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**TRAIL STUDY AND INVASIVE SPECIES MANAGEMENT PLAN
FOR THE SPERRYVILLE TRAIL NETWORK
FOR
SPERRYVILLE COMMUNITY ALLIANCE**

AUGUST 31, 2022

REVISED NOVEMBER 18, 2022



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1.0 INTRODUCTION

On May 17, 2022, the Sperryville Community Alliance contracted with Racey Engineering to provide a Trail Study and Invasive Species Management Plan for the Sperryville Trail Network. The Racey Engineering Team consists of Racey Engineering, PLLC, Monteverde Engineering and Design Studio, and Wetland Studies and Solutions, Inc., and may be referred to individually, or collectively as the Racey Team. The Racey Team met with Client Representatives on May 16, 2022, for a project kickoff meeting and conducted a walkover of the existing trail segments.

2.0 OBJECTIVES

The Alliance and Sperryville Trail Advisory Committee (STAC) have developed the following vision statement for the trail network:

Inspire a sense of community connectedness where residents and visitors of all ages can relax and enjoy the unlocked natural surroundings of the Thornton River and its watershed and access the village's many amenities using pedestrian trails as a safe walking environment.

The Sperryville Trail Network is intended to provide users with an admirable and enjoyable sense of place in the very heart of Sperryville that not only connects individuals from space to space but offers an invitation to linger throughout this picturesque town by experiencing all the local boutique shops and restaurants Sperryville has to offer. Beyond this, the real invitation lies in the experience of walking amidst nature alongside the Thornton River, taking a stroll with a loved one throughout the pathed meadow, and exploring a once thriving River District that is committed and destined to reclaim its past character by identifying itself as a place of destination once again.

The intent of the Sperryville Trail Study is to provide a guidance document for maintenance and restoration of existing trail segments, outline future trail expansion opportunities, identify opportunities for additional amenities along the trail, and outline a 5-to-10-year vision for the Study Area consistent with the vision statement. **The Study Area, for purposes of this Trail Study, is to include the existing trail segments and any potential future trail extensions as noted within the Sperryville Trail Study.**

The Invasive Species Management Plan will identify areas of severe infestation of invasives, develop a management plan for invasives which outlines the locations of infestations, invasive species identification, and treatment and removal specifications and recommendations to seeding and replanting with native species throughout the Project Area. **The Project Area, specific to the Invasive Species Management Plan, is to include the existing trail bed plus 10 feet to either side of the trail; and up to 25' outside the existing trail bed in areas where the existing trail is within 25 feet of the Thornton River.**

3.0 EXISTING TRAIL NETWORK

The existing trail network is a network of individual trails across private properties. Together, they amount to





approximately 1.25 miles of trail that extends from 31 Main Street (Before and After Café) eastward along the Thornton River and Water Street and terminating at the River District; and another section of trail beginning on the south side of the Water Street bridge and extended as a mowed path through the existing meadow to the south/southeast to the property gate of the Pen Druid brewery. These trail segments are shown in the maps in **Figures 1, 3, 4, 5, and 6**.

- Figure 1 – Existing Trail Overall. Existing trail segments are show in reference to roadways and landmarks, such as Main Street and the River District.
- Figure 3 – Existing Trail Main Street. Identifies the location of amenities (community seating/pollinator garden/pedestrian bridge) and points of interest (Before & After Café/Headmasters Pub) along the Main Street section of trail.
- Figure 4 – Existing Trail Thornton River. Highlights the existing section of trail that follows along the Thornton River between Headmasters Pub and the River District. Includes photos of existing trail segments and signage and identifies location of the existing pedestrian bridge and Water Street bridge.
- Figure 5 – Existing Trail River District. Shows existing trail adjacent to river district. Includes photos of existing trail segments and River District structures.
- Figure 6 - Existing Trail Miller Farm Trail – Aerial view and alignment of existing trail from Water Street to Pen Druid property.

4.0 OPPORTUNITIES (5-10 YEAR VISION)

The intent of the 5-to-10-year vision is to explore opportunities and provide guidance to the Sperryville Community Alliance and the Sperryville Trail Advisory Committee (STAC) in expanding the existing trail corridors and providing direction on the future use of the trail network within the next 10 years. This guidance is intended to identify items and amenities that are anticipated to be able to be completed within the noted period as well as meeting the priorities and goals to include interconnectivity, invasive species management, access to the Thornton River, minimizing erosion, minimizing the need (or identifying the need) for additional parking, and integrating recreational facilities and other amenities.

These opportunities are discussed in the following paragraphs, portrayed on the maps in **Figures 2, 7, 8, 9, 10 and 11** and elaborated on in the Implementation Strategy section. How and when these opportunities may be implemented is shown notionally in the roadmap provided in **Appendix 1**.

There are multiple opportunities to provide for **amenities** within the existing trail system. These amenities could include seating areas, interpretive/educational/wayfinding signage, pollinator gardens, rock gardens, nature play areas, outdoor classrooms, art displays, and other community areas as discussed under the Implementation Strategy. These amenities can often be completed in a relatively short amount of time and may provide opportunities for community volunteering. Seating areas are readily visible trail improvements that provide opportunities for trail users to relax and enjoy the natural surroundings of the river corridor. The development of seating areas is a relatively low-cost improvement to the existing trail corridor and seating areas can be completed in a single area when materials, funding, and/or workforce are available.





The various types of **signage** outlined within the Trail Study also provide an opportunity for trail improvements that provide a visual signal of progress to users and can be completed as smaller, less expensive, individual projects. Interpretive and educational signage can provide opportunities for visitors to the trail to learn more about their location and surroundings, growing a sense of understanding and closeness to the Thornton River, Sperryville, and the history, ecology, and culture of the surrounding areas. Wayfinding signage is especially useful in encouraging the use of the trail as a valid pedestrian avenue. Maps and directional signs create a sense of appropriateness for the use of the trail as a means of travel throughout the Sperryville Trail Network. As a user of a trail at one of the trailheads or access points observes a map showing the trail and points of interest, this validates to the trail user that the development of the trail is intended to provide interconnectivity for pedestrians as well as opportunity to relax or engage in recreational activities. The inclusivity provided by the signage is welcoming to visitors of the Sperryville Trail Network and is likely to grow interest in the trail network which will be shared with others who may not be aware of the trail network. The potential for increase in trail use as a means of access throughout Sperryville should be noticed by residents and businesses alike, further encouraging community backing and support (interest, financial, and planning) of the growth, improvement, and expansion of the trail network.

