GILLETTE PATHWAYS

MASTER PLAN

September 2022

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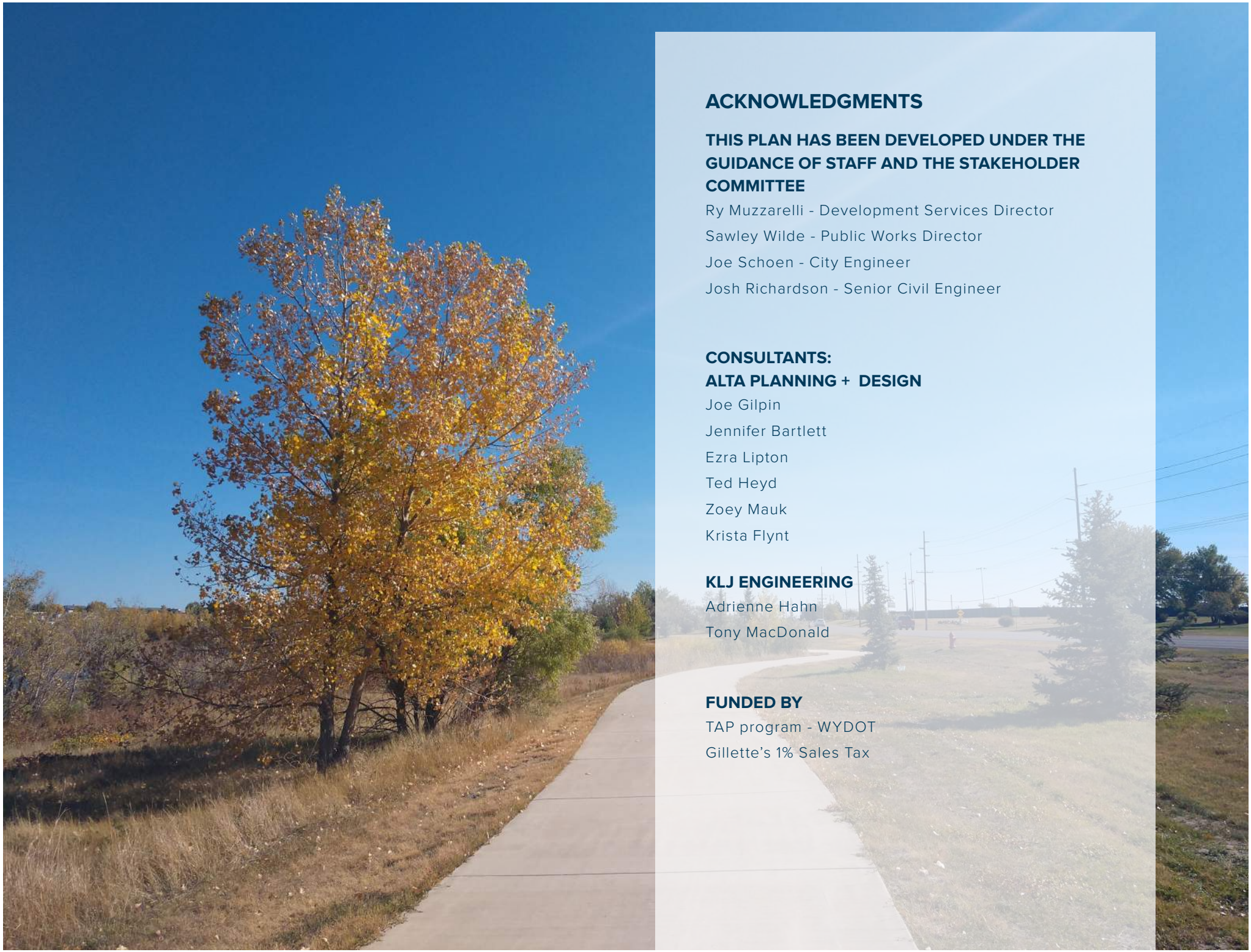

ACKNOWLEDGMENTS

THIS PLAN HAS BEEN DEVELOPED UNDER THE GUIDANCE OF STAFF AND THE STAKEHOLDER COMMITTEE

Ry Muzzarelli - Development Services Director

Sawley Wilde - Public Works Director

Joe Schoen - City Engineer

Josh Richardson - Senior Civil Engineer

CONSULTANTS:

ALTA PLANNING + DESIGN

Joe Gilpin

Jennifer Bartlett

Ezra Lipton

Ted Heyd

Zoey Mauk

Krista Flynt

KLJ ENGINEERING

Adrienne Hahn

Tony MacDonald

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Gillette's 1% Sales Tax

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CHAPTER 1

INTRODUCTION

PLAN CONTEXT

Founded in 1891, the City of Gillette is located in northeast Wyoming. As the county seat of Campbell County, Gillette calls itself “Energy Capital of the Nation” due to the prolific deposits of coal, oil, and coal bed methane gas that are extracted nearby. The surge in energy production is substantially responsible for Gillette increasing in population by 50 percent between 2000, and 2020. The 2020 Census estimates the population at 33,403. Of this population, Gillette has nearly 26 percent of its population under the age of 18, eight percent over the age of 65 and there are an estimated nine percent of residents with some form a of a disability. In considering the future of Gillette’s pathway system, these segments of the population are particularly important as they are less likely to have access to or be able to operate a (private) motor vehicle. Taken together, the data show that over 30 percent of the community’s population are more likely to be dependent on walking, bicycling, and paratransit for everyday mobility and some may just want to walk their destinations. Presumably, many of these residents may already use the city’s sidewalks and pathways for some of their trips.

From a recreational standpoint, Gillette makes an effort to be an interesting stopping point for visitors exploring nearby destinations like the Black Hills, Devils’ Tower or even Yellowstone National Park. Improving the pathway network may also incentivize visitors to visit or spend more time in Gillette as they are in transit to other nearby destinations.

Plan Structure

Chapter 1. The remainder of this chapter connects this planning effort to prior plans and describes the purpose and vision.

Chapter 2. This chapter describes what makes up the Pathway system today and informs the subsequent recommendations

Chapter 3. This chapter describes the outreach process and highlights some of the feedback that informed the recommendations

Chapter 4. This chapter describes the facility, policy and program recommendations that were developed to guide the evolution of the pathways network and to increase bicycling in Gillette

Chapter 5. This chapter includes implementation strategies, maintenance guidance and identifies and describes the priority projects developed for this plan.

INTRODUCTION COMPONENTS

PLAN CONTEXT– *Introduces the City of Gillette and the context for the plan.*

EXISTING PLANS – *Briefly describes relevant aspects of existing plans in Gillette.*

PLAN PURPOSE – *States the intent of the plan.*

PLAN VISION – *States vision developed for this Plan*

City Park is an important community gathering spot

PLAN PURPOSE

The purpose of this analysis is to understand the current conditions in Gillette related to the community, land uses, and especially the pathway system. The analysis is a key to understanding how the community and conditions have changed since the last Pathways Plan was completed (in 2009) and what critical needs and opportunities should be considered for the 2021 Plan update. When completed, the Plan update will feature a series of policy and project recommendations that will be presented to city staff and community members for consideration and input. Based on that input, a final Plan will be developed and presented to city council for approval and adoption this fall.

PLAN VISION

During the second public meeting, participants were asked to describe their vision for the Gillette Pathways system. Using the public feedback as inspiration, and working with Gillette staff, the following vision was developed to guide the development and implementation of this plan. This plan is an attempt to increase Gillette's already excellent quality of life and provide for the future residents of the City.

The Gillette pathways system is well-connected, safe, and accessible for all users. It is both a viable transportation system and an enjoyable recreational asset for those who live, work, and play in Gillette.

EXISTING PLANS

Several local and regional plan have been completed in recent years that directly or indirectly address active transportation, including the use of the pathway system, in Gillette and Campbell County. This Plan update seeks to build upon these efforts and develop appropriate project recommendations and design guidelines for the pathway system. The following studies were reviewed to determine their impact on this update and the relevant guidance from each has been summarized.

- Gillette Parks and Pathways Plan (2009)
- Gillette Long Range Transportation Plan (2017)
- Wyoming Bicycle and Pedestrian Report (2018)

Gillette Parks and Pathways Plan (2009)

The Gillette Parks and Pathways Plan lays out an approach to further develop the sidepath and trails system in Gillette. It acknowledges the benefits of pathways to the community and supports the expansion of them using a variety of policies, pathway types and approaches to routing.

Plan Goal

As stated in the 2009 Plan, the overarching goal for Gillette's trail system is to provide primary recreation for short- and medium-distance users; promote safe routes to schools and parks; act as a supplementary transportation means to activity centers such as retail, workplace, church and civic uses; improve wellness; and better connect Gillette's neighborhoods.

Plan Principles

The Plan sets forth six main pathway principles:

- The system is designed around both destinations and opportunities, established to connect the dots linking major destinations and constituent neighborhoods;
- The pathways should include an integrated local system that provides access to schools and local recreation clusters;
- Drainage corridors will be a major determinant of the location and alignment of multi-use trails;
- The system provides a network of interlocking loops, providing people with maximum choice;
- Substantial attention should be given to providing safer system segments, addressing hazards inherent within a sidepath system; and
- Trail development will be phased, creating a system that works at each step of the implementation process.

Guiding Goals and Policies

The 2009 Plan highlighted several goals and policies to guide pathway development, including:

- Create a linked park network that includes trails, greenways, and civic streets that connect open spaces, neighborhoods, and activity centers;
- Provide parks and recreational facilities to meet the needs of newly developing areas;

McManamen Park

- Distribute active recreation use across the geographical area of the city, guarding against over concentration of park resources in any quadrant of the city;
- Balance active and passive recreation opportunities for all people of Gillette;
- Complement sidepaths with a network of off-road, multi-use trails that provide both recreational and transportation benefits;
- Continue the program of sidepath development along major streets, particularly along streets that have relatively few interruptions by intersecting streets and drives;
- Recognize some of the hazards created by sidepath and motor vehicle conflicts, and address these issues by redesign and enhancements of the existing sidepath system; and
- Ensure that strategic elements of Gillette's street systems are adapted to providing safe and effective environments for pedestrians and bicyclists.

Priority Projects

Priority projects and corridors listed in the 2009 as key to development of the overall system include:

- The Gillette Greenbelt, including the Donkey Creek corridor;
- Stonepile Trail;
- Butler Spaeth Corridor;
- Douglas Highway Pathway;
- Burma Avenue Complete Street;
- Sunflower Connector; and
- Enzi Trail.

The status of these projects (e.g. completed, in-progress, unfunded) will be considered and factored into the development and prioritization of project recommendations in the Plan update.

Gillette Long Range Transportation Plan Update (2017)

The Gillette Long Range Transportation Plan builds upon previous transportation plans to update the transportation model, evaluate the future transportation network, and develop a prioritized list of transportation projects. It also highlights several priorities for the expansion of the city's pedestrian network, including requiring provisions for a pathway on at least one side of all new arterials, and recommends the several new pathways and bike routes.

Similar to the pathway projects in the 2009 Plan, the list of priority pathway projects in the 2017 plan will be evaluated to determine their status. The development and prioritization of projects in the Plan update will factor in whether priority projects from the 2017 Plan have been completed, are under construction, or are still planned but not yet funded.

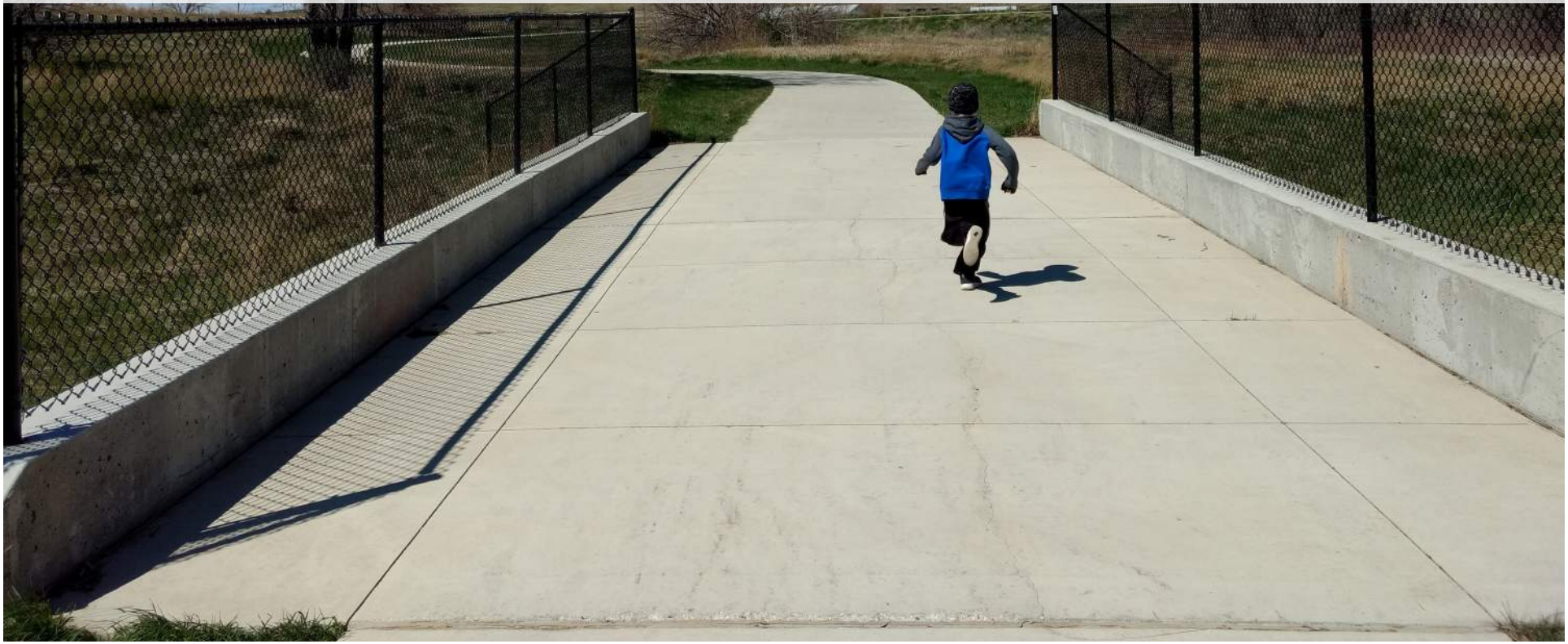
Wyoming Bicycle and Pedestrian Report (2018)

The Wyoming Bicycle and Pedestrian Report is the first state-level effort of its kind to study the opportunities, benefits, and challenges of bicycle and pedestrian trails in Wyoming and provide recommendations to the legislature and state agencies. Twelve key agencies or groups were involved in this process, including the Wyoming State Legislature, the Office of the Governor, Wyoming Department of Transportation (WYDOT), the Wyoming Business Council, the Wyoming Office of Tourism, Wyoming State Parks, the Wyoming Office of State Lands and Investments, Pathway and Trail Non-Profit & Advocacy Organizations, and Federal Land Managers (USFS, BLM, NPS). The report outlines policy, statute, program, and infrastructure recommendations tailored to the twelve key agencies/groups in Wyoming responsible for improving conditions for walking and bicycling along Wyoming roads.

Divided into five sections, the report also outlines strategies for improving walking and biking conditions in a variety of different contexts, including community pathways and local streets, main streets and downtowns, rural bicycling and walking, and natural surface trails, and highlights the many health and safety benefits of walking and bicycling. While not exhaustive, the report provides strategies relevant to planning, design, and future implementation on Gillette's pathways.

CHAPTER 2

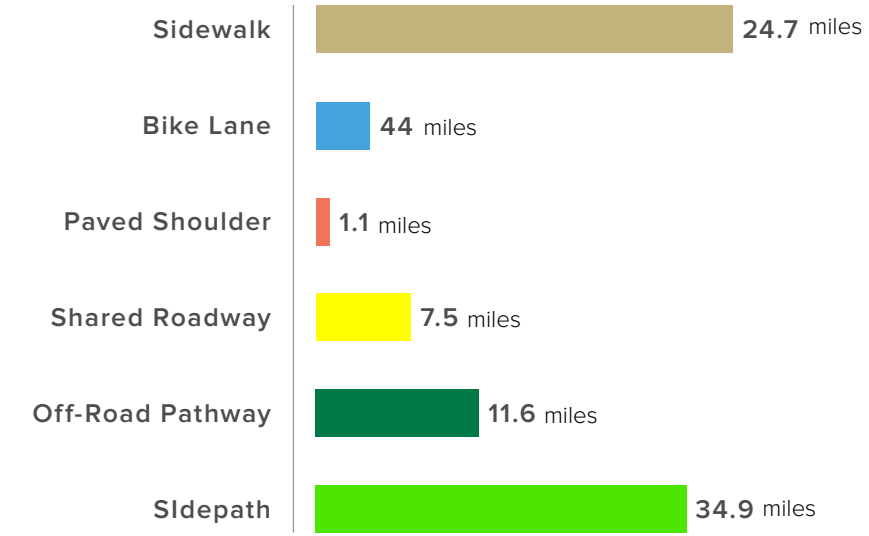
EXISTING PATHWAY SYSTEM



EXISTING PATHWAY SYSTEM

As of 2020, there were over 80-miles of "pathways" designated throughout Gillette. This term "pathways" encompasses a variety of on and off-road facility types which vary in width, quality, separation from motorized traffic, and the type of experience they provide to users. The facility types and total mileage within the current network are illustrated in Figure 2.1, and shown in context in Map 2.1. Note: there are many miles of sidewalks and shoulders that exist, but were not previously designated as part of the pathway network. This section provides an overview of the existing conditions analysis. For more detail, please see the Existing Conditions Memo found in the Appendix.

FIGURE 2.1. EXISTING FACILITIES MILEAGE BY TYPE



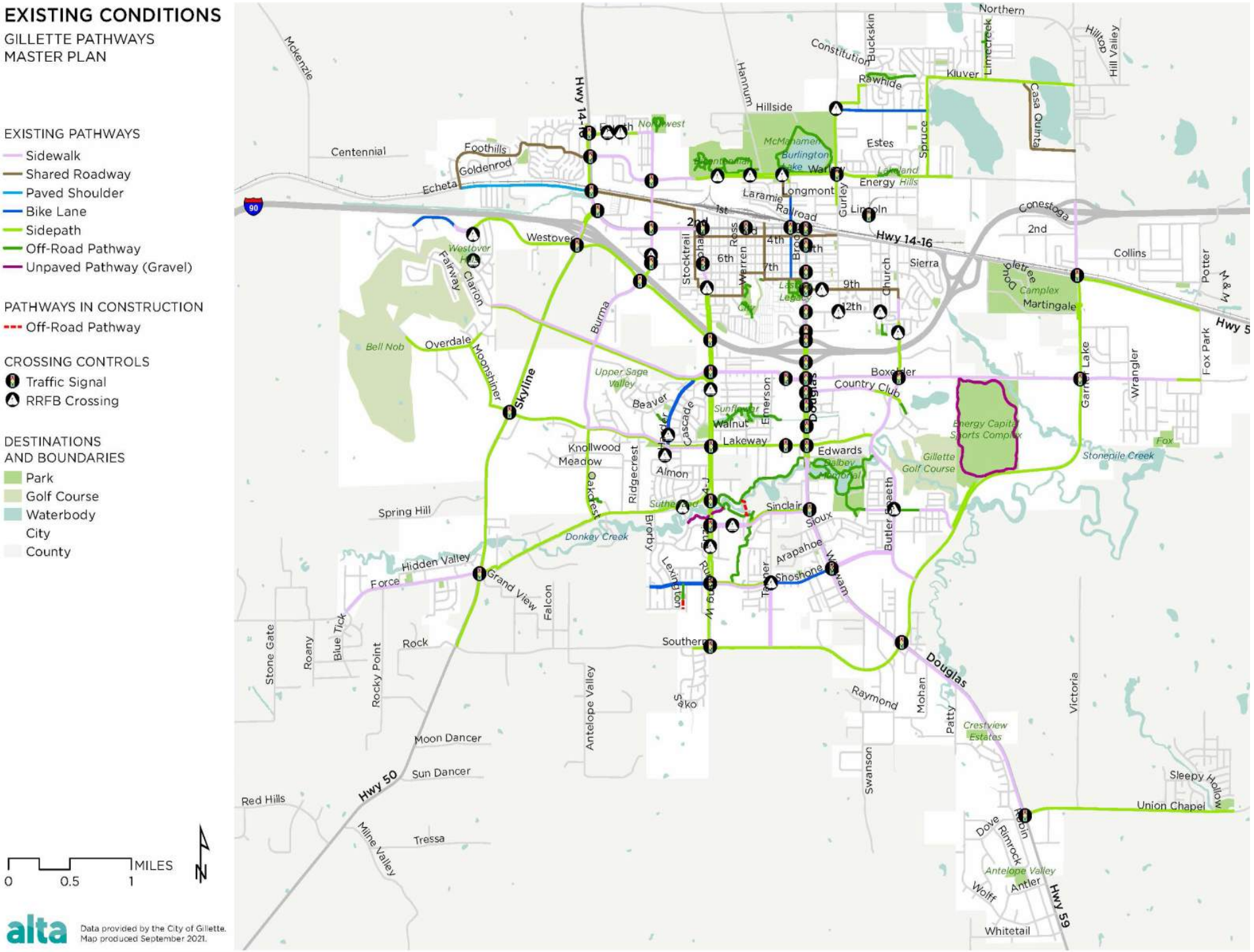
EXISTING SYSTEM COMPONENTS

EXISTING PATHWAY SYSTEM *– Describes the existing overall trail system.*

EXISTING PATHWAY TYPES– *Includes information for existing pathways*

PLANNED PATHWAYS– *Includes information for existing pathways*

MAP 2.1 EXISTING PATHWAYS AND FACILITIES



EXISTING PATHWAY TYPES

Sidewalk

Pedestrian facilities separated from traffic by a curb and gutter. Sidewalks are required to be at least 4-feet wide to meet current (national) design standards; however 5 feet is a recommended minimum. Some existing sidewalks in the network are the minimum width whereas some are wider. Sidewalks are not intended for bicycle travel.

