Fossil Basin Trails Master Plan

avenue
CONSULTANTS

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INTRODUCTION

Lincoln County is home to some of Wyoming's most vibrant and unique communities. Not only is there an incredible quality of life for the residents, but also an inviting atmosphere for visitors. The parks and trails are a foundation of the residents' quality of life and can be part of the memorable experiences our visitors take home with them. Recognizing that the trails play a vital role in the future health of the area's ecosystems, community, and economy, Lincoln County has prepared this Trails Master Plan.

This plan reflects the desires of the community. It is a future-focused, system-wide, strategic plan that guides the resourcing, development, management, provision, and expansion of the trails and bike lanes for the future. Not only does the plan represent the commitment to the future of the trails, but it reaffirms the essential role the trails play in protecting our ecosystems, enabling our residents and visitors to be more active more often, connecting families to each other and with nature, strengthening our economy, and attracting and maintaining skilled labor on which the economy depends. The plan works to position the trails system as an interconnected, high quality and diverse network of recreational spaces that attract the residents.

GOALS OF THE FOSSIL BASIN MASTER PLAN:

- *To create a comprehensive plan for trails and bike lanes in the community*
- *Engage with residents in developing the type and location of trails*
- *Identify trail loops and create greater connectivity of trails*
- *Identify potential improvements to create a guide for the future*

Parks and trails offer many benefits to the community. The current trails provide places for recreation, activity, engagement, socializing, peace and enjoyment with many other untapped benefits not yet realized. These range from environmental and health benefits to social and economic advantages – combined, they provide a sustainable environment in the community.

STUDY AREA

The Fossil Basin Trails Master plan is focused on the south area of Lincoln County centered around Kemmerer but goes outside of the city boundaries (see Figure 1). We are also considering the areas of Diamondville and Frontier and connections of the trails adjacent to these areas.

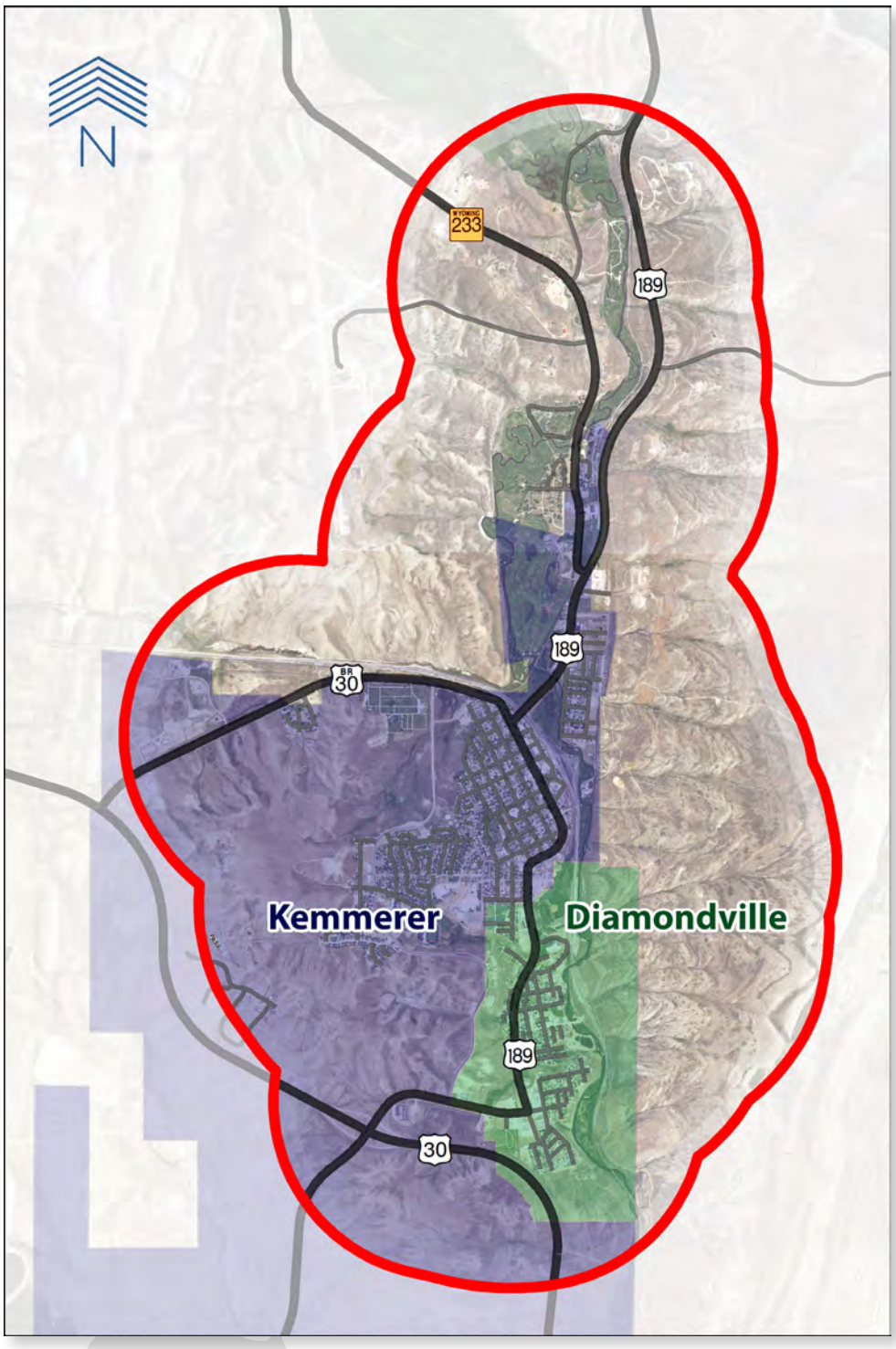


Figure 1. Study Area

PROJECTS

PROJ. #	TYPE	LOCATION	LENGTH (ft)	COST
B1	Bike Lane	Aspen / Beryl St.: Golf Course to Hillside Trail	1,500'	$ 10,000
B2	Bike Lane	4th West Ave / Garnet St. / 3rd West Ave: Elk St. to US 189	4,050'	$ 26,000
B3	Bike Lane	Elk St.: Canyon Rd. to Sorensen Dr.	1,550'	$ 10,000
B4	Bike Lane	Beech Ave.: US 189 to Sapphire	1,800'	$ 12,000
B5	Bike Lane	Moose St.: 3rd West Ave. to US 189	1,150'	$ 8,000
B6	Bike Lane	3rd West Ave. / Little Canyon Rd. / Diamondville Ave.: Garnet St. to Conroy St.	5,200'	$ 34,000
B7	Bike Lane	Conroy St.: US 189 to Hillside Trail	1,400'	$ 9,000
B8	Bike Lane	US 189: Canyon Rd. to Antelope St.	7,250'	$ 47,000
B9	Update Bike Lane	Canyon Rd.: US 189 to Canyon Rd. Trail	9,500'	$ 60,000
S1	Sharrows	US 189: Hwy 30 Alt. to Golf Course Trail	1,750'	$ 10,000
S2	Sharrows	US 189: Antelope St. to Hwy 30 Alt.	5,000'	$ 29,000
S3	Sharrows	Hwy 30 Alt: US 189 to Canyon St. Connector Trail	1,550'	$ 9,000
T1	Paved Trail	Hams Fork River Trail – Hwy 233 Trail	500'	$ 32,000
T2	Paved Trail	Golf Course - River Connector Trail	7,500'	$ 267,000
T3	Paved Trail	Old Bridge Golf Course Loop Trail	4,550'	$ 311,000
T4	Paved Trail	Cemetery Trail	3,400'	$ 661,000
T5	Paved Trail	School - Canyon Road Connector Trail	1,250'	$ 122,000
T6	Unpaved Trail	Hillside Trail	10,300'	$ 890,000
T7	Paved Trail	Carbon St. Connector Trail	750'	$ 27,000
H1	Trail Head	Beryl St. Trail Head		$ 3,000
H2	Trail Head	Carbon St. Trail Head		$ 3,000
H3	Trail Head	Antelope St. Trail Head		$ 3,000
H4	Trail Head	Conroy St. Trail Head		$ 3,000
		TOTAL		**$ 2,586,000**

The project map and list are the results of months of work within the community to develop a comprehensive list of trail and active transportation projects. They are the guideline for improvements in the study area.

