



WEST JORDAN

Active Transportation Plan



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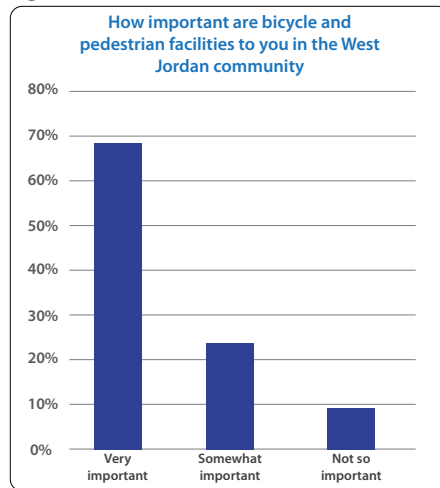
1 EXECUTIVE SUMMARY



The Active Transportation (AT) Plan allowed the City of West Jordan to take a detailed look at bicycle and pedestrian facilities in the city. The plan represents the next step from the Transportation Master Plan to the specifics needed to plan for sidewalk, trail, and bike lane projects. Residents in West Jordan have expressed a desire to see more trails and more and more Utahns are saying that active transportation facilities are important to their quality of life.

This plan is designed to lay the groundwork for enhancing active transportation in the community by presenting a vision for future AT projects and how to see them realized. This plan is organized into five sections that illustrate the journey from **Where We Are** (section 2), to **What We Heard** (section 3), **Where We're Going** (section 4), **Planned Projects** (section 5), and **How We Get There** (section 6). Throughout this study there were regular meetings and interaction with City staff and officials and well as a focus on collaborating with residents and key community stakeholders about what they would like to see in West Jordan.

Figure 1-1:



Joint West Jordan and South Jordan Study

The study was conducted jointly between West Jordan and South Jordan. The two cities worked together at the same time to collaborate on projects and to help ensure that needed connections on corridors spanning both cities could be realized. Projects like buffered bike lanes on 2700 West are important to both West Jordan and South Jordan, and the cities wanted consistency and coordination across borders.

The collaborative planning process was instrumental throughout the study, specifically with the Steering Committee members from both cities and in the joint website for the project: www.jordanatp.com.

Figure 1-2: Community event



Many of the planned projects in the project prioritization map came from public input.



Summary

Hundreds of public comments about potential active transportation projects were collected and reviewed. These potential projects were evaluated against the projects already identified in past plans and alongside bicycle and pedestrian usage data to develop and refine a final list of projects. These projects include striped, buffered and separated bike lanes, trails, sidewalks, and byways.

The full list of projects for both West Jordan and South Jordan was ranked based on a number of criteria developed by the team including comfort, potential usage, regionality, public support, etc. The rankings were reviewed by the team, and while they generally indicate priority they do not need to be completed in order. Figure 1-3 shows a map of the ranked projects in West Jordan and Table 1-1 provides the list of projects.



Figure 1-3: Active transportation project prioritization map

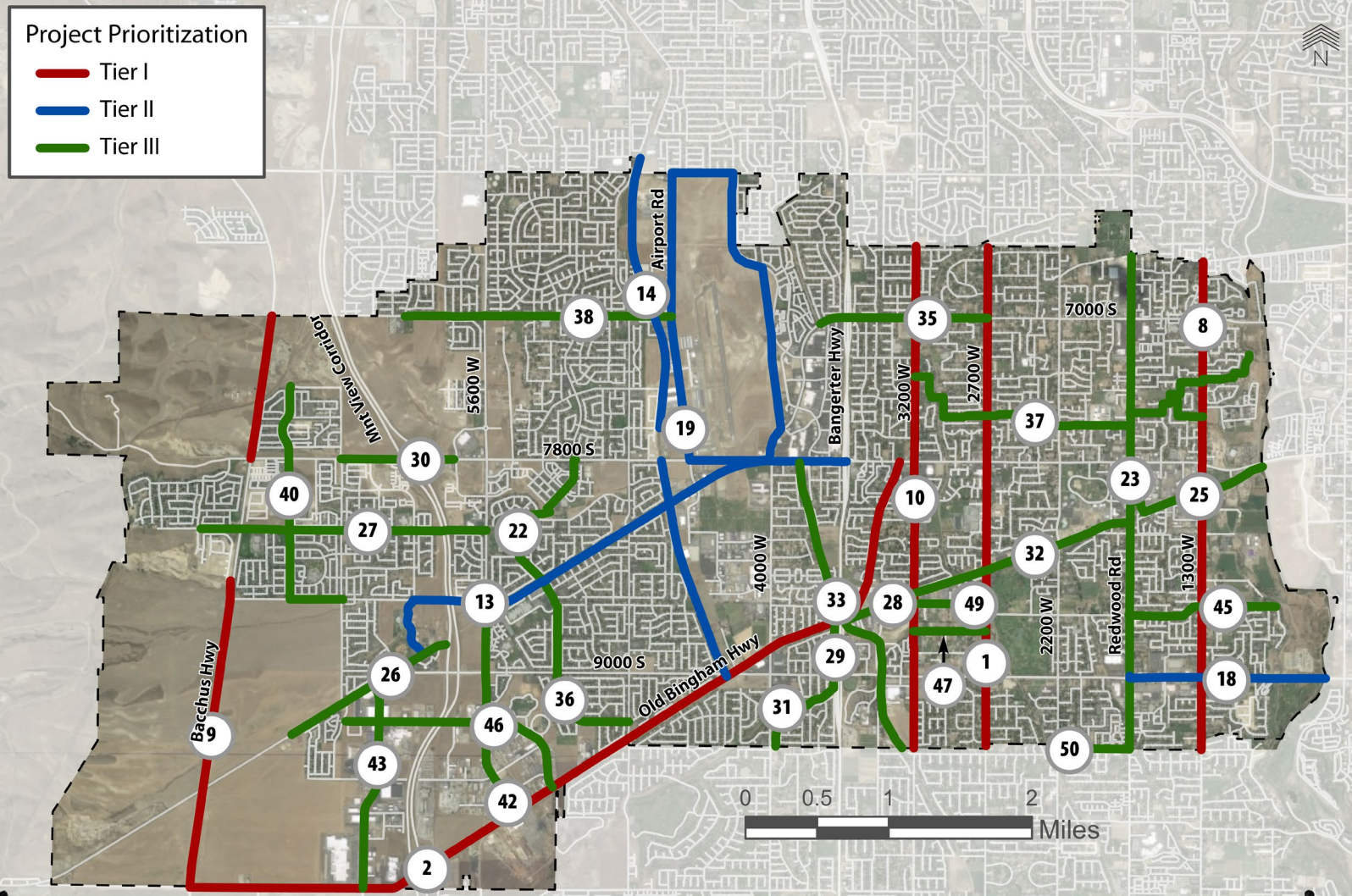




Table 1-1: Active transportation project prioritization

Combined Rank *	Location	Type	Miles	Cost	Cost
Tier I					
1	2700 West between West Jordan's northern city boundary and southern city boundary	Buffered bike lane	3.5	\$256,000	TAP/ Choice Fund
2	Old Bingham HWY between 7800 South to Bacchus HWY	Buffered or protected bike lane	6.3	\$216,000-\$4,985,000	TAP/TIFF
8	Temple Dr. between Winchester St. and southern city boundary	Buffered or protected bike lane	3.4	\$117,000-\$2,701,000	TAP/ Choice Fund
9	SR-111 South Jordan to West Valley City	Paved Multi Use Path	3.2	2,700,000	Development
10	3200 West between West Jordan's northern city boundary and southern city boundary	Bike Lane	3.5	\$93,000	TAP/Choice Fund
Tier II					
13	New Bingham HWY between Mountain View HWY and Bangerter HWY - Ron Wood Parkway/8600 South between New Bingham HWY and Mountain View HWY	Buffered or protected bike lane	3.7	\$1,700,000-\$7,800,000	TAP/ Choice Fund
14	Garfield Rail Trail New Bingham Highway to West Valley	Paved Multi Use Path	3.5	\$2,971,000	TAP
18	9000 South between Redwood Rd and West Jordan's eastern city boundary	Bike Lane	1.4	\$37,000	UDOT
19	Around the South Valley Regional Airport	Paved Multi Use Path	5.2	\$4,336,000	City
Tier III					
22	Grizzly Way between 7800 South and 900 South	Buffered or protected bike lane	1.8	\$63,000-\$1,455,000	TIFF
23	Redwood Rd. between West Jordan's northern city boundary and Shields Ln.	Sidewalk (8'-10')	3.4	\$728,000	TIFF
25	Trail along TRAX from Sugar Factory Rd. between Redwood Rd. and West Jordan's eastern city boundary	Paved Multi Use Path	1.0	\$877,000	TIFF
26	New Bingham HWY between 6700 West and Mountain View HWY	Buffered or protected bike lane	1.3	\$44,000-\$1,011,000	TAP/City
27	8200 South between Stokesley Dr and 5600 West	Buffered or protected bike lane	2.0	\$69,000-\$1,589,000	City
28	Trail along TRAX from Utah Distribution Canal to 2700 West	Paved Multi Use Path	1.0	\$878,000	TIFF
29	Connecting the Bingham Creek Trail and 8600 South along Bingham Creek and Bangerter Hwy	Paved Multi Use Path	0.7	\$614,000	TAP/City
30	7800 South between 6400 West and Highlands Loop Rd.	Paved Multi Use Path	0.8	\$664,000	TAP

* The numbers in the **Combined Rank** column reflect the complete prioritization list among all South Jordan and West Jordan projects.



Combined Rank	Location	Type	Miles	Cost	Funding
Tier III					
31	Welby-Jacobs Trail along Provo Reservoir Canal between Bingham Creek Trail and West Jordan's southern city boundary	Paved Multi Use Path	0.2	\$197,000	TAP/Choice Fund
32	Trail along TRAX from 2700 West to Redwood Road	Paved Multi Use Path	1.1	\$892,000	TIFF
33	Along the Utah Lake Distribution Canal between 7800 South and West Jordan's southern city boundary	Paved Multi Use Path	2.3	\$1,942,000	TAP
35	7000 South between 3760 West and 2700 West	Buffered or protected bike lane	1.2	\$40,000-\$932,000	TAP/City
36	Wild Acres Dr. between 9000 South and 4800 West	Neighborhood Byway	0.7	\$2,000	CATF
37	Connecting Redwood Rd. and trail near Primavera Way/Highland Hollow Dr. between Paisley Way and Temple Dr./Connecting 3200 West and Redwood Rd.	Neighborhood Byway	3.4	\$11,000	CATF
38	7000 South between Oquirrh Ridge Rd. and Airport Rd.	Buffered or protected bike lane	2.2	\$74,000-\$1,718,000	TAP
40	6700 West between 7400 South 8600 South	Bike Lane	1.9	\$50,000	CATF
42	5600 West/Hawley Park Rd between New Bingham HWY and Old Bingham HWY	Bike Lane	1.5	\$40,000	City
43	Prosperity Road from Wells Park Rd to New Bingham Highway	Sidewalk	1.5	\$307,000	City
45	8600 South/8660 South/Gardner Ln between Redwood Rd. and Millrace Bend Rd	Neighborhood Byway	1.1	\$3,000	City
46	Bagley Park Rd /Dannon Way from New Bingham Highway to 6400 West	Sidewalk	1.7	\$366,000	Development
47	8750 South from 3200 West to 2700 West	Sidewalk	0.5	\$107,000	City
49	Haun Dr between 3200 West and Jaguar Dr.	Bike Lane	0.5	\$13,000	City
50	Fullmer Ln. between 2200 West and Redwood Rd.	Bike Lane	0.5	\$13,000	City
				TOTAL COST:	\$20,420,000 - \$40,288,000

Table 1-2: Project prioritization total cost and miles by Tier

Tier I		Tier II		Tier III	
Total Miles	19.6	Total Miles	13.8	Total Miles	12
Total Cost	\$3,382,000 - \$10,735,000	Total Cost	\$9,044,000 - \$15,144,000	Total Cost	\$7,994,000 - \$14,409,000

Cost estimates were developed by active transportation engineers based on the most recent bid prices for construction items like striping paint and concrete curbs. The full construction cost estimates were based on facility types and linear feet of construction. Buffered or protected bike lane projects costs are based on recently completed buffered or protected bike lane projects. Variability in the cost of these projects is based upon design choices, restrictions, and existing conditions. A common occurrence that will effect cost is if a bike lane and buffer can be striped in the existing road, if right-of-way is required to add the buffered bike lane, or if it is a curb protected bike lane that requires new concrete and drainage accommodations, that is why they are shown as a range.

All the cost estimates include a contingency and should be considered planning level cost estimates only. Better engineering based costs will need to be developed as projects near construction.

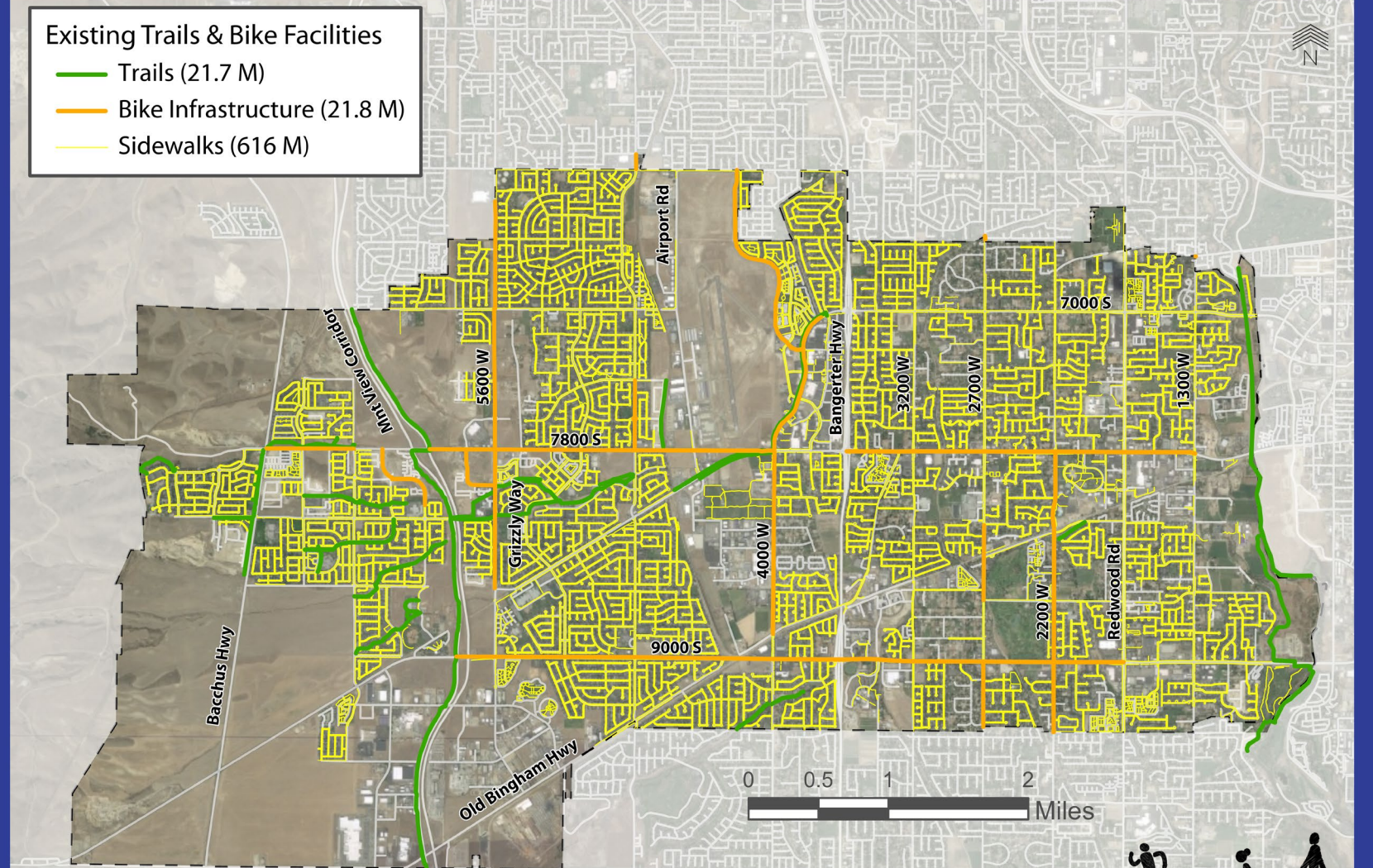


2 Where We Are



Active Transportation West Jordan City's AT network is a key component of the overall transportation system. It enhances the livability, health, and safety for residents. The existing network consists of 21.7 miles of paved multi-use trails, 37.2 miles of combined AT designated shoulders and bike lanes, and over 590 miles of sidewalks. The Jordan River Trail is the most used and second longest continuous trail system, extending from South Jordan to Taylorsville (4.4 miles). The Mountain View Corridor Trail is the longest continuous facility covering 4.5 miles from South Jordan to West Valley City.

Figure 2-1: Existing AT facilities



Mobility versus Accessibility

The main purpose of the transportation system in any community is to provide mobility. Mobility focuses on efficiently moving people and goods from point A to point B, or the level of ease with which movement happens. Without basic mobility, store shelves would be empty, and people would not be able to get to necessary destinations like work and school. Even more important for communities, however, is accessibility. While mobility focuses on overall movement, accessibility encompasses

Figure 2-2: Cyclist navigating 1300 West in South Jordan



the less tangible components of travel, like travel time, cost, options, comfort, and risk. The two concepts are tied together, and as accessibility increases mobility improves. Mobility is highest in places that accommodate pedestrians, transit users, and bicyclists as well as

drivers. Improving accessibility revolves around making locations easy to approach and enter. Accessibility differs by mode and although a location may have high accessibility for automobile travelers, it may have little to no accessibility for transit riders, pedestrians and cyclists. The key to good transportation planning is identifying the overall needs of the users and improving accessibility for all.

Land-Use and Transportation

Land-use and transportation are inseparably linked. Different land uses will create different transportation impacts and require different types of transportation access. The transportation facilities provided will often dictate how people travel. For example, a newly constructed office building may include a large parking lot to accommodate

commuters driving alone or carpooling, or it may be built near a light rail station with minimal parking to incentivize using transit. It is important to consider what types of trips are connected with various locations, particularly for locations that may incorporate active transportation modes.