Bike Lane

Preferential on-street lanes 4-7' in width designed exclusively for bicycle travel. The bike lane is located directly adjacent to motor vehicle travel lanes and is used in the same direction as motor vehicle traffic. Bike lanes are typically on the right side of the street, between the adjacent travel lane and curb, road edge or parking lane.

SIDEWALK

Sidewalk along Boxelder Road east of Cliff Davies Drive

PAVED SHOULDER

Paved shoulder on Harder Drive north of W Lakeway Road

BIKE LANE

Bike Lane on S Brooks Avenue at E 8th Street

Paved Shoulder

Paved space adjacent to motorized vehicle lanes that can be used by but are not exclusively intended for bicyclists or pedestrians.

Shared Roadway

On-street routes on which bicyclists share lanes of travel with motorized vehicles. Ideally, these corridors will feature low traffic volumes and speeds so that conditions are comfortable for bicycling.

Off-Road Pathway

Also known as Pathway, Greenway, or Shared-Use Path, these facilities that are 8-12' in width, paved, designed to ADA standards and accommodate bicyclists and pedestrians outside of the road corridor right-of-way. These facilities often follow creeks or drainage ditches, through parks, or along utility corridors.

Sidepath

Pathways that are separated from the road but are typically within the roadway right-of-way.

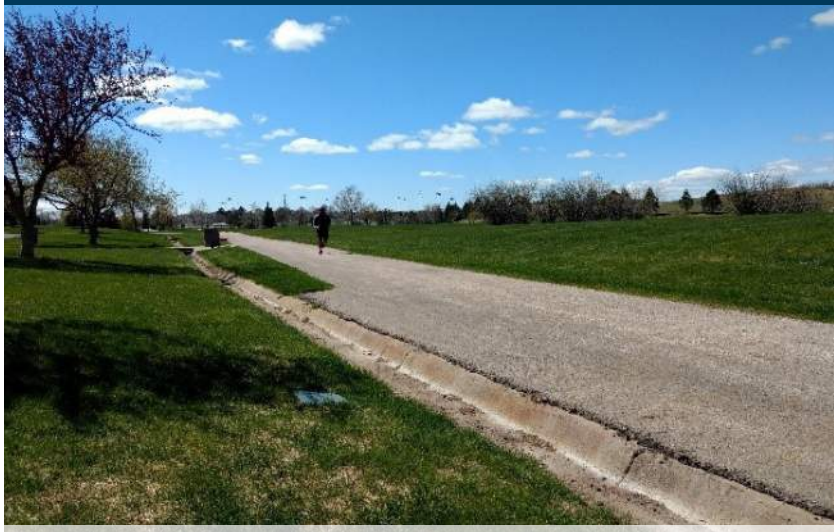
SIDEPATH

Asphalt Sidepath along 4-J north of Granite Court

SHARED ROADWAY

Shared Roadway on W 3rd Street

OFF-ROAD PATHWAY



Asphalt Off-road pathway in Bicentennial Park

As shown in Figures 2.1-2.3 the current condition of facilities in the pathway system significantly varies throughout Gillette. Some facilities were constructed to a high standard and are in very good physical condition. Others, however, predate current standards and do not provide as high a standard. Age of the facility has also left some pathways in need of maintenance or renewal with various levels of degradation observed.

PLANNED PATHWAYS

Also shown in Figure 2.1, there are several pathways or corridors in the network that have been identified as a priority, but the projects are not yet funded and construction has not yet started. Some of these include priority projects, as previously listed, carried forward from the 2009 Pathways Plan and the 2017 Long Range Transportation Plan. The current list of priority projects and corridors from these plans, presented below, will be closely evaluated in the development and prioritization of project recommendations for the 2021 Plan update:

- Southern from Hwy 50 to Enzi Pathway
- Donkey Creek Pathways
- Shoshone extension
- Stonepile Creek Pathway
- Hwy 14-16 Pathway from Gurley to Garner Lake
- Echeta Pathway and I-90 crossing to Westover
- Hwy 14-16 from Fourth, along Northern to Lime Creek
- Hannum Pathway connection
- Warlow Pathway

McManamen Park bench overlooking the lake

McManamen Park, though the trees

CHAPTER 3

PUBLIC OUTREACH

OUTREACH

To help understand the experiences and needs of Gillette residents related to the pathway network, Two rounds of public outreach were conducted comprising a mix of virtual and in-person engagement methods. The following summarizes these activities and their outcomes.

Initial public engagement activities were conducted concurrently with the existing conditions analysis. While several virtual outreach opportunities were completed, in-person engagement was limited due to the COVID19 Pandemic. However, informative results were still gathered despite the unique challenges of virtual engagement.

The primary element for engagement was development and promotion of a project web page (https://gillettepathways.com/) that hosted a survey and an interactive comment map. As part of the initial engagement activities, the web page had been visited by 227 unique users. In the fall of 2021, the map was used a second time to gather input on the project recommendations in which approximately 50 visitors commented on.

IN-PERSON OUTREACH

Pathway Committee Meeting #1

The stakeholder group was convened to introduce the project and planning process. The group was a broad coalition of representatives from organizations invested in Gillette Pathways. They provided initial information regarding context and trail issues in Gillette.

Community Workshop #1

An online virtual public workshop with the public was held on March 10, 2021 with an in-person viewing available at City Hall to introduce the project and planning process. This meeting also launched the interactive elements of the project website including the interactive map and survey. This meeting was recorded and posted to the project website for those who could not attend during the workshop itself.

Community Workshop #2

A second in-person meeting was conducted on October 14th, 2021 in a hybrid format for those who did not wish to attend in person. This meeting focused on reviewing the planning process, introduced the draft facility recommendations and solicited feedback on

OUTREACH COMPONENTS

IN-PERSON OUTREACH– *Describes the various in-person engagement methods and summarizes the results.*

ONLINE OUTREACH– *Summarizes the results of the online input map.*

the proposed segments and improvements. Participants commented on both hard copy maps as well as an updated version of the online interactive map which depicted the same recommendations. Online users could comment on the recommendations, or "like" them.

ONLINE ENGAGEMENT

Online engagement was an important component of the Pathways Master Plan outreach approach, as it allowed people who did not attend the in-person events to provide their input. Two online engagement tools were developed for the plan: an online input map and an online survey.

Online Public Survey

The project survey was completed by 175 people with the results shown in Figure 3.4. In summary, survey respondents generally:

- Walk more regularly than bike;
- Feel comfortable walking and bicycling in Gillette;
- Walk or bike primarily for fun/recreation, or exercise;
- Find weather, followed by safety concerns, to be the biggest obstacles to walking or biking; and
- Said that construction of new pathways, improved lighting, and wayfinding signage are the three factors that would most encourage them to bike or walk more.

In addition:

- 62 percent of respondents were female;
- Almost a quarter of respondents were 65 years or older;
- Over a quarter of respondents were between 35-44 years old;
- The majority of respondents were White (80%);
- Most respondents that categorized their household income identified it as $100,000-150,000 a year.
- The survey had a low number of responses from households that make under $50,000 per year.

Online Input Map

The online input map was live concurrently with the survey and allowed users to draw lines and add comments relating to walking, bicycling, and pathways on a map of Gillette. Comments were categorized depending on whether they pertained primarily to walking or bicycling issues. Users also had the ability to add comments with suggested improvements. The online input map comments are represented in Figure 3.5.

Interactive Map Feedback - Needs and Existing Conditions

There were 65 comments made on the interactive map including 21 route suggestions. The comments encompassed the following themes:

Gaps

Gaps were identified between existing facilities or destinations such as Northern and Southern Drive, N Garner Lake, Enzi Drive and Hwy 50, connections to the downtown area, and another pathway crossing of a railway. Gaps were also identified where pathway connections to subdivisions do not exist such as Sage Bluffs and along Echeta.

Pathway Recommendations

There were many suggestions for where new pathways should be constructed including along Huntington Drive and on E Warlow Dr.

Maintenance/Repair

Many comments identified specific areas along the pathway network where the declining condition of the pathway has created a challenge.

Issues identified range from poor drainage, sidewalk and pathway quality (i.e., potholes and cracks), and seasonal maintenance needs including control of weed growth.

Lighting
New or improved lighting along pathways was identified as needed along Westover Rd and at Dalbey Memorial Park.

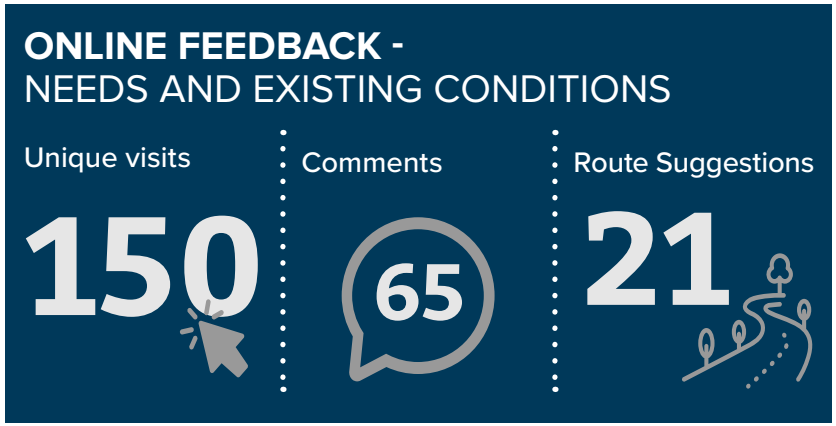
Accessibility
A few comments identified accessibility gaps, including stairs along the sidewalk on 4-J between 4th and 5th, and at the intersection of E Warlow Dr and Lakeland Hills.

Surface Materials
A few comments referenced pathway surface materials, indicating a preference for hard surface trails (e.g. concrete or asphalt instead of gravel or wood chips).

Connectivity
Paths / routes needed to better connect downtown to other parts of the community

Interactive Map Feedback - Recommendations
After the second community meeting, the public had the opportunity to once again use the online map; however, this time the draft recommendations were loaded into the mapping tool and the public was asked to provide comments and/or like or dislike the recommendations. The mapping tool was available for comment from October 14 through November 1, 2021. In addition to an opportunity to comment on the proposed facilities and spot improvements, users could also draw in routes they felt were omitted from the recommended network.

The feedback was incorporated used to generate the project list. The recommendations were reviewed by staff and the Pathways, who then used the feedback to develop the priority project list and conceptual cost estimates.



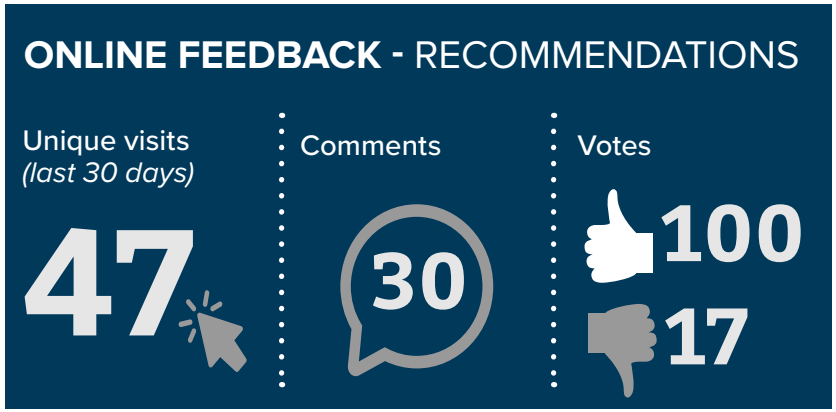


FIGURE 3.4 EXISTING CONDITIONS ONLINE SURVEY RESULTS HIGHLIGHTS

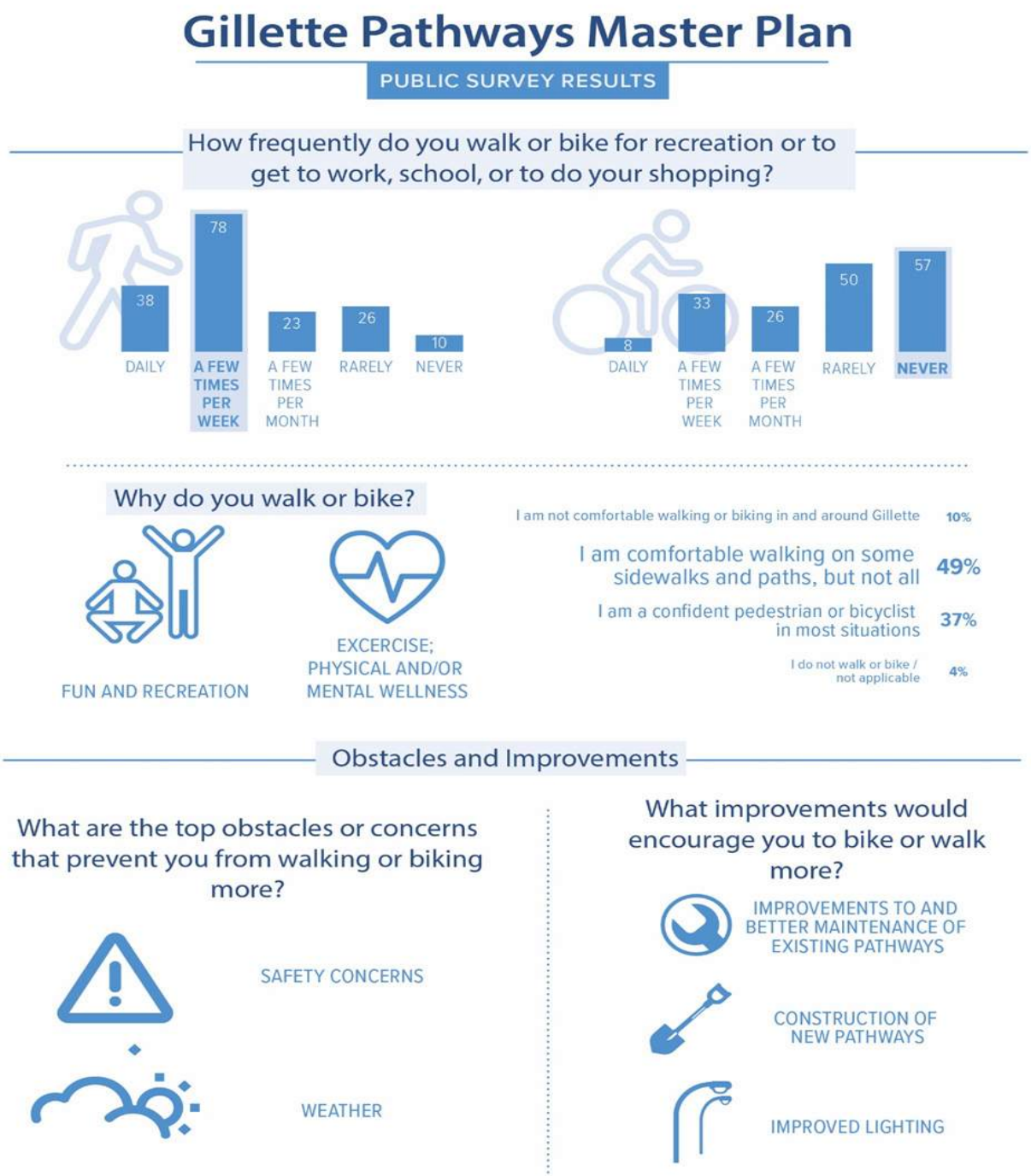


FIGURE 3.5: ONLINE INPUT MAP SHOWING FEEDBACK POINTS DURING EXISTING CONDITIONS PHASE

Map Legend

The pathways shown on the map reflect existing and proposed pathways. Pathway type varies depending on the pathway, as shown in the map.

Sidewalk (pedestrian facilities separated from traffic by a curb and gutter)

Bike Lane (4-7' lanes designed exclusively for bicycle travel)

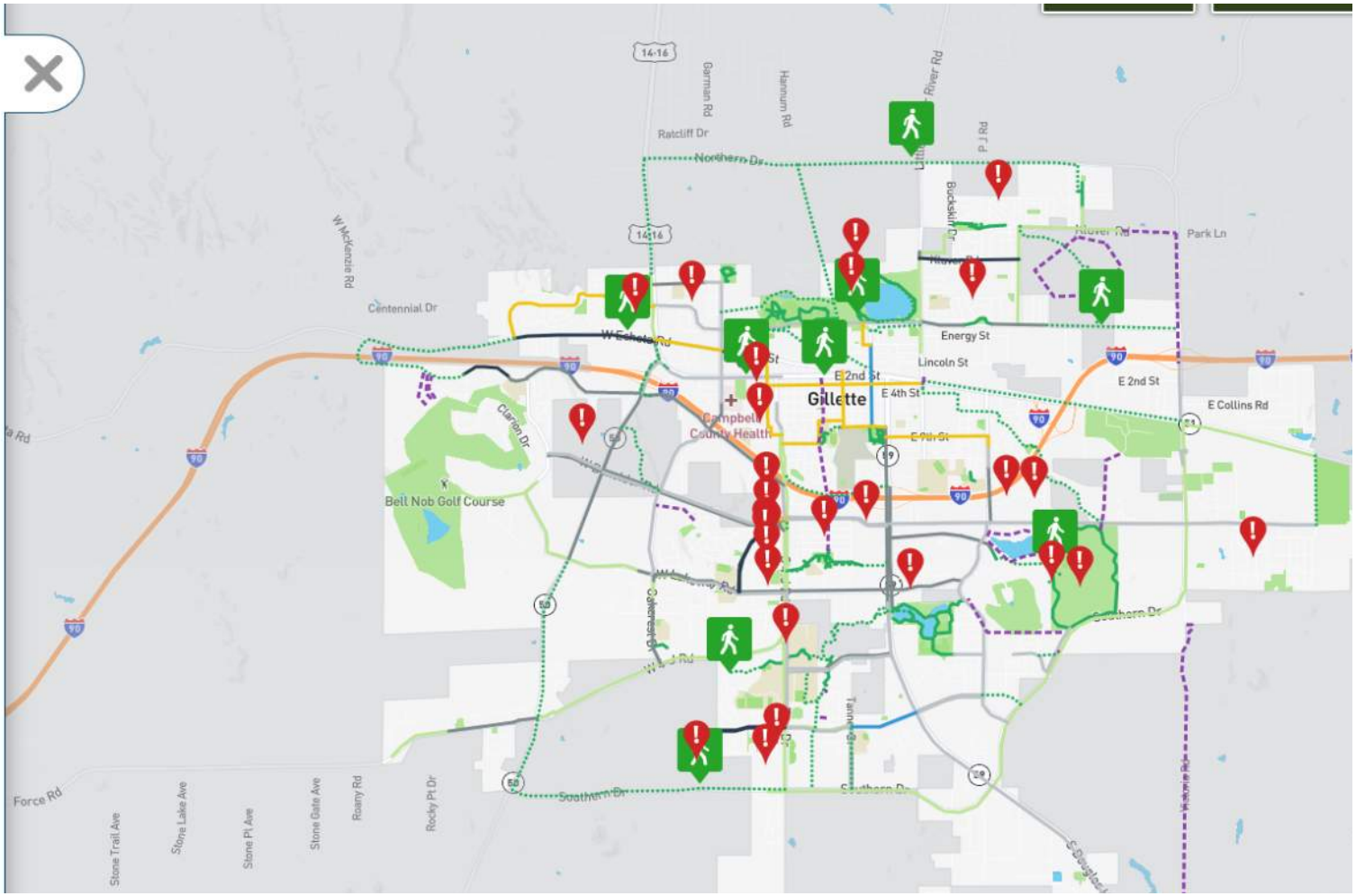
On-Road Pathway (low-speed, low-volume roads that prioritize biking and walking)

Off-Road Pathway (8-12' paved paths that accommodate bicyclists and pedestrians off-street)

Sidepath (pathways that are separate from but share the right-of-way with road corridors)

User Comments

- Route needing improvement
- Suggested pathway route
- Biking Destination
- Walking Destination



CHAPTER 4

RECOMMENDATIONS

CONNECTING A NETWORK

The recommendations developed for this plan reflect the need expressed by the community for more connections to parks and safer ways to move around Gillette. The recommended network is the product of extensive analysis and builds directly from:

- Previous planning efforts including the Comprehensive Plan, and the 2009 Pathways plan
- Access to key destinations and parks
- Gaps and barriers within the existing system
- Modeled Level of traffic stress for pedestrians and bicyclists
- Public feedback collected during two rounds of the project online mapping tool

The recommended network also acknowledges that the users needs vary and there was strong interest in ensuring that both biking and running can be accommodated. Where possible, running facilities are already being constructed adjacent to pathways. This concept is included in the updated design standards for pathways and bicycle facilities shown on the following pages.

