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Setting the Stage
Introduction

The 2040 Metropolitan Transportation Plan (MTP) envisioned a safe and active transportation system that supports a healthy community by providing for multimodal options for all transportation system users. The Bannock Transportation Planning Organization (BTPO) has a bicycle master plan, a pedestrian master plan, and a greenway master plan. The first step in moving the community toward that vision is to combine the three plans into a single Bicycle and Pedestrian Master Plan (BPMP) document.

The approach used in this plan is to focus on a few elements that are critical to the success of an active transportation network. Connectivity, removal of barriers, and improved safety are the elements in the Portneuf Valley that, if improved would move the community towards the MTP's envisioned future.

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The Bicycle and Pedestrian Master Plan’s goal is to provide multimodal options that support a safe, active, and healthy community.

Metropolitan Planning Organizations

Fixing America’s Surface Transportation (FAST) Act was signed into law on December 4, 2015. The FAST Act continued the requirement that urban areas over 50,000 population establish a Metropolitan Planning Organization (MPO) for developing a continuous, comprehensive, and cooperative performance based multimodal transportation plans that encourage the development of facilities that serve the mobility needs of people and freight. BTPO as an MPO must include the mobility needs of people in our planning process. MPOs primarily ensure that urban areas are cooperatively and comprehensively developing a transportation system which meets the needs of the public. The FAST Act requires BTPO to develop a twenty-year long-range transportation plan which includes the identification of bicycle and pedestrian facilities.

The cities of Pocatello and Chubbuck along with Bannock County used their joint-powers to create the Bannock Transportation Planning Organization in 1982 to conduct transportation planning for the Pocatello/Chubbuck Urban Area (Figure 2). BTPO develops plans and programs to meet the federal retirements and assist the cities and county development long-range transportation plans.
Figure 1: BTPO Planning Area
Plan Overview

The three current non-motorized plans served as a starting point in developing this master plan. The Bicycle and Pedestrian Master Plan objectives are:

- Develop a connect low-stress bicycle network;
- Identify gaps in the non-motorized network;
- Identify projects and actions that member agencies need to complete to advance the plan;
- Provide the City of Pocatello, City of Chubbuck, and Bannock County with the tools and support needed to implement a connected and safe multimodal network; and
- Increase knowledge and support for active transportation options.

This plan is not a design manual, nor will it provide design recommendations. There are many great national, regional, and local approved guidelines for the design of bicycle and pedestrian facilities. Appendix A of this BPMP provides reference and recommendations of some of the best practices for bicycle and pedestrian design. The cities and developers are encouraged to review the list and seek the latest design guideline information.

Figure 2 provides an outline and the remaining sections of the BPMP.
Peer Review

Comparisons between communities are like trying to compare apples to oranges; most cities and regions do not have the same characteristics. The BTPO planning area has several features, which affect the transportation network which are different from many other regions in the west. The purpose of conducting a peer review is to determine how our region is doing as compared to others. The peer city comparison includes Idaho communities similar to Pocatello and Chubbuck. The peer region comparison uses communities which are similar to the Pocatello Urban Area, located in the west.

Bicycle and pedestrian activity are very challenging for communities to measure. Other potential comparisons such as crashes and facilities are challenging. Rates require the number of users, and this information does not exist in almost all cities. The rate of bicycle and pedestrian crashes would allow a better comparison but is unavailable.

Commute to work mode share, land use, and crashes were chosen as they are goals in the 2040 Metropolitan Transportation Plan (MTP). Mode share is the percentage of commuters who walk and ride a bicycle to work. Land use shows the mix of land use types in a region and neighborhoods. Land use diversity can help identify areas that are walkable. The 2040 MTP identifies safety and reduction of crashes as a priority. Comparing where the BTPO planning area is in each of these three areas can provide context to the data.

Peer Communities

The availability of data complicates peer analysis. Some data is available for urban areas, and others are only available for individual cities. The Idaho Peer analysis uses city data because the safety data was available for cities, not urban areas. Within Idaho, the three other similar sized Metropolitan Planning Organizations (MPO) along with micro areas which have a similar population to Pocatello or Chubbuck were chosen (Figure 3).

The criteria for peer communities outside of Idaho was a similar population, interstate access, a railroad which divides the community, and a river which divides the community. There are eight peer urban areas which meet most if not all the criteria (Figure 4). Logan Utah, St. George Utah, and Billings Montana are the three with the least similarities. Logan has a much larger university, but there is no interstate location of a river which divides the community. Due to the proximity to Pocatello Logan was included. Both St. George and Billings lack a major university but have an interstate and railroads.
Mode Share

The number of actual bicycles and walking trips in urban areas is not known. BTPO is starting a bicycle and pedestrian counting program, but there is no regional wide estimate of the total number of trips.

In the BTPO 2012 household survey about seven (7) percent of all trips in the region were by walking or bicycling. This number varies by location within the urban area. Centrally located neighborhoods and neighborhoods near the Idaho State University campus have a higher rate.

The American Community Survey (ACS) provides an annual and 5-year average of commuting by mode of transportation. The ACS number can have a high error rate, but for an urban area or city, the values can be used for comparison. The ACS commuting data lists all the potential modes of transportation to and from work. The percentage of commuters who use each mode is called the mode split. Transit mode split was included due to the linkage to walking and bicycling. Every transit trip starts and ends with a pedestrian trip, and transit is sometimes used by a bicyclist to extend the range of their commute. Figure 5
Bicycle and Pedestrian Master Plan

shows the Pocatello Urban area has the highest percentage of bicycle and walk commutes of any of the Idaho peer areas. For Idaho Falls and Pocatello, public transit includes bus transportation to and from the Idaho National Laboratory.

Figure 6 provides the regional peer areas commute mode share. Pocatello is fourth behind Flagstaff, Missoula, and Logan. Flagstaff has almost ten (10) percent modal split with walking trips accounting for 8.1 percentage of the total. Missoula is more balanced with five (5) percent work trips for bicycle and walking modes.

Figure 5: Non-Motorized Work Trip Mode Split Idaho Peer Communities

Source 2012-2016 American Community Survey Table B08006
**Land Use Mix**

Land Use Mix measures the average neighborhood-level diversity of destinations across a metropolitan area based on the mix of eight different employment types (office, retail, industrial, service, entertainment, education, health, and public sector). The data comes from the Environmental Protection Agency’s Smart Location Database, version 2.0. Figure 7 shows that the Pocatello Urban area has a mix of land uses above the peer communities average of 74. An interesting point is there does not seem to be a relationship between land use and commute to work mode share. St. George had 100 percentile or the best neighborhood-level diversity of destinations, but the mode share was below Pocatello.
**Bicycle and Pedestrian Master Plan**

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**Bicycle and Pedestrian Crashes**

Figure 8 shows that the City of Pocatello has higher bicycle and pedestrian crashes per 100,000 population than other cities in Idaho, except for Coeur d’Alene. Chubbuck, however, is at or below the peer cities.

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**Online User Traditional Survey**

In November 2017 through December 2017, BTPO conducted an online survey (Survey Monkey) and an interactive mapping survey. The survey was open for two months, and 342
people completed the survey. The survey was open to all residents, but outreach efforts focused on people who walked and biked.

The complete user survey questions and responses are included in Appendix B. The survey asked respondents twenty-nine (29) questions related to walking and bicycling habits and demographic information. The focus of the survey was on the reasons for taking a bicycle, and pedestrian trip, trip types, facilities preferred, and barriers to walking and bicycling. The survey asked participants about their walk and bicycle trip and on what type of facility they would choose to take the trip. Participants ranked the factors which made walking or bicycling difficult.

The majority of the participants walked (97%) and bicycled (79%) over ten minutes in the previous year. The winter season was least likely for participants to walk or bicycle. A majority of participants would walk in the winter (69%), but only thirty-one (31) percent of respondents would bicycle. Participants ranked the Lack of sidewalks, vehicle traffic, driver behavior, and street crossings as the top four factors which made walking difficult or uncomfortable, and for bicyclist, the top four factors were the lack of bicycle lanes, driver behavior, traffic volume, and narrow roads.

Participants preferred separate paths almost twice as much as walking on a local street with speeds of 20 to 25 mph. In selecting a route, the availability of a sidewalk along the route was the highest ranked factor, followed by the directness and the amount of vehicle traffic. Bicycling had a similar response where the top three factors in selecting a facility for their bicycle route were; separated path, bicycle lane, and local streets.

Participants were asked to rank from highest to lowest the factors which impacted their decision in choosing a route for walking and bicycling. Walkers ranked availability of sidewalks or paths, directness, and amount of traffic as the top three. Bicyclist top three were the availability of bicycle lanes or paths, the amount of traffic, and quality of the facility.

The survey asked participants how difficult it was to walk or bicycle in the region. The ease or difficulty of walking fell in the middle with 34% finding it somewhat difficult, but slightly less 32% found it somewhat easy. Almost half the participants found bicycling somewhat difficult.

