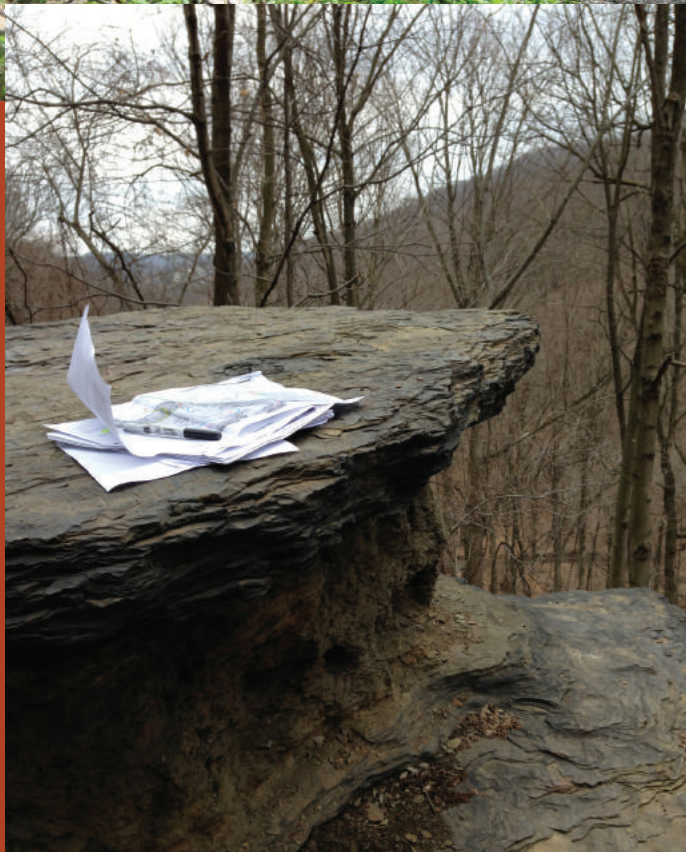


# Dead Man's Hollow Conservation Area *Management Plan*



Helping local people save local land.



**PASHEK ASSOCIATES**

LANDSCAPE ARCHITECTURE | DESIGN | PLANNING

with the Pennsylvania Natural Heritage Partnership  
and CycleForward

September 29, 2014

→ ←  
THE DEAD  
RUNS  
TRAIL

# Dead Man's Hollow Conservation Area Management Plan



Prepared by

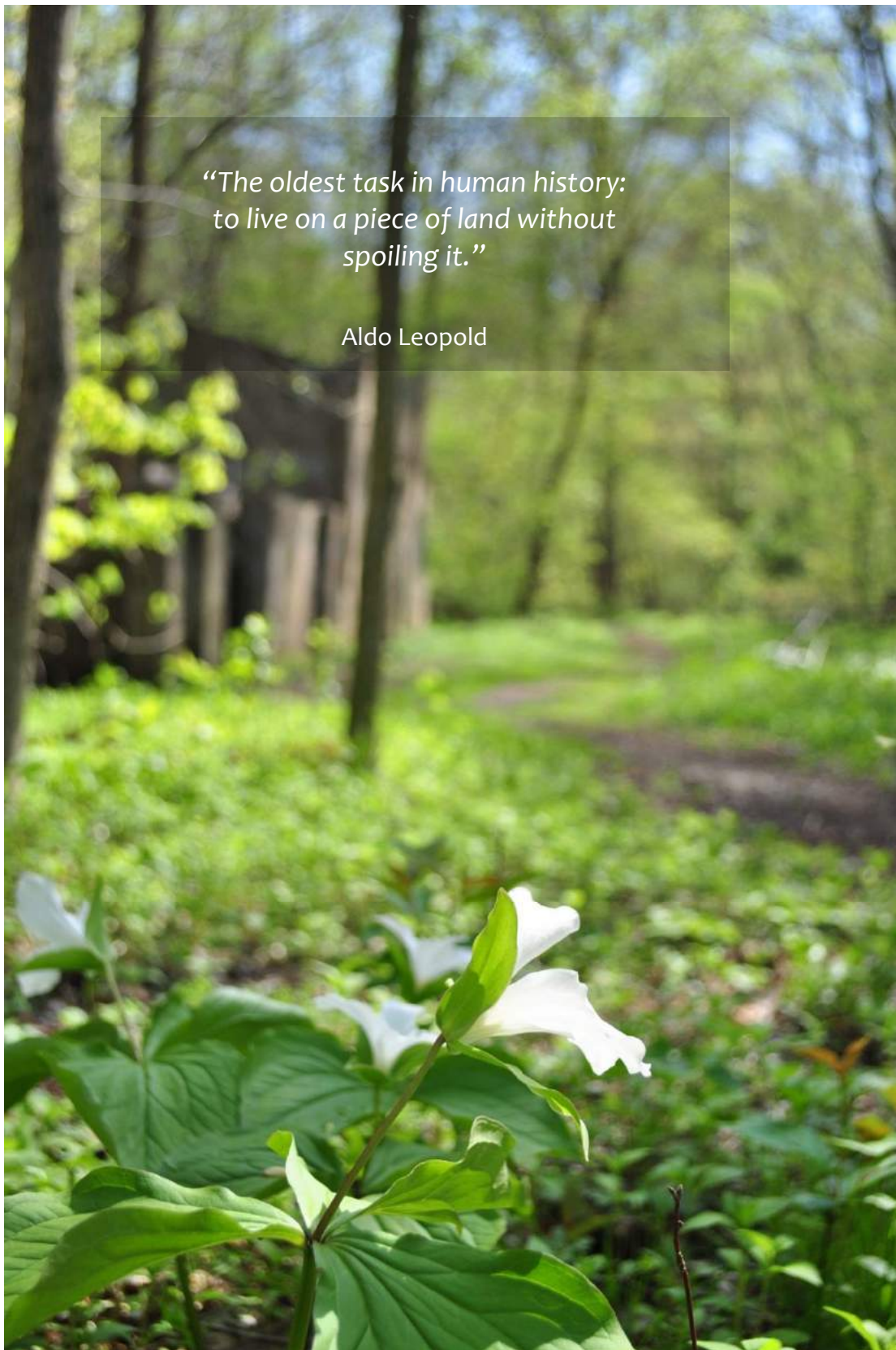


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and CycleForward

September 29, 2014



*“The oldest task in human history:  
to live on a piece of land without  
spoilng it.”*

Aldo Leopold

## **Acknowledgments**

Special thanks to the residents of Lincoln and Liberty Boroughs, and Elizabeth Township for their enthusiastic participation and exceptional support throughout the development of this plan. Further, the contribution and input of the following individuals were important to the successful development of this plan:

### **Allegheny Land Trust**

Mr. Chris Beichner, President & CEO  
Ms. Emilie Rzotkiewicz, Stewardship Director  
Ms. Caitlin Seiler, Stewardship Coordinator  
Mr. Mike Good, Stewardship Coordinator (former)

### **Project Steering Committee**

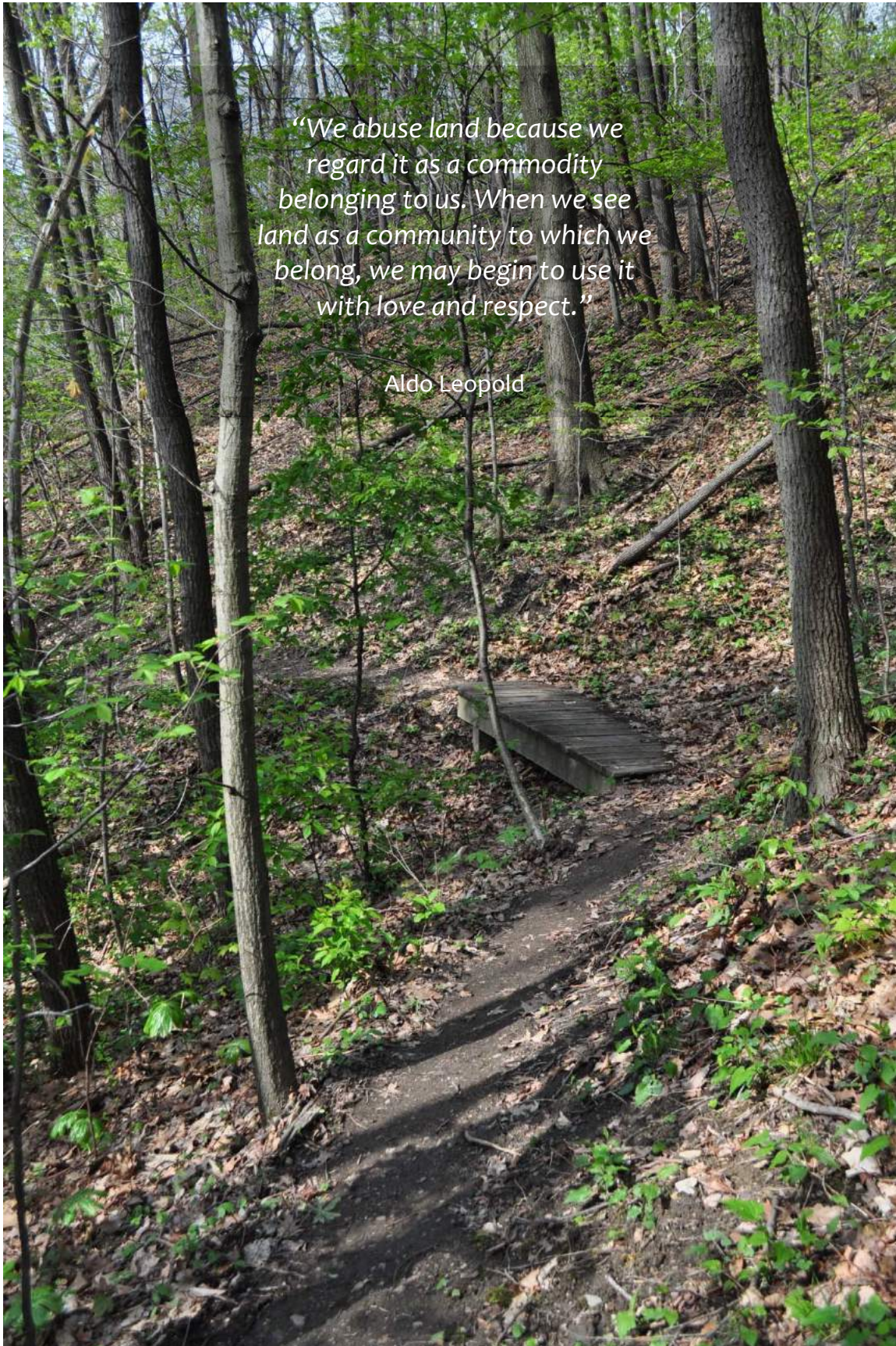
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Ms. Amy Camp, Cycle Forward



This Plan was prepared by a Landscape Architect licensed to practice in the State of Pennsylvania.



*"We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."*

Aldo Leopold

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- Appendix 7:*     **Dead Man's Hollow Conservation Area Stakeholder & Partner List**

# Executive Summary

## Dead Man's Hollow Conservation Area Management Plan - 2014

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The Dead Man's Hollow Conservation Area consists of 434 acres of property owned by Allegheny Land Trust whose mission is to serve as the lead land trust conserving and stewarding lands that support the scenic, recreational and environmental well-being of communities in Allegheny County and its environs.

ALT's vision for the Dead Man's Hollow Conservation Area is:

The Allegheny Land Trust desires to enhance the recreational and educational opportunities at Dead Man's Hollow and to identify public opportunities that will promote the use of the property without impairing the Hollow's unique spaces and habitats.

To achieve this vision ALT commissioned the preparation of this management plan to promote and manage the use of the property in a sustainable manner and to guide ALT in making decisions in achieving its goals for the property, now and into the future.

**Chapter 1: Where Are We Now** inventories and analyzes the existing resources of the site; identifies opportunities and constraints related to those resources; and, sets the stage for making decisions regarding the future of the property. Highlights of Chapter 1 include the following facts related to the Dead Man's Hollow Conservation Area:

- The Hollow contains a significant interior forest for Allegheny County, of which much of the County is urbanized and therefore, interior forests are severely fragmented or non-existent;
  - 232 acres of interior forest in the hollow provides healthy interior forest habitat conditions for neotropical migrants and forest breeding birds and forest interior-dwelling birds;
- Calcareous soils support an abundant wildflower population and a regenerating native sugar maple basswood forest, the abundance of spring wildflowers in the Hollow makes it one of Allegheny County's best-kept secrets for spring wildflower viewing;
- The factory ruins located within the Hollow are classified as industrial archeology sites and a Phase I Archeology evaluation of the ruins indicates they are eligible for the National Register of Historic Places due to the potential for recovery of new information related to the once prominent clay industry of western Pennsylvania. The evaluation indicated the sites have a high potential to yield important new information to the archeological record of this industry from the early 1880s to 1924;
- Myths, lores, and legends of the property, as documented in Karen Frank's book "*Dead Man's Hollow: An Oral History and More...*" have established the Hollow as destination for those interested in history, haunts and the paranormal;

# Executive Summary

## Dead Man's Hollow Conservation Area Management Plan - 2014

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- Over six miles of easy to intermediate hiking trails take visitors throughout the property.

**Chapter 2: *Where Do We Want To Be*** establishes the vision, goals, recommendations for managing conservation and recreation aspects of the property to achieve the vision and goals established for the property. Recommendations for achieving the vision for the Hollow includes:

- Managing the Hollow's vegetation and associated habitat to promote the restoration of flora and fauna native to the Youghiogheny River valley and environ;
- Protecting the forest interior and its wildflower habitat from being overtaken by invasive species;
- Improving sustainability and connectivity of the hiking trails through the property to eliminate erosion and develop a network of sustainable trails for the enjoyment of those visiting the property to enjoy the resources that it offers;
- Interpreting the environment and habitat, history, myths, lore and legends of the Hollow to tell the story of the place;
- Completing the National Register of Historic Places nomination to have the site listed on the National Register of Historic Places and working with local university researchers to learn more about how the industries contributed to the development of western Pennsylvania;
- Providing for the safety and security of those visiting the Hollow; and,
- Marketing, promoting and providing public outreach to invite visitors to experience the Hollow and all of its offerings.

**Chapter 3: *How Do We Get There*** provides specific recommendations and implementation strategies developed to achieve the vision for the future of the Dead Man's Hollow Conservation Area. This chapter is meant to be a working document, specific implementation strategies are presented in an Implementation Workbook. The workbook is organized as follows:

- Management Guidelines and Policy Strategies
- Sustainable Trails Strategies
- Conservation Management/Forest & Ecosystem Monitoring Strategies
- Cultural Resource Interpretation & Education Strategies
- Environmental Interpretation & Education Strategies
- Conservation & Preservation Strategies
- Protection of Life & Property Strategies
- Land Protection Strategies
- Marketing, Promotion and Public Outreach Strategies

# Executive Summary

## Dead Man's Hollow Conservation Area Management Plan - 2014

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Each section includes a table containing specific implementation strategies and the following information pertaining to the implementation of each specific strategy:

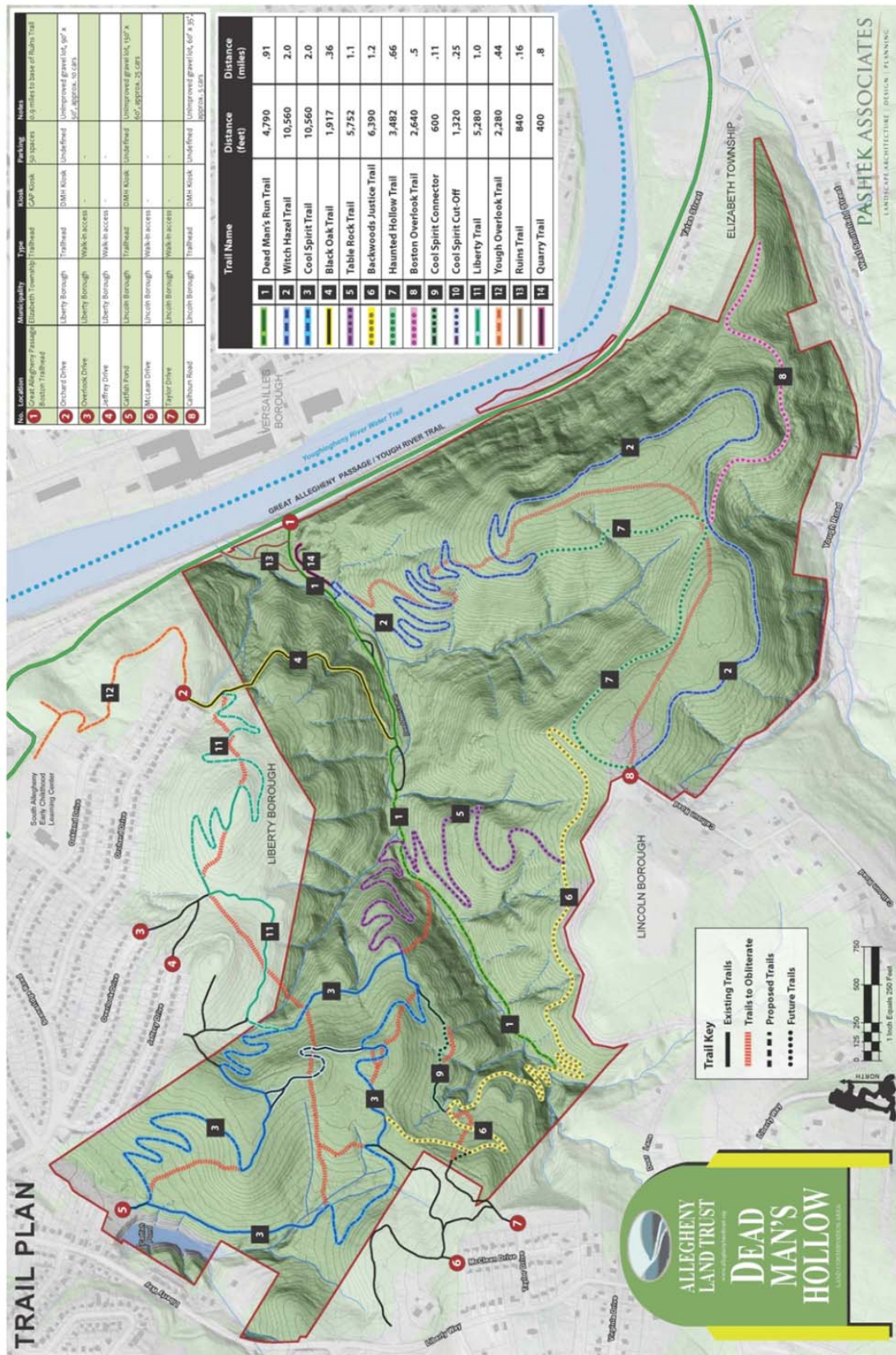
- Description of the implementation strategy
- Priority
  - Immediate... within 0 to 12 months
  - Short..... 1 to 3 years
  - Medium ..... 3 to 5 years
  - Long ..... 5 years plus
- Potential Partners - agencies or organizations responsible for/or potentially able to provide assistance with implementing the strategy

In addition to the implementation workbook tables, this chapter includes a list of potential funding sources to assist with various aspects of implementing the recommendations contained within this plan.

Allegheny Land Trust's ability to obtain funding to support staff dedicated to implementing the strategies identified herein will be critical to the success of the Trust's ability to achieve its vision for the Dead Man's Hollow Conservation Area. Although this effort identified many potential partners, at the end of the day it is the ALT's responsibility to manage and achieve its vision and goals for the Hollow. In order to begin implementing the management strategies identified herein, approximately \$100,000 in operating funds and \$600,000 to \$800,000 in capital funds will be required to address the needs of the Dead Man's Hollow Conservation Area over the next three to five years.

# Executive Summary

## Dead Man's Hollow Conservation Area Management Plan - 2014



# Chapter 1: Where are We Now?

## Allegheny Land Trust History

The Allegheny Land Trust (ALT) was established in 1993. Their mission is to serve as the lead land trust conserving and stewarding lands that support the scenic, recreational and environmental well-being of communities in Allegheny County and its environs. ALT is an independent Pennsylvania nonprofit 501<sup>(c)(3)</sup> organization whose mission is to protect land of natural value in and adjacent to Allegheny County. ALT helps local people save local land that contributes to the scenic, recreational, educational and environmental wealth of our communities.

In 2010, ALT obtained accreditation through The Land Trust Accreditation Commission, an independent program of the Land Trust Alliance. Accreditation provides public recognition of land trusts that are engaged in the long-term protection of the land in the public interest. It increases public awareness of, and confidence in, land trusts and land conservation. Land trusts use the accreditation application process as a way to fine-tune their policies and streamline their operations. The Commission conducts an extensive review of the application and grants accreditation to land trusts that meet the practices. The accreditation is a mark of distinction in land conservation. It recognizes organizations for meeting national standards for excellence, upholding the public trust and ensuring that conservation efforts are permanent. Land trusts are required to be re-accredited every five years.

Applicants must demonstrate implementation of standards and practices. *Land Trust Standards and Practices* are the ethical and technical guidelines for the responsible operation of a land trust. The Land Trust Alliance developed the practices at the urging of land trusts who believe a strong land trust community depends on the credibility and effectiveness of all its members and who understand that employing best practices is the surest way to secure lasting conservation. For more information see: [www.landtrustaccreditation.org](http://www.landtrustaccreditation.org).

These practices are designated by the Land Trust Alliance and indicate the land trust's ability to operate in an ethical, legal and technically sound manner and ensure the long-term protection of land in the public interest. Indicator practices were chosen based on the following criteria:

- Responsible governance of the organization;
- Protection of the public interest with sound and sustainable land transactions and stewardship;
- Ethical operations;
- Accountability to donors and the public; and,
- Compliance with all laws, such as Internal Revenue Code §170<sup>(h)</sup> and §501<sup>(c)(3)</sup>.

ALT has established a successful record of fiscal responsibility and management, leveraging capital dollars at the ratio of 2:1, and operating effectively with a lean staff and budget. At the same time, ALT has earned its reputation as an organization that gets things done. Investments in Allegheny Land Trust have resulted in permanent conservation of more than 1,700 acres. ALT is also a member of the Pennsylvania Land Trust Association.

## Background

In 1994, the Allegheny County Natural Heritage Inventory identified the Dead Man's Hollow watershed as one of Allegheny County's significant ecological areas. The significance lies in its minimally developed and fragmented character and in its status as the most intact of all the tributary valleys to the Youghiogheny River in Allegheny County.

*"Conservation is a state of harmony between men and land."*

Aldo Leopold

ALT sees Dead Man's Hollow as a priority area for the preservation of the natural landscape and for the protection of biodiversity in the county. Therefore ALT adopted a vision to protect the Dead Man's Hollow watershed. In March of 1996 ALT acquired its first parcel in Dead Man's Hollow.

Today, Dead Man's Hollow Conservation Area encompasses 434 acres of highly significant wildlife habitat in Lincoln and Liberty Boroughs, and Elizabeth Township. The Conservation Area is the largest privately protected conservation area in Allegheny County.

There are several trailheads but the most active and easily accessible is from the Boston Trailhead of the Great Allegheny Passage. Park at the trailhead and walk approximately 3/4 mile north, downstream, to the main entrance. The property features trails, benches, a pond and the ruins of a ceramic tile factory. Local school groups and the Audubon Society use the area for educational programs.

## Vision

With this plan ALT will achieve their desire to develop a Management Plan that supports their vision for Dead Man's Hollow as follows.

### Vision for Dead Man's Hollow Conservation Area

The Allegheny Land Trust desires to enhance the recreational and educational opportunities at Dead Man's Hollow and to identify public opportunities that will promote the use of the property without impairing the Hollow's unique spaces and habitats.

## Goals

1. Provide ongoing stewardship and conservation of the lands within the Dead Man's Hollow watershed necessary to support the recovery and restoration of the Watershed to a state consistent with the natural landscapes that have existed along this section of the Youghiogheny River prior to European settlement.
2. Provide recreational and educational opportunities for the public at Dead Man's Hollow consistent with the goal of protecting the conservation values within the Dead Man's Hollow watershed.
3. Interpret the lore & legend of man's past use of the land.

### Conservation Values

**Primary - Maintain Biodiversity** –Dead Man's Hollow is part of the Liberty Valley Natural Heritage Area (NHA) as defined by the Allegheny County Natural Heritage Inventory. Protecting this property will help conserve this biologically rich area.

**Secondary- Protect Water Quality** –There are numerous water features found in the Dead Man's Hollow Conservation Area. The surrounding dense woods provides natural systems for storm water management and water infiltration.

**Secondary – Value Greenways/Scenic Landscapes** –This Natural Heritage Area is the only Youghiogheny River tributary valley in Allegheny County that is not fragmented by roads or utility right-of-ways.

### Overall Property Management

- Maintain property for scenic beauty and public use.
- Maintain a healthy riparian zone for increased/ maintained water quality.
- Maintain safe and durable hiking trails that do not have a negative impact on the biological resources of the property.

### Regional Context

Dead Man's Hollow is situated in southeastern Allegheny County, in Lincoln and Liberty Boroughs, and Elizabeth Township. It is approximately 3/4 of a mile south of Boston, PA. The Great Allegheny Passage extends along the property's eastern border. The Great Allegheny Passage (GAP) rail-trail offers 150 miles of hiking and biking between Cumberland, MD, and Point State Park in Pittsburgh, PA. In Cumberland, the GAP joins the C&O Canal Towpath, creating a continuous 335 mile long trail experience to Washington, DC. On a bike you can travel 20.9 miles north along the Great Allegheny Passage, from the Dead Man's Hollow Conservation Area, to reach Mellon Square in downtown Pittsburgh. This trip should take the average cyclist about two hours to complete.

The nearest town is Boston, PA an unincorporated village within Elizabeth Township. Boston is a census-designated place. As of the 2010 census the population of Boston was 545 persons.

Boston is recognized and promoted as a Trail Town at mile 130 along the Great Allegheny Passage. Boston has become a very popular spot to start and end journeys because there is plenty of parking and it's relatively safe to leave your car there. There is a diner and a friendly pub, and a restaurant called the Boston Waterfront located in town.

#### Boston Trail Town Goods & Services

##### Food

- Boston Waterfront
- Generoso's Italian Eatery and Pizzeria
- Rich's Parkside Den
- Betsy Shoppes
- Central Pizza
- BP Gas Station/Buy-N-Fly

##### Lodging

- Yough Shore Inn

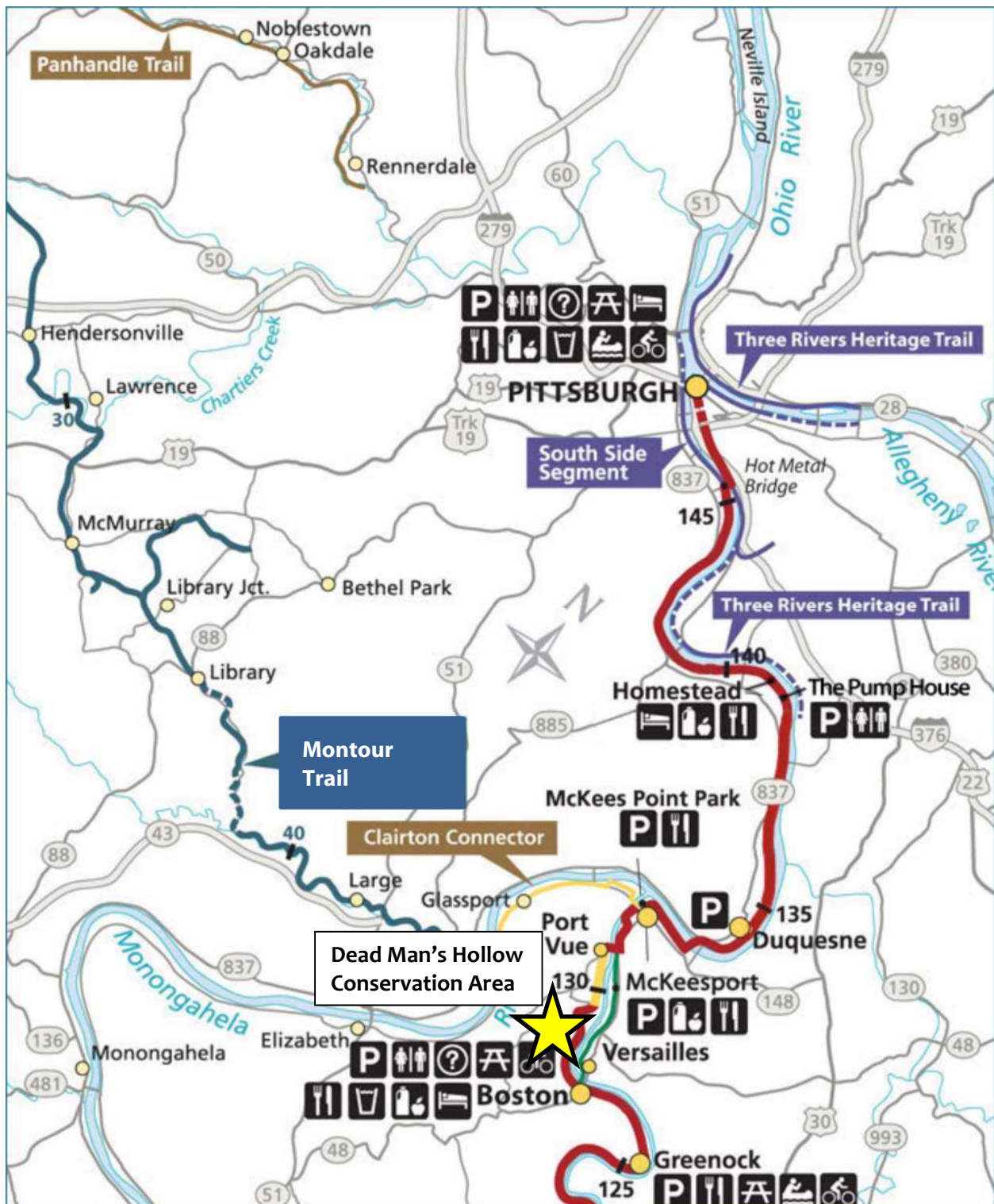
##### Bike Rentals

- Trailside Treasures

##### Fuel

- BP Gas Station / Buy N Fly





Most regional residents do not appear to be familiar with Dead Man's Hollow. This statement is based upon interviews and conversations over the course of this project. Those most familiar with the Hollow include residents in municipalities bordering the property as well as Great Allegheny Passage trail users and promoters. It's also likely that members of outdoor clubs and organizations are familiar with the Hollow. The limited awareness presents an opportunity for the Allegheny Land Trust to attract a new audience of users and supporters, particularly as trails are enhanced and interpretation is incorporated.

The growth opportunities are likely related to attracting the following audiences:

- Local residents
- Great Allegheny Passage trail users
- Hiking and wildlife viewing groups
- Cultural / heritage travelers engaging in a curated Mon Valley and Rivers of Steel Heritage Area experience
- Those interested in the 'haunted' themes

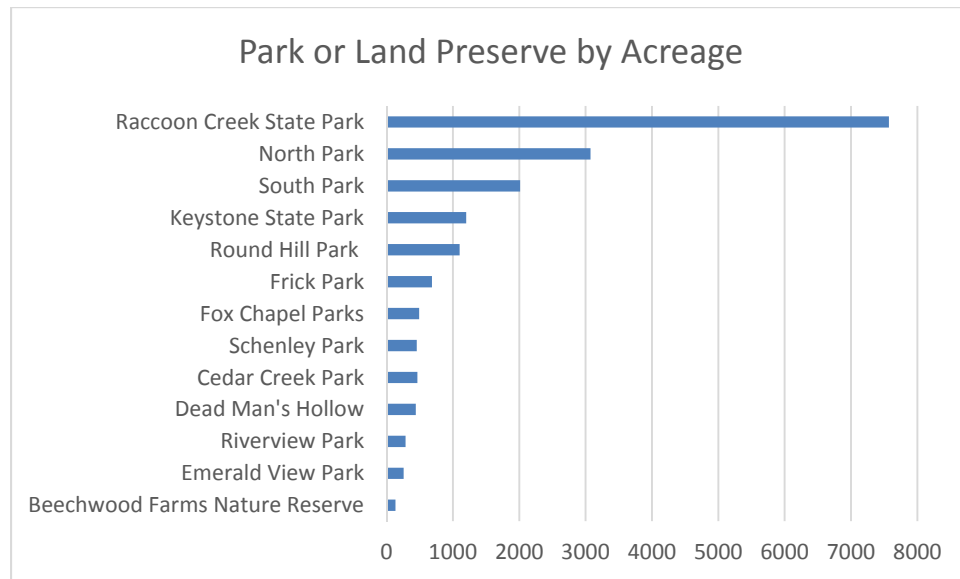
A key audience as identified by the Allegheny Land Trust are Great Allegheny Passage (GAP) trail users. The GAP effectively serves as a “front door” to the Hollow, with an estimated 22,087 – 44,174 people passing through this section of the conservation area each year. The majority of GAP trail users are regional residents who can be engaged in the space with signage and interpretation.

The Hollow is of comparable size to some very popular regional parks (Schenley Park, Frick Park), and offers a new, unique place to explore. The industrial and residential history give the Hollow a competitive edge over other parks. In combination with the impressive population of birds and wildflowers, the history helps the space to “come alive.”



*Great Allegheny Passage at Dead Man's Hollow*

## Other Regional Parks and Land Preserves



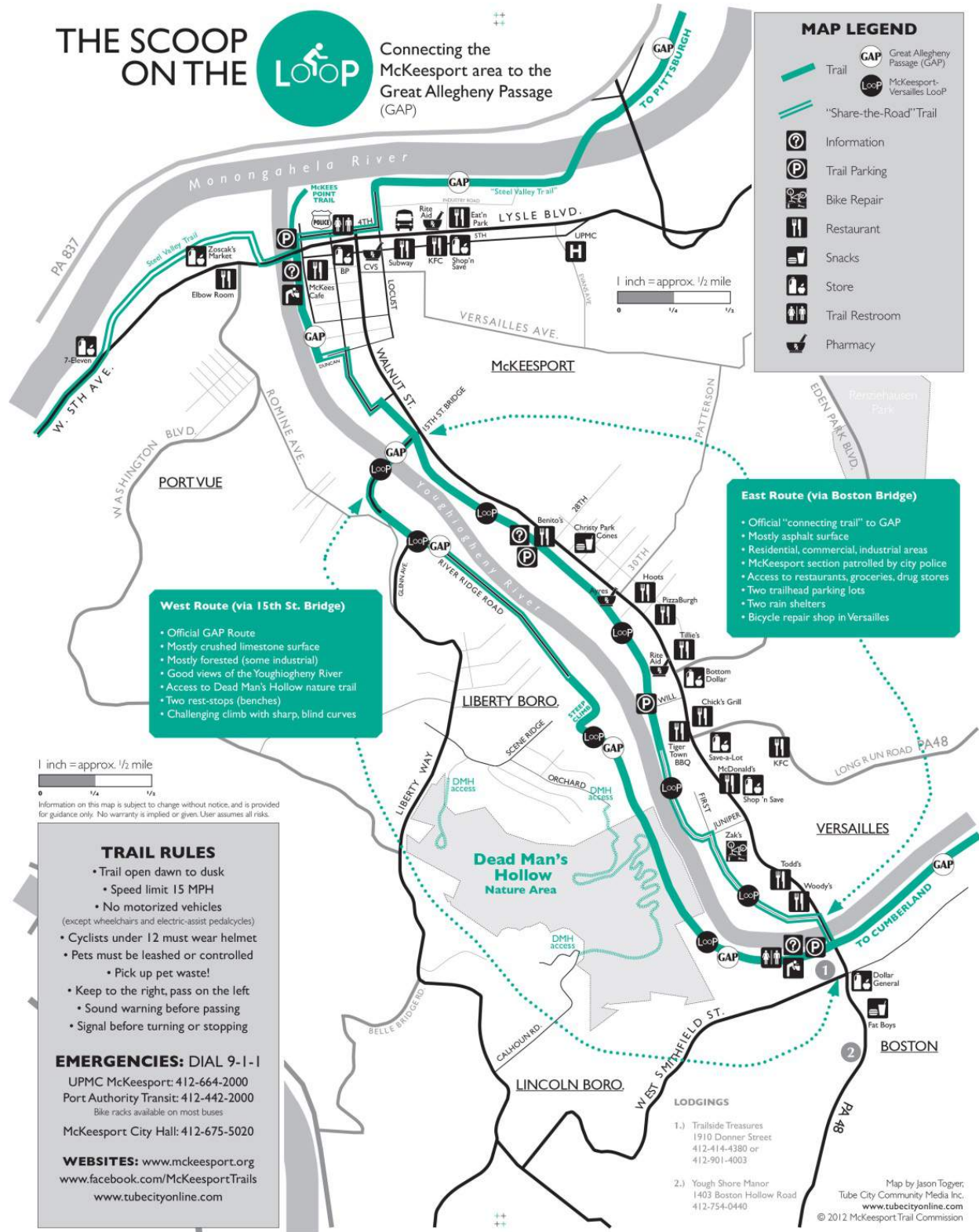
## Trails

In addition to the trails at the Dead Man's Hollow Conservation Area, there are a number of nearby trails.

The Great Allegheny Passage (GAP), as previously mentioned, extends along the property's eastern border. The rail-trail offers 150 miles of hiking and biking between Cumberland, MD, and Pittsburgh, PA. In Cumberland, the GAP joins the C&O Canal Towpath, creating a continuous 335-mile long trail experience to Washington, DC. The GAP is a segment of the Potomac Heritage National Scenic Trail. This evolving network celebrates the heritage of the Potomac and upper Ohio River basins and offers opportunities for hiking, cycling, boating, horseback riding in certain areas and cross-country skiing. Major nearby GAP trailheads include the Boston trail access,  $\frac{3}{4}$  of a mile south, downstream, of the Dead Man's Hollow Conservation Area, and the McKeesport trailhead to the northwest. Downtown Pittsburgh is approximately 20 miles from the Dead Man's Hollow Conservation Area via the GAP.

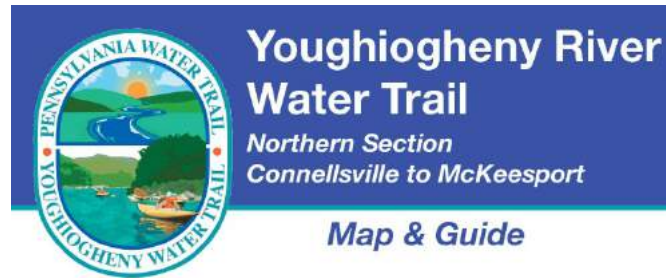
McKeesport and Boston also share a 10K (6.2 mile) LooP trail marked on both sides of the Youghiogheny River between the Boston and 15th Street bridges. Connecting to the McKeesport Trailhead is the Steel Valley Trail that leads to the Montour Trail in Clairton and a scenic McKees Point Trail that offers a view of the junction of the Monongahela and Youghiogheny Rivers.

Most of these trails are compacted stone or paved bicycle/hiking paths or marked "Share the Road" routes and are open from dawn to dusk to the public for recreational use. The McKeesport Trailhead is opposite the McKees Café near the Marina on Water Street at 5th Avenue; it is lit at night and has 25 parking spaces plus benches and bicycle racks. The 10K Loop has another trailhead at Walnut Street and 28th Street.



The Youghiogheny River Water Trail, which extends 76 miles, from Confluence to McKeesport, also passes by Dead Man's Hollow.

The nearest put-in upstream of Dead Man's Hollow is located at the Boston Pennsylvania Fish and Boat (PFBC) Commission Launch, approximately one mile upstream of Dead Man's Hollow. The PFBC also has a launch on the west bank, near the confluence between the Youghiogheny and Monongahela Rivers. This is the nearest downstream take-out, approximately three miles downstream of Dead Man's Hollow on the left descending bank of the river.



### Existing Research on Outdoor Recreation and Cultural Heritage Travel

A 2010 Venture Outdoors study (VO'DEX – Outdoor Recreation Benchmark Study) surveyed over 1,000 regional residents (60% members of Venture Outdoors and a 40% random self-selected sample) to establish a baseline pertaining to outdoor recreation habits. Walking on paved surfaces was the most popular activity reported. Hiking ranked second (65% amongst members and 32% of the random

sample). Biking paved trails was third (60% and 30%, respectively). Whereas “paved” trails were indicated and the Great Allegheny Passage at Dead Man’s Hollow is crushed limestone, it is likely that respondents perceive and use both similarly (nearly level, compact surface rail trail). The closest alternative was “off-road/mountain biking,” which may have been perceived primarily as mountain biking by survey respondents.

The survey queried respondents on frequency of outdoor recreation activity. Those who are most active (the VO members) were also those most willing to try new recreational activities. This suggests that active hikers and bikers who have not yet visited the Hollow are a prime audience. Additionally, the most cited reason for no longer participating in outdoor activities was “*just don’t have the time anymore*” followed by “*not being able to find other people with similar interests*” and “*having no experience and not being able to find a guide.*” More organized outings to Dead Man’s Hollow by Allegheny Land Trust, Friends of Dead Man’s Hollow, Venture Outdoors, or any other group will hit two of the three top reported reasons cited for inactivity.

The survey also queried respondents pertaining to annual spending on outdoor recreation. The results demonstrate regional outdoor recreational spending in this order:

1. Purchase of products / equipment
2. Rentals (non-members spend more on rentals, as they are less likely to own equipment)
3. Maintenance / service (non-members spend more)

Trip related spending (food, fuel, drinks, etc.) was categorized as “Miscellaneous Spending.” The majority of respondents spent more than \$50 within the past year of being surveyed. The majority of Venture Outdoors members (54%) spent \$100 or more annually on such items in association with their outdoor recreation outings. This suggests that increased visitation to Dead Man’s Hollow may positively benefit local businesses.

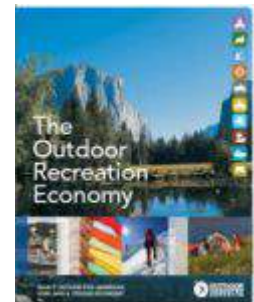
Finally, the study indicates that the top reasons for participating in outdoor recreation are:

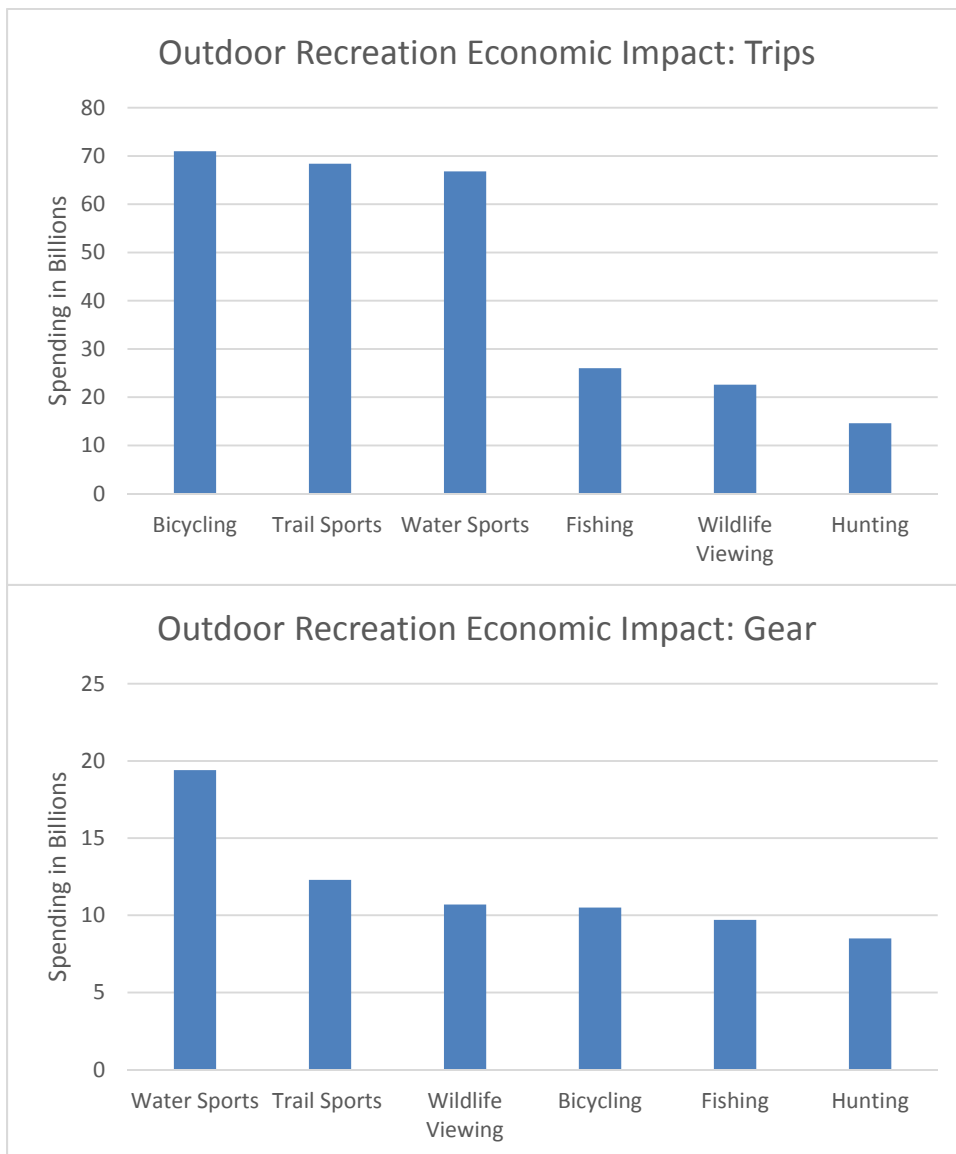
1. Physical fitness
2. Recreation / enjoyment
3. Socializing

While some of the Hollow’s steeper trails may particularly appeal to those who are primarily driven to outdoor recreation for physical activity, the rich ecological, cultural, and historical offerings may entice outdoor enthusiasts who cite “Recreation and Enjoyment” as a leading reason to spend time outside. Focusing improvements and interpretation at the GAP entrance would be a reasonable starting point in attracting the latter audience.

### **2012 Outdoor Recreation Economy Report (Outdoor Industry Association)**

The Outdoor Industry Association has found that 81% of annual outdoor recreation spending in the United States is spent on trips and travel-related expenditures, and the remaining 19% on equipment. That’s \$524.8 billion and \$120.7 billion, respectively. Outdoor recreation activities that mostly pertain to Dead Man’s Hollow are shown below as reported at a national level. The following graphs represent aggregate spending on trips and equipment. Note: “Trail Sports” include trail running, hiking, backpacking, and rock climbing.





Additionally, a 2011 U.S. Fish & Wildlife Service study (2011 National Survey of Fishing, Hunting, and Wildlife-Association Recreation) details a number of activities relevant to Dead Man's Hollow. According to the study, wildlife viewing increased by 9% from 2001 to 2011, with about a third of wildlife watchers traveling a mile or more from home to observe, photograph, or feed wildlife. This bodes well for Dead Man's Hollow and its significant bird population as a regional draw for birders.

#### 2008 Great Allegheny Passage Economic Impact Study

The local economic impact by type of activity would likely demonstrate a wider gap between cycling and other activities. On the Great Allegheny Passage, annual direct spending is estimated at \$40.8 million, with 91% of GAP trail users cycling, and 9% walking or running. Total spending is up from \$7.26 million in 2002. Trail users on multi-day trips spend an average of \$114/day, with international users spending significantly more. An international audience may express particular interest in the region's industrial history. Local and regional trail users were found to spend an average of \$13/day.

### **2012 Great Allegheny Passage Trail Use Patterns**

The Great Allegheny Passage has historically experienced an increase in trail use with each major connection made. This supports a widely-held belief that the longer the trail, the greater the public interest, usage, and economic impact. It is anticipated that the May 2013 completion to Point State Park in Pittsburgh has pushed the Great Allegheny Passage to its highest usage rates yet in 2013 and 2014.

Improvements to the hiking trails of Dead Man's Hollow combined with efforts to attract GAP trail users into the Hollow are appropriately timed. Of the GAP's estimated 370,530 – 555,795 individual users (estimates based upon electronic and manual count data) in 2012, 6% of total users biked or walked the GAP through Dead Man's Hollow. This amounts to a range of 22,087 - 44,174 people. This represents the range of conservative and high end estimates. The middle estimate for this section of trail (Boston North) was 33,130 users. The only busier sections in 2012 were Ohiopyle to Confluence (the most popular section of trail), Boston to West Newton, and Homestead/Waterfront (drawing from Pittsburgh's dense population). Trail use data from 2013 is not yet available.

### **2009 U.S. Cultural & Heritage Travel Study**

This study commissioned by the U.S Department of Commerce and U.S. Cultural & Heritage Tourism Marketing Council found that 78% of U.S. leisure travelers participate in cultural and/or heritage activities while traveling. The study identified five types of heritage travelers: Passionate, Well-rounded, Aspirational, Self-Guided, and Keeping it Light. More than half agreed that they prefer their leisure travel to be educational. Findings that support the notion of cross-over interests between the heritage and recreational audiences include:

- 66% reported visiting historical sites
- 41% reported visiting state/national parks while traveling

This indicates that many of the same people that are interested in biking the GAP may also be interested in historic and cultural sites along the corridor, wildlife and wildflower viewing, and experiencing communities that border the GAP and Dead Man's Hollow.

## Site Inventory & Analysis

### Location

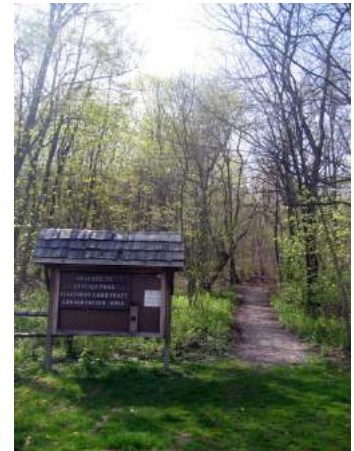
Dead Man's Hollow Conservation Area is located in Lincoln and Liberty Boroughs, and Elizabeth Township in southeast Allegheny County. There are several trailheads but the most active and easily accessible is the Boston Entrance of the Great Allegheny Passage on Donnor Street which dead ends at the Youghiogheny River. Park at the Passage trail and walk approximately 3/4 mile north, downstream, to the main entrance.

### Acres

The Allegheny Land Trust's property holdings for the Dead Man's Hollow Conservation Area consists of 434.3 acres, including a 9 acre conservation easement on an adjacent property.

### Property Description

Dead Man's Hollow Conservation Area encompasses 434.3 acres of highly significant wildlife habitat in Lincoln and Liberty Boroughs, and Elizabeth Township. The Conservation Area is the largest privately protected conservation area in Allegheny County. A forested buffer to the Youghiogheny River, this green space offers beautiful wooded ridgeline views whether driving, riding your bike on the Great Allegheny Passage or floating on the river. This parcel consists of highly significant wildlife habitat with a vertical drop of over 400 feet to the Youghiogheny River. The Hollow is full of biological and cultural wonders. Steep cliffs offer unique habitat to Pennsylvania native flora and fauna. Catfish Pond provides habitat diversity and contrasts the steep wooded slopes that characterize the Dead Man's Hollow Conservation Area.

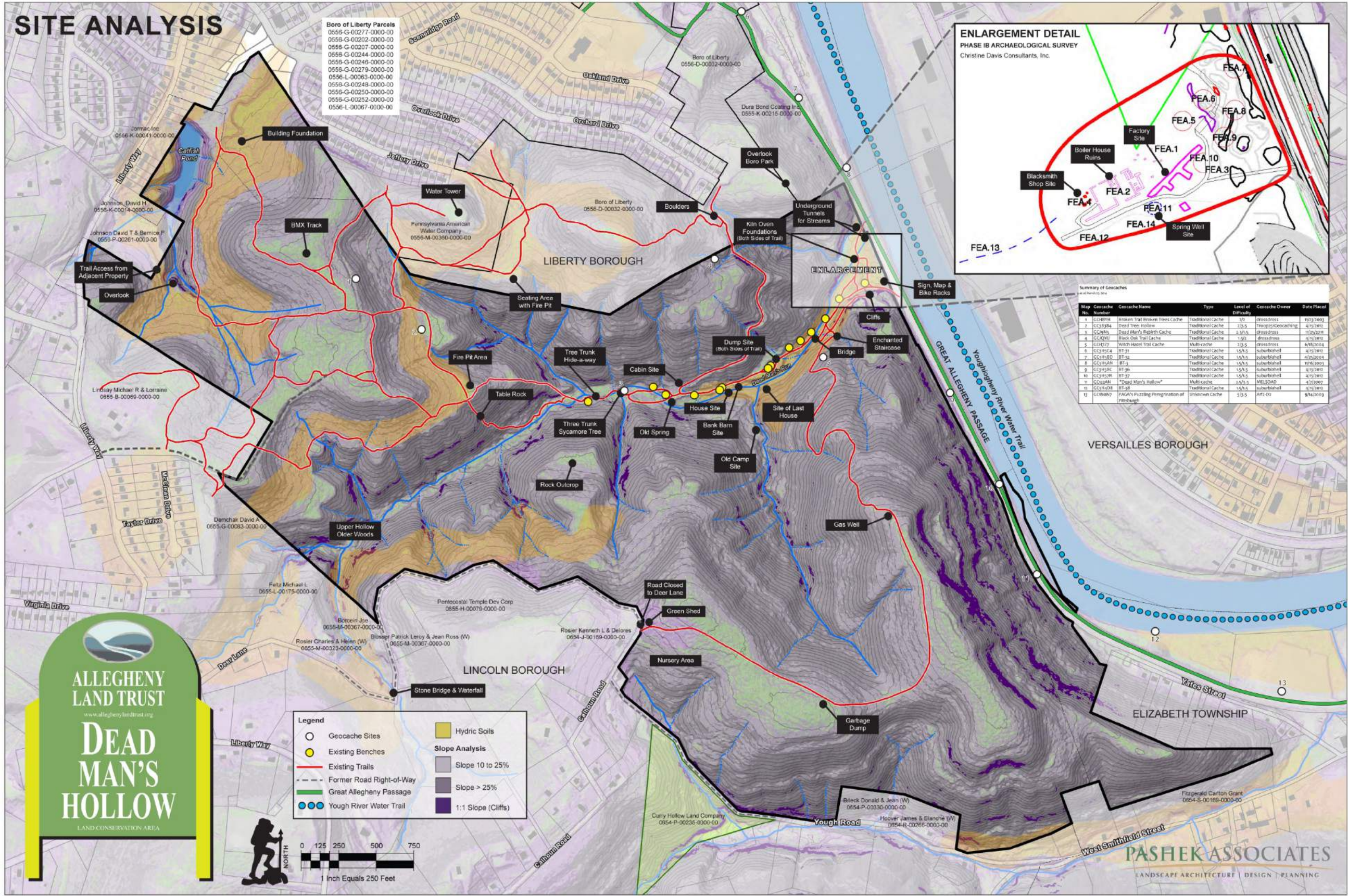


At one time the Hollow was an industrial center. It was the site of a 19th century quarry and an early 20th century factory. Until the late 1920s, the Union Sewer Pipe Company manufactured clay sewer pipes here. The operation supplied almost all the cities of Pennsylvania, New York and New England. If one could spy into those years from the tops of today's tall trees, the view would be dominated by acres of flattened muddy storage yards, huge coal fired kilns, rails and road. However, with the pipe company's end came a new beginning. The site became the play yard of children. For some, it became a place to dump garbage, for others, a place to hunt. And as the decades passed, a forest grew to overtake the factory's buildings and kilns. Today only the ruins remain, stimulating the imagination.

The property is primarily forested with a dense over story canopy and cool stream bottoms. The over story trees consist of white ash, maple, hickory, many oak varieties and sassafras. Invasive plant species are found throughout the property; these include but are not limited to Japanese stilt grass, Tree-of Heaven, Japanese barberry, and Norway maple. Benches, stone steps and sturdy bridges can be found throughout the property; these structures were constructed by local volunteers and maintained by active site stewards. A group of volunteers maintain an active website where additional information can be found on the Dead Man's Hollow Conservation Area:

[www.dead-mans-hollow.com](http://www.dead-mans-hollow.com)





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The Great Allegheny Passage, locally known as the Youghiogheny River Trail (YRT), serves as the main entrance to the Hollow. The trail's Boston parking lot is 3/4 of a mile from the Dead Man's Hollow Conservation Area trail access. Bicycles are presently not permitted in the Conservation Area, so bike racks are provided at the trail entrances. The Hollow's existing trails include:

- ✓ **Dead Man's Trail and Loop** – 1,879 feet long  
Smooth surface and gentle grades over most of the trail; for visitors with physical disabilities.
- ✓ **The Ruins Trail** – 1,685 feet  
Easy walk through the ruins of the early 20th century terra cotta sewer pipe factory; suitable for visitors with physical disabilities.
- ✓ **Witch Hazel Trail** – 5,528 feet  
Challenging 420-foot elevation change but worth the effort; easy near Calhoun Road.
- ✓ **Black Oak Trail** - 1,917 feet  
Moderately difficult hike.
- ✓ **Cool Spirit Trail** – 6,459 feet  
Easy walk with great views of Catfish Pond and the waterfall; entrance is off of Sceneridge Road with parking at Catfish Pond.
- ✓ **Table Rock Trail** – 1,326 feet  
Challenging hike with inspiring geological feature at the end.
- ✓ **Unnamed Trails** – 13,081 feet  
These are unofficial trails that have not been officially recognized. These trails typically provide access to and from the local neighborhoods to the existing trail network in the Hollow.

## History

Karen Frank in her book “*Dead Man's Hollow, An Oral History and More...*”<sup>1</sup> documents much of the history, legend and lore that has been associated with the hollow over the past 150 years.

## Archeology

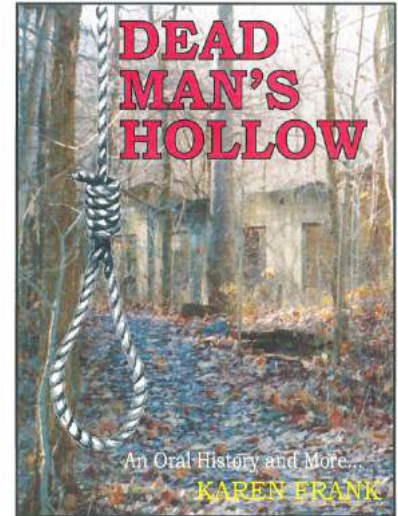
A Phase I archeological survey completed in 2010, by Christine Davis Consultants, for the Buena Vista-McKeesport Sewer Interceptor Elizabeth Township and Lincoln and Liberty Boroughs Allegheny County, Pennsylvania documents the history and archeology of the Dead Man's Hollow valley.

The earliest industry at the confluence of Dead Man's Run and the Youghiogheny River was a stone quarry owned by A. Fleming. Evidence of the quarry exists today. In 1888, Fleming executed the “largest blast in this section of the country” to prepare an estimated 500,000 cubic yards of rock for use as railroad ballast (Frank 2003). Five years later, in October of 1893, the Union Brick & Stone Company purchased the quarry property from Theodore Bollje for \$10,000 (Deed Book 861:83). The company continued in business until November of 1898 when the property was sold at sheriff's sale for \$12,240 to Samuel M. Bowman of nearby North Versailles.

When Bowman purchased the property, it consisted of a one-story office building, one-story dry house (40 x 60 ft), a frame building (12 by 25 ft), a building measuring 40 x 80 ft containing engines, boilers, brick machinery, elevators, stone crushers, derricks, dynamos, and steam heating apparatus. The property also included machines, cars, tools, and appliances for manufacturing brick (Deed Book 1013:329). Bowman used the existing buildings on the property to begin manufacturing building bricks and pavers.

By 1902, the Bowman Brothers were running at full capacity making building bricks and paving blocks using the stiff-mud process. The plant mined shale from the adjacent hillside to use as a raw material and transported the rock in small cars to the pens. A fan dryer was used to dry the blocks and heat was furnished through pipe coils. The engine's exhaust heated the building in the daytime and, at night, steam from the boiler was conducted. Two types of kilns were used including round, down-draft and square upright types. By 1902, the Bowman Brothers also owned a brick plant in Layton, Fayette County where paving blocks were made from fireclay (Anonymous 1902). At the time, McKeesport was experiencing a building boom and became the site of the nation's largest tube works. With all the new construction, there was a need for millions of building bricks and the brick plants could hardly keep up with the demand (Anonymous 1902).

In 1905, Bowman expanded his business and added two partners to form the Union Sewer Pipe Company for manufacturing sewer pipe, terra cotta, building blocks, fire brick, and other clay products. The other two partners were T. H. Bowman and John M. Lyle (Anonymous 1905). The company's office was located on the B&O Railroad at 539 Jerome Avenue in McKeesport (Bell Publishing 1976; McKeesport City Directory 1922). The business became one of McKeesport's important industries and employed over 70 workers. Employees walked to work or traveled across



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<sup>1</sup> Frank, Karen. *Dead Man's Hollow, An Oral History and More...* Howling Wolf Creations. 2003. Print

the river by ferry (Frank 2003).

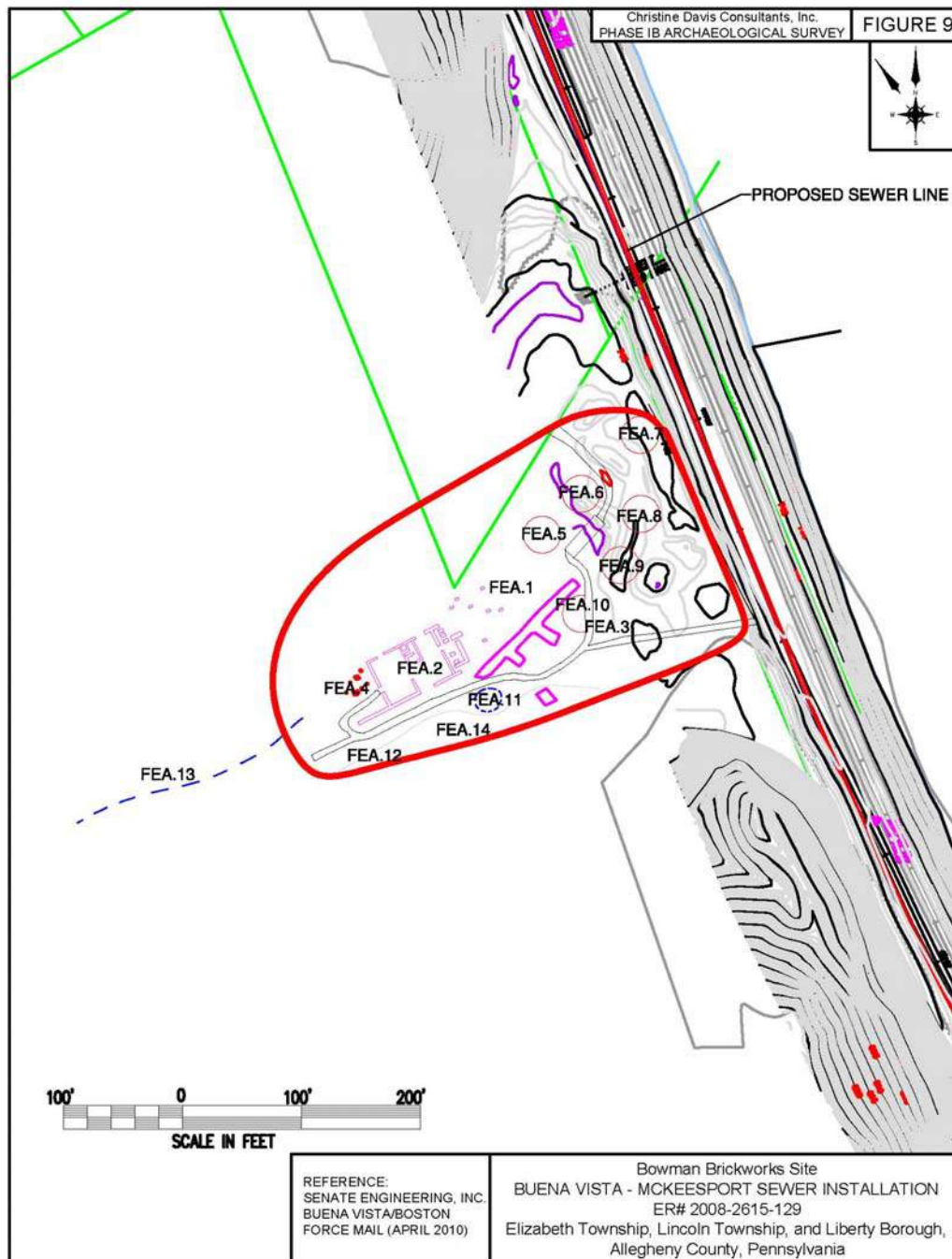
One of the legends of Dead Man's Hollow involved the death of one of the employees at the Bowman Brick works. In 1905, Mike Sacco was crushed between an elevator and the third floor of the brick works. Mr. Sacco died at a local hospital after the accident (Frank 2003). The Bowman Brothers continued in business until 1924 when fire destroyed the brick works. Subsequently, the plant was dismantled and the machinery sold for scrap (Frank 2003).

### *Description*

The Bowman Brick Works/Union Sewer Pipe Company (36AL615) is located at the confluence of Dead Man's Run with the Youghiogheny River. Thousands of ceramic sewer pipe fragments are strewn across the site. Firebricks impressed with "Layton FCCO McKeesport, PA" and "Widimir" are found near the kilns. The archaeological remains of the Company include the following (Figure 9):

- Feature 1:     **Factory Building.** This five-story building was constructed of wood and used to manufacture pipe. The building burned in 1924 and only the foundation footers remain (Photo 6).
- Feature 2:     **Boiler House.** This concrete building measured 45 by 65 ft and has been partially demolished (Photo 7). The boiler house supplied power for the machinery and heat for drying the factory's products. The tall rectangular hole in the wall held the belt and pulley system for the steam engine that connected the boiler house to the factory building and provided the power source. The round holes in the concrete wall of the boiler house were used as conduits to carry steam from the boilers into the building for drying products and supplying heat in the winter. Other pipes were intakes for water from a deep spring located beneath the cliffs on the other side of the boiler house. The spring was necessary because Deadman's Run was polluted. The tall stacks for the two coal-fired boilers were anchored in place with cables attached to metal anchors in the adjacent cliff.
- Feature 3:     **Railroad Spur.** The spur for moving raw materials and finished products meanders through the plant as part of the Ruins Trail section of the Dead Man's Hollow Trail. The spur connected with the railroad mainline, now the Great Allegheny Passage.
- Feature 4:     **Blacksmith Shop.** Located north of the boiler house, the shop was used for maintaining the metal components throughout the factory (Photo 8).
- Features 5-10: **Kilns.** Kilns used for firing brick and pipe were saucer-shaped and connected by underground draft ways to allow the ovens to vent smoke through their towering brick chimney stacks. The remains of six of the nine kilns in the plant were identified between the factory site and the railroad (Photos 9 and 10).
- Feature 11:    **Spring Well.** The spring well is reportedly 80 to 90 ft deep and located near the center of the site between the trail and the tramway. A large pump conveyed the water to the nearby power house (Frank 2003). Quarry faces with outcropping sandstone, limestone and shale are located on both sides of the valley floor. Drilling scars from the dynamite charges can be seen on the quarry walls.

- Feature 12:     **Clay Mines.** Clay mines that supplied the factory with raw material are terraced along the cliff face north of the blacksmith shop.
- Feature 13:     **Culvert for Dead Man's Run.** Dead Man's Run flows beneath the site through a concrete culvert (Photo 11).
- Feature 14:     **Stone Quarry Tramway.** The tramway extends from the factory site to the shale and sandstone quarry cuts high above the plant. A collapsed concrete structure is located on the old tramway near the edge of the quarry.



The Bowman Brick Works Site (36AL615) is recommended as eligible for the National Register of Historic Places as a significant industrial archaeological site with the potential for the recovery of new information regarding the once prominent clay industry of Western Pennsylvania. Under Criterion D, the foundations, kilns, quarry sites, and other features have a high potential to yield important new information to the archaeological record of this industry from the early 1880s to 1924.

### Myths, Lore and Legends

Karen Frank<sup>2</sup> also researched and documented the following myth, lore and legends associated with the Dead Man's Hollow Conservation Area.

#### **1874 – Origin of the Name**

A group of boys were wandering through a remote area near the Youghiogheny River when they discovered a man hanging from a noose in a tree. The body was badly decomposed at the time, making it impossible to identify the victim. Some believed that it was an act committed by the Ku Klux Klan, but they were not prevalent in the Pittsburgh area during that point in history. Other versions of the legend claim it to have been the body of a woman and another alleges that it was a Native American. Many believe this tale is the reason for the name of the area.

