



Dixie Metropolitan Planning Organization

Dixie MPO Regional Active Transportation Plan

March 2015





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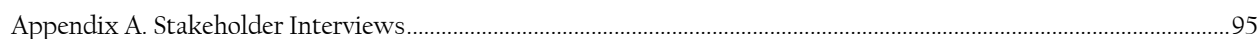


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Chapter 1: Introduction

Overview

Located in the southern region of Washington County, the Southwestern most county in Utah, the Dixie MPO municipal boundaries encompass St. George, Washington, Santa Clara, Ivins, Hurricane, LaVerkin, Leeds, Toquerville and portions of unincorporated Washington County. Approximately 142,000 people reside within the 177 square miles of the Dixie MPO region (American Community Survey 5-Year Estimates) and the population continues to grow. The Dixie MPO recognizes that biking and walking have positive benefits on the environment, economic development, health, and overall quality of life for residents within the Dixie region. The Dixie MPO Regional Active Transportation Plan aims to enhance the existing bike and pedestrian corridors to allow a means for more people to bike and walk to work, school and other destinations.

The Dixie MPO Regional Active Transportation Plan analyzes the area's current biking and walking activity as well as the needs of residents. Through this analysis the Plan makes facility and program recommendations for improvement and then defines the costs and priorities for implementation.

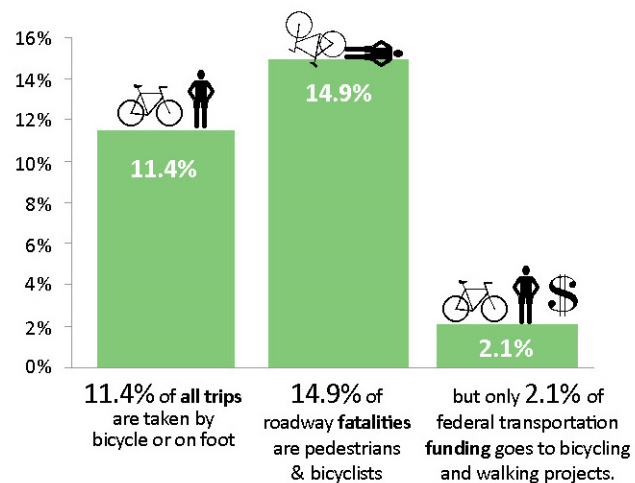
Why is encouraging biking and walking important?

Safety and 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 shares of commuters bicycling or walking to work. Likewise, where commuters bicycle or walk to work in higher shares, more of the population is meeting the recommended amount of weekly physical activity

Safety, too, has a close relationship with bicycling and walking levels. In cities where a higher percent of commuters walk or bicycle to work, corresponding fatality rates are generally lower. This is in contrast to critics who fear a higher rate of crashes when more bicyclists and pedestrians use the roadway.¹

Figure 1: Disparity of Bicycle and Pedestrian Mode Share, Fatalities and Funding (Credit: Alliance for Biking and Walking 2014 Benchmarking Report)



¹ Alliance for Biking and Walking, *Bicycling and Walking in the United States, 2014 Benchmarking Report*

Quality of Life

Bicycling and walking are also important ways to improve quality of life for existing and prospective Washington County residents. Trails consistently rank in the top five amenities desired by prospective home buyers.² Millennials and baby boomers alike are trending towards locations where they can bike or walk to access their daily needs.

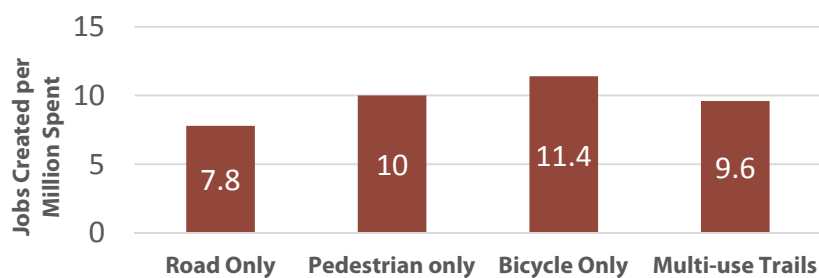
Economic Development

Bicycling and walking can also have positive impacts on local economies. In addition to automobile ownership and healthcare costs associated with inactivity, trails and bikeways have shown demonstrated economic impacts in relation to more concrete economic indicators such as property values and consumer spending habits. For example, in Ohio, residents are willing to pay a \$9,000 premium to live within 1,000 feet of the Little Miami Scenic Trail.³ In addition, studies have shown that investment in bicycle and pedestrian infrastructure create more jobs per dollar spent on average than those spent strictly on roadway projects.⁴

Figure 2: Downtown St. George



Figure 3: Economic Impact of Bicycle and Pedestrian Infrastructure Investment



Who benefits?

Investment in active transportation benefits people in every stage of life. Families, children, students at Dixie State, millennials, young professionals as well as baby boomers and retirees all benefit from the implementation of bicycle and pedestrian friendly communities. Safe Routes to School Programs enhance school safety zones, reduce

2 National Association of Realtors

3 vom Hofe, R., and Parent, O., in University of Cincinnati, 2011 - "New Research Finds that Homeowners and City Planners Should 'Hit the Trail' When Considering Property Values"

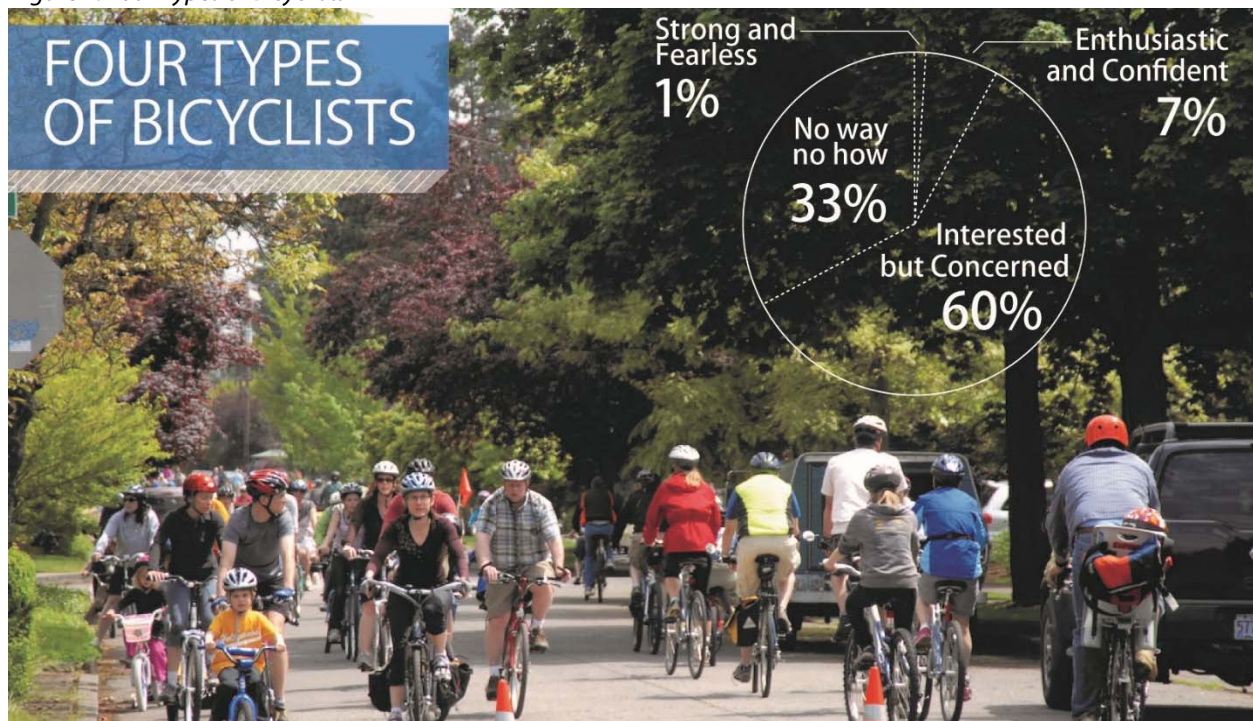
4 Garrett-Peltier, H., 2011 - Pedestrian and bicycle infrastructure: A national study of employment impacts, Political Economy Research Institute, University of Massachusetts Amherst

congestion around schools, improve children's health and can establish a sense of freedom and lifetime healthy habits. Students at Dixie State will benefit from the convenient biking and walking access to campus. Young professionals and baby boomers can both enjoy increased access to trails and bikeways. Young professionals seeking transportation options can choose to walk or bicycle to destinations while baby boomers can stay active as they move into their senior years.

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. Strong and fearless bicyclists (approx. 1% of population) 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 paths. Enthusied and confident bicyclists (approx. 5-10% of population) are fairly comfortable riding in dedicated bikeways but usually choose low traffic streets or shared use paths when available. This group can include many kinds, including commuter and recreational bicyclists. Interested but concerned bicyclists (approx. 60% of population) comprise the majority of the population and are typically those who only ride on low traffic streets or shared use paths in fair weather. These people perceive traffic, safety, and other issues as significant barriers to bicycling. The Dixie MPO Regional Active Transportation Plan is specifically designed to create a network that is accessible and appealing to the 60%, "interested but concerned" group. No way, no how encompasses approximately 30% of population. These are not bicyclists and will not ride a bicycle under any circumstances. Although, some may eventually try bicycling with time, education and training.

Figure 4: Four Types of Bicyclists



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Chapter 2: Existing Conditions Analysis

Introduction

The Dixie MPO Regional Active Transportation Plan seeks to develop a cohesive vision for future facilities and programs to encourage the daily act of walking and biking among Washington County residents. The plan seeks to achieve the following vision statement:

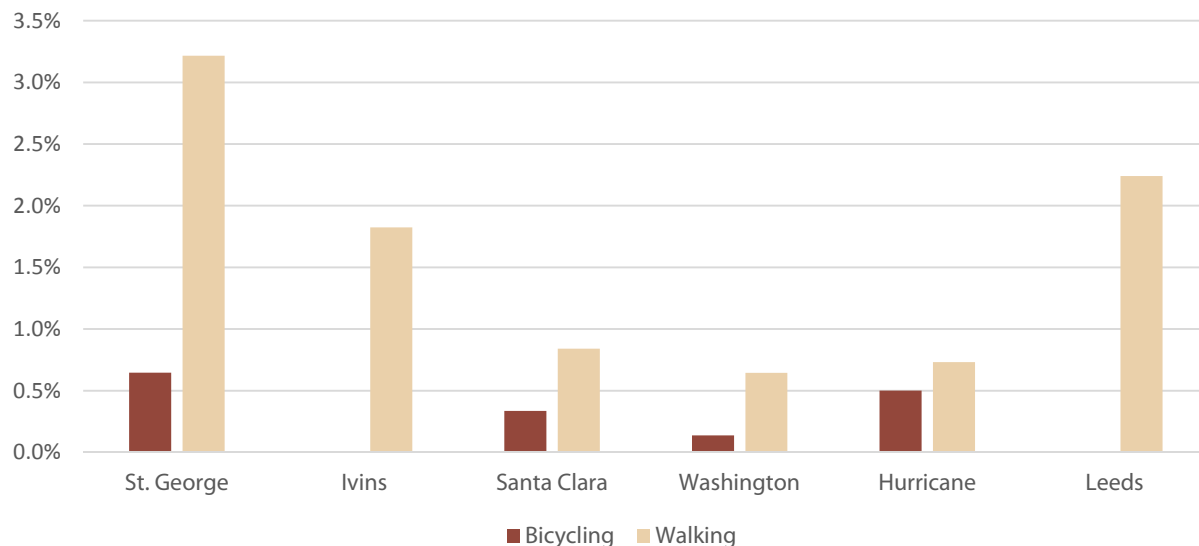
Washington County's active transportation network will help balance the multi-modal transportation network by comfortably accommodating users of all abilities and link neighborhoods, job centers, recreation areas and adjacent communities

To successfully realize this goal, careful study of the region's existing biking and walking activity and conditions is necessary to determine strengths and weaknesses in the current system. The following chapter summarizes existing conditions for the Dixie MPO Regional Active Transportation Plan and creates the framework by which the plan's ultimate recommendations will be developed.

Existing Biking and Walking Activity

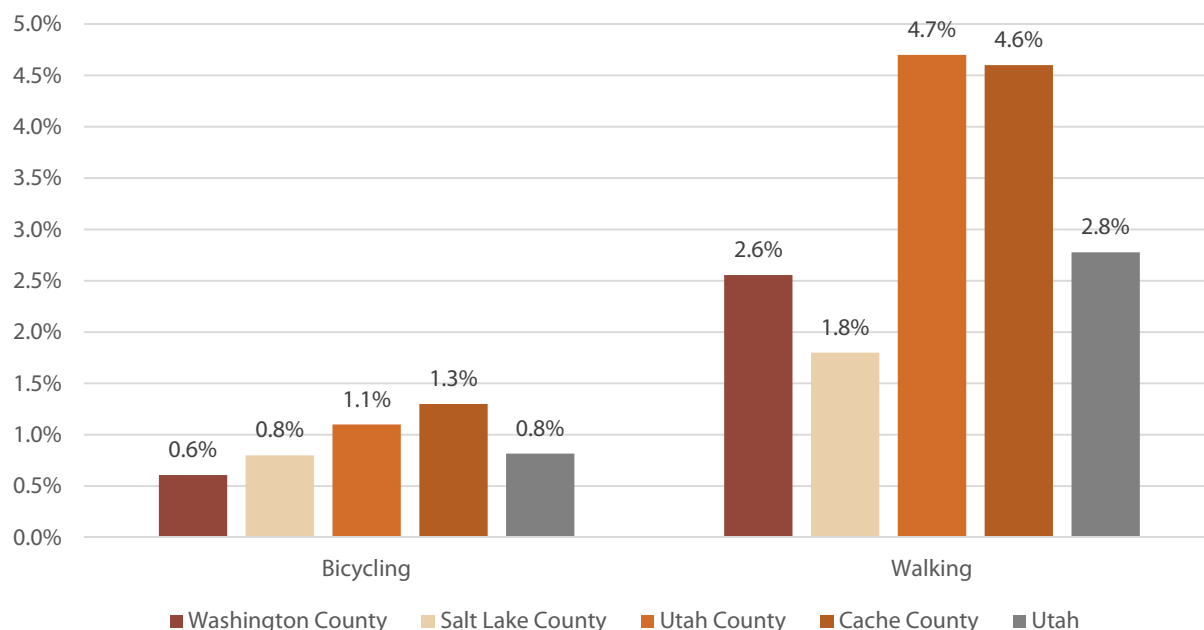
Journey to Work / Commuting (ACS) 2012 Data

Figure 5: Dixie MPO Municipality Biking and Walking Mode Share Comparison



Data: American Community Survey (ACS) Five-Year Estimates, 2008-2012

*Note: Biking and Walking mode share data was unavailable for LaVerkin and Toquerville

Figure 6: Statewide Commute to Work (ACS) Mode Share Comparison

Data: American Community Survey (ACS) Five-Year Estimates, 2008-2012

Based on 2008-2012 American Community Survey data, Washington County possesses walking and biking commute mode shares equal to overall Utah averages. When compared to other urbanized Utah counties, Washington County equals the biking and walking trip mode shares found in Salt Lake County, but lags behind those seen in Cache and Utah Counties.

Utah Travel Study (2012)

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. The 2012 Utah Travel Study was developed as a statewide survey and report in conjunction with the Utah Department of Transportation (UDOT), the Utah Transit Authority (UTA) and several statewide metropolitan planning organizations, including the Dixie MPO. The primary tool of the study was the household travel diary survey which was supplemented by additional surveys including the Long Distance Survey, the College Travel Diary, Bike/Pedestrian Debrief Survey, the Bike/Pedestrian Barriers Survey, the attitude Debrief survey and the Residential Choice Stated Preferences Survey. The study measured trips for all modes and all purposes (not just journey to work) and thereby paints a clearer picture of current transportation habits beyond ACS data.

Table 1: Utah Travel Study Non-motorized Mode Shares

REGION	ALL TRIPS	
	Walk	Bike
Wasatch Front	7.8%	1.7%
Cache	7.7%	2.7%
Dixie	6.0%	1.3%
UDOT	6.5%	1.9%
Utah Total	7.5%	1.8%

As Table 1 shows, the Dixie MPO area percentages for trips taken on foot and by bike are lower than other MPOs and the Utah statewide average. This is generally consistent with the data from the ACS that focused only on home-based work trips. These numbers illustrate the need for wider implementation of walking and biking infrastructure and programming.

Regional Obstacles to Biking and Walking

The Dixie MPO region possesses many unique barriers that affect the active transportation network or individual bicyclists and pedestrians. Many of these barriers are regional or environmental factors that are part of life in southwest Utah.

Weather

Weather plays an important role in the comfort and likelihood of Washington County residents to engage in biking or walking trips. Daytime temperatures routinely hit triple digits in the summer months making mid-day biking or walking trips uncomfortable for even short trips. Although this does balance during the mild winter months, many of the states with the highest biking and walking trip mode shares can be found in northern climates. The top five states with the highest commuter bicycle and walking levels are all located in northern climates. In order from highest to lowest these include Alaska, New York, Vermont, Oregon and Montana. In addition, the 2014 Alliance for Biking and Walking Benchmarking Report found a relationship between pedestrian commuting and the number of days above 90 degrees Fahrenheit. Cities experiencing a greater number of these 90-degree days were more likely to have lower walking and bicycling rates.⁵

Topography

Washington County has a widespread reputation for its scenic and dramatic landscape. However, these unique topographic features present challenges in establishing a connected street or trail network. Landforms such as the East Black Ridge and the West Black Ridge present significant barriers to east-west mobility into, or out of, Downtown St. George. This often results in bicyclists, pedestrians and vehicles funneled into corridors to circumnavigate these obstacles, thereby creating additional problems. In addition, travelers within the Dixie MPO region sometimes have to travel in counter-intuitive directions to reach their destination.

River Corridors

Although the Santa Clara River and the Virgin River present excellent opportunities for development of trails, they also create significant barriers to developing a connected system. Bridge construction across either river is a substantial engineering effort that requires major planning and expense. This applies to both non-motorized and motorized transportation. As such, vehicular connections across the rivers tend to facilitate high volume roads and are not as conducive to bicycle or pedestrian traffic unless separation or protection are provided.

Existing Dixie MPO Bicycle and Pedestrian System

Existing System (See Map 2.1: Existing Bicycle and Pedestrian Facilities)

The Dixie MPO and its communities currently possess a moderate but somewhat disconnected bicycle and pedestrian transportation network. Most investment to date has focused heavily on shared use paths and

⁵ Alliance for Biking and Walking, *Bicycling and Walking in the United States, 2014 Benchmarking Report*

sidepaths. The mix of existing bikeway and trail facilities can be seen in Figure. 8 A map of the MPO's existing bicycle and pedestrian system can be found on page 15, Map 2.1: Existing Bicycle and Pedestrian System

Figure 7: Existing Dixie MPO Facility Mileage

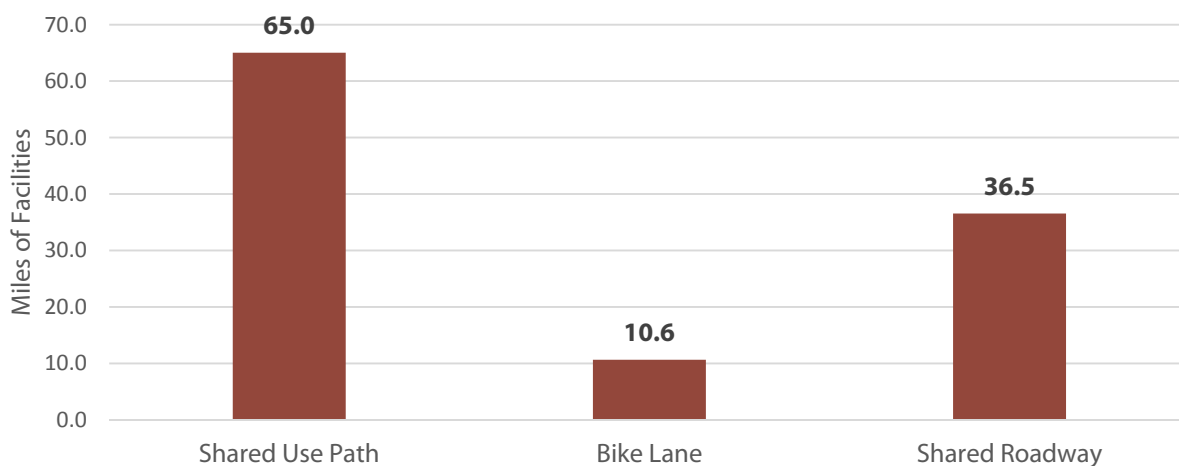
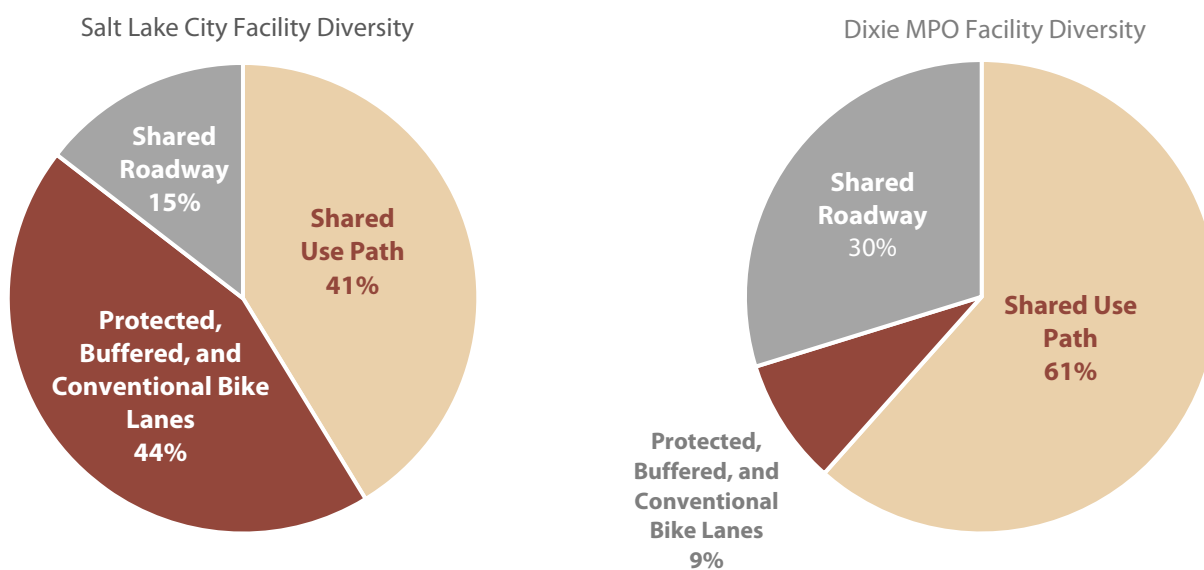


Figure 8: Salt Lake City vs. Dixie MPO Active Transportation Network Make-up



Although the region has made considerable investments in off-street trails, there are many opportunities to enhance the on-street bikeway network that have not yet been addressed. In particular bike lanes have not been widely implemented outside of downtown St. George. The proposed infrastructure recommendations seek to address these issues.

