

PIKE 2 BIKE

Southern Alleghenies Conservancy (SAC)
Trail Network Master Plan and Adaptive Re-Use Study

 **Gannett Fleming**

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Pike to Bike Advisory Committee:

Robert McKinley (chairman); Murray Schrottenboer (vice-chairman); William Plank (secretary); Ryan Nemanic; Carol Snyder; David Bachman; Thomas Holsinger; Karl King; David Sewak; David Steele; Ellis Yingling; Olga Herbert; Hallie Chatfield; James Bittner; Jeff Kloss; James Smith; Steve Keiper; David Scamardella; John Bibber; John Carlin; Judy Felton-Carlin; Kevin Mountz; Robert Strait; Mary K. Seville; Wendy Melius; Susan Jolley; Erin Cromer; Edie Coleman

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Plan prepared by Gannett Fleming



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Study Background

The Master Plan and Adaptive Re-use Study represents a unique effort by the Southern Alleghenies Conservancy (SAC) to create a trail network corridor located on an abandoned segment of the original Pennsylvania Turnpike.

Prior to serving as the alignment for the Pennsylvania Turnpike, much of this route was initially intended to be the location of the South-Pennsylvania Railroad. In the late 1800s, railroad giants were in a constant struggle to out-compete the facilities of their competitors. In an attempt to bankrupt a competing railroad, William Vanderbilt, owner of the New York Central, dispatched survey and construction crews to begin construction of a line that could put financial pressure on the Pennsylvania Railroad. In a two year period, Vanderbilt spent millions of dollars creating 120 miles of infrastructure to support his new rail line. The vast project included the construction of culverts, bridging of creeks, and the digging of nine tunnels. Within a year and a half of its completion, construction was terminated. A wealthy financial backer, J.P. Morgan, realized that he had financed major portions of competing projects. Morgan brokered an agreement between the two sides and construction ceased on the Southern Pennsylvania Railroad.

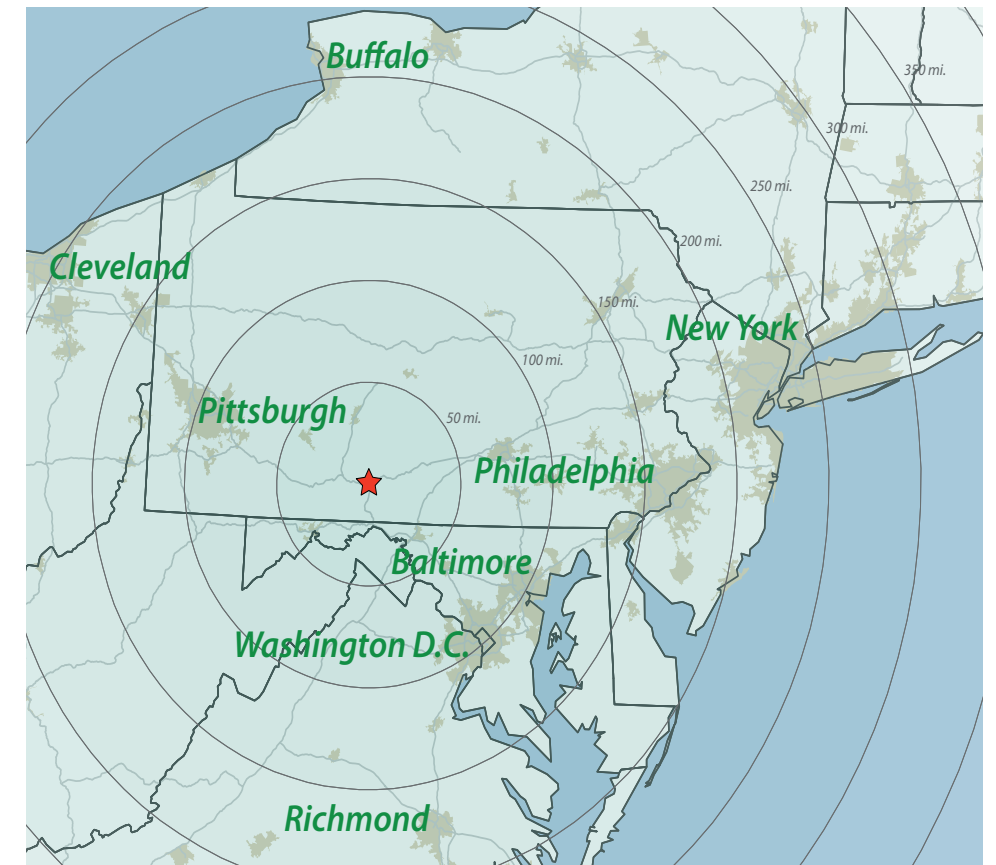
The eventual construction of the Pennsylvania Turnpike represented a huge milestone in the transportation history of the United States. Billed as

“America’s First Super Highway” the Pennsylvania Turnpike would quickly change the Nation’s concept of travel. Upon completion, this was the nation’s first “limited access” highway. It was a road designed with motorist comfort and ease of travel as its prime goals. A four-lane super highway, void of stoplights and cross traffic, became the strategy to obtain the goal. Completion of the original 160-mile road involved a multitude of earthmoving and the construction of hundreds of bridges. The most impressive feat of the entire project was the excavation and retrofit of seven tunnels through the Appalachian Mountain Range. For much of the original alignment, the engineers relied on the use of abandoned South Penn Railroad facilities.



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Eastern portal of Ray's Hill Tunnel during construction

On October 1, 1940 the Pennsylvania Turnpike was opened to automobiles, providing a quick and safe connection between Carlisle in the east and Irwin in the west. Almost immediately the public embraced the ease and speed of travel allowed by the Turnpike. It quickly surpassed the original traffic projections and usage continued to expand. As traffic levels increased, the inherent design faults became evident. The initial design took advantage of existing South-Pennsylvania Railroad facilities in order to minimize costs and speed construction. The original tunnels utilized by the Turnpike Commission were limited to one tube per mountain, providing one travel lane in either direction. As traffic volumes increased, bottlenecks ensued and alleviating the backups around the tunnels became a top priority. In most cases the best course of action was determined to be the construction of a twin tube



parallel to the original. A different plan of action was created for two specific tunnels, the shortest tunnel and longest tunnel of the system.

In 1968, the Turnpike Commission bypassed an 11 mile segment of roadway containing the 1.3 mile Sideling Hill Tunnel and the .7 mile Ray's Hill Tunnel. In the initial years after its closure, this section of roadway seemed as though it was doomed to a future of slow decay. It was sporadically used by the Turnpike Commission to stockpile miscellaneous materials and to train new snow-plow drivers. A local troop of State Police took advantage of the inaccessibility and isolation of the site, and located their pistol firing range at the former Cove Valley service plaza.

The abandoned stretch of turnpike, continued on in this fashion until well into the 1980s. Some time in the mid part of the decade, the Turnpike Commission realized the uniqueness and potential of an eleven mile stretch of abandoned highway. In 1988, the Safety Testing and Research (STAR) facility was launched. The abandoned roadbed provided an excellent platform for transportation related research and testing. Some of the initial research projects conducted on the STAR facility included vehicle crash

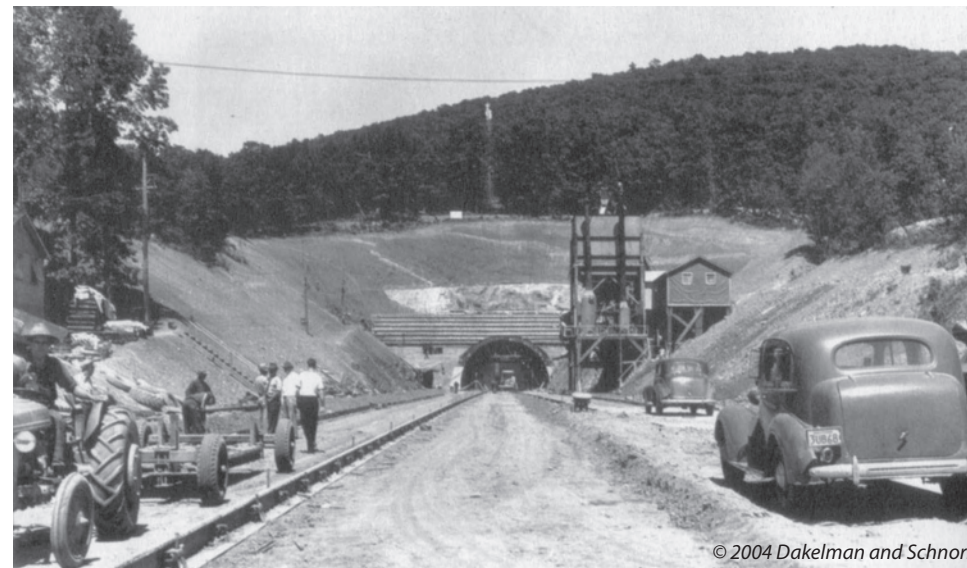


Ray's Hill Tunnel shortly after its opening c. 1940

and rollover tests, truck brake-distance tests, road sign visibility tests and a study evaluating the effectiveness of imbedded pavement reflectors. The most well known product of the STAR facility was the development of the Sonic Nap Alert Pattern, or SNAP. Realizing the staggering number of yearly accidents attributed to sleepy drivers, the Turnpike Commission used this section of roadway to test the recessed rumble strips that now line most major highways across the nation. The STAR facility proved a valuable resource for the Turnpike Commission until the mid 1990s, when advances in technology allowed the same types of study to be done in a laboratory setting at a greatly reduced cost.

In 2000, the Pennsylvania Turnpike Commission began to contemplate the future of this facility. They began working to find a way to return it to the public sector. Their answer was provided in part by the groups of recreational users who found the facility and embraced it as a local resource. Soon it became evident that the goals of the Turnpike Commission did

not include the operation of a major recreational facility. Shortly after this realization, the Commission began negotiations with the Southern Alleghenies Conservancy, located in nearby Bedford PA for a transfer of ownership. In 2001, the Pennsylvania Turnpike Commission sold an 8.5 mile section of the roadway, including the two tunnels, to the Southern Alleghenies Conservancy for the price of \$1.00.



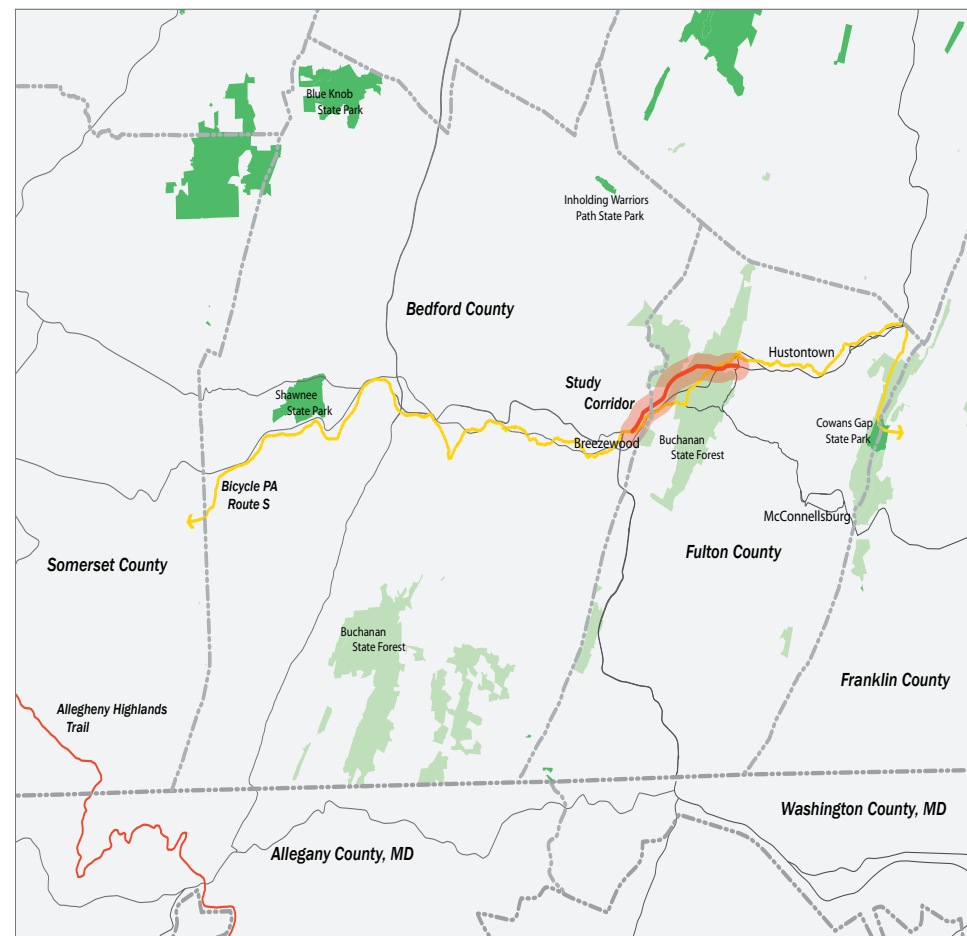
Rays Hill Shortly Before Its Opening c.1940

The initial intent of the SAC was the conversion of this section of abandoned roadway into a multi-use trail corridor. The abandoned roadway is located in rural Bedford and Fulton Counties. The proposed trail corridor is ideally located to capitalize on regional recreational facilities by providing connections to them at the local level. Ironically, the rural undeveloped nature of this area limits the economic viability of recreational facilities typically found in more developed areas. The 8.5 mile abandoned turnpike corridor traverses the expansive Buchanan State Forest and already contains connections to its trail and roadway network. The Bicycle PA On-route Network's Route S roughly parallels the trail corridor to the south and crosses it in a number of locations.

The proximity of major transportation routes, such as the Pennsylvania Turnpike, the Lincoln Highway/ Route 30, and Route 70, expand the trail corridors market from a locally significant resource, to one that serves the entire Mid-Atlantic Region. Upon completion, the new trail will attract user groups from a large surrounding area and promote the unique natural, cultural and historical resources of rural south-central Pennsylvania.

Comprised of an abandoned highway, achievement of the trail conversion creates unique challenges faced by no other similar project, "de-highwaying" a roadway into a multi-use trail. To successfully address these challenges and to most efficiently enact the trail conversion, the SAC commissioned the creation of this Plan to guide their future actions. Their goal was the creation of a Master Plan for the immediate reuse of this facility and the establishment of a strategy for its long term survival. To fund the initial study and the resulting Master Plan, the Southern Alleghenies Conservancy enlisted the financial support of a Pennsylvania Heritage Parks Program Grant and a Rural Business Enterprise Grant provide by the USDA, all to be managed and executed jointly between the Pennsylvania Department of Conservation and Natural Resources, the Southern Alleghenies Conservancy, and the Lincoln Highway Heritage Corridor, a Pennsylvania Heritage Area supervised by the Department of Conservation and Natural Resources and the USDA.

The purpose of this study is to lead the SAC in achieving their goals for the future of the trail. The resultant product of the master planning effort is the creation of a new trail to be known as "Pike to Bike Trail." The implementation of the Pike to Bike Trail will enhance recreational opportunities in the area, enhance wildlife habitat and stimulate local economic development by serving as a unique tourism and recreation attraction for the entire Mid Atlantic Region.



Regional Context

Executive Summary

Project Background

The Master Plan and Adaptive Re-use Study represents a unique effort by the Southern Alleghenies Conservancy (SAC) to create a trail network corridor located on an abandoned segment of the original Pennsylvania Turnpike. The eventual construction of the Pennsylvania Turnpike represented a significant milestone in the transportation history of the United States. On October 1, 1940 the Pennsylvania Turnpike was opened to automobiles, providing a quick and safe connection between Carlisle in the east and Irwin in the west. It quickly surpassed the original traffic projections and usage continued to expand. As traffic levels increased, the inherent design faults became evident. The original tunnels utilized by the Turnpike Commission were limited to one tube per mountain, providing one travel lane in either direction. As traffic volumes increased, bottlenecks ensued and alleviating the backups around the tunnels became a top priority. In most cases the best course of action was determined to be the construction of a twin tube parallel to the original. A different plan of action was created for two specific tunnels, the shortest tunnel and longest tunnel of the system. In 1968, the Turnpike Commission bypassed an 11-mile segment of roadway containing the 2.2 mile Sideling Hill Tunnel and the 0.9 mile Ray's Hill Tunnel.

In 2000, the Pennsylvania Turnpike Commission began to contemplate the future of this facility. The Commission began working to find a way to return it to the public sector. Their answer was provided in part by the groups of recreational users who found the facility and embraced it as a local resource. Soon it became evident that the goals of the Turnpike Commission did not include the operation of a major recreational facility. Shortly after this realization, the Commission began negotiations with the Southern Alleghenies Conservancy, located in nearby Bedford PA for a transfer of ownership. In 2001, the Pennsylvania Turnpike Commission sold an 8.5 mile section of the roadway, including the two tunnels, to the Southern Alleghenies Conservancy for the price of \$1.00.

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Project Program

Trail Vision

The vision of the Pike 2 Bike Trail capitalizes on the essential need for recreational activities in most people's lives. Fostering local recreation opportunities will improve the quality of life for Bedford and Fulton County residents. To achieve the trail vision, the Southern Alleghenies Conservancy and the Pike 2 Bike Advisory Committee created and adopted a Project Mission Statement. This statement identified five keys to help the current trail become a regional resource and achieve its vision. The five keys include the following: *Enhance Recreational Opportunities; Stimulate Economic Development; Improve Wildlife Habitat; Capitalize on the Unique Historical Resources; and Total Trail Renovation.*

Trail Program

Enhancement of Recreational Opportunities speaks to the creation of an improved recreational corridor which links disparate activities and creates

a hub for recreation activities throughout the Mid-Atlantic Region. As it begins to draw users from a large radius the trail corridor will *Stimulate Economic Development*. Visitors traveling from far off destinations to recreate along the length of the trail will require food, lodging and other amenities. The Town of Breezewood and the Sideling Hill Service Plaza both stand as prime targets for trail promotion and will directly benefit from its success. As visitors travel to take advantage of this unique resource they will be amazed by the unspoiled natural environment which surrounds the Trail Corridor. The permanent preservation of the surrounding land and subsequent management activities will consequently *Improve Wildlife Habitat* along the length of the trail. As well as its natural values, the Pike 2 Bike Trail Corridor represents an opportunity to *Capitalize on a Unique Historical Resource*. Currently, few other locations exist where transportation and history buffs have the ability to walk or bicycle along roadways and through tunnels previously restricted to vehicular traffic. The final objective set forth in the Mission Statement is *Total Trail Renovation*. The creation and execution of a plan for *Total Trail Renovation* will sow the seed for the fulfillment of the previous four objectives.

The *Total Trail Renovation* is envisioned to focus on the creation of four distinct but intertwined experiential programs. The view of the corridor as a historic cultural resource is the first of these programs. Historic installations along the length of the trail will exploit the rich transportation history of the original Pennsylvania Turnpike alignment. Interpretive installations are scheduled to be located along the length of the trail at significant locations, be they the abandoned Cove Service Plaza, the Civilian Conservation Corps Camp Oregon, or some other unique historic resource located along the Trail. The culmination of these installations will be the creation of a linear *Transportation & History Museum*. Between historically significant locations, trail visitors will be enriched by the surrounding natural environment. A complimentary Art Park program focuses on the development of both permanent and ephemeral art installations along the length of the Pike 2 Bike Trail Corridor. The subjects of the installations will focus on interpreting the ecology and history of the site and their inter-relationships to the broader community. The Pike 2 Bike Trail Corridor passes abundant

natural environmental resources, including geologic formations, high-quality streams, watersheds, vegetation and wildlife habitat. Placement of interpretive signage and educational partnerships with local and statewide conservation organizations will heighten the understanding of the environmental forces at work. The result will be a linear *Environmental Center*. All of the aforementioned activities will occur along the length of the Trail. These activities, in addition to additional recreational opportunities, will all occur along a linear corridor. As visitors move from one location to the next, or just travel the length of the trail, they will be taking advantage of one of the area's first truly *Linear Parks*.

Facilities Plan

Paving

The once smooth travel surface of the roadway has since succumbed to the elements and a general lack of maintenance. The existing condition of the road surface varies greatly from one end of the trail to the other. Some sections of roadway remain relatively intact, while other sections have all but been obscured by the invasion of surrounding vegetation. After the completion of a comprehensive paving surface survey, it was determined that the best alternative would involve resurfacing of a 12 foot lane located along the inside of the former east bound traffic lane. The new trail surface would consist of a 1.5 inch bituminous overlay placed directly over top of the existing roadway surface. The remainder of the road surface and median would be retained in their current state, and would therefore serve recreational users which demand less of a finished trail surface or those users who would potentially damage the trail.

Trailheads

A trailhead serves as the critical access point to any trail. It provides the visitor with their first impressions of the overall trail experience. The two trailheads locations, Breezewood and Cove Plaza, were chosen to maximize on their proximity to local amenities and their potential for additional trail connections. The nearby adjacent Bicycle PA Route S and the proximity to the nearby Town of Breezewood, are examples of how regional connections aided in determining the location of the proposed trailheads.

Parking accommodations are designed to satisfy the needs of all user groups, whether they are a visiting family in a single car, an equestrian group towing horse trailers, or visiting school groups traveling by bus. In addition to serving as parking facilities, trailheads serve as the introduction to the trail experience. This also includes any interpretive themes that will be explored along the length of the trail. To kick-off the learning experience, the introductory interpretive station should also be located at or very near the trailheads.

Since trailheads are the most easily accessed and most heavily visited portions of the trail they also become the targets of undesirable behavior. Several strategies have been enacted to address any potential issues arising from vandalism or other undesirable activities. Toilet facilities selected for the Trail are designed to be virtually vandal-proof. In addition, the selected facilities have been located some distance from either trailhead, further reducing the potential for vandalism. Supplementary security measures have also been proposed including tamper proof access gates and other structures to prohibit vehicular traffic on the Trail.

Bicycle PA Route S

Bicycle PA is an extensive network of on-road bicycle routes that sprawl out across the State of Pennsylvania. Bicycle PA's Route S roughly parallels the Pike 2 Bike Corridor, located just to its south. Many of the rural roads designated for this portion of Route S are winding and narrow, and are therefore unsafe for large numbers of bicyclists. Realignment of portions of Route S to take advantage of the Pike 2 Bike Trail would help to alleviate the dangerous traffic conditions found on local roads and would increase regional visitation to the Trail Corridor.

Stormwater

As with any modern roadway, the Turnpike was initially built with an advance drainage system to quickly remove excess water from the roadway during a rain event. The original system was comprised of 86 inlets along the shoulders and 65 inlets located in the median. Since the decommissioning of this section of roadway most of the drainage system has ceased to function efficiently or has ceased functioning at all. After an extensive

drainage system survey it was determined that the drainage network should be restored to a level which provides a safe trail surface and reduces additional roadway degradation related to stormwater. The plan proposes to replace the inlet covers and clean-out drainage channels in order to address immediate safety concerns.

Tunnels

The two tunnels, Ray's Hill and Sideling Hill, are perhaps the most unique aspects of the Pike 2 Bike Corridor. Similar to other portions of the abandoned roadway, the two tunnels have suffered from extended periods of neglect. However, unlike other portions of the remaining infrastructure, disrepair of the tunnels pose the most serious potential safety problems. After initial engineering surveys, it was determined that the two tunnels needed a minimal amount of repairs, as well as some minor preventative maintenance, to retain them in conditions which would be safe to trail users. Based on the engineering recommendations, some stabilization steps should occur prior to any official trail opening. These steps include: limiting access to tunnel control rooms; repair of existing tunnel drainage systems; remediation of cement failures along the walls and ceilings; and replacement of failing ceiling hangers along the length of both tunnels.

Tunnel Lighting

When Ray's Hill and Sideling Hill Tunnel's were initially constructed they contained a complex lighting system designed for safe vehicular passage. After careful consideration of the different lighting options, it was determined that a new lighting system was needed that would create a delicate balance between user safety and still retain the feeling created by the darkened tunnels. This lighting extent, about the intensity of a moonlit evening, could be achieved by the instillation of ceiling mounted light emitting diode, or LED, fixtures on 70 foot centers. LED fixtures were chosen primarily for their very low operational and maintenance expenses. Additionally, various schemes for service connection were explored. After consideration, it was determined that the best option would be the installation of a system of solar energy collectors to power the tunnel lighting systems.

Bridges

Bridges are an integral part of any roadway system. During the construction of the original Pennsylvania Turnpike, hundreds of bridges were constructed to retain high speed traffic flow with limited interruptions. These bridges require limited but periodic maintenance to retain their safe functionality. The Pike 2 Bike Trial Corridor contains two bridges which both span local roadways, one over Chapel Mountain Road and one over Oregon Road. A preliminary survey determined that both bridges are in sufficient condition to allow pedestrians and bicycles, with occasional vehicular traffic and these bridges do not require any major stabilization repairs.

Interpretative Program

Directional and Interpretive Signage

Signage along a trail accomplishes many important tasks. Wayfinding signs help trail users understand their location, services, destinations and distances. This type of signage should be located at various locations along the trail. Informational signs provide the specific messages of who, what, where, when and how. Informational signage should be located at strategic locations along the length of the trail and at both of the trailheads. The final type of sign are those with an interpretative message. Interpretative signage should be located at areas representing a significant place or event. The creation of an effective signage package is an effective way to assist in the branding of a trail project.

Phasing and Costs

Realizing that improvements identified in this plan, collectively, represent an approximately \$3 million dollar investment, it is important to consider how projects can be grouped together in logical phases that make the overall cost more manageable. An important consideration when developing the phasing strategy is the desire to maximize accessibility to the trail as quickly as possible. The following break-out represents an itemized list of projects, and in some cases sub-projects, into eight separate phase to be achieved within an approximately 10 year completion horizon. Each phase represents a bundle of projects with a total cost not to exceed \$500,000. This amount

is considered a conservative upper limit for annual funding, based on any likely grants that would support this project. This figure also represents a project management threshold, based on likely staff capacity to oversee such capital projects.

Phase 1: Initial Trail Development

Total Cost: \$320,000

Phase 2: Begin Ray's Hill Tunnel Stabilization and Lighting

Total Cost: \$381,000

Phase 3: Begin Sideling Hill Tunnel Stabilization

Total Cost: \$453,500

Phase 4: Sideling Hill Tunnel Lighting

Total Cost: \$305,000

Phase 5: Trail Surfacing

Total Cost \$342,000

Phase 6: Cove Plaza Trailhead Improvements and Completion of Ray's Hill Tunnel Stabilization

Total Cost: \$334,500

Phase 7: Completion of Sideling Hill Stabilization

Total Cost: \$412,000

Phase 8+: Remaining Trailhead Improvements and Interpretative Signage Program

Total Cost: \$458,000

Ownership, Management and Maintenance

Ownership

On October 10, 2001, the Pennsylvania Turnpike Commission sold the 8.5 mile abandoned section of roadway to the Southern Alleghenies

Conservancy. The agreement of sale contained a number of significant stipulations. The stipulations dictated the abandoned roadway be used only for recreational biking and hiking and all motorized vehicle traffic be prohibited. In addition to this the Southern Alleghenies Conservancy must seek Turnpike Commission approval for removing, remodeling or impacting any structures on the property in perpetuity. Should it be determined that the Southern Alleghenies Conservancy needs to transfer ownership of the trail, the creation of a joint authority, ideally representing a legal governmental partnership between Fulton and Bedford Counties would be the optimal ownership structure to ensure the viable future of the Pike 2 Bike trail.

Management

The size and scale of the Pike 2 Bike Trail dictate that it require a moderate degree of manpower, especially when considering the initial management of capital infrastructure projects, start-up marketing, and then continued maintenance responsibilities. In the scope of this plan, two basic management structures have been considered: provision of daily maintenance by the ownership entity and provision of daily maintenance by a new or existing non-profit organization. In either scenario, it is important that volunteer assistance be tapped and fostered to support the daily activities of the trail management entity.

Marketing Strategy

As stated in the Mission Statement, this trail is designed to act as a setting for diverse activities and as a result, serve a multitude of audiences. Secondary to this overall mission, is the goal of creating a resource that supplements the local economy, either through attracting visitors, who in turn spend money in the community or by supporting the overall community quality-of-life which in turn helps to attract business leaders to establish businesses in the community. The marketing strategy goals include:

1. Serve the Local Population
2. Tap Existing Markets

3. Attract Special Interest Groups

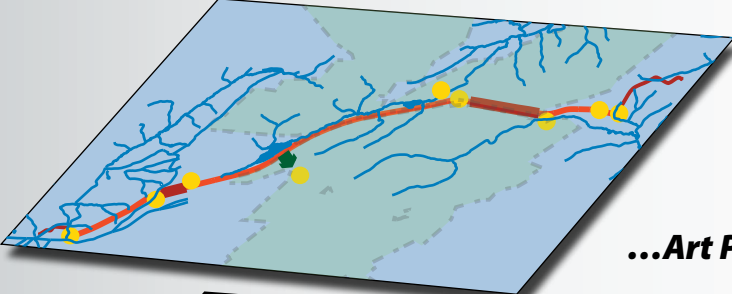
The Key Steps that should be taken to achieve these goals include:

1. Hire a Marketing/Promotion Staff Person
2. Create and “brand” Pike2Bike as a premier, nationally-recognized trail attraction
3. Develop a Detailed Promotional Strategy with Collateral Material
4. Cultivate Partnerships
5. Track Usership and Economic Impact of the Trail on Local Economy

Military Involvement

The uniqueness of an abandoned and isolated section of turnpike roadway provides an excellent setting to address some of the deficiencies of the modern Army. In December of 2003, the Army Reserve’s 99th Regional Readiness Command began to coordinate training exercises on the trail corridor. They implemented a program known as Convoy Survivability Training (CST). The training is based on attack and ambush scenarios executed on convoys. The abandoned portions of the turnpike provided an ideal training platform that could be replicated in very few other places across the United States. The influx of troops associated with the execution of the CSTs on the trail provides a great deal of local economic stimulus. The military also represents an opportunity to advance the capital improvement of the trail, through their need to provide valuable in the field training operation for the engineering and construction personnel. An agreement between the two parties should be developed to advance this initiative and also ensure a long and friendly relationship between the 99th Regional Readiness Command and the trail management organization.

**Pike 2 Bike:
The World's Only _____ on an Abandoned Superhighway!**



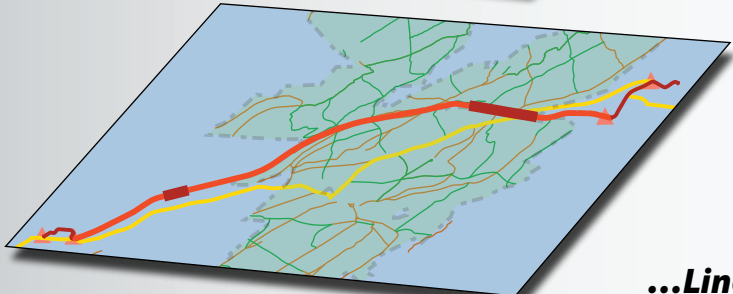
...Art Park...



...Transportation & History Museum...



...Environmental Center...



...Linear Park: Bike/ Rollerblading/ Recreation Trail...



Composite View

Pike to Bike Vision Statement

Recreation is an essential activity that enhances the quality of life for Bedford and Fulton County residents and fosters personal wellness, strengthens the sense of community, prevents crime, contributes to a healthy economy and preserves the environment. The Southern Alleghenies Conservancy will strive to provide a trail that:

- Aspires to the highest standard of excellence through quality design and materials and through cooperative partnerships with diverse community organizations.
- Fosters the need of the citizens for recreational pursuits within a natural and leisure environment.
- Provides stewardship of the community's recreational, natural, cultural and historic resources.

Project Mission Statement

Objective #1 Enhance Recreational Opportunities

An improved recreational corridor will create linkages between disparate activities and promote a regional recreation district. An expanded recreation district will serve as a recreation destination throughout the Mid-Atlantic Region.

Objective #2 Stimulate Economic Development

A regional recreation corridor will attract visitors from a large surrounding area. Travelers will require services before, during, or after they use the newly created trail. The Town of Breezewood and possibly the former Sideling Hill Service Plaza, serve as ideal locations to promote the trail and will directly benefit from the increased usage.

Objective #3 Improve Wildlife Habitat

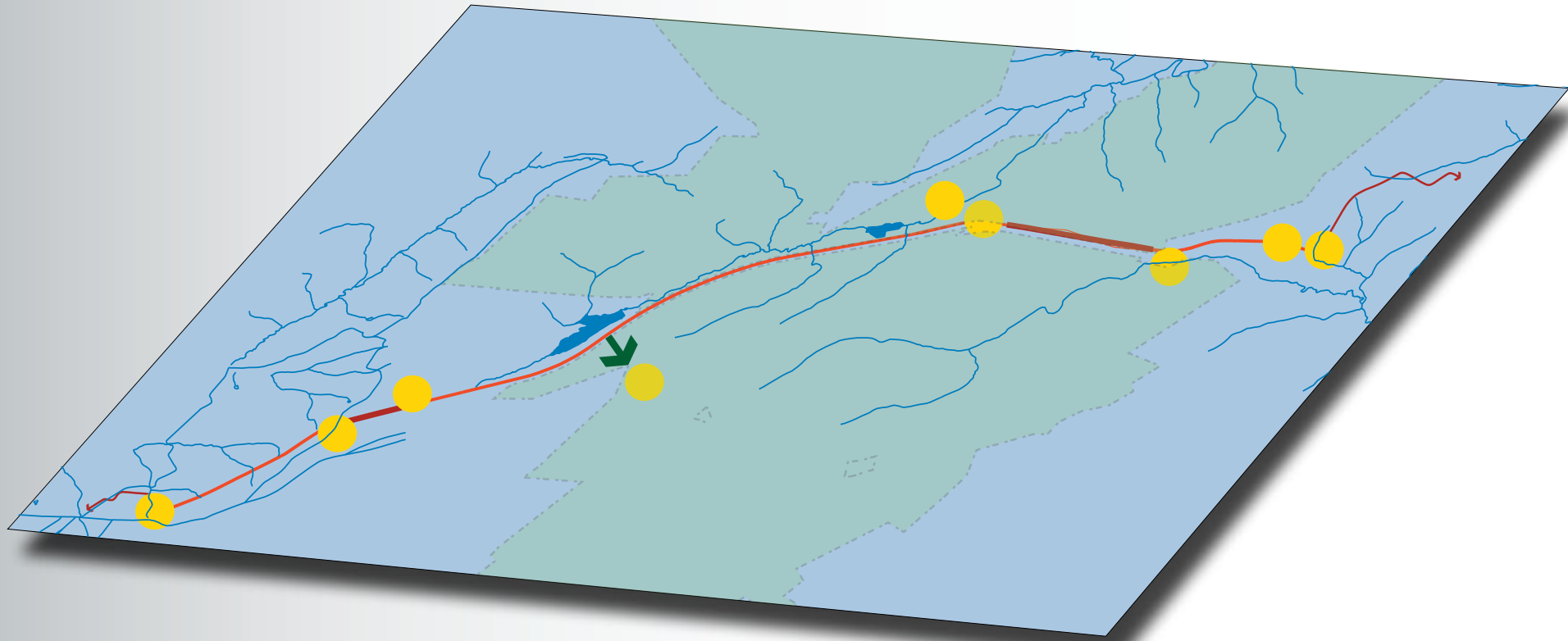
Any permanent preservation of land, especially corridors, promotes wildlife habitat. The creation of a governance entity is proposed to address land management practices and consequently to improve the overall quality of habitat found along the trail.

Objective #4 Capitalize on the Unique Historical Resource

Representing the only current example of a superhighway to trail conversion, the trail corridor will become a destination for history buffs and transportation enthusiasts alike. The ability to walk or bicycle through tunnels previously restricted to automobile traffic presents a distinct marketing opportunity. The overlay of major historical, natural, and recreational resources represent a unique interpretive opportunity, with the current trail project representing the next phase of a continuum for the resource corridor.

Objective #5 Total Trail Renovation

Total Trail Renovation speaks to the goal of having a plan of action which promotes the previous four goals, and the means to execute this plan.



The type and location of permanent or temporary, “ephemeral” art installations will vary by the inspiration of the artists combined with functional guideline requirements of the Trail Board. Possible locations, based on the interface of cultural and natural resources are shown here as examples.

The Basis:

The Pike 2 Bike is a setting for a unique opportunity to interpret the interaction between high-quality environmental resources, nearly two centuries of transportation engineering, and the growing cultural desire for recreation and leisure activities.