RECOMMENDATION COMPONENTS

FACILITY RECOMMENDATIONS *– Presents recommendations for new pathway facilities and pathway facility improvements.*

POLICY RECOMMENDATIONS – *Presents policy recommendations that will support the facility recommendations.*

PROGRAM RECOMMENDATIONS– *Presents program recommendations that support walking and biking in Gillette*

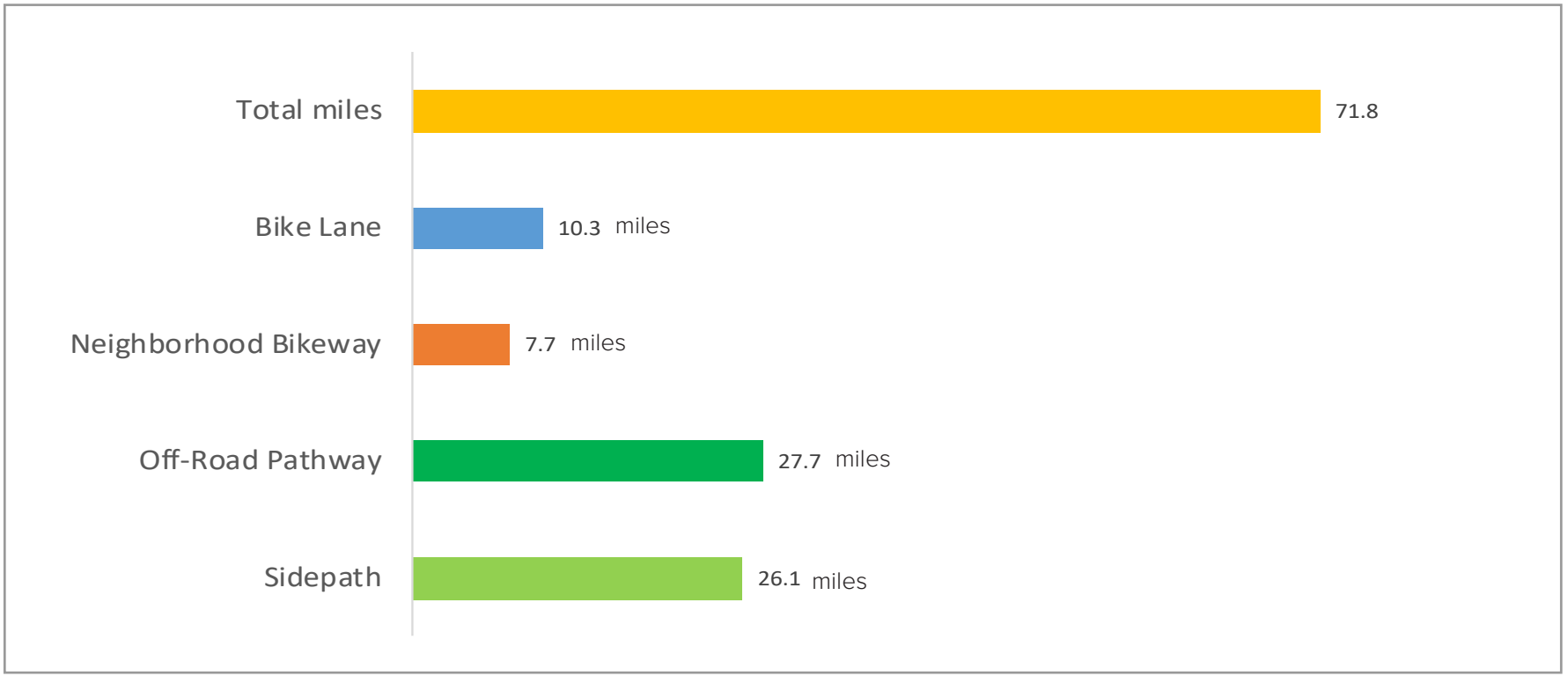
FACILITY RECOMMENDATIONS

The plan proposes the addition of nearly 72 miles of various facility types and 30 spot improvements around Gillette (Figure 4.1). The construction of new off-road pathways, in addition to improvements to existing sidepaths and roadways, will enhance the comfort and safety of pathway users and offer new opportunities to comfortably move and recreate around Gillette.

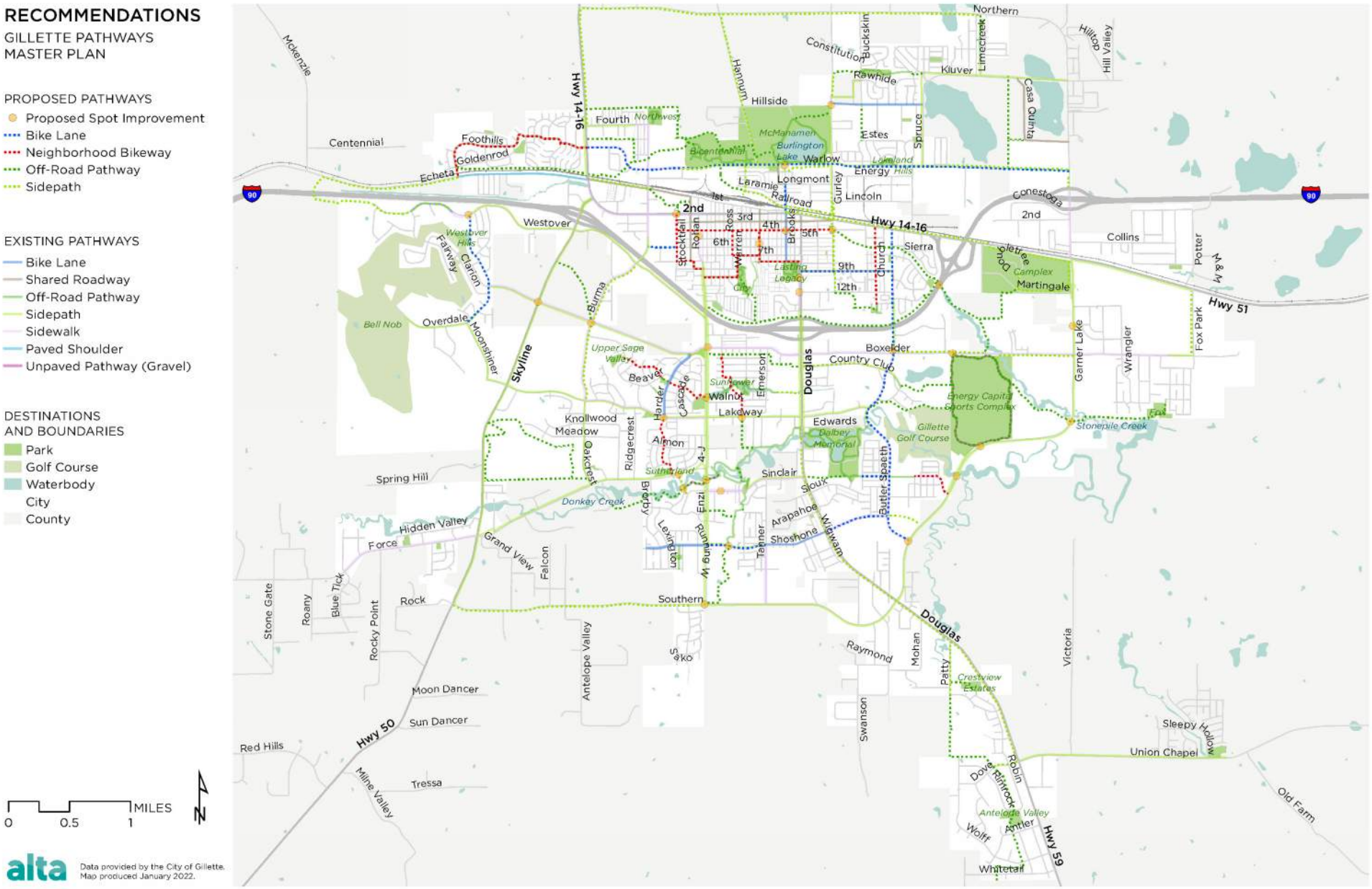
PATHWAY SYSTEM RECOMMENDATIONS

The network is illustrated in Map 4.1 and includes facility types defined in Chapter 2. Maps 4.2 through 4.6 and Tables 4.1 through 4.5 provide additional detail regarding each recommended project including location, extents and length (if applicable).

FIGURE 4.1. PROPOSED FACILITY TYPES



MAP 4.1: RECOMMENDED PATHWAYS



Sidepaths

Sidepaths are an important facility type in the Gillette Pathways system. Due to their high level of acceptance, they make up a high percentage of the existing network and are the primary type recommended. The proposed improvements for sidepaths presented in this plan are focused on connecting and providing access to destinations, and creating longer routes. Table 4.1 lists the shared use path improvements while Map 4.2 illustrates their locations in Gillette.

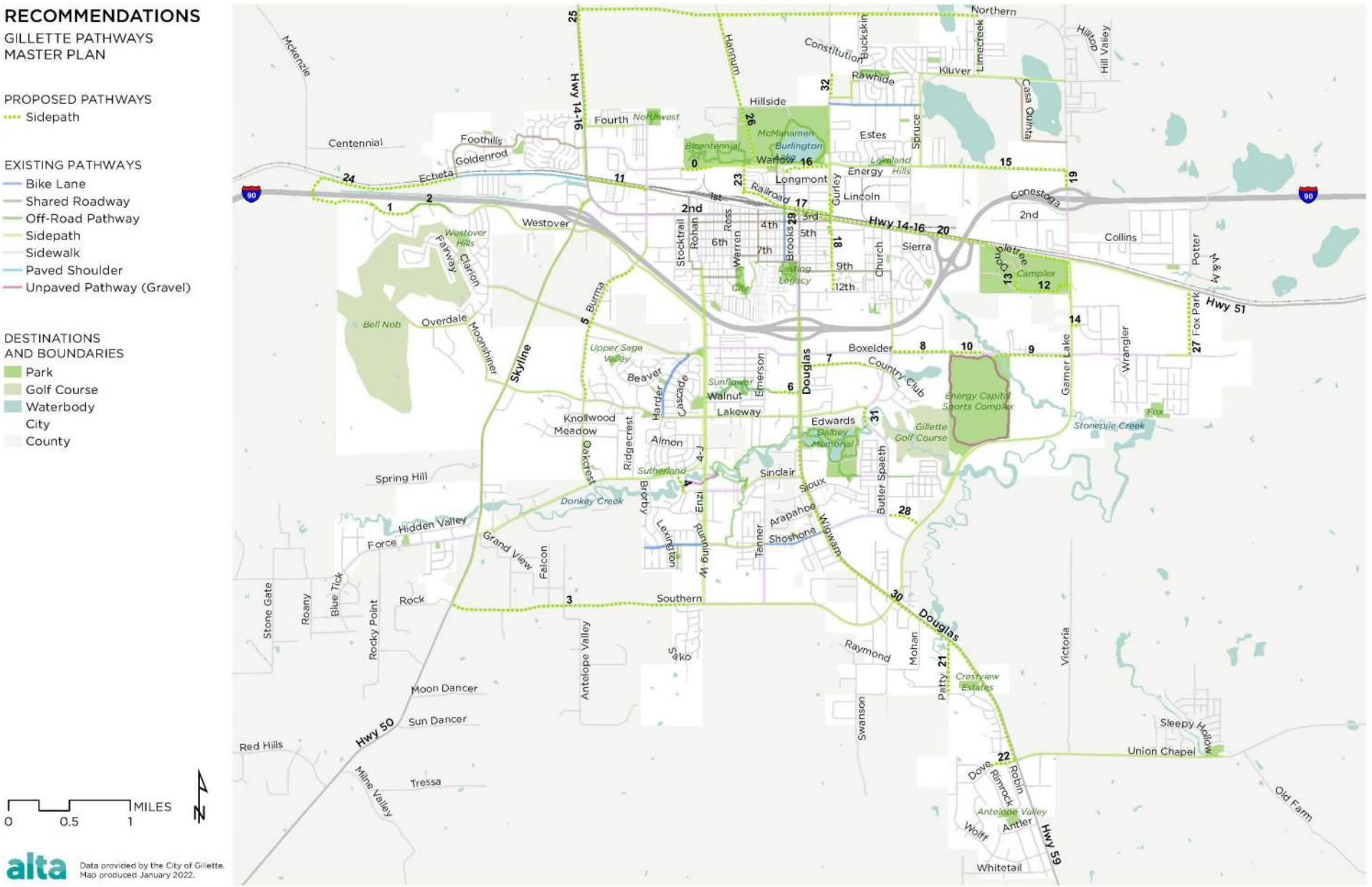
TABLE 4.1 SIDEPATH IMPROVEMENTS

ID	Trail Name	Mileage	Description
1	Westover Rd Sidepath, County line to Fairway Dr	0.33	Existing, concrete, 8 feet
2	Westover Rd Sidepath, Fairway Dr to Overdale Rd	0.35	Existing facility is marked as a bike lane. The lanes have plenty of space to add a physical buffer here to create a sidepath per AASHTO. This would need a barrier to accomplish. Curb, flex posts, rumble strip, median, could all be used here pending study.
3	Southern Dr Sidepath, Hwy 50 to 4-J	1.95	10’ concrete, detached. Recommended in 2017 LRTP
4	Saunders Blvd	0.17	Widen sidewalk to sidepath level 10 foot concrete, detached if possible.
5	South Burma Avenue Sidepath	1.26	10' concrete, detached where possible
6	Walmart Path	0.20	This connection will be challenging due to grades and landscaping. Project designers should consider the north or south side of the ditch as potential alignments
7	Country Club Road Sidepath	0.54	Sidepath 10' concrete if connections to the west are constructed. This would replace existing narrower sidewalk.
8	Boxelder Sidepath	0.50	10' concrete. Light poles on back side of existing asphalt sidewalk. Will need grading and utility work.
9	Boxelder Sidepath	0.66	10' concrete
10	Boxelder Sidepath 3	0.27	10' concrete, replace existing asphalt sidewalk.
11	Echeta Rd Sidepath	0.51	10' concrete
12	Martingale Sidepath 1	0.47	10' concrete
13	CAM-PLEX Park Sidepath	0.16	10' concrete

TABLE 4.1 CONTINUED

ID	Trail Name	Mileage	Description
14	Indian Paintbrush Sidepath	0.09	8' concrete
15	W Warlow Dr Sidepath	0.99	10' concrete, set back from road edge
16	E Warlow Dr Sidepath	0.38	10' concrete
17	Railroad St Sidepath	0.89	10' concrete
18	S Gurley Ave Sidepath	0.82	Would be coordinated with bridge reconstruction over the railroad
19	Garner Lake Rd	0.17	8' concrete
20	Hwy 14/16 Sidepath	2.57	10' concrete
21	Patty Ave Sidepath	0.43	8' concrete
22	Dove Rd Sidepath	0.21	8' concrete
23	N Gillette Ave Sidepath	0.27	This street has no home frontages and little garage access along it. This linkage connects Bicentennial Park to downtown via the pedestrian bridge over the railroad. It is recommended to widen the sidewalk into the street on the west end to provide a 10
24	Frontage Rd Connector	1.82	8'or 10' concrete Recommended in 2017 LRTP
25	Northern Drive Sidepath	4.23	8' concrete Recommended in 2017 LRTP
26	Hannum Rd Sidepath	1.26	8' concrete Recommended in 2017 LRTP
27	Fox Park Ave Sidepath	0.52	10' concrete Recommended in 2017 LRTP
28	Shoshone Ave Sidepath	0.25	Would be provided with roadway extension Recommended in 2017 LRTP
29	S Brooks Ave Sidepath	0.06	10' concrete
30	Hwy 59 Sidepath	3.40	10' concrete detached where possible from highway
31	Butler-Spaeth Sidepath	0.14	10' concrete in place of sidewalk
32	Gurley Ave Sidepath	0.19	10' concrete

MAP 4.2: PROPOSED SIDEPATHS



Off-road Pathway Improvements

Gillette has an existing canal network that could relatively easily be the basis of the off-road trail system. Particularly in the northwest quadrant, the canal system is well developed creating opportunities to envision a comfortable walking and bicycling experience providing access to Bicentennial Park and Downtown. Additional opportunities exist on the east side, with opportunities to connect to the Sports Complex and CAM-PLEX. Off-road improvements are described in Table 4.2 and illustrated in Map 4.3.

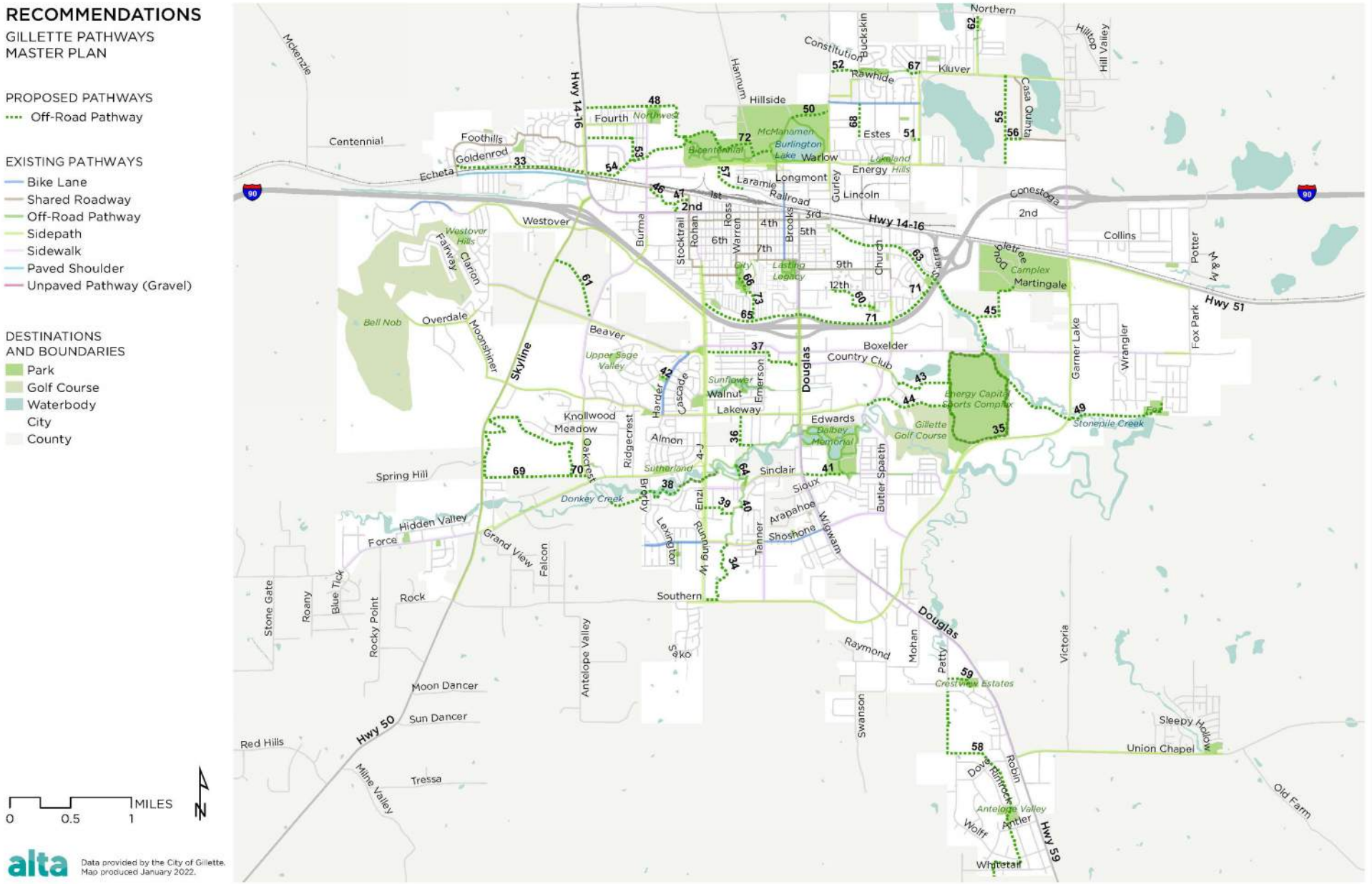
TABLE 4.2 OFF-ROAD PATHWAYS

ID	Facility Name	Mileage	Description
33	Rail with Trail	1.08	10' concrete
34	Donkey Creek Trail	1.06	10' concrete
35	Energy Capital Sports Complex Trail	2.25	10' concrete
36	Dogwood Ave Connector	0.35	Some type of paved trail
37	Central E-W Connector (4-J to Hwy 59)	0.85	10 foot concrete
38	Donkey Creek Trail Project	1.12	This project includes upgrading two segments of existing gravel trail to 10' concrete. A parallel gravel trail may be maintained for runners.
39	Pronghorn Center Connector	0.32	10' concrete
40	Lariat St Connector	0.03	8’ concrete
41	Southern E-W Connector (Sinclair St)	0.33	10’ concrete
42	Connector Path	0.07	10’ concrete
43	Connector trail	0.47	10' concrete. Recommended in 2017 LRTP
44	Connector trail	0.75	10' concrete
45	CAM-PLEX Connector	0.84	10' concrete
46	Canal Path to museum	0.37	10' concrete
47	Fire Station Connector	0.12	10' concrete
48	Bicentennial Park Connector	1.17	10' concrete
49	Stonepile Creek East	1.52	10' concrete section east of Garner Lake Rd. Recommended in 2017 LRTP
50	McManamen Park Connector	0.31	10' concrete
51	Kluver Rd Connector	0.04	10' concrete
52	Heritage Village Park Connector	0.23	10' concrete

TABLE 4.2 CONTINUED

ID	Facility Name	Mileage	Description
53	North Canal Trail	1.07	8-10’ concrete depending on available width. Connects to several neighborhood connections that exist.
54	Canal Path	0.44	10' concrete
55	Kluver/Warlow Connector	0.74	10' concrete
56	Vaquero Ave Connector	0.13	8' concrete
57	Bicentennial Park Canal Trail	0.33	10' concrete
58	Antelope Valley / Crestview Trail	2.19	8' concrete
59	Crestview Estates Park Connector	0.23	8' concrete
60	Butler-Spaeth Rd Connector	0.46	10' concrete
61	Skyline Connector	0.60	As recommended in 2017 LRTP
62	Ash Meadows Park Connector	0.13	8’ concrete. Recommended in 2017 LRTP
63	Eastern Canal Trail	1.50	10' concrete. Recommended in 2017 LRTP
64	Donkey Creek Path Connector	0.13	10' concrete. Recommended in 2017 LRTP
65	I-90 path	0.80	10' concrete. Recommended in 2017 LRTP
66	Water Tower/City Park Connector	0.13	10' concrete
67	Primrose Dr/Phoenix Ave Connector	0.12	10' concrete
68	Kluver Rd/Estes Ln Connector	0.29	8' concrete
69	Mt. Nebo Cemetery Pathway	2.49	10' concrete
70	Mt. Nebo Cemetery Pathway	0.13	10' concrete
71	I-90-Parallel Pathway	1.35	10' concrete
72	Bicentennial Park Pathway	0.91	10' concrete
73	City Park/Mt. Pisgah Cemetery Connector	0.29	Using portion of cemetery or off to the side 10' concrete.