The Rappahannock County’s **Flint Hill and Sperryville Pedestrian Infrastructure Evaluation** memorandum developed through the Growth & Accessibility Planning Technical Assistance Program (“GAP Memo”), identified three potential **trailhead** locations.

- The first trailhead location is along the intersection of the existing trail corridor crossing Route 522 at the Thornton River. This location provides excellent visibility for visitors to Sperryville, and the concept plan includes other amenities such as monument signs, benches, and system mapping.
- The second trailhead location proposed is at the RCSWA access road entrance off Route 522. This location will be ideal if and when future walk and trail phases are developed in this area. The conceptual plan for this location includes a crosswalk to connect the proposed trail segment to the proposed sidewalk, benches, planters, and system maps. Dedicated parking for trail users currently does not exist.
- The third trailhead location is proposed adjacent to Water Street near the Copper Fox Distillery and Artist Cooperative. This proposed location is an excellent fit with the existing trail corridor and the concept provides a list of amenities and improvements that fit well with the existing trail segments and the potential improvements outlined herein.

The Alliance and Trail Committee should plan to be involved with future design and planning phases to ensure that any improvements that are constructed through the GAP Memo are done so in a manner that is consistent with the overall branding and aesthetics of other trail amenities.

The **removal of invasive species** along the trail corridor and establishment of native vegetation will be an ongoing task. The Invasive Species Management Plan has identified three focus areas along the existing trail corridor that should be the highest priority for removal efforts in near term. These three focus areas have been chosen because they contain a high number of invasive vegetation and are in very visible areas that have a potential for high use. The removal of the invasives provides for a positive ecological impact to these areas, allowing for native species to repopulate the area. The visibility and potential use of these





areas will foster a vision of progress toward trail improvements and further a sense of community and interest in the trail network.

Community Engagement, Planning, Design, and Funding are going to be an integral part of the next 5 to 10 years in the development of the Sperryville Trail Network. Community engagement will be a key component for growing interest and support for the trail. As support grows, opportunities for funding by community groups, businesses, and individuals may become greater, allowing for potential trail projects to start development. Additionally, as the community is further engaged, and support for the trail grows, additional potential trail corridors may become available. Understanding that, outside of the right of way of existing roads, the entirety of the existing trail corridor and proposed expansions is within the bounds of private properties and will require the support and agreement of the landowners to continue the use, or expansion of the trail network. Informational sessions and public input meetings may be beneficial to creating a bond with the community and residents and provide an important link between the community and the trail network. Community based organizations are another key factor in the growth and development of projects. Often these organizations are looking to organize volunteer opportunities and may have funding available to support community projects. Such organizations often have resources available outside of the local or regional membership that can be utilized for community improvement projects.

The Sperryville Trail Study is a critical first step in the overall development of the trail network and identifies several general and specific improvements and expansions; however, some improvements will require additional planning to be implemented. Landowners will need to be coordinated with to allow for trail expansions and use. Potential trail expansions have been identified and are included visually in **Figure 11** “Future Corridor Connections” (a.k.a. Study Area). These identified extensions include:

1. East Sperryville from the existing trail corridors along 522 to Fletchers Mill Road,
2. West Sperryville to the Resettlement Monument on the north side of 211,
3. From Main Street, continuing along Woodward Road to Estes Mill Road connecting back to 211,
4. Thornton Gap Church Road and Old Hollow Road corridors, and
5. Connectivity to Shenandoah National Park and Oventop Mountain.

Funding will need to be secured to complete the design and construction of the trails. In many cases, funding opportunities require at least a preliminary and conceptual plan of a project in order to be considered. Additionally, cost estimates are beneficial in identifying overall project costs, determine funding needed, and identify potential funding avenues that match with the project size and scope. Other improvements, amenities, pedestrian bridges, etc. may require a level of planning that is more detailed than can be provided in the Trail Study. Amenities along the trail corridor will require landowner coordination and development of trail spurs. Potential bridges will need preliminary assessments to identify potential issues and agency requirements prior to entering design phases.

Design of improvements and expansions as a follow up to planning completed will assist in the overall timeline, budgeting, and funding of potential projects. Design costs are typically a small percentage of total project costs, often totaling less than 10% of the completed project. Completion of design phases also provides a visual cue of progress towards an end. Having a design plan “on the shelf” and “shovel ready”





shows a commitment by the Sperryville Community Alliance and STAC to maintaining progress and commitment to the overall success and growth of the trail network. This perceived commitment can help to solidify public support and further grow backing of future projects. The completion of the design phase on certain projects also opens additional funding opportunities that are designated specifically for construction projects and require a completed design for eligibility.

Funding of improvement projects is a critical step and is often one of the most limiting factors to project completion. Funding opportunities have been listed in the Trail Study, and there are surely other funding avenues that exist. Often these funding opportunities have annual deadlines for applications and other requirements to meet eligibility requirements. Funding opportunities can be further researched and reviewed to identify which opportunities best match with the vision of the Alliance, STAC, and the community. Funding opportunities are available from Federal, State, and Regional agencies, as well as local and private opportunities. The review and selection of viable funding sources can require significant work to identify proper funding sources, prepare applications and associated documents. It is recommended that work towards securing funding be initiated early and continue to be a priority for the Alliance and Committee.

It is important to remember that many funding opportunities are highly competitive and if initial success of funding does not occur, it should not be a reason not to re-apply for those same funding programs. When preparing applications and associated documents, it is important to have a well-defined scope of work for the application and ensure that the work meets the requirements of the funding program, can be completed within the monetary parameters of the programs, and in certain cases, can be completed within the required timeframes outlined withing the program. Funding programs for trail and transportation alternative projects are often setup to benefit a phased project approach. Through this means, projects are developed within smaller well defined project limits, which are funded and completed within a specified time frame. Successful completion of a funded project is paramount in the continued funding of future phases of the project. As a record of successful project completion is developed, project limits and funding may be increased over time allowing for larger trail expansions or improvement projects to be developed under a single application cycle.

A robust **implementation strategy**, described in the following section, is required to realize these opportunities in a coherent, timely and cost-effective manner. This strategy should address trail improvements as well as trail maintenance.

5.0 IMPLEMENTATION STRATEGY

The proposed **implementation strategy** provides a roadmap for implementing potential improvements, upgrades, and expansions to the existing trail network over the next 5-10 years. Details are described in the following subsections. The strategy also discusses and provides guidance on specific issues that may constrain the implementation process. Finally, this strategy focuses on short-term and long-term maintenance requirements as part of a Trail Maintenance Plan.