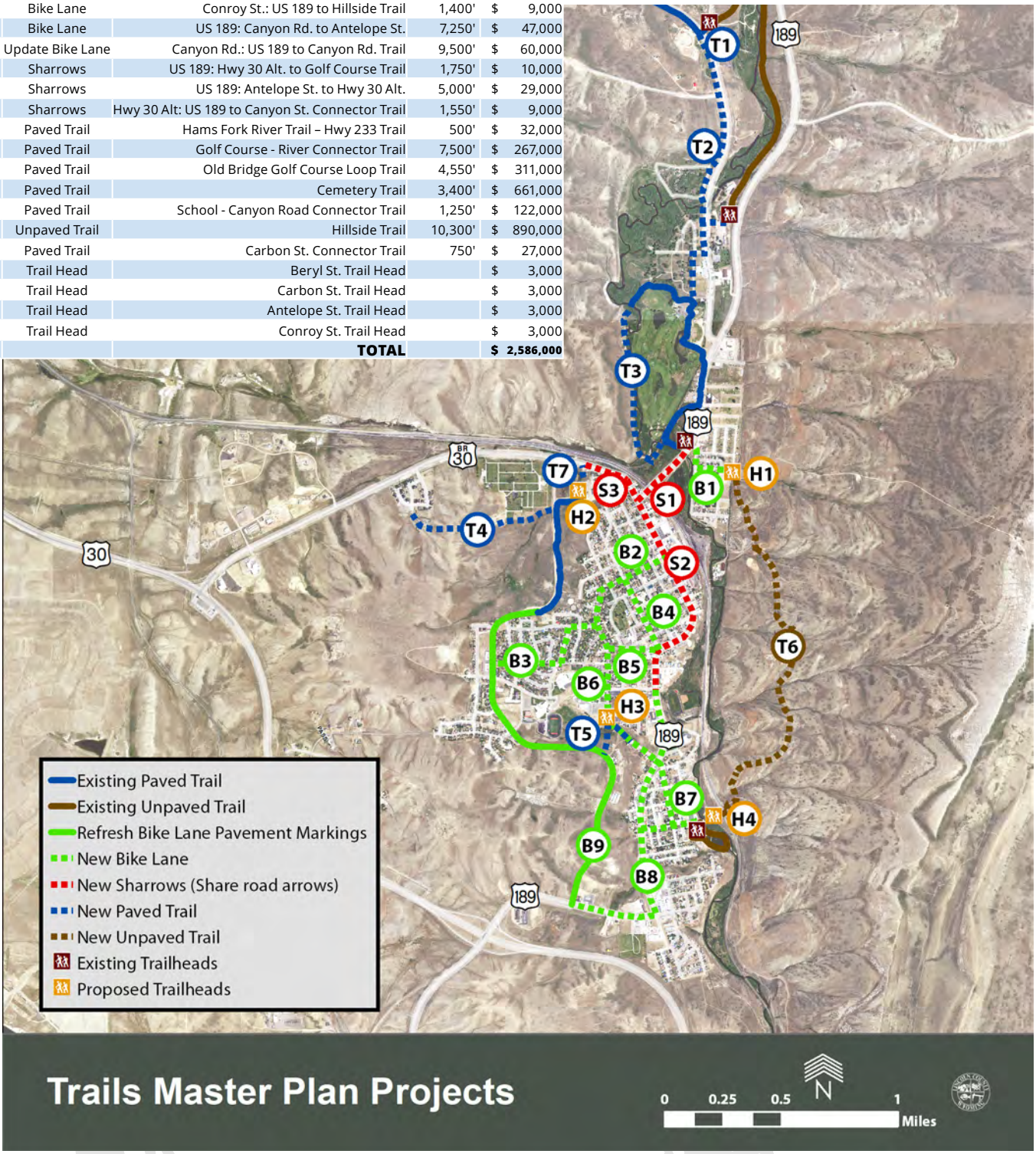


Figure 2. Trail Master Plan Projects

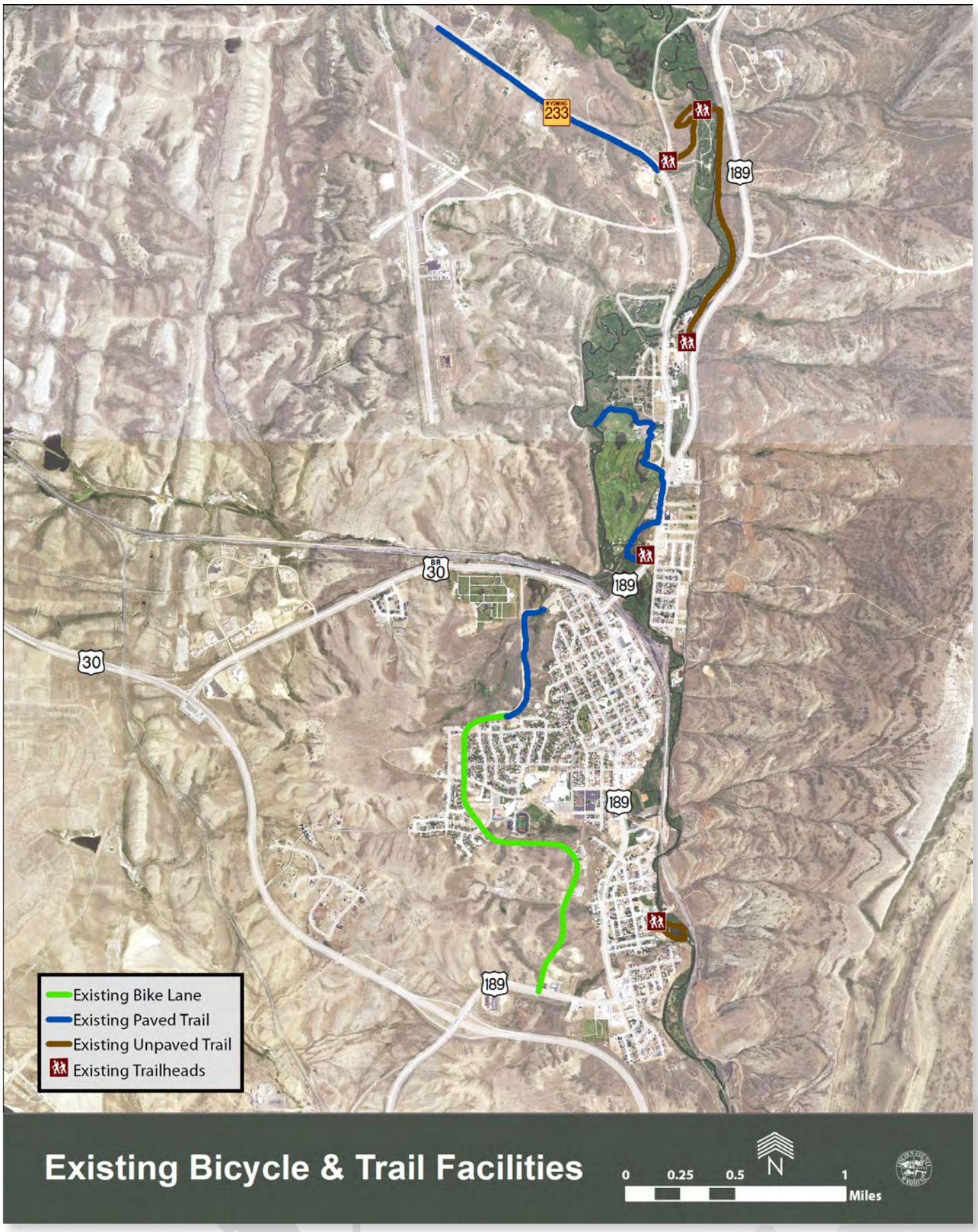


Figure 3. Existing Facilities

WHERE WE ARE

Before developing a clear action plan to improve the trails and bicycle facilities in Fossil Basin it was important to understand the current conditions in the community. Kemmerer and Diamondville have some existing trails and bike lanes, and during the study, a new trail along SR-232 was added to the community. These existing trails are well used, and many members of the community talked about their importance to the identity of the area. Figure 3 is a map of existing trails and bike lanes in the study.

A key component of the study is to understand where people would feel comfortable walking and bicycling within Diamondville and Kemmerer as well as where there are existing gaps or barriers in the active transportation network.

BICYCLE COMPATIBILITY INDEX (BCI)

To better identify where residents would feel comfortable cycling, a Bicycle Compatibility Index (BCI) was created for the roadways within the urban areas of Kemmerer and Diamondville. BCIs are a design tool to help plan for and build roadways that are bicycle compatible by determining the ability of a road to accommodate both motorists and bicyclists. In Fossil Basin, the purpose of the BCI was to identify specific roadway segments where improved bicycle accommodations and/or separate facilities may be necessary to create a robust bicycle and trail network. The BCI was developed using GIS analysis of the Level of Traffic Stress (LTS) and from an inventory of bicycle comfort on selected roads.

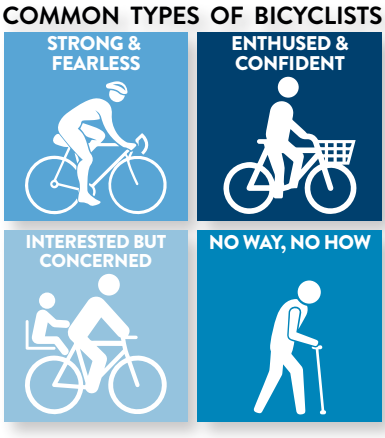


Figure 4. The 4 Types of Cyclists

Level of Traffic Stress (LTS)

The Level of Traffic Stress (LTS) is a rating given to a road or a crossing indicating the traffic stress it imposes on bicyclists. This classification of roadway segments based upon the comfort of bicyclists depends on traffic characteristics and whether cyclists are cycling in mixed traffic, bike lanes, or on separated paths. LTS classifies road segments in four levels of traffic stress that correspond to the four types of cyclists (see above).

The characteristics of each LTS include:

LTS 1	LTS 2	LTS 3	LTS 4
Most children feel safe riding their bikes on these streets	The "Interested but Concerned" population feel safe riding bikes on these streets	"Enthused & Confident" riders find these roads acceptable & feel safe riding on these streets	High-stress streets with high speed limits, many travel lanes, long intersection crossings, & limited/no bikeways.

Table 1 summarizes the LTS classification system used for each roadway segment within the study area based upon land use, posted speed limits, number of traffic lanes, and bicycle accommodations.

Road Inventory

An inventory of the roadway network was completed on September 18, 2018 by members of the project team, to refine the GIS analysis of LTS. Over 32 miles of roadway were included in the inventory, and 2,812 photos were taken documenting the roadway conditions and cycling comfort.

The inventory used the same scoring method as LTS from low stress (1 = low stress/high comfort) to high stress (4 = high stress/low comfort).

Table 1. Level of Traffic Stress in Terms of Marginal Rate of Substitution

ROADWAY		STRESS REDUCTION FROM BICYCLE ACCOMMODATIONS					
NUMBER OF LANES	SPEED LIMIT	ROADWAY STRESS WITHOUT BICYCLE ACCOMMODATION	BIKE ROUTE 5%	SHARROWS 10%	BIKE LANE 50%	BUFFERED BIKE LANE 65%	PROTECTED BIKE LANE 75%
2 lanes (residential)	Up to 25 mph	10%	10%	9%	5%	4%	3%
2 lanes (residential)	30 mph	15%	14%	14%	8%	5%	4%
2-3 lanes	Up to 25 mph	20%	19%	18%	10%	7%	5%
4-5 lanes	Up to 25 mph	35%	33%	32%	18%	12%	9%
2-3 lanes	30 mph	40%	38%	36%	20%	14%	10%
6+ lanes	Up to 25 mph	67%	64%	60%	34%	23%	17%
4-5 lanes	30 mph	70%	67%	63%	35%	25%	18%
6+ lanes	30 mph	80%	76%	72%	40%	28%	20%
2-3 lanes	35+ mph	100%	95%	90%	50%	35%	25%
4-5 lanes	35+ mph	120%	114%	108%	60%	42%	30%
2 lanes	35+ mph	140%	133%	126%	70%	49%	35%

Source: Lowry, M., Furth, P., and Hadden-Loh, T. "Prioritizing New Bicycle Facilities To Improve Low-Stress Network Connectivity."

ROADWAY GRADES

Due to the terrain within the study area, the LTS system was adapted to include roadway grade. The average segment grade was estimated for each road segment, and the LTS score adjusted as shown in Table 2 below. For roads with a minimal slope, the LTS was not adjusted since it does not impact most riders. However, when there are sustained grades above 6%, the LTS was adjusted up to 3 points (to a max of LTS 4) since mostly only strong and fearless riders choose to cycle on roads with significant grades.

Table 2. LTS Adjustment for Roadway Grade

ROADWAY GRADE	LTS ADJUSTMENT	CYCLIST TYPE
0-2%	0	Most riders
2-4%	+1	Interested but Concerned
4-6%	+2	Enthused & Confident
6+%	+3	Strong & Fearless

However, a level 5 was included in the inventory for roads that are not suitable for all cyclists due to being unpaved (gravel or dirt) or other issues such as lack of shoulders, on-street parking, free right-turn movements, and/or high traffic speeds/volumes that made the road segment very uncomfortable for cycling.

Compatibility Index

The BCI was developed as a composite of the LTS and road inventory scores. As with the road inventory score, the BCI ranges from 1 = very comfortable (low stress) to 5 = very uncomfortable (high stress, unsuitable for bicycling). For scores 1 to 4, the BCI is the average of the LTS and inventory score. Segments with a BCI of 5 are based upon data from road inventory where it was determined that the road segment is very uncomfortable for cycling or unsuitable for all types of cyclists since the road is unpaved. Figure 6 summarizes the BCI for the Kemmerer and Diamondville area.