MAP 4.3: PROPOSED OFF-ROAD PATHWAYS



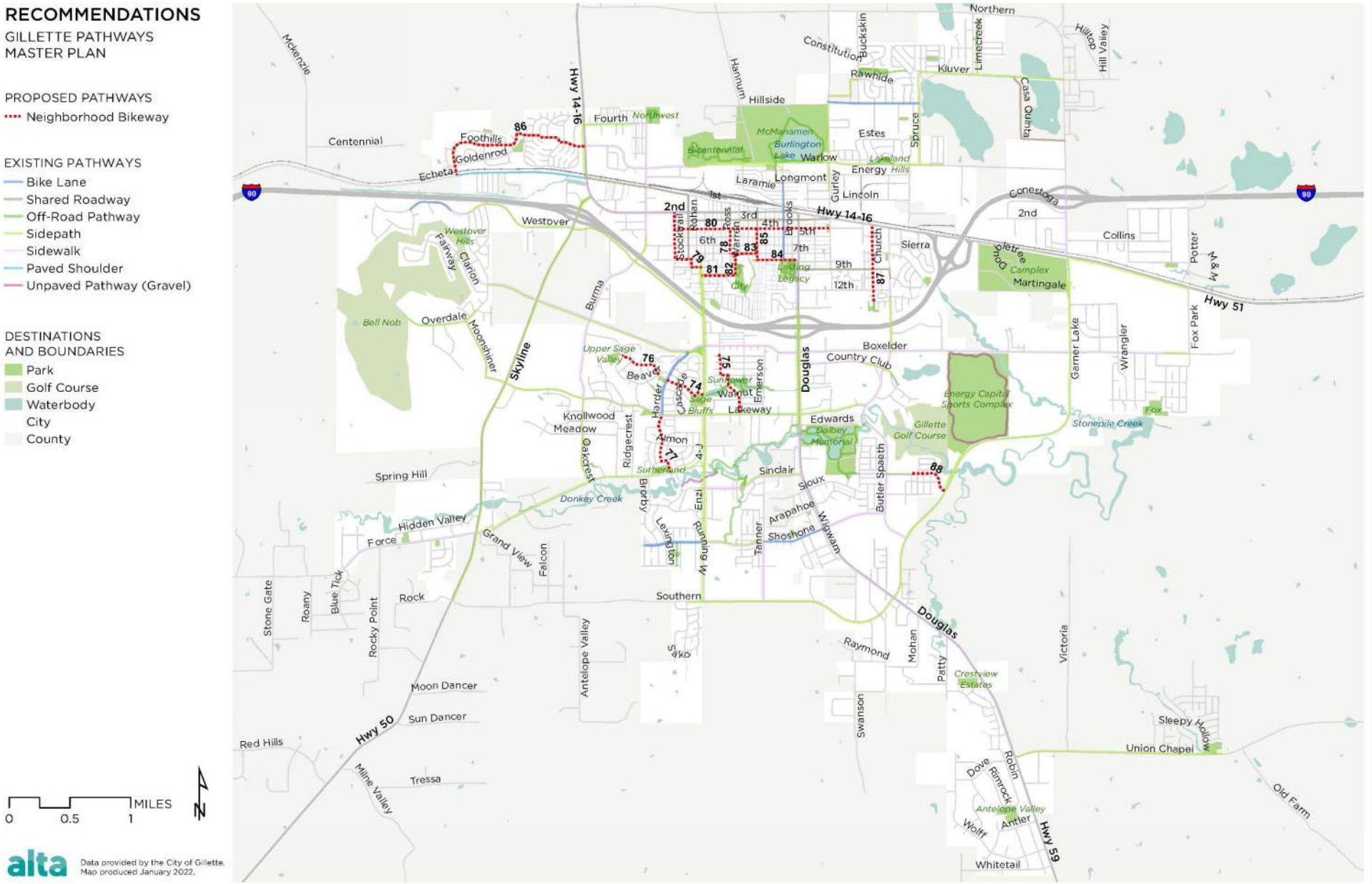
Neighborhood Bikeways

This plan proposes modifying and expanding the existing network of bike routes that have existed primarily in the downtown area under the umbrella of neighborhood bikeways. This term conveys the expectation that these routes feature more than simply a green bike route sign to meet the standard. Bikeways are recommended to make connections that are not possible with shared-use or off-road pathway connections. It is recommended that this network be upgraded with painted shared lane markings, improved wayfinding signage, and improved connectivity to other pathway facility types that the routes intersect with. Maintenance of these elements should be considered during design. Spot improvements should also be considered to improve the safety and comfort of any major street crossings that these routes intersect with. Neighborhood bikeway projects are listed in Table 4.3 and shown on Map 4.4.

TABLE 4.3 NEIGHBORHOOD BIKEWAY IMPROVEMENTS

ID	Facility Name	Mileage
74	Frontier Dr Bikeway	0.36
75	Dogwood Ave	0.60
76	Dryfork Dr	0.39
77	Harder Dr Neighborhood Route	0.53
78	Warren Ave	0.21
79	Stocktrail Ave	0.67
80	4th St	1.27
81	10Th St	0.27
82	Gillette Ave	0.18
83	7th St	0.23
84	8th St	0.33
85	Carey Ave	0.26
86	Foothills Blvd	1.42
87	Church Ave	0.63
88	Sinclair St Bike Boulevard	0.37

MAP 4.4: PROPOSED NEIGHBORHOOD BIKEWAYS



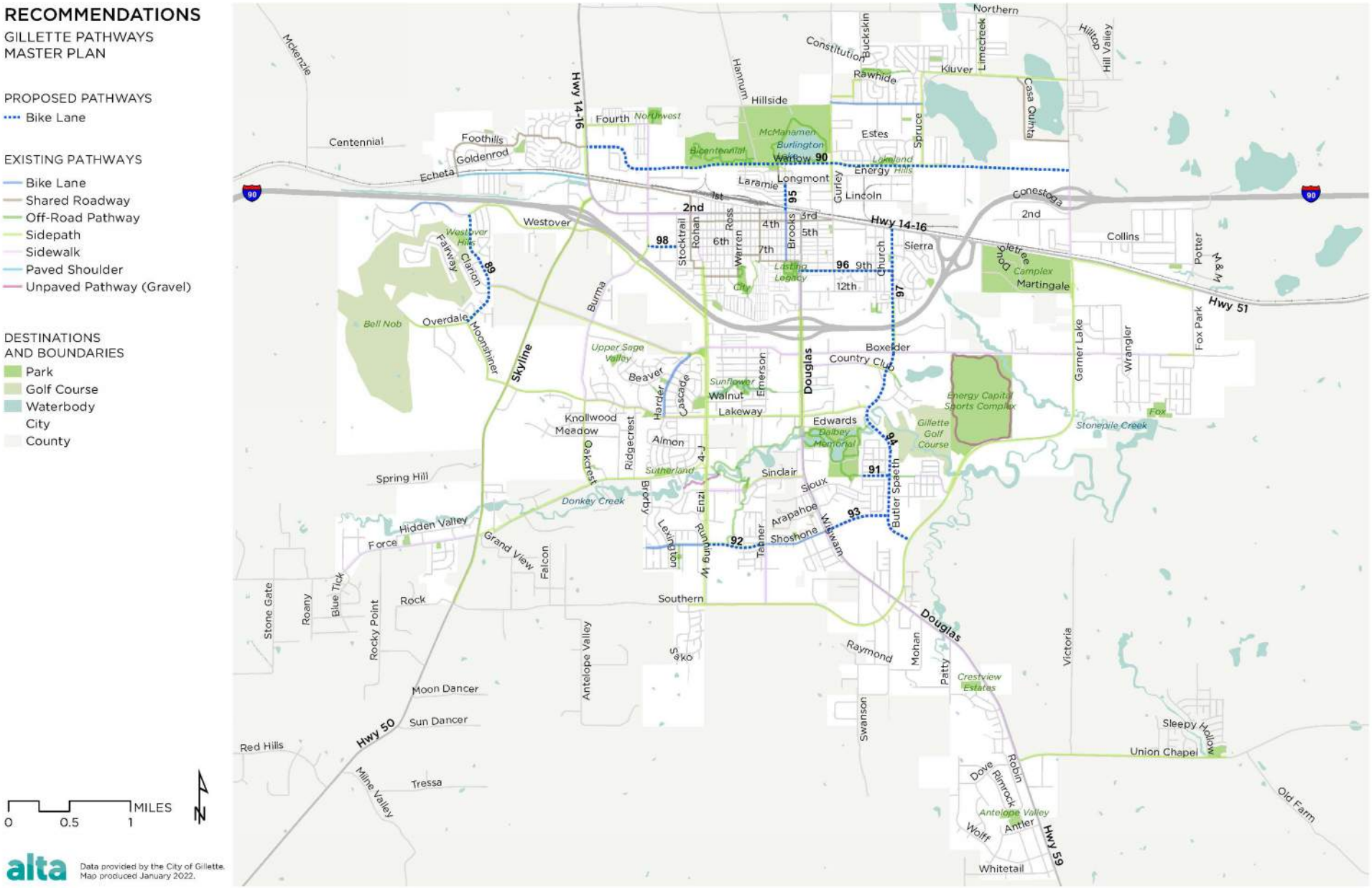
On-Street Improvements

Bike lanes are not a standard treatment in Gillette. Many of the city's roadways would be considered too wide and fast to offer a comfortable experience bicycling. Streets like Hwy 59 and 4J Road are examples of locations where sidepaths provide a superior level of service to most potential bicyclists. Alternatively, city roadways like Warlow Drive and Shoshone could provide a comfortable bike lane experience if the roads were reconfigured in accordance with their traffic levels. Neighborhood bikeway on-street improvement projects are listed in Table 4.4 and shown in Map 4.5.

TABLE 4.4 ON-STREET IMPROVEMENTS

ID	Facility Name	Mileage	Notes
89	Overdale Dr Bike Lane	0.98	Not quite wide enough to maintain parking on both sides. Recommend consolidating parking to one side of the street and providing bike lanes. In front of the school there are traffic calming treatments which may be compatible with bike lanes.
90	Warlow Drive Bike Lanes	4.06	No section of this 4-lane street exceeds 6,196 ADT with most sections below 4,000 ADT. A 3-lane section would offer improved crash reduction, lower top end speeds and provide the ability to add a bike lane to connect the northern neighborhoods.
91	Sinclair St Bike Lanes	0.22	Buffered bike lanes as no parking should exist on this street. This also provides a bike and pedestrian connection to continuing pathways.
92	Shoshone Bike Lanes	0.49	Street is 42 feet wide, can be reconfigured to add bike lanes with existing 3-lane section with 5 foot bike lanes, 11 foot travel lanes and a 10 foot turn lane.
93	Shoshone Bike Lanes 2	0.52	Street is 40-41 feet wide. Options to consider include: Maintaining center turn lane with 5 foot bike lanes, 10 foot travel lanes and 10 foot turn lane or turn lane can be dropped for wider bike lanes and travel lanes. Volumes are under 4,000 ADT in more dense sections of the street.
94	Butter-Spaeth Rd	1.74	Mark existing asphalt shoulders as bike lanes. Without curb and gutter 4 feet is the minimum bike lane width.
95	N Brooks Ave Bike Lane Enhancement	0.22	Brooks does not have many building frontages along it. It is recommended to provide buffered bike lanes and eliminate on-street parking for this stretch from E 1st Street to E Longmont St
96	E 9th St Bike Lanes	0.76	Most homes have frontages on sides streets or off-street parking. Street is about 38-40 feet wide including gutters. Review is recommended to determine the right parking/bike lane configuration.
97	Butler-Spaeth Bike Lanes 2	1.02	Use existing shoulders or eliminate unnecessary parking where needed to create a continuous pair of directional bike lanes in street. Review recommended.
98	6th St Bike Lanes	0.24	Curb to curb is currently 48 ft. Enough to have parking and bike lanes or substantial buffered bike lanes if one or both parking lanes are removed. Review recommended.
97	Butler-Spaeth Bike Lanes 2	1.02	Use existing shoulders or eliminate unnecessary parking where needed to create a continuous pair of directional bike lanes in street. Review recommended.
98	6th St Bike Lanes	0.24	Curb to curb is currently 48 ft. Enough to have parking and bike lanes or substantial buffered bike lanes if one or both parking lanes are removed. Review recommended.

MAP 4.5: PROPOSED ON-STREET IMPROVEMENTS



Spot Improvements

Proposed spot improvements are largely focused on improving bicycle and pedestrian connectivity across roads or natural features. They may be stand-alone projects or may be part of a longer segment and their use should be affirmed during the design process. Spot improvements are listed in Table 4.5 and displayed on Map 4.6.

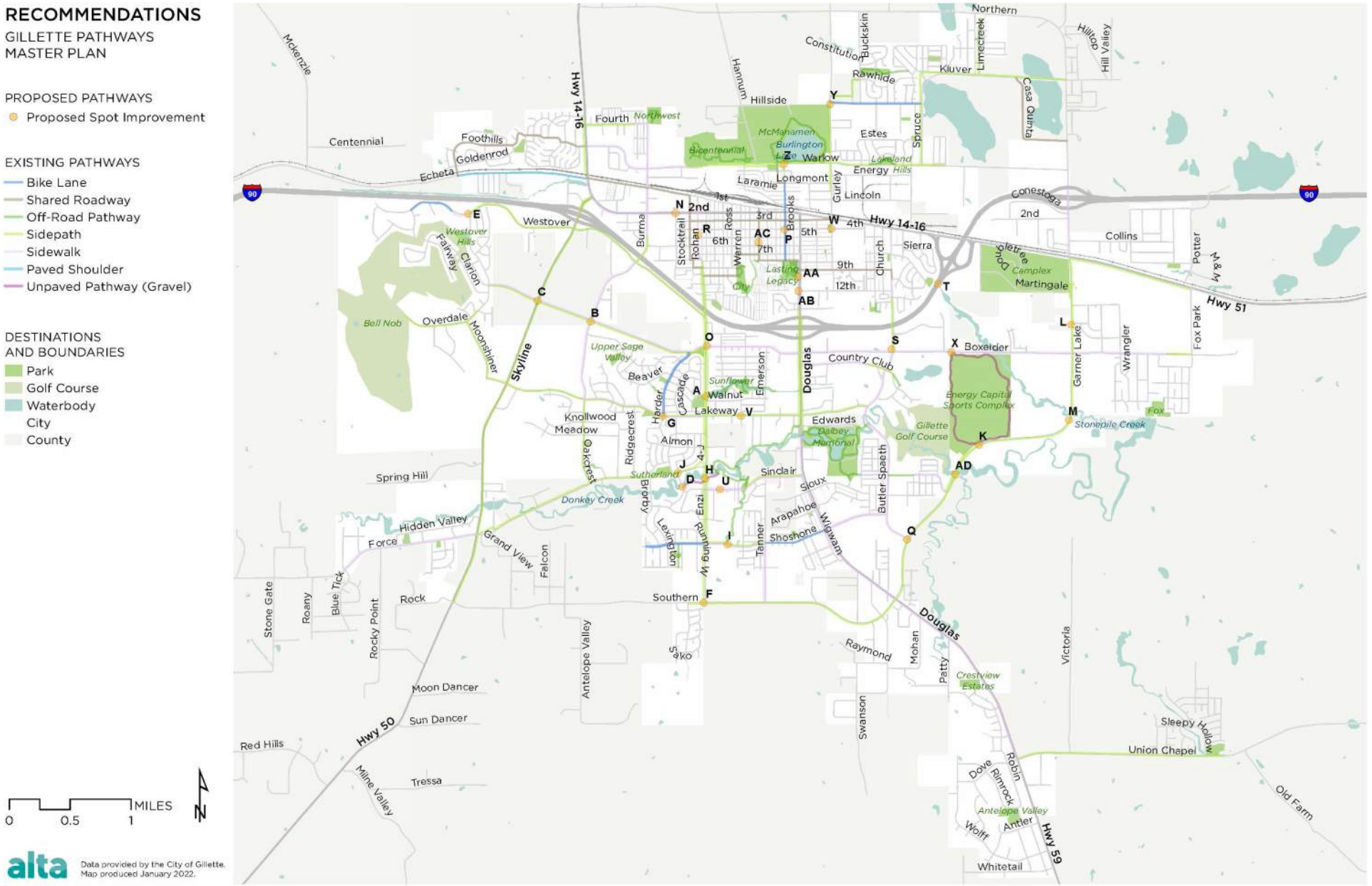
TABLE 4.5 SPOT IMPROVEMENTS

ID	Improvement Name	Notes
A	Pedestrian Hybrid Beacon (PHB)	Install pedestrian hybrid beacon on south leg of the intersection. This improvement is appropriate for a higher speed multi-lane roadway and reestablishes the crossing that was removed.
B	Rectangular Rapid Flashing Beacon (RRFB)	
C	New Traffic Signal or roundabout	Boxelder is a significant east-west connection for bikes. Drivers also have difficulty merging and crossing with high-speed traffic on Skyline Drive. Some sort of traffic control is needed. A RRFB or PHB would not be appropriate at this location due to high speed and likely driver exploitation of those treatments.
D	Median refuge	
E	Median refuge with School Rectangular Rapid Flashing Beacon (RRFB)	
F	Add Leading Pedestrian Interval (LPI) to Signal	Leading pedestrian interval and keep crosswalk striping refreshed.
G	School crossing	Install crosswalks and school zone warning signage with S1-1 Signs.
H	Pedestrian Hybrid Beacon (PHB)	Pedestrian hybrid beacon or RRFB with study.
I	Mid-block crossing with median refuge and trail crossing signage	
J	Rectangular Rapid Flashing Beacon (RRFB) or Pedestrian Hybrid Beacon (PHB)	
K	Pedestrian Hybrid Beacon (PHB)	Street is too fast for RRFBs
L	Pedestrian Hybrid Beacon (PHB)	Connects campground to fairgrounds
M	Pedestrian Hybrid Beacon (PHB)	PHB if/when trail is added.
N	Pedestrian Hybrid Beacon (PHB)	

TABLE 4.5 CONTINUED

ID	Improvement Name	Notes
O	Improve channelized turn lane	Install second warning sign and consider raised pedestrian crossing in channelized turn lane. RRFB could be added to warning signs as well.
P	Curb extensions and warning signage	
Q	Full signal or Pedestrian Hybrid Beacon (PHB)	
R	Reconstruct east sidewalk to remove steps and make accessible	
S	Bike lane approach	If bike lanes are added to Butler-Spaeth, the southbound bike lane will need road widening or a short path to connector to this intersection.
T	Freeway Underpass needed for pathway	
U	New mid-block crossing with Rectangular Rapid Flashing Beacon (RRFB)	
V	Pedestrian Hybrid Beacon (PHB)	PHB or full signal if/when sidepath is added.
W	Stop sign or Rectangular Rapid Flashing Beacon (RRFB)	If/when pathways are added
X	Pedestrian Hybrid Beacon (PHB)	
Y	Add pedestrian crossing to south leg	
Z	Roundabout	
AA	Include closures of Veterans to isolate park from other uses	
AB	Street closure to allow pathway users to continue	
AC	Evaluate back-in angled parking	
AD	Pathway underpass with golf cart access	

MAP 4.6: PROPOSED SPOT IMPROVEMENTS



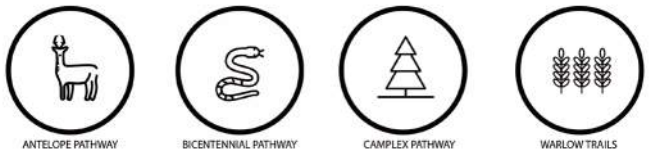
POLICY RECOMMENDATIONS

Implementing a successful pathway network takes more than simply building great pathways; it requires policies be put in place to ensure efficient and effective system use and management. While this plan is not policy, it does recommend the following policies be adopted by the City of Gillette which are intended to support the facility recommendations discussed in the previous section.

Develop a comprehensive wayfinding program for the pathways system

Gillette currently has some existing signage, but feedback from both stakeholders and the general public suggests that it is insufficient for most users to effectively navigate the system. Developing a comprehensive wayfinding program for the entire on and off-street network using current wayfinding best practices should be a priority for Gillette. A consistent and well-designed signage program will not only improve the user experience, it will provide an opportunity to promote the Gillette brand. An updated route map should be developed. Wayfinding signage throughout the pathway network should be enhanced to make routes more clear. Consideration should be given to the use of signs, symbols, pavement stamps. Gillette already has a community wayfinding series of vehicular oriented signs. It is possible to build from these signs using common elements and apply them to the pathway network as well.

FIGURE 4.1 EXAMPLE NAMED PATHWAY BRANDING



Existing vehicular and bicycle oriented wayfinding signs in Gillette

In 2021, GPA's Engineering Divisions developed pictograms for each named pathway. The icons are proposed to be installed as a thermoplastic stencil at pathway junctions and decision points to make it more clear which route is the main named route versus connector pathways. Consistent information about routes and destinations will make the system more usable. Figure 4.1 illustrates some of the icons for each named pathway. It is recommended that Gillette undergo a comprehensive community wayfinding planning process to unify and design signs and other wayfinding typologies such as mile markers, kiosks, trailhead and park signage and other features as desired with the goal of creating a unified wayfinding brand and system that will enable residents and visitors to navigate the city.

