

PIEDMONT VALLEY

Regional Shared-Use Path Summary and Recommendations



March 2013

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Regional Shared-Use Path Summary and Recommendations

Steering Committee:

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Dan Staton, South Dakota Department of Transportation
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References:

Federal Highway Administration, Recreational Trails Program
Federal Highway Administration, Designing Sidewalks and Trails for Access
Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas

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Project Overview

Background and Purpose

The Piedmont Valley Shared-Use Path project is funded through the Rapid City Area Metropolitan Planning Organization, with the City of Summerset providing local matching funds. The purpose of the project is to create a long-term plan to incorporate a shared-use path to improve pedestrian and cyclist options in the region, thereby improving the quality of life for residents of the valley.

Planning Process Overview

At the initiation of the project, a Steering Committee was formed to provide feedback and guidance throughout the project. This committee was comprised of local residents and government officials and met periodically. Input was gathered at key milestones in the project. See the appendix for the complete Steering Committee meeting minutes.

Executive Summary

This document summarizes early planning efforts to determine the possibility of incorporating shared-use paths within the Summerset municipality as well as the greater Piedmont Valley area. In general, the findings of this study support moving forward; however, additional efforts are needed to better define project needs, implementation strategies, and possible funding mechanisms. Actual trail routings shown are conceptual at this point and would require ground truthing and property verification as the project moves forward.

Inventory and Analysis

Introduction

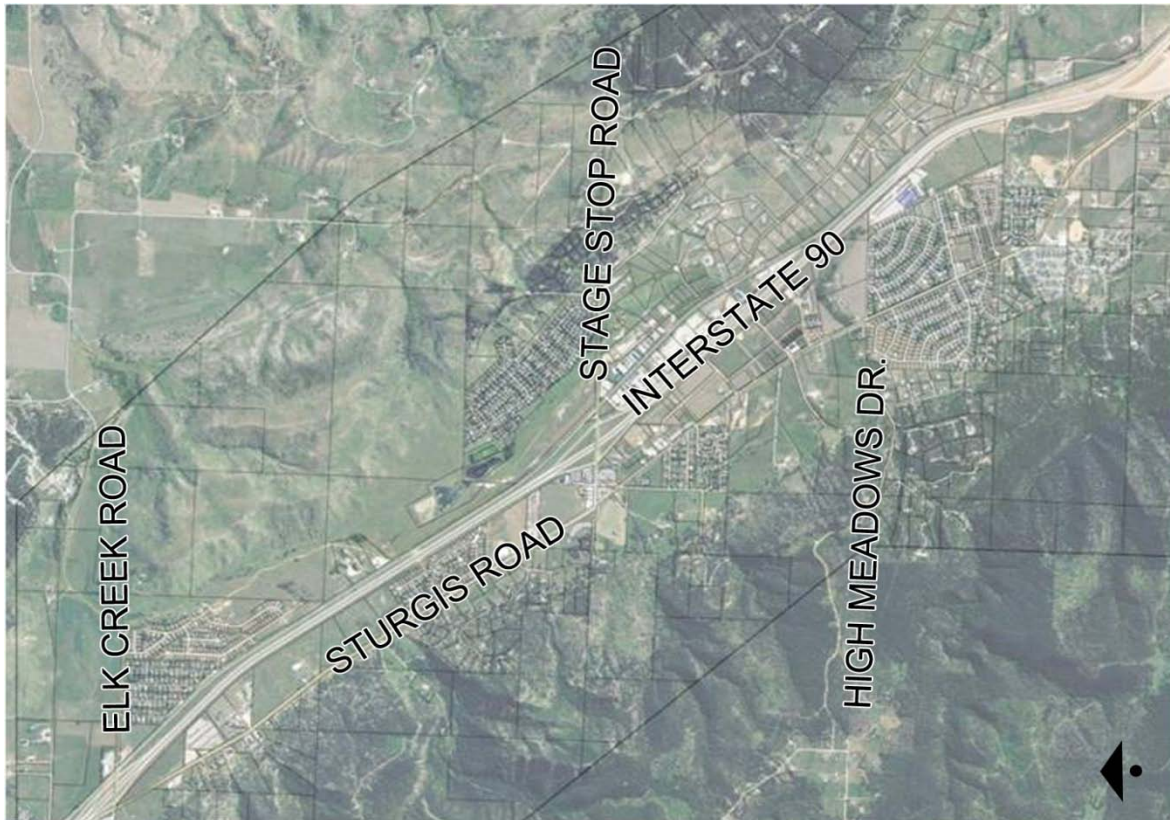
The purpose of the inventory and analysis is to gather input and data based on the existing conditions, project how the future may change these conditions, and identify opportunities and constraints based on these findings. Due to the conceptual nature of this study, the inventory was kept to surface-level data and does not involve complexities such as slope, soil types, or utilities.

Data Collection

Data was collected through site observations, conversations with stakeholders and steering committee members, and through GIS data. This data included land ownership details, right-of-ways, property lines, streets, and municipal boundaries. Additionally, local and national regulations were consulted to ensure the recommendations comply with those standards.

Adjacent Community Connections

During initial Steering Committee meetings, it was decided that the shared-use path could eventually connect the entire Piedmont Valley, including Summerset, Piedmont, Black Hawk, and the unincorporated areas in between. In future phases, the surrounding communities will be involved in the routing and connection options of the pathway.



Base Data Map

Points of Connection Overview

“Points of Connection” were identified during the inventory and analysis and can be seen on the final Routing Recommendations (see Appendix). These are defined as areas that are public in nature, and tend to draw people to them through services or recreational opportunities.

These include schools, churches, commerce centers, government centers, open space and parks, and campgrounds and hotels.



Stage Stop Commerce Center Intersection

Public Participation

Public and Steering Committee Meetings

Public Meetings were an important part of the planning process. Including the public helps to determine the goals and objectives of the project, as well as the values, issues, and preferences of the local residents that will be utilizing the shared-use path. Many of the important issues to address were raised during the Steering Committee meetings.

In addition to periodic Steering Committee meetings, two Open Houses were held in Summerset. Press releases and postcard mailings informed residents and property owners of the location and times of these meetings, and contact information was provided for those who would be unable to attend.