5.1 ROADMAP

A roadmap to realize specific trail opportunities is provided in **Appendix 1**. This table lists key tasks associated with each opportunity area, identifies their suggested priority, relative cost, and approximate implementation timing. Priority 1 items would be implemented first as soon as funding and resources permit.

Some tasks, such as Trail Extension Planning/Design/Construction, and on-trail seating areas have been listed singularly. This allows for the Alliance to identify segments that may become priorities due to landowner cooperation, donations, or changes in desired connection points. For example, there may be an area along 522 where one to two landowners of large tracts are willing to provide easements or agreements for trail use that would become evident during the planning phases of trail extension, which would thereby reduce the cost for acquisition and provide a more immediate enhancement to the user experience based on the trail location that would increase the trail extensions priority rating for this segment. Alternatively, a business owner along the trail corridor may be willing to donate benches or signage for a seating or interpretive area under a stipulation that the added amenities would be added to the trail on or adjacent to the business location.

Maintenance activities have been excluded from the roadmap and should be addressed through the development of a separate Trail Maintenance Plan.

5.1.1 SITE FEATURES AND AMENITIES

Numerous use-cases have been identified and proposed for inclusion into the overall Sperryville Trail Study. Implementation of these use-cases include site features that promote recreational + explorative experiences, kid-friendly defined amenities, informational + educational resources, environmentally conscious design, multi-purposed facilities, and art appreciation + awareness. These proposed site features and planned programming activities aim to provide value that extend beyond trail improvements by establishing itself as a highly desired destination. The development of a regionally well-known outdoor destination could serve as a key foundation that drives the revitalization of the village of Sperryville by attracting new business to town due to increased pedestrian presence. The trail is important to the community as a source of enjoyment and exercise, to safely navigate between areas of the village, for families to safety play together, for people to walk or jog, and as a location for community activities.

Appendix 2 includes visual samples of additional trail features and amenities that have been used in other locations.

Nature Play Area

The National Wildlife Federation (NWF) highlights research that indicates, *“when children play and learn in nature, they do so with more vigor, engagement, imagination, and cooperation than in wholly artificial environments, and that symptoms of attention deficit and depression are reduced. Experts agree that*





children need access to nature the same way they need good nutrition and adequate sleep.” The incorporation of a kid-friendly nature play area not only raises awareness of the importance of interaction with nature and its provided health benefits, but more intentionally provides a space where parents can take their children to experience the considerable influence and impact that occurs when tangibly interacting with nature. Many designated nature play areas utilize natural materials found in the surrounding landscape, such as wood, rocks, vegetation, etc. However, the use of recycled material designed by specialty playground vendors is also common to ensure adequate safety measures are met as required by the National Safety Council (NSC).

Outdoor Classroom

Similar to nature play areas, there has been a recent resurgence of raising awareness regarding the importance of nature’s vital role in our health. As many educational institutions found themselves desperate for answers during the Covid 19 pandemic, it was apparent that the natural solution was, nature itself. Outdoor classrooms have now become a design requirement in a substantial percentage of new school construction, as it has become apparent that this is a “trend” here to stay. Recognized benefits of outdoor classrooms include improved health, increased focus, increased creativity, better sleep, decreased stress, improved retention, and environmental awareness. The installation of an outdoor classroom as part of the Sperryville Trail Network adds tremendous value to both the community and visitors alike.

Outdoor classrooms come in many different forms but have several common factors. Seating areas are integral for students and come in many different forms. Benches, stones, stumps, and sloped areas have been used in different scenarios. In some cases, seating is arranged with small group tables to provide an area for students to write or have a stable surface for working on projects and activities.

A teaching or instruction area is the second element common to most outdoor classrooms. Instruction areas can be as simple as a podium to something more elaborate as an outdoor “desk” with a kiosk style background for posting learning materials. Typically, the instruction area is in a central location (relative to the seating) that is easily seen and heard.

Storage areas are another common element in outdoor classrooms. Storage is especially helpful when an activity or class is planned to be repeated or to provide basic equipment that may be useful across a variety of activities. The inclusion of a storage area takes some of the burden off the instructors who may have to otherwise bring and remove learning materials from the site for each planned activity.

Riverside areas, pollinator gardens, planters, and raised planting beds make for a suitable location (or addition to) for outdoor learning areas. These locations provide additional firsthand learning opportunities that can be tailored to aquatic life and environments, bees and other pollinators, and gardening.

Example pictures of outdoor classrooms can be found in **Appendix 3**.





Proposed Open Areas for Activities -

Outdoor multi-purpose spaces are often strategically located in central locations where a variety of frequent uses are planned to occur at a mid-high attendance rate. These spaces are best suited where sufficient parking is available for full capacity events. As recommended in the proposed 5-to-10 Year Vision, the River District lawn (privately-owned property and currently serving the Sperryville Summer Concert Series shown in **Figure 9**), and the lawn area adjacent to Headmasters Pub and Route 522/Estes Bridge (currently utilized by community groups, shown in **Figures 7 and 8**) are recommended to be utilized as designated multi-use spaces, maximizing the revitalization potential of these once vibrant areas. Proposed amenities and suggested programming opportunities could include:

- Bandstand (concerts, plays, covered events, etc.)
- Active + Passive Lawn - open during non-event hours from dawn-dusk
- Community Yoga
- Larger Outdoor Classroom
- Movie Night
- Dinner in the District (could be linked fundraising or private event)
- Wedding Venue
- Corn-Hole Tournament
- Food Truck Events
- Community Art Installation/Showcase

Pollinator Garden

Environmental education and awareness through the installation of interpretive signage is planned throughout this proposed 5-to-10 Year Vision. In addition to interpretive signage, the Consultant team recommends implementing a site-specific amenity demonstrating an example of environmental conservation in action, primarily through the installation of additional pollinator garden(s) in addition to the existing pollinator garden located between Headmasters Pub and the existing footbridge (**Figure 3**). The proposed pollinator garden will contain native vegetation that includes a multitude of grasses, wildflowers, shrubs, and trees, as deemed appropriate.

Rock Garden

Rock gardens can be found in all shapes and sizes, ranging from large boulder designed parks to small, quarried cut gardens. Types of gardens can also vary widely based upon design goals and the desire of individual experience. Rock gardens can be designed in a manner that reflects historical methods and significance, such as spiritual calm + zen (historically connected with Asian culture) to diverse rock selection + native planting (most commonly found stateside). As the former of the two is used for more contemplative and mindful purposes, the latter is often interactive and explorative and is thus the recommended option for this site (See **Figure 8**).

