:	JA
ISSUE DATE:	2024/03/15

REVISION	DATE	DESCRIPTION
-	-	-

IRRIGATION PLAN-IR 100

CARENOW T.I.

IRRIGATION PLAN

IR-100

IRRIGATION PLAN SPECIFICATIONS

IRRIGATION SPECIFICATIONS

PART 1 - GENERAL

1.1 SUMMARY

Work to be done includes all labor, materials, equipment and services required to complete the Project irrigation system as indicated on the Construction Drawings, and as specified herein. Includes but is not limited to: Furnishing and installing underground and above ground sprinkler system complete with any accessories necessary for proper function and operation of the system. All plant material on the Project shall be irrigated. Remove and dispose of any existing sprinkler system components which are disturbed during the construction process and are not to be saved. Restoration of any altered or damaged existing landscape to original state and condition.

1.2 SYSTEM DESCRIPTION

A. Design of irrigation components: Locations of irrigation components on Construction Drawings may be approximate. Piping, sleeving and/or other components shown on Construction drawings may be shown schematically for graphic clarity and demonstration of component groupings and separations. All irrigation components shall be placed in landscaped areas, with the exception of pope and wire in sleeving under hardscapes. Actual routing of pipe, wire or other components may be altered due to site conditions not accounted for in the design process.

B. Construction requirements: Actual placement may vary as required to achieve a minimum of 100% coverage without overspray onto hardscape, buildings or other features.

C. Layout of Irrigation Components: During layout and staking, consult with Owner Approved Representative (hereafter referred to as OAR) to verify proper placement of irrigation components, and to provide Contractor recommendations for changes where revisions may be advisable. Small or minor adjustments to system layout are permissible to avoid existing field obstructions such as utility boxes or street light poles. Contractor shall place remote control valves in groups as practical to economize on quantity of manifold isolation valves. Quick coupler valves shall be placed with manifold groups and protected by manifold isolation valves. Quick coupler valves are shown on Construction Documents in approximate locations.

1.3 DEFINITIONS

A. Water Supply: Secondary water piping and components, furnished and installed by others to provide irrigation water to this Project, including but not limited to filter, saddles, nipples, spools, shut off valves, corporation stop valves, water meters, pressure regulation valves, and piping upstream of (or prior to) the Point of Connection.

B. Point of Connection: Location where the Contractor shall tie into the water supply. May require filter, saddle, nipples, spools, isolation valves or Stop and Waste valve for landscape irrigation needs and use.

C. Main Line Piping: Pressurized piping downstream of the Point of Connection to provide water to remote control valves and quick couplers. Normally under constant pressure.

D. Lateral Line Piping: Circuit piping downstream of remote control valves to provide water to sprinkler heads, drip systems or bubblers.

1.4 REFERENCES

A. The following standards will apply to the work of this Section:

a. ASTM-American Society for Testing and Materials

b. IA - The Irrigation Association: Main BMP Document, Landscape Irrigation Scheduling and Water Management Document.

1.5 SUBMITTALS

A. At least thirty (30) days prior to ordering of any materials, the Contractor shall provide manufacturer catalog cut sheet and current printed specifications for each element or component of the irrigation system. Submittals shall be in three ring binders or other similar bound form. Provide five copies of submittals to OAR for distribution. Place cover or index sheet indicating order in submittal document. No material shall be ordered, delivered or any work preceded in the field until the required submittals have need reviewed in its entirety and stamped approved. Delivered material shall match the approved samples.

B. Operation and Maintenance Manual:

a. At least thirty (30) days prior to final inspection, the Contractor shall provide Operation and Maintenance manual to OAR, containing:

i. Manufacturer catalog cut sheet and current printed specifications for each element or component of the irrigation system.

ii. Parts list for each operating element of the system

iii. Manufacturer printed literature on operation and maintenance of operating elements of the system.

iv. Section listing instructions for overall system operation and maintenance. Include directions for Spring Start-up and Winterization.

b. Project Record Copy

i. Maintain at project site one copy of all project documents clearly marked "Project Record Copy". Mark any deviation in material installation on Construction drawings. Maintain and update drawing at least weekly. Project Record Copy to be available to OAR on demand.

ii. Completed Project As-Built Drawings

1. Prior to final inspection, prepare and submit to OAR accurate as-built drawings
2. Show detail and dimension changes made during installation. Show significant details and dimensions that were not shown in original Contract Documents.
3. Field dimension locations of sleeving, points of connection, main line piping, wiring runs not contained in main line pipe trenches, valves and valve boxes, quick coupler valves.
4. Dimensions are to be taken from permanent constructed surfaces, features, or finished edges located at or above finished grade.
5. Controller Map: upon completion of system, place in each controller a color coded copy of the area that controller services: indicating zone number, type of plant material and location on project that zone services. Laminate map with heat shrink clear plastic.

1.6 QUALITY ASSURANCE

A. Acceptance: Do not install work in this section prior to acceptance by OAR.

B. Regulatory Requirements: All work and materials shall be according to any and all rules, regulations or codes, whether they are State or Local laws and ordinances. Contract documents, drawings or specifications may not be construed or interpreted to permit work or materials not conforming to the above codes.

C. Adequate Water Supply: Water supply to this Project exists, installed by others. Connections to these supply lines shall be by this Contractor. Verify that proper connection is available to supply line and is of adequate size. Verify that secondary connection components may be installed if necessary. Perform static pressure test prior to commencement of work. Notify OAR in writing of problems encountered prior to proceeding.

D. Workmanship and Materials:

a. It is the intent of this specification that all material herein specified and shown on the construction documents shall be of the highest quality available and meeting the requirements specified.

b. All work shall be performed in accordance with the best standards of practice relating to the trade.

E. Contractor Qualifications:

a. Contractor shall provide document or resume including at least the following items:

i. That Contractor has been installing sprinklers on commercial projects for five previous consecutive years.

ii. Contractor is licensed to perform Landscape and Irrigation construction in the State of this Project.

iii. Contractor is bondable for the work to be performed.

iv. References of five projects of similar size and scope completed within the last five years. Three of the projects listed shall be local.

v. Listing of suppliers where materials will be obtained for use on this Project.

vi. Project site Foreman or Supervisor has at least five consecutive years of commercial irrigation installation experience. This person shall be a current Certified Irrigation Contractor in good standing as set forth by the Irrigation Association. This person shall be on Project site at least 75% of each working day.

vii. Evidence that Contractor currently employs workers in sufficient quantities to complete Project within time limits that are established by the Contract.

viii. All General laborers or workers on the Project shall be previously trained and familiar with sprinkler installation and have a minimum of one-year experience. Those workers performing tasks related to PVC pipe shall have certificates designated below.

1.7 DELIVERY-STORAGE-HANDLING

A. During delivery, installation and storage of materials for Project, all materials shall be protected from contamination, damage, vandalism, and prolonged exposure to sunlight. All material stored at Project site shall be neatly organized in a compact arrangement and storage shall not disrupt Project Owner or other trades on Project site. All material to be installed shall be handled by Contractor with care to avoid breakage or damage. Damaged materials attributed to Contractor shall be replaced with new at Contractor's expense.

1.8 SEQUENCING

A. Perform site survey, research utility records, contact utility location services. The Contractor shall familiarize himself with all hazards and utilities prior to work commencement. Install sleeving prior to installation of concrete, paving or other permanent site elements. Irrigation system Point of Connection components, backflow prevention and pressure regulation devices shall be installed and operational prior to all downstream components. All main lines shall be thoroughly flushed of all debris prior to installation of any sprinkler heads.

1.9 WARRANTY

A. Contractor shall provide one year Warranty. Warranty shall cover all materials, workmanship and labor. Warranty shall include filling and or repairing depressions or replacing turf or other plantings due to settlement of irrigation trenches or irrigation system elements. Valve boxes, sprinklers or other components settled from original finish grade shall be restored to proper grade. Irrigation system shall have been adjusted to provide proper, adequate coverage of irrigated areas.

1.10 OWNER'S INSTRUCTION

A. After system is installed, inspected, and approved, instruct Owner's Representatives in complete operation and maintenance procedures. Coordinate instruction with references to previously submitted Operation and Maintenance Manual.

1.11 MAINTENANCE

A. Furnish the following items to Owner's Representative:

a. Two quick coupler keys with hose swivels.

b. One of each type or size of quick coupler valve and remote control valve. Five percent of total quantities used of each sprinkler and sprinkler nozzle.

B. Provide the following services:

a. Winterize entire irrigation system installed under this contract. Winterize by 'blow-out' method using compressed air. Compressor shall be capable of minimum of 175 CFM. This operation shall occur at the end of first growing season after need for plant irrigation but prior to freezing. Compressor shall be capable of evacuating system of all water pressure regulation devices. Compressor shall be regulated to not more than 60 PSI. Start up system the following spring after danger of freezing has passed. Contractor shall train Owner's Representative in proper start-up and winterization procedure.

PART 2 - PRODUCTS

2.1 GENERAL NOTES

A. Contractor shall provide materials to be used on this Project. Contractor shall not remove any material purchased for this Project from the Project Site, nor mix Project materials with other Contractor owned materials. Owner retains right to purchase and provide project material.

2.2 POINT OF CONNECTION

A. The Contractor shall connect onto existing irrigation or water main line as needed for Point(s) of Connection. Contractor shall install new main line as indicated.

2.3 CONNECTION ASSEMBLY

A. Secondary water shall be used on this Project. Install filter and RPZ as needed.

2.4 CONTROL SYSTEM

A. Power supply to the irrigation controller shall be provided for by this Contract.

B. Controller shall be as specified in the drawings. Controller shall be surge protected.

a. Installation of wall-mount/ground pedestal timer controllers: Irrigation contractor shall be responsible for this task. Power configuration for wall-mount/ground pedestal timer controllers shall be 120 VAC unless otherwise noted.

b. Locate Controller(s) in general location shown on Construction drawings. Coordinate power supply and breaker allocation with electrical contractor. Contractor shall be responsible for all power connections to Controllers, whether they are wall mount or pedestal mount. Contractor shall coordinate with electrical or other Project trades as needed to facilitate installation of power to controllers.

C. Wires connecting the remote control valves to the irrigation controller are single conductors, type PE. Wire construction shall incorporate a solid copper conductor and polyethylene (PE) insulation with a minimum thickness of 0.045 inches. The wires shall be UL listed for direct burial in irrigation systems and be rated at a minimum of 30 VAC. Paige Electric Co., LP specification number P7079D.

a. A minimum of 24" of additional wire shall be left at each valve, each splice box and at each controller.

b. Common wire shall be white in color, 12 gauge. Control wire shall be red in color, 14 gauge. Spare/extra wire (3 ft.) shall be looped within each valve box of the grouping it is to service.

D. RCV wire splicing connectors shall be 3M brand DBY or DBR. Wire splicing between controller and valves shall be avoided if at all possible. Any wire splices shall be contained within a valve box. Splices within a valve box that contains no control valves shall be stamped 'WIRE SPLICE' or 'WS' on box lid.

2.5 SLEEVING

A. Contractor shall be responsible to protect existing underground utilities and components. Sleeving minimum size shall be 2". Sleeving 2" through 4" in size shall be S/40 PVC solvent weld. Sleeving 6" and larger shall be CL 200 PVC gasketed. Sleeve diameter shall be at least two times the diameter of the pipe within the sleeve. Sleeves shall be extended 6" minimum beyond walk or edge of pavement. Wire or cable shall not be installed in the same sleeve as piping, but shall be installed in separate sleeves. Sleeve ends on sleeve sizes 4" and larger shall be capped with integral corresponding sized PVC slip cap, pressure fit, until used, to prevent contamination. Sleeves shall be installed at appropriate depths for main line pipe or lateral pipe.

2.6 MAIN LINE PIPE

A. All main line pipe 4" and larger shall be Class 200 gasketed bell end. All main line pipe 3" in size and smaller shall be Schedule 40 PVC solvent weld bell end.

a. Maximum flows allowed through main line pipe shall be:

3/4"	8 GPM
1"	12 GPM
1-1/2"	30 GPM
2"	53 GPM
2-1/2"	75 GPM
3"	110 GPM
4"	180 GPM

b. Main line pipe shall be buried with 24" cover

2.7 MAIN LINE FITTINGS

A. All main line fittings 3" and larger shall be gasketed ductile iron material. All ductile iron fittings having change of direction shall have proper concrete thrust block installed. All main line fittings smaller than 3" in size shall be Schedule 80 PVC.

2.8 ISOLATION VALVES

A. Isolation valves 3" and larger shall be Waterous brand model 2500 cast iron gate valve, resilient wedge, push on type, with 2" square operating nut. Place sleeve of 6" or larger pipe over top of valve vertically and then extend to grade. Place 10" round valve box over sleeve at grade.

B. Isolation valves 2-1/2" and smaller shall be Apollo brand 70 series brass ball valves, contained in a Carson Standard size valve box. Valves shall be installed with S/80 PVC TOE Nipples on both sides of the valve. Valve shall be placed so that the handle is vertical toward the top of the valve box in the 'off' position.

2.9 MANIFOLDS

A. Action Manifold fittings shall be used to create unions on both sides of each control valve, allowing the valve to be removed from the box without cutting piping. Valves shall be located in boxes with ample space surrounding them to allow access for maintenance and repair. Where practical, group remote control valves in close proximity, and protect each grouping with a manifold isolation valve as shown in details. Manifold Main Line (or Sub-Main Line) and all manifold components and isolation valves shall be at least as large as the largest diameter lateral served by the respective manifold.

2.10 REMOTE CONTROL VALVES

A. Remote control valves shall be as specified on the drawings. Remote control valves shall be located separately and individually in separate control boxes.

2.11 MANUAL CONTROL VALVES

A. Quick coupler valve shall be attached to the manifold sub-main line using a Lasco G17S212 swing joint assembly with snap-lock outlet and brass stabilizer elbow. Quick coupler valve shall be placed within a Carson 10" round valve box. Top of quick coupler valve cover shall allow for complete installation of valve box lid, but also allow for insertion and operation of key. Base of quick coupler valve and top of quick coupler swing joint shall be encased in ¾" gravel. Contractor shall not place quick coupler valves further than 200 feet apart, to allow for spot watering or supplemental irrigation of new plant material. Quick coupler valve at POC shall not be eliminated or relocated.

2.12 LATERAL LINE PIPE

A. All lateral piping shall be Schedule 40 PVC, solvent weld, and bell end. Lateral pipe shall be buried with 12-18" of cover typically. Lateral pipe shall be ¾", 1", 1 ¼", 1 ½" or 2" in size as indicated on Construction Drawings.

2.13 LATERAL LINE FITTINGS

A. All lateral line fittings shall be S/40 PVC

2.14 SPRAY SPRINKLERS

A. Spray head sprinklers shall be as specified on the drawings. Nozzles shall be as specified on the drawings.

2.15 VALVE BOXES

A. Rainbird valve boxes shall be used on this project. Sizes are as directed in these Specifications, detail sheets or plan sheets. Valve boxes shall be centered over the control valve or element they cover. Valve box shall be sized large enough to allow ample room for services access, removal or replacement of valve or element. Valve box shall be set to flush to finish grade of topsoil or barked areas. Contractor shall provide extensions or stack additional valve boxes as necessary to bring valve box pit to proper grade.

2.16 IMPORT BACKFILL

A. All main line pipe, lateral line pipe and other irrigation elements shall be bedded and backfilled with clean soil, free of rocks 1" and larger. Contractor shall furnish and install additional backfill material as necessary due to rocky conditions. Trenches and other elements shall be compacted and/or water settled to eliminate settling. Debris from trenching operations un-usable for fill shall be removed from project and disposed of properly by Contractor.

2.17 OTHER PRODUCTS

A. Substitution of equivalent products is subject to the OAR's approval and must be designated as accepted in writing.

a. The Contractor shall provide materials to make the system complete and operational.

PART 3 - EXECUTION

3.1 PREPARATION

A. Contractor shall repair or replace work damaged by irrigation system installation. If damaged work is new, repair or replacement shall be performed by the original installer of that work. The existing landscape of this Project shall remain in place. Contractor shall protect and work around existing plant material. Coordination of trench and valve locations shall be laid out for the OAR prior to any excavation occurring. Plant material deemed damaged by the OAR shall be replaced with new plant material at Contractor's expense. Contractor shall not cut existing tree roots larger than 2" to install this Project. Route pipe, wire and irrigation elements around tree canopy drip line to minimize damage to tree roots. Contractor shall have no part of existing system used by other portions of site landscape without water for more than 24 hours at a time.

3.2 TRENCHING AND BACKFILLING

A. Pulling of pipe shall not be permitted on this project. Over excavate trenches both in width and depth. Ensure base of trench is rock or debris free to protect pipe and wire. Grade trench base to ensure flat, even support of piping. Backfill with clean soil or import material. Contractor shall backfill no less than 2" around entire pipe with clean, rock free fill. Main line piping and fittings shall not be backfilled until OAR has inspected and pipe has passed pressure testing. Perform balance of backfill operation to eliminate any settling.

3.3 SLEEVING

A. Sleeve all piping and wiring that pass under paving or hardscape features. Wiring shall be placed in separate sleeving from piping. Sleeves shall be positioned relative to structures or obstructions to allow for pipe or wire within to be removed if necessary.

3.4 GRADES AND DRAINAGE

A. Place irrigation pipe and other elements at uniform grades. Winterization shall be by evacuation with compressed air. Automatic drains shall not be installed on this Project. Manual drains shall only be installed at POC where designated on Construction Drawings.

3.5 PVC PIPE

A. Install pipe to allow for expansion and contraction as recommended by pipe manufacturer.

B. Install main line pipes with 18" of cover, lateral line pipes with 12" of cover.

C. Drawings show diagrammatic or conceptual location of piping - Contractor shall install piping to minimize change of direction, avoid placement under large trees or large shrubs, avoid placement under hardscape features.

D. Plastic pipe shall be cut squarely. Burrs shall be removed. Spigot ends of pipes 3" and larger shall be beveled.

E. Pipe shall not be glued unless ambient temperature is at least 50 degress F. Pipe shall not be glued in rainy conditions unless properly tented. All solvent weld joints shall be assembled using IPS 711 glue and P70 primer according to manufacturer's specification, no exceptions. All workers performing glue operations shall provide evidence of certification. Glued main line pipe shall cure a minimum of 24 hours prior to being energized. Lateral lines shall cure a minimum of 2 hours prior to being energized and shall not remain under constant pressure unless cured for 24 hours.

F. Appropriate thrust blocking shall be performed on fittings 3" and larger. All threaded joints shall be wrapped with Teflon tape or paste unless directed by product manufacturer or sealing by o-ring.

3.6 CONTROLLERS

A. All grounding for pedestal controllers shall be as directed by controller manufacturer and ASIC guidelines, not to exceed a resistance reading of 5 OHMs.