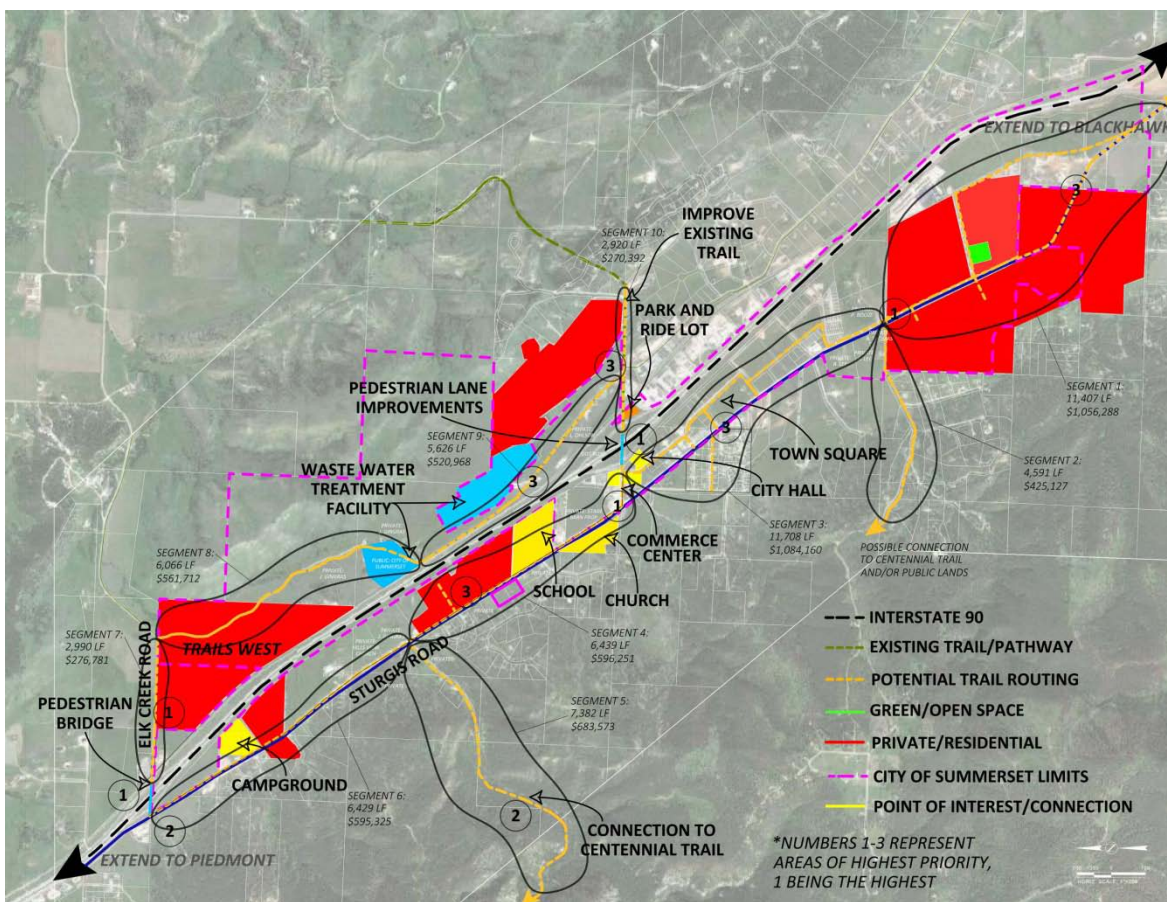


Image 1

Open House – January 10, 2013

This meeting had 23 people in attendance and was held at the Summerset City Hall. The purpose of the meeting was to actively involve the public in understanding of the possibility of incorporating shared-use paths in the community and involve them in the process of developing the pathway system. A routing plan was presented with the intent of encouraging

response and feedback, as well as other path option design considerations, refinement, and participation.

It was determined that motorized vehicles would not be allowed on the shared-use path. Participants addressed preferences to the trail connections and included Elk Creek Road to the Trails West Subdivision, Sturgis Road to Piedmont, and Blackhawk to Rapid City.

Possible funding options were discussed, as well as private land ownership. A representative from the South Dakota Department of Transportation (SDDOT) commented that if additional right-of-way is necessary, the land would need to be purchased from private landowners. After this meeting, the planning team was able to use the feedback and direction provided to create a map of potential trail routing areas. Special consideration was included for context sensitivity and public health, safety, and welfare.

Open House – February 28, 2013

This meeting had 25 attendees and focused on the public overview of costs for both construction and maintenance. Participants were invited to join in a “dotmocracy” exercise, in which each person was given dots that represented \$500,000 each. They then placed \$3 million each on the areas of the shared-use path in which they would like to prioritize funding. This exercise resulted in the final Conceptual Trail Routing Alternatives.

Conceptual Trail Routing Alternatives

Preferred Trail Routing Alternative

Based on the Open House “dotmocracy” exercise, the areas in which citizens would like to see the trail routed have become clear. Two maps (see images below) show dots placed in areas of higher prioritization.

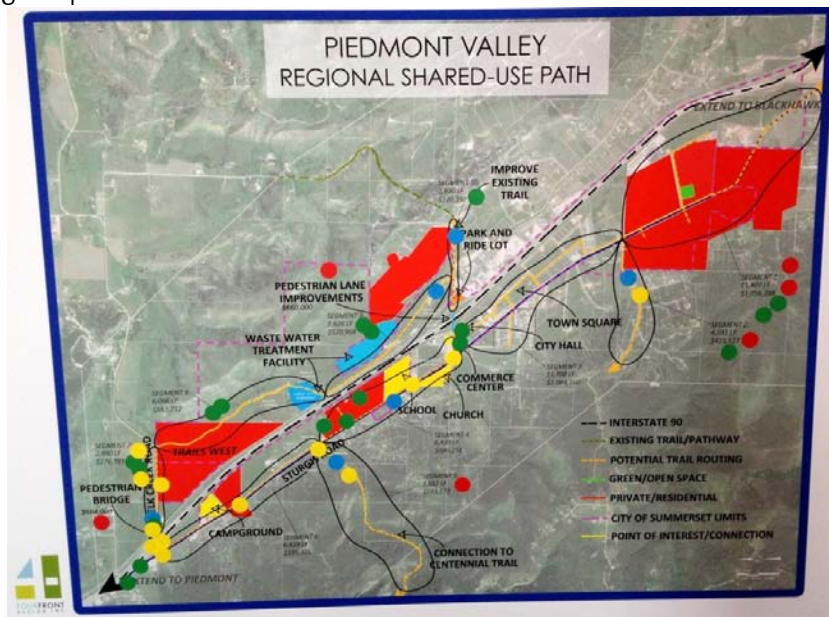


Image 2

Image 2 displays the highest amount of preferences for the trail to be routed through the following areas:

- Elk Creek Road
- Sturgis Road (southern City Limits to High Meadows Drive)
- Stage Stop Road, near the Commerce Center

Participants also identified route connections in the following areas:

- Connection to Centennial Trail
- Extension to Piedmont
- Housing connections to Kit Carson Trail and Stables Drive.

Additionally, participants expressed interest in prioritizing the pedestrian overpass on Elk Creek Road, as shown by the yellow dots in Image 2. The bicycle and pedestrian facility in this area could be constructed in conjunction with future interchange reconstruction projects.