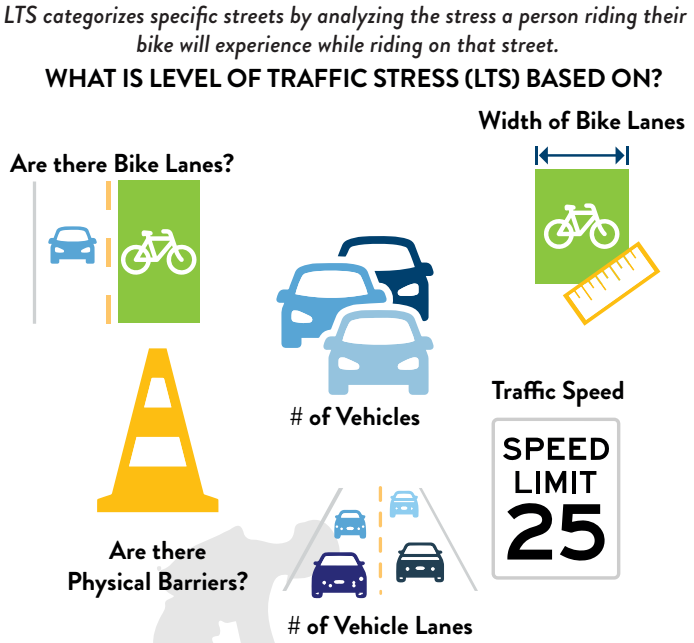


Figure 6. Level of Traffic Stress Explained

GAP & BARRIER ANALYSIS

Building upon the BCI analysis, existing bicycle and pedestrian gaps and barriers in the active transportation network were identified within the urban area. The gap and barrier analysis relied on the inventory of existing facilities completed by the project team. This field data was supplemented with aerial imagery from Google. The purpose of the gap and barrier analysis is to document existing conditions and identify current needs to provide a foundation to create a complete bicycle and trails plan.

Missing and/or Incomplete Sidewalks

Approximately 14 miles of sidewalks are identified as missing or incomplete. Most of these gaps in the sidewalk network are located within Diamondville and older neighborhoods within Kemmerer. However, within these areas segments of sidewalk have been completed as properties have been developed or redeveloped. These gaps in the pedestrian network make it difficult for pedestrians to walk to destinations without walking within the street. Additionally, utility poles are located within the sidewalk in several locations and are a significant issue for wheelchair users especially when they are adjacent to pedestrian ramps.

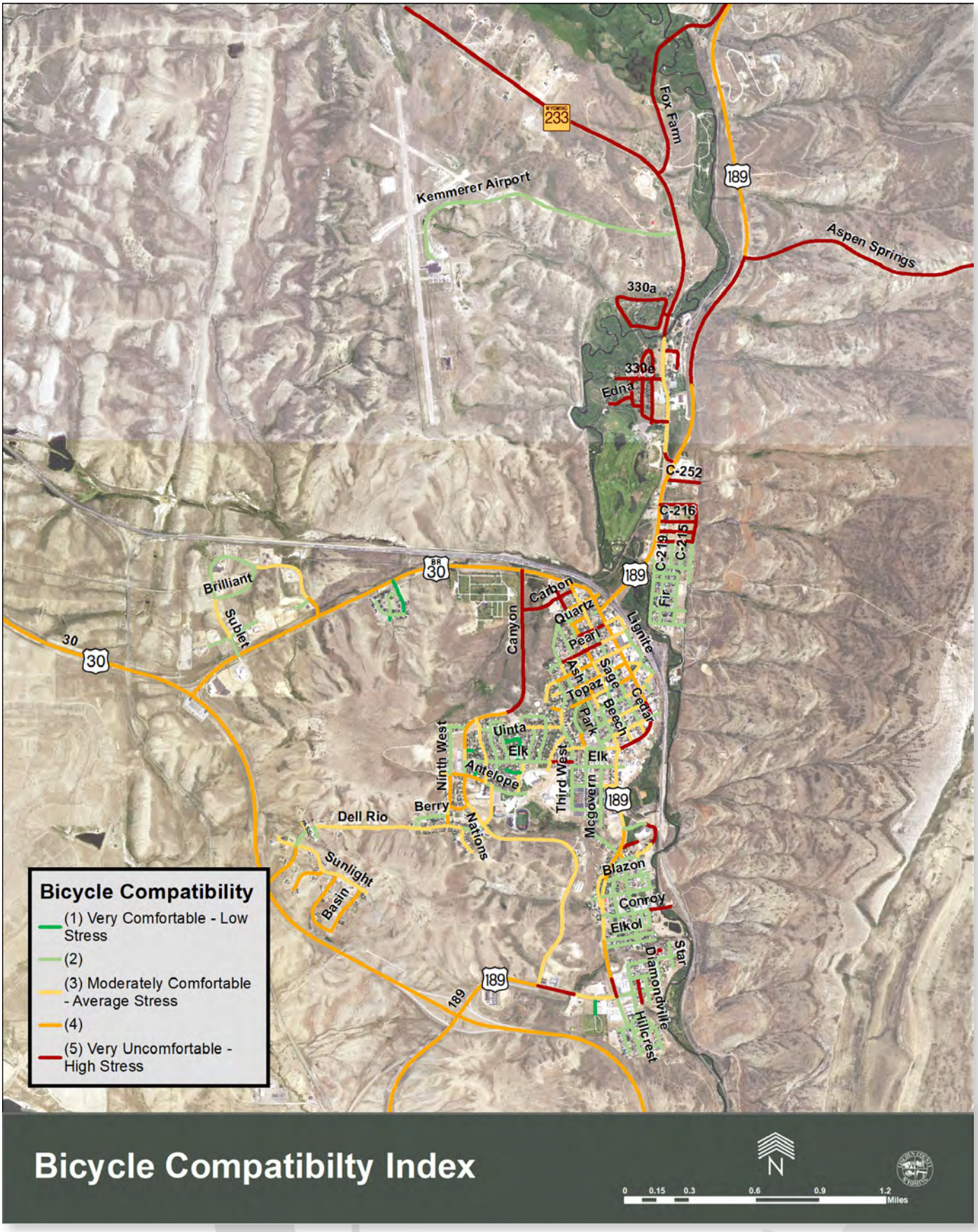


Figure 6. Bicycle Compatibility Index

Unconnected Trailheads

Many of the existing trailheads are not connected to the existing sidewalk or bicycle network making it challenging for trail users to access the current trail system. Only the Canyon Road multi-use trail connects to the existing sidewalk and bike lanes on Canyon Road. These unconnected trailheads create gaps within the bicycle and pedestrian network.

Hams Fork River & Union Pacific Railroad

The Hams Fork River and Union Pacific Railroad are significant barriers to potential trail connections to the east and the north. Only Conroy Street and US 189 cross the Hams Fork River while US 189 is the only road that crosses the railroad tracks. US 189 provides a sidewalk on the east side of the structures that cross the Hams Fork River and Union Pacific Railroad.

Steep Grades

Steep grades can be difficult for pedestrians, bicyclists, those in wheelchairs, and others experiencing mobility challenges to navigate. Slopes greater than 5% were identified as barriers using GIS analysis of the street network. Slopes greater than 5% were used as the criteria to identify steep slopes since sidewalks with grades greater than 5% are considered ramps unless they are adjacent to the street and the sidewalk grade is equal to the street grade. While steep sidewalks don't require additional improvements, ramps with grades of 5% or greater are required to have landings to allow users to rest after a 30-inch rise. These locations that have 5% or greater grades are likely to remain barriers within the bicycle or pedestrian network or will require additional improvement to make them accessible to all users.

Unpaved Roads/Trails

Unpaved roads and trails can be barriers to some cyclists and other wheeled users. These users with narrow tires or wheels may not be able to pass over gravel or dirt surfaces. These unpaved facilities can act as a barrier blocking access to other bicycle and pedestrian facilities.

Figure 7. Cycling south on US 189 near Sapphire Street

Existing Gap & Barriers

The previously identified gaps and barriers in the pedestrian and bicycle network are summarized in Figure 9.

Summary

While there are no multi-lane or high volume roads in Kemmerer that would be very stressful and unsuitable for cyclists, but that does not mean that all the roads are low stress and comfortable for cyclists. A member of the team personally biked on almost every road in the study area and independently rated their stress levels on the street as part of our inventory. That data was added to the rest of the comfort level analysis to create the BCI in figure 6.

Figure 8. Biking through Kemmerer

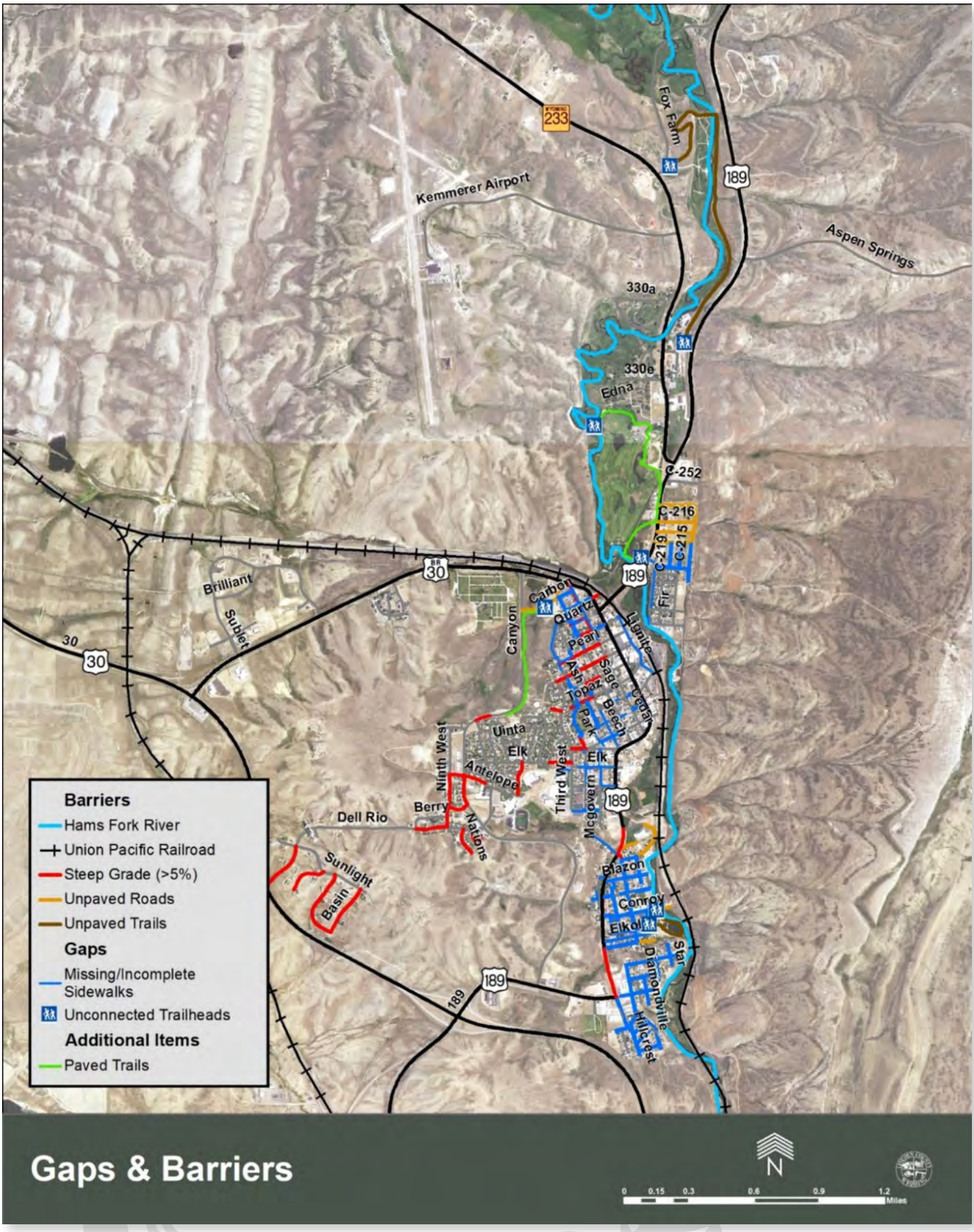


Figure 9. Gap and Barrier Analysis

WHAT WE HEARD

Throughout the project, there was a robust community involvement effort. This outreach included the development of a project website, completion of a community survey, meetings with stakeholders, and attendance of major public events.