Locations like neighborhoods, schools, parks, and shopping areas are prime locations for active connections. Improving connections and providing opportunities for citizens to walk and bike not only improves accessibility and mobility, but also improves the health and wellbeing of the local community. Accessibility improvements to sidewalks and trails can also enrich the livability of a community. Sidewalks and trails with pedestrian-friendly elements, such as curb ramps and benches, create inviting strolling and shopping areas while providing access for people with limited transportation options. While all pedestrians will have different needs, the goal should be to make all sidewalk and trail environments accessible to the largest possible number of potential users.

Pedestrian facilities should be developed that are safe, attractive, convenient, and easy to use. Sidewalk and trail projects should be selected carefully to maximize their usefulness to the community. Although worthwhile, it can be difficult to retrofit existing built-out areas to incorporate trails and sidewalks. Because of this, high priority should be given to incorporating sidewalks and trails during long-range planning and new site development. It is always easier to incorporate infrastructure during the development process rather than trying to retrofit after the fact.





Complete Streets

One way to ensure that the system provides for all transportation modes is through the development of complete streets. For the majority of the twentieth century roadways were designed primarily for motor vehicles. While this is still a dominant approach to roadway design, a personal vehicle-centric approach can pose significant barriers to use by pedestrians, bicyclists, and public transit users, which limits active transportation opportunities, hinders access and connectivity, and results in negative health consequences by supporting a sedentary lifestyle.

Figure 2-3: Complete streets rendering

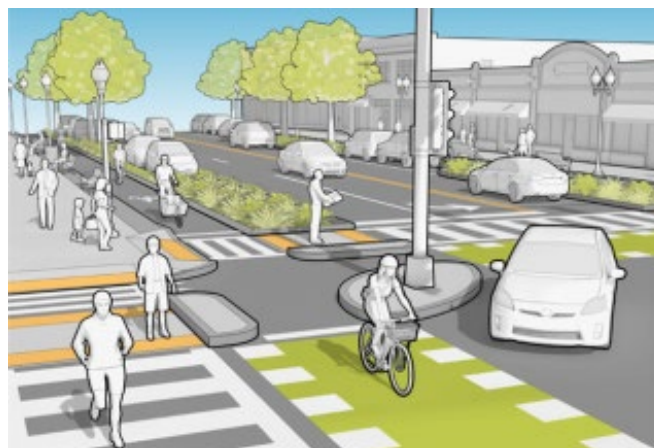


Figure 2-4: Complete Street 7800 South



Complete streets are corridors that are designed and operated to enable safe use and support mobility for all users. Those include people of all ages and abilities, regardless of whether they are traveling as drivers, pedestrians, bicyclists, or public transportation riders. Using a complete streets approach, the focus of road design is no longer about auto-mobility but creating an overall network that serves all users. Complete Streets strategies include retrofitting existing arterials to accommodate multi-modal users or building new facilities that support multi-modal transportation and complementary roadside uses. Complete Streets elements can include pedestrian and bicyclist accommodations, public transit access, accommodations for persons with disabilities, landscape elements, and traffic calming. When implementing a complete street strategy, transit should not be overlooked. Transit and non-motorized modes go hand in hand. Nearly 80% of transit trips involve an active transportation link on one or both ends. Bicycle and pedestrian accessibility to Trax stations is crucial as it makes riding public transportation easier and more convenient, improves riders' health through active transport, and reduces congestion on the roads.

This 4-lane arterial has a center turn lane for vehicles, and also a 6-foot bike lane with a 3-foot buffer for cyclists. The buffer provides needed separation on this 40 mph road. The sidewalks are separated from the road by a parkstrip to create a more comfortable experience for pedestrians by creating space between them and roadway traffic.



Bicycle and Pedestrian Counts

To estimate existing levels of walking and biking within West Jordan, six locations were counted for two hours each between May 12 and May 24, 2019. These locations are shown in Figure 2-4 and included:

- 7800 South & 2600 West
- Jordan River Trail & 7800 South
- Barney's Creek Trail & 4800 West
- 2700 West & 8200 South
- Mountain View Trail & 8300 South
- 9000 South & 2600 West

The counts were conducted over several days and on various days of the week, but all counts were conducted for at least two hours between 4:00 – 6:00 PM. Bicyclists and pedestrians were recorded separately and additional information about users was collected during these counts. This included gender, children, whether the user was on the path or sidewalk, and if cyclists were observed riding the wrong way.

Figure 2-5: Data collection form

Bicycle/Pedestrian Data Collection - Count Form*

Name: Bob Date: 15 05 2019 GPS Reference: 40°52'23.1" N 112°1'9.10" W

Count Period: 4:00 PM to 6:00 PM Location: MOUNTAIN VIEW TRAIL & 2600 SOUTH Weather: [] CLOUDY [] WINDY [] RAIN [] FAIR [] SUNNY

Bicyclists

DIRECTION NB: 6 | DIRECTION SB: 6

TOTAL: 12

Female: 1 | Child: 6

On Path/Sidewalk: 11 | On Street: 1

Wrong Way: 0 | Other: 0

Pedestrians

DIRECTION NB: 0 | DIRECTION SB: 1

TOTAL: 1

Female: 1 | Child: 0

Walking: 1 | Dog-Walker: 0

Running/Jogging: 0 | With Stroller: 0

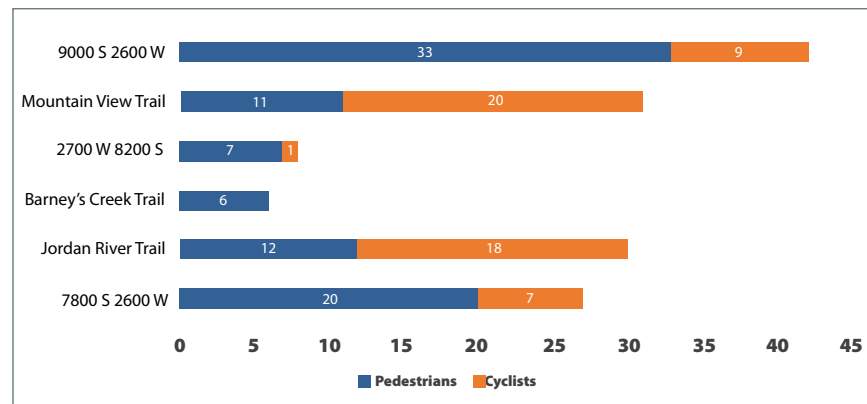
Wheelchair/Special Needs: 0 | Other: 0

Observations: on main bike lane on trail
 NB: 11 SB: 11
 WB: 11 SB: 11



Overall, 55 bicyclists were observed, and 89 pedestrians were documented at the count locations within West Jordan. The busiest location counted was at 9000 South at 2600 West with 33 pedestrians and 9 bicyclists. However, the Mountain View Corridor Trail saw the most bicyclists with 20 counted, and was also the second busiest count location.

Figure 2-6: Counts of pedestrians and cyclists



The overall comfort level of the bicycle and pedestrian networks can be indicated by the demographic characteristics of users. A minority of AT users who are highly experienced cyclists will ride on most roadways because they have the confidence to utilize vehicle travel lanes when necessary, while the majority of the public is more likely to prefer bikeways with either greater separation, grade separation, or physical barriers from vehicular traffic. Generally, communities that have more protected bikeways show a more equal distribution of men and women riding bicycles.

Overall, 86% of the bicyclists and pedestrians were male, while only 14% were female. Similarly, only 20% of users were children and 80% adults. These demographic indicators show that the existing bicycle network may be appropriate for confident cyclists but is not supportive of community members, like moms with kids, who prefer more comfortable paths or trails with greater separation from vehicles.

Table 2-1: Percentage of people walking or biking

Category	Count	Percentage
Female	20	14%
Male	124	86%
Adult	118	82%
Child	26	18%



Counts Map

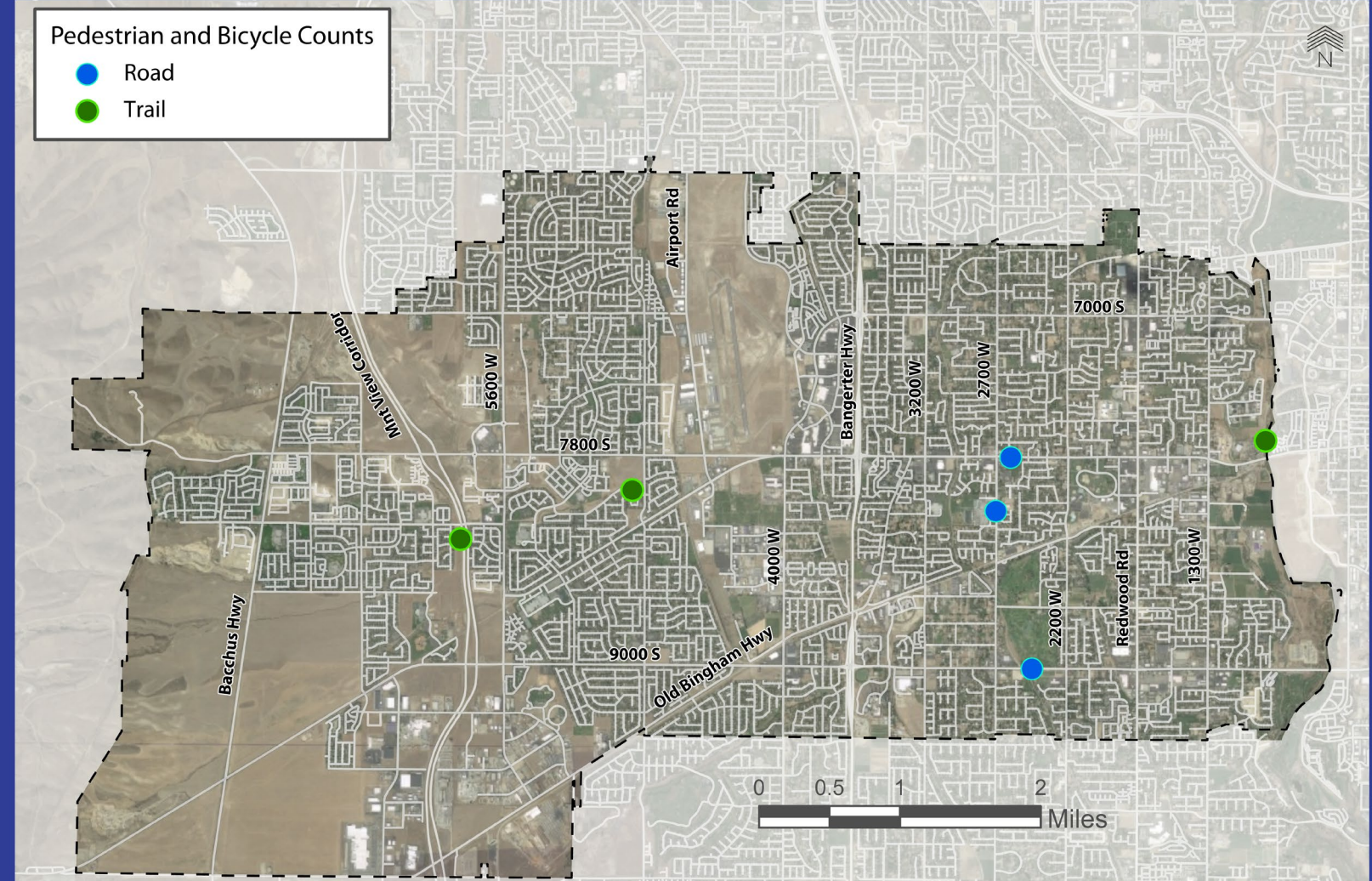
Figure 2-7 shows the count locations in West Jordan. Bicycle and pedestrian counts followed best practice techniques, but were limited in scope. Roadway counts were made at locations that had bike lanes. Pedestrian counts at those locations included sidewalks and bicycle counts included bike users of both bike lanes and sidewalks. The bicycle/pedestrian counts were mostly supplemental data to pedestrian traffic signal actuation and Strava user data described in the following section.

Signal Actuations

In addition to the collected pedestrian count data, pedestrian signal actuations were evaluated for 58 existing traffic signals within West Jordan. The pedestrian traffic signal actuations summarize the number of times the crosswalk button has been pushed and the crosswalk signal has been triggered.



Figure 2-7: Locations of pedestrian and bicycle counts

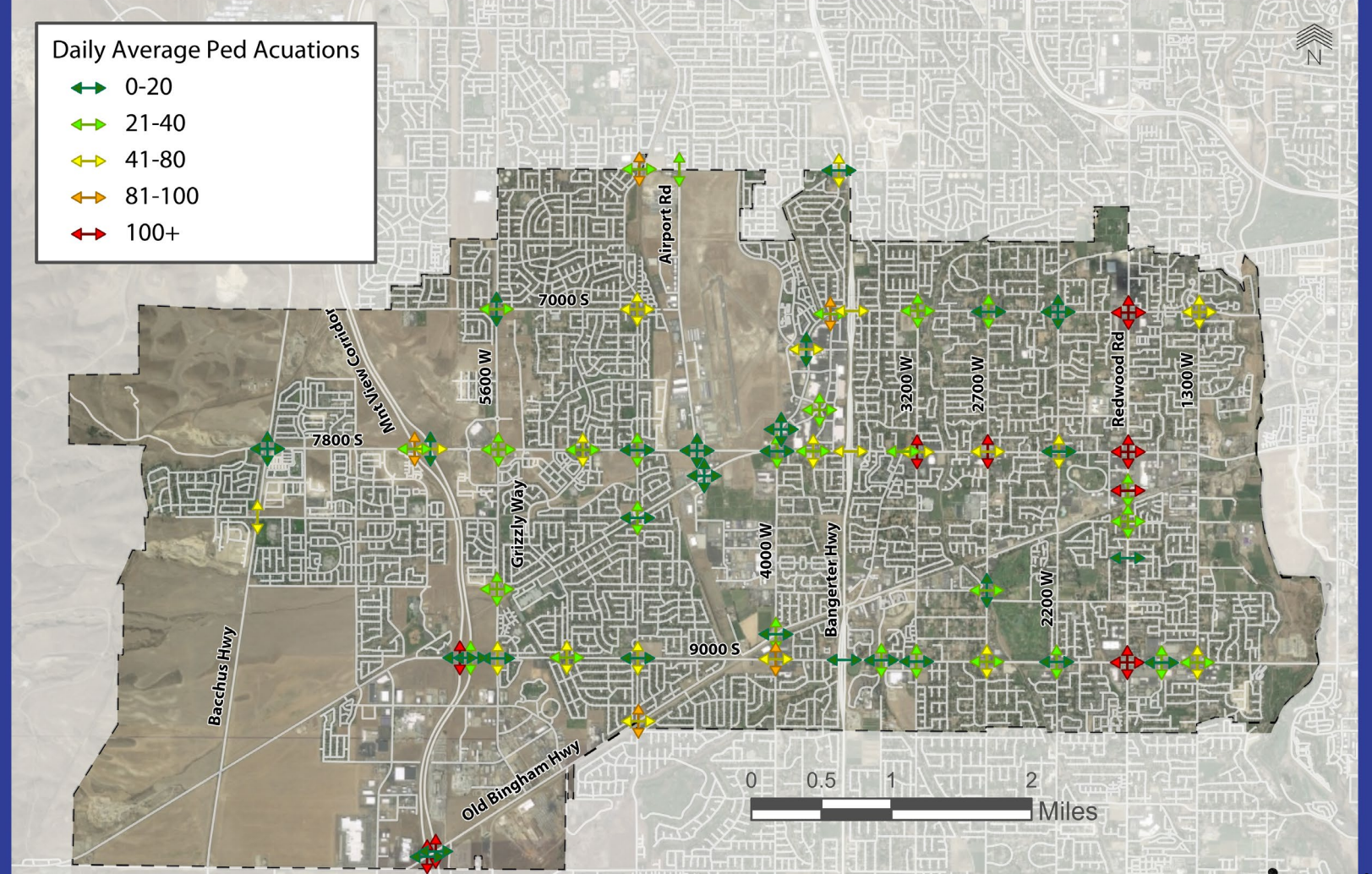


Pedestrian traffic signal actuations represent the number of times the crossing signal is activated by pedestrians, not the total number of people crossing since each actuation can allow for multiple pedestrians to cross. This data is available from UDOT's Automated Signal Performance Measures (ATSPM) website <http://udottraffic.utah.gov/atspm> and was used to calculate the average number of daily pedestrian actuations across all days in 2018. The daily average pedestrian actuations are shown **by direction** in Figure 2-8.

The most pedestrian traffic signal actuations were at 7000 South and Redwood Road averaging 353 per day. Of these, 211 were pedestrian calls for east/west across Redwood Road and 142 were for north/south across 7000 South. The second highest pedestrian actuation counts were on Redwood Road at 7800 South and 9000 South averaging 259 and 228 per day. This data indicates demand and shows locations that could benefit from AT facilities like sidewalk improvements.



Figure 2-8: Number of pedestrian actuations by intersection



Strava Data



Strava is a fitness app and social network for athletes that provides aggregated public activities for pedestrians, runners and cyclists. The data illustrates where pedestrians, runners, and bicyclists voluntarily provided their activity in 2018. This information is very illustrative when mapped because it clearly shows where active transportation use is concentrated, but only among heavy users.

In 2017, UDOT purchased a statewide Strava data set to help identify key active transportation routes. As a stand alone data set this information is limited because it is only recording trips of users who voluntarily submit the information. But when this information is combined with the public outreach process, traditional pedestrian and bicyclist counts and other forms of evaluation and analysis involved in the planning process, Strava can be a useful tool for better understanding how and where to invest in infrastructure and improvements for active transportation projects.

Another benefit of Strava data is that it can display the information in various ways. One option is to see the number of “rides” or trips that are taken along a route. Whether someone walks a route everyday or only once a year the total number of specific trips will be shown. Another way to understand the data is through a commute estimation that looks at specific point to point trips that are identified as commuting trips versus recreational trips.

The Strava data is only a snapshot of the totality of bicycle riders and pedestrians, however, it may be the best tool currently available to review AT data because of the flexibility offered in reviewing the data sets.

Figure 2-9: Strava app being used during a bike ride



Figure 2-10 shows the total pedestrian trips recorded with the Strava app in 2018. Strava can be a strong visual aid in identifying popular active transportation routes. In West Jordan, The Jordan River Trail is the most used walking route in the city with over five thousand recorded trips in total for 2018. Other areas that have a high frequency of usage are 4800 West, Grizzly Way and the Mountain View Corridor Trail. However, note should be taken that most of the roads in West Jordan still have some

level of activity recorded along them. While the routes with the highest number of Strava trips offer a broader level of connectivity to a greater number of pedestrians, more localized areas that provide access to neighborhood resources and destinations are still essential to an AT network.