B. Locate controllers in protected, inconspicuous places, when possible. Coordinate location of pedestal controllers with Landscape Architect to minimize visibility.

C. Coordinate location of wall mount controllers with building or electrical Contractor to facilitate electrical service and future maintenance needs. Wall mount shall be securely fastened to surface. If exterior mounted, wall mount controllers shall have electrical service wire and field control wire in separate, appropriate sized weatherproof electrical conduit, PVC pipe shall not be used.

D. Wiring under hardscape surfaces shall be placed continuously in conduit. Contractor shall be responsible to coordinate sleeving needs for conduit or sweeps elbows from exterior to interior of building.

E. Pedestal controllers shall be placed upon VIT-Strong Box Quick Pad as per manufacturer's recommendations. Controllers shall be oriented such that Owner's Representative maintenance personnel may access easily and perform field system tests efficiently.

F. Place Standard valve box at base of controller or nearby to allow for three to five feet of slack field control wire to be placed at each controller. This Contractor shall provide conduit access if needed for Electrical Contractor. Electrical supply and installation, as well as hook-up to controller shall be by this Contractor.

G. Electrical contractor is in charge of providing 1.5" conduit from controller to outside landscape area. Provide power and room for controller. Provide ethernet to hardwire power into the controller.

3.7 VALVES

A. Isolation valves, remote control valves, and quick coupler valves shall be installed according to manufacturer recommendation and Contract Specifications and Details.

B. Valve boxes shall be set over valves so that all parts of the valve can be reached for service.

C. Valve box and lid shall be set to be flush with finished grade. Only one remote control valve may be installed in a valve box. Place a minimum of 4" of ¾" washed gravel beneath valve box for drainage. Bottom of remote control valve shall be a minimum of 2" above gravel.

3.8 SPRINKLER HEADS

A. No sprinkler shall be located closer than 6" to walls, fences, or buildings.

B. Heads adjacent to walks, curbs, or paths shall be located at grade and 2" away from hardscape.

C. Control valves shall be opened. Then fully flush lateral line pipe and swing joints prior to installation of sprinklers.

D. Spray heads shall be installed and flushed again prior to installation of nozzles.

E. Contractor shall be responsible for adjustment if necessary due to grade changes during landscape construction.

3.9 FIELD QUALITY CONTROL

A. Main line pipes shall not be backfilled or accepted until the system has been tested for 2 hours at 100 psi.

B. Main line pressure test shall include all pipe and components from the point of connection to the upstream side of remote control valves. Test shall include all manifold components under constant pressure. Piping may be tested in sections that can be isolated.

C. Contractor shall provide pressurized water pump to increase or boost pressure where existing static pressure is less than 100 psi.

D. Schedule testing with OAR 48 hours in advance for approval.

E. Leaks or defects shall promptly be repaired or rectified at the Contractors expense and retested until able to pass testing.

F. Grounding resistance at pedestal controller shall also be tested and shall not exceed 5 OHMs.

3.10 ADJUSTMENT

A. Sprinkler heads shall be adjusted to proper height when installed. Changes in grade or adjustment of head height after installation shall be considered a part of the original contract and at Contractor's expense.

B. Adjust all sprinkler heads for arc, radius, proper trim and distribution to cover all landscaped areas that are to be irrigated.

C. Adjust sprinklers so they do not water buildings, structures, or other hardscape features.

D. Adjust run times of station to meet needs of plant material the station services.

3.11 CLEANING

A. Contractor shall be responsible for cleanliness of jobsite. Work areas shall be swept cleanly and picked up daily.

B. Open trenches or hazards shall be protected with yellow caution tape.

C. Contractor is responsible for removal and disposal of offsite trash and debris generated as a result of this Project.

D. OAR shall perform periodic as well as a final cleanliness inspection.

E. Contractor shall leave Project in at least a 'broom clean' condition.

END OF SECTION

IRRIGATION NOTES

1. BEFORE WORK IS TO COMMENCE, BLUE STAKES/DIG LINE IS TO BE CALLED AND NOTIFIED. IF ANY DAMAGE TO UTILITIES HAPPEN DURING CONSTRUCTION, THE CONTRACTOR SHALL REPAIR IT AT THEIR EXPENSE WITH NO ADDITIONAL COST TO THE OWNER.
2. CONTRACTOR SHALL APPLY AND PAY FOR ALL NECESSARY PERMITS IN ACCORDANCE WITH CITY AND/OR COUNTY CODES AND COMPLY WITH SPECIFICATIONS AND DRAWINGS.
3. INVESTIGATE TO MAKE SURE THAT THE IRRIGATION SYSTEM IS, IN FACT, BEING CONNECTED TO A SECONDARY SYSTEM. IF IT IS NOT CONNECTED TO SECONDARY, CONTACT THE OWNER AND LANDSCAPE ARCHITECT TO COORDINATE A CULINARY SYSTEM AND REQUIRED COMPONENTS. A FUNCTIONING AMIAD FILTER IS TO BE USED AT THE POINT OF CONNECTION.
4. VERIFY THAT THE POINT OF CONNECTION IS IN THE CORRECT LOCATION BEFORE INSTALLATION. ALL CONNECTIONS ON THIS PROJECT ARE TO SECONDARY WATER AND SHOULD BE NOTED AS SUCH; THEREFORE, ALL PARTS MUST MEET WATER STANDARDS THAT PERTAIN TO SECONDARY WATER.USE PURPLE VALVE BOXES FOR SECONDARY WATER SYSTEMS.
5. ON OCCASION AND FOR GRAPHIC PURPOSES ONLY, THE IRRIGATION SYSTEM MIGHT BE SHOWN IN HARDSCAPE AREAS. THIS IRRIGATION IS TO BE PLACED IN LANDSCAPED AREAS ON THE PROPERTY SITE.
6. CONTRACTOR SHALL USE ONLY COMMERCIAL GRADE IRRIGATION PRODUCTS. THIS INCLUDES PIPE TO BE SCHEDULE 40 PVC OR BETTER. NO POLY PIPE IS TO BE USED. FITTINGS UP TO 1-1/2" MUST BE SCHEDULE 40 OR BETTER. FITTINGS LARGER THAN 1-1/2" SHALL BE SCHEDULE 80 OR BETTER. CONTRACTOR IS RESPONSIBLE FOR ENSURING ACCURATE COUNTS AND QUANTITIES OF ALL IRRIGATION MATERIALS FOR BIDDING AND INSTALLATION.
7. MAIN LINES SHALL BE A MINIMUM OF 24" DEEP AND LATERAL LINES A MINIMUM OF 12" DEEP. NO ROCK GREATER THAN 1/2" DIAMETER SHALL BE ALLOWED IN TRENCHES. TRENCHING BACKFILL MATERIAL SHALL BE COMPACTED TO PROPER FINISHED GRADE.
8. NO IRRIGATION MAIN LINE MAY BE LOCATED WITHIN 5 FEET OF ANY STRUCTURE.
9. TO AVOID PIPE DAMAGE, ADJUST LOCATION OF PIPE TO NOT BE DIRECTLY UNDER PLANT MATERIALS. VALVE BOXES ARE PREFERRED TO BE IN PLANTER BEDS INSTEAD OF THE LAWN. SYSTEM IS TO BE WINTERIZED IN THE LATE FALL.
10. PLAN INDICATES 100% OR BETTER HEAD TO HEAD COVERAGE. SHOULD CONTRACTOR FIND DISCREPANCIES DUE TO NECESSARY FIELD ADJUSTMENTS, CONTACT LANDSCAPE ARCHITECT FOR IRRIGATION CORRECTION.
11. DRIP IRRIGATION TO BE INSTALLED PER DETAILS. CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS. TUBING SHOULD REST TOWARD OUTER EDGE OF ROOTBALL AND NOT AGAINST TRUNK OF PLANT.
12. A QUICK COUPLER SHALL BE INSTALLED AT POINT OF CONNECTION TO ALLOW BLOW OUT OF SYSTEM BY AIR COMPRESSOR AT END OF EACH SEASON.
13. INSTALL SLEEVES FOR ALL PIPES AND WIRE CONDUIT THAT ARE PLACED UNDER PAVEMENT AND SIDEWALKS. SLEEVES SHALL BE 2 SIZES LARGER THAN PIPE BEING PLACED INTERNALLY. WIRE CONDUIT SHALL BE INSTALLED IN CLASS 200 PIPE. AT ANY DIRECTIONAL CHANGE THAT OCCURS, A JUNCTION BOX IS TO PLACED.
14. CONDUITS CAN NOT BE SHARED BY WATER AND ELECTRICAL LINES. ALL WIRE TO BE PUT IN PVC CONDUIT. ALL WIRE CONNECTIONS TO BE PLACED IN A VALVE BOX. ALL WIRE CONNECTIONS TO USE WATERPROOF WIRE CONNECTORS WITH AT LEAST 3' OF EXTRA WIRE. PROVIDE PLENTY OF EXTRA WIRE AT EVERY DIRECTIONAL CHANGE. INSULATED 14 GAUGE COPPER TO BE USED FOR ALL CONTROL WIRES AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
15. CONTRACTOR TO INSTALL LIGHTNING ARRESTOR AND GROUNDING RODS ON SITE PER MANUFACTURER'S RECOMMENDATIONS, SEE DETAILS.
16. CONTRACTOR TO SEPARATE SYSTEM (CONTROLLER, VALVES, AND DIFFERENT COLORED WIRE) FROM CITY MAINTAINED PROPERTY AND HOA/OWNER MAINTAINED PROPERTY.
17. DUCT TAPE ALL SLEEVES TO PREVENT SOIL OR OTHER DEBRIS ENTERING PIPE. IDENTIFY ALL SLEEVES BY WOOD OR PVC STAKES AND SPRAY PAINT WITH MARKING PAINT. REMOVE STAKES ONCE IRRIGATION SYSTEM IS COMPLETE.
18. TO PREVENT EROSION AND LOW POINT DRAINAGE CONTRACTOR SHALL INSTALL CHECK VALVES
19. LOCATE SPRAY HEADS NO CLOSER THAN 6" FROM WALLS, FENCES OR BUILDINGS AND 2" AWAY FROM WALKS, PATHS OR CURBS.
20. PRESSURE TEST MAINLINE FOR LEAKS PRIOR TO BACKFILLING. CONTACT LANDSCAPE ARCHITECT/OWNER AT THIS TIME FOR COMPLIANCE.
21. CONTRACTOR TO CONSULT WITH OWNER ON EXACT LOCATION OF CONTROLLER. CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR AND OWNER FOR THE POWER SUPPLY. INSTALL ALL PER MANUFACTURER'S SPECIFICATIONS. CONTRACTOR SHALL INSTALL A RAIN SENSOR WITH THE CONTROLLER UNLESS OTHERWISE DIRECTED BY OWNER OR LANDSCAPE ARCHITECT.
22. LATERAL LINES SHALL BE NO SMALLER THAN 3/4". LANDSCAPE CONTRACTOR TO ENSURE THE FOLLOWING PIPE SIZES DO NOT EXCEED THE SUGGESTED GPM LISTED BELOW:

I	3/4"	8 GPM
II	1"	12 GPM
III	1-1/2'	30 GPM
IV	2"	53 GPM
V	2-1/2"	75 GPM
VI	3"	110 GPM
VII	4"	180 GPM

WATERING SCHEDULE

90 Day Establishment Period Irrigation Schedule

Hi/Low Water Use Zones	TYPE	IR HEAD	AMT. H20	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
Hi Water Use	TURF	MP ROTATOR	.5 INCH	15 MIN.	15 MIN.	15 MIN.	15 MIN.	15 MIN.	15 MIN.	15 MIN.	Participate in a water check to determine
Medium to Low Water Use	SHRUBS	DRIP	2 GAL/HR.		2 HOURS			2 HOURS			precipitation rate of sprinkler system.
Xeric Water Use	SHRUBS	DRIP	2 GAL/HR.		2 HOURS						

Note: Begin irrigation 4:00 am. Use cycle and soak method in clay soils-divide into 3 waterings for each turf irrigation event. Shrubs to be watered so soil is moist 6" below root ball. Do not overwater shrubs, allow to dry between waterings especially in clay soils. Watch for water stress.

Regular Irrigation Schedule: Begin Spring Watering May 15 (Turf irrigation event once every 5-7 days; Shrubs 2-4 times/month)

Hi/Low Water Use Zones	TYPE	IR HEAD	AMT. H20	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
Hi Water Use	TURF	MP ROTATOR	.5 INCH		60 MIN.						Participate in a water check to determine
Medium to Low Water Use	SHRUBS	DRIP	2 GAL/HR.			2 HOURS					precipitation rate of sprinkler system.
	SHRUBS	DRIP	No Water								

Note: Begin irrigation 4:00 am. Use cycle and soak method in clay soils-divide into 3 waterings for each turf irrigation event.
Do not overwater shrubs, allow to dry between waterings especially in clay soils. Watch for water stress. Days of watering may vary based on local restrictions

Regular Irrigation Schedule: Begin Summer Watering June 15 (Turf irrigation event once every 2-3 days; Shrubs 1 time/week)

Hi/Low Water Use Zones	TYPE	IR HEAD	AMT. H20	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
Hi Water Use	TURF	MP ROTATOR	.5 INCH		60 MIN.		60 MIN.		60 MIN.		Participate in a water check to determine
Medium to Low Water Use	SHRUBS	DRIP	2 GAL/HR.			2 HOURS					precipitation rate of sprinkler system.
Xeric Water Use	SHRUBS	DRIP	2 GAL/HR.			1 HOUR					

Note: Begin irrigation 4:00 am. Use cycle and soak method in clay soils-divide into 3 waterings for each turf irrigation event.
Do not overwater shrubs, allow to dry between waterings especially in clay soils. Watch for water stress. Days of watering may vary based on local restrictions
Reference Utah DNR weekly watering guide: https://conservewater.utah.gov/weekly-lawn-watering-guide/

Regular Irrigation Schedule: Begin Fall Watering September 1-End Fall Watering October 15 (Turf irrigation event once every 5-7 days; Shrubs 2-4 time/month)

Hi/Low Water Use Zones	TYPE	IR HEAD	AMT. H20	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
Hi Water Use	TURF	MP ROTATOR	.5 INCH		60 MIN.						Participate in a water check to determine
Medium to Low Water Use	SHRUBS	DRIP	2 GAL/HR.			2 HOURS					precipitation rate of sprinkler system.
Xeric Water Use	SHRUBS	DRIP	No Water								

Note: Begin irrigation 4:00 am. Use cycle and soak method in clay soils-divide into 3 waterings for each turf irrigation event.
Do not overwater shrubs, allow to dry between waterings especially in clay soils. Watch for water stress. Days of watering may vary based on local restrictions

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t. 385.247.8570

LICENSED LANDSCAPE ARCHITECT
JEREMY AINSWORTH
8128121-5301
03/15/2024
ELECTRONIC SEAL
STATE OF UTAH

consultants

CARENOW URGENT CARE CLINIC T.I.

175 W. 500 S.
BOUNTIFUL, UT

PROJECT NO:	UT-24034
DRAWN BY:	JA
CHECKED BY:	JA
ISSUE DATE:	2024/03/15

REVISION	DATE	DESCRIPTION
-	-	-

IRRIGATION PLAN IR-101

CARENOW T.I.

IRRIGATION PLAN

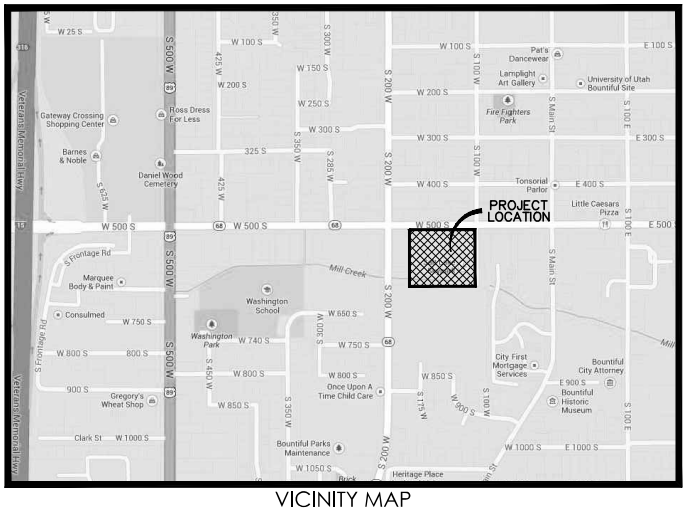
IR-101

Stantec

THESE PLANS ARE FOR THE ORIGINAL BUILDING.

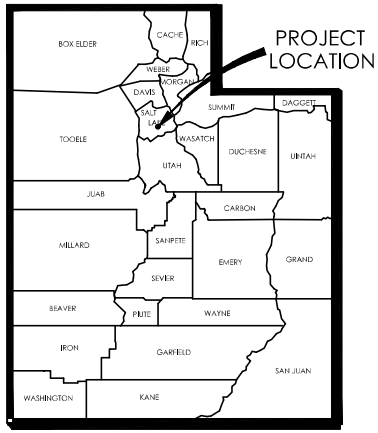
SCOPE OF PROPOSED WORK IS INTERIOR T.I. - NO CIVIL SCOPE REQ'D.

Wasatch



VICINITY MAP

SITE LOCATION MAP



STATE OF UTAH

WASATCH COMMERCIAL MANAGEMENT, INC

CORNER BAKERY CAFE

COMMERCIAL DEVELOPMENT SUBMITTAL

December 20, 2013

Project Number: 186201153

INDEX OF DRAWINGS

OWNER:
WASATCH COMMERCIAL MANAGEMENT, INC
CONTACT: MATT RINDLISBACHER
299 SOUTH MAIN STREET, STE. 2400
SALT LAKE CITY, UTAH 84111
PHONE: (801) 961-1102
EMAIL: matt.rindlisbacher@netwasatch.com

ENGINEER:
STANTEC CONSULTING SERVICES INC.
CONTACT: JACOB JENSEN, P.E. OR ERIC WINTERS
3995 SOUTH 700 EAST STE. 300
SALT LAKE CITY, UTAH 84107
PHONE: (801) 261-0090
FAX: (801) 266-1671
EMAIL: jacob.jensen@stantec.com or eric.winters@stantec.com

REGISTERED PROFESSIONAL ENGINEER No. 4775487 JACOB R. JENSEN STATE OF UTAH

CALL BEFORE YOU DIG BLUE STAKES 1-800-662-4111

THE CONTRACTOR SHALL CAREFULLY READ ALL OF THE NOTES AND SPECIFICATIONS, THE CONTRACTOR SHALL BE SATISFIED AS TO THEIR TRUE MEANING AND INTENT AND SHALL BE RESPONSIBLE FOR COMPLYING WITH EACH.