Existing Facility Types

Bike Lanes

Bike lanes are not widely found in the region. St. George and Santa Clara are the only two municipalities in the Dixie MPO to have implemented bike lanes. In St. George, bike lanes have been implemented along segments of 300 South, 300 West, Diagonal St., Tuweap Dr., Lava Flow Dr., Tonaquint Dr., and Bloomington Dr. Santa Clara possesses the MPO's only other bike lane along Santa Clara Dr.

Shared Use Paths & Sidepaths

Shared use paths and sidepaths have been widely implemented throughout the Dixie MPO region. St. George has developed some impressive shared use paths such as the Red Hills Parkway Trail, the Virgin River Trail and the Santa Clara River Trail among others. On the other hand, Ivins has leveraged development to construct most of its existing sidepath network.

Designated Bike Routes

A number of signed bike routes exist throughout the region. Application and treatment of these facilities vary substantially among the municipalities. Current bike routes utilize signs and sometimes possess a wide shoulder, such as the Sand Hollow Loop in Hurricane. Other signed bike routes do not necessarily indicate bicycle-friendly routes but rather serve as a wayfinding tool to navigate bicyclists to key areas.

Figure 9: Existing St. George Bike Lanes



Figure 10: Existing Ivins Sidepath



Existing Bicycling and Walking Activity

Existing Walking Activity (see Map 2.2)

Utilizing ACS Census Data, existing biking and walking commute to work trip mode shares were mapped in the Dixie MPO region. A majority of walking activity occurs in and around downtown St. George in the area bound by I-15, Bluff St. and Red Hills Parkway. This is logical due to the high number of destinations such as downtown St. George shops and restaurants, Dixie State University, the St. George Temple, Tabernacle and St. George library.

Existing Biking Activity (see Map 2.3)

Existing biking activity in the Dixie MPO region follows much of the same spatial trends as walking activity. Biking activity is predominantly clustered around downtown St. George bound by I-15, the West Ridge and the North Ridge.

System Gaps

Existing Bicycle and Pedestrian System Gaps (See Map 2.4)

Although the existing bicycle and pedestrian system in the Dixie MPO region is quite extensive, many gaps exist in the overall network. Map 2.4 on page 21 illustrates the existing gaps in the regions bicycle and pedestrian system. These gaps can take a number of different forms:

System Gaps

System gaps result when bicycle and pedestrian facilities end abruptly before making meaningful connections to other facilities or destinations. An example of this type of gap would be the bike lane along Santa Clara Dr. in Santa Clara.

Figure 11: System Gap



Crossing Gaps

Crossing gaps are created along major streets where safe bicycle and pedestrian crossings are absent from significant stretches. Bluff St. from Snow Canyon Parkway to 500 North represents a current example of a crossing gap although proposed improvements to the Sunset Blvd. /Bluff St. intersection will address this issue.

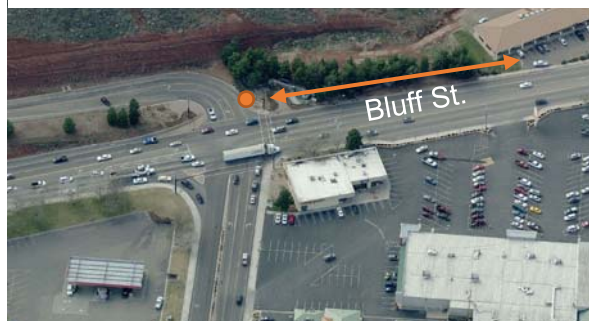
Figure 12: Crossing Gap



Sidewalk Gaps

Sidewalk gaps are the result of incomplete sidewalk connectivity. Sidewalks gaps can be the product of variable development patterns, post-World War II neighborhoods or simply planning oversights. Chapter 5 presents a methodology for evaluating and prioritizing construction of missing sidewalk gaps.

Figure 13: Sidewalk Gap



Barriers and Hazards Survey

Utah Travel Study Barriers and Hazards (See Map 2.5)

Another component of the Utah Travel Study polled resident's perceived bicycle and pedestrian barriers. Respondents were asked to describe the nature of the barrier as well as rate the severity of the problem. Results of this effort for the Dixie MPO are displayed in Map 2.5: Utah Travel Study Barriers and Hazards. Major clusters of responses revealed needs in several areas:

St. George Blvd

- Lack of wide shoulders or bike lanes, difficult crossings and high vehicular speeds

Bluff St.

- Lack of wide shoulders or bike lanes, difficult crossings and high vehicular speeds
- Inability to turn left on Sunset Blvd.

Dixie Dr.

- Lack of adequate shoulders on Dixie Dr.

River Rd.

- Lack of bike lanes

General Comments:

- Generally poor pavement quality
- Widespread issues with sidewalk connectivity, especially in Bloomington, Hurricane and Washington

Figure 14: St. George Blvd.



Figure 15: Dixie Dr.



The Utah Travel Study also asked participants to classify the type and location of barriers submitted through the survey. The overwhelming type of problem was missing infrastructure and barriers were most often encountered along roadways, bike paths or sidewalks for both bicyclists and pedestrians.

Figure 17: Utah Travel Study Barrier Types

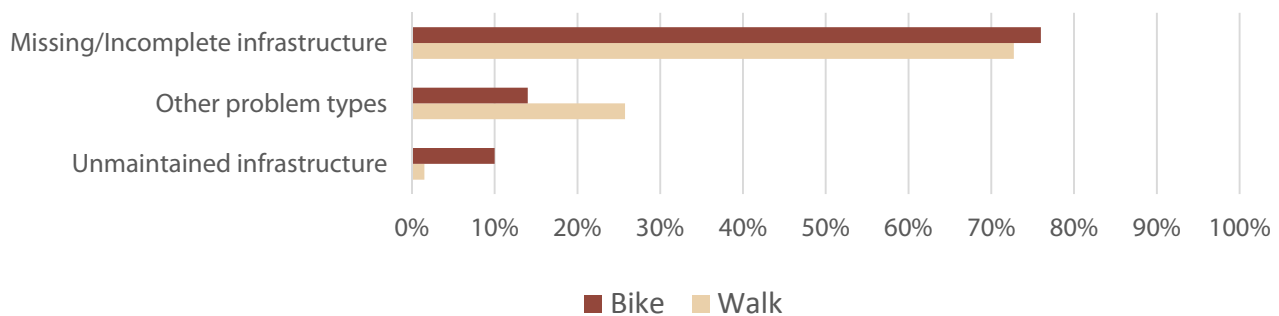
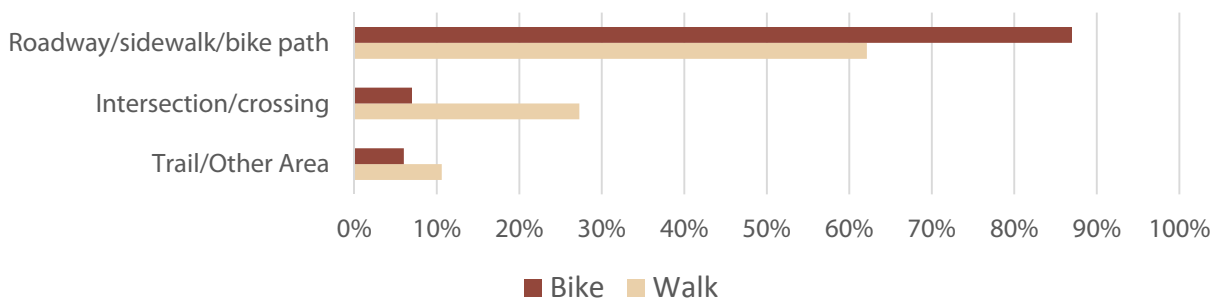


Figure 16: Utah Travel Study Barrier Locations



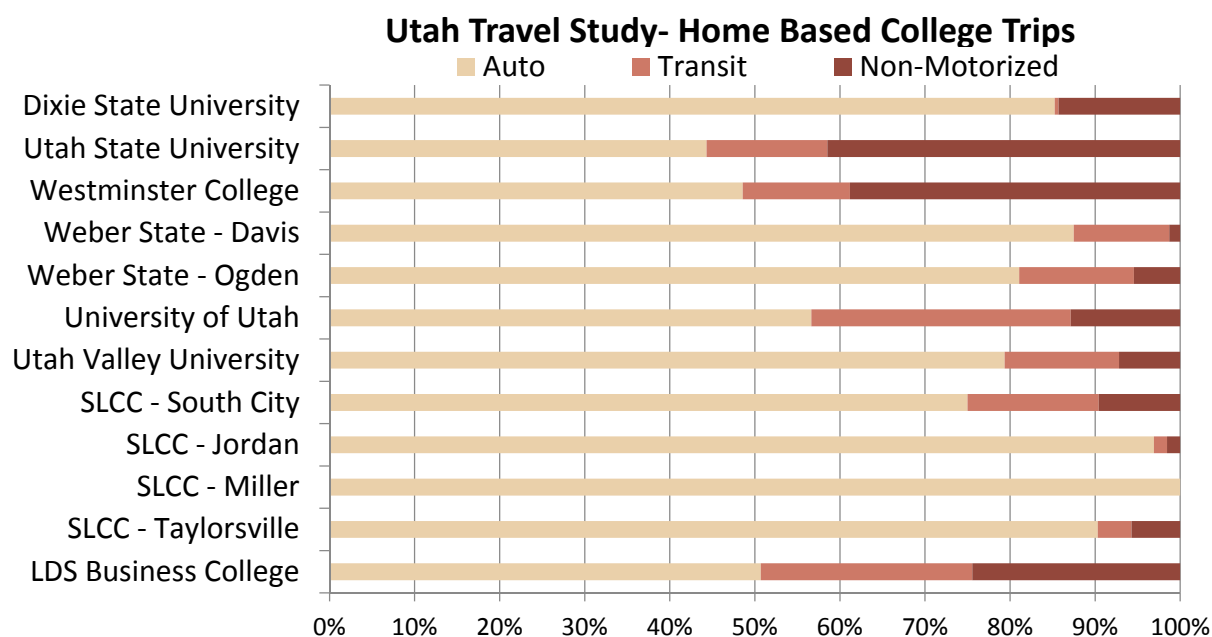
Dixie State Bicycle and Pedestrian Conditions

Dixie State University (DSU) is an important bicycle and pedestrian walking destination in downtown St. George. DSU enrolls approximately 8,500 students and employees many more faculty and staff. In recent years, the University has focused on improvement and redevelopment of the campus. Projects such as the new clock tower project and the x demonstrate the campus's commitment to providing a more traditional campus rather than a commuter school. In this vein, the campus has also realized the need to create opportunities for its students to walk, bike or travel on public transit to and from school. Providing safe and efficient bicycle and pedestrian access to the DSU campus will be a critical component of the overall success of downtown St. George's active transportation system.

Dixie State University Mode Share vs. Other Utah Colleges

Part of the Utah Travel Study consisted of a College Travel Diary which asked participants enrolled in one of eight state universities to record their travel habits. Figure 18 illustrates the mode by which students make trips to and from their respective schools.

Figure 18: Utah Travel Study College Mode Share Results



Dixie State Student Bike-Pedestrian Service Analysis (See Map 2.6)

To analyze how well the existing bicycle and pedestrian network serves Dixie State Students, the planning team mapped anonymous addresses of enrolled Dixie State University students. Map 2.6 illustrates where clusters of DSU students live within the region. As expected, many students choose to live on or near campus. However, there are significant clusters of student populations that live in the neighborhoods across I-15, east of campus. If these students do choose to walk or bike to campus, they are forced to take a circuitous route utilizing the 100 South underpass of I-15. A proposed bicycle and pedestrian undercrossing at 400 South would create a safe and efficient connection for these student populations to campus. In addition, DSU students would enjoy enhanced access to the many shops and restaurants located along Red Cliffs Dr. /River Rd.

Transit Service Analysis (See Map 2.7)

Transit systems share positive synergies with biking and walking systems. Over 90% of people who use public transit walk or bike to reach transit stops⁶ Suntran serves St. George and recently added service to Ivins in January 2015. Other surrounding communities, such as Washington City, are considering new routes in their area. As the transit system in Washington County continues to develop, the bike and pedestrian system will also need to grow to ensure people riding transit can easily access stations on foot or by bike. Future transit planning and development should also address secure bicycle parking at transit centers, bicycle racks on buses (Suntran buses currently are outfitted with bike racks that hold up to two bikes) and other pedestrian and bicycle infrastructure improvements that will benefit transit ridership.

Analyzing the existing bicycle and pedestrian system led to the discovery of several needs related to the transit system. The following streets with high levels of transit access were relatively underserved by the bicycle and pedestrian system:

- Main St.
- 700 South
- 100 South
- Sunset Blvd.
- Mall Dr.

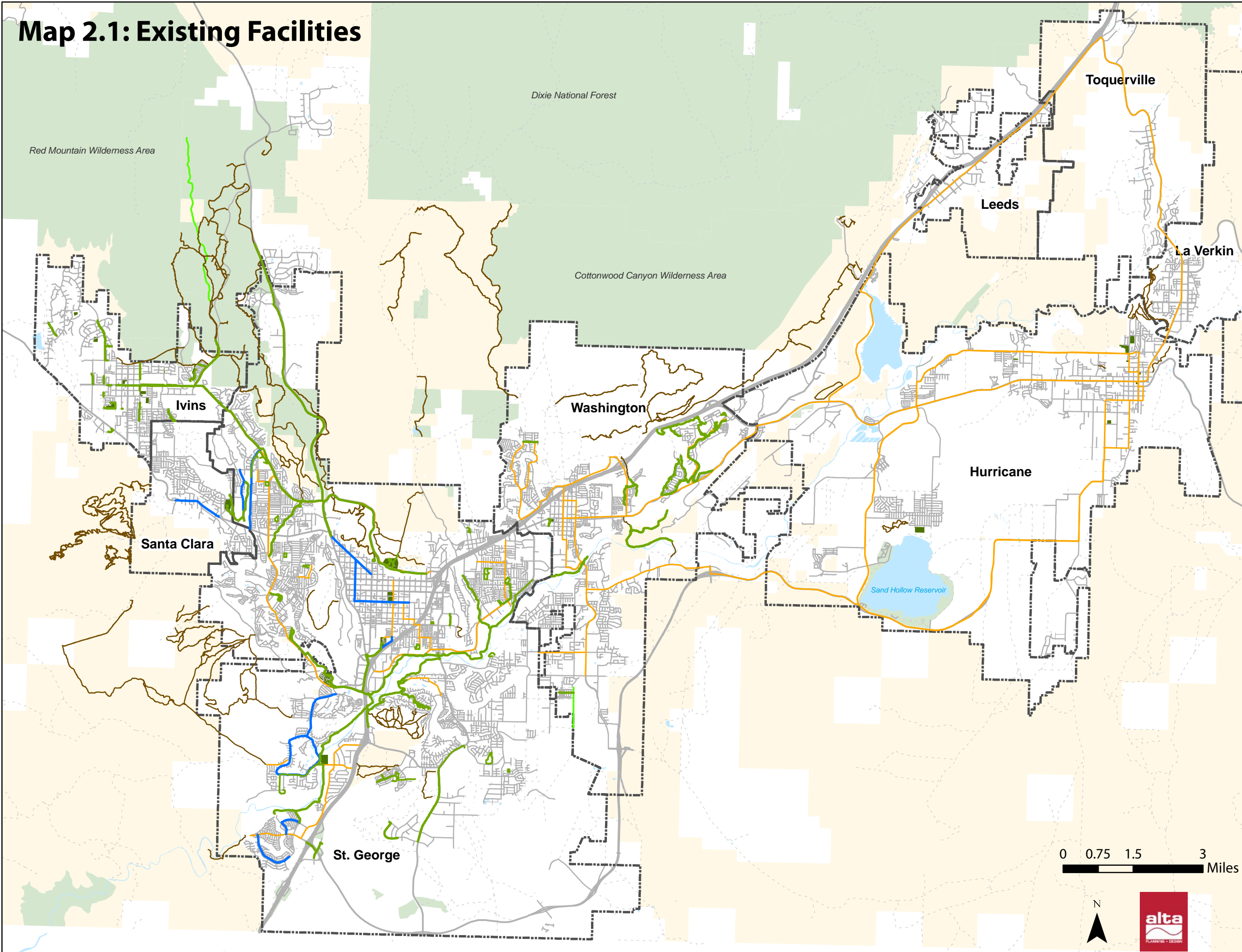
Figure 19: Suntran bicycle racks



⁶ Alliance for Biking and Walking, *Bicycling and Walking in the United States, 2014 Benchmarking Report*

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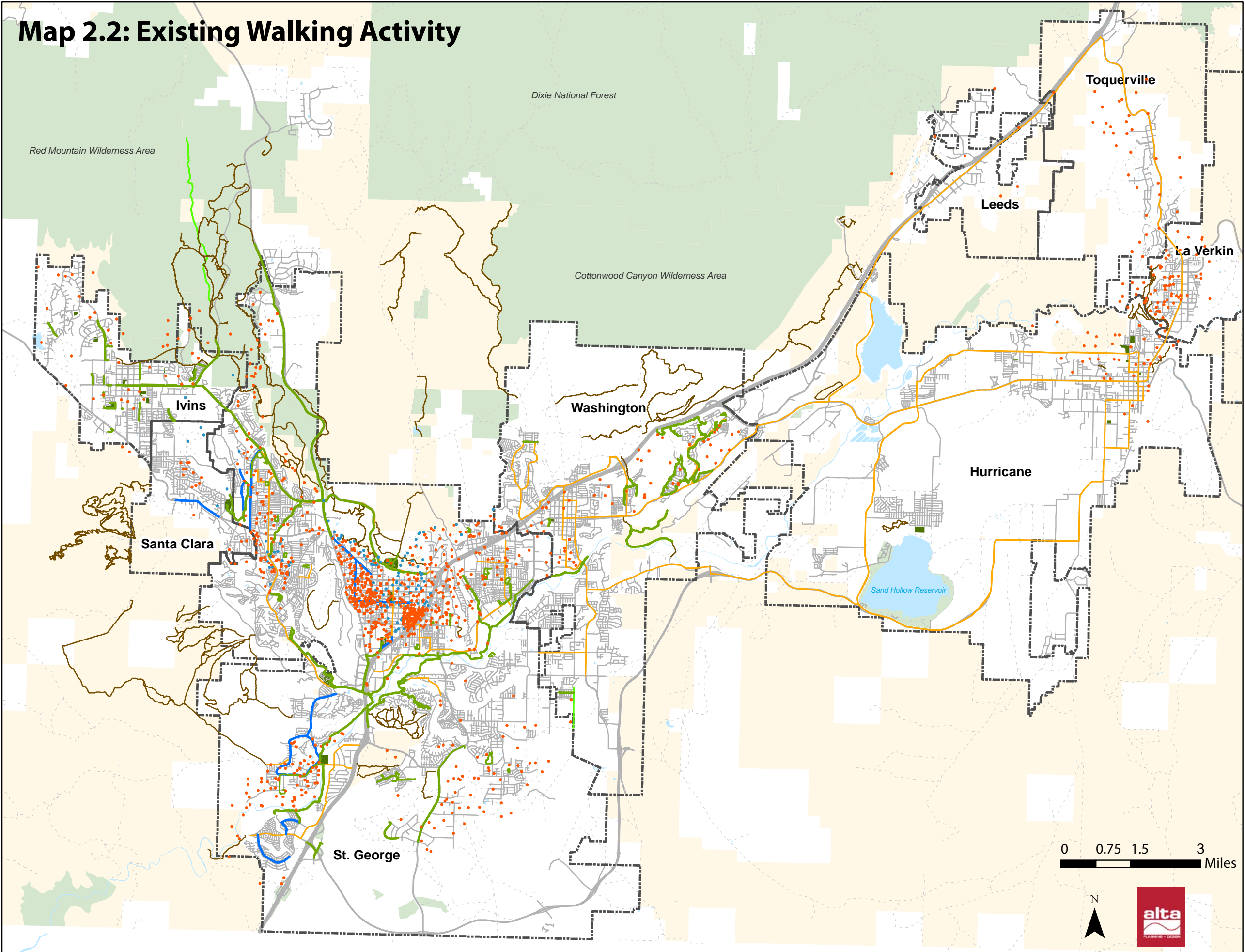
Map 2.1: Existing Facilities



LEGEND

- Shared Use Path, Sidewalk Trail, or City Park Path
- Equestrian Trail
- Natural Surface Trail
- Bike Lane
- Designated Bike Routes
- Interstate
- Secondary Route / Major Arterial
- Minor
- Street
- Unpaved
- Parks
- Water
- BLM and Other Federal
- Nat'l or St Forest, Parks, Wildlife