Community Integrated Art

The addition and inclusion of art into any environment plays a significant role in the encouragement of lasting economic growth, creating and sustaining cultural identity, and creating a sense of belonging.





Publicly displayed art, such as the Ephemeral Art Project installed in September 2022, provides space for visitors to experience local culture that, at times, can be as personal as a friendly conversation, itself. It not only provides its visitors with a wealth of transparency and beauty, but public art installations are often found to increase local morale, while instantly enhancing underutilized (often public) spaces within a community. Art installations can also be a community-focused engagement that increases community relations through the collaborative and creative efforts resulting from teamwork. There is endless potential and many opportunities to let art speak throughout this trail network, resulting in the diverse experience had by each visitor. One suggested method of art display includes the intentional integration designed to function as various site elements and features. Potential examples of this include:

- Sculpture art designed to function as outdoor seating.
- Design/sculpting of rock to be displayed in the Rock Garden.
- Art Showcase event that takes place at the proposed area for activities in the River District (private property). Selected pieces are awarded and displayed in the art district for public viewing.
- Sculpture Design/Build that is utilized as gateway signage/trailhead feature.
- Interactive art that can safely function within individual site amenities (nature play area, proposed areas for activities, outdoor classroom, etc.)
- Communal gathering area. Annual contest that awards the winning design to be featured as a focal element for one year.

5.1.2 DESIGNATED REST AREAS

Designated rest areas are often seen to be essential site features and amenities within an overall trail network or greenway. Although applications and definitions of rest areas vary, there are numerous opportunities for this passive-use to be integrated into the trail network as we imagine the full potential of the Sperryville Trail Network and its interaction with neighboring uses. Such uses-cases include: bench seating along trail path(s) (**Figures 3 and 8**), off-trail destination areas accessed by secondary or tertiary pathways, and a communal gathering area situated in a location with high activity and foot traffic volume. As these seating areas (formal or informal) are utilized, it is important to keep current with any maintenance needs. These could include: waste removal, appropriate landscape maintenance, and stabilization of hardscape pavers (if utilized). Rest areas, even a singular bench, should be a place of invitation that offers a warm, defined and appropriately-scaled design that strategically places itself based on a multitude of factors; in context to our site, this primarily includes points of interest where an individual(s) may linger (such as destinations, amenities, features, etc.), a resting place from point a to point b (the in-between), or even a planned communal space that offers a combination of the two.

Visual examples of seating and rest areas are included in **Appendix 4**.

5.1.3 INTERPRETIVE SIGNAGE

Interpretive signage is a key element in providing a sense of place to the end-user of a site. Interpretive signage is heavily utilized to tell the story of place without the need of human intervention or guidance, allowing nature to lead users at their own pace and direction. Examples of signage that is interpretive includes: entrance/gateway features (including trailheads, **Figures 7, 8, and 9**), site information kiosk(s),





educational (both environmental + historical), descriptive + illustrative storytelling, and wayfinding + amenity identification. The use of signage should be utilized to create a cohesive, seamless aesthetic that ties the entirety of the trail together. Although each section may deliver a distinct experience, any design elements and/or tools implemented should be considered, and therefore consistent, with the remainder of the trail for pedestrian legibility/clarity and brand recognition.

As seen in **Appendix 5**, signage design styles can mix + match so long as it is complementary throughout (e.g., “industrial” can be designed in a manner that is rustic, simplistic, modern, or artistic).

5.1.4 PEDESTRIAN BRIDGE ACROSS THORNTON RIVER

The potential location for pedestrian bridge has been identified behind the existing building at 9 River Lane (Copper Fox Distillery). This area behind the building lies low near the riverbank and is approximately 10’ feet lower than the opposite riverbank. This area is identified by FEMA as Zone AE as shown on FIRM Panel 51157C0115E and the Base Flood Elevation (BFE) is approximately 637.4’ while the BFE is approximately 644’ further west towards Water Street. The existing elevations on both sides of the Thornton River based on GPS observations range from 628’ to 642’ on the north side and from 635’ to 640’ on the south side. The elevation change is greatest to the east (downstream) of the Copper Fox Distillery building and are least to the west approaching Water Street.

The notable change in elevation between the north and south banks of the Thornton River will create unique challenges for located a bridge to the east of the Distillery building. The abutment on the north side of the river would be roughly 10’ to 12’ tall and would require the use of an approach ramp, steps, or fill to access the bridge from the lower ground surface and providing a bridge elevation that is higher than the BFE. Based on the GPS observed elevations closer to Water Street, bridge abutments on either side of the river would be shorter, potentially ranger from 3’ to 5’ in height and be more uniform on each side.

Prior to the design or locating of a proposed pedestrian bridge structure, a full site topographic and physical features survey should be performed, as well as an environmental and permitting evaluation to determine limitations, restrictions, and permitting requirements for the bridge. A preliminary bridge design would be completed for the pedestrian bridge, suitable for permit submittals to the Corps of Engineers, Coast Guard, or other agencies as identified during the permitting evaluation.

Permitting for the bridge is anticipated to involve a Joint Permit Application (JPA) and County Building Permit. JPA requires a project schematic design, which is anticipated to be for a single span pedestrian bridge with concrete abutments. Preliminary survey and engineering studies would be required to prepare a schematic design. The engineering and survey assignments can be typically completed in a 45-to-60-day timeframe and are completed concurrently with the JPA applications.

The JPA is submitted to the Virginia Marine Resources Commissions (VMRC) and is distributed by the VMRC to the other Agencies having jurisdiction (such as Department of Environmental Quality, U.S. Army Corps of Engineers) for review and comment. Agencies will provide comments, request further information, or waive





further reviews based on the scope of the project and information provided. The design team coordinates with the Agencies throughout the JPA process to provide any additional requested items or provide comment responses. The JPA review process typically spans a period between 6 and 12 months before the required approvals and permits are in place.

During the JPA review process, bridge plans will be advanced beyond the schematic phase to permit submittals. Bridge plans will be provided to the Client or contractor for submittal to the County Building Official. In past projects in Rappahannock County (for private vehicular bridges), this review process was completed concurrently with the JPA reviews. Racey Engineering was able to collaborate closely with the Contractor and Building Officials office to provide phased inspection of the construction project and provide third party inspection of the bridge and final completion certificate to the County as part of the closeout documentation.