SURVEY RESULTS

To understand where people currently walk and bike within Lincoln County, a community survey was completed from August through November 2018. The survey was available at the community center as well as online. A total of 94 surveys were completed. While a full compilation of the survey results can be found in the Appendix, some of the key findings from the survey are summarized below.

Most respondents (54%) walked or biked within the last week. However, a sizable proportion (27%) had not walked nor biked within the community within the last month. Of these respondents, 9 people (9%) said that they had 0 walk or bike trips per month.

The purpose of these walking and biking trips is mostly for exercise or recreation. These exercise/ recreation trips comprised the majority of biking or walking trips with 62% of the reported trip purposes. Work trips which were the next highest trip purpose represent just 10% of trips walking or biking trips.

To understand the origins and destinations of trails users, the survey also asked where people live and where do they travel to most frequently. The most popular destination for walking or biking was the golf course with 19 trips (21%) followed by downtown 16 trips (19%) and the Kemmerer Elementary / High School area 13 trips (14%).

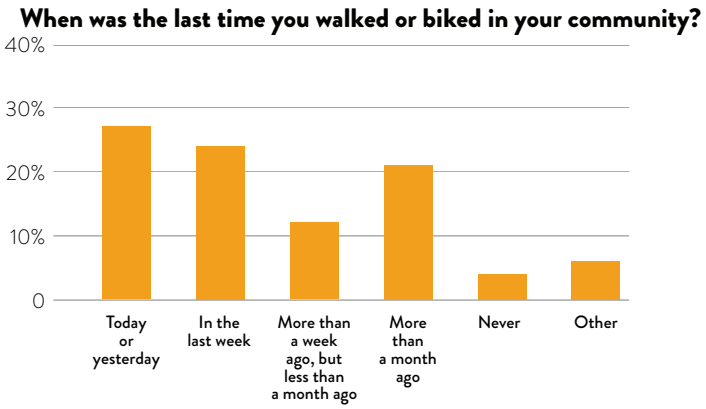


Figure 10. Survey Question: Last time you walked or biked in your community

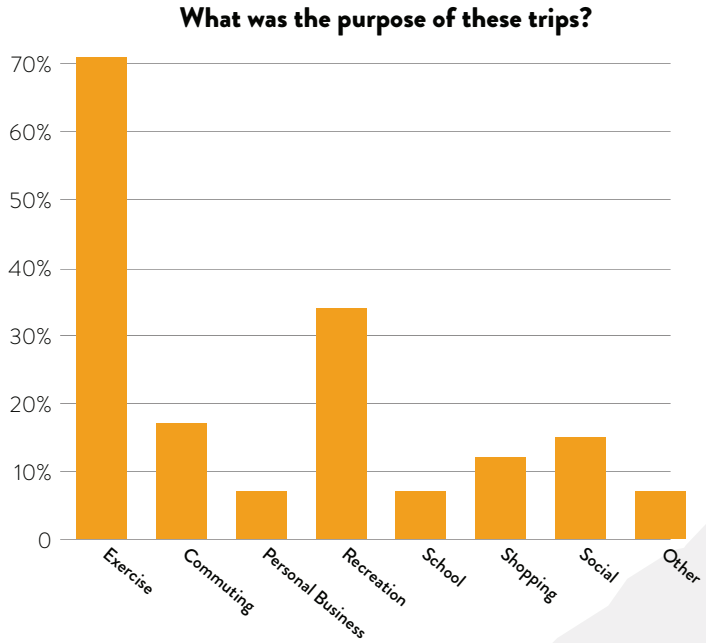


Figure 11. Survey Question: Purpose of these walking or biking trips

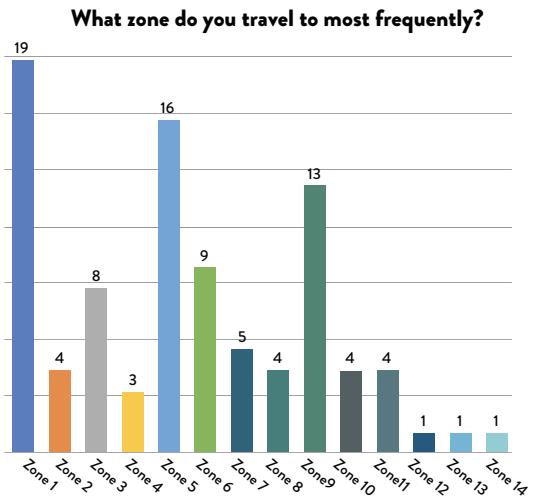


Figure 12. Survey Question: Which zone do you travel to most frequently?

PUBLIC EVENTS

In addition to the community survey, two community workshops were conducted in conjunction with other public events in Kemmerer. These "pop-up" workshops were designed around other major events in Kemmerer and Diamondville to increase participation beyond a typical open house. The first workshop was conducted before the homecoming football game on October 5, 2018. The workshop was designed to gather community input on where people currently walk and bike as well as where they would like to see future improvements. The attendees used maps and markers to identify their issues and concerns as well as possible solutions or projects they would like to see.

The second public workshop presented the draft recommendation with a focus on study findings and conclusions. This workshop was held at the annual Health Fair at the South Lincoln Training and Events Center on March 30, 2019. The final projects and costs were presented in a poster map of the recommended projects. Residents expressed genuine interest in the proposed projects, and the public was generally supportive of the alternatives.

Figure 13. Public Event at Football Game October 5, 2018

Summary

A consistent theme from the public community events and in the survey responses was that the way people use the trails was more important to them than their location. One resident specifically said that she didn't care where the trail was and that she would go to the trails to walk wherever they are. Many residents didn't have a strong preference where trails are located, as long as there are trails and they wanted them to complete loops. Residents use the trails mainly for recreation and exercise, not necessarily for getting to specific destinations. For many people, trails are the destination, rather than a bridge to another place. Residents enjoy walking and biking. They care about the trails and would like to see more of them. This general theme has driven a lot of the projects in this plan.

"I don't care where you put the trails. I will go to them"

*"There is a paved path next to Canyon Road, it is very nice except that it does not **connect with the town or other paths.** I hate packing up the car to drive a short distance in order to walk"*

WHERE WOULD YOU LIKE TO SEE TRAIL/ROUTE IMPROVEMENTS?

*"Connections with **wayfinding signs** to **connect current trails** (down Canyon from cemetery trail by fishing pond/ golf course to trail by river/Lions Club)"*

*" **I would walk all year** if Canyon Road and the trails were cleaned off in the winter"*

*"I need **sidewalks** in the hospital area where we live, we do not want our children to walk in the street."*

*"The routes we have now are nice. Although it would be nice to have **more routes to choose from**. I enjoy taking in all the beautiful views of Kemmerer and its surroundings. **There's so much to see, so more trails would be awesome**"*

Figures 14 & 15. Going over the trail projects at the South Lincoln County Health Fair

RECOMMENDATIONS

Based on the analysis of the active transportation network as well as feedback received throughout the study, recommendations were developed to improve bicycle and pedestrian facilities within the greater Kemmerer and Diamondville area. In addition to these recommendations, the Safe Routes to School Plan was updated to reflected improvements since the last update.

SAFE ROUTES TO SCHOOL

As part of the Master Plan, the Kemmerer Safe Routes to School Plan was reviewed for changes since the last plan was completed in 2013. It is important that the plan stays up-to-date, so identified projects are eligible for various funding sources. Since the completion of the prior plan, schools have been combined, and school locations have changed. The middle school was combined with the High School serving grades 7-12 at Kemmerer Junior/Senior High School. Grades K-6 will be in the Canyon School (former middle school) with the old elementary school building now housing the New Frontier High School. The recommendations for the Safe Routes to School Plan are summarized on the following pages with a focus on key intersections and building on recommended improvements from the 2013 plan.

ANTELOPE STREET / 5TH WEST AVENUE: OPTION #1

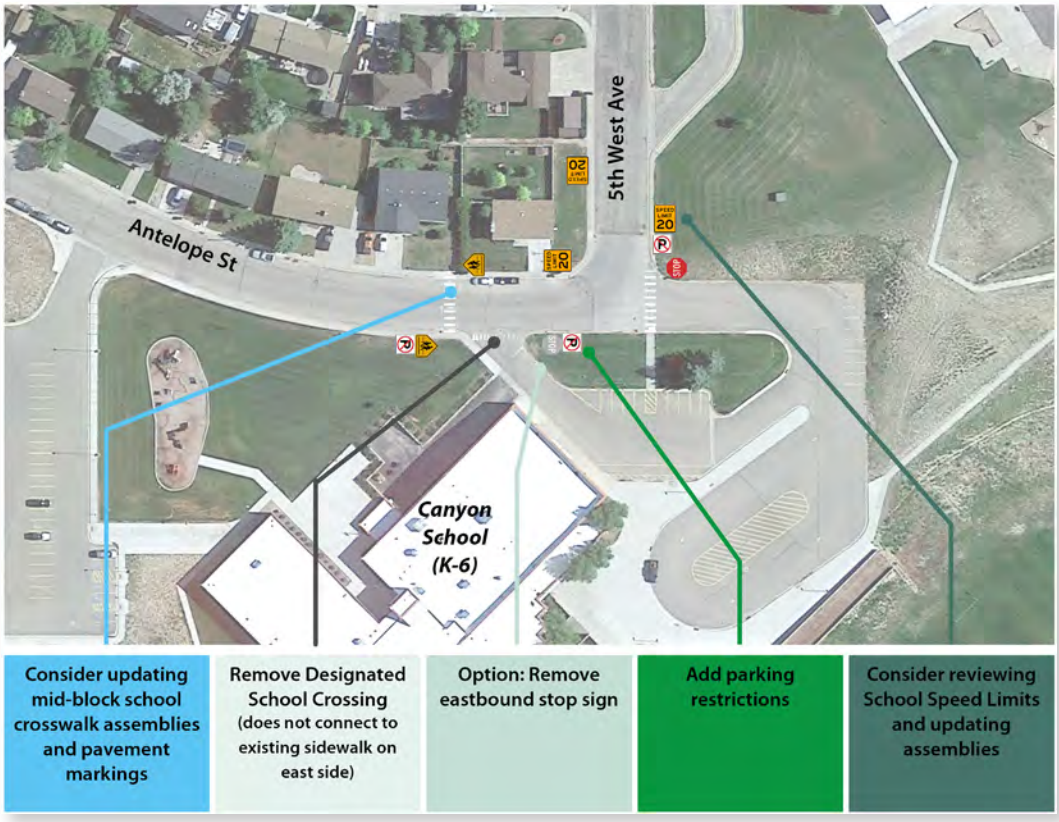


Figure 17. Antelope Street / 5th West Avenue – Option 1 Keep Mid-block Crossing

Antelope Street / 5th West Avenue

This intersection is the primary access to Kemmerer Middle School that serves students from 5th through 8th grades. The intersection is a "T" intersection with two-way stop control on the east/west approaches. The driveway to the parent drop-off/pick-up area is located just west of the stop sign on Antelope Street. There are marked school crosswalks on Antelope Street and the driveway to the drop-off/pick-up area. The crosswalk on the east leg of the intersection was a recommendation from a prior routing plan and has been completed since the 2013 plan update.