#### *The Facts*

The story is slightly similar to a documented story of a group of schoolboys discovering the body of George Barber in Lunger's Hollow, Indiana in 1874. This area also came to be known as Dead Man's Hollow.

Researchers have been unable to find any documentation to support the origins of the story in the McKeesport area.

#### **1880 - Gunned Down**

Robert 'George' McClure owned a dry goods shop in McKeesport that had been robbed. McClure went on a hunt to find those responsible for the crime and discovered them in Dead Man's Hollow. McClure fired shots at the criminals who fired back. McClure was killed in the encounter. Seven years later, gang leader Ward McConkey was convicted of McClure's murder and hanged for the crime in the courtyard of the Allegheny County Jail. His alleged last words were, "Goodbye, all you murderers". Some believe it's his spirit that haunts Dead Man's Hollow.

#### *The Facts*

The New York Times reported that a man named George A. McClure was killed in February of 1880 in Dead Man's Hollow. Ward McConkey was convicted of the crime in August of 1881, but was hanged in May of 1883. He was only 19 years old at the time of his execution in the courtyard of the Allegheny County Jail. The newspaper reported that McConkey's last words were, "All I have to say, gentlemen, is that you hang me because you think I know something about the murder of George McClure and won't squeal and the people of McKeesport want to see me hanged, but I'm innocent." A white cap was placed over his face and just before the trap was sprung, McConkey said, "Goodbye, murderers, goodbye".

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<sup>2</sup> Ibid

### **1883 - The Explosion**

In March of 1883, four workmen at George Flemming's stone quarry in Dead Man's Hollow were killed when attempting to thaw frozen explosives by an open flame. The explosives ignited and the blast killed at least two of the men instantly.

#### *The Facts*

The Wheeling Register reported the story on March 10, 1883. The article states that the workmen did arrive at the quarry and find their explosives frozen, but decided to place them near a fire that had already been built for their personal warmth. David Henninger was the foreman, accompanied by his brother George, Noble Gilkey, and an unidentified black man. David was closest to the fire at the time of the explosion and was killed instantly. His brother George was found near death and left in the quarry while the first to respond waited for a surgeon to arrive. He did not survive. The unidentified man received burns and was not expected to survive. Noble Gilkey was severely burned on his face and body, but was expected to recover.

### **The Bank Heist**

*Two men robbed a bank in Clairton and met in the hollow to split the money. One of the men shot the other to keep all the money. As the man was exiting the woods, he stashed the money in a secret hiding place. Legend says he was discovered at the opening of the woods by lawmen and gunned down. Some people believe the money is still in the hollow.*

#### *The Facts*

This story is undocumented. Duquesne University Archivist Thomas White has explained that it was common for newspapers to avoid printing certain stories to remain business-friendly in the public eye. A story such as this could have damaged the reputation of the bank and hurt business.

### **The Giant Snake**

*An elderly man by the name of Charles Brown went for a walk in Dead Man's Hollow on a hot August day in 1893. He took with him a walking stick and chose a shady path for his stroll in order to stay out of the summer heat. He heard a strange noise in the brush and paused before he saw what he believed to be a massive snake. Brown fainted at the sight and upon regaining consciousness; ran into town and announced that he had seen a snake he believed to be over forty feet long.*

Numerous reports dating back to the 1860's describe a snake between thirty and forty feet long that lives within the woods at Dead Man's Hollow. The snake has become a local Loch Ness Monster as people have reported sighting the creature.

### *The Facts*

There is no physical evidence to support the claims of the giant snake. Locals suspect that the legend began when the wooded area was popular among moonshiners who spread the rumors themselves to keep people away from their operation.

#### ***Was there a Giant Snake lurking in Dead Man's Hollow?***

*Had it not been for the medical journal written by a prominent physician from McKeesport, the lore of the hollow's Giant Snake may have faded into obscurity long ago. It was two entries in particular that defined Doctor George Huey's fascination with the legendary creature.*

In 1960, exactly one hundred years after the doctor's passing, both of the entries were referenced in the publication commemorating McKeesport's Old Home Week celebration. The notes described how the mysterious snake sightings brought much excitement to an army regiment that was encamped across the river from Dead Man's Hollow. The remarks also stated that those who saw the snake calculated it to be nearly forty foot in length with the girth of an average Top Hat.

During that era, a number of other individuals had encounters with the Giant Snake. The most recognized account came from an older gentleman named Charles Brown. His incident occurred on a hot afternoon in August of 1893.

During a stroll along the banks of the Youghiogheny River, the elderly man walked directly into the path of the creature. Overcome by fear, Brown swooned and collapsed to the ground. When he regained consciousness, the giant snake was nowhere to be found. Brown immediately fled. Later, he found himself facing public ridicule for sharing such an unbelievable tale with The Daily News.

#### ***1887 - Washed Ashore***

*Edward Woods drowned in the Youghiogheny River and washed ashore at Dead Man's Hollow. Some suspected it was foul play and believe his spirit still haunts the area.*

### *The Facts*

Edward Woods was a 74-year-old man from Elizabeth Township who had been crossing the Youghiogheny River on the McClure Ferry when he lost his balance and fell off into the river.

#### ***1905 - Sacco's Death***

*Mike Sacco was working at the Union Sewer Pipe Company when he was killed in an elevator accident. Some believe his spirit is still haunting the area.*

### *The Facts*

Mike Sacco was leaving work on September 25, 1905. It's been reported that he pulled the rope to lower the elevator, but it began to rise instead. He foolishly jumped from the elevator in an attempt to reach the second floor. His body became wedged between the second floor ceiling and the floor of the elevator. He was rushed to the hospital, but died before arrival.

#### ***Is there really a ghost in Dead Man's Hollow?***

*Some people may be surprised to learn that even with all of the strange and unusual tales that surround Dead Man's Hollow, only one of the incidents was officially documented.*

*That 'ghost sighting' took place in 1934 when a resident of the hollow, Michael Bendzuch Jr. was travelling across the Youghiogheny River by row boat late one night.*

According to the account, the young man noticed an eerie mist gliding along the opposite riverbank. Aided by the light of the moon, a second glance provided a view of a man's silhouette emerging through the thin cloud. Once out of the shadows, Bendzuch Jr. could see that the figure had the distinct traits and attire of a Native American Indian.

As the gentle current carried the boat downstream, the young man continued to stare at the person standing by the water's edge. Oddly enough, the individual on the shoreline appeared to be staring right back.

Puzzled by the situation that was unfolding before him, Bendzuch Jr. decided that it would be in his best interest to further the distance between his boat and that particular bend in the river. As he began to work the oars again, he turned his eyes back to the shoreline just in time to see the mist and its occupant vanish into the evening air.

Confused by what he had just witnessed, the young man paused from rowing again. He would later reveal that his immediate thoughts turned to the ghost stories that he had heard when he was much younger. Those recollections were enough to push him home just a little faster that night.

By mid-morning of the following day, Michael Bendzuch Jr. had shared his unusual tale with everyone who was willing to listen. Naturally, the details of his brush with the unknown fascinated the children living in Dead Man's Hollow. His older friends and neighbors, on the other hand, weren't so easily convinced. In fact, by the end of the day, it was being said that a whiskey jug may have played a vital role in the apparition's appearance.

## Acquisition and Ownership

Since the Allegheny County Natural Heritage Inventory (1994) identified the Dead Man's Hollow watershed as one of the county's significant ecological areas ALT has acquired 9 parcels, totaling 434.3 acres. As of this writing Dead Man's Hollow is the largest privately protected conservation area in Allegheny County.

### Dead Man's Hollow Land Holdings Summary

Landowner	Municipality	Lot & Block No.	Acreage	Ownership	Transaction	Date
Cleveland Works (Palkovitz Property)	Lincoln Borough Allegheny County	555-R-395 654-J-310 654-J-335 655-H-88	263.327	Fee Simple	Purchase	3/20/1996
Cleveland Works	Lincoln Borough Allegheny County	654-P-235	9.017	Conservation Easement	Purchase	3/25/1996
Lomeo Family	Liberty & Lincoln Boroughs Allegheny County	556-P-299 556-L-101	117.11	Fee Simple	Purchase	12/30/1998
Buchanan Family	Liberty Borough Allegheny County	556-L-62	3.96	Fee Simple	Donation	12/20/1999
Faulker Family	Liberty & Elizabeth Boroughs Allegheny County	654-S-233	40.88	Fee Simple	Purchase	10/24/2008

### Surrounding Land Ownership

The Site Analysis map identifies the owners of property adjacent to Dead Man's Hollow.

#### Access and Circulation

Currently there are eight opportunities to access Dead Man's Hollow. Four of these opportunities can be considered as destination trailheads, meaning vehicular parking is available at them. These include:

- Great Allegheny Passage Trailhead
- Orchard Drive Trailhead
- Catfish Pond Trailhead
- Calhoun Road Trailhead

Of these, the Great Allegheny Passage's Boston Trailhead, Catfish Pond Trailhead in Liberty Borough and Calhoun Road Access in Lincoln Borough are the only publicly promoted trailheads.

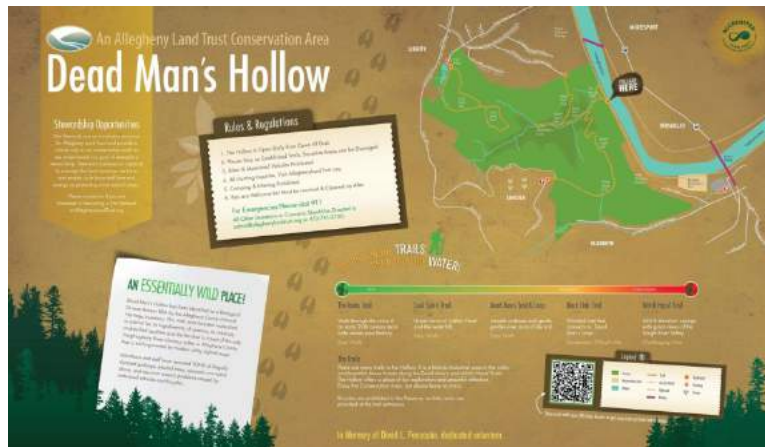
The four remaining access points do not have parking associated with them. Two of them, Orchard and Jeffrey Drives require crossing property owned by Pennsylvania American Water and Liberty Borough, respectively, to access the Hollow. Access to the Hollow from McLean and Taylor Drives requires crossing private properties. As such, they should not be considered access points unless trail access easement agreements can be obtained in writing from the respective owners.

## Dead Man's Hollow Conservation Area Management Plan - 2014

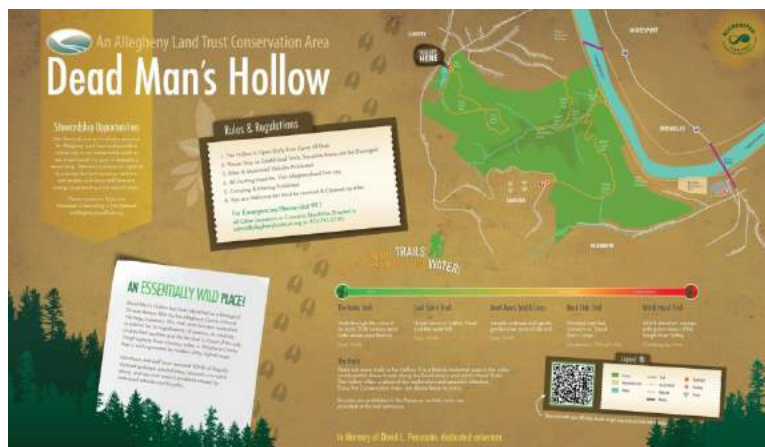
The following is a summary of each of these access opportunities.

### Potential Trailheads & Points of Entry

No.	Location	Municipality	Type	Kiosk	Parking	Notes
1	Great Allegheny Passage Boston Trailhead	Elizabeth Township	Trailhead/EMS	GAP Kiosk	50 spaces	0.9 miles to base of Ruins Trail
2	Orchard Drive	Liberty Borough	Trailhead/EMS	DMH Kiosk	Undefined	Unimproved gravel lot, 90' x 50', approx. 10 cars
3	Overlook Drive	Liberty Borough	Walk-in access	-	-	
4	Jeffrey Drive	Liberty Borough	Walk-in access/EMS	-	-	Requires easement for public access.
5	Catfish Pond	Lincoln Borough	Trailhead/EMS	DMH Kiosk	Undefined	Unimproved gravel lot, 130' x 60', approx. 25 cars
6	Washington Boulevard	Lincoln Borough	Walk-in access/EMS	-	-	Requires easement for public access.
7	Taylor Drive	Lincoln Borough	Walk-in access	-	-	Requires easement for public access.
8	Calhoun Road	Lincoln Borough	Trailhead/EMS	DMH Kiosk	Undefined	Unimproved gravel lot, 60' x 35', approx. 5 cars



Great Allegheny Passage Trailhead



Catfish Pond Trailhead

### Old Calhoun Road and Yough Road

Venturing off the beaten path can often be a rewarding experience, especially in the Dead Man's Hollow Conservation Area. One of those 'rewards' is found along a forgotten stretch of road on the outskirts of the Hollow.

Calhoun's Crossing is the informal name given to a large stone retaining wall that still rests along an abandon portion of what was originally Calhoun Road. It was constructed nearly a century ago in order to create a land bridge over a deep ravine and one of the tributaries flowing into Dead Man's Run.

For many years, Calhoun Road provided an alternate travel route through Lincoln Borough. However, frequent land slides brought temporary closures to the road as well as a constant strain on the Borough's budget. By the 1970s, it had become too costly for Lincoln Borough to continue making the necessary repairs and Calhoun Road was permanently closed to 'thru' traffic. Likewise, a portion of Yough Road was also closed.

Today, the majority of these former roads have been reclaimed by nature.

## Wildlife and Habitats

During the Spring of 2014 representatives of the Pennsylvania Natural Heritage Program (PNHP) conducted an inventory and assessment of the flora and fauna of the Dead Man's Hollow Conservation Area. Appendix 1 contains a list of species observed during their site visits to the property. It is not a comprehensive list, as it only reflects those species observed while PNHP staff while on-site.

The species identified during the field visits to the Hollow include:

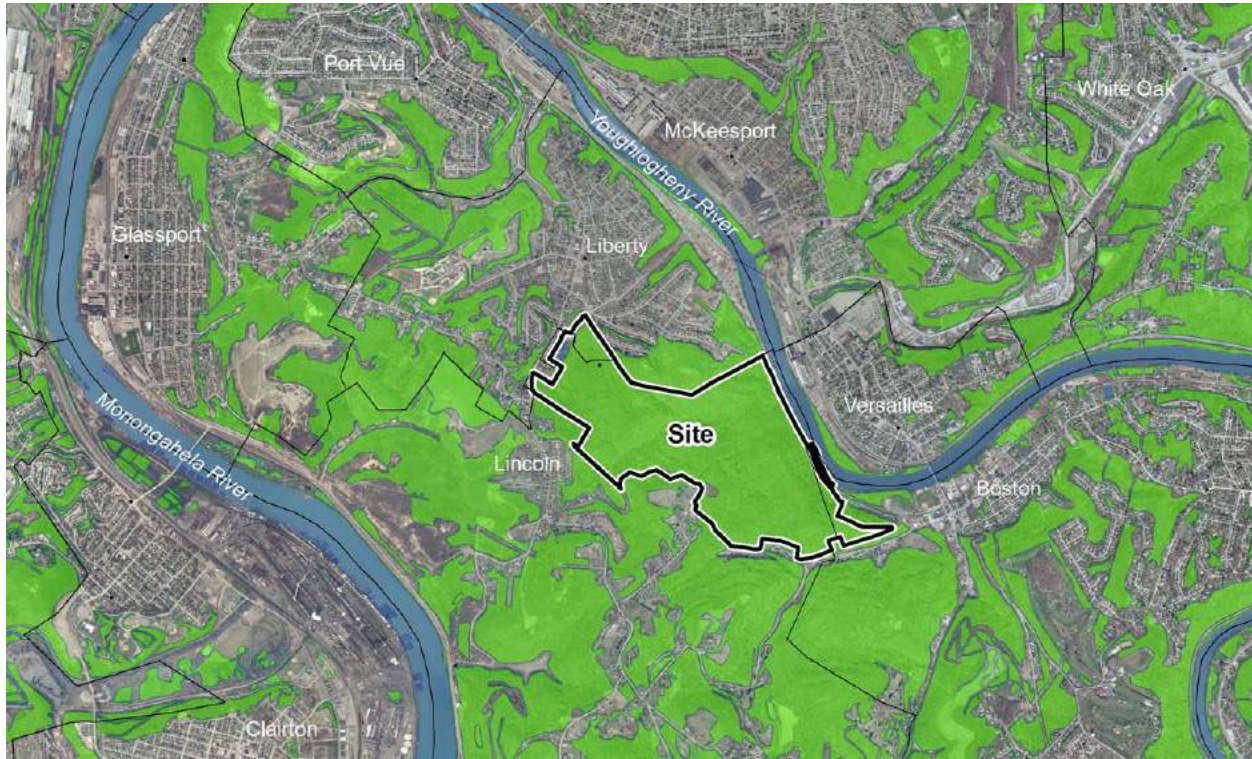
- 2 Amphibians
- 5 Fungi and Lichen
- 8 Insects
- 1 Reptile
- 53 Birds
- 12 Mammals
- 122 Plants

*“The last word in ignorance is the man who says of an animal or plant: “What good is it?” If the land mechanism as a whole is good, then every part is good, whether we understand it or not. If the biota, in the course of aeons, has built something we like but do not understand, then who but a fool would discard seemingly useless parts? To keep every cog and wheel is the first precaution of intelligent tinkering.”*

Aldo Leopold, Round River

### Landscape Context and Forest Fragmentation

Dead Man's Hollow is a relatively large patch of contiguous forest within an otherwise largely fragmented landscape. The position of DMH as a large block of forest just south of the Pittsburgh region makes the site important for migratory birds and other wildlife.



Prior to European settlement, forest covered more than 90 percent of the area that became Pennsylvania (Goodrich et al., 2003). Today, 62 percent of the state is forested, comprising an area of over 17 million acres (Figure 6a; Goodrich et al., 2003; Myers et al., 2000). As the region that eventually became Pittsburgh was settled, permanent landscape features such as roads, utility rights-of-way, and development fragmented the natural landscape into smaller and smaller patches. The fragmentation of contiguous forested landscapes into smaller, isolated tracts has an effect on plant and animal distribution and community composition.

When a large piece of forest tract is fragmented, or split into pieces, the resulting forest islands may lack some of the habitats that existed in the original tract, or may be smaller than the minimum area required by a given species (Lynch and Whigham, 1984). For example, the Louisiana waterthrush (*Seiurus motacilla*) is rarely found in small woodlots because they require upland forest streams within their territory and most small woodlots lack this necessary component (Robbins, 1980; Robinson, et al., 1995). Area-sensitive species such as the northern goshawk (*Accipiter gentilis*), barred owl (*Strix varia*), and bobcat (*Lynx rufus*) typically require interior forest areas in excess of 6,000 acres to accommodate breeding and foraging territories (Ciszek, 2002; Mazur and James, 2000; Squires and Reynolds, 1997).

Edge forest is composed of a zone of altered microclimate and contrasting community structure distinct from the interior or core forest (Matlack, 1993). Along with a reduction in total forested area,

forest fragmentation creates a suite of edge effects which can extend up to 1,000 feet into the remaining fragment (Forman and Deblinger, 2000). Edge effects include increased light intensity, reduced depth of the leaf-litter layer, altered plant and insect abundance, reduced numbers of macroinvertebrates, and fewer species of macroinvertebrates (Haskell, 2000; Watkins et al., 2003; Yahner, 2000). The macroinvertebrates in the leaf litter are significant for the pivotal role they play in energy and nutrient cycling; these macroinvertebrates also provide food source for salamanders and ground-feeding birds (Voshell, 2002). Additionally, a number of studies have shown that the nesting success of forest-interior songbirds is lower near forest edges than in the interior, due to increased densities of nest predators and brood parasites.

Not only do roads fragment forests, but roads can also act as corridors for dispersal of invasive plants and toxic chemicals, and pollute nearby aquatic systems (Forman and Alexander, 1998; Trombulak and Frissell, 2000; Watkins et al., 2003; Williams, 1995). Vehicles can transport exotic plant seeds into previously un-infested areas, while road construction and maintenance operations provide sites for seed germination and seedling establishment (Schmidt, 1989; Trombulak and Frissell, 2000).

Road traffic and maintenance of rights-of-way also contribute to the introduction of at least six different kinds of chemicals to the environment: heavy metals, salt, organic pollutants, ozone, nutrients, and herbicides (Forman and Alexander, 1998; Trombulak and Frissell, 2000). Heavy metals such as lead, aluminum, and iron contaminate soils, plants, invertebrates, and vertebrates up to 656 feet from roads (Trombulak and Frissell, 2000). Deicing salts alter the soil's chemical composition (including the pH), which affects plant growth (Forman and Alexander, 1998; Trombulak and Frissell, 2000).

Airborne sodium chloride from snowplowing may cause leaf injury to trees up to almost 400 feet from a road (Forman and Alexander, 1998). Organic pollutants such as dioxins and polychlorinated biphenyls (PCBs) are present in higher concentrations along roads, and hydrocarbons may accumulate in aquatic ecosystems near roads. Storm runoff from roads, particularly where roads abut or cross water bodies, can result in the transportation of nutrients and sediments into aquatic ecosystems. Drifting or misused herbicides applied to roadsides and utility rights-of-ways to control woody plant growth may damage forest edge and interior plant species or directly kill rare plants (Williams, 1995).

### Land Cover and Forest Habitat

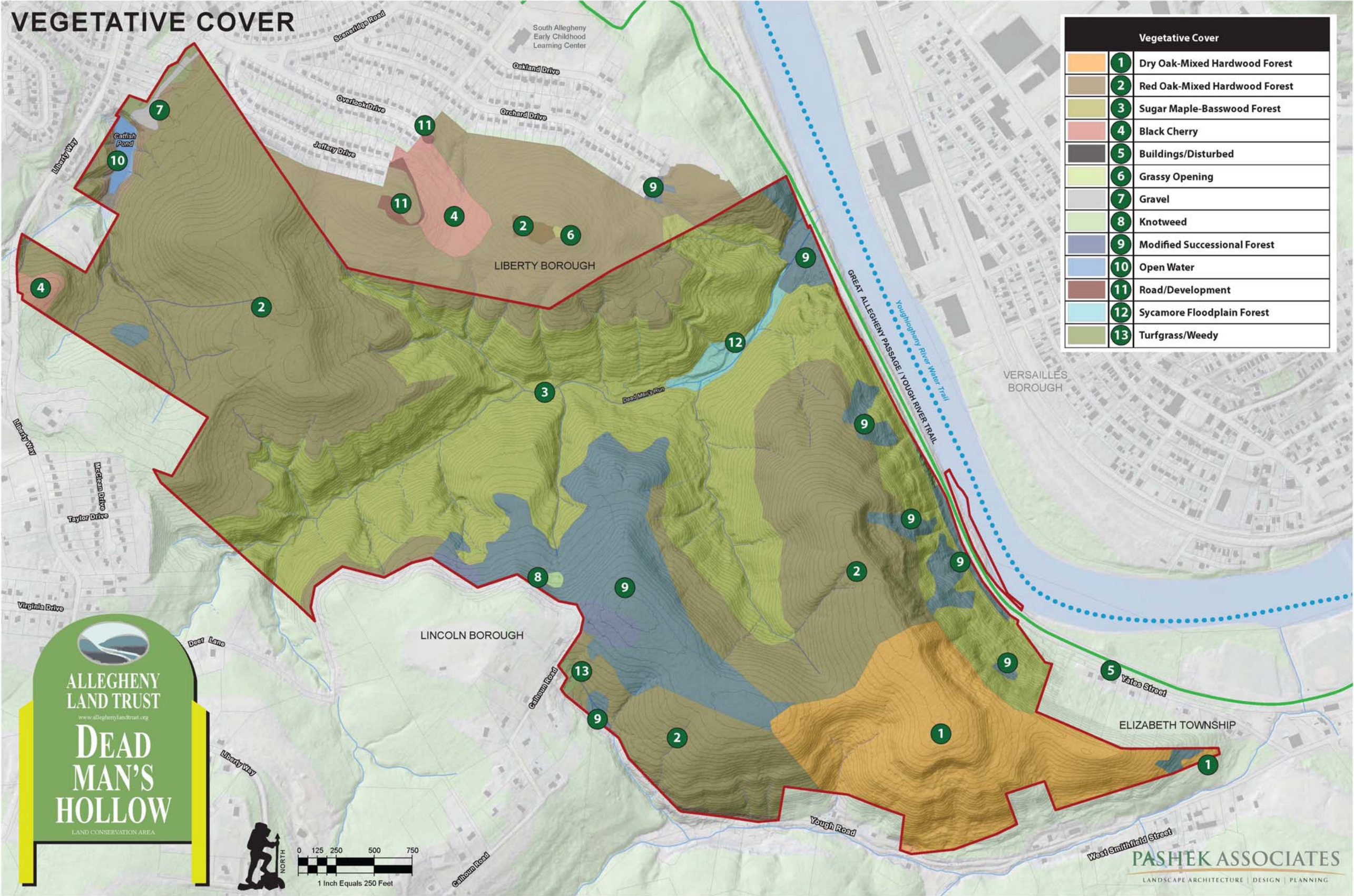
The forests of the region have been characterized by a number of people and from a number of perspectives. E.L. Braun (1950) suggested, based on her studies of original forest remnants in the early 1900's, that Dead Man's Hollow is located in the Cumberland and Allegheny Plateaus Section of the Mixed Mesophytic forest region. The dominant species of the climax forest in this region are the American beech (*Fagus grandifolia*), tulip tree (*Liriodendron tulipifera*), basswood (*Tilia sp.*), sugar maple (*Acer saccharum*), American chestnut (*Castanea dentata*), sweet buckeye (*Aesculus octandra*), red oak (*Quercus rubra*), white oak (*Quercus alba*) and eastern hemlock (*Tsuga canadensis*). Braun described the variation in this forest type for the various sections of the Mixed Mesophytic forest region.

The area being described falls within the Low Hills Belt subdivision and was thought to have a larger proportion of oak than other sections of the Mixed Mesophytic forest. Jennings (1927) further supported Braun's research when he described the vegetation of the region surrounding and

including DMH in the early part of the 1900's as being part of two associations, the White Oak Association and the Sugar Maple-Beech Climax Association. The forests of the White Oak Association occurred on rolling uplands or rounded hills and are dominated by white oak, shagbark hickory (*Carya ovata*), red maple (*Acer rubrum*), red oak and many other oak species. Those species that dominated the Sugar Maple-Beech Climax Association which occurred on more fertile soils along floodplains and lower slopes in the Ohio River valley included sugar maple, American beech, hickories, red oak, white oak, white ash (*Fraxinus americana*), American basswood and a number of other less common species.

Since the time of Braun and Jennings, the natural forest cover of the Dead Man's Hollow area has taken on a different character. Human manipulation in the form of timbering, agriculture and clearing of land for industrial and commercial use, as well as road construction, have all impacted the health and integrity of the forest. With the introduction of two exotic forest pests, the chestnut blight (*Endothia parasitica*) and the gypsy moth (*Lymantria dispar*), forest composition has changed dramatically in the early part of this century and continues to change to this day.

In 1996, Jeff Wagner and Lisa Smith of the Western Pennsylvania Conservancy drafted a baseline vegetation map of Dead Man's Hollow. This map consisted of 51 management compartments. As this was done before Pennsylvania had a standardized natural community classification, we updated this map to the communities (i.e. associations) present in the current PNHP natural community classification.



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The following are the primary natural communities present on the site:

**Sugar Maple - Basswood Forest** – This type occurs on a wide range of sites in western Pennsylvania. Aside from sugar maple (*Acer saccharum*) and basswood (*Tilia americana*), other trees typically present include northern red oak (*Quercus rubra*), white ash (*Fraxinus americana*), tuliptree (*Liriodendron tulipifera*), yellow birch (*Betula alleghaniensis*), and sweet birch (*B. lenta*). Shrubs include spicebush (*Lindera benzoin*) and witch-hazel (*Hamamelis virginiana*). There is generally a rich vernal flora; species include wood anemone (*Anemone quinquefolia*), black snakeroot (*Cimicifuga racemosa*), wood geranium (*Geranium maculatum*), blue cohosh (*Caulophyllum thalictroides*), wild leek (*Allium tricoccum*), liverleaf (*Hepatica nobilis*), bloodroot (*Sanguinaria canadensis*), trout-lily (*Erythronium americanum*), spring-beauty (*Claytonia virginica*), jack-in-the-pulpit (*Arisaema triphyllum*), bishop's-cap (*Mitella diphylla*), cut-leaved toothwort (*Cardamine concatenata*), and wild ginger (*Asarum canadense*). Other herbaceous species include false Solomon's-seal (*Smilacina racemosa*), evergreen wood fern (*Dryopteris marginalis*), and rattlesnake fern (*Botrychium virginianum*). At DMH, this type is confined to the deep valley of Dead Man's Run and the steep slopes along the Youghiogheny River.

**Red Oak - Mixed Hardwood Forest** – This broadly defined community type includes much of Pennsylvania's hardwood-dominated forests occurring on fairly mesic sites, and is therefore quite variable in composition. Northern red oak (*Quercus rubra*) is usually present, often dominant/codominant, most often with red maple (*Acer rubrum*), black oak (*Quercus velutina*), white oak (*Q. alba*), mockernut hickory (*Carya tomentosa*), shagbark hickory (*C. ovata*), sweet birch (*Betula lenta*), yellow birch (*B. alleghaniensis*), white ash (*Fraxinus americana*), American beech (*Fagus grandifolia*), and/or tuliptree (*Liriodendron tulipifera*). Shrubs include northern arrowwood (*Viburnum recognitum*), southern arrowwood (*V. dentatum*), maple-leaved viburnum (*V. acerifolium*), smooth serviceberry (*Amelanchier laevis*), shadbush (*A. arborea*), hornbeam (*Carpinus caroliniana*), hop-hornbeam (*Ostrya virginiana*), witch-hazel (*Hamamelis virginiana*), and spicebush (*Lindera benzoin*). The herbaceous layer is highly variable. Representative species include mayapple (*Podophyllum peltatum*), Indian cucumber-root (*Medeola virginiana*), blue cohosh (*Caulophyllum thalictroides*)—on richer sites, wood ferns (*Dryopteris* spp.), and hayscented fern (*Dennstaedtia punctilobula*).

**Sycamore – Mixed Hardwood Floodplain Forest** – Generally speaking, this community is primarily associated with intermediate and smaller tributaries on low to intermediate elevation terraces. The presence of several tree species with low to moderate flood tolerance suggests the substrate is sufficiently coarse and the flow is sufficiently rapid to prevent significant development of anaerobic soil conditions. The substrate is saturated or inundated annually from less than a week to as long as three months each year. The substrate is usually coarse sand and gravel, often with inclusions of cobble-lined scour channels. This community is clearly dominated by sycamore (*Platanus occidentalis*) in the forest canopy, but usually has significant cover of one or more other hardwood species. Sugar maple (*Acer saccharum*) is the typical canopy associates on smaller tributaries. The sub-canopy may be sparse to moderately dense, consisting of canopy species as well as hornbeam (*Carpinus caroliniana*). Typical shrubs include spicebush (*Lindera benzoin*). On sites with a closed canopy, jewelweed (*Impatiens* spp.), clearweed (*Pilea pumila*), false nettle (*Boehmeria cylindrica*), wood nettle (*Laportea canadensis*), stinging nettle (*Urtica dioica*), jumpseed (*Persicaria virginianum*), and Jack-in-the-pulpit (*Arisaema triphyllum*) are common. In areas of more open canopy, goldenrods (*Solidago* spp.), deer-tongue grass (*Panicum clandestinum*), and wingstem (*Verbesina alternifolia*) dominate the herbaceous layer. The shrub and herbaceous layers are often heavily impacted by non-native plant species such as multiflora rose (*Rosa multiflora*), Morrow's honeysuckle (*Lonicera morrowii*),

common privet (*Ligustrum vulgare*), Japanese barberry (*Berberis thunbergii*), reed canary-grass (*Phalaris arundinacea*), Japanese stiltgrass (*Microstegium vimineum*), dame's-rocket (*Hesperis matronalis*), and garlic-mustard (*Alliaria petiolata*).

**Dry Oak-Mixed Hardwood Forest** – This type occurs on less acidic to somewhat calcareous, moderately dry soils. It is most often found on south and southwest-facing slopes. Common trees include white oak (*Quercus alba*), sweet birch (*Betula lenta*), shellbark hickory (*Carya cordiformis*), hackberry (*Celtis occidentalis*), red maple (*Acer rubrum*), sugar maple (*A. saccharum*), chestnut oak (*Q. montana*), black oak (*Q. velutina*), northern red oak (*Q. rubra*), pignut hickory (*Carya glabra*), white ash (*Fraxinus americana*), and basswood (*Tilia americana*). The shrub layer is perhaps more diagnostic. Characteristic shrubs include flowering dogwood (*Cornus florida*), hornbeam (*Carpinus caroliniana*), shadbush (*Amelanchier arborea*), and hop-hornbeam (*Ostrya virginiana*). Herbaceous species include false Solomon's-seal (*Smilacina racemosa*), wild-oats (*Uvularia sessilifolia*), Solomon's-seal (*Polygonatum biflorum*), ebony spleenwort (*Asplenium platyneuron*), tick-trefoil (*Desmodium* spp.), rattlesnake weed (*Hieracium venosum*), wild sarsaparilla (*Aralia nudicaulis*), Pennsylvania sedge (*Carex pensylvanica*), a sedge (*Carex communis*), and whorled loosestrife (*Lysimachia quadrifolia*). This is found in the area of highest elevation at the site, east of the Witch-Hazel Trail.

However, due to the land use history of the site some of the forest doesn't fit the classification and are therefore not formally describe as naturally occurring native plant communities. We refer to this as Modified Successional Forest. This community type usually occurs on highly disturbed sites or in small woodlots in an agricultural or suburban matrix. Black locust (*Robinia pseudoacacia*) is usually the dominant tree. Other associates vary; typical representatives include red maple (*Acer rubrum*), the exotic Norway maple (*Acer platanoides*), sassafras (*Sassafras albidum*), various oaks (*Quercus* spp.), or wild black cherry (*Prunus serotina*). There is generally a dense graminoid understory due to the light penetration through the canopy. Poison ivy (*Toxicodendron radicans*) is commonly abundant. Exotic species usually predominate; common representatives include Japanese honeysuckle (*Lonicera japonica*), tree-of-heaven (*Ailanthus altissima*), Morrow's honeysuckle (*L. morrowii*), Japanese barberry (*Berberis thunbergii*), multiflora rose (*Rosa multiflora*), garlic mustard (*Alliaria petiolata*), stilt grass (*Microstegium vimineum*), Kentucky bluegrass (*Poa pratensis*), and orchard grass (*Dactylis glomerata*).

Although, natural occurring canopy gaps due to treefalls and other disturbance tend to recover towards their original community type, canopy gaps at DMH tend to revert to a modified successional type due to the high invasive species load present at the site. Generally speaking this type is found at the edges of the DMH, where the greatest land use impacts have been undertaken.

For more information about these natural communities, please see the Terrestrial & Palustrine Plant Communities of Pennsylvania 2nd Edition, available at:

<http://www.naturalheritage.state.pa.us/Communities.aspx>.

### Invasive Species of Dead Man's Hollow

The spread of invasive species presents a significant hurdle to the reestablishment of native plants and animals. Successful control of invasive species is a time-, labor-, and resource-intensive process, but it is also necessary for native plants to survive. Prevention or control during the early stages of an infestation is the best strategy. In areas where invasive plants are well established, multiple control strategies and follow-up treatments may be necessary. After the infestation has been eliminated, regular maintenance of the site to prevent a new infestation may also be needed. Specific treatment depends on the target species' biological characteristics and population size. The following sections provide an overview of the local effects of invasive plants and animals on the ecology of Dead Man's Hollow.

#### *Invasive Plants*

Invasive plants reproduce rapidly, spread quickly over the landscape, and have few, if any, natural controls such as herbivores and diseases to keep them in check. Invasive plants share a number of characteristics that allow them to spread rapidly and make them difficult to remove or control: 1) Spreading aggressively by runners or rhizomes; 2) Producing large numbers of seeds that survive to germinate, and; 3) Dispersing seeds away from the parent plant through various means such as wind, water, wildlife, and people.

Invasive plants are capable of displacing native plants from natural communities, especially those with rare, vulnerable, or limited populations. This initial impact is worsened by the tendency for native wildlife to prefer native species over invasive species for food. In some cases, a switch to the invasive plant food supply may affect the physiology of the prey species. For example, many invasive shrubs, such as nonnative bush honeysuckles (*Lonicera* spp.), provide fruits that native birds find attractive, yet these fruits do not provide the nutrition and high-fat content the birds need in their diets (Swearingen et al. 2002).

Aggressive invasive plants can also transform a diverse small-scale ecosystem, such as a wetland or meadow, into a monoculture of a single species, drastically reducing the overall plant richness of an area and limiting its ecological value. The decrease in plant biodiversity can, in turn, impact the mammals, birds, and insects in an area, as the invasive plants do not provide the same food and cover value as the natural native plant species did (Swearingen et al., 2002).

#### *Significant invasive plant species with colonization potential in Dead Man's Hollow*

Species	Description and Threat
Japanese barberry ( <i>Berberis thunbergii</i> )	A commonly used landscape shrub that can form dense thickets that displace native woody and herbaceous plants.
Privet ( <i>Ligustrum</i> spp.)	A commonly used landscape shrubs have escaped from cultivation to form dense thickets that displace native woody and herbaceous plants.
Oriental bittersweet ( <i>Celastrus orbiculatus</i> )	An exotic vine that climbs and strangles native trees and shrubs.
Japanese and giant knotweed ( <i>Polygonum cuspidatum</i> and <i>P. sachalinense</i> )	These fast-growing exotics displace natural vegetation, greatly alter natural ecosystems, and degrade riparian systems throughout the state. Once established in a wetland these species are difficult to eradicate and will displace native species.
Japanese stiltgrass ( <i>Microstegium vimineum</i> )	An exotic annual grass that spreads rapidly in moist areas displacing native vegetation.

Garlic mustard ( <i>Alliaria petiolata</i> )	A perennial herb that spreads rapidly and displaces native spring wildflower.
Periwinkle ( <i>Vinca minor</i> )	A perennial vines cover and out-compete native vegetation
Glossy buckthorn ( <i>Rhamnus frangula</i> )	
Non-native bush honeysuckles ( <i>L. morrowii</i> , and <i>L. maackii</i> )	These shrubs are spread by birds and creates dense thickets that outcompete native vegetation.
Multiflora rose ( <i>Rosa multiflora</i> )	This shrub is spread by birds and creates dense, thorny thickets that outcompete native vegetation.
Tree-of-heaven ( <i>Ailanthus altissima</i> )	These fast growing introduced trees are still sold as ornamental trees. They have spread throughout Pennsylvania invading many rich upland woodlands and are commonly found along roadsides.

### Invasive Animals

The gypsy moth (*Lymantria dispar*) has caused extensive defoliation of forests in the northeast. This European moth was intentionally introduced to the U.S. in 1869 as part of a failed commercial silk production venture. Its main impact is that it defoliates trees, concentrating on oak species, but opportunistically eating almost any type of plant. This defoliation can result in a reduction in the growth rate and eventual death of afflicted trees.

Another introduced species that threatens trees is the emerald ash borer (*Agrilus planipennis*), an exotic beetle species that has been devastating for populations of all species of ash trees (*Fraxinus* spp.) wherever it has become established. Ashes are an important component of much of the upland forests at Dead Man's Hollow. As the ash trees die from the beetle feeding on its sapwood, gaps in the forest canopy open up which may allow the establishment and spread of exotic plant species. Additionally, dead or dying ash trees may present hazards along hiking trails.

And yet another introduced tree-killing species is the hemlock woolly adelgid (*Adelges tsugae*). This is a small aphid-like insect that feeds on the leaves of eastern hemlock trees (*Tsuga canadensis*). Infestations of the woolly adelgid appear as whitish fluffy clumps of feeding adults and eggs along the underside of the branch tips of the hemlock. Hemlock decline and mortality typically occurs within four to ten years of initial infestation. The adelgid can cause up to 90% mortality in eastern hemlocks, which are important for shading trout streams, and provide habitat for about 90 species of birds and mammals, some exclusively. Several control options are currently being tested, but these have met with very limited success. It is currently distributed from Maine to Georgia and can be found in most of the counties in Pennsylvania (DCNR 2007d).

### Bird Communities of Dead Man's Hollow

During the first Pennsylvania Breeding Bird Atlas (PBBA, 1983-1989), there were 79 bird species recorded in the atlas block (9.6 square-mile sampling unit) covering Dead Man's Hollow. The second PBBA (2004-2009), now five years old, recorded just 57 breeding bird species within the same area. Given

that Dead Man's Hollow represents a fairly large and intact patch of contiguous forest in Allegheny County, the focus of bird conservation at the site should be Neotropical migrants and forest breeding birds, more specifically Forest Interior-Dwelling Species of birds, also known as FIDS.

*"A bird doesn't sing because it has an answer, it sings because it has a song."*

Maya Angelou

Some birds like American Robins, Eastern Towhees, or Northern Cardinals are more adaptable and general in their nesting habitat needs and they will inhabit a variety of edge or shrub woodlands. On the other hand, FIDS like Louisiana Waterthrush, Scarlet Tanager, and Acadian Flycatcher are birds that require core forest, typically at least 100m from habitat edges and often in large contiguous patches, in order to maintain healthy populations and breed successfully. A number of ecological factors within that 100m buffer of edge habitat can negatively impact breeding success of forest birds. Higher temperatures and winds, invasion from exotic plants, and more pollution are just some of these edge effects. Nest predation rates, both mammalian (raccoons, feral cats, etc.) and avian (American Crows, Blue Jays, etc.), are also higher within and near habitat edges, as is brood parasitism by Brown-headed Cowbirds. Near habitat edges, female cowbirds lay their eggs in other species' nests, forcing the host parents to rear the cowbird young with nestling cowbirds often kill or out-compete the host nestlings. Many FIDS are much more vulnerable to these edge effects, which is exactly why they need healthy interior forest habitat.

At more than 434 acres, the Dead Man's Hollow Conservation Area can provide interior forest habitat conditions for breeding birds. This was evidenced by the fact that 17 FIDS were recorded between the two atlas projects. However, 14 were recorded during the first atlas while only eight FIDS were recorded during the second project. Two possible causes for this decline may be, 1) more survey effort during the first PBBA returned more bird species (i.e. some FIDS were missed during the 2<sup>nd</sup> PBBA), or 2) forest quality actually declined during the 20 years between atlases, resulting in fewer FIDS breeding in the area. The latter would no doubt have greater implications for bird conservation at the site.

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Forest interior bird species (FIDS) recorded as breeding in the Dead Man's Hollow block during Pennsylvania Breeding Bird Atlases and during 2014 WPC surveys.

FIDS	1st PBBA (1983-89)	2nd PBBA (2004-09)	WPC Surveys (2014)	Nesting Guild	Conservation Status <sup>1</sup>
Acadian Flycatcher	Yes	Yes	Yes	Sub-canopy	
American Redstart		Yes	Yes	Sub-canopy	
Black-and-white Warbler			Yes	Ground	
Black-billed Cuckoo	Yes			Shrub	
Broad-winged Hawk	Yes		(Migration Only)	Canopy	PA Maintenance
Brown Creeper	Yes			Sub-canopy	
Cerulean Warbler	Yes			Canopy	USFWS BCC, PIF Watch List, PA High Level Concern-Responsibility
Hairy Woodpecker	Yes		Yes	Cavity	
Hooded Warbler	Yes	Yes	Yes	Shrub	
Kentucky Warbler	Yes		Yes	Ground	USFWS BCC, PIF Watch List, PA Maintenance
Louisiana Waterthrush		Yes	Yes	Ground	PA Maintenance- Responsibility
Ovenbird	Yes		(Migration Only)	Ground	
Pileated Woodpecker		Yes	Yes	Cavity	
Red-eyed Vireo	Yes	Yes	Yes	Sub-canopy	
Scarlet Tanager	Yes	Yes	Yes	Canopy	
Sharp-shinned Hawk	Yes		(Migration Only)	Sub-canopy	PA Maintenance
Wood Thrush	Yes	Yes	Yes	Sub-canopy	USFWS BCC, PIF Watch List, PA Maintenance- Responsibility
Worm-eating Warbler	Yes		Yes	Ground	USFWS BCC, PIF Watch List, PA Maintenance- Responsibility

<sup>1</sup>USFWS BCC – 2008 Birds of Conservation Concern List, Partners in Flight (PIF) Watch List, Pennsylvania Wildlife Action Plan – High Level Concern, Maintenance Concern, and Responsibility species.

To provide more current information on avian diversity and abundance at Dead Man's Hollow, the Pennsylvania Natural Heritage Program (PNHP) established 15 point count locations largely along existing trails. PNHP staff and volunteers conducted one spring migration survey visit (early May 2014) and two breeding season survey visits (late May/mid June 2014) at these locations following standard avian point count protocols used by the Western Pennsylvania Conservancy (See Appendix).

Surveys during spring migration revealed a diversity of Neotropical migrant land birds utilizing the site as stopover habitat, 53 species were recorded across the site. Out of the 34 migrant species recorded, the majority of these were migrant passerines (songbirds) which points to the benefits of the Dead Man's Hollow forests as migratory stopover habitat in an otherwise fragmented and highly developed landscape of Allegheny County. The most abundant species recorded during migration was the Blue Jay, a common resident habitat generalist, followed by Northern Cardinal, another habitat generalist, and Tufted Titmouse, a forest generalist. The most frequently encountered bird species across the site during migration was Wood Thrush, a Neotropical migrant FIDS, followed by

another migrant, Eastern Towhee, which prefers woodlands with dense understories and early successional forests. Other migrants included a diversity of the colorful and insectivorous wood-warblers such as the Black-throated Green Warbler, Hooded Warbler, Blackburnian Warbler, and Nashville Warbler. Maintaining the forests as functioning ecosystems with a diversity of insect larvae will be necessary to ensure that migrant songbirds can continue to use the site as a refueling point during their northbound journeys each spring.

There were 53 bird species recorded during spring 2014 migration at Dead Man's Hollow utilizing the 15 point count locations established by WPC (sorted by highest frequency, FIDS are denoted in bold).

Common Name	Total Detections (Outside Survey)	Frequency	Migration Status
<b>Wood Thrush</b>	10	0.73	Migrant
Eastern Towhee	13	0.67	Migrant
Blue Jay	17	0.60	Resident
Northern Cardinal	16	0.60	Resident
Tufted Titmouse	11	0.60	Resident
<b>Black-throated Green Warbler</b>	10	0.53	Migrant
American Goldfinch	11	0.47	Resident
Carolina Chickadee	10	0.40	Resident
<b>Pileated Woodpecker</b>	6	0.40	Resident
Red-bellied Woodpecker	6	0.40	Resident
<b>Hooded Warbler</b>	4	0.33	Migrant
American Crow	6	0.27	Resident
Northern Flicker	3	0.27	Resident
<b>Ovenbird</b>	2	0.27	Migrant
Wild Turkey	2	0.27	Resident
Yellow-rumped Warbler	4	0.20	Migrant
Rose-breasted Grosbeak	2	0.20	Migrant
White-breasted Nuthatch	2	0.20	Resident
American Robin	1	0.20	Resident
Tennessee Warbler	2	0.20	Migrant
<b>Broad-winged Hawk</b>	2	0.13	Migrant
Chestnut-sided Warbler	2	0.13	Migrant
Nashville Warbler	2	0.13	Migrant
<b>Black-and-white Warbler</b>	1	0.13	Migrant
Blue-gray Gnatcatcher	1	0.13	Migrant
<b>Blue-headed Vireo</b>	1	0.13	Migrant
<b>Northern Parula</b>	1	0.13	Migrant
White-throated Sparrow	2	0.07	Migrant
<b>Blackburnian Warbler</b>	1	0.07	Migrant
Cooper's Hawk	1	0.07	Resident
Downy Woodpecker	1	0.07	Resident

<b>Hairy Woodpecker</b>	1	0.07	Resident
House Wren	1	0.07	Migrant
<b>Louisiana Waterthrush</b>	1	0.07	Migrant
Philadelphia Vireo	1	0.07	Migrant
<b>Red-eyed Vireo</b>	1	0.07	Migrant
<b>Scarlet Tanager</b>	1	0.07	Migrant
<b>Sharp-shinned Hawk</b>	1	0.07	Resident
Swainson's Thrush	1	0.07	Migrant
Turkey Vulture	1	0.07	Migrant
Ruby-crowned Kinglet	0 (1)	--	Migrant
Brown-headed Cowbird	0 (1)	--	Migrant
<b>Black-throated Blue Warbler</b>	0 (2)	--	Migrant
Blackpoll Warbler	0 (1)		Migrant
Carolina Wren	0 (1)	--	Resident
Chipping Sparrow	0 (1)	--	Migrant
Indigo Bunting	0 (1)	--	Migrant
Baltimore Oriole	0 (1)	--	Migrant
Bay-breasted Warbler	0 (1)	--	Migrant
Canada Goose	0 (1)	--	Resident
Chimney Swift	0 (1)	--	Migrant
Common Grackle	0 (1)	--	Resident
Eastern Phoebe	0 (1)	--	Migrant

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During late May and June 2014, WPC staff and volunteers Bill Brown and Alyssa Karmann conducted breeding season surveys at the established point count locations. These surveys documented 34 species of breeding birds which included 12 FIDS. Combined with WPC's migration surveys, a total of 17 FIDS were documented during 2014 at Dead Man's Hollow. Broad-winged Hawk, Ovenbird, and Sharp-shinned Hawk (potential breeders) were all recorded prior to safe breeding dates, but these three species were found breeding in the area during the 1<sup>st</sup> PBBA but not the 2<sup>nd</sup> PBBA. The 12 FIDS recorded during breeding season surveys included four additional species that were not documented during the 2<sup>nd</sup> PBBA – Black-and-white Warbler, Hairy Woodpecker, Kentucky Warbler, and Worm-eating Warbler. These results seem to point toward the possibility of a lower survey effort in this area during the 2<sup>nd</sup> PBBA, likely due to the relative remoteness of some areas of Dead Man's Hollow or lack of public knowledge about the site. Future surveys could reveal some answers as to whether or not these FIDS have returned as nesters or if their utilization of the site is now limited to migration only.

The overall breeding bird community at Dead Man's Hollow appears to be dominated by forest interior birds. Not only was FIDS diversity nearly as high as that of forest generalists, but FIDS also made up the majority of bird density across the site, comprising 39% of bird abundance – more than any other assemblage. Not surprisingly, six of the 13 species of breeding birds ranked most abundant and most frequently encountered were also FIDS. Red-eyed Vireo was the most abundant and most

frequently encountered breeding bird. Scarlet Tanager and Wood Thrush were also among the most abundant species and were found at more than 70% of the survey locations. Rounding out the most abundant FIDS were Hooded Warbler and Acadian Flycatcher, both of which were found at more than half of survey locations, and Kentucky Warbler, a species declining significantly within the region and range wide, ranked 9<sup>th</sup> most abundant and 7<sup>th</sup> in frequency. With FIDS making up a significant portion of the breeding bird community, this gives us an indication of the quality of interior forest habitat at Dead Man's Hollow.

The forest interior birds at the site have a variety of nesting requirements. The bird community includes ground nesters like Kentucky Warbler and Louisiana Waterthrush, both of which tend to be associated with riparian areas. Yet Kentucky Warbler prefers streams with dense shrub and herbaceous cover while Louisiana Waterthrush needs swift-flowing streams with ample rocks and debris to provide aquatic insect prey. The site supports Hooded Warbler, a shrub nesting FIDS, which tends to prefer canopy light-gaps where dense understories are found – unfortunately this also makes this species highly susceptible to brood-parasitism from Brown-headed Cowbirds. Going higher into the forest vegetation strata, Dead Man's Hollow has sub-canopy nesters like Acadian Flycatcher and Wood Thrush, both of which may be found along streams. Hairy and Pileated Woodpeckers both benefit from standing snags and live cavity trees as they serve as primary cavity nesters. The only canopy, or forest overstory, nesting FIDS recorded at Dead Man's Hollow during 2014 surveys was the common and widespread Scarlet Tanager. Absent was the canopy-nesting Cerulean Warbler, a USFWS species of national conservation concern and Continental Watch List species by Partners in Flight due to an estimated range wide population loss of 70% during the past 50 years.

There were 37 breeding bird species recorded during 2014 breeding season surveys by WPC at Dead Man's Hollow (sorted by highest density, FIDS are denoted in bold).

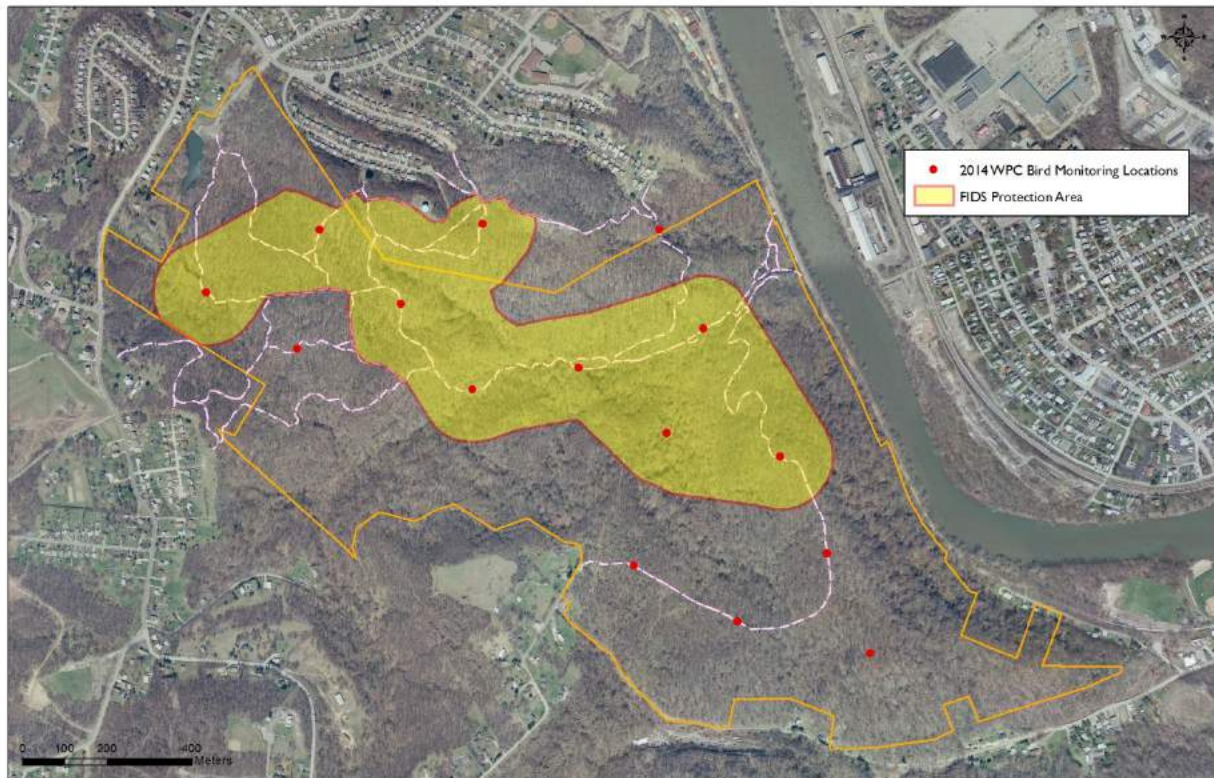
Common Name	Total Detections (Outside Survey)	Density/ point	Frequency	Abundance Rank	Frequency Rank
<b>Red-eyed Vireo</b>	48	1.66	1.00	1	1
Northern Cardinal	28	0.97	0.80	2	2
<b>Wood Thrush</b>	21	0.72	0.73	3	3
Tufted Titmouse	19	0.66	0.80	4	2
Eastern Towhee	15	0.52	0.73	5	3
<b>Scarlet Tanager</b>	14	0.48	0.80	6	2
<b>Acadian Flycatcher</b>	13	0.45	0.53	7	5
Carolina Chickadee	13	0.45	0.53	7	5
American Crow	12	0.41	0.40	8	6
<b>Hooded Warbler</b>	11	0.38	0.67	9	4
<b>Kentucky Warbler</b>	11	0.38	0.33	9	7
Rose-breasted Grosbeak	9	0.31	0.53	10	5
Indigo Bunting	9	0.31	0.40	10	6
American Robin	8	0.28	0.40	11	6
Red-bellied Woodpecker	7	0.24	0.53	12	5

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Blue Jay	7	0.24	0.33	12	7
Northern Flicker	5	0.17	0.33	13	7
Downy Woodpecker	5	0.17	0.27	13	8
Baltimore Oriole	4	0.14	0.20	14	9
Blue-gray Gnatcatcher	3	0.10	0.27	15	8
<b>Pileated Woodpecker</b>	3	0.10	0.27	15	8
Yellow-billed Cuckoo	3	0.10	0.27	15	8
American Goldfinch	3	0.10	0.20	15	9
Common Grackle	2	0.07	0.20	16	9
<b>Louisiana Waterthrush</b>	2	0.07	0.13	16	10
Ruby-throated Hummingbird	2	0.07	0.13	16	10
White-breasted Nuthatch	2	0.07	0.13	16	10
<b>American Redstart</b>	1	0.03	0.13	17	10
<b>Black-and-white Warbler</b>	1	0.03	0.13	17	10
Black-capped Chickadee	1	0.03	0.07	17	11
Carolina Wren	1	0.03	0.07	17	11
<b>Hairy Woodpecker</b>	1	0.03	0.07	17	11
Turkey Vulture	1	0.03	0.07	17	11
Wild Turkey	1	0.03	0.07	17	11
Chimney Swift	0 (1)	--	0.07	18	11
Red-winged Blackbird	0 (1)	--	0.07	18	11
<b>Worm-eating Warbler</b>	0 (1)	--	0.07	18	11

While Dead Man's Hollow will not qualify as an Important Bird Area due to its small size relative to other forested landscape blocks in western Pennsylvania, it still represents a quality patch of forest in a highly fragmented and urbanized landscape of Allegheny County that provides a haven for a number of breeding forest interior birds. A FIDS Protection Area was delineated using breeding bird density and diversity estimates based on WPC 2014 surveys. Based on current knowledge of the site, this area should be the focus for the conservation of forest interior birds. However, continued monitoring may reveal new areas of importance. Management of the site should aim to protect interior forest conditions and even enhance or restore areas of degraded interior forest. Here are some management recommendations:

1. Continue to monitor forest breeding birds to better refine the FIDS Protection Area, assess changes over time, and track the health of the Dead Man's Hollow forests.
2. Identify areas of interior forest that are degraded by invasive species (see Invasive Species of Dead Man's Hollow). Develop and implement appropriate plans for invasive species removal and restoration of these degraded areas.
3. Maintain diverse vertical forest structure, providing shrub, sub-canopy, and overstory canopy nesting habitat as well as light gaps and cavity trees.
4. Encourage natural succession of native vegetation toward old-growth forest conditions.



### Hydrology

The main hydrological feature on the site is Dead Man's Run. This approximately one-mile long stream generally runs in an easterly direction until it reaches the Youghiogheny River. The stream is fed by numerous seeps and side channels. These side channels are generally steep and somewhat flashy, with high flows of water after storm events. It passes over several small waterfalls. The lower section of the stream is largely contained within a culvert as it passes under and through the fill of the former clay pipe factory and rail line. There is a relatively wide floodplain halfway up the valley, but as the stream approaches its mouth, it becomes more confined due to the presence of large amounts of fill from the former industrial operations.

The edges of the Dead Man's Hollow Conservation Area drain into other watersheds. Many of these are heavily impacted by development and buried into underground tunnels. Catfish Pond is the main hydrological feature that drains to the northern edge of the property.

The Pennsylvania Code, Chapter 93, establishes and defines the water quality standards for waters of the Commonwealth. Dead Man's Hollow is located within the Youghiogheny River Watershed, HUC 12 No. 050200061203, and is classified as a warm water fishery which is defined as follows: *WWF Warm Water Fishes—Maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat.*

### Wetlands and Hydric Soils

A review of the National Wetland Inventory Maps does not identify any mapped jurisdictional wetlands on the property. However, a review of the soil survey and a field review conducted for this study indicate there is potential for jurisdictional wetlands along the low lying areas adjacent to Dead Man's Run. Additionally, there are numerous seeps along the steep valley walls along Dead Man's Run.

The soils table in the appendix lists the map unit components rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established

(Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

### **Riparian Zones**

Dead Man's Run is centrally located within the Dead Man's Hollow Conservation Area, as such it has a significant riparian zone adjacent to it, well in excess of the recommended 10m to 300m buffer. That said, the location of trails and other features must be designed in a manner which does not negatively impact the stream with sediment deposits from erosion of the trails or erosion created by other site features.

## Inventory of Existing Trails

Well established user-created trails in the Hollow lead visitors on a walk through nature as well as the past. The main entrance to the Dead Man's Hollow Conservation Area trails lies less than one mile from the Boston Bridge on Route 48 by way of the GAP. The nationally acclaimed trail follows the former Pennsylvania and Lake Erie Railroad grade which parallels the Youghiogheny River. The trail that leads from the Boston Bridge to the Hollow was originally an old wagon trail leading to a stone quarry.

Heading down river 3/4 of a mile on the compacted limestone GAP leads to the Dead Man's Hollow Conservation Area. Shady trees line both sides of the trail. The GAP is an accessible trail. ALT provides bike racks at the entrance to the Hollow.

The entrance from the GAP into the Hollow is a level grade trail with a mulched surface, appropriately named Dead Man's Trail. The trail loops around the Bowman factory ruins and along Dead Man's Run at an easy grade extending for slightly more than one half mile.

The following table summarizes the trails that exist on the property today. Detailed descriptions of each trail follow this table.

Trail	Distance (ft)	Distance (Mi)
Black Oak Trail	1,917	0.36
Cool Spirit Trail	6,459	1.22
Dead Man's Loop	1,879	0.36
Ruins Trail	1,685	0.32
Table Rock Trail	1,326	0.25
Witch Hazel Trail	5,528	1.05
Unnamed Trails	13,081	2.48
<b>Totals</b>	<b>31,875</b>	<b>6</b>

### Ruins Trail

Just beyond the GAP entrance, to Dead Man's Trail, the Ruins Trail breaks off to the right, forming a brief side loop that merges back on to Dead Man's Trail. Like the main trail, grades are gentle along the Ruins Trail. The Ruins Trail explores the remnants of the former Union Sewer and Bowman Brick Factory ruins. The loop first crosses the old rail spur and loading ramp, then meanders around the remaining foundations for the brick kiln ovens that were used nearly a century ago. After circling the ruins of the ovens, the trail turns left and travels towards the boiler house ruins. Rock cliff faces of sandstone, limestone, and shale rise beyond the trail across the valley floor to the west. A man by the name of Fleming operated a quarry here in the late 1800's. In the summer of 1888 he prepared for "the largest blast in this section of the country" according to an article in the *Daily News* published at that time. Fleming expected the explosion to provide over 500,000 cubic yards of stone for railroad ballast. Evidence of holes drilled for blasting still scar the rock face. Once the railroad came through the area it became known as Fleming Station.

Just before the concrete ruins of the boiler house, a five story wooden building once stood on the east side of the trail. This is where the pipe manufacturing process occurred. The building burned down decades ago, and nature has reclaimed the ground where it stood. Only the adjacent concrete ruins of the boiler house remain. Leaving the trail and walking through the boiler house ruins, rectangular holes open through the left wall. These holes permitted the belt and pulley system from the steam engine to enter the wooden building and power all of the machinery necessary for the pipe making process. Numerous round holes punctuate the walls. These holes held pipes that carried steam from the boilers and ran beneath the buildings drying the wet, freshly pressed pipes and supplying heat in the winter. Other pipes carried intake water for the boilers. The water of Dead Man's Run was too contaminated to operate the boilers, so the pumps drew water from a deep spring well located beneath the cliffs on the other side of the boiler house.

The stacks for the two coal fired boilers rose so that that anchors were lodged into the adjacent hillsides to secure them with cables. Those willing to leave the trail and scramble up the cliffs on either side of the valley may discover the location of the metal tie downs. However, each passing year renders them more difficult to find as the underbrush and new trees obscure their location.

Beyond the boiler house the Ruins Trail merges back with Dead Man's Trail near the site of the old blacksmith shop, where metal maintenance work to support the pipe factory took place. Dead Man's Trail then follows Dead Man's Run upstream. Spring, fall and winter usually produce a steady flow to the Youghiogheny River. During the summer the stream often dries to a trickle. Interestingly, the upper portions of the stream typically maintain water longer than the lower section.

History does not stop at the end of the Ruins Trail. A walk upstream on the gentle incline of Dead Man's Trail continues with signs of the past. Workers digging out clay for the sewer pipe factory terraced the cliffs on the left. Additionally, watch for an old gas pipeline crossing the stream on the right. At the turn of the century hundreds of oil and gas wells dotted local communities, including Dead Man's Hollow. Shortly beyond the corroded pipe, a newly built, rustic style bridge provides an easy and scenic crossing of the stream. With its stout timber and solid construction, it blends aesthetically into the woodland setting. A bench provides a spot to rest and appreciate the natural scenery. From behind the bench, a sign post marks the Junction of Dead Man's Trail with Witch Hazel Trail to the left. One may notice sewer pipe sections embedded along the banks of Dead Man's Run. Bowman, the sewer pipe factory owner, placed them there many years ago to line the

stream. But they proved an unwelcomed obstacle during the construction of the bridge. The bridge span turned out much longer than anticipated as workers uncovered buried sewer pipes as they dug further back from the stream to hit solid ground for the foundations.

### **Dead Man's Trail**

Dead Man's Trail continues on the other side of the bridge to another bench and follows the grade of an old dirt road. A horse-drawn wagon once carried rejected and broken pipes up this road to a dump on both side of the trail. This generated large hills of terra cotta. Creating perfect habitat for local snakes. The overgrown mounds appear natural to the topography, but a closer inspection reveals their composition of broken pipe pieces. At this point, the trail has a very short side loop on the left leading to a pair of benches.

For those interested in a little off trail exploration, climb down to the floodplain below. A short distance upstream where the last remaining house of the Hollow stood. Careful scrutiny of the area will divulge its location as the foundation stones still exist. Continuing further up Dead Man's Hollow leads to a site where a bank barn, which housed a bootleg operation, once stood near a small tributary creek. An accident with a coal burning stove and some moonshine caused the bank barn to catch fire. A quick-thinking companion saved the owner, whose clothing burst into flames, by throwing him into the creek. Prohibition agents discovered the incident, although the men had hastily hidden the still in the woods. The owner repaid the Good Samaritan by blaming the moonshine operation on him. The incident forced the unfortunate fellow to spend scarce Depression era money on trolley fare to report periodically for probation in downtown Pittsburgh.

Above the barn stood a blockhouse and its foundation still remains. A climb up the ridge along the tributary beyond the old house leads to another flat are containing more foundation stones. These foundations were a former Scout camp. The grounds on this level are marshy. For this reason, a local Scout leader relocated the camp down into the Hollow by converting the old blacksmith shop to a cabin complete with bunks and a wood burning stove. This cabin was destroyed many years ago.

For those continuing on Dead Man's Trail past the set of benches, the end loop of the trail circles back upon itself and angles in from the left, but visitors should continue ahead to complete the counter-clockwise circuit. Shortly thereafter a sign post marks the Black Oak Trail junction entering from the right. At this intersection a log cabin once stood although no remains mark the spot. A steam shovel pushed its foundation aside when Bowman cut a right-of-way from Liberty Borough to access his factory. As it continues upstream, this portion of the Dead Man's Trail end loop is not accessible as it crosses the stream a couple of times without the aid of bridges. However, most visitors can easily rock-hop the short span across the water without difficulty, particularly when the water is low.

An ancient, three trunk sycamore tree marks the apex of the loop, which then curves to the left to travel back downstream. For those willing to leave Dead Man's Trail, the older woods further upstream beckon more adventurous hikers to depart from the established route. Deer trails and hunter paths cross the stream repeatedly guiding the way. In its upper reaches, Dead Man's Run branches into several smaller watersheds. No houses ever stood here. Explorers may find a 'lost' bench, an Indian head carved into a tree trunk, a small waterfall, or a 'table rock' inscribed with years of overlapping names and initials. Also, many of the trees here are carved with old initials and dates as well and are interesting to read. Exploring this area may also uncover miniature cave-like

openings through cliff-top rocks, as well as camp sites or shacks. Since this upper portion of the Hollow is a popular hunting area, wearing blaze orange during hunting season is sensible. Additionally, please respect the rights of private property owners whose lands border the Hollow. Many residents of Lincoln Borough own large wooded tracts of land and post their property against trespassing.