GENERAL NOTES:

1) ALL IMPROVEMENTS SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH THE FOLLOWING: CITY OF DRAPER STANDARD SPECIFICATIONS, SEPTEMBER 1998 UNLESS OTHERWISE STATED. SOUTH VALLEY SEWER DISTRICT STANDARD SPECIFICATIONS, LATEST EDITION, AND ALL AMENDMENTS THERE TO DATE, AND THE UTAH PUBLIC WORKS GENERAL CONDITIONS AND STANDARD SPECIFICATIONS FOR CONSTRUCTION IN ITS LATEST EDITION (UPW).

2) PRIOR TO PERFORMING ANY WORK, THE CONTRACTOR SHALL CONTACT BOUNTIFUL CITY FOR A PRE-CONSTRUCTION CONFERENCE.

3) IT IS INTENDED THAT THESE PLANS AND SPECIFICATIONS REQUIRE ALL LABOR AND MATERIALS NECESSARY AND PROPER FOR THE WORK CONTEMPLATED AND THAT THE WORK BE COMPLETED IN ACCORDANCE WITH THEIR TRUE INTENT AND PURPOSE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY REGARDING ANY DISCREPANCIES OR AMBIGUITIES WHICH MAY EXIST IN THE PLANS OR SPECIFICATIONS. THE ENGINEER'S INTERPRETATION THEREOF SHALL BE CONCLUSIVE.

4) WHERE THE PLANS OR SPECIFICATIONS DESCRIBE PORTIONS OF THE WORK IN GENERAL TERMS BUT NOT IN COMPLETE DETAIL, IT IS UNDERSTOOD THAT ONLY THE BEST GENERAL PRACTICE IS TO PREVAIL AND THAT ONLY MATERIALS AND WORKMANSHIP OF THE FIRST QUALITY ARE TO BE USED.

5) THE CONTRACTOR SHALL BE SKILLED AND REGULARLY ENGAGED IN THE GENERAL CLASS AND TYPE OF WORK CALLED FOR IN THE PROJECT PLANS AND SPECIFICATIONS. THEREFORE, THE OWNER IS RELYING UPON THE EXPERIENCE AND EXPERTISE OF THE CONTRACTOR, IT SHALL BE EXPECTED THAT PRICES PROVIDED WITHIN THE CONTRACT DOCUMENTS SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY AND PROPER FOR THE WORK CONTEMPLATED AND THAT THE WORK BE COMPLETED IN ACCORDANCE WITH THEIR TRUE INTENT AND PURPOSE. THE CONTRACTOR SHALL BE COMPETENT, KNOWLEDGEABLE AND HAVE SPECIAL SKILLS ON THE NATURE, EXTENT AND INHERENT CONDITIONS OF THE WORK TO BE PERFORMED. CONTRACTOR SHALL ALSO ACKNOWLEDGE THAT THERE ARE CERTAIN PECULIAR AND INHERENT CONDITIONS EXISTENT IN THE CONSTRUCTION OF THE PARTICULAR FACILITIES, WHICH MAY CREATE, DURING THE CONSTRUCTION PROGRAM, UNUSUAL OR PECULIAR UNSAFE CONDITIONS HAZARDOUS TO PERSONS, PROPERTY AND THE ENVIRONMENT. CONTRACTOR SHALL BE AWARE OF SUCH PECULIAR RISKS AND HAVE THE SKILL AND EXPERIENCE TO FORESEE AND TO ADOPT PROTECTIVE MEASURES TO ADEQUATELY AND SAFELY PERFORM THE CONSTRUCTION WORK WITH RESPECT TO SUCH HAZARDS.

6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LICENSES REQUIRED FOR THE CONSTRUCTION AND COMPLETION OF THE PROJECT, AND SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS AND CONDITIONS OF ALL PERMITS AND APPROVALS APPLICABLE TO THIS PROJECT. THE CONTRACTOR SHALL ENSURE THAT THE NECESSARY RIGHTS-OF-WAY, EASEMENTS, AND/OR PERMITS ARE SECURED PRIOR TO CONSTRUCTION.

7) CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT WHERE APPLICABLE FOR ANY WORK DONE WITHIN RIGHTS-OF-WAY OR EASEMENTS FROM BOUNTIFUL CITY AND/OR DAVIS COUNTY, AND/OR UDOT. CONTRACTOR SHALL NOTIFY CITY, COUNTY, AND/OR STATE, 24 HOURS IN ADVANCE OF COMMENCING THE WORK, OR AS REQUIRED BY SAID PERMITS.

8) THE CONTRACTOR SHALL, AT THE TIME OF BIDDING, AND THROUGHOUT THE PERIOD OF THE CONTRACT, BE LICENSED IN THE STATE OF UTAH AND SHALL BE BONDABLE FOR AN AMOUNT EQUAL TO OR GREATER THAN THE AMOUNT BID AND TO DO THE TYPE OF WORK CONTEMPLATED IN THE PLANS AND SPECIFICATIONS. CONTRACTOR SHALL BE SKILLED AND REGULARLY ENGAGED IN THE GENERAL CLASS AND TYPE OF WORK CALLED FOR IN THE PLANS AND SPECIFICATIONS.

9) CONTRACTOR SHALL INSPECT THE SITE OF THE WORK PRIOR TO BIDDING TO SATISFY THEMSELVES BY PERSONAL EXAMINATION OR BY SUCH OTHER MEANS AS THEY MAY PREFER, OF THE LOCATION OF THE PROPOSED WORK, AND OF THE ACTUAL CONDITIONS OF AND AT THE SITE OF WORK.

IF, DURING THE COURSE OF THEIR EXAMINATION, A BIDDER FINDS FACTS OR CONDITIONS WHICH APPEAR TO THEM TO BE IN CONFLICT WITH THE LETTER OR SPIRIT OF THE PROJECT PLANS AND SPECIFICATIONS, THEY SHALL CONTACT THE OWNER/ENGINEER FOR ADDITIONAL INFORMATION AND EXPLANATION BEFORE SUBMITTING THEIR BID.

SUBMISSION OF A BID BY THE CONTRACTOR SHALL CONSTITUTE ACKNOWLEDGMENT THAT, IF AWARDED THE CONTRACT, THEY HAVE RELIED AND ARE RELYING ON THEIR OWN EXAMINATION OF (1) THE SITE OF THE WORK, (2) ACCESS TO THE SITE, AND (3) ALL OTHER DATA AND MATTERS REQUISITE TO THE FULFILLMENT OF THE WORK AND ON THEIR OWN KNOWLEDGE OF EXISTING FACILITIES ON AND IN THE VICINITY OF THE SITE OF THE WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.

THE INFORMATION PROVIDED BY THE OWNER OR THE ENGINEER IS NOT INTENDED TO BE A SUBSTITUTE FOR, OR A SUPPLEMENT TO THE INDEPENDENT VERIFICATION BY THE CONTRACTOR TO THE EXTENT SUCH INDEPENDENT INVESTIGATION OF SITE CONDITIONS IS DEEMED NECESSARY OR DESIRABLE BY THE CONTRACTOR. CONTRACTOR SHALL ACKNOWLEDGE THAT THEY HAVE NOT RELIED SOLELY UPON OWNER OR ENGINEER FURNISHED INFORMATION REGARDING SITE CONDITIONS IN PREPARING AND SUBMITTING THEIR BID.

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10) THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, BARRICADES, SIGNS, FLAGMEN OR OTHER DEVICES NECESSARY FOR PUBLIC SAFETY.

11) THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL WATER, POWER, SANITARY FACILITIES AND TELEPHONE SERVICES AS REQUIRED FOR THE CONTRACTORS USE DURING CONSTRUCTION.

12) THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY FIELD CHANGES MADE WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE OWNER AND/OR ENGINEER.

13) THE CONTRACTOR SHALL EXERCISE DUE CAUTION AND SHALL CAREFULLY PRESERVE BENCH MARKS, CONTROL POINTS, REFERENCE POINTS AND ALL SURVEY STAKES, AND SHALL BEAR ALL EXPENSES FOR REPLACEMENT AND/OR ERRORS CAUSED BY THEIR UNNECESSARY LOSS OR DISTURBANCE.

14) THE CONTRACTOR AGREES THAT:

A. THEY SHALL BE RESPONSIBLE TO CLEAN THE JOB SITE AT THE END OF EACH PHASE OF WORK.

B. THEY SHALL BE RESPONSIBLE TO REMOVE AND DISPOSE OF ALL TRASH, SCRAP AND UNUSED MATERIAL AT THEIR OWN EXPENSE IN A TIMELY MANNER.

C. THEY SHALL BE RESPONSIBLE TO MAINTAIN THE SITE IN A NEAT, SAFE AND ORDERLY MANNER AT ALL TIMES.

D. THEY SHALL BE RESPONSIBLE TO KEEP MATERIALS, EQUIPMENT, AND TRASH OUT OF THE WAY OF OTHER CONTRACTORS SO AS NOT TO DELAY THE JOB. FAILURE TO DO SO WILL RESULT IN A DEDUCTION FOR THE COST OF CLEAN UP FROM THE FINAL PAYMENT.

E. THEY SHALL BE RESPONSIBLE FOR THEIR OWN SAFETY, TRAFFIC CONTROL, PERMITS, RETESTING AND REINSPECTIONS AT THEIR OWN EXPENSE.

F. UNLESS OTHERWISE NOTED ALL EXCESS SOILS AND MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE LAWFULLY DISPOSED OF OFF SITE AT THE CONTRACTOR'S EXPENSE.

15) THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

16) DUST TO BE CONTROLLED 24 HOURS PER DAY, 7 DAYS PER WEEK, AS CONDITIONS DICTATE.

17) CONSTRUCTION STAKING FOR LIMITS OF DISTURBANCE INCLUDING CONSTRUCTION AND SILT FENCES, GRADING, CURB, GUTTER, SIDEWALK, SANITARY SEWER, STORM DRAIN, WATER, AND ELECTROLIERS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

18) FOR ALL WORK WITHIN PUBLIC RIGHTS-OF-WAY OR EASEMENTS, THE CONTRACTOR SHALL PRESERVE THE INTEGRITY AND LOCATION OF ANY AND ALL PUBLIC UTILITIES AND PROVIDE THE NECESSARY CONSTRUCTION TRAFFIC CONTROL. CONTRACTOR SHALL, THROUGH THE ENCROACHMENT PERMIT PROCESS, VERIFY WITH THE NECESSARY REGULATORY AGENCIES, THE NEED FOR ANY TRAFFIC ROUTING PLAN. IF A PLAN IS REQUIRED, CONTRACTOR SHALL PROVIDE A PLAN AND RECEIVE PROPER APPROVALS PRIOR TO BEGINNING CONSTRUCTION.

19) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATELY SCHEDULING INSPECTION AND TESTING OF ALL FACILITIES CONSTRUCTED UNDER THIS CONTRACT. ALL TESTING SHALL CONFORM TO THE REGULATORY AGENCY'S STANDARD SPECIFICATIONS. ALL TESTING AND INSPECTION SHALL BE PAID FOR BY THE OWNER; ALL RE-TESTING AND/OR RE-INSPECTION SHALL BE PAID FOR BY THE CONTRACTOR.

20) IF EXISTING IMPROVEMENTS NEED TO BE DISTURBED AND/OR REMOVED FOR THE PROPER PLACEMENT OF IMPROVEMENTS TO BE CONSTRUCTED BY THESE PLANS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING IMPROVEMENTS FROM DAMAGE. COST OF REPLACING OR REPAIRING EXISTING IMPROVEMENTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS REQUIRING REMOVAL AND/OR REPLACEMENT OF EXISTING IMPROVEMENTS. THERE WILL BE NO EXTRA COST DUE THE CONTRACTOR FOR REPLACING OR REPAIRING EXISTING IMPROVEMENTS.

21) WHENEVER EXISTING FACILITIES ARE REMOVED, DAMAGED, BROKEN, OR CUT IN THE INSTALLATION OF THE WORK COVERED BY THESE PLANS OR SPECIFICATIONS, SAID FACILITIES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE, AFTER PROPER BACKFILLING AND/OR CONSTRUCTION, WITH MATERIALS EQUAL TO OR BETTER THAN THE MATERIALS USED IN THE ORIGINAL EXISTING FACILITIES. THE FINISHED PRODUCT SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER, THE ENGINEER, AND THE RESPECTIVE REGULATORY AGENCY.

22) THE CONTRACTOR SHALL MAINTAIN A NEATLY MARKED SET OF FULL-SIZE AS-BUILT RECORD DRAWINGS SHOWING THE FINAL LOCATION AND LAYOUT OF ALL MECHANICAL; ELECTRICAL AND INSTRUMENTATION EQUIPMENT; PIPING AND CONDUITS; STRUCTURES AND OTHER FACILITIES. THE AS-BUILTS OF THE ELECTRICAL SYSTEM SHALL INCLUDE THE STREET LIGHT LAYOUT PLAN SHOWING LOCATION OF LIGHTS, CONDUITS, CONDUCTORS, POINTS OF CONNECTIONS TO SERVICES, PULLBOXES, AND WIRE SIZES. AS-BUILT RECORD DRAWINGS SHALL REFLECT CHANGE ORDERS, ACCOMMODATIONS, AND ADJUSTMENTS TO ALL IMPROVEMENTS CONSTRUCTED. WHERE NECESSARY, SUPPLEMENTAL DRAWINGS SHALL BE PREPARED AND SUBMITTED BY THE CONTRACTOR.

PRIOR TO ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL DELIVER TO THE ENGINEER, ONE SET OF NEATLY MARKED AS-BUILT RECORD DRAWINGS SHOWING THE INFORMATION REQUIRED ABOVE. AS-BUILT RECORD DRAWINGS SHALL BE REVIEWED AND THE COMPLETE AS-BUILT RECORD DRAWING SET SHALL BE CURRENT WITH ALL CHANGES AND DEVIATIONS REDLINED AS A PRECONDITION TO FINAL PROGRESS PAYMENT APPROVAL AND/OR FINAL ACCEPTANCE. CONTRACTOR SHALL THEN SUBMIT MYLAR AND DISK TO CITY.

23) WORK IN EASEMENTS AND/OR RIGHTS-OF-WAY IS SUBJECT TO THE APPROVAL AND ACCEPTANCE OF THE REGULATORY AGENCY RESPONSIBLE FOR OPERATION AND/OR MAINTENANCE OF SAID EASEMENTS AND/OR RIGHTS-OF-WAY.

CLEARING AND GRADING NOTES:

1) CONTRACTOR SHALL PERFORM EARTHWORK IN ACCORDANCE WITH BOUNTIFUL CITY STANDARD SPECIFICATIONS, DIVISION 2 OF THE UTAH PUBLIC WORKS STANDARD SPECIFICATIONS AND THE RECOMMENDED EARTHWORK SPECIFICATIONS FOUND IN THE PROJECT GEOTECHNICAL REPORT.

2) THE EXISTING TOPOGRAPHY SHOWN ON THESE PLANS IS BASED ON A TOPOGRAPHIC SURVEY COMPLETED BY STANTEC.

3) STANTEC SHALL PROVIDE A TEMPORARY EROSION CONTROL PLAN AND SUBMITT REQUEST FOR SWPP PERMIT. OWNER REQUIRED TO OBTAIN OTHER PERMITS FROM BOUNTIFUL CITY, DAVIS COUNTY AND THE STATE OF UTAH FOR TEMPORARY EROSION CONTROL. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PROVIDE ALL TEMPORARY EROSION CONTROL AND MAINTENANCE, AND SHALL PROVIDE EROSION AND SEDIMENT CONTROL FORMS TO THE CITY. FOR ADDITIONAL EROSION CONTROL INFORMATION, SEE "EROSION CONTROL/REVEGETATION PLAN" SHEETS AND REPORTS.

DEWATERING NOTES:

1) THE CONTRACTOR SHALL FURNISH, INSTALL, OPERATE AND MAINTAIN ALL MACHINERY, APPLIANCES, AND EQUIPMENT TO MAINTAIN ALL EXCAVATIONS FREE FROM WATER DURING CONSTRUCTION. THE CONTRACTOR SHALL DISPOSE OF THE WATER SO AS NOT TO CAUSE DAMAGE TO PUBLIC OR PRIVATE PROPERTY, OR TO CAUSE A NUISANCE OR MENACE TO THE PUBLIC OR VIOLATE THE LAW. THE DEWATERING SYSTEM SHALL BE INSTALLED AND OPERATED SO THAT THE GROUND WATER LEVEL OUTSIDE THE EXCAVATION IS NOT REDUCED TO THE EXTENT WHICH WOULD CAUSE DAMAGE OR ENDANGER ADJACENT STRUCTURES OR PROPERTY. ALL COST FOR DEWATERING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ALL PIPE CONSTRUCTION. THE STATIC WATER LEVEL SHALL BE DRAWN DOWN A MINIMUM OF 1 FOOT BELOW THE BOTTOM OF EXCAVATIONS TO MAINTAIN THE UNDISTURBED STATE OF NATURAL SOILS AND ALLOW THE PLACEMENT OF ANY FILL TO THE SPECIFIED DENSITY. THE CONTRACTOR SHALL HAVE ON HAND, PUMPING EQUIPMENT AND MACHINERY IN GOOD WORKING CONDITION FOR EMERGENCIES AND SHALL HAVE WORKMEN AVAILABLE FOR ITS OPERATION. DEWATERING SYSTEMS SHALL OPERATE CONTINUOUSLY UNTIL BACKFILL HAS BEEN COMPLETED TO 1 FOOT ABOVE THE NORMAL STATIC GROUNDWATER LEVEL.

2) THE CONTRACTOR SHALL CONTROL SURFACE WATER TO PREVENT ENTRY INTO EXCAVATIONS. AT EACH EXCAVATION, A SUFFICIENT NUMBER OF TEMPORARY OBSERVATION WELLS TO CONTINUOUSLY CHECK THE GROUNDWATER LEVEL SHALL BE PROVIDED.

3) SUMPS SHALL BE AT THE LOW POINT OF EXCAVATION. EXCAVATION SHALL BE GRADED TO DRAIN TO THE SUMPS.

4) THE CONTROL OF GROUNDWATER SHALL BE SUCH THAT SOFTENING OF THE BOTTOM OF EXCAVATIONS, OR FORMATION OF "QUICK" CONDITIONS OR "BOILS", DOES NOT OCCUR. DEWATERING SYSTEMS SHALL BE DESIGNED AND OPERATED SO AS TO PREVENT REMOVAL OF THE NATURAL SOILS. THE RELEASE OF GROUNDWATER AT ITS STATIC LEVEL SHALL BE PERFORMED IN SUCH A MANNER AS TO MAINTAIN THE UNDISTURBED STATE OF NATURAL FOUNDATIONS SOILS, PREVENT DISTURBANCE OF COMPACTED BACKFILL, AND PREVENT FLOTATION OR MOVEMENT OF STRUCTURES, PIPELINES AND SEWERS. IF A UPDES (UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM) PERMIT IS REQUIRED FOR DISPOSAL OF WATER FROM CONSTRUCTION DEWATERING ACTIVITIES, IT SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO ANY DEWATERING ACTIVITIES.