Map 2.2: Existing Walking Activity



LEGEND

Bicycle and Walk Commuting

1 Dot = 1 person commuting

Walk

Shared Use Path, Sidewalk Trail, or City Park Path

Equestrian Trail

Natural Surface Trail

Bike Lane

Designated Bike Route

Interstate

Secondary Route / Major Arterial

Minor

Street

Unpaved

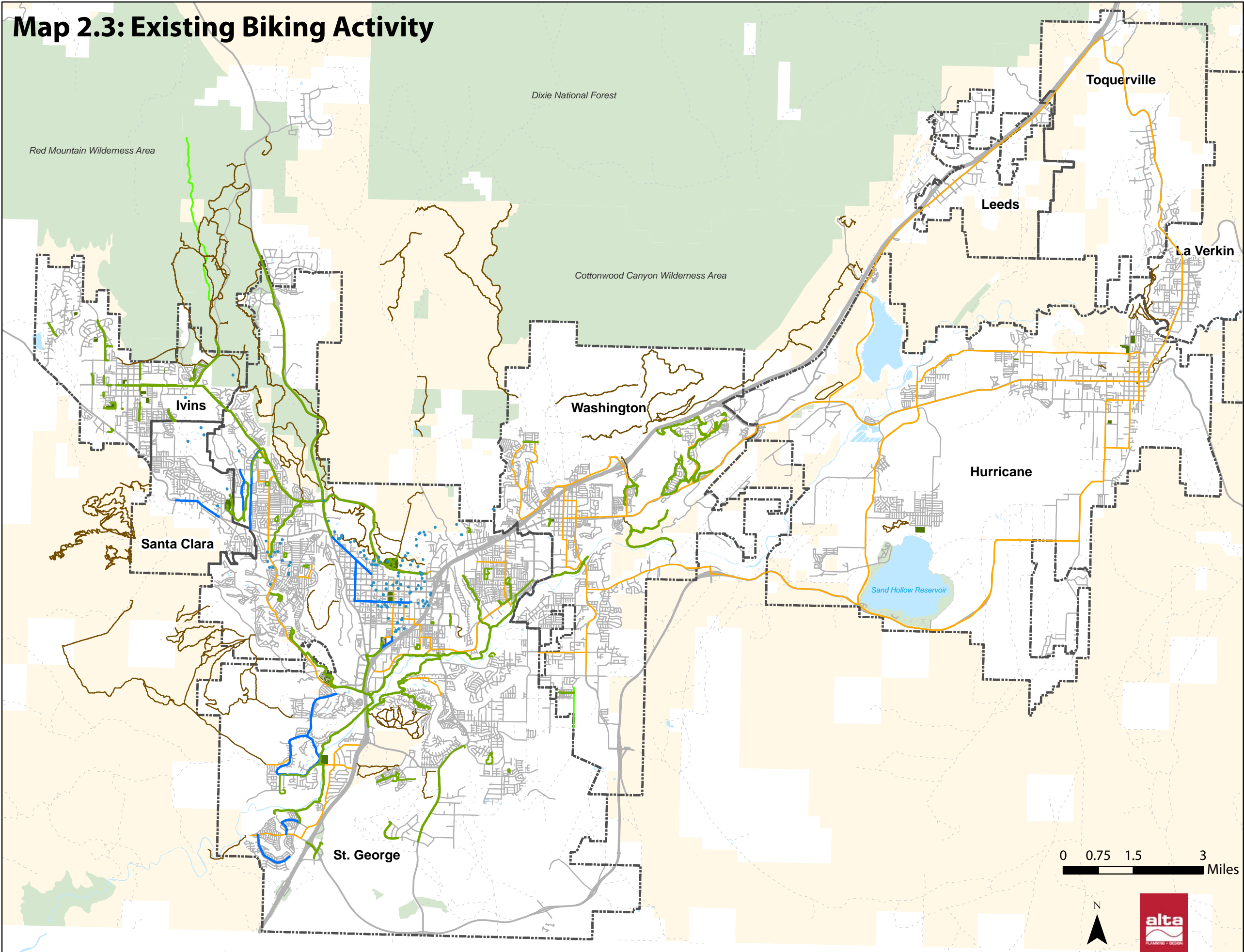
Parks

Water

BLM and Other Federal

Nat'l or St Forest, Parks, Wildlife

Map 2.3: Existing Biking Activity

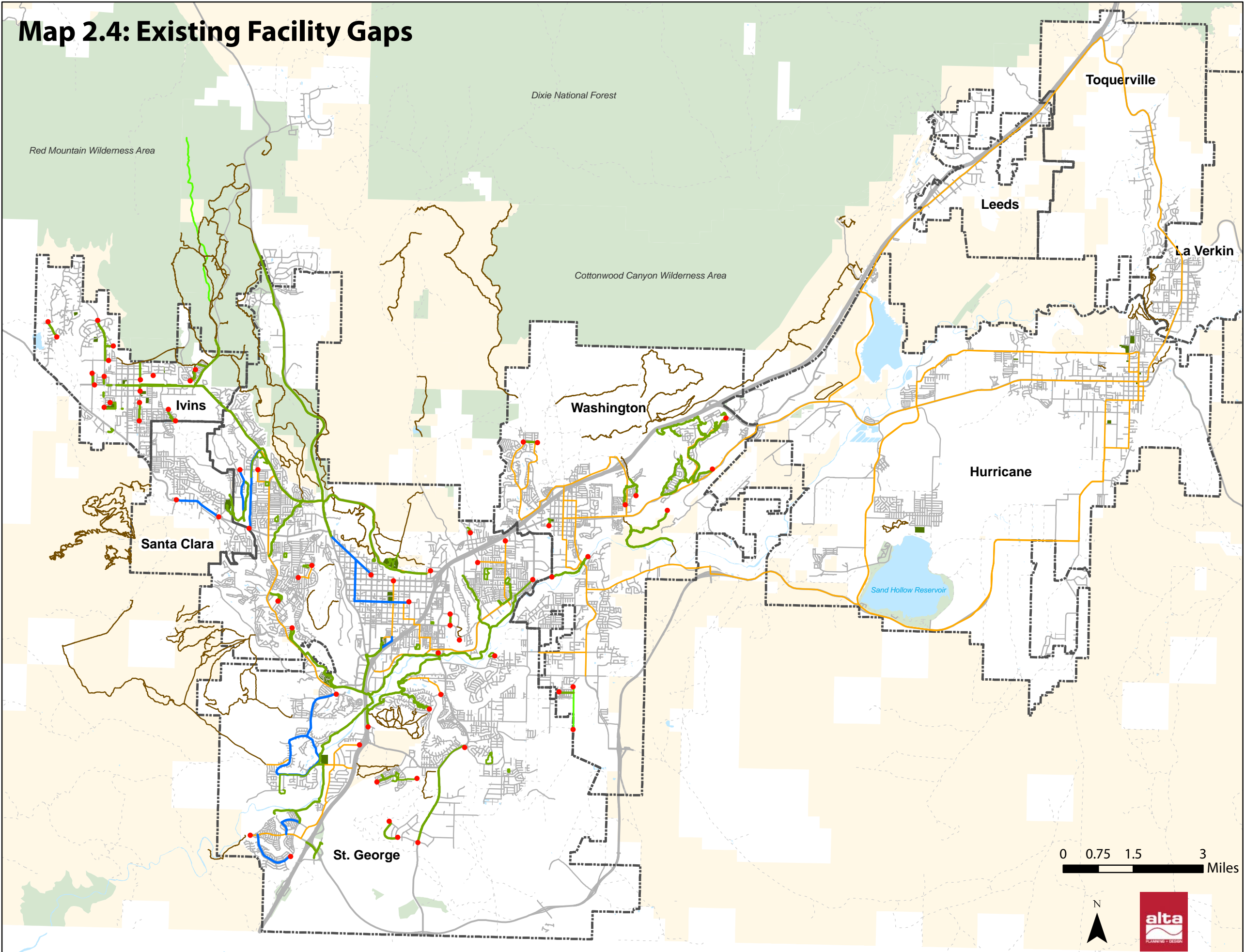


LEGEND

Bicycle and Walk Commuting

- 1 Dot = 1 person commuting
- Bicycle
- Shared Use Path, Sidewalk Trail, or City Park Path
- Equestrian Trail
- Natural Surface Trail
- Bike Lane
- Designated Bike Routes
- Interstate
- Secondary Route / Major Arterial
- Minor
- Street
- Unpaved
- Parks
- Water
- BLM and Other Federal
- Nat'l or St Forest, Parks, Wildlife

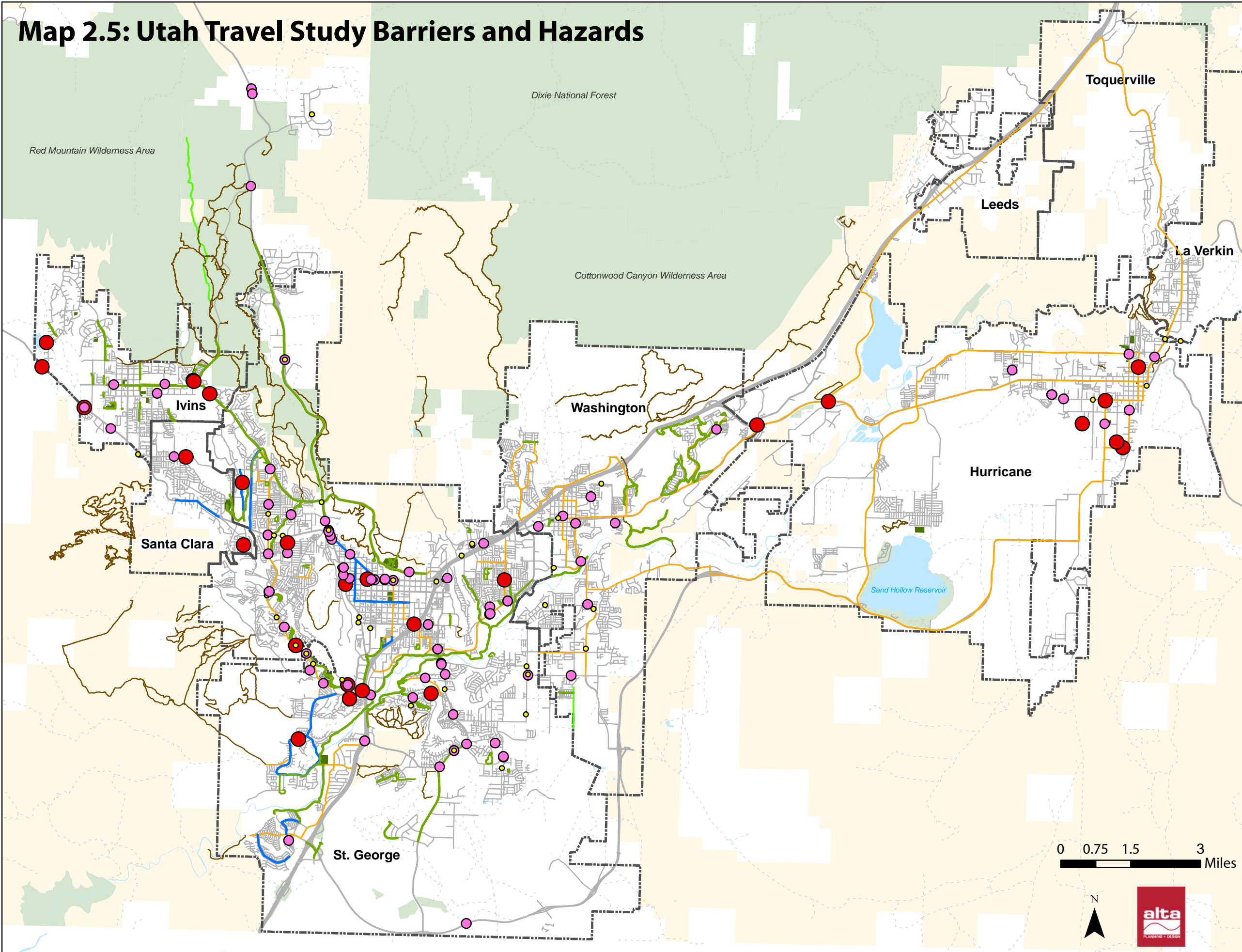
Map 2.4: Existing Facility Gaps



LEGEND

- Existing Facility Gaps
- Shared Use Path, Sidewalk Trail, or City Park Path
- Equestrian Trail
- Natural Surface Trail
- Bike Lane
- Designated Bike Routes
- Interstate
- Secondary Route / Major Arterial
- Minor
- Street
- Unpaved
- Parks
- Water
- BLM and Other Federal
- Nat'l or St Forest, Parks, Wildlife

Map 2.5: Utah Travel Study Barriers and Hazards

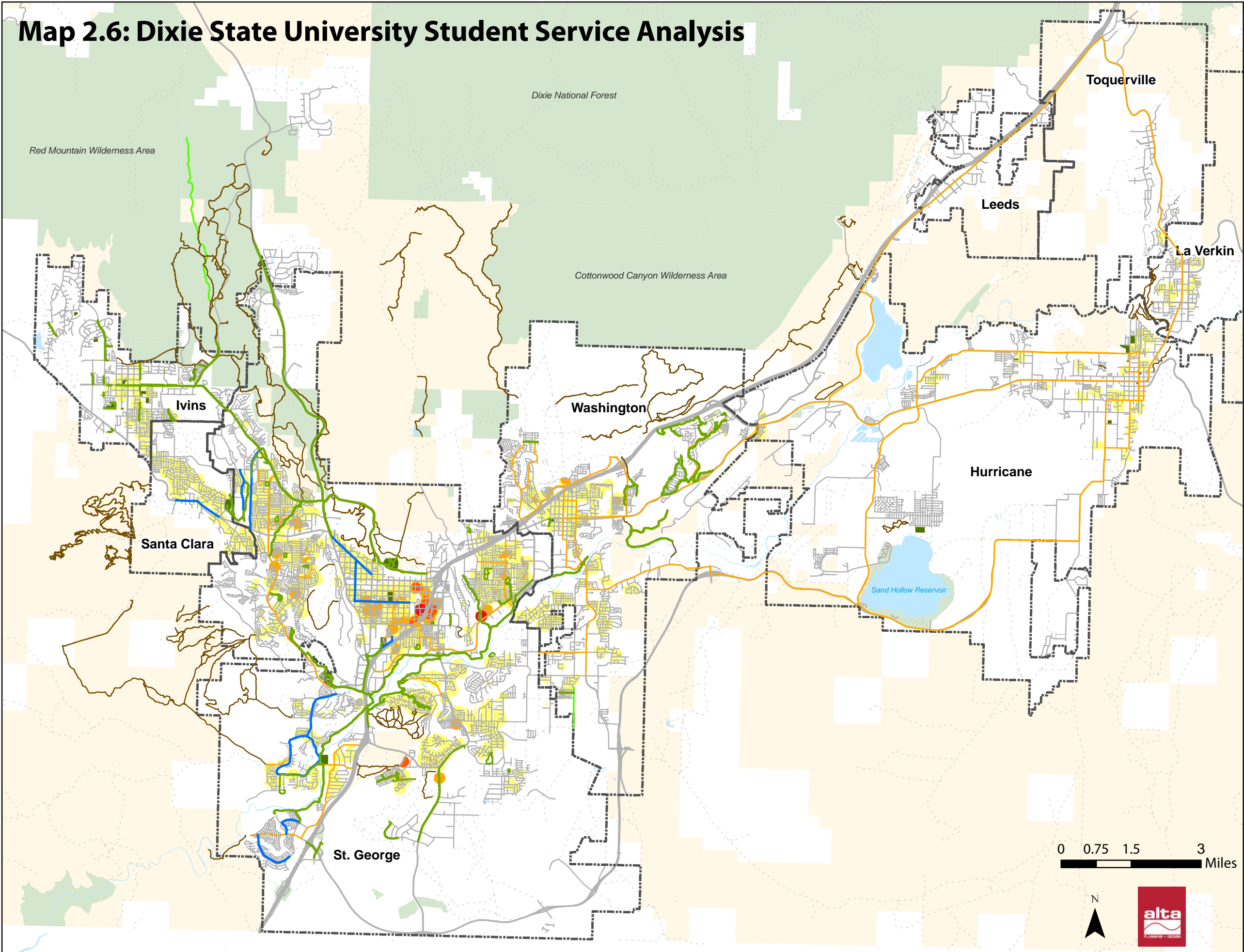


LEGEND

Bike and Ped Barriers - Severity

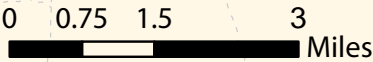
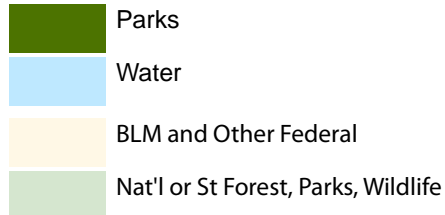
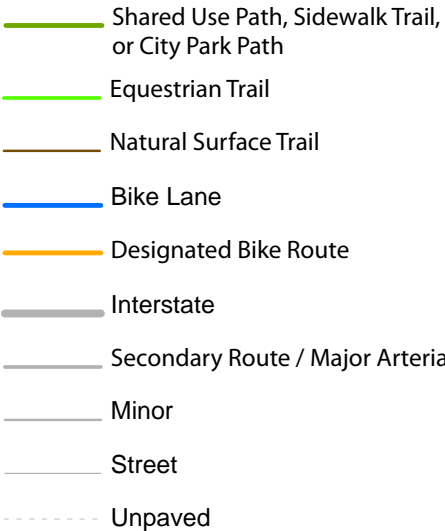
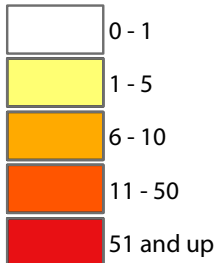
- 1
- 2
- 3
- Shared Use Path, Sidewalk Trail, or City Park Path
- Equestrian Trail
- Natural Surface Trail
- Bike Lane
- Designated Bike Routes
- Interstate
- Secondary Route / Major Arterial
- Minor
- Street
- Unpaved
- Parks
- Water
- BLM and Other Federal
- Nat'l or St Forest, Parks, Wildlife

Map 2.6: Dixie State University Student Service Analysis



LEGEND

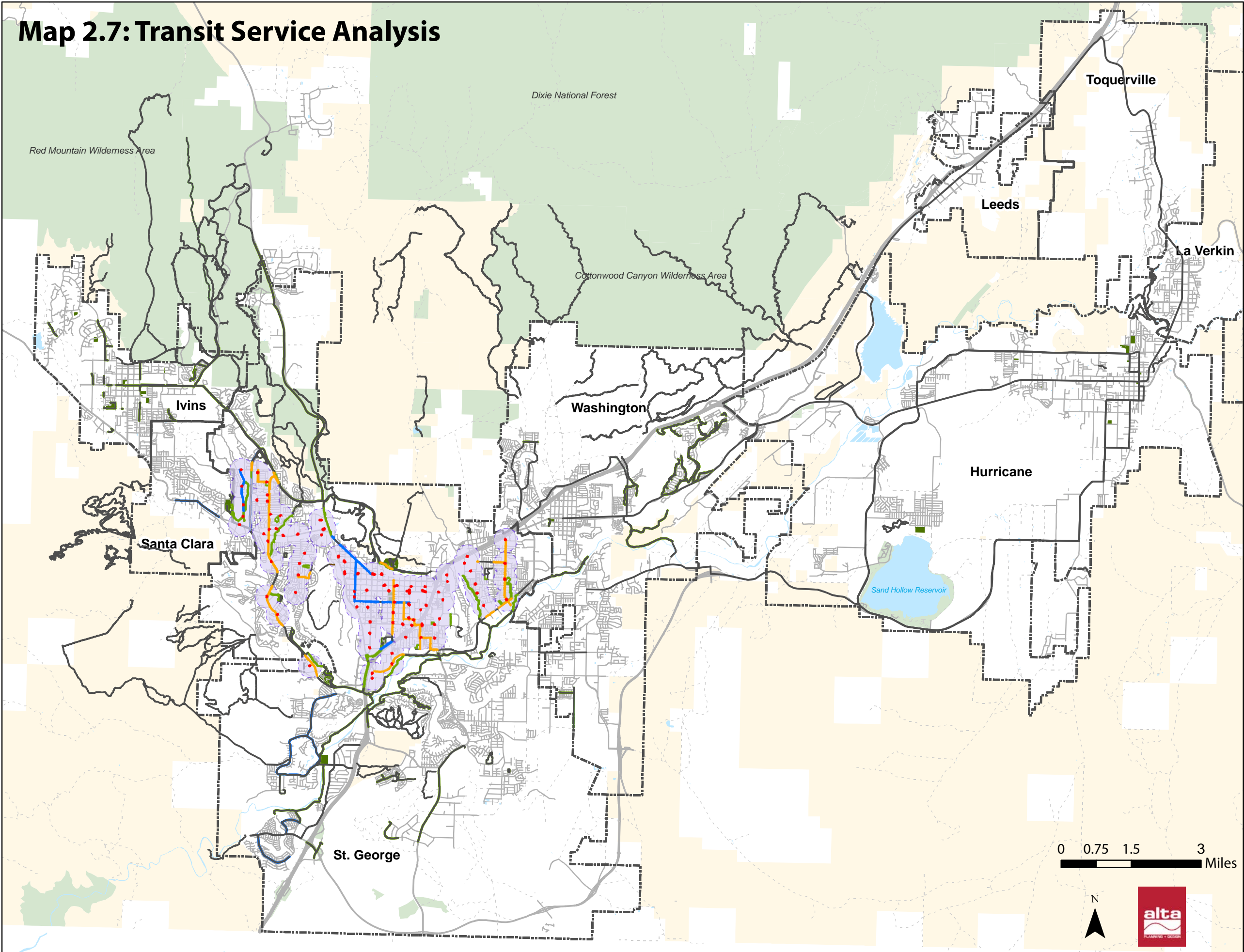
Students per Acre



N



Map 2.7: Transit Service Analysis



LEGEND

- Bus Stops
- Bus Stops 1/4 mi radius Buffer
- Existing Bicycle and Walk Infrastructure not inside Buffer
- Shared Use Path, Sidewalk Trail, or City Park Path
- Equestrian Trail
- Natural Surface Trail
- Bike Lane
- Designated Bike Route
- Interstate
- Secondary Route / Major Arterial
- Minor
- Street
- Unpaved
- Parks
- Water
- BLM and Other Federal
- Nat'l or St Forest, Parks, Wildlife

Chapter 3: Program & Policy Recommendations

Recommended Programs and Policies

Improvements to and continued support of education, encouragement, enforcement, and evaluation strategies are critical to increasing the number of bicycle and pedestrian trips and safety. These programs can ensure that more residents know about new and improved facilities, learn the skills they need to integrate bicycling and walking into their activities, and receive positive reinforcement about integrating these activities into their daily lives. In essence, the new and enhanced programs market the idea of bicycling and walking to local residents and ensure a shift to bicycling and walking as a transportation option.

The following section presents program and policy recommendations intended to support bicycling and walking in the Dixie MPO region.

Education

Equally as important as providing bicycle and pedestrian infrastructure is ensuring that users are aware of bicycle and pedestrian law, are competent bicyclists and know how to use the various bicycle and pedestrian facilities they will encounter in the real world. This section presents recommended bicycle, pedestrian, and motorist education programs.

Education and Awareness Campaigns

An education/awareness campaign can be as large or small as necessary to fit the time constraints of the implementing staff, budget resources, and desired objectives. Campaigns can include everything from Public Service Announcements (PSAs) on local media outlets, billboards, and bus wraps, to fliers around the community, interactive booths at farmers markets and announcements or notices through the schools.

Campaigns can focus on:

- Bike safety
- Pedestrian education
- Driver awareness of bicyclists/pedestrians
- Rules of the road
- Safe Routes to School (SRTS)
- Health benefits of active transportation
- Sharing the road
- Identifying as a bicyclist/pedestrian

Messaging within a campaign should be concise and clear. Some examples include a SRTS focused campaign in the City of Pasadena, CA, where they used PSA's with simple messages: "We make time to drive 25" and "We make time to brake for kids". Another approach could be to do an "I am a bicyclist" campaign to identify the range of people that use bicycles and to normalize the use of bicycles in every-day errands. Everyone is a pedestrian at some point of their day, yet few people would identify themselves as a pedestrian. Calling attention to this fact could be the basis of a pedestrian focused campaign.