Figure 2-10: Total pedestrian trips collected through Strava in 2018

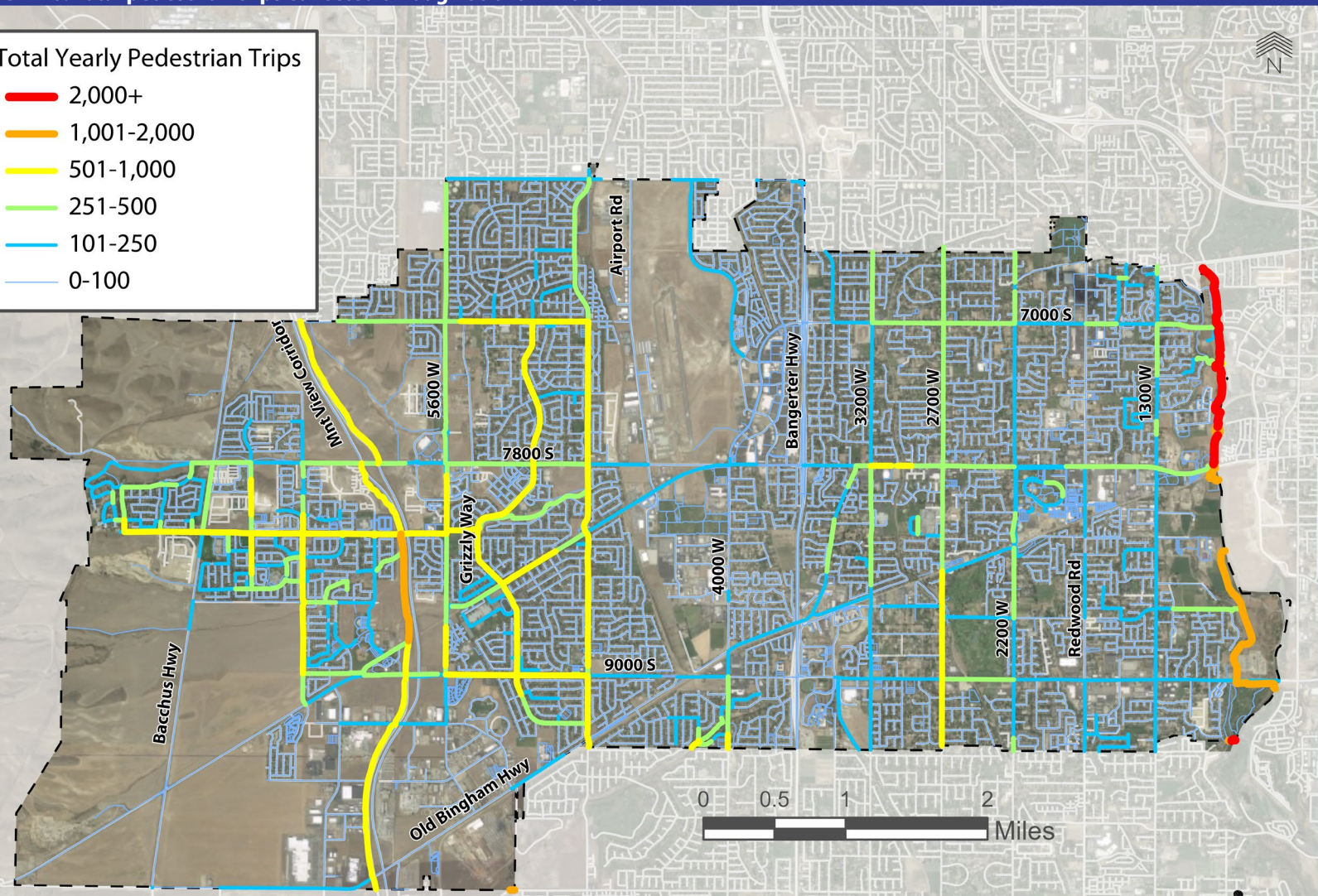
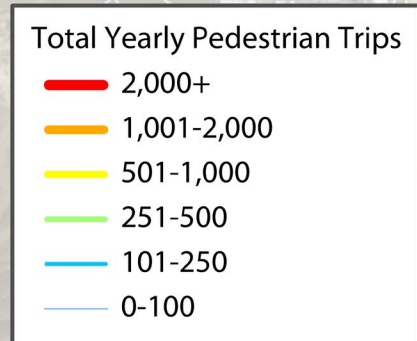


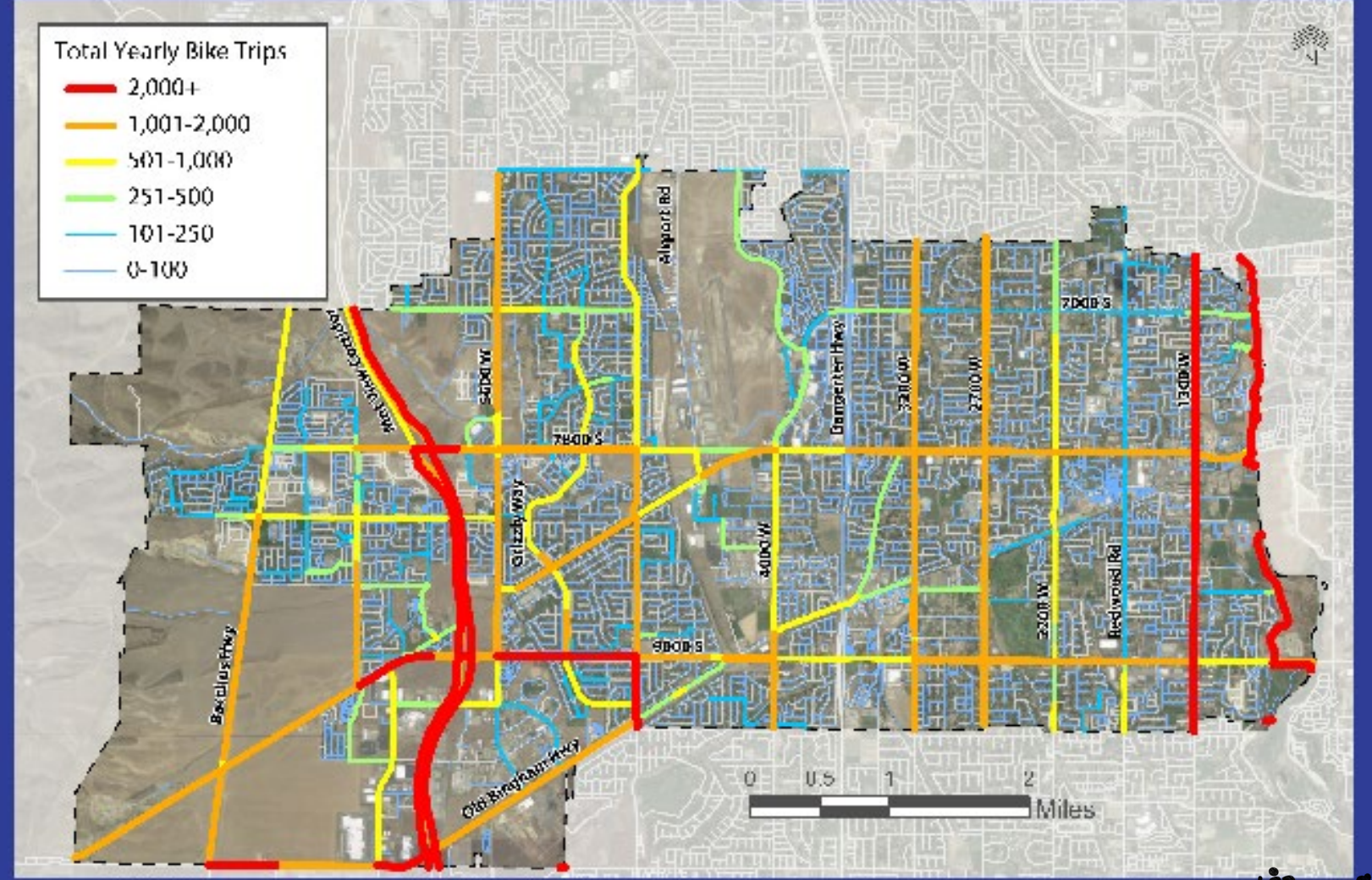
Figure 2-11: shows the total Strava bicycle trips in 2018. The map shows that cyclists are riding on all the major trails and routes in West Jordan.

The Jordan River Trail and Mountain View Corridor are popular recreational north to south connections and receive some of the highest Strava use. However, out of all north to south travel, 1300 West is both the most frequently used and most direct, making it the main commuter connection. For east to west travel the highest number of bike trips are seen along 9000 South and 7800 South.

Just as with the Strava pedestrian map, the bike trips map reveals various levels of usage on practically all of its roads and paths. This data shows a demand for both broad scale and neighborhood scale AT connections that offer quality levels of comfort for all bike trips, whether local, regional or combined. The Strava data provides convincing evidence that a cohesive network of local and regional projects are needed for a robust active transportation network.



Figure 2-11: Total bicycle trips collected through Strava in 2018



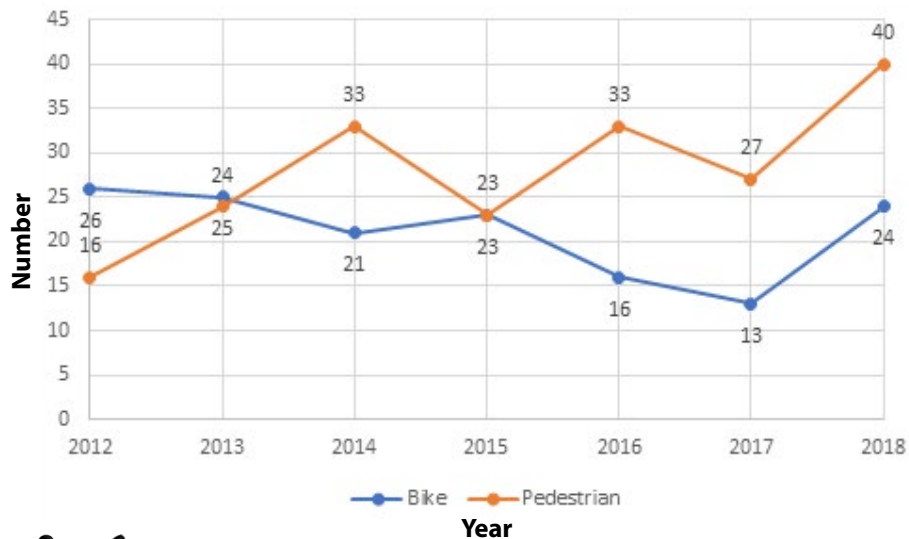


Safety

Safety is principal factor when identifying opportunities to improve walking and biking. Pedestrians and bicyclists are the most vulnerable road users with high vehicle speeds, poor visibility and distracted driving leading to pedestrian/vehicular conflicts. Analysis of recent bicycle and pedestrian related crash data provides a basis to develop recommendations that can improve safety.

Figure 2-12 shows the number of bike and pedestrian crashes from 2012 through 2018 in West Jordan. Over the seven-year period there were a total of 344 crashes with 148 bike crashes and 196 pedestrian crashes. Although annual crash totals can vary considerably year to year, during 2018 there were 64 bicycle and pedestrian crashes, which is the highest annual number with 10 more crashes than the second highest year of 2014, that had a total 54 crashes. The upward trend in crashes may be due to increased bicycle or pedestrian activity over the analysis period. However, without additional data, such as trends in bicycle or pedestrian volumes over the same period, the graph in Figure 2-12 may not provide a complete picture of bicycling and walking within the City.

Figure 2-12: Number of bike and pedestrian related vehicle crashes : 2012 -2018



A review of where bicycle and pedestrian crashes occurred can identify locations for safety related projects. Table 2-2 lists the roadways with the most crashes and Figure 2-13 shows the location of the bicycle and pedestrian crashes in West Jordan City.

7800 South had the most bike and pedestrian crashes with 19 bike crashes and 23 pedestrian crashes. Redwood Road had the second most crashes with 11 bike crashes and 21 pedestrian crashes. However, over the summer of 2019 buffered bike lanes were installed on 7800 South creating clearly designated and marked space along the roadway. 9000 South had 25 total crashes, almost evenly split between pedestrians and cyclists. Most of these reported crashes along 9000 South occurred near or at intersections. 3200 West has had several bike crashes between the 7800 South intersection to the Joel P Jensen Middle School south of the intersection. The majority of crashes along 7000 South have occurred near Redwood Road.

Table 2-2: Bike and pedestrian related vehicle crashes; 2012-2018

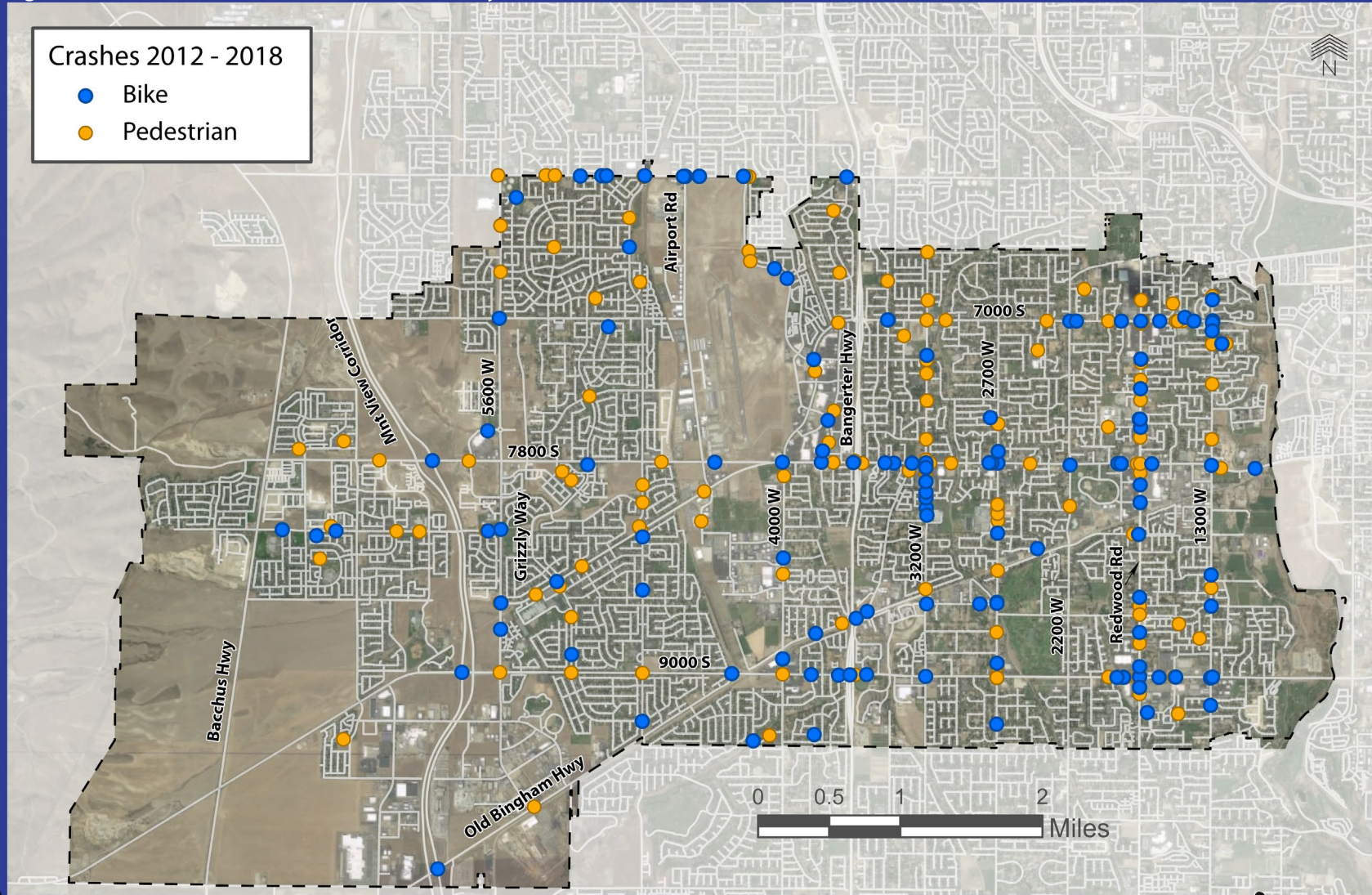
	Bike	Pedestrian	Total
7800 South	19	23	42
Redwood Road	11	21	32
9000 South	13	12	25
3200 West	9	15	24
7000 South	9	12	21
6200 South	11	9	20





Figure 2-13 shows the location of the vehicle crashes involving bicycles and pedestrians over the seven years from 2012-2018. The total number of bike and pedestrian crashes for the combined years is 348. South Jordan had a total of only 138. In West Jordan, 275 of the crashes were reported as 'no injury,' 'possible injury,' or 'minor injury.' There were six pedestrian fatalities over this period of time (there were no bicycle fatalities reported).

Figure 2-13: Pedestrian and bike related crashes by location; 2012-2018



Severity

Pedestrians and bicyclists are both susceptible to serious or fatal injuries in collisions, as illustrated in Figure 2-14 and Figure 2-15. Fatal or serious injuries involving pedestrians make up 30% compared to 14% percent of bicycle-involved collisions. The location of these crashes is illustrated in Figure 2-13. Overall, Redwood had the most serious and fatal crashes with 10 crashes. Of these crashes, there was one fatal pedestrian crash, seven serious injury pedestrian crashes and two serious injury bicycle crashes on Redwood Road. Although 7800 South experienced fewer serious or fatal crashes with seven, two of the crashes were fatalities. The third most serious injury or fatal crashes with three bike crashes and three pedestrian crashes occurred on 2700 West. These serious injury and fatalities represented a higher proportion of all crashes at 42% of the total 14 crashes on 2700 West.

A new school crosswalk was constructed in front of West Jordan High School with a reasied meadian and RRFB (Rectangular Reflecting Flashing Beacon) signs to enhance pedestrian safety.

Active transportation facilities are an important component when creating a safe environment for both pedestrians and bicyclists. While there is a growing trend towards the creation of new facilities that provide improved safety, like buffered bike lanes, there is still the risk of crashes, partially because of an increase in the number of active transportation users combined with problems like distracted driving.

The National Highway Traffic Safety Administration (NHTSA) reported that in 2018 pedestrian traffic deaths increased 3.4% and bicycle traffic deaths increased 6.3%. Designs that address the safety issues specific to each project's location and environment can help decrease AT related crashes.