UNDERGROUND UTILITIES:

1) THE INFORMATION SHOWN ON THE PLANS WITH REGARD TO THE EXISTING UTILITIES AND/OR IMPROVEMENTS WAS DERIVED FROM FIELD INVESTIGATIONS AND/OR RECORD INFORMATION. THE ENGINEER DOES NOT GUARANTEE THESE LOCATIONS TO BE EITHER TRUE OR EXACT. PRIOR TO CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO VERIFY ALL EXISTING IMPROVEMENTS AND TO EXPOSE ALL EXISTING UNDERGROUND UTILITIES RELATED TO THE PROJECT, INCLUDING BUT NOT LIMITED TO, SEWER, STORM DRAIN, WATER, IRRIGATION, GAS, ELECTRICAL, ETC. AND SHALL NOTIFY THE ENGINEER FORTY-EIGHT (48) HOURS IN ADVANCE OF EXPOSING THE UTILITIES, SO THAT THE EXACT LOCATION AND ELEVATION CAN BE VERIFIED AND DOCUMENTED. THE COST ASSOCIATED TO PERFORM THIS WORK SHALL BE INCLUDED IN EITHER THE LUMP SUM CLEARING COST OR IN THE VARIOUS ITEMS OF WORK. IF LOCATION AND/OR ELEVATION DIFFERS FROM THAT SHOWN ON THE DESIGN PLANS, PROVISIONS TO ACCOMMODATE NEW LOCATION/ELEVATION MUST BE MADE PRIOR TO CONSTRUCTION.

2) PRIOR TO COMMENCING ANY WORK, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE EACH UTILITY COMPANY LOCATE, IN THE FIELD, THEIR MAIN AND SERVICE LINES. THE CONTRACTOR SHALL NOTIFY BLUE STAKES AT 1-800-662-4111 48 HOURS IN ADVANCE OF PERFORMING ANY EXCAVATION WORK. THE CONTRACTOR SHALL RECORD THE BLUE STAKES ORDER NUMBER AND FURNISH ORDER NUMBER TO OWNER AND ENGINEER PRIOR TO ANY EXCAVATION. IT WILL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO DIRECTLY CONTACT ANY OTHER UTILITY COMPANIES THAT ARE NOT MEMBERS OF BLUE STAKES. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROTECT ALL EXISTING UTILITIES SO THAT NO DAMAGE RESULTS TO THEM DURING THE PERFORMANCE OF THIS CONTRACT. ANY REPAIRS NECESSARY TO DAMAGED UTILITIES SHALL BE PAID FOR BY THE CONTRACTOR. THE CONTRACTOR SHALL BE REQUIRED TO COOPERATE WITH OTHER CONTRACTORS AND UTILITY COMPANIES INSTALLING NEW STRUCTURES, UTILITIES AND SERVICE TO THE PROJECT.

3) THE CONTRACTOR SHALL PROVIDE ALL SHORING, BRACING, SLOPING OR OTHER PROVISIONS NECESSARY TO PROTECT WORKMEN FOR ALL AREAS TO BE EXCAVATED TO A DEPTH OF 4' OR MORE. FOR EXCAVATIONS 4 FEET OR MORE IN DEPTH, THE CONTRACTOR SHALL COMPLY WITH INDUSTRIAL COMMISSION OF UTAH SAFETY ORDERS SECTION 68 - EXCAVATIONS, AND SECTION 69 - TRENCHES, ALONG WITH ANY LOCAL CODES OR ORDINANCES. ANY EXCAVATION GREATER THAN 10 FEET IN DEPTH REQUIRES A TRENCH BOX.

4) PRIOR TO OPENING AN EXCAVATION, EFFORT SHALL BE MADE TO DETERMINE WHETHER UNDERGROUND INSTALLATIONS; I.E. SEWER, WATER, FUEL, ELECTRIC LINES, ETC., WILL BE ENCOUNTERED AND IF SO, WHERE SUCH UNDERGROUND INSTALLATIONS ARE LOCATED. WHEN THE EXCAVATION APPROACHES THE APPROXIMATE LOCATION OF SUCH AN INSTALLATION, THE EXACT LOCATION SHALL BE DETERMINED BY CAREFUL PROBING OR HAND DIGGING; AND, WHEN IT IS UNCOVERED, ADEQUATE PROTECTION SHALL BE PROVIDED FOR

THE EXISTING INSTALLATION. ALL KNOWN OWNERS OF UNDERGROUND FACILITIES IN THE AREA CONCERNED SHALL BE ADVISED OF PROPOSED WORK AT LEAST 48 HOURS PRIOR TO THE START OF ACTUAL EXCAVATION.

5) IN CASES OF HIGH GROUNDWATER, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO USE RUBBER GASKET JOINTS ON ALL PRE CAST PIPES. THE COST FOR RUBBER GASKET JOINTS SHALL BE INCLUDED IN THE UNIT PRICES OF PIPE.

6) THE CONTRACTOR SHALL PROVIDE CLAY DAMS IN UTILITY TRENCHES TO PREVENT CHANNELING OF SUBSURFACE WATER, DURING AND AFTER CONSTRUCTION. CONSTRUCT CLAY DAMS AT THE TOP OF GRADE BREAKS AND IN ACCORDANCE WITH BOUNTIFUL CITY, OR SOUTH DAVIS SEWER DISTRICT STANDARDS AND SPECIFICATIONS.

7) RCP PIPE SHALL BE CLASS III PIPE UNLESS OTHERWISE NOTED ON PLANS

8) ALL CONSTRUCTION AND MATERIALS FOR THE SEWER MAIN AND LATERALS MUST COMPLY WITH THE SOUTH DAVIS SEWER DISTRICT STANDARDS, THE UNIT COST OF THE SEWER LATERAL INCLUDES CONNECTION TO THE SEWER MAIN. THE CLEAN OUT RISER FOR EACH SERVICE SHALL BE INSTALLED BY THE CONTRACTOR.

9) ALL EXISTING WATER VALVES TO BE OPERATED UNDER THE DIRECTION OF BOUNTIFUL CITY PERSONNEL ONLY.

10) WATER LINES SHALL BE A MINIMUM OF 10' HORIZONTALLY FROM SEWER MAINS. CROSSINGS SHALL MEET STATE HEALTH STANDARDS. CONTRACTOR RESPONSIBLE FOR ALL NECESSARY FITTINGS AND THRUST BLOCKS.

11) THE CONTRACTOR SHALL NOTIFY STANTEC CONSULTING AT LEAST 48 HOURS PRIOR TO BACKFILLING OF ANY PIPE WHICH STUBS TO A FUTURE PHASE OF CONSTRUCTION FOR INVERT VERIFICATION. TOLERANCE SHALL BE IN ACCORDANCE WITH THE REGULATORY AGENCY STANDARD SPECIFICATIONS.

12) ALL UNDERGROUND UTILITIES SHALL BE IN PLACE PRIOR TO INSTALLATION OF CURB, GUTTER AND STREET PAVING.

13) WATER PIPE SHALL BE PVC DR-18 OR APPROVED EQUIVALENT. WATER PIPE SHALL BE INSTALLED AND TESTED TO BOUNTIFUL CITY STANDARDS. CONTRACTOR RESPONSIBLE FOR ALL NECESSARY FITTINGS AND THRUST BLOCKS.

14) STRAIGHT LINE SEWER PIPE IS TO BE PVC SDR-35 OR APPROVED EQUAL. SEWER SHALL BE INSTALLED AND TESTED TO SOUTH DAVIS SEWER DISTRICT STANDARDS. FOUR FEET OF COVER IS REQUIRED OVER ALL SEWER LINES.

15) STRAIGHT STORM DRAIN PIPING IS TO BE REINFORCED CONCRETE PIPE (RCP) OR ADS PIPE AS SHOWN ON THESE PLANS. ALL STORM DRAIN SHALL BE INSTALLED AND TESTED TO BOUNTIFUL CITY AND UPW STANDARDS.

16) ALL INTERCEPTOR DITCH STORM WATER COLLECTION PIPING SHALL BE 12" PVC OR HDPE.

17) THRUST BLOCKING SHALL BE CONSTRUCTED PER BOUNTIFUL CITY STANDARDS AND SPECIFICATIONS.

18) CONTRACTOR IS REQUIRED TO SUBMIT AS BUILT SEWER LATERAL LOCATIONS PER S.D.S.D. STANDARD.

19) CONTRACTOR IS REQUIRED TO SUBMIT AS-BUILT DRAWINGS SHOWING ALL FIELD CHANGES INCLUDING BUT NOT LIMITED TO:

A. DRY UTILITIES THAT ARE MORE THAN A FOOT OFF OF LOCATION SHOWN ON TYPICALS
B. WATER SERVICE LATERALS THAT ARE MORE THAN A FOOT OFF OF CALL OUT LOCATIONS ON UTILITY PLAN
C. ALL CHANGES OR ADDITIONS TO THE STORM DRAIN UTILITY

SURFACE IMPROVEMENTS:

1) SUB GRADE PREPARATION: EARTHWORK FOR ROADWAY SECTIONS AND MASS GRADING SHOULD BE CONDUCTED PER THE PROJECT GEOTECHNICAL REPORT. ONCE ROADWAY EXCAVATION STARTS THE SUB GRADE SHOULD BE SCARIFIED AND RECOMPATED AT THE PROPER MOISTURE CONTENT TO 95 PERCENT RELATIVE DENSITY (STANDARD PROCTOR ASTM D698). THE NATIVE SUBGRADE SHOULD BE FIRM AND NONYEILDING PRIOR TO SUB-BASE PLACEMENT. EVERY EFFORT SHOULD BE MADE TO AVOID EXPOSING NATIVE SUB-GRADES TO EXCESS MOISTURE. FILLS THICKER THAN 8' SHALL BE DENSIFIED TO 98% STANDARD PROCTOR (ASTM D698)

2) GRANULAR SUBBASE: GRANULAR MATERIAL MUST MEET STRUCTURAL FILL SPECIFICATIONS. IT MUST BE CLEAR OF ORGANIC AND DELETERIOUS MATERIAL AND COMPACTED WITH PROPER MOISTURE CONTENT TO THE BOTTOM OF THE AGGREGATE BASE ELEVATION AT 95 PERCENT RELATIVE DENSITY (STANDARD PROCTOR ASTM D698) SEE PAVEMENT SECTION ON CROSS-SECTION/DETAIL SHEET.

3) AGGREGATE BASE: AGGREGATE BASE SHALL COMPLY WITH THE GUIDELINE REQUIREMENTS FOR PAVEMENT DESIGN IN THE REPORTS CITED IN THE PROJECT GEOTECHNICAL REPORT. THE AGGREGATE BASE SHALL BE DENSIFIED TO AT LEAST 100 PERCENT RELATIVE DENSITY (STANDARD PROCTOR ASTM D698). SEE PAVEMENT SECTION ON DETAIL SHEET.

4) ASPHALTIC CONCRETE: ASPHALTIC CONCRETE SHALL BE PER FINDINGS PROJECT GEOTECHNICAL REPORT OR MATCH THE EXISTING PAVEMENT SECTION ON-SITE AND BE COMPACTED TO THE REQUIREMENTS DEFINED IN THE GEOTECHNICAL INVESTIGATION.

5) ALL MANHOLE RIMS, VALVES AND MONUMENT BOXES, ETC. SHALL BE ADJUSTED TO FINISH GRADE AFTER STREET PAVING, UNLESS OTHERWISE NOTED. IN PAVED AREAS, PROVIDE A 1 FOOT BY 1/2 FOOT CONCRETE COLLAR . SET CONCRETE COLLAR 3/8 INCH LOWER THAN FINISH GRADE AT OUTER EDGE. PROVIDE CONCRETE COLLAR FOR ALL VALVES PER CITY OF DRAPER STANDARD SPECIFICATIONS. COST FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICES FOR SAID FACILITIES.

6) PAYMENT FOR PAVEMENT WILL BE MADE ONLY FOR AREAS SHOWN ON THE PLANS. REPLACEMENT OF PAVEMENT WHICH IS BROKEN OR CUT DURING THE INSTALLATION OF THE WORK COVERED BY THESE SPECIFICATIONS, AND WHICH LIES OUTSIDE OF SAID AREAS, SHALL BE INCLUDED IN THE CONTRACTOR'S UNIT PRICE FOR THE INSTALLATION OF THE WORK, AND NO ADDITIONAL PAYMENT SHALL BE MADE FOR SUCH WORK.

7) INSTALLATION OF STREET LIGHTS SHALL BE IN ACCORDANCE WITH BOUNTIFUL CITY DEVELOPMENT GUIDELINES AND STANDARDS.

8) THE ELECTROLIER UNIT COST SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
A. ELECTROLIER,
B. LABOR,
C. DIRECT BURIAL WIRE FROM ELECTROLIER TO THE POWER SOURCE,

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE DISTANCE FROM THE ELECTROLIER TO THE POWER SOURCE.

9) PRIOR TO FINAL ACCEPTANCE OF THE IMPROVEMENTS BUILT TO THESE PLANS AND SPECIFICATIONS THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH THE OWNER, BOUNTIFUL CITY, AND ROCKY MOUNTAIN POWER TO HAVE THE ELECTRICAL SYSTEM AND ALL STREET LIGHTS ENERGIZED.

10) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL STRIPING AND/OR PAVEMENT MARKINGS NECESSARY TO TIE EXISTING STRIPING INTO FUTURE STRIPING. METHOD OF REMOVAL SHALL BE BY GRINDING OR SANDBLASTING.

11) STRIPING AND PAVEMENT MARKINGS WITHIN 500 SOUTH SHALL BE IN CONFORMANCE WITH U.D.O.T. STANDARDS.

STORM DRAINAGE NOTES:

1. ALL PIPING MATERIAL WITHIN THE PRIVATELY OWNED AND MAINTAINED STORM DRAIN SYSTEM WILL BE ADS PIPING OR APPROVED EQUIVALENT.

ABBREVIATIONS:

AB	AGGREGATE BASE	O.C.	ON CENTER
&	AND	O.C.E.W.	ON CENTER EACH WAY
APPROX.	APPROXIMATELY	O.D.	OUTSIDE DIAMETER
ARV	AIR RELEASE VALVE	OG	ORIGINAL GROUND/GRADE
@	AT	OH	OVERHEAD
BND	BOUNDARY	PC	POINT OF CURVEVATURE
BVC	BEGINING OF VERTICAL CURVE	P.E.	REGISTERED PROFESSIONAL ENGINEER
CATV	CABLE TELEVISION	PI	POINT OF INTERSECTION
CB	CATCH BASIN	PL	PROPERTY LINE
CL OR ℄	CENTERLINE	PP	POWER POLE
CMP	CORRUGATED METAL PIPE	PRC	POINT OF REVERSE CURVE
CONC.	CONCRETE	PRV	PRESSURE REDUCING VALVE
CT.	COURT	PSF	POUNDS PER SQUARE FOOT
DET.	DETAIL	PS	PRESSURE SEWER
DIA.	DIAMETER	PSI	POUNDS PER SQUARE INCH
DIP	DUCTILE IRON PIPE	PT	POINT OF TANGENT
DIST.	DISTRICT	PUE	PUBLIC UTILITY EASEMENT
DR.	DRIVE	PVC	POLYVINYL CHLORIDE
DW	DRIVEWAY	PVI	POINT OF VERTICAL INTERSECTION
DWG.	DRAWING	PVMT	PAVEMENT
E	EAST	PVT.	PRIVATE
EA	EACH	R	RADIUS
EG	EXISTING GRADE	RCP	REINFORCED CONCRETE PIPE
ENV.	ENVIROMENTAL	REF.	REFERENCE
EP	EDGE OF PAVEMENT	ROW	RIGHT-OF-WAY
ELEV	ELEVATION	S	SOUTH
EVC	END OF VERTICAL CURVE	S=	SLOPE
E.W.	EACH WAY	SS	SANITARY SEWER
EX.	EXISTING	SD	STORM DRAIN
EXP.	EXPIRATION OR EXPANSION	S.L. CO.	SALT LAKE COUNTY
FG	FINISHED GRADE	S.D.S.D.	SOUTH DAVIS SEWER DISTRICT
FH	FIRE HYDRANT	SW	SIDEWALK
FIN.	FINISH	SF	SQUARE FEET
FL	FLOWLINE	SHT.	SHEET
GB	GRADE BREAK	STA	STATION
HP	HIGH POINT	STD.	STANDARD
HDPE	HIGH DENSITY POLY-ETHELYNE	TBC	TOP BACK OF CURB
IMPROV.	IMPROVEMENT	TEMP.	TEMPORARY
INV	INVERT ELEVATION	TFW	TOP OF FOUNDATION WALL
IRR.	IRRIGATION	THRU	THROUGH
L	LENGTH	TG	TOP OF GRATE
LN.	LANE	TOP	TOP OF PORCH
LF	LINEAR FEET	TW	TOP OF WALL
LP	LOW POINT	TYP.	TYPICAL
L.U.D.	LIMITED USE DRIVEWAY	VAR.	VARIOUS
MFR	MANUFACTURER	U.N.O.	UNLESS NOTED OTHERWISE
MAX	MAXIMUM	VERT.	VERTICAL
MH	MANHOLE	W	WATER
MIN	MINIMUM	W	WEST
N	NORTH	W/	WITH
NTS	NOT TO SCALE		

Stantec

3995 South 700 East, Suite 300
Salt Lake City, Utah 84107
www.stantec.com

Owner/Project

Legend

Notes

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
2 BOUNTIFUL CITY 2ND SUBMITTAL	EKW	JRJ	13.12.20
1 BOUNTIFUL CITY SUBMITTAL	SDJ	JRJ	13.11.11