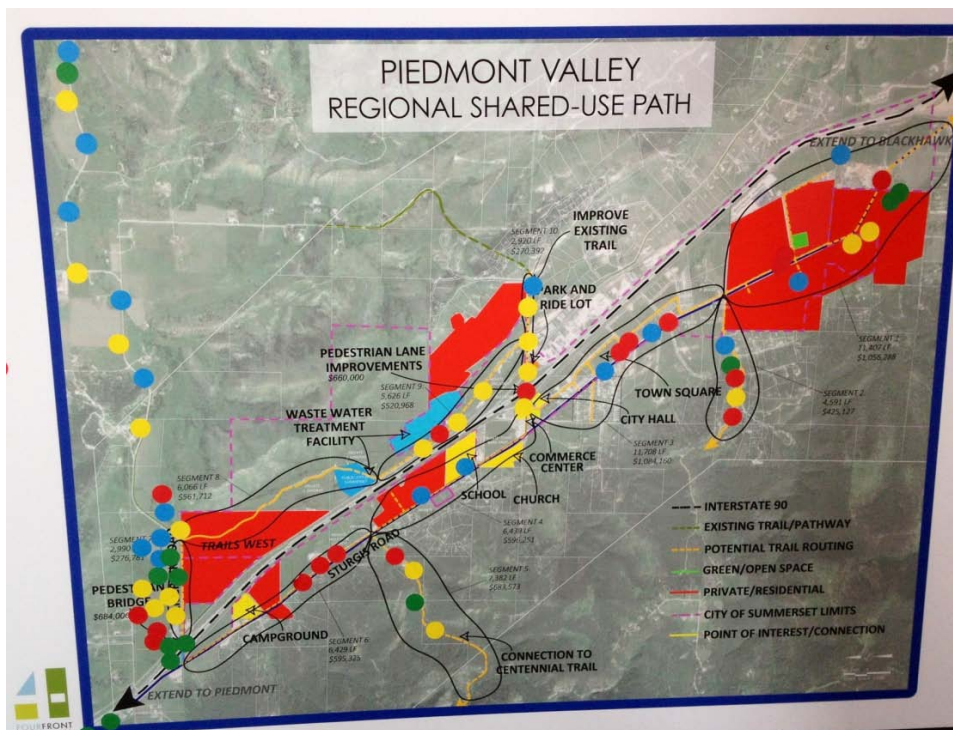


Image 3

Although similar to Image 2, Image 3 shows Elk Creek Road area connections as the route with the highest concentration of dots. The prioritized routing areas based-off of this image include:

- Elk Creek Road, extending further east
- Stage Stop Road, connecting to the existing east trail
- High Meadows Drive
- Connection to Centennial trail

Recommendations Summary

PRIORITY (1-3)*	PROJECT AREA**	SEGMENT NUMBER
1	Elk Creek Road, including a pedestrian overpass bridge and extending to the east	7
1	Stage Stop Road near the commerce center	4/10
1	Sturgis Road near High Meadows Drive	1
1	Path connections across Interstate 90 at Elk Creek Road (Exit 46) and Stage Stop Road (Exit 48)	4/7
2	Connection to Centennial Trail	5
2	Extension to Piedmont	6
3	Housing connections to Kit Carson Trail and Stables Drive	4
3	Stage Stop Road, connecting to the existing east trail	10
3	Area adjacent to the railroad tracks	9
3	Sturgis Road to the south	1
3	Sturgis Road near Sunflower Street	3

*1 = highest, 3 = lowest

**See page 9 for specific area limits

Recommended Design Parameters

Uses

The term "**shared-use path**" means a multi-use trail or other path, physically separated from motorized vehicular traffic by an open space or barrier, either within a highway right-of-way or within a public right-of-way, and usable for transportation purposes. Shared-use paths may be used by *pedestrians, bicyclists, skaters, equestrians, and other nonmotorized users*.

Equestrian and other nonmotorized recreational uses are allowed on shared-use paths and trails that use federal-aid transportation funds. Federal transportation laws and regulations do *not* prohibit equestrians, in-line skaters, skateboarders, cross country skiers, snowshoe users, or other nonmotorized users on shared-use paths or trails. State or local managers may choose to prohibit these uses; but it is a state or local determination, and not a federal requirement. These restrictions should be established and mentioned when federal funds are applied for and incorporated into the design of the project.

Locations

In terms of safety considerations, transportation plans and projects shall provide due consideration for safety and contiguous routes for bicyclists and pedestrians. Safety considerations shall include the installation, where appropriate, and maintenance of audible traffic signals and audible signs at street crossings. SDDOT will determine when and if standards are met prior to warranted determination of installation adjacent to state right-of-way.

Bridges are essential in any transportation network, and many Interstate or other freeway bridges often are the only possible pedestrian connections across rivers, canyons, railroads, other highways, or other major barriers. Major highway bridges often are necessary links for nonmotorized transportation networks.

Surfaces

There are no Federal laws or regulations that require a shared-use path to be paved. The American Association of State Highway and Transportation Officials (AASHTO) recommends paved surfaces, but it recognizes that there are successful unpaved surfaces.



Surface types, along with benefits of each, recommended for the project include:

1. Concrete (permeable or non-permeable):
Recommended for high-use areas susceptible to erosion or flooding. More expensive than other material options, but long-lasting and low maintenance.
2. Crushed aggregate with stabilizers:
Recommended in less urbanized areas in which the natural environment should be highlighted. Tends to be less expensive, but will require more long-term maintenance than concrete or asphalt.
3. Asphalt (permeable, non-permeable, or recycled):
Recommended in urbanized areas without sensitive environmental surroundings. Relatively long lasting but requires maintenance. Best used in areas with high bicycle traffic.

Each individual segment of the shared-use path should use the recommended surface most appropriate for that particular Level of Service (LOS), environmental surroundings, topography, erosion potential, soil characteristics, and maintenance considerations.

A few specific points regarding surfaces include:

1. Federal-aid surface transportation projects must meet accessibility guidelines. This means shared-use path surfaces must be



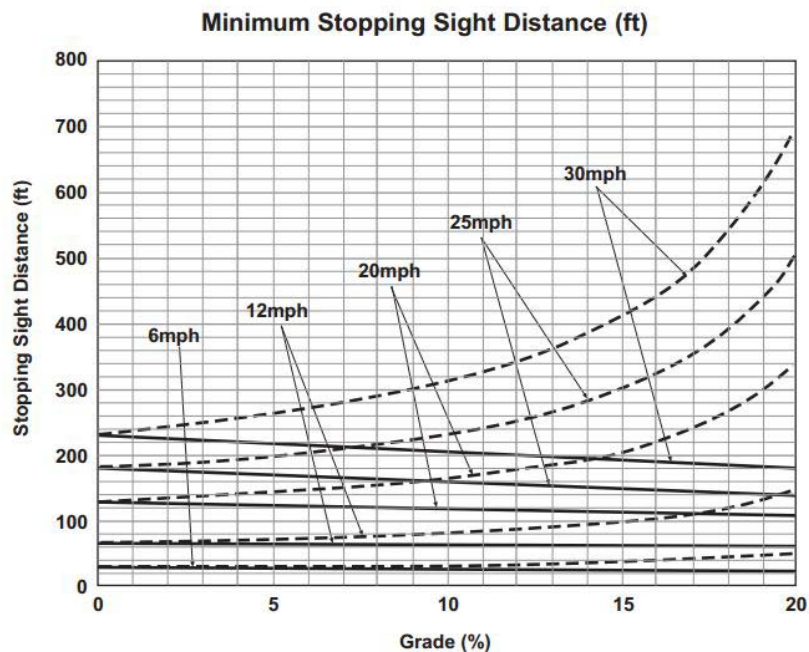
- firm and stable, but does not necessarily mean paved.
2. If using concrete, use "saw cut" for joints.
 3. Keep drainage grates off the trail.
 4. Minimize openings, pavement and bridge joints, open bridge decks, railroad crossings, and boardwalks.
 5. Openings shall not permit passage of a 0.5 inch diameter sphere.
 6. Elongated openings should be perpendicular or diagonal to travel direction.
 - a. Some exceptions for boardwalks: 0.75 inch.