For those who stay on the end-loop of Dead Man's Trail, an old pipe spills spring water into the stream from the right hillside at another rock-hop crossing. This provided water for the families that lived here long ago. Over the years a local Scout leader had this spring water tested for his troop's camping trips. Each test provided it was a good source of potable water. However, drinking is at one's own risk since water quality can change without warning.

Beyond the spring, the trail reconnects back onto itself below the Black Oak Trail junction. An easy stroll back down stream to the entrance retraces the trail. Upon reaching the bottom of the Hollow near the ruins, pass the Ruins Trail junction and continue ahead on Dead Man's Trail to observe the boiler house ruins from the other side. The trail squeezes past a rocky cliff on the right that follows the loading ramp that ran along the plant. Beyond the ruins watch for a large depression remaining from a deep spring well that fed the boilers off the right side of the trail. The hike ends at that entrance.

The two other trails mentioned that intersect with Dead Man Trail are not accessible and offer more challenging hikes.

### **Black Oak Trail**

Black Oak Trail climbs with a moderate grade to reach Orchard Drive in Liberty Borough. The path follows an old dirt road for about four-tens of a mile. Together with Orchard Drive, this dirt road once provided a right-of-way through the Sinn Farm property to the Hollow. Large boulders positioned at the top of the hill prevent vehicles from driving into Dead Man's Hollow.

Black Oak Trail ends at the dead-end turnaround of Orchard Drive just beyond the boulders. Liberty Borough maintains a small park across the street from the trailhead with a parking area for several cars. An open, grassy field with a bench, picnic table and a view overlooking Versailles makes this a pleasant spot to relax after a hike up from the Hollow. Orchard Drive can also serve as a starting point for a hike down into Dead Man's Hollow, although it is not a main entrance.

### **Witch Hazel Trail**

For the most challenging trail of the Hollow, Witch Hazel Trail provides a strenuous hike over a mile long to the top of Calhoun ridge, changing elevation by more than four hundred feet. It extends down to Dead Man's Trail in the Hollow and then climbs back up to Calhoun Road in Lincoln Borough. Calhoun Road is one of the oldest roads in Lincoln Borough and was once a branch of a three-road 'Y'. Gates currently close the connecting ends of all three roads to non-emergency vehicular traffic, although the Borough does permit foot travel. A small lot allows several cars to park at the end of Calhoun Road. No other trailhead parking facilities exist in Lincoln Borough.

A hike on Witch Hazel Trail can begin down in the Hollow at the bridge over Dead Man's Run or up at the Calhoun Road entrance. Beginning at the Calhoun Road entrance the path first passes to the right of a bright green shed that volunteers built for tool storage. At the end of Calhoun Road the trail is rather level. Overgrown conditions may obscure the first portion of the trail during the

summer, requiring a bit of bushwhacking to push through. This area is popular with deer, turkey, and small game hunters, so please wear blaze orange during hunting season. The trail may be muddy in spots due to drainage problems and downfalls may cross the path. The trail then abruptly drops down a steep but short grade and immediately climbs an equally steep slope. At the top, the trail veers left to follow the ridge that parallels the Youghiogheny River and bike trail below. Several side paths cut from the right of the main trail to the edge of the ridge for views of Versailles across the river during the fall and winter months.

The Witch Hazel Trail passes an old gas line, and then it begins its steady descent down into Dead Man's Hollow. Several switchbacks help ease negotiation of the precipitous slopes and curtail erosion. Two small rustic treadways cross the watershed drainage.

Near the bottom, an enchanting stone stairway curves to grace the trail. Although the stairs are manmade, they are rustic and beautifully crafted to fit naturally into the woodland setting. At the end of the steps the trail bears left at the 'T'. The right path branches into several unofficial trails to explore the clay banks and provide a bird's eye view of the factory ruins from atop steep cliffs. Witch Hazel Trail ends by the wooden bridge over Dead Man's Run, merging with Dead Man's Trail. Less than hearty hikers starting at the Calhoun Road trailhead can avoid a strenuous climb back to their cars by parking an additional vehicle at the Boston YRT access and making a through hike.

### **Table Rock Trail**

Constructed in late 2011 by Boy Scout Troop 251, the Table Rock Trail begins where the Dead Man's Trail ends. The new trail winds along the side of a steep hill before leveling out near the 'Table Rock' landmark. The trail then continues to another incline before connecting with the Cool Spirit Trail and descending to the Catfish Pond entrance. Visitors can identify this new trail by looking for the orange marking flags on the edge of the path. The Table Rock Trail has a difficulty level equivalent to the Witch Hazel Trail and can be strenuous to even the most experienced hiker.

### **Cool Spirit Trail**

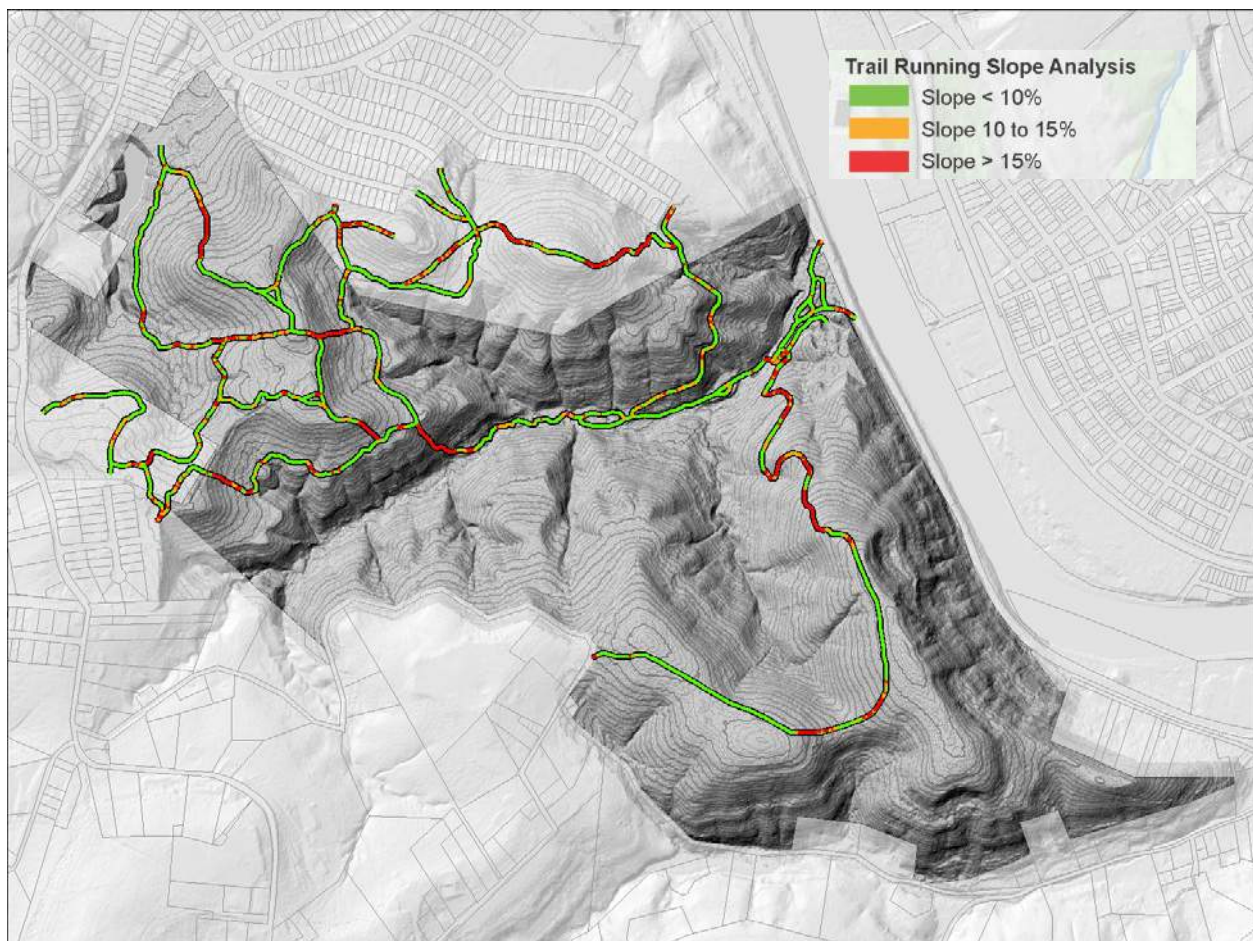
The Cool Spirit Trail begins with a relatively easy walk along the hillside overlooking the Catfish Pond in Liberty Borough. The trail twists through the woods before crossing over a wooden bridge near a small waterfall. The flat portion of the trail ends just beyond the bridge. After a challenging climb to the top of the ridge, visitors will have to choose between following the path that forms the Cool Spirit Trail's 'figure-eight' pattern or continuing to the Table Rock Trail. Hikers who complete the loop trail will most likely find the 'lost' BMX Track and it's strange 'anthill' formations on the way back to the Catfish Pond.

## Analysis of Existing Trails

Both named and unnamed trails were located during several field visits to the site utilizing GPS technology. The GPS data was then utilized to place the trails on the mapping. While inventorying the trails' unique features, unsustainable grades, fall line trail segments and water/erosion impacts were identified and noted.

Chapter 2 describes in detail aspects of trail design and construction that make them sustainable. Two of those aspects have the most influence on aspects of sustainability, 1.) running slope of the trail and 2.) existing water patterns of the site.

Therefore, utilizing GIS we analyzed the running slope of the existing trails. Generally, trail segments with a running slope of less than 10% can be sustainable provided other sustainability features are implemented. Trail segments with a running slope between 10% to 15% may be sustainable for short segments. And, trail segments with a running slope of 15% or greater is typically not sustainable.



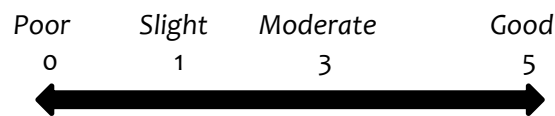
The GPS data from the field views was entered into a desktop analysis using GIS mapping software. Once the data was transferred into the GIS system, the GIS system was used to analyze the existing trail conditions to determine their sustainability.

Through field analysis of existing conditions and the desktop analysis using GIS software, it was determined that of the 11.8 miles of existing trails, 7.3 miles of trail have a gradual running slope of less than 10%, 2.1 miles of trail have a running slope of between 10% and 15% and 2.4 miles of trail have a slope of greater than 15%.

After determining the sustainability of trails based on running slope and drainage issues, a new trail system was designed to re-route unsustainable sections of trail.

### Ranking of Existing Trails

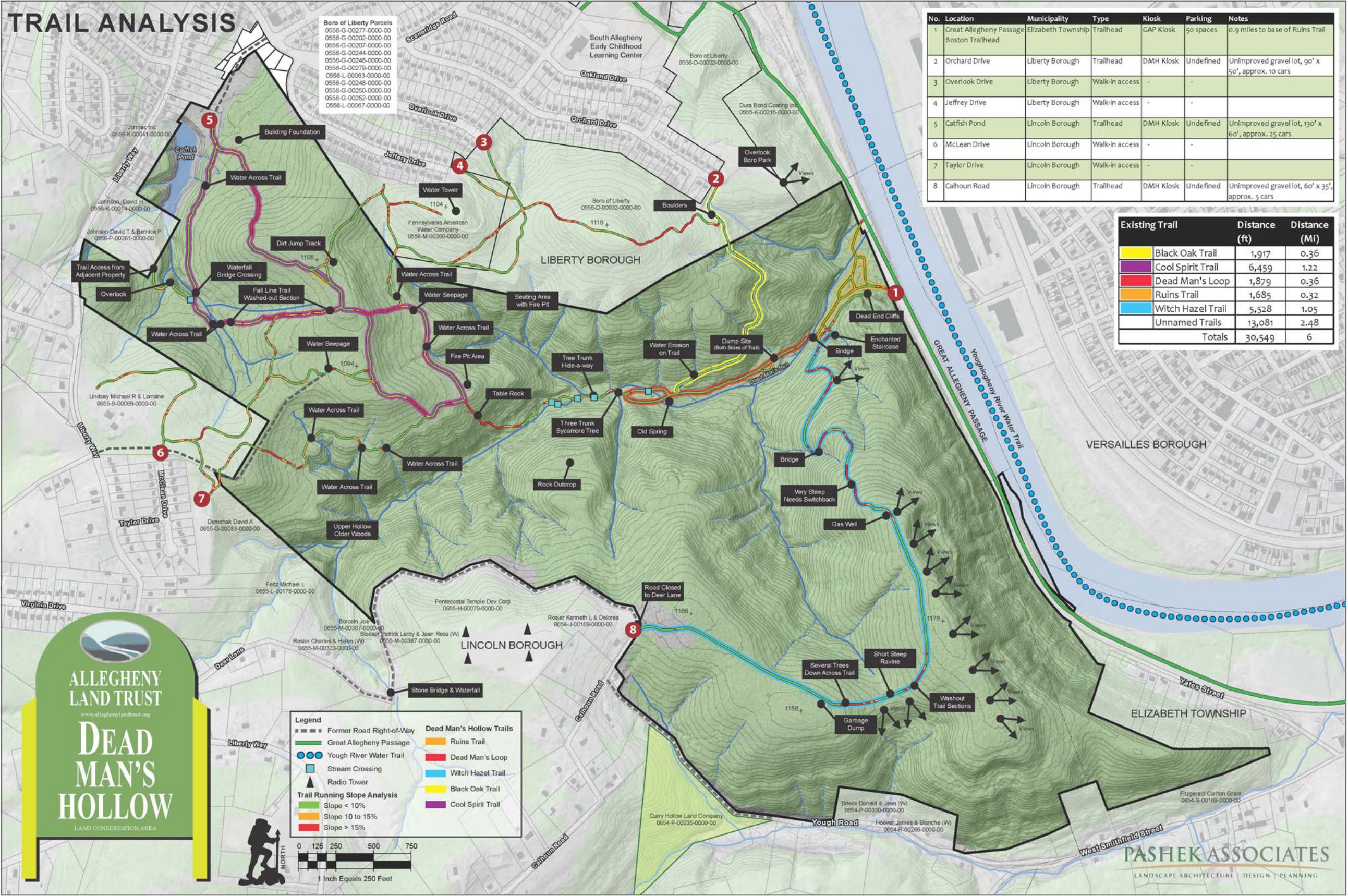
Upon completing the inventory and analysis of the existing trails, the trails were ranked based on the need to improve their sustainability. Based on this analysis, the trails were assigned a value between 0 and 5.



The overall score of each trail was used to rank the trails with respect to their need for sustainable trail improvements.

Trail Ranking	Sustainable Grades	Fall Line Trail	Water/Erosion Impacts	Total Value	Ranking
Cool Spirit Trail	5	3	5	13	1
Witch Hazel Trail	5	5	2	12	2
Table Rock Trail	5	5	1	11	5
Dead Man's Run Trail	1	1	5	7	3
Black Oak Trail	2	2	2	6	6
Ruins Trail	1	1	1	3	4

We recommend trails with a higher ranking be addressed before trails with a lower ranking.



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### Points of Interest

Numerous points of Interest are identified and located on the Site Analysis Map. The following is a brief description of each.

#### *The 'Lost' BMX Track*

The large masses of packed dirt that surround the 'Lost' BMX Track of Dead Man's Hollow often become a puzzling sight to first time visitors. Some immediately question if they are crossing the sacred earth of an old Native American burial ground. An active imagination might cause others to believe that they've stumbled upon humongous anthills straight out of a classic 1950's Science-Fiction film. The rest simply make no attempt to unravel the mystery of the barren mounds and just continue along the path.

The explanation behind this oddity at the highest point of the Cool Spirit Trail is really quite simple and even less exciting to some.

In the days between Disco and the dawn of the Internet, adolescent boys from Liberty Borough spent the better part of their weekends constructing a series of ramps and jumps for their BMX bicycles. The majority of the ramps on the obstacle course were built out of stacked timber and large rocks covered by loose soil. For the most part, the continued use of the track packed the dirt in place and prevented new vegetation from growing between the ramps.

With time, the individuals who originally built the bicycle course outgrew the pastime and moved on to other interests. This left the BMX track open for a new generation to claim. Eventually, use of the track declined and nature began to reclaim the property.

#### *Enchanted Staircase*

Just a short distance from the wooden bridge that crosses Dead Man's Run, visitors can find one of the Hollow's hidden treasures. Located on the Witch Hazel Trail, there is a moss covered stone staircase that curves along the hillside. Many refer to it as 'The Enchanted Staircase' since it appears to have been pulled out of the pages of a medieval tale. Surprisingly, very little is known about the origin of the stone stairs. Some local residents believe that the stairs were constructed during the days when the Bowman factory and the Flemming stone quarry ruled Dead Man's Hollow. Others challenge that theory by suggesting the staircase was built shortly after the Allegheny Land Trust acquired the property in 1996. Regardless, those who stumble upon the stone walkway for the very first time almost always pause for a moment to absorb such a unique sight.

#### *Table Rock*

Table Rock is an unusual Siltstone formation that rests high on the hillside overlooking the hollow's creek bed. It is located on a steep grade halfway between the Boiler House Ruins and the Catfish Pond.

Despite being one of the most difficult places to reach, Table Rock remains high on the list of popular destinations in Dead Man's Hollow. Long before the development of Allegheny Land Trust's current trail system, people of all ages were making the occasional trek to the unusual Siltstone formation. For many, the red, gold and orange shades of Autumn made the scenic view of the valley below even more appealing to the eye. Age old storytelling even characterized Table Rock as a meeting place and trading post of sorts for the Native Americans and early settlers that once resided in the hills above the Youghiogheny.

Table Rock can be found along the edge of a steep hillside between the Factory Ruin and the Catfish Pond. Thanks to the efforts of Boy Scout Troop 251, a new trail leading to the landmark makes it easier to find. However, the climb is still very demanding. Once at this point of interest, visitors are asked to use extreme caution. Recent studies have indicated that Table Rock appears to be breaking away from its foundation. For safety reasons as well as the preservation of this natural wonder, visitors are asked to avoid climbing and standing upon the rock.

### *Tunnels*

A tunnel runs underneath the former Union Sewer Pipe Company in Dead Man's Hollow. The tunnel, known by the local youth as 'the catacomb', was built in the late 1800s to cover Dead Man's Run. By burying the stream, this provided the pipe factory with additional work and storage space. At one point, wooden skiffs were even used on the 'underground river' to move finished pipes beneath the P&LE railroad line to waiting barges on the Youghiogheny. It was truly an impressive setup for its time.

Today, a few collapsed sections of the tunnel have created hidden ravines in the thick undergrowth along the Ruins Trail. On the surface, these openings are a great place to observe the wildlife that resides in or around cave-like settings.

### *Boiler House Ruins*

The Boiler House Ruins are all of the archeological features associated with the Bowman Brick Works/Union Sewer Pipe Company that were formerly operating on the property as described beginning on page 10.

### *Three Trunk Sycamore*

Dead Man's Hollow may be best known for its dark history and ghostly legends. However, thanks to the efforts of the Allegheny Land Trust, the hollow has recently earned a new reputation. Dead Man's Hollow is now recognized as being one of the best places in Allegheny County to get close to nature. Visitors that frequent the 434 acre conservation area have become accustomed to crossing paths with a wide variety of mammals, reptiles, amphibians, and birds. In addition to the wildlife, various species of trees and vegetation can be found along the trails. Out of all of the deciduous plants growing in Dead Man's Hollow, there is one particular tree that tends to draw more attention than others.

It is the Three Trunk Sycamore Tree. Named for the unusual growth of its three trunks, the Sycamore towers high above the creek next to the Dead Man's Trail. Visitors to the conservation area often make it a priority to locate and photograph it.

### *Tree Trunk Hideaway*

Many people believe that Dead Man's Hollow is one of Allegheny County's most haunted places. With acre upon acre of seclusion, and the remains of the Union Sewer Pipe Company, the hollow would undeniably be an ideal home for a ghost. Whether it is true or not, there certainly is an eerie feeling that looms over the valley. On crisp autumn days, a gentle breeze and numerous unusual sights can make it easy for the imagination to run wild in Dead Man's Hollow.

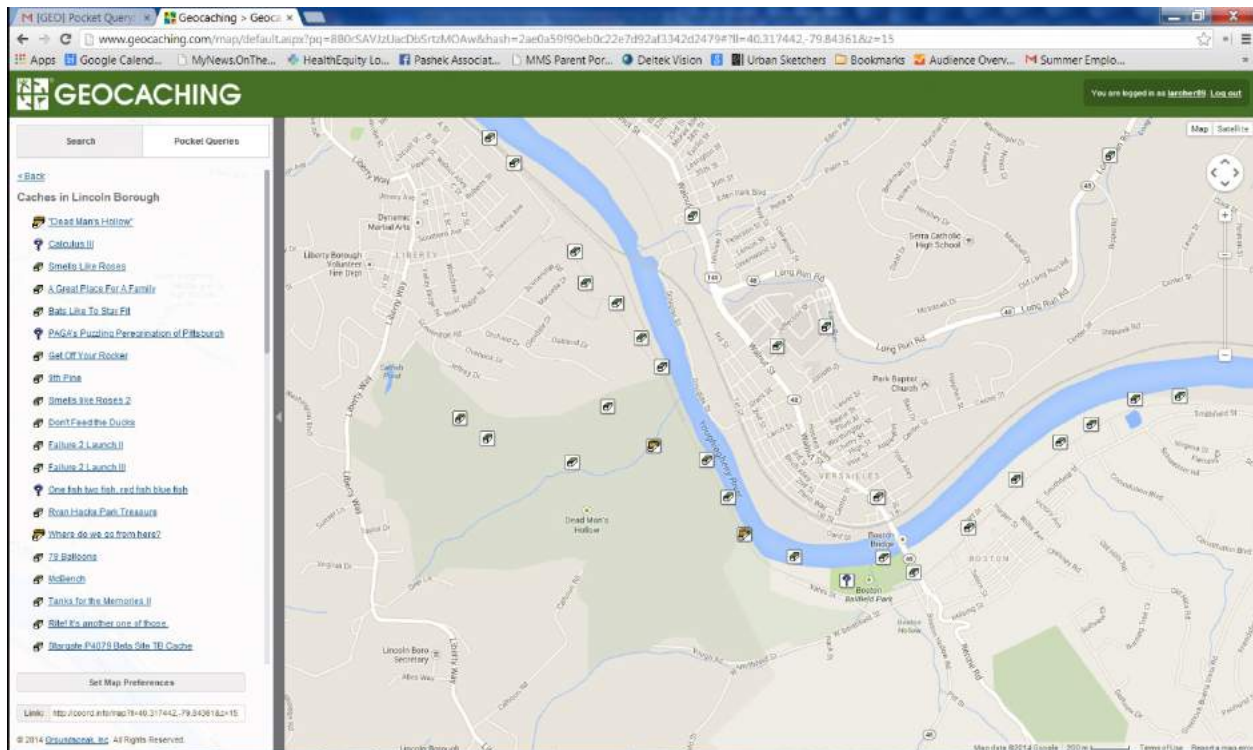
The 'Tree Trunk Hideaway' is one of those oddities that helps to give credibility to the stories that have been passed down through the years. Could this have been the tree where the robbery suspect in the Clairton bank heist stashed the loot over one hundred years ago? It is quite possible.

Regardless this unique work of nature is truly worth a second look. Visitors can find the Tree Trunk Hideaway upstream from the Three Trunk Sycamore on the Dead Man's Trail.

### Geocaches

Geocaching is a real-world, outdoor treasure hunting game using GPS-enabled devices. Participants navigate to a specific set of GPS coordinates and then attempt to find the geocache (container) hidden at that location.

Geocaching.com houses the international database of geocache locations. A query of their database indicates a number of geocaches within the vicinity of Dead Man's Hollow.



As of this writing, six locations are specific to the Dead Man's Hollow property, three locations are in close proximity but are associated with the Youghiogheny River Trail and many more in the surrounding area. Geocaches are placed and maintained by volunteers. Therefore, the locations and number of geocaches change over time.

### Fundamental Placement Guidelines for Geocaches

- ✓ All local laws and documented land management policies apply.
- ✓ You assure us that you have the landowner's and/or land manager's permission before you hide any geocache, whether placed on private or public property.
- ✓ Geocaches are never buried, neither partially nor completely.
- ✓ Geocache placements do not damage, deface or destroy public or private property.
- ✓ Wildlife and the natural environment are not harmed in the pursuit of geocaching.
- ✓ Geocaches are not placed in restricted, prohibited or otherwise inappropriate locations.
- ✓ Physical elements of different geocaches should be at least 0.10 miles (528 ft or 161 m) apart.
- ✓ Geocaches are allowed in space, on other planets and in spacecraft.

## Dead Man's Hollow Conservation Area Management Plan - 2014

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### Summary of Geocaches

as of March 25, 2014

Map No.	Geocache Number	Geocache Name	Type	Level of Difficulty	Geocache Owner	Date Placed
1	GCH8YH	Broken Trail Broken Trees Cache	Traditional Cache	2/2	drossdross	11/23/2003
2	GC38384	Dead Tree: Hollow	Traditional Cache	2/3.5	Troop251Geocaching	4/15/2012
3	GCJ9N5	Dead Man's Rebirth Cache	Traditional Cache	2.5/1.5	drossdross	11/25/2011
4	GCJQMJ	Black Oak Trail Cache	Traditional Cache	1.5/2	drossdross	4/15/2012
5	GCH7Z7	Witch Hazel Trail Cache	Multi-cache	2/3.5	drossdross	6/18/2004
6	GC3H5C4	BT-31	Traditional Cache	1.5/1.5	suburbiahell	4/15/2012
7	GC3H5BD	BT-32	Traditional Cache	1.5/1.5	suburbiahell	4/25/2004
8	GC3H5AN	BT-3	Traditional Cache	1.5/1.5	suburbiahell	11/16/2003
9	GC3H58C	BT-36	Traditional Cache	1.5/1.5	suburbiahell	4/15/2012
10	GC3H57R	BT-37	Traditional Cache	1.5/1.5	suburbiahell	4/15/2012
11	GC122AN	"Dead Man's Hollow"	Multi-cache	2.5/3.5	MELSDAD	4/7/2007
12	GC3H4D8	BT-38	Traditional Cache	1.5/1.5	suburbiahell	4/15/2012
13	GC1NoN7	PAGA's Puzzling Peregrination of Pittsburgh	Unknown Cache	5/3.5	Arf2-D2	9/14/2009

## Chapter 2: Where do We Want to Be?

### Master Plan

#### Trail Sustainability Management Plan

When planning for sustainable trails, minimizing impacts on natural and cultural resources is critical. Trail layout and design must take into account these resources of the site. The highest quality habitats and sensitive cultural sites should be avoided. Sustainable trail planning objectives include:

- **Physical Sustainability:** Designing trails to retain their structure and form over years of use and under forces of humans and nature is a key factor in sustainability. Trail use promotes change, so trails must be designed in anticipation of change to ensure that they remain physically stable with appropriate maintenance and management.
- **Ecological Sustainability:** Minimizing the ecological impacts of trails, and protecting sensitive natural and cultural resources is fundamental in sustainable trail design and development.
- **Economic Sustainability:** For any trail to be sustainable, the implementing agency or advocacy group must have the capacity to economically support it over its life cycle. Developing and committing to a long-term maintenance strategy is a critical aspect of a successful trail program.

#### Trail Sustainability

One of the first considerations when preparing a trail master plan is erosion. Erosion is the number one problem for trails. Erosion is the natural process by which soil and other material is transported by wind or water. If left unchecked, erosion can quickly cause serious damage to trails and the very resources we are charged to protect. Trail erosion can be accelerated by seasonal conditions, weather patterns, trail use, use volume, use type, terrain, vegetative cover, and gravity to name a few. Depending on the combination of the listed conditions above, tread material susceptibility will vary. However, one can only mitigate trail erosion through the utilization of sustainable trail principles.

Erosion damages trails, is expensive to repair and diminishes the user experiences. Water is the primary erosive force. Trails that collect water or channel water will be both environmentally and economically un-sustainable.

Trails lie on the land in three ways:

- 1) Fall Line Trail - along a fall-line, parallel with the direction of the slope
- 2) Flat Trail - on flat ground with little slope or cross slope, and
- 3) Contour Trail - along the contour with subtle elevation changes.

Of these types of trails, only the contour trail easily sheds water. If running slopes along contour

trails are reasonable, they are typically the only sustainable type of trail.

Further, when users leave the trail tread, they tend to widen it, creating braided trails, and 'social' trails. These can cause environmental damage and raise maintenance costs. Users leave the trail when it becomes eroded or wet, or when the trail does not meet their needs or expectations. Ultimately, a sustainable trail design will most often be a contour trail that connects desired control points by contouring along the sides of slopes while making subtle changes in grade. These photos indicate the typical problems that occur when a trail is not sustainable.



***Trail on Poor Soils***



***Water Following Trail***



***Fall Line Trail***

Important considerations in sustainable trail design include:

- Trail Corridor
- Tread Design
- Tread Drainage
- Changes in Trail Grade
- Drainage Solutions
- Tread Reinforcement & Trail Structures

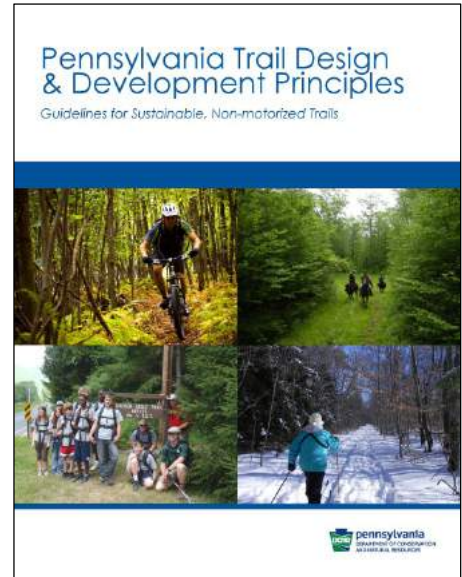
The principles of sustainable trail design, as described in PA DCNR's publication ***Pennsylvania Trail Design & Development Principles: Guidelines for Sustainable, Non-motorized Trails*** were utilized to guide the preparation of a sustainable trail plan for Dead Man's Hollow. These guidelines are available here: [www.dcnr.state.pa.us/brc/elibrary/brcpublications](http://www.dcnr.state.pa.us/brc/elibrary/brcpublications).

We recommend this document and the principles presented in it be followed when implementing the recommendations contained in this plan.

Regardless of trail type, your trail can be sustainably designed by following the International Mountain Bicycling Association's (IMBA) five essential elements of sustainable trails<sup>3</sup>:

1. **The Half Rule:** A trail's grade should not exceed the half grade of the hillside or sideslope that the trail traverses. If grade does exceed half of the sideslope, consider it a fall line trail that may be susceptible to erosion.
2. **The Ten Percent Average Grade Guideline:** Generally, a trail with an average grade of 10 percent or less is most sustainable. This does not mean you need to keep all grades less than 10 percent. Many sections of a trail will have short steep sections greater than 10 percent, and some unique situations will require average grades of more than 10 percent.
3. **Maximum Sustainable Grade Trails:** Maximum sustainable grade equals the steepest section of trail that is more than 10 feet in length. When designing a trail, it is essential to determine early in the process the maximum grades the trail will be able to sustain given local conditions. Variables that impact the maximum sustainable grade include: soil type, rock, annual rainfall amount, grade reversals, type of users, number of users, planned level of difficulty, etc.
4. **Grade Reversals:** A grade reversal occurs at spot where a climbing trail levels out and then changes direction, dropping subtly for about 10 to 50 linear feet before rising again. This change in grade forces water to exit the trail at the low point before it can gain volume, velocity, and erosive power. Other names for grade reversals include dips, grade breaks, drainage dips, or rolling dips.
5. **Outslope:** As the trail contours across a hillside, the downhill or outer edge of the trail tread should tilt slightly down and away from the high side. This encourages water to flow across and off the trail.

When you are designing sustainable trails, consider the level of trail development required based upon the location, use, and other factors. Some trails may consist of a natural surface, while others may consist of more developed surfaces.



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<sup>3</sup> Trail Solutions, IMBA's Guide to Building Sweet Single Track, International Mountain Bicycling Association: 2004

Additional considerations include:

1. Designing an experience into your trail.
2. Controlling access to wet areas, steep slopes, critical habitats and other culturally or environmentally sensitive areas. Design periphery routes with access points.
3. Managing stormwater through natural infiltration practices to keep water off and away from the trail by using porous surfacing, water bars, cross vanes, swales, etc.
4. Considering sustainable trailhead improvements such as: pervious paving for the parking lot, solar lighting, certified lumber for structures, composting toilets, native landscaping, etc.
5. Enhancing riparian areas between the trail and the rivers, streams, lakes and wetlands.
6. Managing invasive plants along the trail, replanting these areas with natives.

Old logging roads, designed for temporary rather than long-term use, typically make poor trails. They often include sections of fall-line trail (prone to erosion), flat land sections that collect water, and have a wide tread to accommodate logging equipment. When used for recreational trails, old logging roads need frequent maintenance to address erosion and tread degradation. Unsustainable trails consume valuable time and resources.

### Trail Uses

In addition to designing sustainable trails, it is also important to consider the user, their needs, and the trail design requirements for their type of trail use. The predominate use of trails within the Dead Man's Hollow Conservation Area is hiking. Typical hiking benefits include:

- ✓ Health and Wellness
- ✓ Recreation
- ✓ Outdoor exploration
- ✓ Bird Watching
- ✓ Exploration of natural habitats
- ✓ Exploration of cultural resources

Hikers typically:

- Seek out trails for a desired experience such as solitude, whether near home or at some travel distance
- Prefer looped systems over out-and-back trails to vary the experience
- Seek out trails of varying difficulty
- Stop along the trail to rest, observe, and socialize if hiking in a group
- Expect trails to be of varying difficulty consistent with landscape characteristics

## Dead Man's Hollow Conservation Area Management Plan - 2014

### *Difficulty Standards for Hiking Trails, as defined by the Pennsylvania DCNR*

Trail Type	Easiest	More Difficult	Most Difficult
Clearing Height	8-10 feet	8 feet	8 feet
Clearing Width*	4 feet	3-4 feet	3 feet
Treadway Width**	1.5 to 2+ feet	1-1 ½'	1-2 feet
Treadway Slope***	Less than: 5%	Less than: 12%	Less than: 18%
	Maximum: 20% up to 100 feet	Maximum: 30% up to 300 feet	Maximum: 30+% up to 500 feet
Treadway Cross Slope	0-3%	0-5%	0-8%
Turning Radius	NA	NA	NA
Sight Distance	NA	NA	NA
Surface Materials	Uniform, firm and stable surface. Smooth tread with no obstacles. Pavement may be appropriate in highly developed settings.	Native surface with some imported material. Sidehill trail is constructed. Generally clear of obstacles, steps to 10 inches.	Native surface with constructed sidehill trail. Obstacles, roots, rocks, and steps to 24 inches.

\* Curve alignment to avoid cutting large trees.

\*\* Increase tread width six inches on switchbacks or where side slopes exceed 60%.

\*\*\* Upper limit of treadway slope and distance depends on soil type, amount of rock, vegetation type, and other conditions affecting trail surface stability.

Note: Some features on this chart are not considered sustainable for most situations and may be existing trails or trails in an unusual circumstance like the Appalachian Trail.

Although the Allegheny Land Trust prohibits bicycles on their property, there is a BMX course, and occasionally a bicyclist will enter the Hollow. Discussions during the planning process suggest that the mountain biking community can be an asset to Dead Man's Hollow as they would expand the pool of volunteers who may assist in various activities on the property. In addition, the BMX track appears to have been constructed and maintained by a group of teenagers from the adjacent Liberty Borough neighborhood. The track provides them with a positive outlet.

For these reasons we recommend the Allegheny Land Trust consider permitting bicycles in the Dead Man's Hollow Conservation Area where appropriate. Mountain biking activities should be limited to the BMX track and to the northern side of the property down to the GAP. The area south of Dead Man's Run is ecologically sensitive and therefore mountain biking should be prohibited in that area of the property.

The property is not large enough, nor is it connected to external mountain bike trail systems that would make it more than a local attraction. Because bicycling/mountain biking is a secondary use, trail should be designed to focus on the hiking community's desires.

### Accessibility

Another important aspect of trail design is ensuring access to all facilities to not only accommodate those with disabilities, but to also make it easier for the general public to use the facilities.

Accessibility, in design terms, is described by the Americans with Disabilities Act (ADA), which guarantees equal opportunity for individuals with disabilities to participate in the mainstream of public life. To do so, the ADA sets requirements for facilities to prevent physical barriers that keep people with disabilities from participating. When recreational facilities are built or altered, they must comply with the ADA standards by providing an accessible route to the area of use and spectator areas. With regards to complying with ADA, the following standards and guidelines must be taken into consideration:

- Access Board: [www.access-board.gov](http://www.access-board.gov)
- Access Board Information on Recreation Facilities:  
[www.access-board.gov/recreation/guides](http://www.access-board.gov/recreation/guides)
- 2010 ADA Standards for Accessible Design:  
<http://www.ada.gov/regs2010/2010ADAStandards/2010ADAstandards.htm>
- Draft Final Guidelines for Outdoor Developed Areas  
[www.access-board.gov/outdoor/draft-final.htm](http://www.access-board.gov/outdoor/draft-final.htm)
- Forest Service Accessibility Guidebook for Outdoor Recreation and Trails  
[www.fs.fed.us/recreation/programs/accessibility/htmlpubs/htm06232801/toc.htm](http://www.fs.fed.us/recreation/programs/accessibility/htmlpubs/htm06232801/toc.htm)
- Penn State Center for Dirt and Gravel Road Studies  
[www.dirtandgravel.psu.edu/Trails/trails.html](http://www.dirtandgravel.psu.edu/Trails/trails.html)

### **2010 Standards for Accessible Design**

Portions of 2010 Standards that are highly relevant to park design:

- Accessible Routes (Chapter 4)
- Parking spaces (Sections 208 and 502)
- Play Fields and Courts (Sections 204.1, 206.7.9, 221.2.1.4, 221.2.3, 302.1, and 303.1).
- Fishing Piers and Platforms (Sections 237 and 1005)
- Play Areas (Sections 240 and 1008)
- Swimming Pools, Wading Pools, and Spas (Sections 242 and 1009).
- Fixed Picnic Tables (Sections 226 and 902)

#### *Accessible Routes*

All accessible features must be connected by an Accessible Route.

#### Requirements:

- ✓ Less than 2% cross slope.
- ✓ Less than 5% grade running slope, unless ramped.
- ✓ If running slope grade exceeds 5%, must be ramped. Vertical changes in level can be no more than ¼". Stairs do not meet this requirement and cannot be part of an accessible route.
- ✓ Surface must be Firm, Stable, and Slip-resistant.
- ✓ Width: DCNR requires a 5'-0" minimum accessible route width to allow for two-way travel

and passing. This is wider than the width required under the 2010 Standards.

### *Accessible Parking*

Accessible Parking spots must be adjacent to an Accessible Route. All accessible elements must be connected to accessible parking by an accessible route.

- ✓ Paving required in parks, not at trailheads.
- ✓ Clearly marked with correct signage.
- ✓ Car spaces should be at least 96" wide.
- ✓ Van spaces should be at least 132" wide and next to a 60" wide access aisle.
- ✓ Access aisle should adjoin an Accessible Route.
- ✓ Required number of accessible spots depends on the total number of spaces in the facility.
- ✓ Fine amounts should be posted under the accessible parking sign.

### *Fixed Picnic Tables*

- ✓ The 2010 Standards only apply to picnic tables that are fixed in place.
- ✓ 5% of spaces at fixed picnic tables must be accessible.
- ✓ Tabletops must be between 28 and 32 inches high.
- ✓ Must provide knee and toe clearance and clear floor space at accessible spots. See 2010 Standards, Sections 305, 305, and 902.

### *Accessibility Guidelines for Outdoor Developed Areas*

Where the 2010 Standards are not applicable, the Outdoor Guidelines provides guidance on achieving accessibility.

- Outdoor Recreation Access Route (Section 1016)
- Outdoor Constructed Features (Section 1011)
- Picnic Facilities (Section F 245)
- Viewing Areas (Sections F246 and 1015)
- Trails (Sections F247 and 1017)

### *Outdoor Recreation Access Route vs. Accessible Route*

- ✓ Accessible Routes apply to facilities covered by the 2010 Standards.
- ✓ Outdoor Recreation Access Routes apply to facilities covered by the Draft Outdoor Guidelines.
  - ✓ Running slope grades may be as steep as 10% for short segments.
  - ✓ Surfaces must be "Firm and Stable" but are not required to be "Slip-resistant."
  - ✓ Obstacles may be higher than ¼", although stairs are still non-compliant.

### *Outdoor Constructed Features*

Outdoor constructed features consist of:

- Picnic tables
- Fire rings, grills, fireplaces, and woodstoves
- Trash and recycling receptacles
- Water hydrants
- Benches

- Telescopes and periscopes

How many of each type of feature must be accessible?

- ✓ All features that are located in an accessible camping unit or picnic unit.
- ✓ For common-use features, the required number of accessible units will depend on the total features provided.

Constructed features must have clear ground space:

- ✓ Space for wheelchair users to approach and use accessible features.
- ✓ Must be level, firm, and stable.
- ✓ Must provide adequate clearance.
- ✓ Specific guidelines located in Sections 305 and 306.

### *Picnic Units*

A Picnic Facility is made up of Picnic Units.

A picnic unit in which the following, if provided, are accessible:

- ✓ Outdoor Constructed Features.
- ✓ Parking Spaces.

### *Accessible Picnic Units*

- ✓ Facilities with 2 or less Picnic Units: All Picnic Units should be accessible.
- ✓ Facilities with more than two Picnic Units: At least 20%, but no less than 2, picnic facilities should be accessible.

## Trail Accessibility

Distinctions between Trails, Outdoor Recreation Access Routes, and Accessible Routes

- ✓ A trail is used primarily for recreational purposes.
- ✓ Accessible Routes and ORARs are used primarily to connect elements, spaces or facilities within a site.
- ✓ Trails are held to less stringent standard than Accessible Routes.

### Allowable Running Slopes

Running Slope of Trail		
Steeper Than	But Not Steeper Than	Maximum Length of Segment
1:20	1:12	200 feet
1:12	1:10	30 feet
1:10	1:08	10 feet

Trail signs, where provided, should include:

- ✓ Length of the trail or trail segment
- ✓ Surface type
- ✓ Typical and minimum tread width
- ✓ Typical and maximum running slope and
- ✓ Typical and maximum cross slope



## Viewing Area Guidelines

- ✓ Clear ground space on Outdoor Recreation Access Route.
- ✓ Unobstructed view between 32 and 48 inches above clear ground space.
- ✓ Slope no steeper than 1:33 or 1:48 for asphalt, concrete and boards.
- ✓ Firm and stable Surface.
- ✓ Turning space.

### Conditions for Departure and Exceptions from the Accessibility Guidelines for Outdoor Developed Areas

Compliance will not always result in facilities accessible to all persons with disabilities. Therefore the guidelines recognize this by providing four conditions for departures from the required technical provisions. The Access Board permits departures from certain technical provisions where at least

one of four conditions is present for trails, picnic and camping facilities, and beaches.

The four conditions that permit departures from specific technical provisions include:

1. Where compliance would cause substantial harm to cultural, historic, religious, or significant natural features or characteristics.
2. Where compliance would substantially alter the nature of the setting, the purpose of the facility, or portion of the facility.
3. Where compliance would require construction methods or materials that are prohibited by federal, state, or local regulations or statutes.
4. Where compliance would not be feasible due to terrain or prevailing construction practices.

### **Access & Trailheads**

Three existing trailhead access locations, 1.) Great Allegheny Passage Trailhead, 2. Catfish Pond Trailhead, and 3.) Calhoun Road Trailhead provide opportunities for visitors to transition from vehicle to entering the Hollow by a non-motorized means. Of these, the Great Allegheny Passage Boston Trailhead, Catfish Pond Trailhead in Liberty Borough, and the Calhoun Road Trailhead in Lincoln Borough are the publicly promoted trailheads. A fourth trailhead at Orchard Drive is a user-created trailhead on Liberty Borough property located at the end of Orchard Drive. While this is a commonly used as a public access point for the Hollow, it is located on Liberty Borough property, and it has never been formally recognized by the Borough as an access point for Dead Man's Hollow. With this study ALT has begun conversations with Liberty Borough about establishing this as a formal trailhead for Dead Man's Hollow.

Presuming Liberty Borough and ALT come to an agreement to utilize Orchard Drive as a trailhead, we recommend all four be publicly promoted as trail access points. While the Great Allegheny Passage Boston Trailhead has been formally developed, the others have been created by users. We recommend ALT improve the three remaining trailheads; this includes defining parking, providing accessible parking, providing an accessible route from the parking area(s) to the trail(s), providing kiosks and trail access information, and potentially providing a small shelter at the Catfish Pond and Orchard Drive locations. These shelters can serve as a venue for programming activities as well as a sheltered space to allow visitors to take cover during inclement weather.

The four remaining accesses identified in the inventory and analysis are either located on private property or require visitors to cross private property before reaching the Hollow. As such, they should not be considered access points unless trail access easement agreements can be obtained in writing from the respective owners.

We recommend that ALT pursue trail and/or conservation easements to allow the public to access Dead Man's Hollow from these locations.

### **Trail System**

Based on the inventory and analysis, we recommend that five existing trails be re-routed and improved to provide sustainable trail segments over their entire length. Those trails include:

#### ***Existing/Rerouted Trails***

- Dead Man's Run Trail (presently Dead Man's Loop Trail)
- Witch Hazel Trail
- Cool Spirit Trail
- Black Oak Trail
- Ruins Trail

Further, in order to achieve a goal of the management plan, providing connectivity between the east and western portions of the property and to create a sustainable destination trail system, we recommend the addition several new trails.

**Proposed Trails**

- Backwoods Justice Trail
- Haunted Hollow Trail
- Boston Overlook Trail
- Cool Spirit Connector
- Cool Spirit Cut-Off
- Liberty Trail
- Quarry Trail

Proposed Trail Summary	Distance (feet)	Distance (miles)
1. Dead Man's Run Trail	4,790	0.91
2. Witch Hazel Trail	10,560	2.00
3. Cool Spirit Trail	10,560	2.00
4. Black Oak Trail	1,917	0.36
5. Table Rock Trail	5,752	1.09
6. Backwoods Justice Trail	6,390	1.21
7. Haunted Hollow Trail	3,482	0.66
8. Boston Overlook Trail	2,640	0.50
9. Cool Spirit Connector Trail	600	0.11
10. Cool Spirit Cut-Off Trail	1,320	0.25
11. Liberty Trail	5,280	1.00
12. Yough River Overlook Trail	2,280	0.43
13. Ruins Trail	840	0.16
14. Quarry Trail	400	0.08
<b>Total</b>	<b>56,811</b>	<b>10.76</b>

**Trail Master Plan Descriptions****Dead Man's Run Trail**

Dead Man's Run Trail consists of the existing Dead Man's Loop Trail and a proposed section that extends one-half mile further upstream, along Dead Man's Run. While there are no grade issues along this proposed trail, there are several crossings of Dead Man's Run that need addressed. If hiking this trail only, it will be an out and back hike.

The trail can be accessed from the GAP trailhead and it connects with Ruins Trail, Witch Hazel Trail, Black Oak Trail, Table Rock Trail and Backwoods Justice Trail.

**Cool Spirit Trail**

The existing Cool Spirit Trail has numerous drainage and fall line trail issues. The proposed re-route around these issues has been designed to utilize as much of the sustainable sections of existing trail as possible. Additionally, the existing bridge at the waterfall was used as a control point to maintain the built infrastructure that provides an aesthetic quality to the trail. The re-design features several new switchbacks to navigate steeper slopes and is designed to pass around existing ephemeral drainage paths as best possible.

The trail can be accessed from the Catfish Pond Trailhead and it connects with Witch Hazel and Table Rock Trails, and the proposed Backwoods Justice and Liberty Trails.

### ***Witch Hazel Trail***

Witch Hazel Trail in its current state is a challenging hike. While this type of trail has value to provide recreational opportunity for all skill levels, the trail still needs to be built in a sustainable manner to reduce erosion and long term maintenance.

Starting at Calhoun Road, the trail will be re-routed to gradually drop down the slope to the south of the existing trail. This will eliminate the fall line trail on the existing path as it crosses from one ridge to the other. Once the trail is across the valley area between the Calhoun Road area and the section overlooking the Yough River, the proposed trail begins to gradually climb. The new section of trail along on the Yough River is proposed to be re-located north to allow for sweeping views over Boston, Versailles and the Yough River. Heading down into the Hollow, the existing drainage crossings were used as control points to design new switchbacks that will make the new trail sustainable.

The trail can be accessed from the Calhoun Road Trailhead and it connects with the existing Ruins Trail and the proposed Quarry, Haunted Hollow, Boston Overlook and Backwoods Justice Trails.

### ***Black Oak Trail***

The existing Black Oak Trail follows a former road grade and thus is not proposed for any design changes as a part of this planning process. Further recommendations for signage along this trail can be found in this document.

The trail can be accessed from the Orchard Drive trailhead and it connects with the proposed Liberty, Yough Overlook and Dead Man's Run Trails.

### ***Table Rock Trail***

Table Rock Trail as it was designed in 2011 takes a very direct, unsustainable fall line route from the Hollow at Dead Man's Loop Trail to Table Rock. The proposed trail re-route will feature several swooping switchbacks traversing the hillside to climb to the Table Rock in a sustainable manner. This will also make the trail less strenuous and more enjoyable for hikers. In addition to connecting Dead Man's Run Trail to Table Rock, the new proposed trail will also connect with the with proposed Backwoods Justice Trail across the hollow creating an opportunity to hike from the Calhoun Road Trailhead to this unique feature.

The trail can be accessed from the Calhoun Road Trailhead (via the proposed Haunted Hollow and Backwoods Justice Trails) or from the GAP trailhead (via the existing Dead Man's Run Trail) and it connects with existing Dead Man's Run and Cool Spirit Trails and the proposed Backwoods Justice Trail.

### ***Backwoods Justice Trail***

The Backwoods Justice trail is a new trail proposed to connect the Calhoun Road area (western portion of the Hollow) with the Catfish Pond area (eastern portion) of Dead Man's Hollow. This trail was designed to cross as few drainage patterns as possible before switch-backing to the Hollow floor at the upper reaches of Dead Man's Run.

The trail can be accessed from the Calhoun Road Trailhead (via the proposed Haunted Hollow and Backwoods Justice Trails) or from the Catfish Pond Trailhead (via the existing Cool Spirit Trail) and it connects with existing Dead Man's Run Trail and the proposed Backwoods Justice, Table Rock and Cool Spirit Trails.

### ***Haunted Hollow Trail***

The Haunted Hollow trail is a new trail proposed to provide a loop off Witch Hazel trail in the Calhoun Road area of Dead Man's Hollow. This trail was designed to cross as few drainage patterns as possible while connecting with the existing Witch Hazel Trail at three different points creating an opportunity for two stacked loops with varying lengths.

The trail can be accessed from the Calhoun Road Trailhead or from the GAP Trailhead (via the existing Dead Man's Run Trail and Witch Hazel Trail) and it connects with the existing Witch Hazel Trail and proposed Backwoods Justice and Boston Overlook Trails.

### ***Boston Overlook Trail***

The Boston Overlook trail is a new trail proposed as an out and back trail off of Witch Hazel trail to access a prime spot for an overlook of Boston. This trail was designed to gradually descend onto a shelf below the existing Witch Hazel Trail.

The trail can be accessed from the Calhoun Road Trailhead (via the existing Witch Hazel Trail) or from the GAP trailhead (via the existing Dead Man's Run and Witch Hazel Trails) and it connects with the existing Witch Hazel Trail and the proposed Haunted Hollow trail.

### ***Cool Spirit Connector Trail***

The Cool Spirit Connector trail is an existing trail that will connect the proposed Backwoods Justice trail to the Cool Spirit trail. There is one section where the trail dips down the slope crossing over a drainage way causing erosion and slope issues. This section will be re-routed upslope to avoid as much of the drainage channel as possible.

The trail serves as a connection between existing Cool Spirit Trail and the proposed Backwoods Justice Trail.

### ***Ruins Trail***

The Ruins trail is an existing trail with no drainage or slope issues.

The trail can be accessed from the GAP trailhead (via Dead Man's Run Trail) and it connects with the existing Dead Man's Run Trail.

### ***Quarry Trail***

The Quarry trail is an existing unnamed trail with no drainage or slope issues.

The trail can be accessed from the GAP trailhead (via the existing Dead Man's Run and Witch Hazel Trails) and it connects to the existing Witch Hazel trail.

### ***Yough Overlook Trail***

The Yough Overlook trail is a new trail proposed to connect to the GAP at the South Allegheny Early Childhood Learning Center as well. This trail travels along the top of the ridge overlooking the Yough River, McKeesport and Versailles.

The trail can be accessed from the Orchard Drive Trailhead and it connects with the existing Black Oak Trail.

### ***Liberty Trail***

The Liberty Trail is a proposed re-route of an existing trail that connect Orchard Drive trailhead to Cool Spirit Trail. There are several sections that a fall line trail need to be re-routed with switch backs to make a sustainable path.

The trail can be accessed from the Orchard Drive Trailhead (via Black Oak Trail) and the Catfish Pond Trailhead (via Cool Spirit Trail) and it connects with the existing Black Oak and Cool Spirit Trails.

## **Catfish Run Trailhead**

The most predominant and well-used trailhead for visitors to access the upper portion of the Dead Man's Hollow Conservation Area is located in the Catfish Pond Trailhead, located along the border of Lincoln and Liberty Boroughs. The Catfish Pond Trailhead located on the south side of the Sceneridge Drive and River Ridge Road intersection. Not only does it provide access into Dead Man's Hollow Conservation Area, Catfish Pond is a destination in itself for many.



Unless specifically looking for this entrance, and knowing its location it is easy to pass as a very small sign indicates the entrance into the Hollow.



Existing Dead Man's Hollow Conservation Area Sign  
(small green sign below no parking sign)

From the intersection of the Sceneridge Drive and River Ridge Road intersection a gravel access road, extending approximately 710 feet extends into the Dead Man's Hollow Conservation Area, terminating at the trailhead parking area. This gravel parking area is approximately 60 feet by 175 feet, with the ability to accommodate about 30 vehicles.

Although the parking area is near the northern edge of Catfish Pond it is topographically separated, with the parking area being located about 30 feet above the elevation of the pond. Catfish Pond is just over one-half acre in size, 0.58 acre. It is roughly 410 feet in length and an average of 80 feet in width. The depth of Catfish Pond is unknown.

The surrounding slopes from the parking lot down to the pond are very steep, and in some cases greater with 1:2, a fifty percent slope. This makes accessing the pond on foot very difficult. Further, the steep slopes extend directly to the water level. Therefore, accessing the surface of the water is difficult and dangerous because of the steepness of the slope which makes it very difficult to gain firm footing and because there is not a level shelf around the perimeter of the pond to steady oneself before reaching the water.

This trailhead provides direct access to the existing Cool Spirit Trails.

This trailhead is functional with very few improvements. ALT recently installed a kiosk near the parking area.

### Catfish Pond Trailhead Improvement Recommendations

As the main access and trailhead for the Dead Man's Hollow Conservation Area, we recommend the following improvements be considered for the trailhead entrance:

1. Construct a visually appealing sign for the conservation area at the existing vehicular entrance into the Hollow near the intersection of Sceneridge Drive and River Ridge Road.

We recommend consideration be given to designing a sign that reflects the cultural and heritage of the hollow.

2. Define the width of the access road to be limited to 20 feet wide, no wider, to accommodate two-way vehicular access onto the property. Limiting the width of the road will improve the visual character of the arrival sequence, reduce dust and should reduce speeds along the road into the Hollow.
3. Construct a compacted aggregate shared use path, 10' wide, separated from the edge of the road by a minimum of 5 feet to provide pedestrian and bicycle access into the Hollow.
4. The access drive be lined with deciduous shade trees to call attention to the entrance into the Hollow.
5. Remaining areas beyond the defined access road be restored and vegetated with plants native to the area. Restoration be completed with native trees, shrubs, perennials and non-mowed grasses so it requires low maintenance to maintain. Mowed lawn areas should not be incorporated into the trailhead landscape.



Once traveling fifteen-tenths of a mile into the property one arrives at the trailhead. We recommend the following improvements to the trailhead parking area:

1. Defining a compacted stone parking lot for approximately 12 vehicles and restore native landscape to edge of parking. Parking lot should also contain two asphalt-paved spaces complying the Americans with Disabilities Act.
2. Construct 20 feet by 30 feet laminated wood beam picnic shelter with steel support posts and metal roof. Shelter can serve as an outdoor classroom for environmental and interpretive programming efforts.
3. Construct a 6 feet wide elevated boardwalk ramp down the hillside to the edge of Catfish Pond and provide a 10 feet wide level, elevated boardwalk along the edge of Catfish Pond to allow visitors to safely access the water's edge.

Elevated ramp and level boardwalks can be purchased in pre-manufactured sections and delivered to the site. We recommend consideration be given to installing boardwalk sections on helical piers which are driven into the earth. For more information, refer to: [www.wickcraft.com/Walkways.aspx](http://www.wickcraft.com/Walkways.aspx).



## Trail Prioritization

Recognizing that sufficient resources to implement the proposed trail plan may not be available all at once, we prioritized the existing and proposed trails based upon:

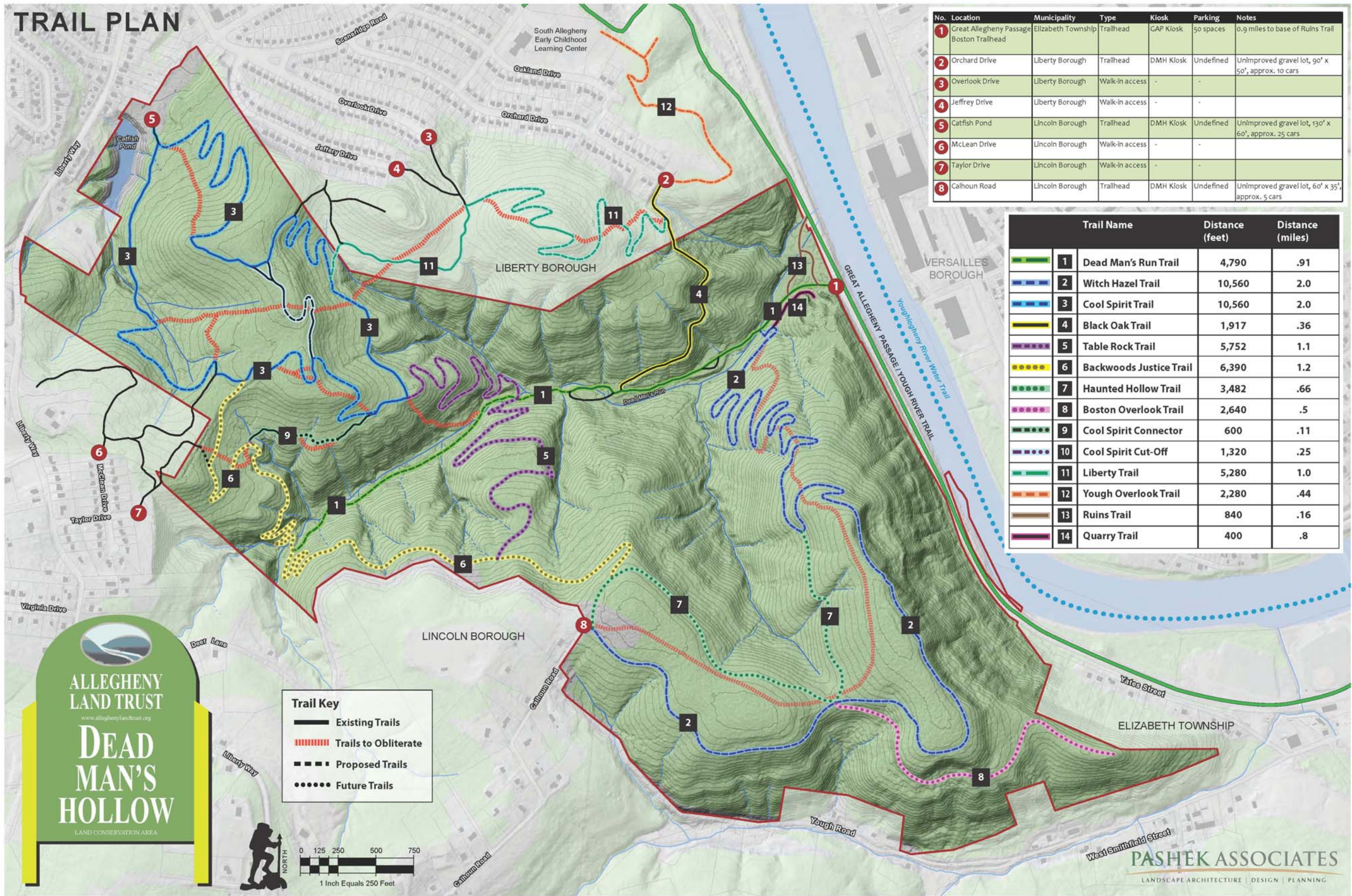
- Whether the trail is existing or proposed – existing trails are a higher priority while proposed trails are a lower priority.
- Whether the trail is a main trail (higher priority) or a connector trail (lower priority).
- Whether the trail is associated with unique site features (higher priority) or if not (lower priority). This also takes into consideration the quality, number and frequency of unique features.
- Potential use, based on its location and proximity to the surrounding neighborhoods, as well as, the frequency of regional visitors to the trail.
- The number and severity of unsustainable aspects (grades, fall line trail segments and water/erosion features) associated with the trail, more and/or high severity are higher priority.

Based on this analysis the existing and proposed trails are prioritized as follows:

Trail Prioritization	Existing or Proposed	Main or Connector	Unique Features	Potential Use	Sustainable Grades	Fall Line Trail	Water/Erosion Impacts	Total Value	Priority
Cool Spirit Trail	5	5	4	5	3	3	5	30	S
Witch Hazel Trail	5	5	3	3	5	5	2	28	S
Dead Man's Run Trail	5	5	5	5	1	1	5	27	M
Ruins Trail	5	5	5	5	1	1	1	23	M
Table Rock Trail	5	1	2	1	5	5	1	20	M
Liberty Trail	5	1	1	4	3	2	1	17	L
Black Oak Trail	5	1	2	3	2	2	2	17	L
Quarry Trail	5	1	3	2	3	1	1	16	L
Cool Spirit Connector	3	1	1	4	1	1	1	12	L
Cool Spirit Cut-Off	3	1	1	4	1	1	1	12	L
Boston Overlook Trail	1	5	3	2	0	0	0	11	F
Backwoods Justice Trail	1	5	1	3	0	0	0	10	F
Yough Overlook Trail	1	1	3	4	0	0	0	9	F
Haunted Hollow Trail	1	1	2	2	0	0	0	6	F

This prioritization is put forth as a guide to assist ALT in focusing its resources to improve the trails. However, if opportunities arise to improve trails not listed as highest priority, ALT should not hesitate to seize them.

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## Trail Construction Work Logs

As the proposed trail re-routes and proposed trails are flagged and final design is completed in the field, Trail Construction Work Logs should be prepared to indicate the location and work required along each segment. The work log is typically prepared in a spreadsheet format, as follows:

Trail Construction Work Log	Trail Name/Segment	Location	Comments/Reference	Work Required	Detail No.	Built By
		N E				
		N E				
		N E				
		N E				
		N E				
		N E				
		N E				
		N E				
		N E				
		N E				
		N E				

### Trail Construction Standards

We recommend the construction details, contained in Appendix 3, be adopted as standard construction details for trails in the Dead Man's Hollow Conservation Area.

Details include:

- Trail Clearing Limits
- Typical Trail Cross Sections
- Trailbed Slope and Finish
- Grade Dip
- Rolling Dip
- Insloped Climbing Turn
- Switchback Type I
- Switchback Type II
- Switchback Type III
- Drainage Lens
- Stone Steps
- Stepping Stones
- Shallow Stream Ford Crossing
- Culvert with Stone Headwall
- Trail Obliteration
- Trail Restoration

They are based on the U.S. Forest Service's National Trail Drawings and Specifications, available here:

[www.fs.fed.us/database/acad/dev/trails/trails.htm](http://www.fs.fed.us/database/acad/dev/trails/trails.htm)

The locations of these items should be documented on a Trail Construction Work Log during the final flagging and design of the trails. The work log will then serve as the construction documents that volunteers and others will follow to build the trails.

**Opinion of Probable Construction Costs**

There are two potential scenarios for constructing the trail improvements at the Dead Man's Hollow Conservation Area. Scenario One – improvements are constructed by volunteers/in-kind forces, and/or trail corps. This scenario presents the most fiscal approach to constructing trail improvements.

Scenario Two – improvements are constructed through a public bidding process. Scenario Two's construction costs are higher, as all workers must be paid prevailing wage rates.

Which scenario, and corresponding cost projections, to rely upon is dependent upon ALT's approach to funding trail improvements, as well as, requirements of funding sources. Therefore, costs have been projected considering each scenario.

**Opinion of Probable Construction Costs – Scenario One**

The opinion of probable construction costs projected here assumes improvements are constructed by volunteers/in-kind forces, and/or trail corps. The following table summarizes the projected costs. Detailed opinion of probable construction costs follow this summary.