We recommend the use of a prefabricated bridge structure or construction of a steel beam and deck bridge. Both options will require design and construction of concrete abutments to support the bridge on each side of the river. The prefabricated bridge structure will be designed, constructed offsite, and delivered to be set by the contractor. The prefabricated bridge options allow for various bridge designs, layouts, and material options. A steel beam and deck bridge would be constructed of two or more steel beams spanning the river. A wood timber or composite deck would be attached on top of the beams and a guardrail would be installed.

An alternative to the fixed pedestrian bridge would be a low water crossing (or pedestrian ford similar to what is commonly found in the Shenandoah National Park) providing a crossing using natural or fabricated materials that blend and complement the surrounding river corridor. Utilizing a mix of larger stones (natural or fabricated) that can resist movement during large runoff events, and smaller rocks that provide a stable surface while allowing the stream to continue in a free-flowing state. The larger rocks should be located in a manner to be dry and normal flow levels and be selected and spaced to provide a walking surface. The larger stones would be placed along the downstream portion of the crossing, with smaller stones upstream to help retain the smaller stone and provide a wider crossing area during times of lower stream levels.

The low water crossing should be located within a narrow area of the river to minimize the amount of placed stone and utilizing the natural stream channel and stream banks to the extent practicable. It should be noted that the use of rock crossing presents an inherent risk to users. Stones may become unstable or slippery and other hazards may be introduced to the stream crossing area carried downstream by high water events. Additionally, the slopes along the riverbank around the proposed stream crossing may be difficult to traverse due to the change in elevation between the stream crossing and the portion of the existing trail through the meadow. The potential risks and difficult slopes should not preclude the use of a low water crossing as part of the trail, but it may limit this section of trail to some users, or during highwater events.

We do not recommend the use of a culvert crossing on the Thornton River. A potential culvert crossing would consist of multiple culverts across the riverbed with a flat surface constructed for pedestrians. The culverts would pass normal river flows but would be inundated during high water events. While historic flows for the river are not readily available, it is not uncommon for waterways within mountainous areas to quickly





rise and fall during storm events. The frequent overflow of the culvert structure will lead to costly maintenance issues due to scouring, blockage, uplift, and potential for complete loss of culverts during extreme high-water events.

5.2 SAFETY AND LIABILITY ISSUES

There are five significant concerns identified along the existing trail corridor and anticipated on future trail extensions.

The trails proximity to the river and the inherent risks of recreational activities in and near water sources should be recognized. While safety around water should always be a priority, high water events and cold weather pose significant hazards. High swift water is often more powerful than is anticipated and trail users should be instructed to stay out of the river during high water events. It may be necessary to close portions of the trail that are close to the river or could be inundated during a high-water event. During cold weather seasons the effect of exposure to cold water and possibility of hypothermia are increased. In water temperatures lower than 50 degrees Fahrenheit, the effects of hypothermia can start in less than 30 minutes

Bridges should be checked often to ensure that the walking surface is safe, sturdy, and free of tripping hazards and that handrails/guardrails are sturdy and safely attached. In areas where steep slopes or other hazards are in proximity to the trail approaching the bridge crossing, it may be appropriate to provide guard rails beyond the ends of the bridge for the safety of trail users. It is recommended that guidance be provided in advance of approaching bridges.

Steep slopes along the trail corridor or adjacent to the identifies path can be a hazard for trail users. It is recommended that trail slopes steeper than 5:1 (20% slopes) be avoided, or steps be provided for pedestrians in this area. If stairs are provided, users should be notified by signage in both directions. Stairs are also recommended to be equipped with handrails that meet applicable standards and codes. Handrails should extend the full length of the stairs on both sides and be at a consistent height along their length that is between 34 and 38 inches from the top of stair to the top of handrail. The trail should be located or constructed in areas that are not immediately adjacent to steeper slopes, maintaining a minimum buffer of 5 feet (where possible) between the edge of the delineated trail and the top of the slope. In areas where it is not feasible to locate the trail away from the top of the slope guard rails or some form of safety barrier is recommended to protect users from falling, slipping, or tripping over the slope.

Tripping hazards may be encountered in various places along the trail corridor. Some tripping hazards, such as tree roots and large rocks cannot be easily mitigated. In areas where the trail cannot be routed away from such hazards it may be beneficial for public safety to provide a warning or signage in areas where tripping hazards are present. Other tripping hazards such as smaller rocks and stones, fallen trees or branches, and other debris should be relocated out of the trail corridor. Rocks along and in the river can often be slippery, especially when wet.





An additional safety concern along most areas of the trail network is **falling trees or branches**. While branches or trees could fall at any time, instances are more likely during times of high wind and rainy conditions. Signage is available commercially that can be posted at intervals along the trail notifying trail users of this potential hazard. It is further recommended that members of the Alliance and/or the Trail Committee routinely check for dead or dying trees and branches and check for loose branches that may be lodged in the tree canopy that could become dislodged during a wind or storm event. When potential falling limb/tree hazards are identified, the trees or limbs should be removed or taken down in a controlled manner to minimize user risk.

Safety should be a top concern and actions should be taken to remove or reduce risk of any identified concerns along the existing and proposed trail corridors. The trail passing through natural areas, and open to generally unmonitored use by the general public, safety is ultimately the responsibility of the user. Users should be advised not to exceed their physical limitations, be aware of their surroundings, and dress appropriately for trail conditions, weather conditions, and their selected activities.

Landowner liability for recreational users often prevents some landowners from sharing access to their lands for public use. The following is not intended to be legal advice and an experienced attorney that is familiar with right of way acquisition and landowner liability should be consulted during the planning and acquisition phases of future trail segments. The use of public information meetings may be beneficial in introducing landowners to the project and garnering support. In Virginia, there is a legal mechanism as outlined in Virginia Code Section 29.1-509 that limits the liabilities of a landowner that grants an easement to their property for recreational use.

In summary, the code reads that whenever a landowner has entered into an agreement with, or grants an easement to any locality or authority for recreational purposes, concerning the use of, or access over, their land by the public for recreational purposes, the landowner shall be immune from liability to any member of the public arising out of said use of land. As stated, the code attempts to protect the landowner who permits free public recreation on or across their land, from liability concerns of those who are granted use and access.

There are additional code sections adjacent and referenced that should also be reviewed. Exceptions are listed concerning the payment of a fee to the landowner, and in cases of “willful or malicious failure to guard or warn against a dangerous condition, use or structure” on the property.