Speed

The AASHTO recommended Design Speed for this type of trail is 14 to 20 miles per hour. It's important to consider *not* having completely straight paths, as those may encourage excessive speed and result in speed variation conflicts. The Federal Highway Administration's LOS guide should be consulted during the trail design.

The trail LOS model uses six levels of service categories to determine an optimum width to accommodate a variety of users and speeds. FHWA provides a Shared-Use Path LOS (SUPLOS) model that uses select inputs describing conditions along a trail to calculate a LOS score. This model should be followed when determining LOS categories for each trail segment and area.

Additionally, curves and changes to routes are often used as traffic and speed calming measures and should be considered in appropriate areas.



Railings

Low forms of edge protection, such as curbs, are not recommended on shared-use paths because of the negative impact they have on bicyclists. If edge protection is needed, it should take the form of a railing. The minimum railing height on a shared-use path should be 42 to 48 inches high to prevent bicycle riders from flipping over the top. It is also important to avoid protrusions at handlebar height.

In some situations, it may also be beneficial to provide a gripping surface for pedestrian use in addition to the protective railing. If a handrail is included as part of the railing design, it should meet the specifications in the ADA Accessibility Guidelines (ADAAG) to ensure accessibility.

Signs

Signs that clearly describe the shared-use path conditions are an essential component to enhance pedestrian access. Signs should be provided in an easy to understand format with limited text and graphics that are understood by all users.

Objective information about the shared-use path conditions such as grade, cross slope, surface, width, and obstacles is preferable to subjective difficulty ratings such as easy or difficult.

Written information should also be provided in alternative formats, such as Braille, large print, or an audible format. Signs that provide objective information about shared-use paths using simplified text and graphics benefit all users.

It is recommended that the following information be objectively measured and conveyed to the user through appropriate information formats:

- A. Shared-use path name;
- B. Permitted users;
- C. Path length;
- D. Change in elevation over the total length and maximum elevation obtained;
- E. Average running grade and maximum grades that will be encountered;
- F. Average and maximum cross slopes;
- G. Average tread width and minimum clear width;
- H. Surface type; and
- I. Firmness, stability, and slip resistance of surface.

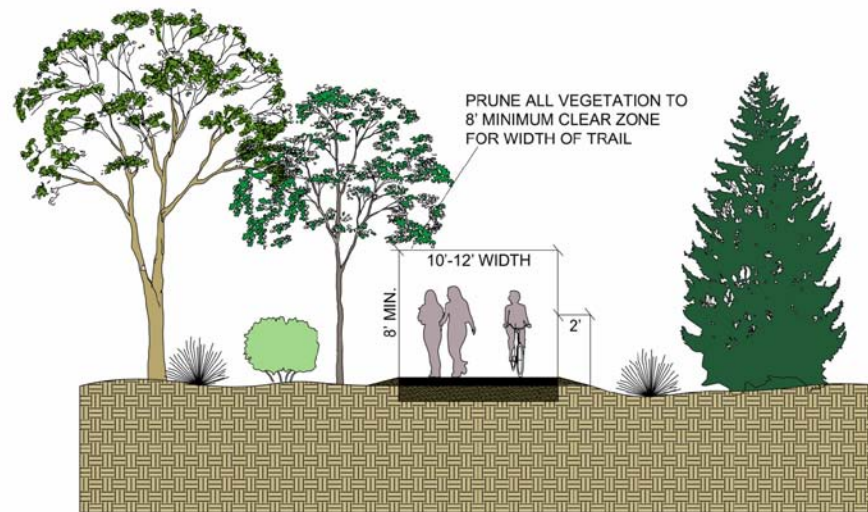
Width

The tread or usable surface should be at least 10 feet wide. A minimum of 8 feet may be used on shared-use paths that will have limited use. Paths should also have transition graded

areas at least 2 feet on either side of the path. On shared-use paths with heavy volumes of users, tread width should be increased to a range from 12 feet to 14 feet.

Trails having an 8 foot width, which AASHTO recommends only in “rare instances,” were found to have poor LOS, except at very low volumes or with user mixes that included few pedestrians and runners. AASHTO’s minimum recommendations are a paved width of ten feet for a two directional shared-use path.

Trails of 11 to 15 feet are wide enough to operate as three-lane paths. The increased passing capacity provided by a trail that operates as three lanes improves LOS and increases the trail’s ability to absorb higher volumes and more diverse mode splits without severely degrading service.



TYPICAL TRAIL SECTION

During the design of new trails and widening of existing trails, it is customary to consider varying the trail width to achieve LOS goals in key locations but not overbuild in other locations. Adding width to improve LOS is valuable to trail users, even if it is provided only on selected segments.

Trails should be designed in one foot rather than two foot increments. This approach provides measurable increases in LOS while at the same time containing costs and minimizing environmental impacts.

Passing space

Generally, passing spaces are not necessary on shared-use paths because the width of the shared-use path exceeds the recommended dimensions that require a passing space. If a shared-use path is narrow, periodic passing spaces of at least 60 inches by 60 inches should be provided.

Accessibility

It is important that all path facilities are planned and designed in accordance with the Americans with Disabilities Act (ADA) and/or the Architectural Barriers Act (ABA). ADA should be used as the base requirements in accordance with FHWA standards, although ABA generally allows a more flexible and economical standard for more remote routes, thus both should be considered depending on funding source. FHWA's *Designing Sidewalks and Trails for Access* provides best practices on surface materials; firmness, stability, and slip resistance; and other design considerations.

Protruding Objects

Protruding objects are anything that overhangs or protrudes into the shared-use path tread whether or not the object touches the surface. Examples of protruding objects include lighting posts, poorly maintained vegetation, and signs.

Ideally, objects should not protrude into any portion of the clear tread width of a shared-use path. If an object must protrude into the travel space, it should not extend more than 4 inches.

A vertical clearance of 8 feet should be provided to accommodate other shared-use path users, such as bicyclists. On shared-use paths where there is the potential for emergency or maintenance vehicles to gain access to areas, it may be necessary to increase the vertical clearance. In addition, when an underpass such as a tunnel is used, 10 feet of vertical clearance is recommended.