Although a study in Oregon found that nationally four bicycle rider groups exist (Geller, 2009) and that these groups are separated based on their ability to ride in various traffic conditions, the BTPO user survey did not include these categories since we were trying to be consistent and use the same questions asked in the 2012 bicycle survey which used the American Association of State Highway Transportation Officials (AASHTO) guidelines for rider types. In the 2017 survey, participants were asked to select their cycling ability when on a public street which best fit one of the six categories (Figure 9). The categories reflected the ability of the cyclist to ride in mixed traffic. In the survey results, combining those who the preferred local streets and those who ride primarily on local streets, the total was 58%. This is a similar percentage to the "Interested but Concerned" group (Geller 2009) which made up 56% of those respondents (Figure 9). These riders
will cycle if the conditions or if the perceived conditions of the route are safe. The user survey had a much higher percentage (35%) who considered cycling skills as having the ability to ride in mixed traffic, which is higher than the nine percent (9%) classified nationally as "Enthusied and Confident" (Geller 2009). Because the survey was targeted to the bicycle and walking community, the high percentage of skilled cyclists is not surprising.

![Figure 9: User Survey Question 14 Cycling Ability](image)

### Online User Interactive Mapping

BTPO used an online program called Community Remarks to allow survey participants the opportunity to provide specific concerns about locations. Users selected an area of concern from one of five categories. The categories were a barrier to bicycling and walking, bicycle comment, bicycle and pedestrian opportunity, intersection/crossings, and pedestrian comments. The final map contained one hundred twenty-one (121) comments in the five categories (Figure 10).

There are themes and specific locations which rose out of the process. As BTPO developed the proposed bicycle and pedestrian networks, these concerns were used to highlight potential issues which need to be addressed.

**Barrier to Bicycling or Walking** - Twenty-one (21) comments were received with the category of a barrier to bicycle and walking. Most of the comments identified some facility gap or design flaw. Lack of sidewalks, sidewalks ending without warning or options, and the Benton street and Center Street bridges were the focus of most of the comments. Participants identified locations where people walk in the street due to lack of a sidewalk.
Other concerns included intersection barriers such as the lack of sidewalks and ADA deficiencies.

**Bicycle Comment** - Bicycle comments focused on areas where bicycle lanes, increased road width, or bicycle route markings would help improve the system. Many locations have narrow traffic lanes, which make bicycle travel even more difficult. The other common comments were potholes and other objects near the curb line which required bicycles to swerve, causing potential safety concerns.

**Bicycle/Pedestrian Opportunity** – For this category, twenty-nine (29) comments were focused on locations where bicycle lanes, sidewalks, or crosswalks are needed. Connectivity was the other theme in this category.

**Intersection/Crossings** - The twenty-nine (29) intersection and crossing comments continued the barrier theme. Participants identified locations where a marked crosswalk, traffic signal, or another device to allow pedestrians to cross safely are needed.

**Pedestrian Comments** - Pedestrian comments could have easily fit into the barrier category. The lack of sidewalks, crosswalks, and ADA ramps accounted for most of the comments. There were several comments which mentioned disconnected sections of sidewalk which require the pedestrian to walk in the street, in some cases along busy roadways.

Benton Street Overpass, the University area, Old Town, Main Street and Kraft Road, Yellowstone Corridor, and the South 5th interchange accounted for areas where numerous comments were provided. For each area, a common theme was apparent even though the categories were different.

Benton Street Overpass and the Center Street Underpass are two examples. In both cases, the comments all focused on the issues related to crossing the facility. Some focused on specific elements while others provided general improvement plans.
Figure 10: Mapped Comments from User Survey
Figure 11: Examples of Comments Grouped by Area

The Center Street Underpass had several comments from the underpass to issues related to crosswalks.

The Benton Street Overpass had many comments related to issues with crossing the bridge. There were also comments on potential improvements.
Bicycle Plan
History of Previous Plans and Progress

At the beginning of the 21st century, the Pocatello/Chubbuck region had eight (8) miles of bicycle lane with none of the sections creating a completed corridor. Two Federal Highway Administration (FHWA) Enhancement grants created four (4) miles, new construction and use of existing shoulders composed the other four (4) miles of bicycle lanes. The 2003 Bicycle Plan recommended network improvements to connect an add-on to the existing system. Bicycle lane additions were mostly limited to new road construction from 2005 to 2017. During that time, one mile of bicycle lane was removed to allow for a center turn lane. Two reasons for this limited progress which persists today are limited road width and competition with parking.

Since 2006, BTPO has sponsored a Bike to Work event to promote bicycling as a mode of transportation. The program has had some success, but the growth peaked at 600 participants in 2014.

The City of Pocatello has focused much of its time and resources developing the separated trail system and the off-road mountain bike trails. The development of the mountain bike and walking trails have helped the region to attract more riders and mountain bike events. The City of Chubbuck has focused on connecting bicycle facilities on Chubbuck Road and Hawthorne Road and has also included separated paths within some subdivisions to increase connectivity and safety of bicycle and pedestrians.

User Analysis

Who is the bicycle network design for? A common question addressed in most regional bicycle plans? BTPO evaluated the user types from various sources including AASTHO’s Guide for the Development of Bicycle Facilities 2012 – Fourth Addition(AASHTO, 2012), AASTHO’s Guide for the development of bicycle Facilities 1999 (Officials, 1999), and Roger Geller’s Portland’s Four Types of Transportation Cyclist (Geller, 2009). Each of these systems divides the bicycle user into ability groups. Portland’s types also identify a “none” user type. This “none” category recognized that some people would not bicycle regardless of the type of bicycle facilities. BTPO identities users of bicycle facilities as Children, Casual, and Experienced user types. The user types determine the type of facility that user type would use in a low-stress situation (Table 1). Children are limited to shared roadways with limited vehicle volume and slow speeds or separated pathways.

Casual riders are the focus of the recommendations in the bicycle network plan. Facilities that casual riders prefer to use are those with low-stress (described on page 27) or facilities with low traffic volumes and speeds and as much separation from other vehicles as possible.
### Existing Bicycle Network

In 2017, the BTPO bicycle network included 19.05 miles of bicycle lanes, 1.88 miles of bicycle routes, and 6.49 miles of paved shoulders. There are also 14.97 miles of separated shared-use path (Figure 12). Shared Use paths are discussed in detail in a separate section, but the facilities are included to show the entire bicycle network. Most of the existing bicycle facilities in the region were built during the construction or reconstruction of the adjacent road segments. The lack of connectivity is the single most critical issue with the existing system. The 2017 user survey found that the top four factors making bicycling difficult were the lack of bicycle lanes, driver behavior, traffic, and narrow roads. The lack of bicycle facilities and connectivity affects the first two factors. The transition from a road with a designated bicycle space to a sharded road (no designated space) can confuse and increase the stress level for the bicyclist and drivers. This confusion can lead to poor driver and bicycle behavior.
Figure 12: Existing Bicycle Network
Bicycle Work Commute

Bicycle commute to work was chosen to reflect bicycle activity within the region. The American Community Survey (ACS) provides a five-year rolling average for the mode to work. Table 2 shows the bicycle mode to work in the region has remained consistent with 1.2% of all commute trips. Using the Census Track data for the 2012-2016, the ACS allows identification of where in the urban area where bicycle commuting is the highest. Census Tract 7, which includes Idaho State University (ISU) has the highest percentage of people to commute to work via bicycle at 5.6%. The next highest is Census Tract 9 at 5.3% bicycle commute. Census Tract 9 includes the area from E. Center Street to Oak Street and 5th Ave to 15th Ave, commonly called the Bonneville Neighborhood. Surprising in the data is that the census tracts located on the West Bench and the Highland area have a 1.2% percent bicycle commute. These areas are located on benches with steep access and limited employment, so most of the travel would probably be out of tract for work (see Figure 13).

<table>
<thead>
<tr>
<th>Means of Transportation to Work</th>
<th>2007-2011</th>
<th>2012-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Single Occupant Vehicle Mode to Work</td>
<td>20.5%</td>
<td>23.0%</td>
</tr>
<tr>
<td>Drove Alone</td>
<td>79.5%</td>
<td>77.0%</td>
</tr>
<tr>
<td>Carpoled</td>
<td>11.3%</td>
<td>10.6%</td>
</tr>
<tr>
<td>Public Transit</td>
<td>1.2%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Walked</td>
<td>2.3%</td>
<td>4.1%</td>
</tr>
<tr>
<td>Bicycle</td>
<td>1.2%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Taxi or other means</td>
<td>0.9%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Worked at Home</td>
<td>3.7%</td>
<td>3.9%</td>
</tr>
</tbody>
</table>

Source American Community Survey Table B08006

Table 2: Mean of Transportation to Work
Figure 13: Percentage of Workers who Bicycle to Work

Source A&S 2012-2016 Table B080006 Sex of Workers by means of transportation to work

Figure 13: Percentage of Workers who Bicycle to Work
Bicycle Crash Analysis

This safety analysis includes bicycle crash data from 2011 to 2016. The analysis intends to identify trends, monitor performance measures, identify potential problem areas, and propose strategies to improve identified potential problem areas.