<b>Trail</b>	<b>Labor Cost</b>	<b>Materials Cost</b>	<b>Total Cost</b>	<b>Total Hours</b>
Cool Spirit Trail	\$15,984	\$1,050	<b>\$17,034</b>	1,332
Witch Hazel Trail	\$19,159	\$1,400	<b>\$20,559</b>	1,597
Dead Man's Run Trail	\$8,997	\$824	<b>\$9,821</b>	758
Ruins Trail	\$1,497	\$500	<b>\$1,997</b>	125
Table Rock Trail	\$13,051	\$950	<b>\$14,001</b>	1,088
Liberty Trail	\$11,916	\$900	<b>\$12,816</b>	993
Black Oak Trail	\$3,454	\$600	<b>\$4,054</b>	288
Quarry Trail	\$719	\$450	<b>\$1,169</b>	60
Cool Spirit Connector	\$1,744	\$428	<b>\$2,172</b>	146
Cool Spirit Cut-Off	\$840	\$450	<b>\$1,290</b>	70
Boston Overlook Trail	\$4,553	\$650	<b>\$5,203</b>	379
Backwoods Justice Trail	\$14,314	\$1,084	<b>\$15,398</b>	1,196
Haunted Hollow Trail	\$7,937	\$828	<b>\$8,765</b>	662
Yough Overlook Trail	\$4,326	\$600	<b>\$4,926</b>	360
<b>TOTALS</b>	<b>\$108,489</b>	<b>\$10,714</b>	<b>\$119,203</b>	<b>9,054</b>

## Dead Man's Hollow Conservation Area Management Plan - 2014

### TRAIL WORK SHEET LABOR AND MATERIALS COSTS



Trail: **COOL SPIRIT TRAIL**

CONSTRUCTION ACTIVITY	QUANTITY	QTY PER HOUR	HOURS	HOURLY RATE	PER UNIT COST	LABOR COST	MATERIAL COST
<b>Trail Flagging</b>							
Trail Flagging - Medium Vegetation	6537	870	7.5	FT	\$17.00	\$128	
<b>Trail Brushing and Clearing</b>							
Trail brushing maintenance - Medium	6537	160	40.9	FT	\$12.00	\$490	
<b>Hand Crew Construction</b>							
Trail reroute & reconst. - Light 2' or < tread	6537	7	933.9	FT	\$12.00	\$11,206	
<b>Site Restoration</b>							
Trail obliteration	1700	100	17.0	LF	\$12.00	\$204	
<b>Switchback &amp; Climbing Turns</b>							
Climbing turn construction - 2' or < tread	14	24	336.0	HR	\$12.00	\$4,032	
<b>Signs</b>							
Trail Access Information Sign	2	1	0.0	EA	\$200.00		\$400
Trail Access Information Sign installation	2	0.5	1.0	HR	\$12.00	\$12	
Trail Marker	13	1	0.0	EA	\$50.00		\$650
Trail Marker installation	13	0.25	3.3	HR	\$12.00	\$39	
<b>Subtotals</b>			<b>HOURS</b>			<b>LABOR</b>	<b>MATERIALS</b>
			1332.0			\$15,984	\$1,050

**TOTAL COST** **\$17,034**

COOL SPIRIT TRAIL CREW/VOLUNTEER CONSTRUCTION	
Number of Crew/Volunteers	4.0
Hours per Work Week	40.0
<b>Total Project Hours</b>	<b>1332.0</b>
Length of Project in Work Weeks	8.3

## Dead Man's Hollow Conservation Area Management Plan - 2014

### TRAIL WORK SHEET LABOR AND MATERIALS COSTS



#### Trail: WITCH HAZEL TRAIL

CONSTRUCTION ACTIVITY	QUANTITY	QTY PER HOUR	HOURS	HOURLY RATE	PER UNIT COST	LABOR COST	MATERIAL COST
<b>Trail Flagging</b>							
Trail Flagging - Medium Vegetation	10560	870	12.1	FT	\$17.00	\$206	
<b>Trail Brushing and Clearing</b>							
Trail brushing maintenance - Medium	10560	160	66.0	FT	\$12.00	\$792	
<b>Hand Crew Construction</b>							
Trail reroute & reconst. - Light 2' or < tread	10560	7	1508.6	FT	\$12.00	\$18,103	
<b>Site Restoration</b>							
Trail obliteration	1600	100	16.0	LF	\$12.00	\$192	
<b>Signs</b>							
Trail Access Information Sign	2	1	0.0	EA	\$200.00		\$400
Trail Access Information Sign installation	2	0.5	1.0	HR	\$12.00	\$12	
Trail Marker	20	1	0.0	EA	\$50.00		\$1,000
Trail Marker installation	20	0.25	5.0	HR	\$12.00	\$60	
<b>Subtotals</b>			<b>HOURS</b>			<b>LABOR</b>	<b>MATERIALS</b>
			1596.6			\$19,159	\$1,400

<b>TOTAL COST</b>	<b>\$20,559</b>
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WITCH HAZEL TRAIL CREW/VOLUNTEER CONSTRUCTION	
Number of Crew/Volunteers	4.0
Hours per Work Week	40.0
<b>Total Project Hours</b>	<b>1596.6</b>
<b>Length of Project in Work Weeks</b>	<b>10.0</b>

## Dead Man's Hollow Conservation Area Management Plan - 2014

### TRAIL WORK SHEET LABOR AND MATERIALS COSTS



Trail: **DEAD MAN'S RUN**

CONSTRUCTION ACTIVITY	QUANTITY	QTY PER HOUR	HOURS	HOURLY RATE	PER UNIT COST	LABOR COST	MATERIAL COST
<b>Trail Flagging</b>							
Trail Flagging - Light Vegetation	2258	1745	1.3	FT	\$17.00	\$22	
<b>Trail Brushing and Clearing</b>							
Trail brushing maintenance - Light	4790	260	18.4	FT	\$12.00	\$221	
<b>Hand Crew Construction</b>							
Trail reroute & reconst. - Light 2' or < tread	4790	7	684.3	FT	\$12.00	\$8,211	
<b>Drainage Structures</b>							
Drainage lens	180	4	45.0	CF	\$12.00	\$540	
Quarry rock - 4" - 8"	8	1	8.0	CY	\$28.00		\$224
<b>Signs</b>							
Trail Access Information Sign	2	1	0.0	EA	\$200.00		\$400
Trail Access Information Sign installation	2	0.5	1.0	HR	\$12.00	\$12	
Trail Marker	4	1	0.0	EA	\$50.00		\$200
Trail Marker installation	4	0.25	1.0	HR	\$12.00	\$12	
Kiosk	0	1	0.0	EA	\$3,000.00		\$0
Kiosk installation	0	16	0.0	HR	\$12.00	\$0	
Interpretive Sign	0	1	0.0	EA	\$2,500.00		\$0
Interpretive Sign installation	0	4	0.0	HR	\$12.00	\$0	
Property Boundary Marker	0	1	0.0	EA	\$5.00		\$0
Property Boundary Marker installation	0	0.2	0.0	HR	\$12.00	\$0	

#### Subtotals

HOURS
757.7

LABOR	MATERIALS
\$8,997	\$824

<b>TOTAL COST</b>	<b>\$9,821</b>
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TRAIL CREW/VOLUNTEER CONSTRUCTION	
Number of Crew/Volunteers	4.0
Hours per Work Week	40.0
<b>Total Project Hours</b>	<b>757.7</b>
<b>Length of Project in Work Weeks</b>	<b>4.7</b>

## Dead Man's Hollow Conservation Area Management Plan - 2014

### TRAIL WORK SHEET LABOR AND MATERIALS COSTS



#### Trail: RUINS TRAIL

CONSTRUCTION ACTIVITY	QUANTITY	QTY PER HOUR	HOURS	HOURLY RATE	PER UNIT COST	LABOR COST	MATERIAL COST
<b>Trail Brushing and Clearing</b>							
Trail brushing maintenance - Light	840	260	3.2	FT	\$12.00	\$39	
<b>Hand Crew Construction</b>							
Trail reroute & reconst. - Light 2' or < tread	840	7	120.0	FT	\$12.00	\$1,440	
<b>Signs</b>							
Trail Access Information Sign	2	1	0.0	EA	\$200.00		\$400
Trail Access Information Sign installation	2	0.5	1.0	HR	\$12.00	\$12	
Trail Marker	2	1	0.0	EA	\$50.00		\$100
Trail Marker installation	2	0.25	0.5	HR	\$12.00	\$6	
Kiosk	0	1	0.0	EA	\$3,000.00		\$0
Kiosk installation	0	16	0.0	HR	\$12.00	\$0	
Interpretive Sign	0	1	0.0	EA	\$2,500.00		\$0
Interpretive Sign installation	0	4	0.0	HR	\$12.00	\$0	
Property Boundary Marker	0	1	0.0	EA	\$5.00		\$0
Property Boundary Marker installation	0	0.2	0.0	HR	\$12.00	\$0	

#### Subtotals

HOURS
124.7

LABOR	MATERIALS
\$1,497	\$500

<b>TOTAL COST</b>	<b>\$1,997</b>
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RUINS TRAIL CREW/VOLUNTEER CONSTRUCTION	
Number of Crew/Volunteers	4.0
Hours per Work Week	40.0
<b>Total Project Hours</b>	<b>124.7</b>
<b>Length of Project in Work Weeks</b>	<b>0.8</b>

## Dead Man's Hollow Conservation Area Management Plan - 2014

### TRAIL WORK SHEET LABOR AND MATERIALS COSTS



#### Trail: **TABLE ROCK TRAIL**

CONSTRUCTION ACTIVITY	QUANTITY	QTY PER HOUR	HOURS	HOURLY RATE	PER UNIT COST	LABOR COST	MATERIAL COST
<b>Trail Flagging</b>							
Trail Flagging - Medium Vegetation	5752	870	6.6	FT	\$17.00	\$112	
<b>Trail Brushing and Clearing</b>							
Trail brushing maintenance - Light	5752	260	22.1	FT	\$12.00	\$265	
<b>Hand Crew Construction</b>							
Trail reroute & reconst. - Light 2' or < tread	5752	7	821.7	FT	\$12.00	\$9,861	
<b>Switchback &amp; Climbing Turns</b>							
Climbing turn construction - 2' or < tread	10	24	240.0	HR	\$12.00	\$2,880	
<b>Signs</b>							
Trail Access Information Sign	2	1	0.0	EA	\$200.00		\$400
Trail Access Information Sign installation	2	0.5	1.0	HR	\$12.00	\$12	
Trail Marker	11	1	0.0	EA	\$50.00		\$550
Trail Marker installation	11	0.25	2.8	HR	\$12.00	\$33	
Kiosk	0	1	0.0	EA	\$3,000.00		\$0
Kiosk installation	0	16	0.0	HR	\$12.00	\$0	
Interpretive Sign	0	1	0.0	EA	\$2,500.00		\$0
Interpretive Sign installation	0	4	0.0	HR	\$12.00	\$0	
Property Boundary Marker	0	1	0.0	EA	\$5.00		\$0
Property Boundary Marker installation	0	0.2	0.0	HR	\$12.00	\$0	

#### Subtotals

HOURS
1087.6

LABOR	MATERIALS
\$13,051	\$950

<b>TOTAL COST</b>	<b>\$14,001</b>
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TABLE ROCK TRAIL CREW/VOLUNTEER CONSTRUCTION	
Number of Crew/Volunteers	4.0
Hours per Work Week	40.0
<b>Total Project Hours</b>	<b>1087.6</b>
<b>Length of Project in Work Weeks</b>	<b>6.8</b>

## Dead Man's Hollow Conservation Area Management Plan - 2014

### TRAIL WORK SHEET LABOR AND MATERIALS COSTS



Trail: **LIBERTY TRAIL**

CONSTRUCTION ACTIVITY	QUANTITY	QTY PER HOUR	HOURS	HOURLY RATE	PER UNIT COST	LABOR COST	MATERIAL COST
<b>Trail Flagging</b>							
Trail Flagging - Light Vegetation	3508	1745	2.0	FT	\$17.00	\$34	
<b>Trail Brushing and Clearing</b>							
Trail brushing maintenance - Light	3508	260	13.5	FT	\$12.00	\$162	
<b>Hand Crew Construction</b>							
Trail reroute & reconst. - Light 2' or < tread	5124	7	732.0	FT	\$12.00	\$8,784	
<b>Site Restoration</b>							
Trail obliteration	400	100	4.0	LF	\$12.00	\$48	
<b>Switchback &amp; Climbing Turns</b>							
Climbing turn construction - 2' or < tread	10	24	240.0	HR	\$12.00	\$2,880	
<b>Signs</b>							
Trail Access Information Sign	2	1	0.0	EA	\$200.00		\$400
Trail Access Information Sign installation	2	0.5	1.0	HR	\$12.00	\$12	
Trail Marker	10	1	0.0	EA	\$50.00		\$500
Trail Marker installation	10	0.25	2.5	HR	\$12.00	\$30	
<b>Subtotals</b>			<b>HOURS</b>			<b>LABOR</b>	<b>MATERIALS</b>
			993.0			\$11,916	\$900

**TOTAL COST** **\$12,816**

LIBERTY TRAIL CREW/VOLUNTEER CONSTRUCTION	
Number of Crew/Volunteers	4.0
Hours per Work Week	40.0
<b>Total Project Hours</b>	<b>993.0</b>
<b>Length of Project in Work Weeks</b>	<b>6.2</b>

## Dead Man's Hollow Conservation Area Management Plan - 2014

### TRAIL WORK SHEET LABOR AND MATERIALS COSTS



Trail: **BLACK OAK TRAIL**

CONSTRUCTION ACTIVITY	QUANTITY	QTY PER HOUR	HOURS	HOURLY RATE	PER UNIT COST	LABOR COST	MATERIAL COST
<b>Trail Flagging</b>							
Trail Flagging - Medium Vegetation	1917	870	2.2	FT	\$17.00	\$37	
<b>Trail Brushing and Clearing</b>							
Trail brushing maintenance - Medium	1917	160	12.0	FT	\$12.00	\$144	
<b>Hand Crew Construction</b>							
Trail reroute & reconst. - Light 2' or < tread	1917	7	273.9	FT	\$12.00	\$3,286	
<b>Signs</b>							
Trail Access Information Sign	2	1	0.0	EA	\$200.00		\$400
Trail Access Information Sign installation	2	0.5	1.0	HR	\$12.00	\$12	
Trail Marker	4	1	0.0	EA	\$50.00		\$200
Trail Marker installation	4	0.25	1.0	HR	\$12.00	\$12	
Kiosk	0	1	0.0	EA	\$3,000.00		\$0
Kiosk installation	0	16	0.0	HR	\$12.00	\$0	
Interpretive Sign	0	1	0.0	EA	\$2,500.00		\$0
Interpretive Sign installation	0	4	0.0	HR	\$12.00	\$0	
Property Boundary Marker	0	1	0.0	EA	\$5.00		\$0
Property Boundary Marker installation	0	0.2	0.0	HR	\$12.00	\$0	

#### Subtotals

HOURS
287.8

LABOR	MATERIALS
\$3,454	\$600

<b>TOTAL COST</b>	<b>\$4,054</b>
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BLACK OAK TRAIL CREW/VOLUNTEER CONSTRUCTION	
Number of Crew/Volunteers	4.0
Hours per Work Week	40.0
<b>Total Project Hours</b>	<b>287.8</b>
Length of Project in Work Weeks	1.8

## Dead Man's Hollow Conservation Area Management Plan - 2014

### TRAIL WORK SHEET LABOR AND MATERIALS COSTS



Trail: **QUARRY TRAIL**

CONSTRUCTION ACTIVITY	QUANTITY	QTY PER HOUR	HOURS	HOURLY RATE	PER UNIT COST	LABOR COST	MATERIAL COST						
Trail Flagging													
Trail Flagging - Light Vegetation	400	1745	0.2	FT	\$17.00	\$4							
Trail Brushing and Clearing													
Trail brushing maintenance - Light	400	260	1.5	FT	\$12.00	\$18							
Hand Crew Construction													
Trail reroute & reconst. - Light 2' or < tread	400	7	57.1	FT	\$12.00	\$686							
Trail reroute & reconst. - Medium 4' or < tread	0	5	0.0	FT	\$12.00	\$0							
Trail reroute & reconst. - Heavy 5' or < tread	0	4	0.0	FT	\$12.00	\$0							
Signs													
Trail Access Information Sign	2	1	0.0	EA	\$200.00		\$400						
Trail Access Information Sign installation	2	0.5	1.0	HR	\$12.00	\$12							
Trail Marker	1	1	0.0	EA	\$50.00		\$50						
Trail Marker installation	1	0.25	0.3	HR	\$12.00	\$3							
Kiosk	0	1	0.0	EA	\$3,000.00		\$0						
Kiosk installation	0	16	0.0	HR	\$12.00	\$0							
Interpretive Sign	0	1	0.0	EA	\$2,500.00		\$0						
Interpretive Sign installation	0	4	0.0	HR	\$12.00	\$0							
Property Boundary Marker	0	1	0.0	EA	\$5.00		\$0						
Property Boundary Marker installation	0	0.2	0.0	HR	\$12.00	\$0							
Subtotals			<table><tr><th>HOURS</th></tr><tr><td>59.9</td></tr></table>		HOURS	59.9	<table><tr><th>LABOR</th><th>MATERIALS</th></tr><tr><td>\$719</td><td>\$450</td></tr></table>			LABOR	MATERIALS	\$719	\$450
HOURS													
59.9													
LABOR	MATERIALS												
\$719	\$450												

<b>TOTAL COST</b>	<b>\$1,169</b>
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QUARRY TRAIL CREW/VOLUNTEER CONSTRUCTION	
Number of Crew/Volunteers	4.0
Hours per Work Week	40.0
<b>Total Project Hours</b>	<b>59.9</b>
<b>Length of Project in Work Weeks</b>	<b>0.4</b>

## Dead Man's Hollow Conservation Area Management Plan - 2014

### TRAIL WORK SHEET LABOR AND MATERIALS COSTS



Trail: **COOL SPIRIT CONNECTOR TRAIL**

CONSTRUCTION ACTIVITY	QUANTITY	QTY PER HOUR	HOURS	HOURLY RATE	PER UNIT COST	LABOR COST	MATERIAL COST
<b>Trail Flagging</b>							
Trail Flagging - Medium Vegetation	310	870	0.4	FT	\$17.00	\$6	
<b>Trail Brushing and Clearing</b>							
Trail brushing maintenance - Light	950	260	3.7	FT	\$12.00	\$44	
<b>Hand Crew Construction</b>							
Trail reroute & reconst. - Light 2' or < tread	950	7	135.7	FT	\$12.00	\$1,629	
<b>Drainage Structures</b>							
Drainage lens	20	4	5.0	CF	\$12.00	\$60	
Quarry rock - 4" - 8"	1	1	1.0	CY	\$28.00		\$28
<b>Signs</b>							
Trail Access Information Sign	2	1	0.0	EA	\$200.00		\$400
Trail Access Information Sign installation	2	0.5	1.0	HR	\$12.00	\$12	

**Subtotals**

HOURS
146.4

LABOR	MATERIALS
\$1,744	\$428

<b>TOTAL COST</b>	<b>\$2,172</b>
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COOL SPIRIT CONNECTOR TRAIL CREW/VOLUNTEER CONSTRUCTION	
Number of Crew/Volunteers	4.0
Hours per Work Week	40.0
<b>Total Project Hours</b>	<b>146.4</b>
<b>Length of Project in Work Weeks</b>	<b>0.9</b>

## Dead Man's Hollow Conservation Area Management Plan - 2014

### TRAIL WORK SHEET LABOR AND MATERIALS COSTS



Trail: **COOL SPIRIT CUT-OFF TRAIL**

CONSTRUCTION ACTIVITY	QUANTITY	QTY PER HOUR	HOURS	HOURLY RATE	PER UNIT COST	LABOR COST	MATERIAL COST
<b>Trail Flagging</b>							
Trail Flagging - Medium Vegetation	447	870	0.5	FT	\$17.00	\$9	
<b>Trail Brushing and Clearing</b>							
Trail brushing maintenance - Light	1272	260	4.9	FT	\$12.00	\$59	
<b>Hand Crew Construction</b>							
Trail reroute & reconst. - Light 2' or < tread	447	7	63.9	FT	\$12.00	\$766	
<b>Signs</b>							
Trail Access Information Sign	2	1	0.0	EA	\$200.00		\$400
Trail Access Information Sign installation	2	0.5	1.0	HR	\$12.00	\$12	
Trail Marker	1	1	0.0	EA	\$50.00		\$50
Trail Marker installation	1	0.25	0.3	HR	\$12.00	\$3	
<b>Subtotals</b>			<b>HOURS</b>			<b>LABOR</b>	<b>MATERIALS</b>
			70.0			\$840	\$450

<b>TOTAL COST</b>	<b>\$1,290</b>
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TRAIL CREW/VOLUNTEER CONSTRUCTION	
Number of Crew/Volunteers	4.0
Hours per Work Week	40.0
<b>Total Project Hours</b>	<b>70.0</b>
<b>Length of Project in Work Weeks</b>	<b>0.4</b>

## Dead Man's Hollow Conservation Area Management Plan - 2014

### TRAIL WORK SHEET LABOR AND MATERIALS COSTS



Trail: **BOSTON OVERLOOK TRAIL**

CONSTRUCTION ACTIVITY	QUANTITY	QTY PER HOUR	HOURS	HOURLY RATE	PER UNIT COST	LABOR COST	MATERIAL COST
<b>Trail Flagging</b>							
Trail Flagging - Heavy Vegetation	2640	435	6.1	FT	\$17.00	\$103	
<b>Trail Brushing and Clearing</b>							
<b>Hand Crew Construction</b>							
Trail reroute & reconst. - Light 2' or < tread	2640	7	377.1	FT	\$12.00	\$4,526	
<b>Signs</b>							
Trail Access Information Sign	2	1	0.0	EA	\$200.00		\$400
Trail Access Information Sign installation	2	0.5	1.0	HR	\$12.00	\$12	
Trail Marker	5	1	0.0	EA	\$50.00		\$250
Trail Marker installation	5	0.25	1.3	HR	\$12.00	\$15	
<b>Subtotals</b>			<b>HOURS</b>			<b>LABOR</b>	<b>MATERIALS</b>
			379.4			\$4,553	\$650

<b>TOTAL COST</b>	<b>\$5,203</b>
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BOSTON OVERLOOK TRAIL CREW/VOLUNTEER CONSTRUCTION	
Number of Crew/Volunteers	4.0
Hours per Work Week	40.0
<b>Total Project Hours</b>	<b>379.4</b>
Length of Project in Work Weeks	2.4

## Dead Man's Hollow Conservation Area Management Plan - 2014

### TRAIL WORK SHEET LABOR AND MATERIALS COSTS



#### Trail: BACKWOODS JUSTICE TRAIL

CONSTRUCTION ACTIVITY	QUANTITY	QTY PER HOUR	HOURS	HOURLY RATE	PER UNIT COST	LABOR COST	MATERIAL COST
<b>Trail Flagging</b>							
Trail Flagging - Medium Vegetation	6390	870	7.3	FT	\$17.00	\$125	
<b>Trail Brushing and Clearing</b>							
Trail brushing maintenance - Medium	6390	160	39.9	FT	\$12.00	\$479	
<b>Hand Crew Construction</b>							
Trail reroute & reconst. - Light 2' or < tread	6390	7	912.9	FT	\$12.00	\$10,954	
<b>Switchback &amp; Climbing Turns</b>							
Climbing turn construction - 2' or < tread	9	24	216.0	HR	\$12.00	\$2,592	
<b>Drainage Structures</b>							
Drainage lens	80	4	20.0	CF	\$12.00	\$240	
Quarry rock - 4" - 8"	3	1	3.0	CY	\$28.00		\$84
<b>Signs</b>							
Trail Access Information Sign	2	1	0.0	EA	\$200.00		\$400
Trail Access Information Sign installation	2	0.5	1.0	HR	\$12.00	\$12	
Trail Marker	12	1	0.0	EA	\$50.00		\$600
Trail Marker installation	12	0.25	3.0	HR	\$12.00	\$36	
<b>Subtotals</b>			<b>HOURS</b>			<b>LABOR</b>	<b>MATERIALS</b>
			1195.8			\$14,314	\$1,084

**TOTAL COST** **\$15,398**

BACKWOODS JUSTICE TRAIL CREW/VOLUNTEER CONSTRUCTION	
Number of Crew/Volunteers	4.0
Hours per Work Week	40.0
<b>Total Project Hours</b>	<b>1195.8</b>
<b>Length of Project in Work Weeks</b>	<b>7.5</b>

## Dead Man's Hollow Conservation Area Management Plan - 2014

### TRAIL WORK SHEET LABOR AND MATERIALS COSTS



Trail: **HAUNTED HOLLOW**

CONSTRUCTION ACTIVITY	QUANTITY	QTY PER HOUR	HOURS	HOURLY RATE	PER UNIT COST	LABOR COST	MATERIAL COST
<b>Trail Flagging</b>							
Trail Flagging - Medium Vegetation	4382	870	5.0	FT	\$17.00	\$86	
<b>Trail Brushing and Clearing</b>							
Trail brushing maintenance - Medium	4382	160	27.4	FT	\$12.00	\$329	
<b>Hand Crew Construction</b>							
Trail reroute & reconst. - Light 2' or < tread	4382	7	626.0	FT	\$12.00	\$7,512	
<b>Drainage Structures</b>							
Drainage lens	20	4	5.0	CF	\$12.00	\$60	
Quarry rock - 4" - 8"	1	1	1.0	CY	\$28.00		\$28
<b>Signs</b>							
Trail Access Information Sign	2	1	0.0	EA	\$200.00		\$400
Trail Access Information Sign installation	2	0.5	1.0	HR	\$12.00	\$12	
Trail Marker	8	1	0.0	EA	\$50.00		\$400
Trail Marker installation	8	0.25	2.0	HR	\$12.00	\$24	

**Subtotals**

HOURS
662.4

LABOR	MATERIALS
\$7,937	\$828

<b>TOTAL COST</b>	<b>\$8,765</b>
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HAUNTED HOLLOW TRAIL CREW/VOLUNTEER CONSTRUCTION	
Number of Crew/Volunteers	4.0
Hours per Work Week	40.0
<b>Total Project Hours</b>	<b>662.4</b>
<b>Length of Project in Work Weeks</b>	<b>4.1</b>

## Dead Man's Hollow Conservation Area Management Plan - 2014

### TRAIL WORK SHEET LABOR AND MATERIALS COSTS



Trail: **YOUGH OVERLOOK**

CONSTRUCTION ACTIVITY	QUANTITY	QTY PER HOUR	HOURS	HOURLY RATE	PER UNIT COST	LABOR COST	MATERIAL COST
<b>Trail Flagging</b>							
Trail Flagging - Light Vegetation	2280	1745	1.3	FT	\$17.00	\$22	
<b>Trail Brushing and Clearing</b>							
Trail brushing maintenance - Light	2280	260	8.8	FT	\$12.00	\$105	
<b>Hand Crew Construction</b>							
Trail reroute & reconst. - Light 2' or < tread	2280	7	325.7	FT	\$12.00	\$3,909	
<b>Switchback &amp; Climbing Turns</b>							
Climbing turn construction - 2' or < tread	1	24	24.0	HR	\$12.00	\$288	
<b>Signs</b>							
Trail Access Information Sign	2	1	0.0	EA	\$200.00		\$400
Trail Access Information Sign installation	2	0.5	1.0	HR	\$12.00	\$12	
Trail Marker	4	1	0.0	EA	\$50.00		\$200
Trail Marker installation	4	0.25	1.0	HR	\$12.00	\$12	
<b>Subtotals</b>			<b>HOURS</b>			<b>LABOR</b>	<b>MATERIALS</b>
			360.5			\$4,326	\$600
<b>TOTAL COST</b>							<b>\$4,926</b>

YOUGH OVERLOOK TRAIL CREW/VOLUNTEER CONSTRUCTION	
Number of Crew/Volunteers	4.0
Hours per Work Week	40.0
Total Project Hours	360.5
Length of Project in Work Weeks	2.3

### Opinion of Probable Construction Costs – Scenario Two

The opinion of probable construction costs projected here assumes improvements are constructed through a public bid process utilizing the Pennsylvania Department of Labor and Industry's prevailing wage rates. These projections are likely to give folks "sticker shock." That said, projects should not be put on hold, deferred, or not entertained as they seem too expensive to undertake. Rather the Allegheny Land Trust and its partners need to "think outside the box" to determine how to construct and implement the recommendations of this plan, at the lowest possible cost while maintaining a high level of quality in the construction of that work.

Unit prices for construction were assigned based on the consultant's experience with construction costs in 2014. These costs are based upon publicly bid projects that pay prevailing wage rates.

The cost projections take into account the following:

- ✓ The condition of the property at the time of construction will be similar to its condition in 2014.
- ✓ Projects will be bid through a competitive bidding process utilizing state or federal prevailing wage rates.
- ✓ Opinions of probable construction costs should be confirmed / revised upon completion of preliminary design.
- ✓ To budget for inflation costs for improvements that will occur after 2014, we recommend a 4.5% annual increase for each year thereafter.
- ✓ In Pennsylvania all projects, valued at over \$25,000 and using public funds, are required to pay workers in accordance with the Commonwealth Department of Labor and Industry's Prevailing Wage Rates

It is important to note that costs are based on 2014 construction figures. Should projects be constructed in future years an additional 4.5% per year should be factored for inflation. Additional increases may be necessary to address the escalation of steel and fuel prices as their costs are escalating at unprecedented rates.

As noted, volunteer labor, in-kind services, and donated materials and services can reduce the overall project cost from costs projected here. Additionally, alternate sources of funding, including grant opportunities, may assist in offsetting construction costs.

The following table summarizes our opinions of probable construction costs for implementing the physical improvements described herein and shown on the master plan based on a public bid scenario. Detailed opinions of probable construction costs based on a public bid can be found in Appendix 4.

## Dead Man's Hollow Conservation Area Management Plan - 2014

Opinion of Probable Construction Cost Summary				Priority		
Ranking	Trail	Overall	Short	Medium	Long	Future
1	Cool Spirit Trail	\$85,773	\$85,773			
2	Witch Hazel Trail	\$80,592	\$80,592			
3	Dead Man's Run Trail	\$37,296	\$166,365	\$37,296		
4	Ruins Trail	\$11,512		\$11,512		
5	Table Rock Trail	\$49,468		\$49,468		
6	Liberty Trail	\$45,760		\$98,275	\$45,760	
7	Black Oak Trail	\$13,827			\$13,827	
8	Quarry Trail	\$4,531			\$4,531	
9	Cool Spirit Connector Trail	\$6,304			\$6,304	
10	Cool Spirit Cut-Off Trail	\$4,752			\$4,752	
11	Boston Overlook Trail	\$17,474			\$75,173	\$17,474
12	Backwoods Justice Trail	\$57,108				\$57,108
13	Yough River Overlook Trail	\$11,320				\$11,320
14	Haunted Hollow Trail	\$29,679				\$29,679
<b>Total</b>		<b>\$455,395</b>				<b>\$115,582</b>

Trail Ranking	Sustainable Grades	Fall Line Trail	Water/Erosion Impacts	Total Value	Ranking
Cool Spirit Trail	5	3	5	13	1
Witch Hazel Trail	5	5	2	12	2
Dead Man's Run Trail	1	1	5	7	3
Ruins Trail	1	1	1	3	4
Table Rock Trail	5	5	1	11	5
Black Oak Trail	2	2	2	6	6

Trail Prioritization	Existing or Proposed	Main or Connector	Unique Features	Potential Use	Sustainable Grades	Fall Line Trail	Water/Erosion Impacts	Total Value	Priority
Cool Spirit Trail	5	5	4	5	3	3	5	30	S
Witch Hazel Trail	5	5	3	3	5	5	2	28	S
Dead Man's Run Trail	5	5	5	5	1	1	5	27	M
Ruins Trail	5	5	5	5	1	1	1	23	M
Table Rock Trail	5	1	2	1	5	5	1	20	M
Liberty Trail	5	1	1	4	3	2	1	17	L
Black Oak Trail	5	1	2	3	2	2	2	17	L
Quarry Trail	5	1	3	2	3	1	1	16	L
Cool Spirit Connector	3	1	1	4	1	1	1	12	L
Cool Spirit Cut-Off	3	1	1	4	1	1	1	12	L
Boston Overlook Trail	1	5	3	2	0	0	0	11	F
Backwoods Justice Trail	1	5	1	3	0	0	0	10	F
Yough Overlook Trail	1	1	3	4	0	0	0	9	F
Haunted Hollow Trail	1	1	2	2	0	0	0	6	F

## Brand and Image

*"Image is acutely important because it greatly influences public opinion about your company, and public opinion is the final judge of right/wrong, good/bad, and moral/immoral actions.*

*In our society, public opinion is one of the most formidable phenomena a company encounters because so many powerful people are beholden to it - people who can protect you and people who can bring you down."*

*Sauerhaft and Atkins, Image Wars*

Branding plays a pivotal role in the ability to thrust forward and achieve a competitive edge. A brand establishes a consistent image and message to advertise and advocate for a specific entity. We recommend a brand be established for the Dead Man's Hollow Conservation Area.

Branding should be carefully approached. We recommend consideration be given to market testing the brand and image to make sure it fits the image ALT wants to convey and reaches the intended audiences.

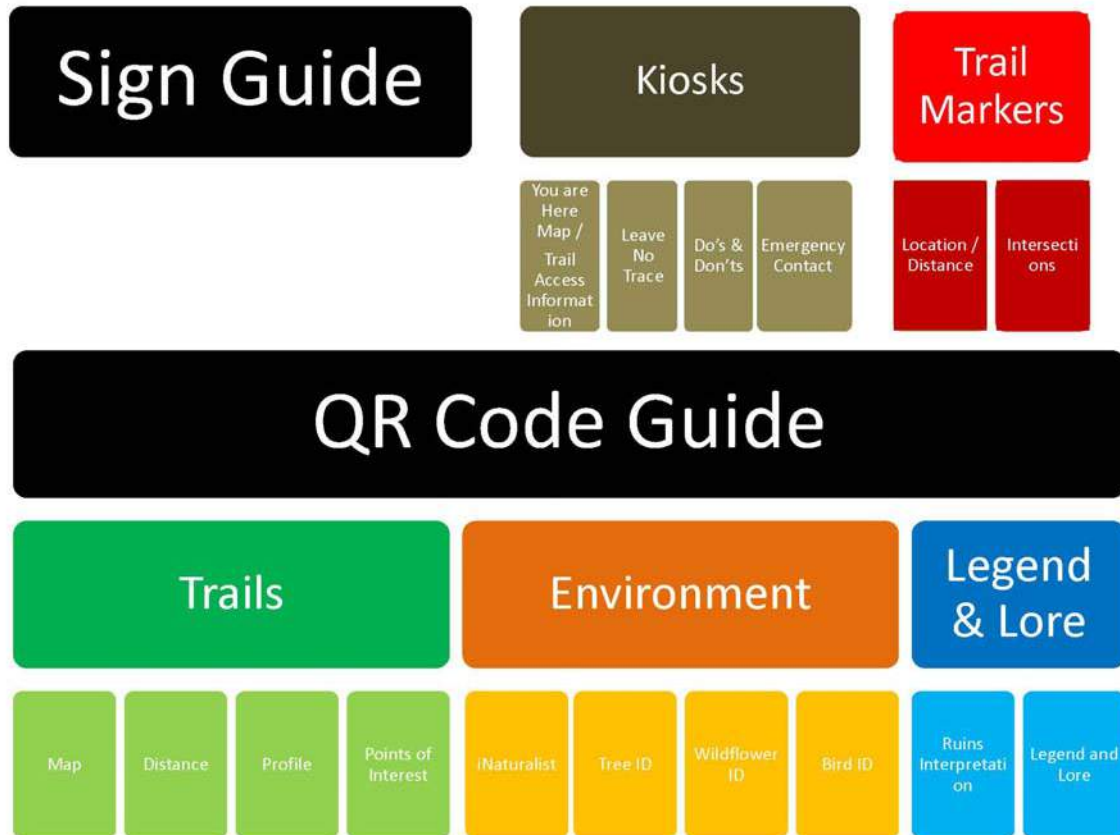
During the course of this study we briefly took existing graphic information related to the Dead Man's Hollow Conservation Area (the graphics of the Dead Man's Hollow bumper sticker) and developed a brand logo for the Dead Man's Hollow Conservation Area. The only recommended modification would be to add "Conservation Area" to the 2009 design in order to be consistent with the image and vision for the hollow as established by the Allegheny Land Trust.



Upon officially adopting a brand and logo for the Dead Man's Hollow Conservation Area, the brand should appear on all promotional material and on all signs related to the Dead Man's Hollow Conservation Area.

### Location Identification/Signage

The following graphic illustrates the proposed components of the signage plan for the Dead Man's Hollow Conservation Area.



Conceptually, we recommend the signs at the kiosk be re-developed to:

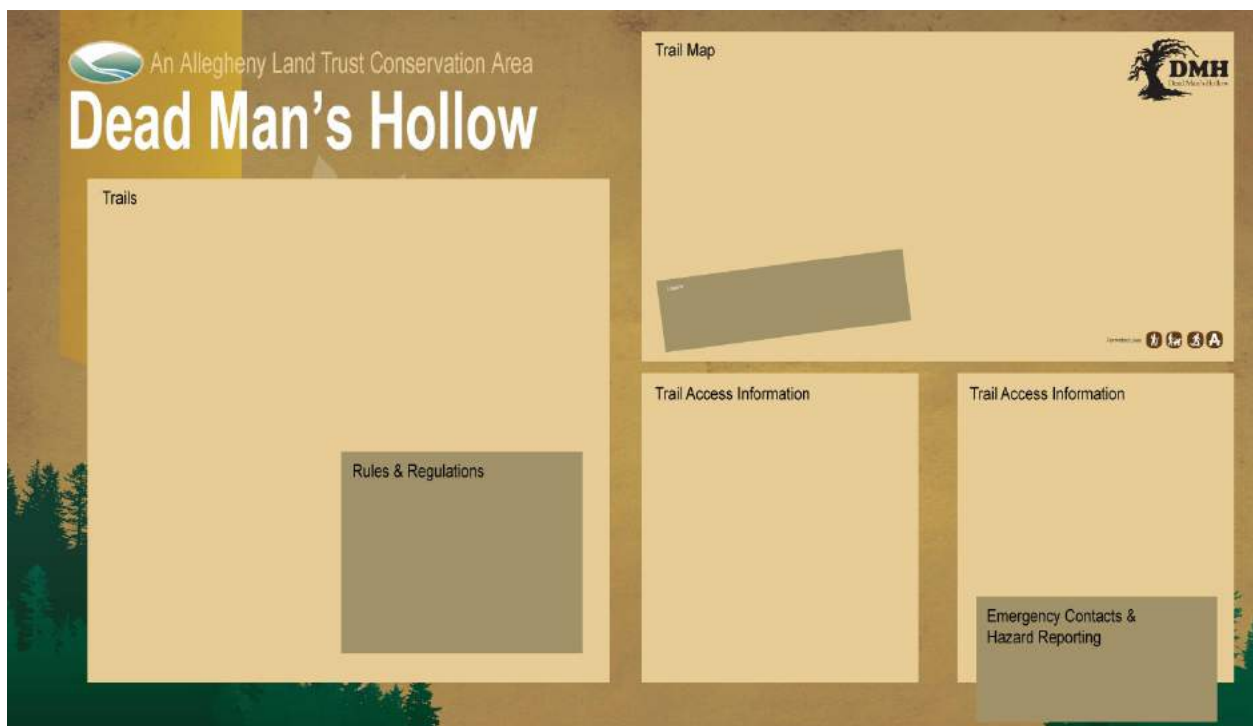
1. Establish the conservation message related to the Dead Man's Hollow Conservation Area.
2. Provide information related to the legends and lore of the property.
3. Convey information related to the trail system on the property.

### Informational Kiosks

Utilizing the existing kiosk graphic format, we have developed the following conceptual layouts for kiosk signs.



Conservation Message Board



Trail Orientation Board

The Allegheny Trail Alliance and the Trail Town Program have adopted and published the Graphic Identity & Sign Guidelines Manual for the Great Allegheny Passage.


Allegheny Trail Alliance prefers that groups seek permission to follow or adapt the established sign guidelines in instances that such signs are placed off the GAP corridor. If ALT does not wish to adapt these guidelines, it may at least consider that any new signs and kiosks complement the GAP brand being that GAP-branded signs will flank the Hollow.

ALT may want to consider incorporating the vocabulary of the GAP sign guidelines into the signs for the Dead Man's Hollow Conservation Area given its proximity along the Great Allegheny Passage.


## INFORMATION KIOSKS

Overview

### A2



Two-sided kiosk



Three-sided kiosk

Information Kiosks include two- and three-sided versions. Both formats employ identical post and panel details; only a metal angle strip changes to accept panels at a 90-degree angle (for two-sided), or at a 60-degree angle (for three-sided).

Typically located in or near trail access areas, information kiosks can display trail town maps and business directories, town welcome messages, and regional trail maps. They can also acknowledge trail maintenance organizations and volunteers.

Brochure holders integrated with the graphic panels can hold town and trail maps.

Kiosks which include trail town maps and directories should be situated so that the town map is oriented according to the physical world.

The information panels are produced using high-resolution digital printing technology on a vinyl film which is applied to a metal substrate. Trail town maps and directories may change out on an annual or semi-annual basis and this production method is suitably economical.

The area below and immediately around information kiosks should be carefully landscaped to minimize maintenance burden. Consider hard materials such as concrete, brick, cobblestones, or specialty materials that will prohibit weed growth.

11152.0-04.18.11
THE GREAT ALLEGHENY PASSAGE | Graphic Identity & Sign Guidelines Manual
5.4

### **Interpretation & Interpretive Signs**

The most common form of interpretation is a sign on a post planted in front of a resource that explains what the visitor is looking at. We call that 'history on a stick.' In most cases, that sign only engages the left side of the brain, and most visitors will forget everything they read on the sign by the time they get home.

If we want visitors to remember something, we must find a way to engage them in the story, to get them excited about what they are learning. We call these types of engagements that stimulate both the right side and the left side of the brain 'experiences'.

The challenge of effective interpretation is to create a variety of experiences that appeal to the variety of interests of a variety of audiences in a way that engages both the left side and right side of the brain.

If our overarching objective is to motivate people to really love and care for a place, then we must help them discover the meaning and significance of that place in a way that is personal and significant for them. This is how and why people develop their sense of place, and that is why and how we interpret places.

### ***Six Elements of Interpretation***

Through our planning we developed the framework for interpreting the Dead Man's Hollow Conservation Area assets by asking and answering the following questions:

1. What are the principal goals and objectives for this site?
  - a. Provide ongoing stewardship of the lands within the Dead Man's Hollow watershed necessary to support the recovery and restoration of the Watershed to a state consistent with the natural landscapes that have existed along this section of the Youghiogheny River.
  - b. Provide recreational and educational opportunities for the public at Dead Man's Hollow consistent with the goal of conserving and stewarding lands within the Dead Man's Hollow watershed.
  - c. Interpret the lore & legend of man's use of the land.

2. Who is the Primary Audience, and what are their interests?
  - a. Passive recreation enthusiasts hikers and bird watchers.
  - b. Active recreation enthusiasts: hikers.
  - c. Those interested in the legend and lore associated with the property.
  - d. Those interested in early history of the area/property.
  - e. Those interested in the ecological richness of the area/property.

*"Nature is reclaiming the built environment and creating something completely unique to the place. The patterns of growth are completely unique to the location. There are nationally and internationally known botanists that speak to the uniqueness of the site. The environmental impact is dramatic; the succession of nature dramatic. We're examining the environment's impact on man and how the environment responds to man. Nature is orderly in how it's reacting to that particular environment. The same is true for Dead Man's Hollow."*

*Ron Baraff, Director of Museum Collections & Archives, Rivers of Steel*

3. What are the various natural, cultural and historic resources we have that may appeal to their interests and what are the stories we'd like to share with visitors?
  - a. Ecology and Wildlife
    - 1) Significant spring wildflower population that rivals the most well-known spring wildflower sites in Allegheny County
    - 2) Migratory bird habitat, especially for forest dwelling interior species. Given the limited interior forest habitat in Allegheny County, this is very significant.
    - 3) iNaturalist inventory populated, can use iNaturalist web and smartphone applications to retrieve species information and obtain field guide.
  - b. Cultural & Historic Resources
    - 1) National Register Eligible historic site: Bowman Brick Works/Union Sewer Pipe Company refer to discussion in Chapter 1.
    - 2) Legend and Lore refer to discussion in Chapter 1.
  - c. Scenic Views
4. What are the messages we want people to learn and remember from the stories that we share about those resources that reinforce the goals we have set for this project?
  - a. Value of conservation and its impact on ecology, wildlife, and human well-being.
  - b. Legend & Lore: emphasizing the mystery or/haunted factors to create a memorable experience, a desire to return, and a desire to invite others to visit.
  - c. The history of place beyond Dead Man's Hollow. How this place and others along the Youghiogheny River contributed to the regional and national economy, how people lived, etc.

5. What are the various forms of media we can use to deliver our messages?
  - a. Interpretive signs.
  - b. Quick Response codes to provide interactive learning experiences.
  - c. Hands-on interpretive programming.
6. How do we put it all together?

From the first sign at the trailhead to trail markers, the signage at Dead Man's Hollow Conservation Area should provide a consistent and integrated delivery of information to the visitor, as well as, serve to allow visitors to identify their specific location, and more importantly, to allow emergency services responders to quickly locate and access a given location on the property.

Further, each sign should be evident to the visitor and present concise and engaging information. Kiosk and interpretive signs can present basic information, and quick response codes can provide access to more in depth information.

Quick Response (QR) codes are designed to be used with most modern smartphones (android and iOS) for quickly linking to internet resources. These can include:

- Oral history video interviews
- Interactive site maps
- Augmented reality photographs
- Guided tours
- Links to site specific ecology and historic information

With QR codes one's imagination is the only limitation. The opportunities are endless. Further, with QR codes content can be updated, revised or replaced without incurring the cost of replacing a kiosk.

An example of a well-executed QR code interpretation is the Leaks Mound Interpretive Trail:  
[www.westga.edu/~khebert/leakemounds](http://www.westga.edu/~khebert/leakemounds)

An example of a site very similar to the Dead Man's Hollow Conservation Area as it contains industrial archeology sites:  
[www.foundrytour.org](http://www.foundrytour.org)

An example of a commissioned video for a specific landscape region. *Susquehanna Gateway Heritage Area-Stories of the Land*:  
[www.susquehannaheritage.org/learn/ourworkalongthesusquehanna/storiesoftheland.aspx](http://www.susquehannaheritage.org/learn/ourworkalongthesusquehanna/storiesoftheland.aspx)

A small sampling of existing content that potentially could be used at the Dead Man's Hollow Conservation Area (upon obtaining permission from the respective authors)

- iNaturalist Inventory for the Dead Man's Hollow Conservation Area:  
[www.inaturalist.org/projects/dead-man-s-hollow-conservation-area](http://www.inaturalist.org/projects/dead-man-s-hollow-conservation-area)

- Invasive Plants: [www.dcnr.state.pa.us/forestry/plants/invasiveplants](http://www.dcnr.state.pa.us/forestry/plants/invasiveplants)
- Birding: The Western Pennsylvania Birding Trail Guide <http://pa.audubon.org/videos/why-birds-matter-2>

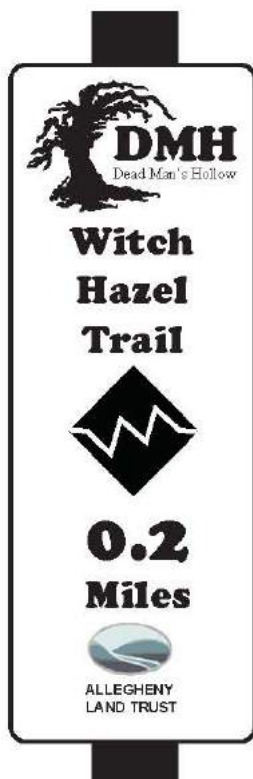
As with the kiosks, the GAP sign guidelines have established a vocabulary for interpretive signs that ALT may want to consider incorporating into interpretive signs for the Dead Man's Hollow Conservation Area.



### Trail Access Information Signs

We recommend trail access information signs be located at each entrance to a trail. These signs should contain the name of the trail, identify the permitted uses and contain information about the trail as required by the Americans with Disabilities Act, which includes: Trail Length, Change in Elevation, Maximum Grade, Average Grade, Maximum Cross Slope, Minimum Width, Surface Type, and Types of Obstructions to be Encountered.

As recommended in the section titled "Safety, Protection of Life & Property and Search & Rescue" we recommend placing trail markers along each trail at an interval of two-tenths of a mile to serve as location identifiers.



And, to deter unwanted access and/or trespassing onto adjacent property we recommend the property boundaries be clearly delineated in the field as necessary in locations where trespassing is or may be a concern. For this we recommend using double sided fiberglass reinforced posts with labels that identify the boundaries and ask visitors to respect adjacent private property.

The proposed locations of all signs being recommended are identified on the Signage Plan.

### Boundary Markers

Good fences make good neighbors. Clearly identifying and marking the boundaries of the Dead Man's Hollow Conservation Area accomplishes several goals:

1. Clearly marked boundaries ensure visitors do not stray onto adjacent private lands.
2. Identify boundaries between the conservation land and private property to prevent encroachment
3. Provides law enforcement with clear delineation of property and ability to enforce trespassing concerns when necessary.



We strongly recommend that the painting of tree blazes on trees not be adopted as standard practice for boundary marking, trail marking, etc. Paint introduces small amounts of potentially toxic chemicals into the environment. Therefore, it is not an acceptable conservation practice.

We recommend aluminum boundary markers be affixed to trees with nails as a cost effective solution for marking property boundaries. Plastic markers should not be used as they are vulnerable to both the chewing of animals, especially porcupines.

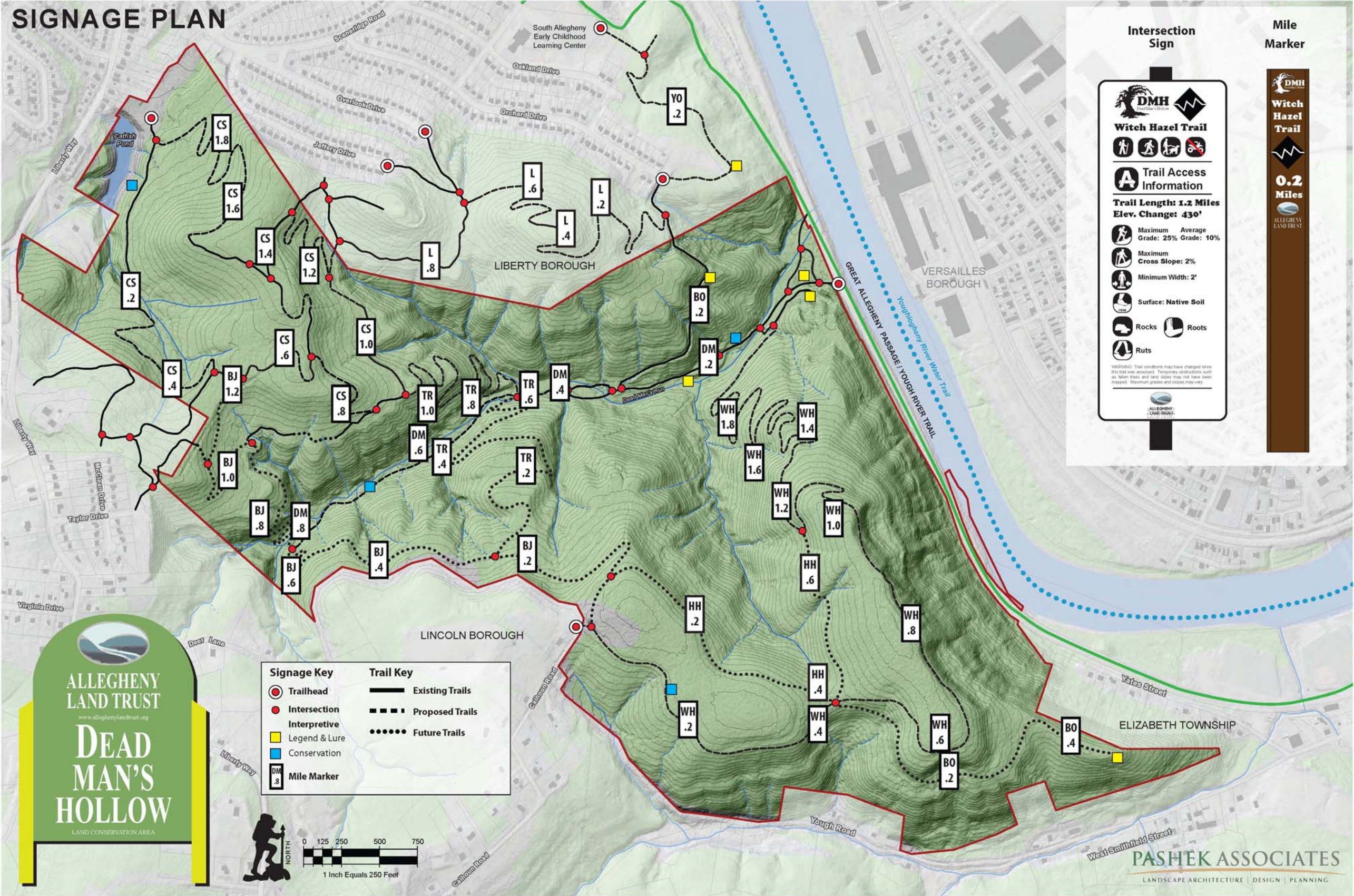
The use of aluminum mounting nails prevents corrosion problems and rust marks that occur when steel nails are used. They are also safer when your sign is being nailed to a tree. If the tree is ever needs to be removed due to being blown down or identified as a safety hazard, saws will cut through aluminum nails easily, preventing harm to both the saw blade and sawyer. To use, leave the nail a little short of all the way in, about 3/8" left to go, so that a few of the rings on the nail shank still show. This leaves room for the tree to grow out, preventing the sign from being pushed off the nail and keeping the sign mounted longer.

Care should be taken to ensure the boundaries of the property are located utilizing surveyor's property corners, or in the case of the lack thereof, with GPS units being used to field locate property corners from survey references.

For more information and to obtain pricing on boundary markers, contact:

**Voss Signs**  
112 Fairgrounds Drive  
P.O. Box 553  
Manlius, NY 13104  
800-473-0698  
[www.VossSigns.com](http://www.VossSigns.com)

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## Trail Inspection and Maintenance

The frequency of trail maintenance varies depending on the type of maintenance activity being undertaken, and potentially by frequency of use.

Trail maintenance tasks should be documented in the trail management plan and should be adopted by the agency/organization responsible for the trail.

Maintenance requirements are dependent on the type of trail and amount of visitation it receives.

An excellent on-line reference resource for trail maintenance crews is the U.S. Forest Service's *Trail Construction and Maintenance Notebook*, available here:

[www.fhwa.dot.gov/environment/recreational\\_trails/publications/fs\\_publications/07232806/toc.cfm](http://www.fhwa.dot.gov/environment/recreational_trails/publications/fs_publications/07232806/toc.cfm)

### Scheduled Maintenance

Scheduled maintenance is the normal maintenance needed to restore a trail to its intended standard after prolonged wear and tear of normal use and exposure to the elements.

Develop an annual trail maintenance schedule using historical and known maintenance requirements from previous inspections or deferred maintenance. This living document should be adapted to the changing conditions of the trail.

Typically, scheduled maintenance tasks are described below. This list can be altered as needed to meet the needs of the trail, its users and ALT:

- Trimming or removing vegetation, dead limbs, or standing dead trees
- Removing debris, deadfalls, or loose impediments
- Cleaning out ditches, swales and culverts
- Repairing and revegetating minor erosion on slopes or embankments
- Grooming the tread surface
- Mowing
- Trash removal
- Invasive plant removal
- Signs – inspect/repair/replace
- Fence – inspect/repair/replace
- Drainage structures – inspect/repair/replace
- Gates - inspect/repair/replace
- Bridges - inspect/repair/replace
- Maintain dips
- Grade ditches
- Storm damage
- Vandalism removal/repair

Typical Types of trail maintenance include:

- ✓ Scheduled Maintenance
- ✓ Seasonal Closure and Opening
- ✓ Winter Maintenance
- ✓ Periodic Grooming
- ✓ Corrective Maintenance
- ✓ Deferred Maintenance

- Repair washouts
- Cleaning of restrooms at trailheads
- Maintaining and completing preventative maintenance on support facilities
- Inspecting trail-related structures to ensure they are in a safe condition
- Plowing trailhead parking lots in the winter

The following is a typical calendar for scheduled maintenance:

Frequency of Scheduled Maintenance												
Maintenance Activity	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
EXAMPLE- Mowing			•	••••	••••	••••	••••	••••	••••	•••		
Mowing												
Trimming												
Trash												
Pruning												
Weeding												
Invasive Removal												
Signs - inspect/repair/replace												
Fence - inspect/repair/replace												
Drainage Structures - inspect/repair/replace												
Gates - inspect/repair/replace												
Bridge - inspect/repair/replace												
Maintain Dips												
Trail Grooming												
Groom Trail Surface												
Landscaping												
Repair Storm Damage												
Repair Vandalism												

### Seasonal Opening and Closure

If seasonal closures occur along a trail, inspect and maintain portions of the trail that require maintenance. Sometimes this maintenance can be intensive, especially in areas prone to blow downs. For those trails with winter closures the tread surface may need to be graded, compacted, and or groomed in preparation for increased use during wet conditions of the spring season. Fall maintenance should focus on clearing and trimming of vegetation sufficiently to account for the next growing season. Repair and stabilize eroded areas to prevent future erosion.

### Corrective Maintenance

Corrective maintenance is necessary for the restoration of areas or structures severely damaged or destroyed by overuse, inadequate scheduled maintenance, abuse, vandalism, or unexpected natural events. Corrective maintenance is usually unexpected and may require more planning or design than scheduled maintenance. Corrective maintenance includes:

- Grooming and maintenance of trail tread surface.
- Stabilization of erosion.
- Reconstruction of grade dips, or other water control features.
- Replacement or major repair of drainage structures or bridges.

Regardless of the level of planning and effectiveness of the scheduled maintenance program, the

unexpected will occur. Address unexpected emergencies by establishing a contingency line item in the annual maintenance budget. Ideally, a long-term capital improvement budget should be in-place to repair/replace major structures.

### **Maintenance of Signs**

Incorporate a regular maintenance program for signs into your trail management plan. Sign maintenance is important from a safety and liability perspective. Further, signs are highly visible and their maintenance or lack of maintenance leaves the visitor with a positive or negative impression about the trail and ALT. Well-maintained signs convey a sense of pride and reduce vandalism, while poorly maintained signs may contribute to a diminished visitor experience, including disorientation of trail users.

The following guidelines are recommended:

- Maintain a record of all signage, including location, GPS coordinates, type of sign, and photo.
- Inspect signs regularly, especially after each winter season, for weathering and visibility.
- Repair or replace damaged or missing signs as soon as possible.
- Secure loose or tilting signs in an upright position.
- Clear vegetation from around signs to maintain visibility.
- For signs mounted on living trees, loosen fasteners as necessary to accommodate growth of the tree.
- Review signage content to ensure continued relevance and accuracy.

When signs have been weathered or otherwise damaged or destroyed, consider the reasons for the damage. If the sign was eaten by wildlife, consider less palatable materials. If weather or natural events damaged the sign, consider stronger materials, a different location, or a different system for mounting the signs. If the sign is damaged by water or decay, consider applying a sealer or preservative (assuring compatibility with color, aesthetics, and environmentally sustainable practices) or replacing the sign with a more water-resistant material. When signs are damaged due to vandalism, managers should consider a different location or temporary signage that is not expensive to replace.

Priorities for sign maintenance are:

- Signs required for user safety
- User restrictions and advisory signs
- Destination and identification signs, blazes, and trail logos, and
- Informative and interpretive signs

There is a fine balance between providing good information and diminishing the trail experience with too much signage. An abundance of signage can also be a burden on the trail managers and those responsible for maintaining the signs.

### Hazard Tree Identification, Inspection and Corrective Action

A tree is considered hazardous when structural defects are likely to cause failure of all or part of a tree within striking distance of an object. An object can be a vehicle, building, or an area where people or their equipment are likely to stop and congregate, such as park benches, campgrounds, picnic tables and environmental education areas. Identifying hazard trees is not an exact science. Many times trees will fail though they appear healthy. One cannot always accurately determine the hazard potential of every tree, but following a few basic inspection techniques can identify many hazard trees so corrective action can be taken.

Trees in poor condition should be inspected more closely for structural defects including cracks, cankers, decay, weak branch unions and root problems. Be sure to inspect trees carefully and systematically. Examine all parts of the tree, including the trunk flair, main stem, branches and branch unions. A pair of binoculars or a spotting scope will allow for a more complete examination of the tree canopy.

Close inspection should occur in any public overnight and day use areas, along trails and roadways, and adjacent to buildings. Again, a hazard tree is defined as having a defect and an object it can damage. Tree inspections should be conducted using consistent procedures.

A widely accepted method of assessment is the USDA, USFS Risk Assessment Scale, which prioritizes hazard trees based on three criteria. The three assessment criteria are tree condition, failure potential, and probability of impacting an object. Tree condition considers the amount of deadwood, foliage and trunk decay. Failure potential is rated according to the severity of the defects. Probability of impacting a target is ranked based on frequency of use.

Trees determined to have low probability of failure and impact should be considered for their value as wildlife habitat.

Tree inspections should occur in the spring before leaf-on, in mid-summer, and after leaf-off in the fall. This inspection schedule allows trees to be observed in various states and provides ample time for corrective action to be taken. Areas more heavily used by the public should be inspected immediately after severe storms that cause blow downs, leaning trees, or large hanging branches.

Tree inspections should be documented. This documentation should include the date(s) of the inspections, the area(s) inspected, the person(s) conducting the inspection, and whether this inspection was a routine inspection or conducted because of a storm event. Using the USFS Risk Assessment Scale allows for easy and consistent documentation over a time. If necessary, trail maintainers can provide this document to the landowner as a recommendation for corrective action.

Following the identification and inspection of trees, if a tree is found to have a deficiency, the appropriate corrective action should be taken promptly.

Use the USFS Risk Assessment Scale to prioritize hazard trees that require corrective action. These corrective actions could include moving the object, pruning the tree to remove the hazardous portion, or removing the entire tree. Landowners/managers can contact a professional arborist if they do not have sufficient equipment or properly trained people to carry out tree pruning or removal.

Only properly trained and certified personnel should work with trees, especially when it comes to felling trees and/or working with power equipment, such as chain saws.

Additional information on hazardous trees and the USDA, USFS Risk Assessment scale can be Found here: [http://www.fs.usda.gov/detail/r10/forest-grasslandhealth/?cid=fsbdev2\\_038339](http://www.fs.usda.gov/detail/r10/forest-grasslandhealth/?cid=fsbdev2_038339).

### Training

Training is critical to the success of a trail. Management cannot assume trail users, volunteers, or staff have the knowledge and skills necessary to properly use the trails, and to perform their duties and functions in the manner required to maintain a safe, inviting, and well-maintained trail environment. Your trail management plan should incorporate a summary of the various training components to be offered, their intended audience and the intended frequency of the education/training program. The following is a sample summary table:

Component	Audience						Frequency and Location
	Designer	Land Manager	Maint. Staff	Trail Patrol	Volunteers	Trail Users	
Safety Training		X	X		X		
Trail Etiquette						X	
Proper Trail Use					X	X	
Outdoor Ethics					X	X	
Trail Construction	X	X	X		X		
Trail Maintenance			X		X		
Water Crossing Construction			X		X		
Hazard Tree Identification		X	X				
Trail Inventory Procedures	X	X		X			

### Trail Building

Before beginning construction, the Allegheny Land Trust will need to determine how and who will be constructing improvements to the Dead Man's Hollow Conservation Area trail system. Final trail design, flagging, and construction can begin, provided it is led by properly trained crew leaders with experience in sustainable trail design, layout and construction.

The ***Pennsylvania Trail Design & Development Principles: Guidelines for Sustainable Non-Motorized Trails*** details four options for trail construction, these include:

- 1) Constructing trails with in-house labor.
- 2) Constructing trails with volunteers.
- 3) Constructing trails with a contractor.
- 4) A combination of the above.

We recommend option 4, a combination between constructing trails with a contractor and constructing trails with volunteers. In this case, the contractor will be a trail specific organization who is capable of training and leading volunteers to construct trails. A second option would be to have a trail specific organization who is capable of training and constructing the trails. This option would require more cash funding than the first option.

The International Mountain Bicycle Association can provide this training through its Subaru/IMBA Trail Care Crew program. On the road since 1997, this effort is IMBA's grass roots educational program and an authority on sustainable trail building practices. Two teams of professional trail experts travel year-round throughout the United States and beyond, leading trail work sessions, meeting with land managers and working with IMBA-affiliated clubs and the communities they serve to improve mountain biking opportunities.

We strongly encourage the Allegheny Land Trust partner with a trail or mountain bicycling organization who can help with the implementation of sustainable trail improvements within the Dead Man's Hollow Conservation Area. However, it must be done with an understanding and commitment from each party that the work will only be completed by individuals who have the necessary skills and training.

There are many examples of successful partnerships between park agencies and local volunteer trail organizations. One such partnership is between the Allegheny County Parks Department and the Pittsburgh Trails Advocacy Group (PTAG, [www.ptagtrails.org](http://www.ptagtrails.org)). PTAG has designed, flagged and constructed trail networks in Moraine State Park in partnership with PA DCNR. Further, they have partnered with Allegheny County to develop and maintain trails in North Park, South Park, Boyce Park, White Oak Park, Deer Lakes Park and Hartwood Acres. They have also partnered with the Hollow Oak Land Trust at the Montour Woods Conservation Area.

We recommend informal discussions occur between the Allegheny Land Trust and PTAG to determine interest in partnering to establish a high quality, sustainable hiking trail network in the Dead Man's Hollow Conservation Area.

Another organization that may be interested in a similar partnership is the Emerald Trail Corps. The Emerald View Trail Corps was established by the Mount Washington Community Development Corporation to support and expand the development of Mt. Washington's Emerald View Park. Informal discussions during the course of this project indicate there may be an opportunity for the Emerald Trail Corps to partner with the Allegheny Land Trust to assist with the implementation of the proposed improvements to the Dead Man's Hollow Conservation Area trail system.

*For more information on the **Emerald Trail Corps of the Mt. Washington Community Development Corporation** contact:*

*Thomas Guentner, Emerald Trail Corps Program Manager  
Mount Washington Community Development  
Corporation  
301 Shiloh Street  
Pittsburgh, PA 15211  
412.481.3220  
thomas@mwcdc.org*

A third option is the Keystone Trails Association Summer Trail Crew. As the lead organization for the hiking community in Pennsylvania, the Keystone Trails Association leads five day trail crew sessions throughout the state.

*For more information on the **Keystone Trails Association's Summer Trail Crew** contact:*

*Keystone Trails Association  
101 North Front Street, 3rd Floor  
Harrisburg, PA 17101  
717-238-7017  
info@kta-hike.org*

As these discussions progress we recommend that any arrangement be formalized in writing through a Memorandum of Understanding (MOU) which specifies the expectations of each party before any work begins.

A MOU defines expectations and establishes quality control for the trail system. Ultimately, the Allegheny Land Trust, as the owner of the land, will be responsible for the trail system and bear the responsibility associated with its improvement. The following is a sample agreement that was executed between Butler County and PTAG.

**Memorandum of Understanding (MOU)  
between the Pittsburgh Trails Advocacy Group (PTAG) and Butler County, Pennsylvania**

This MOU dated \_\_\_\_\_ establishes and defines the working relationship between the Pittsburgh Trails Advocacy Group (PTAG), a not for profit corporation and Butler County, acting through its Parks Department, in order to support shared objectives of improving recreational opportunities related to park trails within the Butler County park system.

PTAG's purpose is to protect and encourage shared use trail access to the wooded trails in Western Pennsylvania. PTAG is concerned with single track trails used by mountain bikers, equestrians, and hikers. PTAG works with city, county, state, and private landowners to ensure that all trails are approved by the landowner or land manager and constructed and maintained to International Mountain Bike Association (IMBA) standards, with minimal impact on the environment, recognizing that the larger mission of creating sustainable trails is the preservation of Western Pennsylvania's forests, lakes, rivers, and streams. PTAG works to educate all users on responsible trail use with the goal of fostering improved relations among landowners and trail users. PTAG has been providing this service to the western Pennsylvania region since 2001.

Butler County recognizes that trail use, to include mountain biking, is a healthy, popular, and authorized recreational choice in county parks for the citizens of Pennsylvania and is consistent with the Parks Department's mission to enhance the quality of life and well being of Butler County residents through a regional parks system that: (1) Provides quality landscapes, facilities, programs, and special events that meet county-wide needs for leisure and recreation on behalf of the diverse segments of the community; (2) Conserves natural and cultural resources while offering educational programs and opportunities for hands on experience; (3) Forms an integral part of a county-wide system of open spaces, greenways, and trails; (4) and Contributes to the economic vitality of the County.

Butler County is concerned about public physical fitness and health, encourages programs that increase interest in, enthusiasm for, and participation in health and fitness. Additionally, Butler County considers the parks to be an important natural resource and recognizes the absolute need for sustainable and purposeful trails to enable its citizens to respect and protect the land.

**PTAG's Responsibilities:**

1. PTAG agrees to develop and supply a volunteer base for the repair, maintenance, and installation of multi-use trails. PTAG may also solicit volunteers from other user groups to participate in trail work. Butler County remains responsible for maintenance of all improved surface (gravel) roads and fire roads, for which PTAG will have no responsibility.
2. The PTAG Board of Directors will designate a steward team or representative for each park in which PTAG is asked to undertake trail work. The park steward will coordinate trail projects with the PTAG Board of Directors and the Parks Director, or his or her duly authorized representative. PTAG will supply volunteers with hand tools of the trail building trade. The appointed park steward shall have been trained in IMBA sustainable trail building techniques by participating in a International Mountain Bicycle Association (IMBA) Trail Care Crew Workshop/Trail Building Workshop (IMBA Trained).

3. An IMBA Trained PTAG representative will provide training and safety instruction before each work session and lead each trail work crew. PTAG will also provide a first aid kit on all work details.
4. Trail work performed by PTAG includes, but is not limited to, the following: corridor clearing, tread improvement, water and erosion control measures, installation of crib walls and rolling crown switchbacks, bridge building, culvert installation, step installation, installation of trail guide structures, signing and blazing of trails, armoring and/or hardening of water crossings, and closure or restoration of existing trails.
5. PTAG may also propose the design and installation of new trails where appropriate, or as requested, subject to PTAG Board approval. New trail construction must be approved by the Parks Director in writing. New trails will be sustainable, purposeful, and of the highest quality possible so as to improve the user experience, improve trail connectivity, and reduce user conflict. The designated PTAG steward will submit any new trail proposals to the PTAG board for approval prior to submission to the Parks Director. All new trail design layouts will minimize the impact on natural resources while enhancing the user experience.
6. PTAG agrees to maintain, inspect, repair, insure, and in all respects service the Freeride and Bike Skills Area as authorized by this MOU. PTAG may also install future freeride trails and features subject to Parks Director written approval. The a Freeride and Bike Skills Area, and the natural and artificial features located thereon, shall remain the property of Butler County, and as such, the County reserves the right to perform the same services listed above when deemed necessary in its discretion. The Freeride and Bike Skills Area shall enjoy the same rights and privileges to exist and remain as do any other similar county park feature. Evidence of satisfactory insurance with notice of cancellation to County will be provided. Butler County will be covered under the insurance as "additional Insured".
7. Recognizing that PTAG may not necessarily service all trails within the County park system, PTAG will maintain a log of all trails built, repaired, or maintained, so as to ensure it can provide meaningful comment on any given proposed trail event.