The Program:

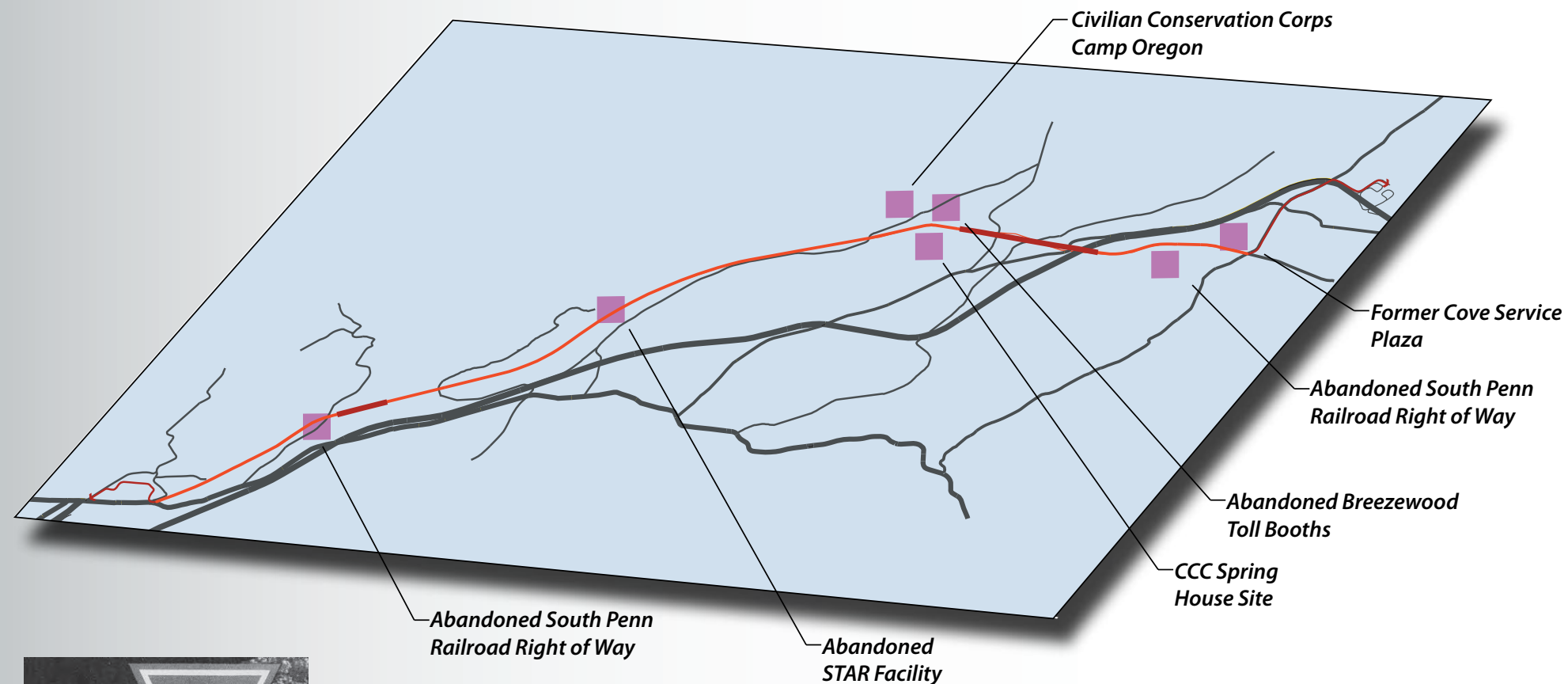
Permanent and ephemeral art installations, on both a small and “mega” scale will be fostered through a program focused on interpreting the ecology and history of the site and their inter-relationships to broader community.

Key First Steps:

- Set-up an art committee which includes representatives from the Trail Board and representatives from art advocacy groups in the region.
- Develop a private and corporate sponsorship program focused on art education. Pursue foundation and governmental grants to support programs with school art programs.
- Create connections with national arts groups focused on outdoor and environmental art installations in order to market sites and events to a national artist audience.
- Market the site for such art installation and possibly develop an annual “Superhighway Trail” Festival which partially focuses on developing new annual art installations each year.



Project Program Transportation & History Museum



The Basis:

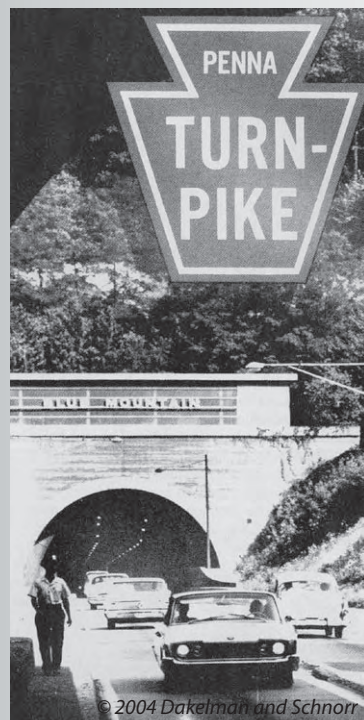
The struggle to move goods and people from the East to the West goes back to the early days of our nation. The Pike 2 Bike is one small piece of the country's transportation technological advances, from the original South Penn Railroad alignment with its early surveying, bridge and tunnel building technologies to the highly advanced notion of a "Superhighway" with broad roadway curves and sleek tunnel designs.

The Program:

Large "highway-scaled" interpretive installations will be created at both trailheads. The main focus will be on creating a series of elements at Cove Plaza trailhead with small trail-scaled interpretive signing at the various elements along the trail. Interpretation would focus on a layered series of information that highlights the physical landform and how it shaped transportation technology, first through footpaths, then railroads, ultimately highways, and finally the abandonment of one highway for another, and then the creation of the Pike 2 Bike Trail. The inter-relationship of other cultural aspects, such as the Civilian Conservation Corps camp, various local historical artifacts and military utilization should be depicted to form a complex story of the area and the trail facility.

Key First Steps:

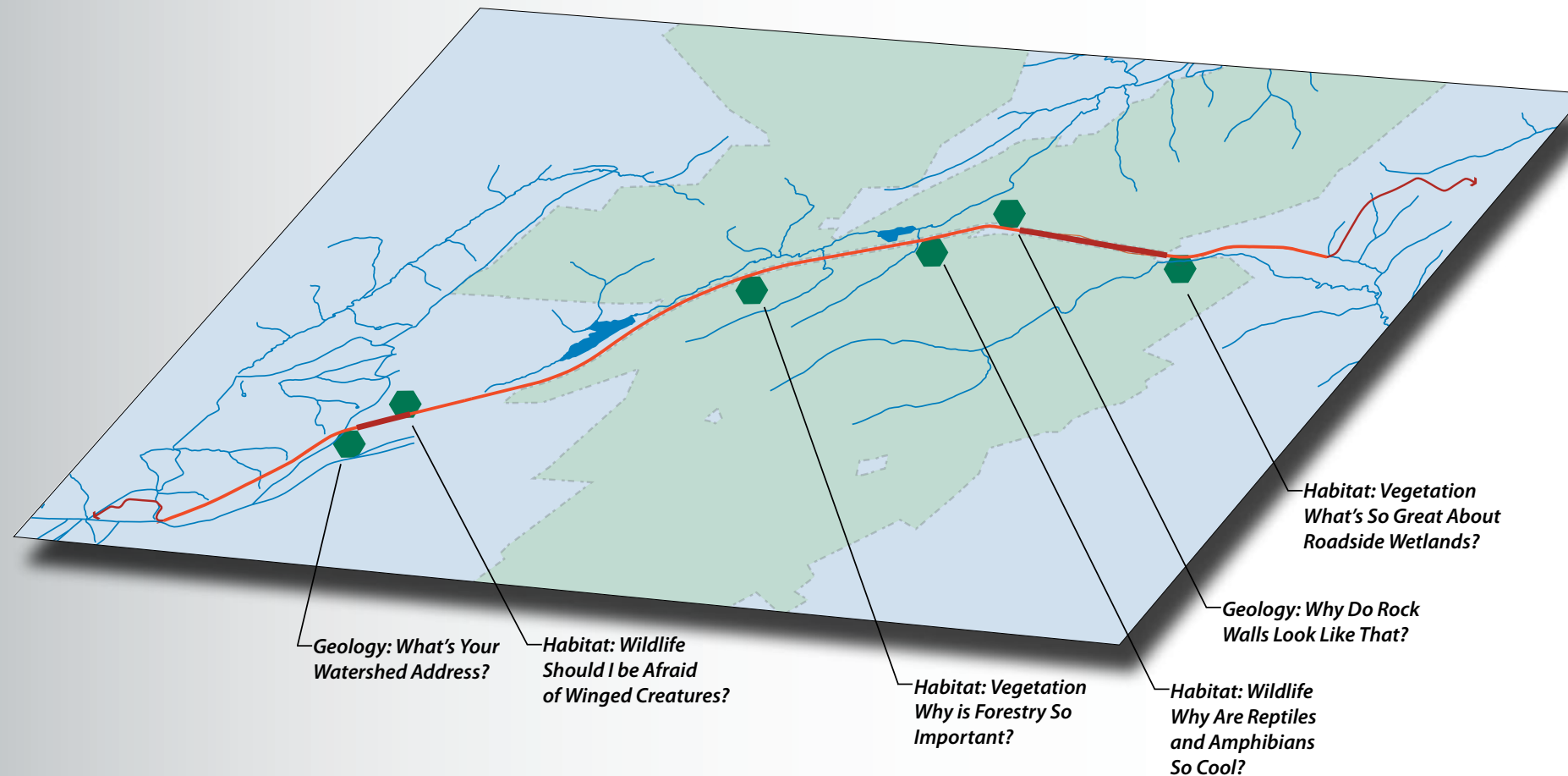
- A history committee should be formed which includes representatives from the Trail Board and representatives from local historical and special interest groups. This group should develop a protocol for collecting, archiving and disseminating information about the historical aspects of the trail.
- Coordinate with the Pennsylvania Turnpike Commission on its efforts to document and register the historical importance of the Turnpike to ensure the trail alignment and its components are included in an appropriate manner in the certification.
- Identify funding sources for a comprehensive interpretive signing program and hire an environmental signing firm that specializes in the design of historical corridor signing to develop a comprehensive signing program.
- Begin to research and package historical text, photos and other archival material to be utilized as content in the comprehensive interpretive signing program.
- Create connections with historical events/groups, such as the Lincoln Highway Heritage Corridor to ensure that Pike 2 Bike is included as a destination in their marketing efforts and also to link with other special events. The site should also be marketed for other local significant events, such as classic car shows, etc. to gain local exposure to the facility.
- Market the site for special events focused on the unique aspects of the site such as an annual event with behind the scenes tours of the tunnels and supporting facilities.



Promotional Material from the early 1960's



Sideling Hill Tunnel shortly after its closure



The Basis:

Navigating through 8.5 miles of abundant natural environmental resources, including geologic formations, high-quality streams, watersheds, vegetation and wildlife habitats and the Buchanan State Forest, a visitor has the potential to develop a greater appreciation for the complex interactions of the natural environment.

The Program:

Through in-situ interpretive signing and educational partnerships with other entities, such as the Southern Alleghenies Conservancy, DCNR, etc. programs and event-oriented activities will be programmed to heighten the understanding of the environmental forces at work.

Key First Steps:

- An environmental management committee should be established which includes representatives from the Trail Board, the Southern Alleghenies Conservancy and representatives from Buchanan State Forest. This committee should be focused on developing specific parameters for the management of the landscape and environmental resources along the trail.
- Utilizing the environmental management data that exists already, prepare a specific restoration and management plan for the entire vegetative habitat along the trail corridor. This plan should identify a policy on invasive species and identify all areas that need to be targets for eradication. Policies on new plantings, mowing, tree removal etc.
- Existing dump sites along the corridor should be removed and an appropriate restoration plan for each area should be developed.
- Undertake an inventory of adjacent properties and ownership, especially in critical view-shed areas. An education/communication program should be instituted, to ensure that undesirable land uses do not develop along the trail on private property that could negatively impact the trail.
- Develop environmental educational programs with local school natural science programs promoting field visits, etc.



Tributary of the Oregon Creek



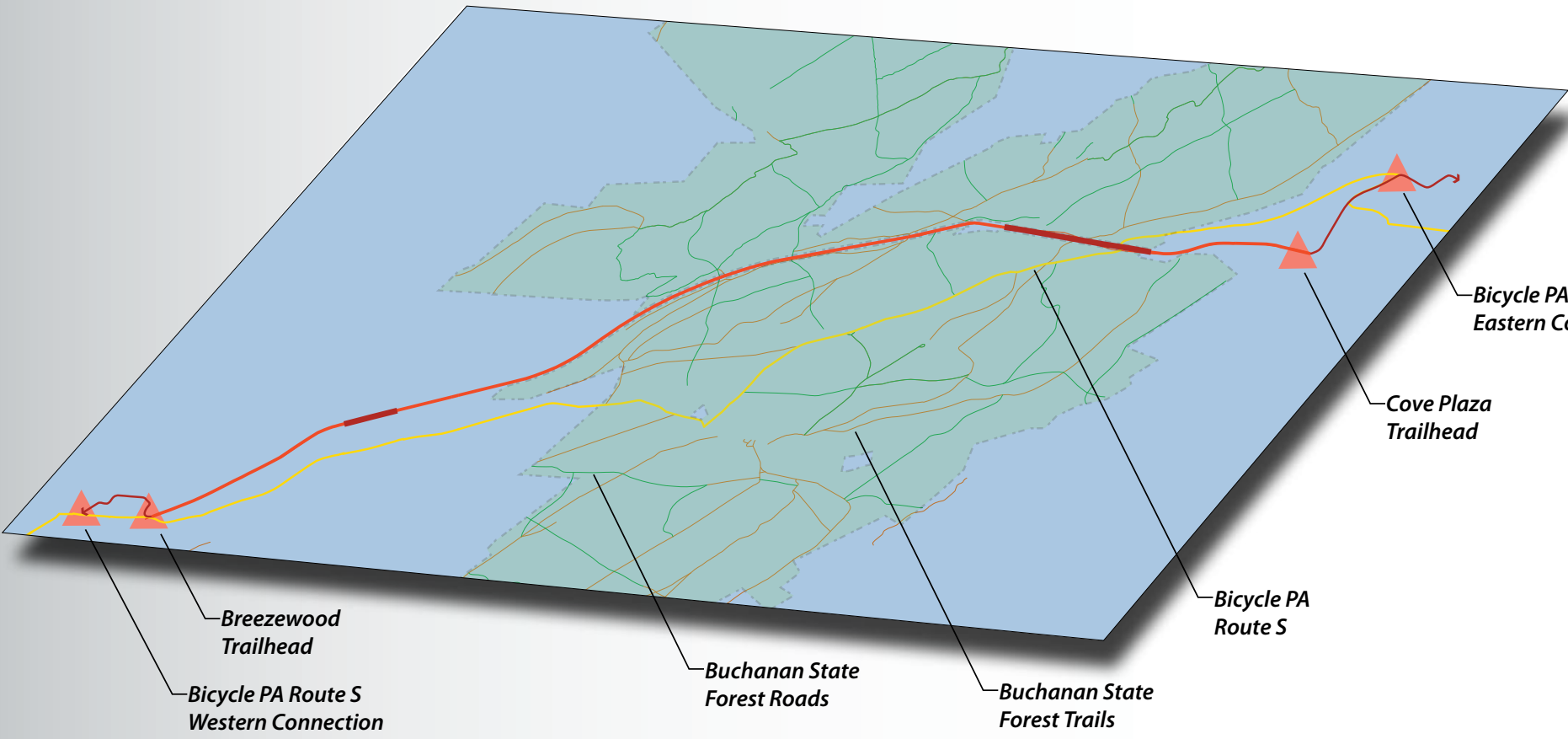
Wooden Bridge Creek



Rock Outcropping near Sideling Hill



Trailside Wetland



The Basis:

Unlike most traditional trails, the Pike 2 Bike represents the opportunity to create a recreation facility that consists of multiple linear non-motorized recreation activities including biking (both road and off-road), roller blading, horseback riding, etc.

The Program:

A unique and modern facility will be created to serve both local recreation needs and to draw visitors from Mid-Atlantic Region and beyond.

Key First Steps:

- Form a non-profit trail corporation to oversee all aspects of the trail management, marketing, etc. An oversight board for the trail corporation should be established with leadership chairs for the major program components identified in this plan, along with other required positions, such as financial, record keeping, etc.
- Develop a detailed Capital Improvement Program for the first five years of trail development. This should include packaging all of the project components by potential federal and state program and funding sources. Generic collateral material that is typically needed for such grant and funding applications should be developed.
- A private and corporate sponsorship program focused on the creation and management of the trail as a critical regional and national resource should be developed. Specific designations with corporations such as Cannondale, should be explored to enhance the trail notoriety.
- Oversee the planning, design and construction of all major capital improvements that focus first and foremost on providing safe public access to the Pike 2 Bike trail.



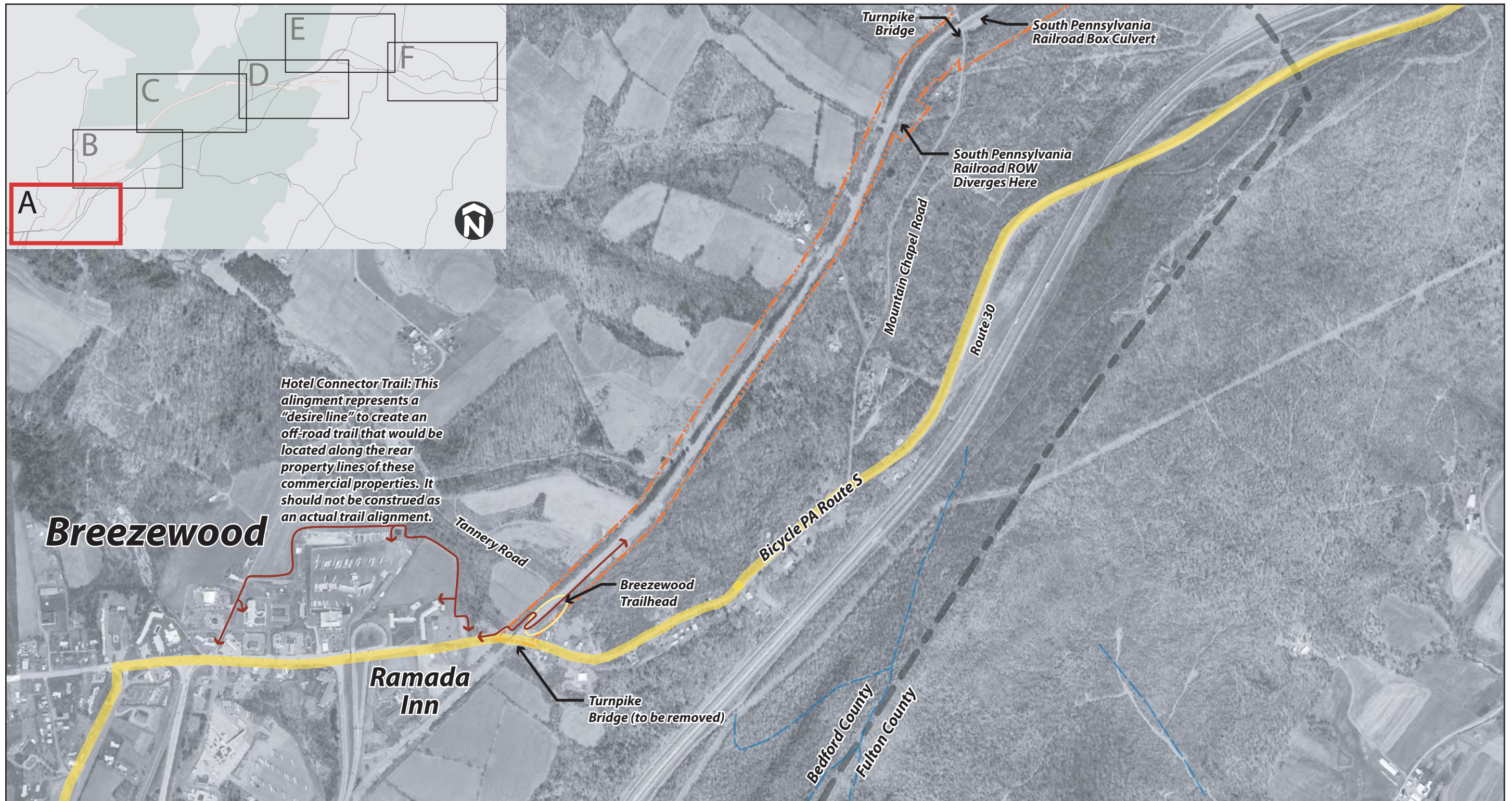
Trail Looking West

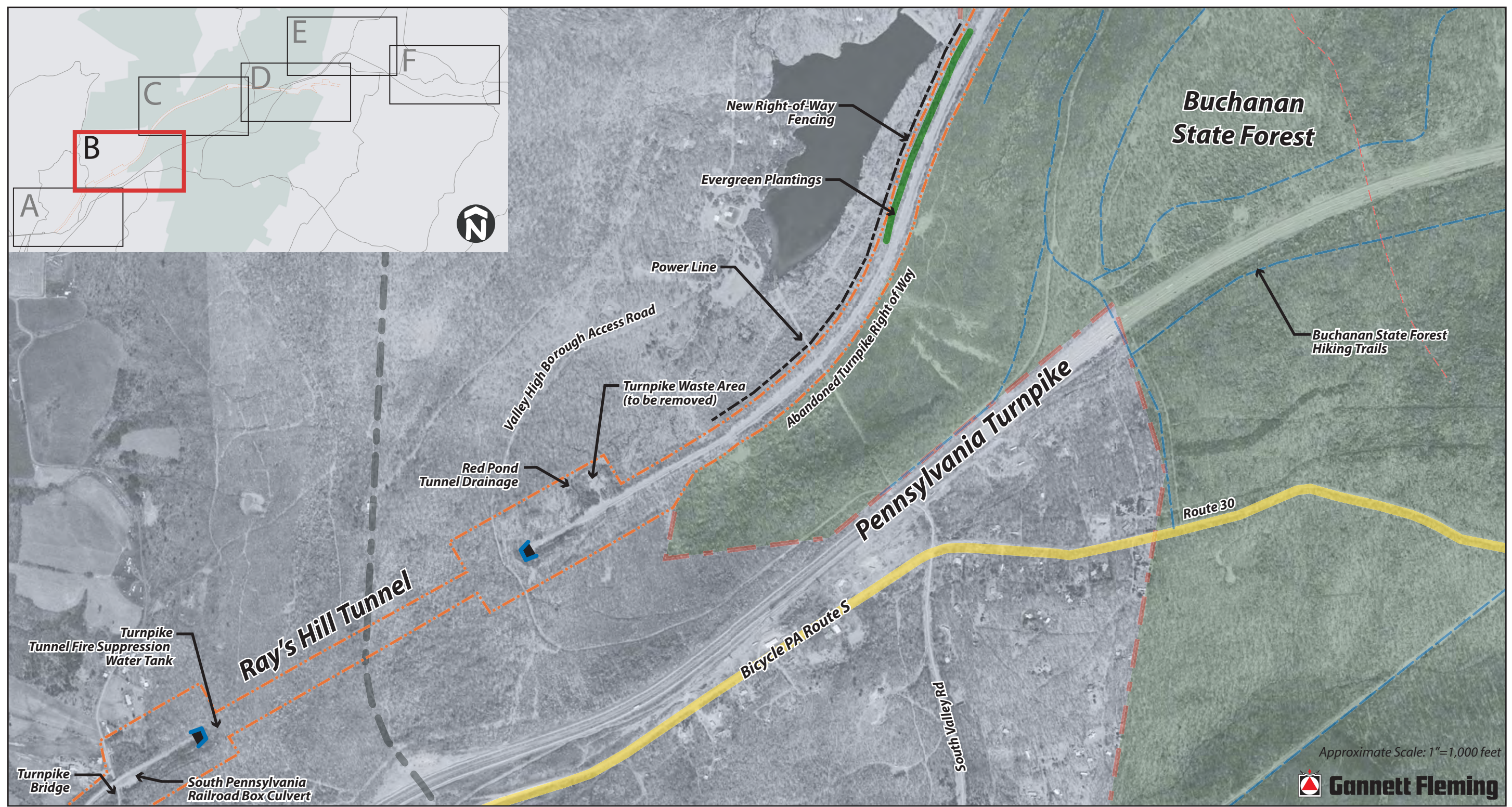


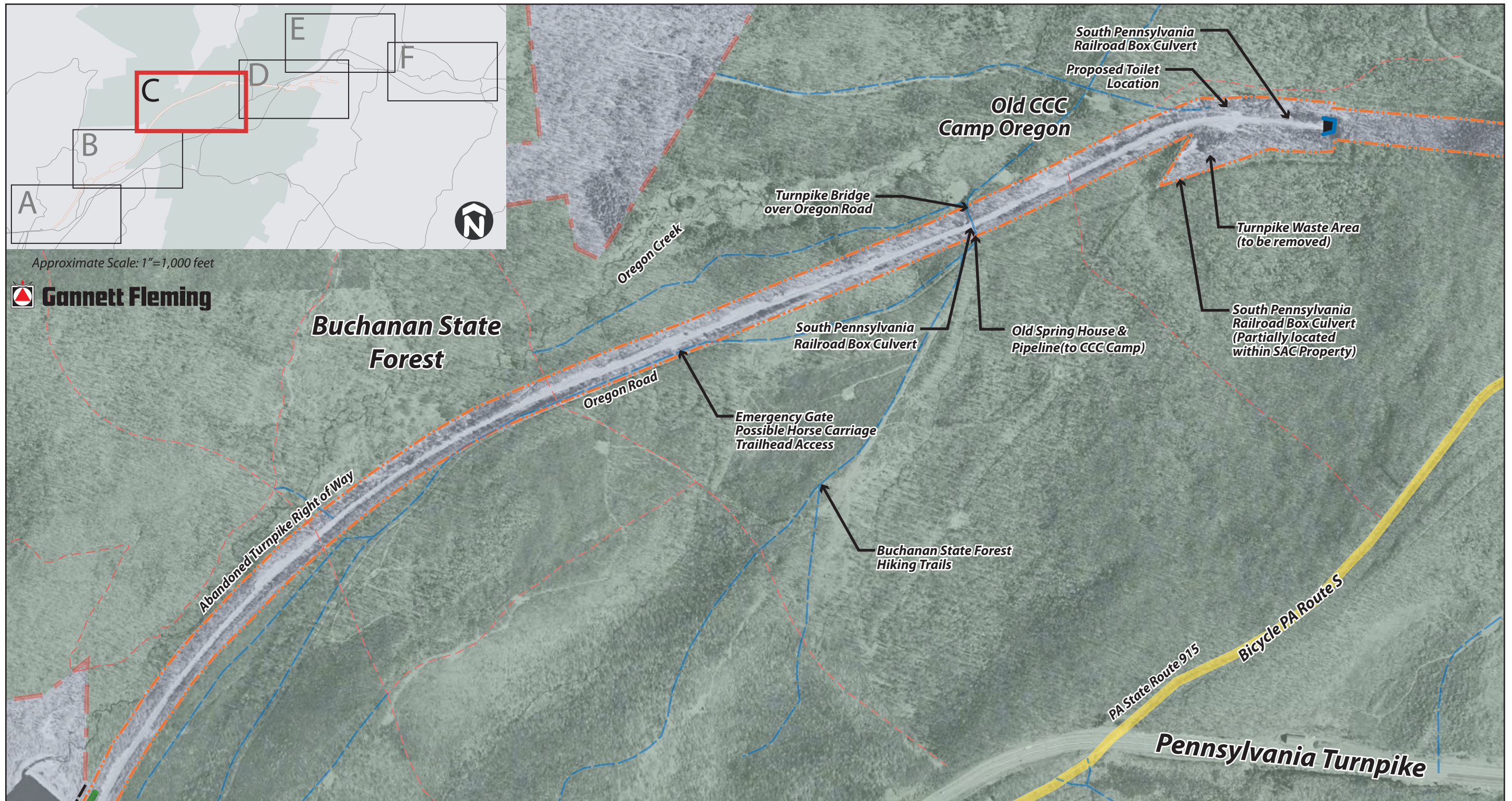
Eastern End of The Trail

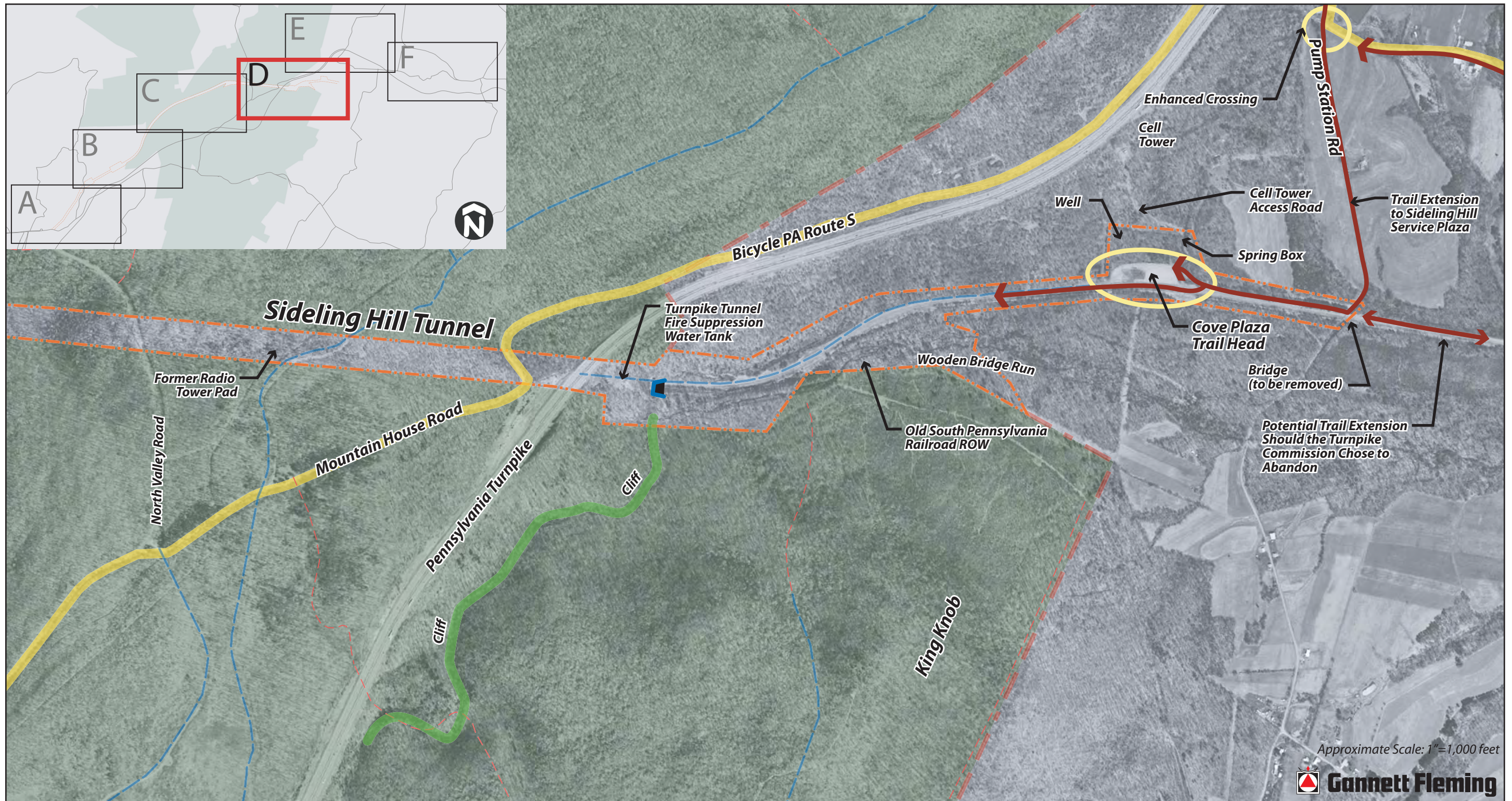


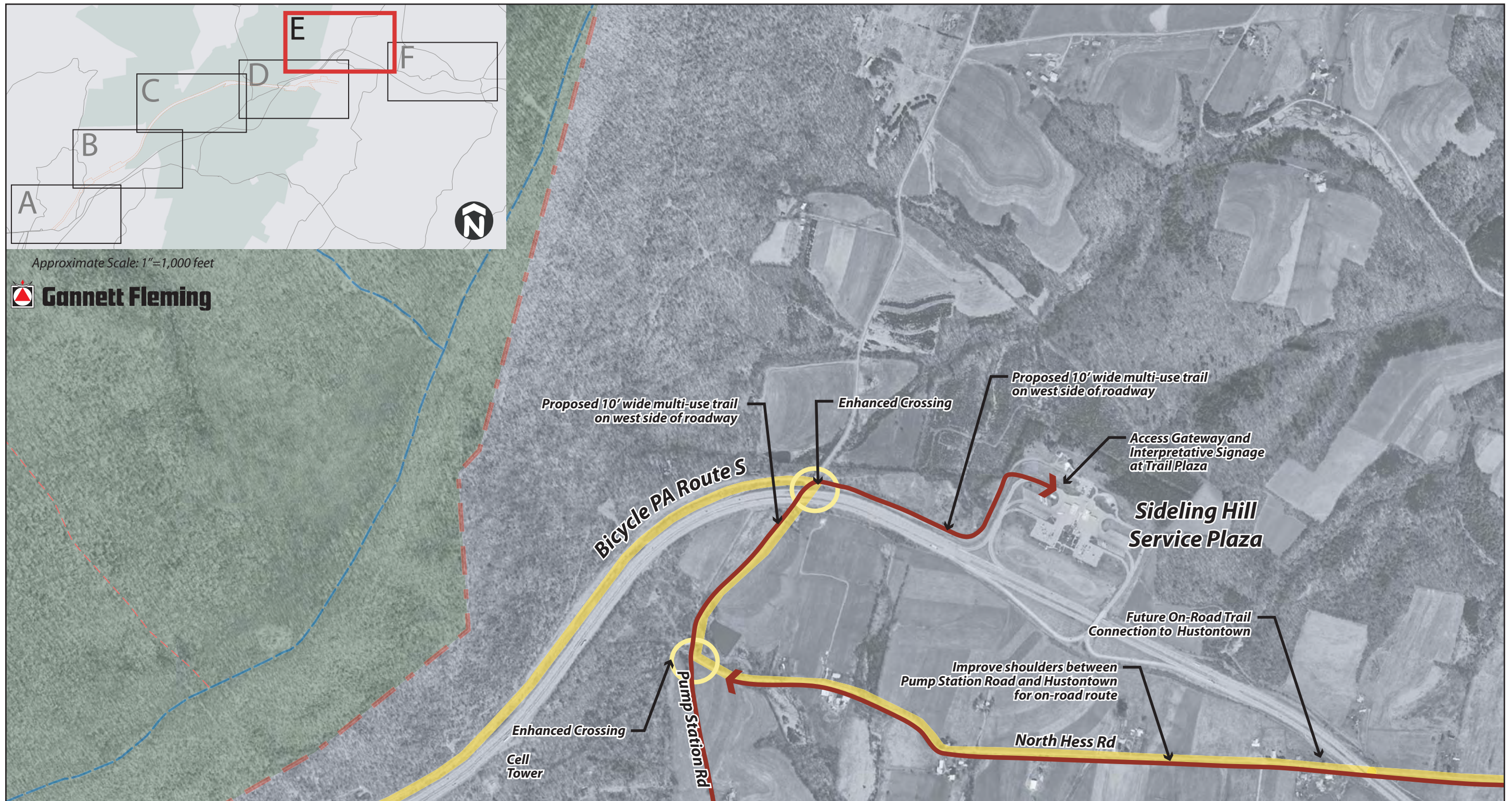
Local Biking Group

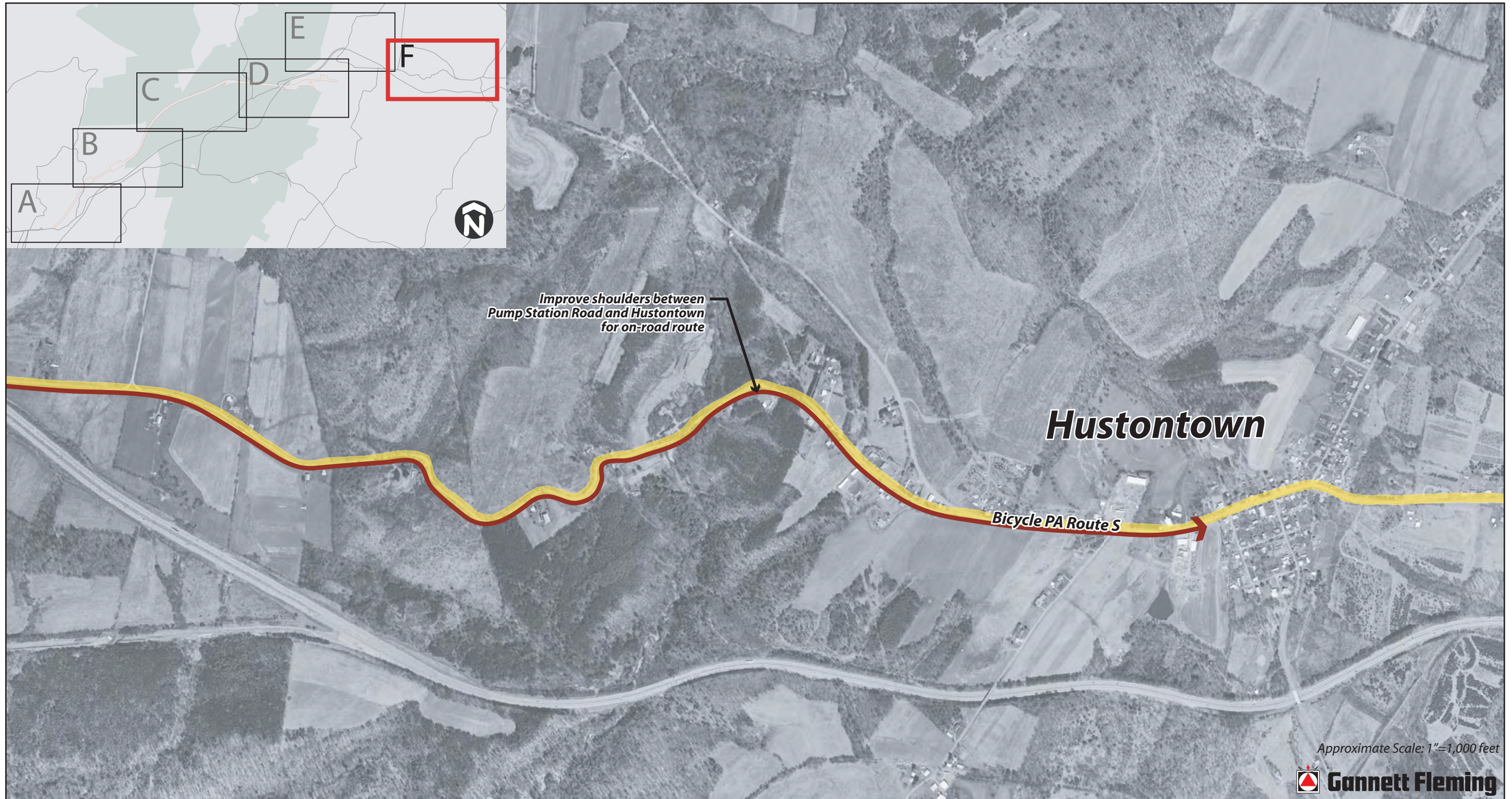












Pavement

The abandoned roadway surface once provided a smooth and speedy journey along its entire length. Years of wear and exposure to the elements have degraded the original surface. Overall, the conditions of the existing paving is highly variable. In some sections the roadway surface is in relatively good condition. In other sections, however, the elements and invasion of vegetation have obscured most of the roadway surface. In order to best inform the decision-making process of locating the proposed trail facility with the overall right-of-way, a field survey and assessment of the existing conditions was completed; the detailed results of which can be seen in Appendix A – Existing Pavement Distress.