Improve pathway-related amenities throughout the system

Pathway-related amenities such as benches, lighting, restrooms, water points and bicycle parking can improve user experience by increasing convenience and comfort. Benches provide opportunities

to rest, lighting increases visibility and safety, and water points provide refreshment on a hot day.

People may ride their bicycle more frequently if they know there are ample places to securely park their bikes. Gillette should assess bike parking needs at destinations such as parks, schools, shopping centers and downtown. Bicycle parking should be required at new and remodeled commercial businesses and a rack installation program should be initiated to install bike racks in public locations as needed. On-street bike parking options such as bike corrals should be considered in locations with high demand. Other bike support facilities such as bike fix-it stands should be considered and may be installed at key pathway locations. Bike parking can be temporary in some locations to meet seasonal fluctuations in demand. Reference the Association of Pedestrian and Bicycle Professionals (APBP)'s *Essentials of Bike Parking: Selecting and Install Bike Parking That Works* (2015) for further information on bicycle parking best practices. Gillette should also consider accommodating charging infrastructure for e-bikes at key destinations like the library as they continue to increase in popularity.

Separated sidepaths should be included on all future collector and arterial construction in Gillette.

One strategy to complete the pathway network is to ensure that roadway projects include high quality sidepaths. This guidance helps mitigate the 'missed opportunity' that sometimes happens when a plan doesn't specifically identify a project. With this policy in place, Gillette can take advantage of opportunities with agency partners for new roads knowing they will be designed and constructed in support the community goal of a connected network.

Design and construction of pathways shall be consistent with the guidelines contained in this plan, including widths, clear zones, pathway materials, etc. This is consistent with the recommendations of the 2017 LRTP.

Maintain and upgrade pathways to current standards within 10 years

While Gillette has made tremendous progress towards implementing pathways, it is important to note that the standards for bicycle and pedestrian facility design and construction have changed since the prior plan was written. Chapter 5 details the revised standards to which all new facilities should be built and attention should be paid to future editions of the AASHTO Guide for the Development of Bicycle Facilities. Table 4-2 and Map 4-2 illustrate the pathways, based on a high level conditions analysis, that should be considered. This policy is aspirational, but will assist the City with upgrading older sub-standard facilities that also may not be in a satisfactory state of repair. This plan identifies many of such pathways.

Covered short-term bicycle parking provides weather protection.

E-bikes and other electric mobility devices are welcomed on pathways in Gillette

The pathways in Gillette are designed for use by bicyclists and pedestrians. Increasingly, e-bikes are using the facilities and the Wyoming state legislature has approved the use of class 1-3 E-bikes on all pathways not on state or federal lands. In the winter, E-fat-tire mountain bikes are unceasingly used.

E-bike sales in the US grew by 145% between 2019 and 2020, compared to traditional pedal bikes that increased in sales by only 65% over the same time period. E-bikes open up bicycling opportunities to people who cannot ride a traditional bike due to health and physical fitness conditions, age, disability, or travel time. E-bikes can enable people with limitations to commute, run errands, and recreate outdoors. Many communities are concerned that E-bike proliferation will lead to conflicts on their pathways. Because of the vast potential of E-bikes, this plan recommends that Gillette does not attempt to regulate their use at the city level. Instead, implement signage, and other programs to encourage users to ride courteously in consideration for other pathway user groups.

Promote a pathways system that is usable in all seasons

In recent years, more and more community members have been riding their bicycles year round. The need for clear walking paths has always been high as people continue to use the pathway system throughout the Winter months. As noted in the Chapter 4, several departments within Public Works are responsible for trail maintenance. The Parks Division maintains the trails with the City Parks and the Streets Division maintains those pathways adjacent to and on streets within Gillette. Each Division has policies and protocols for maintenance of their respective facilities. This plan recommends close coordination between the two divisions to ensure that facilities are being maintained to a uniform high level. A process is recommended to ensure that maintenance of the adjacent landscaping is performed. An easy method for the community to report work that needs to be done such as a 311 reporting system used by communities across the country.

Example Courtesy sign long pathway in Cleveland Ohio

PROGRAM RECOMMENDATIONS

In addition to policies, programs play an important role in enhancing/growing, supporting bicycling and walking in Gillette. The program recommendations contained in Table 4.6 highlight opportunities to provide education as well encourage bicycling and walking. They are intended to support the facility recommendations discussed in the previous section. Many of these programs will benefit from partnerships with members of the community, local non-profits, Campbell County or WYDOT.

Family-friendly bike event (Credit: Alta)

TABLE 4.6: PROGRAM RECOMMENDATIONS

Program Recommendations	Potential Partners	Notes
Programs Catered Toward Children and Young Adults		
Safe Routes to School	Campbell County School District (CCSD), City of Gillette (COG), Gillette Police Department (GPD), WYDOT	Continue focus on making walking and biking to school in Gillette possible for as many students as possible. City to work with Police Department and School District to explore needed elements, which could include: School Zone safety improvements, targeted enforcement, delayed driving release to allow walkers and bikers to clear the school zone, classroom education, incentives to regularly walk or bike to school, Establishment of local walking and/or biking school bus programs, and new pathway connections designed to make walking and biking safer and more attractive.
Family Bicycle Rides	COG	Also known as “Kidical mass”: Fun short group bike ride for all ages of kids and their parents. Rides often have theme and connect to parks.
Equipment Giveaways	COG, GPD	Helmet and/or light giveaways: distribute free helmets to kids at events or as part of safe routes to school activities if they do not have one.
Bicycle Rodeos	CCSD, COG, GPD	May take place in schools or as stand-alone community events. Children learn bike skills (turning, braking, yielding, signaling) in a safe environment

TABLE 4.6: CONTINUED

Program Recommendations	Potential Partners	Notes
Programs Intended to Encourage Bicycling and Pathway Use		
Request a Rack Program	COG	This program would involve the City off Gillette acting as the facilitating agent to procure and install bicycle racks at locations or businesses based on community requests. Bicycle racks encourage trips to be made by bicycle. Racks can be procured in volume for approximately $100 each for a “inverted U” or “staple” type rack which can securely park two bicycles.
Bicycle Parking Requirements	COG	The City of Gillette should update its parking requirements to also require bicycle parking as part of new development to ensure that these destinations encourage and accommodate bicycling. The Association of Pedestrian and Bicycle Professionals maintains model code requirements for bicycle parking
Bike Buddy Program	COG	Less experienced bicyclists are paired with a trained or experienced mentor to help them plan routes, answer questions, and practice riding
Seek “Bicycle Friendly Community” Designation	COG	The League of American Bicyclists bestows multiple different levels of “Bicycle Friendly Community Designations” based on a comprehensive application process which looks not only at the built pathway network, but also at programs and policies. Many communities use the feedback provided by the League as a road map toward prioritizing efforts going forward to better their application and award status. Status may have economic benefits for both tourism and attraction of jobs and talent to the area.
Bicycle / Pedestrian / Pathway Awareness Media Campaign	COG, GPD	Many pedestrians and bicyclists do not know the rules of the road, pathway etiquette or where to walk or ride. A marketing campaign that highlights these elements, as well as safety and other support programs (existing and recommended in this plan), is an important part of creating awareness of bicycling and walking in Gillette. A high-profile campaign is an effective way to reach the general public, highlight bicycling and walking as viable and normal forms of transportation, and reinforce safety for all road users. Campaigns are particularly effective when kicked off in conjunction with other bicycling/walking events, back to school in the fall, major community events, baseball games, or other related initiatives.
Summer/Winter Bike To Work Events	COG	Many western communities promote days or weeks in the summer and winter to promote bicycling and using the pathway network for transportation purposes. These events often feature incentives, or giveaways, partnerships with local businesses such as bike shops or coffee shops and assistance from local community groups. Winter events often revolve around helping people to understand what equipment and gear is helpful to make bicycling in the winter safe and comfortable. Events could correlated to National Bike Month events.

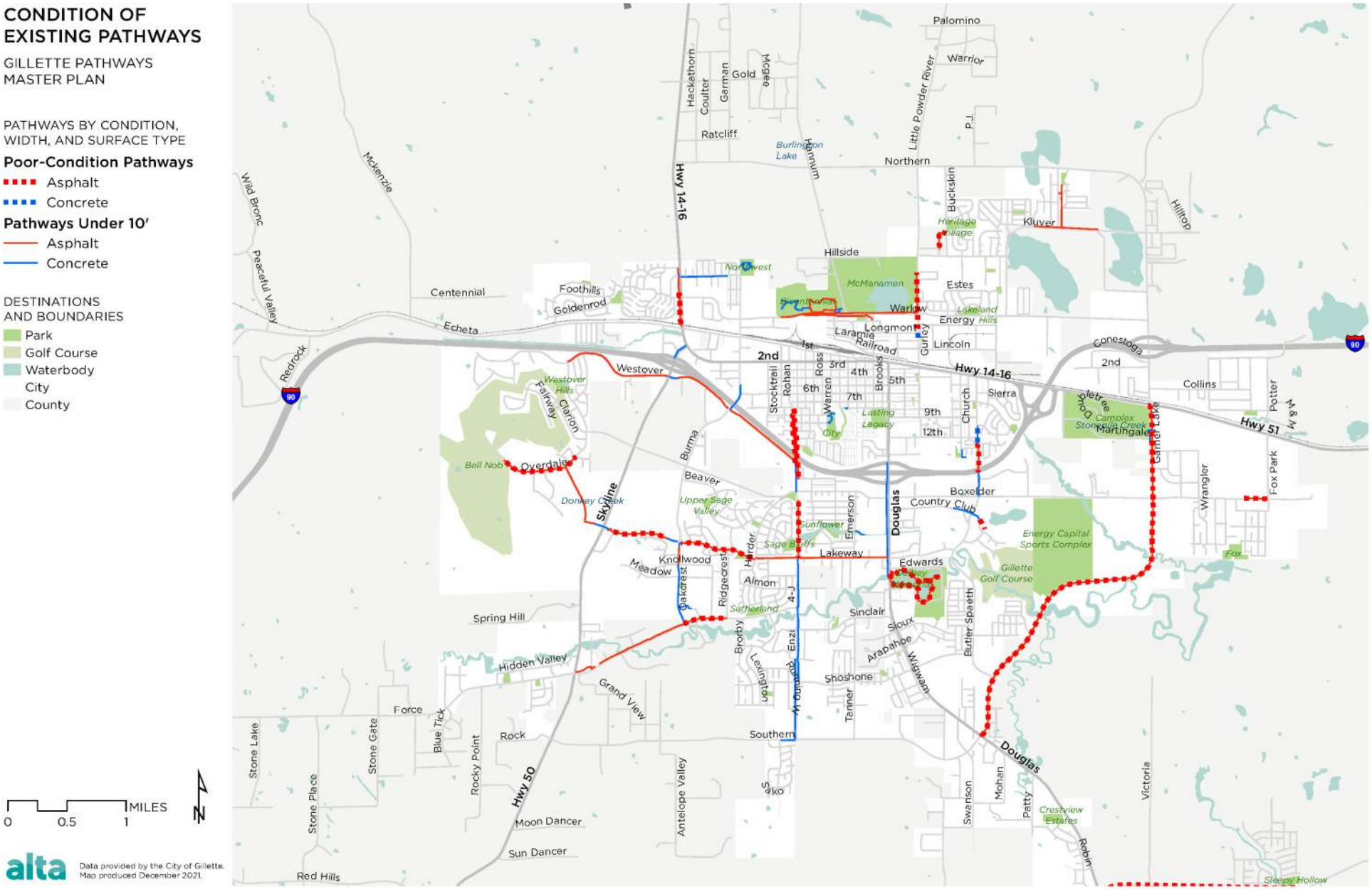
MAINTENANCE PROJECTS AND UPGRADES

An important part of this plan was the identification of pathways that need maintenance or reconstruction to meet current standards. While many may have been constructed to the standard at the time of construction, design guidelines and accessibility standards have changed so a review of existing conditions included understanding width and surface condition based on available data. While many of the pathways are in good condition, a number of them are narrow and may cause challenges for users or had poor pavement condition. Based solely on city data about pavement condition, about 70 percent of the asphalt pathways are in poor to very poor condition, while the rest are in fair to excellent condition. Only a small percentage (2%) of the existing concrete pathways are in poor condition. While there are a few pathways that are in good condition and are 8 feet wide, the recommended standard is now 10 feet and no segments meet both surface quality and width recommendations. To support on-going maintenance, it is recommended that pathways be added to the City pavement management system.

Proposed maintenance projects, based on pavement condition are shown on Map 4.2.

Cracking on asphalt sidepath in Gillette

MAP 4.2: RECOMMENDED PATHWAY MAINTENANCE PROJECTS



CHAPTER 5

IMPLEMENTATION

PUTTING IT ALL TOGETHER

The pathway and facility recommendations provided in Chapter 4 represent a visionary plan practical plan for the City of Gillette and parts of Campbell County. Realizing this vision will take considerable time and dedication involving many years of successful partnerships, creative funding strategies and coordination. This chapter discusses implementation strategies, provides updated design standards, establishes a maintenance framework and provides priority project descriptions that the City of Gillette can immediately begin to pursue following plan adoption.

IMPLEMENTATION STRATEGIES

Include pathway projects with larger road or bridge projects. Including a pathway project with a roadway project is an important way to add connections to the network. It's also more efficient and can be most cost effective. As these projects would be additive to other larger City, County or WYDOT infrastructure projects, these should not be considered independently unless opportunities to "piggyback" are lost. Ideally funding for these projects would be included as part of the larger roadway or bridge project as necessary elements rather than as "add ons" which would require distinct sources of funding.

Implement projects as part of routine maintenance. These projects are predominantly limited to on-street bikeways, neighborhood bikeways and potentially sidepaths under certain conditions. City and County staff should continually coordinate maintenance efforts with the recommendations provided within this Master Plan. Opportunities to implement projects that could be tied to these maintenance activities such as resurfacing, restriping, curb ramp upgrades, signal modifications, etc may provide opportunities to improve conditions for people using the pathway network.

Implement quick projects with City funding. Such projects may be pursued even if lower ranked due to their simplicity and low cost. An example of this might be a new section of pathway, a crossing improvement or other spot improvement where right of way and jurisdictional approval is not needed.

Externally funded Pathway Projects. Many grants or federal/state funding sources have limitations to the types of projects that would be applicable. The priority projects provided in this Chapter are presented in a way as to be easily adapted into a grant application for funding.

IMPLEMENTATION COMPONENTS

IMPLEMENTATION STRATEGIES *– Includes a brief description of various strategies that can be undertaken to implement projects*

DESIGN GUIDELINES – *Includes recommended design specifications for each facility type.*

MAINTENANCE – *Describes typical maintenance tasks for each trail type with some planning-level costs.*

PRIORITY PROJECTS – *Provides additional detail on high-priority projects to pursue as stand-alone efforts leading from this plan*

DESIGN GUIDELINES

Pathways are an important way in which people experience Gillette and they are used more and more as part of the transportation network, in addition to the already popular recreation uses these recommendations increasingly support their use as part of the transportation network. These design guidelines specify how pathways, of various types, and supporting facilities should be designed and constructed within Gillette. Projects must not only be planned for their physical aspects as facilities serving specific transportation objectives; they must also consider effects on the aesthetic, social, economic and environmental values, needs, constraints and opportunities in a larger community setting.

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

- The Federal Highway Administration's (FHWA) ***Manual on Uniform Traffic Control Devices (MUTCD)*** defines the standards to install and maintain traffic control devices on all public streets, highways, bikeways, and private roads open to public traffic.
- ***FHWA's Small Town and Rural Multimodal Networks (2016)*** document is a design resource and idea book to help small towns and rural communities support safe, accessible, comfortable, and active travel for people of all ages and abilities.
- AASHTO **Guide for the Development of Bicycle Facilities** addresses issues around a wide variety of bicycle-related projects and programs to clarify the elements needed to make bicycling a more safe, comfortable, and convenient mode of transportation.

TABLE 5.1: PATHWAY DESIGN GUIDELINES

Criteria	Off Road Pathways
Width	10’ minimum, 12’ recommended where use is expected to be high
Surface	Concrete with saw cut joints
Shoulder	No gravel shoulder required, however, where appropriate, provide a 3-5’ min running path next to the concrete path. Provide 2’ clearances to objects
Markings	No markings are required; however, center lines may be marked on paths with a high volume of bidirectional traffic. Solid centerlines may be desirable in areas of low visibility or on approaches to road crossings. Note: Wayfinding guide marking are planned for designated concrete trails using thermoplastic. Wayfinding plan recommended to determine placement guidelines.
Grade	5% maximum Railing for bicycle facilities should be 42-48” tall and have a “rub rail” for handlebar contact.
Cross Slope	2% maximum, design to no more than 1.5% to account for construction tolerances (1% recommended)
Subsurface	A soils investigation is recommended to determine the load-carrying capabilities of the native soil and the need for any special treatments. Note: 4” Min. road base should be used for any trails that expect any vehicular traffic)
Drainage	Design should catch drainage on the uphill side of the trail to prevent slope erosion and deposits of mud across trail. Catchment basin to carry the intercepted water under the path if needed.
Sight Distance	Shared use paths should be designed with adequate stopping sight distances depending on intersection control type. Stop, yield or priority approaches on the pathway will impact the needed sight distance required for motorists as well as the vehicle approach speed and other factors. See AASHTO Bike Guide for discussion and distances.
Design Speed	General AASHTO guidelines note that design speeds may range from 12 to 30 mph depending on context; however, designers may choose lower design speeds on approaches to controlled intersections.

TABLE 5.1: CONTINUED

Criteria	Multi-Use Trails / Shared Use Paths
Intersection Design	• Align or widen trail at railroad intersections to permit perpendicular crossing of tracks • Avoid using bollards or obstacles at grade-level intersections unless operations prove they are needed. If necessary, use entrances with a median separating directional movement in place of bollards • When bollards or gateway barriers are used, provide a minimum opening of 5' to adequately permit clearance for bicyclists. Avoid poorly marked cross barriers that can create hazards for entering bicyclists, especially in the dark • Curb ramps should be as wide as the pathway leading into them • Intersections should be as close to a right angle as practical given the existing conditions • Additional crossings measures (such as reducing traffic speeds, curb extensions, active warning, thermoplastic crosswalk markings) should be located at uncontrolled intersections where speed limit exceeds 35mph and the roadway has 4 or more lanes of traffic

Signage	• Provide regulatory and warning signs consistent with the MUTCD, including:
	  • Gillette trail system logo
	  • An identifying trail name or logo
	  • Pictures Identifying permitted uses
	  • Trail maps at regular intervals
	  • Mileage markers
	  • Interpretive signage
	  • Direction indicators
	  • Safety rules
	  • Use regulations and prohibitions
	• Liability warnings
	• Additional signage not depicted in the MUTCD may be necessary pending approval of City Engineer
	• Signage should be provided at trailheads and intersections of other trails.

Support Facilities	Provide periodic minor rest stops, including benches, shaded areas, picnic areas, and information trailheads, as well as more major rest stops, such as at trail heads. Benches, trash cans, dog bag dispensers should be every 1/4 to 1/3 of a mile. Roadway lighting should be located within 500' of any multi-use trail and at major street crossings.

TABLE 5.2: SIDEPATH DESIGN GUIDELINES

Criteria	Sidepath
Context	• Along streets that have controlled access to limit conflicts with driveways and intersecting streets. Should not average more than one intersecting access points per 300' • Adjacent roadway has relatively high-volume and high -speed motor vehicle traffic that might discourage bicyclists from riding on the roadway and there are no practical alternatives for either improving the roadway or accommodating bicyclists on parallel streets • Note: When a nearby parallel off-roadway route is implemented, consideration may be given to the removal of adjacent sidepaths as long as connections are made
Width	10', 8' minimum in pinch points
Buffer	Preferred minimum separation width is 6.5' from traffic. Minimum separation distance is 5' without recommended barrier (need not be crash worthy)
Surface	Concrete with saw cut joints
Markings	No markings are required; however, center lines may be marked on paths with a high volume of bidirectional traffic. Solid centerlines may be desirable in areas of low visibility or on approaches to road crossings. Note: Wayfinding guide marking are planned for designated concrete trails using Thermo..
Cross Slope	2% maximum, design to no more than 1.5% to account for construction tolerances (1% recommended)
Grade	5% max desired, or grade of the parallel street
Subsurface	A soils investigation is recommended to determine the load-carrying capabilities of the native soil and the need for any special treatments Note: 4" Min. road base should be used for any trails that expect any vehicular traffic)
Drainage	Catchment basin to carry the intercepted water under the path if needed.
Sight Distance	Sight distance is not as problematic for sidepaths as for shared use paths crossing across a roadway. Typically, the side street or driveway is controlled by a stop sign or signal. Utilize the latest edition of the AASHTO Guide for the Development of Bicycle Facilities to determine the proper sight triangle at side streets.