### Butler County's Responsibilities:

1. Butler County authorizes PTAG to perform trail work on all trails located within the Butler County Park system.
2. From time to time Butler County may also supply tools and personnel where appropriate or requested to assist PTAG with trail work.
3. The County authorizes the installation of a Freeride and Bike Skills Area location in mutually agreed upon location by PTAG and the Parks Director.
4. In order to ensure that all PTAG serviced trails are used and preserved in accordance with PTAG's mission, a PTAG representative, as appointed by the PTAG Board, is invited by Butler County to be present at any and all County meetings regarding proposed trail events in order to offer comment on proposed trail use in an advisory capacity. Under no circumstances will PTAG act as an approval authority for any proposed trail event within the park system.

5. If any provisions of this MOU are determined to be inconsistent with existing laws, regulations, or directives governing the signatories, then only those provisions of this MOU not affected by an inconsistency shall remain in full force and effect.
6. Any fiscal or funding arrangements are not governed by this MOU, rather arrangements involving contribution or reimbursement of funds will be outlined in separate agreements as authorized by the appropriate statutory authority. PTAG agrees to maintain liability insurance for all PTAG serviced trails within the County park system.
7. This agreement will remain in effect for five (5) years at which time it will continue on a year to year basis unless specifically renewed or modified by agreement of all parties. This agreement may be amended at any time by agreement of all parties, or it may be terminated unilaterally by any party. PTAG also reserves the right to decline trail work requests for good cause without affecting the validity of this agreement. This MOU will constitute a permit for PTAG to perform work as specified by the MOU.

By:

**Pittsburgh Trails Advocacy Group**

**Butler County Parks & Recreation Department**

\_\_\_\_\_  
President

\_\_\_\_\_  
Butler County Parks and Recreation Director

**Butler County Commissioners**

\_\_\_\_\_  
William L. McCarrier

By following best practices for trail design, construction and maintenance, the Allegheny Land Trust will put forward a good faith effort to defend any potential liability that arises from trail development within the Dead Man's Hollow Conservation Area. Allegheny County instituted a similar partnership in Allegheny County Parks. Since the partnership has been developed there have been no liability claims related to mountain biking trail use in the Allegheny County Parks system.

Once trails are flagged and necessary permits are obtained, trails can be constructed. Before the trails are re-opened to the public they should be marked/signed, and a corresponding map should be developed to serve as a guide to those desiring to use the trails.

### **Funding for Trail Development**

The majority of the costs associated with the construction of hiking and mountain bicycling trails are labor costs. Little material is required; however, given the trails are cleared, benched and constructed with hand tools, they are labor intensive. Materials expenses are greater where trail access and trailhead facilities are constructed. Therefore, if the Allegheny Land Trust is going to partner with a non-profit organization and/or volunteers to construct the trail, we recommend the development of a plan of action to capitalize on matching in-kind services provided with grant dollars.

Most funding programs and grant opportunities require matching in-kind services to be performed after funding is announced and committed. 'Banking' in-kind services from prior efforts is typically

not allowed with state grants. Therefore, trail construction needs to be timed with grant writing and funding efforts in order to maximize the ability of securing cash matches to in-kind labor donations.

Specific funding sources are detailed in Chapter 3: How Do We Get There?

# Conservation Planning

Allegheny Land Trust's mission is to serve as the lead land trust conserving and stewarding lands that support the scenic, recreational and environmental well-being of communities in Allegheny County and its environs. The Dead Man's Hollow Conservation Area encompasses 434 acres of highly significant wildlife habitat in Lincoln and Liberty Boroughs and Elizabeth Township. The Preserve is the largest privately protected conservation area in Allegheny County.

Although property in Dead Man's Hollow was initially acquired by ALT in 1996 the full scope of its significance as a premier conservation landscape in Allegheny County was not well known until the preparation of this management plan. Although rare, threatened or endangered species were not found in the Hollow, it does contain rich resources that are significant at the county level. These resources include breeding interior forest birds, calcareous soils that support an abundant wildflower population and a regenerating native forest.

With this in mind we recommend that ALT seriously consider opportunities to expand the Dead Man's Hollow Conservation Area holdings either by obtaining additional conservation easements or fee simple acquisitions of appropriate parcels adjacent to the current holdings.

## Land Preservation

During the course of this planning process, adjacent properties were identified and evaluated for their conservation value based on: 1) watershed protection value, 2) forest conservation value, and 3) wildlife/habitat conservation value. When ALT desires to expand the conservation of Dead Man's Hollow Conservation Area they should approach land owners to discuss the options. Options to expand the conservation area include: conservation easements, bargain sales, and/or fee simple acquisitions. Land will not be acquired from unwilling land owners.

The following is a prioritized list of adjacent parcels that were evaluated followed by a map indicating the locations of the properties and their relationship to the Dead Man's Hollow Conservation Area.

Conservation Value of Adjacent Lands	Watershed Protection Value	Forest Conservation Value	Wildlife/Habitat Conservation Value	Total Conservation Value	Priority	Recommended Protection	Size in Acres
Boro of Liberty 0556-D-00032-0000-00	5	5	5	15	S	E	51.19
Patrick Leroy & Jean Ross (W) 0655-M-00367-0000-00	5	5	5	15	S/M	E/A	2.04
Pennsylvania American Water Company 0556-M-00360-0000-00	5	3	3	11	S	E	11.82
Demchak David A 0655-G-00083-0000-00	5	3	3	11	S/M	E/A	7.75
Rosier Charles & Helen (W) 0655-M-00323-0000-00	5	3	3	11	S/M	E	5.51
Borcein Joe 0655-M-00367-0000-00	3	5	3	11	S/M	E/A	0.52
Yates Street Hillside Parcels Lindsay Michael R & Lorraine 0655-B-00069-0000-00	1	5	5	11	S/M	PE	
Briek Donald & Jean (W) 0654-P-00330-0000-00	3	3	3	9	L	E	13.70
Fitzgerald Carlton Grant 0654-S-00169-0000-00	1	5	3	9	L	E	2.00
Dura Bond Coating Inc. 0555-K-00215-0000-00	0	5	3	8	L	E/A	4.59
James & Blanche (W) 0654-R-00266-0000-00	1	3	3	7	L		1.76
Jormac Inc 0556-K-00041-0000-00	1	3	3	7	L		
Pentecostal Temple Dev Corp 0655-H-00079-0000-00	3	1	1	5	L	E/A	0.96
Johnson, David H 0556-K-00014-0000-00	3	1	1	5	L	E	18.00
Johnson David T & Bernice P 0556-P-00261-0000-00	1	1	1	3	L	E	0.96
Curry Hollow Land Company 0654-P-00235-0000-00	1	1	1	3	L	E	0.42
					L		8.6

## Safety, Protection of Life & Property and Search & Rescue

Safety is likely not to be foremost on people's minds as they come to visit Dead Man's Hollow Conservation Area. That said, the conservation area must be safe for visitors, provide for the preservation of life, protection on property (public and private) and allow emergency service responders to respond to incidents on the property as quickly as possible.

At the same time, safety must be balanced with the opportunity to explore the trails, natural habitat and environs and the archeological resources of the Bowman Brick Works/Union Sewer Pipe Company. It is the responsibility of the Allegheny Land Trust to determine where the fulcrum of balance falls between safety and the user's willingness to visit Dead Man's Hollow Conservation Area. If the property is managed to eliminate every possible hazard or risk, the area will not offer challenges and subsequently not be very interesting and desirable to potential visitors. However, if it is not managed with reasonable safety measures, accidents, injuries, and catastrophe may eventually limit access by the public.

This section of the plan suggests considerations that need to be evaluated and recommendations that should be implemented to assure a facility that provides a high level of safety within an appealing, challenging and adventuresome natural environment.

### Safety Policy

A written safety policy statement is essential to making safety a top priority for Dead Man's Hollow Conservation Area. Safety and risk management can only be effective if it is known and supported at all levels of the agency. The Allegheny Land Trust board, staff and volunteers responsible for implementation of the safety efforts know and understand what is expected of them.

A written safety policy is an effective tool to communicate to staff, volunteers and to the general public the specific purposes of the safety program. It provides a general outline of what actions staff and volunteers must take to make the program successful.

The safety policy should include the following elements:

- ✓ A simple, clearly written description of the philosophies and objectives of the safety program.
- ✓ Adoption as official policy by the Allegheny Land Trust.
- ✓ Strong support from the Allegheny Land Trust Board and staff.

### Safety Planning Team

Establishing an emergency preparedness plan for Dead Man's Hollow Conservation Area is best accomplished by those who have the greatest expertise and interest in such a plan. Therefore emergency service providers and law enforcement agencies should be integrally involved in the development of the safety management plan for Dead Man's Hollow Conservation Area. They, along with Allegheny Land Trust board members, staff and volunteers should be appointed to serve as the Dead Man's Hollow Conservation Area Safety Planning Team. The Allegheny Land Trust will appoint the Team.

### *Safety Planning Team Responsibilities*

- ✓ Develop emergency procedures.
- ✓ Develop safety training for staff, volunteers and visitors.
- ✓ Identify an emergency access to all areas of the property.
- ✓ Assist in identifying the locations of helipads.
- ✓ Create a Risk Management Plan.
- ✓ Develop emergency response plans for all potential situations.
- ✓ Establish a search and rescue plan.
- ✓ Develop a plan for regular mock accidents and drills to ensure emergency preparedness of all appropriate agencies.

DCNR Bureau of State Parks uses an emergency plan outline that is provided for each State Park to develop its own emergency plan. This outline could provide a good basis for the beginning of such a plan for Dead Man's Hollow Conservation Area. The Allegheny Land Trust should contact DCNR to acquire a copy of the outline.

The Team should meet at least semi-annually to review the plan and analyze all accidents and incidents on the property and determine if adjustments need to be made in the response plan. They should also assure that scheduled training and response drills are being conducted as required or recommended.

During the planning process the Lincoln Borough Police Chief agreed to co-chair a committee with a representative from the Allegheny Land Trust to establish the safety team and begin to formalize a Safety, Protection of Life & Property and Search & Rescue Plan for the Dead Man's Hollow Conservation Area. During this meeting, it was suggested that the following emergency responders be invited to participate in this process:

Police Departments	Fire Departments	EMS Providers	Hospitals	Others
Lincoln Borough Liberty Borough Elizabeth Township Port Vue Borough Glassport Borough City of McKeesport North Versailles Borough	Lincoln Borough Liberty Borough Elizabeth Township Port Vue Borough Glassport Borough	Elizabeth Township EMS Lincoln Borough White Oak Borough	UPMC McKeesport Jefferson Regional	Urban EcoStewards Friends of Dead Man's Hollow GAP Trail Monitors Community Volunteers

### **Volunteer Monitoring Program**

A volunteer monitoring program team should be established to assist with a variety of safety and security functions on the property. Many similar teams across the country require a nominal membership fee, as well as requiring members to commit to attending safety-training courses, acquiring specific certifications in vehicle safety, first aid, CPR, and others.

Volunteer monitors should be trained and/or certified by attending a training class conducted by the Allegheny Land Trust or a representative on their behalf.

Volunteers should be considered as unpaid staff and should be treated as such. They should agree to perform certain functions within the property and commit to the required certification processes.

They should be expected to perform all functions in an exemplary manner and should be held to a higher standard than visitors to the property. Volunteers should be held accountable for their actions.

Volunteers should be available to visitors to provide information and assistance. They should patrol the property looking for persons in need of assistance. They should be expected to identify safety hazards, enforce the rules of the property, report undesired behavior, and respond to accidents or injuries. Visitors should be made aware that the monitors are patrolling the property and serving in the capacity as a member of the volunteer monitoring program.

Team members should be identified by wearing a bright colored t-shirt marked volunteer patrol on the back. A visible presence on the property provides a good deterrent. Volunteers should have radios, cell phones, or other means of communication to report accidents, contact local authorities or summon emergency assistance.

Monitors should keep a record of their time, location(s) and distance monitored during each outing. They will report their monitoring times, locations and distances to their monitoring captain, who in turn will submit monthly reports to the Allegheny Land Trust. Any incident of an urgent nature, such as a trail wash out or fallen tree should be reported to the Allegheny Land Trust at once.

Monitors must be taught to be the eyes and ears for the property, but they should not attempt to undertake enforcement activities as they may escalate. Incidents that are criminal in nature must be reported to the local police department.

The Friends of the Washington & Old Dominion (W&OD) Trail have developed a volunteer patrol handbook. This handbook serves as a good example of a how to establish and document policies and procedures to train, establish, and manage volunteer trail patrols.

The handbook is available here:

[www.railstotrails.org/resources/documents/resource\\_docs/Trail\\_Patrol\\_Handbook\\_2009-v1-5.pdf](http://www.railstotrails.org/resources/documents/resource_docs/Trail_Patrol_Handbook_2009-v1-5.pdf).

### Location Identification and Access for Emergency Services

Two factors are central to any incident response: 1) Locating the scene of the incident, and, 2) Accessing the scene of the incident with personnel and equipment in a timely manner. In addition, location identification and access also shape operations and maintenance activities on the property.

The Emergency Response/Search and Rescue Plan for Dead Man's Hollow Conservation Area identifies proposed locations for emergency response access on the property. They include:

- Public Trailhead Access Locations
  - Boston Hollow Trailhead – accessible from the Yough River Trail
  - Calhoun Road Trailhead
  - Catfish Pond Trailhead
  - Orchard Drive Trailhead

- Potential Emergency Response Only Access Locations
  - Jeffrey Drive – requires access easement with land owner
  - Deer Lane Access
  - Washington Boulevard

Creating vehicular access routes through the property must be carefully considered. The value to EMS response must be weighed against the negative impact to the environment and habitat:

- Placing roads through the property would have negative impacts the conservation values.
- More roads facilitate ATV access, and create the potential for more serious accidents.

- Potential vehicular routes
  - Washington Boulevard to Jeffrey Drive
  - Orchard Drive to Dead Man's Run
  - Calhoun Road to Dead Man' Run
  - Calhoun Road to Deer Lane
  - Yough Road to Calhoun Road

The locations identified above are former logging roads and access former access roads into the property. If the safety team believes it is absolutely necessary to provide access routes into the property these corridors are the only ones that should be considered. Further, access should be minimal, accommodating a side-by-side UTV rescue vehicle at the most.

It is Lincoln Borough's desire to obtain a side-by-side rescue vehicle or ATV tow-behind rescue basket for the property.



- Potential Air Evacuation Landing Zones
  - Boston Ballfields
  - Catfish Pond Trailhead
  - Orchard Drive Trailhead
  - Bellbridge Soccer Fields

Further, we have developed a location identification system for the property which is also shown on the plan. Features include:

- Trail Naming Convention
- Trail Distance Markers, 2/10 mile interval
- Trail Intersection Markers – Lincoln Borough Police Department prefers the markers to be a bright color, or bright colored letters on a contracting post
- Interpretive Sign Location Identification

When the markers and signs are placed on the property, a corresponding map of the property identifying the locations of each sign should be provided to and be on file with the emergency service providers. With such a map, they can quickly locate the scene of the incident, based on information furnished in the report, and determine which access point will provide personnel and equipment with the nearest access to the scene of the incident.

With this location identification system in place, visitors to the property should be able to identify, accurately, their general and specific location on the property by referencing which trailhead they entered onto the property, which trail they are located on, and the marker/sign nearest to their location.

If/when marker and sign locations change updated maps must also be provided to emergency service providers.

### Emergency Service Providers

The following Emergency Services Providers should be invited to participate in safety, emergency response, and search and rescue planning for Dead Man's Hollow Conservation Area.

#### Police Departments

Lincoln Borough Police Department  
45 Abes Way  
Elizabeth, PA 15037  
(412) 751-7155

Liberty Borough Police Department  
2921 Liberty Way  
McKeesport, PA 15133  
(412) 678-0606

Elizabeth Township Police Department  
522 Rock Run Road  
Elizabeth, PA 1507  
(412) 751-3399

Port Vue Borough Police Department  
1194 Romine Avenue  
Port Vue, PA 15133  
(412) 672-225

Borough of Glassport Police Department  
440 Monongahela Ave  
Glassport Pa 15045  
911

McKeesport Police Department  
201 Lysle Boulevard  
McKeesport, PA 15132  
(412) 675-5016

North Versailles Police Department  
1401 Greensburg Pike  
North Versailles, PA 15137  
(412) 823-9354

***Fire Departments***

Lincoln Borough Volunteer Fire & Rescue  
Company No. 1  
4312 Liberty Way  
Elizabeth, PA 15037  
(412) 751-6701

Liberty Boro Volunteer Fire Department  
Rear Haslage Street  
Liberty Boro, PA 15233  
(412) 672-1820

Central Volunteer Fire Company of  
Elizabeth Township  
425 Scenery Drive  
Elizabeth, PA 15037  
(412) 751-9712

Vigilant Hose Company #1 of Port Vue  
1800 Romine Avenue  
Port Vue, PA 15133  
(412) 664-7828

Citizen's Hose Co. #1 of Glassport  
523 Allegheny Avenue  
Glassport, PA 15045  
(412) 672-2025

***Emergency Medical Providers***

Elizabeth Township Area Emergency  
Medical Services  
911 Swiss Way  
Elizabeth, PA 15037  
(412) 751-0919

White Oak EMS – Station 645  
2800 State Street  
White Oak, PA 15131  
(412) 672-3055

Lincoln Borough Volunteer Fire & Rescue  
Company No. 1  
4312 Liberty Way  
Elizabeth, PA 15037  
(412) 751-6701

STAT MedEvac  
10 Allegheny County Airport  
West Mifflin, PA 15122  
(412) 460-3000

***Nearest Hospitals***

UPMC McKeesport  
1500 Fifth Avenue  
McKeesport, PA 15132  
(412) 664-2000

Jefferson Regional Medical Center  
565 Coal Valley Road  
Clairton, PA 15025  
(412) 469-5000

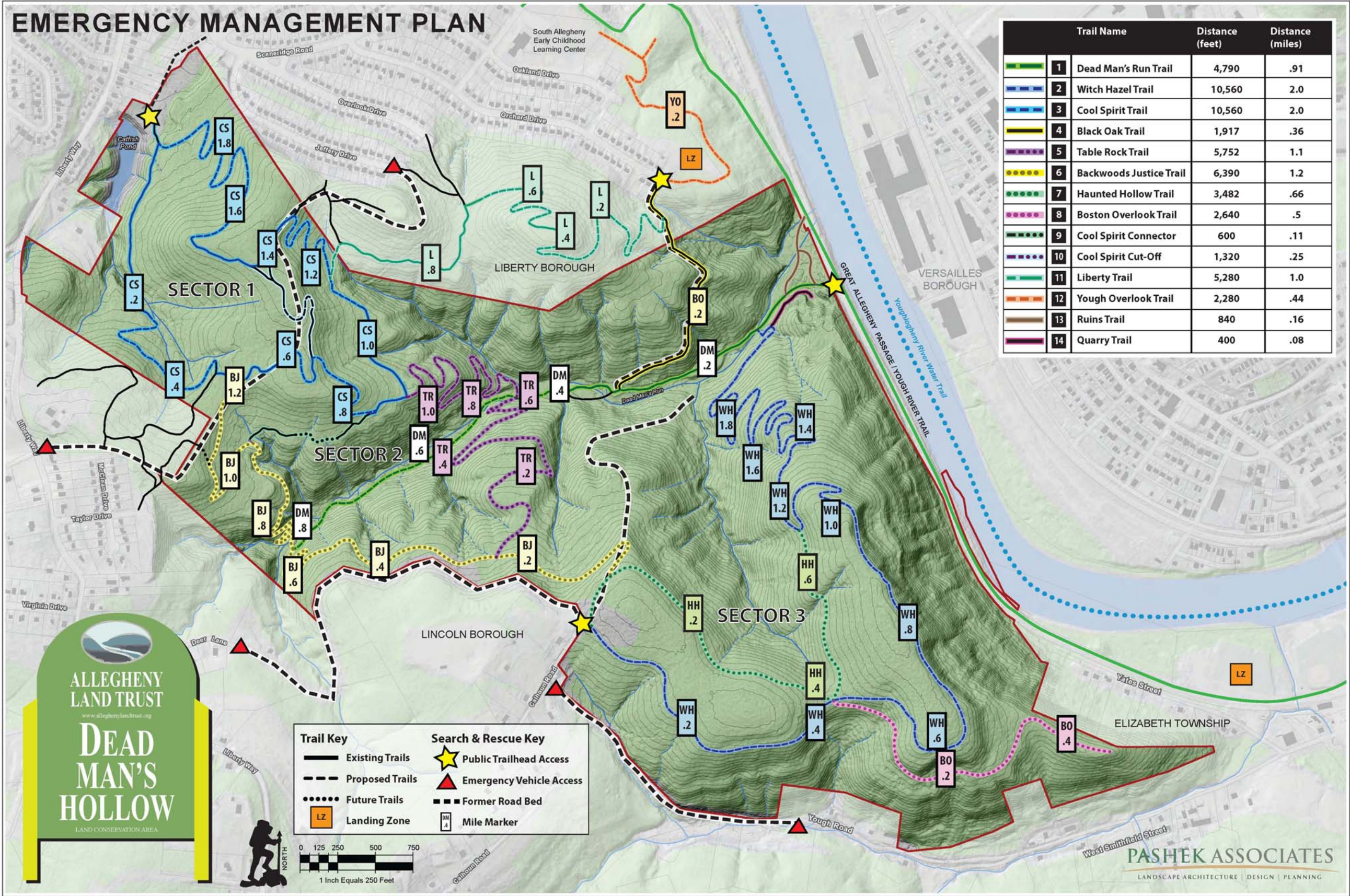
## **Emergency Response/Search & Rescue**

The emergency response/search & rescue plan formalizes and documents standard operating procedures, roles and protocols of and between the various emergency service providers that respond to a given incident. The goal of a search and rescue plan is to provide as much information at the on-set of an incident to allow responders to swiftly and efficiently respond and provide resources to the scene. Further, it provides resource checklists, contact information, resource locations, and other information that may be required during search and rescue operations so they are immediately in the hands of the search and rescue manager when an incident is reported.

Search and rescue plans are specific to site/location. We recommend the emergency services providers and representatives of the Allegheny Land Trust develop a specific search and rescue plan for Dead Man's Hollow Conservation Area.

The PA DCNR Bureaus of State Parks and Forestry have adopted a SAR (Search and Rescue) Resource Plan. It is a manual for developing and administering a search and rescue plan for each park location or complex. This document was provided to the Allegheny Land Trust and Lincoln Borough Police Chief during this planning process and should serve as a the basis for developing an SAR plan specific to Dead Man's Hollow Conservation Area.

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## **Security**

The Allegheny Land Trust should maintain an appropriate plan for security of the property. The plan should address three primary areas of security: 1) prevention of undesired access; 2) protection of adjacent properties; and 3) safeguarding people and possessions.

### **Preventing Undesired Access**

It goes without question that ATVs and off-road motorcycles have used the property against the owner's wishes. Unfortunately, restricted vehicular access to the property, the size and location of the property and the limited staff inhibits the ability for successful enforcement. Therefore, the Allegheny Land Trust has enrolled the property in the Pennsylvania Game Commission's Cooperative Forest-Game Program to provide enhanced property protection and heightened awareness to bolster other activities.

The Allegheny Land Trust should work with local law enforcement agencies to get commitments to strictly enforce existing state and local laws concerning ATV and off-road motorcycle use of local roads and enforce trespassing laws against violators in the Dead Man's Hollow Conservation Area.

During the planning process the Lincoln Borough Police Department indicated they currently do not have the appropriate equipment to properly patrol/enforce trespassing/criminal activities on the property. They discussed the possibility of having the Allegheny Land Trust work with them to apply for grant funding to obtain a side-by-side UTV equipped for search and rescue.

In addition to the existing gate at the Yough River Trail entrance into Dead Man's Hollow Conservation Area, this plan recommends installation of fencing and other barriers, as necessary, in key places that are known to be locations of access by unauthorized riders. ATVs and off-highway motorcycles are specifically design to travel in all types of terrain and in places that are challenging. The nature of the vehicles allow them to simply travel to other places that are not fenced to prevent access. The fences will establish the fact that access is not permitted. In places where fencing is not installed, boundary markers should be placed along the property's boundaries as necessary to identify the boundary and indicate no trespassing. Posting these locations also aides local police departments in the enforcement and prosecution of those who trespass at these locations.

### **Preventing Access to Adjacent Private Property**

In addition to fencing to prevent unlawful access to Dead Man's Hollow Conservation Area, visitors should be deterred from intentionally or unintentionally traveling onto private property surrounding the Hollow. There are several trails that enter/exit Dead Man's Hollow Conservation Area from private property. We recommend the Allegheny Land Trust meet with these land owners to determine whether they are interested in providing a trail easement through their property to allow this access. If they are unwilling the trail should be closed to public use. When the trails are closed and marked as such, users will have to make an intentional decision to travel into restricted areas of the Hollow to access surrounding property. Signs should be posted at the perimeter indicating that visitors are approaching private property and that trespassing onto the property is prohibited. Such signs will allow local police departments to enforce this restriction.

These methods will not assure unlawful trespassing onto private property but will establish the fact that it is prohibited. Assistance will be needed from surrounding property owners to assure that their private properties are protected from unlawful use.

Education will also be of great benefit to protecting the property of surrounding land owners. Visitors to the property should be educated to understand the rights of private property owners and should be trained to be respectful and considerate. Users should be encouraged to obey all posted signs and rules including perimeter signs posted as “No Trespassing”. This should be a part of all training programs provided at the property and should be included in a property safety and information guide.

### **Protection of Life and Property**

There will be many issues in protecting people, including staff, volunteers, visitors, and guests. Security concerns will include vandalism and theft of both Dead Man's Hollow Conservation Area and private property. Such concerns include issues of disputes and disagreements, illegal activity, disobeying of property rules and regulations, vehicle, parking, and traffic issues, accidents and emergencies, and violence.

All staff and volunteers should be trained in matters related to security. This includes:

- An awareness of security issues.
- A clear understanding of property rules and regulations.
- An understanding of the differences between violating park rules and breaking laws.
- Methods of dealing with difficult people.
- Ways to defuse difficult situations.
- Knowing when to call law enforcement officials.
- Knowing and understanding the safety and security plan.
- Knowing the consequences of violations.

### **Consequences for Violating Property Rules and Regulation**

The Allegheny Land Trust should consider developing a policy that establishes consequences for violating rules and regulations that are not enforceable by local authorities under the criminal code. Options to consider in the policy include:

- Verbal explanation of the rule and warning not to violate again.
- Written warning not to violate again.
- Short-term suspension of property privileges.
- Long-term suspension of property privileges.
- Permanent termination of privileges.
- Referring criminal and trespassing or other criminal violations to local police for investigation and legal follow through.

The Safety Planning Team should develop policies and procedures for monitoring parking areas, trails and use areas of the property to enhance security of all areas of the property. Staff and volunteers will need to watch for issues of security as they go about their routines and report any suspicious activity to local law enforcement. The rules for the property need to address security measures as well as safety.

Although enforcement begins with staff and volunteers, it will also be necessary to utilize law enforcement agencies to assist in addressing those incidents that violate the law. The Allegheny

Land Trust should meet with the local police department to discuss responding to incidents, accidents, and emergencies.

### **Communication Protocol**

A communication protocol also needs developed to provide for quick response to incidents on the property. If a report is made to local authorities, staff or volunteers, there needs to be a communication protocol to allow contact with the appropriate person to respond to the incident. Cell phone service is generally adequate and available throughout most of the property. Many people carry cell phones for personal use. This provides an easy way for users to communicate when incidents occur. A phone number should be posted in a variety of locations including kiosks, signs, brochures, maps, and in an information guide telling visitors how to report an incident or accident.

The Lincoln Borough Police Department suggests that a 911 call box be located at one or more of the trailheads.

### **Incident Reports**

Incident reporting is vital to understanding, responding to and planning for all types of incidents. Most incidents deal with safety or security of staff, volunteers or visitors. A copy of the PA DCNR Incident Report Form is included in this section. Criminal incidents reports will be completed by, and filed with, the local police department.

Incidents should be digitally tracked through the same or similar system as outlined earlier in this chapter. This will allow management to track locations and types of incidents to identify trends that need to be addressed. Recurring types of incidents may indicate the need for better education of visitors to the property, a change in rules or enforcement, or program adjustments. Incidents that continually occur in certain locations may suggest the need for additional security measures such as trail re-routes fencing or increased patrols.

Incident Reports also provide a written report that may be valuable to ALT in case of future litigation dealing with a particular incident. It is therefore essential that the reports provide correct and detailed information about each incident.

PA DCNR Incident Report Forms are located in Appendix 5.

### Risk Management Plan

A risk management plan for Dead Man's Hollow Conservation Area is of the highest importance to assure the safety of the users and to minimize the liability exposure of Allegheny Land Trust staff and board members.

When property and programs are provided for public use, every precaution should be taken to ensure user safety. Documentation of all risk management procedures is essential, not only for good record keeping and maintenance scheduling, but also to provide evidence in case of legal action.

Every area and program provided within Dead Man's Hollow Conservation Area should have its own risk analysis and management plan. This risk analysis should include:

1. Identification of the risk. Identify what it is about the program or area that provides a risk. Identify the anticipated frequency of injury or loss associated with the risk. Determine how frequently an incident is likely to occur. Is likely to happen frequently, occasionally, or rarely?
2. Assessment of loss potential. Assess what type of injury is likely from the risk. Is it likely to cause fatal or severe injuries, major or minor injuries or simple injuries? The same questions should be asked about potential financial implications of the risk. Is the potential financial loss so critical that Dead Man's Hollow Conservation Area may need to be closed to the public? Or would the loss be moderate or minimal?
3. Determination of the response. Determine what changes could be made to minimize the risk. Will there need to be major changes made in the program or use areas? Will minor modifications of the program or use area reduce the risk sufficiently? Is the risk so great that you should not provide the program or use area? Is the risk limited enough that no change is necessary?
4. Identify what can be done to minimize or limit the risk. Should signs be posted; should the ages be limited; should trail grades be changed? Should railings of fences be installed? There are dozens of possible adjustments that can be made to limit the risks of a facility.

The potential risk and impact of the risk should be analyzed against the policies of the Allegheny Land Trust to determine its appropriateness at Dead Man's Hollow Conservation Area. This type of assessment and comparison will strengthen the management of the risks associated with this type of area. This should not be a one-time analysis, it should be ongoing. As risk is observed within any use area or program, it should be assessed and tracked to determine if changes are needed. Additionally, ALT's response should be documented.

Staff, paid and volunteer, should be integrally involved in the ongoing risk management within the Dead Man's Hollow Conservation Area. Staff should be trained in safety procedures and should be expected to be constantly aware of the condition of use areas. Staff should be trained to recognize and post unsafe conditions, prevent the use of unsafe equipment and facilities, and report safety hazards, in writing, so they can be remedied in a timely manner.

Regularly scheduled safety inspections should be conducted by trained staff, paid or volunteer at every use area and trail available for public use. Written work orders should be issued for needed repairs and completed work should be documented. Adequate liability insurance must be kept up-to-date. As new programs and use areas are developed, liability insurance coverage should be revised to reflect new conditions. Regular communication with the insurance carriers is necessary. Both risk to users and insurance costs may be reduced if all offerings can be brought into compliance with current safety standards and guidelines.

The risk management functions should be the responsibility of the Land Protection Director. He or she should work closely with the safety committee of the Board to assure quick and effective responses to safety hazards. The committee and Land Protection Director should meet at annually, at a minimum, to discuss and amend the Risk Management Plan as necessary.

### **Routine Trail Assessments**

Trails and use areas should be assessed for safety and maintenance deficiencies periodically during the peak season. Assessments should be conducted in such a way that safety hazards are corrected as soon as possible. Hazards or deficiencies can be corrected when they are found. If hazards or deficiencies cannot be corrected immediately, the location, date, time, and type of hazard should be recorded, reported and scheduled for repair.

A record of assessments and corrective actions should be kept. This will allow staff to identify trends in types and locations of repairs and provide a written record of corrective actions made. Such records will provide an added level of protection in liability for accidents or injuries caused by trail deficiencies.

The ***Pennsylvania Trail Design & Development Principles: Guidelines for Sustainable Non-Motorized Trails*** proposes a Trail Assessment Form which is on the pages. This form can be adapted for use in the Dead Man's Hollow Conservation Area.

## Trail Assessment Form

**Trail Name** \_\_\_\_\_ *Begin Segment* \_\_\_\_\_ identified by mileposts ☐  
*Location* \_\_\_\_\_ *End Segment* \_\_\_\_\_ or coordinates ☐  
*County* \_\_\_\_\_ *Total Trail Length* \_\_\_\_\_ Segment Length \_\_\_\_\_  
*Conducted by* \_\_\_\_\_ *Date* \_\_\_\_\_

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**Designed Use** ☐ Hike / Pedestrian ☐ Bike ☐ Mountain Bike ☐ Equestrian  
☐ Cross Country Ski ☐ Snowshoe ☐ ATV ☐ Snowmobile  
☐ Others, \_\_\_\_\_

**Level of Difficulty** ☐ Easiest ☐ More Difficult ☐ Most Difficult

---

**Trailheads & Access Points** *Name* \_\_\_\_\_ *Location* \_\_\_\_\_ identified by milepost ☐  
*Latitude* N \_\_\_\_\_ or coordinates ☐  
*Longitude* W \_\_\_\_\_

---

**Notes**

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**Trail Tread / Surface** *Condition* ☐ Good ☐ Fair ☐ Poor ☐ Needs Improvement

*Materials* \_\_\_\_\_ *Average Width* \_\_\_\_\_, min. \_\_\_\_\_, max. \_\_\_\_\_

*Grade* \_\_\_\_\_% *Cross Slope* \_\_\_\_\_%

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**Notes**

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**Drainage** ☐ Drains properly ☐ Draining onto or across trail surface  
☐ Water staying on trail ☐ Needs drainage structure

*Bridges and Culverts* ☐ Good ☐ Fair ☐ Poor ☐ Cleanout

*Dips* ☐ Good ☐ Fair ☐ Poor ☐ Cleanout

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**Notes**

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### Road / Railroad Crossings

*Condition* ☐ Good ☐ Fair ☐ Poor ☐ Needs improvement

*Sight Lines* ☐ Good ☐ Fair ☐ Need to prune ☐ Unsafe

*Accessible (Note Exceptions)* \_\_\_\_\_

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**Notes**

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## Trail Assessment Form

**Trail Name** \_\_\_\_\_ *Begin Segment* \_\_\_\_\_ identified by mileposts ☐  
*Location* \_\_\_\_\_ *End Segment* \_\_\_\_\_ or coordinates ☐  
*County* \_\_\_\_\_ *Total Trail Length* \_\_\_\_\_ Segment Length \_\_\_\_\_  
*Conducted by* \_\_\_\_\_ *Date* \_\_\_\_\_

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### Adjacent Land Uses (Check all that apply)

☐ Forest ☐ Farm ☐ Residential ☐ Commercial ☐ Industrial ☐ Encroachment

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### Notes

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### Historical and Other Structures

*Condition* ☐ Good ☐ Fair ☐ Poor ☐ Needs Improvement  
☐ Needs to be replaced ☐ Needs to be cleared out

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### Notes

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### Signage (includes trailhead and reassurance markings, blazes, etc.)

*Blaze / Marking Color or Style* \_\_\_\_\_

*Overall Condition* ☐ Good ☐ Fair ☐ Lacking ☐ Needs Maintenance

*Regulatory* ☐ Good ☐ Fair ☐ Lacking ☐ Needs Maintenance

*Wayfinding* ☐ Good ☐ Fair ☐ Lacking ☐ Needs Maintenance

*Interpretive* ☐ Good ☐ Fair ☐ Lacking ☐ Needs Maintenance

*Wooden / Routed* ☐ Good ☐ Fair ☐ Lacking ☐ Needs Maintenance

*Reassurance Markings* ☐ Good ☐ Fair ☐ Lacking ☐ Needs Maintenance

*Intersections* ☐ Good ☐ Fair ☐ Lacking ☐ Needs Maintenance

*Pavement Markings* ☐ Good ☐ Fair ☐ Lacking ☐ Needs Maintenance

*Others (fiberglass, etc.)* ☐ Good ☐ Fair ☐ Lacking ☐ Needs Maintenance

*Replace Signs:*

### Notes

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## Trail Assessment Form

<b>Trail Name</b> _____	<i>Begin Segment</i> _____	identified by mileposts <input type="checkbox"/>
<i>Location</i> _____	<i>End Segment</i> _____	or coordinates <input type="checkbox"/>
<i>County</i> _____	<i>Total Trail Length</i> _____	<i>Segment Length</i> _____
<i>Conducted by</i> _____	<i>Date</i> _____	

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**Other Notes and Summary**

**Please return this form to**

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### Reporting Hazards

A system should be in place that will allow staff, volunteers and visitors to report hazards they discover. Each report should be responded to in a timely manner.

As a key component to reporting hazards, staff and volunteers should be trained and required to look for potential hazards when they visit the property. Similar reporting methods can be used for both staff and visitors.

A simple form can be developed to record the hazard location and description, date and time discovered, name of the person reporting the hazard, and a description of the needed repairs. This report could be in the form of a small tablet that is carried by staff and volunteers. There should be a centralized location where the form is to be turned in. A staff person should be assigned to gather the reports at a specified frequency and to determine how the situation needs to be addressed.

The same form should be available on-line where visitors can complete them on their own. It should be clearly described where the forms should be submitted. There could be return boxes located next to the forms or at the main office or security office. A schedule must be established for the collection of the forms. Once collected, the reports should be passed on to the appropriate staff person to determine how to handle the situation.

Signage at trailhead kiosks must encourage and explain to visitors how to report hazards. The signs should indicate that hazards can be reported to staff by completing the on-line Hazard Report Form.

### Information Management

An integrated computerized information management system would provide the best opportunities to administer and track all of the Allegheny Land Trust's holdings. A system should be considered that provides several tracks that can be integrated to function together. Information management systems necessary for Dead Man's Hollow Conservation Area includes financial, maintenance, geographic information systems (GIS), safety and security, and programming.

Several vendors offer information management software for recreation operations. Allegheny Land Trust does not need a sophisticated program, but does need a system to track information related to Dead Man's Hollow Conservation Area as this information also serves as basis for the Risk Management Plan described earlier. Information typically tracked includes:

#### Financial

- General Ledger
- Accounts Payable
- Purchase Orders
- Time Management
- Payroll Accounting

#### Maintenance

- Personnel/Volunteer Management
- Asset Maintenance
- Labor, Equipment, Material & Misc. Expense Log
- Contract Cost Tracking
- Preventive Maintenance Tracking
- Work Requests/Order Processing
- Employee Leave Tracking
- Weather Tracking
- Job/Task Maintenance Scheduling
- Planning, Budgeting & Depreciation
- Inspections & Results

#### Geographic Information Systems

GIS - A Software solution engineered for storing, retrieving and analyzing data about the location and characteristics of all your property information including:

- Site Infrastructure
- Sign Plan & Inventory
- Environmentally Sensitive Areas
- Land Use and Zoning
- Parcel and Ownership Information
- Maintenance Activities
- Site Security and Safety

### Safety and Security

- Integrated GIS and Maintenance systems.
- Tracking of risks.
- Locating risk areas via GPS.
- Identifying high accident areas.
- Tracking accidents.
- Maintaining files.
- Tracking and recording information in the field with a mobile device.
- Brings mobile computing to the maintenance application.
- Work Request - create new work requests in the mobile device with automatic upload to maintenance later.
- Inspection Processing – access and then complete inspection forms in the field as the inspections are being performed. Work orders are automatically created for failed inspection items.
- Work Log/Combination Log Processing - enter scheduled work task data as completed.
- Preventive Maintenance Order, check list view - view updated PM order checklists and details using a mobile device.
- View staff/volunteer work schedules.

## Guidelines for Conservation Easements and Fee Lands of the Allegheny Land Trust

The Allegheny Land Trust has established the following guidelines & policies that address the use of their lands, in conjunction with state and municipal statutes that apply:

- Bikes (2-wheeled non-motorized)
- Campfires
- Camping
- Dogs
- Dumping
- Easement Violations
- Geocaching
- Hiking & Recreational Use
- Horseback Riding
- Hunting & Trapping
- Motorized Vehicles
- Pesticide Use
- Resource Collecting
- Water Activities

Each of these guidelines/policies are located in Appendix 6.

# Chapter 3: How Do We Get There?

## Implementation Workbook

In this chapter you will find tables and information which will assist Allegheny Land Trust and potential partners in tracking progress with implementing the recommendations contained in this plan. ALT staff should frequently review and update these tables as the recommendations are implemented. Further, we recommend the Allegheny Land Trust meet annually with all active and potential partners to review, discuss, update, and revise the implementation strategies, as necessary, to respond to changes in the management, operations, financial and economic development factors.

The Implementation Workbook includes:

- Management Guidelines and Policy Strategies
- Sustainable Trails Strategies
- Conservation Management/Forest & Ecosystem Monitoring Strategies
- Cultural Resource Interpretation & Education Strategies
- Environmental Interpretation & Education Strategies
- Conservation & Preservation Strategies
- Protection of Life & Property Strategies
- Land Protection Strategies
- Marketing, Promotion and Public Outreach Strategies

*"Give me a lever long enough and a fulcrum on which to place it, and I shall move the world."*

Archimedes

Each table includes the following information:

- Description of the implementation strategy
- Priority
  - Immediate... within 0 to 12 months
  - Short..... 1 to 3 years
  - Medium ..... 3 to 5 years
  - Long ..... 5 years plus
- Potential Partners - agencies or organizations responsible for/or potentially able to provide assistance with implementing the strategy

In addition to the implementation workbook tables, this chapter includes a list of potential funding sources that may be able to assist with funding various aspects of implementing the recommendations contained within this plan.

During the planning process many potential partners were identified that may directly or indirectly be able to assist with implementing recommendations and implementation strategies contained in this plan. The following table summarizes the potential partners that were identified and categories where they may be willing to offer assistance in:

## Dead Man's Hollow Conservation Area Management Plan - 2014

Abbreviation	Potential Partners	Enforcement/Security	Organizing/Leading Volunteers	Environmental Monitoring	Environmental Education Programming	Interpretive Education Programming	Land Acquisition/Lease	Cooperative Management Agreement	Trail Building/Inspection/Maintenance	Marketing/Promotion
ATA	Allegheny Trail Alliance									X
ASWP	Audubon Society of Western Pennsylvania			X	X					
BSWP	Botanical Society of Western Pennsylvania		X	X	X					
BSWP	Boys Scouts		X						X	
CM	City of McKeesport									X
ET	Elizabeth Township	X								X
ETHS	Elizabeth Township Historical Society					X				X
ETC	Emerald Trail Corps								X	
FDMH	Friends of Dead Man's Hollow		X							
HHC	Heinz History Center					X				X
HSWP	Historical Society of Western PA					X				X
LB	Liberty Borough	X					X			X
LB2	Lincoln Borough	X								X
LB3	Local Businesses									X
MHS	McKeesport Historical Society		X			X				X
MTC	McKeesport Trail Commission									X
MYTC	Mon-Yough Trail Council		X							X
MWA	Mountain Watershed Association		X	X	X					X
PGC	Pennsylvania Game Commission	X		X				X		
PNHP	Pennsylvania Natural Heritage Program			X						
PPGAP	Petal Pushers of the Great Allegheny Passage		X	X	X					X
PTAG	Pittsburgh Trails Advocacy Group		X						X	
PP	Preservation Pennsylvania					X				X
RTC	Regional Trail Corporation	X						X	X	
RSHC	Rivers of Steel Heritage Corporation					X				X
SPA	Society for Pennsylvania Archaeology - Mon Yough Chapter 3					X				
SASD	South Allegheny School District		X		X	X				X
THRC	Three Rivers Birding Club		X	X	X					
TTP	Trail Town Program					X				X
VO	Venture Outdoors		X		X	X				
WPWPCA	Western PA Water Pollution Control Association			X	X					
WPC	Western Pennsylvania Conservancy			X	X					
YPAP	Young Preservationists Association of Pittsburgh					X				

### Management Guidelines and Policy Strategies

The Dead Man's Hollow Conservation Area is, above all, land dedicated to the conservation of natural systems and landscapes. Activities that take place within the watershed should complement or, at least, not interfere with the conservation goals specified for the project. Within this context, it should be possible to accommodate a number of uses consistent with conservation or protection of important natural and cultural features.

#### **Natural Resource Management**

Active management will be required to accomplish a number of specific goals defined by the management plan. These activities will be designed to restore, protect, or inventory the natural features of the site. With this approach, Dead Man's Hollow Conservation Area should be progressively managed to develop into a mature second-growth forest, providing both an important location of biodiversity and a unique area for ecological study in Allegheny County.

A responsible trail management plan would be remiss if it did not include policies addressing use of the outdoors in a sustainable manner, so that its resources will continue to be available for future generations to enjoy.

#### *Hunting*

ALT recognizes the tradition of hunting within the watershed and surrounding undeveloped areas. The Trust also recognizes that control of white-tailed deer populations may benefit the ecological balance and processes of the watershed.

#### *Recreation*

ALT is committed to the restoration and protection of the natural qualities at Dead Man's Hollow. In keeping with this goal, recreation and education activities that take place at the site should be designed in such a way as to complement these conservation goals. Recreation will be limited to passive activities so as not to impose threats to the natural qualities or user enjoyment of the site.

ALT recognizes that the Dead Man's Hollow Conservation Area is integrally linked with an important recreation resource in the county. Consistent with the passive use designation of the Great Allegheny Passage, walking, hiking, and cross-country skiing are permitted in the Hollow. Use of motorized vehicles is not permitted anywhere on the property.

#### *Biking*

An important consideration under this section relates to the permitting biking on the trails within the Hollow. ALT's policy on the use of any mechanized form of transportation, with the exception of wheel chairs, on trails is that they are not permitted. However, there is a BMX track on the property that is actively used by the local community and local residents occasionally use the trails for mountain biking. Given the amount and length of trails the Hollow will not become a mountain biking destination. Therefore, we recommend ALT consider opening the Hollow's trails up to mountain biking.

#### Goals:

1. Provide bicycle racks at the trailheads.
2. Maintenance of trails that permit biking to allow passage of cyclists (limb heights, etc.)

#### Trails

There are few places like Dead Man's Hollow Conservation Area that provide people with a similar opportunity for hiking on trails through a forest. Remnants of old roads and trails related to past land-uses does provide the basis for an extensive trail system in Dead Man's Hollow. Individuals who use the bike trail and desire to hike are able to park and lock their bikes at the entrance to the property and access the trail system from that point. For those on foot, trailheads are situated both at the lower hollow entrance to the property, as well as one or two strategically located areas in the uplands.

In many cases, old skid roads from logging operations and quarrying activity that were poorly planned are now subject to serious erosion. Such trails will be the focus of recovery efforts and will be avoided as part of the trail system. A number of the existing trails in the valley will be upgraded and a few new trails will be constructed following the guidelines set forth PA DCNR's publication **Pennsylvania Trail Design & Development Principles: Guidelines for Sustainable, Non-motorized Trails**, available here: [www.dcnr.state.pa.us/brc/elibrary/brcpublications](http://www.dcnr.state.pa.us/brc/elibrary/brcpublications).

### Goals:

1. Adopt a sustainable trail management plan.
2. Re-route unsustainable trails to be more sustainable.
3. Develop trail map/brochure and make them available at trailheads and on-line.
1. Sign trails.
2. Complete a trail system at the Dead Man's Hollow Conservation Area. This trail system should include viewing/scenic areas which should also be identified on trail maps.
3. Identify and implement a volunteer trail crew that will monitor all trails two times per year and perform follow-up maintenance.

The GAP Trail serves as an excellent snowshoeing/cross country ski trail in the winter. Overall, the terrain of the Dead Man's Hollow Conservation Area does not lend itself to cross-country skiing; however, a trail along the stream in the bottom of the valley could be used for such activity. This trail would connect directly with the GAP Trail.

### *Camping*

In an attempt to satisfy some of the recreational needs associated with the GAP Trail, ALT may explore the potential of partnering with Elizabeth Township and the Allegheny Trail Alliance to provide a limited number of camping areas to serve GAP Trail users. An area that would serve well would be the Boston Riverfront Park. This area could provide individual campsites and group campsites.

### *Nature Study*

A well-maintained trail system that is comprehensive in its layout will lead individuals interested in bird watching, wildflower identification, or other forms of nature study through a variety of natural communities and habitats at the Dead Man's Hollow Conservation Area.

### *Horseback Riding*

### Leave No Trace

Leave No Trace is a national and international program designed to assist outdoor enthusiasts with their decisions of how to reduce their impacts when they hike, camp, picnic, snowshoe, run, bike, hunt, paddle, ride horses, fish, ski or climb.

The program strives to educate all those who enjoy the outdoors about the nature of their recreational impacts, as well as techniques to prevent and minimize such impacts. Leave No Trace is best understood as an educational and ethical program, not as a set of rules and regulations.

#### Leave No Trace Principles

1. Plan Ahead and Prepare
2. Travel and Camp on Durable Surfaces
3. Dispose of Waste Properly
4. Leave What You Find
5. Minimize Campfire Impacts
6. Respect Wildlife
7. Be Considerate of Other Visitors

## Dead Man's Hollow Conservation Area Management Plan - 2014

Management Guidelines & Policy Strategies						
Strategy Description		Priority	Responsible/ Potential Partner(s)	Projected Cost	Funding	Date Completed
MGP-1	Adopt management plan as the tool to guide decision-making related to Dead Man's Hollow Conservation Area.	I	ALT	\$0	n/a	
MGP-2	Provide management plan to municipalities and meet with each to review ALT's plan for the future of the site.	I	ALT	\$0	n/a	
MGP-3	Meet with all potential partners on an annual basis to determine potential for assistance in implementation.	On-Going	ALT	\$0	n/a	
MGP-4	Annually review management plan to determine progress and establish goals for upcoming year.	On-Going	ALT	\$0	n/a	
MGP-5	Annually review and establish calendar for submitting grant and foundation funding applications.	On-Going	ALT	\$0	n/a	
MGP-6	Apply for funding to implement recommendations of this management plan.	I	ALT	\$100,000	Foundation	
MGP-7	Adopt brand image & message to advocate and market the site.	I	ALT	\$0	n/a	
MGP-8	Adopt Leave No Trace policy.	I	ALT	\$0	n/a	
MGP-9	Adopt trail marking policy & prohibit blazing of trees.	I	ALT	\$0	n/a	
MGP-10	Adopt policy to protect sugar maple/basswood forest and wildflower population from development.	I	ALT	\$0	n/a	
MGP-11	Adopt policy to protect ruins and archeological resources associated with National Register of Historic Places.	I	ALT	\$0	n/a	
MGP-12	Adopt policy prohibiting horseback riding on property.	I	ALT	\$0	n/a	
MGP-13	Change policy to permit bicycles in designated areas/on designated trails.	S	ALT	\$0	n/a	
MGP-14	Approach and discuss with Elizabeth Township and ATA potential for establishing designated camping area in the Boston Riverfront Park.	S	ALT	\$0	n/a	
MGP-15	Publicize hunting policy on-line and at trailheads	Annually - Fall	ALT, FODMH	\$0	n/a	

## Sustainable Trails Implementation Strategies

The trail system within the Dead Man's Hollow Conservation Area should promote the exploration of the property and its resources and provide recreation opportunities, while respecting the sensitive ecological systems. All trails should be sustainable in nature, to limit the trail's impact on the surrounding environment, as well as, reducing their maintenance requirements.

To implement this vision requires those responsible for implementing the recommendations to:

- 1) Understand the ecological resources of the site, as inventoried and described herein.
- 2) Be trained to recognize unsustainable trails, and in the design, construction and maintenance of sustainable trails.

Potential Partners include:

- ☐ Pittsburgh Trails Advocacy Group
- ☐ Emerald Trail Corps
- ☐ Boy/Girl Scouts
- ☐ Mon Yough Trail Council
- ☐ Allegheny Trail Alliance
- ☐ Regional Trail Corporation

## Dead Man's Hollow Conservation Area Management Plan - 2014

Sustainable Trails Strategies						
Strategy Description		Priority	Responsible/ Potential Partner(s)	Projected Cost	Funding	Date Completed
ST-1	Adopt trail standards for construction & signage.	I	ALT	\$0	n/a	
ST-2	Establish & implement volunteer trail monitor & maintenance program.	I	ALT, FODMH, PTAG, KTA	\$5,000 Staff Time	Foundation	
ST-3	Conduct volunteer training programs: trail construction, trail maintenance & trail monitoring.	Bi-annually	PTAG, ETC	\$1,500	Donations	
ST-4	Annually recruit volunteer membership for volunteer trail monitor and maintenance program.	On-going	ALT, FODMH, PTAG, KTA	Staff Time	n/a	
ST-5	Annually review trail sustainability improvements to determine progress and establish goals for upcoming year.	On-going	ALT, FODMH, PTAG	Staff Time	n/a	
ST-6	Annually update site mapping (GIS & media) to reflect progress in improvements.	On-going	ALT	Staff Time	n/a	
ST-7	Develop trail map/brochure and make available at trailheads and on-line.	S	ALT	\$2,000 Staff Time	Foundation	
ST-8	Install trail markers on all existing trails.	S	ALT, Volunteers	\$5,500	Foundation	
ST-9	Develop signage highlighting sustainable trail practices.	S	ALT	\$10,000	Foundation	
ST-10	Revise kiosk format, graphics & text to reflect brand & incorporate QR code technology.	S	ALT	Staff Time	n/a	
ST-11	Collaborate with local partners & organizations to utilize trail improvements as green job	S	ALT, ETC PA DCNR	Dollars for Trail Crew Development	PA DCNR, Foundation	
ST-12	Implement short term sustainable trail improvements.	S	ALT, ETC, KTA, PTAG & volunteers	\$166,365	CFA, PA DCNR, Foundation	
ST-13	Implement Catfish Pond Trailhead Improvements.	S	ALT	\$250,000	CFA, PA DCNR, Foundation	
ST-14	Designate area(s) & trail(s) for bicycling.	S	ALT	Staff Time	n/a	
ST-15	Clear trail(s) designated for bicycle use to accommodate bicycling.	S	ALT, ETC, KTA, PTAG & volunteers	Volunteers	n/a	
ST-16	Maintain clearances on trail(s) designated for bicycle use.	On-going	ALT, ETC, KTA, PTAG & volunteers	Volunteers	n/a	

## Dead Man's Hollow Conservation Area Management Plan - 2014

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ST-20	Upon reaching agreement with Liberty Borough for public access implement Orchard Drive Trailhead Improvements.	S-M	ALT	\$150,000	CFA, PA DCNR, Foundation	
ST-21	Implement mid term sustainable trail improvements	M	ALT, ETC, KTA, PTAG & volunteers	\$98,275	CFA, PA DCNR, Foundation	
ST-22	Implement Calhoun Road Trailhead Improvements.	M	ALT	\$150,000	CFA, PA DCNR, Foundation	
ST-23	Implement long term sustainable trail improvements	L	ALT, ETC, KTA, PTAG & volunteers	\$78,173	CFA, PA DCNR, Foundation	
ST-24	Implement future term sustainable trail improvements	F	ALT, ETC, KTA, PTAG & volunteers	\$115,582	CFA, PA DCNR, Foundation	

## Conservation Management & Forest and Ecosystem Monitoring Strategies

As DMH is designated as a conservation area, activities and site programming should be focused on activities that respect and promote this function. The conservation of the Hollow will involve a combined effort from three major areas:

- 1) Protection of land in the watershed from development, over-use, uses that stand to negatively alter or damage the land, and from adjacent activities that could negatively impact the ecology or character of the watershed;
- 2) Inventorying and collecting data to understand the ecological resources of the watershed and to track those resources over time; and
- 3) Managing the land to reestablish lost or degraded natural communities.

*“A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise.”*

Aldo Leopold

All of these efforts are intertwined but for the purposes of planning and goal setting, it will be helpful to consider them separately. This should allow energies to be focused and activities to be prioritized as circumstances change. A clear conservation framework will also be useful for assigning tasks and responsibilities.

Understanding the ecology of the watershed and how species and natural communities respond to the management programs implemented is key to the conservation goals for Dead Man's Hollow Conservation Area. First of all, data must be collected that will allow all changes to be assessed and compared to the current condition of the watershed. This data can then be updated periodically with trends noted for the entire watershed and for specific areas as may be chosen for study. This inventory and monitoring process need not be complex or demand great resources but does need to be accomplished accurately and repeatably if valid comparisons are to be made. To that end, it will be important to follow specific procedures and enlist the services of a person(s) familiar with performing those procedures and interpreting the results. Using the same persons or organization for numerous monitoring cycles should lend consistency to the data collected.

### Inventory

The inventory process documents what is present on a site at any given time and may be updated periodically to provide a detailed picture of the resources present on the site. Here, inventory refers to biological inventory, although other types of inventories pertinent to the overall conservation of the site may be considered (e.g., archeological, geological). This information is crucial for directing monitoring efforts and for discovering species, both native and exotic, that establish or decline within the watershed.

Because little data exists for Dead Man's Hollow Conservation Area and because the project is young, the programs most appropriate are those that will provide baseline data and provide a foundation for future research within the watershed.

### Goals

- 1) Develop a baseline plant species list.
- 2) Develop a baseline aquatic macroinvertebrate species list.
- 3) Compile a breeding bird species list.

This first inventory of Dead Man's Hollow Conservation Area was completed to produce the cover maps contained in this management plan. This inventory of natural communities and flora will provide a starting point for future work, but a comprehensive understanding of the site will require broader and more intensive inventory. Completion of the following inventory tasks over the next five years should provide a solid beginning to the long-term monitoring of Dead Man's Hollow Conservation Area:

- Multi-seasonal floral inventories during at least two of the five years should reveal unusual or state-listed species, and provide data for a comprehensive flora of Dead Man's Hollow. A multi-seasonal flora assessment would entail an early spring (late March-early April) visit, an early-mid summer (early June-early July) visit, and a late season (September-early October) visit.
- Avian inventories performed during the late spring-early summer breeding season in two of the five years should supply baseline data for species presence and for total number of bird populations within Dead Man's Hollow.
- An inventory of the aquatic invertebrate populations will provide valuable data with which to assess water quality and subsequent changes in water quality. Sampling should be conducted throughout the season in accordance with PA DEP guidelines.
- Other types of inventory efforts focused on fish, amphibians, reptiles, mammals, bryophytes and other groups of fauna or flora would complement the studies proposed above but with limited resources, they might best be left as opportunities present themselves. University sponsored research projects, graduate student thesis projects, and government agency programs are all possible sources for specific inventory and monitoring focuses.

### Monitoring

The function of monitoring is to produce a record of certain aspects of the property and watershed. Such a record is important not only to management decisions for Dead Man's Hollow Conservation Area, but as contributions to regional and national scientific data as a whole. The specific kinds of monitoring undertaken should be directed toward important issues or questions that concern the property (e.g., how is additional development in the watershed affecting water quality of the stream?) Also, the monitoring activities themselves should be simple and inexpensive enough to allow them to be carried on for the prescribed period.

A stream monitoring program that considers both chemical and biological parameters should provide baseline data for use in tracking the effects of land-use changes in the watershed. Basic

chemical analysis should include measurement of pH, conductivity, and nitrogen (nitrate), phosphate, calcium, and iron levels. Biological monitoring should include invertebrate sampling, bacterial counts, and notation of vertebrates discovered during sampling. We recommend developing a stream monitoring protocol based on the PA DEP Publication: *Designing Your Monitoring Program, A Technical Handbook for Community - Based Monitoring In Pennsylvania* which can be viewed here:

[http://files.dep.state.pa.us/Water/BNPNSM/StormwaterManagement/MS4\\_Information\\_Resource\\_CD\\_Files/volunmonchapter1.pdf](http://files.dep.state.pa.us/Water/BNPNSM/StormwaterManagement/MS4_Information_Resource_CD_Files/volunmonchapter1.pdf)

### Goals

- 1) Track changes in water quality in the Dead Man's Run Watershed.
- 2) Improve water quality in the Dead Man's Run Watershed.
- 3) Improve awareness of water quality issues facing the Dead Man's Run Watershed.
- 4) Increase level of community and individual commitment to water quality stewardship.

### Special Species Monitoring

Monitoring of populations of plants, animals and natural communities of special concern can contribute to the understanding of these elements, as well as provide reference for specific management programs that will be employed within Dead Man's Hollow Conservation Area. As of this writing, there are no known species or natural communities of special concern within the watershed or on the property owned by ALT. Further inventory may discover plant or animal populations or other uncommon, though not listed, elements for Pennsylvania. NatureServe's document, *Biodiversity Inventory of Natural Lands: A How-To Manual for Foresters and Biologists*, discusses general guidelines for monitoring of plant populations.

[http://www.natureserve.org/sites/default/files/publications/biodiversityinventorymanual\\_main.pdf](http://www.natureserve.org/sites/default/files/publications/biodiversityinventorymanual_main.pdf)

### Goals

- 1) Continue surveys for rare plants and animals that could be present or establish themselves at DMH..
- 2) Monitor continues presence of host plants for invertebrates of concern

### Exotic Species Monitoring

#### Goals

- 1) Early detection monitoring, that is finding species when they first appear in a management area, is implemented before unwanted species have arrived in an area. It is the most cost-effective monitoring because when rapid eradication takes place, control efforts are minimal.
- 2) Monitoring the effects of invasive species management actions on the target species to help determine the most effective control method.
- 3) Monitoring for the status and trends of invasive species populations.

### Forest Monitoring

#### Goals

- 1) Conduct annual bird surveys
  - a. One survey in mid-May for migrant species.
  - b. Two surveys during June for breeding species.

The Annual Bird Survey should follow the protocol that was used to conduct the survey for this study as follows:

All bird survey point locations were placed at least 100 m from the forest edge. ArcGIS was used to generate non-overlapping survey points spaced at a minimum of 250 m along existing trails to adequately cover survey area and forest patch (Ralph et al. 1993, Ralph et al. 1995, Hamel et al. 1996, Martin et al. 1997, Heckscher 2000, Forcey et al. 2006). Point count surveys were conducted during the height of the avian breeding season in Pennsylvania forests, between 25 May and 15 July (PBBA 2012).

Surveys during 2014 were only conducted once during June. However, each point count location should be surveyed twice during the season to account for intra-season variation and variation in bird detectability. Each round should occur during the following periods: 28 May – 18 June (early season) and 19 June – 15 July (late season). For sites located in southern Pennsylvania, final surveys should be conducted by early July due to drop-off in bird breeding activity. Surveys were completed during the first five hours after sunrise when detection rates are most stable, generally between 0500 and 1000 EST (Ralph et al. 1993, Ralph et al. 1995, PBBA 2012). Weather and wind conditions were recorded during each count following the Beaufort scale and standard weather codes, and no surveys were conducted during high wind conditions (> 12 mph) or during dense fog, steady drizzle, snow, or prolonged rain (Martin et al. 1997).

Surveys at each point location were 5 minutes in duration, with counts split between an initial 3-minute period and the following 2-minute period. With travel time between point count locations estimated at less than 15 minutes, this count length should maximize the number of survey points across the sample area without compromising the quality of data from a single survey point (Ralph et al. 1995). All birds seen or heard within a 50 meter radius of each point were counted (Buskirk and McDonald 1995, Ralph et al. 1993, Ralph et al. 1995, Martin et al. 1997, Dettmers et al. 1999, Heckscher 2000), and birds were recorded in two subsequent distance bands 50-100m, and beyond 100m to enable density estimates to be made. Birds observed in each of the following categories: flying above the canopy or through habitat and new species encountered between points will be recorded separately (Ralph et al. 1995). Singing males were noted to allow breeding population estimates. This bird data enables abundance and diversity indices to be estimated for each site which can then be used to detect changes over time.

Point count protocols vary considerably in terms of duration and the radius in which birds are counted. The protocol employed here is the one most generally used in recent and current breeding bird studies in the northeast region, accounting for 56% of the studies listed for the region in the USGS Bird Point Count Database (USGS 2009). This protocol should enable the completion of 15-25 points per morning, depending on travel (walking) time between points as dictated by the navigability of the forest terrain.

[illegible]

- 2) Utilizing trained volunteers, conduct deer abundance surveys and deer browse surveys every two years to determine impact of deer herd on understory and groundcover vegetation in the Hollow.

White-tailed deer directly affect many aspects of our lives. Hunters, farmers, foresters, motorists, gardeners, and homeowners are all impacted by deer abundance levels. This may be through car deer collisions, disease transmission, loss of desirable landscaping, crop damage, or over-browsed woodlands.

Reducing the impact of deer on forest ecosystems is imperative to sustainable management of our forest resources. Over-browsing by deer can change the composition of the forest. The kind of young trees and their abundance is affected by deer. For example, ecologically and economically important species like oaks are greatly reduced or eliminated from the understory. If deer are too numerous, mature forests will have no or very few desirable tree seedlings to replace trees that are harvested or die of natural causes. Research has shown that as many as 85% of forested sites in Pennsylvania that are harvested fail to regenerate a new forest of desirable tree species due to over-browsing by deer.

Over-abundant deer populations also reduce the diversity of plants and other wildlife species found in the forest. High levels of browsing by deer can completely remove the shrub and tree seedling layers in a forest. Many native wildflower species are also preferred deer foods. These plants are also reduced in abundance or completely eliminated when deer impact is high. With the loss of the understory tree and shrub layer comes a loss in abundance of many other wildlife species. Numerous species of birds which nest in the shrub layer or on the forest floor are reduced in abundance when deer populations rise beyond what the habitat can support.

When deer populations are above the carrying capacity of the land for long periods of time they begin to degrade their habitat. Under these conditions, forest understories become composed predominantly of plants that deer avoid or prefer not to eat. Once this happens, the degraded environment supports only a fraction of the biodiversity it once did.

### **Estimating Deer Populations and Habitat Impact<sup>4</sup>**

In order to manage white-tailed deer populations wildlife biologists need to know the deer population in a given area. Biologists need to know if populations are increasing, decreasing, or are stable.

One way to determine deer populations is to perform a census. A census is an exact count of every animal in a given area at one time. An example of a census would be the aerial forward looking infrared flights (FLIR) that the Pennsylvania Bureau of Forestry has been doing on state forests. Often it is not possible to census the entire deer population. In this case biologists may use a sampling method. Sampling is not an exact count. It is an estimate based on studying just part of the population.

When it is not necessary to know the exact number of deer in an area a population index can be used. An index does not result in an exact count of the animals that live in an area it just tells whether there are more or fewer animals than the last time it was checked.

An index tells us how abundant animals are by counting signs. Many types of animal signs can be

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<sup>4</sup> <http://ecosystems.psu.edu/youth/sftrc/deer/wtd-lessons>

used as long as each animal leaves them in roughly the same amount. For deer, counts of their droppings can be used since each animal leaves them in roughly the same amount. Population monitoring involves using a census, sample, or index to determine how populations are changing over time.

For this activity students will be using two survey methods: Pellet Group Counts and Browse Impact Surveys:

- Pellet counts are a population index that represents average deer density over winter.
- Browse impact surveys assess the level of browsing on forest tree seedlings and relates to habitat carrying capacity.
- Deer pellet counts and browse impact surveys must be conducted after snow melt but before spring green up.
- Surveys should cover as large an area as possible; preferably a deer's home range (1 square mile or 640 acres).
- Survey area size can be adjusted dependent upon time constraints and woodlot size.

### Deer Density Estimation (Pellet Group Count)<sup>5</sup>

This technique, used to estimate deer density, requires 4 pieces of data:

1. Number of pellet groups deposited per day per deer (constant)
  2. Period of time pellet groups are deposited (variable)
  3. Number of pellet groups counted in plots (variable)
  4. Area sampled by plots for pellet groups (variable)
- 1.) Recent work, conducted by observers following deer for 24 hour periods, found that deer actually deposit on average 25 pellet groups per day.
  - 2.) Annual leaf fall in deciduous forests covers up pellet groups: only pellet groups deposited after leaf fall are visible for counting the following spring. The technique calls for counting pellet groups in spring after snow melt and assumes that all pellet groups counted were deposited after leaf fall the previous fall. Most of the leaves are gone by November 15 on the Allegheny Plateau, so deposition period is calculated by counting the number of days between November 15 and the date pellet groups are counted.
  - 3.) Number of pellet groups counted is simply the total number of pellet groups observed within the sample plots. Use 4 foot radius sample plots within which all pellet groups are counted. Sample pellet groups within area approximately the size of a deer's home range, one square mile or 640 acres. Run parallel transect lines one mile long (5280 feet), 1000 feet apart.
  - 4.) Area sampled is computed in square miles. This will end up giving the number of deer per square mile.