Field Inventory and Assessment

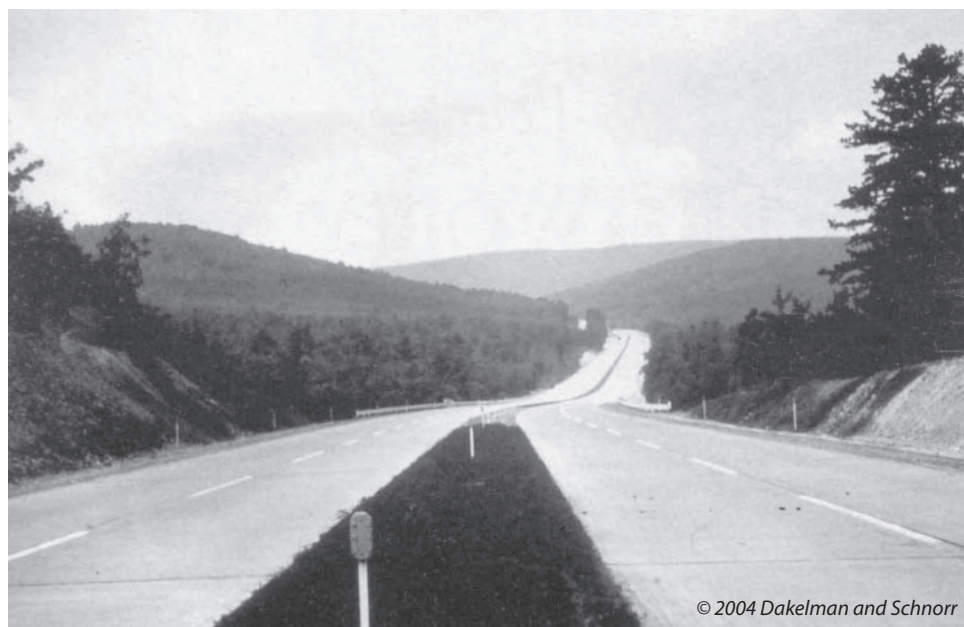
In January of 2005, a team of roadway engineers surveyed the proposed trail alignment. The purpose of the reconnaissance was to view the general condition of the existing mainline pavement and document the types of pavement distresses along the alignment. The mainline consists of two v travel lanes in both the eastbound and westbound directions. Based on review of available drawings, the original roadway surface consists of 9 inches of reinforced concrete pavement overlaid with 3 inches of ID-2

bituminous wearing course. Ray’s Hill and Sideling Hill tunnels are located along this stretch of the alignment. These tunnels include one travel lane in each direction.

Predominantly, two pavement distresses were noted along the existing alignment, including raveling and reflection cracking. Raveling is defined as the wearing away of hot mix asphalt concrete caused by the dislodging of aggregate particles and loss of asphalt binder. Reflection cracking is defined as cracking in asphalt concrete overlay surfaces that occur over joints in concrete pavement. These distresses were found along the majority of the alignment. It is anticipated that the condition of these distresses, particularly the raveling, will continue to worsen, but at a very slow rate since anticipated traffic loads will consist only of bikes and pedestrians. However, if a smooth surface for bike and pedestrian traffic is desired, pavement rehabilitation will be necessary.

Trail Surface Recommendations

A bituminous overlay consisting of 1.5 inches of ID-2 wearing course is recommended to provide a smooth trail surface. Prior to placement of the



A newly paved stretch of highway looking west between Ray’s Hill and Sideling Hill Tunnels.



Examples of raveling and reflection cracking along the same stretch of highway.



A detailed view of current pavement distress.

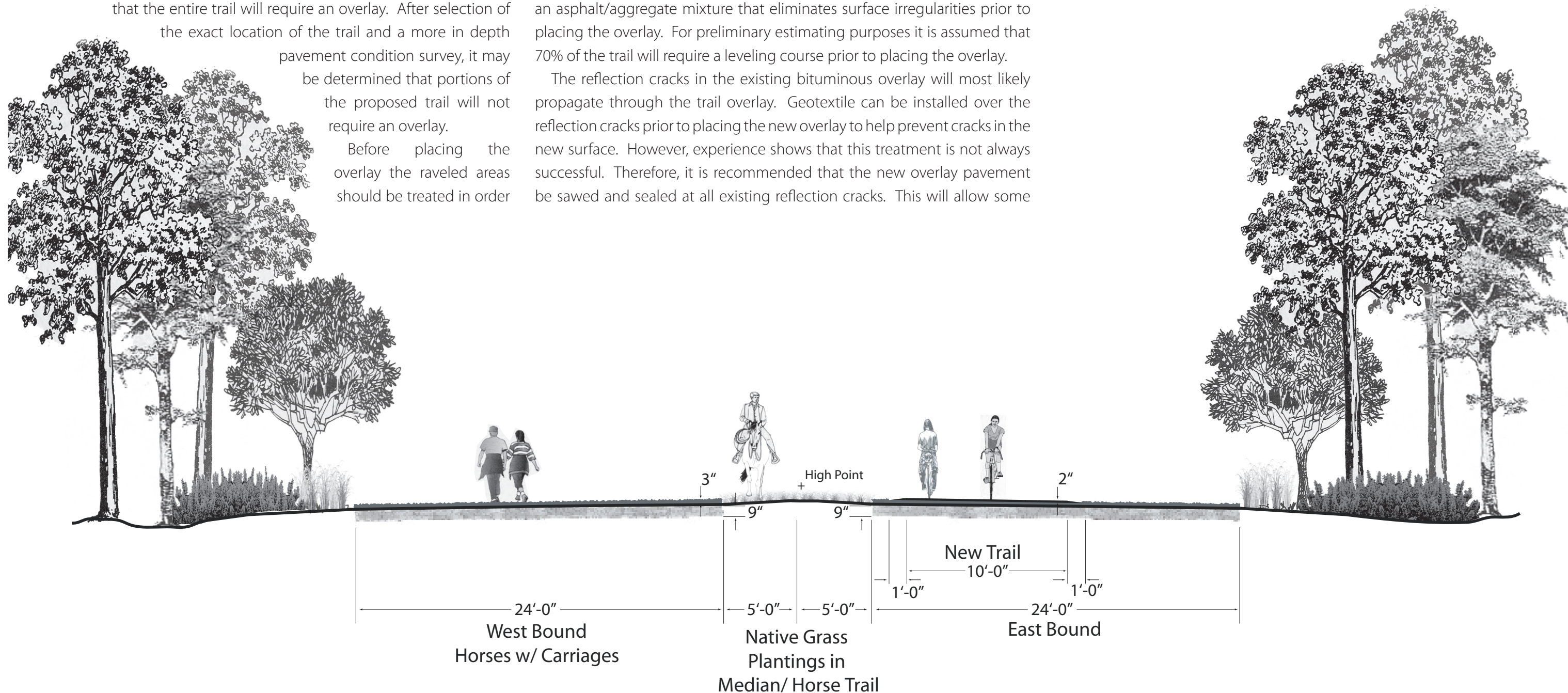
overlay the existing pavement should be thoroughly cleaned and all loose debris removed. Transverse paving notches should be provided so that the overlay can be transitioned to match the adjacent existing pavement. This will help prevent the overlay pavement from raveling at the edges and will create a smooth transition for safety purposes. A bituminous tack coat should be applied to the existing pavement to help produce a better bond with the overlay. For preliminary estimating purposes it is assumed that the entire trail will require an overlay. After selection of the exact location of the trail and a more in depth pavement condition survey, it may be determined that portions of the proposed trail will not require an overlay.

Before placing the overlay the raveled areas should be treated in order to provide a level paving surface. Treatment of the raveled areas can be done by milling or by placing a leveling course of bituminous pavement. One inch of milling would be appropriate for this project because this is the approximate depth of the raveled areas. However, since the existing bituminous overlay is only 3 inches thick, milling a limited depth may result in destruction of the entire existing overlay section. Therefore, a leveling course is recommended to treat the raveled areas. The leveling course is an asphalt/aggregate mixture that eliminates surface irregularities prior to placing the overlay. For preliminary estimating purposes it is assumed that 70% of the trail will require a leveling course prior to placing the overlay.

The reflection cracks in the existing bituminous overlay will most likely propagate through the trail overlay. Geotextile can be installed over the reflection cracks prior to placing the new overlay to help prevent cracks in the new surface. However, experience shows that this treatment is not always successful. Therefore, it is recommended that the new overlay pavement be sawed and sealed at all existing reflection cracks. This will allow some movement of the overlay pavement without damaging its integrity. For preliminary estimating purposes it is assumed that sawing and sealing of the trail overlay pavement will be performed every 50 feet.

The estimated cost for providing a 12-foot wide smooth trail surface is shown in the estimate of probable costs. The quantities were estimated from observations made during pavement reconnaissance, and the unit prices were obtained from PennDOT's website.

The estimated cost for providing a 12-foot wide smooth trail surface is shown in the estimate of probable costs. The quantities were estimated from observations made during pavement reconnaissance, and the unit prices were obtained from PennDOT's website.



Trailheads

A trailhead may be considered one of the most important features of any trail, whether it is a simple loop, a linear trail or a highly developed trail network. The trailhead serves the pragmatic purpose of providing an access point to the trail, as well as presenting visitors with their first impression of the overall trail experience. It is an activity concentration point through which most users will pass. Because of its high level of traffic and exposure, the trailhead also presents an ideal location for many necessary trailside amenities. For a trailhead to properly function, its location and design must meet a number of criteria. It must be located so that it is easily accessible from the vehicular roadway network, has good visibility for visitors unfamiliar with the area, and provide convenient access to the trail. A trailhead must provide sufficient amenities to service all visitors, yet not be overbuilt to the point that structures detract from the overall trail experience. Ideally, the trailheads should also serve as an introduction to the trail, giving visitors insight into the theme and overall trail experience.

Location

The proposed trailheads were located to make maximum use of existing facilities and potential connections. Regional transportation networks crisscross the area, providing quick and easy access to large groups of potential users. In addition to the large scale automotive transport networks, the Bicycle PA Route S parallels the trail corridor. Bicycle PA is an on-road bicycle trail network which traverses the state along several different routes. Consideration of potential Bicycle PA Route S connections further weighed on the decision for trailhead location. Aside from potential connections, the location of pre-existing facilities played a large role in the determination of trailhead locations. The abandoned Cove Service plaza parking area on the eastern leg of the trail is an example of how existing facilities could be easily converted to serve as a trailhead. The western terminus of the trail is located in close proximity to the town of Breezewood. Aside from providing a various array of amenities, Breezewood is also the crossroads of Route 30/ Lincoln Highway, Interstate Route 70, and the Pennsylvania Turnpike.

Amenities

In addition to serving as the actual jumping-off point for the trail, the trailhead should provide the highest level of amenities along any trail network. Since most trail visitors will travel at least some distance, a trailhead must provide sufficient parking to accommodate all user groups. Hikers and bikers don't usually require special parking facilities, but as popularity of the trail grows, users may travel from ever increasing distances to take advantage of this unique resource. Vacationers who travel long distances to the trail or those that make it a side trip on some longer journey, often travel in the comfort of campers or other type of recreational vehicle. These large vehicles create additional design concerns when considering the turning radii and parking requirements of their given mode of travel. Additionally, as the educational opportunities increase, school groups will take advantage of the resource. Buses bringing students to the trail will require parking and maneuvering amenities similar to those of campers and recreational vehicles. The overall design of the parking facilities should focus on a clean and neat look. Curbing and landscaping should be included, but all aspects of the trailhead should be designed to promote the overall vision of a historical ruin.

Although the majority of a trailhead is focused on the accommodation of automobiles, provision must also be made for the diverse user groups that would be attracted to the completed trail. Equine groups have already expressed a large interest in utilizing the completed trail. Increasing traffic volumes and fencing of local farms have decreased local opportunities for horseback riding. The trailheads must be designed in such a way to accommodate horse trailers and provide the amenities required to sustain the riders and their horses.

Aside from parking, a few basic necessities should be provided at any trailhead. Water and restrooms will satisfy the needs of most trail visitors. The provision of potable water to trail users may be considered the most important amenity along the length of the trail. The lack of drinking water not only limits the scope of potential users, it can also create dangerous situations, where thirsty visitors are forced to drink from potentially polluted streams. Considering the current and expected level of usership for the trail, the location of hand pumps for the provision of drinking water would be the most sensible idea. One pump could be located at either trailhead and should be sufficient enough to serve most needs. With the provision



Site of the abandoned Cove Service Plaza, future Cove Plaza Trailhead location



Western terminus of the trail, future Breezewood Trailhead location.

of “frost free” fixtures the pumps would become features requiring little or no maintenance, which could provide drinking water throughout the year. Before further consideration of this topic, a comprehensive well and water quality study should be completed to assess groundwater quantity and quality.

In addition to the basic provision of drinking water, consideration should be given to the potential of vending services providing light snacks and additional beverage options. The funds generated by this service may prove a valuable resource. However, careful consideration should also be given to the potential impacts created by the addition of vending machines. Aside from the obvious security concerns created by locating vending in remote areas, additional concerns such as increased rubbish, litter and electrical requirements of the machines should be considered before any final decision can be made.

As trail visitors recreate and enjoy the environment, sooner or later natural urges will arise. The occasional deposit of human waste is little cause for environmental concern. However, as usership increases and visitors are focused in trailhead areas, the need for restroom facilities becomes evident. First instinct for location of toilet facilities would be at the two trailheads. However, it has become apparent that when this type of facility is located adjacent to a roadway it quickly becomes the target of vandalism. Location of toilet facilities trailside, at least one-quarter mile from a trail head greatly reduces the incidents of vandalism, while placing the facility at a location where it still serves most users. Additionally, restroom facilities were located to provide limited vehicular access through the use of existing state forest roads.

Provision of toilets in isolated areas greatly limits the types of facilities which can reasonably be sustained. The two most common types of restrooms used in most trail situations are the commonly seen port-a-potty type and more substantial sweet smelling toilet type. The port-a-potty types are the plastic boxed portable toilets most commonly associated with construction sites. Being made of extruded plastic, the port-a-potty types are reasonably cheap to purchase. However, they are designed to be drained and cleaned on a weekly basis by a toilet professional. This type of toilet is also very prone to vandalism and tipping. The more substantial sweet smelling toilet types, are types favored by State and National Parks. Sweet smelling toilets are



Sweet Smelling Toilet being installed.

significantly more expensive to purchase, but after the initial purchase, the sweet smelling toilets require very little expense to maintain. Occasional cleaning can be easily performed by volunteers. This type of facility is also designed to be virtually vandal-proof. Upon consideration of the advantages of the toilet facility options, it becomes apparent that the sweet smelling toilet types would be the most appropriate for location along the trail corridor.

Interpretive Information

Built as a part of the first real highway systems, the trail corridor represents an interesting time in this nation’s history. No matter what condition the trail is presently in, this history shapes the trail experience. From the remnants of the original South Penn rail alignment to the hulking infrastructure left to slowly decay, to dark depths of the abandoned tunnels, this trail tells an important story of the evolution of transportation technology over the past 200 years. The colored history of the trail presents excellent opportunities for the development of an interpretive vision to be applied to all aspects of the trail corridor. The current state of industrial decay evokes a feeling reminiscent of visions of a “Post Apocalyptic America.” The post apocalyptic theme will be carried through to all elements of the trail project. It will

influence the design, materials and message of features from signage to pavilions to trailside sculptural installations.

The inherent value of the surrounding natural environment provides an excellent backdrop for the rich transportation history of the trail corridor, while enhancing the overall trail experience. The natural environment should be reflected in the interpretive signs and displays located throughout the trailhead areas. Introducing environmental and historic concepts at the start of the trail experience will help acclamate visitors to the trail environment and will prepare them for the surreal journey back in time they are about to take.

Interpretive information should be conceived with a number of different levels of concepts and learning. The first level would be focused on the “one-time” visitor and would focus on the broad topics such as the general history and environmental conditions. The next level of interpretation should be focused on the occasional visitor and may include more in-depth topics, such as the changing trail character throughout the seasons. The final level of interpretation should be focused on the avid user, and it should promote interaction between the user, the trail and the environment. An example topic for this level could be a study of the processes involved as the built environment decays and the natural environment consumes its facilities.



Cascadian SST model in action.

The level of interpretation a visitor gains at the trailhead should be part of a cohesive program spaced along the length of the trail. In addition to educational information trailhead signage should provide basic information, such as an overall trail facilities map. The addition of limited commercial advertisements for local lodging, food services or recreational tour services may become an additional funding source.

Trailhead signage should be designed in a way which promotes access and easy understanding. At no time should interpretive signage be designed in such a way that it overshadows the surrounding environment. Its intent is to add to the experience, not dictate the experience.

Security

The remote location of the trail facility makes security of the user groups and trail facilities a constant concern. A walk down the trail today will produce evidence of any number of undesirable activities, from graffiti to the remnants of last weekend's party and bonfire. The same aspects that make the trail so desirable for legal activities make it equally as desirable for illegal activities. It would be impossible to thwart all undesirable activities from occurring along the length of the trail and at the trailheads. The implementation of a few simple measures could prevent or divert the majority of undesirable activities.

Gates and Barriers

The trail was previously a roadway. The current character of the trail still begs to be driven on. Currently, cars are prohibited from entering the trail at either end by the location of jersey barriers in the center of the roadway. The jersey barriers do a fine job of excluding traffic. Unfortunately, once in place they are very difficult to move without the aid of heavy equipment. In a situation similar to the trail corridor, which demands the exclusion of most vehicles and permits access on occasion, jersey barriers become very cumbersome. Their inability to be easily moved often keeps them from being returned after the entrance is opened. The result is at most times anyone can drive their car directly onto the trail.

When the full trailhead plazas are completed, they will contain removable bollards to prohibit unwanted trail access. This type of bollard is commonly used on other trails and institutional situations. The bollards slide into



Damaged livestock type gate.



Newly installed trail gate.



Boulders placed to create barrier.

sleeves cemented into the ground and are padlocked in place. In the case where emergency or maintenance vehicles need access, the padlocks can be unlocked and the bollards removed, allowing easy access to the roadway.

In the interim, other measures must be enacted to prohibit unwanted access and retain easy access when required. The use of several different types of gates was considered. The most commonly used gates for trail purposes are the standard light duty livestock type gate and a heavier duty trail gate. The standard livestock type gates are common fixtures to provide access to trails and private road ways. These gates are cheap, light and easy to install. Unfortunately, they are also quite susceptible to damage caused by ramming. This susceptibility limits their value in extremely isolated cases. The second type of gate, the heavy duty trail gate, is not much more difficult to install and is much more resistant to ramming. These gates are much more expensive, but for the trail corridor seem to be a better choice. An additional feature when selecting gates of either type would be the inclusion of a collar protecting the lock. The collar surrounds the locking mechanism, while allowing access to the keyhole. This prohibits the lock from being cut or otherwise vandalized.

In addition to the provision of gates, other steps may need to be taken to exclude unwanted vehicles from the trail. The temporary gate system needs to be laterally extended to the edges of the roadway to keep cars from driving around. Several jersey barriers set side by side and parallel to the roadbed, would make a cheap structure impassable to autos. The barriers should be spaced in such a way that would still allow hikers, bikers or

horseback riders to pass in between. To purchase jersey barriers for this task would be a relatively cheap undertaking. It may also be possible to reach an agreement with the Turnpike Commission to donate or loan a number of barriers for this task.

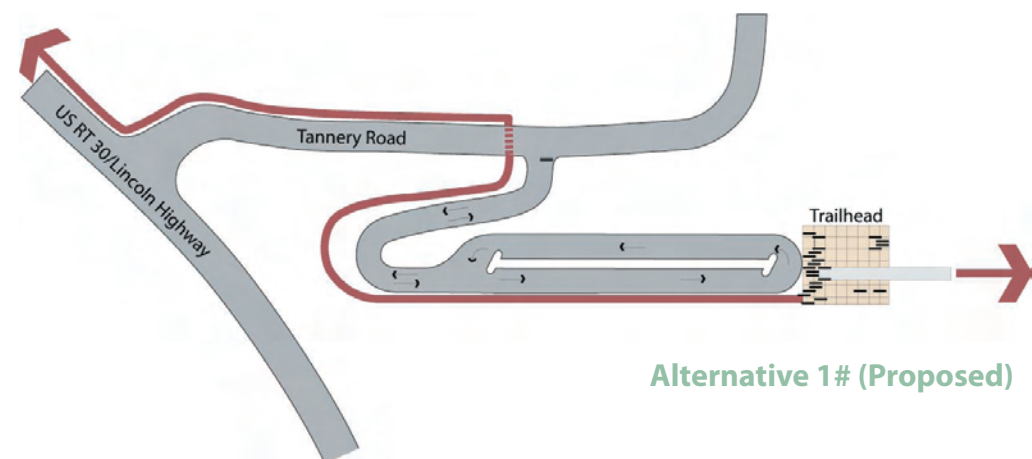
Breezewood Trailhead

The nearby town of Breezewood serves as a hub for regional transportation routes. The Pennsylvania Turnpike, Route 30/Lincoln Highway and Route 70 all converge on this small town. The result is a hive of transportation related service amenities, including various food outlets, gas stations and lodging. The existing services and level of highway access make Breezewood an ideal location for any type of attraction and a great starting point for a trail.

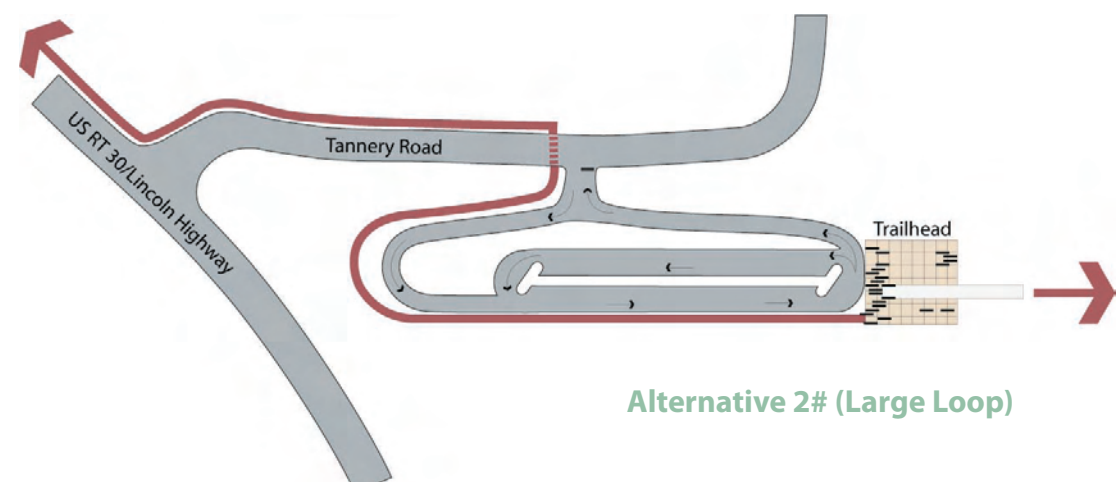
The trail corridor terminates on the edge of Breezewood, where the abandoned roadway crosses Route 30. In the near future the Pennsylvania Turnpike Commission intends to remove the bridge crossing Route 30, making this the absolute terminus of the trail. As part of the agreement with the Turnpike Commission, they have arranged to regrade the area directly surrounding the demolished bridge. The result of the grading activities will be the creation of an access road connecting the trail corridor and nearby Tannery Road. Completion of the Tannery Road access would allow the location of the Breezewood Trail Head in the adjacent section of abandoned roadway.

Additional connections with the town of Breezewood could be aligned in ways to minimize on road travel, yet still allow access to nearby amenities. Extension and connection of the trail system to the town could be complete with the cooperation of adjacent land owners, many of whom have already indicated their support. With the grant of several small trail easements the trail could be extended along a short portion of Tannery Road and Route 30, then continue off road into the heart of Breezewood.

A series of layout options were explored for the creation of vehicular and parking access at the Breezewood trailhead. In all cases, consideration was provided for the ability to accommodate at least 100 parking spaces. In all of the alternatives, the ability exists to accommodate expanding the parking to some extent, should it be deemed necessary in the future. The exact alignment, location and accommodation of facilities will need to be determined through preliminary and final engineering design, when comprehensive site survey information is available. The following is summary of the various alternatives.



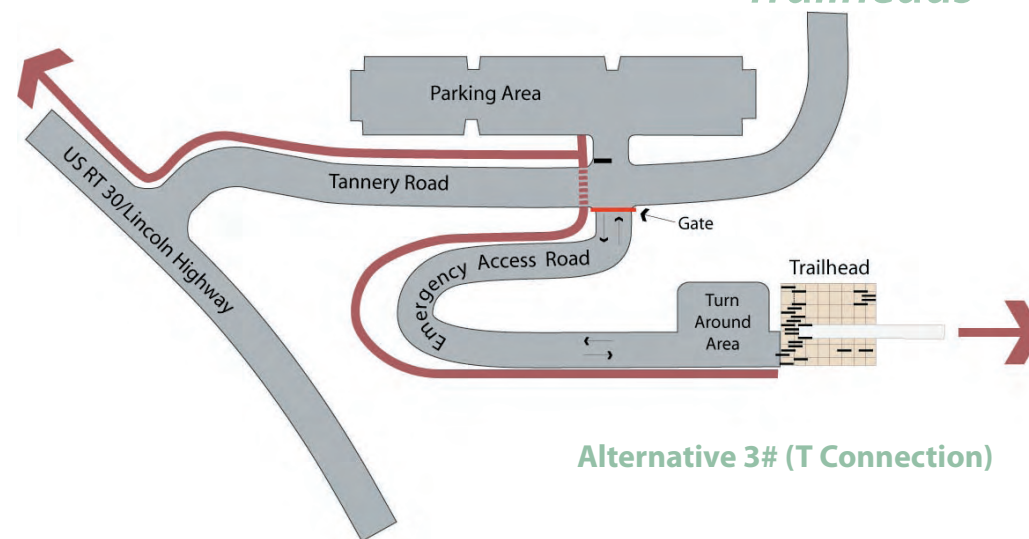
Alternative 1# (Proposed)



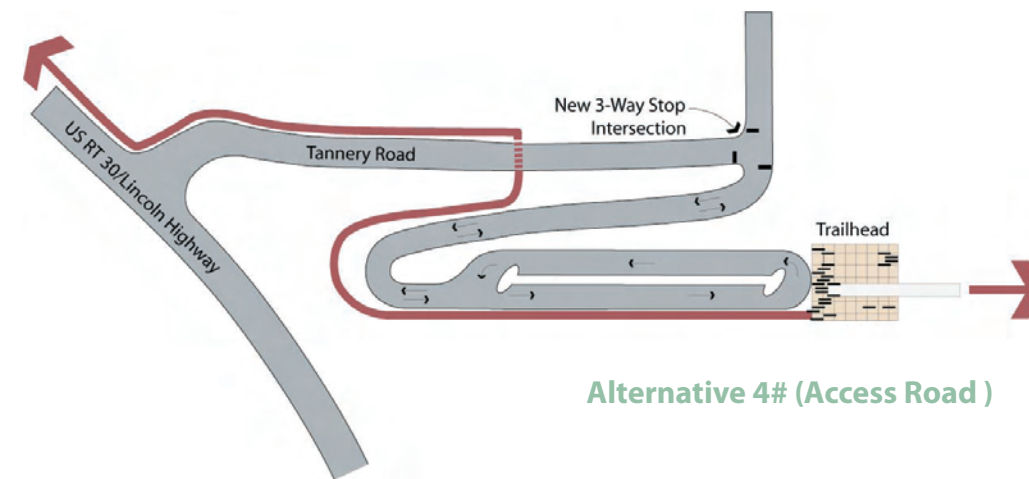
Alternative 2# (Large Loop)

Alternative 1# (Recommended) – This alternative provides access via a new two-lane access driveway. The access driveway would intersect with Tannery Road at its approximate mid-point between its intersection with Route 30 and a significant 90 degree bend, to the east. The access drive would ascend the existing slope located at the edge of the former turnpike roadway and then turn to the east and align with the former eastbound lane of the turnpike. Two bays of parking would be provided in the passing lane areas of both the eastbound and westbound lanes. A one-way circulation pattern would be utilized for the circulation through the parking area, in order to utilize diagonal parking, which increases the amount of parking that can be accommodated and reduces the perpendicular depth needed for the parking bays.

Alternative 2# - This alternative is a variation of Alternative 1#. The access driveway would be located in the same location along Tannery Road as in Alternative 1#. In this case, however, the ascending access driveway would become one-way. The parking layout would remain the same. A new one-way exit driveway would be provided at the eastern end of the parking area, which would descend down,



Alternative 3# (T Connection)



Alternative 4# (Access Road)

to meet the main access point with Tannery Road. This option provides the ability for larger vehicles to enter and exit the parking area, without having to turn-around. This alternative does result in additional grading and impacts to the slope between the parking area and Tannery Road.

Alternative 3# - This alternative creates a longer and more gradually sloped access driveway than in Alternatives 1# and 2#. This is achieved by providing access to the driveway, via a new 3-way intersection that would be located where the current 90 degree bend in Tannery Road exists. The parking area would remain the same as in Alternative 1#. It cannot be determined, based on available data, if a small triangular portion of right-of-way that would be needed in this area to accommodate the proposed intersection is owned by the Southern Alleghenies Conservancy.

Alternative 4# - This alternative is presents a significantly different approach from the others. It proposes to remove all but emergency vehicle access from the original turnpike right-of-way, at this trailhead. Instead, a new parking area would be created on a portion of the existing farm field located across the Tannery Road from the trailhead. This option would require the acquisition of additional land for the parking area. The field is relatively flat and is well suited for accommodating a large parking lot. This alternative could also be considered as a long term option, should additional parking need to be created at this end of the trail and it is determined to be undesirable to further reduce the length of the trail.

In all options an access trail is proposed along the south edge of the parking area. This trail continues to Tannery Road and will provide an on-trail connection for Bicycle PA Route S and amenities located in Breezewood. The on road section of the trail will be located on a newly expanded ten-foot wide shoulder, built to accommodate the trail. Structures at the trailhead will be limited in their extent and design. The only structure currently proposed for the Breezewood Trailhead is a pavilion built from recycled corrugated steel. The pavilion would house several picnic facilities and possibly some type of permanent grill or fire pit structure. The pavilion is designed in a style that is consistent with the vision proposed for the entire trail corridor.

Cove Plaza Trailhead

The Cove Service Plaza was once an important location for travelers to refuel and take a break from the roadway. When the turnpike alignment was adjusted to bypass Ray’s and Sideling Hills, the service plaza was also bypassed. Sometime after its closure, the plaza was stripped of its facilities and allowed to decay. All that remains today is a flush of young vegetation where the building stood and the paving that surrounds the former facility.

The abandoned Cove Service Plaza is ideally located to serve as the trailhead for the eastern terminus of the trail. The road network that once allowed employees to access the plaza still remains in place. The former plaza service road provides easy access to Pump Station Road. A connection to the Sideling Hill Service Plaza, located on the active Turnpike, would allow travelers to access the trail by parking at the service plaza and without having to exit the Turnpike. This connection would be created by the addition of a ten-foot wide multi-use trail located on the expanded shoulder of Pump Station Road. Immediately after crossing under the Turnpike, the trail would turn off of Pump Station road, following the shoulder of a plaza access road



Rendering of interpretive installation at Cove Plaza Trailhead.

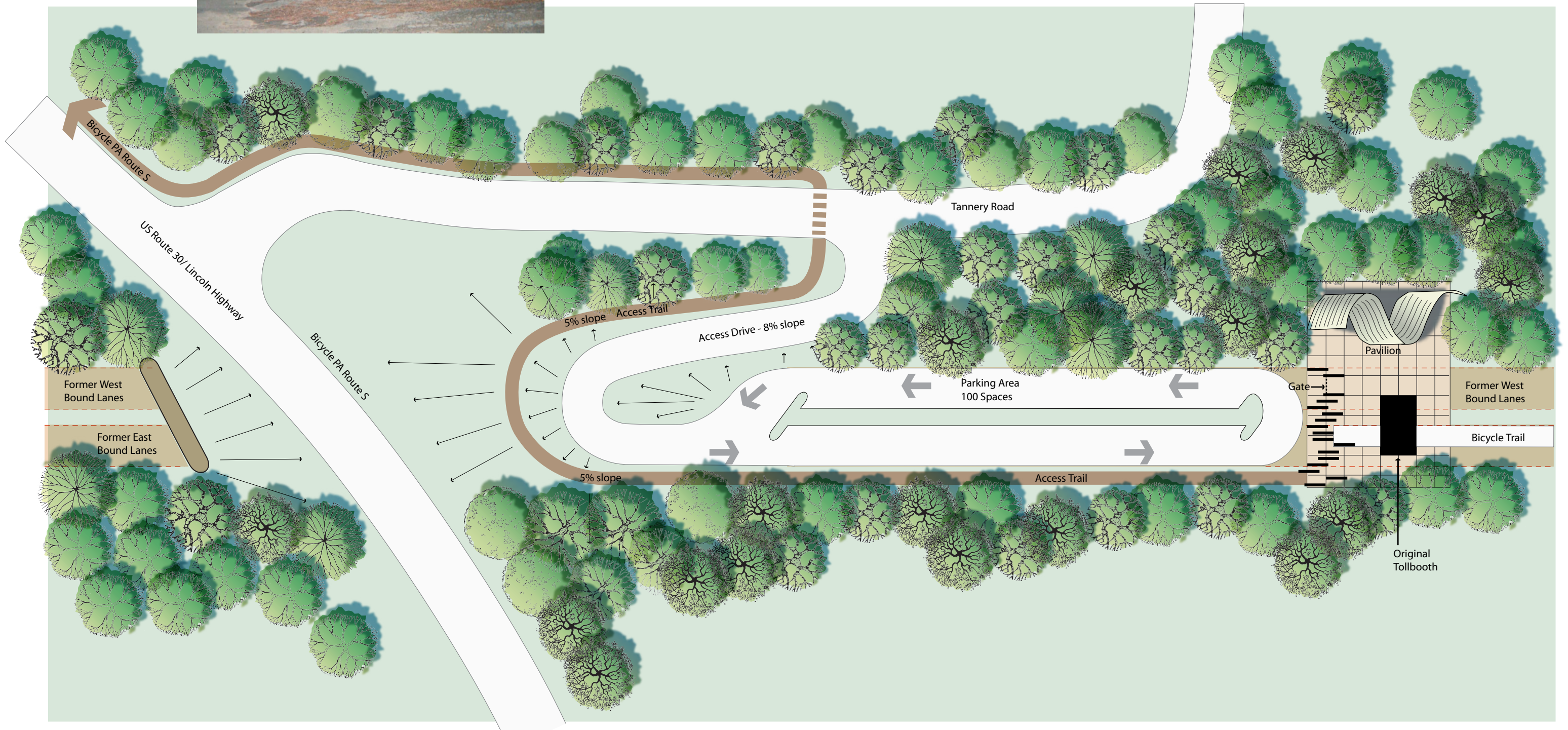
to parking located at Sideling Hill Plaza. Mid-way to Sideling Hill Plaza, along Pump Station Road, is the intersection of North Hess Road. This intersection is the location which Bicycle PA Route S turns off of North Hess Road onto Pump Station Road and would provide a connection between the two trails. This connection would provide a trail route to Hustontown in the east.