File Name: 01153-001nt.dwg	Dwn.	Chkd.	Dsgn.	YY.MM.DD
	SDJ	JRJ	EKW	13.11.11

Permit-Seal

REGISTERED PROFESSIONAL ENGINEER
No. 4775487
JACOB R. JENSEN
STATE OF UTAH

CALL BEFORE YOU DIG!
BLUE STAKES 1 800 662 4111

Client/Project
WASATCH COMMERCIAL MANAGEMENT, INC
299 SOUTH MAIN STREET, SUITE 2400
SALT LAKE CITY, UT 84111

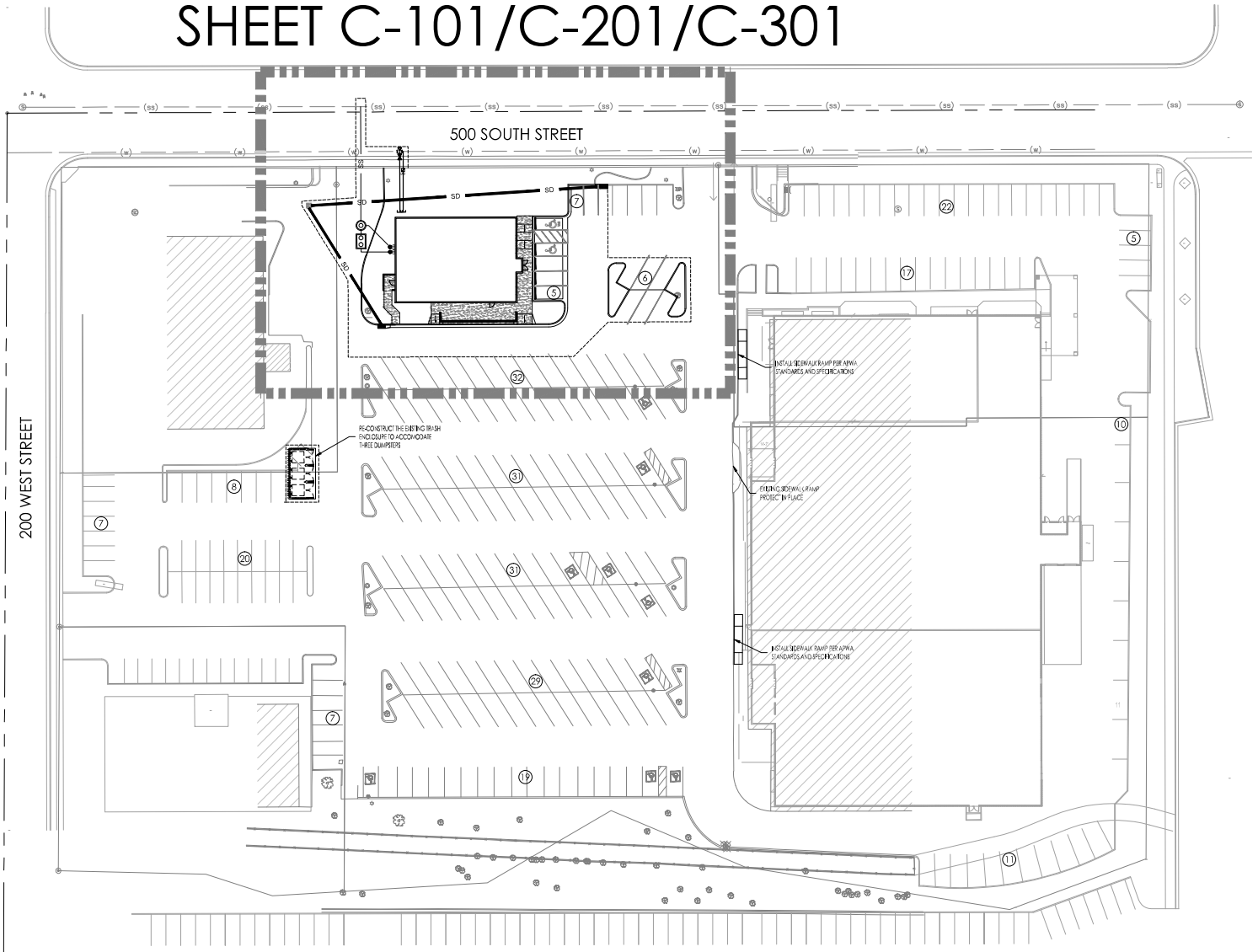
CORNER BAKERY CAFE
Bountiful, Utah

Title
GENERAL NOTES & ABBREVIATIONS

Project No.	Scale	
186201153		
Drawing No.	Sheet	Revision
C-001	of	0

ORIGINAL SHEET - ARCH D

SHEET C-101/C-201/C-301



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Notes

Revision		By	Apprd.	YY.MM.DD
2	BOUNTIFUL CITY 2ND SUBMITTAL	DDW	JRJ	13.12.20
1	BOUNTIFUL CITY SUBMITTAL	SDJ	JRJ	13.11.11
Issued		By	Apprd.	YY.MM.DD
File Name: 01185402fig.dwg		SDJ	JRJ	DDW	13.11.11
		Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

REGISTERED PROFESSIONAL ENGINEER No. 4775487 JACOB R. JENSEN STATE OF UTAH

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Client/Project

WASATCH COMMERCIAL MANAGEMENT, INC
299 SOUTH MAIN STREET, SUITE 2400
SALT LAKE CITY, UT 84111

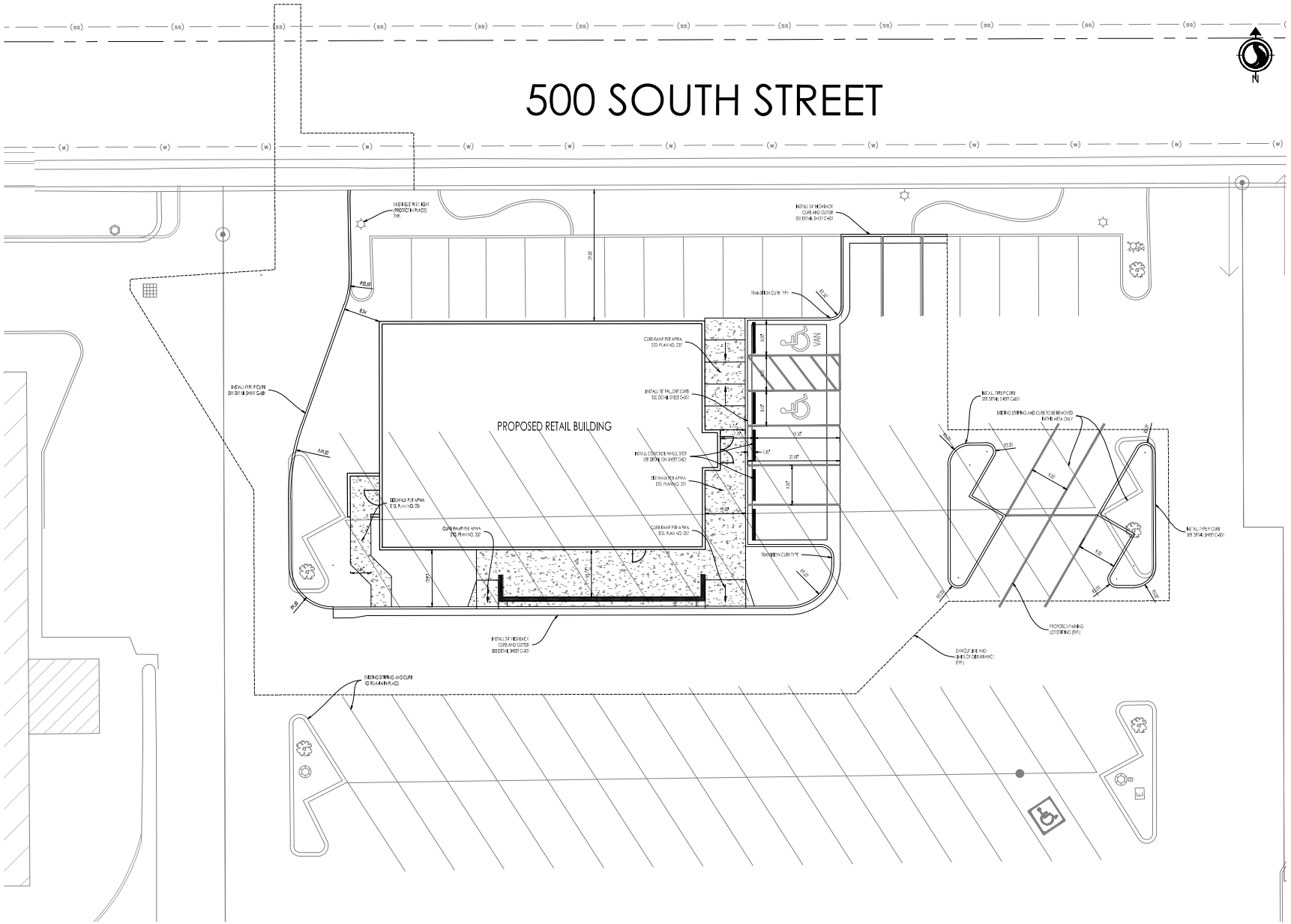
CORNER BAKERY CAFE
Bountiful, Utah

Title

OVERALL SITE MAP & KEY SHEET

Project No.	Scale	
186201153	1"=30'	0 30' 45' 60'
Drawing No.	Sheet	Revision
C-002	of	0

500 SOUTH STREET



ORIGINAL SHEET - ARCH D

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EXISTING INFRASTRUCTURE IN THIS AREA TO BE REMOVED AND REPLACED

Notes

Revision		By	Apprd.	YY.MM.DD
2	ROUNTIFUL CITY 2ND SUBMITTAL	DEW	JRJ	13.12.20
1	ROUNTIFUL CITY SUBMITTAL	SCJ	JRJ	13.11.11

Issued		By	Apprd.	YY.MM.DD

File Name: 01185-10 sp.dwg		SCJ	JRJ	DEW	13.11.11
		Dwn.	Chkd.	Dsgn.	YY.MM.DD

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No. 4775487
JACOB R. JENSEN
STATE OF UTAH

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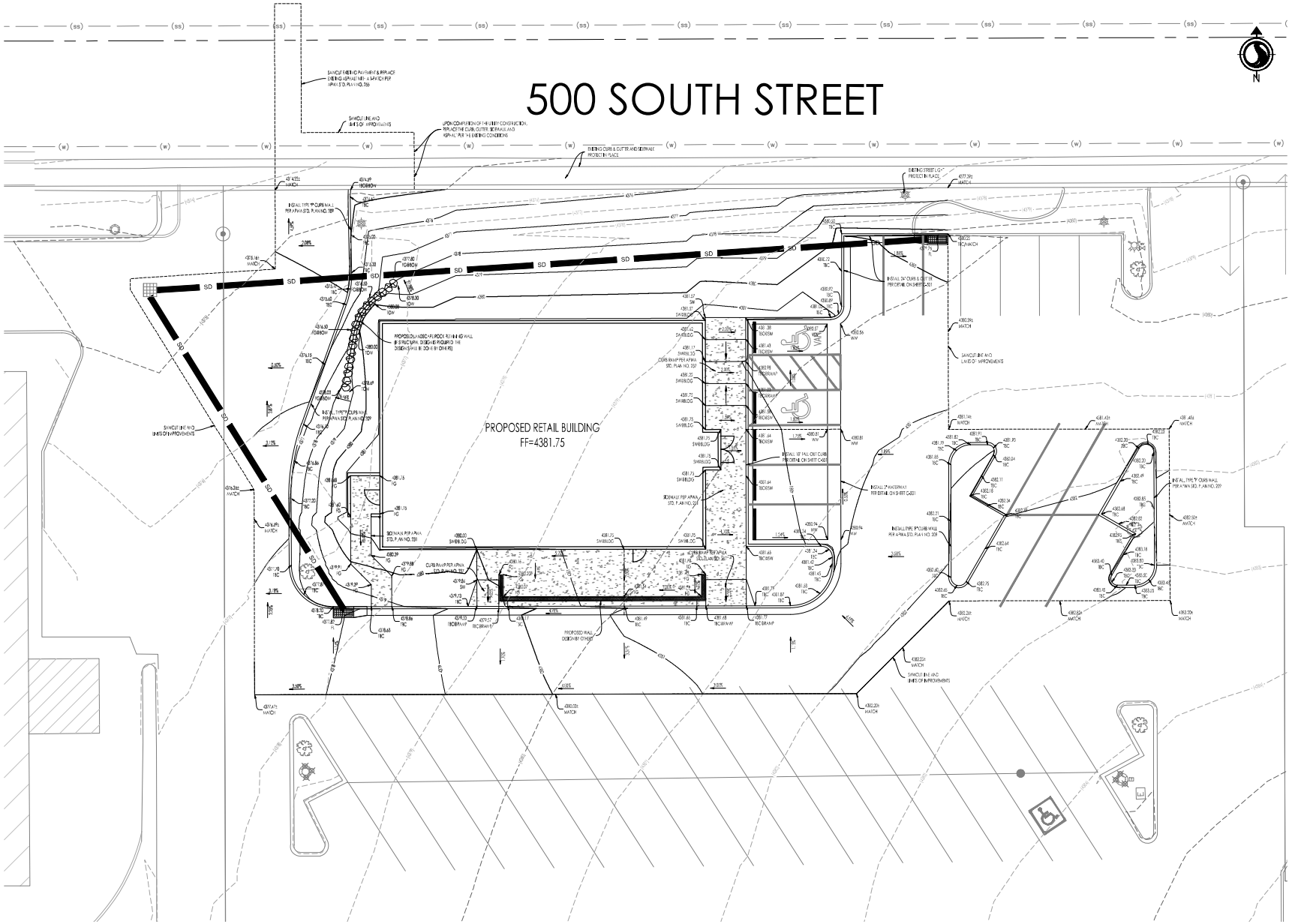
Bountiful, Utah

Title

SITE PLAN - NORTH

Project No.	Scale	Revision
186201153	1"=10' (0, 10', 15', 20')	
Drawing No.	Sheet	
C-101	of	0

500 SOUTH STREET



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Revision	By	Apvd.	YY.MM.DD
2 BOUNTIFUL CITY 2ND SUBMITTAL	DEW	JRJ	03.12.20
1 BOUNTIFUL CITY SUBMITTAL	SCJ	JRJ	03.11.11

Issued	By	Apvd.	YY.MM.DD

File Name: 01185-20 gp.dwg	Dwn.	Chkd.	Dsgn.	YY.MM.DD
	SCJ	JRJ	DEW	03.11.11

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Bountiful, Utah

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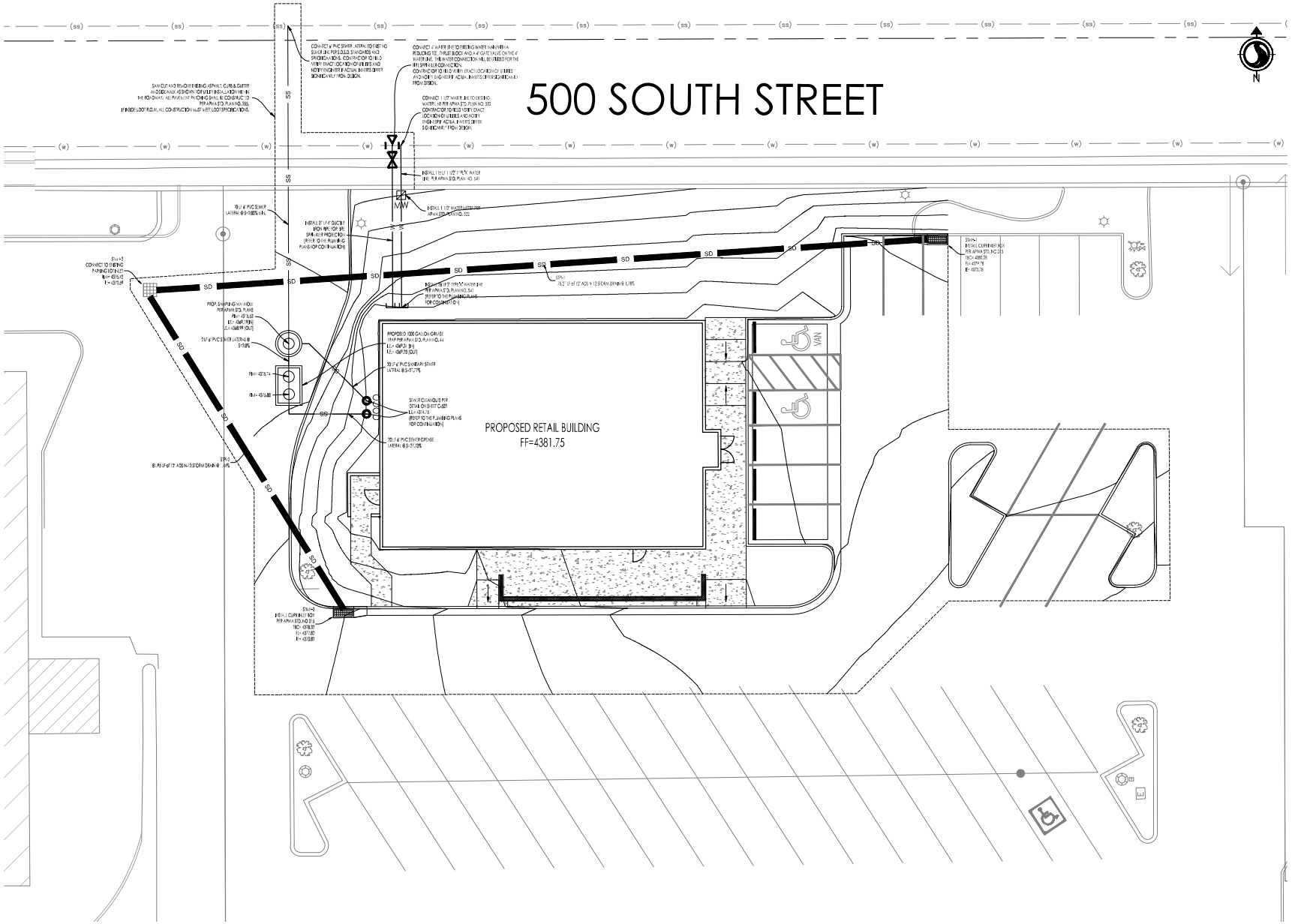
GRADING PLAN - NORTH

Project No.	Scale
186201153	1"=10' (0, 10', 15', 20')

Drawing No.	Sheet	Revision
C-201	of	0

ORIGINAL SHEET - ARCH D



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Revision	By	Apvd.	YY.MM.DD
2 BOUNTIFUL CITY 2ND SUBMITTAL	DDW	JRJ	13.12.20
1 BOUNTIFUL CITY SUBMITTAL	SCJ	JRJ	13.11.11

Issued	By	Apvd.	YY.MM.DD

File Name: 01185430 lup.dwg	SCJ	JRJ	DDW	13.11.11
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

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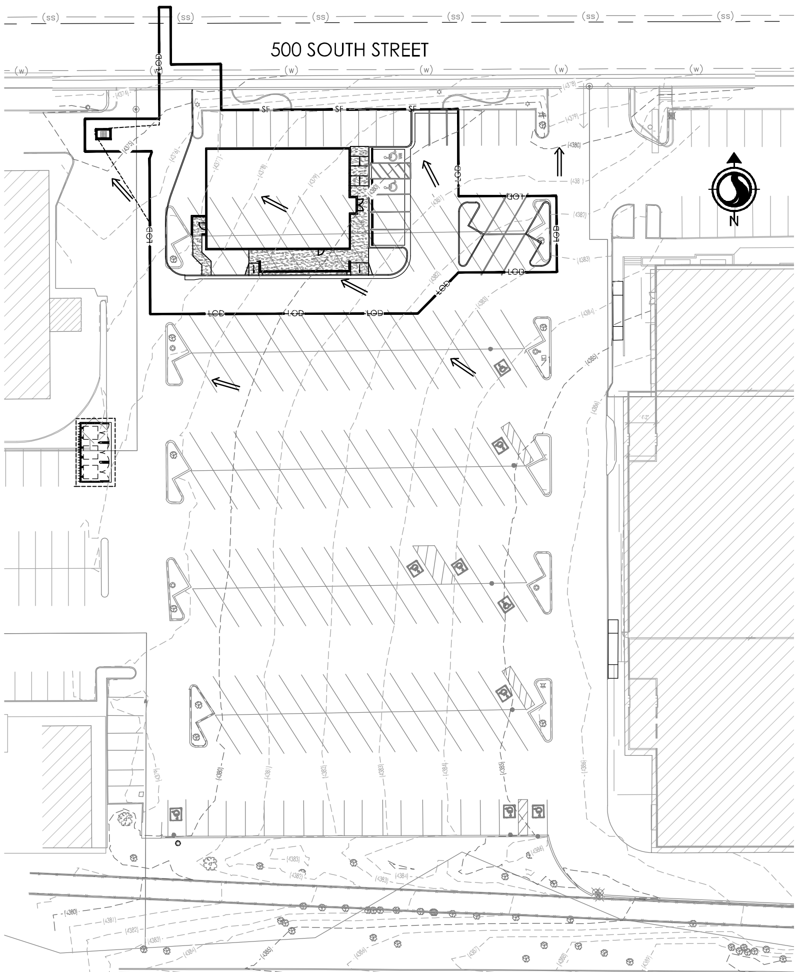
Bountiful, Utah

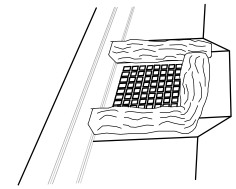
Title

UTILITY PLAN - NORTH

Project No.	Scale
186201153	1"=10' (0, 10', 15', 20')

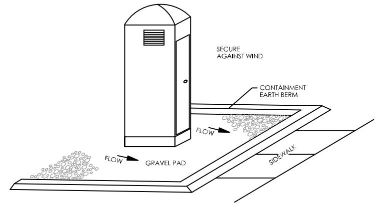
Drawing No.	Sheet	Revision
C-301	of	0





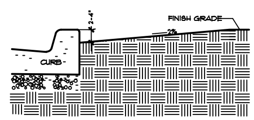
INLET PROTECTION - WATTLE

WATTLE WILL BE STRAW FILLED. INSTALL WHEN CONSTRUCTION OF CURB AND GUTTER AND ROADWAYS IS COMPLETE.