Both Figure 17 and Figure 18 present options for additional improvements to the intersection. During peak times for student drop-off/pick-up, some parents park on Antelope Street west of intersection instead of pulling into the student loading zone. These parked or waiting vehicle makes it difficult for drivers to see children entering the mid-block school crosswalk. To improve sight distance and safety of children using the crosswalk parking should be restricted near the crosswalk. The Wyoming Department of Transportation (WYDOT) Pedestrian & School Manual section[1] 2.14 states at mid-block crosswalks "the restriction shall be a minimum of 100 feet" and 20 feet at stop-controlled intersections. It is recommended that parking is restricted near the designated school crosswalks.

ANTELOPE STREET / 5TH WEST AVENUE: OPTION #2

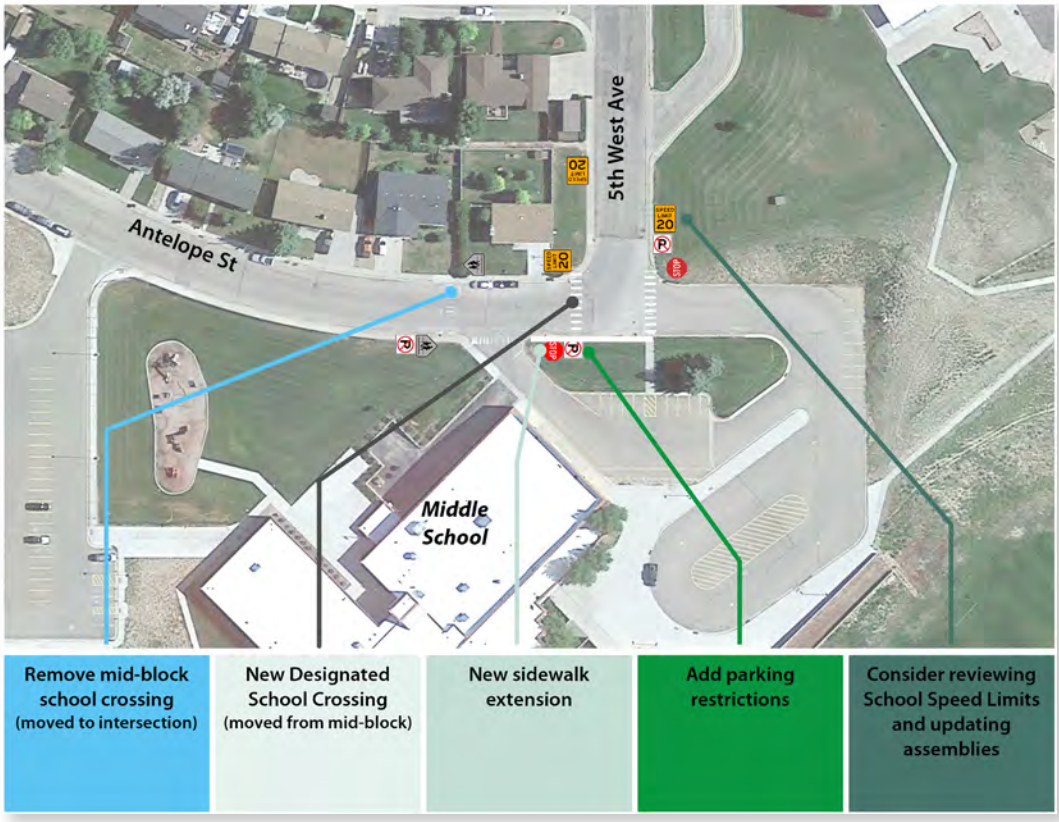


Figure 18. Antelope Street / 5th West Avenue – Option 2 Move Mid-block Crossing

During peak times the existing stop control on the west leg of the intersection can create queueing on both Antelope Street and 5th West Avenue. Vehicles that stop at this stop sign block access both to and from the bus and student drop-off/pick-up area. To improve traffic circulation near the school, an option would be to remove this stop sign since the major traffic movements are from Antelope Street to 5th West Avenue.

There is a marked crosswalk on the south leg of the school driveway access. This crosswalk does not connect to the sidewalk on the east side of the driveway and could be removed. A second option for this intersection is to construct a sidewalk and curb ramp connections at this location instead. The mid-block crosswalk would be relocated to the intersection and the crosswalks located on the stop-controlled approaches.

Additionally, the pavement markings at these crosswalks are worn and difficult to see while the sign assemblies are old and do not meet current guidelines and standards. As pavement markings are refreshed and sign assemblies updated, they should be designed to meet the WYDOT Pedestrian & School Manual[1] and Part 7 of the MUTCD standards[2].

1. www.dot.state.wy.us/files/live/sites/wydot/files/shared/Traffic%20data/Ped_Manual_Final_1-14-14.pdf
2. https://mutcd.fhwa.dot.gov/pdfs/2009/part7.pdf

ELK STREET & 5TH WEST AVENUE

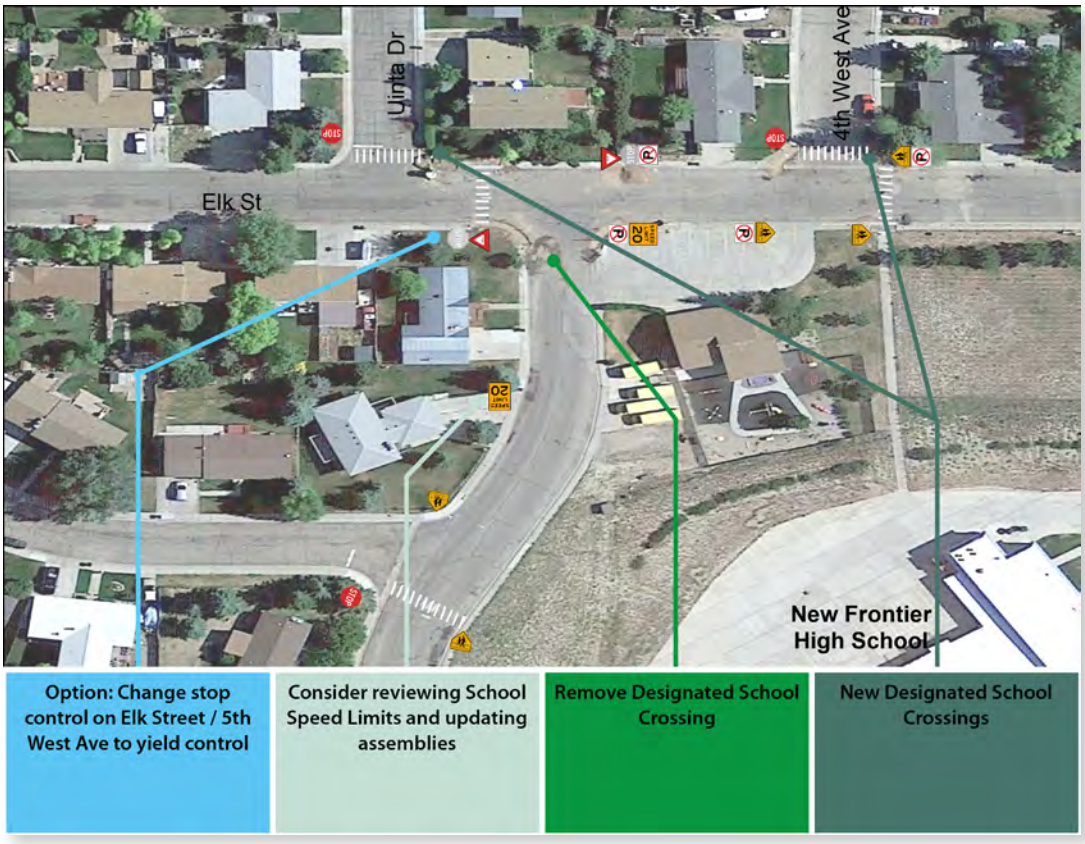


Figure 19. Elk Street / 5th West Avenue Improvements

Elk Street & 5th West Avenue

Figure 19 summarizes the proposed improvements for the Elk Street / 5th West intersections. Since the completion of the prior plan, curb parking has been restricted near the Kemmerer Child Development Center improving visibility of pedestrian in the crosswalks. Additional improvements to the intersection could include removing the crosswalk on the south leg of 5th West Avenue since the approach is not stop controlled. Students west of intersection would be routed down the existing crosswalk at 5th West Court / 5th West Avenue. New crosswalks across Uinta Drive and 4th West Avenue would also be installed so pedestrians can easily access the north elementary school entrance. These crosswalks would be located at "T" intersections with stop-controlled approaches.

Currently, eastbound and westbound vehicles are stopped at this intersection and there are no other stop signs along this section of Elk Street. One option for improving consistency and driver expectations on Elk Street is to change the stop signs on Elk Street to yield signs. As with the other intersections, pavement markings are faded, and the sign assemblies are old and do not meet current guidance and standards. As pavement markings are refreshed and sign assemblies updated, they should be designed to meet the WYDOT Pedestrian & School Manual[1] and Part 7 of the MUTCD standards[2].

ELK STREET & LINCOLN HEIGHTS DRIVE

Figure 20. Elk Street / 5th West Avenue Improvements

Elk Street & Lincoln Heights Drive

The intersection serves as the primary access to the student drop-off/pick-up area for Kemmerer Elementary School. It is a "T" intersection with one-way stop control on eastbound Elk Street with a guard rail blocking the east leg of the intersection. Lincoln Heights Drive and the school access are not controlled causing some confusion for drivers at this intersection. There are two crosswalks crossing the west leg of Elk Street and north leg of Lincoln Heights Drive. Parking is currently restricted near the crosswalks on Elk Street.

The major improvement at this location would be to extend the existing sidewalk on the east side of Lincoln Heights Drive to the Elementary School. This connection would not require students to cross either street to access the school. The existing angled crosswalk on Lincoln Heights could be moved to the south leg with option resulting in shorter crossing distances. An alternative to reduce queues on Elk Street and improve safety for pedestrians in the crosswalk would be to stop control each approach as identified in the prior plan due to the balanced traffic volumes.