The crash data for the analysis comes from the crash records submitted to the Idaho Transportation Department (ITD). The Web CARS application and Local Highway Technical Assistance Council’s (LHTAC) Idaho Local Road Crash Data are the two primary programs used to access the crash data. Bicycle crashes are reported when the crash involves a motor vehicle and, property damage exceeds $1,500 or when crashes involving a motor vehicle, and there is a reported injury. Injuries have four categorized. Fatal and A Injury (incapacitating) are the types included in national, state and BTPO performance measures. Class B Injury is visible but is not incapacitating. Class C injuries are other reported injuries that are not visible.

Between 2011 and 2016, 114 crashes involving a bicycle occurred which is an average of 19 crashes per year (Figure 14). The number of crashes per-year provides a trend but does not provide insight into the cause or circumstance of the crash.

The crash report contains the contributing circumstance to the bicycle crashes. Contributing circumstance is the action taken by the driver (bicyclist or motorist) which contributes to a crash. The responding police officers determine the contributing circumstances. The top five Contributing Circumstance for bicycle crashes from 2011 – 2016 are shown in Figure 15.
The two primary circumstances are a failure to obey traffic control devices and none. A contributing circumstance of none indicates that the driver did not have an action which contributed to the crash. Each crash has, at a minimum, two drivers one for the bicycle and the other for the vehicle.

What the bicyclist was doing at the time of the crash is important. A bicyclist crossing an intersection at a crosswalk comprised Fifty-four (54) percent of the total bicycle crashes. Bicycle crashes where the bicycle was riding on the sidewalk or in a crosswalk, the percentage increases to sixty-six (66) percent. Two-thirds of bicycle crashes are related to bicycles on the sidewalk. The blue dot indicates crashes where a bicyclist was either crossing at a crosswalk or riding on the sidewalk at the time of the crash (Figure 16).

In Idaho and the Cities of Pocatello and Chubbuck, riding on the sidewalk is not prohibited. Riding the wrong way in traffic accounted for another eight (8) percent of the crashes. Seventy-one (71) percent of all sidewalk crashes occurred when the bicyclist crossed the intersection at the crosswalk. These crashes were not a bicyclist riding on the road crossing the street, but rather on the sidewalk and crossed the street where motorist expects pedestrians. Most of the riding on a sidewalk crashes occurred along high volume commercial corridors without bicycle facilities. Examples include crashes at entrances to business.
Figure 16: Bicycle Crashes Relates to Riding on Sidewalk or Crossing in Crosswalk
Stress Level

Casual riders feel comfortable riding on different bicycle facilities depending upon the type of bicycle facility and vehicle volumes and speed. BTPO used the Highway Capacity Manual’s Level of Service (LOS) for bicycles in the 2012 bicycle plan. LOS calculations for each road segment is converted into a letter grade A through F. The LOS score, and the letter represents how a bicycle rider experience is on a specific road with specific vehicle traffic conditions. The problem with LOS is the data required are very high, and application is limited to roads classified as a collector or arterial. In 2012, the Mineta Transportation Institute recommended an alternative method called Stress Level. (Maaza C Mekuria, 2012) The principle behind the low-stress bicycle network is to identify the roads, regardless of the bicycle facility, where most users would ride.

Table 3 describes the four Levels of Traffic Stress (LTS) which can be attributed to a specific road segment. BTPO assigned LTS 5 to all streets like the interstate where bicycling is prohibited. LTS 1 and 2 are the low-stress street where casual riders would feel comfortable using the bicycle facility.

<table>
<thead>
<tr>
<th>Level</th>
<th>Definition</th>
<th>User Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTS 1</td>
<td>A strong separation from all vehicles except at low speed, low volume traffic. Vehicle speeds less than 25 mph and daily traffic volumes less than 3,000.</td>
<td>All Users</td>
</tr>
<tr>
<td>LTS 2</td>
<td>Mixed traffic situations which 2 or 3 lanes roads with vehicle speeds less than 30 mph and daily traffic less than 4,000.</td>
<td>Casual/Less Confident</td>
</tr>
<tr>
<td>LTS 3</td>
<td>Mixed traffic situation with higher interaction with vehicles. Multi-lane roads with 35 mph speeds are LTS 3.</td>
<td>Experienced/Confident</td>
</tr>
<tr>
<td>LTS 4</td>
<td>High-speed multi-lane roads with traffic volumes over 4,000 vehicles per day.</td>
<td>Experienced/Confident</td>
</tr>
<tr>
<td>LTS 5</td>
<td>Not a stress Level but used to show routes where bicycles are prohibited such as the Interstate</td>
<td>Bicycles not allow</td>
</tr>
</tbody>
</table>

Table 3: Level of Traffic Stress

The Bicycle and Pedestrian Master Plan goals are to create a connected system of low-stress bicycle facilities. Figure 17 shows the streets which have an LTS of 1 or 2. LTS 1 and 2 are the low-stress categories where casual riders would feel comfortable riding. A majority of the streets in the region are low stress. The Interstate system (I-15 and I-86) and the railroad create gaps in the network. No low-stress street cross the interstate or the railroad in Pocatello’s downtown.
Figure 17: Level of Traffic Stress Map with only LTS 1 and LTS 2 shown
Facility Type and Level of Traffic Stress

Streets are designed differently depending upon the level of traffic and expected travel speed. In the original LTS research, any street over 3,000 vehicles and 35 mph had an LTS of 3 or 4. As designers looked for ways to improve bicycle safety, new facilities types like the buffered bike lanes and sidepaths were developed. The Level of Traffic Stress research in 2017 adjusted the criteria to provide for these new design types (Furth, 2018). Table 4 shows the bicycle facilities included in this master plan and the associated LTS depending upon the street’s characteristics. Separate bicycle lanes, sidepaths, and shared use paths all have LTS 1 for the section of trail, but the LTS can change if the path crosses a street without traffic control.

Figure 18 lists the types of bicycle facilities recommended in the plan and provides a brief description of the facility. The facilities are arranged from those that provide the least protection or separation to those with the highest. Table 4 provides how the LTS changes for each facility depending upon the number of travel lanes, and traffic volume, vehicle speed.
### Facility Type | Description | Protection
--- | --- | ---
**Share or mixed-use road** - A street where vehicles and bicycles share the same road without any designated space.  

**Shoulder or Bike Lane** - A section of road between the travel lanes and the edge pavement. The widths vary, but the minimum width is 4 feet. The painted stripe on pavement is the separation

**Buffered Bike Lane** - Similar to bike lane but a minimum of 18-inch buffer exists between the travel lane and bike lane. A Buffer can be painted or have vertical delineators.

**Separated Bike Lane and Sidepath** - A dedicated separate space for bicycles. Separation can be horizontal space between the road and bike facility or vertically protected by a raised curb or another barrier.

**Share Use or Multi-Use Paths** - A trail specifically for bicycles and pedestrians outside of a street right-of-way.

*Figure 18: Bicycle Facility Type Description*
Barriers and Issues

Each road segment was evaluated to determine the existing LTS and potential improvements needed to meet the LTS 1 or LTS 2 goal. Figure 19 identifies the locations of any of the barriers and issues identified in public outreach or field visits. These barriers and issues are grouped into four systemic categories, They are:

- **Crossing the interstate** – None of the four current urban interchanges have bicycle facilities which connect both sides. Center Street Interchange has bike lanes to the interchange, but they stop at the interchange. Pocatello Creek Interchange has a separated path at the interchange but does not connect to bicycle lanes on either side. The Northgate Interchange (opening in 2019) has separated multimodal facilities on one side which connects to sidepaths.

- **High Volume Gaps** – Yellowstone Avenue, Pole Line Road and sections of Alameda Road and E. Chubbuck Road are high volume streets with no bicycle facilities and present difficulty in crossing the facility.

- **Bridges** – Except for South Valley Boulevard, all of the existing bridges crossing the interstate or railroad have LTS 3 or LTS 4. This high LTS creates a barrier from east to west and north to south. These crossings lack bicycle facilities, and in many cases, the road width and volumes create LTS 4 conditions.

- **Intersections and turn bays** – The LTS levels are affected by crossing other streets. A street segment (section of street between two intersections) having an LTS 1 is increased if that segment crosses another segment of a higher LTS. The exception is signalized intersections. Dedicated turn lanes require a bicyclist to cross traffic lanes to make a turn, which increases the LTS of the street segment.