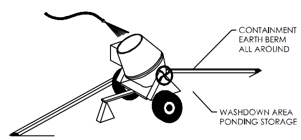


PORTABLE TOILET

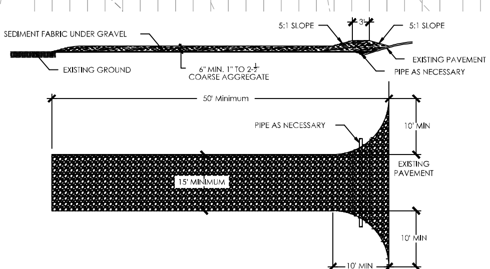
PORTABLE TOILETS TO BE INSTALLED DURING HOMEBUILDING PHASE.



CURB SEDIMENTATION TRAP

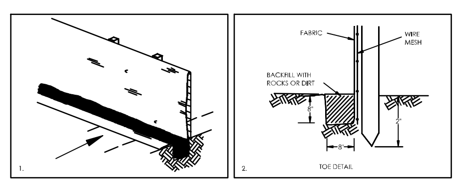


CONCRETE WASTE MANAGEMENT



STABILIZED CONSTRUCTION ENTRANCE

STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED UNTIL SUCH TIME AS ROADS ARE ASPHALTED AND INDIVIDUAL HOME LOTS ARE BEING DEVELOPED.



SILT FENCE

SILT FENCE MAY BE INSTALLED FOR PERIMETER CONTROL.
A MINIMUM 20-FOOT VEGETATED BUFFER MAY ALSO BE SUBSTITUTED FOR PERIMETER CONTROL
(PRESERVATION OF EXISTING VEGETATION).

EROSION CONTROL NOTES

1. CONTROLLING SEDIMENT TRANSPORT AND PREVENTING AND/OR CORRECTING PROBLEMS ASSOCIATED WITH EROSION AND RUNOFF PROCESSES THAT COULD OCCUR BOTH DURING AND AFTER PROJECT CONSTRUCTION WILL BE CLOSELY MONITORED. PERIODIC MAINTENANCE AND INSPECTION OF SEDIMENT CONTROL DEVICES WILL BE SCHEDULED. PARTICULAR ATTENTION SHALL BE GIVEN TO EXISTING DRAINAGE PATTERNS THAT RUN THROUGH DISTURBED AREAS AND OVER EXTREME SLOPES. THESE PATTERNS WILL BE IDENTIFIED TO ISOLATE PROBLEM AREAS WHERE WATER WILL CONCENTRATE. PROVISIONS SHALL BE MADE TO CHANNEL RUNOFF AWAY FROM NEW OR EXISTING IMPROVEMENTS TO PREVENT UNDERMINING AND GENERAL SITE EROSION. THESE PROVISIONS SHALL BE STABILIZED AND SHALL REMAIN IN PLACE UNTIL THE PERMANENT STORM DRAINAGE FACILITIES ARE INSTALLED AND FUNCTIONAL.

2. EROSION CONTROL - A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN PREPARED IN ACCORDANCE WITH THE UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMIT FOR CONSTRUCTION, OUTLINING HOW EROSION AND SILTATION WILL BE CONTROLLED. A NOTICE OF INTENT (NOI) HAS BEEN SUBMITTED TO OBTAIN THE UPDES CONSTRUCTION PERMIT. A COPY OF THE PLAN MUST BE ON SITE AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING THE PLAN AND INSTALLING AND MAINTAINING THE EROSION CONTROL FACILITIES WITH EACH PHASE OF WORK. SHOULD SILT LEAVE THE SITE OR EROSION OCCURS, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO TAKE CORRECTIVE ACTION AND REPAIR ANY DAMAGE CAUSED BY THE SILT OR EROSION IMMEDIATELY. ALL COSTS ASSOCIATED WITH THE MODIFICATION AND APPROVAL OF THE PLAN WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

3. BEFORE CONSTRUCTION BEGINS, THE LIMITS OF DISTURBANCE (LOD) BOUNDARY SHALL BE FLAGGED ON SITE AND APPROVED BY THE ENGINEER. UNDER NO CIRCUMSTANCES SHALL SITE DISTURBANCE OCCUR OUTSIDE THE DESIGNATED AREAS AT ANY TIME DURING CONSTRUCTION.

4. EXCAVATION AND EMBANKMENT OPERATIONS SHALL PROCEED IN SUCH A MANNER SO THAT FINISHING OF SLOPES, INCLUDING REVEGETATION SHALL BE ACCOMPLISHED AS SOON AS POSSIBLE AFTER ROUGH GRADING. ALL SLOPES 2:1 OR FLATTER SHALL BE SCARIFIED WITH HEAVY EQUIPMENT, LEAVING TRACKS PERPENDICULAR TO THE SLOPE.

5. CUT SLOPES SHALL BE 1:1 MAXIMUM AND FILL SLOPES 2:1 MAXIMUM UNLESS ROCK IS ENCOUNTERED. CUT SLOPES IN ROCK MAY BE STEEPENED, DEPENDING UPON GEOTECHNICAL CONSIDERATIONS. THE TOPS OF ALL CUT SLOPES IN SOIL SHALL BE ROUNDED FOR A HORIZONTAL DISTANCE OF THREE (3) FEET BEYOND THE CATCH POINT. SLOPE ROUNDING SHALL OCCUR AS THE SLOPE IS BEING BROUGHT DOWN. THE OVERALL SHAPE, HEIGHT AND GRADE OF ANY CUT AND/OR FILL SLOPE SHALL BE DEVELOPED IN CONCERT WITH THE EXISTING NATURAL CONTOURS, SCALE AND VEGETATION OF NATURAL TERRAIN.

6. STABILIZATION PRACTICES MAY INCLUDE, BUT ARE NOT LIMITED TO, TEMPORARY SEEDING, PERMANENT SEEDING, MULCHING, GEOTEXTILES, SOD STABILIZATION, VEGETATIVE BUFFER STRIPS, PROTECTION OF TREES, PRESERVATION OF NATURAL VEGETATION AND OTHER APPROPRIATE MEASURES. USE OF IMPERVIOUS SURFACES FOR STABILIZATION SHALL BE AVOIDED EXCEPT AS PROVIDED BELOW. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE IN DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

   6.1. WHERE DEEP SNOW OR FROZEN GROUND CONDITIONS PRECLUDE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY PERMANENTLY CEASES, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.

   6.2. WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH DISTURBING WILL RESUME WITHIN 21 WORKING DAYS, TEMPORARY STABILIZATION MEASURES NEED NOT BE INITIATED ON THAT PORTION OF THE SITE.

7. SPECIFICALLY OUTLINED DISTURBED AREAS, BOTH ON AND OFF-SITE SHALL BE REVEGETATED. THESE AREAS SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL UNSURFACED AREAS WITHIN THE FLAGGED LOD, STAGING AND STORAGE AREAS, MATERIAL WASTE AREAS, UNDERGROUND UTILITY CONSTRUCTION AREAS, BENCHED AREAS, INCLUDE RETAINING WALL BENCHES, AND TEMPORARY OR EXISTING ACCESS ROADS USED FOR CONSTRUCTION ACTIVITIES. CUT AND FILL SLOPES OVER 3:1 REQUIRE THE PLACEMENT OF EROSION CONTROL/REVEGETATION MATTING. SLOPES LESS THAN 3:1 MAY BE SPRAYED WITH TACKIFIER. ROCK CUTS STEEPER THAN 1:1 WILL NOT BE REVEGETATED.

8. SEDIMENT TRAPS MUST OUTLET ONTO STABILIZED (PREFERABLY UNDISTURBED) GROUND OR LEFT TO PERCOLATE INTO THE GROUND.

9. CONTROLLED OUTLETS SHALL DIRECT COLLECTED RUNOFF THROUGH SILT FENCES OR STRAW BALES

10. TYPICAL FUGITIVE DUST SHALL BE CONTROLLED BY WATERING AND/OR CHEMICAL STABILIZATION, PROVIDING VEGETATIVE OR SYNTHETIC COVER AND WIND BREAKS ARE CONSISTENT WITH THE UTAH STATE DIVISION OF AIR QUALITY STANDARDS.

11. ANY SEDIMENT TRACKED OFF-SITE SHALL BE REMOVED PRIOR TO THE END OF THE WORK SHIFT OR PRIOR TO SUNSET, WHICHEVER OCCURS FIRST.

12. CONTRACTOR MAY ADJUST THE LOCATIONS OF THE CONSTRUCTION FENCE, CONSTRUCTION TRAILERS, AND CONSTRUCTION MATERIALS RECEIVING AND STORAGE AREAS, AS NEEDED TO ACCOMPLISH THE CONSTRUCTION. ALL CHANGES SHALL BE NOTATED ON THE EROSION CONTROL PLAN.

13. CONTRACTOR SHALL CONDUCT PERIODIC INSPECTIONS OF THE EROSION CONTROL MEASURES, AS REQUIRED AND NOTATED IN THE SWPPP. THE CONTRACTOR WILL MAINTAIN A LOG ON-SITE OF ALL INSPECTIONS WITH THE SWPPP.

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(4260)	EXISTING CONTOUR
LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE
	DEWATERING SUMP LOCATION
	INLET PROTECTION
	STABILIZED CONSTRUCTION ENTRANCE
⟹	DIRECTION OF FLOW

Notes

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
2 BOUNTIFUL CITY 2ND SUBMITTAL	EKW	JRJ	13.12.20
1 BOUNTIFUL CITY SUBMITTAL	SDJ	JRJ	13.11.11

File Name: 01153-401ec.dwg	Dwn.	Chkd.	Dsgn.	YY.MM.DD
	SDJ	JRJ	EKW	13.11.11

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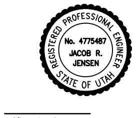

Client/Project

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SALT LAKE CITY, UT 84111

CORNER BAKERY CAFE
Bountiful, Utah

Title

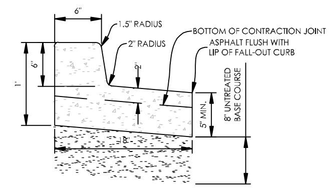
EROSION CONTROL PLAN
AND DETAILS

Project No. 186201153

Scale 1":30' (0, 30', 45', 60')

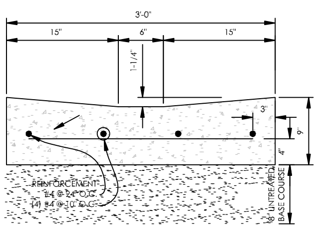
Drawing No. C-401 | Sheet of | Revision 0

ORIGINAL SHEET - ARCH D

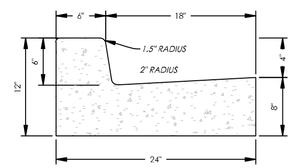


18" FALLOUT CURB
NTS

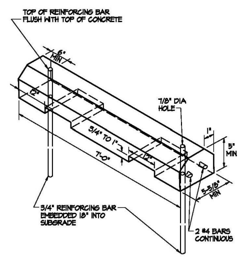
NOTE: EXPANSION AND CONTRACTION JOINTS PER APWA STANDARDS



3' CONCRETE WATERWAY
NTS



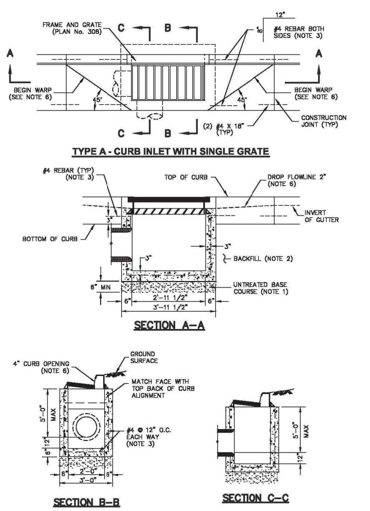
24" HIGHBACK CURB & GUTTER
NTS



CONCRETE WHEEL STOP
NTS

Catch basin

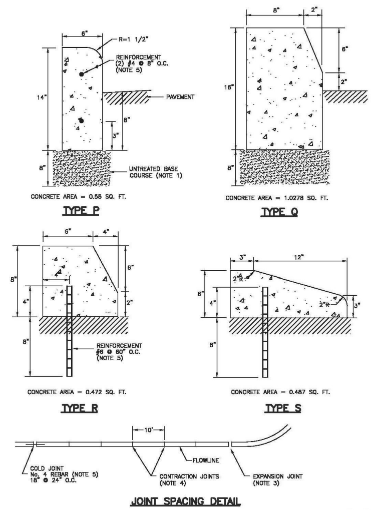
1. UNTREATED BASE COURSE: Provide material specified in APWA Section 32 11 23.
   A. Do not use gravel as a substitute for untreated base course without ENGINEER's permission.
   B. Place material per APWA Section 31 23 23.
   C. Compact per APWA Section 31 23 26 to a modified proctor density of 95 percent or greater. Maximum lift thickness before compaction is 8 inches when using riding compaction equipment or 6 inches when using hand held compaction equipment.
2. BACKFILL: Provide and place per APWA Section 31 23 23 on all sides of basin. Compact per APWA Section 31 23 26 to a modified proctor density of 95 percent or greater. Maximum lift thickness is 8 inches before compaction.
3. REINFORCEMENT: ASTM A 615, grade 60, deformed steel.
4. CONCRETE: Class 4000 per APWA Section 03 30 04. Place concrete per APWA Section 03 30 10 Cure per APWA Section 03 39 00.
5. PIPE LATERALS: The drawing shows alternate connections to the catch basin. Refer to construction drawings for connection locations.
6. CURB FACE OPENING: Make opening at least 4 inches high. Provide at least a 2 inch drop between the "begin warp" line in the gutter flow-line and the top of the grate at the curb face opening.



Plan No.
315
Catch basin
July 2000 137 Drawing 1 of 2

Curbs

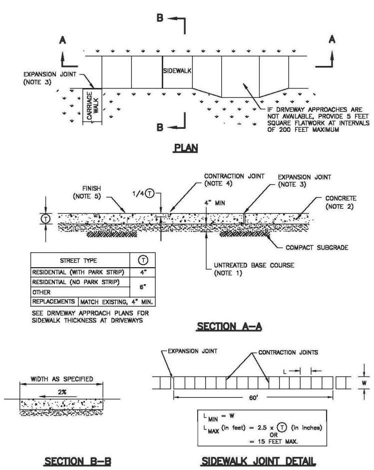
1. UNTREATED BASE COURSE: Provide material specified in APWA Section 32 11 23.
   A. Do not use gravel as a substitute for untreated base course without ENGINEER's permission.
   B. Place material per APWA Section 32 05 10.
   C. Compact per APWA Section 31 23 26 to a modified proctor density of 95 percent or greater. Maximum lift thickness before compaction is 8 inches when using riding compaction equipment or 6 inches when using hand held compaction equipment.
2. CONCRETE: Class 4000 per APWA Section 03 30 04.
   A. If necessary, provide concrete that achieves design strength in less than 7 days. Use caution; however, as concrete crazing (spider cracks) may develop if air temperature exceeds 90 degrees F.
   B. Place concrete per APWA Section 03 30 10.
   C. Provide 1/2 inch radius on concrete edges exposed to public view.
   D. Cure concrete per APWA Section 03 39 00 with type ID Class A or B (clear with fugitive dye) membrane forming compound unless specified otherwise.
3. EXPANSION JOINT: Make expansion joints vertical., full depth, 1/2 inch wide with type F1 joint filler material per APWA Section 32 13 73.
   A. Set top of filler flush with surface of concrete.
   B. Expansion joints are required at the start or end of a street intersection curb return.
   C. Expansion joints are not required in curb tangents or slip form work.
4. CONTRACTION JOINT: Make contraction joints vertical.
   A. 1/8 inch wide and 2 inches deep or 1/4 slab thickness if slab is greater than 8 inches thick.
   B. If necessary, match location of contraction joints in adjacent concrete flatwork.
5. REINFORCEMENT: ASTM A 615, grade 60, galvanized or epoxy coated deformed steel. See APWA Section 03 20 00 requirements.
6. FINISH: Broomed.