The safety and comfort level of a roadway, sidewalk or trail can change throughout the course of a day or week. Morning traffic may be lighter than afternoon traffic. Perhaps, cyclists being visible to automobiles is not an issue during the day, but at night it is of serious concern. One issue clearly identified among fatalities is lighting. In 2018, 76% of pedestrians fatalities and 50% of cyclists fatalities happened at night.

Locating crossings at appropriate places is also an important factor. Over half of pedestrian and cyclist fatalities occurred somewhere outside of an intersection. People may take unreasonable risks to cross mid-block because it provides the shortest route between them and their destination.



Figure 2-15: Pedestrian related crashes by severity; 2012-2018

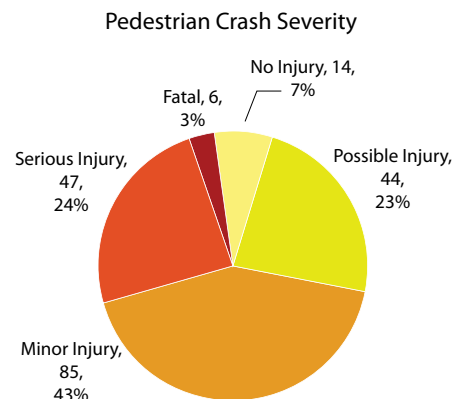
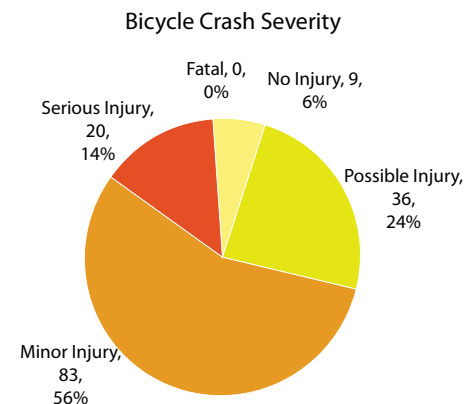


Figure 2-15: Bicycle related crashes by severity; 2012-2018



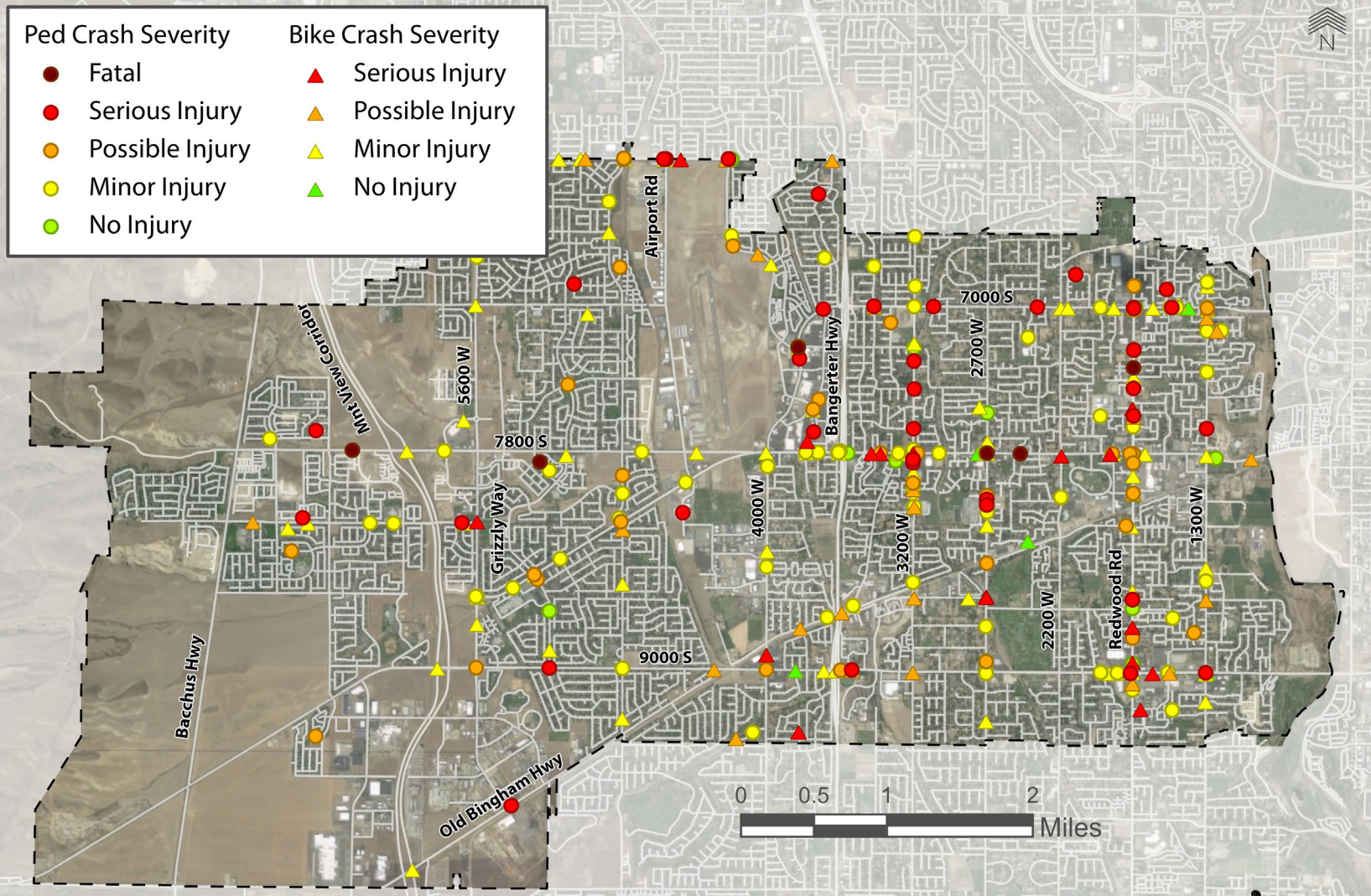
Conclusion

Over the last three years there has been an increase in the number of bicycle and pedestrian crashes in West Jordan.

Pedestrian crashes went from 33 in 2016 to 40 in 2018, and bike crashes went from 16 in 2016 to 24 in 2018. The growing population and increasing number of bicyclists and pedestrians are creating more conflicts. The projects in this plan are designed to specifically address many of the safety issues identified by the plan. Wider sidewalks on Redwood Rd, new bike lanes on 1300 West, buffered bike lanes on 2700 West and new trails will all contribute to improving safety for the walking and riding public. These projects and others increase the separation between drivers and cyclists/pedestrians to help reduce conflicts and therefore crashes.



Figure 2-16: Pedestrian and bicycle crashes by severity and location; 2012-2018



3 What We Heard



Throughout the project there was an extensive community involvement effort. This effort included building a project website, creating community surveys, meeting with bike shops and stakeholders, and hosting booths at three community events. The team talked to dozens of people and received over 200 completed surveys. The comments, observations, criticisms, opinions, and discussions provided the team with invaluable information that contributed greatly to the planning process. The variety of outreach methods enabled feedback from a broad spectrum of the community. What we heard from these groups is provided in this chapter.

Figure 3-1: Community event in 2019

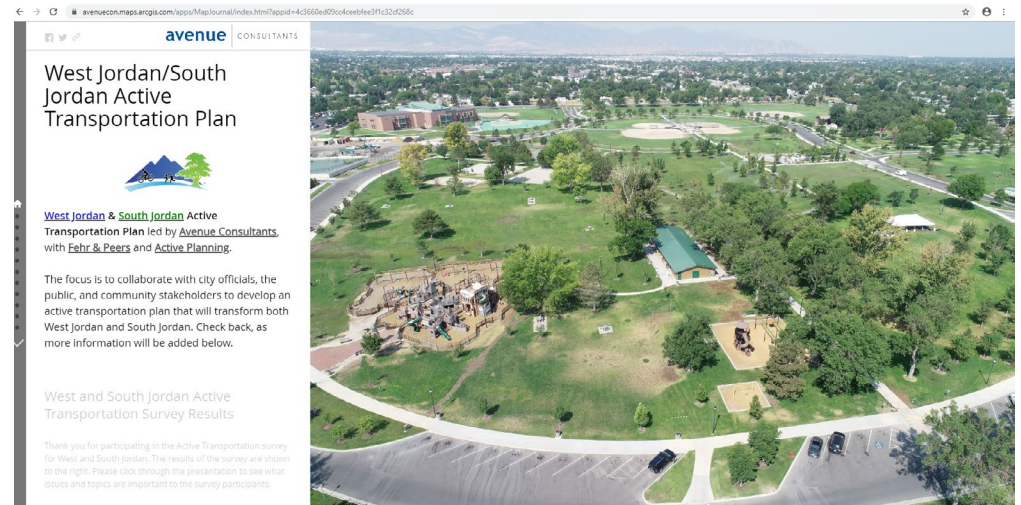


Project Website

The project website can be accessed at: www.jordanatp.com.

The website contains project maps and information. There are videos of the community events and a presentation of the survey results, and downloadable PDF files of the project lists and maps. Over 2,400 visitors have viewed the project website.

Figure 3-2: Landing page for the project website





Community Events

The project team hosted booths at three community events: The *Salt Lake County Safe Kids Fair* held in West Jordan City Park on May 18th, 2019, the *SoJo Summerfest* held in South Jordan City Park on May 31st and June 1st, 2019, and the *West Jordan Western Stampede* held in West Jordan City Park on July 4th, 2019. Two in West Jordan and one in South Jordan. At the three events we had visitors from both cities and others (Taylorsville, Riverton, Sandy, etc.).

Complete event videos can be found on the project website www.jordanatp.com.

Figure 3-4: SoJo Summerfest, June 2019



Figure 3-3: Safe Kids Fair, May 2019



Figure 3-5: Western Stampede, July 2019





These community events were chosen because of their popularity and the opportunity to talk to the most people about the project. All events were well attended, and the team spoke to dozens of people at each event and received comments on the active transportation network. Some of the most notable take-aways from the events were:

- Safety concerns on arterials like Redwood Road, 7800 South and Bangerter Highway. The safety concerns were mainly regarding the difficult pedestrian and bicycle crossings.
- A desire for more east-west trails crossing West Jordan and South Jordan.
- Requests for a new bike trail along the existing UTA Trax Red Line rail corridor.
- The potential for placing new trails along existing canals running north-south in the cities.
- A preference for riding on slower speed roads for new bike lanes instead of along arterial streets.

Many location-specific comments were gathered at events as stickers on a map. Each one was then geocoded and is now available on the project website.

The community pop-up events were fun and well attended and the team likely got more project comments from attending these existing events in the community than if there were traditional open houses.

Figure 3-6: Public comments from community event

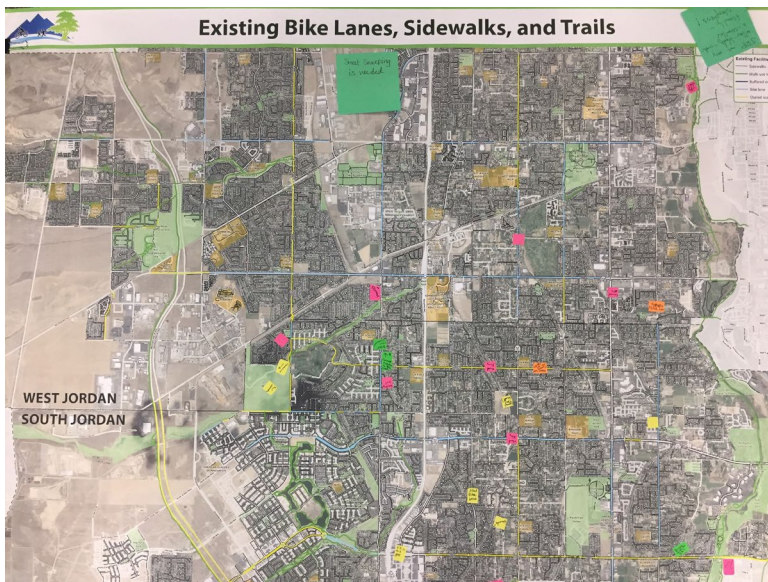
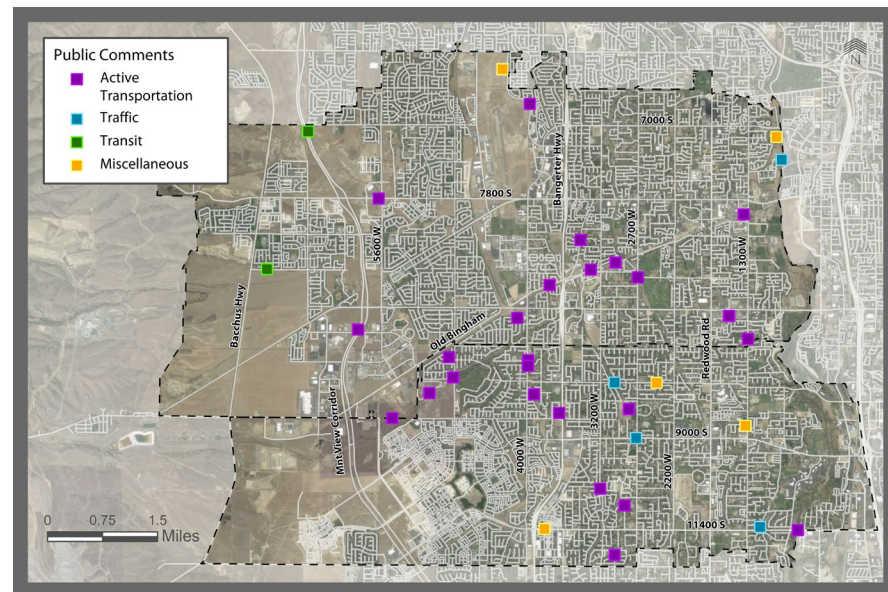


Figure 3-7: Public comments converted and displayed in GIS



Community Survey

The team sought to reach all members of the community, including those that may not have attended one of the events. A community survey was created and posted on each city's web page. The survey was available beginning in May and available through July 2019. Over 200 respondents completed the survey, including 114 in West Jordan and 99 in South Jordan. The following graphs summarize the results of the West Jordan portion of the survey.



Half of those taking the survey stated that they never bike anywhere in the community, while 13% stated that they bike everyday. The Jordan River Trail seemed like the favorite biking route with 49% of respondents saying they ride on it between once a day to once a year.

Figure 3-8

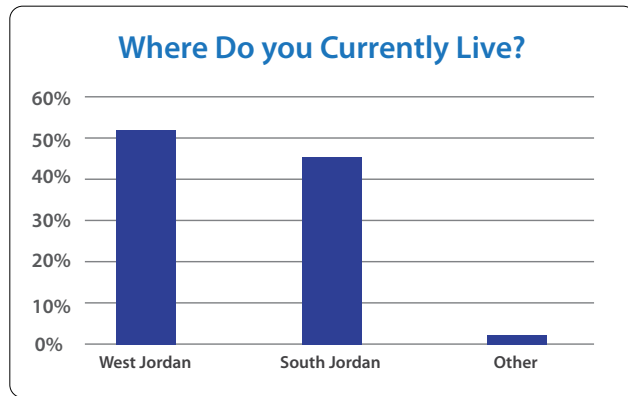
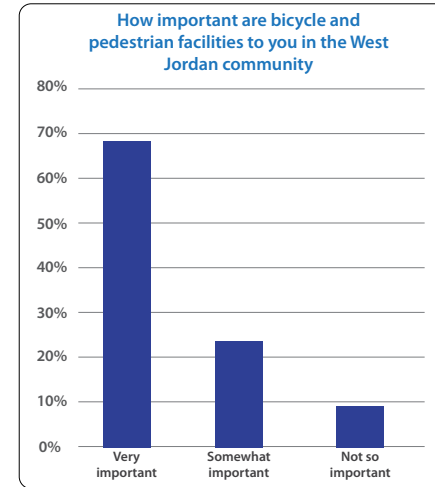
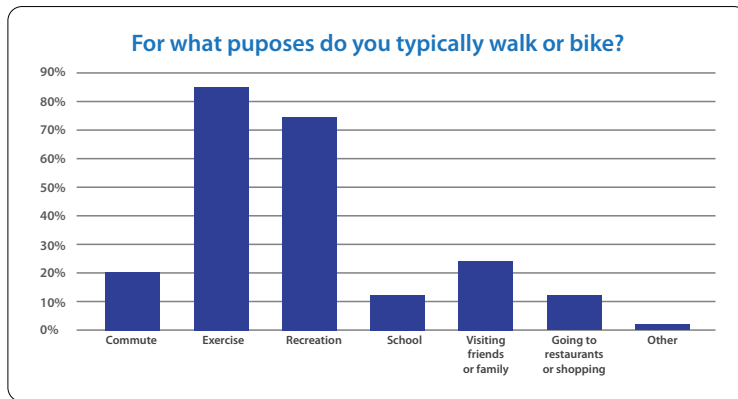


Figure 3-9



A majority of residents (68%) of respondents stated that bicycle and pedestrian facilities were extremely important or very important while only 9% stated that they were not so important or not important.

Figure 3-10



Most respondents (85%) indicated that the reason they walk and bike is for exercise, while 20% stated that they walk or bike to commute to work or school.

Figure 3-11: Pedestrian on the Jordan River Trail



Every respondent indicated that they walk on sidewalks at least sometimes and 79% indicated that they walk on the Jordan River Trail at least sometimes.





Almost three-fourths of respondents stated that there have been times when they did NOT walk or bike to their destination in West Jordan because comfortable facilities were not available.

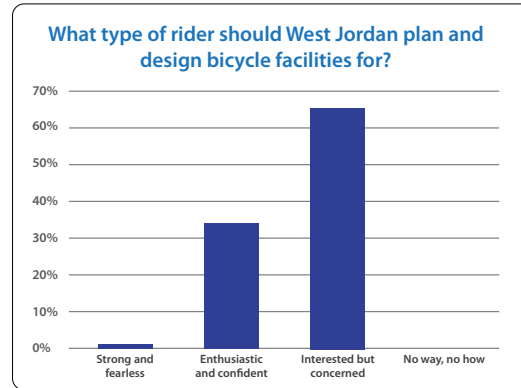
Figure 3-12



Respondents indicated that their top priority would be to extend the trail system in West Jordan (72%). Adding buffered bike lanes was another priority for respondents (45%).

Finally, when asked, what type of rider should West Jordan plan and design for, 34% said “enthusiastic and confident” and 65% said “interested but concerned.” This indicates that respondents want to see facilities designed for all abilities.

Figure 3-13



The survey was helpful not only for evaluating potential projects, but also for determining facility types and priority given to the ranking on the projects.