Proposed Bike Network

The proposed bicycle network tries to accomplish the objectives of a connected low-stress bicycle network. Table 4 shows the bicycle network increasing from (43.10) miles to (104.54) miles of bicycle facilities. The 2012 bicycle plan had a similar proposed mileage. To assist local communities in implementing the bicycle network, BTPPO has developed a list of projects from very feasible to less feasible. For example, many streets existing shoulders meet the width of a bicycle lane. The stripping already exists, but the pavement marking, and signage is missing. The proposed network includes the proposed and existing shared use network, which is described later in this report.
Figure 19 Bicycling Barriers and Issues
Proposed Bicycle Network

Legend
- Road
- Roadway

Bicycle Facilities
- Proposed Bike Network
- Bike Route
- Bike Lane
- Proposed Bike Lane
- Proposed Boulevard
- Proposed Shoulder

Greenway
- Shared Use Path
- Proposed Shared Use Path
- Sidewalk
- Proposed Sidewalk
- Proposed Canal Path

Figure 20: Proposed Bicycle Network
Bicycle and Pedestrian Master Plan

<table>
<thead>
<tr>
<th>Bicycle Facility</th>
<th>Existing (2018)</th>
<th>Proposed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bike Route</td>
<td>1.88</td>
<td>18.72</td>
<td>20.60</td>
</tr>
<tr>
<td>Bike Boulevard</td>
<td>0.00</td>
<td>1.34</td>
<td>1.34</td>
</tr>
<tr>
<td>Shoulder</td>
<td>6.49</td>
<td>-3.11</td>
<td>3.38</td>
</tr>
<tr>
<td>Bike Lane</td>
<td>19.35</td>
<td>24.33</td>
<td>43.68</td>
</tr>
<tr>
<td>Buffered Bike Lane</td>
<td>0.00</td>
<td>1.41</td>
<td>5.41</td>
</tr>
<tr>
<td>Separate Bike Lane</td>
<td>0.00</td>
<td>1.42</td>
<td>3.14</td>
</tr>
<tr>
<td>Sidewalk</td>
<td>0.48</td>
<td>13.59</td>
<td>9.87</td>
</tr>
<tr>
<td>Canal Shared Use Path</td>
<td>0.00</td>
<td>8.80</td>
<td>8.80</td>
</tr>
<tr>
<td>Shared-Use Path</td>
<td>14.90</td>
<td>32.56</td>
<td>48.81</td>
</tr>
<tr>
<td>Total</td>
<td>43.10</td>
<td>97.44</td>
<td>140.54</td>
</tr>
</tbody>
</table>

Table 4: Proposed Mileage of Bicycle Facilities

Table 5 shows the linear miles of streets where the LTS is over two will decrease by 22% and the linear miles of LTS 2 will increase by 31%. Once built, the proposed bicycle network limits high-stress streets to one-way streets and streets with vehicle speeds over 45 mph (Figure 21).

<table>
<thead>
<tr>
<th>Level of Traffic Stress</th>
<th>Existing Network</th>
<th>Proposed Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>364.3</td>
<td>370.8</td>
</tr>
<tr>
<td>2</td>
<td>33.6</td>
<td>47.8</td>
</tr>
<tr>
<td>3</td>
<td>26.1</td>
<td>25.8</td>
</tr>
<tr>
<td>4</td>
<td>68.8</td>
<td>49.8</td>
</tr>
</tbody>
</table>
Figure 21: LTS after completion of Bicycle Network
Pedestrian Plan
History of Previous Plans and Progress

The BTPO approved the last pedestrian plan in 2008. The 2008 pedestrian master plan included a complete inventory of the pedestrian network including curb ramps. The inventory identified the location of the facility and identified any deficiency according to the Access Board standards for accessibility walkways. BTPO submitted the plan to the cities of Pocatello and Chubbuck for their ADA transition planning efforts. BTPO has maintained the sidewalk and curb ramp location and condition for all collectors and arterials. BTPO has not maintained the ADA deficiencies database, and that dataset needs re-inventoried.

The City of Pocatello, City of Chubbuck, and the Idaho Transportation Department have focused on connectivity and curb ramps. Missing links on arterial and collectors were the emphasis of the plans recommended projects. The area has also eliminated four of the thirty missing links identified in 2008. Safety and mobility were improved around schools near the four projects.

Existing Conditions

In the urban area, there are 182 miles of streets with a sidewalk on both sides of the street, and another 19 miles of streets that have a continuous sidewalk on at least one side of the street. Figure 22 shows the current sidewalk inventory and collectors and arterials where the sidewalk does not exist on at least one side of the street. Overall 44% of the streets do not have sidewalks, and 43% have sidewalks on both sides of the street. When streets that have a continuous sidewalk on one-side the percentage increases to 52%. The 2040 Metropolitan Transportation Plan established a performance target to increase the percentage of non-interstate collectors and arterials with pedestrian accommodations. The 2012 baseline percentage of the street with pedestrian accommodation was 26.5%. Another 5% had a discontinuous sidewalk on one or both sides of the street. These sections primarily occur in developing areas where not all the lots of developed or in spot development areas where the development added a sidewalk on their frontage, both the rest of the street does not have a sidewalk.

Many of the missing segments of sidewalk occur outside city limits, but the map is limited to those areas within the Pocatello and Chubbuck city limits. Most of the missing collector and arterial sidewalk are on eight (8) main corridors. They are:

- Garrett Way;
- North Main Street;
- South 5th Ave;
- Bannock Highway;
- Hawthorne Road;
- Hilene Road;
- East Chubbuck Road; and
- Philbin Road.
Figure 22: Sidewalk Inventory and Missing Links
Bicycle and Pedestrian Master Plan

Other locations where no sidewalks exist are areas where a city incorporated a county subdivision (Johnny Creek area), or the subdivision was built when a sidewalk was not required (the neighborhoods south and north of West Alameda Road). BTPO maintains a pedestrian network existing conditions online map. That map is located at https://arcg.is/0vr911. The map includes the location and type of curb ramps. The map changes as updates occur.

Connectivity is one of the plan goals. Table 5 shows the percentage of the sidewalks by the street’s functional classification and the percentage completed. Centerline is the distance from the center of one intersection to the center of the next intersection. Proposed is double the center line miles and assumes the sidewalks is located next to the street. Actual column is the total miles of sidewalk by functional classification for each city.

<table>
<thead>
<tr>
<th>Class</th>
<th>Pocatello</th>
<th></th>
<th></th>
<th></th>
<th>Chubbuck</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Miles of Sidewalk</td>
<td>Center Line</td>
<td>Projected</td>
<td>Actual</td>
<td>Percentage Complete</td>
</tr>
<tr>
<td>Local</td>
<td></td>
<td>181.12</td>
<td>362.24</td>
<td>217</td>
<td>60%</td>
</tr>
<tr>
<td>Collector</td>
<td></td>
<td>23.56</td>
<td>47.12</td>
<td>29.53</td>
<td>63%</td>
</tr>
<tr>
<td>Minor Arterial</td>
<td></td>
<td>18.15</td>
<td>36.3</td>
<td>25.76</td>
<td>71%</td>
</tr>
<tr>
<td>Principal Arterial</td>
<td></td>
<td>30.68</td>
<td>61.36</td>
<td>31.26</td>
<td>51%</td>
</tr>
</tbody>
</table>

Center Line = The distance of street segments; Projected = twice the centerlines mileage; Actual = The inventoried length of the sidewalk

Table 5: Inventory of Sidewalks by Functional Classification
User Analysis

Children, adults, and the elderly are the three different types of pedestrians. Each has specific issues related to walking. Children often lack the skills to cross streets safely or judge the distance and speed of approaching vehicles. Older people sometimes take additional time to cross the street and can have an issue with judging vehicle speeds. The three groups often have different trip purposes when walking. In our region the children (under 18), adults (18 to 64) and Elderly (65+) are not over-represented in the pedestrian crash data. The pedestrian plan is not focused on any one group but in making the entire network safer and easier to travel. From the user survey, the factors which make walking uncomfortable are the lack of sidewalk and the amount of vehicle traffic. The pedestrian plan focuses on these two areas regardless of the pedestrian group.

Walk to Work Commute

Pedestrian commute to work was chosen to reflect walking activity within the region. The American Community Survey (ACS) provides a five-year rolling average for the mode to work. Pedestrian commute rates in the Pocatello metropolitan area increased from 2.7% (2007-2011) to 4.1% (2012-2016) (Table 2 page 21). Census Tracts data provides information on which track has the highest levels of walking to work modal split. Census Tract 7 which includes Idaho State University (ISU) has the highest percentage of people to commute to work via walking at 24.3 percent. Census Tracts 8 and 9 are the next highest at 15% and 12% respectively (Figure 24).
Figure 23: Percentage of Commute trips taken by walking
Pedestrian Safety Analysis

Between 2011 and 2016, 117 crashes involving a pedestrian occurred which is an average of 19.5 crashes per-year (Figure 25). Figure 26 provides the locations of the 117 pedestrian crashes. The number of crashes per-years provides a trend but does not give insight into the cause and circumstance of the crash. The remaining sections of pedestrian analysis will investigate the driver’s actions and the location of the crashes.