Additional Considerations

Open Space and Trail Elements

In addition to the trail surface itself, site furnishing elements are important amenities to include during trail design.

A few local residents specifically requested pet waste stations be included into the planning and maintenance of the trail. Benches that take advantage of favorable locations and views are a positive addition to any path or



trail. Additionally, trash receptacles are important to include to control waste and littering.

Interstate Bridges

Bicyclists have the desire to dismount and walk their bikes over the interstate bridges, which is a much safer alternative.



Trailheads



Incorporating various trailheads along the shared-use path route will allow public access as well as amenities and signage. Special consideration should be given to the location of these areas, as they will serve to control public access points and allow the path to be a true community-wide amenity.

Due to public input, vehicular accessibility, and proximity to points of interest, it is recommended to consider the Elk Creek Road interchange, the Stage Stop Road interchange, and the areas east of the interstate, such as Trails West subdivision for trailhead locations.

Land Ownership Considerations

It is important to note that the trail routing options are intended to utilize public lands and right-of-ways, however, in some areas this is difficult to accomplish.

Conversations with private landowners will be necessary to ensure the continuity of the shared-use path in some places.

Funding, Maintenance, and Implementation

See Appendix D for the complete Opinion of Probable Costs. Items highlighted indicate elements of design that are difficult to estimate until site specific design occurs. Maintenance is an item that should not be overlooked, as considerable costs can be associated with trail maintenance and upkeep. Federal Funds cannot be used for trail maintenance costs.

Typical maintenance items generally include:

- A. Weed Control (Shoulders)
- B. Leaf Blowing
- C. Tree Maintenance/Pruning
- D. Sweeping Debris & Erosion
- E. Vector Control (insect and vermin control)
- F. Sign Maintenance/Installation

- G. Graffiti Removal
- H. Retaining Wall Repair
- I. Staining of wood structures
- J. Erosion Control

Maintenance responsibility varies for each unique trail situation, yet the division of duties can significantly affect the overall maintenance and operations costs. An example of maintenance costs are \$1,500 to \$2,525 per mile for a ten foot wide path (in 2007). A few options for responsibility are:

- A. City Maintenance Crews (Work Orders, Emergencies, Installation of Signs, etc.)
- B. Contractual (Weeding, Edging, Pruning, Blowing)
- C. Prison Labor (Weed abatement, fire breaks, retaining wall install, kiosk install, bench install, etc.)
- D. Service Groups (trash pick-up, shrub planting, tree planting, etc.)
- E. Volunteers (Mulch install, bridge maintenance, tree planting, etc.)
- F. Adopt-a-trail Program (trash pick-up once a month)

Funding options for trails include municipal sources, private donations, and grants and loans. Federal Highway Administration (FHWA) is a source of funding and typically administers various grants with an 80/20 match of grant to local contribution. These include Transportation Alternatives under MAP-21 and Federal Transportation Activities Transit Enhancements grants.

Summary and Next Steps

The Piedmont Valley Shared-Use Path project has created a long-term plan to incorporate a shared-use path to improve pedestrian and cyclist options in the region, thereby improving the quality of life for residents of the valley.

The Steering Committee provided valuable input at key milestones and area residents aided in prioritizing routing preferences and areas of future development.

The following three areas have the highest priority level:

1. Elk Creek Road, including a pedestrian overpass bridge extending to the east at least as far as the Trails West entrance,
2. Stage Stop Road and near the commerce center, and
3. Sturgis Road near High Meadows Drive and between the entrances to the residential subdivision to the east of the road.

Additionally, linkages across Interstate 90 should be included in future plans.

The design parameters noted should be followed generally, yet can be flexible depending on the specific site conditions of each trail routing area. A trail width of 10 feet is recommended, but can be flexible depending on LOS requirements for each individual area. The trail LOS will be determined by FHWA's Shared-Use Path LOS (SUPLOS) model that uses select inputs describing conditions along a trail to calculate a LOS score.

Also, care should be taken to ensure the protection and enhancement of wildlife habitats. Areas prone to erosion should be mitigated to ensure the longevity of the landscape and native planting areas should be used when possible.

Costs will be determined by the materials used during installation, including trail elements, signage materials, vegetative species, hardscape elements, and seating elements. Using recycled and salvaged materials is highly encouraged, as it will add to the sustainability aspects of the project in addition to creating a more pedestrian and bicycle friendly community.

Phasing is an important method of cost control that can be used during construction. As money becomes available, portions of the project can be completed, beginning with the areas of the highest prioritization.

Potential funding sources include privately-raised money collected during fundraising efforts arising out of this planning project, local public/private partnerships and matching funds for grants, and federal trail grant funding such as the Recreational Trails Program (RTP), The Land and Water Conservation Fund (LWCF), The Moving Ahead for Progress in the 21st

Century Act (MAP-21), South Dakota Recreational Trails Program, and federal health grants that fund bike/pedestrian programs.

APPENDIX

Appendix A – Steering Committee Meeting Minutes



MEETING NOTES

PROJECT: Summerset Shared-Use Path
Summerset, SD

PROJECT #: 12.1909.L01

DATE: December 3, 2012

AUTHOR: Eirik Heikes

IN ATTENDANCE: Dan Staton, SDDOT
Elizabeth Halvorson, Summerset
Kip Harrington, City of Rapid City MPO
Patsy Horton, City of Rapid City
Jessica Hawn, FourFront Design
Mayor Mandas, Summerset
Eirik Heikes, FourFront Design

ITEMS DISCUSSED

1. The City of Piedmont recently annexed land to the east of the City of Summerset city limits. The task force would like to see if Piedmont wants to participate in the trail routing strategy. This would include input, participation with funding, and an enhancement of the current contract. Kip will contact Phil Anderson to see if this is something they're interested in.
2. The path should be referred to as a "Shared Use Path" for the sake of consistency and to limit confusion.
3. Eirik explained some of the design parameters, including the width of the path (10 feet) and manageable shoulders.
4. Patsy commented that during the next Open House, they would prefer to allow the public to come up with their own ideas as to the placement of the pathway. They'd like to "put the pencil in the public's hand".
5. Dan explained that SDDOT has plans to improve Exits 46 and 44 in the near future. Exit 48 was recently improved so future enhancements will likely not be for many years.
6. It is unknown where future school district property will be on the east side of the interstate, although we should include that in future plans.
7. The task force agreed that one option for routing should include a pathway on both sides of the interstate (not necessarily in the ROW).
8. Eirik explain the stopping distances diagram and that there will be very visible areas and gradual slopes approaching roads and intersections.
9. Trail clearance will be maintained at an adequate height (8 feet) and landscape will be pruned if it encroaches.
10. The Open House will include similar images as those shown at the meeting to convey the design intent to the public.
11. The Open House will allow the public to input their original ideas; however, we should have a few alternatives drafted if necessary to spark the conversation.