TABLE 5.2: CONTINUED

Criteria	Sidepath
Intersection Design	• Crossings should be highly visible to motorists on both parallel and intersecting streets; ownership of ROW should be clear to both motorists and bicyclists • Curb/intersection cuts or ramps must be logical and in the direct travel line • The intersection area must be free of obstructions, such as poles, lights, and curbs • Trail crossings must be clearly marked, consistent with AASHTO and MUCTD standards • At intersections with pedestrian actuated signals, the signal control should be readily accessible from the trail surface • Right-turn bypasses should be employed at sidepath crossings to control turns on or from major roads • Reduce the density of driveways if possible (i.e. combine access points) • Design intersections to reduce driver speeds and heighten awareness of path users • Consider design measures on approaches to intersections that encourage lower speeds for pathway users • Curb ramps should be as wide as the sidepath leading into them
Signage	Signage must be readable from the trail in both directions; advisory signs should caution motorists of the presence of bicyclists in the area and in intersections; signage should either 1) be oriented to motorists on the parallel road, warning that turning traffic yields to pedestrians, or 2) be oriented to sidepath users at intersections. Provide regulatory and warning signs consistent with the MUTCD

TABLE 5.3: SHARED USE ROUTE / NEIGHBORHOOD BIKEWAY DESIGN GUIDELINES

Criteria	Shared Use Route / Neighborhood Bikeway
Context	Conventional residential streets that have one through lane in each direction with parallel parking; low traffic multi-lane facilities, where bike traffic is directed to a shared outside lane in each direction Roads with multiple lanes and low traffic should be evaluated for lane reallocation to bicycle lanes and other uses (FHWA Road Diet Guidelines). Any four-lane roadway with daily volumes below 20,000 may be an ideal candidate for conversion to a 3-lane roadway and bicycle lanes
Width	Travel lane should be less than 14’ or bike lanes provided
Markings	Shared lane marking to be placed in center of lane where speeds are posted at 30mph or below
Signage	Bikes may use full lane sign in urban contexts with speeds posted at 30mph and below. Use Bicycle warning sign with “On Roadway” supplement in lieu of Share the Road Sign in higher speed or rural contexts (FHWA Small Town and Rural Multimodal Networks Guide). MUTCD compatible bicycle guide signs may be used for wayfinding purposes for on-street routes

TABLE 5.4: BIKE LANE DESIGN GUIDELINES

Criteria	Bike Lane
Width	5’ minimum with curb and gutter (6’ recommended); 4’ minimum with no gutter. Recommend at least 4 feet of asphalt surface outside of gutter pan if present.
Vehicle Travel Lane Width	Context dependent, 11’ minimum (10’ for left turn lane).
Markings	8” thermoplastic marking to separate moving lane and bike lane on streets without parking; on streets with parking 6” thermoplastic marking line separating bike lane from moving lane and 4” separating bike lane and parking lane; bike lane markings should include pre-cut plastic bicycle symbol and directional arrow.
Intersection Design	• Bike lane markings should be continued to the stop bar at controlled intersections or to the right-of-way line extended at uncontrolled intersections • When right turning traffic crosses the bike lane, the bike lane should be highlighted with green dash markings • Bike sensitive signal sensor loops or other types of passive detection should be placed appropriately in the bike lane • A bike lane shall not be provided to the right of a right turn only lane. Use through bike lane to the left, or bicycle specific signal phase. • With combination lane, bicyclists have priority over turning traffic and markings/signs should support this priority and remind motorists of the obligation to yield. Dashed bike lane lines, and/or green coloring may be used. • Appropriate bicycle detection should be provided where needed to actuate the signal or extend the clearance phase if the intersection is wide.
Signage	Standard signs should be provided to mark bike lanes, using MUTCD standards. Wayfinding and guide signage on pathways away from roadways do not need to conform to MUTCD standards

MAINTENANCE

Regular maintenance is a critical component of a high-quality pathway system. Without proper and timely maintenance, pathways are at risk of erosion, overgrowth, and general degradation, which can pose risks to user safety and can have a negative impact on the user experience. People are more likely to walk or bicycle for transportation and recreation when they have access to well-maintained facilities.

Ultimately, maintenance protects the investments made in building pathways, and ensures that they will continue to be assets to the community long into the future.

During the winter months, regular plowing of priority sidepaths, sidewalks and off-street pathways is necessary to provide access, protect user safety, and reduce liability. Trail grooming can also be an option for increasing opportunities for wintertime use such as cross-country skiing and fat tire biking.

Restriping shoulder is typically necessary once a year in places that receive significant snowfall.

The following recommendations provide a menu of options that address the pathway improvements proposed in this plan.

Types Of Maintenance

This section provides a brief overview of typical pathway maintenance tasks. It includes some general best practices.

Tree and Brush Trimming

Tree branches should be trimmed in a manner that leaves a one- to five-foot minimum horizontal clearance from the shoulder of the path and an eight- to twelve-foot vertical clearance. Any branches that appear to be dying, broken, or loose should be removed. Larger trees can be trimmed beyond the recommended clearance and trimmed less often.

Mowing and Landscaping

Maintaining vegetation on pathway shoulders (in open space) and in sidepath buffers is important for preserving the integrity of the soil, preventing encroachment, and enhancing the character of the trails. The frequency of mowing and other landscaping activities will depend on the time of year and weather conditions. Grass or vegetation patches that wither or die should be replaced by seeding the patches, placing mulch, and allowing them to establish during the wetter months. If erosion occurs in the patch before the new grass is grown, grading the area may be necessary.

Weed Abatement

In the case of landscaped buffers adjacent to sidepaths or other planted areas near trails, weeds should be removed regularly to preserve the setting's aesthetic features. Native vegetation along trails in open space and wooded areas can typically be left untended (with the exception of trimming), and will contribute to the natural aesthetic. However, invasive plant species should be removed.

Crack sealing operations help to extend that lifespan of asphalt trails.

Debris Removal

Debris on paved paths can range from natural tree and plant droppings, such as leaves and twigs, to human-produced garbage and litter. Debris should be swept or blown off of the path to prevent tripping hazards and to preserve the paths' aesthetic features. Debris removal may be required more frequently at different times of year.

Gravel Replacement

Paths laid with gravel, crusher fines, or any other surface treatment other than pavement need to be inspected regularly for deterioration. Any deficiencies found in the trail, such as ruts, upheavals, potholes, or erosion, should be mitigated through grading and the reapplication of the surface material. Always compact the surface after reapplication to avoid additional deterioration. Wet spots can accelerate the degradation of gravel and crusher fine trails, and proper drainage strategies should be employed to ensure the mitigation of wet soil conditions.

Sign Repair and Replacement

Existing and future pathway signage is not only critical for navigation and orientation, but also serves as a "brand" for the trail system. Keeping signage and pavement markings in good condition is therefore vital for maintaining a usable and appealing network. Pathway signage should be inspected annually and replaced or repaired if damaged or defaced.

Regrading

Occasionally, portions of pathways will need to be regraded or replaced to maintain a sufficiently even surface for users and to efficiently manage drainage. Natural surface trails will typically need spot regrading every couple of years to "deberm" the trail and promote drainage.

Pavement Preservation for Off-Road Pathways and Sidepaths

Pathways and sidepaths require regular routine and capital maintenance to provide a quality experience to users. Maintenance activities will vary depending on the surface material (asphalt, concrete, or crusher fines). Concrete is the preferred surface of all future pathway projects.

Routine Maintenance

Maintenance needs will vary depending on the unique context and needs of each path. However, generally, the routine maintenance includes sweeping, snow removal or grooming, landscaping and vegetation control, and repairs to the path surface. Table 5.1 lists typical shared use path and sidepath routine maintenance tasks, including frequency and estimated annual costs. Overall, routine maintenance for paved paths can range from $500 and $1,500 a year per mile

Winter Maintenance

Winter maintenance of shared use paths in Gillette is an important consideration for both residents and visitors. Winter maintenance consists of two primary activities: snow removal or grooming. Pathways are maintained by the Streets Division and the Parks Department and are cleared according to department protocols.

Capital Maintenance

Major or capital maintenance activities typically involve more intensive maintenance repairs such as pavement seal coating, pavement overlays, pavement reconstruction, or other structural rehabilitations. Needs can vary widely based upon environmental factors, such as soil conditions, drainage and the quality of initial construction. Any paved path surface will deteriorate over time with asphalt surfaces dropping in quality rapidly after 10 years. Preservation efforts such as seal coating extend the life of asphalt efficiently and at a lower cost than waiting for the surface to require reconstruction. Overlays may be needed after multiple seal coats or at approximately 30 years of service. A full reconstruction is typically needed after 50 years if the seal coat and overlay have been provided. Table 5.5 describes a typical 10-year capital maintenance scenario for paved paths.

TABLE 5.5: SHARED USE PATH AND SIDEPATH ROUTINE MAINTENANCE

Maintenance Activity	Function	Frequency	Est. Annual Cost (per mi.)
Path sweeping	Keep paved surfaces debris free	Twice annually (once in spring and once in fall)	$140 (x2)
Litter and trash removal	Keep path clean and maintain consistent quality of experience for users	Annually, or as needed	$70
Mowing path shoulders (native opens space areas)	Increases the effective width of the path corridor and helps prevent encroachment	Twice annually, in late spring and mid- to late-spring	$100 (x2)
Tree and brush trimming	Eliminate encroachments into path corridor and open up sight lines	Annually, or less frequently as needed	$100
Weed abatement	Manage existence and/or spread of noxious weeds, if present	Twice annually, in late spring and mid to late summer	$140 (x2)
Safety Inspections	Inspect path tread, slope stability, and bridges or other structures	Annually	$20
Snow removal/grooming	Limited to sections of the path where year-round access is desired	As needed (assume 20 events)	$480
Sign and other amenity inspection/replacement	Identify and replace damaged infrastructure	Annually (assume 2 sign replacements)	$100
Crack sealing and repair	Seal cracks in asphalt to reduce long term damage	Annually	$300

Concrete paths are preferred for future pathway construction as they require significantly less capital maintenance than asphalt paths. Although they may require isolated jacking or replacement, limited capital maintenance expenditures can generally be expected for upwards of 50 years.

Pathways constructed out of crusher fines can provide a stable ADA compliant surface in some conditions. Like asphalt or concrete paths, these trails require periodic maintenance to provide a high quality experience. Minor re-grading should be done every two years to eliminate any ruts and add gravel to low spots. Table 5.6 illustrates typical costs associated with surface maintenance of crusher fines paths.

Financial planning for major or capital maintenance can be challenging. Typically asphalt shared use paths require greater capital maintenance activities with age and ultimately require full reconstruction at some point. Some jurisdictions stay focused on eventual reconstruction and treat this as a maintenance item to be budgeted for, whereas some treat this as a separate capital project to be considered at a later date.

TABLE 5.6: PAVED SHARED USE PATH AND SIDEPATH CAPITAL MAINTENANCE

Maintenance Activity	Time	Long Term Capital Costs		
Seal coat	Year 10	$0.22/SF	$2.20/LF	$15,000/mi
Seal coat	Year 20	$0.22/SF	$2.20/LF	$15,000/mi
Overlay	Year 30	$2.30/SF	$23.00/LF	$121,000/mi
Seal coat	Year 40	$0.22/SF	$2.20/LF	$15,000/mi
Reconstruction	Year 50	$7.48/SF	$74.50/LF	$395,000/mi

Capital Maintenance Guidance

- **Seal cracks as soon as possible to stop pot holes from forming.**
- **Seal coat the asphalt path surfaces on a regular basis to provide protection from the elements and extend the pavement's usable life.**
- **When minor to modest damage is present, overlays can sufficiently repair the surface without having to complete a total reconstruction.**

A bobcat with a plow can be used to plow shared use paths and sidepaths.

Sweeping Guidance

- **Establish a seasonal sweeping schedule that prioritizes roadways with on-street bicycle and pedestrian facilities.**
- **Sweep on-street facilities whenever there is an accumulation of debris.**
- **Perform additional sweeping in the spring and fall**
- **In curbed sections, sweepers should pick up debris; on open shoulders, debris can be swept onto gravel shoulders.**
- **Pave gravel driveway approaches to minimize loose gravel on paved roadway shoulders.**

Pavement Surface Guidance

- **Ensure that on new roadway construction, the finished surface on shoulders does not vary more than ¼ inch.**
- **Maintain pavement so ridge buildup does not occur at the gutter-to-pavement transition.**
- **Inspect the pavement 2 to 4 months after trenching construction activities are completed to ensure that excessive settlement has not occurred.**
- **During chip seal maintenance projects, if the pavement condition of the shoulder is satisfactory, it may be appropriate to chip seal the travel lanes only. However, use caution when doing this so as not to create an unacceptable ridge between the shoulder and travel lane.**
- **Maintain a smooth pothole-free surface.**

On-Street Facilities

On-street pedestrian and bicycle facilities, including shoulders and bike lanes, are typically maintained as part of standard roadway maintenance programs, and extra emphasis should be put on keeping these facilities clear of debris and snow, as well as keeping vegetation overgrowth from blocking visibility or creeping into the roadway. Maintenance activities could be driven by a regular schedule or by maintenance requests from the public. Typical maintenance costs for on-street facilities are shown in Table 5.7 on the following page.

Sweeping

When an on-street bicycle or pedestrian facility becomes filled with debris such as gravel and sand from the winter, users are forced into the motor vehicle lane. Poor facility maintenance can contribute to crashes and deter potential bicyclists and walkers.

Periodic checks should be made of the on-street bicycle and pedestrian network with the majority of work being confined to spot fixes and damage response. Street sweeping of on-street facilities will need to be coordinated with the Street's Division program to ensure that the roadway is cleared curb to curb.

Pavement Surface

Bicyclists are more sensitive to pavement quality than motorists because of reduced speeds, narrower tire widths, and, typically, lack of suspension or dampening systems. A chip size of ¼ inch or 3/8 inch is recommended to provide comfortable riding surfaces for bicyclists. A seal coat, which is applied after the chip, also contributes to a smooth roadway surface.

Compaction, which occurs after trenches and other construction holes in roadways are filled, is another important pavement surface issue to consider. Uneven settlement after trenching can affect the roadway surface nearest the edge or curb where bicycles and pedestrians

travel. Sometimes compaction is not achieved to a satisfactory level, and an uneven pavement surface can result due to settling over the course of days or weeks.

Pavement Overlay

Pavement overlays represent good opportunities to improve conditions for on-street bicycle and pedestrian facilities if done carefully. A ridge should not be left in the area where users travel (this occurs where an overlay extends part-way into a shoulder). Overlay projects also offer opportunities to widen shoulders or to re-stripe a roadway with advisory shoulders.

TABLE 5.7: ON-STREET FACILITIES MAINTENANCE

Maintenance Activity	Material	Frequency	Estimated Cost
Pavement sweeping	All	Weekly or monthly as needed	Part of regular street sweeping activities and costs
Snow removal	All	Simultaneous with regular roadway snow removal; otherwise, as needed	Depends on conditions; approx $150/mile
Tree and shrub trimming	All	5 months to 1 year	Part of regular street sweeping activities and costs
Sign repair and replacement	Signs and poles	Every 10 years	$300/sign
Shoulder striping	Paint	Yearly	$1,230/mile

Pavement Overlay Guidance

- **Extend the overlay over the entire roadway surface to avoid leaving an abrupt edge.**
- **If the shoulder pavement is of good quality, it may be appropriate to end the overlay at the shoulder provided no abrupt ridge remains.**
- **Ensure that inlet grates, and manhole and valve covers are within ¼ inch of the finished pavement surface and are made or treated with slip-resistant materials.**
- **Pave gravel driveways to property lines to prevent gravel from being tracked onto shoulders.**

Snow Removal Guidance

- **Gillette should employ a proactive or anti-icing strategy, and have a plan for the removal of de-icing surface material debris that accumulates in and around on-street bicycle and pedestrian facilities.**
- **A prioritization schedule for snow removal is necessary and should focus on primary routes and destinations that impact the highest volume of bicyclists and pedestrians immediately following snow events.**
- **Plow all the way to the curb or road edge to clear shoulders.**
- **After plowing, revisit areas that may have been plowed under, prioritizing those areas on primary routes and near key destinations.**

Winter Maintenance

Winter maintenance of bicycle and pedestrian facilities is an important consideration for a city like Gillette that receives significant amounts of snowfall. The City should expect bicyclists and pedestrians to use the road and trail network year-round, even in inclement conditions, and providing safe conditions for trail users is an important goal. Facilities that connect key destinations should be prioritized for snow removal. Coordination between groups that are responsible for winter maintenance is recommended early in the season as well as during event to ensure that snow removal on one facility doesn't negatively impact access to another.

PRIORITY PROJECTS

Continued implementation of the proposed Gillette pathways system will require an approach that accounts for both capital construction and ongoing maintenance. Map 5-1 illustrates the projects that are proposed to be the immediate focus depending on funding and agency coordination.

Although this plan recommends specific priority projects, flexible and opportunistic implementation is encouraged. Deviation from this list is warranted when opportunities exist to construct projects more economically, partner with other agencies, partner with other planned projects (such as utility work or with developers), respond to specific grant funding, or address a pressing public need.

Priority projects 1 and 2 each include several segments that as a whole represent the vision for the area. In both cases, additional study may be needed to identify the 'first' project to complete. Projects 3 though 9 are individual segments. In all cases, additional study is needed to finalize the design for construction. If developing a grant application, it is recommended that the projects be reviewed against the criteria to select the most competitive project for submission. Design can be funded separately.

Details about each project listed in Table 5.8 can be found in the concept sheets on the following pages. The map and full list of projects can be found in the Appendix.

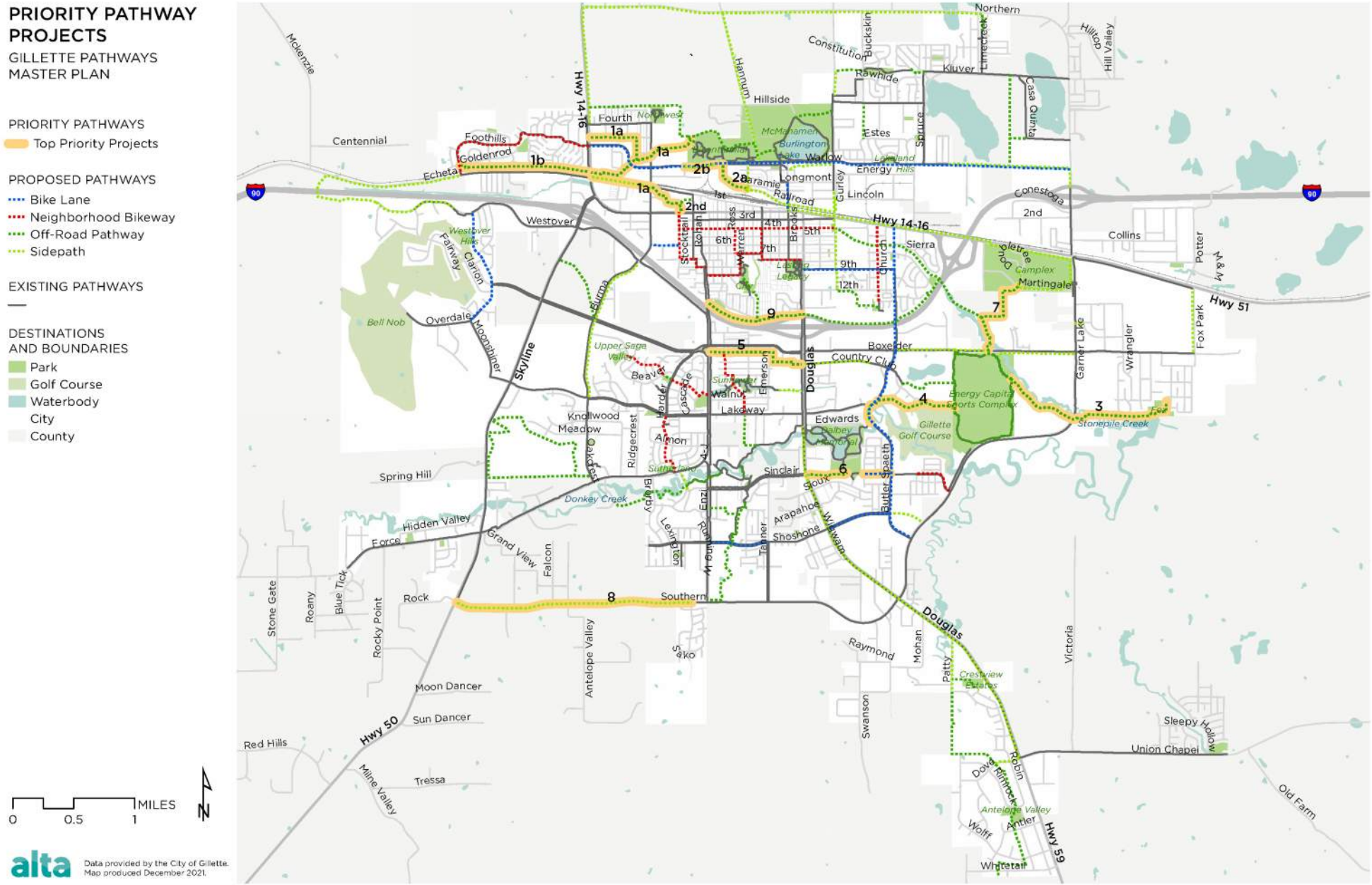
Planning-Level Construction Costs

Detailed estimates were developed for this update and are included in the Appendix as reference and to assist with identifying funding. These planning level costs are in 2021 dollars and will need to be reviewed and updated during the design phase of the project, prior to construction to accurately understand the costs of the project. Planning level costs do not account for permitting, land acquisition, or design. Site-specific issues or constraints may also result in higher costs. Lighting and pathway amenities such as benches and trash cans have been included in the total cost but could be constructed during a later phase. Table 5.8 lists the priority projects and planning-level construction cost estimates for each project. Costs include site development and amenitites. Detailed project costs are included in Appendix B.