Educational Courses

Educational courses are the cornerstone of an education program. Like education and awareness campaigns, educational courses should be selected for the appropriate audience and knowledge gap.

Types of courses to be considered:

- Bicyclist and pedestrian courses for students
- In-class student education curriculum for SRTS
- Bicyclist and pedestrian courses for adults
- Drivers' education training
- Ticket diversion program for drivers and bicyclists
- Women-only program focused on education and support
- Campus bicycling safety during student orientation

There are many resources already available online for a wide variety of courses through the League of American Bicyclists, SRTS National Partnership and SRTS National Center. Youth bicycle education or “Bike Rodeos” could incorporate pedestrian components and a simulated streetscape for students to practice their skills in a safe, off-street setting. A women-only program could include education before a ride, and example is the women-only “Mother’s Day Ride” In Columbia, MO.

Establish a Bicycle Collective

The Bicycle Collective is a Wasatch Front-based, advocacy and community bike shop organization expected to expand statewide. The Collective’s mission is to promote bicycling as an effective, sustainable, clean, healthy, and safe form of transportation through myriad programs, including:

- Open, community bike shops with shared tools, classes, and volunteer mechanics
- Refurbished bicycles for nominal resale and charity purposes
- Bicycle parking at events
- Earn-A-Bike for kids
- Mechanical instruction and certification
- Frame building
- Distribution of free bikes to the neediest members of the community

A St. George branch of the Bicycle Collective would be a logical next step both for the Dixie area and for the Bicycle Collective. Fiscal sponsorship could be one avenue for initiating this first step to simplify logistics of forming a new non-profit.

Figure 20: Bicycle Collective



Encouragement

Bike/Walk Focused Community Events

Creating and hosting community-wide events that are focused on celebrating bicycling and walking is key in creating awareness and increasing bicycling and walking within the Dixie MPO region.

Types of events could include:

- Cyclovia
- Celebrate ‘Walktober’ and International Walk to School Day in October
- Bike Festivals
- Bike rides open to the community such as ‘Critical Mass’ ride or a youth focused ride called ‘Kidical Mass’
- Winter bike events and celebrations

Create Maps

Creating maps are a great resource to create awareness and to encourage people to utilize available facilities. In addition to the maps that are already available, consider creating additional maps, such as:

- City-wide bicycle map
- Themed walking maps
- Suggested walking and biking to school maps, utilizing SNAP maps as a base (<http://www.udot.utah.gov/snap/>)
- Bikeway maps by level of bicyclist comfort

SRTS Activities

Encouraging more bicycling and walking to schools can be achieved through many of the recommended programs in this plan. In addition to the recommendations already listed, below are more ideas for implementing Safe Routes to School activities.

Potential SRTS activities could include:

- Create awareness of SRTS at back to school nights
- School assemblies
- Host “Walk and Roll to School” events
- SRTS related contests such as poster contests or which classroom had the most bicycle/walk to school
- Create Walking School Buses and Bicycle Trains
- Create a ‘Caught Being Good’ enforcement program where those who wear bicycle helmets or look both ways before crossing are ‘ticketed’ with a prize.

In addition, some schools within the Washington County school district are designated as ‘no wheel schools’ to minimize issues with skateboards and bikes on school grounds. Schools should look for other ways to manage potential conflicts. This prevents students from using bicycles or skateboards as transportation options.

UDOT’s Safe Routes to School program page, SNAP (Student Neighborhood Access Program) includes a variety of information for parents, students, and administrators. More information can be found at:

<http://www.udot.utah.gov/snap/>

Road Respect Community Designation

Apply to become a Road Respect Community through the Utah Department of Transportation's (UDOT) "Road Respect Community" Program. With a successful application, Dixie-area cities could demonstrate a commitment to cycling and potentially gain support from UDOT for bicycle related planning and program efforts. This designation, in conjunction with a successful Bicycle Friendly Community designation will heighten the awareness of bicycling in all of the Dixie-area cities

Figure 21: UDOT Road Respect Program



Bicycle Friendly Community Designation

Dixie MPO cities should apply for the League of American Bicyclist's Bicycle Friendly Community (BFC) status. BFC status indicates a commitment creating a city that supports cyclists with infrastructure and culture. Feedback is also provided through the application process to give each city customized technical assistance to improve their bicycling infrastructure and programs.

Figure 22: LAB Bicycle Friendly Community



Bicycle Friendly University Designation

Dixie State University should apply for the League of American Bicyclist's Bicycle Friendly University status. Young adults are increasingly looking for transportation options and choosing to live in walkable communities. A Bicycle Friendly University Designation could be a valuable marketing tool for potential students and also an opportunity to get valuable feedback on ways to improve cycling around the campus.

Figure 23: Bicycle Friendly University



Walk Friendly Community Designation

Similar to the Bicycle Friendly Community Designation, Walk Friendly Communities (WFC) is a national recognition program developed to encourage towns and cities across the U.S. to establish or recommit to a high priority for supporting safer walking environments. The WFC program recognizes communities that are working to improve a wide range of conditions related to walking, including safety, mobility, access, and comfort.

Figure 24: Walk Friendly Communities



Enforcement

Police Training

Strengthening bicycling and walking information in police education courses or training can help local police officers and sheriff's improve public safety and enforce existing laws more effectively. Police training will enhance other educational and enforcement programs.

Traffic Citation Diversion Classes

Other than one-time drivers education courses, there are few formal opportunities for motorists and/or bicyclists to learn the legal rights and responsibilities specific to bicycling and walking. The cities and county should work with local partners on traffic citation diversion classes so that road users (pedestrians, bicyclists, and/or motorists) who

commit offenses known to endanger pedestrians and bicyclists can, at the discretion of the officer, be invited to take a safety and diversion class in lieu of paying fines.

Evaluation

Trail / Signal Counters and Annual Count Program

One way to determine success at increasing bicycling and walking rates and associated safety, is to establish an annual data collection program. Trail counters should be installed along key off-street trail segments throughout the corridor to provide reliable and simple collection of user counts. In addition, traffic signals with the capability to count bicyclists and pedestrians should also be specified as signals throughout the region are installed or upgraded. This will provide the City and MPO with information about growth of bicycling/pedestrian rates.

Annual Report

An annual report should include relevant bicycling and pedestrian metrics (count results, new bikeway/greenway/sidewalk facility miles, major completed projects, bicycle and pedestrian-involved crashes, number of organized events) and may also include information on user satisfaction, public perception of safety, or other relevant qualitative data that has been collected. Cumulative bikeway, trail, and sidewalk mileage should be shown to demonstrate long-term progress in improving infrastructure. Crash data should also be compiled annually as part of this effort to highlight improvements that have increased safety and to monitor developing trends.

Though this can take many forms and be as simple or complex as desired, here's an example of an annual report from Billings, Montana.

http://www.healthybydesignyellowstone.org/wpcontent/uploads/REPORT_BillingsCSBenchmarkRprt_2013.08.08_FINAL.pdf

Parent Survey SRTS

Parent surveys help Safe Routes to School programs stay in touch with parents and understand their concerns and perceptions of walking and bicycling. Because they collect information about transportation mode choice and how far from school the family lives, they provide valuable insight into the potential for shifting to active or shared modes of transportation.

The National Center for SRTS parent survey is an established survey form and methodology. Results can be sent or entered into the Data Collection System, which generates reports by school and program-wide, comparing among time periods. More information can be found at: <http://www.saferoutesinfo.org/program-tools/evaluation-parent-survey>.

Hand Tallies SRTS

Student hand tallies are a quick and effective way of gathering data about students' transportation mode for a Safe Routes to School program. Hand tallies are often required for Safe Routes to School (SRTS) funding. Teachers, program staff, and/or volunteers simply go to classrooms at participating schools and ask students how they get to/from school. Hand tallies are considered the most accurate method of collecting information about the school commute. The National Center for SRTS has developed a standard tally sheet for use. More information can be found at: <http://www.saferoutesinfo.org/program-tools/evaluation-student-class-travel-tally>.

Infrastructure Policy Recommendations

Sidewalk Infill Program

Some neighborhoods within the Dixie MPO region exhibit poor or limited sidewalk connectivity. Completing missing sidewalk links can be challenging, especially in older residential areas where residents have developed fencing and landscaping within the public right-of-way and may consider those areas to be part of their personal space. In addition, some residents may not want traditional sidewalks due to the rural look of their neighborhoods, and potential impacts to mature landscaping and trees. Regardless, the public right-of way that is generally located on either side of the paved driving and parking area is intended for walking, whether or not a sidewalk currently exists. The Dixie MPO area cities should consider a Sidewalk Infill Program where City staff periodically inventory the street network to identify sidewalk gaps, and develop strategies, project prioritization criteria and funding for completing these gaps. Suggested prioritization criteria for evaluating potential sidewalk projects can be found in Chapter 5: Implementation.

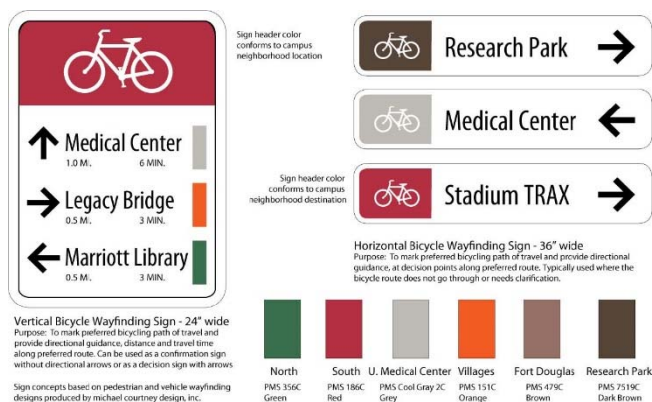
Bicycle Parking Policy and Development Regulations

Bicycle parking is an important component of the bicycle network. Secure end-of-trip accommodations encourage people to travel by bicycle. Each of the cities within the MPO should consider adopting APBP's recommended bicycle parking code as part of their respective development code to address proper rack design, placement, and number of recommended racks. St. George should also consider developing a Request-a-Rack program for downtown to promote proper bike parking and mitigate the number of bicycles locked to trees, signs and posts.

Unified MPO-wide Wayfinding Program

SUBA and the City of St. George have expressed interest in and desire for a unified countywide program that will provide directional, wayfinding guidance to pedestrians and bicyclists. Given the area's unique topography, numerous washes and rivers and major transportation corridors, many physical barriers to bicycling and walking exist. This results in sometimes needing to travel in counter-intuitive directions to reach destinations. A unified wayfinding system would help bicyclists and pedestrians navigate this somewhat confusing bicycle and pedestrian system. These groups should work in concert to develop an approach to wayfinding that will follow consistent design, informational, installation, and maintenance standards.

Figure 25: University of Utah Wayfinding System



NACTO Urban Bikeway and Street Design Guides

It is recommended that the Dixie MPO area cities endorse or adopt the National Association of City Transportation Officials' (NACTO) Urban Bikeway Design Guide and Urban Street Design Guide in their reference material and "other comparable publications and standards" mentioned above. It is recommended that both publications be formally endorsed by the cities and the MPO, adopted as official design guides.

Evaluate Bike Share

St. George should evaluate the potential to bring a bike share system to the region. Bike share is a public bicycle system that allows users to take a bike from one station and return it to another. Bike share could help contribute to the St. George's goal for a vibrant and active downtown. The region already serves as a tourist destination and lends itself well to a potential bike share system to accommodate visitors looking to explore the area by bike.

Some bike share programs have 100% government financing of capital costs and operations, like CaBi. Others are 100% privately financed through sponsors like CitiBank and MasterCard in NYC. In between, there is a mixture of government dollars (particularly for up-front capital costs), and some combination of user revenues, sponsorships, advertising, grants, and/or government monies, to pay for operations.

St. George should conduct a preliminary feasibility study to determine if bike share could potentially meet the City's tourism and transportation objectives and better understand the costs and implications associated with developing and maintaining the system.

Figure 26: Greenbike Bike Share (Photo credit: Greenbike)



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Chapter 4: Infrastructure Recommendations

Pedestrian Recommendations

Overview

Most people are pedestrians at some point during the day. The quality and safety of the pedestrian environment significantly affects the likelihood of continued pedestrian activity more so than almost any other factor. Creating environments that allow people to routinely, safely and conveniently walk to and from common destinations has a variety of benefits from health to economic development. The following section describes improvements to the pedestrian system that will allow and encourage greater walking activity in the Dixie MPO region.

Proposed Improvements Methodology

Pedestrian network improvements have been selected to close gaps in the network, make connections to and from major destinations, and improve overall continuity, comfort, and sense of security for pedestrians.

Fieldwork included identifying conditions and needs in the following contexts:

- along the major street network,
- at intersections,
- neighborhoods with poor sidewalk connectivity

Facility Recommendations

The proposed pedestrian network for the Dixie MPO area consists of:

- Sidewalk improvement and completing network gaps
- Crossing improvement projects and overall intersection improvement, including signals, and,
- Shared-use path projects (shown in section Bicycling Recommendations)

Sidewalks

Improving the sidewalk network will allow more predictable trips for pedestrians and will improve the overall connectivity of the Dixie area. Most new policy and land development regulations in Dixie MPO cities requires development of sidewalks except in large lot, rural scenarios, however, many Dixie area neighborhoods developed in the 1960's and 1970's often lack sidewalk infrastructure.

In the absence of sidewalk data, the following neighborhoods have been identified as having generally poor sidewalk connectivity:

- Bloomington
- Bloomington Hills
- Downtown Washington
- Downtown Hurricane

Funding to construct sidewalks in these areas is often limited and demand is usually high. Dixie MPO and its partner cities should use pedestrian focused advisory groups, such as the recently formed St. George Active Transportation Committee to provide guidance on prioritization of needed sidewalk projects. A general sidewalk infill program is described in Chapter 4: Program & Policy Recommendations.

Crossing Improvements

The Dixie MPO area has many locations which would benefit from new pedestrian crossings as well as existing pedestrian crossings which could benefit from upgrades. Such upgrades could include improved curb ramps, high visibility crosswalks, and crossing aids such as Rectangular Rapid Flashing Beacons, curb extensions, pedestrian refuges, pork chop islands, trail undercrossing and trail overcrossings.

Types of Crossing Improvements

Rapid Rectangular Rapid Flashing Beacons (RRFBs)

An RRFB is a user-actuated amber flashing lights that supplement warning signs at un-signalized intersections or mid-block crosswalks. Beacons can be actuated either manually by a push-button or passively through detection. RRFBs use an irregular flash pattern similar to emergency flashers on police vehicles and can be installed on either two-lane or multi-lane roadways. Active warning beacons should be used to alert drivers to yield where bicyclists have the right-of-way crossing a road. RRFBs can improve driver yielding compliance to 95 percent in many locations and should generally not be used where pedestrians cross more than two lanes of traffic without a refuge.

Figure 27: Rectangular Rapid Flash Beacons



Curb Extensions

Curb extensions visually and physically narrow the street creating shorter and safer crossings for pedestrians and bicyclists. Curb extensions can be mid-block or at intersections and be used with any of the below treatments.

Figure 28: Typical Curb Extensions



Pedestrian Refuge Islands

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.

Pork Chop Islands

Right turn slip lanes create difficult crossing situations for pedestrians. Pedestrian islands implemented between the right-turn lanes and the through lanes shorten crossing distances and provide a safe intermediate point for pedestrians. As the pedestrian crossing over the through travel lanes is shortened it is possible that this design may result in more flexibility in signal timing strategies as the pedestrian signal needs are reduced.

Figure 29: Pork Chop Island (Photo Credit: www.bikepedinfo.org)



Trail Undercrossing

Bicycle/pedestrian undercrossings provide critical non-motorized system links by joining areas separated by barriers such as railroads and highway corridors. In most cases, these structures are built in response to user demand for safe crossings where they previously did not exist.

Figure 30: Trail Undercrossing



Trail Overcrossings (Bridges)

Bicycle/pedestrian overcrossings provide critical non-motorized system links by joining areas separated by barriers such as deep canyons, waterways or major transportation corridors. In most cases, these structures are built in response to user demand for safe crossings where they previously did not exist. Overcrossings require a minimum of 17 feet of vertical clearance to the roadway below versus a minimum elevation differential of around 12 feet for an undercrossing. This results in potentially greater elevation differences and much longer ramps for bicycles and pedestrians to negotiate.

Figure 31: Trail Overcrossing

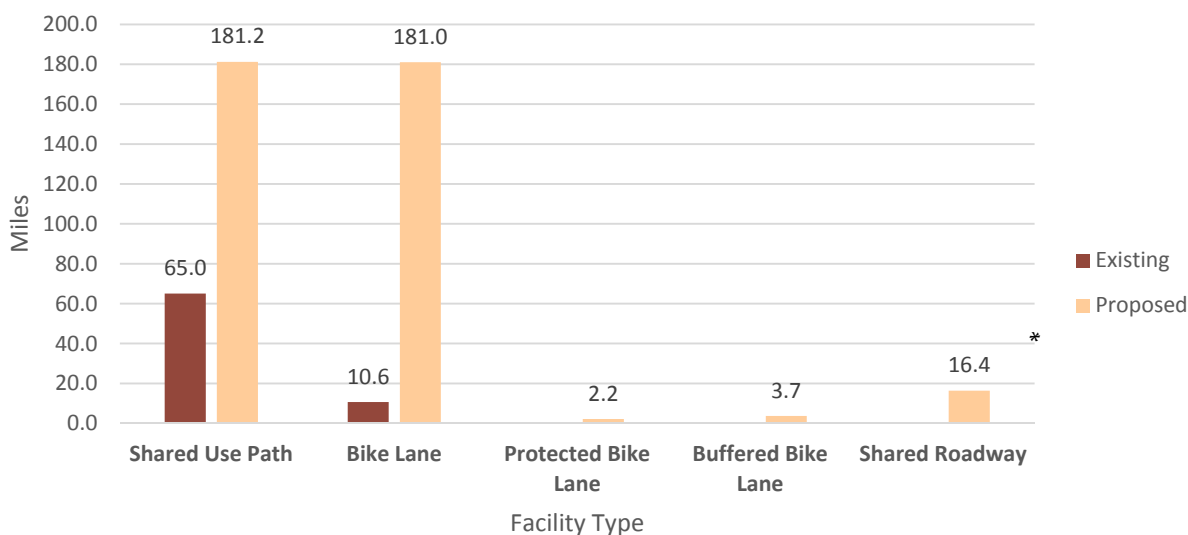


Bicycling Recommendations

Overview

This section outlines potential on and off-street bikeways, trails and crossing improvement projects that will better connect the Dixie MPO area's existing facilities and destinations. These recommendations are intended to encourage active living by residents and visitors alike and accommodate a variety of ability levels and interests with particular emphasis on making the bikeway network more comfortable and accessible to a wider range of Dixie residents. The following chart shows the proposed system mileage for each existing and proposed facility type. Although the increase in facility mileage may be seem daunting, Washington County is expected to grow by 242% between 2010 and 2050. The Dixie MPO area is also relatively underserved by bikeway facilities when compared to similar Wasatch Front areas.

Figure 32: Dixie MPO Proposed Facility Mileage



*Note: Shared roadways refer to shared roadways with shared lane markings only

Applicable Design Standards:

The following national design standards should be referenced in regards to the proposed facility recommendations:

- NACTO Urban Bikeway Design Guide, 2012
- AASHTO Guide for the Development of Bicycle Facilities, 4th Edition, 2012
- MUTCD 2009 Edition.

Retrofitting Existing Streets for Bikeways

Most major streets are characterized by conditions (e.g., high vehicle speeds and/or volumes) for which dedicated on-street bikeways are the most appropriate facility to accommodate safe and comfortable riding. Although opportunities to add on-street bikeways through roadway widening may exist in some locations, many major

streets have physical and other constraints that would require street retrofit measures within existing curb-to-curb widths. As a result, much of the guidance provided in this section focuses on effectively reallocating existing street space through striping modifications. Ideally bike space can be provided without reducing roadway or parking capacity, however it is often necessary to balance the needs of multiple roadway users. Although largely intended for major streets, these measures may be appropriate for any roadway where bike lanes would be the best accommodation for bicyclists

Four main strategies exist for accommodating bikeways on existing roadways.

- **Roadway Widening:** In the absence of curb and gutter, shoulder widening presents a viable option for incorporating dedicated bikeways into an existing street.
- **Lane Narrowing:** Many streets throughout Washington County have travel lanes that are wider than those prescribed in national roadway design standards. Most standards allow for the use of 11' and sometimes 10' wide travel lanes in urban contexts.
- **Lane Reduction:** The removal of a single travel lane will generally provide sufficient space for bike lanes on both sides of a street. Streets with excess vehicle capacity provide opportunities for bike lane retrofit projects. Two potential road diet candidates have emerged based on recent traffic counts conducted by the City of St. George however additional study will be needed.
 - a. **Main Street, south of 700 S:** Recent traffic counts at 11,000 ADT fall well within the typically accepted traffic volumes for a 3-lane road section. Without a lane reduction, Main Street lacks the needed curb-to-curb width to accommodate a standard bike lane. However the lane reduction, Main Street can accommodate a low stress bikeway such as the proposed protected bike lane.
 - b. **Valley View Dr. (Optional):** Recent traffic counts of 12,300 ADT fall within acceptable volumes for a 3-lane road section. Bike lanes currently could be implemented within the existing roadway however a roadway reconfiguration could free up additional space for other bikeway types such as cycle tracks and buffered bike lanes. Any roadway reconfiguration undertaken should evaluate expected costs with the benefit of improved bicycling and pedestrian conditions.
- **Parking Reduction:** Bike lanes can replace one or more on-street parking lanes on streets where excess parking exists (such as in large off-street lots) and/or the importance of bike lanes outweighs parking needs. For example, parking may be needed on only one side of a street to meet demand. Eliminating or reducing on-street parking also improves sight distance for bicyclists in bike lanes and for motorists on approaching side streets and driveways. In Dixie MPO region, parking reduction has predominantly been recommended when parking demand is low or non-existent.

Facility Recommendations

Bicycle facilities vary from bicycle routes designated by signage or shared lane markings to separated, off-street facilities along exclusive rights-of-way. Opportunities to develop bicycle facilities and a cohesive network also vary and may range from deliberate and coordinated development on the part of the MPO and its partner cities to taking advantage of independent street construction, reconstruction and resurfacing projects. Street re-surfacing in particular, is a low-cost way to provide bicycle infrastructure. When streets are resurfaced, new pavement markings are required. During this process, bicycle facilities can often be added depending on existing roadway width and feasibility.