### Instructions: Pellet Groups

- 1.) Fill out header, indicating the site, date, observer name(s), and weather.

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<sup>5</sup> <http://ecosystems.psu.edu/youth/sftrc/deer/pellet-count>

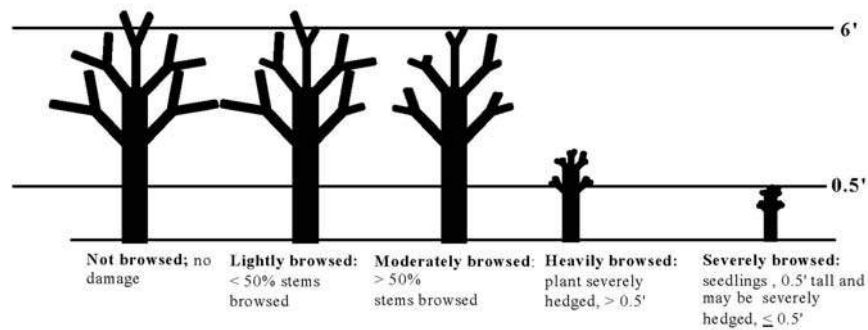
- 2.) Pellet groups are counted within 4 foot radius plots located at 100 foot intervals along transect lines one mile long. The first plot taken is 100 feet from the starting point from the beginning of each transect line, and the last plot is ~ 100 feet from the end of the line. At the end of each transect take a 90° bearing and travel 1,000 feet to the starting point of the next transect. There should be 52 plots per line (exceptions: plots inside fenced enclosures, or that fall in bodies of water aren't counted).
- 3.) There must be at least 10 pellets in a group before it is counted, at least half of the pellets must be within the 4 foot radius plot, and pellets must be on top of leaves or other vegetation. Record pellet groups with a dot tally (see instructions below).
- 4.) If fenced enclosures or ponds/lakes are encountered along the transect line, either climb over the fence/wade through the water and continue along the transect line, or take a sighting on the other side of the fence/water, walk around, and resume the line. Do not count plots, pellet groups, or impact inside the fence or body of water but do monitor distance inside fence (to keep total transect length 5,280 feet).
- 5.) Record the total number of plots and pellet groups for each transect line (top of form).
- 6.) Record any dead deer sighted. Record data as dot tally (see below). May want to differentiate between adults and fawns, bucks and does.
- 7.) Calculate Deer Density = \_\_\_\_\_ # Pellet Groups Counted

$$\frac{\text{Pellet Groups/Day} \times \text{Days Since Leaf Off} \times \text{Square Miles of Plot Area}}{\text{Square Miles of Plot Area}}$$

Completing Deer Density Estimation Survey will result in the current year's estimated deer density per square mile. This number will be used as the Index number by which future years will be compared. Comparing the survey results completed in subsequent years will indicate whether there is an increase or decrease in deer density on the property. Ecologists estimate that an acceptable deer density for eastern forests is 10 to 12 deer per square mile. As the density increases, negative impacts to the forest become apparent.

### **Deer Browse Impact Survey**

Another method of determining the impact of deer on the forest in Dead Man's Hollow is to conduct a Browse Impact Survey. This method requires more expertise in being able gauge the level of deer browse on vegetation.



Select six indicator tree seedling species based upon findings in your survey area. List them on data sheet from least preferred to most preferred based on a browse preference scale by white-tailed deer.

- 1.) Record deer impact to seedlings within the 4 foot radius plot based on six seedling species selected. Record data for seedlings < 6 feet tall.
- 2.) Impact will be recorded at every other pellet group plot.
  - a. If no regeneration < 6 feet exists on plot, record as a dot in box "Plots Without Regen."
  - b. If regeneration > 6 inches is present but is not browsed, record as a dot in box "Plots With Regen, no Impact."
  - c. Record impact for each of the 6 indicator species present on the plot as follows. Record impact in appropriate impact level box.

0 = no impact  
 L = light impact – 1-50% of stems are browsed, seedling > 6 inches tall, < 6 feet tall.  
 M = moderate – more than 50% of stems are browsed but seedling is not hedged, seedlings > 6 inches tall, < 6 feet tall.  
 H = heavy – more than 50% pf stems are browsed, seedling is hedged (browsed to ball of short twigs), seedlings > 6 inches tall, < 6 feet tall.  
 S = severe – more than 50% stems are browsed, seedling is hedged and is less than 6 inches tall.

- 3.) Record all data as a dot tally for all data entries for each transect line.  
 Recording dot tally data: 1st data entry = one dot (.). 2nd data entry, add another dot (..). 3rd data entry, add another dot (.:). 4th data entry, add one more dot (::). 5th entry, connect 2 dots with a line (::). 6th entry, connect another 2 dots with a line (::). 7th data entry, connect 2 more dots with a line (::). Etc. For the 9<sup>th</sup> and 10th data entry make an X through the middle of the square. The eleventh data entry starts with a new dot tally.

Annual surveys will allow ALT to monitor deer density on the property and determine when deer are having a negative impact on vegetation within Dead Man's Hollow. This information can then be used by ALT, in consultation with the Pennsylvania Game Commission, to determine what adjustments should be made in deer management strategy so the integrity of the forest can be preserved.

### Invasive Species Control

Exotic or invasive species control requires both a well-defined management goal and a method for evaluating the success of the control program. The intensity of monitoring will depend upon the severity of the infestation, the reproductive ability of the species, and the effectiveness of the methods employed.

Invasive species can be a threat to developed and natural systems, cause human diseases, reduce water quality, degrade recreational experiences, and cause loss of biodiversity. Having a tool to track the introduction and spread of invasive species is one critical step to curbing their damage.

iMapInvasives, a database for tracking invasive species, stores spatially-referenced information on invasive plants and animals in an on-line system for the public and for natural resource managers. Tracking invasive species locations in this way can assist managers with decision making and prioritizing resources for early detection and rapid response efforts as well as long-term management goals. Several types of information, such as general observations, targeted-survey efforts, and treatments may be entered through the on-line system. Queries and interactive mapping tools enable users to retrieve data and map species distributions.

Dead Man's Hollow contains a number of exotic species that are considered aggressive and have become well established within the watershed. Tree of Heaven (*Ailanthus altissima*), garlic mustard (*Alliaria petiolata*), multiflora rose (*Rosa multiflora*), Japanese knotweed (*Polygonum cuspidatum*) and Japanese barberry (*Berberis thunbergii*) are the species that will require some degree of control within the watershed.

### Priorities for Invasive Treatment

*Priorities along the property boundaries:*

- Norway maple and tree-of-heaven are fairly abundant along the GAP.
- Catfish Pond Trailhead.
- The northern edge of the property near the residential properties.

*Priorities within the core of the property:*

- The Ruins area
- The floodplain and associated riparian habitats
- Along the top of Witch Hazel Trail.
- The sugar maple/basswood forest around 'Table Rock'
- The steep slope in the vicinity of Dead Man's Run

*Trail Priorities:*

- *Japanese stiltgrass is a common invasive that is found along many sections of the trail and is easily spread by foot traffic. Several areas where this was noted include Black Oak Trail, the area immediately around the ruins.*
- *Lesser periwinkle (Vinca minor) is the major groundcover around the ruins of the boiler house.*
- *Other species that tend to be associated with movements along trails include garlic mustard.*

Invasive species can be manually removed by volunteers. Where large patches of invasive species exist, we recommend Allegheny Land Trust contract with a vegetation control service. One such service is Invasive Plant Control, Inc.

Invasive Plant Control, Inc.  
PO Box 50556  
Nashville, Tennessee 37205  
(615) 385.4319  
[stevemanning@mindspring.com](mailto:stevemanning@mindspring.com)

Other vegetative control services to consider include:

- Ehrlich Vegetative Management Services  
J. C. Ehrlich Co. Inc.  
PO Box 13848  
Reading, PA 19612  
813-658-1733  
[randy.eckman@jcehrlich.com](mailto:randy.eckman@jcehrlich.com)
- Meadville Land Service  
10551 S Watson Run Road  
Meadville, PA 16335  
(814) 337-1974  
[Robin@meadvillelandservice.com](mailto:Robin@meadvillelandservice.com)

Regardless of the agency selected, Allegheny Land Trust must understand the amount of oversight and training that needs to be provided to the respective invasive plant control contractor as some require less than others. These are important considerations from budgetary and capacity perspectives.

### Restoration

Restoration entails allowing, through an intentional and specific management, a natural ecological feature or community to recover or reestablish in a location where it once existed prior to a disturbance. Complete restoration is not always possible given the complexity of natural systems. However, through the process, important components and processes (once) present in the community are considered for directing restoration efforts. Restoration can be a useful tool and organizing concept in addressing the management of disturbed and altered landscapes as attested to by its use in private organizations and public agencies concerned with environmental conservation.

Dead Man's Hollow Conservation Area contains several areas where restoration would be an appropriate option (see cover map). These areas have been altered to the point where natural communities resembling those that were once present would not readily reestablish. Excavation of earth, alteration of stream courses, filling, and mining are some of the activities that have permanently changed the natural foundation(s) on which these communities existed. Due to cost, need for considerable personnel, time, and stewardship priorities for the site, undertaking restoration projects may be difficult. As individual restoration projects become possible, the following guidelines should be followed:

### Restoration Projects

- Vegetation, hydrology, and soils. Information necessary to provide an accurate picture of the natural setting may be found through study of early aerial photos, old USGS topography maps, mining permits, deed records, tax records, and a variety of other sources. Also, observation and study of “reference” areas – those local places with similar environmental conditions but lacking heavy disturbance – can be valuable. For small areas, adjacent and less disturbed areas may furnish insight into the natural patterns that were once present and desired to be restored. This information will define the “end point”, as well as some of the benchmarks in implementing the process.
- Determine the critical factors or environmental conditions that will be necessary to reestablish for successful restoration. For a wetland system, restoring a specific hydrologic regime may be the most critical factor. For a forest system, establishment of a closed canopy may be the most important single factor.
- Create a restoration plan that includes goals and objectives, time tables for specific activities, site monitoring methods, evaluation schedule, and contingency plans.
- Create a budget and, if possible, dedicate funds that will sustain the restoration effort for its projected duration rather than relying on year-to-year budget allocations.
- Assign a committee, officer, entity, etc. within ALT to supervise and coordinate the project, as well, as allocate monies. Because the project may span several or more years and because of the many details of the project, such an arrangement should minimize the number of decisions and time required of the entire ALT board.

### Potential Partners include:

- Audubon Society of Western PA
- Three Rivers Birding Club
- Botanical Society of Western PA
- Petal Pushers of the Great Allegheny Passage
- Pennsylvania Game Commission
- Pennsylvania Department of Conservation and Natural Resources
- Pennsylvania Natural Heritage Program
- Venture Outdoors
- Western Pennsylvania Conservancy
- Western Pennsylvania Water Pollution Control Association

## Dead Man's Hollow Conservation Area Management Plan - 2014

Conservation Management & Forest & Ecosystem Monitoring Strategies						
Strategy	Description	Priority	Responsible/ Potential Partner(s)	Projected Cost	Funding	Date Completed
CM-1	Incorporate and adopt conservation message as part of the brand for the property.	I	ALT	Staff Time	n/a	
CM-2	Adopt iNaturalist as the database management tool for inventorying species identified on the property.	I	ALT	\$0	n/a	
CM-3	Apply for PA DCNR Wild Plant Sanctuary Status.	S	ALT, PNHP	Staff Time	in-kind	
CM-4	Conduct Breeding Bird Survey	S - then Triannual	ALT, Volunteers, Three Rivers Birding Club, PNHP	Staff Time	in-kind	
CM-5	Map locations of invasive species on site.	S	ALT, Volunteers	Staff Time	in-kind	
CM-6	Develop and adopt invasive species management plan for the property.	S	ALT, Volunteers	Staff Time	in-kind	
CM-7	Conduct short-term invasive species management activities.	S	ALT, Volunteers	Unknown	Foundation/CFA	
CM-8	Conduct mid-term invasive species management activities.	M	ALT, Volunteers	Unknown	Foundation/CFA	
CM-9	Update Vegetative Coverage Map - especially for invasive species	M - Once every 5 years	ALT, Volunteers, PNHP	Staff Time	n/a	
CM-10	Conduct long-term invasive species management activities.	L	ALT, Volunteers	Unknown	Foundation/CFA	
CM-11	Conduct Deer Abundance Survey and document evidence of deer damage.	M - then Biannual	ALT, Volunteers, PNHP	Staff Time	n/a	
CM-12	Conduct an annual event on the property to educate visitors on the value of the property, to recruit volunteers, and initiate/continue discussions with adjacent property owners.	S	ALT, Volunteers & Partners	Staff Time	Foundation/ Fundraising	
CM-13	Develop baseline plant species list.	S	ALT, Volunteers, PNHP, WPC	Staff Time	in-kind	
CM-14	Establish endowment specifically for this property dedicated to conservation management and ecosystem monitoring.	S	ALT	Staff Time	Foundation	
CM-15	Develop pond monitoring program and collect baseline state including chemical analysis and biological data.	S	ALT, WPAWPC	Staff Time	n/a	
CM-16	Develop baseline wildflower species list.	S	ALT, Volunteers, PNHP, WPC	Staff Time	in-kind	

## Dead Man's Hollow Conservation Area Management Plan - 2014

CM-17	Develop baseline aquatic macroinvertebrate species list.	M	ALT, Volunteers, PNHP, WPC	Staff Time	in-kind	
CM-18	Compile list of breeding bird species.	S	ALT, Volunteers, PNHP	Staff Time	in-kind	
CM-19	Complete multi-seasonal floral inventories for species of special concern	M - twice in five years	ALT, Volunteers, PNHP	Staff Time	in-kind	
CM-20	Develop stream monitoring program and collect baseline data including chemical analysis and biological data.	S	ALT, Volunteers, PNHP	Staff Time	in-kind	
CM-21	Implement biannual stream monitoring data collection and analysis.	S	ALT, Volunteers, PNHP	Staff Time	in-kind	
CM-22	Map locations and extents of invasive/exotic species.	S	ALT, Volunteers, PNHP	Staff Time	in-kind	
CM-23	Develop and adopt riparian buffer protection and enhancement plan.	S	ALT, Volunteers, PNHP, WPC	Staff Time	in-kind	
CM-24	Develop education/outreach program focusing on adjacent neighbors and lawn/landscape practices.	S	ALT, Volunteers	Staff Time	in-kind	
CM-25	Monitor status and trends of invasive species populations.	M	ALT, Volunteers, PNHP	Staff Time	in-kind	
CM-26	Develop and adopt wildflower protection and enhancement plan.	M	ALT, Volunteers, PNHP	Staff Time	in-kind	
CM-27	Implement riparian buffer protection and enhancement plan.	M-L	ALT	Unknown	Foundation	

## Cultural Resources Implementation Strategies

The Dead Man's Hollow Conservation Area has long been a focus of legend and lore, and contains the ruins of past industrial development along the Youghiogheny River Valley. Both of these features are of interest not only locally, but also regionally and potentially nationally. Much research has been conducted regarding events that have occurred in the Hollow and, as discussed in Chapter 1, a Phase I Archaeological Inventory was conducted of the Bowman Brick Works/Union Sewer Pipe Company, which as a result has been deemed to be eligible for the National Register of Historic Places.

As noted earlier, Karen Frank<sup>6</sup> documents much of the legend and lore that has been associated with the Hollow over the past 150 years. Further, she describes that industrial ruins located on the property, which Archeologist Christine Davis further inventoried and documented.

Industrial heritage sites are frequently exposed, vulnerable, under-appreciated, and at risk because there is no unified listing or inventory of sites and landscapes that allows evaluation and judgment about what resources are of value and in particular need of preservation.

Industrial Archaeology is the systematic study of material evidence associated with the industrial past. This evidence, collectively referred to as industrial heritage, includes buildings, machinery, artifacts, sites, infrastructure, documents and other items associated with the production, manufacture, extraction, transport or construction of a product or range of products. The field of industrial archaeology incorporates a range of disciplines including archaeology, architecture, construction, engineering, historic preservation, museology, technology, urban planning and other specialties, in order to piece together the history of past industrial activities. The scientific interpretation of material evidence is often necessary, as the written record of many industrial techniques is often incomplete or nonexistent. Industrial archaeology includes both the examination of standing structures and sites that must be studied by an excavation.

PHMC's document '*Guidelines for Archaeological Investigations in Pennsylvania*' provides guidelines for investigating site and preparing a nomination for the National Register of Historic Places. This document can be viewed here:

[http://www.portal.state.pa.us/portal/server.pt/document/850485/archaeologyguidelines\\_pdf](http://www.portal.state.pa.us/portal/server.pt/document/850485/archaeologyguidelines_pdf)

The nomination should include some additional research to determine the full extent of the site, including the clay pipe shard piles (dump), access road, etc.

Not only do we recommend the Bowman Brick/Union Sewer Pipe Company ruins be nominated for listing on the National Register of Historic Places, we also recommend:

- 1) Further research be conducted to determine the relationship/significance of this site with other foundries located along the Youghiogheny River.
- 2) Determine if this site is connected with the Bowman Homestead, located in North Versailles, and listed on the National Register of Historic Places in 1979:

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<sup>6</sup> Ibid

### *Bowman Homestead (Record Number #79003140)*

The Bowman Homestead in North Versailles Township, Allegheny County, Pennsylvania is a two-and-a-half story brick farmhouse built in 1846 by George Bowman in a combination of the Western Pennsylvania vernacular and Greek Revival styles. Timber for the house was harvested on site, and the bricks were fired nearby.

Bowman moved to Western Pennsylvania in the early 1800s and married Eliza Mellon, the sister of Judge Thomas Mellon and aunt of Andrew Mellon, the future Secretary of the Treasury.

North of McKeesport at 3500 The Lane, North Versailles Township , McKeesport

- Historic Significance: Architecture/Engineering, Event
- Architect, builder, or engineer: Bowman, George
- Architectural Style: Other, Greek Revival
- Area of Significance: Exploration/Settlement, Architecture
- Period of Significance: 1825-1849
- Owner: Private
- Historic Function: Domestic
- Historic Sub-function: Single Dwelling
- Current Function: Domestic
- Current Sub-function: Single Dwelling

- 3) Develop an interactive QR code based interpretive tour of the ruins which explains the historic significance of the ruins to the region.

An good example of cultural and historical interpretation of an industrial archeological site is the West Point Foundry Preserve online guide, which can be viewed here:

<http://foundrytour.org.s3-website-us-west-2.amazonaws.com/>

Potential Partners include:

- McKeesport Historical Society
- Elizabeth Township Historical Society
- Heinz History Center
- Historical Society of Western Pennsylvania
- Preservation Pennsylvania
- Rivers of Steel Heritage Corporation
- Regional Trail Corporation
- TrailTown Program
- Venture Outdoors
- Young Preservationists Association

# Dead Man's Hollow Conservation Area Management Plan - 2014

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## Environmental Interpretation & Education Strategies

Given the proximity of Dead Man's Hollow to the major metropolitan area of Pittsburgh and its relatively ecologically intact condition, this site can make an excellent nature interpretation and conservation education facility.

Two findings during this study are worthy of developing and environmental interpretation and education strategies around. These include:

1. Significant spring wildflower population it, rivals the most well-known spring wildflower sites in Allegheny County.

With the iNaturalist inventory populated for spring wildflowers during the course of this study, visitors can use iNaturalist web and smartphone applications to retrieve species information and obtain field guide.

Further, we believe a case can be made for nominating the site for PA DCNR's Wild Plant Sanctuary Program.

2. Migratory bird habitat, especially for forest dwelling interior species. Given the limited interior forest habitat in Allegheny County, this is very significant.

One of the more significant findings at the Dead Man's Hollow Conservation Area is the fact that it serves as a breeding ground for forest interior bird species. Given the fragmentation of forest in Allegheny County, such habitat is rare.

We recommend ALT develop environmental education programs with its partners around this significant resource.

Published resources for educational purposes include:

- Ontario Extension Notes, 'Conserving the Forest Interior: A Threatened Wildlife Habitat'  
[http://www.lronline.com/Extension\\_Notes\\_English/pdf/forInterior.pdf](http://www.lronline.com/Extension_Notes_English/pdf/forInterior.pdf)
- Ontario Ministry of Natural Resources publication 'A land manager's guide to conserving habitat for forest birds in southern Ontario'

[www.npca.ca/wp-content/uploads/mnr-guide-s-ontario-forestry.pdf](http://www.npca.ca/wp-content/uploads/mnr-guide-s-ontario-forestry.pdf)

The Dead Man's Hollow Conservation Area can be considered an outdoor classroom for those interested in environmental education opportunities such as local schools or other education entities. ALT will arrange programs and led hikes at the site for local community members which will focus on the natural history of the site.

### Pennsylvania Department of Conservation and Natural Resources Wild Plant Sanctuary Program

The goal of the Wild Plant Sanctuary Program is to recognize some of the best examples of habitat supporting state-listed species of concern. The property in question must function as an exceptional refuge for Pennsylvania's natural heritage. If you are considering enrolling your property into the Wild Plant Sanctuary Program, it must meet one or more of the following criteria:

1. Supports plants that are rare, threatened, or endangered in Pennsylvania  
Well over 600 plants are considered species of special concern in Pennsylvania and are closely monitored by DCNR through the Pennsylvania Natural Heritage Program in order to ensure the protection of known populations. If one or more of these species are located on a property, it is a high priority for enrollment into the Wild Plant Sanctuary Program. The presence of large and viable populations within intact historical plant communities illustrates a best-case scenario. *State-listed species originating from nursery stock that is not of local or ecoregional genetic material will not be considered. Please DO NOT collect wild species of special concern, or buy these species from unethical nurseries that unsustainably take from the wild.*
2. Contains host plants for rare moths, butterflies, and other arthropods  
Serving as larval hosts for invertebrates of concern, non-listed plants play a hand in supporting our dwindling natural heritage. Protection of the host plants of at-risk invertebrates ensures that sufficient breeding locations exist for these rare species. In addition, the protection of appropriate habitat and food sources for adult invertebrates allows for the maintenance of all stages of their lifecycles. *Host plants originating from nursery stock that is not of local or ecoregional genetic material will not be considered. An active breeding population of state-listed invertebrates, or high potential for these species to utilize the site in the future, should be demonstrated.*
3. Includes outstanding or unique natural features or plant communities  
Pennsylvania's natural heritage encompasses more than just the species that grace our mountains and valleys. Many geologic sites are also of concern, celebrated for their intrinsic, ecological, and educational values. These special sites, such as springs, waterfalls, and fossil beds, are linked with Pennsylvania's deepest history. DCNR also recognizes the importance of conserving rare plant communities, many of which are remnants of habitat once characteristic of the region prior to European settlement. These ecological communities are under threat, as changing climate, halted disturbance regimes, invasive species, and deer overbrowsing alter species composition across the state.
4. Is being maintained or managed using ecologically sound practices  
Ecologically sound practices include management techniques such as invasive species control, native plant restoration, and deer exclusion. Sites with high educational potential are also of value. Some level of adherence to this criterion is expected of all submissions; therefore, management using ecologically sound practices is not necessarily a qualifier. However, the Wild Plant Sanctuary Committee will consider properties solely on this criterion if the management is exceptional, such as the restoration of a rare plant community using local genetic material.

Of this criteria the Dead Man's Hollow Conservation Area meets criteria 2 and 4, and a case could be made for meeting criteria 3.

For more information on PA DCNR's Wild Plant Sanctuary Program and to begin the nomination process go to:

[www.dcnr.state.pa.us/forestry/plants/plantsanctuaries/index.htm](http://www.dcnr.state.pa.us/forestry/plants/plantsanctuaries/index.htm).

iNaturalist, a tool for continual inventory and management  
Part of ALT's mission is to identify and monitor the resources in Dead Man's Hollow Conservation Area. With iNaturalist you can become part of an integrated network that does just that. iNaturalist is an app that allows you to record what you see in nature, meet other nature lovers, and learn more about the natural world.

iNaturalist is an online community of naturalists, citizen scientists, and biologists built on the concept of mapping and sharing observations of biodiversity across the globe. At the local level, observation made in and around Dead Man's Hollow Conservation Area can provide valuable information for the management of the property. To that end, we have created a project on the iNaturalist website for Dead Man's Hollow Conservation Area:

[www.inaturalist.org/projects/dead-man-s-hollow-conservation-area](http://www.inaturalist.org/projects/dead-man-s-hollow-conservation-area).

On the project page visitors can find information on the flora and fauna observed within the Hollow as well as view a species guide. Clickable inks allow users to learn more information on each species located within the hollow.

Observations may be added via the website or from a mobile application. To get more information and to sign up, visit [www.inaturalist.org](http://www.inaturalist.org).

If enough people record their observations, the data will provide scientists and land managers with useful information for monitoring the biodiversity of a particular place over time.

We recommend ALT publicly promote the use of iNaturalist as it provides detailed information related to species that can be located on the property at no cost to Allegheny Land Trust.



**[www.iNaturalist.org](http://www.iNaturalist.org)**

ALT needs your help identifying species living in Dead Man's Hollow. Make an iNaturalist account today and get your species "life list" started!

How to get involved:

1. Create an iNaturalist account at [iNaturalist.org](http://iNaturalist.org).
2. To make an observation using a mobile device, download the iNaturalist app (available for Android and iPhone/iPad).
3. Open the app and enter your login information.
4. Take a photo of a plant or animal species using either the iNaturalist app or a camera.
5. Upload your observation to website. Using a smartphone/tablet, sync your observations to the website. If using a camera, upload photos directly to the iNaturalist site or to your Flickr account which can be linked to iNaturalist.
6. Log on to iNaturalist on your computer to edit the recently added observations (add species ID, descriptions, etc.).

### Public Outreach

We recommend the Allegheny Land Trust proactively promote all conservation and preservation efforts undertaken at the Dead Man's Hollow Conservation Area. This can be done by publishing local interest articles on the ALT Blog and Facebook page, in local newspapers, as well as, through environmental outlets such as the Allegheny Front. The Allegheny Front is a radio program covering the environment in Pennsylvania. It's produced in Pittsburgh and broadcast throughout Pennsylvania on other public radio stations.

Potential Partners include:

- Audubon Society of Western PA
- Three Rivers Birding Club
- Botanical Society of Western PA
- Petal Pushers of the Great Allegheny Passage
- Pennsylvania Game Commission
- Pennsylvania Department of Conservation and Natural Resources
- Pennsylvania Natural Heritage Program
- Venture Outdoors
- WESA 90.5
- Western Pennsylvania Conservancy
- Western Pennsylvania Water Pollution Control Association

#### **The Allegheny Front Environmental Radio**

67 Bedford Square  
Pittsburgh, PA 15203  
412-697-2933

#### ***Listen to the Allegheny Front***

- WESA 90.5FM in Pittsburgh, PA every Saturday at 7:30 AM
- WIUP 90.1 FM in Indiana, PA every Monday at 7:30 AM
- WLRI 93.0 FM in Lancaster, PA every Tuesday at 8:00 PM
- WNJR 91.7 FM in Washington, PA every Monday at 5:00 PM
- WPSU, Penn State Public Broadcasting every Friday at 1:30 PM and every Sunday at 7:00 AM
- WQLN in Erie, PA every third Sunday at 4:00 PM



## Protection of Life and Property Implementation Strategies

Protection of life and property, as well as, search and rescue/emergency response planning is important for all potential emergency service providers. While this plan begins to address these issues a specific plan should be developed for the Dead Man's Hollow Conservation Area. As of this writing the Lincoln Borough Police Chief has indicated his wiliness to chair, along with an ALT staff member, a working group consisting all potential emergency service providers. The purpose of this group will be to refine and prepare a site-specific emergency response plan for the property.

Potential Partners include:

- ☐ Lincoln Borough
- ☐ Liberty Borough
- ☐ Elizabeth Borough
- ☐ Pennsylvania Game Commission
- ☐ Lincoln Borough Police Department
- ☐ Liberty Borough Police Department
- ☐ Elizabeth Township Police Department
- ☐ Port Vue Borough Police Department
- ☐ Borough of Glassport Police Department
- ☐ McKeesport Police Department
- ☐ North Versailles Police Department
- ☐ Lincoln Borough Volunteer Fire & Rescue Company No. 1
- ☐ Liberty Boro Volunteer Fire Department
- ☐ Central Volunteer Fire Company of Elizabeth Township
- ☐ Vigilant Hose Company #1 of Port Vue
- ☐ Citizen's Hose Co. #1 of Glassport
- ☐ Elizabeth Township Area Emergency Medical Services
- ☐ White Oak EMS – Station 645
- ☐ Lincoln Borough Volunteer Fire & Rescue Company No. 1
- ☐ STAT MedEvac
- ☐ UPMC McKeesport
- ☐ Jefferson Regional Medical Center

# Dead Man's Hollow Conservation Area Management Plan - 2014

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## Land Protection Implementation Strategies

Currently, ALT owns approximately 434 acres comprising the Dead Man's Hollow Conservation Area and has an easement on an additional 9 acres. Protection of the other lands within the watershed will require ALT to forge agreements with other landowners, build relationships within the community, and to determine whether there are additional opportunities to purchase land and easements in the watershed. Building an effective volunteer program, establishing relationships with the local media, and finding creative ways to gain strong support for the long-term effort will be an important part of this work.

### Goals:

1. Provide protection to all land within the watershed through any combination of devices including acquisition, easement, management agreements, etc.
2. Establish a positive community presence through volunteer programs, participate in community events, and other special programs and events.
3. Develop partnerships with municipalities, trail organizations and adjacent landowners.

### Potential Partners include:

- ☐ Liberty Borough
- ☐ Lincoln Borough
- ☐ Elizabeth Township
- ☐ Pennsylvania American Water
- ☐ Adjacent Property Owners

## Dead Man's Hollow Conservation Area Management Plan - 2014

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## Marketing, Promotion and Public Outreach Implementation Strategies

These recommendations are divided into three categories:

- A. Accessing the Great Allegheny Passage trail user audience
- B. Leveraging the Power of Partnerships
- C. Easy wins

### Accessing the Great Allegheny Passage Trail User Audience

#### 1. *Understand the GAP trail user audience and their motivations*

ALT should come to understand the GAP-user audience during this time. An informal query to GAP trail users as to whether or not they would stop to explore the Hollow demonstrates a general openness. Responses appear later in this report. There are some cases in which people expressly would not want to explore:

- a. If they are on a schedule;
- b. If they prefer biking without stops and want to stay on course;
- c. If they aren't equipped for a walk or hike (e.g., cyclists who use clipless pedals and the stiff cycling shoes that go along with them);
- d. If they are local walkers / runners and want to keep to routine.

#### 2. *Capitalize on Great Allegheny Passage promotional opportunities*

- a. The Allegheny Trail Alliance (ATA) has already provided free space for a property map in its new 2014-2015 TrailBook. Additionally, TrailBook details mile-by mile trail features and points of interest. Allegheny Land Trust can review this text and suggest updates for the 2015-16 book. Thinking beyond The Dead Man's Hollow Conservation Area may prove to be fruitful. Perhaps ATA would be willing to include a feature on "hiking off the GAP & Towpath" (Dead Man's Hollow, Ferncliff Peninsula, Maryland Heights, Appalachian Trail). Any outreach to ATA concerning the 2015-16 TrailBook should be made by late 2014. If such a feature is not included in TrailBook, it could be included on [www.GAPtrail.com](http://www.GAPtrail.com) on the "Do-it-Yourself Trips" page.
- b. The Great Allegheny Passage Facebook page has been "liked" by nearly 13,000 users (as of August 2014, with more than 1,800 new likes over a three month period). The most popular age group among GAP Facebook followers is 35-54 and the most popular city, Pittsburgh. However, the audience is international. ATA's post about the April 23 public meeting about Dead Man's Hollow Conservation Area received 79 "likes" and 19 "shares." ATA's internal assessment of the popularity of its page content indicates that updates on trail conditions and improvements are highly popular, as are scenic images and photos of trail users. *This suggests that content*

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<sup>7</sup> The largest age group using the trail itself is 45-54 (2008 Great Allegheny Passage Economic Impact Study).

*pertaining to the Hollow, including images and trail improvement updates, would reach a captive audience if posted on the page.*

3. *Cater to GAP trail users by expressly “welcoming” them to the area.*
  - a. An interesting way of doing so would be installing a Dero company “Fix-it Station” at the Boston trail access and to include some interpretive information on the Hollow at this location. The stations include a bike stand with securely attached basic tools and pump (cost \$940). There are no such stations along the GAP and hosting one would draw positive attention. This recommendation is made with caution understanding that the Allegheny Land Trust is a non-profit organization. It is imperative to understand and define the importance or unimportance of drawing GAP trail-users to the Hollow, and, if deemed important, what costs ALT is willing to incur to expand its audience. It is possible that an accompanying interpretive sign can educate trail users on conservation efforts and opportunities to support both ALT and the Mon-Yough Trail Council. Partnering on the purchase of a station and sign could be an important step in developing a partnership with the trail council or even the Trail Town Program. A standard GAP kiosk is being planned for the Boston trail access, so coordination is recommended to avoid conflicting signs or messaging.
  - b. Over time, replace the bike rack at the Hollow’s Great Allegheny Passage entrance with “post and ring” style racks that are preferred by most cyclists. Simple racks could be put in, or custom-designed racks could be created. The rack at the Calhoun and other entrances should suffice given that fewer cyclists will access the Hollow from those locations.



*Dero Fix-it Station*

4. *Introduce GAP trail users to other portions of Dead Man's Hollow Conservation Area and Encourage Return Visits*

The GAP is the “front door” to the Hollow that is passed by thousands of outdoor recreationists each year. It appears that many of those people are not aware of the Hollow’s offerings or that there are other ingresses to the property. Raising awareness and encouraging independent return visits to expressly visit the Hollow are recommended. Because the majority of GAP trail users passing through the Hollow are local and regional residents, return visits are likely if a compelling case is made.

5. *Collaborate with Friends of Ohiopyle to promote day hikes along the GAP*

The land trails accessible from the GAP in Ohiopyle present a similar opportunity to draw passing cyclists onto walking trails. Another similar situation is at Harpers Ferry (Maryland Heights and the Appalachian Trail). As previously mentioned, these could be collectively marketed in TrailBook and on the [www.GAPtrail.com](http://www.GAPtrail.com) “Do-it-Yourself Trips” page.



*Catfish Pond*

### **Leveraging the Power of Partnerships**

1. *Participate in the Trail Town Process*

Boston has recently been established as a GAP Trail Town, and a three-town task force (Boston, McKeesport, Homestead) is in place. Taking part in this conversation raises awareness around the Hollow, and sends a message that Boston has more than just one trail offering. It also opens up Mon Valley partnership opportunities.

2. *Interpret the Site and Enable Others To Do The Same*

Consider low-cost interpretive opportunities to draw people to the site. In addition to signage, trip itineraries, and static materials, interpretive walks, hikes, and rides remain popular and effective ways of introducing new visitors to a space. Partnering with Venture Outdoors or Friends of Dead Man's Hollow is recommended. Additionally, make all organizations that offer relevant interpretive programming aware of site improvements and provide useful resources (fact sheets, detailed histories, etc.).

Groups that offer hiking, biking, botany, and wildlife viewing trips should be engaged cultivated as partners. The Venture Outdoors research that indicates that those who are most active in the outdoors and organized groups are most willing to try new activities and discover new places for recreation supports the importance of this recommendation (“if you build it, they will come”).

3. *Partner with other historic and cultural sites in the area to collectively promote the sites*

Rivers of Steel has developed a narrative around the rich industrial history that Dead Man's Hollow Conservation Area and other sites along the GAP can leverage. Ron Baraff of Rivers of Steel has stated, “Each site is a link in the chain. Each tells a different story. It would be foolish to not link the sites together. From a tourism standpoint, from an economic development standpoint things like tours, signage, and so forth make a stronger case for all of us.”

The Trail Town Program has also expressed interest in working together to promote the Mon Valley and in producing a printed industrial-themed brochure. For reference, other points of interest identified on nearby GAP kiosks (or being considered for new kiosks) include:

- Riverton Bridge, McKeesport
- The Pump House, Munhall
- Montour Trail
- Carrie Furnaces
- South Side neighborhood
- West Newton
- Kennywood
- Boston Bridge



*Carrie Furnaces*

#### 4. *Develop a Resource Library*

Gather useful resources that will enable ALT and its partners to pursue designations and promotional opportunities. Collect or create:

- Present day photos (Deploy volunteer and/or professional photographer to develop a photo library of high quality images. Capture all four seasons.)
- Historic photos
- Oral histories
- Site artifacts
- Fact sheets (on history, ecology, trails, etc.)
- Detailed history of the site

#### 5. *Propose Exhibits at Area Museums and History Centers*

An exhibit at the Senator John Heinz History Center timed with notification of a National Register listing would offer the most exposure. This will introduce the Hollow's rich history and present day offerings to an audience of history enthusiasts and regional residents. Additionally, Rivers of Steel has expressed interest in hosting an exhibit at its steel heritage museum in Homestead. Other local possibilities for a traveling exhibit include the McKeesport Heritage Center and the Elizabeth Township Historical Society.

#### 6. *Connect to the Youghiogheny River Water Trail*

Mountain Watershed Association manages this trail and may create a new printed map and guide over the next 1-2 years. They may be open to including information on Dead Man's

Hollow Conservation Area and examining the possibility of a new access point adjacent to the Hollow. The Regional Trail Corporation owns the land at the riverfront and would need to be included in such conversations. Additionally, Friends of the Riverfront, which manages the Three Rivers Water Trail, including the Monongahela from McKeesport to Pittsburgh, may be interested in new opportunities at Dead Man's Hollow Conservation Area.

### Easy Wins

#### 1. *Create and Make Available Suggested Itineraries*

Written itineraries enable those who know a site or area to curate an experience for those who are visiting. They can be posted on websites or other media. They result in ease of travel and engaging people at a deeper level by providing “insider” tips and information that visitors otherwise may not be privy to. Providing itineraries will enable users to visit the Hollow armed with information. They continue to be viewed by tourism professionals as powerful tools (see later in this document for more). To get started, secure an intern or service corps member with an interest in tourism or marketing. Always test the itineraries before finalizing. Consider multi-site itineraries that extend beyond Dead Man's Hollow in order to attract a wider audience.



*Boston Bridge*

Potential themes:

- a. A Rich History
  - b. Ecological Treasures
  - c. Legend and Lore
  - d. Pedal, Paddle, Poke Around
  - e. Cemeteries and Haunted Places (DMH, Dravo Cemetery, West Newton Cemetery)
  - f. Bridge to Bridge (Boston to Riverton in McKeesport)
- 
- #### 2. *Partner with Local and Regional Media to Draw Attention to Dead Man's Hollow*

Approach the Daily News about developing a recurring series on Dead Man's Hollow. Stories can include volunteer work days, industrial history, current efforts, hidden gems, connections to the GAP, “trail and town” attractions / “how to spend a day” in the Hollow (directing people to itineraries), and nearby communities, etc. As suggested by Pashek Associates, work with Allegheny Front radio show and others on other angles.

3. *Work with Friends of Dead Man's Hollow and Mon-Yough Trail Council to Steward the Site*

The management plan identifies a number of site improvement opportunities. One near term “band aid” fix that may help to improve user experiences and impressions is to continue site clean ups and to increase them if possible. Hiking trails and natural areas with visible litter, graffiti, and broken glass can feel unsafe. Perceived or real, these elements do impact visitor experience and should be minimized if possible.

4. *Build a High Quality Present Day Photo Library*

As previously referenced, deploy volunteer and/or professional photographers. Capture all four seasons.

5. *Adhere to Cultural Heritage Tourism Success Principles*

Developed by the Partners in Tourism Coalition, these principles include:

- a. Balance needs of residents and visitors
- b. Focus on quality and authenticity
- c. Make sites come alive
- d. Preserve and protect the resource
- e. Collaborate

## Dead Man's Hollow Conservation Area Management Plan - 2014

Marketing, Promotion and Public Outreach Strategies						
Strategy	Description	Priority	Responsible/ Potential Partner(s)	Projected Cost	Funding	Date Completed
Awareness campaign to introduce GAP trail users to less known parts of DMH	Can use TrailBook, www.GAPtrail.com, news features, and itineraries as low cost methods. Can also consider developing a full marketing campaign.	S	ALT	Varies		
Participate in Trail Town process	A three-town task force (Boston, McKeesport, Homestead) is in place. Raise awareness around DMH as another outdoor recreation and heritage opportunity in the area.	S	Trail Town Program	Staff time		
Offer interpretation	Follow recommendations as made by Paschek Associates. Also, provide fact sheets and other resources to groups that can offer interpretive programming on site.	S	ALT / Various			
Partner with area historic and cultural sites and promote them collectively	The sites together create a compelling narrative that can draw people who might not have visited a single sight. Trail Town Program may be interested in collaborating on an industrial-themed brochure. Rivers of Steel is also interested.	S	ALT / Trail Town Program / Rivers of Steel	Staff time		
Develop a resource library	Professional present day photos, historic photos, oral histories, site artifacts, fact sheets, site history.	S	ALT	TBD		
Create suggested itineraries	Create themed itineraries, both specific to DMH and also multi-site. Hire intern or service corps member to create and test itineraries.	S	ALT / Various	Staff time		
Seek local and regional media features to raise awareness around DMH	The Daily News (McKeesport), Allegheny Front, others	S	ALT	Staff time		Begin fall 2014 by sharing info on completed management plan
Steward the site / clean ups	A litter-free, graffiti-free site improves user experiences and impressions	S	ALT / Friends of Dead Man's Hollow / Mon-Yough Trail Council	Staff time		Ongoing
Build photo library	Use volunteer and / or professional photographers to develop a library. Photos can be used in all other efforts.	S	ALT			
Suggest text updates for 2015-16 TrailBook	Review 2014 TrailBook (p. 68) and request text changes if applicable. Also ask for a "hiking along the GAP" feature highlighting DMH and other sites.	M	ALT / Allegheny Trail Alliance	Staff time		
Provide periodic updates to Allegheny Trail Alliance for	Develop a relationship with ATA as well as a captive audience of trail users (nearly 13,000 individuals).	M	ALT / Allegheny Trail Alliance (Facebook contact is Sandra Finley)	Staff time		Ongoing
Install Dero "Fix-it" station at GAP Boston trail access	A first of its kind on the GAP, the station would send a welcoming message to trail users and could be combined with an informational sign.	M	Mon-Yough Trail Council / Trail Town Program	\$940 + cost of sign		
Replace bike rack at GAP trail access with post & ring style racks	Send welcoming message to GAP trail users with this preferred style of bike rack (see Dero "bike hitch" for an example).	M	ALT	\$75-\$150 each non-custom		
Promote day hikes along GAP	Partner with Friends of Ohiopyle and other groups to market day hike opportunities along the GAP (and also Great Allegheny Passage)	M	ALT / Friends of Ohiopyle / Harpers Ferry National Historic Park / Appalachian Trail Conservancy	Staff time		
Exhibit at area museums and history centers	Target Heinz History Center particularly if National Register designation secured. Also, Rivers of Steel museum in Homestead.	M	ALT / Heinz History / Rivers of Steel / McKeesport Heritage Center / Elizabeth Twp. Historical Society	TBD		
Connect to Yough River Water Trail	Seek inclusion in update of Yough River Water Trail Map and Guide. Explore addition of an access ramp.	M	ALT / Mountain Watershed Association	TBD		

### Funding Opportunities

Many funding sources are available to help land trusts and municipalities fund planning, acquisition, and development of greenways, conservation areas and trails. Additionally, numerous organizations and agencies provide grant funding for conservation, environmental and recreational programming.

The Commonwealth of Pennsylvania has a number of funding opportunities available to land trusts and municipalities for conservation purposes. Most of these fall under the umbrella of one of two sources: 1.) Act 13 the Marcellus Legacy Fund, and, 2.) DCNR's Community Conservation Partnership Program.

#### Marcellus Legacy Fund

Act 13 of 2012 establishes the Marcellus Legacy Fund and allocates funds to the Commonwealth Financing Authority (CFA) for planning, acquisition, development, rehabilitation and repair of greenways, recreational trails, open space, parks and beautification projects using the Greenways, Trails and Recreation Program (GTRP).

#### Marcellus Legacy Fund

For additional information visit:  
<http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/greenways-trails-and-recreation-program-gtrp>

The CFA program is annual, and the application deadline is typically in July for consideration at the November CFA board meeting.

#### Uses

Projects which involve development, rehabilitation and improvements to public parks, recreation areas, greenways, trails and river conservation.

#### Funding

Grants shall be awarded to eligible applicants for projects that do not exceed \$250,000. A 15% local match of the total project cost is required.

#### Eligibility

- ✓ Municipalities
- ✓ Councils of Governments
- ✓ Authorized Organization
- ✓ Institution of Higher Education
- ✓ Watershed Organization
- ✓ For-Profit Businesses

### DCNR Community Conservation Partnership Programs and Priorities

The DCNR 2014 Grant Announcement describes grant assistance from the Department of Conservation and Natural Resources (DCNR) to help communities and organizations plan, acquire, and develop recreation, park, and trail facilities and conserve open space. Grants are funded through the Community Conservation Partnerships Program which combines several state and federal funding sources including the Keystone Recreation, Park, and Conservation Fund, Environmental Stewardship Fund, Pennsylvania Recreational Trails Program, and the Land and Water Conservation Fund.

#### PA DCNR Grant Opportunities

For additional information visit:

<http://www.dcnr.state.pa.us/brc/grants/>

Grant applications for this program are generally due in April of each year with funding announcements typically being made in the late fall.

The 2014 DCNR Grant Program continues to focus on making grant awards that advance local recreation and conservation priorities and implement the Statewide Comprehensive Outdoor Recreation Plan 2009-2013 (<http://paoutdoorrecplan.com/>).

#### Uses

- ✓ Sustainable and green park development and planning
- ✓ Major park and recreation rehabilitation projects that modernize facilities and bring them into compliance with the current standards for safety, ADA, and the Universal Construction Code,
- ✓ Trail projects that close gaps in major statewide greenways and regionally significant trails and planning to help communities become bicycle and pedestrian friendly
- ✓ Land conservation to protect critical habitat, forested watersheds, wetlands, and riparian corridors and lands that conserve connectors between public lands, or conserve urban green space
- ✓ Rivers conservation projects that enhance water trails, improve public access and/or increase awareness of Pennsylvania rivers
- ✓ Emerging trends including off-leash dog parks, splash/spray parks, skate parks and community parks that feature green amenities such as gardens and natural areas that connect children to nature, etc.
- ✓ Statewide and regional partnerships that build capacity to promote outdoor recreation and conservation of natural and heritage resources

DCNR is in the process of completing the new 2014-2018 State Comprehensive Outdoor Recreation Plan that will establish new priorities for grant funding beginning in 2015. Preliminary indications are that there will be a renewed emphasis on funding for local parks, while also maintaining the commitment to trail and conservation priorities.

Each of these grants typically requires the grantee to contribute or match a portion of the grant amount.

### **The Conservation Easement Assistance Program**

The Conservation Easement Assistance Program, sponsored by the Pennsylvania Land Trust Association, provides reimbursement grants to qualified organizations to help with completing conservation as well as trail and fishing access easements, amending and restating older easements, establishing or updating baseline documentation, and installing signs on eased properties. More information can be found here:

<http://conserveland.org/ceap>

### **National Park Service – Rivers, Trails, and Conservation**

Project applicants may be state or local agencies, tribes, nonprofit organizations, or citizen groups. Federal agencies may apply in partnership with other local organizations. More information can be found here:

<http://www.nps.gov/orgs/rtca/apply.htm>

### **PENNDOT- Transportation Alternatives Program Moving Ahead for Progress in the 21st Century**

(MAP-21) introduced fundamental changes to the administration of local programs, including those that previously existed as separate programs in the Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) legislation. Transportation Enhancements (TE), Safe Routes to School (SRTS), Scenic Byways (Byways) and the Recreational Trails Program (RTP) are now consolidated into the Transportation Alternatives Program (TAP). With the exception of the RTP, which takes funding “off the top”, the current eligible activities from the SAFETEA-LU programs compete against each other for funding. Transportation alternatives projects build pedestrian and bicycle facilities, improve access to public transportation, create safe routes to school, preserve historic transportation structures, provide environmental mitigation, create trails projects that serve a transportation purpose, while promoting safety and mobility. To provide for the continuation of recreational trails projects, MAP-21 requires each State to set aside a portion of its TAP funds for projects relating to recreational trails under 23 USC 206. The program will continue to be administered by the Department of Conservation and Natural Resources (DCNR). Guidance for the Recreational Trails Program remains relatively unchanged. The remaining guidance herein is not applicable to the Recreational Trails Program, more information is available at:

[www.dcnr.state.pa.us/cs/groups/public/documents/document/d\\_001241.pdf](http://www.dcnr.state.pa.us/cs/groups/public/documents/document/d_001241.pdf)

### **National Forest Foundation Grants**

The National Forest Foundation (NFF) is the only conservation organization solely focused on addressing the challenges that face America's National Forests and Grasslands. The NFF stands apart from similar organizations through its commitment to facilitating local involvement and encouraging grassroots participation in the stewardship of our public lands. More information can be found here:

[www.nationalforests.org/conserve/grantprograms](http://www.nationalforests.org/conserve/grantprograms)

### **Outdoor Foundation**

The Outdoor Foundation is a not-for-profit 501(c)3 foundation established by Outdoor Industry Association to inspire and grow future generations of outdoor enthusiasts. Its vision is to be a driving force behind a massive increase in active outdoor recreation in America

The Foundation's Corporate Philanthropy Programs allow brands and businesses to create consumer-facing giving campaigns that align with business goals while increasing outdoor recreation and spurring community engagement. Leveraging the Foundation's experience, companies can develop and completely own a unique, branded community grant program that results in effective charitable giving, meaningful stakeholder activation and valuable marketing content without incurring administrative or staff resources. To date, the Foundation has worked with partners to invest more than \$2 million in these corporate-driven community programs. For more information visit:

[www.outdoorfoundation.org](http://www.outdoorfoundation.org)

### **Do GOOD Outdoors**

\$5,000 grants to help you use the great outdoors to do GOOD in your community. Whether you want to organize an educational trip to the tidepools, start a rock-climbing club for kids, or plant flowers in a communal garden, we want to know what you're up to! Tell us how you'll be doing GOOD while getting some fresh air this summer and you'll be eligible for \$5,000.

<http://outdoors.maker.good.is/>

### **Blue Moon Fund**

Blue Moon Fund is a private philanthropic foundation that makes grants to nonprofit organizations. They work to build human and natural resilience to a changing and warming world. They use natural, social, and financial capital to implement new models in high-biodiversity regions around the world. They accept letters of inquiry solely through their website, and they accept full grant applications by invitation only. Please note that they do not accept inquiries by mail, email, or telephone. For more information:

[www.blumoonfund.org/grantmaking/](http://www.blumoonfund.org/grantmaking/)

### **Kresge Foundation**

The Kresge Foundation supports efforts that create access and opportunity in underserved communities. Each of their programs focuses on specific areas so they ask that you begin by learning more about the program that best fits your project. For more information:

<http://kresge.org/funding/apply-for-funding>

### **Lawrence Foundation**

The foundation is focused on making grants to support environmental, human services and other causes although Their interests are fairly diverse and may lead them into other areas on an occasional basis. They make both program and operating grants and do not have any geographic restrictions on our grants. Nonprofit organizations that qualify for public charity status under section 501(c)(3) of the Internal Revenue Code or public schools and libraries are eligible for contributions or grants. For more information visit:

[www.thelawrencefoundation.org/grants/guidelines.php](http://www.thelawrencefoundation.org/grants/guidelines.php)

### **Nathan Cummings Foundation**

The Environment program's accountability approach seeks to address the root causes of environmental degradation. Funding priority will be given to projects with the potential of having state, multi-state, or national impacts. More information can be found here:

[www.nathancummings.org/grant-programs/ecological-innovation-program](http://www.nathancummings.org/grant-programs/ecological-innovation-program)

### **Dr. Robert C. & Tina Sohn Foundation**

While the scope of the Foundation's efforts are largely centered on the environment and alternative health care modalities, the Foundation has the flexibility to contribute to such other causes as the Trustees believe are consistent with the Sohns' vision, including alleviation of poverty, education and the arts.

- A. The Foundation makes grants to private and publicly supported, not-for-profit, IRC approved 501(c)(3) tax exempt agencies, institutions, and organizations.
- B. The Foundation makes grants to eligible institutions whose mission involves: The Environment, Health and Human Services, Education (Arts)

For more information visit:

[www.sohnfoundation.org/Grant\\_guidelines1.htm](http://www.sohnfoundation.org/Grant_guidelines1.htm)

### **Keep America Beautiful**

Keep America Beautiful's partnerships with sponsors in the business community provide significant grants to their affiliates that can be used for creating and expanding local programs. These competitive grants promote volunteerism, beautification, community greening, litter prevention, recycling, waste reduction, and more. In the last few years, KAB affiliates have received grants and in-kind services valued at more than \$10 million. These significant grants allow their affiliate network to further KAB's mission to build and sustain vibrant communities. For more information visit:

[www.kab.org/site/PageServer?pagename=grants\\_Grant\\_applications](http://www.kab.org/site/PageServer?pagename=grants_Grant_applications)

### **Rite Aid Foundation**

The Rite Aid Foundation is dedicated to helping people in the communities Rite Aid serves lead happier, healthier lives. Eligible programs must focus on health and wellness in the communities in which Rite Aid operates and be offered by non-profit organizations that are classified under section 501(c)(3) of the Internal Revenue Service Code. Applications are accepted throughout the year with rolling deadlines. Grants are awarded for one year at a time, and no organization can receive a grant more than two years in a row. For more information visit:

[www.expandedschools.org/funding-opportunities/rite-aid-foundation#sthash.Pz2oUi6M.dpbs](http://www.expandedschools.org/funding-opportunities/rite-aid-foundation#sthash.Pz2oUi6M.dpbs)

### **Colcom Foundation**

Colcom Foundation's principal funding interests reflect a primary concern for quality of life, which it strives to address with honesty, compassion and responsibility. Through the practice of strategic grant-making, the Foundation focuses its philanthropic program on environmental sustainability, natural resource preservation, land and water conservation, and efforts to establish a sustainable population. For more information visit:

[www.colcomfdn.org/interests.html](http://www.colcomfdn.org/interests.html)

### **Western Pennsylvania Conservancy's Watershed Conservation Program**

Western Pennsylvania Conservancy's Watershed Conservation Program is dedicated to watershed conservation issues and to providing a full range of services to the community. WPC participates in a wide range of water conservation efforts including watershed conservation plans, watershed restoration projects, bathymetry initiatives, water trail mapping, algae studies and many others. For more information visit:

<http://waterlandlife.org/112>

### **Pennsylvania American Water is launching the Community Investment Challenge**

Pennsylvania American Water is launching the Community Investment Challenge contest on Facebook this fall to give nonprofit organizations the opportunity to win grant money for their community/environmental improvement project. For more information visit:

[www.amwater.com/paaw/about-us/community-involvement/community-program-info/page21833.html](http://www.amwater.com/paaw/about-us/community-involvement/community-program-info/page21833.html)

### **National Forest Foundation Grants**

The National Forest Foundation (NFF) is the only conservation organization solely focused on addressing the challenges that face America's National Forests and Grasslands. The NFF stands apart from similar organizations through its commitment to facilitating local involvement and encouraging grassroots participation in the stewardship of our public lands. For more information visit:

[www.nationalforests.org/conserve/grantprograms](http://www.nationalforests.org/conserve/grantprograms)

### **William Penn Foundation**

The William Penn Foundation works to advance opportunity, foster creativity, and ensure sustainability, we will continue to honor our enduring values of stewardship, respect, integrity, collaboration, and accountability. Acting with transparency and renewed urgency, we want to use data effectively in our service to others as a smart resource and dedicated partner. For more information visit:

[www.williampennfoundation.org/GrantmakingOverviewApplicationProcess.aspx](http://www.williampennfoundation.org/GrantmakingOverviewApplicationProcess.aspx)

### **Environmental Education Grants**

Pennsylvania Department of Environmental Protection Environmental Education Grant Program. The Environmental Education Grant Program was established by the Environmental Education Act of 1993, which mandates that five percent of all pollution fines and penalties collected annually by the Department of Environmental Protection be set aside for environmental education. Since the inception of the environmental education grant program, DEP has awarded nearly \$8 million in grants to support the environmental education efforts throughout Pennsylvania. Administered through DEP, the funds are used for projects ranging from creative, hands-on lessons for students, teacher training programs, and outdoor learning resources to conservation education for adults. For more information visit:

[www.portal.state.pa.us/portal/server.pt/community/environmental\\_education/13903/grants/588549](http://www.portal.state.pa.us/portal/server.pt/community/environmental_education/13903/grants/588549)

### **National Education Foundation**

National Education Foundation supports new ideas and practices to strengthen teaching and learning. Their goal is to fund and share successful strategies to educate and prepare students for bright and rewarding futures. They have learned that the best teaching methods come from our greatest assets: educators. That is why, over the last 10 years, they have awarded more than \$7.1 million to fund nearly 4,500 grants to public school educators to enhance teaching and learning. To build their knowledge base and to uncover new, great practices in public education they invite all eligible educational professionals to apply for these grants. They support new ideas and practices to strengthen teaching and learning. Their goal is to fund and share successful strategies to educate and prepare students for bright and rewarding futures. For more information visit:

[www.neafoundation.org/pages/grants-to-educators/](http://www.neafoundation.org/pages/grants-to-educators/)

### **The Water Resources Education Network**

The Water Resources Education Network (WREN) is a project of the Citizen Education Fund of the League of Women Voters of Pennsylvania (LWVPA-CEF). WREN is a nonpartisan informal collaboration of organizations and public officials working for the protection and management of Pennsylvania's water resources, both surface and ground water, through grass-roots education and informed policy-making. WREN provides training and grants for local coalition building to promote community awareness and development of public policies necessary to protect Pennsylvania water resources. For more information visit:

<http://wren.palwv.org/grants/local.html>

### **Lorrie Otto Seeds for Education Grant**

The Lorrie Otto Seeds for Education Grant Program gives small monetary grants to schools, nature centers, and other non-profit and not-for-profit places of learning in the United States with a site available for a stewardship project. Successful non-school applicants often are a partnership between a youth group (scouts, 4-H, etc.) and a site owner. Libraries, government agencies and houses of worship are eligible subject to youth participation.

[www.for-wild.org/seedmony.htm](http://www.for-wild.org/seedmony.htm)

### **Pennsylvania Department of Conservation and Natural Resources, Bureau of Forestry Tree Vitalize**

Pennsylvania Department of Conservation and Natural Resources, Bureau of Forestry Tree Vitalize- Responding to an alarming trend of the loss of trees in Pennsylvania's metropolitan areas, TreeVitalize is a public-private partnership to help restore tree cover, educate citizens about planting trees as an act of caring for our environment, and build capacity among local governments to understand, protect and restore their urban trees. For more information visit:

[www.treevitalize.net/SubGrant.aspx](http://www.treevitalize.net/SubGrant.aspx)

### **Public Allies Pittsburgh**

Public Allies is a national movement grounded in the conviction that everyone leads. They believe that everyone can make a difference and can work to inspire more citizens to believe in themselves, step up, and act. Throughout our nation's history, lasting social change has always resulted from the courageous acts of many, not just the inspiration of the few.

Public Allies' mission is to advance new leadership to strengthen communities, nonprofits and civic participation. Public Allies is changing the face and practice of leadership in communities across the country by demonstrating their conviction that everyone can lead, and that lasting social change results when citizens of all backgrounds step up, take responsibility, and work together.

The Public Allies signature AmeriCorps Ally Program identifies diverse young adults and prepares them for leadership through paid full-time nonprofit apprenticeships and rigorous leadership training. Their 10-month, full-time AmeriCorps apprenticeship program can help participants on their pathway to furthering their education and career, while giving them skills to expand their influence and leadership skills.

For more information visit: [www.publicallies.org](http://www.publicallies.org).

### **GRO1000 Grassroots Grants**

Scotts Miracle-Gro provides GRO1000 Grassroots Grants to help foster community spirit and public service. Grassroots Grants of up to \$1,500 are awarded to local communities to help bring edible gardens, flower gardens and public green spaces to neighborhoods across the United States. For more information visit:

<http://grogood.com/GiveBackToGro/Gro1000/Grassroots#sthash.fuMtj7SK.dpuf>

### **Public Lands Every Day, Every Day Event Grants**

Our nation's public lands are places where we picnic, play ball, fish, fly kites, pull weeds and plant seeds. Our public lands should be safe places of natural beauty where everyone can go to lend a hand, observe nature and enjoy life. With generous support from Toyota Motor Sales USA, Inc., NEEF offered Every Day Event Grants to public land organizations, or Friends Groups, to engage their community on a public land site. For more information visit:

<http://publiclandseveryday.org/grants/every-day-event-grants-o>

### **The Centers for Disease Control and Prevention Community Transformation Grant**

The Centers for Disease Control and Prevention (CDC), Community Transformation Grant (CTG) – Program continues its long-standing dedication to improving the health and wellness of all Americans through the Community Transformation Grant (CTG) Program. CTG is funded by the Affordable Care Act's Prevention and Public Health Fund. CDC supports and enables awardees to design and implement community-level programs that prevent chronic diseases such as cancer, diabetes, and heart disease. For more information visit:

[www.cdc.gov/nccdphp/dch/programs/communitytransformation/funds/index.htm](http://www.cdc.gov/nccdphp/dch/programs/communitytransformation/funds/index.htm)

### **Shell**

Shell Grants will consider charitable contributions to eligible nonprofit organizations with priority consideration given to organizations serving in or near US communities where Shell has a major presence. Focus is on biodiversity initiatives with support to programs that restore critical ecosystems, address water, air quality research, preserve wetlands and sponsor wetlands initiatives. As part of their commitment to environmental stewardship, they support projects that restore and protect critical ecosystems. In addition to restoration and preservation efforts, they fund research projects for threatened wildlife and/or habitats. For more information visit:

[www.shell.us/environment-society/grant.html](http://www.shell.us/environment-society/grant.html)

### **M&T Bank Grants**

M&T Bank recognizes that their corporate success is directly related to the health and vitality of the communities they serve. So, as a corporate citizen, they believe in providing resources to not-for-profit organizations that make our communities better places to live and work. Through their philanthropic arm, The M&T Charitable Foundation supports a diverse range of civic, cultural, education, health care, human service and youth organizations with financial grants, employee volunteerism and in-kind services. For more information visit:

[www.mtb.com/aboutus/community/Pages/CharitableContributions.aspx](http://www.mtb.com/aboutus/community/Pages/CharitableContributions.aspx)

### **Wells Fargo**

Wells Fargo supports the improvement of low and moderate-income communities through programs that revitalize and stabilize communities and also build strong environmental practices through programs that conserve natural resources, protect endangered species and preserve the global environment. For more information visit:

[www.wellsfargo.com/about/charitable/pa\\_guidelines](http://www.wellsfargo.com/about/charitable/pa_guidelines)

### **REI**

REI stores and employees join with nonprofits across the country to promote environmental stewardship and active volunteerism. For more information visit:

[www.rei.com/stewardship/community/non-profit-partnerships-and-grants/how-to-partner-with-rei.html](http://www.rei.com/stewardship/community/non-profit-partnerships-and-grants/how-to-partner-with-rei.html)

### **The Mazda Foundation**

The Mazda Foundation awards grants to programs promoting: education and literacy, environmental conservation, cross-cultural understanding, social welfare, and scientific research. For more information visit: [www.mazdafoundation.org/Grant\\_Guidelines.html](http://www.mazdafoundation.org/Grant_Guidelines.html)

### **Walmart Foundation**

For more information visit: <http://foundation.walmart.com/apply-for-grants/local-giving-guidelines>

## **Emergency Response Grants**

### **Federal Emergency Management Administration Grants**

- Preparedness (Non-Disaster) Grants
- Assistance to Firefighters Grants
- Hazard Mitigation Assistance Grants
- Disaster Grants
- United States Fire Administration Grants

For more information visit: [www.fema.gov/grants](http://www.fema.gov/grants)

### **Firehouse Subs Public Safety Foundation**

The Firehouse Subs Public Safety Foundation is dedicated to improving the life-saving capabilities of first responders and public safety organizations in communities served by Firehouse Subs by providing funding, resources and support. For more information visit:

[www.firehousesubs.com/Foundation-Overview.aspx](http://www.firehousesubs.com/Foundation-Overview.aspx)

### **Yamaha Motorsports**

For more information visit:

[www.yamahamotorsports.com/outdoor/OHV\\_Grants/GRANT\\_Guidelines\\_2014\\_OAI.pdf](http://www.yamahamotorsports.com/outdoor/OHV_Grants/GRANT_Guidelines_2014_OAI.pdf)

### **Polaris T.R.A.I.L.s Grant**

For more information visit: [www.polaris.com/en-us/company/trails-application.aspx](http://www.polaris.com/en-us/company/trails-application.aspx)

### **Fireman's Fund Insurance Agency Heritage Fund**

For more information visit: [www.firemansfund.com/heritage/Pages/heritage.aspx](http://www.firemansfund.com/heritage/Pages/heritage.aspx)

### **State Farm Good Neighborhood Citizens Grants**

For more information visit:

[www.statefarm.com/about-us/community/education-programs/grants-scholarships/company-grants/](http://www.statefarm.com/about-us/community/education-programs/grants-scholarships/company-grants/)

### **Funding from Oil and Gas Drilling on Park Property**

Local governments and non-profit organizations that are looking for additional sources of revenue for parks and even for other municipal operations often consider drilling for gas and oil on property. While the land owner may believe they have every right to do so, there may be restrictions if grant funding was used in the acquisition or development of the properties. If properties were acquired or developed using the Federal Land and Water Conservation Fund (LWCF), Project 500 Fund (P-500), Keystone Recreation, Park and Conservation Fund (Keystone), and/or the Growing Greener Bond Fund (GG2), the properties may only be used for purposes permitted in the funding legislation. These activities are generally restricted to recreation and conservation. To use the property for natural resource extraction is considered a change in use of the property that requires written consent from the PA DCNR and in some cases the US Department of Interior.

Both DCNR and the Department of Interior recognize that some drilling opportunities are good for the municipalities and their residents. Therefore, they have established certain guidelines under which drilling can take place. Any contracts or agreements for drilling on these properties must receive approval from DCNR prior to the signing of any lease.

If a conversion is approved by DCNR, the revenues produced from the drilling operations can only be used to fund projects that are consistent with the original grant legislation. Under the Keystone Fund, this means "the conservation open space, acquisition or development of park lands or natural areas for public benefit." Other funds have very similar restrictions.

DCNR has issued an the following *Advisory on Oil and Natural Gas Drilling* for those considering to lease oil and gas rights on their property.

## Bureau of Recreation and Conservation (BRC) Advisory on Oil and Natural Gas Drilling

### Who should read this advisory?

This advisory is of importance to local government officials, park and recreation professionals, conservation organizations and others who manage public park, trail or open space areas and who may be considering oil and natural gas exploration. Pay particular attention to this advisory if the property was acquired, developed or donated in conjunction with funding received from the PA Department of Conservation and Natural Resources (DCNR), Bureau of Recreation and Conservation (BRC) or its predecessor-PA Department of Community Affairs.

#### Past and current public grant funding sources:

- **P-70** (Project 70 Land Acquisition and Borrowing Act) - Act 1964-8
- **P-500** (Project 500 The Land and Water Conservation and Reclamation Act) - Act 1968-443
- **LWCF** (Land and Water Conservation Fund) - Federal funds to PA through the National Park Service
- **RIRA** (Recreational Improvement and Rehabilitation Act) - Act 1984-106
- **Key 93** (Keystone Recreation, Park and Conservation Fund Act) - Act 1993-50
- **PRT** (PA Recreation Trails Program) - Federal Highway Administration funds to PA
- **GGI** (Environmental Stewardship and Watershed Protection Act) - Act 1999-68
- **GGLI** (Growing Greener Bond Fund) - Act 2005-45

### Contact

**Greg Gove**- Chief of Recreation, Parks & Conservation Grants Division

(717) 783-2662 or [ggove@pa.gov](mailto:ggove@pa.gov)



**pennsylvania**  
DEPARTMENT OF CONSERVATION  
AND NATURAL RESOURCES

### Background

Many county, local governments and non-profit organizations throughout the Commonwealth are being asked to allow drilling for oil and/or natural gas in the Marcellus Shale formation underneath their lands. These lands include public parks, trails and land set aside for open space protection. Frequently these lands were acquired or developed with public grant funds which limit what can be done with the land. It is important to fully understand the requirements or restrictions that exist on the property prior to entering into an agreement or lease.