The crash data for the analysis comes from the crash records submitted to the Idaho Transportation Department (ITD). The Web CARS application and Local Highway Technical Assistance Council’s (LHTAC) Idaho Local Road Crash Data are the two primary programs used to access the crash data. Pedestrian crashes are reported when the crash involves a motor vehicle and, property damage exceeds $1,500 or when crashes involving a motor vehicle, and there is a reported injury. Injuries have four categorized. Fatal and A Injury (incapacitating) are the types included in national, state and BTPO performance measures. Class B Injury is visible but is not incapacitating. Class C injuries are other reported injuries that are not visible.

![Number of Pedestrian Crashes](image)

**Location**

Pedestrian crashes are very random events, and within the BTPO Planning area, there seems to be no pattern related to where the crashes occur. There were three locations where multiple pedestrian crashes occurred, they were:

- Arthur Ave. and Fremont St. – 4
- Arthur Ave. and Lewis St. – 4
- Jefferson Ave. and Pine St. – 2
Bicycle and Pedestrian Master Plan

The intersection of Arthur Ave. and Freemont is the only non-signalized intersection. Signalized intersection with a protected phase for the pedestrian to cross is considered the safest type of crossing.

**Driver Actions**
Table 6 lists the driver contributing circumstance to the pedestrian crashes. The actions of all vehicles in the crash are included. Pedestrians, in this case, are counted as vehicles and the pedestrian is the driver. The two primary circumstances are a failure to yield and inattention. The reporting officer determines the contributing circumstance. As with bicycle crashes the contributing circumstance “none” indicates that the driver did not have an action related to the crash. In the bicycle crash data, almost fifty percent of the contributing circumstances were none. Table 6 has a contributing circumstance of “none” for only pedestrian crashes as 17.9 percent. There seems to be a more shared responsibility between drivers and pedestrians in pedestrian crashes.

Fifty-eight percent of pedestrians were trying to cross an intersection (Table 7), and the majority were at a marked crosswalk. An evaluation of crash reports on the pedestrian actions did not reveal any roadway characteristics, which could be mitigated with roadway design.
Figure 25: Location of Pedestrian Crashes 2011-2016
### Contributing Circumstance

<table>
<thead>
<tr>
<th>Contributing Circumstance</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol-Impaired</td>
<td>6</td>
<td>5.1%</td>
</tr>
<tr>
<td>Brakes</td>
<td>1</td>
<td>0.9%</td>
</tr>
<tr>
<td>Distracted IN or ON Vehicle</td>
<td>2</td>
<td>1.7%</td>
</tr>
<tr>
<td>Drug Impaired</td>
<td>1</td>
<td>0.9%</td>
</tr>
<tr>
<td>Emotional, Depressed, Angry, Disturbed</td>
<td>2</td>
<td>1.7%</td>
</tr>
<tr>
<td>Failed to Obey Signal</td>
<td>2</td>
<td>1.7%</td>
</tr>
<tr>
<td>Failed to Obey Stop Sign</td>
<td>2</td>
<td>1.7%</td>
</tr>
<tr>
<td>Failed to Yield</td>
<td>40</td>
<td>34.2%</td>
</tr>
<tr>
<td>Following Too Close</td>
<td>1</td>
<td>0.9%</td>
</tr>
<tr>
<td>Improper Backing</td>
<td>2</td>
<td>1.7%</td>
</tr>
<tr>
<td>Inattention</td>
<td>16</td>
<td>13.7%</td>
</tr>
<tr>
<td>Light Defect</td>
<td>1</td>
<td>0.9%</td>
</tr>
<tr>
<td>None</td>
<td>21</td>
<td>17.9%</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>6.8%</td>
</tr>
<tr>
<td>Other Vehicle Defect</td>
<td>3</td>
<td>2.6%</td>
</tr>
<tr>
<td>Speed Too Fast For Conditions</td>
<td>3</td>
<td>2.6%</td>
</tr>
<tr>
<td>Vision Obstruction</td>
<td>2</td>
<td>1.7%</td>
</tr>
<tr>
<td>(blank)</td>
<td>4</td>
<td>3.4%</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>117</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

*Table 6: Contributing Circumstance Pedestrian Crashes 2011 - 2016*

### Pedestrian Action

<table>
<thead>
<tr>
<th>Pedestrian Action</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crossing at Intersection, Crosswalk</td>
<td>38</td>
<td>49.4%</td>
</tr>
<tr>
<td>Crossing at Intersection, NO Crosswalk</td>
<td>7</td>
<td>9.1%</td>
</tr>
<tr>
<td>Crossing at Mid-block, Crosswalk</td>
<td>3</td>
<td>3.9%</td>
</tr>
<tr>
<td>Crossing at Mid-block, NO Crosswalk</td>
<td>7</td>
<td>9.1%</td>
</tr>
<tr>
<td>Not ON Roadway</td>
<td>1</td>
<td>1.3%</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>2.6%</td>
</tr>
<tr>
<td>Playing ON Roadway</td>
<td>3</td>
<td>3.9%</td>
</tr>
<tr>
<td>Standing ON Roadway</td>
<td>6</td>
<td>7.8%</td>
</tr>
<tr>
<td>Walking Facing Traffic NO Bike Lane</td>
<td>1</td>
<td>1.3%</td>
</tr>
<tr>
<td>Walking on Sidewalk</td>
<td>7</td>
<td>9.1%</td>
</tr>
<tr>
<td>Walking with Traffic NO Bike Lane</td>
<td>1</td>
<td>1.3%</td>
</tr>
<tr>
<td>Working in the Roadway</td>
<td>1</td>
<td>1.3%</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>77</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

*Table 7: Pedestrian Action Before Crash*

Figure 26 shows the relationship between the posted speed limit of the road where the crash occurred and the injury type. Nationally, the injury severity increases as the vehicle speed increases. The local data does not seem to indicate this trend. One potential reason is that the majority of pedestrian crashes occur at intersections where the vehicle speeds...
may be lower. The severity of crashes at vehicle speeds of 25 miles and less require additional analysis.

**Summary of Pedestrian Crashes**

Non-signalized intersections are the major factor in pedestrian crashes in the region. The two major areas are the University and Old Town section of Pocatello. As with bicycle crashes, the Yellowstone Corridor and the Arthur/Main Corridor has a high percentage of the crashes.

![Figure 26: Number of Pedestrian Injuries by Posted Speed](image)

**Facility Design and Intersections**

The placement and design standard has not changed since the 2008 Pedestrian Plan. Table 9 has the recommended width for various land use and topography. The table recognizes the need for, and the width of sidewalks is not a constant. In addition to the minimum sidewalk width, a buffer zone of at least four feet is recommended for all arterial streets.
The Americans with Disabilities Act (ADA) requires all public agencies to provide accessible pedestrian walkways. The Access Board is the best location for the current ADA requirements [http://www.access-board.gov/prowac/]. Issues for providing an accessible walkway is recognizing and understanding the standards. *Agency should develop an ADA checklist for property owners and contractors to ensure the sidewalk meet ADA standards.*

### Crosswalks and Intersections

The user survey listed intersections as a barrier due to the perception that they are unsafe. Table 9 indicates that fifty-eight (58) percent of all pedestrian crashes occur at intersections. Over half the pedestrian crashes occurred in a marked crosswalk, but only three intersections had multiple crashes. In 2017, the U.S. Department of Transportation...
Bicycle and Pedestrian Master Plan

released a Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations. (Lauren Backblum, 2017) The major finding of the report is that as vehicle speed and volumes increase a marked crosswalk might not be enough to improve pedestrian safety. The report has two tables which allow agencies to select treatments or countermeasures depending upon the vehicle volume and speed or the type of crashes which occur at that intersection.

The guide provides recommendations for consideration of eight (8) countermeasures depending upon the roadway features and crash type. The countermeasures included are:

- High-visibility crosswalk, parking restrictions, and lighting
- Raised crosswalk
- Advance Yield Here to Pedestrian sign
- In-Street Pedestrian Crossing sign
- Curb extensions
- Pedestrian refuge island
- Pedestrian Hybrid Beacon
- Road Diet

The number of pedestrians present at the intersection or mid-block crossing also help determine the need for additional intersection control measures. After an evaluation of uncontrolled intersection with crash history and high traffic volumes seventeen (17) intersections where identified for further evaluation. The intersections for further evaluation are:

- N. Main Street and W. Fremont Street
- N. Main Street and W. Lander Street
- N. Arthur Avenue and W. Lander Street
- N. Arthur Avenue and W. Fremont Street
- N. Main Street and W. Custer Street
- W. Center Street and Union Pacific Avenue
- E. Center Street and 1st Avenue
- S. 5th Avenue and E. Lovejoy Street
- S. 4th Avenue and E. Lovejoy Street
- S. 5th Avenue and E. Terry Street
- S. 4th Avenue and E. Terry Street
- S. 5th Avenue and Jason Street
- N. 4th Avenue and E. Hayden Street
- N. 4th Avenue and E. Lander Street
- Yellowstone Avenue and Stuart Avenue
- Olympus Drive and Bench Road
Additionally, BTPO has identified six locations where additional research is needed. These areas are areas with a high concentration of pedestrian crashes, high volume road with limited protected crossings, and areas where the user survey identified barriers. The areas are:

**Olympus Drive Area** - BTPO has identified several uncontrolled crossing locations where additional research is needed to provide a recommendation.