1. www.dot.state.wy.us/files/live/sites/wydot/files/shared/Traffic%20data/Ped_Manual_Final_1-14-14.pdf
2. https://mutcd.fhwa.dot.gov/pdfs/2009/part7.pdf

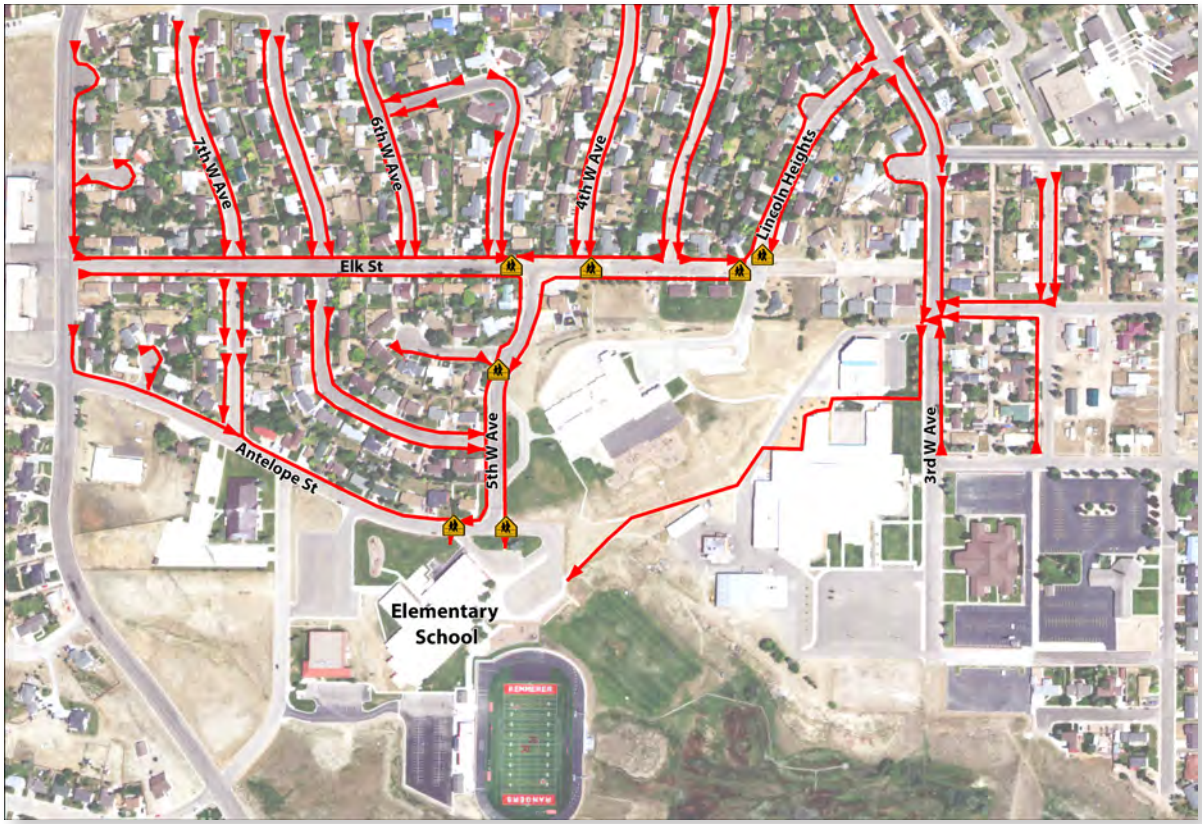


Figure 21. Elementary School Routing Plan

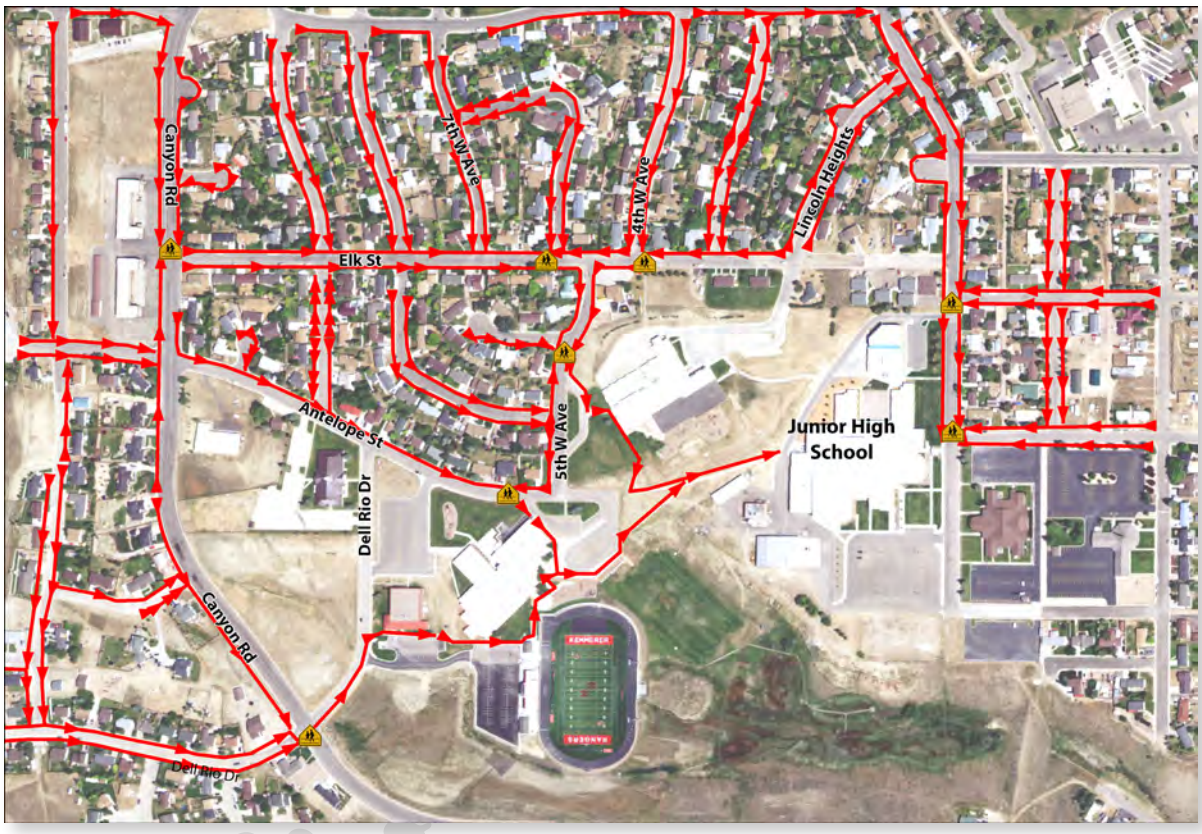


Figure 22. Middle School Routing Plan

School Walking Routing Plan

The pedestrian routes encompass the areas within approximately ½-mile from the schools. These routes identify appropriate sidewalks and crosswalks pedestrians could use to access the school buildings, and they show general routes students should take when walking from their house to the schools. Figures 21 and 22 show routes updated since the 2013 plan to reflect the change in school locations. Of specific note is the middle school routes showing where students should cross Canyon Road which has higher speeds and traffic volumes. It is recommended that students cross Canyon Road at the marked student crosswalks at the intersections of Elk Street and Del Rio Road. Consideration should be given to updated pavement markings and sign assemblies to meet the WYDOT Pedestrian & School Manual[1] and Part 7 of the MUTCD standards[2].

1. www.dot.state.wy.us/files/live/sites/wydot/files/shared/Traffic%20data/Ped_Manual_Final_1-14-14.pdf
2. https://mutcd.fhwa.dot.gov/pdfs/2009/part7.pdf

TRAIL RECOMMENDATIONS

All the analysis and input gathered throughout the study led to the development of trail project recommendations. The BCI, Gap and Barrier Analysis, as well as all the input received directly from residents helped in the development of the below project list. Many of the trail recommendations were identified by members of the community and are specifically targeted toward meeting Study Goal 3: Identify trail loops and create greater connectivity of trails.

The Fossil Basin Trails Master Plan does not have a defined planning year horizon, but the projects below do represent a 20- to 30-year plan.

The potential active transportation improvements listed below don't represent a timing or phasing approach. The list numbering in this table is not relevant to project priority. Any of them can be completed at any time regardless of the other projects. The bicycle and trail projects along with planning level costs are summarized in Table 3.

The costs listed are planning level cost estimates based on what others have paid for similar improvements with adjustments for localization in Lincoln County. The actual costs may vary.

Table 3. Bicycle & Trail Improvements

PROJECT #	TYPE	LOCATION	LENGTH (feet)	COST
B1	Bike Lane	Aspen / Beryl St.: Golf Course to Hillside Trail	1,500'	$ 10,000
B2	Bike Lane	4th West Ave / Garnet St. / 3rd West Ave: Elk St. to US 189	4,050'	$ 26,000
B3	Bike Lane	Elk St.: Canyon Rd. to Sorensen Dr.	1,550'	$ 10,000
B4	Bike Lane	Beech Ave.: US 189 to Sapphire	1,800'	$ 12,000
B5	Bike Lane	Moose St.: 3rd West Ave. to US 189	1,150'	$ 8,000
B6	Bike Lane	3rd West Ave. / Little Canyon Rd. / Diamondville Ave.: Garnet St. to Conroy St.	5,200'	$ 34,000
B7	Bike Lane	Conroy St.: US 189 to Hillside Trail	1,400'	$ 9,000
B8	Bike Lane	US 189: Canyon Rd. to Antelope St.	7,250'	$ 47,000
B9	Update Bike Lane	Canyon Rd.: US 189 to Canyon Rd. Trail	9,500'	$ 60,000
S1	Sharrows	US 189: Hwy 30 Alt. to Golf Course Trail	1,750'	$ 10,000
S2	Sharrows	US 189: Antelope St. to Hwy 30 Alt.	5,000'	$ 29,000
S3	Sharrows	Hwy 30 Alt: US 189 to Canyon St. Connector Trail	1,550'	$ 9,000
T1	Paved Trail	Hams Fork River Trail – Hwy 233 Trail	500'	$ 32,000
T2	Paved Trail	Golf Course - River Connector Trail	7,500'	$ 267,000
T3	Paved Trail	Old Bridge Golf Course Loop Trail	4,550'	$ 311,000
T4	Paved Trail	Cemetery Trail	3,400'	$ 661,000
T5	Paved Trail	School - Canyon Road Connector Trail	1,250'	$ 122,000
T6	Unpaved Trail	Hillside Trail	10,300'	$ 890,000
T7	Paved Trail	Carbon St. Connector Trail	750'	$ 27,000
H1	Trail Head	Beryl St. Trail Head		$ 3,000
H2	Trail Head	Carbon St. Trail Head		$ 3,000
H3	Trail Head	Antelope St. Trail Head		$ 3,000
H4	Trail Head	Conroy St. Trail Head		$ 3,000
		TOTAL		**$ 2,586,000**