The recommended Dixie MPO area bike network represents a comprehensive set of existing and proposed bicycle transportation and recreation facilities. The proposed bicycling network for the Dixie area consists of:

- Shared Roadways and Bicycle Boulevards (with shared lane markings)

- Bike lanes
- Buffered bike lanes
- Protected bike lanes
- Shared use path projects and connections to trails and paths
- Spot improvements including crossings (signalization, markings, ramps, etc.)

Note that signed bike routes (without shared lane markings) are not included in the proposed system. These have been historically used in St. George and other cities, however they do not constitute a physical bikeway facility, and they have not been addressed by this planning effort. Signs may remain in place or be relocated to proposed shared roadway or bicycle boulevard corridors.

Shared Roadways (with shared lane markings)

Shared roadways are low-volume, low-speed streets that are conducive to bicyclists. All shared roadways proposed by the plan should include shared lane markings. Shared roadways that have extremely low volumes and speeds which make these streets comfortable places to bicycle are known as bike boulevards.

Bicycle Boulevards

Bicycle boulevards are low-volume streets that optimize bicycle travel through generous use of wayfinding signage, pavement markings, speed management, and volume management strategies. These treatments allow through movements of bicyclists while discouraging similar through-trips by non-local motorized traffic. Typically, local streets are the most comfortable for bicyclists with vehicle speeds at or below 25 miles per hour and vehicle volumes at or below 3,000 vehicles per day (with 1,500 vehicles per day or less preferred).

Bike Lanes

A bike lane provides a striped and stenciled lane for one-way travel on a street or highway. Many of the identified projects will occur with pavement resurfacing or roadway reconstructions. Bike lanes are minimum width of five feet and a preferred width of six feet.

Buffered Bike Lanes

Where available width exceeds seven feet, buffered bicycle lanes utilize additional width to 'buffer' the bike lane, on the side of the adjacent travel lane and/or parking lane. They provide a more comfortable experience for bicyclists, but they also are an effective tool to discourage motorists from driving or parking in the bike lane that would otherwise be excessively wide. This excessive width can sometimes be present when a roadway reconfiguration project converts an underutilized travel lane or parking lane to a bike lane.

Figure 33: Shared Lane Marking



Figure 34: Bike Lanes



Figure 35: Buffered Bike Lanes



Protected Bike Lanes (Cycle Tracks)

Protected bike lanes, also known as cycle tracks, are exclusive bike facilities that combine the user experience of a separated path with the on-street infrastructure of a conventional bike lane. Protected bike lanes may be at street level or raised at a sidewalk or intermediate level. Protected bike lanes may also be one or two-way depending on design.

One-way protected bike lanes have been proposed along portions of Tabernacle and South Main Street in St. George. This facility type and route are proposed centers for connecting trail users who may be uncomfortable bicycling in traffic or even within conventional bike lanes to downtown. This may attract new bicyclists to downtown improving economic opportunities and reducing congestion.

Figure 36: Protected Bike Lanes



Shared Use Paths (and Sidepaths)

Shared use paths are facilities separate from roadways for use by bicyclists, pedestrians and other non-motorized user groups. Shared use paths are frequently found in separate rights-of-way such as along railroads, utility corridors, parks and along waterways, but can also exist within the street or highway right-of-way with adequate separation. Sidepaths are shared use paths that are impacted frequently by an adjacent street.

Many of Ivins pathways fall into this category.

Sidepaths can provide a pleasant bicycle and pedestrian experience, however additional design considerations are necessary to mitigate potential conflicts with motorists.

Figure 37: Shared Use Paths



Bicycle Spot Improvements

Improvements that are recommended at specific locations rather than along a corridor are known as spot improvements. These could include signalization, crossing improvements or other small connections, and fall under this category. Curb extensions, RRFBs, Hybrid Beacons can all be useful in increasing the comfort and safety for bicyclists at roadway crossings. Additionally the following bicycle specific treatments are also recommended (see table for list).

Figure 38: Bicycle Ramp at Roundabout



Bicycle Ramps

Bicycle ramps can provide key connectivity for bicyclists at roundabouts or over traffic calming features that otherwise would be barriers or cause unsafe merging activity with higher speed traffic.

Undercrossing

As described in the pedestrian spot improvements.

Overcrossings

As described in the pedestrian spot improvements.

Bicycle and Pedestrian System Plan (See Map 4.1-4.6)

The Overall Dixie MPO Bicycle and Pedestrian System Plan can be found on page 45, Map 4.1. Detailed maps of the Dixie MPO municipality proposed bicycle and pedestrian improvements can be found on Maps 4.2 through 4.6. Maps highlight existing and proposed bicycle and pedestrian facilities. These include:

- Proposed on-street bikeways such as shared roadways, bike lanes, buffered bike lanes and protected bike lanes.
- Proposed off-street shared use paths
- And proposed spot improvements including bridges and undercrossings, signals or beacons, crossing/intersection improvements and miscellaneous improvements

Map 4.1 Dixie MPO
Overall

Recommended Improvements

Spot Improvement Type

- Bridge or Undercrossing
- Signal or Beacon
- Intersection Improvement
- Miscellaneous

Linear Facility Type

- Shared Use Path
- Protected Bike Lane
- Buffered Bike Lane
- Bike Lane
- Climbing Bike Lane
- Shared Roadway
- Bicycle Boulevard
- Natural Surface Trail

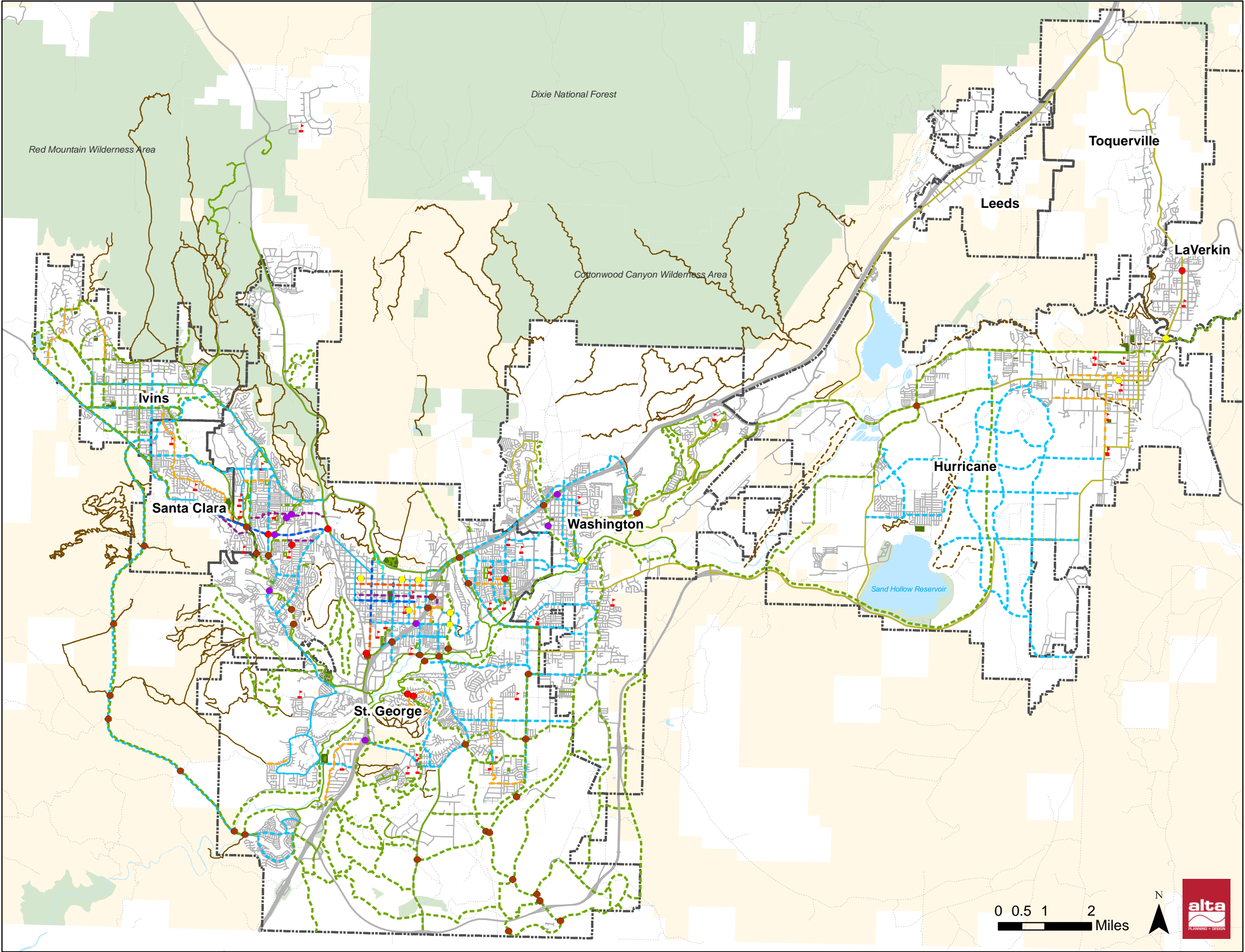
Existing Facilities

Linear Facility Type

- Shared Use Path
- Bike Lane
- Designated Bike Route
- Natural Surface Trail

- Interstate
- Secondary Route / Major Arterial
- Minor Arterial
- Local Street

- Parks
- Water
- ▲ School Locations
- BLM and Other Federal
- Nat'l or St Forest, Parks, Wildlife



Map 4.2 Ivins
Santa Clara / St. George

Recommended Improvements

Spot Improvement Type

- Bridge or Undercrossing
- Signal or Beacon
- Intersection Improvement
- Miscellaneous

Linear Facility Type

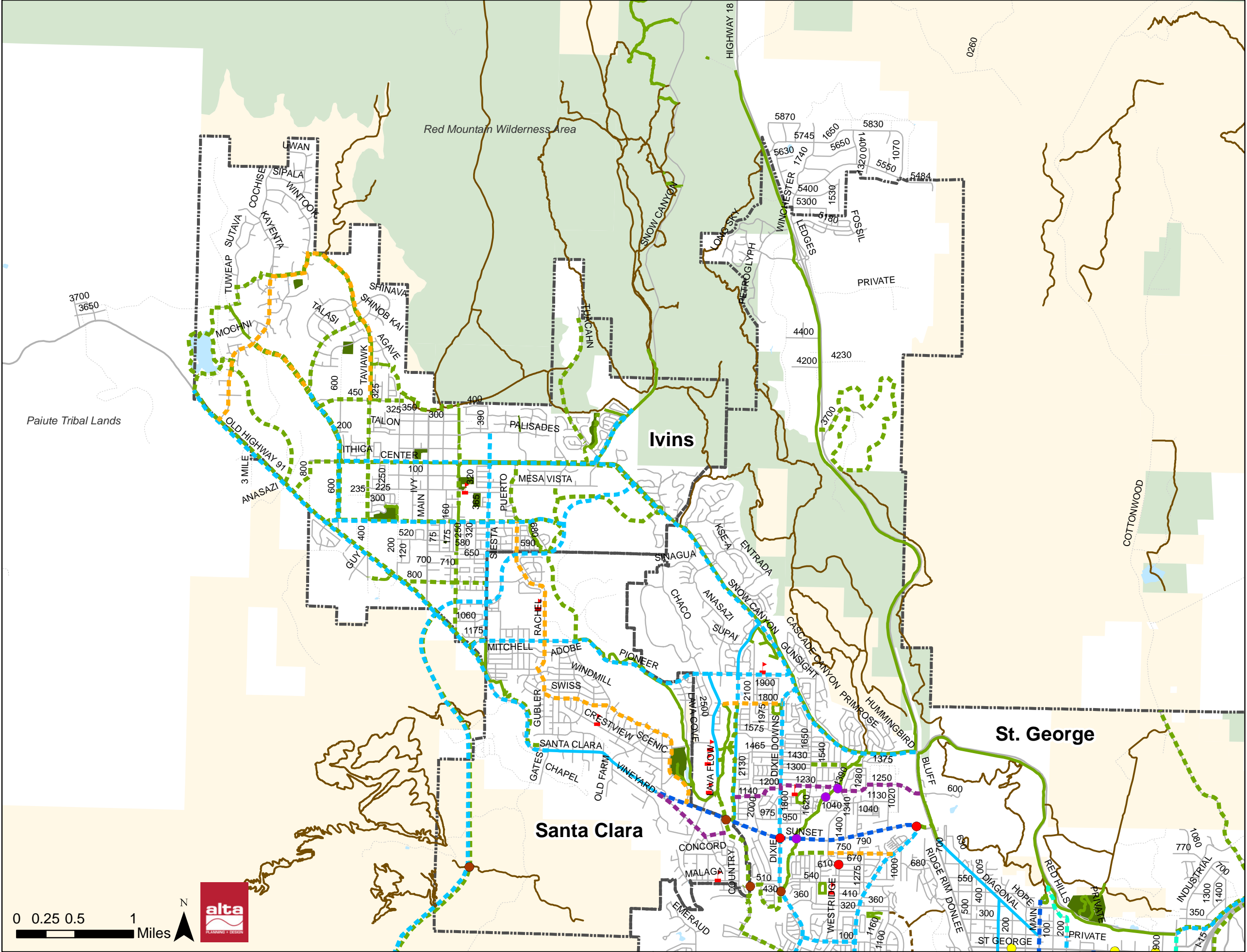
- Shared Use Path
- Protected Bike Lane
- Buffered Bike Lane
- Bike Lane
- Climbing Bike Lane
- Shared Roadway
- Bike Boulevard
- Natural Surface Trail

Existing Facilities

Linear Facility Type

- Shared Use Path
- Bike Lane
- Designated Bike Route
- Natural Surface Trail
- Interstate
- Secondary Route / Major Arterial
- Minor Arterial
- Local Street
- Unpaved

- Parks
- Water
- School Locations
- BLM and Other Federal
- Nat'l or St Forest, Parks, Wildlife



Map 4.3
St. George / Washington

Recommended Improvements

Spot Improvement Type

- Bridge or Undercrossing
- Signal or Beacon
- Intersection Improvement
- Miscellaneous

Linear Facility Type

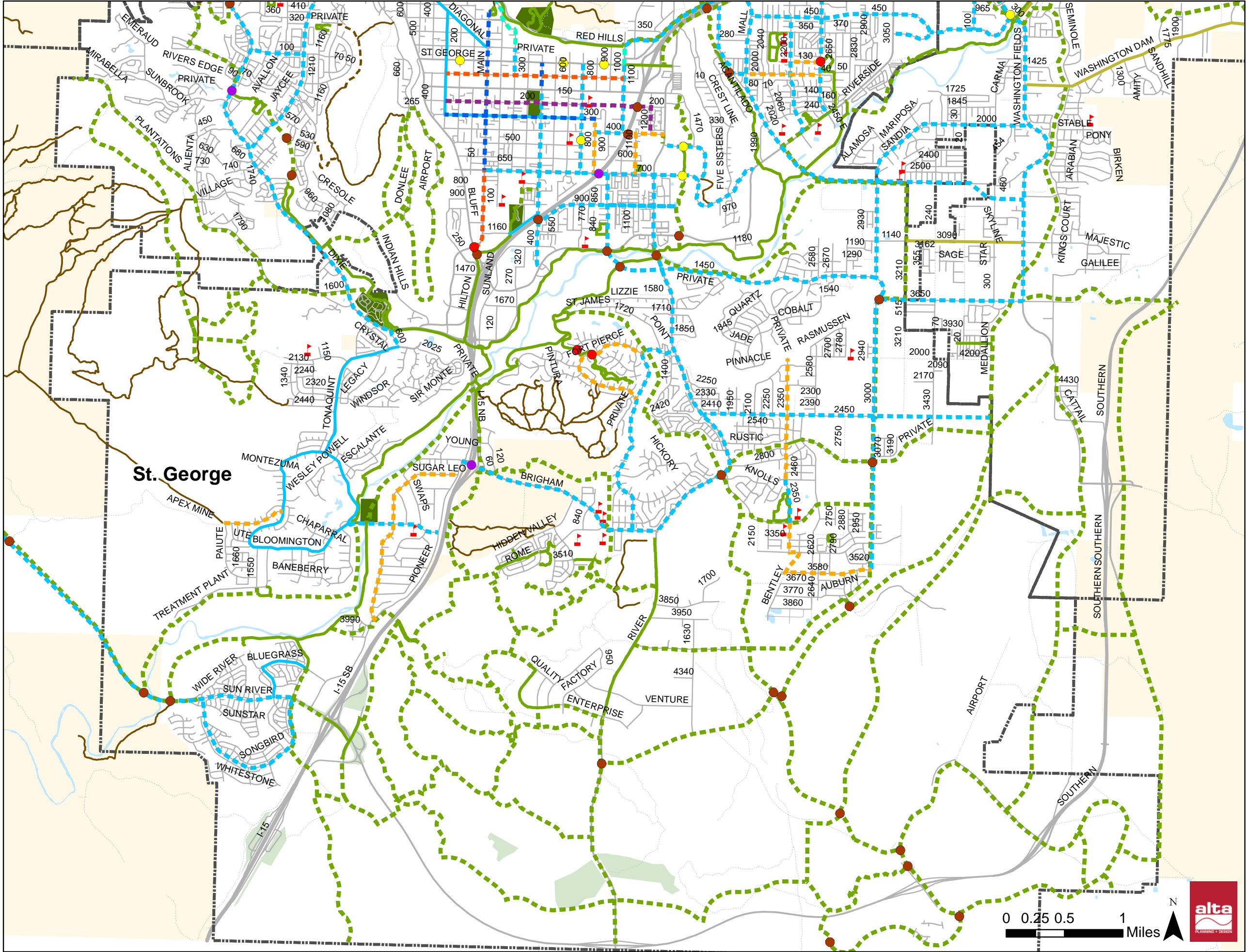
- Shared Use Path
- Protected Bike Lane
- Buffered Bike Lane
- Bike Lane
- Climbing Bike Lane
- Shared Roadway
- Bike Boulevard
- Natural Surface Trail

Existing Facilities

Linear Facility Type

- Shared Use Path
- Bike Lane
- Designated Bike Route
- Natural Surface Trail
- Interstate
- Secondary Route / Major Arterial
- Minor Arterial
- Local Street
- Unpaved

- Parks
- Water
- School Locations
- BLM and Other Federal
- Nat'l or St Forest, Parks, Wildlife



Map 4.4
Washington / Hurricane

Recommended Improvements

Spot Improvement Type

- Bridge or Undercrossing
- Signal or Beacon
- Intersection Improvement
- Miscellaneous

Linear Facility Type

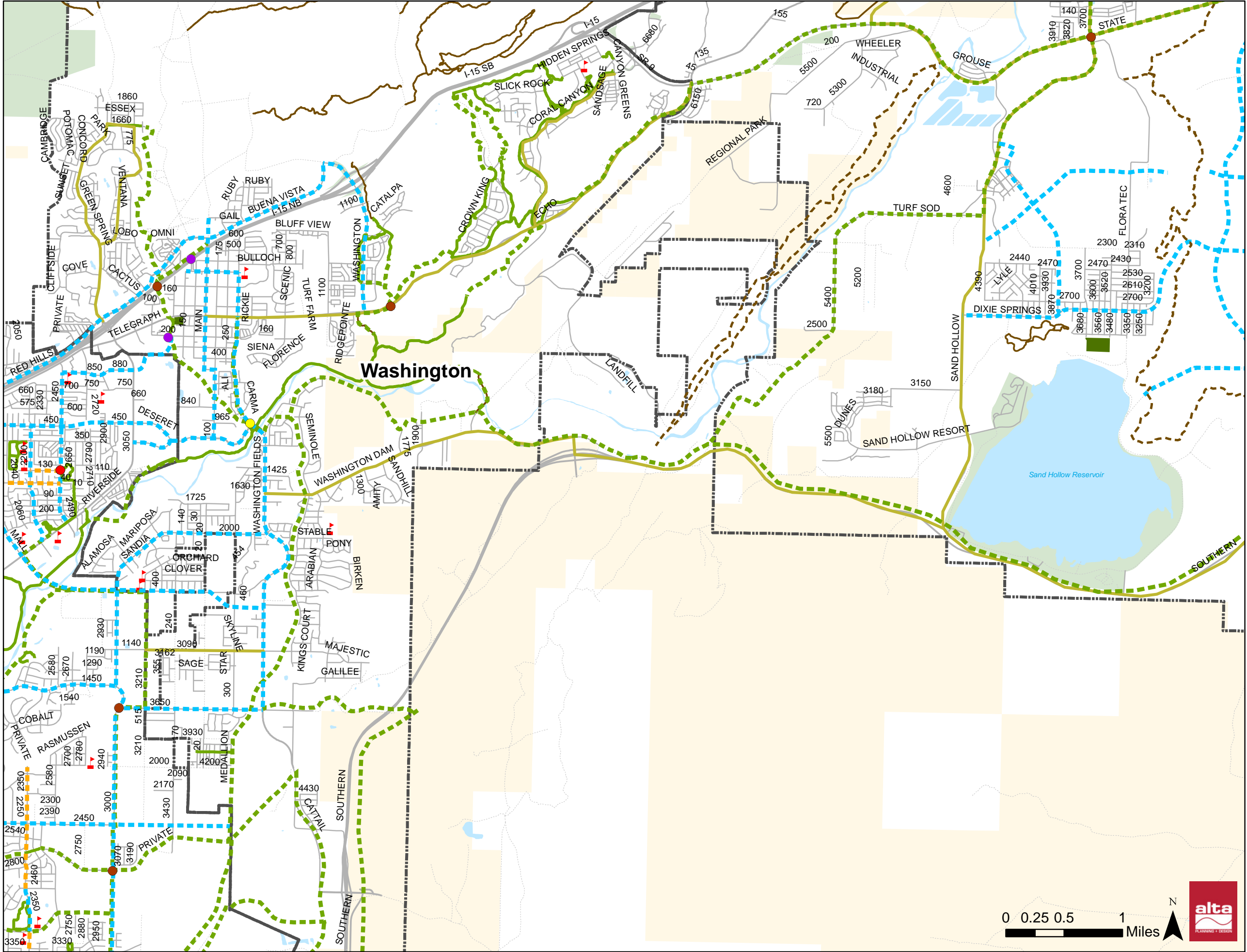
- Shared Use Path
- Protected Bike Lane
- Buffered Bike Lane
- Bike Lane
- Climbing Bike Lane
- Shared Roadway
- Bike Boulevard
- Natural Surface Trail

Existing Facilities

Linear Facility Type

- Shared Use Path
- Bike Lane
- Designated Bike Route
- Natural Surface Trail
- Interstate
- Secondary Route / Major Arterial
- Minor Arterial
- Local Street
- Unpaved

- Parks
- Water
- School Locations
- BLM and Other Federal
- Nat'l or St Forest, Parks, Wildlife



Map 4.5 Hurricane

Recommended Improvements

Spot Improvement Type

- Bridge or Undercrossing
- Signal or Beacon
- Intersection Improvement
- Miscellaneous