Stakeholders

UDOT controls a high number of road miles in West Jordan City. Many of the arterial corridors in West Jordan are UDOT roads, therefore it was extremely important to work closely with them while planning active transportation along these routes. Creating an environment for inclusive and open dialogue is a top objective throughout any planning process so rather than meeting with UDOT Region 2 planners and engineers separately they were invited to participate in the regular team meetings held throughout the process.

The team met with the owners at Laketown Bicycles in West Jordan to talk about what things they have heard from their customers and what improvements they would like to see. They mentioned 9000 South and 1300 West as routes where they would like to see new and improved bike infrastructure.

Conclusion

Many comments were received through the process and each comment was read and considered by the team. These comments contributed to the development of the final list of projects.

Documented comments were also used to rank the projects. Generally, if a project on a corridor received more comments it is ranked higher on the prioritized list.

The public comments and the full survey results were shared with the project team and are available on the project website for all to review.



4 Where We're Going



Existing Plans

Quality active transportation planning has already occurred in West Jordan by the City, Salt Lake County and by UDOT. UDOT has drafted and adopted a State Bicycle Plan and UDOT Region 2 has a detailed map that displays projects and gaps for bicycle facilities in West Jordan. This was a starting point for identifying potential projects.

The Wasatch Front Regional Council has developed a Regional Transportation Plan, Wasatch Choice 2050, that includes a detailed active transportation section. In developing this plan, WFRC worked closely with all the cities in the region. The plan identifies bike/ped projects in West Jordan including: buffered bikes lanes on 2700 West, a 10 foot sidewalk/shared use path on Redwood Road, and a shared use path along U-111 among others.

Figure 4-1: Online map of WFRC's Regional Transportation Plan

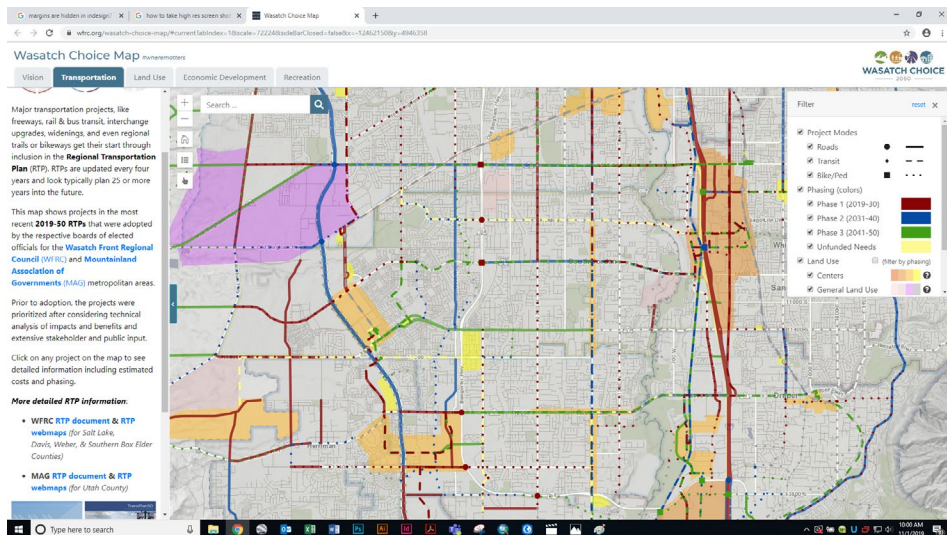
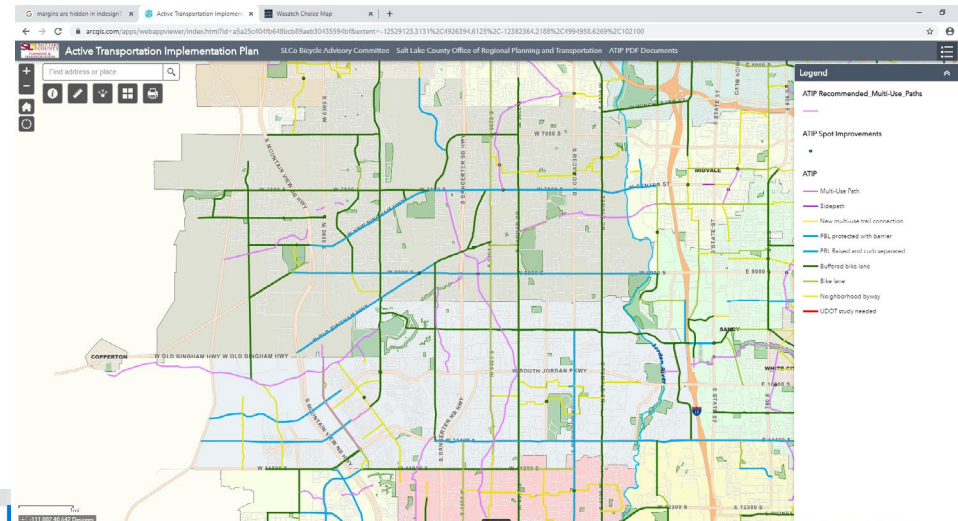


Figure 4-2: Online map of Salt Lake County's Active Transportation Implementation Plan



Salt Lake County also has developed an Active Transportation Implementation Plan (ATIP). The County considers this an evolving document. This allows recommendations like those produced from this report and its corollary planning process to influence the content of ATIP. The plan is focused on creating a high-comfort bicycle network intended to attract a broad spectrum of cyclists. It tends to stay away from adding new facilities to arterials where vehicle speeds are high, instead, the ATIP provides planned buffered and non-buffered bike lanes on collectors. Some identified projects in West Jordan are a buffered bike lane on 2700 West, bike lanes on 1300 West, and to add buffered bike lanes on New Bingham Highway.



1,000 Mile Goal

In 2017 Governor Herbert initiated the 1,000 Miles Campaign to build 1,000 new miles of family-friendly bike paths, lanes, and trails by 2027. Bike Utah is designated to helping carry out the implementation of the 1,000 Miles Campaign. This statewide goal is an indicator that Utah is heading toward more active transportation.

What are family-friendly bike lanes, paths, and trails?

- On-street bike lanes that provide a high level of comfort for all users
- Multi-use pathways that serve as transportation and recreation routes for people of all ages and abilities
- Mountain bike trails for a range of skill levels
- Neighborhood bicycle routes so individuals, families, and children can get to local destinations, including work, school, parks, church, and businesses

As the projects in this plan are built, West Jordan will be contributing to this 1,000 mile goal.

Figure 4-3: Cyclists along the Jordan River Trail



Planned Growth and Active Transportation



It is possible that West Jordan may add 30,000 more jobs by 2050. The impact of this increase on the transportation system can be reduced by the creation of a safe and connected active transportation network. When last inventoried in April 2010, agricultural and vacant land made up most of the acreage in West Jordan, followed closely by single family residential property. It is most likely that the majority of growth in West Jordan will occur on this vacant and agricultural land, most of which is located west of 5600 West. As new construction continues, the development of the western portion of the active transportation network's backbone can be simultaneously implemented. This offers an advantage to the alternative of retroactively incorporating active transportation infrastructure after development has occurred. In such cases there are potentially more hurdles to creating a connected AT system. Some issues are that developers will have completed projects and therefore will not be required to include AT in their costs or design, roads will not necessarily be planned utilizing ROW for AT, and once land is developed, options to connect to other existing networks may be few and far between.

West Jordan's current General Plan has goals and policy measures that align with many of the outcomes of a robust active transportation network, such as mitigating negative environmental impacts and promoting sustainability. Creating new mixed-use areas is an important element to West Jordan's growth, as well. This type of zoning can be highly complementary to active transportation because of the variety in origins and destinations on a relatively small footprint of land allowing for short and frequent trips.





West Jordan's population is projected to grow from 112,185 today, to 135,000 by 2050. This growth trend means that there will be more cars traveling the roadways and more pedestrians and cyclists using the trails and bike lanes. The current number of miles of trail, bike lanes, and sidewalks in West Jordan will need to increase to keep up with the future demand for active transportation. Figure 4-4 is a graph showing the planned 20% increase in West Jordan City's population.

Figure 4-4: Bar graph of projected growth in West Jordan

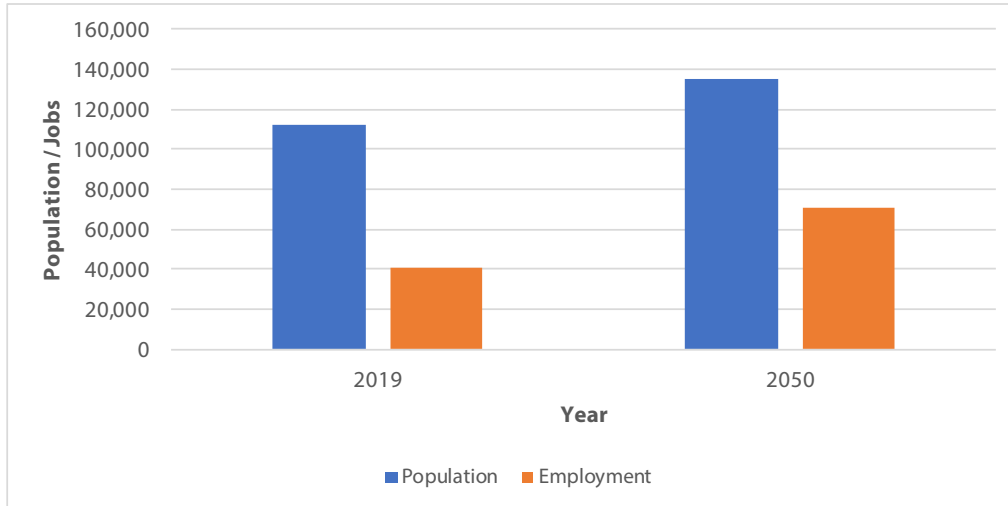


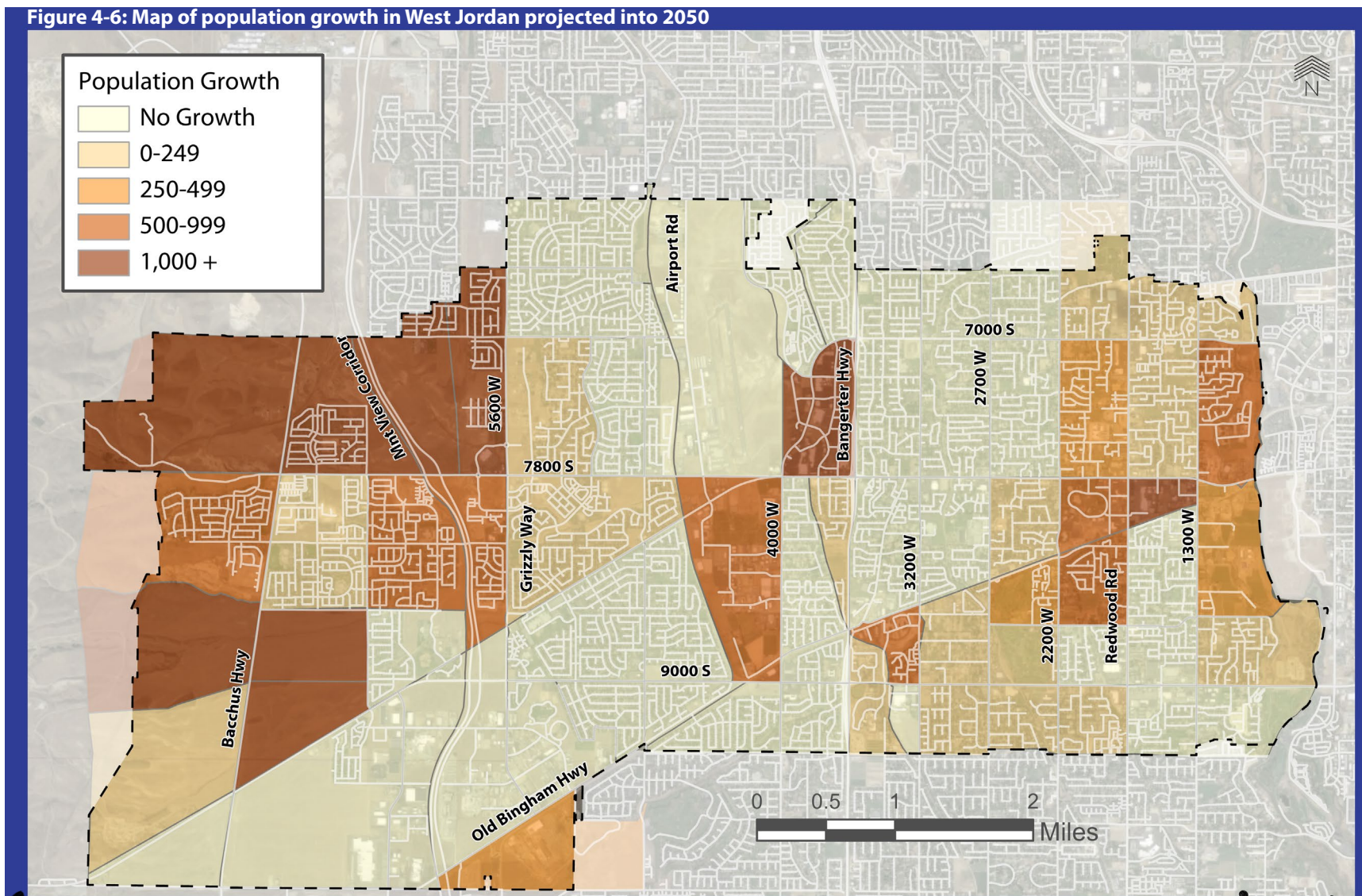
Figure 4-5: West Jordan aerial showing paths and bike lanes



As the City of West Jordan grows, the number of cyclists and pedestrians will also grow. Many Utah communities are integrating active transportation designs into new development. As the western part of West Jordan becomes developed, it is critical that the city requires developers to incorporate measures and design components that benefit pedestrians and cyclists, such as shared-use paths, bicycle parking and landscape beautification that offers shading and/or improved lighting at newly developed areas.



Figure 4-6 shows an increase of approximately 23,000 new West Jordan residents and the general locations of this expected population growth over the next 30 years. These different zones indicate where new homes are anticipated for future residents. Much of this growth is planned on the undeveloped parts of West Jordan, most notably west of 5600 West.

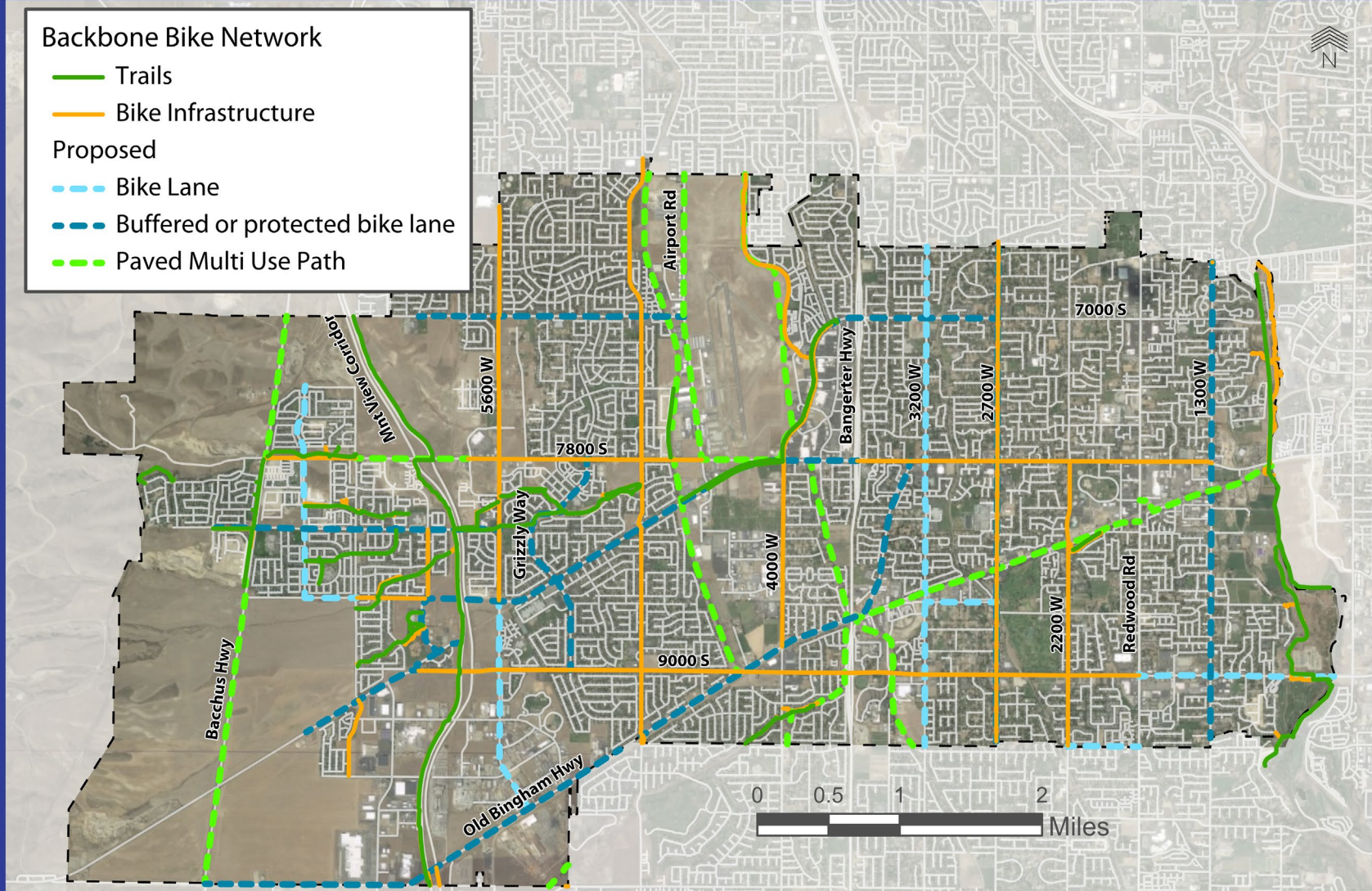


Backbone Network



The information collected from existing active transportation plans combined with the data on projected growth trends led to the development of a single unified active transportation backbone network. This backbone network is similar to a vehicle road network, in that it offers connectivity to destinations within the City as well as regional connections to the neighboring municipalities. The regional connections are important to users because they want to travel without facility changes at city boundaries. This backbone network map represents the complete future of trails, bike lanes, buffered bike lanes, byways and sidewalks. The map includes the planned projects highlighted in Section 5.