**Gould Street Area** - The mapping survey identified this location as disconnected and difficult to cross. BTPO is working with ITD on a related roadway improvement study to recommend improvements.

**Pocatello High School Area** - A sidewalk audit in this area identified several potential improvements to uncontrolled intersection crossings. Pedestrian and traffic volumes indicate additional crosswalk treatments may be needed.

**1st Avenue Corridor** - The Portneuf River Vision Study identified this corridor as critical for connectivity between ISU and Old Town. BTPO and the City of Pocatello are working on a streetscape plan for this area.

**ISU Area** - Several projects have occurred in the area to improve safety. The 4th/5th one-way couplet has significant pedestrian activity and traffic volumes. This corridor needs a comprehensive safety audit to determine potential treatment options.

**South 5th Interchange Area** - The Idaho Transportation Department has made significant improvements to the interchange, but the area still is not connected with sidewalks or marked crossings.

Figure 27 shows the locations of the intersection and areas where additional analysis to determine the type of countermeasure or other action needed to improve pedestrian safety.
Figure 27: Pedestrian Areas of Concern and Intersection Improvements
Separated Network
History and Program of Shared-Use Paths

The Portneuf Greenway Foundation established in 1992 with the mission to create a network of separated shared-use paved bicycle and pedestrian trails throughout the greater Pocatello area. Today Portneuf Greenway system has over fifteen miles of separated shared-use trails. A separated path along the Portneuf River was the initial focus of the Portneuf Greenway, but over time that vision has expanded to include connections across the community. BTPO partnered with the City of Pocatello and the Portneuf Greenway to develop a Portneuf Greenway Trail System Master Plan. The master plan recommended seven corridors for the creation of a separated multi-use trail system. Since 2009, the Portneuf Greenway and the City of Pocatello have constructed the Edson Fichter Nature Area, South Valley Connector, Parrish Trail (Chubbuck Road Corridor), and the Monte Vista Trail. Until the construction of the South Valley Connector, all shared-use trails were constructed outside street rights-of-way.

In 2018, 14.9 miles of shared-use paths and 1.4 miles of sidepaths existed in the region. (Table 5 bicycle plan section). The newest section of the Greenway trail system was completed in September 2018.

The Transition from Greenway to Separated Network

The Bicycle and Pedestrian Master Plan is not intended to replace the Portneuf Greenway Master Plan, but it expands on the network to include sidepaths and canals. Sidepaths are shared-use paths that run within a road right-of-way but separate from the road. The development of South Valley Boulevard provided a blueprint for developing low-stress facilities where vehicle speed along the road and traffic volumes otherwise did not allow a low-stress alternative on the road. BTPO and the Cities plan to use the blueprint for multi-use paths next to arterials with limited access to reduce stress levels on high volume and/or high-speed arterials. These sidepaths provide a vertical separation, wider than the grass medians common in residential areas, and a safe place to bicycle and walk. The new Northgate Interchange will showcase these new sidepaths as a way to provide connectivity for bicycle and walk along high speed and volume arterials.

The Greenway Trail System has a primary goal of recreation travel. The separated network's goal is to provide a low-stress alternative to sidewalks and on-street bicycle facilities. The separated network will provide transportation connections regardless of the trip purpose. This new network requires the inclusion of paths located within road the rights-of-ways.

Planning Corridors

The Greenway Master Plan included seven (7) planning corridors. The separated network adds three (3) additional planning corridors to the augment the on-street bicycle and pedestrian networks. Planning corridors are divided by the location of the corridor. The planning corridors were used in the development of the Greenway Master Plan to focus discussion and identify alternative alignments. This plan identifies specific projects within each planning corridor, but not all the connections or potential routes have been identified.
A summary description of each corridor is presented below. These descriptions highlight the unique characteristics of each section and provide statistics and points of interest (Figure 28)

**River Corridor**

The River Corridor extends south along the Portneuf River from where US-30 crosses the Portneuf River to the Fort Hall Mine Road and the Portneuf Gap. In many places along the corridor, trails are planned for both sides of the river. However, trails that duplicate a similar trail on the other side of the river are long-term priorities, and their construction will be deferred until a complete system is developed on one side of the river.

**ISU Corridor**

The ISU Corridor begins at the intersection of Buckskin and American Roads on the eastern edge of the Idaho State University (ISU) campus and extends southwest to Ross Park and on to the Kirkham Trailhead on South 2nd Avenue near the Portneuf River. The corridor is almost complete. The section from Red Hill Trail entrance to Martin Luther King Boulevard does not have bicycle facilities.

**Old-Town Corridor**

The Old-Town Corridor begins with a series of public open spaces that include Pre-History, Trappers, and Pioneer Park and then extends north to Whitman Avenue and along Union Pacific Ave to the Old Town Pavilion at Lander Street. The corridor includes a bridge over Center Street Underpass. The project is part of the Center Street Underpass project.

**East Side Corridor**

The East Side Corridor begins on the north end at Chubbuck Road and ends at Barton Road. It is a long-term priority and will be built almost entirely in conjunction with future development. The East Side Corridor is at the edge of the urban area, and many portions of the route are very steep.

**Pocatello Creek Corridor**

The Pocatello Creek Corridor includes three major components. The first extends through the Fairgrounds from the intersection Chubbuck Road and Fairgrounds Road to Olympus Drive. The Second extends from the intersection of Fairway and Bench Roads near Highland High School along Bench Road to its intersection with Olympus Drive. The third section extends along Pocatello Creek from near the Intersection of Pocatello Creek Road and Interstate 15 east to Parks Road.

**Chubbuck Road Corridor**

There are two distinct sections in this corridor. The first is in a natural ravine that extends from Mountain Park Road towards Sacajawea Drive in the Mountain Park Subdivision. This segment is 2000 feet long and is about 70 percent complete. The second major element of
**Bicycle and Pedestrian Master Plan**

this corridor extends along Chubbuck Road from Sacajawea Drive eastward until it intersects with the East Side Corridor east of the Highlands neighborhood.

**Hiline Canal Corridor**

This corridor follows the Fort Hall Irrigation Project Hiline Canal south from near Siphon Road to the end of the canal near the intersection of Alameda Road and Yellowstone Avenue. This corridor will be built next to or on top of the Fort Hall Irrigation Hiline Canal system if it is encased. This corridor is a long-term priority that will require significant coordination with the Fort Hall Irrigation Project and may be partially supported by future development at the north end of the corridor.

**I-15 Corridor**

The I-15 corridor will extend from Chubbuck Road and the Portneuf Wellness complex south along Interstate 15 to Terry Street (Buckskin Road) on the ISU campus. The corridor will parallel I-15 and connect the ISU corridor with the Pocatello Creek, Chubbuck Road, and Northern Loop corridors. The corridor provides a north/south linkage from northern Chubbuck to the southern section of Pocatello.

**Northern Loop**

The Northern Loop starts at the Northgate Interchange and continues along Siphon Road to Rio Vista. The loop turns on Rio-Vista and continues south to connect with the River Corridor. The Northern loop provides a connection for residents of the City of Chubbuck to the I-15 and River corridors.
Figure 28: Separated Network Planning Corridors
Bicycle and Pedestrian Master Plan

Separated Network

The separated network is critical to the overall bicycle and pedestrian network. All users can use the separated network. The separated network includes shared-use paths, sidepaths, and canal trails to provide connection to the bicycle and pedestrian networks. Table 10 provides the existing and proposed miles for each facility type. Figure 29 shows the location of the proposed separated network.

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Existing (2018)</th>
<th>Proposed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sidepaths</td>
<td>1.4</td>
<td>8.5</td>
<td>9.9</td>
</tr>
<tr>
<td>Canal Paths</td>
<td>0.0</td>
<td>8.8</td>
<td>8.8</td>
</tr>
<tr>
<td>Shared-use Path</td>
<td>15.0</td>
<td>32.2</td>
<td>47.2</td>
</tr>
</tbody>
</table>

Table 9: Proposed Separated Network Mileage

Currently, 1.4 miles of sidepaths exist within the region. The proposed network includes an additional 8.5 miles of sidepaths. The proposed sidepaths are located on the Northern Loop and the US 30 Corridor from Philbin Road to Gould Street.