Linear Facility Type

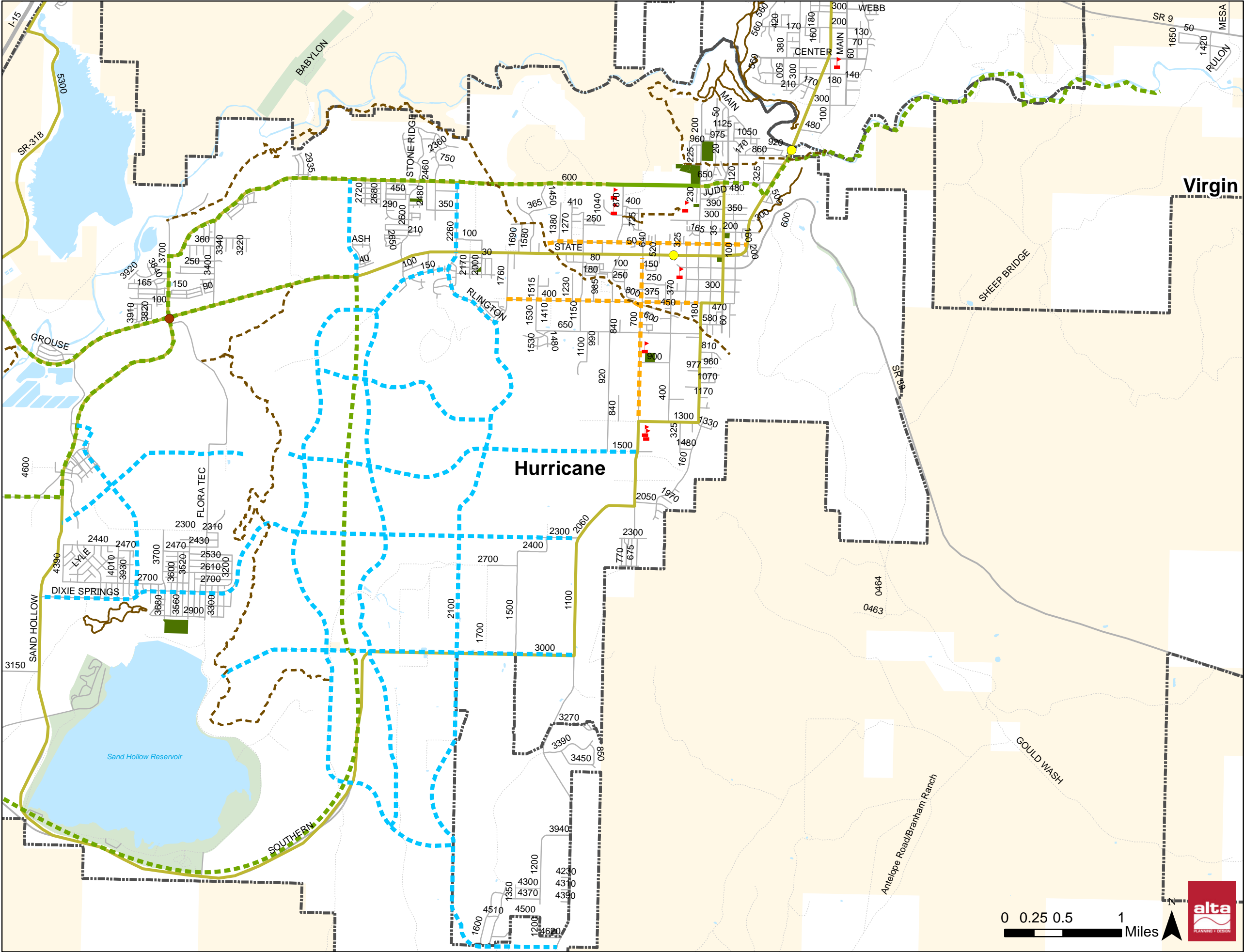
- Shared Use Path
- Protected Bike Lane
- Buffered Bike Lane
- Bike Lane
- Climbing Bike Lane
- Shared Roadway
- Bike Boulevard
- Natural Surface Trail

Existing Facilities

Linear Facility Type

- Shared Use Path
- Bike Lane
- Designated Bike Route
- Natural Surface Trail
- Interstate
- Secondary Route / Major Arterial
- Minor Arterial
- Local Street
- Unpaved

- Parks
- Water
- School Locations
- BLM and Other Federal
- Nat'l or St Forest, Parks, Wildlife



Chapter 5: Implementation

Funding Sources

Federal Funding

In July 2012, the Moving Ahead for Progress in the 21st Century (MAP-21) transportation bill was passed into law and took effect on October 1, 2012. MAP-21 was recently reauthorized through the Spring of 2015. At this time, Congress will need to decide the how to continue or alter MAP-21 programs for future transportation funding. The Dixie MPO should monitor the development of a new long term transportation funding bill to stay abreast of the most current programs and requirements. Most current funding programs emphasize a reliance on multiple transportation modes, reducing auto trips, and providing intermodal connections. Local match requirements are 6.77% or 20% depending on the given program. Although MAP-21 funding programs distribute federal monies, many programs are administered at the state levels through UDOT or Utah State Parks, such as the Transportation Alternatives (TAP) and Recreational Trails Program (RTP) respectively.

Federal Aid Highway Program

The largest source of federal funding for bicycle and pedestrian projects is the United States Department of Transportation's (US DOT) Federal-Aid Highway Program, which Congress has reauthorized roughly every six years since the passage of the Federal-Aid Road Act of 1916. The latest act, Moving Ahead for Progress in the Twenty-First Century (MAP-21) was enacted in July 2012 and recently reauthorized until May 2015. The Act replaces the Safe, Accountable, Flexible, Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU), which was valid from August 2005 - June 2012.

MAP-21 authorizes funding for federal surface transportation programs including highways and transit. There are a number of programs identified within MAP-21 that are applicable to bicycle and pedestrian projects. These programs are discussed below.

Online Resources:

http://www.fhwa.dot.gov/environment/bicycle_pedestrian/funding/funding_opportunities.cfm

Transportation Alternatives Program Funding (TAP)

Transportation Alternatives Program (TAP) is a new funding source under MAP-21 that consolidates three former SAFETEA-LU programs: Transportation Enhancements (TE), Safe Routes to School (SRTS), and the Recreational Trails Program (RTP). These funds may be used for a variety of pedestrian, bicycle, and streetscape projects including sidewalks, bikeways, multi-use paths, school safety, and rail-trails. TAP funds may also be used for selected education and encouragement programming such as Safe Routes to School. Funding amounts at the state level are equal to 2% of the total of all authorized Federal-aid highway and highway research funds. Each state must use a specific portion of these funds for recreational trails projects (as discussed later in this chapter). Among the eligible activities are:

Construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation, including sidewalks, bicycle infrastructure, and pedestrian and bicycle signals.

Construction, planning, and design of infrastructure-related projects and systems that will provide safe routes for non-drivers, including children, older adults, and individuals with disabilities to access daily needs.

Conversion and use of abandoned railroad corridors for trails for pedestrians, bicyclists, or other non-motorized transportation users.

Online Resources: http://www.fhwa.dot.gov/environment/transportation_alternatives/

Recreational Trails Program (RTP)

The Recreational Trails Program (RTP) was continued under MAP-21 although it now contains an option for governors to opt out. If they do not, the RTP continues to function just like it did under the previous Federal transportation bill. It provides funds to states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational users. Federal transportation funds benefit recreation including hiking, bicycling, in-line skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, and four-wheel driving.

The Combined Trails Advisory Council (a Utah-specific body) reviews RTP funding requests and provides funding recommendations. The Council generally meets in August to finalize the award list. The finalized list of projects to be funded under RTP is submitted to the Director of the Division of State Parks and Recreation for administrative approval and funding. Projects authorized for funding are placed on UDOT's Statewide Transportation Improvement Program (STIP).

Online Resources: <http://stateparks.utah.gov/resources/grants/recreational-trails-program>

Utah's Recreational Trails Program Contact:

Chris Haller

801-349-0487

chrishaller@utah.gov

Utah State Parks

1594 West North Temple, Suite 116

Salt Lake City, Utah 84116

Safe Routes to School (SRTS)

The SRTS program was also continued under MAP-21, although there is no longer a dedicated funding component solely devoted to SRTS (TAP funds are now used to fund SRTS efforts). UDOT provides Utah schools with walking and biking safety resources through the SRTS program. Federal SRTS funding can be used for two purposes: (1) educating children about how to walk and bike safely to school and (2) constructing infrastructure improvements such as sidewalks that increase the safety of children walking and biking to school. Prior to MAP-21, SRTS funds did not require a local match. A 6.77% match is now required.

Online Resources: <http://www.udot.utah.gov/main/f?p=100:pg:0::::V,T,1388>

UDOT Contact:

Cherissa Wood

Utah Safe Routes to School Coordinator

801-965-4486

Surface Transportation Program (STP)

The Surface Transportation Program (STP) provides states with flexible funds which may be used for a variety of highway, road, bridge, and transit projects. Bicycle and pedestrian improvements are eligible, including on-street bicycle facilities, off-street trails, sidewalks, crosswalks, bicycle and pedestrian signals, parking, and other ancillary facilities. Modification of sidewalks to comply with the requirements of the Americans with Disabilities Act (ADA) is also an eligible activity. Unlike most highway projects, STP-funded bicycle and pedestrian facilities may be located on local and collector roads that are not part of the Federal-aid Highway System. Fifty percent of each state's STP funds are sub-allocated geographically by population; the remaining fifty percent may be spent in any area of the state.

Online Resources: <http://www.fhwa.dot.gov/map21/guidance/guidestprev.cfm>

Highway Safety Improvement Program (HSIP)

MAP-21 continued funding of the Highway Safety Improvement Program (HSIP) as a core Federal-aid program. The goal of the program is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal lands. The HSIP requires a data-driven, strategic approach to improving highway safety on all public roads that focuses on performance.

Online Resources: <http://safety.fhwa.dot.gov/hsip/>

Federal Lands Access Program (FLAP)

The Federal Lands Access Program (Access Program) was established in 23 U.S.C. 204 to improve transportation facilities that provide access to, are adjacent to, or are located within Federal lands. The Access Program supplements State and local resources for public roads, transit systems, and bicycle and pedestrian facilities, with an emphasis on high-use recreation sites and economic generators. The Access Program is funded by contract authority from the Highway Trust Fund. Funds are subject to the overall Federal-aid obligation limitation. Funds are distributed among the States using a new statutory formula based on road mileage, number of bridges, land area, and visitation. With the large amount of federal lands surrounding Dixie MPO communities, FLAP grants could serve as an important funding mechanism for providing bicycle and pedestrian improvements to access these lands.

Online Resources: <http://flh.fhwa.dot.gov/programs/flap/>

Partnership for Sustainable Communities

Founded in 2009, the Partnership for Sustainable Communities is a joint project of the EPA, U.S. Department of Housing and Urban Development (HUD), and USDOT. The partnership aims to “improve access to affordable housing, more transportation options, and lower transportation costs while protecting the environment in communities nationwide.” The Partnership is based on five Livability Principles, one of which explicitly addresses the need for bicycle and pedestrian infrastructure:

Provide more transportation choices: Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.

The Partnership is not a formal agency with a regular annual grant program. Dixie MPO communities should track Partnership communications and be prepared to respond proactively to announcements of new grant programs. Initiatives that speak to multiple livability goals are more likely to score well than initiatives that are narrowly limited in scope to bicycle and pedestrian efforts.

Online Resources: <http://www.sustainablecommunities.gov>

Community Transformation Grants

Community Transformation Grants administered through the Center for Disease Control support community-level efforts to reduce chronic diseases such as heart disease, cancer, stroke, and diabetes. Active transportation infrastructure projects and programs that promote healthy lifestyles are a good fit for this program, particularly if the benefits of such improvements accrue to population groups experiencing the greatest burden of chronic disease.

Online Resources: <http://www.cdc.gov/communitytransformation/>

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 the Utah State Parks and Recreation Department as a grant program. Any Pedestrian and Bicycle Master Plan projects located in future parks could benefit from planning and land acquisition funding through the LWCF. Trail corridor acquisition can be funded with LWCF grants as well.

Online Resources: <http://stateparks.utah.gov/resources/grants/land-and-water-conservation-fund>

Utah's Land and Water Conservancy Fund Contact:

Susan Zarekarizi

801-538-7496

susanzarekarizi@utah.gov

Utah State Parks

1594 West North Temple, Suite 116

Salt Lake City, Utah 84116

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 throughout the region indirectly through technical assistance, particularly for community organizations, but should not be considered a future capital funding source.

Online Resources: www.nps.gov/rtca

Utah RTCA Contact:

Marcy DeMillion

801-741-1012, ext. 125

324 South State Street, Suite 200

Salt Lake City, Utah 84111

Community Development Block Grants (CDBG)

Through the US Department of Housing and Urban Development (HUD), the Community Development Block Grant (CDBG) program provides annual grants on a formula basis to entitled cities, urban counties, and states to develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low- and moderate-income persons. Eligible activities include, but are not limited to, acquisition of property for public purposes; construction or reconstruction of streets, water and sewer facilities, neighborhood centers, recreation facilities, and other public works; planning activities; and assistance to nonprofit entities for community development. HUD distributes funds to each State based on a statutory formula which takes into account population, poverty, incidence of overcrowded housing and age of housing. All funds (other than administrations and the technical assistance set-aside) are distributed by states to local government units.

Online Resources: www.hud.gov/cdbg

CDBG Program Contact:

Leroy P. Brown
Region 8, Denver Regional Office
1670 Broadway
Denver, Colorado 80202-4801
303-672-5076, ext. 1326
Leroy.brown@hud.gov

Urbanized Area Formula Program (5307)

The Urbanized Area Formula Funding program (49 U.S.C. 5307) makes Federal resources available to local transit operation and capital projects including improvements to bicycle and pedestrian access. Pedestrian improvements within ½ mile of transit stops and bicycle access improvements within three miles are eligible for potential funding.

Online Resources: http://www.fta.dot.gov/documents/FINAL_FTA_circular9030.1E.pdf

Urbanized Area Formula Program Contact:

David Beckhouse
Deputy Regional Administrator
Federal Transit Administration Region VIII
12300 W. Dakota Ave, Suite 310
Lakewood, CO 80228
720-963-3306
David.Beckhouse@dot.gov

Table 2: Federal Funding Sources Matrix

		Planning, Design and/or Construction			
Funding Program		On-street Pedestrian Facilities	On-street Bicycle Facilities	Off-Street Multi-Use Paths	Non-Infrastructure Programs
Federal Sources	MAP-21	Transportation Alternatives (TAP)	✓	✓	✓
		Recreational Trails Program (RTP)		✓	
		Safe Routes to School (SRTS)	✓	✓	✓
		Surface Transportation Program (STP)	✓	✓	
		Highway Safety Improvement Program (HSIP)	✓	✓	✓
		Federal Lands Access Program (FLAP)	✓	✓	
		Urbanized Area Formula Program (5307)	✓	✓	
		Partnership for Sustainable Communities	✓	✓	
		Community Transformation Grants (CTG)	✓	✓	✓
		Land and Water Conservation Fund (LWCF)		✓	✓
		Rivers, Trails, and Conservation Assistance (RTCA)		✓	
		Community Development Block Grants (CDBG)	✓		✓

State Funding

Utah Department of Transportation – Long Range Plan

As part of the 2011-2040 Long Range Plan (LRP), which is a thirty-year plan for state transportation facilities in urban and rural areas, bicycle improvement projects are listed as part of capacity projects along State highways. The Dixie MPO and UDOT can continue to work together on an ongoing basis to identify opportunities for implementation of bicycle and pedestrian facilities as part of capacity improvements.

Utah Department of Transportation – Maintenance Program

UDOT carries out a number of annual road resurfacing projects that are geared at maintenance. There may be opportunities for road re-striping to be completed as part of regular road maintenance. This will require coordination between the Dixie MPO communities and UDOT to ensure that the pavement marking design is safe for cyclists and drivers.

Local Funding

Local funding sources are generally administered by MPOs and other regional agencies although counties or cities may administer some funding sources. Federal, state, and local revenue streams support these funding sources.

General Fund

General Fund expenditures are often used to pay for maintenance expenses and limited capital improvement projects. Projects identified for reconstruction or repaving as part of the Capital Facilities Plan list should also implement recommendations for bicycle and pedestrian improvements in order to reduce additional cost.

Special Improvement Districts

Special Improvement Districts (SIDs) are most often used by cities to construct localized projects such as streets, sidewalks, or bikeways. Through the SID process, the costs of local improvements are generally spread out among a group of property owners within a specified area. The cost can be allocated based on property frontage or other methods such as traffic trip generation.

Business Improvement Area

Pedestrian and bicycle improvements can often be included as part of larger efforts aimed at business improvement and retail district beautification. Business Improvement Areas (BIAs) collect levies on business in order to fund area-wide improvements that benefit business and improve access for customers. These districts may include provisions for pedestrian and bicycle improvements, such as wide sidewalks, landscaping, and ADA compliance.

Local Bond Measures

Dixie MPO municipalities could issue bonds to fund bicycle and pedestrian improvements. This would spread the cost of the improvements over the life of the bonds. Certain types of bonds would require voter approval. The debt would have to be retired, so funding for repayment on the bond and the interest would be required.

Tax Increment Financing/Urban Renewal Funds

Tax Increment Financing (TIF) is a tool for using future tax revenue to finance the current improvements that will create those gains. When a public project such as a shared-use path is constructed, surrounding property values generally increase and encourage surrounding development or redevelopment. The increased tax revenues are then dedicated to finance the debt created by the original public improvement project. TIF typically occurs within designated Urban Renewal Areas (URA) that meet certain economic criteria and are approved by a local governing body. To be eligible for this financing, a project (or a portion of it) must be located within the URA.

Developer Impact Fees / Credits

Dixie MPO municipalities could utilize developer impact fees to fund bicycle and pedestrian improvements. Developer impact fees are typically tied to trip generation rates and traffic impacts produced by a proposed project. A developer may reduce the number of trips (and hence impacts and cost) by paying for on- and off-site bikeway improvements that will encourage residents to bicycle rather than drive. Establishing a clear nexus or connection between the impact fee and the project's impacts is critical.

Recreation, Arts, Parks Tax (RAP)

The Recreation, Arts, and Parks (RAP) tax, is a local option sales tax approved by the voters to be administered by Washington County and its municipalities. The funds generated would support the development or improvement of parks, trails, and recreational facilities within the County's municipalities and unincorporated areas.

People for Bikes

People for Bikes accepts grant applications from organizations and agencies that are committed to putting more people on bicycles more often. Fundable projects include paved paths, lanes, and rail-trails as well as mountain bike trails, bike parks, BMX facilities, and large-scale bicycle advocacy initiatives. The People for Bikes Grant Program has two application categories: facility and advocacy. For the facility category, People for Bikes will accept applications from non-profit organizations whose missions are bicycle and/or trail specific. They also accept applications from public agencies and departments at the national, State, regional, and local levels. However, People for Bikes encourages these municipalities to align with a local bicycle advocacy group that will help develop and advance the project or program. A key goal of the People for Bikes grants program is to support bicycling in as many places as possible.

Online Resources: www.peopleforbikes.org

Private Foundations

Various private foundations provide funds for bicycling and walking infrastructure. Through research at the national Foundation Center, individuals and organizations can find funders, instructions, and grant applications to help fund projects.

Online Resources: www.foundationcenter.org

Recommended Next Steps

In order to realize construction of the greatest portion of the bicycle and pedestrian network, the following actions are recommended:

- **Subscribe to federal communications** and be prepared to respond proactively to announcements of grant availability.
- **Identify local funding** sources for capital and non-infrastructure bicycle, pedestrian and Safe Routes to School projects.
- **Compare identified high priority projects with funding sources** in Table 1 to find potential complementary matches.
- **Develop diverse relationships with local partners** such as health, safety, economic development and bicycle advocates to identify mutually supportive projects and develop grant proposals.
- **Dedicate a funding source** for active transportation projects in annual operations and capital improvement program budgets (e.g., a dedicated portion of general fund dollars, or a new locally collected revenue stream).
- **Coordinate Capital Improvement Program (CIP)** project development and review so programmed roadway and maintenance projects include incidental pedestrian and bicycle facilities.

Project Descriptions and Cost Estimates

Project descriptions and cost estimates have been provided for projects that are currently able to be implemented. Bikeways or sidepaths that are proposed along non-existent or partially developed roadways are not included due to the unknown conditions of future construction. Facilities on proposed roadways should be constructed through the development process or after the roadway has significant complete segments to make meaningful connections.

Planning Level Costs

Planning level cost estimates have been provided to help identify potential future project costs. Costs for on-street bikeways assume implementation occurs with pavement sealing or overlay activities to promote efficiencies in pavement striping and avoid removal of existing roadway paint. Costs shown for off-street facilities do not account for special environmental, geotechnical or permitting requirements and costs. Property acquisition is excluded from planning level costs as well.

Conflicts with the Long Range Transportation Plan

Some proposed on-street bikeway projects pose potential conflicts with the Long Range Transportation Plan. In these cases, the spatial requirements needed to accommodate on-street bikeways conflicts with long term roadway capacity and expansion needs. Projects where this situation occurs have been noted with an asterisks. Planners should seek to develop multi-modal transportation solutions to satisfy both vehicular, bicycle, and pedestrian transportation demands.