Knowing what you can or cannot do in regards to oil and/or natural gas drilling before you sign a lease will save you time and money in the future.

### What is a lease?

A mineral lease is a contractual agreement between the owner of a mineral tract (the lessor), who grants the right to develop deposits of the mineral, to a producer (the lessee). Oil and natural gas can be sold or leased separately to different parties. Different deposits of the same minerals in different formations can also be leased or sold separately. Usually, a lessee will reserve the right to sell or reassign a mineral lease to another party. A lease is usually secured by annual rental payments, or a royalty on production paid to the lessor.

If a lease is created we advise that you model them on the Bureau of Forestry's lease. You can find their standard lease at the following website:

<http://www.dcnr.state.pa.us/forestry/gaslease.aspx>

### Please be advised

Please contact BRC immediately if you are approached regarding an opportunity to drill for oil and/or natural gas; or if active drilling is currently taking place and you have just determine that BRC grant funds were used to **acquire or develop** your park, trail or open space area, or if **donated** land was used as match.

- If you own the park, trail or open space area in fee simple, and received **BRC funds to acquire** the property or have used **donated** land as match, please review a copy of the most recent deed(s) for the property. Deed restrictions associated with many of the grant programs should be listed there.
- Additionally, please determine, via a review of your deed with your Solicitor or Attorney, if your mineral rights have been severed from the property.
- Even if your deeds do not have restrictions in them, it's likely that limitations still apply if you own, lease and/or have an easement on the park, trail or open space area that has been **developed with BRC grant funds**.
- If you have a conservation or trail easement on the park, trail or open space area, review the document for any reference to a grant program. Also, review the current property owner's deed for the underlying fee interest for any reference to the sub-surface mineral rights/ oil and/or natural gas rights.

### Information BRC will ask for

Preliminary information you will be asked to provide on the land when you contact BRC includes:

- A letter describing the request
- Any BRC Grant Contract Numbers, if available
- A map of the area
- Your deed(s) on the property
- Any lease and/or easements on the property

### Recreational Program Grants

A host of organizations and agencies also make grants and other resources available for recreation programming and facilities.

### Other Funding Strategies

It is important to consider multiple funding sources for most major projects. Identify the possible groups, organizations, or grants agencies that may have an interest in a specific project. Consider the following potential sources of funding.

**Grant Agencies** - See the list of potential grant sources provided in this Chapter. It is wise to consider more than one grant source for multifaceted projects. Different agencies may be willing to provide funding for different portions of your project. For example, if a project includes construction of trails and development of a neighborhood park, there are agencies that will fund trails and others who will fund parks and land acquisition. Applying to both types of agencies for funding that meets their specific criteria enhances the likelihood of receiving a grant.

**Adjacent Municipalities** - In some cases adjacent municipalities have a specific interest in park and green space facilities located within the Township or Borough. In these cases there may be interest in making a financial contribution toward the project.

**Local Organizations** - Often local recreation organizations are willing to raise funds to be used for upgrades to their facilities. These funds should be considered as part of the local match for grant funding.

**Funds Already Planned for Use** - It is also helpful to consider funds that may already be allocated for use in or near a park that may be used as a source of matching funds.

**Creativity** - Creativity is key to finding and leveraging funding sources with one another. The intent is to reduce the local share as low as possible while accomplishing the goals of the project. Consider as many options as you can identify. Then contact the funding agencies to determine whether or not your plan meets their requirements.

**Partnerships** – Partnerships will be critical to ensuring local capacity to implement this Plan. All municipalities and organizations should consider opportunities to partner with others as they move toward implementation of the Plan's strategies. Partnerships can allow for the distribution of responsibility for funding, management, operations, programming or maintenance of a specific project. Often times funding agencies look more favorably upon projects that are developed through partnerships than those of an individual entity.



# Appendices

Appendix 1: Species Observed at  
Dead Man's Hollow Conservation Area  
During Study

Appendix 2: Soils of the Dead Man's Hollow Conservation Area

Appendix 3: Dead Man's Hollow Conservation Area Proposed Trail  
Standards

Appendix 4: Public Bid Opinions of Probable Construction Costs

Appendix 5: PA DCNR Incident Reports

Appendix 6: Guidelines for Conservation Easements and Fee Lands of  
the Allegheny Land Trust

Appendix 7: Stakeholder and Partner List

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## Appendix 1

### Species Observed at Dead Man's Hollow Conservation Area During Study

#### Amphibians (Class Amphibia) 2 total

Eastern Red-backed Salamander (*Plethodon cinereus*)

Allegheny Mountain Dusky Salamander (*Desmognathus ochrophaeus*)

#### Fungi and Lichen (Kingdom Fungi) 5 total

Turkey-tail (*Trametes versicolor*)

Dryad's Saddle (*Polyporus squamosus*)

Cinnabar Polypore (*Pycnoporus cinnabarinus*)  
mayapple rust (*Puccinia podophylli*)

Common Greenshield Lichen (*Flavoparmelia caperata*)

#### Birds (Class Aves) 53 total

Downy Woodpecker (*Picoides pubescens*)

Hairy Woodpecker (*Picoides villosus*)

Pileated Woodpecker (*Dryocopus pileatus*)

Red-bellied Woodpecker (*Melanerpes carolinus*)

Northern Flicker (*Colaptes auratus*)

Eastern Screech-Owl (*Megascops asio*)

Chimney Swift (*Chaetura pelagica*)

Ruffed Grouse (*Bonasa umbellus*)

Wild Turkey (*Meleagris gallopavo*)

Canada Goose (*Branta canadensis*)

Sharp-shinned Hawk (*Accipiter striatus*)

Cooper's Hawk (*Accipiter cooperii*)

Red-tailed Hawk (*Buteo jamaicensis*)

Broad-winged Hawk (*Buteo platypterus*)

Turkey Vulture (*Cathartes aura*)

Brown-headed Cowbird (*Molothrus ater*)

Baltimore Oriole (*Icterus galbula*)

Tufted Titmouse (*Baeolophus bicolor*)

Carolina Chickadee (*Poecile carolinensis*)

White-breasted Nuthatch (*Sitta carolinensis*)

Carolina Wren (*Thryothorus ludovicianus*)

House Wren (*Troglodytes aedon*)

#### Insects (Class Insecta) 8 total

Spicebush Swallowtail (*Papilio Troilus*)

Eastern Tiger Swallowtail (*Papilio glaucus*)

Mourning Cloak (*Nymphalis antiopa*)

Great Spangled Fritillary (*Speyeria cybele*)

eastern tent caterpillar (*Malacosoma americanum*)

Pleasing Fungus Beetle (*Megalodacne heros*)

Emerald Ash Borer (*Agrilus planipennis*)

Bee-Like Robber Fly (*Laphria sericea*)

#### Reptiles (Class Reptilia) 1 total

Eastern Rat Snake (*Pantherophis alleghaniensis*)

American Robin (*Turdus migratorius*)

Veery (*Catharus fuscescens*)

Wood Thrush (*Hylocichla mustelina*)

Eastern Phoebe (*Sayornis phoebe*)

Red-eyed Vireo (*Vireo olivaceus*)

Blue-headed Vireo (*Vireo solitarius*)

Ruby-crowned Kinglet (*Regulus calendula*)

Chipping Sparrow (*Spizella passerina*)

Eastern Towhee (*Pipilo erythrophthalmus*)

Indigo Bunting (*Passerina cyanea*)

Rose-breasted Grosbeak (*Pheucticus ludovicianus*)

Northern Cardinal (*Cardinalis cardinalis*)

Scarlet Tanager (*Piranga olivacea*)

Ovenbird (*Seiurus aurocapilla*)

Hooded Warbler (*Setophaga citrina*)

Northern Parula (*Setophaga americana*)

Bay-breasted Warbler (*Setophaga castanea*)

Blackburnian Warbler (*Setophaga fusca*)

Chestnut-sided Warbler (*Setophaga pensylvanica*)

Black-throated Green Warbler (*Setophaga virens*)

Black-throated Blue Warbler (*Setophaga caerulescens*)  
Black-and-white Warbler (*Mniotilta varia*)  
Tennessee Warbler (*Oreothlypis peregrina*)  
Nashville Warbler (*Oreothlypis ruficapilla*)  
Louisiana Waterthrush (*Parkesia motacilla*)  
Blue-gray Gnatcatcher (*Poliophtila caerulea*)  
American Crow (*Corvus brachyrhynchos*)  
Blue Jay (*Cyanocitta cristata*)  
American Goldfinch (*Spinus tristis*)

### **Mammals (Class Mammalia) 12 total**

White-tailed Deer (*Odocoileus virginianus*)  
Common Raccoon (*Procyon lotor*)  
Striped Skunk (*Mephitis mephitis*)  
Domestic Cat (*Felis catus*)  
Domestic Dog (*Canis familiaris*)  
Red Fox (*Vulpes vulpes*)  
Common Gray Fox (*Urocyon cinereoargenteus*)  
Virginia Opossum (*Didelphis virginiana*)  
Eastern Cottontail (*Sylvilagus floridanus*)  
Eastern Gray Squirrel (*Sciurus carolinensis*)  
Woodchuck (*Marmota monax*)  
Deer Mouse (*Peromyscus maniculatus*)

### **Plants (Kingdom Plantae) 122 total**

Christmas Fern (*Polystichum acrostichoides*)  
intermediate wood fern (*Dryopteris intermedia*)  
Bracken (*Pteridium aquilinum*)  
ebony spleenwort (*Asplenium platyneuron*)  
sensitive fern (*Onoclea sensibilis*)  
Eastern White Pine (*Pinus strobus*)  
Eastern Hemlock (*Tsuga canadensis*)  
Eastern Redbud (*Cercis Canadensis*)  
Red Clover (*Trifolium pretense*)  
Black Locust (*Robinia pseudoacacia*)  
Hog Peanut (*Amphicarpaea bracteata*)  
Rum Cherry (*Prunus serotina*)  
Choke Cherry (*Prunus virginiana*)  
Purple-flowering Raspberry (*Rubus odoratus*)

Multiflora Rose (*Rosa multiflora*)  
White avens (*Geum canadense*)  
common ninebark (*Physocarpus opulifolius*)  
Glossy Buckthorn (*Frangula alnus*)  
Common buckthorn (*Rhamnus cathartica*)  
Wood nettle (*Laportea canadensis*)  
Wild Stone Crop (*Sedum ternatum*)  
American Elm (*Ulmus americana*)  
Hackberry (*Celtis occidentalis*)  
Indian Pipe (*Monotropa uniflora*)  
Spotted Touch-me-not (*Impatiens capensis*)  
Flowering Dogwood (*Cornus florida*)  
wild hydrangea (*Hydrangea arborescens*)  
Lesser Periwinkle (*Vinca minor*)  
Catchweed bedstraw (*Galium aparine*)  
azure bluet (*Houstonia caerulea*)  
Jumpseed (*Persicaria virginiana*)  
Japanese Knotweed (*Fallopia japonica*)  
star chickweed (*Stellaria pubera*)  
common chickweed (*Stellaria media*)  
fire pink (*Silene virginica*)  
pokeweed (*Phytolacca americana*)  
spring beauty (*Claytonia virginica*)  
Carolina spring-beauty (*Claytonia caroliniana*)  
Oriental Staff Vine (*Celastrus orbiculatus*)  
Common Dandelion (*Taraxacum officinale*)  
bluestem goldenrod (*Solidago caesia*)  
white wood aster (*Eurybia divaricate*)  
wingstem (*Verbesina alternifolia*)  
sweet Joe-Pye weed (*Eutrochium purpureum*)  
spotted geranium (*Geranium maculatum*)  
Poison Ivy (*Toxicodendron radicans*)  
staghorn sumac (*Rhus typhina*)  
Tree of Heaven (*Ailanthus altissima*)  
Red Maple (*Acer rubrum*)  
Sugar Maple (*Acer saccharum*)  
Norway Maple (*Acer platanoides*)  
Chestnut Oak (*Quercus montana*)  
northern red oak (*Quercus rubra*)  
White Oak (*Quercus alba*)  
Scarlet Oak (*Quercus coccinea*)

American Beech (*Fagus grandifolia*)  
sweet birch (*Betula lenta*)  
beaked hazel (*Corylus cornuta*)  
Eastern Black Walnut (*Juglans nigra*)  
shagbark hickory (*Carya ovata*)  
Mockernut Hickory (*Carya tomentosa*)  
Virginia Bluebells (*Mertensia virginica*)  
Virginia Waterleaf (*Hydrophyllum virginianum*)  
White Ash (*Fraxinus americana*)  
Veiny skullcap (*Scutellaria nervosa*)  
Red deadnettle (*Lamium purpureum*)  
American plantain (*Plantago rugelii*)  
Bloodroot (*Sanguinaria canadensis*)  
squirrel corn (*Dicentra canadensis*)  
Dutchman's Breeches (*Dicentra cucullaria*)  
Greater Celandine (*Chelidonium majus*)  
pale corydalis (*Corydalis flavula*)  
small-flowered crowfoot (*Ranunculus abortivus*)  
black bugbane (*Cimicifuga racemosa*)  
early meadow-rue (*Thalictrum dioicum*)  
Mayapple (*Podophyllum peltatum*)  
Thunberg's Barberry (*Berberis thunbergii*)  
Blue Cohosh (*Caulophyllum thalictroides*)  
Morrow's Honeysuckle (*Lonicera morrowii*)  
Japanese Honeysuckle (*Lonicera japonica*)  
Elderberry (*Sambucus nigra*)  
maple-leaf viburnum (*Viburnum acerifolium*)  
hobblebush (*Viburnum lantanoides*)  
honestwort (*Cryptotaenia canadensis*)  
anise root (*Osmorhiza longistylis*)  
devil's walkingstick (*Aralia spinosa*)  
Sassafras (*Sassafras albidum*)  
Tulip tree (*Liriodendron tulipifera*)  
Cucumber-tree (*Magnolia acuminata*)  
smooth yellow violet (*Viola pensylvanica*)

Sweet white violet (*Viola blanda*)  
Halberd leaved violet (*Viola hastata*)  
Woolly blue violet (*Viola sororia*)  
Canadian wild ginger (*Asarum canadense*)  
Dames Rocket (*Hesperis matronalis*)  
Broadleaf toothwort (*Cardamine diphylla*)  
Touch-me-not bittercress (*Cardamine impatiens*)  
Hairy bittercress (*Cardamine hirsutg*)  
Cutleaf toothwort (*Cardamine concatenata*)  
Garlic mustard (*Alliaria petiolata*)  
smooth rockcress (*Boechera laevigata*)  
Witchhazel (*Hamamelis virginiana*)  
American sycamore (*Platanus occidentalis*)  
Virginia creeper (*Parthenocissus quinquefolia*)  
White bear sedge (*Carex albursina*)  
Japanese stiltgrass (*Microstegium vimineum*)  
Deertongue (*Dichanthelium clandestinum*)  
Common Cattail (*Typha latifolia*)  
Star-of-Bethlehem (*Ornithogalum umbellatum*)  
Small white leek (*Allium tricoccum*)  
False solomon's seal (*Maianthemum racemosum*)  
Solomon's seal (*Polygonatum biflorum*)  
Wake-robin (*Trillium erectum*)  
Large white trillium (*Trillium grandiflorum*)  
large-flower bellwort (*Uvularia grandiflora*)  
Jack-in-the-pulpit (*Arisaema triphyllum*)  
common wild yam (*Dioscorea villosa*)  
Snakewort (*Conocephalum salebrosum*)  
Woodsy thyme-moss (*Plagiomnium cuspidatum*)  
Flat-brocade moss (*Platygyrium repens*)  
Delicate fern moss (*Thuidium delicatulum*)  
Overleaf peltia (*Pellia epiphylla*)

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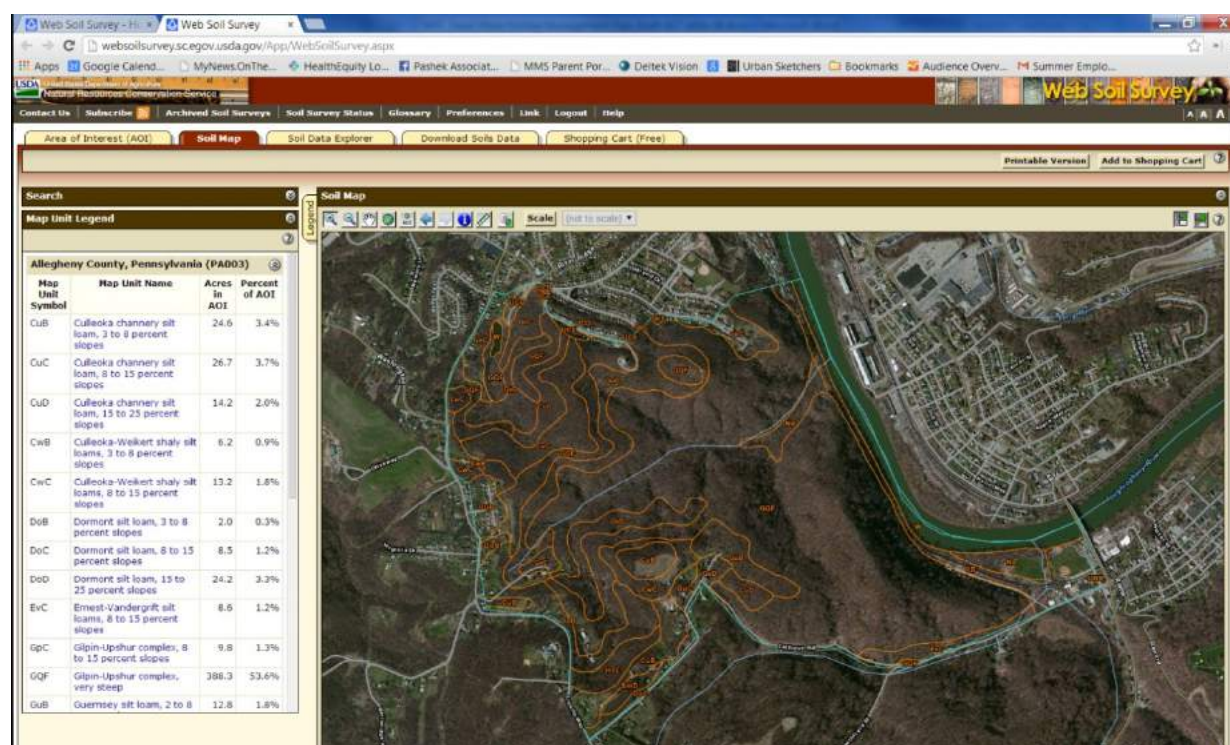
### Appendix 2

## Soils of the Dead Man's Hollow Conservation Area

### Soils

Web Soil Survey provides soil data and information produced by the National Cooperative Soil Survey. It is operated by the USDA Natural Resources Conservation Service (NRCS) and provides access to the largest natural resource information system in the world. NRCS has soil maps and data available online for more than 95 percent of the nation's counties and anticipates having 100 percent in the near future. The site is updated and maintained online as the single authoritative source of soil survey information.

A query of the Web Soil Survey indicates the following about the soils located within the Dead Man's Hollow Conservation Area.



#### *Culleoka Soils*

The Culleoka soils consist of moderately deep, well drained soils formed in residuum of weathered limestone, sandstone, siltstone and shale.

#### *Ernest Soils*

The Ernest series consists of very deep, moderately well drained soils with moderately slow to slow permeability. These soils formed in colluvium from shale.

#### *Gilpin Soils*

The Gilpin series consists of moderately deep, well drained soils formed in residuum of nearly horizontal interbedded shale, siltstone, and some sandstone of the Allegheny Plateau. They are on gently sloping to steep, convex, dissected uplands.

<i>Guernsey Soils</i>	The Gurnsey soils consist of deep, moderately well drained, slowly permeable and moderately slowly permeable soils on uplands. The soils formed in residuum of weathered clay shale, siltstone and limestone.
<i>Newark Soils</i>	The Newark series consists of very deep, somewhat poorly drained soils formed in mixed alluvium from limestone, shale, siltstone, sandstone, and loess. The soil is on nearly level flood plains and in depressions.
<i>Upshur Soils</i>	The Upshur series consists of deep and very deep, well drained, slowly permeable soils formed in residuum derived from clay shale and in places interbedded with thin layers of siltstone. Upshur soils are on ridgetops, benches, and hillsides.
<i>Vandergrift Soils</i>	The Vandergrift series consists of deep and very deep, moderately well and somewhat poorly drained soils formed in interbedded calcareous and noncalcareous, red and gray shale, siltstone, and limestone.

### **Hydrologic Groups**

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

### **Depth to Restrictive Layer**

A "restrictive layer" is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers.

This theme presents the depth to any type of restrictive layer that is described for each map unit. If more than one type of restrictive layer is described for an individual soil type, the depth to the shallowest one is

presented. If no restrictive layer is described in a map unit, it is represented by the "> 200" depth class.

### ***Depth to Water Table***

Water table refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

### ***Prime and Important Farmland***

This table lists the map units in the survey area that are considered important farmlands. Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

For some of the soils identified in the table as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

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Symbol	Map Unit Name	Acres in AOI	Percent of AOI	Drainage Classification	Hydric Soils	Hydric Components	Hydrologic Soils Group	Depth to Restrictive Layer (CM)	Depth to Water Table (CM)	Frequency of Flooding	On-Site Sewage Disposal	Development of Paths and Trails	Prime & Important Farm Land	AVG Frost Free Days
CuC	Culleoka channery silt loam, 8 to 15 percent slopes	18.6	4.80%	Well Drained		X	B	79	>200	None	Very Limited	Somewhat Limited	Farmland of Statewide Importance	183
CuD	Culleoka channery silt loam, 15 to 25 percent slopes	14	3.60%	Well Drained		X	B	79	>200	None	Very Limited	Somewhat Limited	Not Prime Farm Land	183
EvC	Ernest-Vandergrift silt loams, 8 to 15 percent slopes	1.4	0.40%	Moderately Well Drained	X	X	C	71	53	None	Very Limited	Very Limited	Farmland of Statewide Importance	150
GQF	Gilpin-Upshur complex, very steep	284.1	73.90%	Well Drained		X	C	76	>200	None	Very Limited	Very Limited	Not Prime Farm Land	150
GuB	Guernsey silt loam, 2 to 8 percent slopes	11.5	3.00%	Moderately Well Drained		X	C	142	53	None	Very Limited	Somewhat Limited	All Areas Are Prime Farm Land	150
GuD	Guernsey silt loam, 15 to 25 percent slopes	1.8	0.50%	Moderately Well Drained		X	C	142	53	None	Very Limited	Very Limited	Not Prime Farm Land	150
GvC	Guernsey-Vandergrift silt loams, 8 to 15 percent slopes	7.6	2.00%	Moderately Well Drained	X	X	C	142	53	None	Very Limited	Somewhat Limited	Farmland of Statewide Importance	140
GvD	Guernsey-Vandergrift silt loams, 15 to 25 percent slopes	33.4	8.70%	Moderately Well Drained	X	X	C	152	53	None	Very Limited	Somewhat Limited	Not Prime Farm Land	140
Ne	Newark silt loam	7.7	2.00%	Somewhat Poorly Drained	X	X	C	>200	31	Frequent	Very Limited	Somewhat Limited	Farmland of Statewide Importance	160
UB	Urban land	1.2	0.30%			X		25	>200	None	Not Rated	Not Rated	Not Prime Farm Land	185
UCB	Urban land-Culleoka complex, gently sloping	1.2	0.30%			X		>200	>200	None	Very Limited	Not Rated	Not Prime Farm Land	160
UCE	Urban land-Culleoka complex, steep	0	0.00%			X		25	>200	None	Very Limited	Not Rated	Not Prime Farm Land	160
W	Water	1.7	0.50%			X		>200	>200	None	Not Rated	Not Rated	Not Prime Farm Land	160

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### *Appendix 3*

## **Dead Man's Hollow Conservation Area Proposed Trail Standards**

### Trail Construction Standards

We recommend the construction details, contained in Appendix 3, be adopted as standard construction details for trails in the Dead Man's Hollow Conservation Area.

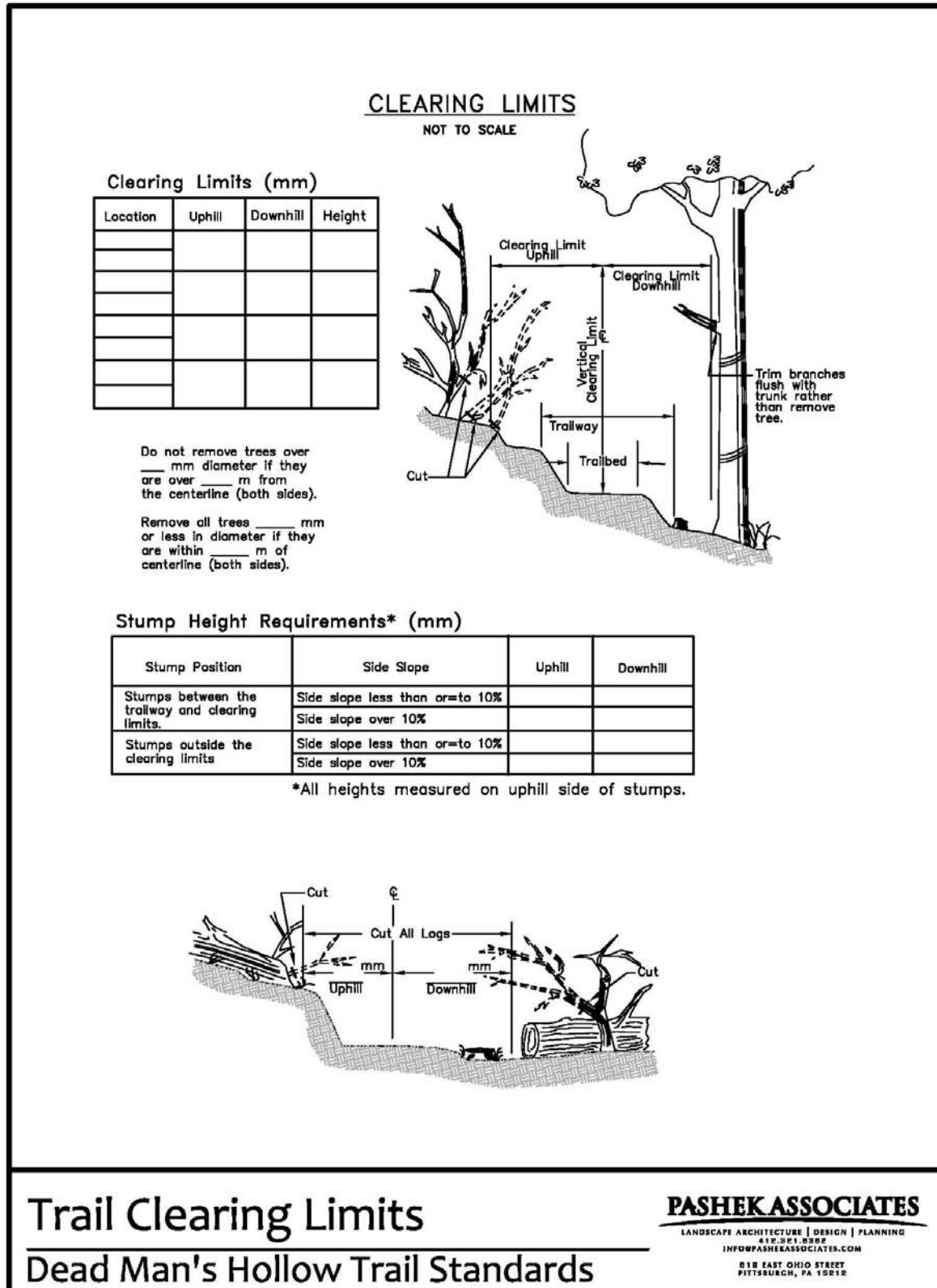
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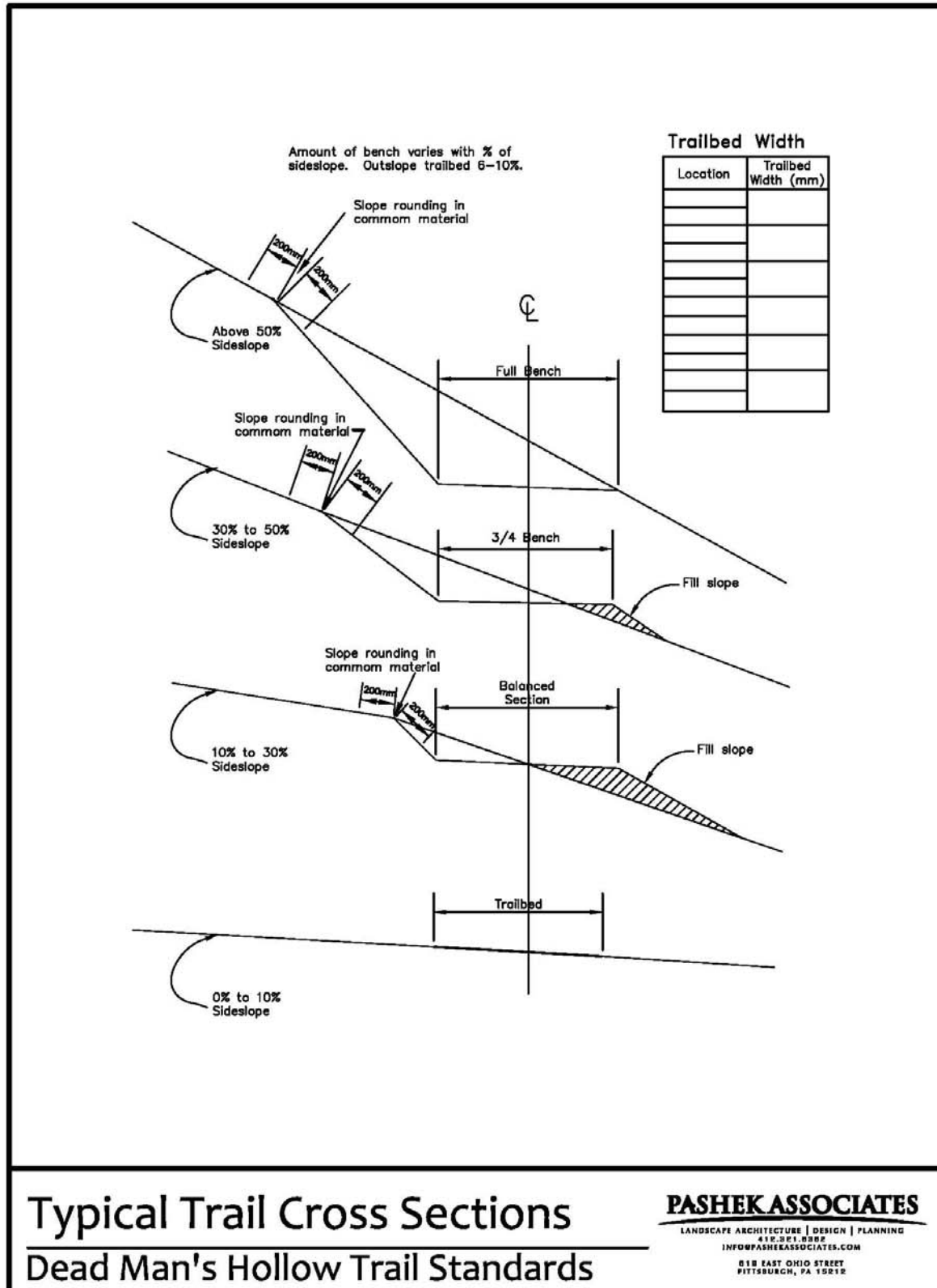
- Trail Clearing Limits
- Typical Trail Cross Sections
- Trailbed Slope and Finish
- Grade Dip
- Rolling Dip
- Insloped Climbing Turn
- Switchback Type I
- Switchback Type II
- Switchback Type III
- Drainage Lens
- Stone Steps
- Stepping Stones
- Shallow Stream Ford Crossing
- Culvert with Stone Headwall
- Trail Obliteration
- Trail Restoration

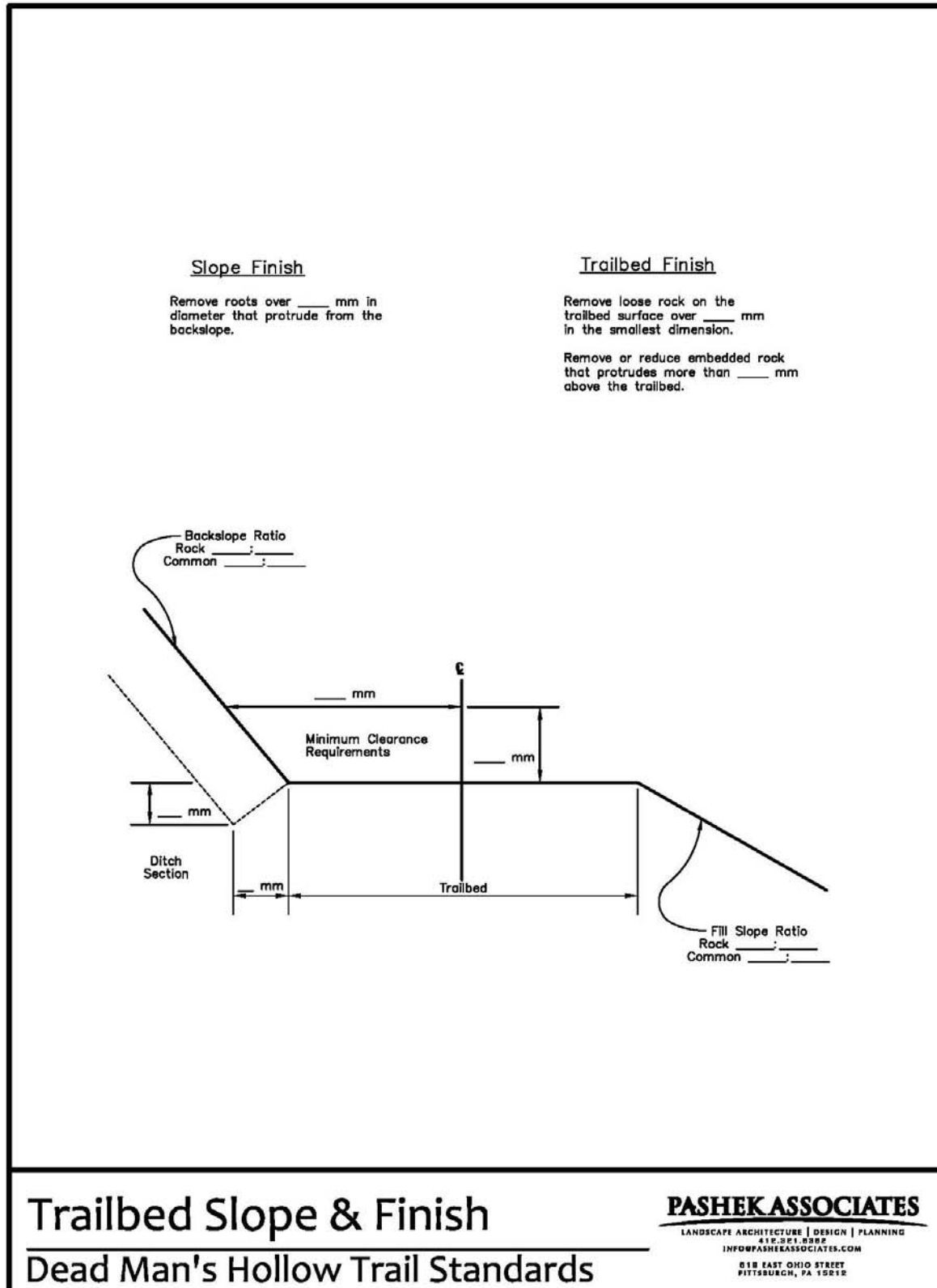
They are based on the U.S. Forest Service's National Trail Drawings and Specifications, available here:

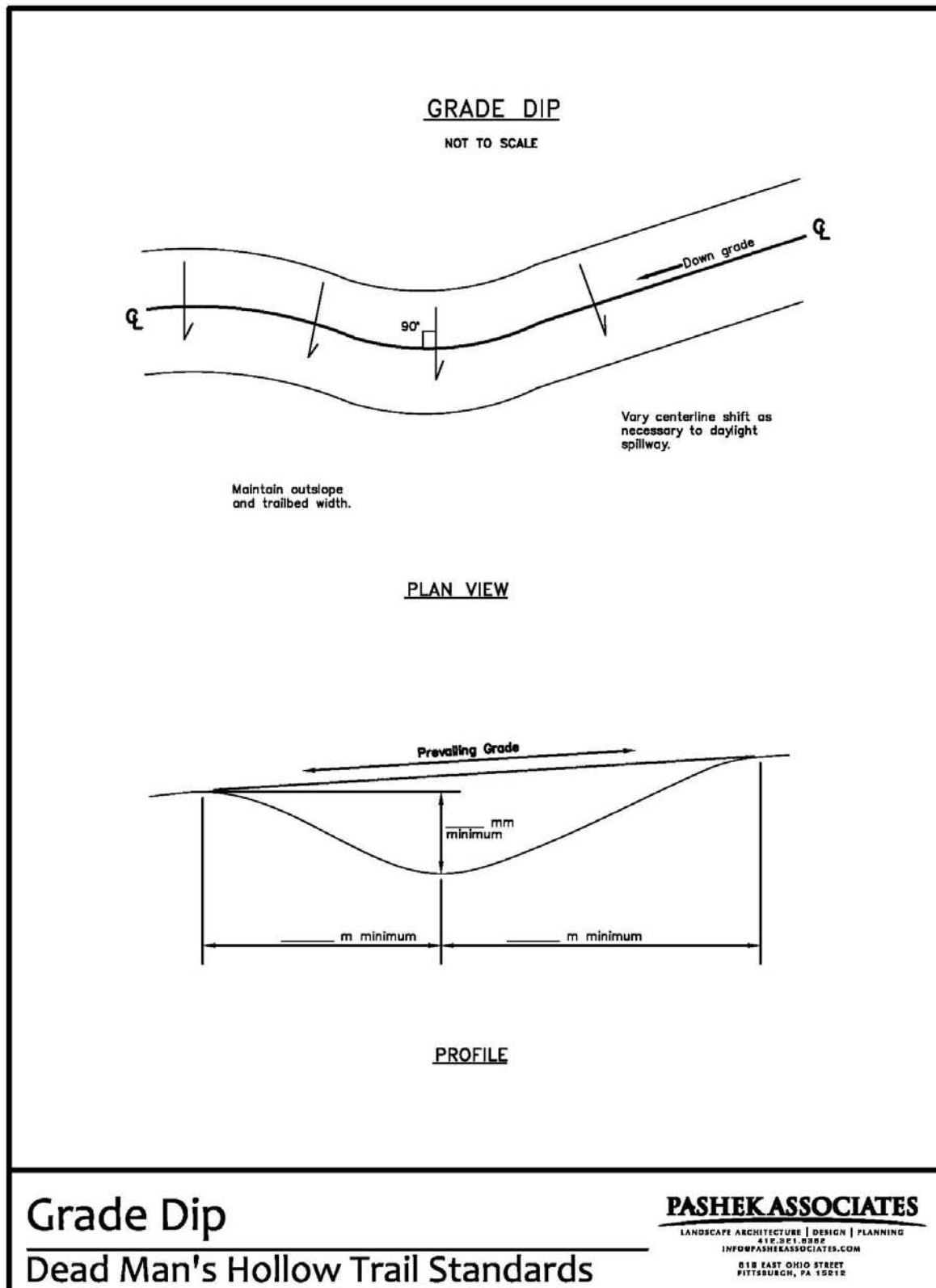
[www.fs.fed.us/database/acad/dev/trails/trails.htm](http://www.fs.fed.us/database/acad/dev/trails/trails.htm)

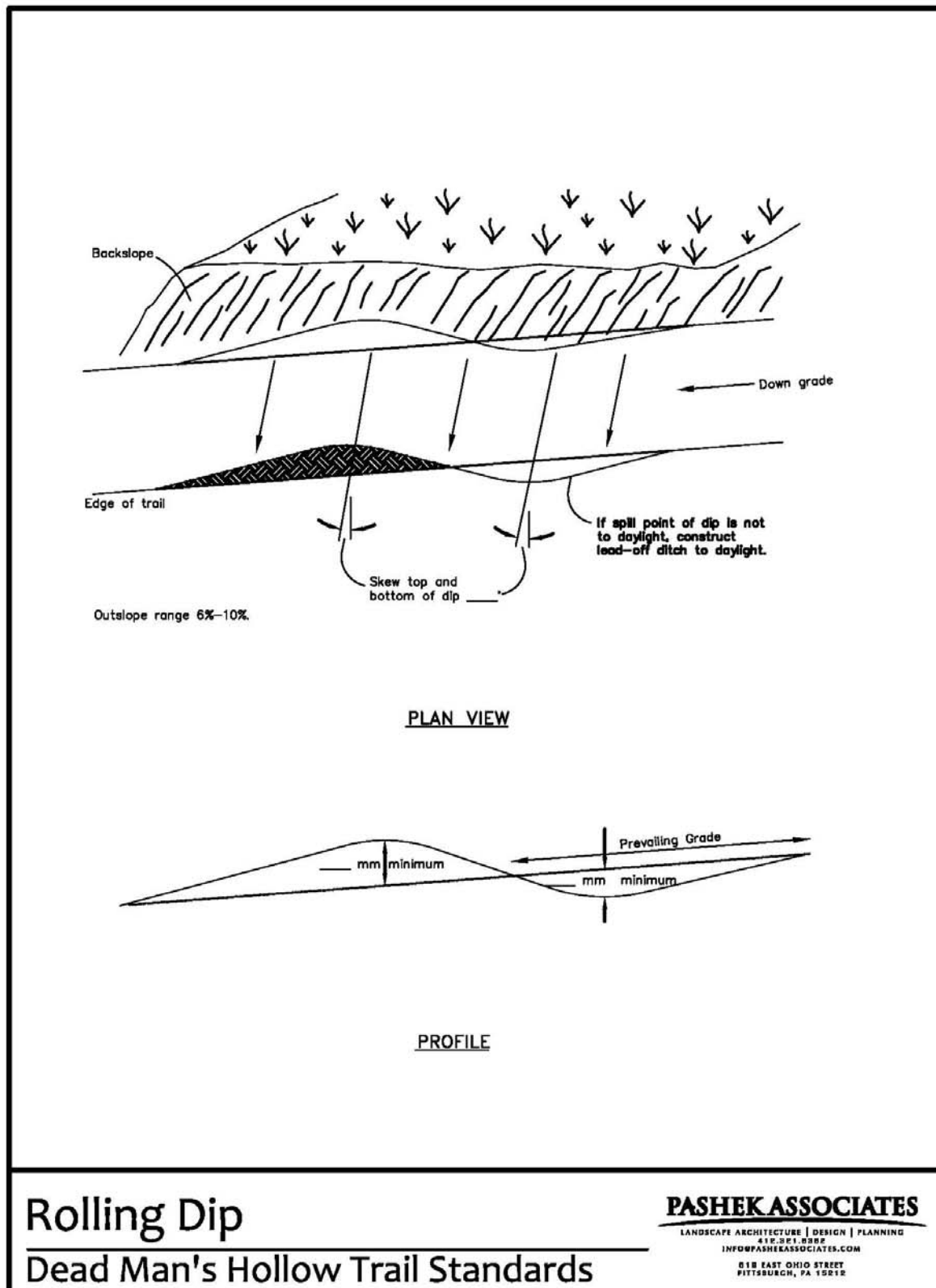
The locations of these items should be documented on a Trail Construction Work Log during the final flagging and design of the trails. The work log will then serve as the construction documents that volunteers and others will follow to build the trails.

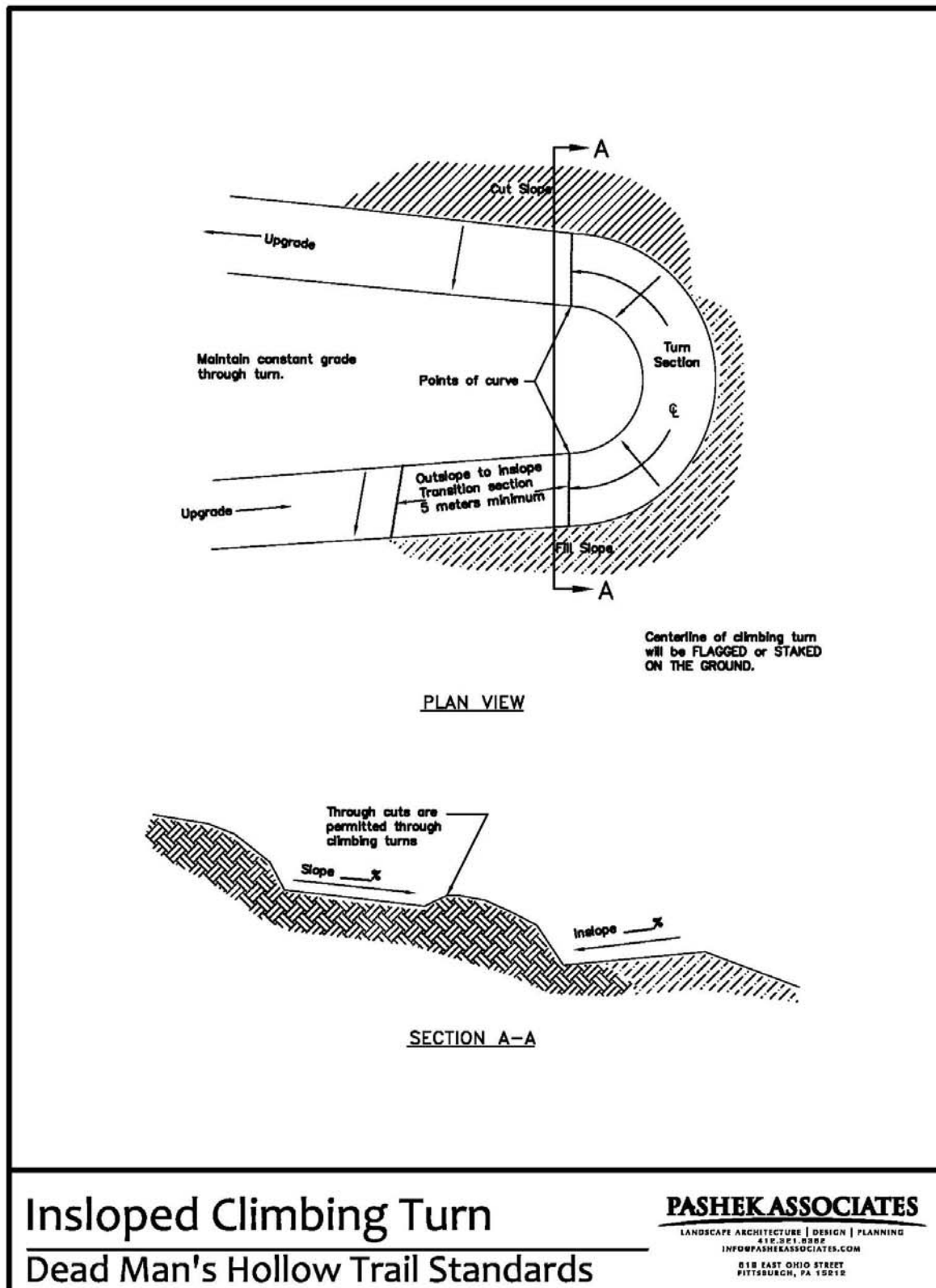


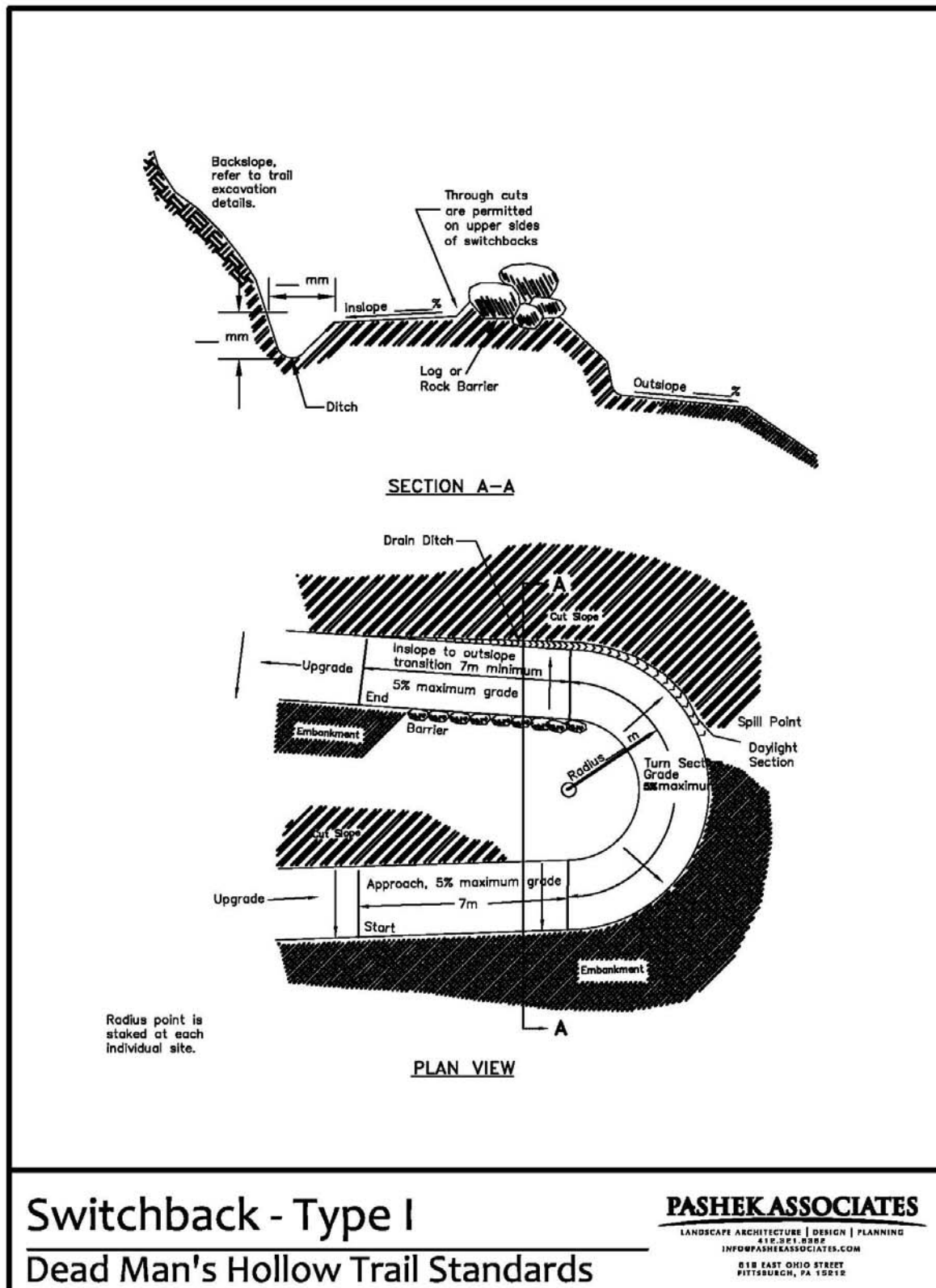


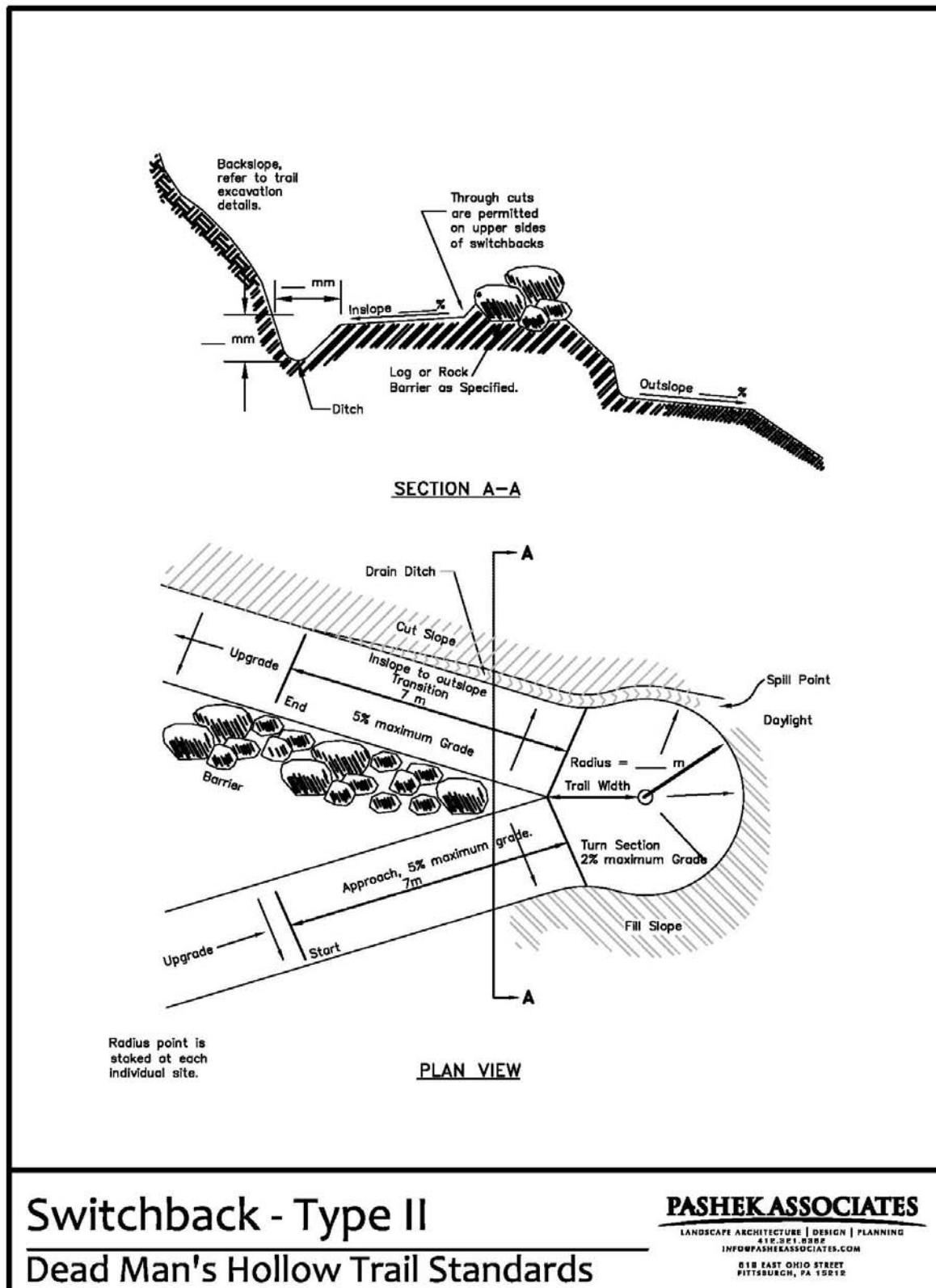


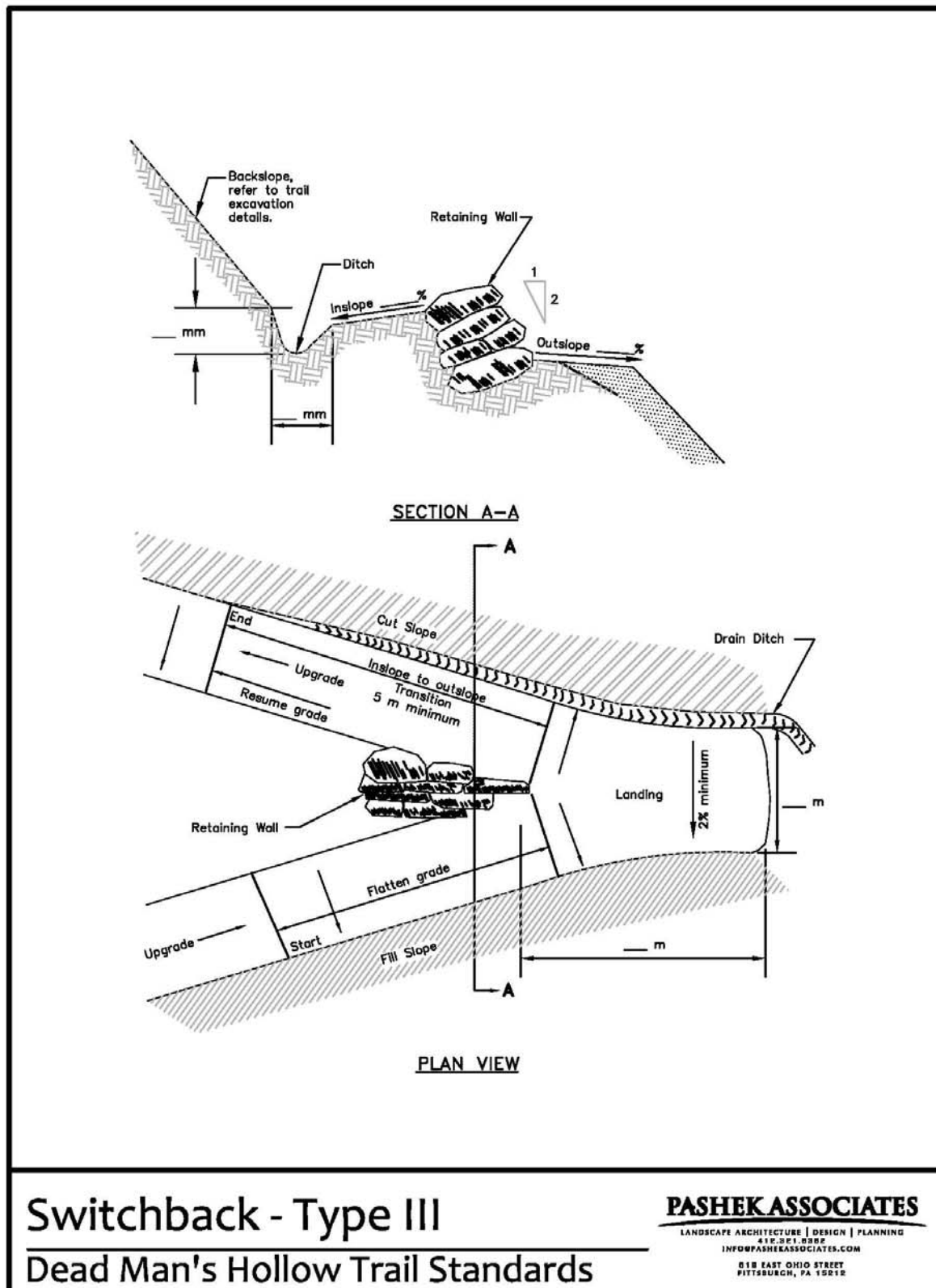


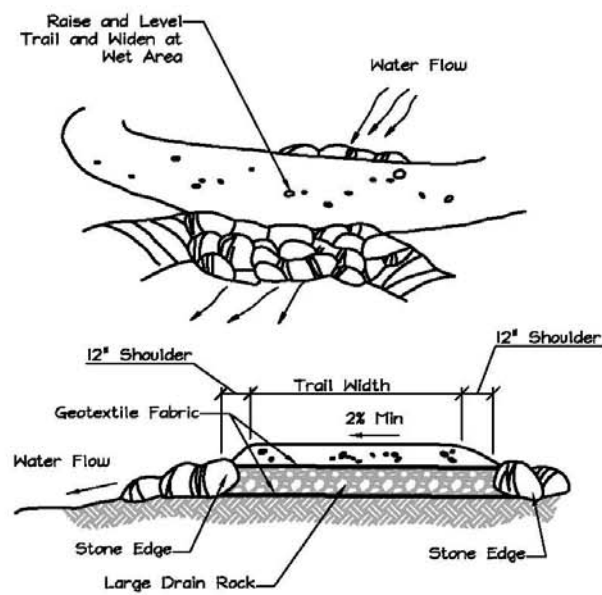










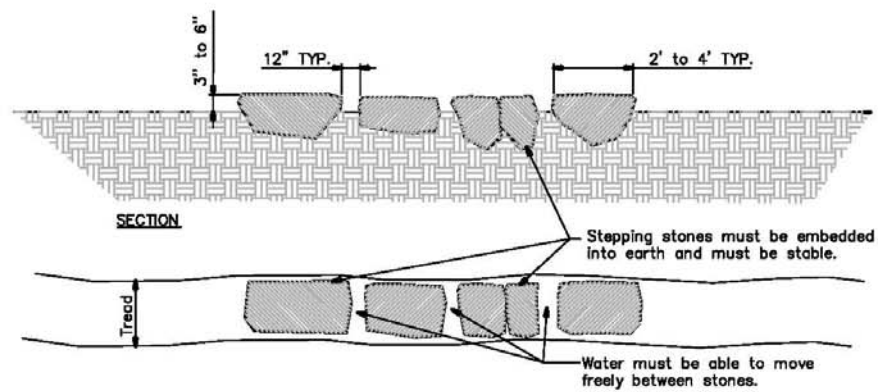


## Drainage Lens

### Dead Man's Hollow Trail Standards

#### **PASHEK ASSOCIATES**

LANDSCAPE ARCHITECTURE | DESIGN | PLANNING  
412.221.8888  
INFO@PASHEKASSOCIATES.COM  
818 EAST OHIO STREET  
PITTSBURGH, PA 15212

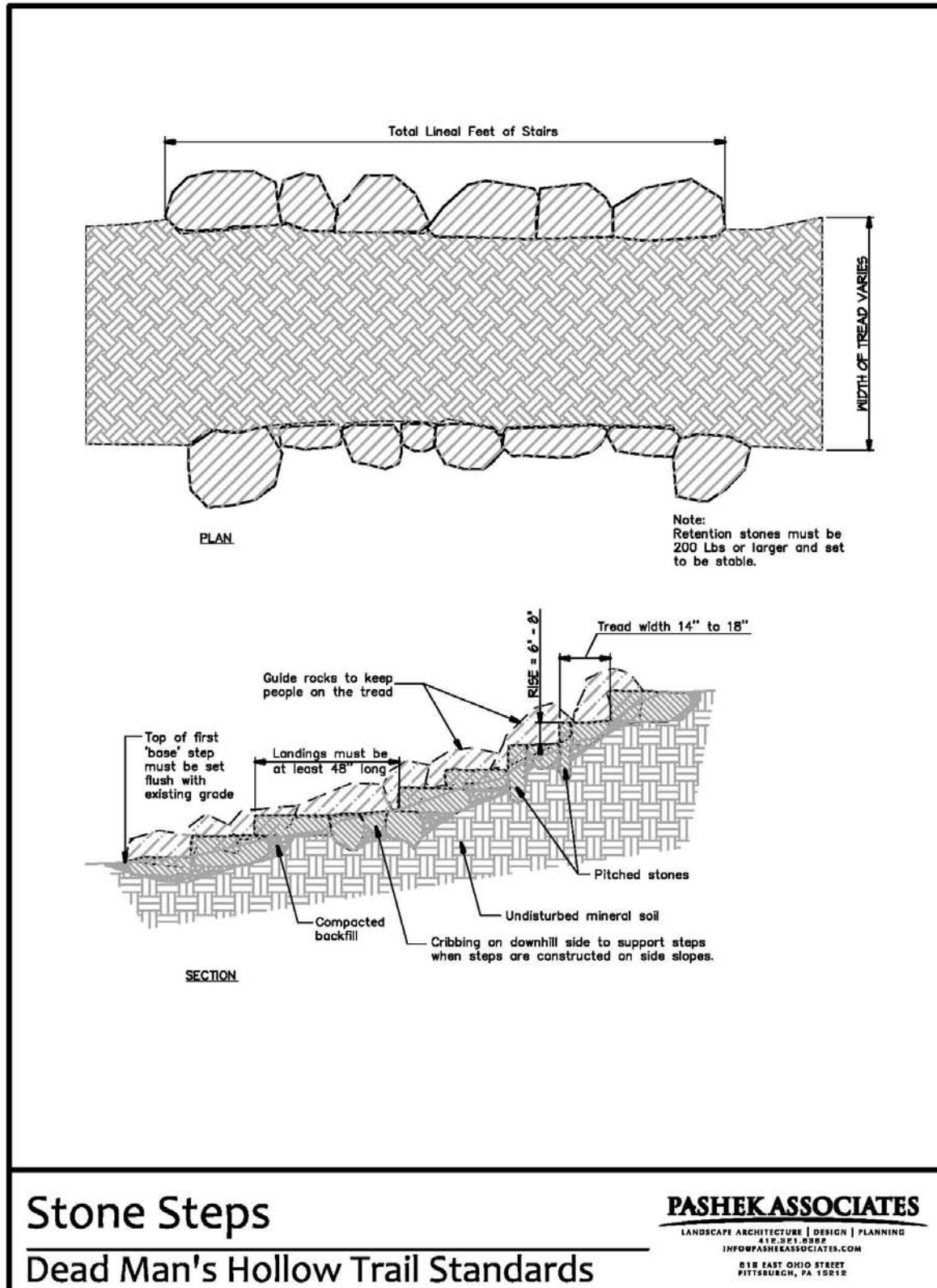


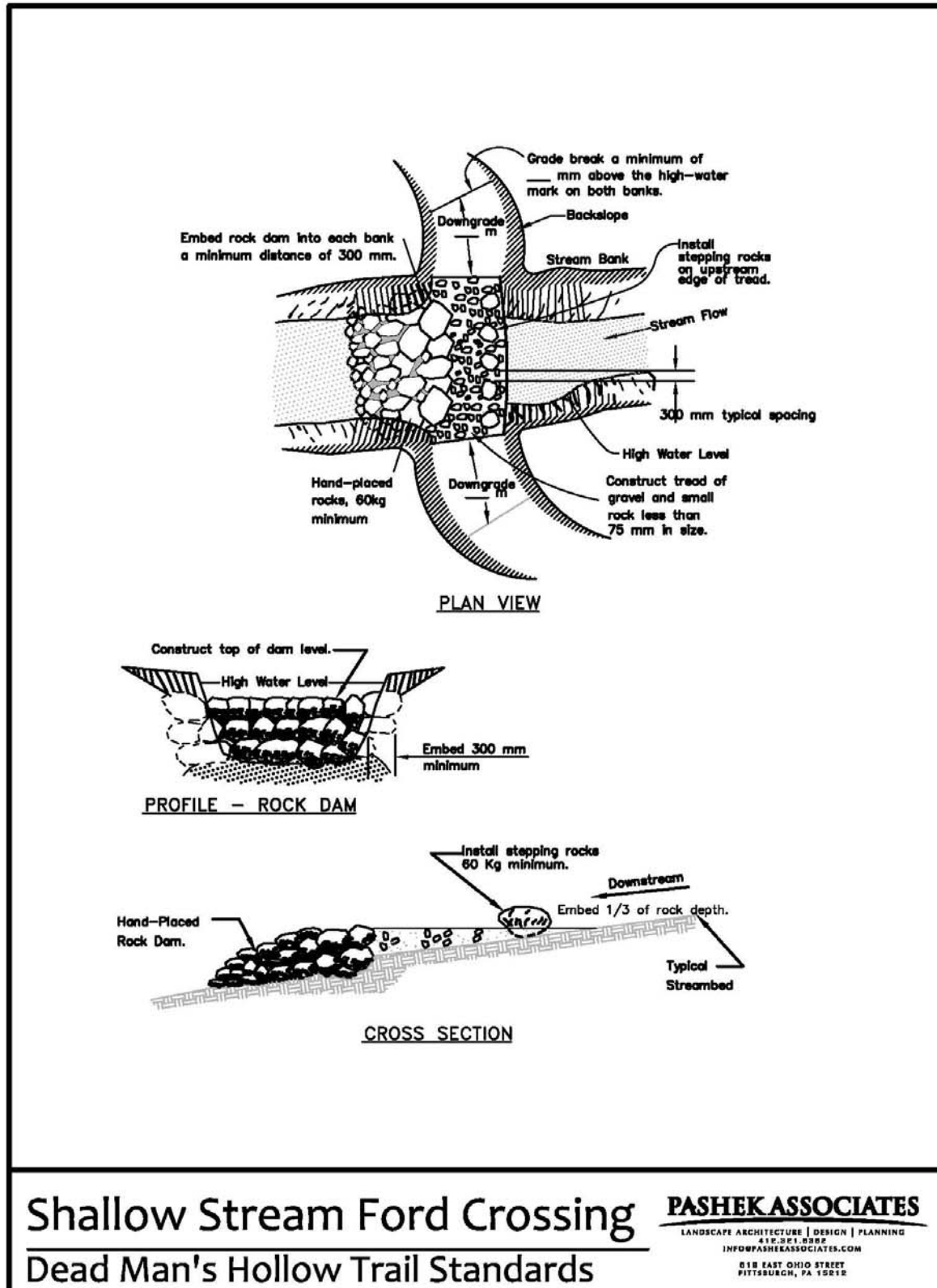
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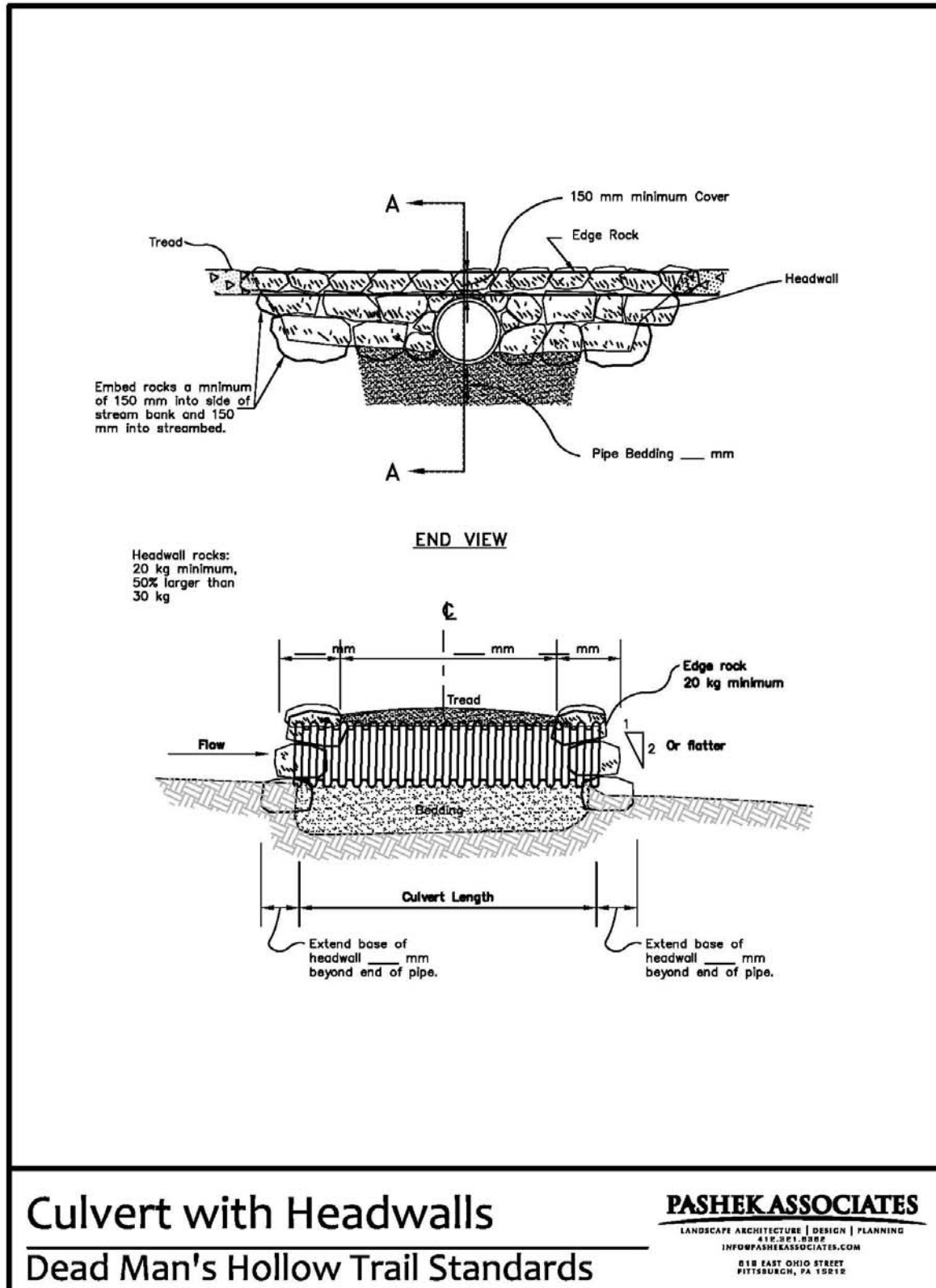
### Dead Man's Hollow Trail Standards