Figure 4-7: Map of the long-term aspirational network



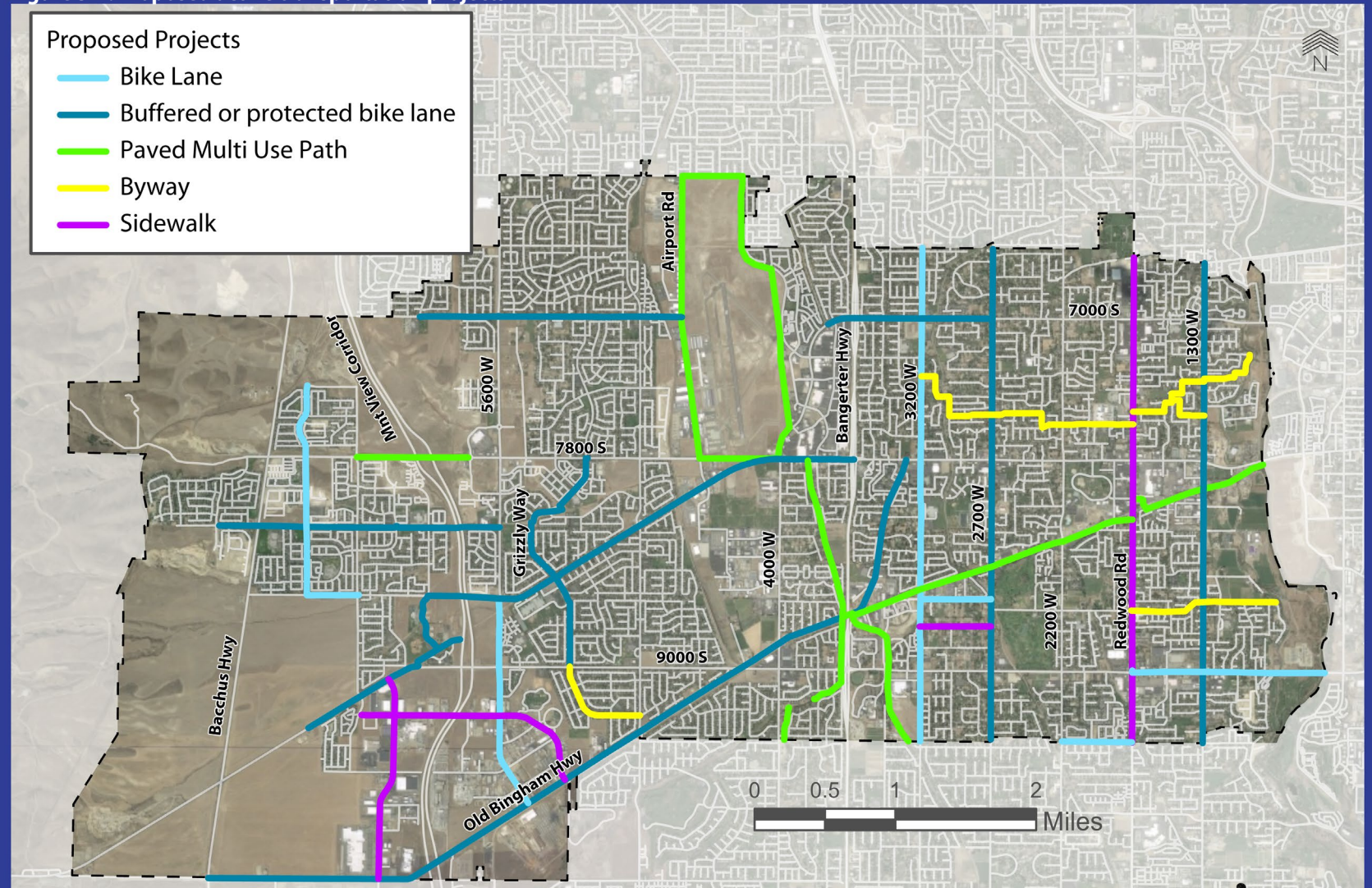
5

Planned Projects



The enumerated list of recommended projects is based on the completed planning efforts discussed in the prior chapters. These projects include trails, bike lanes, sidewalks and neighborhood byways. Projects that have been completed while the team was gathering information, determining

Figure 5-1: Proposed active transportation projects



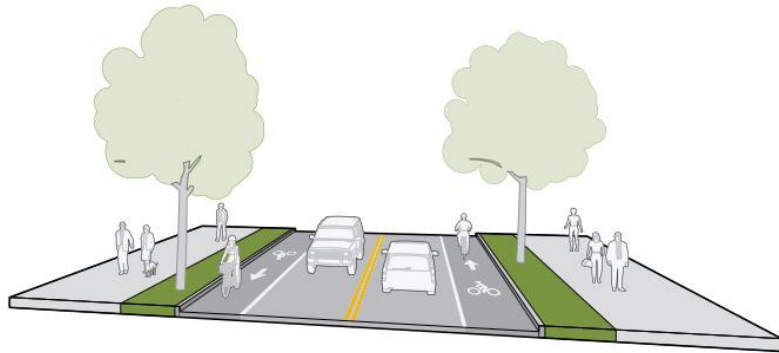
measurement for prioritization, soliciting public feedback, etc. were removed from the potential project list. This current project list was screened and vetted throughout the planning process as more information was gathered. This preliminary screening effort reduced the number of potential projects to a list comprised of approximately 50 projects in West Jordan and South Jordan. These projects were then further evaluated and cost estimates were prepared.

All new projects that were identified during public outreach efforts, such as the multi-use trail around the airport, were carried forward for future evaluation and ranking. Projects were developed and ranked jointly between West Jordan and South Jordan. Each individual city ranking maintains the same numbering that was assigned to the joint city list to ensure that the collective planning efforts do not become fragmented.

Active Transportation Cross-sections

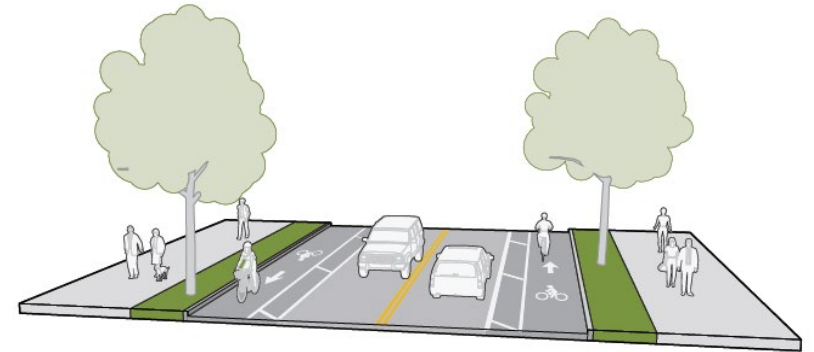
The following graphics are from Salt Lake County's Bikeway Design guidance manual and show the types of bicycle infrastructure recommended in this document. The full Bikeway design guidance manual can be found at https://slco.org/globalassets/1-site-files/planning--transportation/files/slco_bikeway_design.pdf.

Figure 5-2: Striped bike lane



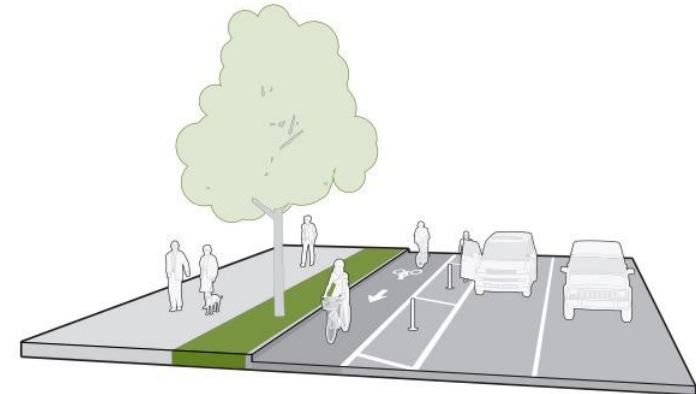
Bike lanes use signs and pavement markings to delineate street space that is exclusive for bicycling. Bike lanes can encourage predictable traffic flow from both cyclists and motorists.

Figure 5-3: Buffered bike lane



Buffered bike lanes use painted buffers which improve bicyclist level of comfort by increasing the distance between traffic and cyclists. As with bike lanes, signs and pavement markings are to designate on-street space exclusive to bicycling.

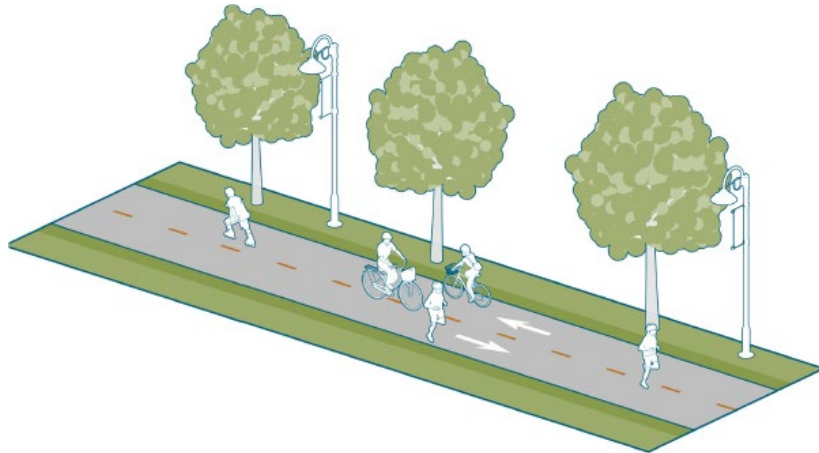
Figure 5-4: Protected bike lane



Protected bike lanes, also known as **separated bike lanes**, are on-street or street-adjacent bikeways. They can be one-way or bidirectional facilities that are separated from traffic and walkways with vertical separation or physical elements such as parking, planters, or curbing. They are intended to provide the same level of comfort as shared-use paths and are similar to side paths but are exclusively for bicycle travel.

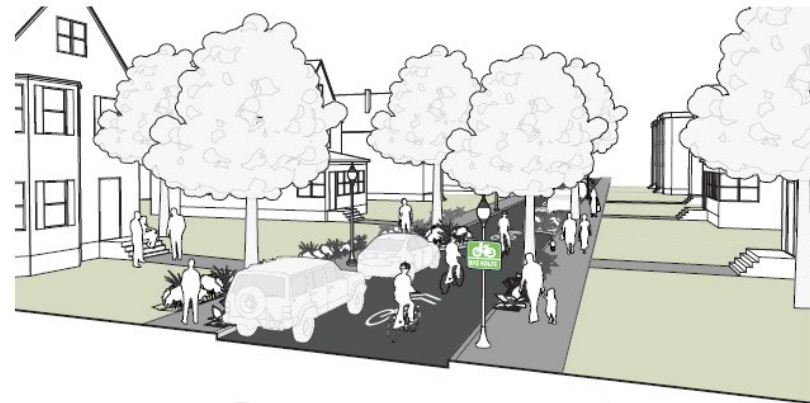


Figure 5-5 Multi-use path



Multi-use paths, also known as **shared-use paths**, paved trails or greenways, are off street, paved facilities for bicyclists and pedestrians that are physically separated from motor vehicle traffic. These facilities are preferred by less experienced cyclists, but more experienced cyclists may avoid them due to out of direction travel and slower users.

Figure 5-6 Neighborhood byway



Neighborhood byways also known as bicycle boulevards or greenways, are shared streets optimized for bicycle travel. Signs and pavement markings are used to create a high comfort environment while traffic calming features manage motor vehicle speeds and volumes.

While these designs are shown independently, they can, and should be integrated together along roadway(s) when it is necessary to do so. **The choice of design treatment is dependent on both the comfort level and context of a specific area.** For example, on a hilly road a striped bike lane may be needed alongside the lane that traffic ascends the hill due to the slower speed of the cyclist while they are climbing the hill. However, a shared use facility design, where cars and bikes are not physically separated, may be sufficient for the opposite, descending travel lane because the speed of the cyclist will be greater on the descent.



Prioritization Goals

Once projects were identified based on public and stakeholder outreach, prior plans, safety issues, and an analysis of gaps in the current network, the next step in the planning process was to determine which potential projects best meet the plan's goals. The end result of this prioritization process was a ranked list of projects, with the highest-ranked projects best meeting a set of criteria that reflect the values of West Jordan residents and stakeholders expressed they value in active transportation facilities.

Evaluation Criteria

Evaluation criteria were prepared based on collaborative discussion with the project team and stakeholder committee. Six major “themes” were identified. An overview of each theme, its measurable criteria, and the metrics that determine how each criterion was valued and integrated into the project's overall score is provided in Table 5-1.

- **Feasibility** reflects the ease with which a project can be implemented, and is weighted to favor projects that are lower in cost and overlap with planned roadway projects that may provide cost savings and reduced construction impacts.
- **Connectivity** reflects the degree to which projects provide a strong and complete network throughout West Jordan and South Jordan, including connecting to existing facilities and key destinations.
- **Equity** reflects a concern for providing access to all neighborhoods in the communities of West Jordan and South Jordan, especially areas that have not been well-served to date by active transportation facilities.
- **Community Demand** accounts for projects that address needs, desires, and safety issues raised by members of the public through outreach events and online surveys.

- **Comfort** prioritizes those projects that provide more protected and separated facilities, such as shared-use paths and protected bike lanes. This reflects a greater emphasis on providing facilities that are attractive to “interested but concerned” users who may be more sensitive to their proximity to motor vehicles.
- **“Wow” Factor** provides additional weight to projects that the Steering Committee has indicated will provide exceptional value to active transportation users in West Jordan and South Jordan. This factor is intended to provide greater prioritization to projects that can serve as a showcase for great infrastructure, provide an excellent experience for users, and help distinguish the communities as leaders in encouraging active transportation along the Wasatch Front.

Figure 5-7: Project team meeting reviewing ranked projects



Prioritization Exercise



After developing the evaluation criteria and associated metrics, each project was measured against these criteria and given a score between 0 and 100. Spatial metrics, such as the number of connected or adjacent facilities, the number of nearby destinations, and shared alignments with other projects, were calculated based on buffer analyses conducted in ArcGIS. These metrics, along with estimated project costs and the number of public comments, were rescaled to be between 0 and 100, such that the highest-ranked project received a score of 100. Other metrics, such as facility types, received a predetermined point values based on how well they aligned with the plan's goals.

Table 5-1: Project evaluation criteria

Proposed Project Evaluation Criteria - South Jordan West Jordan Active Transportation Plan			
Theme	Description	Criteria	Metric / Scoring
Feasibility	Can the project be implemented?	Estimated project cost	100 to 0 based on scaled estimated facility cost
		Does the project share alignment with planned roadway project(s)?	100 points for fully shared alignment, 75 to 25 points for partially shared alignment
Connectivity	Does the project provide connections within and beyond South Jordan/West Jordan?	Does the project connect to one or more external AT facilities or ATIP/WFRC proposed projects?	100 points if directly connected, 50 points if within 1/8 mile
		Is the improvement within 1/2 mile of key destinations (parks, schools, TRAX stations)?	number of destinations within 1/2 mile
		Does the improvement close a gap between or extend existing facilities?	number of existing facilities directly connected
Equity	Does the project provide connections to underserved areas in the communities?	Is the project in an area of either community with below-average access to existing or proposed active transportation infrastructure?	<i>number of existing facilities within 1/2 mile buffer*</i>
Community Demand	Does the project address needs voiced in stakeholder and public outreach?	Does the project address an area highlighted in survey results or public outreach events?	100 to 0 based on count of survey/outreach comments highlighting issues on alignment
Comfort	Does the project provide a facility that enhances comfort for "interested but concerned" users?	Does the project provide a buffered or off-street facility?	100 points for off-street facility, 50 points for buffered/protected facility
"Wow" Factor	Does the project provide a big win for active transportation in SJ/WJ?	Steering Committee indication	100 points if yes, 0 if no

* indicates metrics that are scored in reverse e.a. a higher score on that metric yields a lower overall prioritization score

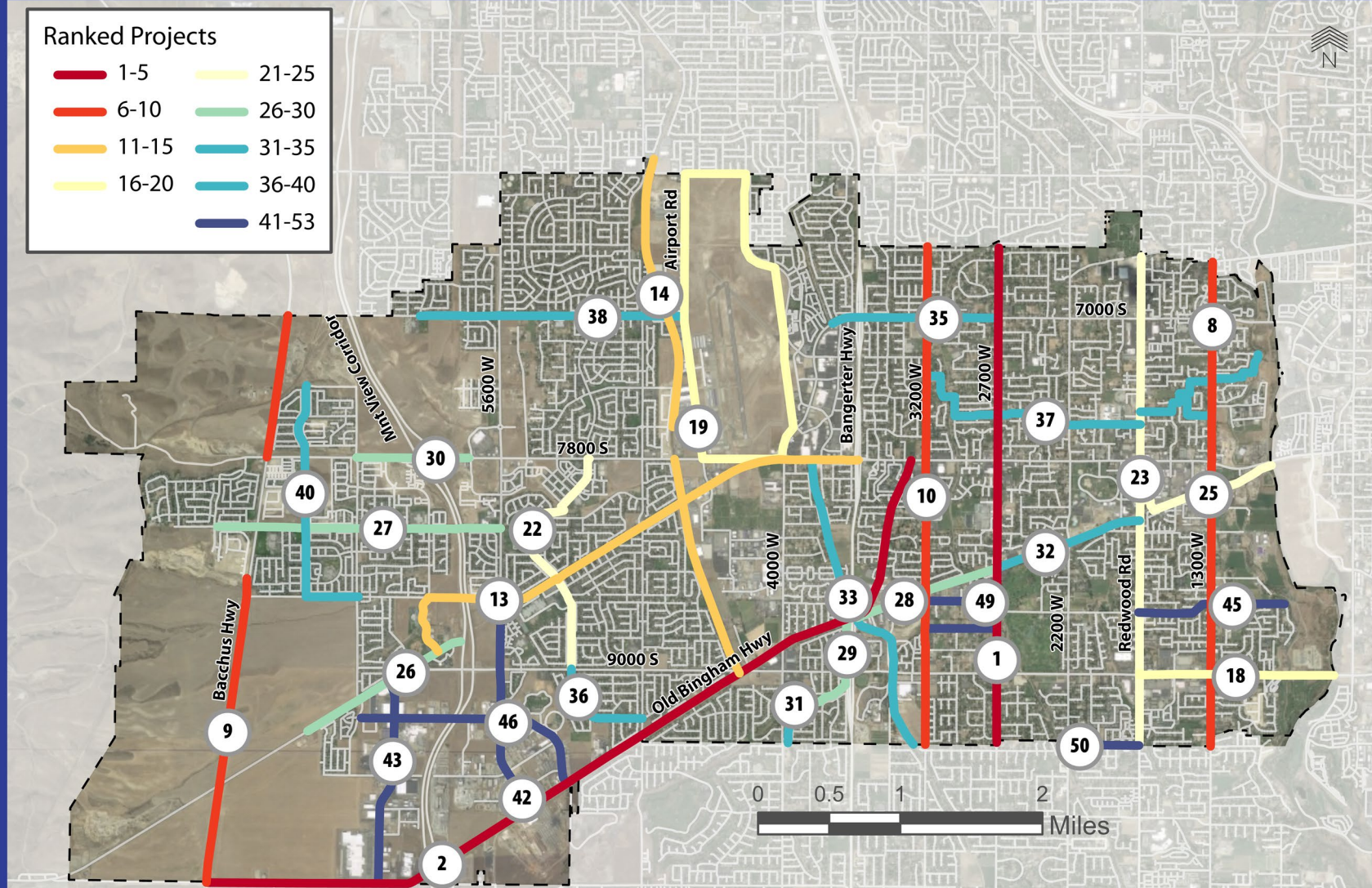


Project Ranking



Each project was ranked based upon the composite score from the process evaluation criteria. The project ranking reflects the relative importance of each project for the active transportation network. However, the ranking does not reflect the order in which the projects should be completed. Additional local criteria and values should be considered prior to advancing each project. The map below shows the ranked projects within the City. The overall ranking is for the entire study area which included both South Jordan and West Jordan.