The above information on landowner liability is provided for guidance and is not intended to be used as legal advice. Consultation with an attorney is recommended.

In an effort to address potential safety concerns and protect the public use of trail sections additional courses of actions can be taken. Physical barriers, such as fences, can be used to exclude public access to certain areas that pose a risk, such as old structures or steep slopes. Potential dangers that cannot be physically separated from the public in all instances, such as streams, rivers, wildlife, etc., may be reduced through the signage warning of such dangers. Signage can also include suggestions on best practices when





encountering such hazards during recreational use of the trail. Safety signage should be located at trailheads and access points, as well as at regular intervals along the trail sections where hazards are located or likely to be encountered.

To grow public support and highlight the responsible use, maintenance, and enjoyment of the trail network, it may be beneficial to identify future expansions that may already have the support of the landowner. Following a successful development, and subsequent use of the new trail segment, additional landowners may be willing to then allow use of their property, through an easement, to allow for future trail development opportunities.

As the first step in future trail expansions, land parcels and landowners should be identified through current county records. Once identified, landowners should be approached for discussions. It may be helpful at this stage to have the services of an attorney to answer legal questions that landowners may have. Once terms for the use of the land have been negotiated between the agency and the landowner, proper documentation (based on the acquisitions methods utilized) should be secured and recorded.

Several options are typically used for land acquisitions. Donation or purchase of land provides land to the Alliance to be used for the trail as a donation or for an agreed upon fee and provides for a permanent arrangement for the trail segment. Land Lease provides a temporary arrangement, usually for a set time period and fee, which allows for use of the land for trail purposes. Access agreements are similar to a lease but provide the landowner an option to revoke access within the terms of the agreement for breach of terms, sale of land, or other reasons as specified within the agreement. Easements provide for use of the land for trail development and maintenance without transfer of ownership. Easements may be limited to a specified time period or granted in perpetuity.

5.3 STRATEGIES FOR TRAIL EXPANSION ACROSS PRIVATE LANDS

Planning of trails across privately owned lands is a major challenge to the expansion of the existing trail network. Often times, landowners who may have been agreeable in preliminary stages can be put off as the project progresses. Others may be completely closed to the idea of allowing for public access on their property.

Engagement of landowners should be a first step prior to sharing any maps or plans publicly. Planning in private with the landowner allows for a level of control and input that will maintain a willing and participatory attitude. Once the private sessions with landowners have been completed and potential corridor routes have been identified, the Alliance and STAC should consult with the landowner prior to releasing the proposed routes or any maps to the public. It is important to allow landowners as much time as may be needed to make decisions or whether to allow access or determine an acceptable location for a trail extension. At times, landowner contact may be only a part of the decision-making team which could also include family members, board members, or business partners that will require input and understanding of the proposed project. Be prepared to discuss concerns with landowners. Frequent concerns encountered





may include liability, privacy, maintenance, and cost. The Alliance should review these concerns and adapt a plan to address each with landowners.

The Alliance should consider having a standard easement form developed prior to approaching landowners. The form should outline the rights and responsibilities of all parties, timelines for the life of the easements, and what (if any) options exist for the termination of the easement. This will create a starting point for the landowner to consider how the potential trail expansion may impact their property and the use thereof. It is likely that multiple revisions will be required to the easement document, and these revisions will vary between landowner entities.

It may be beneficial to develop a project phasing plan when considering future extensions and easement acquisition. A focus on areas where easements may be easier to acquire and will provide high use areas that are visible to the public eye may help to increase public confidence in future trail extensions. This in turn may lead to easier acquisitions on future properties by displaying a successful completion of an extension without negative impact to the current landowners and highlighting the benefit of trail expansions for the community as a whole.

Finally, the consideration of using an attorney or specialist consultant that is familiar with land acquisitions should be considered. Land acquisition, especially with multiple parties involved, can be an arduous process. This process can be eased through the establishment of trust and relationships with the affected landowners. This trust will be more easily built and maintained through the communication of someone who is highly knowledgeable to the process and can speak with the landowners in a positive and well-informed manner instilling confidence that the landowners' concerns will be heard and addressed. These specialists are often used by VDOT, other localities, and utility owners and will be of great assistance in traversing the obstacles that may arise during land acquisition activities.

5.4 TRAIL SURFACES

The existing trail segments are a combination of pea gravel, wood chip, and mowed grass surfaces. Additional trail surfacing options (concrete, asphalt, compacted crushed stone) have not been evaluated due to increase in cost factors from the existing trail surfaces, and due to an increase in stormwater runoff due to the impervious nature of those options.

Mowed grass provides a natural surface that does not create additional runoff or the acquisition of additional materials. This trail surface option is not suitable for all trail locations. Areas with steep slopes may be troublesome for mowers. Other areas where there is not a good existing ground cover of grass (or other suitable vegetation) are also not appropriate for a mowed grass surface trail. The mowed grass surface will require regular mowing during the spring, summer, and fall seasons, and less often in winter. Maintenance of the mowed grass surface may also require overseeding, aeration, and fertilization. Heavy use by pedestrians and other users can cause deterioration of the ground cover especially in areas that are not well drained and hold moisture. These areas will require additional attention to maintain an adequate growth of ground cover to provide the best user experience. The mowed grass surface trail option is





recommended in areas of existing meadow or lawn that are not subject to excessively wet conditions and have a sturdy growth of existing ground cover.

Pea gravel (or other loose stone surface) provides a visually pleasing trail surface that does not detract from the natural surroundings of the trail. One concern of the pea gravel surface is the migration of surface materials from the trail corridor, even with the use of edge treatments to contain the stone. Stormwater runoff may wash substantial amounts of stone if concentrated flow is allowed to cross the trail. Typical use of the trail (walking, running) may also inadvertently cause pea gravel to be removed from the intended trail corridor. A depth of 2 inches is recommended for a pea gravel walking surface that allows for sufficient coverage of the trail without being too deep that the stone may shift during use. The pea gravel trail sections should be raked as needed to maintain a level and even surface. The trail should be monitored on a regular basis (approximately twice a year or more often depending on use) and additional pea gravel will need to be added in areas where loss of trail surface is excessive. A leaf blower may be used to removed leaves and other debris from the gravel surface without impacting the surface. A geofabric liner is recommended to be installed beneath the pea gravel surface to reduce vegetative growth from the soil below and minimize migration of the soil base into the stone surface layer. Over time, soil and organics will accumulate in the pea gravel surface which will create greater opportunities for weed and seeds to establish growth within the trail and will require removal of unwanted vegetative growth. Pea gravel surface is most suitable in areas that are generally flat and are not subject to concentrated flows from stormwater runoff or other sources that could wash the pea gravel from the intended trail corridor.