12. The task force would like to rename the project as the "Piedmont Valley Regional Shared-Use Path" to convey the large scale and connectivity of the project.
13. Pathway material does not have to be hardscape and will likely depend on funding and other issues. Many users may prefer a path that is not asphalt or concrete.
14. If there's a dropoff on the side of the trail that exceeds 30 inches, a 42 inch rail will be necessary for safety issues. Good routing of the trail will seek to avoid these areas to reduce costs.
15. This phase of the project will set a standard for a regional trail that encourages alternative transportation and includes community involvement.
16. The Open House will be advertised in Foothills Monthly and the Summerset Mayor's Newsletter. Eirik will make revisions to the press release based off of input at the meeting, will send it to the task force for approval, and the MPO will send to the media and community members.
17. The next task force meeting is slated for January 17th at 10 a.m.
18. Next steps are to edit the press release and distribute, prepare for the Open House, and from the input gathered, we will settle on possible trail alignments.

END OF MEETING NOTES

PLEASE NOTIFY THIS OFFICE WITHIN 48 HOURS IF THERE ARE ANY ERRORS OR OMISSIONS IN THESE NOTES SO THAT OUR RECORDS CAN BE CHANGED FOR ACCURACY.

EH/er

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Appendix B – Open House Meeting Minutes



MEETING NOTES

PROJECT: Summerset Shared-Use Path
Summerset, SD

PROJECT #: 12.1909.L01

SUBJECT: Community Open House

DATE: January 10, 2013

TIME: 7:00 p.m.

AUTHOR: Eirik Heikes

IN ATTENDANCE: Eirik Heikes, FourFront Design
Kevin Morello, Rendevous Ranch
George Mandas, Summerset
Nate Vander Broek, Rapid City
Elizabeth Halvorson, Summerset
David Eatherton, Piedmont
Rick and Cindy Ferguson, Summerset
Brian and Colby Jenner, Summerset
Kay Bond, Summerset
Sandy Kile, Black Hawk
Jim Gilhart, Summerset
Gaye Turtur, Summerset
Donna Hamilton, Summerset
Kris and Patty Booze
Kevin Baumgartner, Summerset
Jonn Backlund, Summerset
Kip Harrington, Rapid City Area MPO
Patsy Horton, Rapid City Area MPO
Dan Staton, South Dakota Department of Transportation
Bob Burns, Piedmont, Member of Task Force

The purpose of the meeting was to actively involve the public in understanding of the possibility of incorporating shared-use paths to the community and actively involve them in the process of developing the path system.

Introductions were made and an overview of trail design criteria was given to attendees.

A very schematic routing plan was presented with the intent of encouraging response and feedback as well as other path option design considerations, refinement, and participation.

An open, informal setting was established and the following discussion items were conducted.

ITEMS DISCUSSED

1. An overview of key connections that the path could link to was overviewed on the map provided by the meeting. These connections included neighborhoods, schools, business districts, churches, parks, campgrounds, and possibly other trail connections or recreation areas such as public lands.
2. Motorized vehicles are not allowed on pathways.
3. Horses are potentially allowed on pathways, this item to be considered further.
4. Pets are allowed on pathways with requirements for leashes and that owners clean up after their pets similar to parks.
5. Many attendees commented on the need to add a pedestrian lane at the bridge on Exits 46 and 48.
6. A path would be highly desired along Elk Creek Road to connect to the Trails West Subdivision.
7. Extension of paths along Sturgis Road to include linking to Piedmont in future.
8. Costs for implementation of paths to be calculated following refinement of routing. Group commented that costs would likely be presented at next open house.
9. Funding for paths like this one can typically be part of several grant sources; Federal Highway Administration (FHWA) is one such source, stated attendees. This funding typically is an 80/20 match of grant to local contribution. Speculation as to other funding was also discussed; such as a foundation or memorial that could be set up by an individual or organization.
10. South Dakota Department of Transportation representative made comments that if additional right of way was required that it would likely be purchased from private land owners.
11. There was some concern from attendees that the path would increase their taxes and that land would be taken from private owners for path routing. There was fear of "taking" land for the path.
12. One individual commented that a BMX park could be implemented somewhere in Summerset and a site was being investigated. The path could potentially link to the BMX Park.
13. The group discussed which side of Sturgis Road would be better for the path route. The west side was slightly more supported but group discussed advantages to mixing up the routing.
14. One possible solution was to have no pathways implemented, commented group. A "no action" potential always exists and it is part of the reason for the public meeting.
15. Routings of paths can be implemented along shoulders of roads or adjoining vehicular lanes, commented Eirik Heikes; but they are better off safely separated.
16. Part of the project's analysis of routing will be creating locations for hubs and "break areas" along the route. These could include signage, benches, etc..
17. Future Tax Revenue could be assigned to the Path expansion in phases, stated group. Many of the neighborhoods in the area have young families and there is documented growth in the area. Pathways that may not be needed today may very well be needed in response to this growth, for example.

18. Maintenance of pathways was discussed. This will likely be responsibility of city and county road districts and municipal agencies. Costs for maintenance will be investigated and presented at next open house.
19. A Dog Park was discussed and linking the path routing to the park was encouraged. A park and ride facility was discussed as part of the routing plan.
20. Links to Blackhawk and Rapid City to be considered as part of routing as well.
21. Attendees were thanked and meeting adjourned.