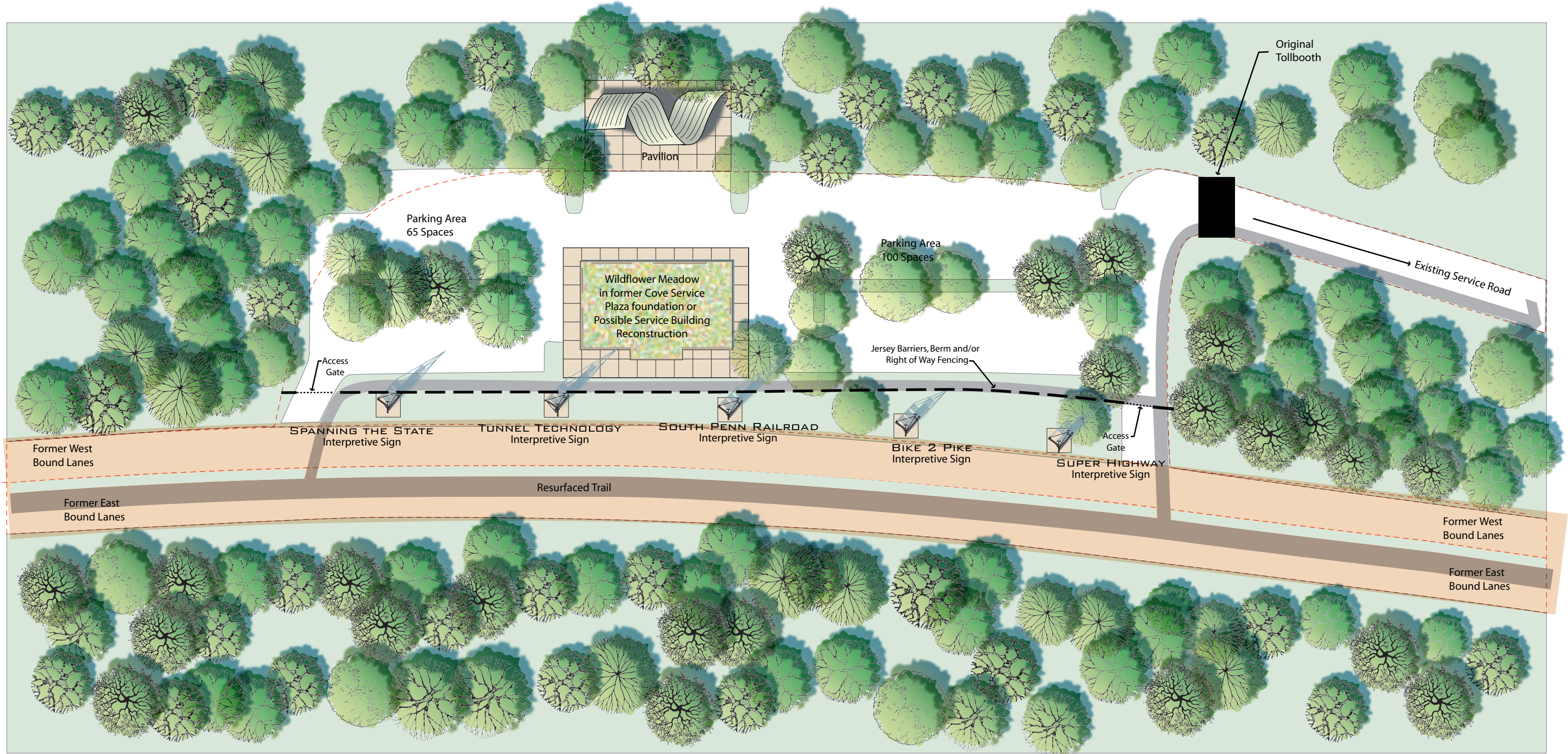
Since the Cove Plaza Trailhead will be located at the abandoned service plaza site, limited construction will be needed to implement this facility. The size of the existing parking areas allows for the creation of approximately 165 parking spaces. This configuration could easily be redesigned to allow for large vehicle parking, without sacrificing too much capacity. A spur trail is designed to leave the main trail, traverse through the parking lot, provide connections and rejoin the main trail route.

The significant history of the Cove Service Plaza makes it a more appropriate location for intensive interpretive displays. The original building

footprint will be cleared of existing vegetation and replanted in a wildflower meadow. The startling contrast between the wildflowers, parking and history will provide visitors a unique reminder of the history and their visit. Several interpretive exhibits will be installed, adjacent to both the spur and main trail routes. The exhibits will be constructed of a collection of roadway and industrial materials. Train rails, guard rails and chain-link fencing will be assembled to support signage spanning the diverse history of the roadway, trail and entire corridor. Once installed, the structures will be allowed to weather and become a cohesive part of the post industrial feel of the trail. A corrugated steel pavilion designed to house picnic facilities is planned for this trailhead. The pavilion is designed to utilized recycled materials and will be very similar to the one to be located at the Breezewood Trailhead.

Several original Turnpike Commission tollbooths exist which could be erected as gateways at the trailheads





Bicycle PA Route S Realignment

The Bicycle PA trail network is an extensive system of on-road bike trails that crisscross the entire state. Route S of the trail network traverses the southern portion of Pennsylvania, connecting to New Jersey in the east and to Ohio in the west. The route is aligned where feasible on rural roads with limited traffic. Unfortunately, the roadway networks in many areas limit the alignment of the trail to roadways that are less than ideal.

In the region of the trail corridor Route S passes through Hustontown taking a circuitous route west towards the trail. It eventually connects with North Hess Road and then turns right to follow Pump Station Road passing just north of the location of the Cove Plaza Trailhead. From this point Route S follows a number of local roads, climbing over Sideling Hill on Mountain House Road. After the descent from Sideling Hill, Route S makes its way to Route 30. It follows Route 30, passing the eastern terminus of the trail, continuing on through Breezewood.

Much of the roads on the current Route S alignment are narrow and undersized for their current rates of traffic, this is especially true of the Route 30 segments. As populations in this area continue to expand, these roadways will become more and more dangerous to travel via bicycle. Realignment of Route S to the trail corridor, through this region would provide a safe and scenic alternative to its current on-road route.

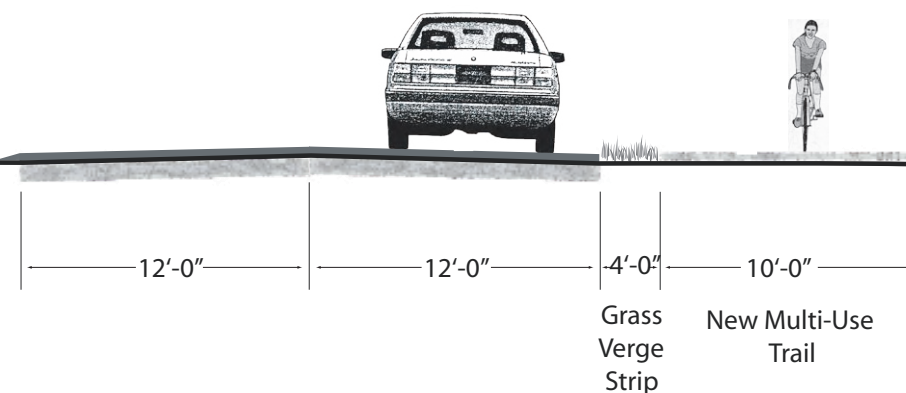
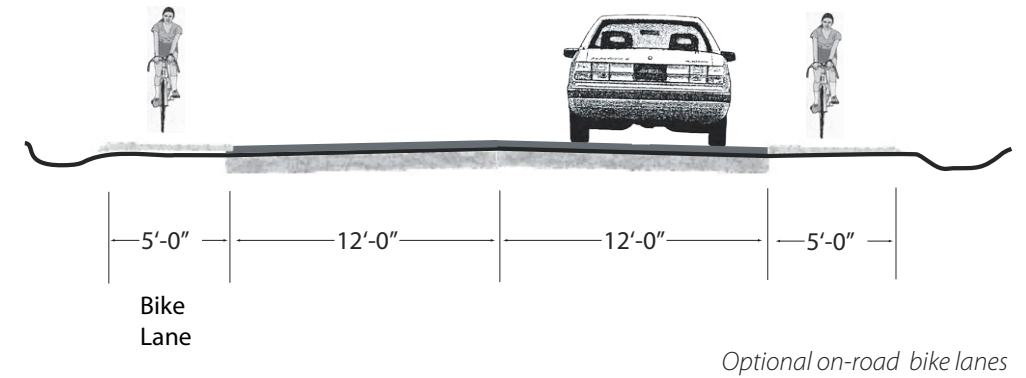
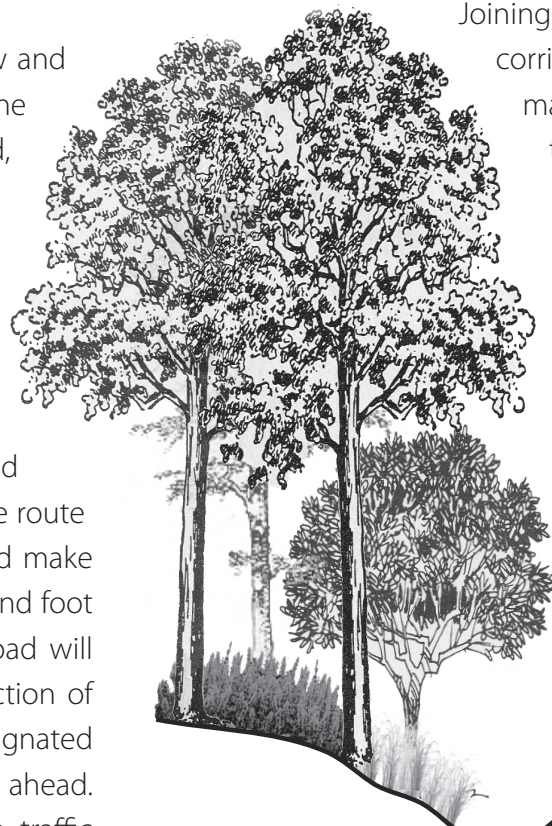
Realignment of a portion of Route S, in addition to limited regional improvements along its length could transform this section of Bicycle PA Route S into an attraction for bicyclists and touring groups. Widening and improvement of shoulders along the route from Hustontown to Pump Station Road would increase safety and make the trail a more desirable route in this area. The increased bicycle and foot traffic created along both Pump Station Road and North Hess Road will require the creation of an enhanced crossing zone at the intersection of these tow roads. A flashing yellow light, increased signage and designated crossing zones will warn approaching motorists of the conditions ahead. To further accommodate the increase in pedestrian and bicycle traffic

Pump Station Road will be widened from the Sideling Hill access road in the north to the Cove Plaza Trailhead access in the south. A ten foot wide multi-use trail constructed on the expanded shoulder should be sufficient to accommodate most users safely.

At the point where the realigned Route S meets the Cove Plaza access road, it will follow the trail west through the two tunnels and onto Breezewood. At the Breezewood Trailhead, Route S would follow the access trail out to Tannery Road. At this point riders could either continue directly out Tannery road to Route 30, rejoining the current Route S alignment, or they could follow the Hotel Connector Trail providing access to the amenities of Breezewood.

Realignment of Bicycle PA Route S will add to the value and experience of the trail corridor. Travelers on Route S may not otherwise be aware of the unique and special experience offered by the trail and its two tunnels.

Joining of the two routes would open the trail corridor to a larger audience and expand the market and opportunities for the completed trail corridor.



Stormwater Management

When the Turnpike was initially built, it contained a sophisticated drainage network to quickly move excess water from the roadway in any rain event. This system typically consisted of numerous drain inlets, culverts and pipes located along the length of the roadway. The existing system for this 8.5 mile segment is comprised of approximately 86 shoulder inlets, 35 median inlets with upstream connecting pipes, and 30 median inlets without upstream connecting pipes. Due to forty years of inactivity and lax maintenance, much of this drainage network has ceased to function efficiently or it has ceased functioning altogether. In many situations this would have little or no effect on a pedestrian/bicycle trail. However, in some instances, around tunnel entrances for instance, improperly functioning drainage systems can cause direct hazards or can contribute to the further degradation of existing structures and facilities.

It is important to note that it would be cost prohibitive and unnecessary to try and remediate all existing drainage problems. A comprehensive evaluation of the existing drainage facilities was performed and recommendations were developed based on their necessity in maintaining the existing drainage network at a level which minimally provides a safe

and navigable trail network and limits heightened degradation of existing facilities and structures.

Field Inventory and Assessment

Inlets - Inlets located in the median can typically be found in the following conditions:

- No grate over an open box.
- Wood skid over open box.
- Roadway material was placed over the inlet. Several inlets have six to twelve inch diameter holes where material fell through the box.

Typically, corrugated metal plates were placed overtop inlets located in the shoulder of the road. Drainage is collected in the inlet; however, the inlet does not function to its full capacity due to the plate overtop the inlet. Two inlets located in the shoulder of the road have jersey barriers placed on top.

Upstream and Downstream Channel Conditions - Several upstream and downstream channels contain leaves and branches. The channel debris blocks flow. In one case, the downstream channel was blocked by debris causing the pipe to be half full of runoff.

Pipes - Storm drainage pipes located in ravines, or if they were part of a closed drainage system, were not viewed. Observed pipes appeared to be in good condition. It is assumed that pipes located within the median were the first structures within the drainage system. These drainage pipes contain roadway material that was used to close the inlet box.

West Side of Sideling Hill Portal - The drainage along the north side of roadway at the west portal of the Sideling Hill Tunnel is ponding in an area varying in width from five to ten feet by 300 feet in length. The four inlets along an 800 foot length in this area are blocked by corrugated metal plates, leaves and branches.

Two inlets located above the tunnel entrance do not have grates. Runoff from the mountainside has eroded a three foot deep hole in the ground adjacent to the access to the basement of the building associated with the tunnel. Over time nature has created its own drainage ditch through the woods. The original stone and concrete channel has washed away. The earthen V-bottom ditch located on the north side of the portal has stream bank erosion varying up to 20 feet in depth. The ditch bottom widens to six feet with a four foot depth. The side slopes are eroded.



Culvert blocked by roadway debris.



Culvert exhibiting channel debris.



An open drainage inlet.

East Side of Sideling Hill Portal - Two inlets located above the tunnel entrance do not have grates. The concrete channel leading to the inlets contain debris, including leaves. The majority of the diversion ditches contain debris, including leaves, tree branches and trees. The runoff from the north side of the mountain is bypassing the earthen diversion ditch, flowing over the steep slope and ponding at the entrance to the portal. The ponding in the winter creates a large area of ice.

West Side of Rays Hill Tunnel Portal - The diversion ditches in this area are functioning properly.

East Side of Rays Hill Tunnel Portal - Runoff is ponding 600 feet east of the Rays Hill Tunnel Portal into an area approximately 50 feet by five to ten feet. An existing inlet in this vicinity captures runoff from the hillside, but it is elevated from roadway therefore not catching any roadway runoff. The pipe leaving the inlet box is below the roadway elevation, and the box could be modified to pick up the roadway drainage.

Minor channel erosion was found in the diversion ditch located on the south side of the east portal. A branch of the diversion ditch contained debris, including leaves and branches. The concrete channel conveying runoff immediately behind the portal wall contains debris. The outfall was not located due to the debris in the channel.

Inside the Tunnels - Inside the tunnels, surface drainage is collected by roadway drainage inlets connected to the center pipe gallery by an eight-inch diameter vitrified clay pipe. The inlets appear to be spaced at approximately 50 foot intervals. A two-inch diameter asbestos cement pipe/duct located on each side of the air duct above the tunnel roadway drains the air duct area. A 12-inch vitrified clay french drain was placed behind the tunnel wall in stone.

Stormwater Management Recommendations

Median inlets operating as part of a downstream conveyance system should have a frame and grate placed on top of the existing box. Median inlets that are the first structure in the drainage system should be blocked to prevent drainage from entering the inlet and the surrounding ground

brought up to the elevation adjacent to the inlet.

The majority of the shoulder inlets are covered with corrugated metal plates. These inlets are functioning with the corrugated metal plates overtop, however the corrugated metal plates appear somewhat unsightly. The shoulder inlets along the north side of the west portal to the Rays Hill tunnel should have the corrugated metal plates removed and the ditch cleaned to prevent ponding along the road. The two shoulder inlets located east of the portal to the Sideling Hill tunnel with jersey barriers on top should be removed.

Currently, inlets collecting runoff from behind the portal walls located above the tunnel entrances do not have grates. Grates should be placed overtop the inlet box.

An existing inlet located 600 feet east of the Sideling Hill tunnel captures runoff from the hillside but is elevated from roadway. This inlet box could be modified to pick up the roadway drainage which is currently ponding in this area.

Existing channels containing debris should be cleaned to improve runoff conveyance.



Another example of a drainage culvert choked by debris.



A spring area exhibiting poor drainage.

Tunnels

Ray's Hill and Sideling Hill tunnels represent the most unique aspects of the trail corridor; the ability to travel by foot or bicycle through a mountain in a tunnel that was intended for automobiles creates a truly one of a kind experience. When the roadway was still a portion of the active Turnpike, the two tunnels receive periodic preventative maintenance to ensure safety and longevity. Since their decommissioning, the structures have had very limited maintenance beyond sporadic inspections. Despite the years of neglect, the tunnels are in remarkably good condition; a testament to the quality construction employed in the original design of the Turnpike. Years of seepage and ice, however, have not allowed the tunnels to weather the years completely unscathed. In order for the tunnels to be opened once again to the public, and to ensure for the future longevity, they will require stabilization and conservation repairs, as well as a commitment for their long term maintenance and management.

Assessment

On December 15 and 16, 2004, a team of engineers conducted a general visual inspection of the both the Ray's Hill and Sideling Hill Tunnels. The inspections included assessment of structural elements including the walls, ceilings, air plenums, portal control rooms, abutments, wing walls and girders. The engineers performed visual inspections on the readily accessible portions



The eastern portal of Ray's Hill Tunnel before a conditions evaluation in 1938.



A portion of cracked ceiling in Ray's Hill Tunnel

of the tunnels and employed the use of a bucket truck to provide access and evaluate the most inaccessible portions of the structures. All concrete surfaces were inspected for delaminations, spalls, cracks, efflorescence, bulged areas, and active leaks.

Sideling Hill Tunnel - The tunnel is generally in fair to good condition. As expected, there are numerous delaminated sections on the walls and ceilings that are typical of all older tunnels. This condition is typically the result of water infiltration and/or subsequent freeze/thaw actions. Active leakage is evident in various locations throughout the tunnel.

Both facades have moderate spalls with exposed rebar, as well as minor cracking and efflorescence. Efflorescence refers to the dissolving and subsequent deposition of minerals on interior surfaces. Inside the portal on the east end the stair to the control room has rusted through and collapsed.

The air plenums are in good condition with a few minor transverse cracks in the arch and minor spalls with one minor longitudinal crack noted at the crown. The hanger rods observed near the ends of the air plenum appear to be stainless steel and are typically in good condition. A couple of rods that were replaced show signs of moderate rust and deterioration. At the East end mud has flowed into the plenum and in some areas is nearly a foot thick. The leaks observed at roadway level have propagated from the air plenum.

Most severe leaks stem from broken or unattached pipes, previously used to carry the water into the drainage system. Holes were previously core drilled into the concrete where a leak had developed. Other minor leaks were noted at some joints.

At roadway level, the concrete walls typically exhibit some full height minor cracking. Moderate horizontal cracking was observed in both the north and south walls about mid-height and in the chamfer towards the middle of the tunnel. At one location the wall has bulged out at the mid height crack. Efflorescence was noted with many of the cracks and at the line of the chamfer. Line of chamfer refers to the joints where the tunnel walls meet the ceiling. At each end of the tunnel where the temperature range fluctuates and the freeze/thaw cycle is harsh the concrete is delaminated and many spalls are prevalent on the walls with exposed reinforcing steel. The ceiling has minor cracking and numerous shallow spalls in the center of the tunnel and around the vent openings. There seems to be insufficient cover over the rebar grid in the ceiling causing the concrete to pop off in the center of the tunnel. The deterioration in the ceiling and around the vents increases as you move from East to West in the tunnel. Approximately 2% of the underside of the ceiling area is spalled, 5% is delaminated and 50% of the vent openings have spalls around them.



Large amounts of ice can form during the winter months obstructing the tunnels.

Rays Hill Tunnel -The tunnel is generally in fair to good condition. There are numerous delaminated sections on the walls and ceilings that are typical throughout the tunnel. This condition is typically the result of water infiltration and subsequent freeze/thaw actions. Active leakage is evident in various locations throughout the tunnel.

Both facades have minor spalls with exposed rebar, as well as minor cracking and efflorescence. The air plenums are in good condition with a few minor transverse cracks in the arch and minor spalls. The hanger rods observed near the ends of the air plenum appear to be stainless steel and are typically in good condition. However, many of the hanger rods observed were replaced and have a moderate amount of rust buildup and deterioration. Minor leaks exist at various locations along the length.

In the tunnel the concrete walls exhibit some minor vertical cracking with some minor efflorescence. Horizontal cracking was observed in both the north and south walls about mid-height near the east end and towards the middle of the tunnel. At each end of the tunnel the concrete is delaminated and many spalls are prevalent on the walls with exposed reinforcing steel. The ceiling has minor cracking and numerous shallow spalls in the center of the tunnel and around the vent openings. A few large spalls exist on the underside of the ceiling. A few delaminated areas around the vents are ready to fall. In several of the expansion joints the water stop has failed and only one has an existing leak.



Delamination and Spalling.

Recommendations

These recommendations are based on the cursory two-day general site visit. An in-depth inspection of the two tunnels should be completed prior to any repair work done, to quantify and locate any defects. This will aid in developing any repair details and quantify and locate other necessary defects.

Sideling Hill - The following items are potential safety hazards to persons and should be addressed prior to opening the tunnel to pedestrians and bicyclists.

Limit access to the control rooms at each portal end to reduce liability due to safety hazards. Entrances should be locked. Access to the air plenum is through these rooms, therefore controlled access needs to be maintained for routine maintenance and inspections.

To prolong the life of the structure, the following recommendations should be implemented.

- The existing pipe carrying leaks to existing drainage system should be reconnected. Additional piping should be added where necessary to direct leakage flow to existing drainage system. This recommendation assumes that the existing drainage system is still operational and has no problems. An in-depth inspection needs to be undertaken to validate the status of the existing drainage conveyance system.
- All spalled areas in the ceiling and walls at roadway level should be cleaned and sealed/repared to protect the integrity of the reinforcing steel in the walls. The ceiling spalls are the greatest safety issue, where concrete may fall onto to the tunnel floor.
- All of the missing and damaged tunnel ceiling slab hangers should be replaced with stainless steel or galvanized hangers above the ceiling slab, within the air plenum.

The horizontal cracking in the walls should eventually be injected where the crack width is greater than 1/8". Suspect areas should be monitored for increased width and/or movement of the wall. This should be part of a greater, overall routine monitoring program for each tunnel.

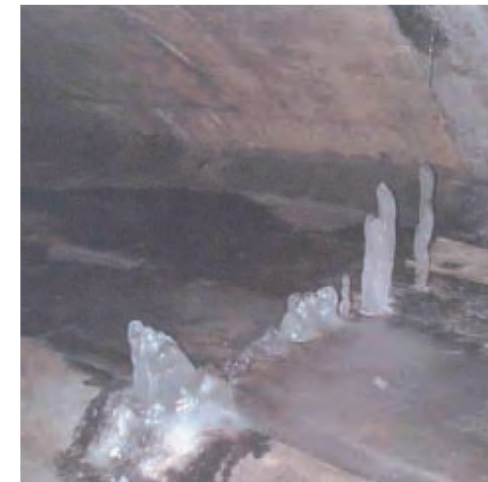
Rays Hill - The following items are potential safety hazards to persons and should be addressed prior to opening the tunnel to pedestrians and bicyclists.

- Limit access to the control rooms at each portal end to reduce liability due to safety hazards. Entrances should be locked. Access to the air plenum is through these rooms therefore they need to remain open to certain people.
- To prolong the life of the structure the following recommendations should be implemented.
- Reconnect existing pipe carrying leaks to existing drainage system. Add additional piping where necessary to direct leakage flow to existing drainage system. This assumes that the existing drainage system is still operational and has no problems.
- Clean and seal/repair all spalled areas in the ceiling and walls at roadway level to protect the integrity of the reinforcing steel in the walls. The ceiling spalls are more of a safety issue, where concrete may fall.
- Replace missing and damaged hangers with stainless steel or galvanized hangers above the ceiling slab.

The horizontal cracking in the walls should eventually be injected where the crack width is greater than 1/8". Suspect areas should be monitored for increased width and/or movement of the wall.



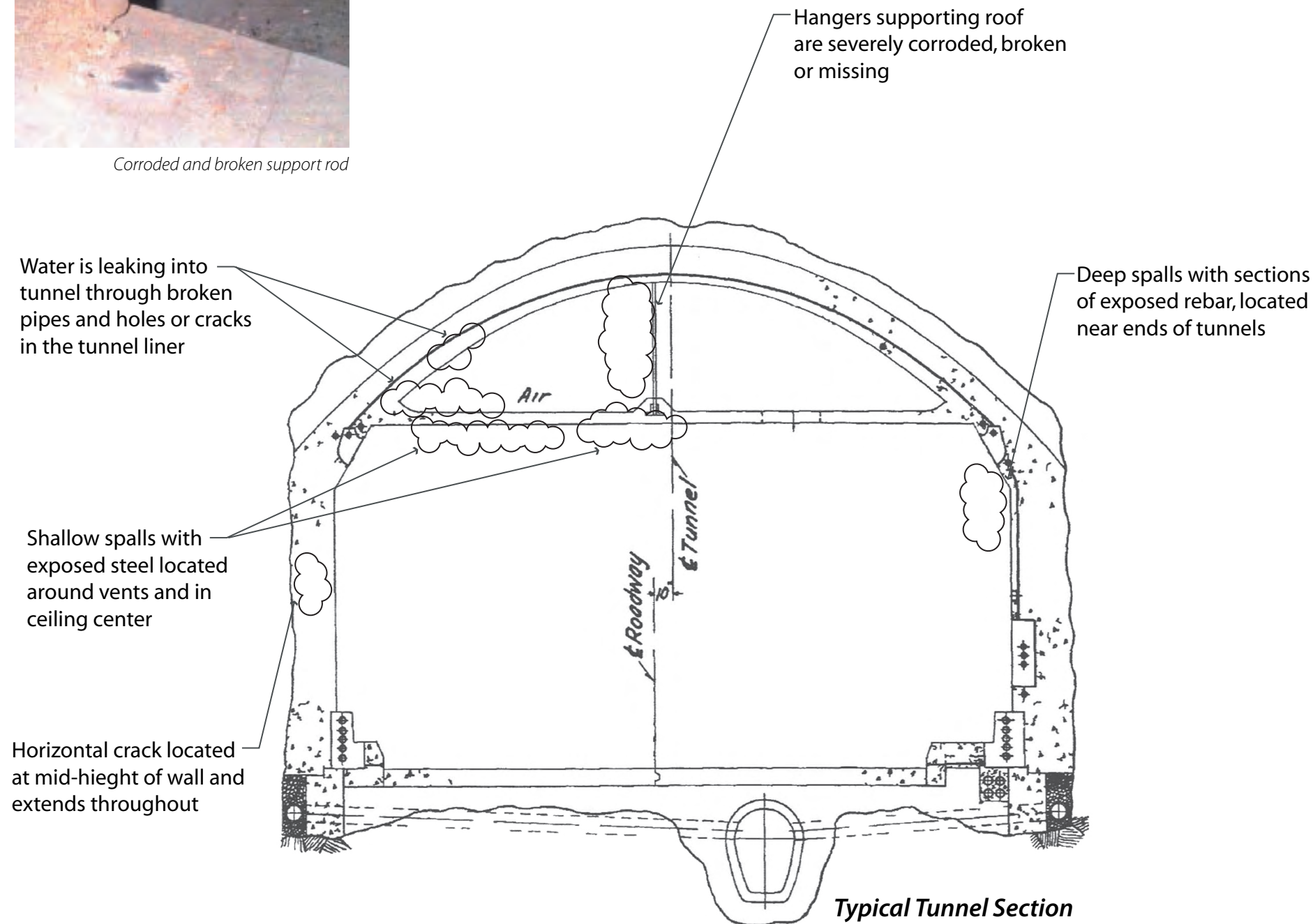
Corroded and broken support rod



Water infiltration in ceiling level



Ceiling spall and exposed rebar around air vent



Recommendations

Hangers

- Replace and/or Repair broken missing hangers with Stainless Steel hangers

Water Leakage

- Reconnect, attach, install new piping to contain the existing leaks and connect to existing drainage system

Cracks

- Cracks greater than 1/8" should be injected with an epoxy resin and sealed with an epoxy sealer

Shallow Spalls

- Remove any loose and unsound concrete,
- Sawcut around spall, clean area and replace with a polymer mortar
- Coat exposed bars with an anti-corrosion agent

Deep Spalls

- Remove loose and unsound concrete
- Sawcut spall
- Clean area and chip concrete away from exposed bars
- Coat exposed bars with an anti-corrosion agent
- Replace removed material with plasticized concrete

Bridges

When the Turnpike was originally built the construction of hundreds of bridges allowed the Turnpike to achieve high speed curves on a continuous and uninterrupted route. Like the roadway and tunnels, the bridges require periodic maintenance and inspection to keep them functioning. Perhaps more important than the preservation of their function, the periodic inspection and maintenance ensures that minor flaws don't lead to large failures or even bridge collapse.

On December 15 and 16, 2004, a team of engineers conducted a general, visual inspection of the two bridge structures located along the abandoned section of roadway. Both structures served the entire width of the original Turnpike and were built to span local roadways. The inspections of these structures included an assessment of structural elements, including the walls, abutments, wing walls and girders. All concrete surfaces were inspected for delaminations, spalls, cracks, efflorescence, bulged areas, and active leaks.

Bridge over Oregon Road

This bridge is in fair to good condition. The most prevalent defect is the presence of efflorescence propagating from the cracks on all three sides of the concrete beams, most likely from water seeping down from the roadway above. There is a minor spall, with exposed rebar, on the underside of the concrete deck. The expansion joint running at the center of the bridge is heavily deteriorated along the underside of the deck, with built up efflorescence, and there are signs of moderate deterioration extending the



A small concrete arch culvert and a T-beam bridge between Ray's Hill and Sideling Hill Tunnels.

entire height of the east and west abutment wall.

The wing walls are in good conditions with the exception of two large spalls and other minor defects. A large horizontal crack, approximately seven feet above the roadway, on the west abutment, starts at the wing wall and extends to the expansion joint.

Bridge over Mountain Chapel Road

This bridge is in fair to good condition, exhibiting minor vertical cracks with built up efflorescence in both abutment walls. A minor horizontal crack exists in the east and west abutment walls, approximately mid height, spanning between both wing walls. The concrete beams have minor cracking with efflorescence on all three exposed sides. The first beam, on the south side, has a spall possibly due to impact damage. The expansion joint in the underside of the deck is severely spalled on both sides and is deteriorated. The wing walls are in good condition with only minor defects present and one spall.

Recommendations

In consideration of the information obtained during the surveys, both bridges are in sufficient condition to allow pedestrian and bicycle travel, with occasional vehicular traffic. No remediation is required at this time, however periodic re-inspections should be conducted.



The same structures as they stand today.



The structure carrying the Turnpike over Route 30 at breezewood while under construction.



Conditions of the above structure prior to demolition.



Post-demolition as it exists today

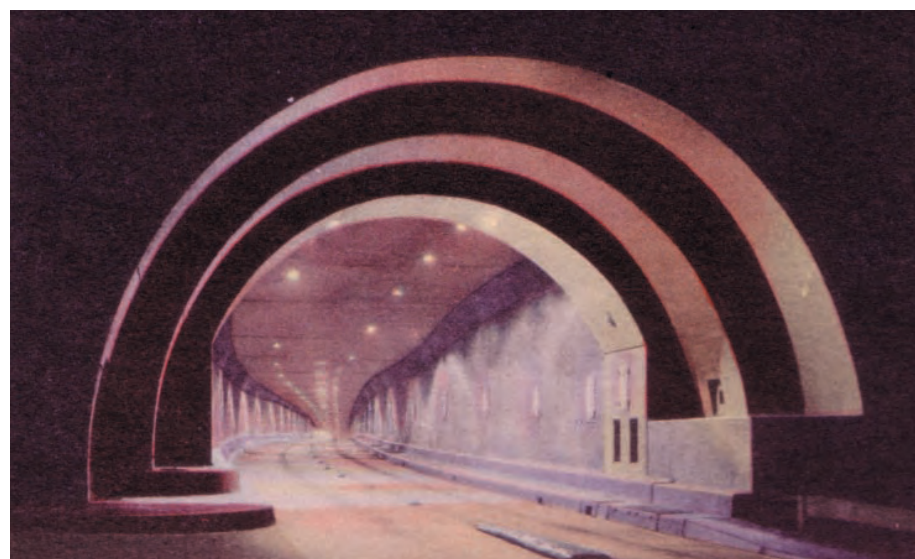
Lighting

Ray's Hill and Sideling Hill Tunnels are the two landmark features of the trail corridor. Traversing their length presents a truly unique and intriguing experience to all who make the journey. As trail ridership increases, the consuming darkness of the tunnels is potentially a serious hazard. There is a need to provide light, at a level reasonable to create a safe environment, but at a level low enough to retain the special experience found by the darkness within.

Service Connections

When the Turnpike still utilized this alignment, power flowed via utility lines lighting the roadway and powering the tunnel facilities. After its abandonment, the local utility companies removed transmission lines to discourage unintentional injuries. Research determined that the two tunnels are located within the separate service areas served by two different service providers. Contact was established with each utility to discuss the feasibility of providing electrical service to each tunnel.

Either wind or solar sources could be determined to be viable sources for energy supply for the proposed lighting systems. Based on the anticipated energy demands, it is likely that such sources would be viable. At the level of actual final design, when exact system demand can be established, alternative supply designs should be explored.



Vintage rendering of tunnel lighting shortly after construction.

Ray's Hill Tunnel - Ray's Hill Tunnel is located within the service territory of Bedford Rural Electric Cooperative. A representative of the electric cooperative indicated that Bedford Rural maintains a 12.4 kV overhead utility line, located within 1,000 feet of the tunnel's western portal. The close proximity of this line would allow Bedford Rural to provide 120/240V, 1-phase service to Ray's Hill Tunnel free of charge.

Sideling Hill Tunnel - Sideling Hill Tunnel is located within the service area of Allegheny Power. Allegheny Power deployed a field engineer to survey the location of their existing overhead 12.4kV utility line. The field engineer determined that the existing Allegheny Power line is located approximately 4,500 feet from Sideling Hill's east portal. Allegheny Power agreed to the extension and connection of the existing 120/240V, 1-phase electric service for a \$21,000 fee.

Lighting Options

Three different lighting alternatives were considered to explore the delicate balance of safety, experience, operating and installation costs. Two of the scenarios utilized traditional high pressure sodium fixtures. High pressure sodium fixtures are the types commonly used to light the exteriors of buildings. They provide a yellowish tinted light, with a high level of visibility. They have a medium/long life span and use a medium amount of power. The scenarios differed in their fixture spacing. The third scenario utilizes new light emitting diode (LED) technology. LEDs have a very long life span and produce a unique white light, while requiring very little power. Details for each scenario and diagrams of lighting extents can be found on the Lighting Extents Diagrams. Lighting extent is measured in footcandles (fc). The International Electric Standards recommend the provision of 0.5 fc where security is not a concern and 0.5 to 2.0 fc when security is an issue. A rule of thumb for the comparison of fcs to ambient light is, 0.01 fc is equivalent to brightly lit moonlight. It was determined that this level of light, the moon lit evening, would provide the best balance of safety, cost and experience.

Scenario A - Scenario A explores the use of high pressure sodium fixtures, mounted 10' above the trail pavement, at 100' intervals. This scenario



Peering out from inside Sideling Hill Tunnel.

would require the installation of 94 total fixtures, 26 in Ray's Hill and 68 in Sideling Hill. This would provide a minimum lighting extent of 0.3 fc in the darkest locations between fixtures. The extent of lighting explored under this scenario would completely remove any dark spots within the tunnels, detracting from their experience. Total installation cost for this scenario is the highest of the three considered at \$111,960 for Ray's Hill and \$423,789 for Sideling Hill (see cost estimate for detail). In addition to the installation cost being the highest, the annual operating expense for this scenario is the highest. On annual basis it would cost \$1,778.40 to operate Ray's Hill and \$4,651.20 to operate Sideling Hill, or \$6,439.60 to operate both tunnels annually. This cost does not include the occasional replacement of bulbs and fixtures.