Table 3: On-Street Bikeway Project Matrix & Cost Estimates

ON-STREET BIKEWAYS						
Municipality	Facility Name	Facility Type	Description	Special Features/Improvements	Length (Ft)	Planning Level Cost
Buffered Bike Lanes						
St. George	300 South Buffered Bike Lane	Buffered Bike Lanes	Stripe 6' bike lane with 3' buffers.		6847	\$20,700.00
St. George	Main Street Buffered Bike Lane	Buffered Bike Lanes	11' travel lanes/7.5' bike lane and buffer/ 8' parking		7179	\$20,500.00
St. George	Sunset Blvd. Bike Lane *	Buffered Bike Lanes	Eliminate on-street parking. Stripe shoulder areas as buffered bike lane. The Long Range Transportation Plan calls for the eventual widening of Sunset Blvd. to 7 lanes. Conflict between the spatial requirements of proposed bikeways and long-term traffic capacity should be resolved before implementation.		12294	\$37,200.00
St. George	400 E Buffered Bike Lane	Buffered Bike Lanes	Implement 5' bike lane with 3' buffers. Consider lane reconfiguration if traffic calming is desired.		1235	\$3,800.00

Bike Lanes						
St. George	Skyline Dr./200 East Climbing Bike Lane	Climbing Bike Lane	Provide a 6' wide bike lane on the uphill side and shared lane markings on the downhill side of Skyline Dr.		2668	\$5,500.00
St. George	1000 E Climbing Bike Lane	Climbing Bike Lane	Provide a 6-7' wide climbing bike lane on the uphill side and shared lane markings on the downhill lanes		885	\$1,900.00
Hurricane	150 S Bike Lane	Bike Lanes	Stripe 5-6' bike lanes.		4065	\$7,000.00
Ivins	Snow Canyon Dr. Bike Lane	Bike Lanes	Widen where needed (between developed area and the state park) to accommodate bike lanes up to the Snow Canyon Park Gate. Work with the Utah Department of Parks and Recreation to coordinate roadway improvements within the park.	Includes widened shoulders	5080	\$159,000.00
Santa Clara	Pioneer Parkway	Bike Lanes	Widen Shoulders 3-4' to accommodate bike lanes.		8225	\$334,000.00
St. George	1450 South Bike Lane	Bike Lanes	May require some lane narrowing to accommodate bike lanes.		9881	\$16,800.00
St. George	200 E Bike Lane	Bike Lanes	Stripe 6' bike lanes in wide shoulder.		1236	\$2,200.00

St. George	2200 E Bike Lane	Bike Lanes	Stripe 6' bike lanes. Construct southern portion in conjunction with road extension to Riverside Dr.		5386	\$9,200.00
St. George	2350 E Bike Lane	Bike Lanes	May require lane narrowing (11' travel, 14' center turn) to accommodate bike lanes.		1973	\$3,400.00
St. George	2450 East Bike Lane	Bike Lanes	Eliminate parking one side of the street to accommodate bike lanes.		6929	\$11,800.00
St. George	2450 S Bike Lane	Bike Lanes	Stripe wide shoulders as bike lanes. Future additions of lanes may require removal of on-street parking or lane width reductions.		13009	\$22,200.00
St. George	1680 E Bike Lane	Bike Lanes	Eliminate parking both sides of road		3805	\$7,300.00
St. George	2000 N Bike Lane	Bike Lanes	Eliminate parking one side to accommodate bike lanes.		3652	\$6,600.00
St. George-Ivins	Snow Canyon Parkway Bike Lanes	Bike Lanes	May require 10' travel lanes or selective widening where medians exist to accommodate bike lanes		32551	\$55,400.00
St. George-Washington	850 North Bike Lane	Bike Lanes	11' Travel lanes 5' bike lanes 8' parking		5990	\$10,200.00
St. George-Washington	Red Hills Pkwy / Buena Vista Bike Lanes	Bike Lanes	Narrow lanes as needed to accommodate bike lanes		18946	\$32,300.00

St. George	400 E Bike Lane- 100 S to 600 S	Bike Lanes	Stripe 6' Bike Lane		3100	\$5,300.00
St. George	400 E Bike Lane- 600 S to 1160 S	Bike Lanes	Eliminate Parking on one-side of street to accommodate bike lanes		2531	\$4,600.00
St. George	Valley View Drive	Bike Lanes	Stripe bike lanes in shoulder area. Evaluate 3-lane road configuration to accommodate buffered bike lanes or cycle track.		11424	\$19,500.00
St. George	400 S / 1000 E Bike Lane	Bike Lanes	Stripe 6-7' bike lanes.		4322	\$7,400.00
St. George	450 North Bike Lane	Bike Lanes	Eliminate on-street parking one-side of street to accommodate bike lanes		10360	\$18,700.00
St. George	600 W Bike Lane	Bike Lanes	Expand shoulders 3' to accommodate 5'-0" bike lane		859	\$1,500.00
St. George	700 E Bike Lane	Bike Lanes	Stripe 5-6' bike lanes in wide shoulder/parking area.		4946	\$8,500.00
St. George	700 S Bike Lane- Main St. to 900 E*	Bike Lanes	Eliminate parking 1 side of street to accommodate bike lanes. Direct bikes onto enhanced bike ramps/sidewalks below overpass. Project conflicts with Long Range Transportation Plan. Consider 600 South as an alternate east-west route.		4337	\$17,000

St. George	700 South Bike Lane- 900 E to Foremaster Dr.	Bike Lanes	Remove shoulder/on-street parking on one side of street to accommodate bike lanes.		3451	\$6,300.00
St. George	900 East- Bike Lane	Bike Lanes	Evaluate removal of center turn lane or parking to allow room for bike lanes. If no lane reconfigurations are feasible, install shared lane marking.		2736	\$4,700.00
St. George	900 S / 400 E	Bike Lanes	Eliminate on-street parking on one side to accommodate bike lanes.		11623	\$21,000.00
St. George	Arrowhead Canyon Dr / Angel Arch Dr Bike Lanes	Bike Lanes	Stripe existing wide shoulders as bike lanes.		8493	\$14,500.00
St. George	Bloomington Hills Dr. Bike Lane	Bike Lanes	Restrict parking. Stripe bike lanes on existing shoulders. Widen shoulders 3' adjacent to golf course to provide needed width for bike lanes.		8778	\$541,700.00
St. George	Brigham Road Bike Lane	Bike Lanes	Narrow travel lanes to 11' if needed.		9722	\$16,600.00
St. George	Commerce Dr.	Bike Lanes	Remove on-street parking one side to accommodate bike lanes.		2410	\$4,400.00
St. George	Dixie Downs Rd. Bike Lane	Bike Lanes	May require 10-11' travel lanes with 11-12' center turn lane to accommodate bike lanes.		6979	\$11,900.00

St. George	Dixie Dr. Bike Lane	Bike Lanes	Conduct feasibility study to determine areas with deficient shoulder space. Widen shoulders and/or narrow travel lanes where needed to accommodate bike lanes.		20711	\$35,300.00
St. George	Foremaster Bike Lanes	Bike Lanes	Stripe existing shoulders		5005	\$8,600.00
St. George	Fort Pierce Dr. Bike Lane	Bike Lanes	Restrict parking both sides		1589	\$3,100.00
St. George	Mall Dr. Bike Lanes- Red Cliffs to Riverside Dr.	Bike Lanes	May require 10' travel lanes to accommodate bike lanes.		7498	\$12,800.00
St. George	Man O' War bike lanes	Bike Lanes	Stripe existing shoulders as bike lanes.		4170	\$7,100.00
St. George	Medical Center Dr. Bike Lanes	Bike Lanes	Stripe shoulders, restrict parking on one or both sides.		3319	\$6,000.00
St. George	River Road Bike Lane*	Bike Lanes	Stripe bike lane in wide shoulders. Selective lane narrowing (11') may be needed to accommodate bike lanes in some areas. Project is in conflict with the Long Range Transportation Plan.		18530	\$31,600.00
St. George	Sun River Pkwy Bike Lanes	Bike Lanes	Study lane narrowing to accommodate bike lanes one existing sections		5597	\$9,600.00
St. George	Tuweap Bike Lanes	Bike Lanes	Restrict parking. South of Pioneer Pkwy implement in conjunction with		1312	\$2,300.00

			development/road improvements			
Washington	Washington Fields Rd / 300 E Bike Lane	Bike Lanes	May require 10' travel lanes to accommodate bike lanes on existing sections.		19224	\$32,700.00
Washington	Main Street Bike Lanes	Bike Lanes	Design proposed interchange to accommodate bike lanes. Utilize parking restrictions where necessary along the remainder of the route to accommodate bike lanes.		10469	\$17,800.00
Washington	2260 W Bike Lane	Bike Lanes	Eliminate parking one side of the street or implement bike lanes in conjunction with future development/roadway widening		3183	\$5,500.00
Washington	300 E Bike Lane	Bike Lanes	Stripe bike lanes in wide shoulders.		2034	\$3,500.00
Washington	300 N Bike Lane	Bike Lanes	Stripe 5' bike lanes. May require 11' travel lanes.		2385	\$4,100.00
Washington	Washington Pkwy Bike Lanes	Bike Lanes	Stripe bike lanes in wide shoulders.		7685	\$13,100.00
Washington	Industrial Dr. Bike Lane	Bike Lanes	Narrow center turn lane, restrict parking both sides		4209	\$7,200.00

Bike Boulevard						
St. George	1200 North Bike Boulevard	Bike Boulevard	Install wayfinding signage and shared lane markings to offer an east-west alternative to Sunset Dr.	Wayfinding Signage	9251	\$14,200.00
St. George	200 S Bike Boulevard (Alternative to 300 S Buffered Bike Lane)	Bike Boulevard	Implement a bike boulevard along 200 S. Seek to prioritize bicycles along the route, reinforce wayfinding with signage and calm traffic. A bicycle/pedestrian undercrossing of I-15 would be needed to fully implement this route.	Wayfinding Signage, traffic calming allowance	10648	\$52,800.00
St. George	750 N. Bike Boulevard	Bike Boulevard	Implement shared lane markings and signage to guide bicyclists as an east-west alternative to Sunset Blvd.		2977	\$3,600.00
Shared Roadways						
Hurricane	400 S ROW	Shared Roadways	Implement shared lane markings.		6130	\$7,400.00
Ivins-Santa Clara	Gubler / Rachel Dr. Shared Roadway	Shared Roadways	Implement shared lane markings.		8629	\$10,400.00
Ivins	Taviawk Dr / 400 W Shared Roadway	Shared Roadways	Shared roadway. Evaluate potential advisory lanes on low-volume portions without landscape medians.		17975	\$21,600.00

Ivins	Kwavasa Shared Roadway	Shared Roadways	Implement shared lane markings and bike route signage.		3373	\$4,100.00
Santa Clara	Canyon View Dr. Shared Roadway	Shared Roadways	Implement shared lane markings		9559	\$11,500.00
Santa Clara	Arrowhead Trail Shared Roadway	Shared Roadways	Implement shared lane markings and signage to guide bicyclists as an east-west alternative to Sunset Blvd.		4089	\$6,500.00
St. George	130 N Bicycle Boulevard	Shared Roadways	Implement shared lane markings.		1364	\$1,700.00
St. George	1800 N Shared Roadway	Shared Roadways	Implement shared lane markings.		2859	\$3,500.00
St. George	2350 E Shared Roadway	Shared Roadways	Implement shared lane markings		5503	\$6,700.00
St. George	3580 S/ 2350 E Shared Roadway	Shared Roadways	Implement shared lane markings		6806	\$8,200.00
St. George	40 N Shared Roadway	Shared Roadways	Implement shared lane markings		3370	\$4,100.00
St. George	400 S / 1100 E Shared Roadway	Shared Roadways	Implement shared lane markings		3154	\$3,800.00

St. George	800 E Shared Roadway	Shared Roadways	Implement shared lane markings. Restrip angle parking to reverse angle parking near DSU.	Parking re-striping at DSU	2288	\$6,800.00
St. George	Fort Pierce Dr. Shared Roadway	Shared Roadways	Implement shared lane markings.		6598	\$8,000.00
St. George	Navajo Shared Roadway	Shared Roadways	Implement shared lane markings.		2895	\$3,500.00
St. George	Sugar Leo Shared Roadway	Shared Roadways	Implement shared lane markings.		9224	\$11,100.00
Protected Bikes Lanes						
St. George	Main St Protected Bike Lane	Protected Bike Lanes	Evaluate lane reconfiguration to reduce travel lanes to one in each direction. If lane configuration is determined to be feasible, construct a one-way cycle track along Main St. from Bluff to 700 S. (Assumes paint/plastic delineator posts)		3652	\$175,300.00
St. George	Tabernacle Protected Bike Lane	Protected Bike Lanes	Implement a one-way cycle track. Eliminate parking on one side of street and consolidate driveways where possible (Assumes paint/plastic delineator posts)		8055	\$386,700.00

Table 4: Sidewalk Project Matrix & Cost Estimates

SIDEWALK PROJECTS					
Municipality	Facility Name	Facility Type	Description	Length (Ft)	Planning Level Cost
St. George	Bloomington Hills Dr. Sidewalks	Sidewalk Projects	Construct sidewalk on the western side of Bloomington Hills Dr. connecting to sidewalk on Fort Pierce Dr.	8969	\$188,349.00
St. George	Main St. (700 S) Sidewalk Gap	Sidewalk Projects	Install sidewalk on the east side of Main St.	218	\$4,578.00
St. George	Bluff St. (St. George Blvd.) Sidewalk Gap	Sidewalk Projects	Construct missing sidewalk on west side.	286	\$6,006.00
St. George	Main St. (1160 S.) Sidewalk Gap	Sidewalk Projects	Construct missing sidewalk segment on the east side of Main St.	945	\$19,845.00
St. George	400 E (840 S. Cir) Sidewalk Gap	Sidewalk Projects	Construct sidewalk on the east side of 400 E.	953	\$20,013.00
St. George	200 North Sidewalk Infill	Sidewalk Projects	Construct missing sidewalk segment on 200 N west of 100 E	236	\$4,956.00
St. George	Pioneer Park Sidewalks	Sidewalk Projects	Construct sidewalks around the perimeter of Vernon Worthern Park.	1813	\$38,073.00

Table 5: Shared Use Path/Sidepath Project Matrix & Cost Estimates

SHARED USE PATHS - SIDEPATHS						
Municipality	Facility Name	Facility Type	Description	Special Features / Spot Improvements	Length (Ft)	Planning Level Cost
Hurricane-LaVerkin	Three Rivers Trail	Shared Use Paths / Sidepaths	Construct a shared use path along portions of 600 N and the Virgin River.	SR-9 Trail Undercrossing	89363	\$13,772,094.00
Santa Clara	Proposed Red Mountain Drive Shared Use Path	Shared Use Paths / Sidepaths	Construct a shared use path along the wash		4521	\$515,394.00
St. George	Dixie High Connector Path	Shared Use Paths / Sidepaths	Develop a shared use path / sidepath connection from Dixie High School to JC Snow Park and the Hilton Dr. Trail		2304	\$262,656.00
St. George	Middleton Wash Trail Extension	Shared Use Paths / Sidepaths	Develop shared use path linking to the Red Cliffs Desert Reserve trails	I-15 Trail Undercrossing	12099	\$3,299,286.00
St. George	Red Hills Parkway Trail Extension	Shared Use Paths / Sidepaths	Upgrade existing sidewalks to a sidepath in conjunction with future development/re-development.		5676	\$851,400.00
St. George	Ft. Pierce Wash Trail	Shared Use Paths / Sidepaths	Construct a shared use path along Pierce Wash from the St. James Trail / South Virgin River Trail to the airport.		31956	\$4,793,400.00

St. George	Bloomington Sun River Trail-Extension	Shared Use Paths / Sidepaths	Construct a shared use path from Bloomington Park to the Web Hill Trail.		8236	\$1,235,400.00
St. George	Old Airport Loop Trail	Shared Use Paths / Sidepaths	Construct a shared use path loop around the old airport site.		19757	\$2,252,298.00
St. George	Virgin River South Trail- River Rd to Mall Dr.	Shared Use Paths / Sidepaths	Construct a shared use path along the south side of the Virgin River linking the existing trail at River Rd. to Springs Park		10576	\$1,586,400.00
St. George	Santa Clara River Trail- Mathis Park to Cottonwood Cove Park	Shared Use Paths / Sidepaths	Construct a shared use path from Mathis Park along the Santa Clara River to Cottonwood Cove Park.	2 pedestrian bridges	4308	\$1,246,200.00
St. George	1375 N Powerline Trail	Shared Use Paths / Sidepaths	Constructed a shared use path in the utility corridor linking 1650 W to Royal Oaks Park.		1814	\$206,796.00
St. George	Rim Rock Wash Trail Extension (South)	Shared Use Paths / Sidepaths	Construct a shared use path south from the existing Rim Rock Wash Trail at 700 S to the Virgin River Trail.	RRFB, Riverside Dr. undercrossing	3758	\$1,892,412.00
St. George	Rim Rock Wash Trail Extension (North)	Shared Use Paths / Sidepaths	Construct a new shared use path along the Rim Rock Wash from the existing trail at Medical Center Dr. north to 100 S.	RRFB	3121	\$379,794.00

St. George	Sand Hollow Wash Connector	Shared Use Paths / Sidepaths	Construct shared use path connecting from proposed undercrossing to existing trail		871	\$99,294.00
St. George	750 N-Halfway Wash Connector Trail	Shared Use Paths / Sidepaths	Develop a shared use path along the canal linking Halfway Wash to the proposed 750 N shared roadway		1547	\$176,358.00
St. George	Bloomington Sun River Trail-Sun River Golf Club to Sun River Pkwy	Shared Use Paths / Sidepaths	Construct a shared use path along the Virgin River from Sun River Golf Club to Sun River Pkwy.		5194	\$779,100.00
St. George	Hamblin Trail	Shared Use Paths / Sidepaths	Construct a shared use path linking the cemetery in Santa Clara to Hamblin Dr. along Old US Hwy. 91		3869	\$580,350.00
St. George	Red Cliffs Dr. Sidepath	Shared Use Paths / Sidepaths	Construct a sidepath along the north and west edge of Red Cliffs Dr. Route the path behind the shopping center and connect to the center sidewalk through the contra-flow interchange. Coordinate with UDOT and shopping center owners.		5501	\$825,150.00

St. George	Sky West Connector Sidepath	Shared Use Paths / Sidepaths	Construct a sidepath linking the Medical Center Dr. bike lane and 400 S shared roadway		394	\$59,100.00
St. George	Snow Canyon High Connector	Shared Use Paths / Sidepaths	Provide a direct connection to the Snow Canyon High School main entrance from the existing Sand Hollow Wash Trail	Crosswalk with refuge	246	\$42,444.00
St. George	Virgin River Trail-Bloomington	Shared Use Paths / Sidepaths	Construct a shared use path along the Virgin River from Man of War Rd. to Christensen Park.		6951	\$1,042,650.00
St. George	Virgin River Trail-Christensen Park to Western Corridor	Shared Use Paths / Sidepaths	Develop a shared use path along the Virgin River from Christensen Park in Bloomington to the proposed Western Corridor.		8096	\$1,214,400.00
St. George	Web Hill Trail Extension	Shared Use Paths / Sidepaths	Extend the Web Hill Trail south to Brigham Rd.	Undercrossing at Brigham Rd.	1971	\$1,735,650.00
St. George-Santa Clara	Halfway Wash Trail Extension	Shared Use Paths / Sidepaths	Construct a shared use path extension from Dixie Dr. to the proposed Sand Hollow Wash.	Dixie Dr. undercrossing, Sand Hollow Wash Ped. Bridge	3466	\$1,445,124.00
St. George-Santa Clara	Sand Hollow Wash Extension	Shared Use Paths / Sidepaths	Construct a shared use path extension along Sand Hollow wash from 1800 N to the Mathis Park Trails.	Sunset Blvd. Trail undercrossing, pedestrian bridge	15769	\$3,895,350.00

Washington	Millcreek Trail Extension	Shared Use Paths / Sidepaths	Construct a shared use path from the existing Mill Creek Trail north, under I-15, past Green Springs Golf Course.	I-15 Trail Undercrossing	10207	\$2,569,665.00
Washington	300 E Trail	Shared Use Paths / Sidepaths	Upgrade existing sidewalks to a sidepath along 300 E/Washington Fields Rd.		5340	\$801,000.00
Washington	Mill Creek Trail (South)	Shared Use Paths / Sidepaths	Construct a trail extension from 200 S to the Virgin River Trail and Sullivan Virgin River Park.		5994	\$899,100.00
Washington	Canal Trail	Shared Use Paths / Sidepaths	Construct a shared use path along the historic canal alignment.		39349	\$5,902,350.00
Washington	Coral Canyon Lake Connector Trail	Shared Use Paths / Sidepaths	Extend the Cottonwood Wash shared use path to Telegraph St.		5087	\$763,050.00
Washington	Highland Park Loop Trail	Shared Use Paths / Sidepaths	Develop a shared use path loop trail		9040	\$1,030,560.00
Washington	Sienna Hills Park Trail	Shared Use Paths / Sidepaths	Construct a shared use path connection from the Virgin River Trail to Sienna Hills Park in conjunction with future development.	Trail undercrossing at Telegraph St.	5255	\$2,228,250.00

Washington	Sienna Park-Highland Park Loop Connector	Shared Use Paths / Sidepaths	Develop a shared use path connection from the proposed Sienna Park Trail to the Highland Park Lopp trail in conjunction with future development.		4153	\$622,950.00
Washington	Telegraph Trail	Shared Use Paths / Sidepaths	Construct shared use path along Telegraph St. to SR 9.		7517	\$1,127,550.00
Washington	Virgin River Trail- S Country Way Connection	Shared Use Paths / Sidepaths	Construct a shared use path linking the Virgin River Trail to the proposed Canal Trail.		2056	\$234,384.00
Washington	Virgin River-Canal Trail Connector	Shared Use Paths / Sidepaths	Construct a shared use path connecting the Virgin River Trail to the Canal Trail near Washington Fields Rd.		1894	\$284,100.00
Washington	Warm Springs Trail	Shared Use Paths / Sidepaths	Construct a shared use path from Washington's Main Street to the proposed Mill Creek Trail adjacent to I-15.		2760	\$414,000.00

Table 6: Spot Improvement Project Matrix & Cost Estimate

SPOT IMPROVEMENT PROJECTS				
Spot Improvement	Municipality	Classification	Description	Planning Level Cost
400 S/I-15 Pedestrian Undercrossing	St. George	Bridges and Undercrossings	Construct a new pedestrian undercrossing of I-15 at 400 S.	\$1,600,000.00
400 E/I-15 Grade-separated bike-ped crossing	St. George	Bridges and Undercrossings	Study future potential grade-separated bicycle and pedestrian crossing connecting 400 E across I-15	\$2,100,000.00
Middleton Wash/40N Pedestrian Bridge	St. George	Bridges and Undercrossings	Construct a pedestrian bridge over Middletown Wash connecting to 40 N.	\$120,000.00
Virgin River Trail/River Road Pedestrian Bridge	St. George	Bridges and Undercrossings	Construction a dedicated pedestrian bridge over the river linking the northern and southern Virgin River Trails. Ensure bridge width is 12' min.	\$300,000.00
200 S / I-15 Trail Undercrossing	St. George	Bridges and Undercrossings	Construct a pedestrian undercrossing below I-15 for the proposed 200S Bike Boulevard (alternative to 300S buffered bike lane).	\$1,600,000.00
200 W / St. George Blvd. midblock crossing	St. George	Signals or Beacons	Eliminate the existing left turn lanes at 200 W. Construct a new median linking the existing landscape medians to the east and west. Implement a mid-block crossing with HAWK. Coordinate signal timing with St. George Blvd. traffic signals.	\$225,000.00
Bluff & Sunset pedestrian ramps to trail	St. George	Crossing / Intersection Improvements	Implement bike and pedestrian ramps to access Bluff St. trail from Sunset Blvd. bike lanes and sidewalks. Coordinate with future intersection improvements.	\$15,000