Plan No.
209
Curbs
May 2005 29

Concrete sidewalk

1. UNTREATED BASE COURSE: Provide material specified in APWA Section 32 11 23.
   A. Do not use gravel as a substitute for untreated base course without ENGINEER's permission.
   B. Place material per APWA Section 32 05 10.
   C. Compact per APWA Section 31 23 26 to a modified proctor density of 95 percent or greater. Maximum lift thickness before compaction is 8 inches when using riding compaction equipment or 6 inches when using hand held compaction equipment.
2. CONCRETE: Class 4000 per APWA Section 03 30 04.
   A. If necessary, provide concrete that achieves design strength in less than 7 days. Caution; concrete crazing (spider cracks) may develop if air temperature exceeds 90 degrees F.
   B. Place concrete per APWA Section 03 30 10.
   C. Provide 1/2 inch radius on concrete edges exposed to public view
   D. Cure concrete per APWA Section 03 39 00 with type ID Class A or B (clear with fugitive dye) membrane forming compound unless specified otherwise.
3. EXPANSION JOINT: Make expansion joints vertical, full depth, 1/2 inch wide with type F1 joint filler material per APWA Section 32 13 73.
   A. Set top of filler flush with surface of concrete.
   B. Expansion joints are not required in slip formwork except at the start or end of the installation activity.
4. CONTRACTION JOINT: Make contraction joints vertical.
   A. 1/8 inch wide and 1 inch deep or 1/4 slab thickness if slab is greater than 4 inches thick.
   B. Maximum length to width ratio for non-square panels is 1.5 to 1.
5. FINISH: Broomed.



Plan No.
231
Concrete sidewalk
December 2005 51

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Notes

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
2 BOUNTIFUL CITY 2ND SUBMITTAL	EKW	JRJ	13.12.20
1 BOUNTIFUL CITY SUBMITTAL	SDJ	JRJ	13.11.11

File Name: 01153-501dt.dwg	Dwn.	Chkd.	Dsgn.	YY.MM.DD
	SDJ	JRJ	EKW	13.11.11

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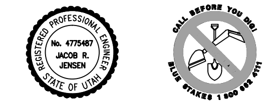

Client/Project
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299 SOUTH MAIN STREET, SUITE 2400
SALT LAKE CITY, UT 84111

CORNER BAKERY CAFE
Bountiful, Utah

Title
DETAILS

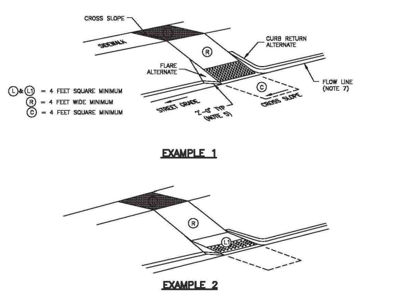
Project No. 186201153
Scale

Drawing No. C-501
Sheet of
Revision 0

ORIGINAL SHEET - ARCH D

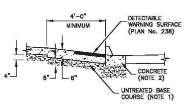
LANDING AT SIDEWALK LEVEL

NARRATIVE:
- SITE CONDITIONS WILL VARY. CONFIGURATION OF RAMP AND LANDING MAY BE CHANGED, BUT THEY MUST MEET DIMENSIONS AND SLOPES SHOWN HERE.
- GRADE BREAKS AT ENDS OF RAMPS MUST BE PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL.
- USE OF FLARES, CURB WALLS, ETC., ARE AT ENGINEER'S DISCRETION.
- LENGTH OF ANY RAMP NOT REQUIRED TO EXCEED 15 FEET.



EXAMPLE 1

EXAMPLE 2



MATERIALS

		RUNNING SLOPE	CROSS SLOPE
LANDING	L	STREET GRADE	1:48 (2%)
	L1	1:48 (2%)	STREET GRADE
RAMP	R	1:12 (8.33%)	STREET GRADE
CLEAR SPACE	C	1:20 (5%)	STREET GRADE

CROSS SLOPE IS PERPENDICULAR TO DIRECTION OF PEDESTRIAN TRAVEL. RUNNING SLOPE IS IN THE DIRECTION OF PEDESTRIAN TRAVEL.

MAXIMUM SLOPES

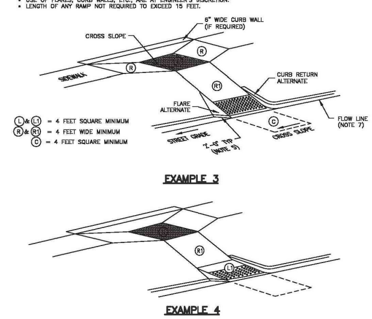
Tangent curb cut assembly Plan No. **236**

Tangent curb cut assembly

1. UNTREATED BASE COURSE: Provide material specified in APWA Section 32 11 23.
   A. Do not use gravel as a substitute for untreated base course without ENGINEER's permission.
   B. Place material per APWA Section 32 05 10.
   C. Compact per APWA Section 31 23 26 to a modified proctor density of 95 percent or greater. Maximum lift thickness before compaction is 8 inches when using riding compaction equipment or 6 inches when using hand held compaction equipment.
2. CONCRETE: Class 4000 per APWA Section 03 30 04.
   A. If necessary, provide concrete that achieves design strength in less than 7 days. Caution, concrete crazing (spider cracks) may develop if air temperature exceeds 90 degrees F.
   B. Place concrete per APWA Section 03 30 10.
   C. Provide 1/2 inch radius on concrete edges exposed to public view.
   D. Cure concrete per APWA Section 03 39 00 with type ID Class A or B (clear with fugitive dye) membrane forming compound unless specified otherwise.
3. EXPANSION JOINT: Make expansion joints vertical.
   A. Full depth 1/2 inch thick type F1 joint filler material per APWA Section 32 13 73. Set top of filler flush with surface of concrete.
4. CONTRACTION JOINT: Make contraction joints vertical.
   A. 1/8 inch wide and 1 inch deep or 1/4 slab thickness if slab is greater than 4 inches thick.
   B. Maximum length to width ratio for non-square panels is 1.5 to 1.
   C. Maximum panel length (in feet) is 2.5 times the slab thickness (in inches) to a maximum of 15 feet.
5. FLARE: If a flare is in a pedestrian circulation area, the slope of the flare shall be 1:10 (10%) maximum measured perpendicular to the pedestrian access route.
6. DETECTABLE WARNING SURFACE: A detectable warning surface is required in a ramp, transition, or landing that provides a flush connection to the street. Perpendicular and non-perpendicular connections are shown in APWA Plan No. 238.
7. PROTECTION AND REPAIR:
   A. Protect concrete from deicing chemicals during cure.
   B. Fill flow line with water. Repair construction that doesn't drain.

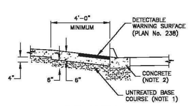
LANDING BETWEEN SIDEWALK AND STREET LEVELS

NARRATIVE:
- SITE CONDITIONS WILL VARY. CONFIGURATION OF RAMP AND LANDING MAY BE CHANGED, BUT THEY MUST MEET DIMENSIONS AND SLOPES SHOWN HERE.
- GRADE BREAKS AT ENDS OF RAMPS MUST BE PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL.
- USE OF FLARES, CURB WALLS, ETC., ARE AT ENGINEER'S DISCRETION.
- LENGTH OF ANY RAMP NOT REQUIRED TO EXCEED 15 FEET.



EXAMPLE 3

EXAMPLE 4



MATERIALS

		RUNNING SLOPE	CROSS SLOPE
LANDING	L	STREET GRADE	1:48 (2%)
	L1	1:48 (2%)	STREET GRADE
RAMP	R	1:12 (8.33%)	1:48 (2%)
	R1	1:12 (8.33%)	STREET GRADE
CLEAR SPACE	C	1:20 (5%)	STREET GRADE

CROSS SLOPE IS PERPENDICULAR TO DIRECTION OF PEDESTRIAN TRAVEL. RUNNING SLOPE IS IN THE DIRECTION OF PEDESTRIAN TRAVEL.

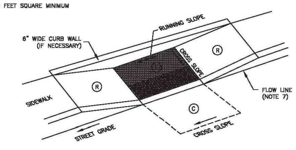
MAXIMUM SLOPES

Tangent curb cut assembly Plan No. **236**

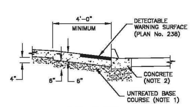
LANDING AT STREET LEVEL

NARRATIVE:
- SITE CONDITIONS WILL VARY. CONFIGURATION OF RAMP AND LANDING MAY BE CHANGED, BUT THEY MUST MEET DIMENSIONS AND SLOPES SHOWN HERE.
- GRADE BREAKS AT ENDS OF RAMPS MUST BE PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL.
- USE OF FLARES, CURB WALLS, ETC., ARE AT ENGINEER'S DISCRETION.
- LENGTH OF ANY RAMP NOT REQUIRED TO EXCEED 15 FEET.

L = 4 FEET SQUARE MINIMUM
R = 4 FEET WIDE MINIMUM
C = 4 FEET SQUARE MINIMUM



EXAMPLE 5



MATERIALS

		RUNNING SLOPE	CROSS SLOPE
LANDING	L	STREET GRADE	1:48 (2%)
RAMP	R	1:12 (8.33%)	1:48 (2%)
CLEAR SPACE	C	1:20 (5%)	STREET GRADE

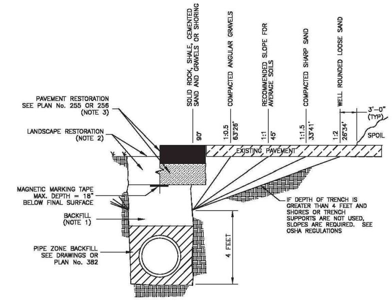
CROSS SLOPE IS PERPENDICULAR TO DIRECTION OF PEDESTRIAN TRAVEL. RUNNING SLOPE IS IN THE DIRECTION OF PEDESTRIAN TRAVEL.

MAXIMUM SLOPES

Tangent curb cut assembly Plan No. **236**

Trench backfill

1. BACKFILL: Above the pipe zone.
   A. Granular Fill. Limit maximum particle size to 6 inches. Place fill per APWA Section 33 05 20. Compact to a modified proctor density of 95 percent or greater. Maximum lift thickness is 8 inches before compaction. Do not use clay without ENGINEER's review and acceptance. Water jetting is NOT allowed in backfilling operation.
   B. Flowable Fill. Provide and place controlled low strength material per APWA Section 31 05 15. Cure the fill before placing surface restorations.
2. LANDSCAPED RESTORATION: Provide landscaped surfaces with topsoil. Rake to match existing grade. Replace vegetation to match pre-construction conditions. See APWA Section 32 92 00 or APWA Section 32 93 13 requirements.
3. PAVEMENT RESTORATION: Do not install asphalt or concrete surfacing until trench compaction is accepted by ENGINEER.
4. PEA GRAVEL: Pea gravel is not allowed in any part of the trench.

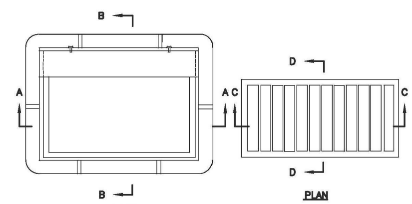


SECTION

Trench backfill Plan No. **381**

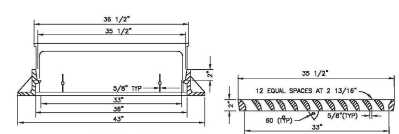
35 1/2" Grate and frame with adjustable curb box

1. CASTING: Grey iron class 35 minimum per ASTM A 48.
2. COATINGS: Except machined surfaces, coat all metal parts with asphaltum paint.
3. INLET BOX: See Plan No. 315.



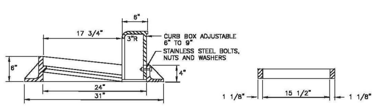
PLAN

PLAN



SECTION A–A

SECTION C–C



SECTION B–B

SECTION D–D

35 1/2" Grate and frame with adjustable curb box Plan No. **308**

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Salt Lake City, Utah 84107
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Owner/Project

Legend

Notes

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
2 BOUNTIFUL CITY 2ND SUBMITTAL	EKW	JRJ	13.12.20
1 BOUNTIFUL CITY SUBMITTAL	SDJ	JRJ	13.11.11

File Name: 01153-502dt.dwg	Dwn.	Chkd.	Dsgn.	YY.MM.DD
	SDJ	JRJ	EKW	13.11.11

Permit-Seal

REGISTERED PROFESSIONAL ENGINEER No. 4775487 JACOB R. JENSEN STATE OF UTAH

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Client/Project
WASATCH COMMERCIAL MANAGEMENT, INC
299 SOUTH MAIN STREET, SUITE 2400
SALT LAKE CITY, UT 84111

CORNER BAKERY CAFE
Bountiful, Utah

Title
DETAILS

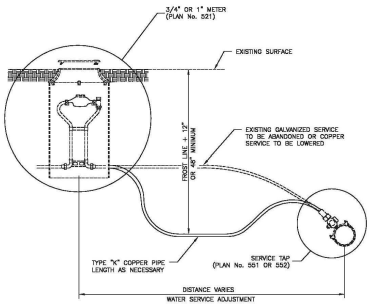
Project No. 186201153 | Scale

Drawing No. C-502 | Sheet of | Revision 0

ORIGINAL SHEET - ARCH D

Water service line

1. INSPECTION: Prior to backfilling trench excavation, secure inspection of installation by ENGINEER.
2. BACKFILL: Provide and place per APWA Section 33 05 20. Compact per APWA Section 31 23 26 to a modified proctor density of 95 percent or greater. Maximum lift thickness is 8 inches before compaction.
3. FITTINGS: Provide brass fittings and nipples. Do not use galvanized materials.



Water service line

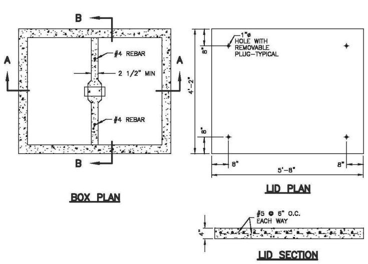
Plan No. **541**

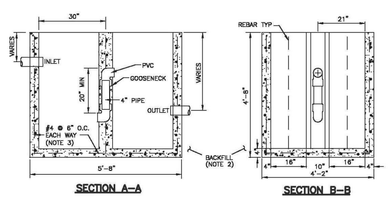
August 2001

229

Grease trap

1. INSPECTION: Prior to backfilling around concrete box, secure inspection of installation by ENGINEER.
2. BACKFILL: Provide and place per APWA Section 31 23 23. Compact per APWA Section 31 23 26 to a modified proctor density of 95 percent or greater. Maximum lift thickness is 8 inches before compaction.
3. REINFORCEMENT: ASTM A 615, grade 60, deformed steel. See APWA Section 03 20 00 requirements.
4. CONCRETE: Class 4000 per APWA Section 03 30 04. Place concrete per APWA Section 03 30 10. Cure per APWA Section 03 39 00.
5. WALL PENETRATIONS: Fill annular space around piping with waterproof sealer.





Grease trap

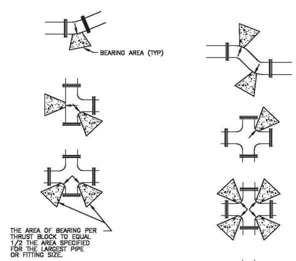
Plan No. **441**

April 1997

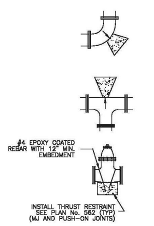
201

Direct bearing thrust block

1. CONCRETE: Class 2000 minimum per APWA Section 03 30 04. Pour concrete against undisturbed soil.
2. PIPE JOINTS: Do not cover with concrete. Leave completely accessible.
3. GREASE: Apply poly-fm grease to all buried metal surfaces. Wrap with 8 mil thick polyethylene sheet and tape wrap.
4. SPECIAL CONSTRUCTION REQUIREMENTS:
   A. Thrust design for pipe sizes or configurations not shown require special design.
   B. Bearing areas, volumes, and special thrust blocking details shown on Drawings take precedence over this plan.
   C. Reinforcing steel bars to be epoxy coated at least 15 mils thick. Minimum stress yield strength of tie down bars is 70,000 psi.
   D. Locking restraint devices may be used in conjunction with concrete thrust blocking (at option of ENGINEER).
5. INSPECTION: Prior to backfilling around thrust block, secure inspection of installation by ENGINEER.
6. BACKFILL: Provide and place per APWA Section 33 05 20. Compact per APWA Section 31 23 26 to a modified proctor density of 95 percent or greater. Maximum lift thickness is 8 inches before compaction.



MINIMUM BEARING AREA IN SQ. FT.					
SIZE OF PIPE	TEES, VALVES DEAD ENDS	90° BENDS	45° BENDS	22 1/2° BENDS	11 1/4° BENDS
4"	2	3	2	2	2
6"	4	5.5	3	1.5	1
8"	6.5	9.5	5	2.75	1.5
12"	14	20	11	5.5	3
14"	19	26.5	14.5	7.5	4
16"	24	34	18.5	9.5	6
20"	27	52	28.5	14.5	16
24"	53	74	41	21	53
30"	81	114	62	32	16



Direct bearing thrust block

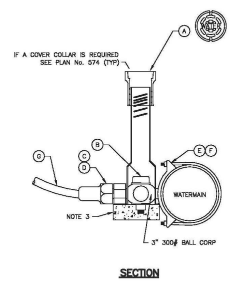
Plan No. **561**

April 1997

239

1 1/2" and 2" service taps

1. TAPPING: Place taps a minimum of 24 inches apart. Use a tapping tool that is sized corresponding to the size of the service line to be installed. No taps within 24 inches of end of pipe.
2. TAPE: Teflon tape is required on all taps.
3. BLOCKS: Clay brick or concrete block required under valve box to assure a 1" space before bearing on a corporation stop.
4. SADDLE CLAMP: Required on all taps.
5. INSPECTION: Prior to backfilling around taps, secure inspection of installation by ENGINEER.
6. BACKFILL: Provide and place per APWA Section 33 05 20. Compact per APWA Section 31 23 26 to a modified proctor density of 95 percent or greater. Maximum lift thickness is 8 inches before compaction.