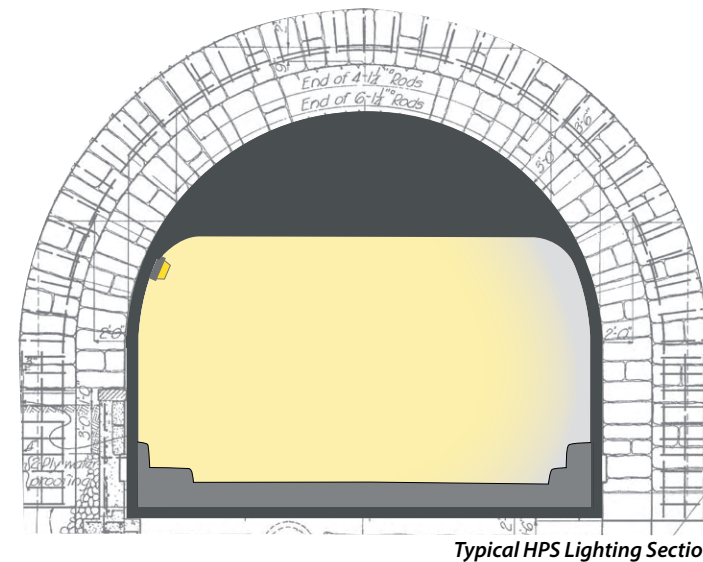
Scenario B - Scenario B is based on scenario A, however fixture placements are spaced out to 200' intervals and reduced by one-half. Fixtures in scenario B would again be mounted 10' above the trail. The spacing determined by this scenario would require the installation of 55 total fixtures, 15 in Ray's Hill and 40 in Sideling Hill. Fixtures placed at this distance would provide a minimum light level of 0.13 fc. This light level is still considerably higher than the moonlit evening. Installation cost for scenario B total \$508,075,

breaking down to \$88,606 for Ray's Hill and \$419,469 for Sideling Hill. Annual operating costs for scenario B would total \$3,798.00, \$1,062.00 for Ray's Hill and \$2,736.00 for Sideling Hill. This cost does not include the occasional replacement of fixtures.

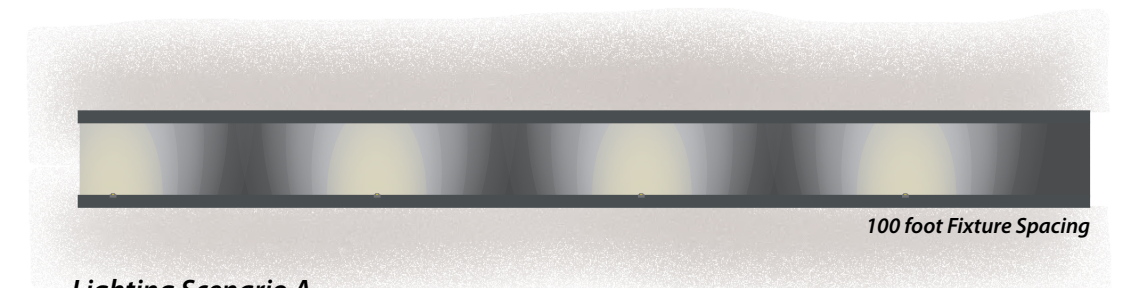
Scenario C - Scenario C explores the use of the relatively new technology found in light emitting diodes. White light emitting diodes (LED) were first developed in the mid 1990s. Since then, their development has been very rapid. They are presently suitable for applications where low light levels are appropriate, such as decorative pathway lighting. LEDs are also often utilized due to their very low energy requirements. Scenario C investigated the lighting extents provided by trail level LEDs on 70' centers. This scheme would provide a minimum of 0.4 fc. Still above the goal of a moonlit evening, but assumed to be a suitable balance of the established lighting criteria. This fixture space would require the instillation of 139 total fixtures, 37 in Ray's Hill and 97 in Sideling Hill. Instillation costs for scenario C would be approximately \$57,557 for Ray's Hill and \$204,487 for Sideling Hill, or \$262,044 for both tunnels combined. Annual operating costs are greatly reduced with LED fixtures. Ray's Hill Tunnel would cost approximately \$26.64 per year and Sideling Hill Tunnel would cost \$69.84 to light on an annual basis, or \$96.48 annually for both tunnels.

Recommendations

Upon consideration of all aspects of the three lighting scenarios, it is determined that Scenario C – LED fixtures, is the most suited for the lighting of Ray's Hill and Sideling Hill Tunnels. This scenario finds the best balance of safety, while retaining the darkened tunnel experience. Additionally, this scenario has the cheapest installation costs. Perhaps the most important factor supporting Scenario C is the low annual cost to provide power. The employment of LED fixtures over the High Pressure Sodium fixtures would provide an annual savings of \$3,701.52 or \$6,343.12 respectively.



Typical HPS Lighting Section

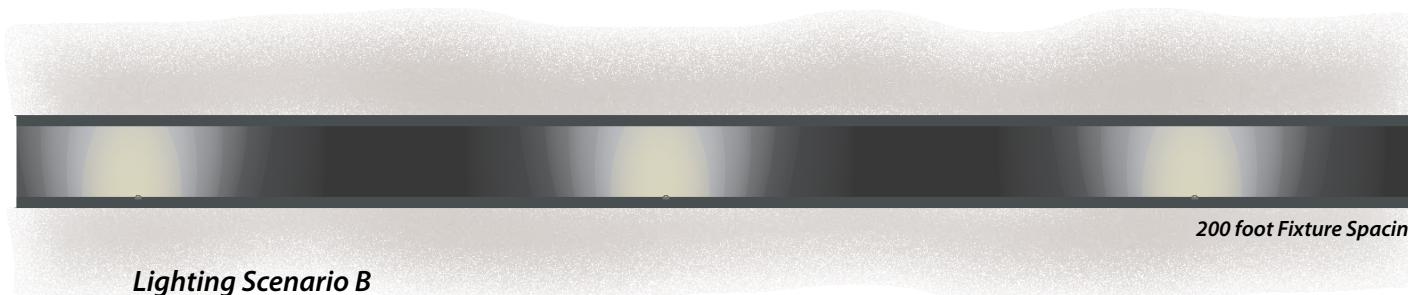


100 foot Fixture Spacing

Lighting Scenario A

High Pressure Sodium Fixtures at 100 Foot Intervals

- Wall mounted High Pressure Sodium luminaire, mounted 10' above trail pavement
- Lamp: 150W clear HPS
- Wattage 190W
- Lamp Life: 24,000 hours
- Provides a minimum of 0.3 footcandles (0.01 is equivalent to moonlight)
- 26 Luminaries required for Ray's Hill Tunnel
- 68 Luminaries required for Sideling Hill Tunnel



200 foot Fixture Spacing

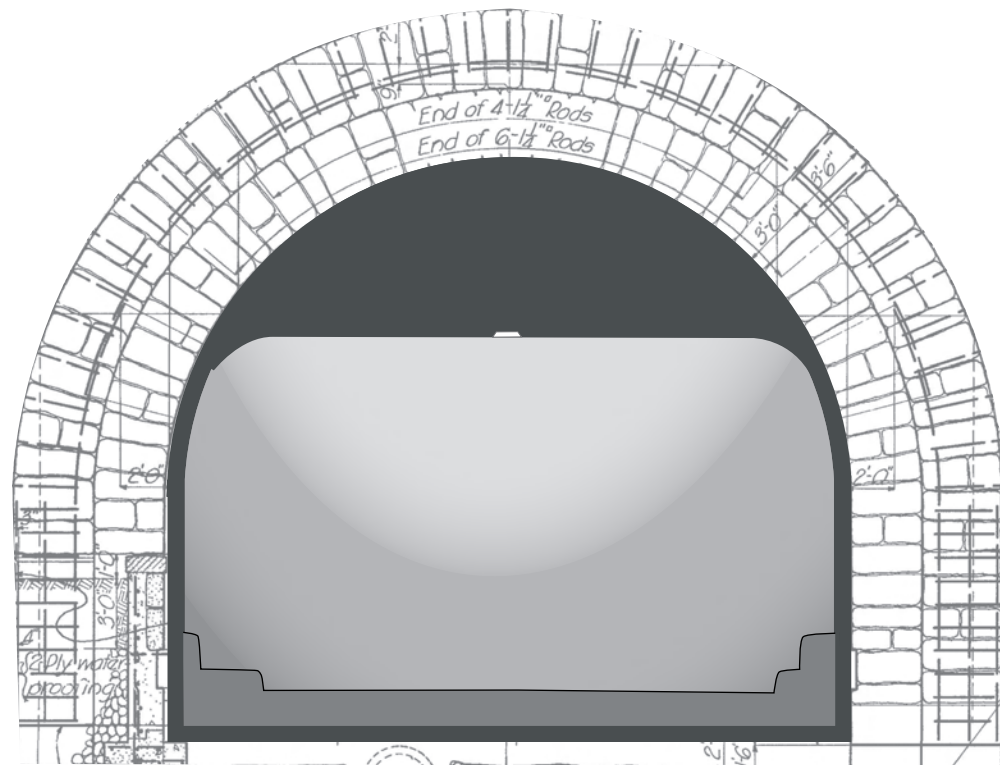
Lighting Scenario B

High Pressure Sodium Fixtures at 200 Foot Intervals

- Wall mounted High Pressure Sodium luminaire, mounted 10' above trail pavement
- Lamp: 150W clear HPS
- Wattage 190W
- Lamp Life: 24,000 hours
- Allows for areas of total darkness
- 15 Luminaries required for Ray's Hill Tunnel
- 40 Luminaries required for Sideling Hill Tunnel



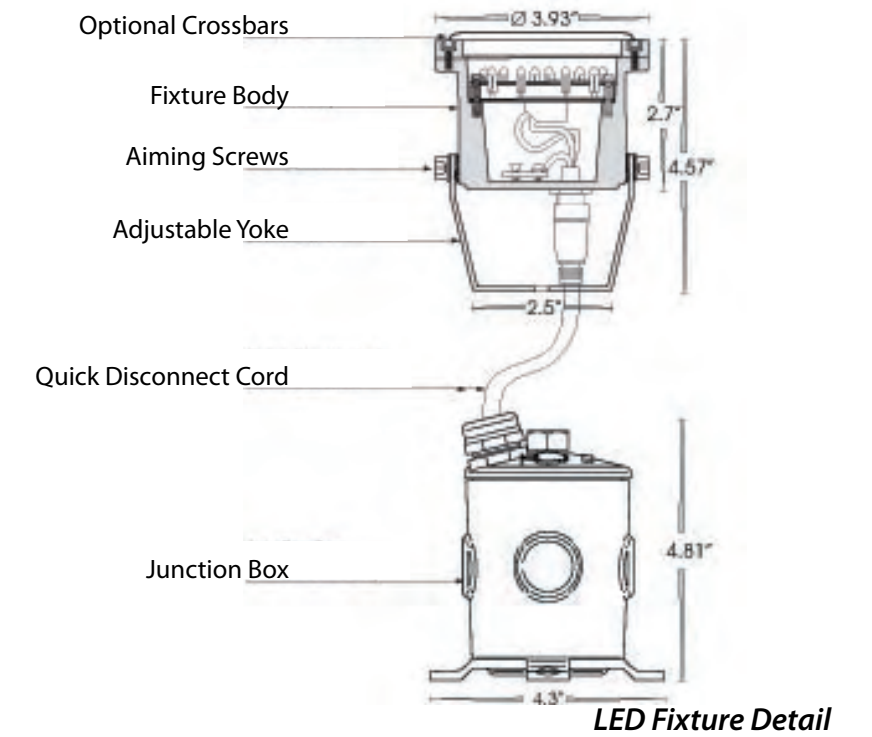
Typical HPS Fixture



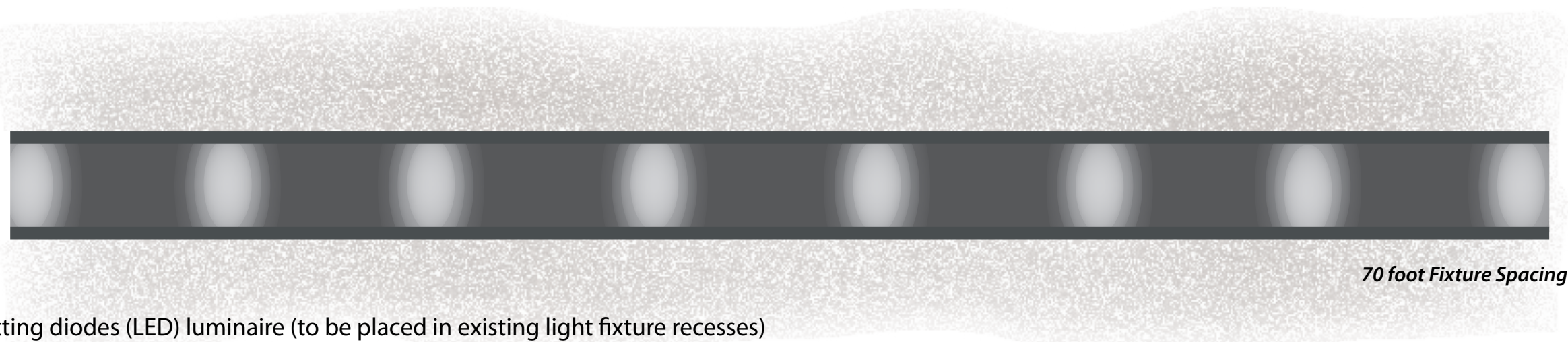
Typical LED Lighting Section



LED Fixture



LED Fixture Detail



70 foot Fixture Spacing

Lighting Scenario C

LED Fixtures at 70 Foot Intervals

- Ceiling-mounted white light emitting diodes (LED) luminaire (to be placed in existing light fixture recesses)
- Lamp: 20 high output LEDs
- Wattage 2W
- Lamp Life: 10,000 hours
- Provides a minimum of 0.1 footcandles (0.01 is equivalent to moonlight)
- 37 Luminaries required for Ray's Hill Tunnel
- 97 Luminaries required for Sideling Hill Tunnel

Environmental Habitat Review

The environment habitat includes all surrounding natural features. The conflict created by the environment surrounding the trail corridor and the trail itself is one of the most unique features of the entire corridor and remains in a relatively undisturbed state. With minimal maintenance the health of the environment surrounding the trail can be maintained, sustained and improved and could serve as an excellent educational resource.

Surrounding Natural Resources

The terrain of the trail itself is relatively flat, but does slope gradually with some areas with more significant topographic changes, hence the inclusion of the two tunnels along the corridor. Ray's Hill Tunnel is located on the border between Bedford and Fulton Counties and Sideling Hill Tunnel is further east, within Fulton County.

The trail corridor is located in the Appalachian Mountain Section of the Ridge and Valley Physiographic Province; evidence of geology can be viewed on the rock walls at the western entrance of the Sideling Hill Tunnel. The project area is mostly covered by forest and is sparsely developed, including rural residential and agricultural sites at each end and a residential area called Valley Hi, which is located between the eastern entrance of Ray's Hill Tunnel and the western boundary for Buchanan State Forest.

Buchanan State Forest

Buchanan State Forest is located surrounding most of the trail within Fulton County. This area is used by the public, primarily for hunting, hiking, mountain biking, and backcountry camping. According to the State Forester, Buchanan State Forest is actively managed and most of it is currently in the "second growth" phase of forest development. This phase is mostly comprised of diverse stands of young trees that are commonly between 25 and 30-years old. Forest growth of Buchanan State Forest resembles the tree growth that covers much of the trail's right-of-way, outside of the paved areas. Trees common to these areas include various oaks (red, white, chestnut, black, and scarlet), maples (sugar and red), birch, tulip poplar, white pine, Scotch pine, eastern red cedar, and black locust.

Wildlife

Wildlife that could potentially be viewed by trail users might include deer, bear, coyote, bobcat, raccoon, opossum, groundhog, wild turkey, ruffed grouse, American crow, cottontail rabbit, gray squirrel, red squirrel, and chipmunk; hunting and management for these species is governed by the Pennsylvania Game Commission (PGC). According to a Wildlife Habitat Management Plan prepared by Wildlife Biologists of the PGC, this trail area is most unique because it features the two tunnels, which are used by bats. Species observed on the property included: small-footed bat, northern long-eared bat, pipistrelles, little brown bat, and big brown bat. Potential species of concern present include small-footed bat, northern long-eared bat, and silver-haired bat, which are targeted for management.

Watersheds

Watershed drainage areas in Fulton County, east of the Ray's Hill Tunnel include Valley Hi Reservoir, Oregon Creek, and Wooden Bridge Creek, all of which feed into Sideling Hill Creek, in the Potomac River Drainage Basin. These are free stone streams that are protected for their Exceptional Value (EV) designation, as described in Chapter 93 of the PA Code, Section 93.4b. In Bedford County, the project area drains to Tub Mill Run, which is designated for Warm Water Fishes (WWF), and eventually feeds into the Raystown Branch of the Juniata River, in the Susquehanna River Drainage Basin.

Wetlands

Wetland resources within the project area are quite rare. This is due to the hilly terrain and natural features that permit adequate drainage. Nonetheless, two unique areas were located during the field view. One was a "roadside wetland", located on the north side of the trail at the eastern entrance of the Sideling Hill Tunnel. This is a small wetland that receives drainage from the tunnel area. It has cattails and several other hydrophytic (water-loving) species. The second area was a small "vernal pool", located on the south side of the trail, not far from the western entrance of the Sideling Hill Tunnel, where the right-of-way comes to a point. This area appears to have drainage that was unnaturally blocked by mounds of fill, which may have been deposited from tunnel excavation. Both wetland areas could be enhanced and protected as part of the trail improvements, including educational signs to display wetland functions and values.



Big Brown Bats clinging to a support rod in tunnel ventilation area.

Phase I Review

A review of the existing Phase I Environmental Assessment Reports was performed in order to determine if any likely pre-existing environmental contamination issues exist that could impact the design, engineering, or construction of the trail or its support facilities. This review is based on work already performed by other environmental professionals. The basis for the conclusion included in this plan include information prepared by Buchart-Horn, Inc. in September 2000 and a review and evaluation of this earlier work, performed by Keller Engineers, Inc. in February 2001. In addition, Gannett Fleming performed a field view in September of 2004.

Both of the documents referred to above, concluded that the potential liability to the Southern Alleghenies Conservancy or any future owner of the property, from environmental contamination, is relatively low. The areas that were identified as having any likelihood for potential concern include:

- The potential existence of closed-in-place underground storage tanks (USTs) at the portals to Sideling Hill Tunnel,
- The potential existence of closed-in-place underground storage tanks (USTs) and a storage drum at the west portal at Rays Hill Tunnel, and
- The potential existence of closed-in-place underground storage tanks (USTs) in the area of the former filling station at the abandoned Cove Valley Service Plaza.
- Two solid waste disposal sites located along the corridor.

Based on the Buchart-Horn, Inc. report, the area of greatest potential for contamination are the USTs located at the Cove Valley Service Plaza. The field probing that was performed as part of their work could not determine if the existing tanks had any remaining petroleum liquids stored within. It was observed that there were gasoline odors at the filler necks of the tanks. This filler necks were also filled with sand, implying that the tanks

had been pumped and filled, as was common practice for closed-in-place tanks, prior to 1989. Further probing would need to be performed to verify that the tanks are empty. The report also noted that soils samples located throughout the site exhibited several petroleum related materials. The age of this contamination cannot be determined.

As long as the area in direct proximity to the USTs is not disturbed, the current paved surface of the parking lot serves as a regulatory-acceptable engineering solution to cap any pre-existing contamination.

Interpretative Programming Directional and Interpretive Signage

Trail Signage

Signage has multiple uses which include Wayfinding/directional, Informational and Interpretive; all of which are addressed in this project. Wayfinding signs help trail users understand their location, services, destinations and distances. Examples include Mile Markers and Directional signs. Informational signs provide specific messages explaining who, what, where, when and how. Examples include Primary Trail Head, Secondary Trail Head and Rules & Regulations signs. Interpretive signs explain the significance of a place or an event. Examples include the signs at the proposed Cove Plaza entrance to the trail. The signage package is an effective way to brand a project. Designing and implementing a comprehensive signage family gives the trail a very specific public image and adds another unique quality to the project. Often signs are the conduit that ties several disparate places together. Signage subtly reminds the user of the size and scale of a facility or resource.

Primary Trailhead

Locate at all major trailhead parking areas, along roads and highways to announce the trail. Information on the sign should include trail name, affiliations, and municipal location. These are the flagship signs.



Secondary Trailhead

Locate on existing trail facility structures (i.e. bulletin boards, buildings, etc) at intersections with local roadways and Buchanan State Forest Trails to direct users along the trail or when trail crosses a street, road or highway. Information on the sign should include trail name and location. These signs should be noticeably smaller than the Primary Trailhead signs.

Rules and Regulations

Locate at all major trailhead areas where the trail is directly connected to parking. Information on the sign should include rules, regulations, guidelines with trail name and affiliations. These signs should NOT vary in content from sign to sign or place to place. These signs should be posted in areas adjacent to but also integral to trail circulation. The text should be legible from 6'-8' and ideas expressed should be clear and concise.

Directional

Locate at trailheads and strategic locations along the trail where user facilities are approaching (should not exceed 5 mile radius from facility), or at locations off the trail that user frequent (i.e. other trailheads, restrooms, small stores, bicycle repair shops or camping areas). Information on the sign should include trail name, affiliations along with names of destinations and distances of destinations. Directional arrow(s) should be used. These signs should be legible at 15'-20'. Any icons used to express and reinforce ideas such as litter and waste removal should be clear and universally understood.



Mile Marker

Locate along trail a specific distance from a fixed point to orient users of their location and distance from that point.



Signage examples courtesy of Cloud Gehshan Associates
www.cloudgehshan.com

Ownership

Currently the former Pennsylvania Turnpike Commission roadway right-of-way that would compose the Pike2Bike is owned by the Southern Alleghenies Conservancy. The Agreement of Sale between these two parties was executed on October 10, 2001 for the price of \$1.00. The terms of the agreement clearly state that the Conservancy purchased the property in an “As Is” condition. In terms of ownership and management, the agreements stipulate a few key points.

- The facility is to be used for a recreational biking/hiking trail for non-motorized vehicles only.
- The Conservancy must receive written approval from the Pennsylvania Turnpike Commission prior to, “removing, remodeling, or doing work that impacts any existing structure(s) on the property at any time.”
- Should the Pennsylvania Turnpike Commission require the property for additional highway or related purpose, the Conservancy must agree to convey the property without costs, penalty or liability with a minimum of six months notice.

Should the Southern Alleghenies Conservancy decide that the ownership of a recreational trail of the magnitude of Pike2Bike not fit within the goals of its organization it may chose not to continue as the owning entity. There are several ownership options. They include:

- A New Non-Profit Entity - The creation of a new non-profit organization with the sole purpose of owning and managing the facility.
- A Joint Authority - The creation of a joint authority, representing a legal governmental partnership, between multiple governmental entities, agencies, etc.
- Separate County Ownership - A transfer of ownership of the corresponding portions of the trail to the appropriate Counties.

The first option, the creation of a new joint non-profit entity has several constraints. The creation of such an entity will require the commitment from yet to be determined individuals, to take a leadership and a potentially un-chartered capital stake in a large public infrastructure project. The major constraint of such an entity owning the trail facility is its ability to qualify and ultimately secure public funding in the form of grants, for the development and management of such a resource. The Pennsylvania Department of Conservation and Natural Resources (DCED), for example, requires that such an entity be in existence for a minimum of five years, before it would be eligible for any funding, and even then, the amount of funds available to such an entity is substantially reduced, when compared to a public entity apply for a comparable project. This structure does make sense from a maintenance standpoint and will be discussed in greater detail later.

The second option is the creation of a joint authority or similar legal entity which jointly shares ownership of all of the assets of the Pike2Bike trail. Pennsylvania State law enables county and municipalities to cooperative form legal entities, or authorities, to own, manage or oversee projects or facilities on behalf of the public welfare. Depending on how the authority is establish, it can ensure equal or any mutually desireable division of representation on a governing board. The benefits of such an entity are several. First, such an entity would allow for one ownership entity to represent the cooperative ownerships of multiple entities. This provides for a more financial efficient form of management, even if the daily management is outsourced to another entity. A multi-governmental form of ownership under one legal entity could represent the most qualified form of ownership, when considering the ability to raise capital, in the form of development and management grant funding. Such an arrangement would be viewed as a regional cooperative project, therefore, given higher priority, both at the state and federal level. The downside of this approach is the requirement to create a new and somewhat complicated legal entity for the sole operation of a relative small facility, when compared to responsibilities of typical authorities in Pennsylvania. It will also require the approval of two County governments to proceed.

Finally, the third and most likely option is the most simple from an initial organizational standpoint and gains the greatest potential benefit from a funding standpoint. This option would divide the trail ownership by county. The portions of the trail located within each county would become a public asset of the respective county government entity. Grant applications would be made by the management entity on behalf of the county for which the specific project would be located. Separate management and liability agreements would need to be composed and adopted for each of the counties. Separate insurance policies may be needed to provide coverage which meets the specific requirements of each county. Most likely, this scenario would automatically require a separate management entity be identified as a condition of the ownership transfer to the counties.

Operation, Ownership and Maintenance Management and Liability

Management and Staffing

A trail facility such as the Pike2Bike will require management manpower, especially when considering the initial management of capital infrastructure projects, start-up marketing, and the added tasks of daily maintenance (trash collection, graffiti removal, etc.).

A new or existing non-profit maintenance entity would be identified to provide daily maintenance. In either case, the owning entity would either provide or contract, through a formal agreement, the daily responsibilities of the trail management, marketing and maintenance. The ideal scenario is a combination of staffing that includes employees, contractors and volunteers. Employees would be needed to specifically deal with the demands of trail construction, including managing design consultants, applying for and managing funding streams and grants and overseeing construction contractors. After the construction phases are completed, staff will be needed to manage daily maintenance activities, volunteers and marketing and events.

Although there will be staff devoted to overseeing trail activities, in no way does this diminish the importance of volunteer assistance. Volunteer groups need to be tapped and fostered to support the focused activities of the staff. A separate, but integrated "Friends of" group should be organized to support the daily activities of the trail management entity. The mission of such a group could range from site clean-up and field maintenance activities, to assisting in marketing tasks, preparing news letters, websites updating, organizing special events, and fundraising.

Based on the magnitude of the projects to be (re)constructed and the long term maintenance and management needs, it is recommended that one full-time manager be retained. This person would be responsible for overseeing and coordinating all trail tasks. In addition, it is suggested that a part-time administrative assistant be retained to support the managerial tasks needed for grant writing, contract administration and day-to-day marketing activities. The part-time staff-person would be needed for at least for the first five years, while the construction related activities are taking

place. Assuming that management of the trail remains within the purview of the Southern Alleghenies Conservancy, the part-time staff position could possibly be an expanded utilization of an existing part-time employee.

The staffing and operational budget presented distinguishes between the first year with one-time initial start-up costs, and the second year and beyond. It should be assumed that operational costs will increase due to inflation and cost of living increases, at a rate of approximately three percent per annum. In order for this staffing approach to succeed a steady funding stream to support staff salaries will need to be determined. Although each grant programs place limitations on how funds can be allocated for non-construction related activities, it is possible that a portion of the in-house construction administration services could be financially supported through overall construction funding.

Year 1			
Line Item	Item	Cost	Subtotal
Itemized Costs - Payroll			\$60,100.00
1	Manager's Salary	\$26,000.00	
2	Administrative Assitant Wages*	\$13,000.00	
3	IRA Benefits	\$4,700.00	
4	Medical Insurance	\$12,000.00	
5	Payroll Taxes	\$3,000.00	
6	Unemployment Compensation	\$1,400.00	
Itemized Costs - Legal Fees, Accounting, Liability and Booking Keeping			\$11,500.00
7	Entity Registration/Legal Services	\$7,000.00	
8	Miscellaneous Accounting	\$500.00	
9	Insurance	\$4,000.00	
Itemized Costs - Marketing, Promotion and Fundraising			\$4,700.00
10	Consultant	\$3,000.00	
11	Website	\$200.00	
12	Printing	\$1,500.00	
Itemized Costs - Office Expenses and Supplies			\$5,880.00
13	Portable Toilet Facilities	\$1,400.00	
14	Internet	\$480.00	
15	General Supplies	\$4,000.00	
Itemized Costs - Office Equipment			\$2,000.00
16	Computer	\$1,500.00	
17	Equipment/Technical Repairs and Maintence	\$500.00	
Itemized Costs - Travel			\$4,000.00
18	Travel (Including promotion, maintenance and training)	\$4,000.00	
19	TOTAL ANNUAL OPERATING COSTS		\$88,180.00
* This annual cost could be saved through the utilization of existing SAC staff, should the organization remain as a managing partner in the project			
Line Item Clarifications and Assumptions			
1. Salary based on a typical DCNR Circuit Rider Postion minimum salary as a model			
2. Part time postion			
3. IRA-Simplified Employee Pension - Deffered compensation based on 15% of salary			
4. HMO Benefits			
7. Estimated legal/accounting fees			
8. - Estimated fee for annual accounting			
10. Fee for developing a professional marketing strategy and a pallette of promotional items			
11. Annual Website maintenance fee			
12. Printing costs for brochures, flyers, etc.			
13. - Rent for portable toilet facilities until permanant facilities are constructed			
14. - High speed internet access charge			
15. Paper, pencils, assorted office supplies			
16. Computer - Startup expense			
17. Computer technical support, etc.			
18. Includes periodic review of the trail and attendance at a training seminar, DCNR workshops, etc.			
19. Total Annual Operating Budget			

Year 2 and Beyond			
Line Item	Item	Cost	Subtotal
Itemized Costs - Payroll			\$60,100.00
1	Manager's Salary	\$26,000.00	
2	Administrative Assitant Wages*	\$13,000.00	
3	IRA Benefits	\$4,700.00	
4	Medical Insurance	\$12,000.00	
5	Payroll Taxes	\$3,000.00	
6	Unemployment Compensation	\$1,400.00	
Itemized Costs - Legal Fees, Accounting, Liability and Booking Keeping			\$4,500.00
8	Miscellaneous Accounting	\$500.00	
9	Insurance	\$4,000.00	
Itemized Costs - Marketing, Promotion and Fundraising			\$950.00
11	Website	\$200.00	
12	Printing	\$750.00	
Itemized Costs - Office Expenses and Supplies			\$6,000.00
13	Portable Toilet Facilities	\$1,400.00	
16	Internet	\$600.00	
17	General Supplies	\$4,000.00	
Itemized Costs - Office Equipment			\$500.00
20	Equipment/Technical Repairs and Maintenance	\$500.00	
Itemized Costs - Travel			\$4,000.00
21	Travel (Including promotion, maintenace and training)	\$4,000.00	
22	TOTAL ANNUAL OPERATING COSTS		\$76,050.00
* This annual cost could be saved through the utilization of existing SAC staff, should the organization remain as a managing partner in the project			
Line Item Clarifications and Assumptions			
1. Salary based on a typical DCNR Circuit Rider Postion minimum salary as a model			
2. Part time postion			
3. IRA-Simplified Employee Pension - Deffered compensation based on 15% of salary			
4. HMO Benefits			
8. - Estimated fee for annual accounting			
11. Annual Website maintenance fee			
12. Printing costs for brochures, flyers, etc.			
13. - Rent for portable toilet facilities until permanant facilities are constructed			
16. Computer - Startup expense			
17. Computer technical support, etc.			

Liability and Insurance

Liability is an extremely important area of concern in virtually all trail projects. In the context of the Pike2 Bike, liability refers to the obligation of a trail manager and/or owning entity to pay or otherwise compensate a person who is harmed through some fault of the trail manager or owner. The filing of a personal injury or tort claim against the presumed responsible party typically begins the formal process of enforcing that responsibility. Since cases are often settled before they reach a court trial, there are limited legal precedents from which to draw. Ultimately many of the liability questions relating to Pike2Bike would be governed by State law, and the applicability of which depends on the specific facts of each case. The ultimate ownership organization should retain legal council in preparing its long term ownership status (i.e. the legal structure of the formal owning entity).

Overview of Recommendations

- Trail ownership and management entities should conduct initial legal research, as early into the process as possible. Important information includes the following: ownership, easement, legal protections available at the State level (e.g., Indemnification, applicable Pennsylvania State statutes, and strength of local trespassing ordinances); local or Pennsylvania State property rights ordinances and information; and trail management organization insurance protection.
- The trail management entity should adhere to design recommendations identified in this report and other uniformly accepted design standards and guidelines (e.g., the AASHTO Guide for the Development of Bicycle Facilities and Manual on Uniform Traffic Control Devices) In particular, signs should be provided at entrances to establish usership regulations, local applicable ordinances, etc.
- The trail management entity should review Pennsylvania State statutes to ensure the validity of indemnification agreements, and the scope or applicability of applicable laws, such as fencing To the extent there is any ambiguity as to the applicability of applicable statutes, trail proponents should work with other state trail organization to strengthen the State's laws to increase liability protection.

- The trail ownership and management entities should purchase or provide comprehensive liability insurance in an amount sufficient to cover foreseeable liability costs and pay the costs for railroad company insurance for defense of claims.

Definitions and Laws

In most States, the duty of care owed to persons who enter another's property depends on whether the injured person is considered a trespasser, a licensee, or an invitee. Trespassers are due the least duty of care, while invitees are due the most.

Recreational use statutes (RUSs) typically protect managing agencies from being held liable for injury to trail users, unless trail managers intentionally or recklessly injure or create danger to users. Virtually all RUSs essentially treat trail users as trespassers on the trail property for purposes of determining the duty owed by the manager of the property to the trail users. Most RUSs, however, are not applicable where a fee is charged for entry or use of the trail. In most States, the RUS grants immunity for the recreational use of any land, whether developed or undeveloped, rural or urban, so long as the plaintiff used it for recreation.

Not all States' RUSs cover trail managers. The courts in California, Pennsylvania, and New York have held that the State RUSs do not cover public agencies, but instead are only applicable to private landowners. Under those circumstances, the public agencies would be liable to the extent specified by the State's tort claim statutes.

Even if a public agency owns the trail and it is not covered by a State RUS, its tort claims law may grant immunity. Pennsylvania has enacted a comprehensive rails-to-trails law that expressly extends the State RUS to "any person, public agency or corporation owning an interest in land utilized for recreational trail purposes" (32 Pa. Cons. Stat. tit. § 5621 (2000)). A trail along a right-of-way may be considered a linear park, the operation of which in some States is considered a "discretionary" or "proprietary" function and immune from liability.

Trail Marketing Strategy

As stated in the Mission Statement, this trail is designed to act as a setting for diverse activities and as a result, serve a multitude of audiences. Secondary to this overall mission, is the goal of creating a resource that supplements the local economy, either through attracting visitors, who in turn spend money in the community or by supporting the overall community quality-of-life which in turn helps to attract business leaders to establish businesses in the community. The framework for a marketing strategy can be defined by the fundamentals: Why, Who, and How.

Why: The importance of marketing recreation resources can not be understatement. There are several key points to be considered for the Pike2Bike Trail, from the success of other trails across the nation.

1. Trails are just one element of larger visitor experience, and providing other opportunities (both recreation and non-recreational) draws a more diverse groups of visitors. In turn, this allows for a greater variety of businesses.

2. Public and Private Investment is critical. Establishing a community as a viable trail destination mandates that business owners must take individual risks as entrepreneurs while simultaneously working together with other businesses to build critical mass.

3. To ensure outstanding peer recommendations, towns and businesses must provide a quality visitor experience to each individual trail user. Trail users pass along knowledge to others by word of mouth, therefore verbal promotion is as important as learning about destinations from promotional materials, travel articles, the internet, etc.

4. Year-round activity is crucial to the survival of many trail related businesses. Even if recreational trail uses are seasonal, communities can provide off-season attractions that provide different experiences.

5. Planning beyond the trail is crucial to the success of the trail and those businesses that capitalize from its existence. Physical, social, economic, political conditions are constantly changing. It is important that routine reassessments be performed to determine if critical conditions

along, adjacent or nearby, where relevant have changed and will in anyway positively or negatively impact the trail facility.

6. Slogans and marketing themes are meaningless unless they are logical and there is local community buys-in. Building a true community identity requires the support of local residents, business leaders, political leaders, etc.

7. Recreation alone generally will not induce visitors to stay overnight. Communities must provide quality lodging, dining, and activities to supplement the draw of recreation.

8. Different types of trail users behave differently. For example, special interest groups, such as rollerbladers, are more likely to travel farther than bicyclist. A diversity of activities expands the potential audience of users.