Sullivan Virgin River Park Crossing Improvements	Washington	Signals or Beacons	Construct a new crosswalk, pedestrian refuge and RRFBs to access the Sullivan Virgin River Park.	\$20,000.00
SR-9 Bridge Improved Pedestrian Crossings	LaVerkin / Hurricane	Signals or Beacons	Two pedestrian crosswalks with median refuges and RRFBs to direct pedestrians to the east side of the bridge	\$40,000.00
850 E and 550 E- St. George Blvd. Midblock Crossing	St. George	Signals or Beacons	Eliminate visibility-obstructing landscaping and construct a mid-block crossing with HAWK. Coordinate signal timing with St. George Blvd. traffic signals.	\$320,000.00
HAWK at Hurricane High School	Hurricane	Signals or Beacons	Construct a hybrid actuated crosswalk beacon (HAWK) with a pedestrian refuge to facilitate pedestrian connectivity to Hurricane High School.	\$130,000.00
700 E / East Elementary Crosswalk with RRFB	St. George	Signals or Beacons	Construct new midblock crossing with RRFBs on 700 E	\$17,500.00
500 N / State St. Expand pork chop islands	LaVerkin	Crossing / Intersection Improvements	Expand curbed pork chop islands to minimize crossing distances and provide a refuge for pedestrians.	\$15,000.00
Bluff St./Blackridge Dr. Pork Chop Islands	St. George	Crossing / Intersection Improvements	Install proposed pork chop island to all four corners to shorten pedestrian crossing distances	\$20,000.00
Larkspur Park/Ft. Pierce Dr. Midblock Crossing	St. George	Crossing / Intersection Improvements	Midblock crossing with curb extensions	\$12,000.00
Sunset / Dixie Dr. Pork Chop Islands	St. George	Crossing / Intersection Improvements	Implement pork chop islands to shorten crossing distances.	\$20,000.00
Westridge / 670 North Crossing Improvements	St. George	Crossing / Intersection Improvements	Install curbed right turn island, crosswalk and pedestrian ramps to shorten crossing distance.	\$7,500.00
Larkspur Park/Larkspur Rd. Midblock Crossing	St. George	Crossing / Intersection Improvements	Midblock crossing with curb extensions	\$20,000.00

East Park Crosswalk & Refuge	St. George	Crossing / Intersection Improvements	Crosswalk with median refuge	\$7,500.00
Sunset. Blvd/Halfway Wash Street Connections	St. George	Miscellaneous	Connect the Halfway Wash Trail to the at-grade street network at undercrossings.	\$17,500.00
1400 W/Halfway Wash Street Connections	St. George	Miscellaneous	Connect the Halfway Wash Trail to the at-grade street network at undercrossings.	\$17,500.00
Narrow travel lanes and create shared sidepaths over bridge	St. George	Miscellaneous	Add bike ramps on either side of bridge to access widened sidepaths; pursue bridge widening long term Dixie Dr. Bike Lane	\$50,000.00
Halfway Wash/1510 W Sidewalk Connection	St. George	Miscellaneous	Connect the existing sidewalk to the Halfway Wash Trail.	\$2,000.00
Connect Mill Creek Trail to adjacent commercial center	Washington	Miscellaneous	Connect the Mill Creek Trail to the adjacent commercial center via a sidewalk or trail extension.	\$17,500.00
700 S Bike Ramps / Enhanced Sidewalks	St. George	Miscellaneous	Widen 700 S. sidewalks below overpass, install bike ramps on either side of overpass to receive proposed 700 S Bike Lanes	\$80,000.00

Prioritization Methodology

Introduction

This section summarizes methodologies for prioritizing recommended improvements for projects within the Dixie MPO city limits. Prioritizing these projects will allow the Dixie MPO to identify high priority projects and low-hanging fruit, as well as provide a foundation for implementation phasing. The prioritization framework relies upon facility-based criteria, as described in the following sections. The prioritization is anticipated to be carried out by the Dixie MPO and their municipalities yearly (or as needed) to assess the highest priority bicycle and pedestrian projects for implementation.

Scoring Criteria

Public Support (applicable only to Table 3)

Public support is an important criteria when evaluating potential sidewalk project implementation. Public requests to repair or implement new sidewalks normally far outweigh the funding available to complete these projects. Demonstrated public support and/or multiple requests for the same sidewalk projects

Proximity to Schools

To encourage more students to walk and bicycle to school, proposed facilities that directly connect to or travel within ¼ mile of any school (public or private) would qualify for this prioritization criterion.

Connectivity to Existing Facilities

Bicycling is typically higher along designated facilities. Creating connectivity to existing bike facilities enable more trips to be made by bike, and provides bicyclists of varying capabilities multiple routes for reaching their destination. Facilities that connect to an existing bikeway or bikeways will receive this scoring criterion.

Connectivity to Proposed Facilities

In addition to the existing bikeway network, the Bike & Pedestrian Master Plan will be proposing the addition of many projects throughout Dixie MPO. While not as immediately effective for bikeway continuity, facilities that connect to proposed facilities will help create a robust and cohesive network. Proposed facilities that intersect with other proposed facilities will be awarded this criterion.

Network Gaps

Gaps in the bicycling and walking networks discourage use of these modes because they limit route continuity, sense of belonging and security, or require users to choose less direct paths to access their destinations. Some feel “stranded” when a facility abruptly ends or does not easily connect to their destination, forcing users to ride on a street that does not accommodate their proficiency level or increase the length of their trip. Facilities that fill gaps in the existing bicycling and walking network will qualify for this criterion.

Connections to Activity Centers

Activity centers are the major trip-driving destinations within Dixie MPO (e.g. parks, commercial districts, employment centers, Downtown, etc.). By increasing accessibility to major activity centers, the recommendations in the Bike & Pedestrian Master Plan can help reduce traffic congestion and support residents and visitors who choose to bicycle or walk. Projects that connect to these centers qualify for this prioritization criterion.

Jurisdiction (applicable only to Table 1)

This criterion considers which agency or agencies own the right-of-way for which changes are proposed and whether or not the project is partially or completely outside of the City limits. For example, a project that is only private land and is located in city limits would receive the lowest score, while a project utilizes existing right of way within Dixie MPO would receive the highest score. Project implementation can be much more time-consuming and costly when projects cross jurisdictional boundaries or private property.

Resurfacing Projects (applicable only to Tables 2 and 3)

As Dixie MPO municipalities maintain their pavement, on-street bicycle facilities should be installed when a street is scheduled to be resurfaced or seal coated. Furthermore, developers can be required to include recommended facilities in the Bike & Pedestrian Master Plan that are located on the streets they are improving. This can be an

added benefit as MPO municipalities will not have to pay for the construction of these bikeways. Facilities that coincide with street paving projects will meet this scoring criterion.

Quick Wins

Bicycling and walking facilities range in project readiness and amount of reconfiguration or prior work that needs to be completed before a facility can be installed. With regard to on-street bikeways, some streets can accommodate bike lanes with little effort; where as other projects may require significant changes to the travel lanes, medians, street parking, right-of-way, etc. Similarly, some trail and street crossings will be easier than others to implement. Many cities choose to pursue the “low-hanging fruit” projects to achieve quick wins and build support for more politically complex projects. Projects that require minimal changes to the built environment and have lower costs will score higher on this criterion.

Sidewalk Project Prioritization

Sidewalk connectivity varies greatly throughout the Dixie MPO Region. Most new policy and land development regulations in Dixie MPO cities requires development of sidewalks except in large lot, rural scenarios, however, many Dixie area neighborhoods developed in the 1960's and 1970's often lack sidewalk infrastructure. The prioritization and projects provided are meant to provide a starting point and framework for evaluating future sidewalk renovation and implementation rather than a comprehensive list of existing sidewalks needs.

Table 7: Trails Prioritization Criteria and Scoring

Criteria	Score	Multiplier	Total	Description
Proximity to Schools	2	3.0	6	Direct access to a Washington County school
	1		3	Secondary access to a Washington County school (within 1/4 mile)
	0		0	Does not directly or indirectly access a Washington County school
Connectivity - Existing	2	3.0	6	Direct access to two or more existing bicycle or trail facilities
	1		3	Direct access to one existing bicycle or trail facility
	0		0	Does not directly or indirectly access an existing bicycle facility
Connectivity - Proposed	2	1.0	2	Direct access to two or more proposed bicycle or trail facilities
	1		1	Direct access to one proposed bicycle or trail facility
	0		0	Does not directly or indirectly access a proposed bicycle or trail facility
Network Gaps	2	3.0	6	Facility fills a network gap between two existing facilities
	1		3	Facility fills a network gap between an existing facility and a proposed facility
	0		0	Does not directly or indirectly fill a network gap
Connectivity - Activity Centers	2	2.0	4	Connects to a major trip-driving destination or two or more major or minor destinations in the Dixie MPO area
	1		2	Secondary connectivity to a major trip-driving destination or connectivity to one destination in the Dixie MPO area
	0		0	Does not directly or indirectly connect to an activity center
Jurisdiction	2	1.0	2	Trail is located within the city limits and within public right-of-way
	1		1	Trail is partially located within either the city limits or within public right-of-way
	0		0	Trail is not within the city limits nor within public right-of-way
Quick Wins	2	2.0	4	Trail project can be constructed/installed in the near future with little planning, minor difficulty and low expense
	1		2	Trail project can be constructed/installed with moderate planning and moderate expense
	0		0	Trail project will require long-term planning and moderate to high expenses

Table 8: On-Street Bikeways Prioritization Criteria and Scoring

Criteria	Score	Multiplier	Total	Description
Proximity to Schools	2	3.0	6	Direct access to a Dixie MPO area school
	1		3	Secondary access to a Dixie MPO area school (within 1/4 mile)
	0		0	Does not directly or indirectly access a Dixie MPO area school
Connectivity - Existing	2	3.0	6	Direct access to two or more existing bicycle or trail facilities
	1		3	Direct access to one existing bicycle or trail facility
	0		0	Does not directly or indirectly access an existing bicycle facility
Connectivity - Proposed	2	1.0	2	Direct access to two or more proposed bicycle or trail facilities
	1		1	Direct access to one proposed bicycle or trail facility
	0		0	Does not directly or indirectly access a proposed bicycle or trail facility
Network Gaps	2	3.0	6	Facility fills a network gap between two existing facilities
	1		3	Facility fills a network gap between an existing facility and a proposed facility
	0		0	Does not directly or indirectly fill a network gap
Connectivity - Activity Centers	2	2.0	4	Connects to a major trip-driving destination or two or more major or minor destinations in the Dixie MPO area
	1		2	Secondary connectivity to a major trip-driving destination or connectivity to one destination in the Dixie MPO area
	0		0	Does not directly or indirectly connect to an activity center
Street Paving Projects	2	2.0	4	Bikeway is located on a project scheduled for street paving (1-5 years). Shared Roadways and bicycle boulevards projects received the full two points because they can be implemented on existing pavement and do not require repaving or reconstruction.
	1		2	Bikeway is located on a project scheduled for street paving (5-10 years) or partially located on a project that will be repaved or reconstructed within 1-5 years.
	0		0	Bikeway is not located on a project scheduled for street paving
Quick Wins	2	2.0	4	Bikeway project can be constructed/installed in the near future with little planning, minor difficulty and low expense
	1		2	Bikeway project can be constructed/installed with moderate planning and moderate expense
	0		0	Bikeway project will require long-term planning and moderate to high expenses

Table 9: Sidewalk Prioritization Criteria and Scoring

Criteria	Score	Multiplier	Total	Description
Public Support	2	3.0	6	Street was identified by the public as desirable for a future facility (multiple times)
	1		3	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
Proximity to Schools	2	3.0	6	Direct access to a Dixie MPO area school
	1		3	Secondary access to a Dixie MPO area school (within 1/4 mile)
			0	Does not directly or indirectly access a Dixie MPO area school
Connectivity - Existing	2	3.0	6	Direct access to two or more existing pedestrian facilities
	1		3	Direct access to one existing pedestrian facility
	0		0	Does not directly or indirectly access an existing pedestrian facility
Connectivity - Proposed	2	1.0	2	Direct access to two or more proposed pedestrian facilities
	1		1	Direct access to one proposed pedestrian facility
	0		0	Does not directly or indirectly access a proposed pedestrian facility
Network Gaps	2	3.0	6	Facility fills a network gap between two existing facilities
	1		3	Facility fills a network gap between an existing facility and a proposed facility
	0		0	Does not directly or indirectly fill a network gap
Connectivity - Activity Centers	2	2.0	4	Connects to a major trip-driving destination or two or more major or minor destinations in the Dixie MPO area
	1		2	Secondary connectivity to a major trip-driving destination or connectivity to one destination in the Dixie MPO area
	0		0	Does not directly or indirectly connect to an activity center
Street Paving Projects	2	2.0	4	Sidewalk is located on a project scheduled for street paving (1-5 years)
	1		2	Sidewalk is located on a project scheduled for street paving (5-10 years)
	0		0	Sidewalk is not located on a project scheduled for street paving
Quick Wins		2.0	4	Pedestrian project can be constructed/installed in the near future with little planning, minor difficulty and low expense
	1		2	Pedestrian project can be constructed/installed with moderate planning and moderate expense
	0		0	Pedestrian project will require long-term planning and moderate to high expenses

Table 10: Spot Improvement Prioritization and Scoring

Criteria	Score	Multiplier	Total	Description
Proximity to Schools	2	3.0	6	Direct access to a Washington County school
	1		3	Secondary access to a Washington County school (within 1/4 mile)
	0		0	Does not directly or indirectly access a Washington County school
Connectivity - Existing	2	3.0	6	Direct access to two or more existing bicycle or trail facilities
	1		3	Direct access to one existing bicycle or trail facility
	0		0	Does not directly or indirectly access an existing bicycle facility
Connectivity - Proposed	2	1.0	2	Direct access to two or more proposed bicycle or trail facilities
	1		1	Direct access to one proposed bicycle or trail facility
	0		0	Does not directly or indirectly access a proposed bicycle or trail facility
Network Gaps	2	3.0	6	Facility fills a network gap between two existing facilities
	1		3	Facility fills a network gap between an existing facility and a proposed facility
	0		0	Does not directly or indirectly fill a network gap
Connectivity - Activity Centers	2	2.0	4	Connects to a major trip-driving destination or two or more major or minor destinations in the Dixie MPO area
	1		2	Secondary connectivity to a major trip-driving destination or connectivity to one destination in the Dixie MPO area
	0		0	Does not directly or indirectly connect to an activity center
Quick Wins	2	2.0	4	Project can be constructed/installed in the near future with little planning, minor difficulty and low expense
	1		2	Project can be constructed/installed with moderate planning and moderate expense
	0		0	Project will require long-term planning and moderate to high expenses

Chapter 6: Conclusion

Figure 39: Road Respect Program Group Ride (Photo Credit: SUBA)



The Dixie MPO Regional Active Transportation Plan establishes an important vision for active transportation in Washington County. With populations projected to grow to nearly 200,000 by 2020, the time to plan for future bicycle and pedestrian investment is now. While the region has made significant strides in building an extensive network of off-street paths, there is still more to be done to establish a similar on-street network and to ensure an integrated and connected network of trails and bikeways.

The region possesses many existing assets and destinations that should be leveraged and connected during the development of the active transportation system. Downtown St. George, Dixie State University, and the region's existing shared use path system are a great framework to build the active transportation system around. The region also boasts a reputation for outdoor recreation with a full schedule of events highlighted by the St. George Ironman. Successful implementation of the Dixie MPO Regional Active Transportation Plan will require leveraging and connecting to these existing community assets while striving to better facilitate walking and biking in underserved areas of the County.

Support for active transportation facilities has been steadily building in Washington County over the past few years. Recent and ongoing infrastructure projects such as the Bluff-Sunset intersection, Bluff-Red Hills Parkway Intersection and Virgin River Trail boardwalk project show that residents, elected officials and transportation planners are committed to providing multi-modal transportation options for Washington County. Meanwhile, the creation of the St. George Active Transportation Committee provides an advisory group to advocate for the continued development of the bicycle and pedestrian system. The Dixie MPO Active Transportation Plan hopes to build on this momentum to create an environment where biking and walking are safe, convenient and daily parts of Washington County life.

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Appendix A. Stakeholder Interviews

Overview

The Planning Team conducted a number of stakeholder interviews to gauge public desire and needs in regards to the active transportation network. Representatives from the following stakeholder groups were interviewed:

- Washington County School District
- Dixie State University
- Southern Utah Bicycle Alliance
- SunTran
- Red Rock Center for Independence
- Various city staff from St. George, Ivins, Santa Clara, and Hurricane

Interview 1: Washington County School District / Dixie State University

- Lots of trails end before reaching the school (mostly in Santa Clara and Ivins)
 - a. Need to get a copy of Jan's SRTS maps
 - b. Not a connection to the neighborhoods
 - c. More comprehensive mapping needed for each school
- Couple of schools trying to get more students biking or walking
- App for smartphone- Walking School Bus
- Bike Valet-
- Walk to School Day- 1.5 mile or 2.0 mile drop off from school and walk the rest of the way in
- Part of wellness plan- Gold Medal
- Certain schools are "no wheel schools", prohibit wheeled transportation of any kind skateboards, bikes, skate-shoes, etc... (work with the school district to change the policy)
- Monty getting school district boundaries and walking boundaries

Dixie State University

- Underpass under 400 South (FHWA, UDOT, on Campus Master Plan, City is very interested)
- Many destinations for students east of the Interstate
 - a. Health Science Building
 - b. Grocery store
 - c. Numerous restaurants and commercial businesses
- 100 S. connection under I-15 is constrained (narrow shoulder, narrow sidewalk)
- Potential cycletrack being discussed on 300 South

- Routes around burns 600-700 South
- Bike parking
 - a. The University can provide counts
 - b. Every building has bike racks
- Where students are living? Paul and Sherry will try to see about providing some info to determine this
- 2008 Traffic Study- from Horrocks (check base data)
- Recent clock tower development and pedestrian promenade along former 900 E.
- Future housing expansions near 1000 E. and 100 S. and near 1000 E. and 400 S.
- Refer to Utah Travel Study for Dixie State Student travel habits
- Dixie State student survey (should show where students live and where their traveling to)

Interview 2: SUBA / St. George City / Sun Tran

Attendees:

- Tom Dancy- SUBA
- John Reed- SUBA
- Marc Mortensen- SUBA / St. George City
- Monty Thurber- SUBA / St. George City
- Ryan Gurr- SUBA
- Fred Davies- SunTran

SunTran Comments

- Current SunTran buses have bicycle racks for up to two bikes
- Three-bike racks are difficult to get the middle bike in and out of the rack
- Current bus policies prevent cyclists from bringing bikes on-board for to avoid potential aisle clearance issues, conflicts with wheelchairs or potential safety issues due to unrestrained bicycles moving inside the bus
- Current bus routes currently operate at standing-room only capacity during major commute hours
- Transfer facility has bike racks
- Many students use SunTran to get to school in areas not served by school bussing
-

SUBA Comments

- Three Rivers Trail Concept served as the genesis for local bicycle and pedestrian planning efforts
- A subsequent plan (Bicycle and Pedestrian Facilities, 2007) was later developed as a result of the initial Three Rivers Trail planning efforts
- Growing need to connect east and west ends of the county

- Numerous gaps in the existing system- Santa Clara has a great bike lane with no connection into St. George
- Limited commuter connectivity into major retail centers
- St. George City has expressed interest in developing a protected bike along 300 South, 300 West and Diagonal St.
- Hurricane offers low-volume, bicycle-friendly roads but new development may change this
- St. George has waived some parking requirements for new downtown developments (Jewel Plaza) to encourage a walkable, bike-able growth
- Interest in providing a connection from existing shared-use paths (Snow Canyon, Virgin River Trail, etc...) into and through downtown
- Improved accommodations needed along Main St. (from St. George Blvd. to Bluff St.) for bikes and peds to improve connectivity to the trails on the south side of town
- Interest in a potential St. George bike share system
- New sidepath along 600 North in Hurricane near Hurricane Elementary seeing lots of use
- Incomplete network due to inconsistent development patterns
- SR 59 and SR 9 both lead to major cycling tourism destinations
- Potential widened shoulders (talk to Dana)
- Potential I-15 underpass could connect to Rim Rock Wash (behind Lowes)
- Connect to major biking destinations including Springdale, Bloomington, Washington City, Coral Canyon

Interview 3: Red Rock Center for Independence

- Audible crosswalk signals helpful for visually impaired
- Especially difficult for disabled in Hurricane and LaVerkin getting into St. George- no public transit
- Hurricane- sidewalks on most streets but lack of signals makes for difficult crossings
- 700 South / River Road signal phase- not long enough to cross
- St. George and Bluff- no sidewalk access on NW side
- No sidewalks on West side of Main Street from 700 South
- Most visually impaired aren't trained to navigate the pedestrian system
- Street crossings near- Crossing Dixie Drive near the Santa Clara River Trail
- Potential trailhead at Dixie Dr. across from Five County AOG next to trail
- Bus doesn't go down St. George Blvd. so difficult to get to destinations
- Scooter / Power Chair- present different accessibility issues
- Urban Trails Guide- available
- Could utilize CDBG funds for implementation of sidewalk gaps
- Dixie State University not ADA friendly

- 400 East, south of 700 South major gaps missing curb cuts- out-of-compliance curb ramps- only a sidewalk on one side

Heritage Court / Meadows

- No sidewalks in Bloomington or Bloomington Hills
- Heritage Court- 900 S & 400 E
- Paratransit only available within $\frac{3}{4}$ mile of a bus line

Interview 4: Hurricane Department of Public Works

- Audible crosswalk signals helpful for visually impaired
- Especially difficult for disabled in Hurricane and LaVerkin getting into St. George- no public transit
- Hurricane- sidewalks on most streets but lack of signals makes for difficult crossings
- 700 South / River Road signal phase- not long enough to cross
- St. George and Bluff- no sidewalk access on NW side
- No sidewalks on West side of Main Street from 700 South
- Most visually impaired aren't trained to navigate the pedestrian system
- Street crossings near- Crossing Dixie Drive near the Santa Clara River Trail
- Potential trailhead at Dixie Dr. across from Five County AOG next to trail
- Bus doesn't go down St. George Blvd. so difficult to get to destinations
- Scooter / Power Chair- present different accessibility issues
- Urban Trails Guide- available
- Could utilize CDBG funds for implementation of sidewalk gaps
- Dixie State University not ADA friendly
- 400 East, south of 700 South major gaps missing curb cuts- out-of-compliance curb ramps- only a sidewalk on one side

Interview 5: St. George Area Chamber of Commerce

- Chamber is generally supportive of increased efforts to increase biking and walking
- Reoccurring Downtown events have fizzled out in the past
 - No strong champion to organize and coordinate