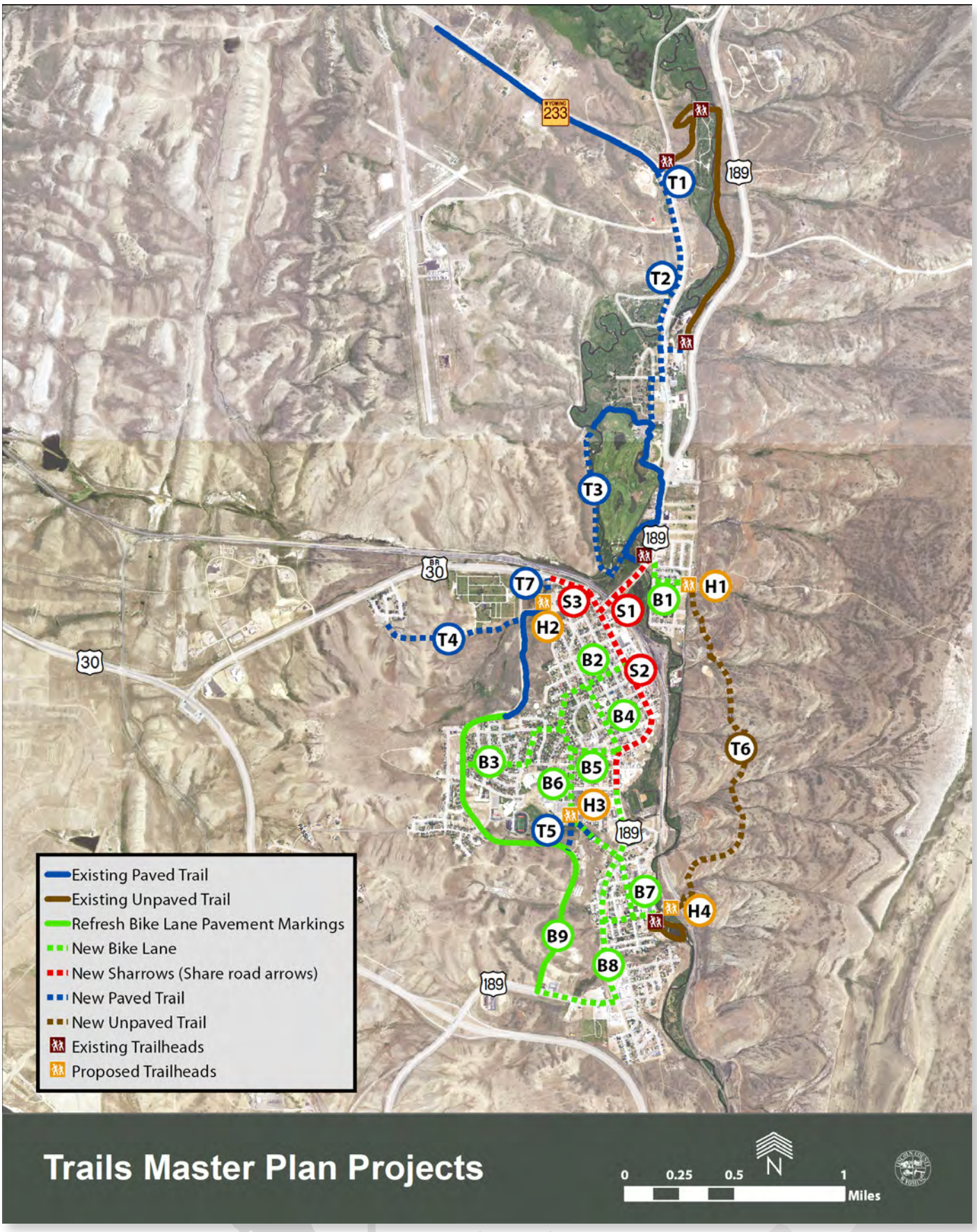


Figure 23. Trail Master Plan Projects

Typical Cross Sections

In developing the Trail Master Plan, all bike and trail improvement types that could be effective or applicable to the locations within the study area were considered. Table 4 summarizes the proposed cross-section standards for these facilities as well as providing a typical cross-section for these facilities types. These cross-sections may vary with different width for parking or curb and gutter, based upon the individual constraints and opportunities on each roadway. Additionally, MUTCD guidance states sharrows "should not be placed on roadways that have a speed limit above 35 mph." This could influence the design options on the US 189 bridge and segment north to the golf course which have a posted speed of 40 mph. If sharrows are to be used on these segments, consideration should be given to completion of a speed and traffic calming study.

Table 4. Typical Cross-section Standards

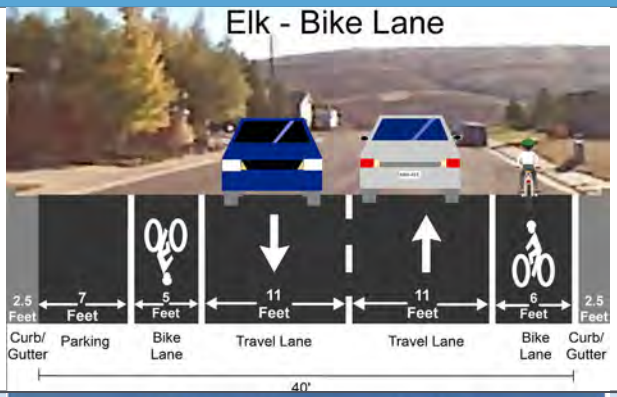
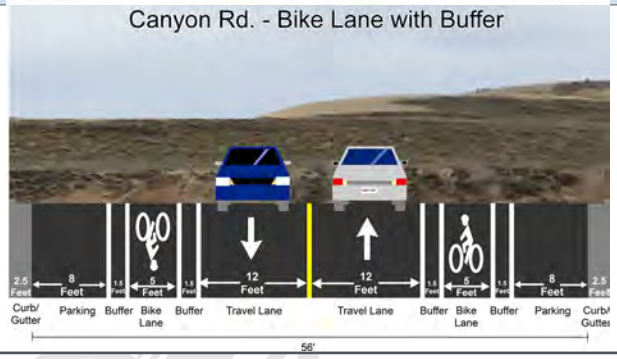
PROJECT #	LOCATION	WHAT THAT COULD LOOK LIKE
B1	*Aspen / Beryl St.: Golf Course to Hillside Trail*	
B2	*4th West Ave / Garnet St. / 3rd West Ave: Elk St. to US 189*	
B3	*Elk St.: Canyon Rd. to Sorensen Dr.*	
B4	*Beech Ave.: US 189 to Sapphire*	
B5	*Moose St.: 3rd West Ave. to US 189*	
B6	*3rd West Ave. / Little Canyon Rd. / Diamondville Ave.: Garnet St. to Conroy St.*	
B7	*Conroy St.: US 189 to Hillside Trail*	
B8	*US 189: Canyon Rd. to Antelope St.*	
B9	*Canyon Rd.: US 189 to Canyon Rd. Trail*	

Table 4. Typical Cross-section Standards (cont'd)

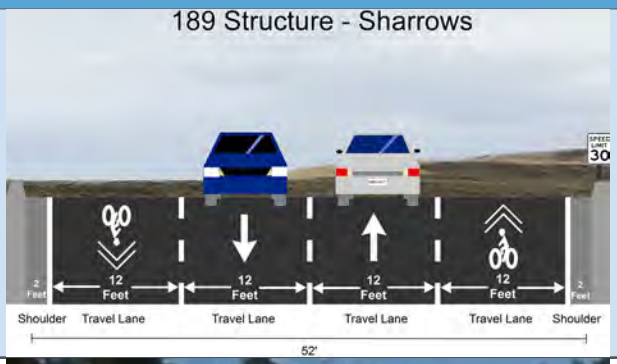
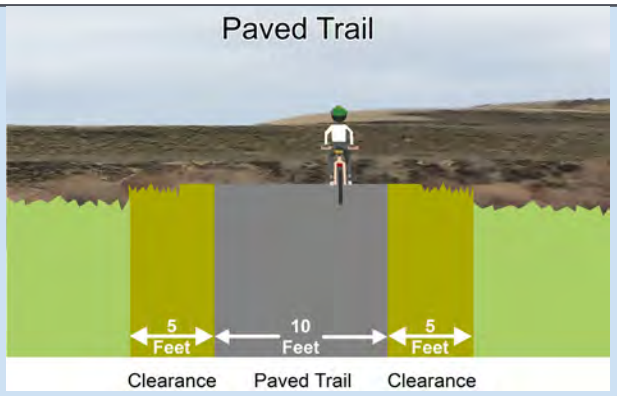
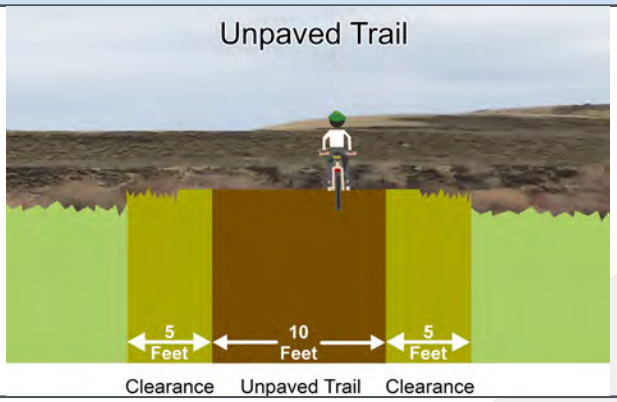
PROJECT #	LOCATION	WHAT THAT COULD LOOK LIKE
S1	*US 189: Hwy 30 Alt. to Golf Course Trail*	
S2	*US 189: Antelope St. to Hwy 30 Alt.*	
S3	*Hwy 30 Alt: US 189 to Canyon St. Connector Trail*	
T1	*Hams Fork River Trail – Hwy 233 Trail*	
T2	*Golf Course - River Connector Trail*	
T3	*Old Bridge Golf Course Loop Trail*	
T4	*Cemetery Trail*	
T5	*School - Canyon Road Connector Trail*	
T7	*Carbon St. Connector Trail*	
T6	*Hillside Trail*	

Table 4. Typical Cross-section Standards (cont'd)

PROJECT #	LOCATION	WHAT THAT COULD LOOK LIKE
H1	*Beryl St. Trail Head*	
H2	*Carbon St. Trail Head*	
H3	*Antelope St. Trail Head*	
H4	*Conroy St. Trail Head*	

Figure 24. New Trail Construction along SR-233

Wayfinding

Wayfinding refers to information systems that guide people through a physical environment and enhance their understanding and experience of the space. It helps them "find their way."

Wayfinding is particularly important in urban/suburban environments and larger community settings. As the Fossil Basin area looks to add trails, sidewalks, and bike lanes. People will need visual cues such as signs, maps, directions, arrows, and symbols to help guide them to their destinations and around the community. Implementation of an effective wayfinding system can contribute to a sense of well-being, safety, and security to those walking and biking in these sometimes high-stress environments.

Figure 26. Simple Signage

In Kemmerer and Diamondville simple signage and information systems for both pedestrians and cyclists (and even motorists), who have unique challenges navigating streets and roadways can be an effective way to help people develop "mental maps" of the terrain and simplify their routes to the extent possible.

Wayfinding signs should be used along trails and bike lanes in conjunction with existing signs including road signs to orient trail users and riders and assist in route planning. These signs tell users that they are on a network trail, inform users how far they are from the next junction or destination, and illustrate the route of the trail or road from their point forward. Signage at trail intersections should be limited to signage regarding the direction to the closest "exit" with distance noted, numbered markers to assist with map reading (i.e., 'You Are Here') and directions for emergency services.