9. Festivals can be a small but important component of an overall marketing strategy. Although they only create direct economic impact for a few days each year, festivals can, however, heighten awareness and attract new repeat users to the trail, creating echo economic impacts. Festivals must become points-of-entry for year-round experiences.

10. A community with ample and diverse recreation and trail opportunities can leverage this advantage for economic development purposes. In the current global economic climate, companies can locate nearly anywhere and many make location decisions partly on the quality-of-life assets that exist within a potential community. Tourism is the second most important industry in Pennsylvania, second only to agriculture. The facility assets need to be packaged as a whole to promote the region as a destination, to attract and retain businesses, and to emphasize the importance of recreation and trails to its quality of life.

Who: Understanding and strategically targeting the key potential audiences for trail usership is important to the overall success of a marketing strategy. In the case of the Pike2Bike, the potential audiences can be grouped into three categories.

1. Serve the Local Population – The need for expanded recreation opportunities was expressed throughout the trail planning process. For the P2B to be truly successful it needs to be thought of as a cherished local asset. The best way to build this mindset is to ensure that the facility serves the local needs. Usership data from trails across the country shows that the most successful trails are those that are used by both the local communities and by enthusiasts from afar.

2. Tap Existing Markets – Whether day trippers, those from the larger region or just tourists passing through on their way to another destination, the opportunity to attract visitors who are already in the area for another purpose, represents a potential easy untapped audience for the trail. Those tourists that already visit provide a reliable base of visitation and it is important to tap into this group. Strategic marketing and education to this group about the recreational opportunities in your community will be key to motivating tourists to extend the lengths of their stay and to encourage repeat visitation to use the trail.

3. Attract Special Interest Groups – The uniqueness of the facility and its relative proximity to major population centers, represents an opportunity to attract special interests groups, such as urban bicyclist clubs, eco-tourism groups, etc., from a large geographical area, possibly country-wide and international travelers.

How: First and foremost successful trail management strategies treat it like a business! Using that approach, there are several key steps to take

1. Hire a Marketing/Promotion Staff Person: This could be a part-time position, possibly under a set term limit, to get the marketing program established. The person could be part of another organization, such as the Lincoln Highway Heritage Corporation, or one of the County Tourism Promotion Agencies. This staff person would be responsible for developing initial promotional material, distributing material and information, developing a website, and organizing special events for the trail.

2. Create and “brand” Pike2Bike as a premier, nationally-recognized trail attraction.

This would convey that Pike2Bike is a vibrant and distinctive resource that provides users with a unique experience. Establishing an image of professionalism is crucial in every aspect of operations. Image is important in making the case for why it is worthwhile to invest in trails and recreation facilities. Everything from a meticulous condition of the trail and trailheads, to publications, appearance of vehicles, forms, signage, how the phones are answered, the website, and customer service—all contribute to defining the image of the system. That importance of this cannot be overstated.

3. Develop a Detailed Promotional Strategy with Collateral Material:

General and special interest promotional material should be developed to support an identified marketing strategy. Segmenting marketing material into special interest groups is important. Once the specialty markets are determined, and their communication networks identified, they often have sophisticated information systems and distribution networks to reach their members. Strategically, there are several “hot button” areas that should be considered when developing the detail promotional strategy.

- Conduct a detailed market research program that would determine detailed users needs in the context of regional attractions and specialty markets. For example, are there specific resources that can be linked together, either of the same type of activity or as part of package of different activities that fulfill market needs.
- Identify special interest groups most likely to be attracted to the Pike2Bike and regional attractions.
- Acquire or develop databases of travel special interest groups, travel intermediaries and distribution systems for key specialty markets (either geographic or activity-oriented) and distribute databases to the local tourism promotion entities.
- Identify tour operators in the region or in the target specialty markets and provide them with the necessary information to help them communicate the desirability of the Pike2Bike experience.

- Develop a user-direct database for direct marketing and educational material, especially for special events, etc. The formation of a user-club will aid in developing user loyalty and aid in spreading the word about the facility and special events.

4. Cultivate Partnerships: Partnerships among local interest groups, local and regional public agencies and businesses are essential for broader support.

If the trail management entity seeks economic support for its facility, it must build partnerships with businesses because businesses provide the financial return. On the private side, businesses need to work together in order to build and maintain critical mass of trail and tourist-related commercial activity to support the intended audience.

- Form an endorsement program which ties related local business to the trail facility and then cross market the resource and activities.
- Explore specific corporate endorsement for the facility. For example, approach larger corporations or related businesses, such as Cannondale, to give the Pike2Bike special “cache.”
- Hold special events for businesses and corporate sponsors to show appreciation for their support and to foster exclusiveness to those that are involved at a special level.

5. Track Usership and Economic Impact of the Trail on Local Economy:

Having real numbers to substantiate usership numbers, patterns and specialty cohorts are essential in building and expanding financial support. This information can be use strategically in grant applications as well as to garner additional private financial support.

The Military's Role in the Pike2Bike Trail

Recent global events have created a need for new types of military training. The uniqueness of an abandoned and isolated section of turnpike roadway provides an excellent setting to address some of the deficiencies of the modern Army. Analysis of casualties in Operation Iraqi Freedom revealed that the soldiers being deployed were ill-prepared to react to certain situations. In December of 2003, the Army Reserve's 99th Regional Readiness Command began to coordinate training exercises on the trail corridor. They



implemented a program known as Convoy Survivability Training (CST). The training is based on attack and ambush scenarios executed on convoys. The abandoned portions of the turnpike provided an ideal training platform that could be replicated in very few other places across the United States. The summer of 2004 saw around 10 CSTs take place and as of early summer 2005, two more occurred, two more are on the calendar and it is likely that several more will be scheduled throughout the summer.

During the typical Convoy Survivability Training exercise, the Army occupies the trail over the span of a weekend. Advanced members of the participating unit usually arrive the Thursday before to set up and perform preliminary reconnaissance. On Friday, as the bulk of the unit arrives, the length of the trail is closed for the remainder of the operation.

The influx of troops associated with the execution of the CSTs on the trail provides a great deal of local economic stimulus. The visiting servicemen and women take advantage of the lodging and restaurant services provided in Breezewood. Large amounts of additional funds are generated by the military's purchase of fuel. During the summer 2004 maneuvers, the military spent over \$550,000 in food, fuel and lodging.

In the short-term and possibly the long-term, the Military's Convoy

Survivability Training exercises play an important role in the life of the proposed Pike2Bike trail and provide an influx of funds to the local economy. Trail planning and trailhead design decisions account for continued use of the trail as a military asset. The Cove Plaza Trailhead incorporates two expanded size access gates, to allow for continual flow and turn-around of large vehicular traffic. The unimproved travel lanes provide a suitable travel surface for the military vehicles, while diverting potential damage caused by heavy truck traffic on the new trail surface.

Continued relationship with the 99th Regional Readiness Command will require the creation of a formal policy agreement outlining the scope of the Military's future involvement in the Trail. Such an agreement will address strategies to minimize conflicts between the military and other user groups. The creation of a comprehensive signage, website posting policy and public education strategy that will inform user groups of the nature of the military presence and indicate any potential trail closures. A policy agreement should also indicate any guidelines for the military to adhere to during maneuvers. This could include subjects like isolating vehicular traffic to unimproved travel lanes and extent of cleanup after the completion of maneuvers.



*Insignia of the 99th Regional
Readiness Command*

between the 99th Regional Readiness Command and the trail management organization.

The occasional closure of the trail for military exercises is a minor inconvenience for our national defense, as well as the economic benefits provided to the surrounding community. The implementation of a formal agreement and policy prior to official public opening of the trail will help to diffuse any potential conflicts that could arise between the military and other trail users. The policy's adoption would also ensure a long and friendly relationship

Estimates of Probable Costs Cost Summary

STUDY PROJECTS			Costs			TOTALS
Project #	Phase		Material/Labor	Design/Engineering/ Specifications/Bid Review/Punchlist	Design/Construction Contingencies	
1	5	Trail Surfacing	\$250,000.00	\$35,000.00	\$57,000.00	\$342,000.00
2	1	Breezewood - Trailhead Site Improvements	\$118,000.00	\$22,000.00	\$28,000.00	\$168,000.00
3	8	Breezewood - Trailhead Ammenities	\$85,000.00	\$11,000.00	\$19,000.00	\$115,000.00
4	6	Cove Plaza - Trailhead Improvements	\$70,000.00	\$22,000.00	\$18,500.00	\$110,500.00
5	8	Cove Plaza - Trailhead Ammenities	\$65,000.00	\$11,000.00	\$15,000.00	\$91,000.00
6	3	Sideling Hill Tunnel Stabilization	\$680,000.00	\$41,000.00	\$145,000.00	\$866,000.00
7	4	Sideling Hill Tunnel Lighting	\$255,000.00	\$28,000.00	\$44,000.00	\$327,000.00
8	2	Rays Hill Tunnel Stabilization	\$370,000.00	\$23,000.00	\$79,000.00	\$472,000.00
9	2	Rays Hill Tunnel Lighting	\$104,000.00	\$21,000.00	\$15,000.00	\$140,000.00
10	4	Electrical Service (Would reduce #7 and 9# each by \$18,500)	\$21,000.00	\$0.00	\$0.00	\$21,000.00
11	1	Drainage Inlet Improvements	\$55,000.00	\$5,000.00	\$12,000.00	\$72,000.00
12	8	Interpretative/Directional Signing	\$104,000.00	\$45,000.00	\$29,000.00	\$178,000.00
13	2	ROW Fencing and Landscape Buffer	\$22,000.00	\$2,500.00	\$5,000.00	\$29,500.00
14	1	Restroom Facilities	\$80,000.00	\$2,000.00	\$16,500.00	\$98,500.00
15	1	Median and Other Plantings	\$12,000.00	\$1,500.00	\$3,000.00	\$16,500.00
Subtotal						\$3,047,000.00

With an annual escalation rate of 3.0% the total project cost would range between \$3,500,000 and \$4,000,000 depending on the size and phasing of contracts

CLARIFICATIONS AND ASSUMPTIONS

- The following Estimate of Probable Cost is prepared for use by the SAC in evaluating a full range of enhancement project options to assist in the development of Capital Budgets for each grant project/application.
- This estimate of probable cost is based on the conceptual designs illustrated in this report and includes likely costs to furnish and install items identified. This estimate excludes any costs for utility systems, hazardous materials or subgrade conditions other than some general assumptions regarding electrical for street lights and excavation where surface materials are changing. A more detailed design and engineering analysis is necessary to further refine this estimate for probable costs. Design and engineer fees are estimates may be higher, dependent upon the level engineering and required permits as a result of funding program and/or PENNDOT.
- Given the conceptual nature of this design, additional design and engineering studies will be necessary for more accurate estimates of construction costs.
- All costs are stated in Year 2005 Dollars and are not escalated to address inflation for future year construction. Once projected construction dates for each phase are determined, a 3% escalation factor should be compounded for each year between January 2005 and the midpoint of construction.
- No land, rights-of-way, or permanent easement acquisition costs have been included these estimates.
- All Public Construction items include the following assumptions - 1% Temporary Construction Cost, 1% Phasing Cost, 3% Contractors Engineering Contingency, 15% Construction Contingency, 1% Survey Cost, PENNDOT Cost Estimate Standards

Estimates of Probable Costs Itemized Costs

12-Foot Trail Surfacing*

DESCRIPTION	QUANTITY		MATERIALS**	
	No. Units	UNIT MEAS.	PER UNIT COST	MATERIAL TOTAL COST
LEVELING COURSE	2,000	tons	\$40.00	\$80,000
TACK COAT	36,000	S.Y.	\$0.10	\$3,600
ID-2 WEARING COAT	36,000	S.Y.	\$4.20	\$151,200
SAWING & SEALING JOINTS	6,500	L.F.	\$2.20	\$14,300
MATERIAL SUBTOTAL				\$249,100
ENGINEERING AND CONTINGENCY				\$92,000
TRAIL SURFACING TOTAL COST				\$341,100

* does not include tunnels

** materials cost to include labor

Trailhead Construction

DESCRIPTION	QUANTITY		MATERIALS**	
	No. Units	UNIT MEAS.	PER UNIT COST	MATERIAL TOTAL COST
<i>Breezewood Trailhead</i>				
Access Gate	1	L.S.	\$1,200	\$1,200
Paving and Drainage (Including Site Work)	7,000	S.Y.	\$20	\$140,000
Landscaping and Site Ammenities (Barriers, Special Paving, Trash Recepticals, Etc.)	1	L.S.	\$48,000	\$48,000
Pavillions	1	L.S.	\$56,000	\$56,000
TOTAL COST				\$245,200
<i>Cove Valley Trailhead</i>				
Access Gate	1	L.S.	\$1,200	\$1,200
Paving and Drainage	10,000	S.Y.	\$9	\$85,000
Landscaping and Site Ammenities (Barriers, Special Paving, Trash Recepticals, Etc.)	1	L.S.	\$69,000	\$69,000
Pavillions	1	L.S.	\$56,000	\$56,000
TOTAL COST				\$211,200
TRAILHEAD CONSTRUCTION TOTAL COST				\$456,400

Drainage Improvements

DESCRIPTION	QUANTITY		MATERIALS**	
	No. Units	UNIT MEAS.	PER UNIT COST	MATERIAL TOTAL COST
Inlet Grates (including installation)	151	L.S.	\$476	\$71,876
DRAINAGE IMPROVEMENTS TOTAL COST				\$71,876

Estimates of Probable Costs Itemized Costs

Tunnel Stabilization

DESCRIPTION	QUANTITY		MATERIALS **		
	Min No. Units	Max No. Units	UNIT MEAS.	PER UNIT COST	MATERIAL EST COST
<i>Sideling Hill Repairs (6,782')</i>					
Repair shallow ceiling spalls	3,400	8,500	S.F.	\$55	\$327,000
Repair deep wall spalls	1,000	2,000	S.F.	\$90	\$135,000
Repair shallow wall spalls	200	500	S.F.	\$75	\$26,250
Plenum Repairs					
Replacement of stainless steel hanger rods	10	30	EA	\$300	\$70,000
Drainage piping repairs	200	1,000	L.F.	\$10	\$6,000
					\$112,850
				TOTAL COST	\$677,100
<i>Ray's Hill Repairs (2,532')</i>					
Repair shallow ceiling spalls	1,750	4,375	S.F.	\$55	\$168,437
Repair deep wall spalls	1,000	2,000	S.F.	\$90	\$135,000
Repair shallow wall spalls	200	500	S.F.	\$75	\$52,500
Plenum Repairs					
Replacement of stainless steel hanger rods	10	30	EA	\$300	\$7,000
Drainage piping repairs	200	1,000	L.F.	\$10	\$6,000
				TOTAL COST	\$368,937

** materials cost to include labor

TUNNEL STABILIZATION TOTAL COST \$1,046,037

Estimates of Probable Costs Itemized Costs

Lighting Improvements Scenario A - HPS Fixtures 100' Spacing

DESCRIPTION	QUANTITY		PER UNIT COST	MATERIALS MATERIAL TOTAL COST	PER UNIT COST	LABOR LABOR TOTAL COST	TOTAL COST
	No. Units	UNIT MEAS.					
Sideling Hill Upgrades (6,782')							
LUMINAIRE 150W HPS WITH UP/DOWN LIGHT	68	EA.	\$255	\$17,340	\$85	\$5,746	\$23,086
# 2 WIRE	176	C.L.F.	\$63	\$11,088	\$73	\$12,760	\$23,848
#3/0 WIRE	566	C.L.F.	\$146	\$82,636	\$130	\$73,580	\$156,216
2" RGS CONDUIT	8,020	L.F.	\$9	\$70,977	\$7	\$58,145	\$129,122
ELECTRIC SERVICE EQUIP.	1	LS					\$3,000
MATERIAL SUBTOTAL				\$182,041.00			
WITH Mark-up (10%):				\$200,245.10			
LABOR SUB TOTAL						\$150,231	
WITH OH & Profit (48.8%):						\$223,544	
TOTAL COST				\$200,245.10		\$223,544	
						TOTAL COST	\$423,789
Ray's Hill Upgrades (2,532')							
LUMINAIRE 150W HPS WITH UP/DOWN LIGHT	26	ea.	\$255	\$6,630	\$85	\$2,197	\$8,827
# 2 WIRE	279	C.L.F.	\$63	\$17,577	\$73	\$20,228	\$37,805
2" RGS CONDUIT	2532	L.F.	\$9	\$22,408	\$7	\$18,357	\$40,765
ELECTRIC SERVICE EQUIP.	1	LS					\$3,000
MATERIAL SUBTOTAL				\$46,615			
WITH Mark-up (10%):				\$51,277			
LABOR SUB TOTAL						\$40,782	
WITH OH & Profit (48.8%):						\$60,683	
TOTAL COST				\$51,277		\$60,683	
						TOTAL COST	\$111,960
SCENARIO A TOTAL COST							\$535,748

Estimates of Probable Costs Itemized Costs

Lighting Improvements Scenario B - HPS Fixtures 200' Spacing

DESCRIPTION	QUANTITY		PER UNIT COST	MATERIALS		LABOR		TOTAL COST
	No. Units	UNIT MEAS.		MATERIAL TOTAL COST	PER UNIT COST	LABOR TOTAL COST		
<i>Sideling Hill Upgrades (6,782')</i>								
LUMINAIRE 150W HPS WITH UP/DOWN LIGHT	40	EA.	\$255	\$10,200	\$85	\$3,380		\$13,580
# 2 WIRE	84	C.L.F.	\$63	\$5,292	\$73	\$6,090		\$11,382
#3/0 WIRE	582	C.L.F.	\$146	\$84,972	\$130	\$75,660		\$160,632
2" RGS CONDUIT	8,882	L.F.	\$9	\$78,606	\$7	\$64,395		\$143,000
ELECTRIC SERVICE EQUIP.	1	LS						\$4,000
MATERIAL SUBTOTAL				\$179,070				
WITH Mark-up (10%):				\$196,977				
LABOR SUB TOTAL						\$149,525		
WITH OH & Profit (48.8%):						\$222,492		
TOTAL COST				\$196,977		\$222,492		
							TOTAL COST	\$419,469
 <i>Ray's Hill Upgrades (2,532')</i>								
LUMINAIRE 150W HPS WITH UP/DOWN LIGHT	13	ea.	\$255	\$3,315	\$85	\$1,099		\$4,414
# 2 WIRE	177	C.L.F.	\$63	\$11,151	\$73	\$12,833		\$23,984
2" RGS CONDUIT	2532	L.F.	\$9	\$22,408	\$7	\$18,357		\$40,765
ELECTRIC SERVICE EQUIP.	1	LS						\$4,000
MATERIAL SUBTOTAL				\$36,874				
WITH Mark-up (10%):				\$40,562				
LABOR SUB TOTAL						\$32,288		
WITH OH & Profit (48.8%):						\$48,045		
TOTAL COST				\$40,562		\$48,045		
							TOTAL COST	\$88,606
SCENARIO B TOTAL COST								\$508,075

Estimates of Probable Costs Itemized Costs

Lighting Improvements Scenario C - LED Fixtures

DESCRIPTION	QUANTITY		PER UNIT COST	MATERIALS MATERIAL TOTAL COST	LABOR		TOTAL COST
	No. Units	UNIT MEAS.			PER UNIT COST	LABOR TOTAL COST	
<i>Sideling Hill Upgrades (6,782')</i>							
LUMINAIRE 2W LED SOURCE	97	EA.	\$308	\$29,876	\$85	\$8,197	\$38,073
#2 Wire	84	C.L.F	\$55	\$4,620	\$65	\$16,770	\$21,390
# 1/0 WIRE	203	C.L.F	\$94	\$19,082	\$99	\$20,097	\$39,179
1 1/2" RGS CONDUIT	6782	L.F.	\$7	\$46,796	\$65	\$10,800	\$57,596
ELECTRIC SERVICE EQUIP.	1	L.S.	\$4,600	\$4,600	\$65	\$10,800	\$15,400
Photo Voltaic Power System	1	L.S	\$18,500	\$18,500	\$80	\$12,800	\$31,300
MATERIAL SUBTOTAL				\$123,474			
WITH Mark-up (10%):				\$135,821			
LABOR SUB TOTAL						\$79,464	
WITH OH & Profit (48.8%):						\$118,242	
TOTAL COST				\$135,821		\$118,242	
						TOTAL COST	\$254,063
 <i>Ray's Hill Upgrades (2,532')</i>							
LUMINAIRE 2W LED SOURCE	37	ea.	\$308	\$11,396	\$85	\$3,127	\$14,523
# 3 WIRE	86	C.L.F	\$55	\$4,730	\$65	\$5,590	\$10,320
1" RGS CONDUIT	2532	L.F.	\$4.40	\$11,141	\$65	\$5,500	\$16,641
ELECTRIC SERVICE EQUIP.	1	L.S.	\$4,600	\$4,600	\$65	\$5,500	\$4,600
Photo Voltaic Power System	1	L.S.	\$18,500	\$18,500	\$80	\$12,800	\$31,300
MATERIAL SUBTOTAL				\$50,367			
WITH Mark-up (10%):				\$55,403			
LABOR SUB TOTAL						\$32,517	
WITH OH & Profit (48.8%):						\$48,385	
TOTAL COST				\$55,403		\$48,385	
						TOTAL COST	\$103,788
SCENARIO C TOTAL COST							\$357,851

Electric Service Connections

Connection of 120/240V, 1-Phase electric service to Sideling Hill Tunnel

\$21,000

Estimates of Probable Costs Itemized Costs

Signage

DESCRIPTION	QUANTITY		MATERIALS **	
	No. Units	UNIT MEAS.	PER UNIT COST	MATERIAL TOTAL COST
Regulatory Signs	20	L.S.	\$500	\$10,000
Interpretative Signs	14	L.S.	\$1,800	\$25,200
Interpretative Elements	10	L.S.	\$6,800	\$68,000
SIGNAGE TOTAL COST			\$103,200	

Miscellaneous Facilities Improvements

DESCRIPTION	QUANTITY		MATERIALS **	
	No. Units	UNIT MEAS.	PER UNIT COST	MATERIAL TOTAL COST
Purchase and instillation of CXT Cascadian SST	2	EA	\$38,000	\$76,000
New Right of Way Fencing(5' galvanized)	2000	L.F.	\$11	\$22,000
Evergreen seedling screen plantings (1000 feet planted on 4' centers)	250	EA	\$2	\$375
MISCELLANEOUS FACILITIES IMPROVEMENTS TOTAL COST			\$98,375	

Phasing Strategy

Realizing that the improvements identified in this plan, collectively, represents a to \$3 million dollar investment, it is important to consider how projects can be grouped together in logical phases that makes the overall cost more manageable. An important consideration when developing the phasing strategy is the desire to maximize accessibility to the trail as quickly as possible. The following break-down represents an itemized list of projects, and in some cases sub projects, into eight separate phase to be achieve within an approximately 10 year completion horizon. Each phase represents a bundle of projects with a total cost not to exceed \$500,000. This amount is considered a conservative upper limit for annual funding, based on likely grant program that would support this project. This figure also represents a project management threshold, based on likely staff capacity to oversee such capital projects.

Phase 1: Years 1 and 2

Breezewood Trailhead Site Improvements	\$168,000
Phase 1 of Signing – Rules and Regulatory Signs	\$10,000
Drainage Improvement	\$72,000
Median Plantings	\$16,000
Toilet Facilities	\$29,500
Initial Setup Items (gates, barriers, etc.)	\$25,000
Phase Total	\$320,000*

Phase 2: Years 3 and 4

Phase 1 of Ray’s Hill Tunnel Stabilization**	\$247,500
ROW Fencing and Buffer Planting	\$29,500
Rays Hill Tunnel Lighting	\$104,000
Phase Total	\$381,000*

Phase 3: Year 5

Phase 1 of Sideling Hill Stabilization**	\$453,500
Phase Total	\$453,500*

Phase 4: Year 6

Sideling Hill Tunnel Lighting	\$305,000
Phase Total	\$305,000*

Phase 5: Year 7

Trail Surfacing	\$342,000
Phase Total	\$342,000*

Phase 6: Year 8

Cove Plaza Trailhead Site Improvements	\$110,000
Phase 2 of Ray’s Hill Tunnel Stabilization	\$224,500
Phase Total	\$334,500*

Phase 7: Year 8

Phase 2 of Sideling Hill Stabilization	\$412,000
Phase Total	\$412,000*

Phase 8+: Years 8-10

Remaining Trailhead Improvements	\$206,000
Interpretative Signing Program	\$258,000
Phase Total	\$464,000*

* All costs are stated in Year 2005 Dollars and are not escalated to address inflation for future year construction. One projected construction dates for each phase are determined, a 3% escalation factor should be compounded for each year between January 2005 and the midpoint of construction.

** This is based on an assumption that the stablization work can be divided into two phases - Engineering/ Imediate Stabilization and Longterm Stabilization.

Financing Strategy

Several potential sources are available at the state and federal level to fund various elements of the Pike to Bike Trail.

The Community Conservation Partnerships Program (C2P2)

The C2P2 is a grant program administered by the Department of Conservation and Natural Resources (DCNR) – Bureau of Recreation and Conservation, with eligibility for greenways and trails under the Development Projects grant type.

Eligible applicants include municipalities, municipal agencies, pre-qualified land trust, and authorized organizations. Authorized organizations must be both tax-exempt under Section 501 (c) (3) of the Internal Revenue Code and registered with the Pennsylvania Department of State, Bureau of Charitable Organizations.

The grant program generally requires a 50% match. No costs or non-cash match incurred prior to the approved project period are eligible for reimbursement or use as a match. The Bureau will accept non-cash match, which can include donated materials, professional time, volunteer time, donated land value, and services conducted in-house for which the grantee organization does not receive compensation.

Applications for all project types, including Development Projects, will be accepted during the “Primary” open application period, which extends from April 30, 2005 – September 30, 2005, if postmarked by the deadline of September 30, 2005 or hand delivered to the Central Office by 5:00 p.m. on that date.

For more information, it is recommended that grant applicants contact their Regional Field Office to discuss the proposed project and program application requirements. The Regional Park Advisor for the Southcentral Field Office (which covers Fulton and Bedford counties) is Cindy Dunlap, who can be contacted at Southcentral Regional Office, P.O. Box 1554, Harrisburg, PA 17105-1554, cydunlap@state.pa.us, phone: (717) 772-4362, fax: (717) 705-2943.

Information related to a Pre-Application Workshop for the 2005-2006 grant round (Round 12) scheduled for June 28, 2005 in Altoona, and to the 2005-2006 C2P2 Program Manual, which includes a Grants Booklet, Grant Application Form, Frequently Asked Questions is available at <http://www.dcnr.state.pa.us/brc/grants>.

Pennsylvania Energy Harvest Grant Program

A state funding program exists that could potentially be used to minimize operational costs along the Pike to Bike Trail. The Pennsylvania Energy Harvest Grant Program funds projects that promote and build markets for advanced or renewable energy technologies, such as small-scale solar or wind power systems in rural areas. Eligible projects include renewable energy deployment and implementation of innovative energy efficiency technologies. This grant could be used to fund a solar power demonstration system capable of providing sufficient energy for the lighting system for the Trail's two tunnels.

The Energy Harvest Grant Program is administered by the Pennsylvania Department of Environment (DEP) – Office of Energy and Technology Development, which distributed grants totaling \$10 million for 2003 and 2004.

The deadline for the third round (2005) of the Energy Harvest Grant is July 22, 2005. A one-page application is available at www.dep.state.pa.us/dep/deputate/pollprev/EHG/default.htm. The contact person at the Pennsylvania DEP is Dan Desmond, Deputy Secretary for Energy and Technology Development.

Federal Transportation Appropriations

Federal funding could potentially be available through inclusion as a line-item in the annual transportation appropriations bill. The local U.S. Congressional Representative for the area covering the Pike to Bike Trail Bill Shuster (R-PA), who is assigned to the House Transportation & Infrastructure Committee. His office can be contacted at: Somerset Office, 118 West Main Street, Suite 104, Somerset, PA 15501, phone: (814) 443-3918, fax: (814) 443-6373.

Transportation Enhancements Program

The Transportation Enhancements (TE) program is a 10% set-aside of the state's Surface Transportation Program (STP) federal authorization which provides funding for a variety of non-traditional transportation-related activities, including *Bicycle & Pedestrian Facility* and *Rehabilitation*

of Historic Transportation Buildings, Structures, & Facilities. This federal cost reimbursement program is administered by PENNDOT and the Regional Planning Agency, in this case, the Southern Alleghenies Planning and Development Commission (SAPDC).

Project development activities eligible for funding include planning, design, acquisitions, and construction. The TE program requires a 20% local or state match. In the 2004 funding round, PENNDOT awarded a total of \$35.9 million for 127 projects statewide, including the Pike to Bike Trail which was awarded \$70,000.

Though the federal transportation bill is currently awaiting reauthorization by the U.S. Congress, the Transportation Enhancements program is being preserved in U.S. House Bill (H.R. 3) – The Transportation Equity Act: A Legacy for Users (TEA-LU).

Applications for the next two-year funding round will be available in August 2005 on the PENNDOT website and due on October 31, 2005. The SAPDC is expected to make final funding selections in early 2006, and will have approximately \$900,000-\$1,000,000 available to award.

Transportation Enhancements program contacts for this study area include the following:

PennDOT Engineering District 9-0
Dave Lyburger
1620 N. Juniata Street
Hollidaysburg, PA 16648
E-mail: dlyburger@state.pa.us
(814) 696-7178

Southern Alleghenies Planning and Development Commission
John Dubnansky
Web: www.sapdc.org
E-Mail: dubnansky@sapdc.org
(814) 949-6232

PennDOT Discretionary Funding

The Pennsylvania Department of Transportation, at the discretion of the department Secretary, may use TE funding or other funding from other state and federal sources, to fund projects of a regionally-significant nature. The Trail's overall length, bi-county coverage, and projected wide catchment area for recreational use, could justify its regional significance and economic impact.

Private Foundation Support

Private foundations are an additional source of funding for greenway/trail projects. The Surdna Foundation funds transportation and urban / suburban land use projects through its Environment Program. The primary focus for funding transportation projects is on reducing vehicle miles traveled and maximizing accessibility over mobility. The overall range of grant awards is \$4,000 - \$450,000, with the average grant in the \$25,000 - \$100,000 range. Eligibility is restricted to non-profit organizations, the geographic scope is national, and there is no application deadline. The primary contact at the Surdna Foundation is Edward Skloot, Executive Director, 330 Madison Avenue, 30th Floor, New York, NY 10017-5001, phone: (212) 557-0010, fax: (212) 557-0003, email: request@surdna.org, Url: <http://www.surdna.org>.

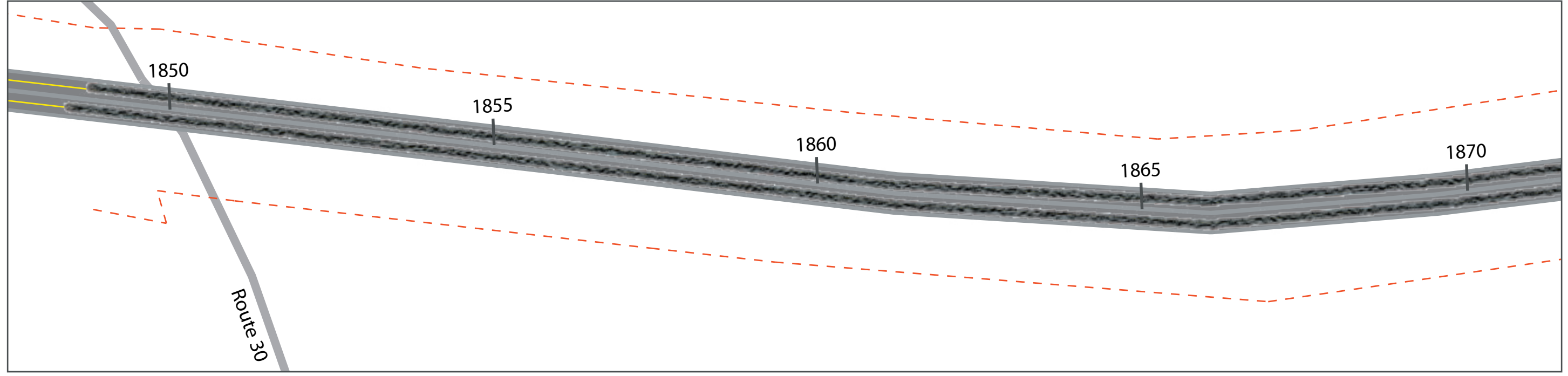
Individual Memberships

Other sources of revenue should be considered for annual support, for day-to-day activities. Local community support and special interest individuals could provide both volunteer labor and individual monetary support. A formal "Friends of" group, with an ultimate goal of 1000 participants at \$25 per member could be achieved. This goal, however, will take several years to achieve and special benefits will need to be developed to attract memberships to support, what is otherwise a free-to-the-public facility. Realistically, the management organization could expect to generate between \$2,500 and \$5,000 annually, during the first few years, in membership dues and personal gifts.

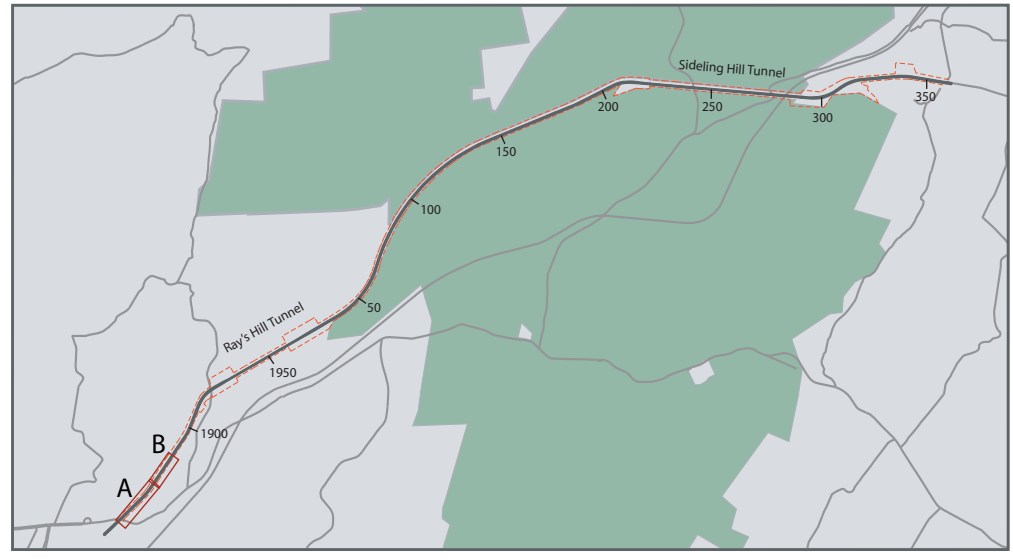
Corporate Sponsorships

The opportunity exists to tap into the region's recent activity in attracting national corporate entities. The national outdoor outfitting company, REI, has located a major distribution facility in Bedford County. Cannondale, a noted

bicycle manufacturer, has a facility in the County as well. These corporations, along with other major businesses, such as New Enterprise Stone, could be a source of financial support in the form of annual or one-time corporate sponsorships. In order for this to be effective, a package of public promotion and donor acknowledgments is needed to excite donor participation.