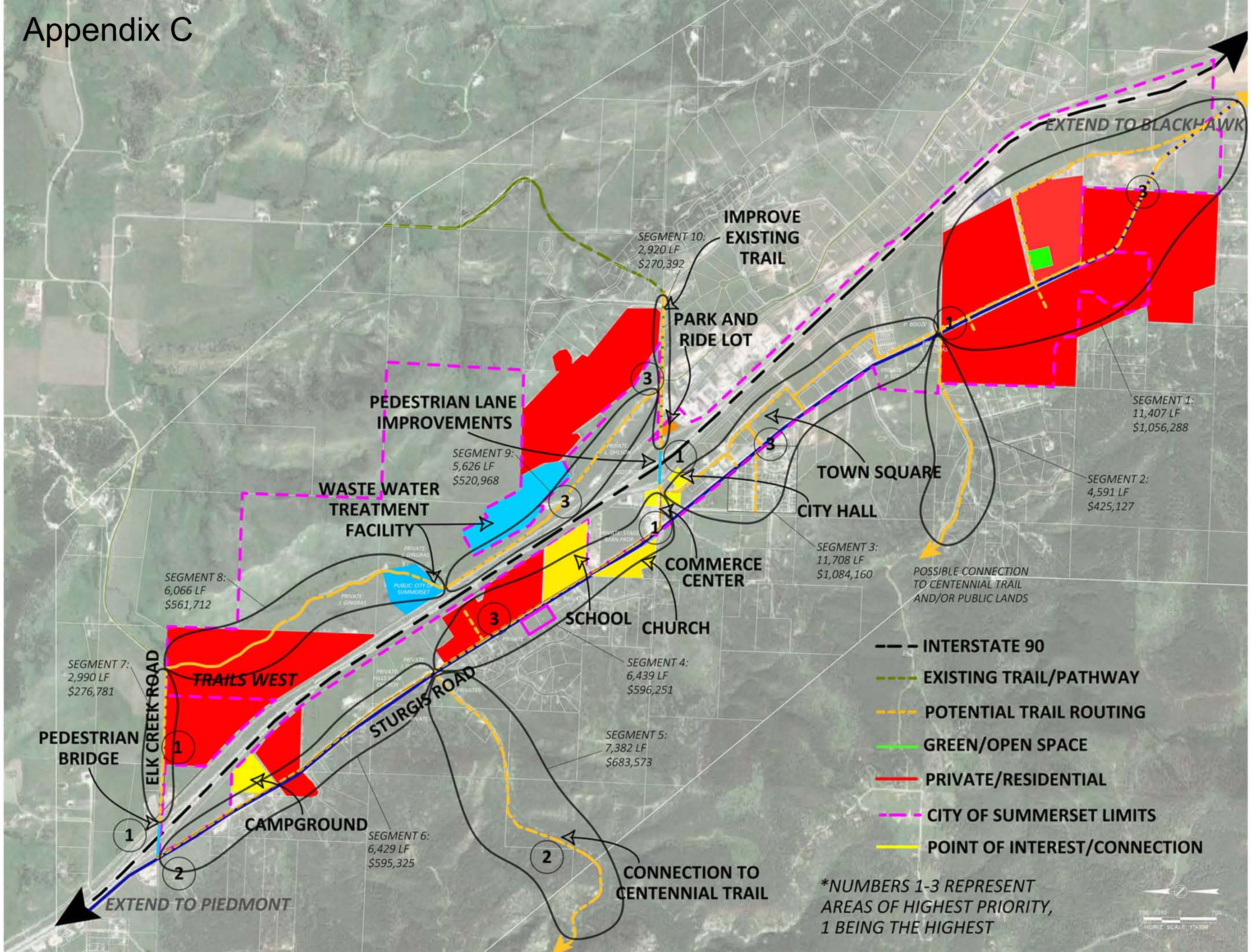
END OF MEETING NOTES

PLEASE NOTIFY THIS OFFICE WITHIN 48 HOURS IF THERE ARE ANY ERRORS OR OMISSIONS IN THESE NOTES SO THAT OUR RECORDS CAN BE CHANGED FOR ACCURACY.

EH/er

Copy: Task Force members.

Appendix C



APPENDIX D

PIEDMONT VALLEY REGIONAL SHARED-USE PATH OPINION OF PROBABLE COSTS*

February 26, 2013					
CONSTRUCTION					
TRAIL ITEM	UNIT	COST	QTY.	TOTAL	Note
Site Preparations and Grading	CY	\$ 14.40			
Base Course Installation	SF	\$ 12.50			
Separation Fabric	SF	\$ 12.50			
10' Wide, 5" Asphalt Pathway	LF	\$ 40.00			
Curbs and Edging - adjacent to vehicular lane or where stormwater dictates	LF	\$ 6.00			
Topsoil/Reseeding Work/Erosion Control	LF	\$ 3.60			
Planting, Erosion Control, and Reclamation	SF	\$ 3.60			4' on each side of trail, \$0.45 per SF
TOTAL TRAIL COST PER LF		\$ 92.60			
LINEAR FEET OF TRAIL			63,580		(12.04 miles)
TOTAL		\$ 5,887,508			
ALLOWANCES					
Stormwater Management (basins, piping, trenching, etc.)	SF	\$ 37.00	212	\$ 7,844	Every 300 feet of trail, culvert crossing (12" RCP pipe)
Pet Cleanup Stations	EA	\$ 450.00	9	\$ 4,050	One per mile
Bridges	LF	\$ 2,000.00	60	\$ 120,000	Expect one 60-foot or 2 30-foot type
Wetland Crossings (boardwalks, etc.)	SF	\$ 65.00	150	\$ 9,750	Small amount of mitigation only where needed.
Site Furnishings and Signage	EA	\$ 5,000.00	5	\$ 25,000	Approximate one "hub" per 2 miles
Guardrails	LF	\$ 80.00	1,000	\$ 80,000	Conservative estimate; where a drop of over 30" exists
Handrails	LF	\$ 60.00	1,000	\$ 60,000	Conservative estimate; where dictated by ABA
Ramps	SF	\$ 18.00	1,300	\$ 23,400	At street crossings, or where slopes exceed 8%
Mitigation of damage to wildlife areas and habitats	LS	\$ 50,000.00	1	\$ 50,000	No documentable impacts identified at this point
Fences	LF	\$ 20.00	5,000	\$ 100,000	Basic post and 3-wire type
Gates	EA	\$ 300.00	5	\$ 1,500	
Retaining Walls	SF	\$ 35.00	1,000	\$ 35,000	Non-structural type; only where absolutely needed
ABA Resting Areas	SF	\$ 6.50	50	\$ 325	100 SF every 900 LF
TOTAL				\$ 516,869	
GRAND TOTAL (TRAIL + ALLOWANCES) =		\$ 6,404,377			
ALLOWANCES (POTENTIAL DEDUCT)					
Using Aggregate surface vs. asphalt	LF	\$ 15.00			
TOTAL (POTENTIAL SAVINGS)		\$ 953,700			
Pedestrian Overpass Bridge (10' WIDE)	SF	\$ 160.00	8,400	\$ 1,344,000	2 Bridges at exits; not including costs for interchange improvements
TOTAL				\$ 1,344,000	(700 LF each at 6' wide)
<i>*Prices based on 2013 regional costs</i>					

MAINTENANCE

1. Typical Maintenance Items:

- a. Weed Control (Shoulders)
- b. Leaf Blowing
- c. Tree Maintenance/ Pruning
- d. Sweeping Debris & Erosion
- e. Vector Control
- f. Sign Maintenance/ Installation
- g. Graffiti Removal
- h. Retaining Wall Repair
- i. Staining of wood structures
- j. Erosion Control
- k. Snow Removal