TABLE 5.8: PRIORITY PROJECT IMPROVEMENTS

Number	Pathway Name	Improvement Type	Length (miles)	Planning-Level Cost
1a	Canal Trail - Hwy 14-16 / W Warlow Dr	Off-road trail	.48	$1,070.000
1a	Canal Path: W Warlow Dr to Bicentennial Park	Sidepath/off-road trail	.54	$1,150,000
1a	Echeta Road Pathway	Sidepath	.51	$1,000,000
1a	Canal Path to Museum	Off-road trail	.37	$830,500
1b	North Canal Trail	Off-road trail	.50	$1,018,000
1b	Rail with Trail	Off-road trail	1.10	$2,276,000
2a	Bicentennial Park Canal Trail	Off-road trail	.33	$688,200
2b	W Warlow Dr, Pumphouse to Crossing	Sidepath	.25	$675,000
3	Donkey Creek East	Off-road trail	1.58	$3,388,000
4	Donkey Creek to Capital Sports Complex	Off-road trail	.89	$2,023,000
5	Central E-W Connector (4-J to Hwy 59)	Off-road trail/sidepath	.85	$1,877,000
6	Southern E-W Connector (Sinclair St)	Off-road trail/bike lane	.55	$893,000
7	CAM-PLEX Connector	Off-road trail	.84	$1,759,000
8	I-90 Path	Off-road trail	.80	$2,075,000
9	I-90 Path (4-j to Hwy 59)	Off-road trail	1.95	$4,518,000

MAP 5.1: PRIORITY PROJECT IMPROVEMENTS



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Priority Projects

Concept Sheets

As part of the development of this Plan update, nine projects were identified for further exploration. They were identified using community and staff feedback and based on the understanding local needs and opportunities.

This section of the Plan further explores these priority projects at a conceptual level to help inform the next phases and aid in communicating the concepts and funding needs, with focus on implementation. Each project concept includes the following information:

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

THE FOLLOWING PROJECTS WERE SELECTED FOR CONCEPT DEVELOPMENT:

- Project 1: Canal Trail: Bicentennial Park to Stonepile
- Project 2: Bicentennial Park Canal Trail
- Project 3: Donkey Creek East
- Project 4: Donkey Creek to Capital Sports Complex
- Project 5: Central E-W Connector

Project 1: Canal Trail: Bicentennial Park to Stonepile (Multiple pathways)

PROJECT SUMMARY

This group of projects is focused on creating access and connection for northwest Gillette. Made up of four primary segments and two additional segments, together these projects help overcome the barrier of the railroad track, connect to the larger pathway network and build on existing work being done by WYDOT. **Estimated Cost (Total): $5,066,900.00**

PROJECT BENEFITS

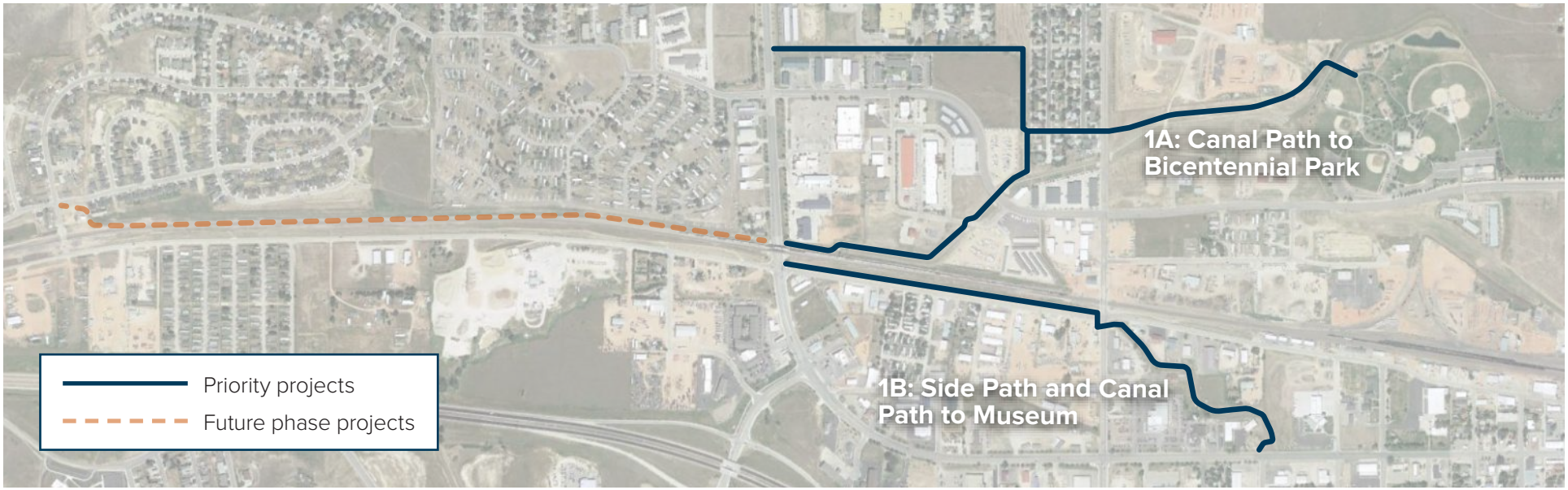
ENHANCED SCHOOL, PARK AND DOWNTOWN CONNECTIONS These proposed pathways provide access to important destinations, including Wagonwheel Elementary School, Bicentennial Park and Downtown and from there to the entire pathway network.

IMPROVED SAFETY FOR EVERYONE These off-street paths are separated from traffic, except where the pathways intersect with streets. Special attention will need to be paid to those crossings to ensure safety and comfort for bicyclists and pedestrians.

FORMALIZATION OF ROUTES ALREADY BEING USED TO ACCESS ADJACENT DESTINATIONS

KEY CONSIDERATIONS

- Crossing at W Warlow Dr may need advance warning beacons due to curve in roadway.
- While generally along the berm, there are several proposed culvert crossings.
- The connection to the existing Hwy 14-16 sidewalk is steep so may need additional length to account for slope.
- Coordination with County will be needed to ensure the tie in at Hwy 14-16 at the Rockpile



1A: Canal Path to Bicentennial Park

SEGMENT DESCRIPTION

The proposed Canal Trails (approx. 1.08 miles) formalize access to Wagonwheel Elementary School and Bicentennial Park using the existing canal bank. The southern Canal Path runs along the spillway, turns north at the culvert and connects to a sidepath along W 2nd Ave. The north Canal trail runs along the spillway and the east side of the culvert to W 2nd Ave. A sidepath along W 2nd Ave includes an RRFB crossing at N Burma Ave and transitions into an off-road path to the Park.

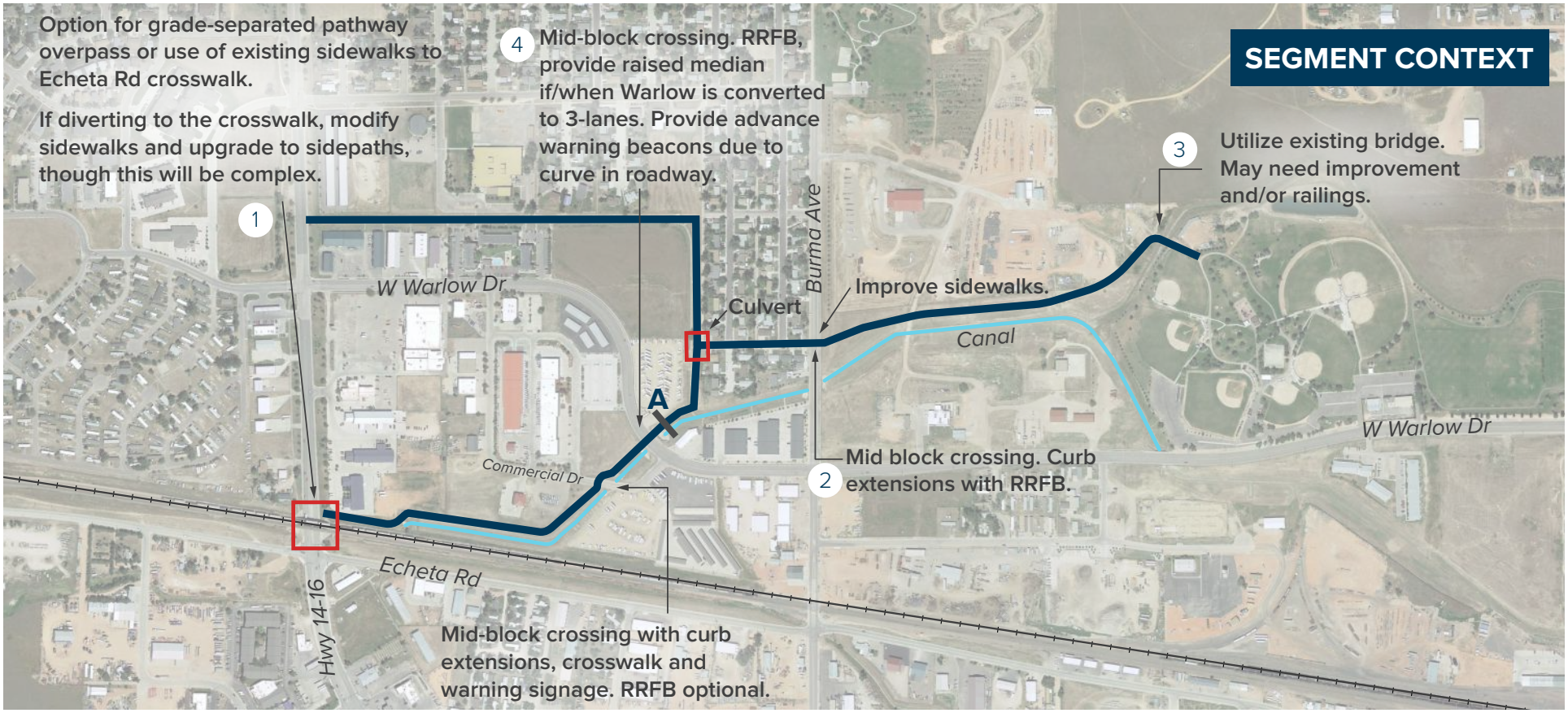
Estimated Cost (Total): $2,220,400 (includes RRFBs, benches and trash cans). Site development only: $1,458,100

BENEFITS

Connects to a major destination and to other planned trails in the area

KEY CONSIDERATIONS

- Includes a pathway connection to the existing trails in the park
- Potential to improve existing bridge to access the Park
- Design should incorporate and preserve existing trees
- Mid-block crossing design at N Burma Ave should incorporate curb extensions.
- A natural surface running trail adjacent to the pathway could be considered



EXISTING SITE

Challenging underpass

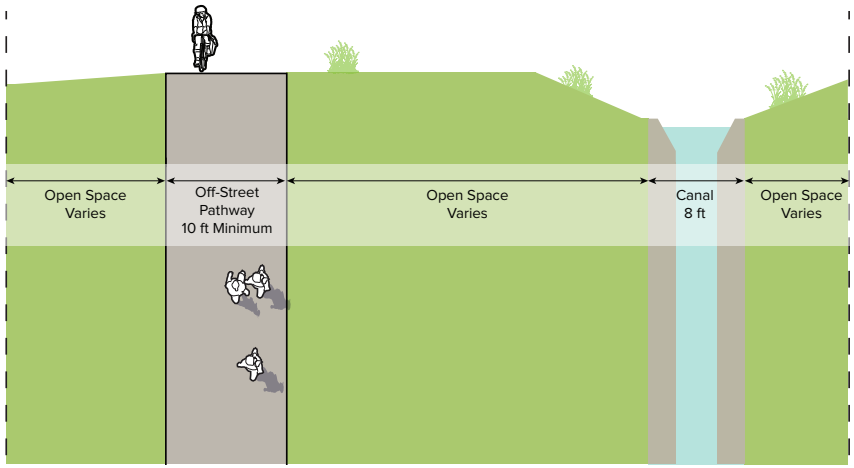
Mid-block crossing needed on Burma Ave.

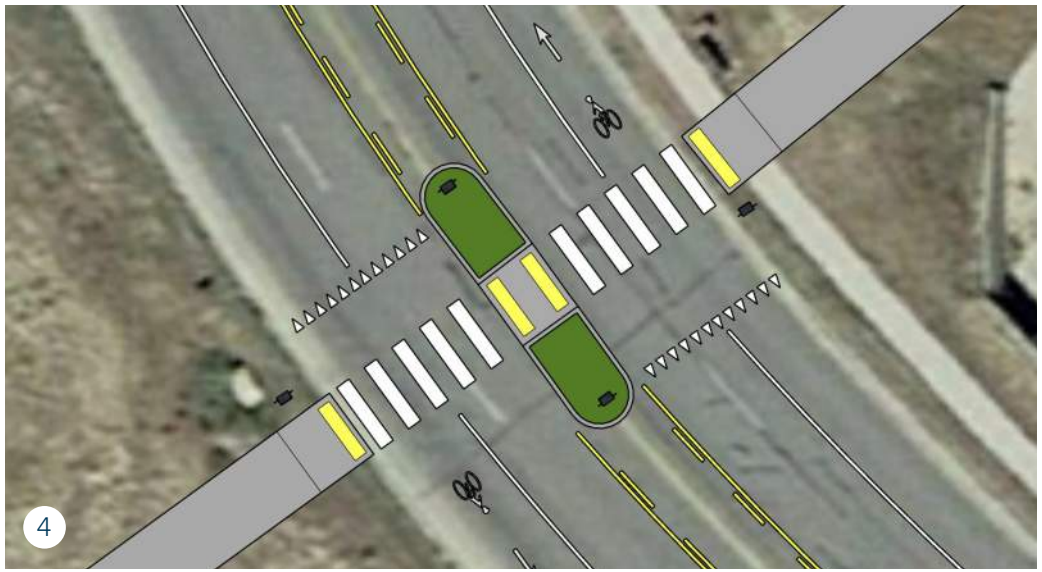
Existing bridge available for use.

EXAMPLE FACILITY

Example mid-block crossing with curb extensions and a striped crosswalk. Warning signage should be included ahead of the crossing in both directions, and an RRFB can be added if traffic volumes determine a need.

SECTION A





Adding a pedestrian refuge to the W Warlow Dr crossing will provide a safe space for pathway users to pause before continuing across the road. This treatment can be implemented when W Warlow Dr is converted to a three-lane road with bike lanes.

1B: Echeta Sidepath and Canal Path to Museum

Hwy 14-16 to Stocktrail Ave crossing

SEGMENT DESCRIPTION

The proposed Echeta Rd sidepath is roughly .54 miles in length. It will replace the existing sidewalk with a 10' separated pathway. The proposed Canal Path to the Rockpile Museum and the Stocktrail Ave crossing is 0.38 miles long along an existing canal. **Estimated Cost (Total): $997,800 (includes RRFBs, benches and trash cans). Site development only: $1647,800**

BENEFITS

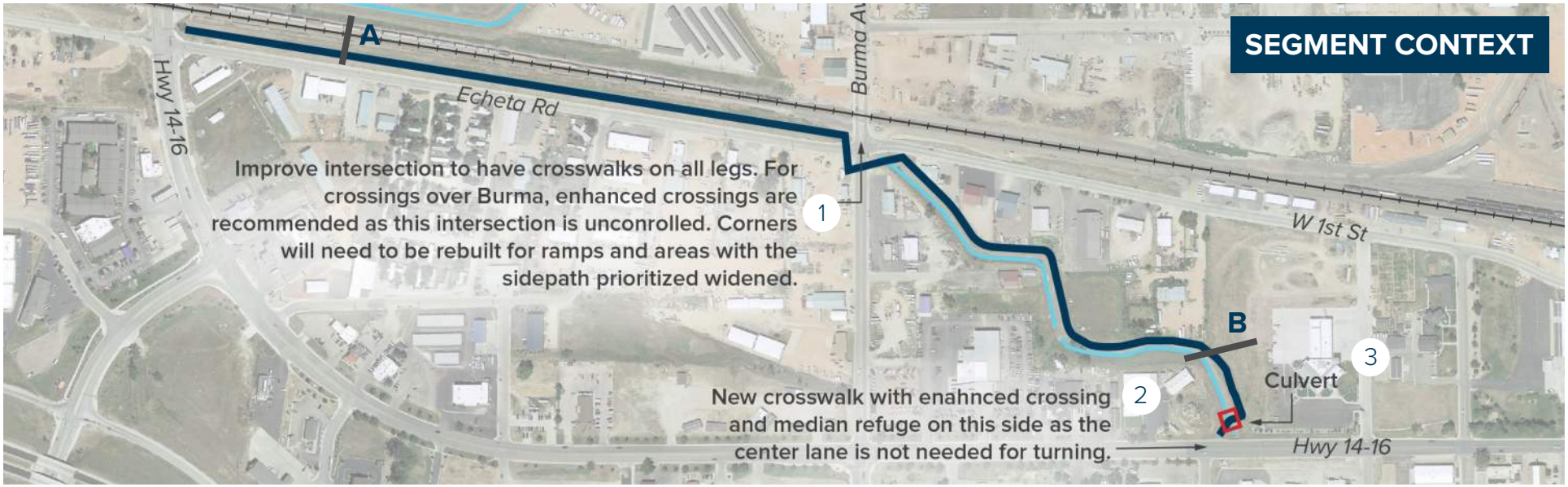
Provides a more comfortable walking and biking experience and connects a currently undeserved part of Gillette to pathways and planned projects such as the Stocktrail Ave crossing This sidepath is an upgrade to an existing sidewalk and will improve comfort and safety for users.

CONNECTS TO NORTHWEST GILLETTE TO DOWNTOWN DESTINATIONS

This segment provides off-street access where there currently is none and will connect users to the new crossing at Stocktrail Ave and provide access to the Campbell County Rockpile Museum

KEY CONSIDERATIONS

- Connects to existing sidewalk at Hwy 14-16
- Enhanced crossing is recommended for crossing of Burma Ave on South leg.
- The intersection of Echeta Rd and W 1st Ave will need to be reconstructed to accommodate ramps and sidepath access.
- Segment along Echeta Rd to be built in existing right-of-way
- Coordination with railroad needed
- Safe crossings need to be provided at Echeta Rd and South Burma Ave. Intersection corners should be rebuilt with curb ramps and sidepath access. Stop control is recommended on W 1st Ave.
- The culvert at W 1st St may need to be extended if the off-road trail crosses over the drainage



EXISTING SITE

Intersection does not accommodate pedestrians or bicyclists

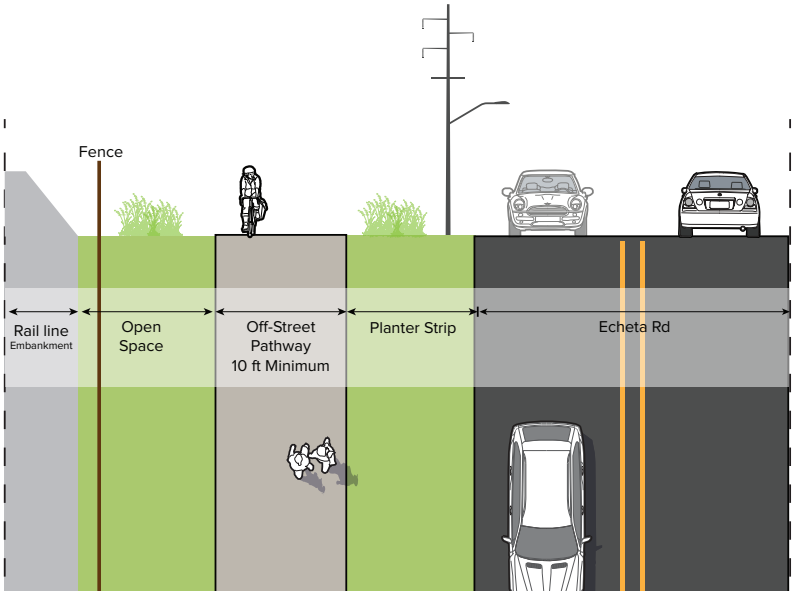
Safe crossing infrastructure needed on Highway 14-16

Difficult to cross drainage culvert

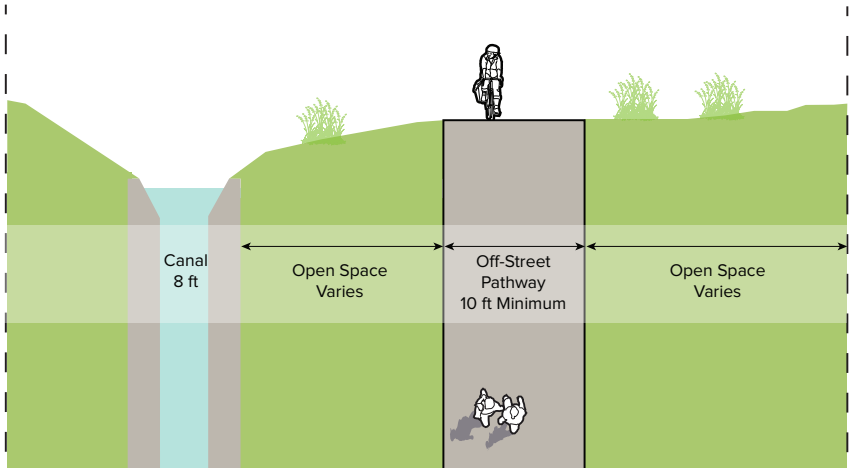
EXAMPLE FACILITY

Sidepaths are wide pathways that run parallel to busy roadways. They provide a high-comfort, low-stress facility that is fully separated from vehicle traffic lanes.