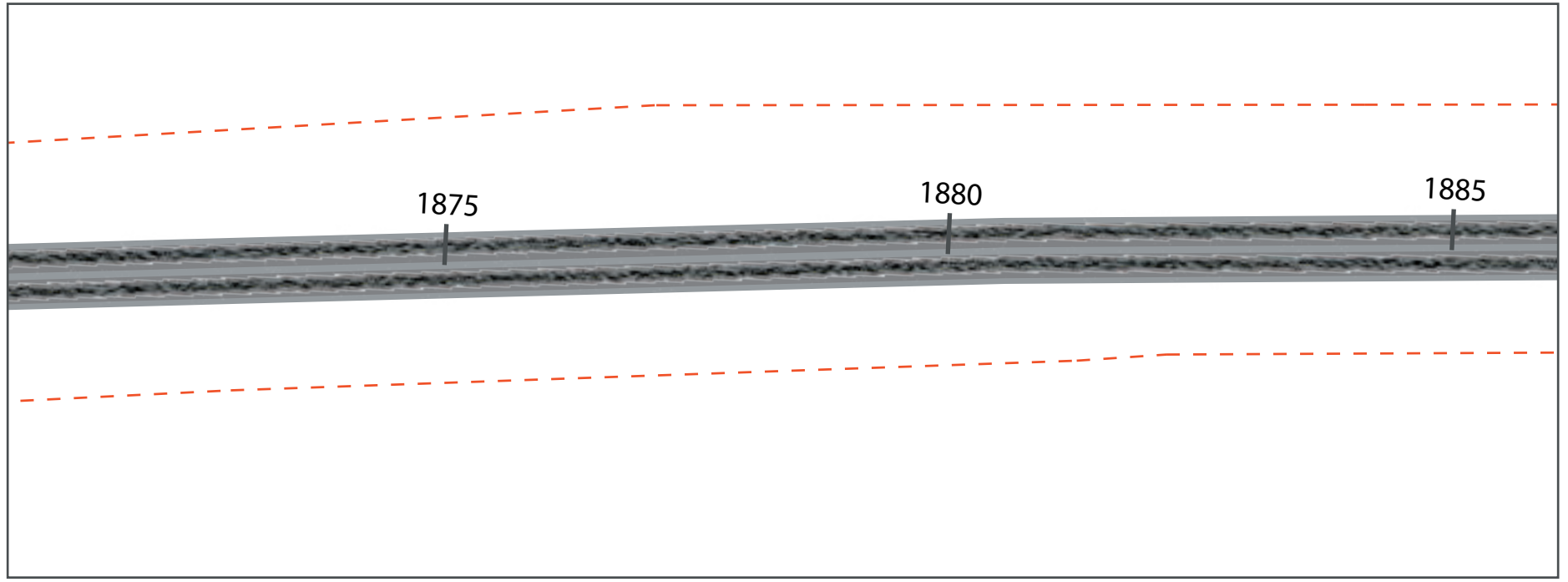
Section A



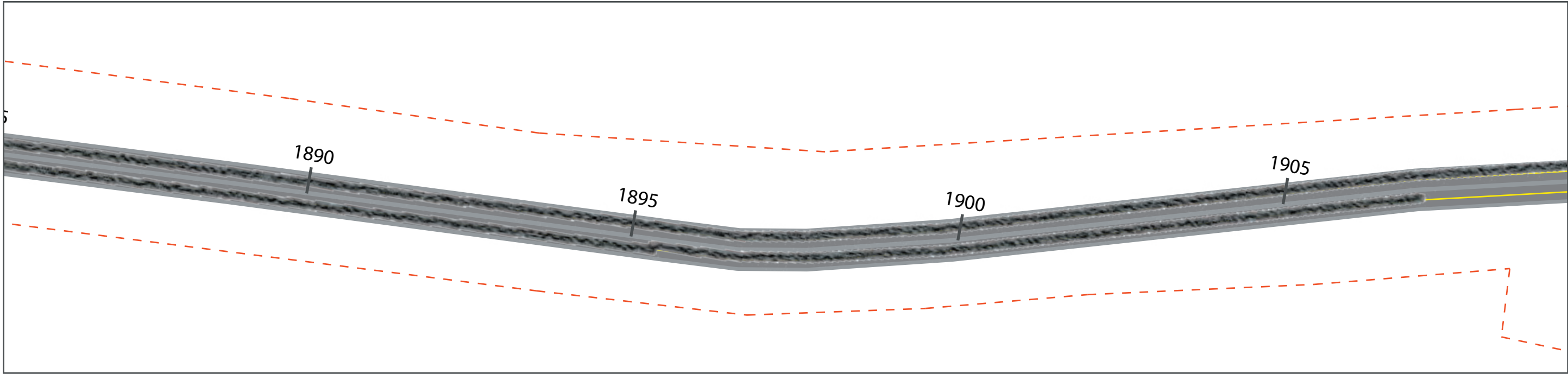
Roadway Section Context

Roadway Distress Key

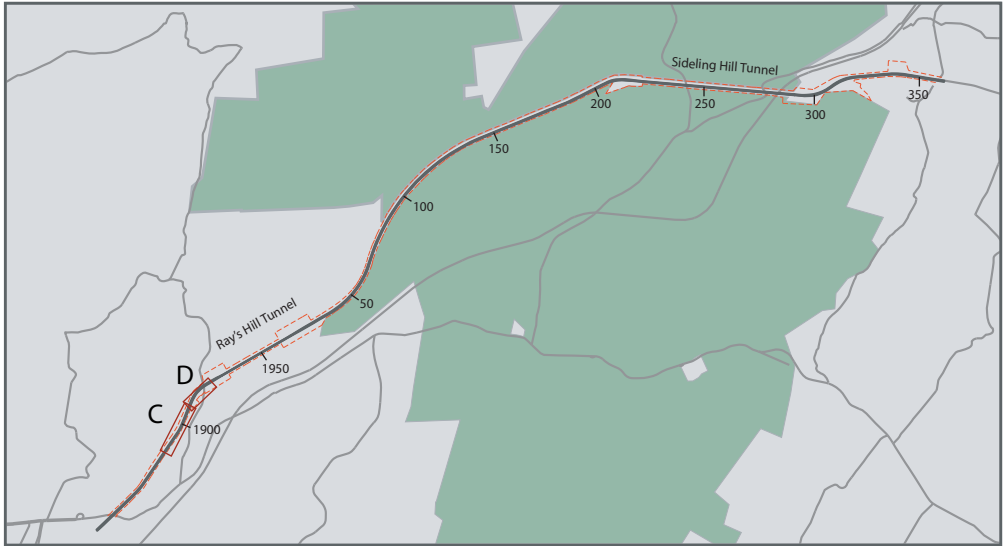
-  Raveling
-  Potholes
-  Vegetation



Section B






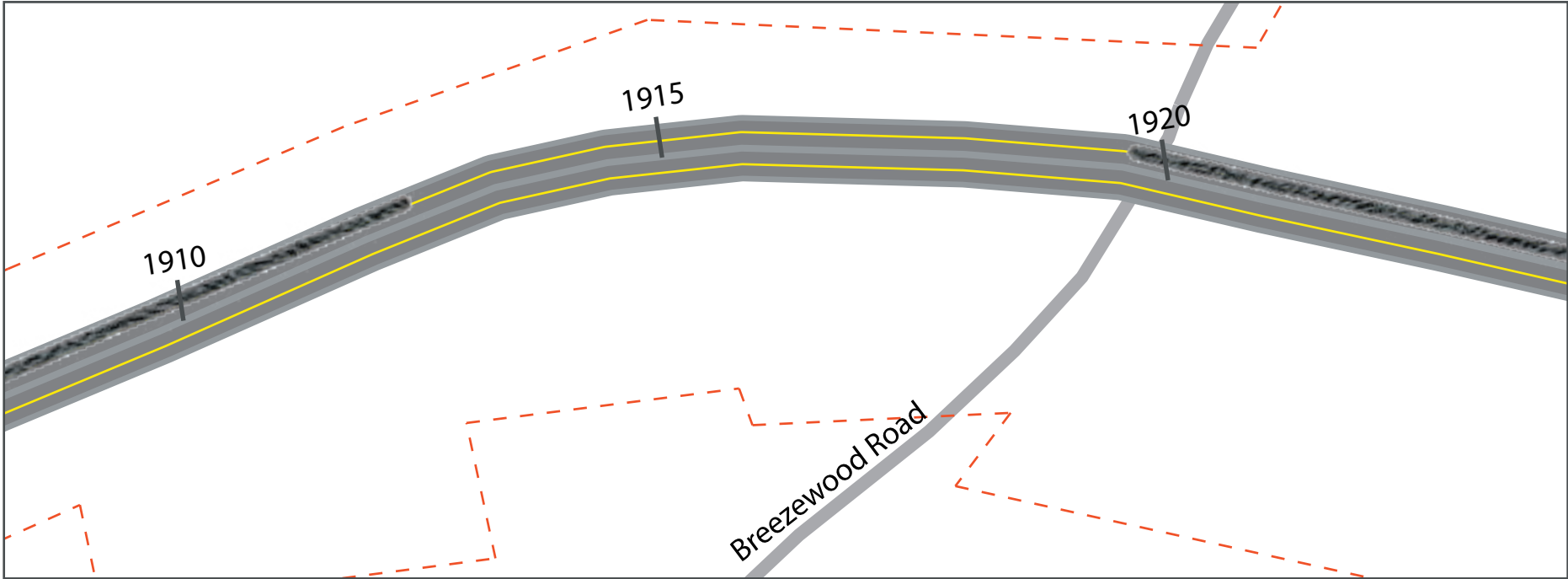
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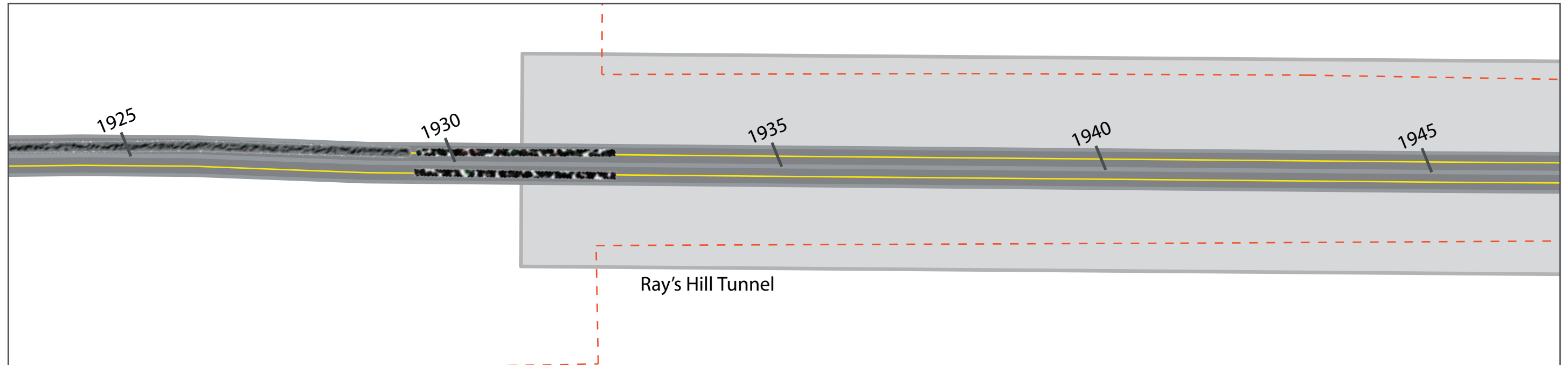
Roadway Section Context