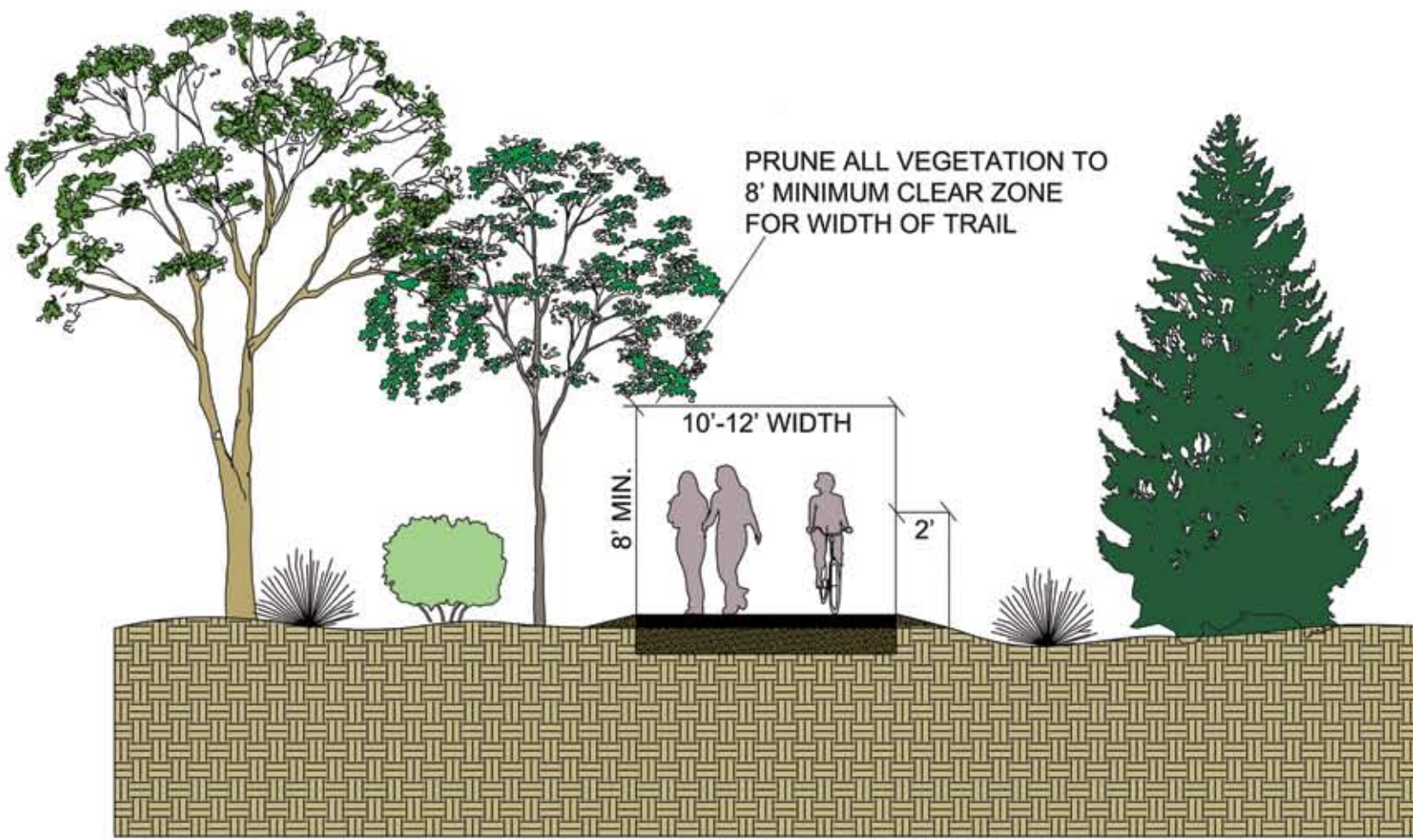
2. Maintenance Responsibility Options:

- a. City Maintenance Crews (Work Orders, Emergencies, Installation of Signs, etc.)
- b. Contractual (Weeding, Edging, Pruning, Blowing)
- c. Prison Labor (Weed abatement, fire breaks, retaining wall install, kiosk install, bench install, etc.)
- d. Service Groups (trash pick-up, shrub planting, tree planting, etc.)
- e. Volunteers (Mulch install, bridge maintenance, tree planting, etc.)
- f. Adopt-a-trail Program (trash pick-up once a month)

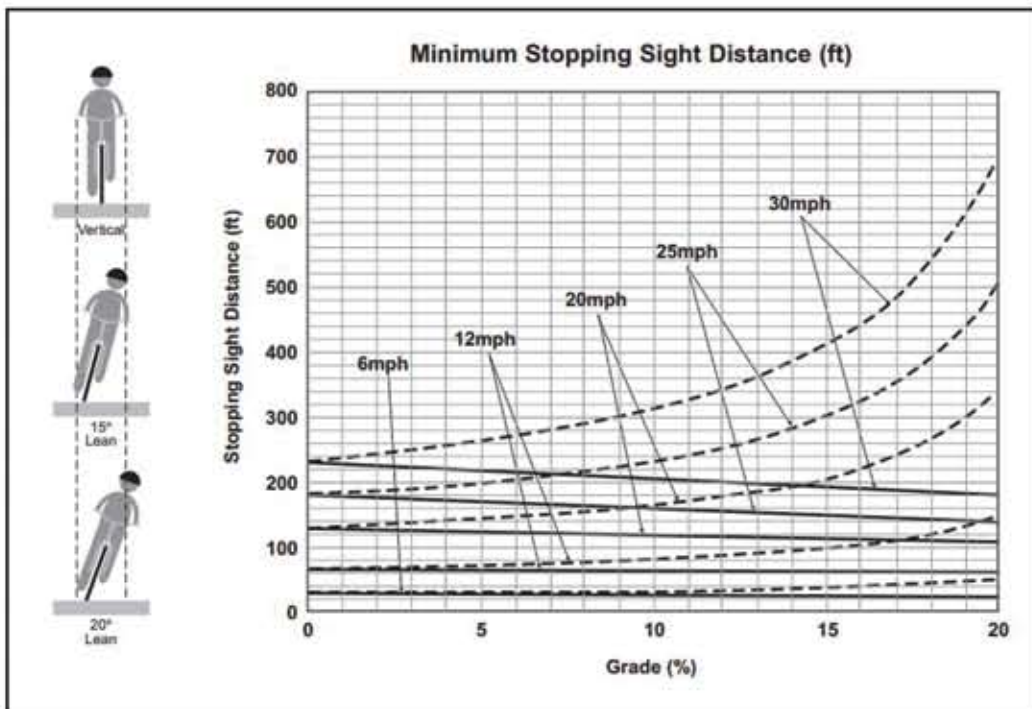
3. Maintenance Costs:

- a. Maintenance responsibility *significantly* affects costs. In 2007, annual costs for trail maintenance were:
 - 1. \$1,500 to \$2,525 per mile for a 10' wide path
 - 2. Snow removal could cost \$30 to \$70 a mile depending on severity of season

ESTIMATED COST PER YEAR FOR MAINTENANCE= \$ 18,062.50 to \$ 30,405.21



TYPICAL TRAIL SECTION



CONCRETE

- Permeable
- Non-Permeable

CRUSHED AGGREGATE WITH STABILIZERS

ASPHALT

- Permeable
- Non-Permeable
- Recycled

MATERIAL OPTIONS

DESIGN SPEED (MPH):	MINIMUM RADIUS (FT.)
20	100
25	156
30	225

SPECIAL CONDITIONS (TOPOGRAPHY CONSTRAINTS):

12	36
15	56

*AASHTO GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES
 **BASED ON A 15 DEGREE LEAN ANGLE

MAXIMUM TURN RADIUS = 156 (25 MPH)

SUMMERSET MIXED-USE PATH
 TYPICAL CURVE RADIUS