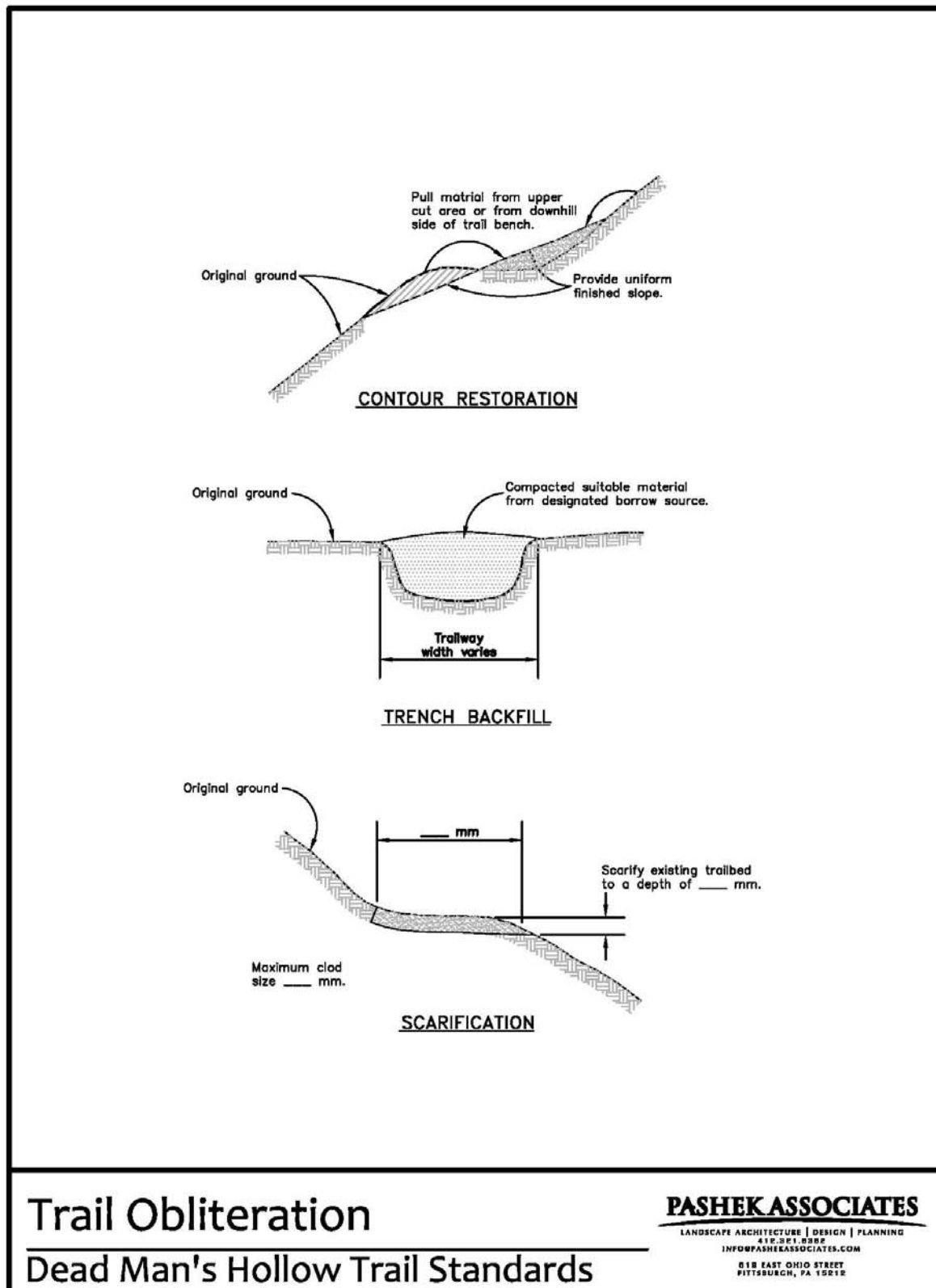
#### PASHEK ASSOCIATES

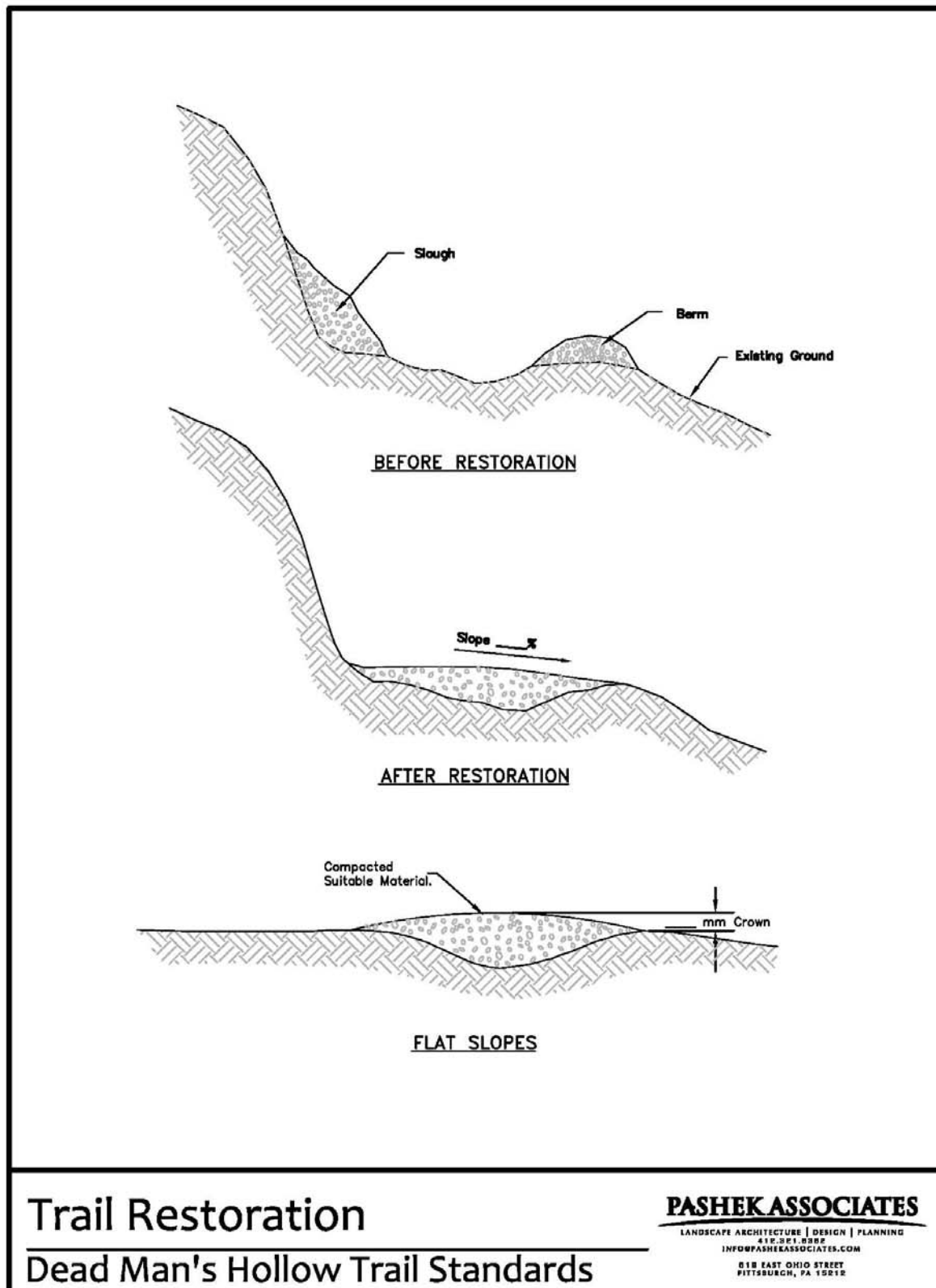
LANDSCAPE ARCHITECTURE | DESIGN | PLANNING  
412.221.0888  
INFO@PASHEKASSOCIATES.COM  
818 EAST OHIO STREET  
PITTSBURGH, PA 15212











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## Appendix 4

### Public Bid Opinion of Probable Construction Costs

The opinion of probable construction costs projected here assumes improvements are constructed through a public bid process utilizing the Pennsylvania Department of Labor and Industry's prevailing wage rates. These projections are likely to give folks "sticker shock." That said, projects should not be put on hold, deferred, or not entertained as they seem too expensive to undertake. Rather the Allegheny County Land Trust and its partners need to "think outside the box" to determine how to construct and implement the recommendations of this plan, at the lowest possible cost while maintaining a high level of quality in the construction of that work.

Unit prices for construction were assigned based on the consultant's experience with construction costs in 2014. These costs are based upon publicly bid projects that pay prevailing wage rates.

The cost projections take into account the following:

- ✓ The condition of the property at the time of construction will be similar to its condition in 2014.
- ✓ Projects will be bid through a competitive bidding process utilizing state or federal prevailing wage rates.
- ✓ Opinions of probable construction costs should be confirmed / revised upon completion of preliminary design.
- ✓ To budget for inflation costs for improvements that will occur after 2014, we recommend a 4.5% annual increase for each year thereafter.
- ✓ In Pennsylvania all projects, valued at over \$25,000 and using public funds, are required to pay workers in accordance with the Commonwealth Department of Labor and Industry's Prevailing Wage Rates

It is important to note that costs are based on 2014 construction figures. Should projects be constructed in future years an additional 4.5% per year should be factored for inflation. Additional increases may be necessary to address the escalation of steel and fuel prices as their costs are escalating at unprecedented rates.

As noted, volunteer labor, in-kind services, and donated materials and services can reduce the overall project cost from costs projected here. Additionally, alternate sources of funding, including grant opportunities, may assist in offsetting construction costs.

## Dead Man's Hollow Conservation Area Management Plan - 2014

### Summary

The following table summarizes our opinions of probable construction costs for implementing the physical improvements described herein and shown on the master plan. Detailed opinions of probable construction costs follow the summary.

Opinion of Probable Construction Cost Summary			Priority			
Ranking	Trail	Overall	Short	Medium	Long	Future
1	Cool Spirit Trail	\$85,773	\$85,773			
2	Witch Hazel Trail	\$80,592	\$80,592			
3	Dead Man's Run Trail	\$37,296	\$166,365	\$37,296		
4	Ruins Trail	\$11,512		\$11,512		
5	Table Rock Trail	\$49,468		\$49,468		
6	Liberty Trail	\$45,760		\$98,275	\$45,760	
7	Black Oak Trail	\$13,827			\$13,827	
8	Quarry Trail	\$4,531			\$4,531	
9	Cool Spirit Connector Trail	\$6,304			\$6,304	
10	Cool Spirit Cut-Off Trail	\$4,752			\$4,752	
11	Boston Overlook Trail	\$17,474			\$75,173	\$17,474
12	Backwoods Justice Trail	\$57,108				\$57,108
13	Yough River Overlook Trail	\$11,320				\$11,320
14	Haunted Hollow Trail	\$29,679				\$29,679
<b>Total</b>		<b>\$455,395</b>				<b>\$115,582</b>

Individual Trail Costs

Short Term

Item	Qty	Unit	Unit Cost	Total
<b>1. Cool Spirit Trail</b>				
a. Final Trail Flagging	LF	6537	\$0.25	\$1,634
b. 12-18" Sustainable Woodland Path	LF	6537	\$4	\$26,148
c. Climbing Turns	EA	14	\$1,500	\$21,000
d. Restoration of 12-18" Woodland Path	LF	4087	\$2	\$8,174
e. Stream/Drainage Crossings	EA	4	\$1,500	\$6,000
f. Tree Removal - 8 trees < 4" dbh	Mile	2	\$600	\$1,200
g. Tree Pruning - 16 trees minor trimming	Mile	2	\$800	\$1,600
h. Trail Marker	EA	12.3807	\$75	\$929
i. Trail Accessibility Information Signs	EA	2	\$200	\$400
j. Interpretive Sign	EA	3	\$2,500	\$7,500
l. Trail Obliteration	HLF		\$400	\$0
Subtotal				\$74,585
Contingency				\$11,188
<b>Cool Spirit Trail Total</b>				<b>\$85,773</b>

Item	Qty	Unit	Unit Cost	Total
<b>2. Witch Hazel Trail</b>				
a. Final Trail Flagging	LF	10560	\$0.25	\$2,640
b. 12-18" Sustainable Woodland Path	LF	10560	\$4	\$42,240
c. Climbing Turns	EA	12	\$1,500	\$18,000
d. Restoration of 12-18" Woodland Path	LF		\$2.00	\$0
e. Tree Removal - 8 trees < 4" dbh	Mile	2	\$600	\$1,200
f. Tree Pruning - 16 trees minor trimming	Mile	2	\$800	\$1,600
g. Trail Marker	EA	20	\$75	\$1,500
h. Trail Accessibility Information Signs	EA	2	\$200	\$400
i. Interpretive Sign	EA	1	\$2,500	\$2,500
j. Trail Obliteration	HLF		\$400	\$0
Subtotal				\$70,080
Contingency				\$10,512
<b>Witch Hazel Trail Total</b>				<b>\$80,592</b>

## Dead Man's Hollow Conservation Area Management Plan - 2014

### Medium Term

Item		Qty	Unit	Unit Cost	Total
<b>3. Dead Man's Run Trail</b>					
a.	Final Trail Flagging	LF	2258	\$0.25	\$565
b.	12-18" Sustainable Woodland Path	LF	2258	\$4	\$9,032
c.	Restoration of 12-18" Woodland Path	LF	2532	\$2	\$5,064
d.	Stream/Drainage Crossings	EA	9	\$1,500	\$13,500
e.	Tree Removal - 8 trees < 4" dbh	Mile	0.75	\$600	\$450
f.	Tree Pruning - 16 trees minor trimming	Mile	0.75	\$800	\$600
g.	Trail Marker	EA	4	\$75	\$321
h.	Trail Accessibility Information Signs	EA	2	\$200	\$400
i.	Interpretive Sign	EA	1	\$2,500	\$2,500
j.	Trail Obliteration	HLF		\$400	\$0
Subtotal					\$32,431
Contingency					\$4,865
<b>Dead Man's Hollow Trail Total</b>					<b>\$37,296</b>

Item		Qty	Unit	Unit Cost	Total
<b>4. Ruins Trail</b>					
a.	Final Trail Flagging	LF	0	\$0.25	\$0
b.	12-18" Sustainable Woodland Path	LF	0	\$4	\$0
c.	Restoration of 12-18" Woodland Path	LF	840	\$2.00	\$1,680
d.	Tree Removal - 8 trees < 4" dbh	Mile	0.2	\$600	\$120
e.	Tree Pruning - 16 trees minor trimming	Mile	0.2	\$800	\$160
f.	Trail Marker	EA	2	\$75	\$150
g.	Trail Accessibility Information Signs	EA	2	\$200	\$400
h.	Interpretive Sign	EA	3	\$2,500	\$7,500
i.	Trail Obliteration	HLF	0	\$400	\$0
Subtotal					\$10,010
Contingency					\$1,502
<b>Ruins Trail Total</b>					<b>\$11,512</b>

Item		Qty	Unit	Unit Cost	Total
<b>5. Table Rock Trail</b>					
a.	Final Trail Flagging	LF	5752	\$0.25	\$1,438
b.	12-18" Sustainable Woodland Path	LF	5752	\$4	\$23,008
c.	Climbing Turns	EA	10	\$1,500	\$15,000
d.	Restoration of 12-18" Woodland Path	LF		\$2.00	\$0
e.	Tree Removal - 8 trees < 4" dbh	Mile	1.1	\$600	\$660
f.	Tree Pruning - 16 trees minor trimming	Mile	1.1	\$800	\$880
g.	Trail Marker	EA	11	\$75	\$830
h.	Trail Accessibility Information Signs	EA	2	\$200	\$400
i.	Interpretive Sign	EA	0	\$2,500	\$0
j.	Trail Obliteration	HLF	2	\$400	\$800
Subtotal					\$43,016
Contingency					\$6,452
<b>Table Rock Trail Total</b>					<b>\$49,468</b>

Item		Qty	Unit	Unit Cost	Total
<b>6. Liberty Trail</b>					
a.	Final Trail Flagging	LF	3508	\$0.25	\$877
b.	12-18" Sustainable Woodland Path	LF	3508	\$4	\$14,032
c.	Restoration of 12-18" Woodland Path	LF	1616	\$2.00	\$3,232
d.	Climbing Turns	EA	10	\$1,500	\$15,000
e.	Tree Removal - 8 trees < 4" dbh	Mile	1	\$600	\$600
f.	Tree Pruning - 16 trees minor trimming	Mile	1	\$800	\$800
g.	Trail Marker	EA	10	\$75	\$750
h.	Trail Accessibility Information Signs	EA	2	\$200	\$400
i.	Interpretive Sign	EA	1	\$2,500	\$2,500
j.	Trail Obliteration	HLF	4	\$400	\$1,600
Subtotal					\$39,791
Contingency					\$5,969
<b>Liberty Trail Total</b>					<b>\$45,760</b>

## Dead Man's Hollow Conservation Area Management Plan - 2014

### Long Term

Item		Qty	Unit	Unit Cost	Total
<b>7. Black Oak Trail</b>					
a.	Final Trail Flagging	LF	1917	\$0.25	\$479
b.	12-18" Sustainable Woodland Path	LF	1917	\$4	\$7,668
c.	Restoration of 12-18" Woodland Path	LF		\$2.00	\$0
d.	Tree Removal - 8 trees < 4" dbh	Mile	0.5	\$600	\$300
e.	Tree Pruning - 16 trees minor trimming	Mile	0.5	\$800	\$400
f.	Trail Marker	EA	4	\$75	\$276
g.	Trail Accessibility Information Signs	EA	2	\$200	\$400
h.	Interpretive Sign	EA	1	\$2,500	\$2,500
i.	Trail Obliteration	HLF		\$400	\$0
j.					\$12,024
Contingency					\$1,804
<b>Black Oak Trail Total</b>					<b>\$13,827</b>

Item		Qty	Unit	Unit Cost	Total
<b>8 . Quarry Trail</b>					
a.	Final Trail Flagging	LF	400	\$0.25	\$100
b.	12-18" Sustainable Woodland Path	LF	0	\$4	\$0
c.	Restoration of 12-18" Woodland Path	LF	400	\$2.00	\$800
d.	Tree Removal - 8 trees < 4" dbh	Mile	0.1	\$600	\$60
e.	Tree Pruning - 16 trees minor trimming	Mile	0.1	\$800	\$80
f.	Trail Marker	EA	0	\$75	\$0
g.	Trail Accessibility Information Signs	EA	2	\$200	\$400
h.	Interpretive Sign	EA	1	\$2,500	\$2,500
i.	Trail Obliteration	HLF	0	\$400	\$0
Subtotal					\$3,940
Contingency					\$591
<b>Quarry Trail Total</b>					<b>\$4,531</b>

Item		Qty	Unit	Unit Cost	Total
<b>9. Cool Spirit Connector Trail</b>					
a.	Final Trail Flagging	LF	310	\$0.25	\$78
b.	12-18" Sustainable Woodland Path	LF	310	\$4	\$1,240
c.	Restoration of 12-18" Woodland Path	LF	640	2	\$1,280
d.	Stream/Drainage Crossings	EA	1	1500	\$1,500
e.	Tree Removal - 8 trees < 4" dbh	Mile	0.1	\$600	\$60
f.	Tree Pruning - 16 trees minor trimming	Mile	0.1	\$800	\$80
g.	Trail Marker	EA	1	\$75	\$44
h.	Trail Accessibility Information Signs	EA	2	\$200	\$400
i.	Interpretive Sign	EA	0	\$2,500	\$0
j.	Trail Obliteration	HLF	2	\$400	\$800
Subtotal					\$5,482
Contingency					\$822
<b>Cool Spirit Connector Trail Total</b>					<b>\$6,304</b>

Item		Qty	Unit	Unit Cost	Total
<b>10. Cool Spirit Cut-Off Trail</b>					
a.	Final Trail Flagging	LF	447	\$0.25	\$112
b.	12-18" Sustainable Woodland Path	LF	447	\$4	\$1,788
c.	Restoration of 12-18" Woodland Path	LF	825	\$2.00	\$1,650
d.	Tree Removal - 8 trees < 4" dbh	Mile	0.1	\$600	\$51
e.	Tree Pruning - 16 trees minor trimming	Mile	0.1	\$800	\$68
f.	Trail Marker	EA	1	\$75	\$63
g.	Trail Accessibility Information Signs	EA	2	\$200	\$400
h.	Interpretive Sign	EA	0	\$2,500	\$0
i.	Trail Obliteration	HLF	0	\$400	\$0
Subtotal					\$4,132
Contingency					\$620
<b>Cool Spirit Cut-Off Trail Total</b>					<b>\$4,752</b>

Future

Item		Qty	Unit	Unit Cost	Total
<b>11. Boston Overlook Trail</b>					
a.	Final Trail Flagging	LF	2640	\$0.25	\$660
b.	12-18" Sustainable Woodland Path	LF	2640	\$4	\$10,560
c.	Restoration of 12-18" Woodland Path	LF	0	\$2.00	\$0
d.	Tree Removal - 8 trees < 4" dbh	Mile	0.5	\$600	\$300
e.	Tree Pruning - 16 trees minor trimming	Mile	0.5	\$800	\$400
f.	Trail Marker	EA	5	\$75	\$375
g.	Trail Accessibility Information Signs	EA	2	\$200	\$400
h.	Interpretive Sign	EA	1	\$2,500	\$2,500
i.	Trail Obliteration	HLF	0	\$400	\$0
Subtotal					\$15,195
Contingency					\$2,279
<b>Boston Overlook Trail Total</b>					<b>\$17,474</b>

Item		Qty	Unit	Unit Cost	Total
<b>12. Backwoods Justice Trail</b>					
a.	Final Trail Flagging	LF	6390	\$0.25	\$1,598
b.	12-18" Sustainable Woodland Path	LF	6390	\$4	\$25,560
c.	Climbing Turns	EA	9	\$1,500	\$13,500
d.	Restoration of 12-18" Woodland Path	LF	0	\$2.00	\$0
e.	Stream/Drainage Crossings	EA	4	\$1,500.00	\$6,000
f.	Tree Removal - 8 trees < 4" dbh	Mile	1.2	\$600	\$720
g.	Tree Pruning - 16 trees minor trimming	Mile	1.2	\$800	\$960
h.	Trail Marker	EA	12	\$75	\$922
i.	Trail Accessibility Information Signs	EA	2	\$200	\$400
j.	Interpretive Sign	EA	0	\$2,500	\$0
k.	Trail Obliteration	HLF	0	\$400	\$0
Subtotal					\$49,659
Contingency					\$7,449
<b>Backwoods Justice Trail Total</b>					<b>\$57,108</b>

Item		Qty	Unit	Unit Cost	Total
<b>13. Yough River Overlook Trail</b>					
a.	Final Trail Flagging	LF	0	\$0.25	\$0
b.	12-18" Sustainable Woodland Path	LF	0	\$4	\$0
c.	Restoration of 12-18" Woodland Path	LF	2280	\$2	\$4,560
d.	Climbing Turn	EA	1	\$1,500	\$1,500
e.	Tree Removal - 8 trees < 4" dbh	Mile	0.4	\$600	\$240
f.	Tree Pruning - 16 trees minor trimming	Mile	0.4	\$800	\$320
g.	Trail Marker	EA	4	\$75	\$324
h.	Trail Accessibility Information Signs	EA	2	\$200	\$400
i.	Interpretive Sign	EA	1	\$2,500	\$2,500
j.	Trail Obliteration	HLF	0	\$400	\$0
Subtotal					\$9,844
Contingency					\$1,477
<b>Yough River Overlook Trail Total</b>					<b>\$11,320</b>

Item		Qty	Unit	Unit Cost	Total
<b>14. Haunted Hollow Trail</b>					
a.	Final Trail Flagging	LF	4382	\$0.25	\$1,096
b.	12-18" Sustainable Woodland Path	LF	4382	\$4	\$17,528
c.	Restoration of 12-18" Woodland Path	LF	0	\$2	\$0
d.	Stream/Drainage Crossing	EA	1	\$5,000	\$5,000
e.	Tree Removal - 8 trees < 4" dbh	Mile	0.8	\$600	\$498
f.	Tree Pruning - 16 trees minor trimming	Mile	0.8	\$800	\$664
g.	Trail Marker	EA	8	\$75	\$622
h.	Trail Accessibility Information Signs	EA	2	\$200	\$400
i.	Interpretive Sign	EA	0	\$2,500	\$0
j.	Trail Obliteration	HLF	0	\$400	\$0
Subtotal					\$25,808
Contingency					\$3,871
<b>Haunted Hollow Trail Total</b>					<b>\$29,679</b>

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## Appendix 5

### PA DCNR Incident Reports

6000-FM-SP0008 Rev. 12/2003		INCIDENT REPORT		DCNR	
PENNSYLVANIA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES – BUREAU OF STATE PARKS				1. Report Number	
2. Region	3. Park #	4. Park Name	5. Location of Incident		6. UCR Code
7. Incident (List)		8. Date Occurred (MM/DD/YY) / /	9. Time Occurred		10. Day
11. I.R.S. Code <input type="checkbox"/> V.C. <input type="checkbox"/> C.C. <input type="checkbox"/> P.R. <input type="checkbox"/> Game <input type="checkbox"/> Fish <input type="checkbox"/> Other _____					12. Section #
13. In the box before each name, enter the appropriate letter. V – Victim, W – Witness, A – Accused, S – Suspect, C – Complainant, O – Other (explain below). Place additional name(s) in the narrative.					
<input type="checkbox"/>	13. Name	14. Date of Birth (MM/DD/YY) / /	15. Phone ( ) -		16. Sex (choose one)
	17. Address	18. City	19. State	20. Zip -	21. Race
<input type="checkbox"/>	13. Name	14. Date of Birth (MM/DD/YY) / /	15. Phone ( ) -		16. Sex (choose one)
	17. Address	18. City	19. State	20. Zip -	21. Race
22. Received By ---- Name		23. Date (MM/DD/YY) / /	24. Time	25. How Received? <input type="checkbox"/> Person <input type="checkbox"/> Phone <input type="checkbox"/> Other _____	
26. Attachments <input type="checkbox"/> Yes <input type="checkbox"/> No Type: _____ Number _____				27. Investigation Complete? <input type="checkbox"/> Yes <input type="checkbox"/> No	
28. Investigated By: (Signature and Date)		29. Approval (Signature and Date)			
30. Narrative: Refer to Management Manual Section 1200.390 Instructions.					

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6000-FM-SP0353

# INCIDENT MISSING PERSON QUESTIONNAIRE

Incident Form Page 1 of 5

Incident Name:		Name of Interviewer:		Date/Time Prepared:	
I N T E R V I E W	Source(s) of information (names and relationships): (Use back page if needed)				(check one):
	( )				<input type="checkbox"/> phone in person
S U B J E C T	Name of missing person: _____				
	Age: _____ Birthday: _____ Other: _____				
	Local address: _____				
	Home Address, if different: _____				
	Nicknames / Aliases: _____				
I. D.	Height: _____ Weight: _____ Build: _____ Hair Color: _____ Hair Length: _____				
D E S C R I P T I O N	Sideburns? Beard? Moustache? Balding: _____				
	Facial Features/Shape: _____				
	Distinguishing Marks (scars, etc.): _____				
	Race/Skin Color and Complexion: _____				
	General Appearance: _____				
O T H E R	Other important information: _____				
	_____				
	_____				
	_____				
	_____				
	_____				
	_____				
	_____				

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**INCIDENT MISSING PERSON QUESTIONNAIRE cont'd.**

<b>C L O T H I N G</b>	Hat? Color/Style?:	_____
	Shirt Color/Style?:	_____
	Sweater? Jacket? Style/Color?:	_____
	Pants/Skirt?:	_____
	Raingear? Gloves or Mitten?:	_____
	Sunglasses? Prescription Glasses?:	_____
	Shoes: Style, Color, Sole Type?:	_____
	Other Clothing?:	_____
	Scent Articles Available? Where?:	_____
<b>E Q U I P M E N T</b>	Pack? Brand, Style, Color?:	_____
	Tent? Color, Type, Brand?:	_____
	Sleeping Bag? Color, Type, Brand?:	_____
	Water Bottle/Canteen? Color/Type?	_____
	Food? Brands, Amount?:	_____
	Flashlight? Brand, Color, Battery Type?:	_____
	Matches? Wooden? Paper? Describe:	_____
	Knife? Compass?:	_____
	Fishing Equipment?:	_____
	Money? Camera/Film/Accessories?:	_____
	Firearms? Gauge? Ammunition?:	_____
	Ice Axe/Skis/Snowshoes/Poles?:	_____
	Other Equipment?:	_____
<b>T R I P P L A N S</b>	Trip Destination and Purpose?:	_____
	Planned Route and Alternate?:	_____
	Planned Date/Time for Return?:	_____
	Group Affiliation? Transportation?:	_____
	Trip Starting Point and Time?:	_____
	Car Description and Location?:	_____
	Alternate Car or Alt. Pickup Plans?:	_____

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### INCIDENT MISSING PERSON QUESTIONNAIRE cont'd.

<b>L A S T  S E E N  D E T A I L S</b>	When? Where?:	_____
	By Whom? (Name, Location, Phone):	_____
	Going Which Way?:	_____
	Weather?:	_____
	Special Reason for Leaving?:	_____
	Any Unusual Comments on Leaving?:	_____ _____ _____
<b>E X P E R I E N C E</b>	Familiar with the Area?:	_____
	Outdoor Experience Level?:	_____
	First Aid/Scout/Military?:	_____
	Hunting/Backpacking/Climbing?:	_____
	Ever been lost before? Where? When?	_____
	Actions when lost before?	_____
	Ever go out alone?:	_____
	Stay on trails or go cross-country?:	_____
	On reaching civilization?:	_____
	(Name, Address, Phone):	_____
	Include friends, relatives:	_____
Habitual bars or restaurants:	_____ _____	
<b>H E A L T H</b>	General condition?:	_____
	Any physical handicaps or limitations?:	_____
	Psychological or psychiatric problems?:	_____
	Any medications? Amount carried?:	_____
	Consequences of loss?:	_____
	Eyesight without glasses/contacts?:	_____
	Carry spares?:	_____
Physician/psychiatrist/counselor:	_____	

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## INCIDENT MISSING PERSON QUESTIONNAIRE cont'd.

<b>P E R S O N A L I T Y</b>	Recreational Drugs?:	_____
	What type/brand? How much?:	_____
	Consequences of withdrawal? (include tobacco, alcohol, marijuana, cocaine, narcotics, prescription drugs):	_____ _____ _____
	Particular outdoor interests? (e.g., "likes to follow-streams because he's a fisherman"):	_____ _____
	Job history?:	_____
	Recent problems at work or school? (confirm with co-workers or teachers):	_____ _____
	Relationship with spouse, family, or significant other(s):	_____
	Any recent changes?:	_____
	Closet relative?:	_____
	Closest other friend/confidant?:	_____
	Who had last significant conversation with subject? What about? When?:	_____ _____
	Any recent mail that might be relevant?:	_____
	Religious preference and beliefs?:	_____
	Priest, minister, or other religious leader who might provide information?:	_____ _____
	History of problems with law? When?:	_____
	Locations where born/raised?	_____
	History of depression?:	_____
	Ever run away from home?:	_____
	Leader or follower? Give up easily?:	_____
	Hole up and wait, or keep going?:	_____
	Outgoing or quiet?:	_____
	Like to be alone?:	_____
	Likely response to searchers?:	_____
	Hitch-hike often?:	_____

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### INCIDENT MISSING PERSON QUESTIONNAIRE cont'd.

<b>F O R  C H I L D R E N</b>	Fears?:	_____
	Dogs? Horses? Farm animals?:	_____
	Wild animals? Darkness? Being alone?:	_____
	Training for what to do if lost?:	_____
	Actions when hurt? Cry?:	_____
	Quiet and withdrawn?:	_____
	Temper tantrums?	_____
	Talk to strangers?:	_____
	Accept rides?:	_____
	Active or passive?:	_____
<b>F O R  G R O U P S</b>	Personality clashes?:	_____
	Any leader-types other than designated leader?:	_____
	How strong were group goals (making summit, getting to next shelter, Etc.)?:	_____
	What actions would members take if separated?	_____
	Name, contact info., and experience of other members (indicate if need for separate Missing Person Questionnaire (MPQ) for any other members)?	_____
		_____
		_____
		_____
		_____
		_____

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**INCIDENT MISSING PERSON QUESTIONNAIRE cont'd.**[illegible]

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## Appendix 6

# Guidelines for Conservation Easements and Fee Lands of the Allegheny Land Trust

The Allegheny Land Trust has established the following guidelines & policies that address the use of their lands, in conjunction with state and municipal statutes that apply:

- Bikes (2-wheeled non-motorized)
- Campfires
- Camping
- Dogs
- Dumping
- Easement Violations
- Geocaching
- Hiking & Recreational Use
- Horseback Riding
- Hunting & Trapping
- Motorized Vehicles
- Pesticide Use
- Resource Collecting
- Water Activities

Each of these guidelines/policies are located in Appendix 6.

### Rules & Regulations

The Allegheny Land Trust has posted the following Rules and Regulations on the kiosks at the Catfish Pond and Great Allegheny Passage Trailheads.

1. The Hollow is Open Daily from Dawn till Dusk
2. Please Stay on Established Trails, Sensitive Areas can be Damaged
3. Bikes & Motorized Vehicles Prohibited
4. All Hunting Inquiries, Visit [AlleghenyLandTrust.org](http://AlleghenyLandTrust.org)
5. Camping & Littering Prohibited
6. Pets are Welcome but Must be Leashed & Cleaned up After
7. Emergencies Please dial 911

All Other Questions or Concerns Should be Directed to:  
[admin@alleghenylandtrust.org](mailto:admin@alleghenylandtrust.org) or 412-741-2750.

### **Bikes (2-wheeled, non-motorized)**

Allegheny Land Trust is experiencing higher levels of recreational demand on their properties as the local awareness increases. This includes mountain biking (or off road, non-motorized biking) as similarly the nationally participation in mountain biking has continually increased since 2001 (IMBA, *Managing Mountain Biking*) ALT will monitor the trails as erosion is arguably the most visible trail impact, and a function of water, wind, and gravity; not a function of recreation. If necessary, trails will be closed, improved, or managed by volunteers to maintain a shared use recreation trail system. In some cases, ALT will partner will local bike organizations to promote the use of a designed single-track trail system just for mountain biking.

Mountain biking is a great form of exercise and provides a unique view of our conservation areas. ALT encourages the use of bike riding on conservation lands when proper etiquette and respect for other trail users is followed, but we have the right to close any trail to mountain bikes when necessary. We support partnership and management of our multi-use trails by volunteers and local biking clubs. When trails are well designed and visitors observe basic trail etiquette, most people, whatever their means of conveyance, will have a satisfying experience on the trails.

*Currently the Trailhead Signs at Dead Man's Hollow indicated bikes are prohibited. While there is concern that bicycle use within the Ruins area may be damaging to the historic resources, bicycle use, especially mountain bicycle use, can be appropriate throughout the majority of the property as long as trails remain sustainable. Therefore, we recommend bicycling be allowed, and that the trailhead signs reinforce the necessary etiquette required in and near the Ruins.*

### **Campfires**

Allegheny Land Trust permits campfires with less than a two foot high flame on ALT property; however, visitors must obtain expressed permission from ALT and follow all guidelines set forth by the PA Department of Conservation and Natural Resources.

These regulations are posted at:

<http://www.dcnr.state.pa.us/stateparks/thingstoknow/firewoodadvisory/index.htm>.

Firewood must be gathered on-site from fallen branches or bought locally since imported wood can potentially pests capable of destroying significant portions of forest canopy. Once established, this damage is irreversible.

Bon fires are prohibited, as well as the burning of any trash or debris; fires are only to be used for cooking and heat. Re-use existing fire pit sites.

Obtain permission by contacting: [stewardship@aleghenylandtrust.org](mailto:stewardship@aleghenylandtrust.org).

If ALT has granted permission for a person or party to camp on-site, it will be understood that that person or party may build a fire, provided they follow the guidelines. One exception would be in the event of a local, state or federal government ban on wood burning, at which time NO campfires would be permitted.

ALT reserves the right to grant or deny permission to build a campfire on ALT property on a case-by-case basis, as well as the right to enforce these stipulations, by removal and/or expulsion of offenders from ALT property.

Allegheny Land Trust believes people and communities are entitled to enjoy the land ALT conserves, provided activities do not threaten the land itself. A well-maintained cooking fire is one of the simple pleasures of the great outdoors, yet those who build fires must take care to ensure the fire will not have a negative impact on the wildlife that depends on the habitat to survive.

*We recommend ALT adopt and promote the **Leave No Trace's***

**4 D's of Firewood Collection**

- ✓ *Dead- use only dead wood*
- ✓ *Down- use only down wood on the ground, Do not cut a branch off of a tree*
- ✓ *Distant- Find your wood a good distance from camp*
- ✓ *Dinky- Use only small wood that is about the size of your forearm.*

### **Camping Policy**

Allegheny Land Trust has agreed to allow recreational camping on select ALT properties, on a limited and trial basis. ALT believes it is in the best interest of the ecology that camping remains sequestered to designated sites, and that interested parties must ask ALT for a permit before permission to camp can be granted. Contact [stewardship@alleghenylandtrust.org](mailto:stewardship@alleghenylandtrust.org) for more details.

Basic camping tenants are as follows:

- Though campfires are permitted, bon fires are not, campers are expected to obey ALT's campfire regulations.
- Leave no trace.
- There are no restroom facilities on ALT sites, prepare accordingly.

Any funds or fees collected will go towards to the stewardship and/or conservation of ALT properties including the upkeep of its campsites. Allegheny Land Trust reserves the right to alter its Camping Policy at any time, as well as the right to grant or deny permission to camp on an ALT property on a case-by-case basis. Failure to comply with ALT's camping policy can result in the person or party being expelled and/or banned from accessing ALT conservation areas, as well as legal action if necessary.

Allegheny Land Trust believes people and communities are entitled to enjoy the land ALT conserves, provided activities do not threaten the land itself. Campers on ALT property are expected to have a vested interest in the safety and protection of the area they visit.

### **Dogs**

Dogs are permitted on Allegheny Land Trust property unless otherwise posted. Where permitted, all dogs must be on a leash as per Pennsylvania Law (except at Fern Hollow, Audubon Greenway and other properties under agreement with the Sewickley Hunt) and under control of the owner at all times. Please pack a pick up bag – scoop your dog's waste, and pack the waste out. Dogs may be prohibited temporarily or seasonally on properties (as posted) where conflicts with wildlife are a concern. ALT reserves the right to deny any dog owner from frequenting an ALT land.

Allegheny Land Trust understands that pets are a part of the family and enjoy open spaces as much as any other ALT user. Keeping your dog on a leash keeps people, other pets, and wildlife safe while enjoying the natural world.

### **Dumping**

No material may be placed, dumped, or otherwise introduced onto ALT lands without written permission from the Land Trust. This includes but is not limited to private household waste, landscaping materials (including grass clippings and Christmas trees), and any other debris.

Dumping of waste on any Allegheny Land Trust property is prohibited. Discarded waste creates a health and human safety liability and threatens the ecology of the land.

### **Easement Violation Guidelines**

The long-term effectiveness of conservation easements in protecting valuable lands depends on the easement holder's ability to enforce the terms of the easements. Strong enforcement builds public confidence in easements as a land protection tool. Moreover, in order to accept tax-deductible gifts and qualify for tax-exempt status, Internal Revenue Service ("IRS") regulations require that easement-accepting organizations commit to upholding the terms of an easement and maintaining the financial capability to enforce the restrictions. [See Treas. Reg. 1.170A-14(c)(1).]

Each easement violation represents a unique situation and requires a tailored approach, with the objective of correcting the violation with the greatest degree of cooperation and the least expense to both ALT and the Landowner. ALT considers a "Minor Violation" to be any action requiring enforcement which is reasonably estimated to cost less than \$10,000 to resolve, including human resources and other direct costs, or any action that does not have a significant detrimental impact on the conservation values protected by the easement. ALT considers a "Major Violation" to be any action requiring enforcement which is reasonably estimated to cost more than \$10,000 to resolve, including human resources and other direct costs, or any action that has a significant detrimental impact on the conservation values protected by the easement.

### **Geocaching**

Geocaching is permitted on ALT lands. All geocaches must be registered with ALT Stewardship and follow guidelines set forth by the PA Department of Conservation and Natural Resources. View this regulation at [www.dcnr.state.pa.us/geocache.aspx](http://www.dcnr.state.pa.us/geocache.aspx). This outdoor adventure game for people who wish to explore the outdoors with the newest technology, a handheld Global Positioning System (GPS) unit. Using the world wide web, cache locations are posted on the internet and users enter their location on their hand held device. When found, the cache provides a visitor with a "treat" or "reward", but never food. Food in a cache will attract more than human visitors. Often a log book is found inside the cache to track visitors. ALT encourages the use of geocaches but asks that you be

responsible.

Responsible geocaching is using common sense and common courtesy while geocaching, so that what is available today will be here to enjoy tomorrow. Registration forms are available by contacting [stewardship@alleghenylandtrust.org](mailto:stewardship@alleghenylandtrust.org). ALT has the right to remove any geocache that threatens the biological integrity of the property or creates a nuisance or burden to the organization.

Allegheny Land Trust believes that exploring land using a GPS unit provides a new and unique opportunity to enjoy the outdoors and encourages exploration and appreciation for nature by all whom participate.

### **Hiking/Recreational Use**

Hiking, snowshoeing, bird watching and cross – country skiing are passive sports that are encouraged on ALT property. Property users are asked to remain on the trails when possible to prevent damage to the ecosystem. No new trails shall be constructed on ALT property unless a trail proposal is reviewed and approved by the Stewardship Director. If new trails are developed, proper trail building best management practices must be used based upon the current, accepted manual by ALT stewardship. Property users should wear fluorescent orange vests during deer hunting season as some ALT property is open to public hunting per PA Game Commission laws.

Allegheny Land Trust believes that the best way to learn about our natural wonders in Allegheny County is to get out and explore them. Those who take in the natural beauty of the outdoors understand and appreciate the importance of good land stewardship.

### **Horseback Riding**

Horseback riding is limited to designated areas only and participation is at the rider's own risk. There is no fee to ride on ALT lands. ALT promotes the continued use of bridal trails in areas where historically, riding was part of the heritage. Allegheny Land Trust absolves itself of any liability from death or injury resulting from horses or horseback riding on its lands. ALT reserves the right to close horse access to any property or trail at any time.

Horseback riding is an excellent form of recreation that allows people to explore and experience nature. However, sometimes horses can have damaging effects on trails. For this reason, horseback riding is limited to designated properties and specific trails.

### **Hunting and Trapping**

Deer hunting is the only form of hunting permitted on ALT lands. This includes archery and firearms unless otherwise noted. Tree stands can be used for archery hunting, but only if they are portable and designed to have no impact to trees. Portable stands must be removed after each use. Damage to trees by tree stands will not be tolerated. PA Game Law and local ordinances apply in all cases. Any hunter using ALT lands is requested to become a member of the Allegheny Land Trust by submitting their contact information to us. Hunters are encouraged to report violations to the Allegheny Land Trust and/or the PA Game Commission.

ALT's Hunting policy is on the following page.

### ALLEGHENY LAND TRUST HUNTING RULES

*Allegheny Land Trust* properties accommodate a wide variety of public uses including hiking, canoeing, cross country skiing, scientific research and hunting. In order to create a safe and enjoyable environment for all visitors, we ask hunters to review and comply with our hunting program policies and guidelines. Failure to adhere to regulations or rules results in suspension of hunting privileges, or citation by local law enforcement. As a local, not-for-profit organization, we ask that hunters' make a donation to the land trust so that we can continue to sustainably manage our conservation lands for all recreational users. To donate, contact Allegheny Land Trust at 412-741-2750 or to donate online go to [www.alleghenylandtrust.org](http://www.alleghenylandtrust.org) and click the DONATE button on the left side of your screen.

Please be aware that lands on which the Allegheny *Land Trust* holds a conservation easement are private property and the Land Trust does not have the authority to grant permission to hunt on these lands. For a current and up to date list of permitted hunting conservation areas, contact ALT stewardship or online at [www.alleghenylandtrust.com/hunting](http://www.alleghenylandtrust.com/hunting).

#### Hunting Rules & Regulations

1. Hunters must possess a valid PA hunting license and comply with all applicable PA Game Commission regulations at all time. Hunter must carry a valid ALT permit card while hunting on any ALT property. These can be obtained at no cost online or by calling Allegheny Land Trust Stewardship department at 412-741-2750.
2. Take an antlerless deer first! It is ESSENTIAL participating hunters make every effort to take an antlerless deer as quickly as possible during the season and as many as you are permitted. Deer populations have far exceeded carrying capacity which is the level at which a habitat can no longer support an organism or it's populations with food, water, shelter, etc and still remain a healthy, intact forest system. There are several reasons for the overpopulation and included in those is a lack of natural predators. Game biologists and conservationists have provided a significant amount of scientific data and evidence that supports the notion that deer are decimating acres of wildflowers, shrubs and young trees (future forest canopy) in PA forests.
3. Only temporary, non-damaging deer stands may be used. **ABSOLUTELY NO PERMANENT TREE STANDS ARE ALLOWED.** The Hunter may put up a stand no more than 2 weeks before the start of the season and it must be removed two weeks after the close of the season. If it is not removed, it may be removed by ALT staff, volunteers or PA Game Commission officer. No stands shall be placed within 100 feet of a property boundary or defined trail system. Allegheny Land Trust has no responsibility for lost or damaged stands left unattended. Please be considerate of other hunters and space stands appropriately. Look to PA State Game Lands rules and regulations for tree stands for more information.
4. No target shooting, practice, or gun ranges are permitted on ALT lands. Be sure of your target and shoot to make a clean kill; indiscriminant or wild shooting will not be tolerated.
5. Drinking alcohol or using controlled substances is not allowed on any ALT property or in any adjacent parking areas.
6. Hunting is allowed on assigned ALT properties only. Not every ALT property is open for public hunting. Identify whether hunting is permitted on the property you are interested in hunting and know if it is Open or Restricted Hunting.
  - a. OPEN Hunting Area- Hunters are permitted to use any weapon available to them legally during the hunting season of September 1 – January 31 to hunt any legal game.
  - b. Restricted Hunting Area – Hunter are permitted to hunt White Tail Deer ONLY using only a Bow and arrow.
7. If an injured deer goes into another area, you may retrieve it **only if you have acquired permission from the lawful owner.**
8. ALT asks that all users abide by the “Leave No Trace” land ethic. This includes no fires, camping, littering (including the use of plastic flagging), or dumping of waste on the property.
9. No ATVS! The use of wheeled vehicles is strictly prohibited on ALT properties for the purpose of hunting. If you need to get a deer out of the woods, a deer carrier or sled may be used.
10. You are responsible for knowing the boundary of the property in which you are hunting. You can obtain property maps online at [www.alleghenylandtrust.org](http://www.alleghenylandtrust.org) or by contacting our office directly. On some properties, the boundary lines are marked with small yellow ALT conservation area markers.
11. All other ALT property rules and regulations must be followed at all times by all hunters. We have the right to remove you by contacting local authorities if you are not following the specific property rules.
12. Be SEEN and be SAFE– wearing orange is smart.

Please remember that you are sharing the woods with other recreation users, be courteous and smart. Don't put yourself or another in an unsafe situation. Remember all PA game laws apply on ALT land. You can be approached and cited by a game officer on ALT land. Know you laws, visit [www.pgc.state.pa.us](http://www.pgc.state.pa.us) for all regulations.

If you are willing to share your harvest information, an experience you had on the conservation area or have an idea on how we can make ALT land better, please contact us at any time. We want to hear from our property users. Questions or comments may be referred to Allegheny Land Trust Stewardship Department at 412-741-2750.

The Allegheny Land Trust is a conservation organization that embraces the protection of natural lands as natural habitat for native plants and animals. Whitetail deer are a native animal to Pennsylvania. Currently, the overpopulation of deer in Pennsylvania has proven to be a major ecological threat. We believe that an effective means to retain some control over this threat is to allow hunting in accordance with PA Game Laws. To date, ALT is not aware of evidence that suggests that other game animals are having the same impact as whitetail deer on native plants and animals. We believe that until some of the other game species has a population explosion that exceeds carrying capacity and impacts the very ecosystems upon which they depend for survival, ALT will limit hunting to deer on ALT lands.

Trapping is prohibited on Allegheny Land Trust property, except when deemed necessary by ALT staff as a natural resource management tool.

### **Motorized Vehicles**

*(including but not limited to all-terrain vehicles, dirt bikes, four wheel drive vehicles and snowmobiles)*

Allegheny Land Trust believes that the use of motorized vehicles interrupts the balance of conservation lands. Due to the disruptive noise and pollution, damage to trails and negative influence on passive recreation users, NO motorized vehicles are permitted on Allegheny Land Trust property, except with permission from the ALT Stewardship Coordinator. ALT staff, consultants and volunteers may use vehicles for property maintenance purposes if deemed necessary. Under certain circumstances, parking is permitted on ALT lands where a designated lot or space is present on ALT lands.

### **Pesticide Use**

Allegheny Land Trust understands that pesticide use may be appropriate under certain circumstances, but should be used cautiously. Use will be determined on site specific basis and should only be applied by ALT staff, trained volunteers or licensed contractors.

Pesticide/Herbicide use is prohibited on ALT lands unless prior approval is granted. Staff is permitted to manage the lands as needed using approved best management practices.

### **Resource Collecting**

Allegheny Land Trust believes removal of natural materials negatively affects the ecology of the land. ALT lands are intended to retain as many natural qualities as possible except in the case when scientific collection is a valuable tool to further understand the land and its ecology. Under certain circumstances, ALT will grant permission to permit scientific collections.

The collection of plants, wildlife, minerals, and historical/cultural artifacts from ALT property by the public is not permitted, this includes fossils. The collection of plants, wildlife, minerals, and historical/cultural artifacts from ALT property may be permitted as part of an academic investigation. The investigation shall be conducted by a qualified individual and approved by the Stewardship committee which may defer the decision to the Board of Directors. The picking and collecting of flowers, trees, mosses, fungi, etc, also including animals not covered under the PA Fish and Game Commission, and materials such as rocks and minerals is prohibited.

Academic research on ALT property is encouraged upon proposal submission, ALT review and approval. This practice provides excellent information and reporting on ALT properties. If approved,

the researcher then must agree to share the data and all other relevant information regarding samples found on ALT property. The researcher must also agree to not divulge information regarding the specific location of any endangered or threatened species or sensitive cultural artifact found on ALT property.

### **Boating**

Allegheny Land Trust believes that experiencing the outdoors through aquatic activities provides an entirely different experience for the user. Exploring the outdoors by boating, swimming and fishing have their own safety precautions and participants must take appropriate precautions.

Boating is allowed on ALT conservation lands that:

1. have existing boat access,
2. have shoreline frontage with access from other points,
3. and, where people can park vehicles in designated parking spaces and can access a portage trail to carry a boat to water.

ALT absolves itself of any liability for death or personal injury as a result of boating on its property. To minimize the potential risk of spreading invasive species to ALT waters, boats and equipment must be washed and properly dried before entering ALT waters.

### **Swimming**

There are no public swimming facilities on any body of water accessed by ALT property. ALT absolves itself of any liability for death or personal injury as a result of swimming on its lands.

### **Fishing**

Fishing is permitted on waters adjacent to or flowing through ALT property in accordance with PA Fish and Boat Commission regulations. Users should take precautions to minimize disturbance to wildlife and natural features.

Appendix 7

**Stakeholder and Partner List**

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## Dead Man's Hollow Conservation Area Management Plan - 2014

### Dead Man's Hollow Conservation Area

#### Stakeholder / Partner List

Local Businesses	Owner / Contact	Address	City	State	Zip	Partnership Potential	Additional Notes
The Betsy Shoppe	Betsy	1908 Dornor Street	Boston	PA	15135	Visitor destination	Owner hosted July public meeting
Rich's Parkside Den	Rich	1907 Dornor Street	Boston	PA	15135	Food and drink	Smoking establishment
Trailside Treasures	Barb Stahley	1910 Dornor Street	Boston	PA	15135	Guest rooms, bike rentals, drinks & snacks	Expressed great interest in July public meeting and had asked Betsy Shoppe owner to get her notes.
Generoso's Italian Eatery		5925 Smithfield Street	Boston	PA	15135	Food and drink	
Yough Shores Inn	Lynn Thorne	1403 Boston Hollow Road	Boston	PA	15135	Caters to GAP trail users, attended both public meetings	
Boston Waterfront	Sandy Kolesar-Peppeler	2422 St. David Drive	Boston	PA	15135	Known for summer pig roasts, also do private events on site, riverside location	
Northeast Paddleboard Company	Sandy Steffen	2422 St. David Drive	Boston	PA	15135	Paddle trips with interpretive stop at the hollow?	
Kathy's Treasures		Foot of Boston Bridge	Boston	PA	15135	Visitor destination	Antique store
Sunoco Station		Smithfield Street	Boston	PA	15135	Visitor supplies	
Dollar General		Smithfield Street	Boston	PA	15135	Visitor supplies	
Mt. Vernon Dairy		1 Duncan Station Road	McKeesport	PA	15132	Small grocery, Homemade food items, fresh baked bread, local meats and produce.	Located in Mt. Vernon
Ted's Peddler's Village (1/2 miles N. on GAP)			Greenock	PA	15047	Bike and boat rentals, pedal paddle trips	Possibly wasn't open in 2014
Kessling Rexall Drugs		2929 Liberty Way	Liberty	PA	15037	Visitor supplies	
Jo-Lynn Pizzeria		3116 Liberty Way	Liberty	PA	15037	Food and drink	
Sunoco Station		2615 Liberty Way	Liberty	PA	15037	Visitor supplies	
Liberty Dairy Store		2814 Liberty Way	Liberty	PA	15037	Visitor supplies	Lunch counter
Cross Creek Inn		620 Boston Hollow Road	Elizabeth	PA	15037	Food and drink	
The Bridge Tap House & Grill		5200 Walnut Street	Versailles	PA	15132	Food and drink	Smoking establishment
Woody's Italian Restaurant		5300 Walnut Street	Versailles	PA	15132	Food and drink	
		2714 Walnut Street	McKeesport	PA	15132	Food and drink	Property abutts Loop Trail
Puzzlers Restaurant and Lounge		3000 Walnut Street	McKeesport	PA	15132	Visitor supplies	Lunch counter
Ayres Drug Store		3014 Walnut Street	McKeesport	PA	15132	Bike rental and supplies	Property abutts Loop Trail
Zak's Bicycle Sales and Repair		1601 Lovedale Road	Liberty	PA	15037	Food and drink	
Carriage Inn	Driscoll Family	2101 Douglas Run Road	Sutersville	PA	15083	Food and drink	Trailside dining, outdoor seating
Driscoll & Sons Café	Driscoll Family	2101 Douglas Run Road	Sutersville	PA	15083	Food and drink	Trailside soft serve ice cream, burgers, etc.
Yough Twister (11 miles N. on GAP)	Betsy Mandarino, Owner	Not listed	West Newton	PA	15089	Has expressed interest and support of the project	Also serves as Secretary of Regional Trail Corp.
Trail Photography Unlimited	Sara Petyk	Not listed	Pittsburgh	PA	15217	Arranges various self-guided trips on the GAP. Potential for including industrial, wildflower, bike/hike themes	Husband attended first public meeting in April.
Bike the GAP (trip planning)	Mary Rendulic	127 Jefferson Court	West Newton	PA	15089	Closest B&B along the GAP	
Bright Morning Bed & Breakfast and The Annex Inn							

## Dead Man's Hollow Conservation Area Management Plan - 2014

Area Assets	Owner / Contact	Address	City	State	Zip	Partnership Potential	Additional Notes
<b>Within 0-2 miles</b>							
Elizabeth Township Historical Society	Arlene Falvo	5811 Smithfield Street	Boston	PA	15135	Attended both public meetings, exhibit and cross-promotion potential	Organization owns Greenock Log House, Dravo Cemetery, and other sites
Boston Bridge (1 mile N. on GAP)	Allegheny County		Boston	PA	15135	Potential as themed Itinerary site.	
Saint Mark Parish church	Diocese of Pittsburgh	3210 Liberty Way	Liberty	PA	15037	Potential as themed Itinerary site, 1960s architecture, beautiful A-framed stained glass front facing Liberty Way, really pretty as sun is setting. Outdoor Stations of the Cross a unique feature.	Maybe an odd connection, but the McKeesport Daily News building has a great neon U.S. map that can be seen lit up after dark. It has a clock for all U.S. time zones with McKeesport starred as the major eastern time zone city. Seeing Saint Mark church + this sign on my way home from the hollow, not to mention the sunset, was like the Mon-Yough Valley "light show" on the drive back to Pittsburgh.
Mt. Vernon Dairy		1 Duncan Station Road	McKeesport	PA	15132	Small grocery. Homemade food items, fresh baked bread, local meats and produce.	Located in Mt. Vernon
Greenock Log House & Community Gardens	Elizabeth Township Historical Society	Greenock-Buena Vista Road	Greenock	PA	15047	Potential as themed Itinerary site.	
<b>Within 3-5 miles</b>							
City of McKeesport - churches, architecture						Potential as themed Itinerary site.	
Minerva Bakery		927 5th Avenue	McKeesport	PA	15132	Potential as themed Itinerary site.	Open since 1923
Dorothy's Candies		1228 Long Run Rd.	White Oak	PA	15131	Potential as themed Itinerary site.	Open since 1947
<b>Within 6-9 miles</b>							
Dravo Cemetery and Campground (5 miles N. on GAP)	Elizabeth Township Historical Society	Great Allegheny Passage	Elizabeth	PA	15037	Potential as themed Itinerary site.	
North Buena Vista Historical Site (8 miles N. near the GAP)		Not listed	Buena Vista	PA	15018	DMH is positioned between two industrial "battle" sites - this one and the Pump House in Murkhill, site of the Battle of Homestead.	Site of 1874 "Battle of Buena Vista," a bloody clash involving striking coal miners.
Round Hill Park and Exhibit Farm (7 miles)		651 Round Hill Road	Elizabeth	PA	15037	Potential as themed Itinerary site / cross-promotion.	A working exhibit farm supplements the park. A number of picnic groves on site. Interpretive programming.
Riverton Bridge (6 miles S. on GAP)	Allegheny County		McKeesport / Duquesne	PA		Potential as Mon Valley themed Interpretive site.	
Duquesne (7 miles N. on GAP) - relics from U.S. Steel's Duquesne Works (and a steel worker sculpture), Kennywood Park, U.S. Steel Edgar Thompson Works			Duquesne	PA	15110	Potential as Mon Valley themed Interpretive site.	
Carrie Furnaces		13th Street	Braddock	PA	15104	Potential as Mon Valley themed Interpretive site.	Visible from trail across
			Rankin	PA	15128	Potential as Mon Valley themed Interpretive site.	Visible from trail across Monongahela River
Pump House, site of Battle of Homestead (11 miles N. on GAP)	Rivers of Steel Heritage Corporation	Waterfront Drive	Homestead	PA	15120	Potential as Mon Valley themed Interpretive site.	
The Waterfront - Labyrinth, smoke stacks, shops	Rivers of Steel Heritage Corporation	Waterfront Drive	Homestead	PA	15120	Potential as Mon Valley themed Interpretive site.	
Homestead Independent businesses: Blue Dust, Tin Front	Various		Homestead	PA	15120	Visitor services / food and drink	
Historic Bost Building / Rivers of Steel National Heritage Area Museum	Rivers of Steel Heritage Corporation	623 E. Eighth Avenue	Homestead	PA	15120	Dead Man's Hollow Exhibit potential; potential as Mon Valley themed Interpretive site.	
Kerber's Dairy		1856 Guffey Road	North Huntingdon	PA	15642	Potential as themed Interpretive site.	Known for their ice cream. Also, hayrides, pumpkin fest, etc.
Greenhouse Winery at Hazuda's Greenhouse		10828 Rilton-Guffey Road	Rilton	PA	15678	They do a "Wheels to Wine" event using the Great Allegheny Passage near Sutersville.	

## Dead Man's Hollow Conservation Area Management Plan - 2014

10+ miles							
West Newton Cemetery		Great Allegheny Passage	West Newton	PA	15089	Potential as themed interpretive site.	Could be part of a "haunted" or historical GAP tour including DMH and Dravo Cemetery. One of the early community-oriented cemeteries, very scenic.
South Side Historic District		East Carson Street	Pittsburgh	PA	15203	Potential as themed interpretive site.	
Hot Metal Bridge (18 miles N. on GAP)		Hot Metal Street	Pittsburgh	PA	15203	Potential as themed interpretive site.	
Triple B Farms (11 miles)		823 Dairy Lane	Monongahela	PA	15063	Pick your own fruits, hay rides	Also a number of antique shops in Monongahela
Donora Smog Museum (15 miles)	Donora Smog Commemorative Committee	595 McKean Avenue	Donora	PA	15033	Potential as themed interpretive site / cross promotion	
Regional Trail Connections							
The Progress Fund	William Prince, Trail Town Program Manager	425 W. Pittsburgh Street	Greensburg	PA	15601	Manages the Trail Town Program, is native to Elizabeth.	They partner with local trail councils and other groups to create and install GAP information kiosks and brochures. Is working on Boston trail access kiosk this year. Expressed interest in partnering on an industrial themed brochure or rack card.
Preservation Pennsylvania	Erin Hammerstedt, Field Representative	257 North Street	Harrisburg	PA	17101	She expressed interest in the project in spring 2014.	They conducted a historic resource inventory along the Great Allegheny Passage and have done some work related to coke ovens along the trail.
Rivers of Steel National Heritage Area	Ron Baraff, Director of Museum Collections and Archives	623 E. Eighth Avenue	Homestead	PA	15120	Expressed interest in Dead Man's Hollow exhibit at on site museum as well as in shared interpretive experiences.	
Allegheny Trail Alliance	Bill Atkinson, President; Darla Cravotta, Vice President (and Allegheny County Special Projects Coordinator)	P.O. Box 501	Latrobe	PA	15650	Coalition of 7 trail organizations that maintain and promote the Great Allegheny Passage. Former president Linda McKenna Box's family foundation helped to fund the purchase of DMH property.	Linda McKenna Box as well as Michele Gornick provide staff support to ATA. Opportunities: Trail Book "mile-by-mile" feature (map was added in 2014). <a href="http://www.GAPtrail.org">www.GAPtrail.org</a> (event listings and recommended trip itineraries)
Regional Trail Corporation	Leslie Pierce	P.O. Box 95	West Newton	PA	15089		
Mountain Watershed Association	Krissey Kasserman, Yough Riverkeeper	1414 Indian Creek Valley Road	Melcroft	PA	15462	Manage Yough River Water Trail; potential in connecting to water trail and promoting Dead Man's Hollow	
Ohio State Park / Friends of Ohio State Park / National Park Service (Maryland Heights)		P.O. Box 105	Ohio State	PA	15470	These locations / entities are other hiking destinations along the Great Allegheny Passage and C&O Canal Towpath.	It may be possible to engage them around enticing GAP trail users to take walking breaks on hiking trails adjacent to the main stem.
Mon-Yough Trail Council	Bill Hall, President	P.O. Box 14	McKeesport	PA	15133	Trail stewardship / interpretive and other signage / cross promotion	
Steel Valley Trail Council	George Schmidt, President	P.O. Box 318	Homestead	PA	15120	Cross promotion	
McKeesport Trail Commission	Bob MacGregor		McKeesport	PA	15132	Cross promotion	Also Vice President of Steel Valley Trail Council
NPS Rivers, Trails, & Conservation Assistance Program	Peggy Plings	P.O. Box 6125	Morgantown	WV	26506	Project assistance	
PA DCNR	Adam Mattis, Kathy Frankel		Pittsburgh	PA	15222	Funding	
Pittsburgh Trails Advocacy Group	Jamie Pfaffle, Interim President		Pittsburgh	PA		Trail building, maintenance	
Venture Outdoors	Lora Woodward, Director of Programming	23 Terminal Way	Pittsburgh	PA	15219	Guided trips to Dead Man's Hollow (they already offer some)	Also a board member of PTAG
McKeesport Heritage Center		1832 Arboretum Drive	McKeesport	PA	15132	Dead Man's Hollow exhibit / cross promotion / themed itinerary potential	





PASHEK ASSOCIATES

LANDSCAPE ARCHITECTURE | DESIGN | PLANNING