Figure 5-8: Ranked projects from list in West Jordan



Key Projects



The top ranked project for West Jordan was 2700 West. In South Jordan, it was ranked third. Due to the combined high ranking, resident input, and city priorities, a conceptual design was created for continuous, intercity buffered bike lanes on 2700 West. Ranked projects were divided into tiers to show general priority. Tier I are the projects ranked 1-10, Tier II are projects 11-20, and Tier III are the remainder. Other combined key projects include bike lanes on 1300 West in West Jordan (which would merge with existing bike lanes beyond South Jordan), the addition of buffered or protected bike lanes on Old Bingham Highway for east/west connectivity, and widening the sidewalk on Redwood Road to improve the pedestrian network.

Figure 5-9: Project prioritization tiers and project ranking

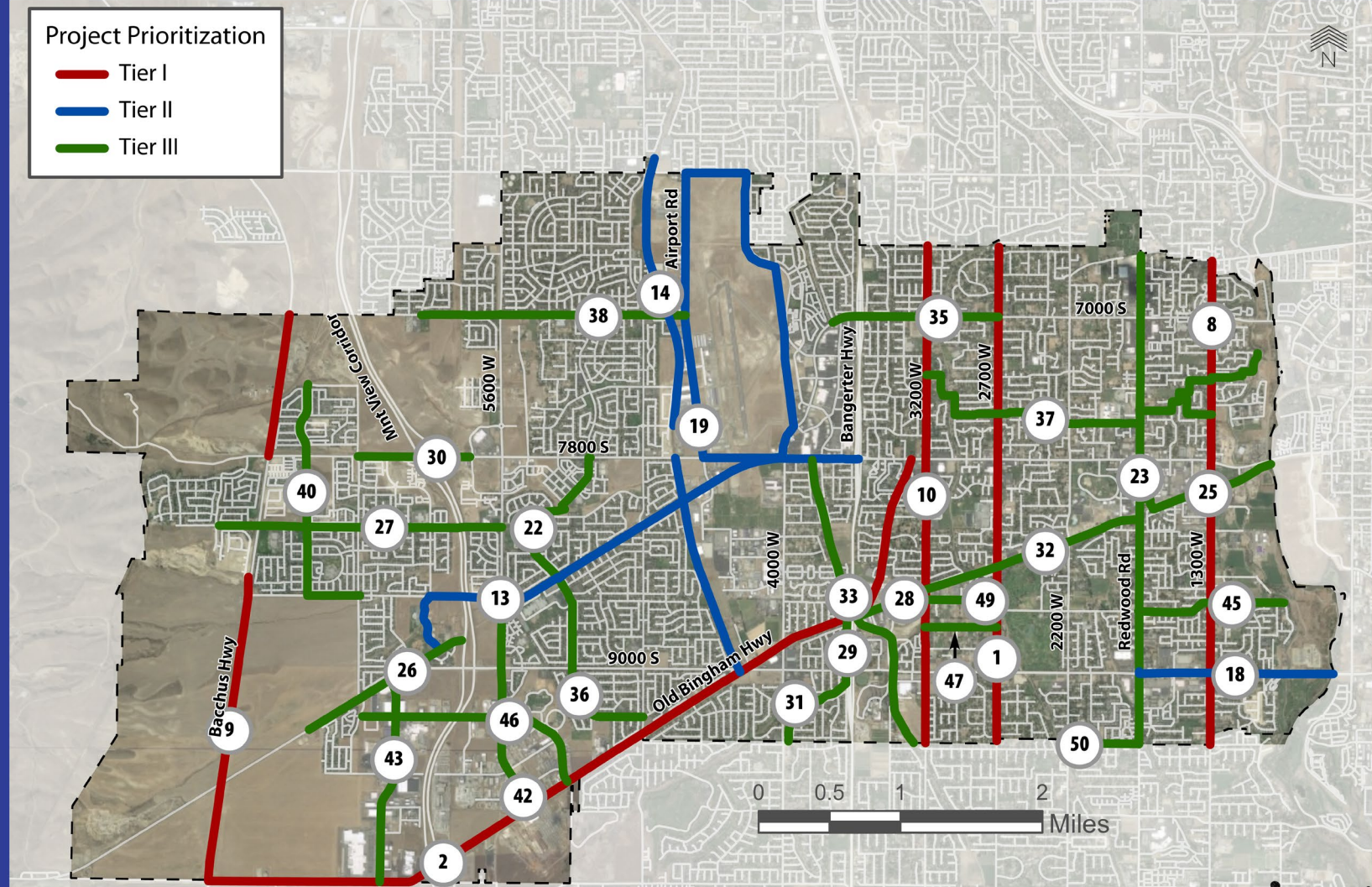




Table 5-2: Project prioritization and ranking

Combined Rank *	Location	Type	Miles	Cost	Cost
Tier I					
1	2700 West between West Jordan's northern city boundary and southern city boundary	Buffered bike lane	3.5	\$256,000	TAP/ Choice Fund
2	Old Bingham HWY between 7800 South to Bacchus HWY	Buffered or protected bike lane	6.3	\$216,000-\$4,985,000	TAP/TIFF
8	Temple Dr. between Winchester St. and southern city boundary	Buffered or protected bike lane	3.4	\$117,000-\$2,701,000	TAP/ Choice Fund
9	SR-111 South Jordan to West Valley City	Paved Multi Use Path	3.2	2,700,000	Development
10	3200 West between West Jordan's northern city boundary and southern city boundary	Bike Lane	3.5	\$93,000	TAP/Choice Fund
Tier II					
13	New Bingham HWY between Mountain View HWY and Bangerter HWY - Ron Wood Parkway/8600 South between New Bingham HWY and Mountain View HWY	Buffered or protected bike lane	3.7	\$1,700,000-\$7,800,000	TAP/ Choice Fund
14	Garfield Rail Trail New Bingham Highway to West Valley	Paved Multi Use Path	3.5	\$2,971,000	TAP
18	9000 South between Redwood Rd and West Jordan's eastern city boundary	Bike Lane	1.4	\$37,000	UDOT
19	Around the South Valley Regional Airport	Paved Multi Use Path	5.2	\$4,336,000	City
Tier III					
22	Grizzly Way between 7800 South and 900 South	Buffered or protected bike lane	1.8	\$63,000-\$1,455,000	TIFF
23	Redwood Rd. between West Jordan's northern city boundary and Shields Ln.	Sidewalk (8'-10')	3.4	\$728,000	TIFF
25	Trail along TRAX from Sugar Factory Rd. between Redwood Rd. and West Jordan's eastern city boundary	Paved Multi Use Path	1.0	\$877,000	TIFF
26	New Bingham HWY between 6700 West and Mountain View HWY	Buffered or protected bike lane	1.3	\$44,000-\$1,011,000	TAP/City
27	8200 South between Stokesley Dr and 5600 West	Buffered or protected bike lane	2.0	\$69,000-\$1,589,000	City
28	Trail along TRAX from Utah Distribution Canal to 2700 West	Paved Multi Use Path	1.0	\$878,000	TIFF
29	Connecting the Bingham Creek Trail and 8600 South along Bingham Creek and Bangerter Hwy	Paved Multi Use Path	0.7	\$614,000	TAP/City
30	7800 South between 6400 West and Highlands Loop Rd.	Paved Multi Use Path	0.8	\$664,000	TAP

* The numbers in the **Combined Rank** column reflect the complete prioritization list among all South Jordan and West Jordan projects.



Combined Rank	Location	Type	Miles	Cost	Funding
Tier III					
31	Welby-Jacobs Trail along Provo Reservoir Canal between Bingham Creek Trail and West Jordan's southern city boundary	Paved Multi Use Path	0.2	\$197,000	TAP/Choice Fund
32	Trail along TRAX from 2700 West to Redwood Road	Paved Multi Use Path	1.1	\$892,000	TIFF
33	Along the Utah Lake Distribution Canal between 7800 South and West Jordan's southern city boundary	Paved Multi Use Path	2.3	\$1,942,000	TAP
35	7000 South between 3760 West and 2700 West	Buffered or protected bike lane	1.2	\$40,000-\$932,000	TAP/City
36	Wild Acres Dr. between 9000 South and 4800 West	Neighborhood Byway	0.7	\$2,000	CATF
37	Connecting Redwood Rd. and trail near Primavera Way/Highland Hollow Dr. between Paisley Way and Temple Dr./Connecting 3200 West and Redwood Rd.	Neighborhood Byway	3.4	\$11,000	CATF
38	7000 South between Oquirrh Ridge Rd. and Airport Rd.	Buffered or protected bike lane	2.2	\$74,000-\$1,718,000	TAP
40	6700 West between 7400 South 8600 South	Bike Lane	1.9	\$50,000	CATF
42	5600 West/Hawley Park Rd between New Bingham HWY and Old Bingham HWY	Bike Lane	1.5	\$40,000	City
43	Prosperity Road from Wells Park Rd to New Bingham Highway	Sidewalk	1.5	\$307,000	City
45	8600 South/8660 South/Gardner Ln between Redwood Rd. and Millrace Bend Rd	Neighborhood Byway	1.1	\$3,000	City
46	Bagley Park Rd /Dannon Way from New Bingham Highway to 6400 West	Sidewalk	1.7	\$366,000	Development
47	8750 South from 3200 West to 2700 West	Sidewalk	0.5	\$107,000	City
49	Haun Dr between 3200 West and Jaguar Dr.	Bike Lane	0.5	\$13,000	City
50	Fullmer Ln. between 2200 West and Redwood Rd.	Bike Lane	0.5	\$13,000	City
				TOTAL COST:	\$20,420,000 - \$40,288,000

Table 1-2: Project prioritization total cost and miles by Tier

Tier I		Tier II		Tier III	
Total Miles	19.6	Total Miles	13.8	Total Miles	12
Total Cost	\$3,382,000 - \$10,735,000	Total Cost	\$9,044,000 - \$15,144,000	Total Cost	\$7,994,000 - \$14,409,000

Cost estimates were developed by active transportation engineers based on the most recent bid prices for construction items like striping paint and concrete curbs. The full construction cost estimates were based on facility types and linear feet of construction. Buffered or protected bike lane projects costs are based on recently completed buffered or protected bike lane projects. Variability in the cost of these projects is based upon design choices, restrictions, and existing conditions. A common occurrence that will effect cost is if a bike lane and buffer can be striped in the existing road, if right-of-way is required to add the buffered bike lane, or if it is a curb protected bike lane that requires new concrete and drainage accommodations, that is why they are shown as a range.

All the cost estimates include a contingency and should be considered planning level cost estimates only. Better engineering based costs will need to be developed as projects near construction.



2700 West Buffered Bike Lanes Concept Design

To help advance active transportation in the community and to focus on implementation by moving from planning into design the study produced a concept design for one key cross-jurisdictional corridor.

Based on the ranking of projects in West Jordan and team discussions with officials from both West Jordan and South Jordan, the project that was selected for conceptual design was the 2700 West buffered bike lanes. Buffered bike lanes are different from basic striped bike lanes because they include a physical space “buffering” or separating bikes from cars moving in the same direction along the road. Buffered lanes vary in width, and the determined amount of necessary separation for cyclists for this concept design was two feet. This space is critical for the comfort of both the cyclists and the drivers.

The concept design layout fits entirely within the existing right-of-way. This was done so the layout would not impact any existing landowners along the corridor. Designing within the right-of-way did present some challenges and the street concept design varies throughout the corridor to maintain those constraints.

The following three segments were chosen to illustrate specific challenges along the corridor. The 7.7 mile long full concept design can be viewed on the project website at www.jordanatp.com

Figure 5-10: 2700 West buffered bike lane concept design layout crossing 7800 South

Intersections can be the most difficult design feature of a roadway active transportation treatment. Because a majority of bicycle/automobile related crashes occur at intersections, visual indicators of where cyclists are given designated roadway space should be highly emphasized. Green thermoplastic is used for the 2700 West concept design at intersections like this one at 7800 South.

Thermoplastic has a lifespan of at least three times more than that of regular paint, is skid resistant, and retro-reflective. The chosen highly visible green color is being adopted as the standard for bike lanes across the country.

This intersection at 7800 South is home to a gas station, 7-Eleven and fast food drive-thrus. Vehicles are making frequent turns in and out of these businesses which increases the probability of distracted driving and crashes. Green thermoplastic combined with buffered bike lanes creates a comfortable environment for cyclists crossing or turning onto 7800 South.

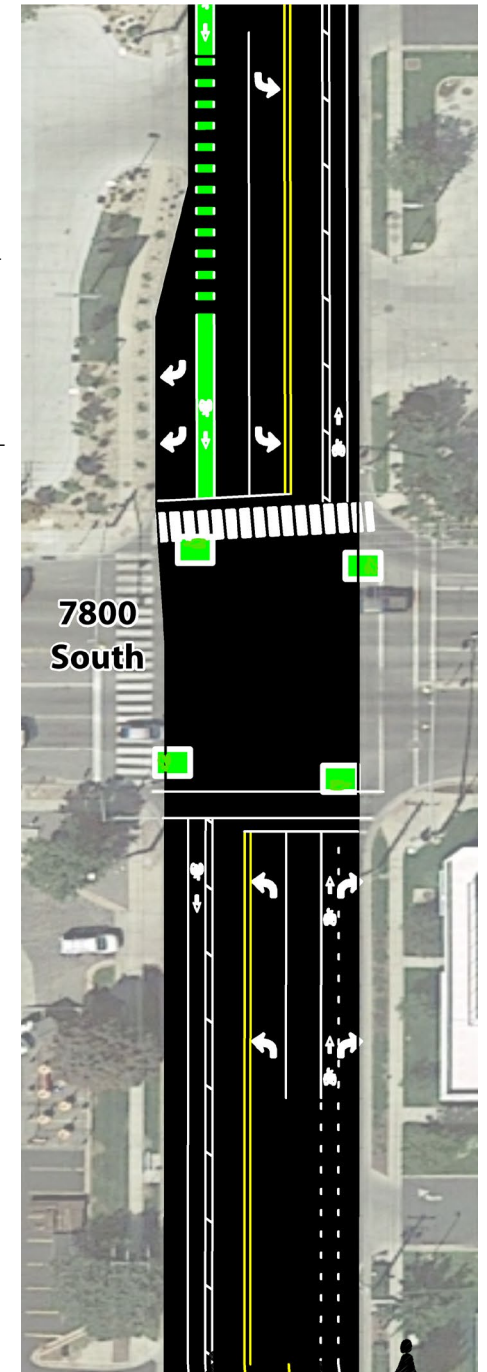


Figure 5-11: 2700 West buffered bike lane concept design layout crossing 9000 South

The 9000 South intersection and all other intersections that include bike lanes or bike ways on the cross street include two-stage left turn queue boxes for cyclists. These left turn queue boxes create an option for cyclists who would like to turn left without having to enter into a vehicle turn lane. When a cyclist is waiting in a turn lane they are in a vulnerable location on the road because they are exposed to oncoming traffic. The bike boxes allow for cyclists to easily navigate left turns while staying outside of the vehicle turn lanes. The placement of the boxes is determined by roadway width and vehicle turning radius. The box is placed where traffic does not normally pass over, regardless of whether a vehicle is going straight or turning.

These two-stage left turn bike boxes are becoming more common and UDOT has accepted them as standard. At this location our concept design includes four such boxes to accommodate every direction.