LEGEND			
No.	*	ITEM	DESCRIPTION
A		VALVE BOX WITH LID	2 PIECE CAST IRON
B		CORPORATION STOP	BRASS
C		COPPER ADAPTER	
D		FLARE OR PACK JOINT COPPER ADAPTER	
E		SERVICE SADDLE CLAMP	D.I., A.C., C.I.
F		SERVICE SADDLE CLAMP	PVC
G		COPPER PIPE (SERVICE LINE)	TYPE K (SOFT)

* FURNISHED BY UTILITY AGENCY

1 1/2" and 2" service taps

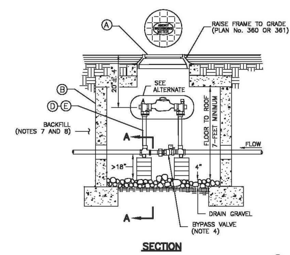
Plan No. **552**

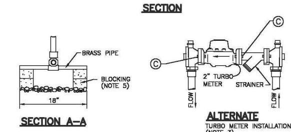
August 2001

237

1 1/2" and 2" meter

1. METER PLACEMENT:
   A. In new construction, install meter at center of lot or per agency requirements.
   B. All meters are to be installed in the park strip or within 7 feet of the property line (street side).
   C. Do not install meters under driveway approaches, sidewalks, or curb and gutter.
2. PIPE: Install type 'K' copper pipe to property line. Coordinate with utility agency for type of pipe to be used outside of right-of-way.
3. ALTERNATE: Turbine meters are required on all systems used exclusively for irrigation or fire protection. Where domestic use is applicable, use a standard meter.
4. BYPASS VALVE: Lock in off position.
5. BLOCKING: Use clay brick or concrete block.
6. CONCRETE BOX:
   A. Center frame and cover over water meter.
   B. Allow 1 inch clearance around waterline where line passes through wall. Seal opening with compressible seal.
7. INSPECTION: Prior to backfilling around the meter box, secure inspection of installation by ENGINEER.
8. BACKFILL: Provide and place per APWA Section 33 05 20. Compact per APWA Section 31 23 26 to a modified proctor density of 95 percent or greater. Maximum lift thickness is 8 inches before compaction.





LEGEND			
No.	*	ITEM	DESCRIPTION
A		27" FRAME AND COVER	PLAN No. 502
B		CONCRETE BOX	PLAN No. 505
C		METER BOLTS	5/8" x 2 3/4" BRASS
D		1 1/2" CUSTOM SETTER WITH BYPASS	
E		2" CUSTOM SETTER WITH BYPASS	

* FURNISHED BY UTILITY AGENCY

1 1/2" and 2" meter

Plan No. **522**

August 2001

217

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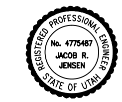
Issued		By	Appd.	YY.MM.DD
2	BOUNTIFUL CITY 2ND SUBMITTAL	EKW	JRJ	13.12.20
1	BOUNTIFUL CITY SUBMITTAL	SDJ	JRJ	13.11.11

File Name: 01153-503dt.dwg	SDJ	JRJ	EKW	13.11.11
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal



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WASATCH COMMERCIAL MANAGEMENT, INC
299 SOUTH MAIN STREET, SUITE 2400
SALT LAKE CITY, UT 84111

CORNER BAKERY CAFE
Bountiful, Utah

Title

DETAILS

Project No. 186201153

Scale

Drawing No. C-503

Sheet of

Revision 0

V:\1862\active\186201153\drawing\sheets\01153-503dt.dwg
2013-12-20 1:09 AM By: Winters, Eric

ORIGINAL SHEET - ARCH D

City Council Staff Report

Subject: **Architectural Services Contract for Bountiful Police Dept. Dispatch Center Remodel Project**
Author: **City Engineer**
Department: Engineering, Police
Date: May 28, 2024

Background

The consolidation of dispatch centers for emergency services in Davis County requires enlargement of the Bountiful Police Department's Dispatch center to accommodate additional consoles.

Analysis

The remodel of the dispatch center is a high priority project which must be completed with a fully functional center by January 1, 2025. With the approval of the City Manager, Gould+ Architects was contacted to provide pricing for the necessary architectural and professional engineering design services for the project. Gould's team includes the same consultants who prepared plans for the remodel of the restroom spaces which is about to start construction.

As a compliment to the quick execution of the overall project, the Engineering Dept. is currently advertising for a Construction Manager/General Contractor to assist in the project design and to oversee construction.

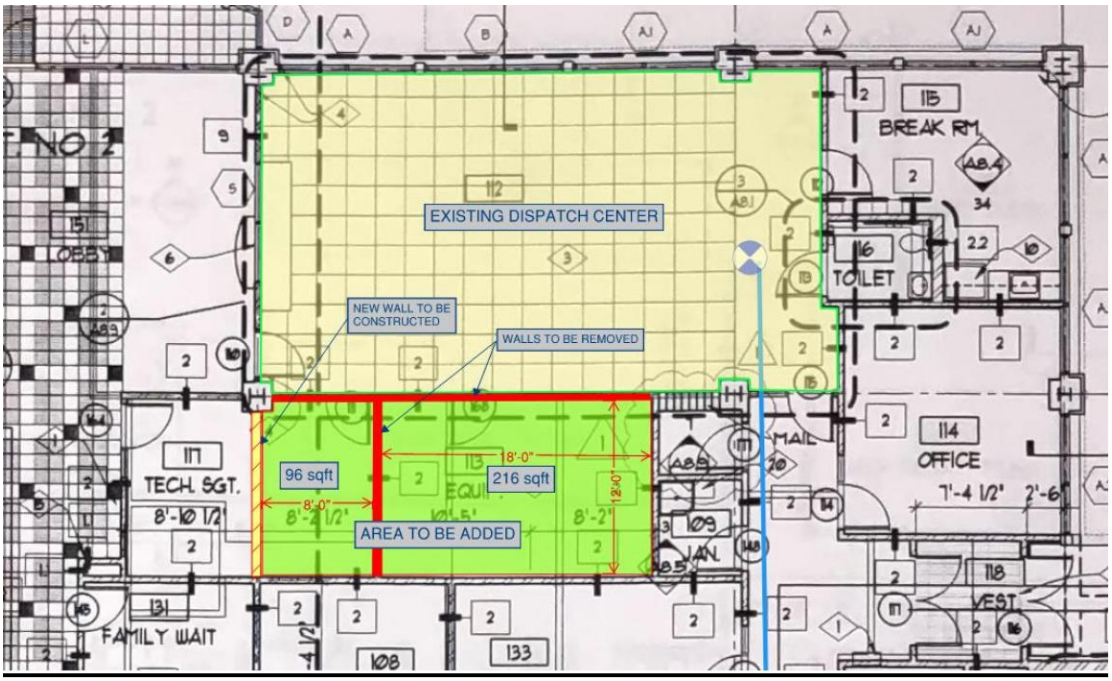

Figure 1 Preliminary Remodel Concept

Department Review

This memo has been reviewed by the Police Chief and the City Manager.

Significant Impacts

Funding for the project is included in the FY 2024-2025 Proposed Budget.

Recommendation

- It is recommended that the City Council accept the proposal of Gould+ Architects in the amount of $24,640.00 and award the contract at the prices noted in their Proposal.

Attachments

None

City Council Staff Report

Subject: Central Irrigation Control Equipment
Author: Brock Hill
Department: Parks
Date: 28 May 2024

Background

Bountiful City Parks Department is committed to providing beautiful clean, green, and safe family recreational areas that enhance the quality of life for all the citizens of Bountiful. Our parks, trails, and open spaces will be designed, developed, and maintained using the industry's best management practices and highest standards of quality. As stewards of these lands, we will serve the public with integrity, accountability, and transparency.

At the Council Retreat in January 2024, Parks staff was tasked with researching the feasibility and cost of converting Bountiful parks irrigation systems to a smart/central control irrigation system. With the overall goal of reducing water use and turning towards water conservation staff began researching central control systems by contacting industry irrigation system suppliers, secondary water suppliers (Bountiful Irrigation, Weber Basin Water Conservation District), having conversations with water conservation research and education professionals, attending water conservation conferences, and water/irrigation managers of others Utah cities.

Analysis

To better understand how smart irrigation controllers manage water use with conservation as the primary driver, information was gathered on best central control systems on the market, commitment to changing/upgrading products as technology advances, which systems best manages water usage, ease of adjusting systems in the field as weather consistently changes, connectivity to supporting weather reporting stations/manufacturers system servers (cellular, radio, fiber, wireless, ethernet), ease or difficulty of programing and user interface, product technical support, future system expandability and upgrading, system costs, and system adaptability to existing in-ground systems. Irrigation products that have been researched include controllers, master valves, flow sensors, and site-specific rain sensors and monitoring systems. Central control systems from several industry suppliers were researched including Weather-Trac, Rainbird IQ4, Cal-Sense, and Hydro-Rain B-Hyve Pro.

Other factors were taken into consideration and assessed as information was gathered and conversations were had with other parks departments and water managers. Factors considered to be of significant impact include current staff knowledge of irrigation operations and programing, time required for system training, installation, set up, and operation; employee turn-over, type of existing system controllers, equipment, and age of existing irrigation systems; availability of products, product cost, and installation of master valves and flow sensors (requires wiring from valve location to controller location, difficulty of valve installations).

With all factors and information gathered, it has been determined that two products meet the needs and concerns outlined, Rainbird IQ4 and Weather-Trac. After much consideration and discussion with other cities and industry professionals, Rainbird IQ4 stands out as best suited for our needs (water

conservation), ease of employee assimilation, training, and operation, ease of existing system integration, and overall cost.

Phase I of the plan, upon approval, is to purchase the equipment, controllers, valves, rain sensors, and install/upgrade the irrigation systems at 10 park locations. The locations chosen are City Hall complex, 400 North Park, Town Square, Washington Park, 1500 S. Park, Mueller Park, Celebration Park, Creekside Park, Lewis Park, and North Canyon Park. This is about 25% of all properties using secondary irrigation. Staff recognizes this is the first step in a long process to better manage, operate, and convert the park irrigations system to central irrigation control technology. Staff is committed to this process and adapt as needed to accomplish the goals of the City Council, conserve water, and better manage park irrigation operations. We will continue to plan the upgrades/installations of the other parks and managed properties into future budget years as funds continue to be made available.

Anticipated costs of central control system equipment, for 10 locations, are as follows:

Rainbird IQ4:	$58,610
Weather-Trac:	$65,200

Department Review

The review was completed by the Parks Department

Significant Impacts

The irrigation system central control system and associated upgrades will meet City Council objective of reducing overall secondary irrigation water usage, meet the action plan of recently established City Water Conservation Plan, goals, and objectives; increase staff management, in real-time, of irrigation systems in changing weather conditions, system breaks or malfunctions, and reduce response time to citizen concerns.

Recommendation

Staff recommends Council approve the purchase of Rainbird IQ4 Central Irrigation Control system equipment required for upgrading 10 park locations, as previously noted, for $58,610 (Council will be asked to approve a separate contract for installation at a future meeting).

Attachments

None, (quotes/estimates available upon request)

City Council Staff Report

Subject: Employer Contributions to Utah Retirement Systems (URS)
Author: Jessica Sims
Department: Human Resources
Date: May 28, 2024

Background

Bountiful City Resolution 2020-08 authorized the City to "pick-up" the required 2.27% employee contribution for Tier 2 Public Safety and Firefighter retirement benefits and to treat these as employer contributions under IRS Code Section 414(h)(2). This employee contribution requirement only applies to employees who have elected the Tier 2 Public Safety Hybrid Option. On July 1, 2022 the rate for these "pick-up" contributions for Tier II Public Safety employees increased to 2.59% and Bountiful City again agreed to "pick-up" the additional contribution through Resolution 2022-09. On July 1, 2024 employee contribution rates will increase an additional 2.14%, for a total employee contribution of 4.73%.

Additionally, for the first time, employees in the Tier 2 Hybrid option system (non- public safety and firefighter) are being asked to contribute 0.7% of their salary, effective July 1, 2024. The option to allow the employer to "pick-up" this contribution is not available currently.

Analysis

The proposed 2024-25 budget includes funding to accommodate the increase to Tier 2 Public Safety. Currently the City is augmenting the 401k contributions of Tier II employees above what is required by Utah Retirement Systems in an effort to compensate them since the Tier II Retirement benefits are not as robust as the Tier I benefits. With the increase in the "pick-up" cost, the additional contribution by the City to Tier II Public Safety employees 401k's will be reduced by the 2.14% increase so there will be no additional financial impact to the City's budget. Staff recommends adopting a new resolution to "pick-up" the required 2.14% employee contribution for Tier 2 Public Safety employees who have chosen the Hybrid Option. We also recommend contributing an additional 2.14% to 401(k) for Tier 2 Public Safety employees who have chosen the 401(k) Option.

The proposed 2024-25 budget also includes funding to contribute an additional 0.7% into the 401-k's of Tier 2 non-public safety to offset the 0.7% amount employees will be required to contribute. This is funded through the additional contribution the City is already making in an

effort to additionally compensate Tier 2 employees since the Tier II Retirement benefits are not as robust as the Tier I benefits.

Department Review

The Resolution and Staff Report were prepared by the Human Resource Director, with oversight by the City Manager.

Significant Impacts

Approval of these updates will provide additional benefit to Tier 2 Public Safety employees and allow Bountiful City to remain competitive in attracting and retaining employees.

Recommendation

It is recommended that the Council approve this Resolution.

Attachments

Resolution 2024-04

BOUNTIFUL

BOUNTIFUL CITY, UTAH
RESOLUTION NO. 2024-04

A RESOLUTION APPROVING AND AUTHORIZING THE CITY OF BOUNTIFUL TO "PICK-UP" THE ADDITIONAL 2.14% EMPLOYEE RETIREMENT PLAN CONTRIBUTION FOR BOUNTIFUL CITY TIER 2 PUBLIC SAFETY EMPLOYEES

WHEREAS, legislative enhancements applicable to all new and current Utah Tier 2 Public Safety and Firefighter retirement employees benefits became effective on July 1, 2020; and

WHEREAS, effective July 1, 2022, Tier 2 Public Safety and Firefighter employers were required to contribute 14% and the employee 2.59% for a total of 16.59% to individual Tier 2 Public Safety and Firefighter retirement plans; and

WHEREAS, beginning July 1, 2024, Tier 2 Public Safety and Firefighter employers are required to continue contributing 14% and the employee contribution increases to 4.73% for a total of 18.73% to individual Tier 2 Public Safety and Firefighter retirement plans; and

WHEREAS, State law and the Internal Revenue Service Code allows employers to "pick-up" the employee's portion of the retirement contribution and treat it as an employer contribution; and

WHEREAS, the employee contribution requirement only applies to employees who have elected the Tier 2 Public Safety Hybrid Option; and

WHEREAS, Bountiful City desires to contribute an additional 4.73% to 401(k) for Tier 2 Public Safety employees who have chosen the 401(k) Option; and

WHEREAS, formal action in the form of a resolution is required if an employer wishes to "pick-up" the employee's portion of the contribution.

NOW, THEREFORE, BE IT RESOLVED by the City Council of Bountiful City, Utah, as follows:

Section 1. Authorization. The Bountiful City Council does hereby authorize Bountiful City to "pick-up" 4.73% employee retirement plan contribution for Tier 2 Public Safety employees who have chosen the Hybrid Option and employees who have chosen the 401(k) Option.

Section 2. Effective date. This Resolution shall take effect immediately upon passage and shall be effective beginning July 1, 2024.

APPROVED, PASSED AND ADOPTED BY THE BOUNTIFUL CITY COUNCIL THIS 28TH DAY OF MAY, 2024.

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Kendalyn Harris, Mayor

ATTEST:

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Shawna Andrus, City Recorder

City Council Staff Report

Subject: Amending the Personnel Policies and Procedures Manual
Author: Jessica Sims
Department: Human Resources
Date: May 28, 2024

Background

During a review of benefits in preparation for the FY25 budget and open enrollment the Human Resources Department wanted to identify any needed adjustments. As life insurance benefits are included in the City Personnel Policies and Procedures Manual any changes to those benefits requires a resolution amending the manual.

Analysis

Currently Bountiful City is providing a $5,000 death benefit insurance policy to 116 retired employees. Although this benefit has been available for many years, few employees know if it's existence, and fewer beneficiaries of deceased former employees claim it. The City has had an average of 2 claims/ year since 2007 on these policies. The annual premium cost to provide these policies is $30,145 or approximately 31% of the annual total premium the City pays for life insurance for all current, full-time employees and retired employees.

The retiree death benefit is considered an Other Post-Employment Benefit (OPEB) and the City is required to maintain a restricted cash liability (currently $641,554) on our books determined by actuaries, as well as additional reporting requirements as part of the City's annual audit. The cost to continue providing the required reporting is $9,000 over the next two years, as well as significant staff time to prepare the required financial statements for the annual comprehensive financial report.

Additionally, the current death benefit for a full-time employee's spouse and dependent children is $2,000, several thousand dollars below the cost to provide cremation and/or burial.

The City could eliminate the retiree benefit and increase spouse and dependent death benefit coverage to $10,000. The cost for this would be $5,683 annually. By making this change the City would see an annual premium reduction of $24,462 and I believe provide a better benefit for our employees at a time when they may need it most.

Department Review

Each department head has reviewed the report and sends their concurrence.

Significant Impacts

The City would reduce annual life insurance premium costs by $24, 462, save additional cost and staff time in no longer needing to prepare OPEB financial statements for the ACFR, and would have an additional $641,554 in unrestricted City funds to use for other priorities.

Recommendation

It is recommended that the Council amend the Personnel Policies and Procedures Manual to remove the $5,000 retiree death benefit and include language to memorialize the spouse and dependent child death benefit for full-time employees and increase the amount to $10,000 of coverage.

Attachments

Resolution 2024-03

BOUNTIFUL

BOUNTIFUL CITY, UTAH
RESOLUTION NO. 2024-03

A RESOLUTION AMENDING THE PERSONNEL POLICIES AND PROCEDURES MANAUL OF THE CITY OF BOUNTIFUL

WHEREAS, Utah Code Annotated §10-3-717 and authorizes city councils to establish personnel policies and guidelines by resolution; and

WHEREAS, the Bountiful City Council has adopted a Personnel Policies and Procedures Manual to assist in the efficient utilization of City resources and the fair and uniform application of requirements regarding City operations and City employees; and

WHEREAS, the Personnel Policies and Procedures Manual should be reviewed and amended from time to time to ensure compliance with the law and contemporary management practices; and

WHEREAS, the City Council finds that amending, adopting and implementing the City Personnel Policies and Procedures Manual is in the best interests of Bountiful City and its employees.

NOW, THEREFORE, BE IT RESOLVED by the City Council of Bountiful City, Utah, as follows:

Section 1. Authorization. The Bountiful City Council does hereby amend the Personnel Policies and Procedures Manual to include the changes as follows: (changes tracked, showing only amended parts or parts relevant to the amendment)

311. Benefits

E. Medical and Life Insurance

3. The City provides a Group Term Life Insurance policy for all full-time employees that is valued at two times basic annual earnings plus an additional $10,000 death benefit. The employee is able to designate their beneficiaries for these policies. Additionally, the City also provides a $10,000 death benefit policy for spouses and dependent children of full-time employees. The employee is the beneficiary of these policies. ~~Employees who retire from the City receive a life insurance policy valued at $5,000. Premiums are paid by the City on behalf of the retiree through the date of their passing. The policy is in the name of the retiree and they are able to designate their beneficiaries.~~

Section 2. Effective date. This Resolution shall take effect immediately upon passage.

APPROVED, PASSED AND ADOPTED BY THE BOUNTIFUL CITY COUNCIL THIS 28TH DAY OF MAY, 2024.

_____
Kendalyn Harris, Mayor

ATTEST:

_____
Shawna Andrus, City Recorder