Shared-use paths within the public street rights-of-way but separated from the travel lanes and provide both transportation and recreation opportunities. Shared-use paths location away from vehicle travel provides a low-stress alternative for users. There are 15 miles of shared-use paths and another 32.2 miles planned for a total of 47.2 miles.

Canals are a type of shared-use path, but since they are located on irrigation canals, a separated designation has been provided. Canals provide a more direct route for bicyclist and pedestrians than the street network, especially in Chubbuck. During the widening of Hiline Road from E. Chubbuck Road to Flandro Drive, the project capped the canal. There was a planned shared-use trail for this facility which still needs to be constructed. The canal trails within the City of Chubbuck will not be capped but will run alongside the canal.

A total of 8.8 miles of canal paths are planned. The plan identifies those canals which provide connectivity from housing to retail or provide a low-stress alternative to other facility types. In some cases, sidewalks, on-street bicycle facilities, and separated paths are proposed for the same road segment. This allows the user to select the facility which best meets the needs for that trip. There are some canals not identified as canal trails, but the plan supports conversion of all canals to include shared-use facilities.
Figure 29: Proposed Separated Network
Implementation Plan
Implementation Overview

BTPO is required by 23 CFR §450.324 to consider the short-term and long-term strategies that provide for a multimodal transportation system. All streets should be designed and constructed under the assumption that they will be used by bicyclists and pedestrians. (AASHTO, 2018). The Bicycle and Pedestrian Master Plan provides a bicycle network to help the local agencies design bicycle facilities to accommodate bicycle ridership over other routes. The pedestrian and separated networks help focus the needed improvements within the transportation system. The City of Pocatello, City of Chubbuck, Bannock County, and the Idaho Transportation Department consultant this master plan for locations of bicycle facilities.

BTPO staff will use the document to assist in providing additional resources to agencies in planning and designing the multimodal network. Data collection, education, promotion, amenities, gaps/barriers, maintenance, projects, potential studies, five-year focus are the eight areas where BTPO plans to use the bicycle and Pedestrian Master Plan to advance bicycling and walking within the urban area.

Data Collection

BTPO has trail counters at ten (10) locations with an additional five installations planned for late 2019. BTPO installed six TRAFx trail counters on the Greenway system in 2016. Parrish and Red Hill Trail were added in 2017. Also in October of 2017, a new counter type (Eco-Counters) were installed at sidewalk locations one at the Center Street Underpass and one on Yellowstone Avenue north of Oak Street. There was an additional counter at the Center Street Underpass location, but it was stolen in July 2018, no replacement is planned.

The counters have provided valuable information on activity on the system. Some locations like AMI north have average daily traffic over 100. The lowest location is Abrazewski Trail where the average daily traffic is 21, which is in a remote location of northwest Pocatello and isolated from other trails. In the summer months, the activity on the Abrazewski trail nearly doubles. The trails are used all year long, but the weather does affect usage.

BTPO is also planning to collect bicycle counts on existing bicycle lanes. BTPO will use tube counters to identify the bicycle activity.
There have been three issues in collecting bicycle and pedestrian activity data. The trail counters only count the number of things that pass the location but does not differentiate if that thing is a bicyclist or pedestrian. The counters do a bad job of counting side by side traffic. BTPO has data related to the number of people who pass the side of the counter side by side but not enough to make corrections at every location.

Table 10: 2017 Count Data for Multi-Use Trails

The second main issue is vandalism. Only three counters have been destroyed or stolen, but many have had an object like tape or rocks placed over the sensors. This causes a loss of data which diminishes its usefulness and comparability. The last issue is monitoring the counters. Data is collected once a month, but if something like vandalism or batteries were to die during the month data is lost for much of the time.

BTPO’s goal is to increase the data collection effort and to monitor the bicycle and pedestrian traffic. BTPO will use this data to projecting region-wide bicycle and pedestrian activity.

Education

Safety, Information, and skills are the three areas BTPO will focus on over the next several years. There are several safety issues which can be addressed with education. In the bicycle section riding on sidewalks was the biggest factor in bicycle crashes. Riding on the sidewalk or crossing at a crosswalk is a safety issue even for streets with bicycle facilities. Education for bicyclist and motorist can help improve safety. Until we can develop facilities, people will continue to ride on the sidewalk to feel safe.

There is a large number of crashes where the pedestrian is in the crosswalk. Compliance with the State law for vehicles to stop for pedestrians within a crosswalk is not high outside the Idaho State University area. The pedestrian section is focusing on areas where the design of the intersection can be improved. BTPO will partner with the Idaho Transportation Department to develop a promotion announcement regarding stopping for pedestrians.

Many bicycle crashes are the result of bicycle riders not following the rules of the road. In Idaho, a bicyclist must follow the rules of the road as if a motorist, but there is no formal education system for teaching these rules of the road and how to ride in a defensive manner. BTPO has offered rider safety classes in the past. BTPO should work to bring back the classes by partnering with regional bicycle shops.
Promotion

Increasing knowledge and support for active transportation options is an objective of the plan. The ease of vehicles and access to free parking in the region makes motor vehicles the preferred option. The land-use design, separation of uses, and location of large retailers also have contributed to the decline of walking and bicycling. This report will not go into all the benefits of active transportation. What is clear is that a connected and safe active transportation network contributes to the quality of life.

BTPO is focusing our promotion efforts on recreational and commuting aspects of bicycling and walking. The region has a very active mountain bike and road bike community. Many events are sponsored which draw thousands to the community. Encouraging these events can allow more people to try bicycling. On the walking side, there are a lot of running groups and neighborhood groups who promote walking.

BTPO will work to promote these activities on the BTPO website, social media, and through our financial and volunteer efforts. Additionally, BTPO will work with local government and community groups to sponsor activities like parklet, bike to work, walk to school, and demonstration projects to show different network treatments.

BTPO has sponsored Bike to Work in the region for the past ten years. BTPO will continue to work with local governments and bicycling advocates to continue this program. On September 21, 2018, Pocatello participated in national Parking Day. Six parklets were built in Downtown Pocatello. The event brought people out to use the streetscape in a different way. Parklets encouraged people to spend time in public spaces.

Terry-First, sponsored by the City of Pocatello, was a project to show how the downtown and university could be connected in walking and bicycling friendly ways. A painted multiuse path, parklets, parking changes, bulbous at the intersection, and pop-up park were part of this one-day event. The attendance was very good, and participants like the active transportation system.

Amenities

Motorist expects that parking, lighting, and traffic control devices will assist them in making a safe trip. Bicyclist and pedestrians have the same expectations. Without pedestrian lighting, intersections designed for pedestrians and bicycles, and bicycle parking, many trips would not be taken.

Walking in the winter is hampered by the lack of pedestrian lighting. Most streets light lighting does not cover the pedestrian walkway. This lighting is intended for vehicles and
Bicycle and Pedestrian Master Plan

not pedestrians. Areas like Old Town Pocatello have pedestrian scale lighting. In neighborhoods and areas where walking is to be promoted like downtown and the university district, lighting is critical for the safety and usability of the pedestrian network.

Bicycle parking is essential in increasing the number of bicycle trips. Trips taken for shopping, work, or recreation need a safe, convenient place to park the bicycle at the end of the trip. Old style bike parking needs to be removed and replaced with modern facilities which protect the bicycle.

The City of Pocatello requirement sets a threshold for bicycle parking when more than 20 vehicle spaces are required. In most of the vehicle parking requirements, this would be a building of more than 5,000 square feet of gross floor area. Once the gross floor area threshold is met, a minimum of five (5) bicycle parking spots would be required. Chubbuck does not have a bicycle parking code requirement. BTPO encourages the City of Pocatello to continue to implement bicycle parking requirements and for the City of Chubbuck to adopt a bicycle parking ordinance.

Gap and Barriers
The interstate system and the Union Pacific Railroad crossing are the biggest barriers and gaps in the bicycle system. There are pedestrian facilities at all the major crossing, but due to the high traffic volume, the crossing does not provide a comfortable pedestrian crossing. Bicycle facilities are not provided at most crossing creating a barrier. As identified earlier, modifications to these facilities are not easy. Agencies should, where possible, make stripping changes to increase or provide a shoulder for all bridges and underpasses. The increased room will provide additional room for bicycle and vehicles until additional improvements are made.

Maintenance
In recent years, the City of Pocatello and Chubbuck have improved the maintenance of roadway including sweeping of parking and bicycle lanes. These practices should continue with emphasis on bicycle routes. Both Pocatello and Chubbuck have made progress in updating out of compliance sidewalks and curbs. Both cities also have guidelines in place for the property owner to maintain the sidewalk in front of their property. Maintenance of sidewalks including removal of snow is critical to encouraging walking.

Demonstration Projects
In the Pocatello/Chubbuck Urban area, bicycle facilities are limited to bicycle lanes. Many of the newer design treatments like buffered bike lanes and bicycle boulevards are new to the community and local engineers. BTPO will include a demonstration project in the Unified Planning and Work Program every other year. These demonstration projects are lower cost temporary facilities that showcase new bicycle designs.