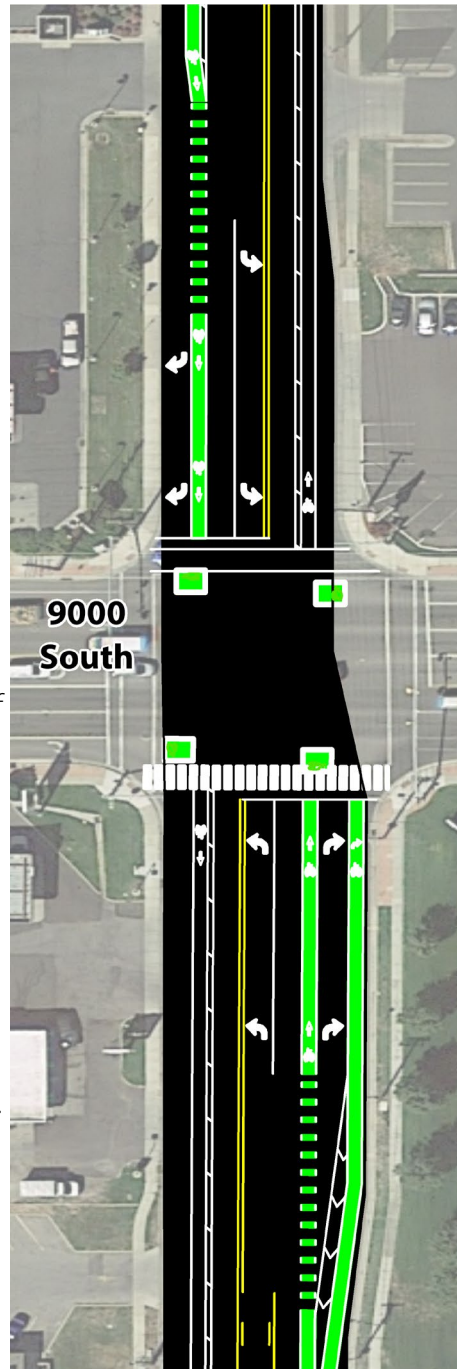
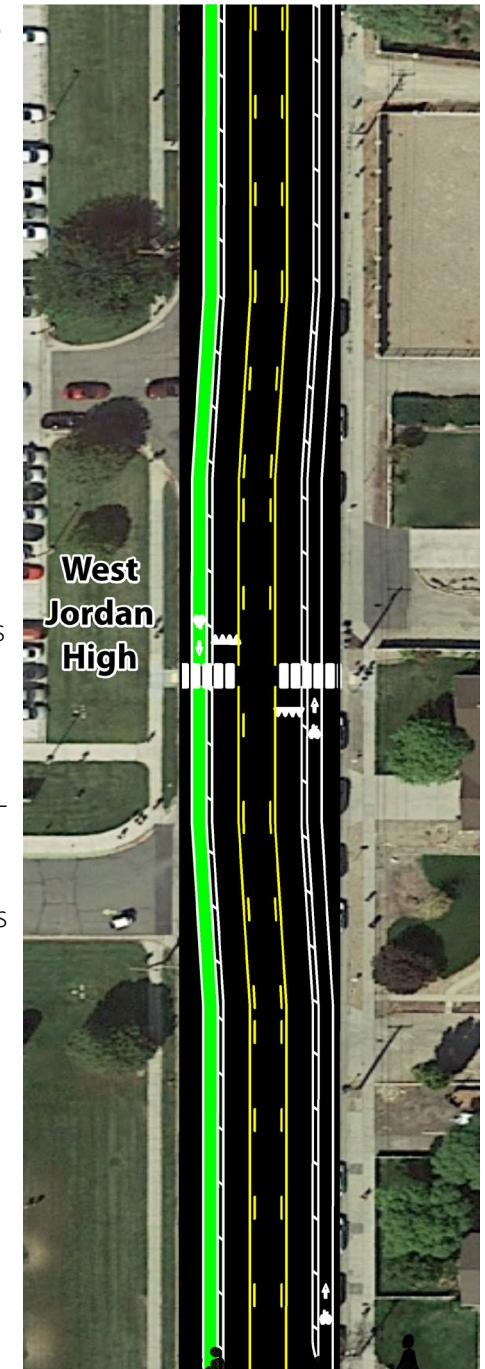


Figure 5-12: 2700 West buffered bike lane concept design layout at West Jordan High

West Jordan High is another area deserving of green thermoplastic bike lanes. The west side of the road has several conflicting school driveways. This is an area of concern to cyclists which creates a need for more visible roadway markings to ensure a high quality level of comfort. The east side of the road has a lower level of concern to cyclists because it does not allow roadside parking but includes waiting zones for student/parent vehicle loading.

The high school has a crosswalk directly in front of it with a raised pedestrian refuge island in the center turn lane. Here, the bike lane concept design requires painted arrows and bike lane symbols close to the crosswalk to alert both the cyclists and pedestrians of the intersecting facilities.





Cost estimates were developed by the design engineers that completed the concept design of 2700 West. The cost includes individual elements to construct this project in West Jordan like, striping paint, thermoplastic green paint, and needed signs. The cost estimate does NOT include any widening, pavement rehab, curb or gutter. The concept was designed to avoid these larger costs and impacts.

Table 5-3: West Jordan Active Transportation Plan-2700 West

BID ITEMS					
No.	Description	Quantity	Unit	Unit Price	Amount
ROADWAY					
1	Thermoplastic Pavement Message	156	EACH	\$ 200	\$ 31,200
2	Thermoplastic Pavement Message (Bike and Bike Arrow)	231	EACH	\$150	\$34,650
3	Thermoplastic Pavement Message (Bike Box)	8	EACH	\$250	\$2,000
4	Thermoplastic Pavement Message (Green Paint)	12,818	SQ FT	\$10	\$128,180
5	Thermoplastic Pavement Message - Crosswalks and Stop Lines	968	FT	\$8	\$7,744
6	Pavement Marking Paint	1,602	GALLON	\$25	40,050
Subtotal					\$243,824
SIGNING					
6	Signing (Estimate)	1	LUMP	\$12,000	\$12,000
Subtotal					\$12,000
Bid Items Subtotal					\$255,824
GRAND TOTAL					\$255,824



6 How We Get There



How projects get constructed often comes down to them receiving funding. This section identifies available funding resources to pay for active transportation projects in West Jordan and to conclude the plan.

Funding

Active transportation routes often span multiple jurisdictions and provide regional significance to the transportation network. As a result, other government jurisdictions or agencies often help pay for such regional benefits and projects. Those jurisdictions and agencies could include the Federal Government, the State or (UDOT), the County, and the local metropolitan planning organization (WFRC). West Jordan will need to continue to partner and work with these other jurisdictions to ensure adequate funds are available for these projects. West Jordan will also need to partner with South Jordan and other adjacent communities to ensure corridor continuity across jurisdictional boundaries.

Federal Funding

Federal funds are available to cities and counties through the federal-aid program. UDOT administers the funds. In order to be eligible, a project must be listed on the five-year Statewide Transportation Improvement Program (STIP). The Surface Transportation Program (STP) funds can be used for transportation enhancements in twelve categories including bicycle and pedestrian facilities. The Joint Highway Committee programs a portion of the STP funds for projects around the state in urban areas. This is a 5-year funding tool and the STIP projects are updated regularly to maintain a 5-year list of projects. Adding AT projects and other projects in West Jordan to UDOT Region 2's transportation plan is an important early step.

State Funding

The distribution of State Class B and C Program funds is established by State Legislation and is administered by UDOT. Revenues for the program are derived from State fuel taxes, registration fees, driver license fees, inspection fees, and transportation permits. 75% of these funds are kept by UDOT for their construction and maintenance programs. The rest is made available to counties and cities. Some of the roads with active transportation facilities in West Jordan fall under UDOT jurisdiction. It is in the interest of the city that staff are aware of the procedures used by UDOT to allocate those funds and to be active in requesting the funds be made available for UDOT owned roadways in the City. Class B and C funds are allocated to each city and county by a formula based on population, centerline miles, and land area. Class B funds are given to counties, and Class C funds are given to cities and towns.

Class B and C funds can be used for maintenance and construction projects including active transportation; however, thirty percent of those funds must be used for construction or maintenance projects that exceed \$40,000. The remainder of these funds can be used for matching federal funds or to pay the principal, interest, premiums, and reserves for issued bonds.

UDOT also administers the Safe Routes to School funding. This is a \$1.2 Million annual fund to pay for active transportation safety improvements near schools across the state. Cities need to apply for this funding which is a reimbursement fund with no matching dollars required. This money can be used for improvements such as new trails or sidewalks, signals, crosswalks, etc.

Senate Bill 136 recently created a new "Transit Transportation Investment Fund" (TTIF). This new fund, beginning July 1, 2019, allocates state funding from the fuel tax specifically for public capital transit projects. However, Senate Bill 72 opened this fund up to non-mo-



torized projects as well. These dollars can also be used for active transportation projects around transit facilities, but the new infrastructure provide access to transit stops. This UDOT fund has not been distributed for the first time yet, and UDOT has stated that cities will need to apply for their projects to get access to this fund. It also requires 40% matching funds from local governments. Cities like West Jordan can use federal (but not state) dollars for the match. More information on this fund will be developing in the coming years.

WFRC Funding

The Wasatch Front Regional Council administers several funding programs of both federal and state dollars for the region. The Transportation Alternatives Program (**TAP**) funds the construction and planning of bicycle and pedestrian facilities. South Jordan and all cities in Salt Lake, Davis, and Weber Counties are eligible. Funds may be used for 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, pedestrian and bicycle signals, traffic calming techniques, lighting and other safety-related infrastructure that will provide safe routes for non- motorists.

Salt Lake County cities receive \$800,000 - \$900,000 every year. WFRC asks cities to submit letters of intent in the fall, with full applications due December 12th this year for funding in July of the following year.

County Funding

Salt Lake County maintains an active transportation fund used to pay for a portion of active transportation projects within the County. It is called County Active Transportation Fund (**CATF**) and is currently \$1 Million annually that cities, including West Jordan can apply for to fund their projects. This fund typically requires a match and is often used to pay for smaller projects since it is limited. Applications are due in July.

Senate Bill 136 also allocated a quarter of one percent sales tax to the Regional Transportation **Choice Fund**. Salt Lake County now has an on-going transportation fund that can be spent on a variety of transportation projects including active transportation. In fact, one

quarter of this fund is earmarked for active transportation projects. This fund held \$40 Million in 2019 its first year, but subsequent years the fund is expected to be less. Salt Lake County has administered these funds and required cities to submit applications. Every project was scored based on several criteria including if the project is multi-jurisdictional. The administration of this fund is changing and the cities within Salt Lake County will be receiving individual portions of this fund, the details of which are still being determined. For more information contact Salt Lake County Regional Planning & Transportation.



City Funding

West Jordan utilizes general fund revenues for active transportation programs. General fund revenues are typically reserved for operation and maintenance purposes as they relate to transportation. However, general funds could be used if available to fund the expansion of active transportation facilities. Providing a line item in the **city** budgeted general funds to address improvements, which are not impact fee eligible, is a recommended practice to fund active transportation projects, should other funding options fall short of the needed amount. Revenue bonding can also be used for projects intended to benefit the entire community.

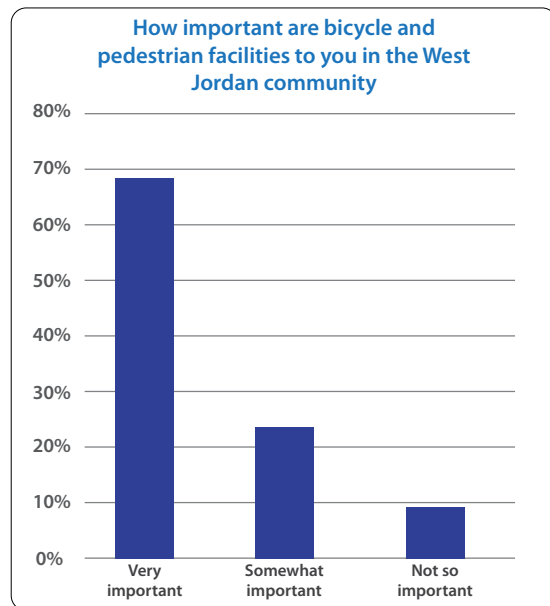
Private interests may also provide resources for transportation improvements including active transportation. **Developers** can construct the local streets with bike lanes within subdivisions and may often dedicate right-of-way for trails and parks, as well. The trails and bike lanes in Daybreak were constructed this way. Many of the new growth areas in West Jordan should include new active transportation facilities provided by the developers.



Community Priorities

West Jordan is a community that values active transportation and is ready to invest in improving facilities to provide safer, more comfortable routes for walking and bicycling. Nearly 70% of survey respondents said that active transportation is very important to them in West Jordan, and many community members indicated areas where current infrastructure is absent or could be improved. Community members also told us that new bike infrastructure should be designed with the 'interested but concerned' cyclist in mind, and provide connections to destinations like parks, schools, trails, jobs, and transit. Finally, we were told that the 2700 West corridor was a high priority location for implementing a continuous and high-comfort north-south connection between West Jordan and South Jordan.

Figure 6-1:



Project Identification and Prioritization

Based on the community values and priorities that we heard through public outreach and discussions with City officials, the planning process

sought out key opportunities for new and improved active transportation facilities. We drew on community comments and suggestions, prior active transportation plans prepared by WFRC and Salt Lake County, and potential right-of-way opportunities along underutilized corridors and undeveloped lands. This process yielded 32 potential projects across West Jordan, which were scored and evaluated against evaluation criteria including Feasibility, Connectivity, Equity, Community Demand, and Comfort.



High-Priority Projects

The highest-priority projects for West Jordan include:

- Installing a buffered/protected bike lane on Temple Drive (1300 West) between Winchester Street and the City boundary
- Installing a buffered/protected bike lane on 2700 West from the northern to southern boundary of the City; this project has been identified as the highest-priority project for the city and a conceptual design has been prepared for the corridor (see pages 35-36)
- Installing a standard bike lane on 3200 West from the northern to southern boundary of the City
- Airport Trail
- New Bingham Highway - 4000 West to 5600 West
- Installing a buffered/protected bike lane on Old Bingham Highway between 7800 South and Bacchus Highway

These projects represent important opportunities to provide multiple high-comfort options for families, recreational riders, and bicycle commuters to travel north/south through and beyond West Jordan, as well as implementing a key east-west corridor across West Jordan from central neighborhoods to western trails, job centers, and future development sites.

Obtaining funding to design and build these high-priority projects is critical to the successful implementation of the plan's vision and goals.



Potential funding opportunities that may be appropriate for implementing these projects include:

- West Jordan should work with UDOT Region 2 staff to include the proposed 1300 West bike facility in the next STIP as a parallel bicycle facility to Redwood Road, making it eligible for federal and state funding.
- The 2700 West buffered/protected bike lane may be a strong candidate for receiving county Transportation Choice funding, as a regionally significant corridor providing a potential connection not only through South Jordan and West Jordan, but also to Taylorsville to the north and Riverton to the south. The 3200 West corridor could likewise be funded in this way as a multi-jurisdictional project.
- The proposed bike facilities on Old Bingham Highway and 2700 West may be good candidates to receive funds from the Transit Transportation Investment Fund, as they provide enhanced connections to TRAX Red Line stations.
- West Jordan should consider applying for WFRC Transportation Alternatives Program funding to further advance planning and design of these high priority facilities, in order of desired implementation.

A key consideration for successfully implementing the 2700 West and 3200 West projects is coordination with adjacent municipalities. South Jordan has also prioritized the construction of buffered bike lane and bike lane facilities on these corridors, and the municipalities should continue to coordinate with each other in order to ensure that these facilities are planned and designed in a coherent and coordinated way, as well as to maximize opportunities for securing funding for the project from funds that are dedicated to implementing regionally-significant corridors. Additional coordination with adjacent municipalities (e.g. Riverton, Kearns and Taylorsville) may further enhance the value and funding eligibility of these projects.



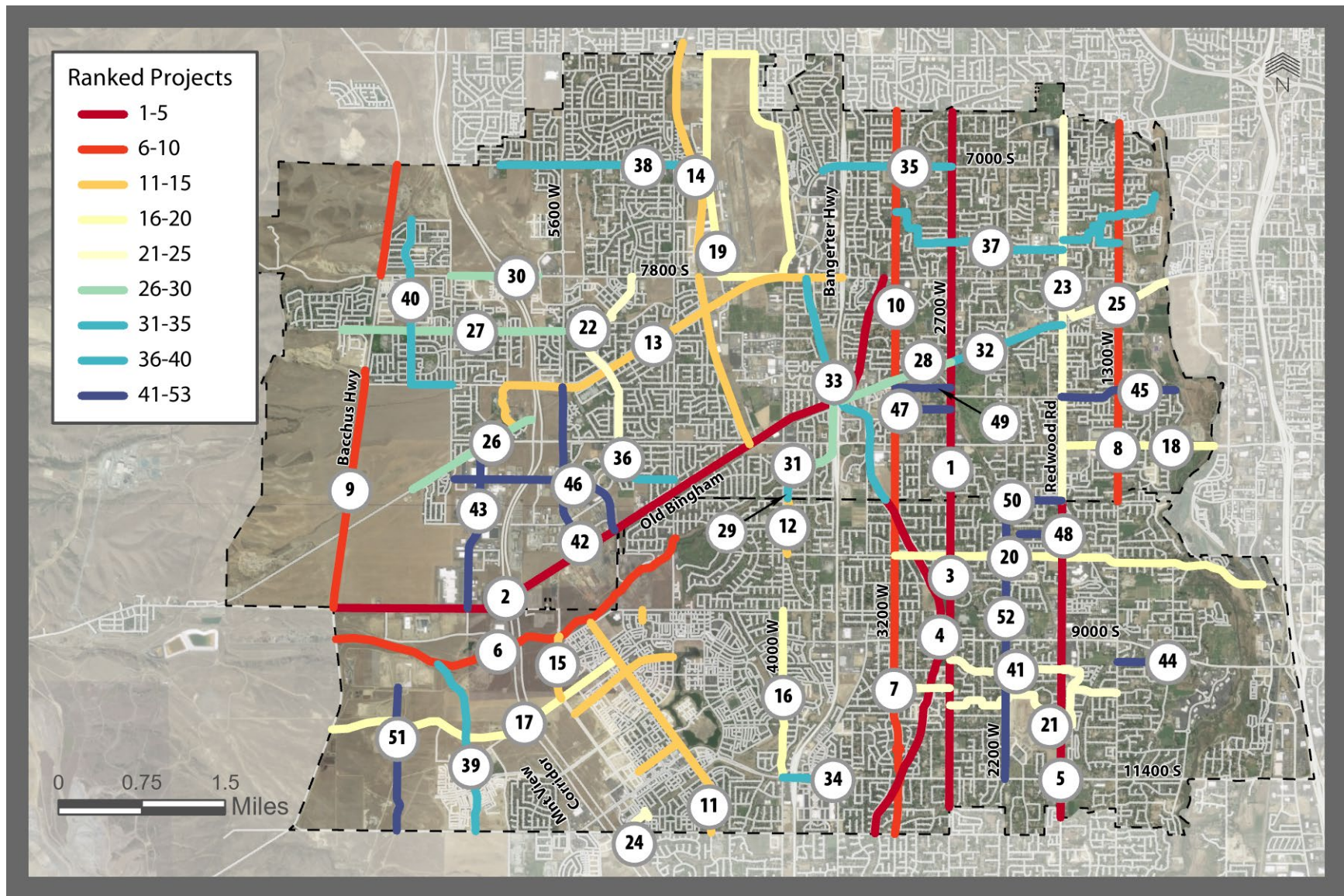
This project was completed as a joint effort between West Jordan and South Jordan in collaboration with UDOT and others. The project celebrated cooperation between neighboring cities. All analysis, brainstorming, project selection, prioritization, and design was performed together and complete collaboratively. Figure 6-3 on the following page, is a joint map showing all the combined project within the two cities.

Figure 6-2: New Bingham is one of the planned projects





Figure 6-3: Map of complete projects for West and South Jordan



More information including the full detailed design of 2700 West in West Jordan and South Jordan can be found at: www.jordanatp.com.