Typically, signs are mounted at a height of 5 feet with either "bike route," the trail name, directional arrow, etc. Taller wayfinding signs that can direct cars, bicycles, and pedestrians would be appropriate in heavily trafficked areas in downtown Kemmerer. These signs could identify specific locations like the library, visitor center, JC Penny, etc. Examples of these two types of signs are shown here.

Figure 27. Example signs for downtown

With this plan in place the community and begin to pursue TAP grants and other funding sources to implement these projects.


Figure 28. Downtown Kemmerer is a great place for wayfinding signs.

IMPLEMENTATION

Kemmerer's vision, as outlined in their comprehensive plan is to create an "*attractive community with a diversified economic base where people take pride in their homes, businesses, and environment*" within the next 20 years. The guiding principles outlined in the plan are not unlike those of most small towns, and they align with components of typical trail plans:

- *"**Attractive Community**: We will invite new visitors, residents of all ages, and businesses to promote a high quality of life through a distinctive combination of small town living with modern amenities.*
- ***Diversified Economic Base**: We will retain our global presence through energy production and expand our economic base through maximizing a regional workforce, leveraging natural resources, and preserving our historic heritage.*
- ***Community Pride**: Our people, housing, events, and businesses will reflect the highest standards of living in the region."*

The Fossil Basin Trails Master Plan supports these guiding principles as they pertain to people walking and cycling. A Trails Master Plan increases accessibility, connectivity, improves public health and encourages active living.

In Kemmerer and Diamondville nearly everything is within a 10-minute walk or 5-minute bike ride. This accessibility is part of what draws people to Fossil Basin. The development and implementation of a trails master plan will help the city move in the right direction by preventing the area from experiencing the downfalls of sprawl, mitigate blight, and help ensure that the mobility groundwork is in place to secure the future of Fossil Basin. With proper planning, the Fossil Basin area has the potential to create a thriving, active community that attracts visitors, recreationalists, and long-term residents to enjoy its natural beauty, unique history, and strong trail network.

The project recommendations shown earlier were designed to be implementable by including many low-cost improvements and that can be completed quickly. WYDOT has also shown a willingness to participate in trail implementation and construction as just witnessed with the new trail built on Highway 233. With this completed plan, Lincoln County should work with Kemmerer, Diamondville, and WYDOT to implement trails, bike lanes, and sharrows as road projects are discussed. If roads need to be resurfaced or restriped implementing the recommended trail projects should be considered. The cities and the county should also consider adding the trail projects to road funding pursuits and design/build projects to help implement the recommended projects list. Also, Lincoln County and the cities can pursue TAP grant and other funding sources for the specific implementation of trail project.

Finally, this plan is a guide for trail improvements for the coming years. It is not tied to phasing or prioritization any and all projects that can be implemented will be an improvement for the community.

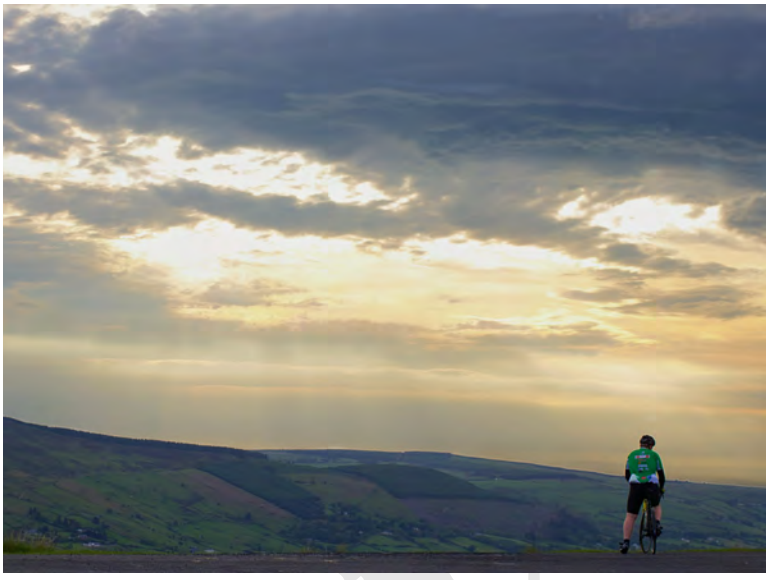
CONCLUSION

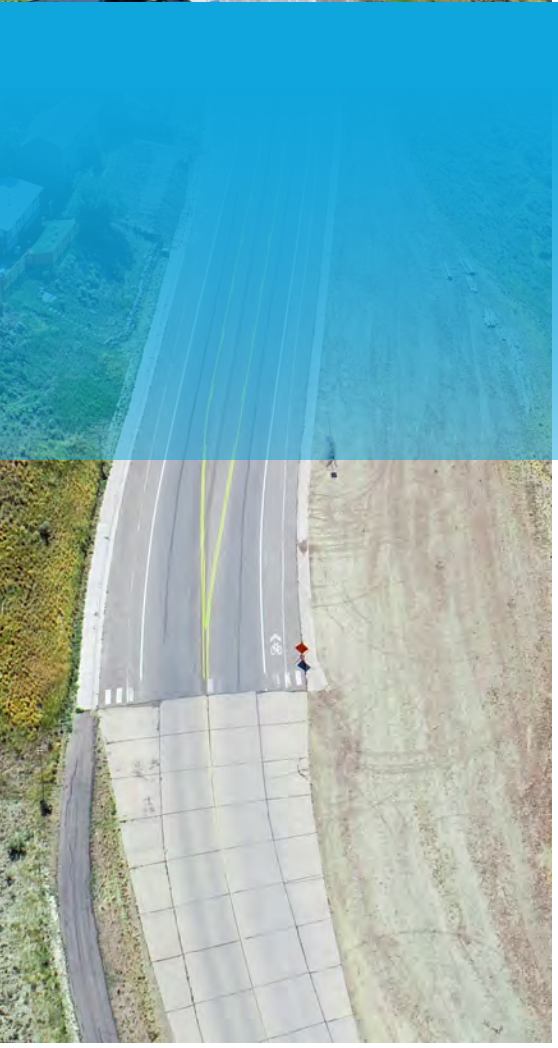
The purpose of the Fossil Basin Trails Master Plan is to guide Lincoln County, and the community in the development of bicycle and Pedestrian improvements in the study area will enhance active transportation and recreation in the area. It incorporates concepts and ideas from many of the residents as well as specific agencies like WYDOT and the cities. It describes the potential improvements that achieve the goals of:

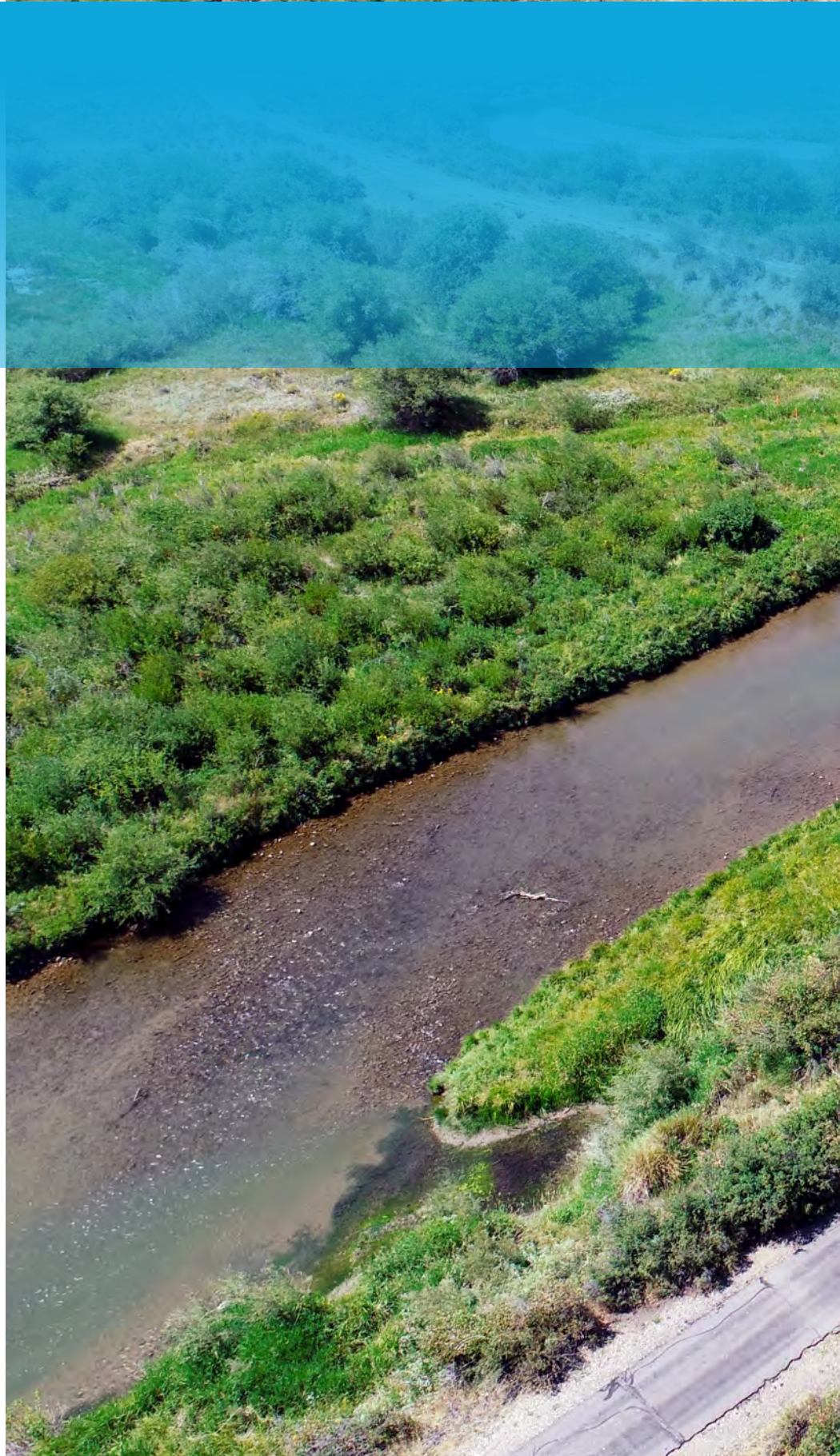
GOALS OF THE FOSSIL BASIN MASTER PLAN:

- *To create a comprehensive plan for trails and bike lanes in the community*
- *Engage with residents in developing the type and location of trails*
- *Identify trail loops and increase the connectivity of trails*
- *Identify potential improvements to create a guiding framework for the future*

The project map and list are the results of months of work within the community to develop a comprehensive list of the trail and other relevant active transportation projects. They are the guideline for improvements in the study area, but the project maps and lists may be amended as needed throughout the life of the plan. Having a plan is critical for applying for TAP and other funding. Equally important is having a plan that acts as a prioritized guide for future enhancements. This will take the collaborative efforts of many residents and other stakeholders within the community to see these projects through to construction, but is well worth it in the end.





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