Roadway Distress Key

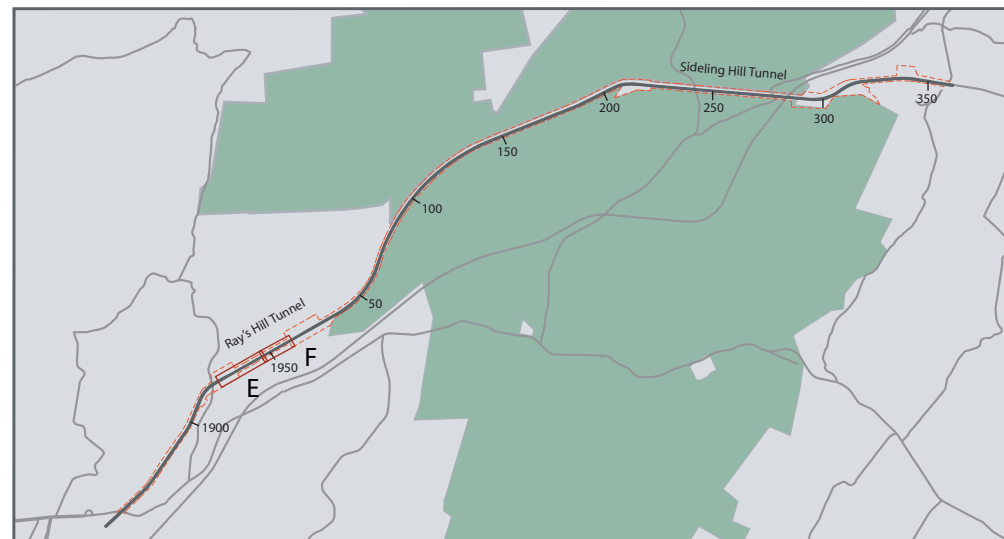
-  Raveling
-  Potholes
-  Vegetation



Section D






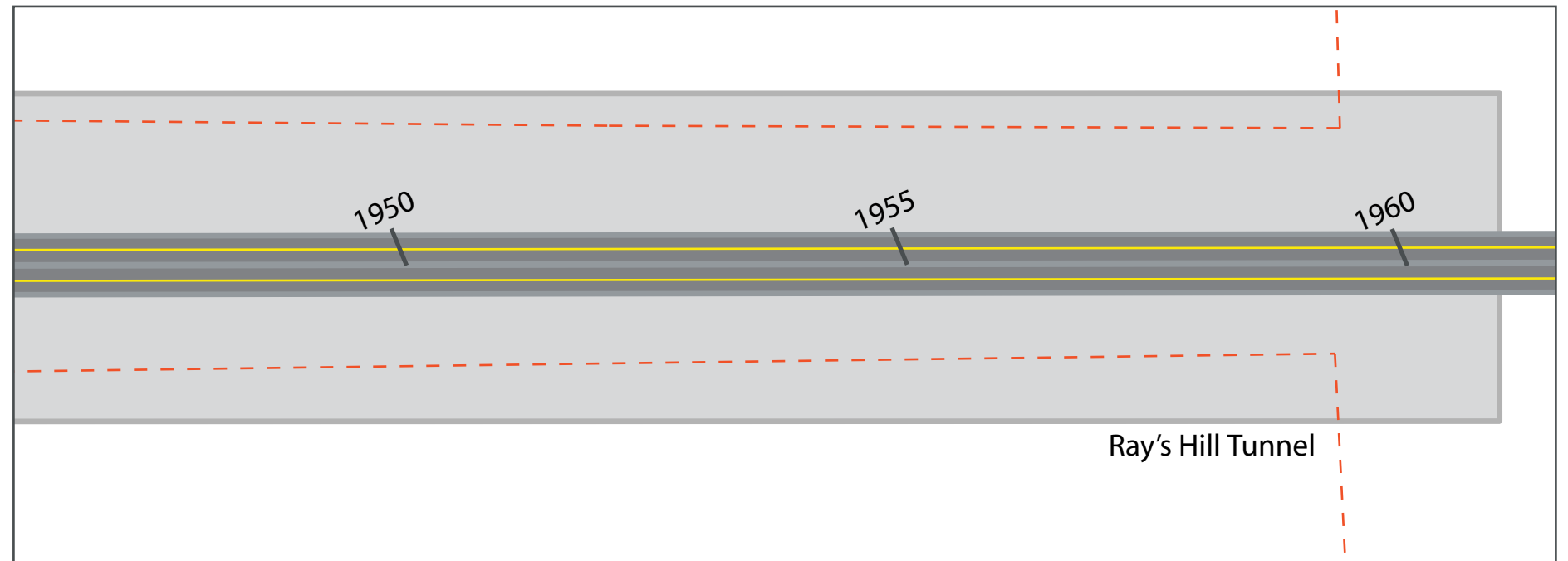
Section E



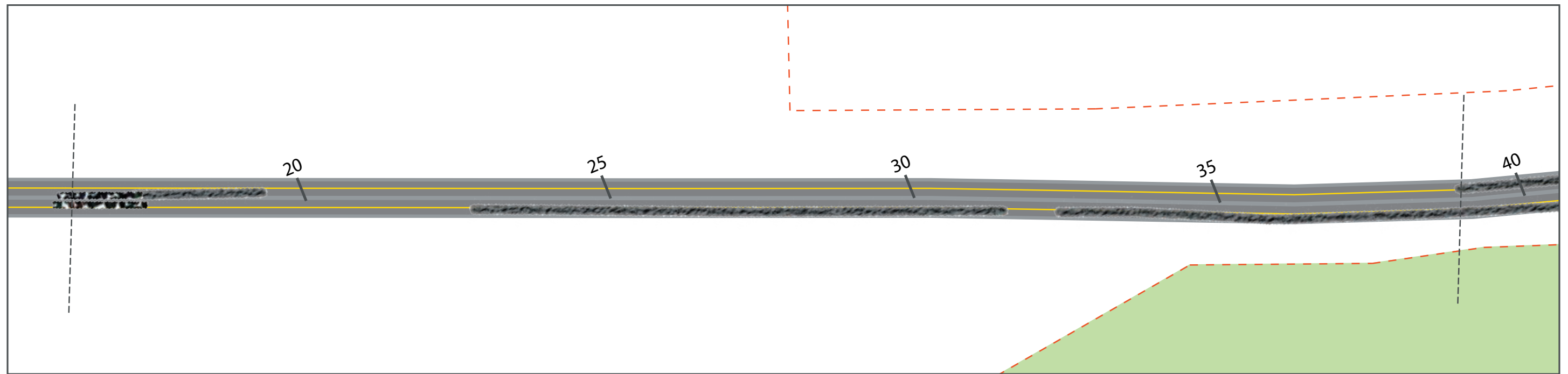
Roadway Section Context

Roadway Distress Key

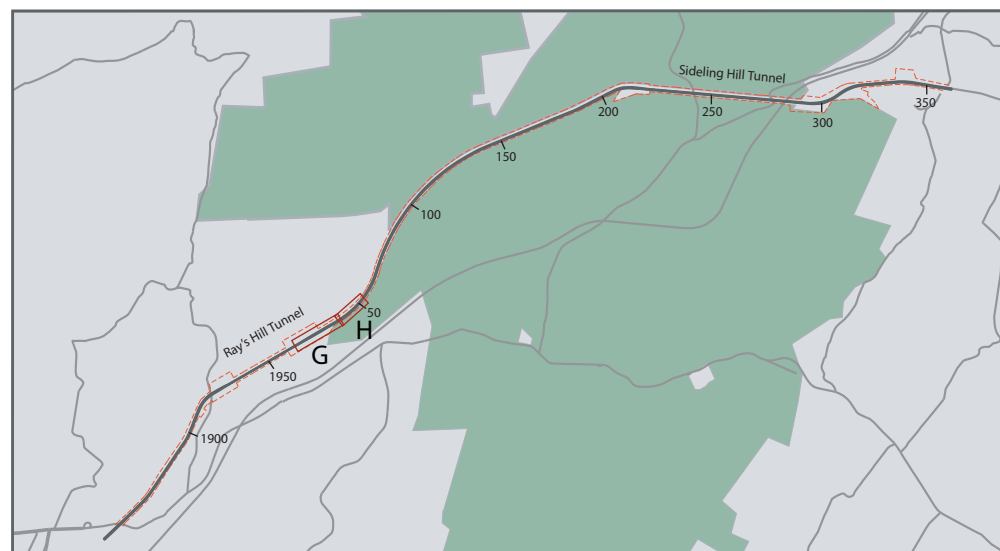
-  Raveling
-  Potholes
-  Vegetation



Section F






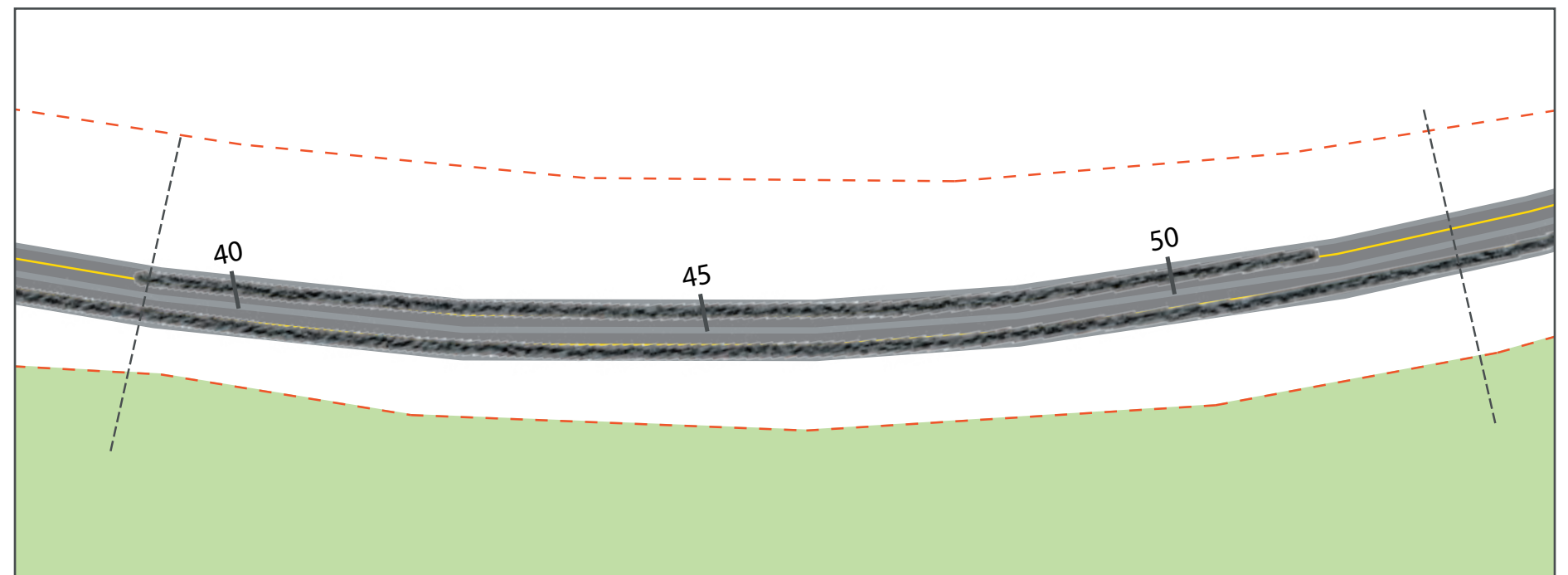
Section G



Roadway Section Context

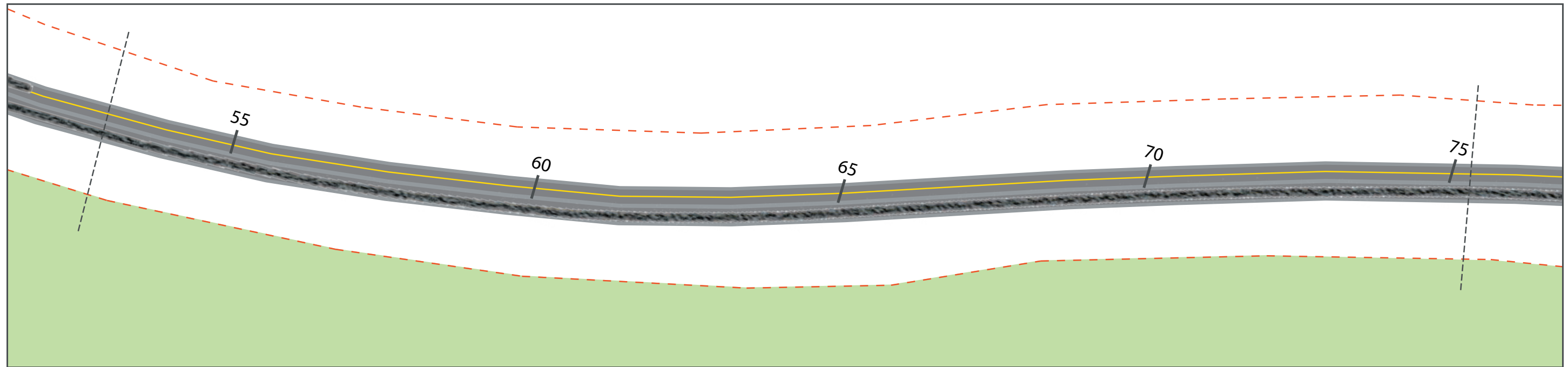
Roadway Distress Key

-  Raveling
-  Potholes
-  Vegetation

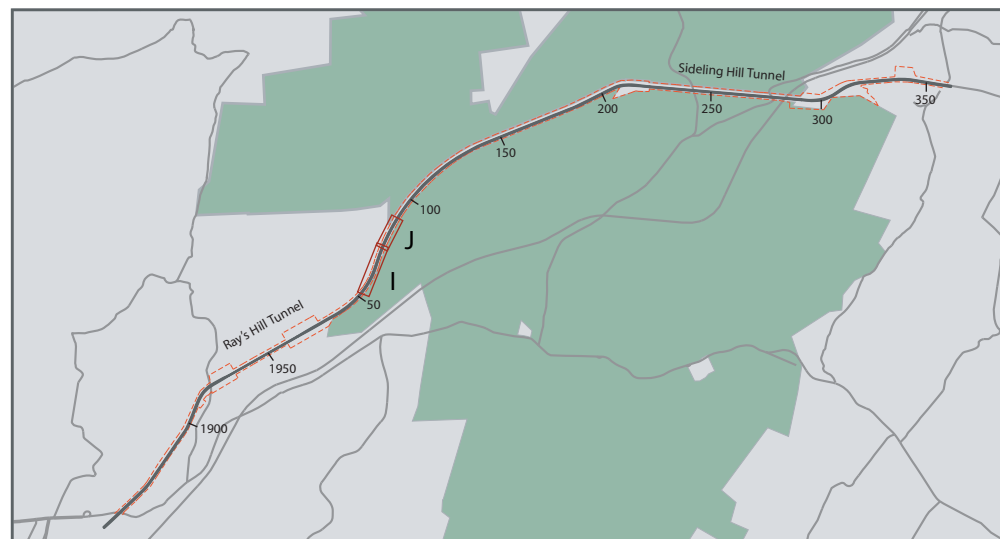


Section H

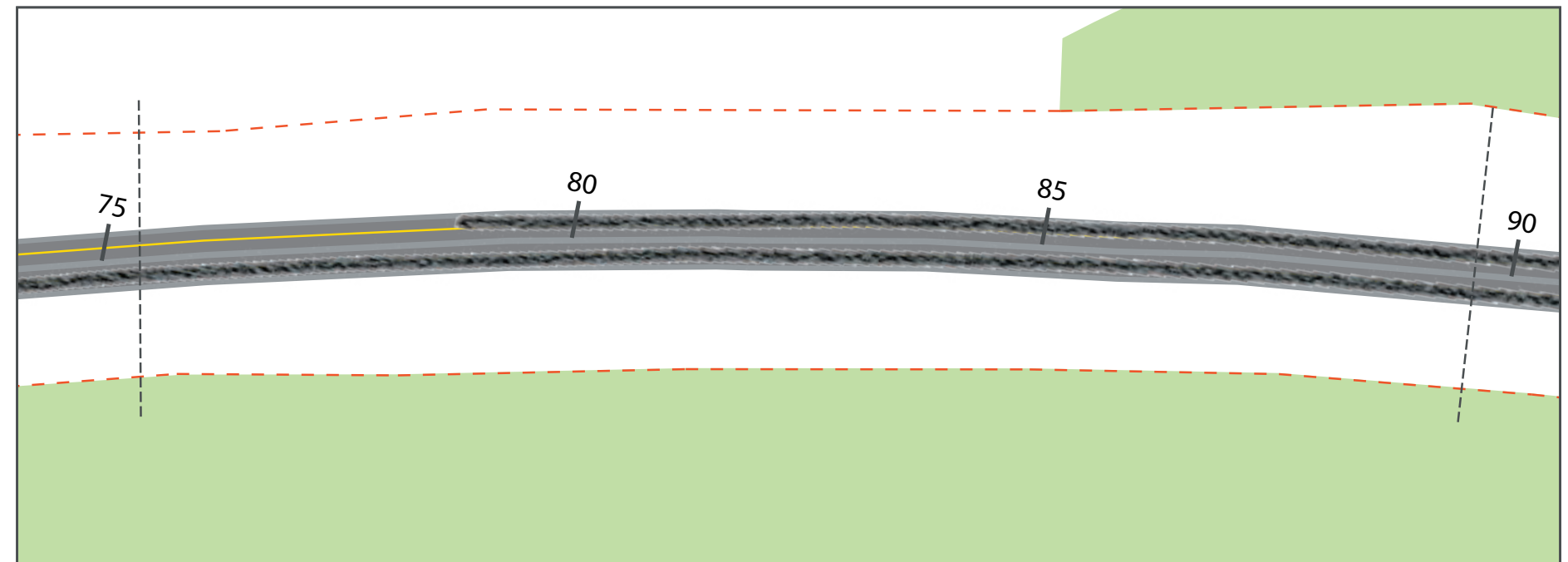
APPENDIX A · Existing Pavement Distress



Section I






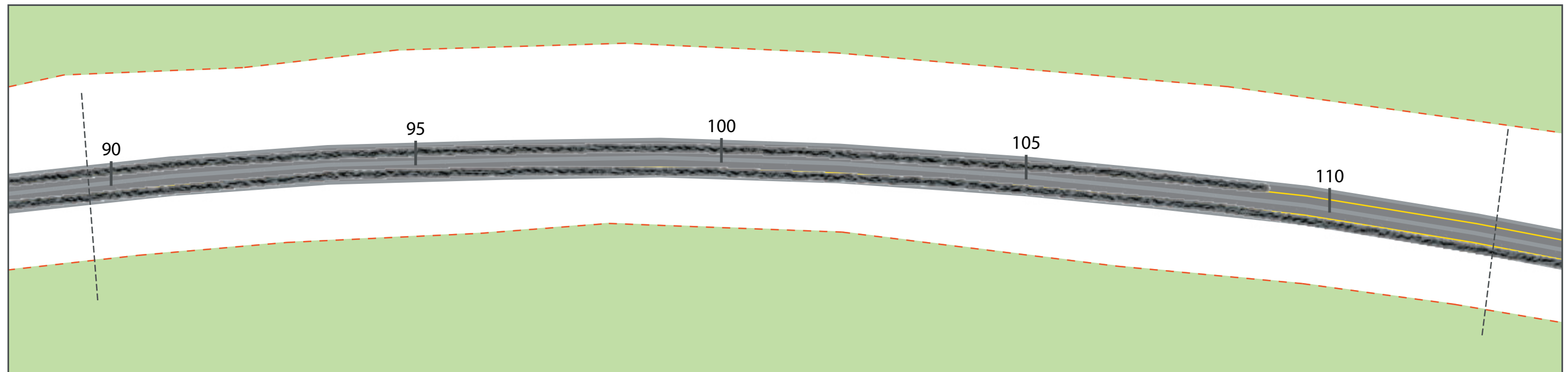
Roadway Section Context



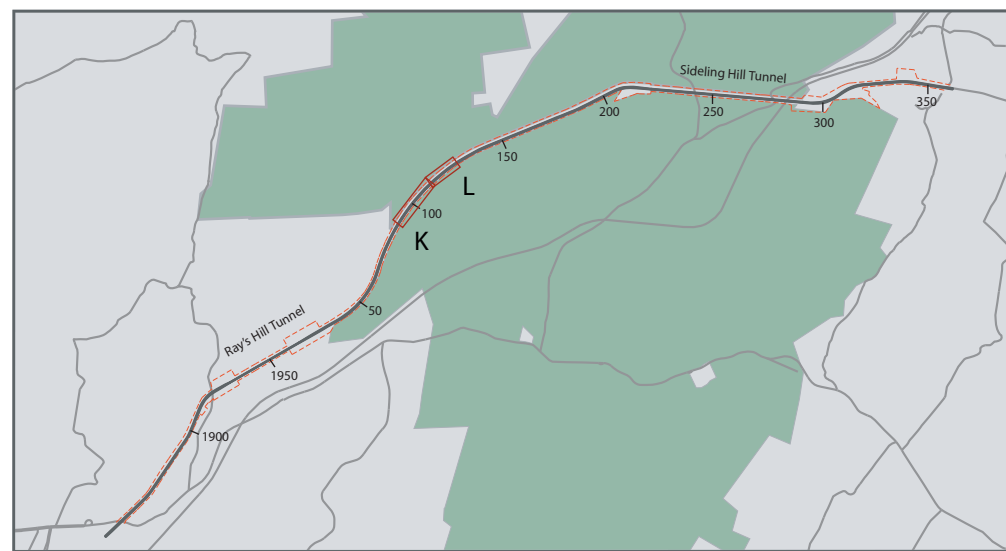
Section J

Roadway Distress Key

-  Raveling
-  Potholes
-  Vegetation






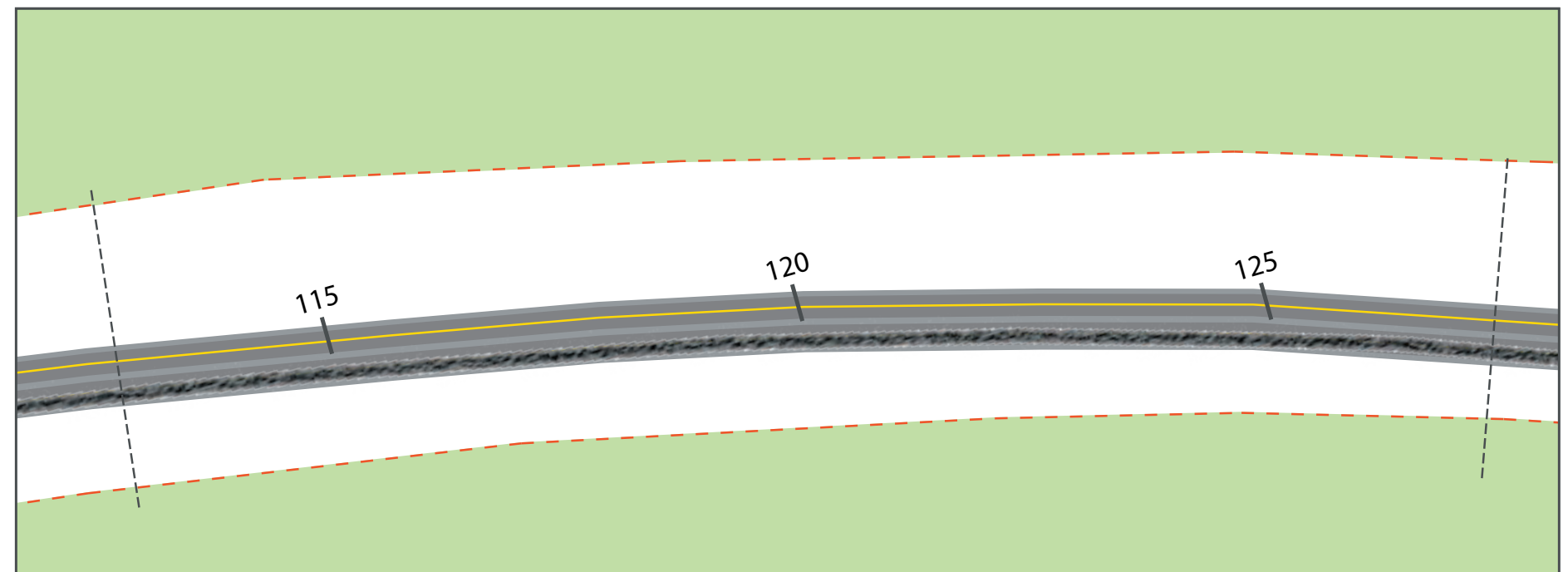
Section K



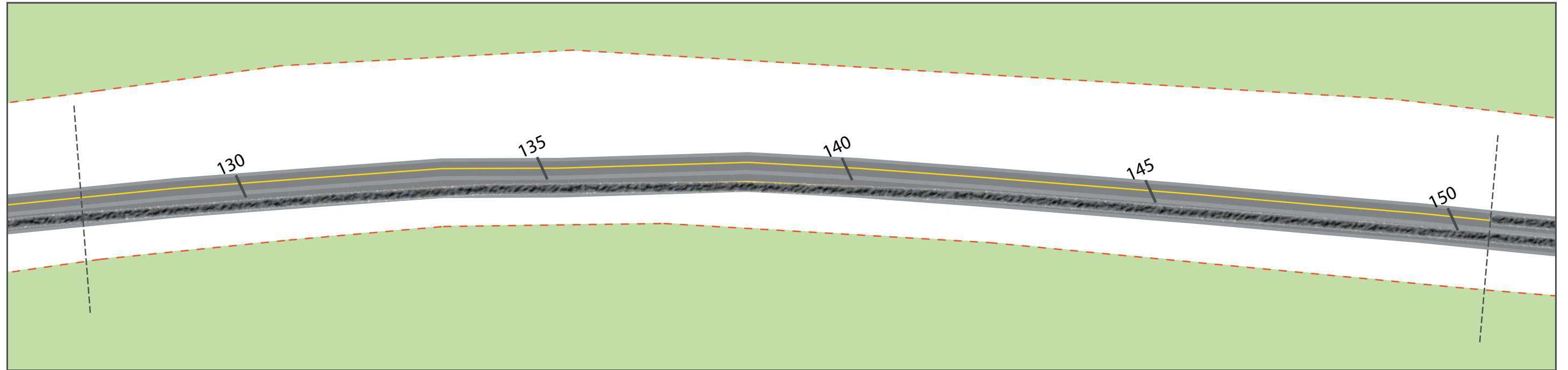
Roadway Section Context

Roadway Distress Key

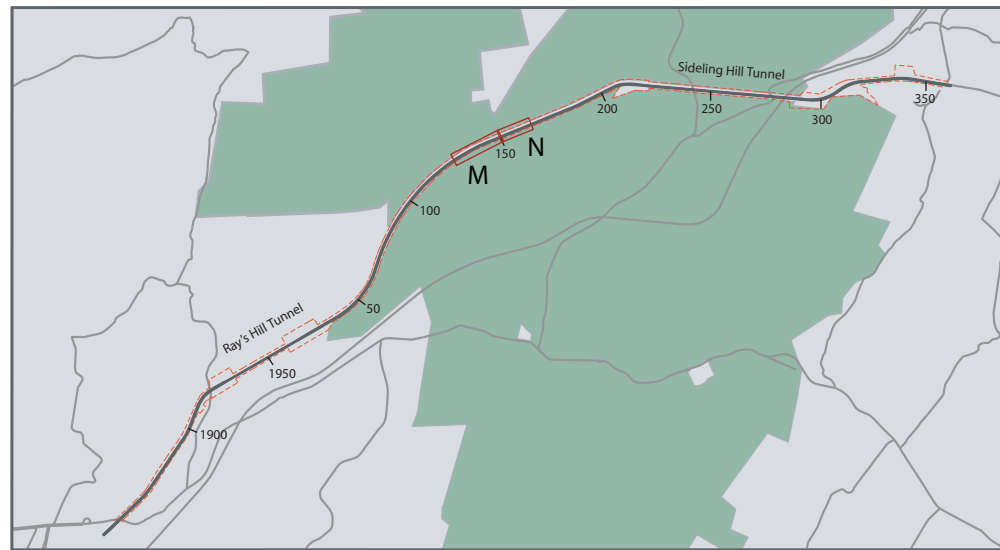
-  Raveling
-  Potholes
-  Vegetation



Section L






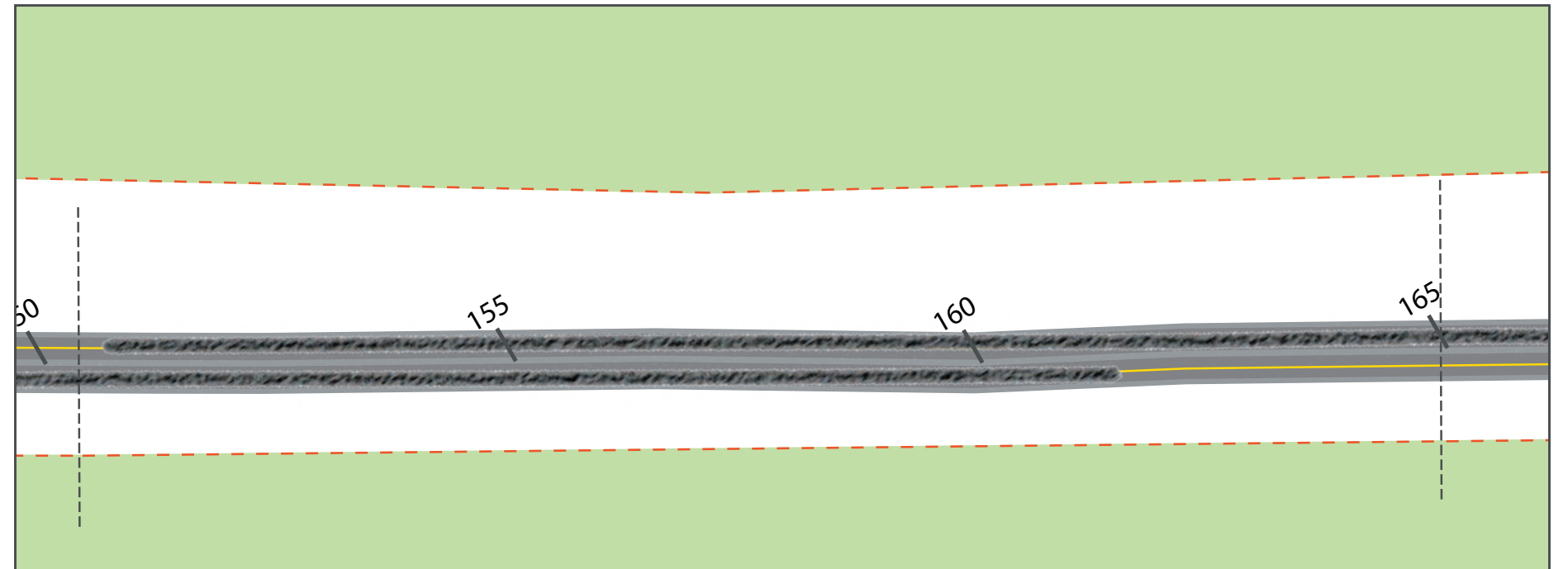
Section M



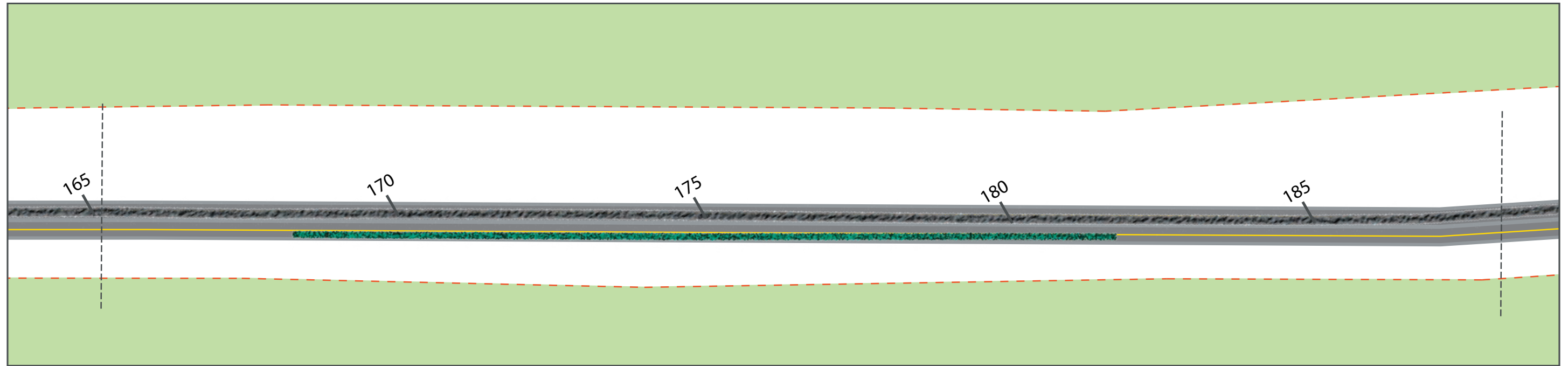
Roadway Section Context

Roadway Distress Key

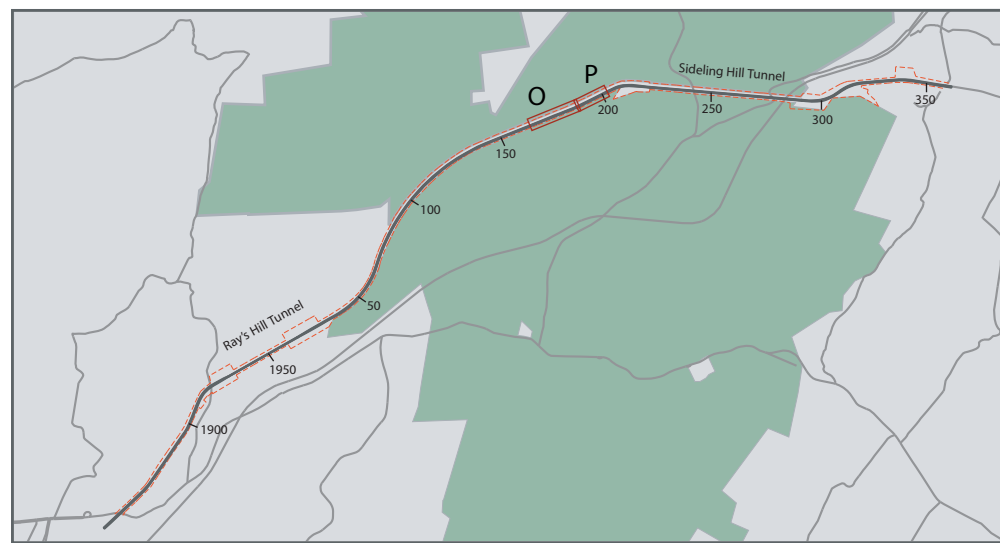
-  Raveling
-  Potholes
-  Vegetation



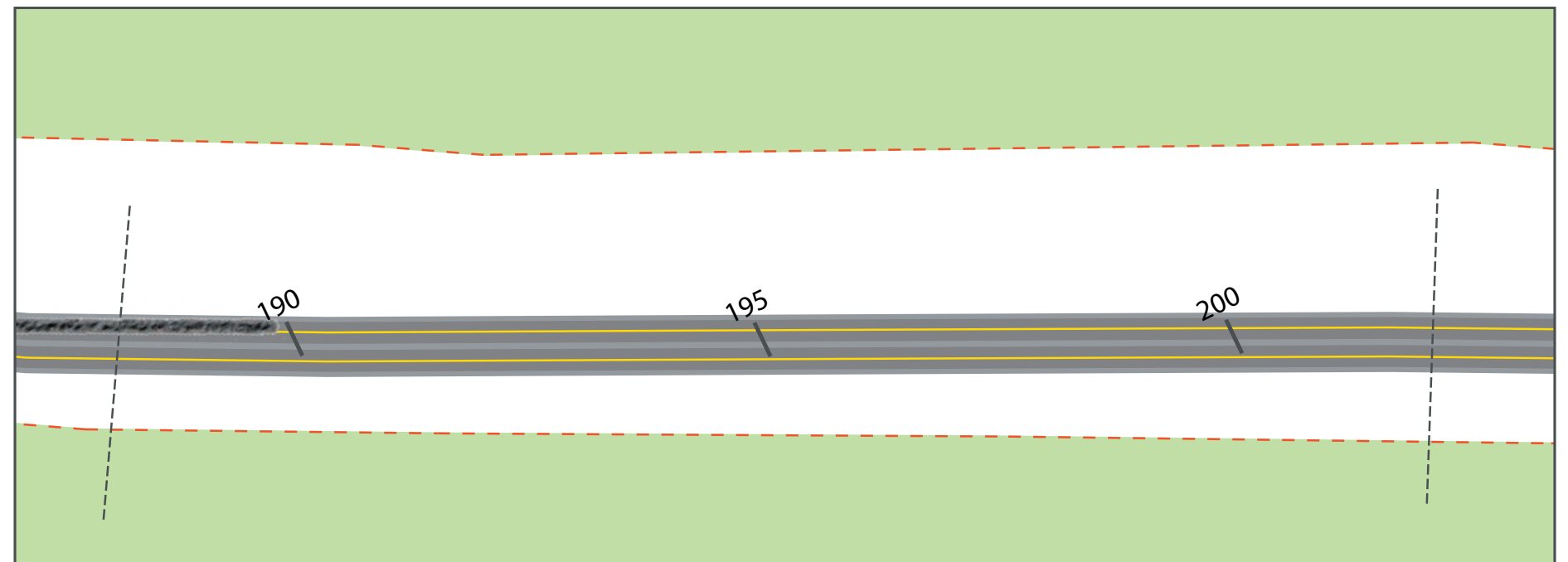
Section N



Section O






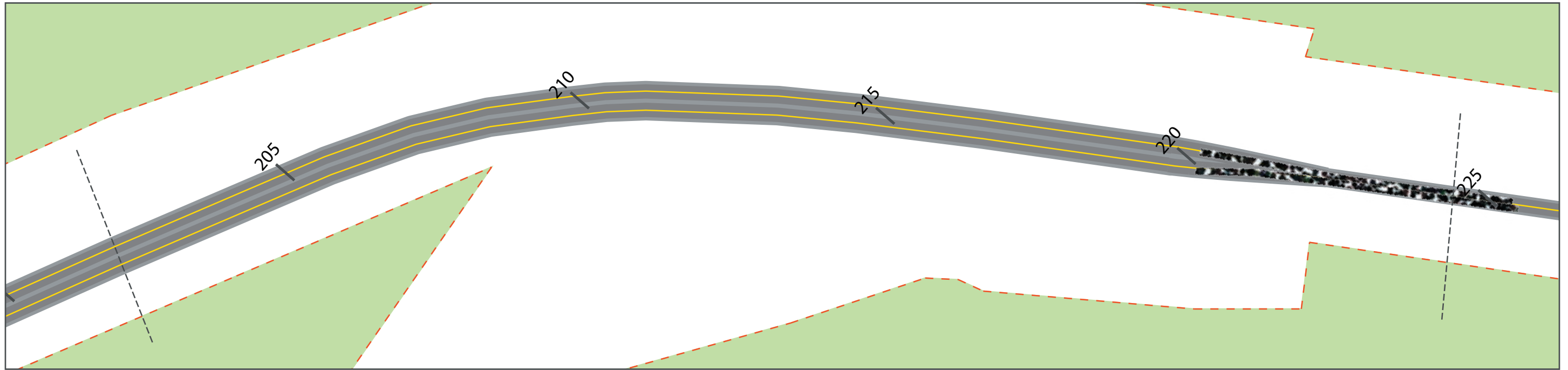
Roadway Section Context



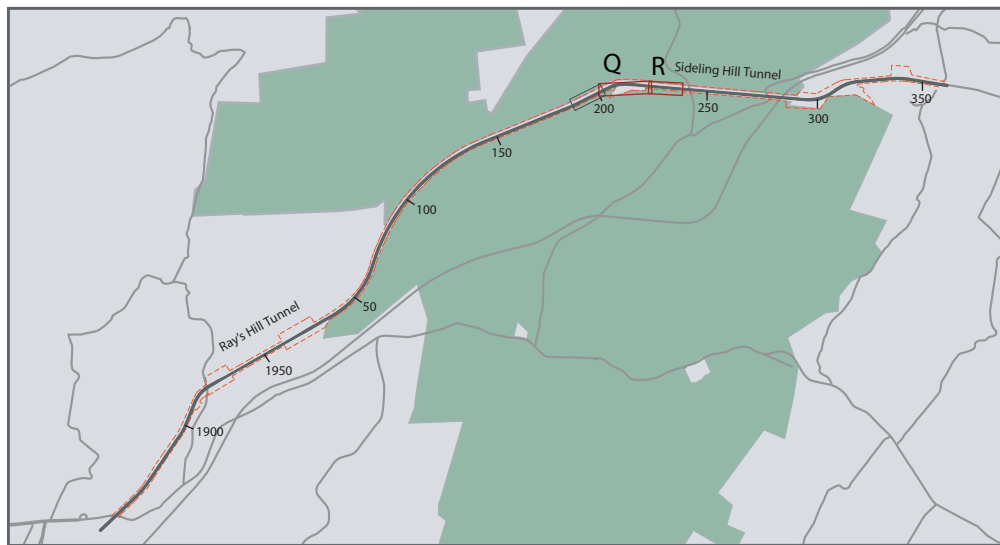
Section P

Roadway Distress Key

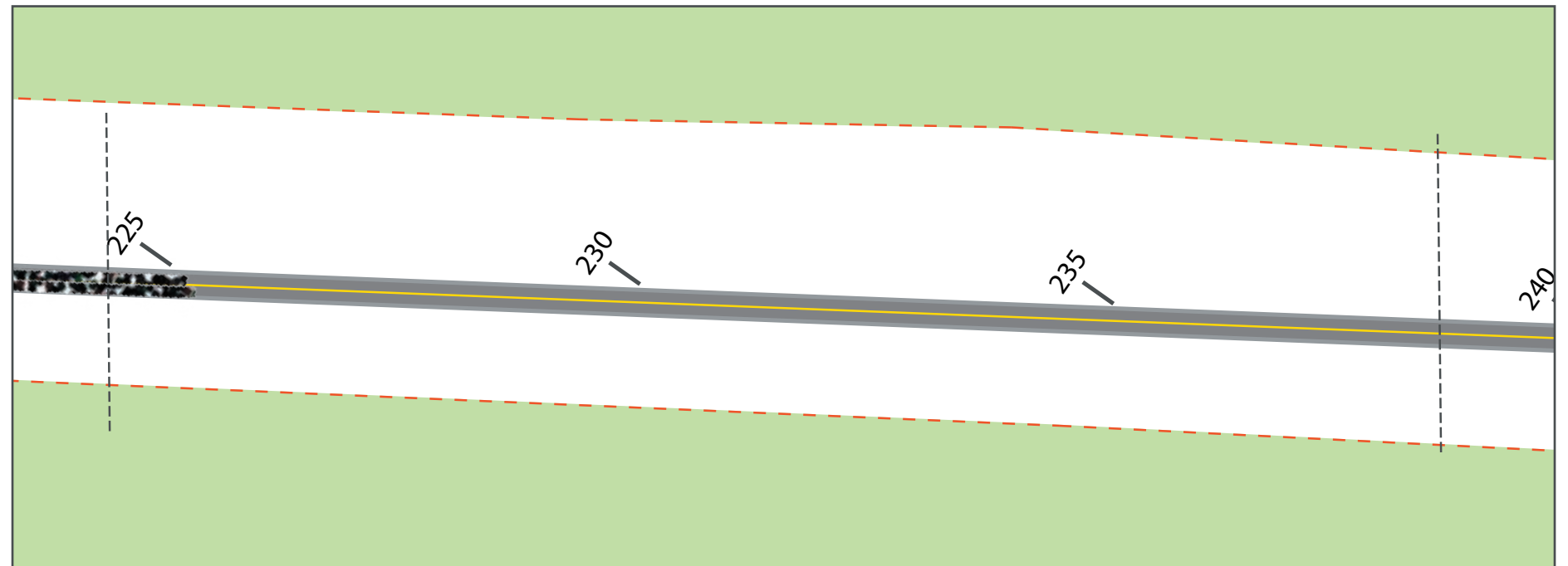
-  Raveling
-  Potholes
-  Vegetation



Section Q






Roadway Section Context

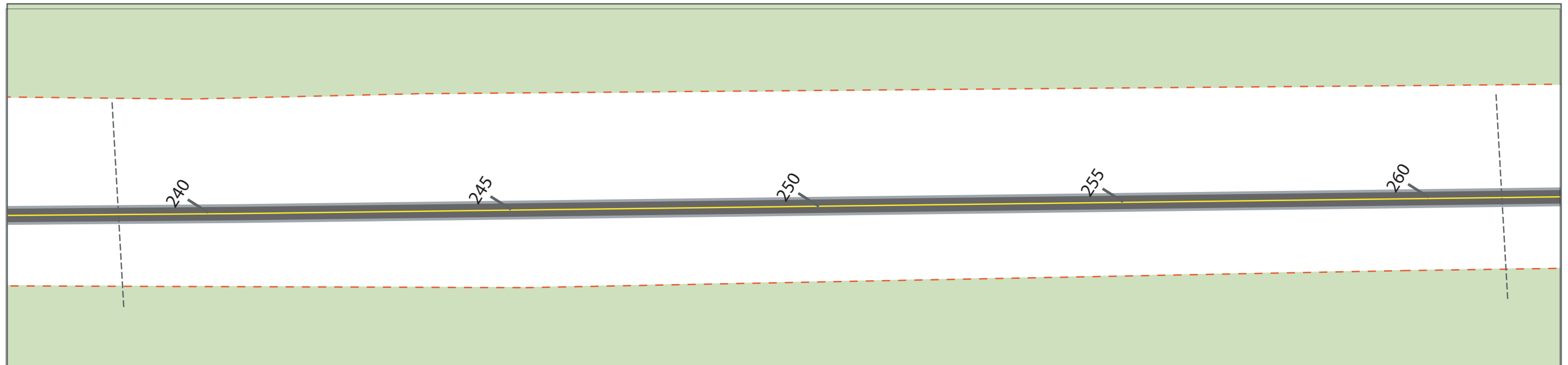


Section R

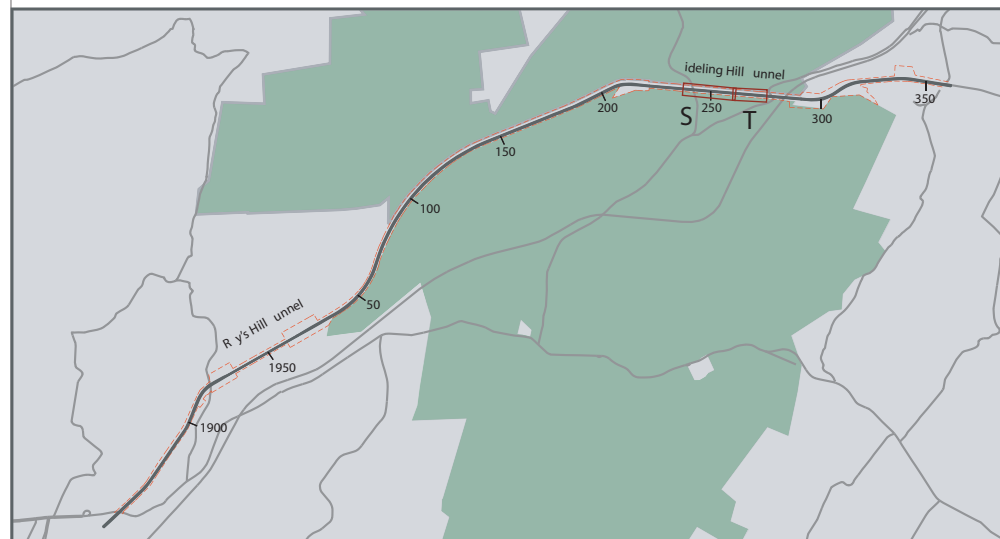
Roadway Distress Key

-  Raveling
-  Potholes
-  Vegetation

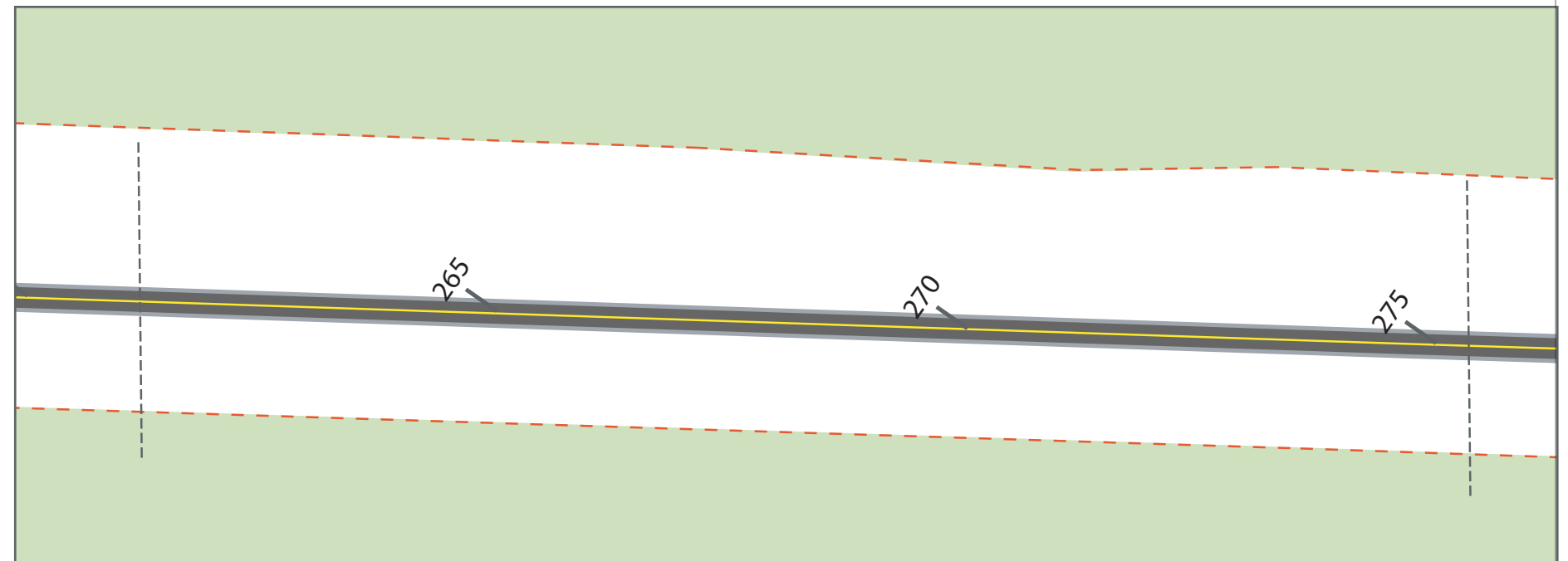
APPENDIX A · Existing Pavement Distress



Section S



Roadway Section Context

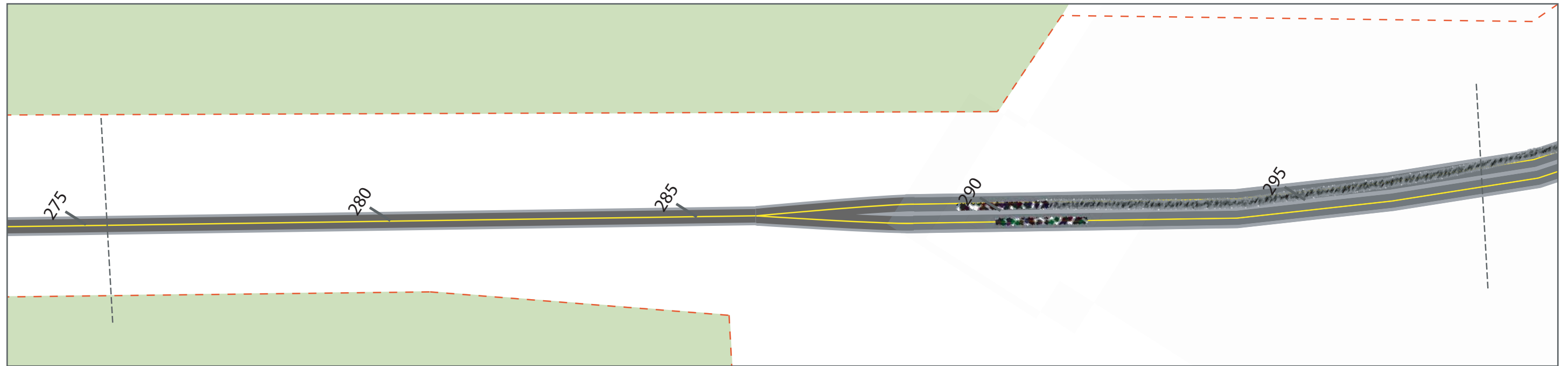


Section T

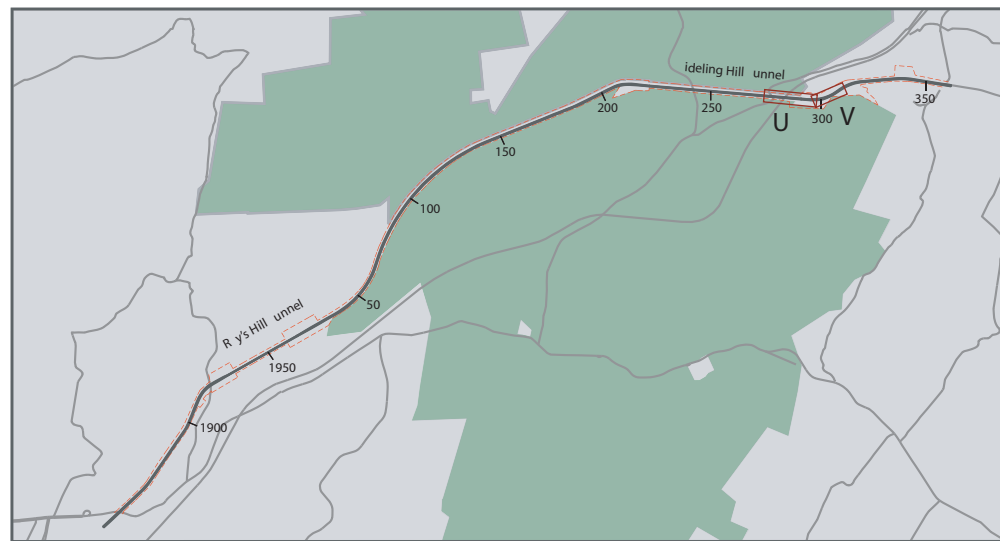
Roadway Distress Key

-  Raveling
-  Potholes
-  Vegetation

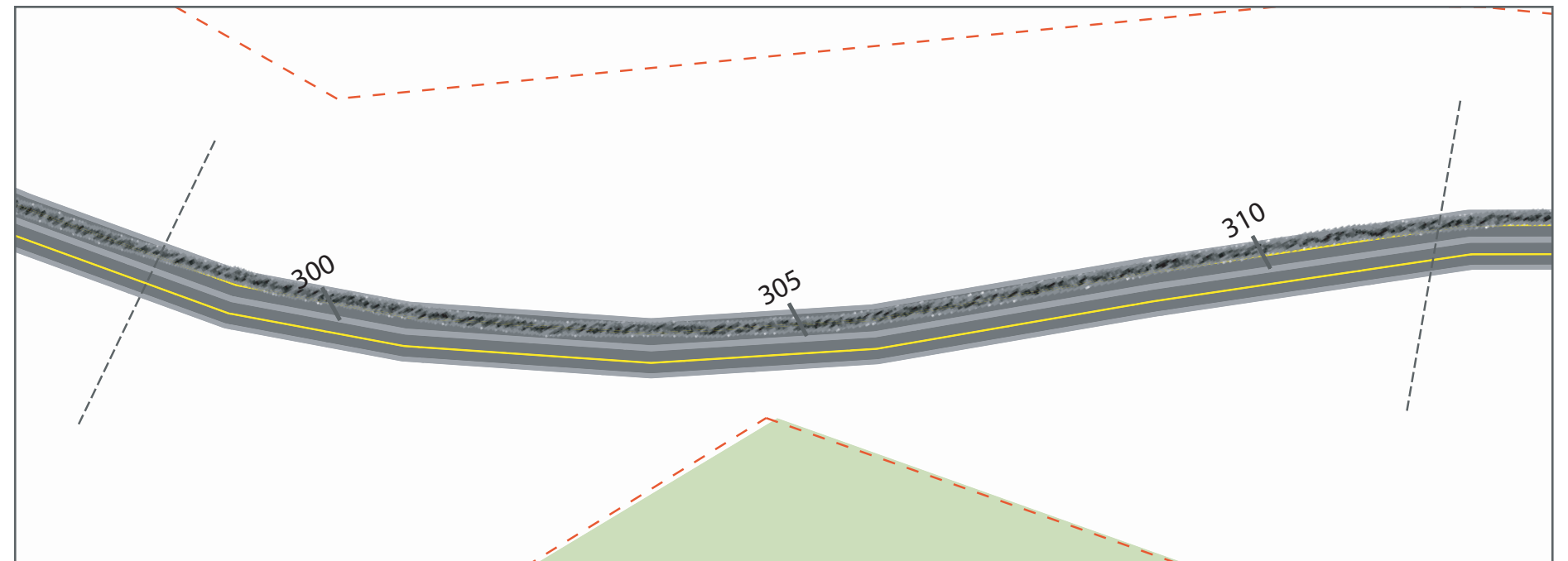
APPENDIX A · Existing Pavement Distress



Section U



Roadway Section Context

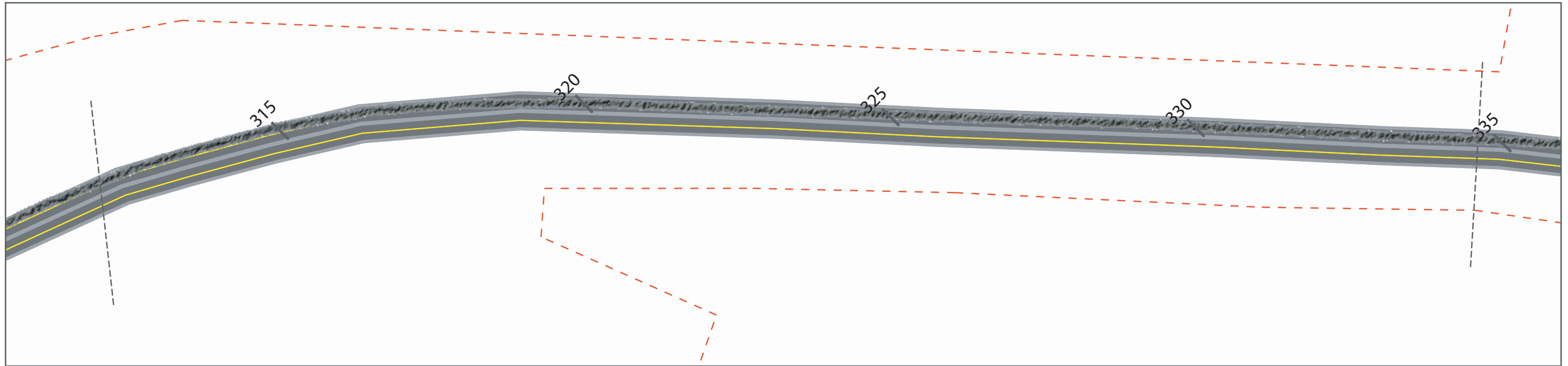


Section V

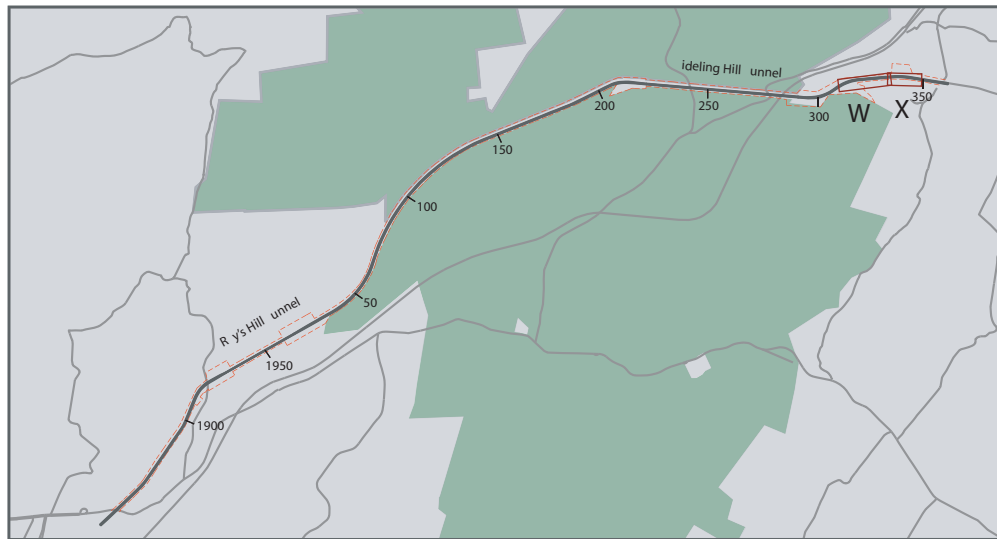
Roadway Distress Key

-  Raveling
-  Potholes
-  Vegetation

APPENDIX A · Existing Pavement Distress




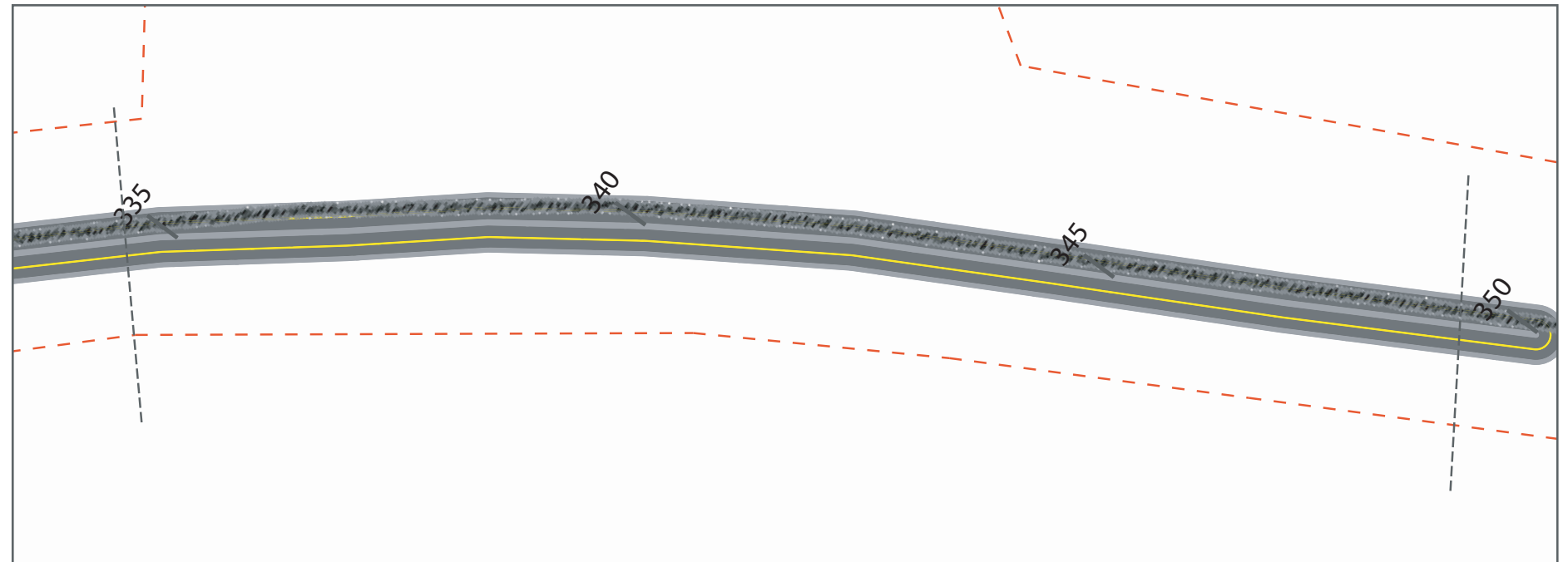
Section W



Roadway Section Context

Roadway Distress Key

-  Raveling
-  Potholes
-  Vegetation



Section X