SECTION A



SECTION B



Project 2: Bicentennial Park Connector and West Warlow Drive (Multiple pathways)

PROJECT SUMMARY

These projects build on proposed connections to Bicentennial Park and create safer off-street connectivity to downtown via the pedestrian bridge at N Gillette Avenue. **Estimated Cost (Total): $1,363,500**

2A Estimated total cost: $688,200 (includes lighting, benches and trash cans). Site development cost only: $456,800)

2B Estimated total cost: $675,300.00 (includes RRFB at W Warlow Dr, lighting, benches and trash cans). Site development cost only: $459,600)

SEGMENT DESCRIPTIONS

The proposed Bicentennial Park Connector trail (approx. .33 miles) is an off-street connection along existing drainage structures. The W Warlow Dr (approx .25 miles) sidepath fills an existing gap along W. Warlow Dr.

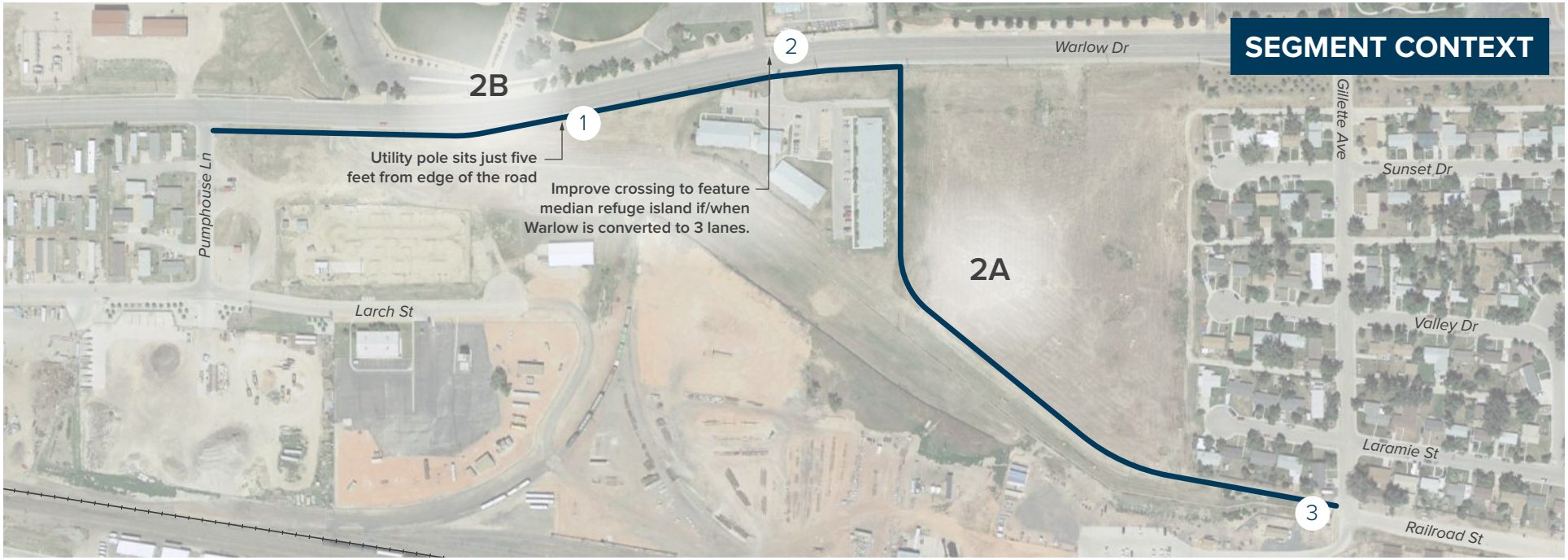
PROJECT BENEFITS

ENHANCED PARK AND DOWNTOWN CONNECTIONS These proposed pathways provide access to important destinations, including Downtown and the rest of the pathway network. The sidepath along W Wariow Dr builds a sidepath where there currently is none.

IMPROVED SAFETY FOR EVERYONE These off-street paths are separated from traffic, except where the pathways intersect with streets. Special attention will need to be paid to those crossings to ensure safety and comfort for bicyclists and pedestrians.

KEY CONSIDERATIONS

- Connects to an existing pedestrian crossing
- Coordination with utilities needed, and with CCSD is recommended



EXISTING SITE

A utility pole along Warlow is close to the curb, creating a challenge for implementing a sidepath

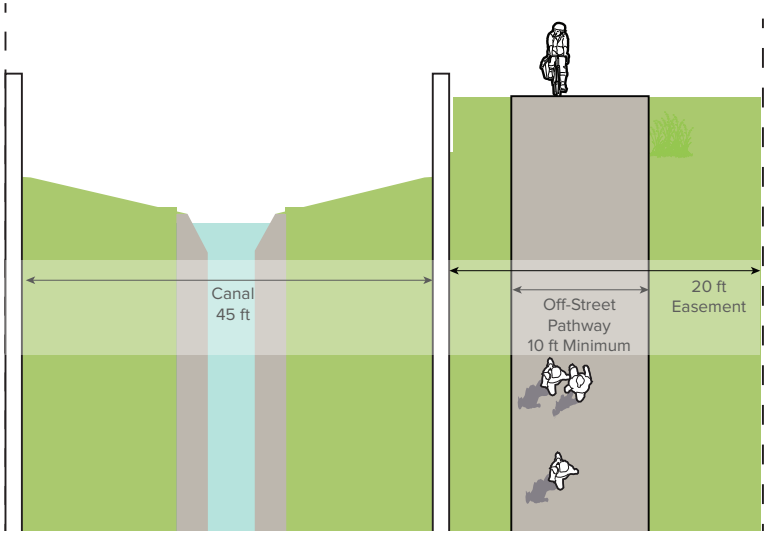
Warlow Rd crossing needs improvements for pathway users

New pathway will provide connections to neighborhoods in central Gillette

EXAMPLE FACILITY

A median refuge island provides a resting place for pathway users when they are moving across multiple directions of traffic. This will be a simple and necessary element to include in a new crossing if/when Warlow Dr is converted to three lanes.

SECTION A



Adding a pedestrian refuge to the Warlow Dr crossing will provide a safe space for pathway users to pause before continuing across the road. This treatment can be implemented when Warner Dr is converted to a three-lane road with bike lanes.

3: Donkey Creek East

Energy Capital Sports Complex to Fox Park/Gordon Street

SEGMENT DESCRIPTION

The proposed 10' off-street pathway is roughly 1.58 miles in length and connects the Energy Capital Sports Complex to Fox Park.

Estimated Cost (Total): $3,388,000 (includes lighting, benches, trash cans. Site development only: $,283,500)

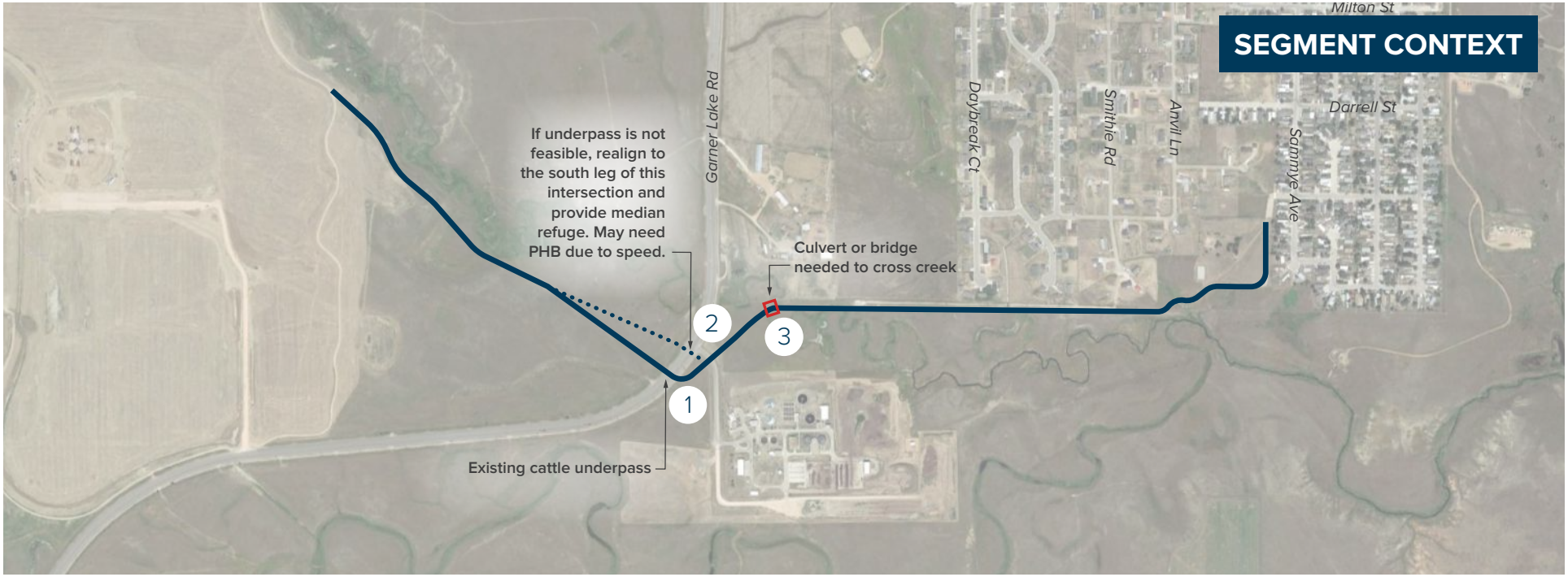
Does not include improvements to the underpass

BENEFITS

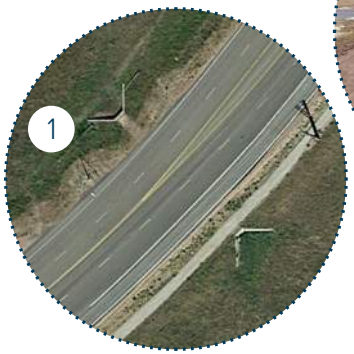
Provides an important connection to a key destination and a neighborhood undeserved by pathways.

KEY CONSIDERATIONS

- Consider the feasibility using the existing cattle underpass under Garner Lake Rd.
- Bridge likely needed to cross culvert east of Garner Lake Rd
- A natural surface running trail adjacent to the pathway could be considered



EXISTING SITE



Existing cattle underpass could be used for a pathway underpass if feasible

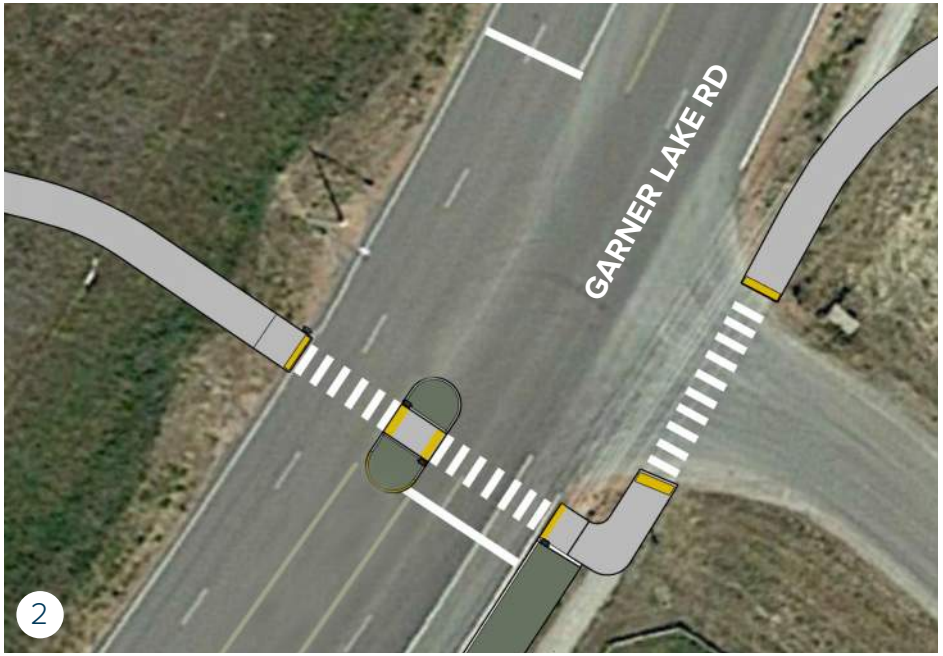
Safe crossing infrastructure needed on Garner Lake Rd if underpass deemed unfeasible

Pathway will need to cross drainage culvert

EXAMPLE FACILITY

Median refuges provide a place for pathway-users to rest between crossing each direction of traffic. With the high traffic speeds along Garner Lake Rd, a Pedestrian Hybrid Beacon (PHB) could be considered to allow pathway users to stop traffic so they can cross safely.

The existing cattle underpass should be considered for a trail underpass if it is determined to meet an acceptable standard. This underpass has less headroom than recommended.



A designated trail crossing, including a pedestrian refuge and Pedestrian Hybrid Beacons (PHBs) on Garner Lake Rd should be implemented if the underpass is determined to not be feasible.

4: North Connector to Energy Capital Sports Complex

Dalby Memorial Path trail to Energy Capital Sports Complex

PROJECT SUMMARY

The 10’ concrete trail (approx. .89 miles) connects from Dalbey Memorial Park to existing natural surface trails within the Energy Capital Sports Complex (ECSC).

Estimated Cost (Total): $2,022,600 (includes, RRFB, lighting, benches, trash cans); Site development only: $1,360,600

PROJECT BENEFITS

This project upgrades the current sidewalk along Butler-Spaeth Rd and provides an off-street path connection to ECSC. It will connect two parks.

KEY CONSIDERATIONS

- Much of the proposed alignment exists in an existing utility easement.
- The specific location to cross Butler-Spaeth Rd will need to be determined during design.
- Established trees will need to be accommodated during design.

EXISTING SITE

Intersection is wide and located at a curve

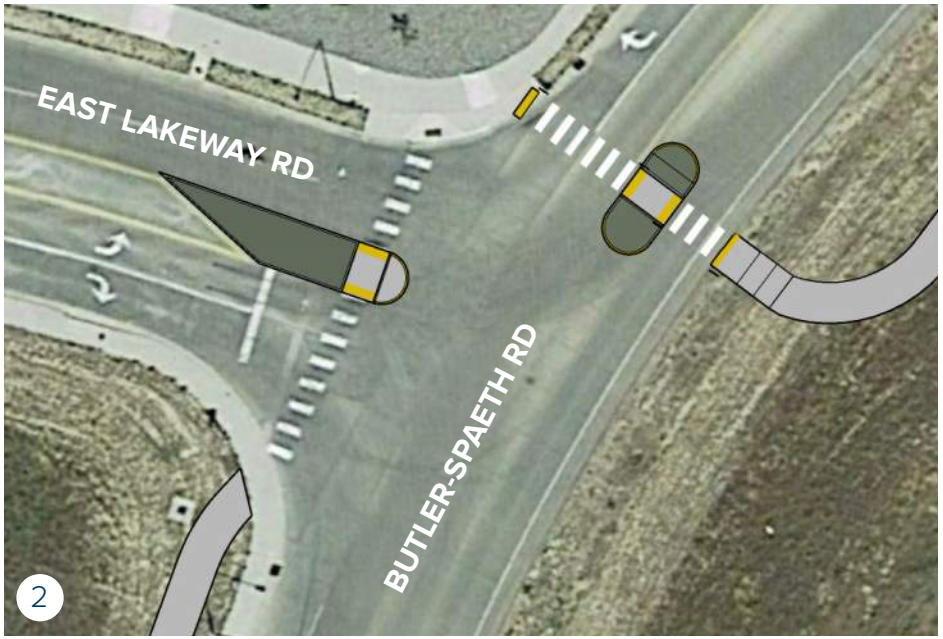
Wider sidepath needed to accommodate pedestrians and bicyclists

Safe crossing needed to traverse the Golf Club driveway

EXAMPLE FACILITY

Example of a raised crossing which could be implemented at the entrance to the Gillette Golf Club to highlight the trail crossing

The existing intersection at East Lakeway Rd and Butler-Spaeth Rd.



A designated trail crossing, including a pedestrian refuge and Rectangular Rapid Flashing Beacons (RRFBs) on Butler-Spaeth Rd should be implemented in addition to widening the existing sidewalk to become a sidepath.

5: Central E-W Connector

S 4-J Rd. to Highway 59

PROJECT SUMMARY

This 10’ concrete trail (approx. .85 miles) connects an off-street connection to between 4-J Rd to Hwy 59.

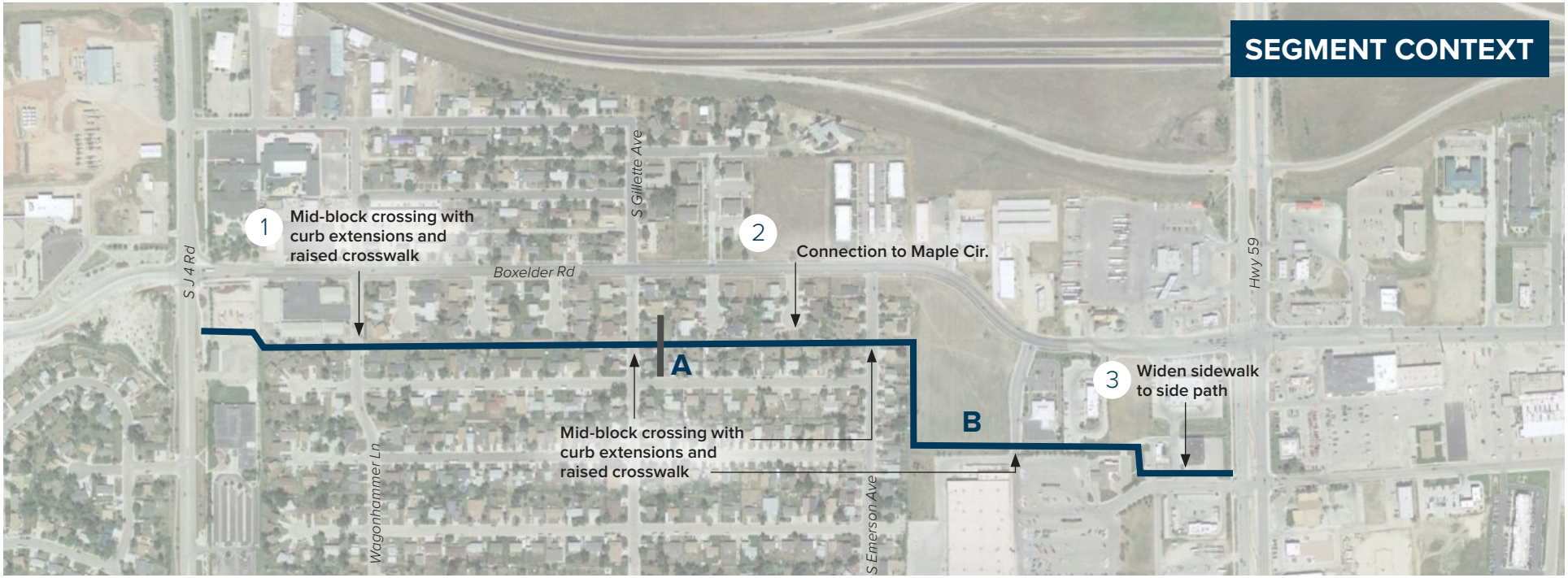
Cost (Total): $1,876,600 (includes lighting, benches, trash cans); Site development only: $1,388,200

PROJECT BENEFITS

This pathway offers a safer alternative to traveling along Boxelder Rd by utilizing an existing utility easement through the neighborhood.

KEY CONSIDERATIONS

- Mid-block crossings with curb extensions and raised crosswalks are recommended at Wagonhammer Ln, S Gillette Ave and S Emerson Ave.
- Sidepath along Country Club Rd entrance to Walmart Super Center shopping complex should be upgraded to 10’ sidepath.



EXISTING SITE

Midblock crossing needed

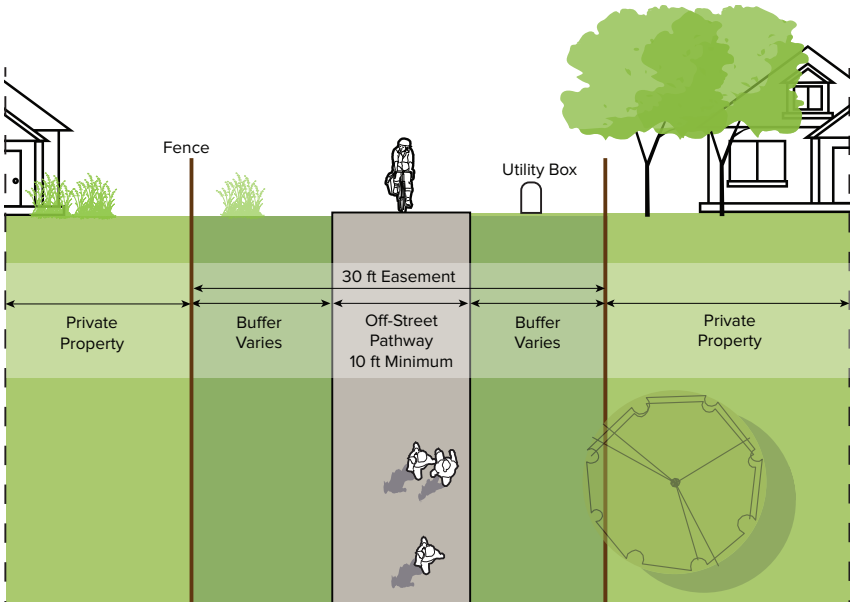
Neighborhood connection/ access needed

Narrow intermittent sidewalk

EXAMPLE FACILITY

Connections to trails from local neighborhood streets, especially cul-de-sacs restore continuity in the street network for people walking and bicycling and increase the usability of the trail system.

SECTION A



A designated mid-block crossing on Wagonhammer Rd including curb extensions and a raised crosswalk will ensure trail users are highly visible, and will encourage vehicles to slow down and yield to trail users.

APPENDIX A

EXISTING CONDITIONS MEMO

APPENDIX B

PROJECT PLANNING COST

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