In the summer of 2017, the City of Pocatello completed a demonstration project called Terry/First. The project added shared use paths on 2nd Avenue and Terry Street, and successfully demonstrated a multiuse path. The project, however, did not last long enough
Bicycle and Pedestrian Master Plan

to get good before and after data. Future demonstration project should last at least one month and include before and after data analysis.

Projects Overarching Theme

Providing a safe and connected transportation system is a goal of this Bicycle and Pedestrian Master Plan. Projects were selected to provide a connection to the non-motorized network. In the pedestrian network, the focus is on the collector and arterial streets. The gaps identified are those on collectors and arterials within city limits and adjacent to residential development. This focus on collector and arterials is not at the exclusion of local streets. All streets should accommodate all users including pedestrians and bicyclist. The Master Plan encourages the Cities, County, and the Idaho Transportation Department to evaluate any street that is scheduled for maintenance to ensure that non-motorized facilities exist and serve the need of the facility users.

The recommendations in this Bicycle and Pedestrian Master plan are based on current conditions and understanding of recommended bicycle facilities. All streets should accommodate bicycles users. The City of Pocatello and Chubbuck should evaluate their design guidelines for any street with a proposed speed above 25 mph, which is the speed level where the Level of Traffic Stress exceeds LTS 2.

Overall Planning Cost

To provide an estimate of the cost of the recommended plan cost estimates were taken from several studies around the region. This planning-level estimates of construction are intended to provide a range of potential cost to construct the system. The cost in the assumptions will change over time as cost change. The total planning level construction cost for all the recommended projects is from 39 to 89 million dollars. This construction cost does not include design or right-of-way cost. This cost seems overwhelming and it is a significant cost, but in comparison, the 2019 to 2025 Transportation Improvement Program has $108,399,000 in projects over the next six years. Several of the recommended highway projects include recommended bicycle and pedestrian improvements. Therefore the actual cost will be lower.
Bicycle and Pedestrian Master Plan

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<th>Facility Type</th>
<th>Planning Cost/ Unit Low</th>
<th>Planning Cost/Unit High</th>
<th>Units</th>
<th>Quantity</th>
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*Note: Design, engineering, right-of-way acquisition not included*

Table 11: Planning Level Cost for Projects Recommended in the Master Plan

The improvements recommended in the Bicycle and Pedestrians section provide a list of potential projects which if constructed will establish a connected non-motorized. A list of projects is included in Appendix C. As a reminder, AASHTO’s Greenbook states that streets should accommodate all users. The project list should be used as a guide, but an engineering analysis should occur to determine the best design at the time of construction.

**Performance Measures**

Several places within the Bicycle and Pedestrian Master Plan have reference to the performance measures used to track the performance of the system and how BTPO and regional partners are doing in the implementation of the plan. Table 12 lists the six (6) performance measures for the Bicycle and Pedestrian Master Plan. The Master Plan added a lot of additional bicycle facilities which lowered the percentage completed from the 2012 data.
Bicycle and Pedestrian Master Plan

Bicycle and Pedestrian Performance Measures | 2017
--- | ---
**Safety** | 
Bicycle Crashes | 11
Pedestrian Crashes | 18
Bicycle and Pedestrian Fatalities and Serious Crashes ** | 4

**Accessibility** | 
Percentage of Bicycle Facilities Complete | 31%
Percentage of Collector and Arterial with Sidewalk | 46.10%

**Mode Share** | 
Percentage of Commuter trips via non-single occupancy vehicle *** | 23%

** The 2017 crash data not complete as of 11/7/2018

***Source American Community Survey Table B08006 Five-year average 2012 2016.

Table 12 Performance Measure

**Future Studies**

The Bicycle and Pedestrian Master Plan has evaluated the overall system. There are several areas within the document where the additional study was required. These locations are either gaps, barriers or where bicycle facility location has several options. BTPO or local cities should complete an in-depth study of the following areas:

**Alameda Corridor** - The Alameda Corridor from Yellowstone Avenue to Jefferson Streets is a barrier to bicycle and pedestrian travel. Few crossing opportunities exist along five-lane one-half mile route. A bicycle safety training conducted in Pocatello studied the route with no recommendations.

**Gould Corridor** - The Gould Corridor from Main Street over the overpass to Yellowstone Avenue is challenging due to the bridge but also the lack of sidewalk or crossings on the south side of the road. The Idaho Transportation Department has completed a study of the roadway. Bicycling and walk improvements were recommended consistent with the plan, but the details still need to be finalized.

**Old Town Pocatello** - Old Town Pocatello, especially near Pocatello High School, has more pedestrian crashes than would be expected given the high number of traffic signals. The area also has a high pedestrian volume. The Center Street underpass has an average daily pedestrian volume over 300. Most of the uncontrolled intersections in this area would qualify for evaluation of additional countermeasure to improve safety. Any improvements in Old Town should be completed as part of a comprehensive plan.

**Terry-First Corridor** - The City of Pocatello completed an analysis of the Terry-First Corridor. The City also included recommended improvements in their River Vision Study. At the draft of this plan, those recommendations are not final. The final recommendations of the River Vision Study and Terry-First are also recommendations of this plan. The additional effort might be needed to combine the River Vision Study and Terry-First study.
Bicycle and Pedestrian Master Plan

**ISU 4th/5th Avenue Corridor** – 4th and 5th Avenue from Humbolt to Carter have been the focus of individual improvements and discussion for years. The main issue is Idaho State University students crossing from parking and housing to the west. Vehicle drivers view of pedestrians is hampered by parking on both streets. A study should be completed on the corridor to include parking analysis and intersection design.

**Olympus Corridor** – Olympus Drive from Pocatello Creek to Fairway Drive is a 5 lane road with heavy traffic and speeds at or about the posted 35 mph. Crossing Olympus Drive is a critical issue on the corridor. An analysis of potential countermeasures will provide a systematic approach to improving pedestrian safety.

**South 5th Avenue Corridor** – South 4th and 5th Avenues from Barton Road to South Valley Boulevard has both pedestrian and bicycle issues. Bicycle issues are related to the lack of facilities and the speed of vehicles traveling along the corridor. The underpass of I-15 is a choke point in this corridor. Pedestrian issues are similar to bicycles with a lack of facilities the biggest concern. The corridor has a 45 mph speed limit, and with the opening of South Valley Boulevard, the vehicle volumes have increased.

**Bicycles on Sidewalk Study** – The bicycle safety analysis showed that the majority of all bicycle crashes occurred when the bicyclist was crossing the street in a crosswalk or riding on the sidewalk crossing a driveway. A literature review did not locate any material related to safety improvements for bicycles riding on the sidewalk. After discussions with FHWA and other experts, a recommendation for improvements including signage was developed. Given the lack of data in this area, a study should be done to determine improvements if any for a given treatment.

### Five-Year Focus

BTPO’s focus areas over the next five years are divided into bicycle and separate pathways and pedestrian facilities. The focus areas are where BTPO will focus our efforts and partnerships with local governments.

**Bicycle Focus**

Complete a connected North/South Bicycle Corridor (called N1). N1 creates a connected bicycle facility from South 5th Avenue to Siphon Road. The facility is made comprised of different types of bicycle facilities into one route (Figure 30). N1 also separated bicycle facilities included in the corridor as they develop to provide a less stressful alternative to N1.
Figure 30: N1 Bicycle Corridor
Bicycle and Pedestrian Master Plan

**Pedestrian Focus**
Elimination of gaps in the pedestrian network and improved safety are the two focus areas for pedestrian facilities. BTPO will work with member agencies to apply for Safe Routes to School and other pedestrian safety funds to target gaps in the sidewalk network near schools. Focus areas are Hiline Road and W. Cedar Street.

BTPO will focus on developing the Old Town Pedestrian Plan and implementing the highest priority project. ITD safety funds exist for project implementation. BTPO will use internal planning funds to complete the study.

**Separated Multi-use Paths**
The Portneuf Greenway Master Plan has a complete listing of priorities by corridor. With the completion of the Farm Bureau trail and anticipation of the Portneuf Medical Center trail, the priority for the next five years is to complete a separated multi-use path from South 5th Avenue to the Northgate Interchange east of Interstate 15.

**Policy Focus**
BTPO provides recommendations to the region on bicycle and pedestrian issues use; many of the recommendations within the Bicycle and Pedestrian Master Plan will require modifications to existing development codes or design guidelines.

*Complete Street Policy* – BTPO should work with the City of Pocatello and the City of Chubbuck to adopt a complete street policy for each agency.

*Design Guidelines* - The design treatment for bicycle facilities is changing. Not all bicycle designs are included in the AASHTO’s design guidelines. The cities should explore Appendix A and if desired adopt a set of design guidelines to meet the changing need.

References:
Bicycle and Pedestrian Master Plan