Wood chips provide a natural material surface trail that blends with the natural surroundings of the trail area while clearly defining the trail surface. Wood chips are generally regularly available and relatively inexpensive. Wood chips could be made from woody materials removed from the trail area however care should be taken to be sure that the material selected for re-use on the trail are free from seeds or roots from non-native or undesirable species that could be unintentionally spread within the trail corridor. The wood chips are prone to migrating from the trail surface but do not stand out like the light-colored pea gravel would outside of the intended trail surface. The recommended depth for the wood chip surface is 1 to 2 inches to allow for sufficient coverage of the trail. A geofabric liner is recommended to be installed before placing the wood chip to assist in reducing vegetative growth from the soil below. It is recommended that the wood chip surface be “topped up” on a yearly basis, though it may need to be done more or less often. Over time the wood chip surface will break down. As it breaks down it create a nutrient rich layer that creates an ideal habitat for unwanted vegetative growth. Maintaining a good surface of fresh wood chips that is compacted by regular foot traffic will help to minimized unwanted vegetation within the trail surface. After 5 to 10 years, based on environmental factors such as moisture and exposure to sunlight, as well as use, the broken-down wood chips material is recommended to be removed (to avoid excessive build up) and a fresh wood chip layer be installed. The removed material can be lightly spread on surrounding areas or used as mulch in community garden or planting areas along the trail corridor. A trail surface of wood chips is recommended in areas that are not suitable for a mowed grass surface and in areas where the trail will pass through forested or natural growth areas along and adjacent to the river.





5.5 POTENTIAL PARTNERS AND FUNDING OPPORTUNITIES

Multiple federal, state, private and organizational funding opportunities are available for the development of trails, trail networks, and recreational opportunities. Many of these funding programs have been available for years, while others come and go based on numerous factors. It is important to remember that this list is not intended to be comprehensive, but a partial list of available resources to be used as a starting point in funding application and opportunity research.

A list of federal funding opportunities is attached in **Appendix 6**. Activity and project types that most apply to the proposed trail network improvements have been highlighted.

The Virginia Department of Conservation and Recreation offers several funding opportunities for eligible trail projects. The Land and Water Conservation Fund is a 50/50 match program for the development of public outdoor recreational areas. The Recreational Trails Program is an 80/20 match program for building and rehabilitation trails and other trail related facilities. The Trail Access Grant is a 100% reimbursement program for projects that increase access to trail opportunities to people with disabilities.

VDOT Transportation Alternatives Set-Aside is a reimbursement program that is intended to help local sponsors fund community-based projects that expand non-motorized travel choices and enhance the transportation experience by improving the cultural, historical, and environmental aspects of the transportation infrastructure.

The Virginia Department of Forestry administers the Urban and Community Forestry (U&CF) Grant Program which encourages projects that promote the protection and enhancement of urban and community forest ecosystems. This program exists to encourage local government and citizen involvement in creating and supporting long-term and sustained urban and community forestry projects and programs at the local level.

Other potential partners include community organizations or service clubs such as the PATH Foundation, Nature Conservancy, Rotarians, Lions, 4-H, Scouts, Riverkeepers, local schools, and Kiwanis. These groups often have funds available for selected activities and may be interested in volunteer opportunities.

Groups such as Master Gardeners of Fauquier and Rappahannock, Appalachian Conservation Corps, and other related organizations often have programs or volunteer events that promote education and restoration projects and may be beneficial in partners in organizing volunteer events, education opportunities, or provide funding or materials for future projects.

The Shenandoah National Park may be another potential partner for future trail network improvements. With potential future trail connections to existing park facilities, and Sperryville location in relation to the park and Route 211 being one of the main entrances to Shenandoah National Park there is a potential for mutual the Park and Alliance to work together on projects that may be mutually beneficial to both parties.





Current partners include the Rappahannock League for Environmental Protection (RLEP), RappFLOW, Piedmont Environmental Council (PEC), the Krebsler Fund, Friends of the Rappahannock, Old Rag Master Naturalists, RappTrails, and the Rappahannock County Garden Club.

Rappahannock County, through VDOT and the Growth & Accessibility Planning Technical Assistance Program has completed the Flint Hill and Sperryville Pedestrian Infrastructure Evaluation Report. The report provides for the development of sidewalks along Lee Highway, Main Street, and Route 522. These proposed sidewalks offer to provide some interconnectivity to the existing trail systems and should be considered for future extensions to increased interconnectivity.

The proposed 5-foot sidewalk along the north side of Route 522 does not currently connect to the existing trail sections but would put the proposed sidewalk near the existing trail near Headmasters Pub and existing walks at the western extents of Main Street. This proposed sidewalk would also serve as a connector to potential future extension of the trail to the west toward Shenandoah National Park, and to the north along Thornton Gap Church Road. The GAP memo addresses concerns with connections from Main Street and Route 211 at the existing bridge location which would require the replacement of the existing bridge or the possibility of a new pedestrian crossing in this location.

The second proposed sidewalk location (and improvements) would tie the proposed walk on the north side of 211 to Main Street and provide upgrades to the existing Main Street sidewalk system. This plan also includes a crosswalk at the Before & After to tie the sidewalk along the south side of Main Street to the existing trail network that connects at this location.

The GAP Memo also proposed connections between Main Street and Route 211, along Route 522 and over the Thornton River. This expansion of the walk would serve to connect the proposed improvements on Main Street and 211 while providing connectivity between the existing trail system, existing Main Street sidewalk and final proposed sidewalk section that would extend from Main Street to the Miller property entrance (which would then tie back into the existing trail along the Miller property entrance drive and extending to the Water Street Bridge.

Additionally, the draft report includes the development of three trailhead projects, two of which are located adjacent to the existing trail network corridor. The proposed trailheads call for additional amenities in these areas, drawing attention to the trail and provided for adding user functionality and enjoyment such as monument signs, trail maps, benches, refuse collection, seating, and planters. These trailhead and associated design elements should be considered while developing plans and designs for the trail network. This also provides a unique opportunity for an expanded partnership between the County, Alliance, and the community to work towards a common goal of increasing pedestrian opportunity and interconnectivity within the community and it is recommended that members of the trail committee





5.6 TRAIL MAINTENANCE PLAN

The Sperryville Trail Advisory Committee (STAC) should develop a Trail Maintenance Plan that identifies and outlines the framework for maintenance objectives and minor improvements to the Sperryville Trail Network. For purposes of this document, the term “maintenance” should be understood to also include minor improvements to the trail system. The Trail Maintenance Plan further lays the foundation to allow for adaptability for future trail phases by initiating a system of prioritizing maintenance objectives, scheduling maintenance tasks, and tracking maintenance work.

A basic maintenance plan for trail systems can be expected to include the following tasks:

- Mowing and weeding
- Trail surface replacement
- Clearing debris/fallen trees and branches
- Painting and upkeep of seating
- Painting and upkeep of signage
- Pedestrian Bridge upkeep
- Removal of standing dead/damaged trees
- Damage from erosion or flooding
- Litter / trash pickup
- Repair of vandalism

Guidance on the choices for trail surfaces is included in Section 5.4.

The Trail Maintenance Plan should first assign acceptable levels of service to trail segments. The acceptable level of services should consider multiple criteria including amount of use, safety considerations, and affect to the user. As new segments of trail are developed and put into service, they should be assigned a level of service for maintenance purposes and the Trail Maintenance Plan updated. Higher acceptable levels of service should be assigned to trail areas that received the highest usage, are highly visible (such as trailheads, road crossings, or community gathering centers), or where lack of proper maintenance could pose a risk to user safety.

Maintenance priorities should be identified by the Trail Committee and determined based on a satisfactory level of service to trail segments and the amount of use a given trail segment receives. With the current trail segments, we do not recommend that any trail segment receive a lesser priority rating due to use given the relatively short overall length and locations of the trail. As the trail system is expanded, and use levels can be evaluated with some certainty, additional segments may receive a lower priority rating. Maintenance priorities should be reviewed on an annual basis and reprioritized as seen fit by the Committee.

Maintenance tasks should be scheduled based on the established levels of service and priorities identified within the Trail Maintenance tasks. Initially, scheduling should be planned based on anticipated intervals and past experience on maintaining existing trail segments. Scheduling of trail maintenance should be





monitored and updated on a rolling basis but should be formally addressed on an annual basis by the Committee aided by the maintenance logs.

Maintenance logs should be maintained to log and track all scheduled and unscheduled maintenance activities. Tracking of maintenance activities will become a valuable tool in efficiently scheduling and prioritizing. Maintenance logs should track the date and time, type of maintenance activities, and record the initial and final state of the trail section (or area, or amenity). Additionally, the amount of time required for maintenance activities and the number of workers required. We recommend the use of standard maintenance tracking form that allows for the recommended information as well as other information that may be deemed useful for tracking and scheduling future maintenance activities.

Funding of maintenance can be a challenge for trail facilities and can often rely heavily on volunteer forces and donation. Fundraising events are often used to create funds for trail upkeep and maintenance such as a 5K walk/run event, a community event, or raffles can be effective fundraisers. Some organizations have used the sale of memorial benches or other amenities (signs, engraved bricks, plaques) that can raise funds for the maintenance of the trail and provide for enhanced amenities along the trail corridor.

The sale of trail specific items such as t-shirts and hats has been used by organization to help fund trail maintenance. The sale of items could also coincide with the establishment of a “Friends of” organization (as a part of the Sperryville Community Alliance organization), which has the potential to reach more potential members and could be established with multiple levels of memberships and associated dues which would be set aside for trail maintenance and improvement projects.

Grant funding is another potential source for maintenance funds. While many grants are set aside for non-maintenance activities, there are grant sources that are set aside specifically for maintenance or general trail projects from a variety of national, state, and regional organizations, some of which have been listed within Section 5.5 of this document.

As the Sperryville Trail Network is further improved, developed, and expanded, additional sections may be identified that will be useful to be included in the Trail Maintenance Plan. Added amenities, hardscapes, pedestrian bridges, etc., may also present additional maintenance requirements that will need to be addressed within the Trail Maintenance Plan.

5.7 INVASIVE SPECIES MANAGEMENT PLAN

An Invasive Species Management Plan (ISMP) has been prepared by Wetland Studies and Solutions, Inc., and is attached as part of the Sperryville Trail Study. The ISMP is intended to promote a healthy riparian corridor along the Thornton River while preserving and enhancing the tree canopy and promoting biodiversity of native species.

The ISMP identifies three (3) focus areas along the existing trail corridor for which a concentrated effort for control and removal of non-native species will ensure maximum benefit to the community and trail users.





More than 40 invasive species have been identified within the Project Area. These species have been identified by removal priority with priority 1 being the most urgent. Recommendations for mechanical and chemical control of invasives are included in the ISMP. Herbicide recommendations will include products and application techniques which do not pose risk to native or stocked trout or other aquatic species such as amphibians and insects or pose genetic risks to wildlife (noting that maintaining water quality is a higher priority than invasive species management).

In addition to the focus areas identified, the project area should be divided into 50' to 100' segments for management purposes. The eradication of non-native species along the entirety of the trail corridor is a major undertaking, with sporadic efforts leading to poor or underwhelming results. The division of the project area will allow for a thorough treatment of target species within a well-defined area, ease of monitoring for additional emergence of invasives within that area and provide a positive visual impression of progress.

Additional details, recommendations, and information is available for review in the complete Invasive Species Management Plan.

Attachments:

- Figure 1 - Overview - Existing Trail Network Drawing
- Figure 2 - Overview - Proposed Trail Network Drawing
- Figure 3 - Existing Trail Segment Detail - Main Street
- Figure 4 - Existing Trail Segment Detail - Thornton River
- Figure 5 - Existing Trail Segment Detail - River District
- Figure 6 - Existing Trail Segment Detail - Miller Farm
- Figure 7 - Vision for Trail Segment Detail - Main Street
- Figure 8 - Vision for Trail Segment Detail - Thornton River
- Figure 9 - Vision for Trail Segment Detail - River District
- Figure 10 - Vision for Trail Segment Detail - Miller Farm
- Figure 11 - Future Connection Corridors Drawing
- Appendix 1 - Implementation Roadmap
- Appendix 2 - Examples and Options for Other Trail Amenities
- Appendix 3 - Outdoor Classroom Examples
- Appendix 4 - Examples and Options for Seating
- Appendix 5 - Examples and Options for Signage
- Appendix 6 - Federal Pedestrian and Bicycle Funding Opportunities
- Invasive Species Management Plan

