

Open Space and Trail Recommendations

By Andropogon Associates

From July to October 2004, Andropogon Associates developed recommendations for open space in the Pennypack Watershed, in particular trails and linkages to open space. This was accomplished through coordination with the planning commissions of Bucks and Montgomery Counties and the eleven municipalities within the watershed. The municipalities in Montgomery County are in the process of updating their open space plans in expectation of receiving funds from the Montgomery County Open Space Board, per a recently passed \$150 million open space bond initiative. Andropogon concentrated on trail linkages in the watershed and the optimal location of a Pennypack Trail.

The team of landscape architects and planners reviewed and assessed the proposed trail configuration and made recommendations concerning its implementation. An unused railroad right-of-way owned by South Eastern Pennsylvania Transportation Authority (SEPTA) appears to be the best choice for the trail. The rail line is ideally suited for usage as a public trail due to its location and its gentle grade. It could be used both to weave together the few remaining pieces of “natural” open space in the region and as a connector for public parks and sites of cultural interest. Much of the alignment is located in floodplain, which could provide opportunities for stormwater management interventions and public education about hydrologic systems.



Background / History



The Fox Chase to Newtown Railroad line was established in the mid-late 1800's during the boom times of the railroad industry. It served mainly as a passenger connection into the city, but also provided daily milk deliveries into the city and moved materials to and from the many mills that lined the Pennypack Creek. A century of bustling railroad activity followed, including a collision in 1921 that was significant enough to make world news headlines.

SEPTA ultimately closed the railroad in 1982 after a grade crossing collision at Second Street Pike and due to unreliable rail service caused by aging self-propelled diesel-powered rail cars. While the line has not been in service, SEPTA has not removed it from their consideration for future use. The SEPTA 2003-2014 Capital Program and Comprehensive Plan contains reactivation of the rail line as a possibility despite low projected ridership and an estimated \$19.2 million cost. It is further hampered by the fact that the line is single track and has significant curves that reduce speed potential.

Trail Negotiations

Montgomery County and several municipalities have attempted to convince SEPTA to allow usage of the unused rail line as a public trail in the years since it closed. The Newtown Greenway Coalition produced a concept plan in early 1992, and Upper Southampton Township produced a Rails to Trails proposal as recently as February 2003, which was refused by SEPTA.

It has been foreseen by trail advocates that the line could be “rail banked” and leased from SEPTA, who would retain the rights to restore the line to a future mass transit corridor. Under Section 8(d) of the National Rail Systems Act, “rail banking” permits rail line owners to negotiate with a state, municipality, or private group that is prepared to assume financial, legal, and managerial responsibility for the right-of-way.

As of February, 2003, the Bucks County Commissioners do not support a plan for creation of a trail on the rail line, but Montgomery County favors the idea. Upper Southampton Township and Upper Moreland have voiced their support of the idea, but it is unclear of the position of the other municipalities in the region.

Regional Analysis

An analysis of the unused rail corridor from a regional perspective revealed features that lend themselves to its use as a public greenway. Examining the cultural history of the region with the physical composition of the land as a driving force reveals some interesting patterns. Geology has strongly influenced the landform, soils, hydrology, vegetation, and human land use of this rolling southeastern Pennsylvania countryside.



The length of the rail line from Fox Chase to Newtown is 15.2 miles through the Piedmont Physiographic Province of Bucks, Montgomery, and Philadelphia Counties. Three major geologic formations are represented along its length, each with distinctive characteristics evident on the surface. From north to south, these are the Stockton, Baltimore Gneiss, and Wissahickon formations.

In Bucks County, the corridor is mostly straight and flat, as the topography is relatively subdued. The Stockton geologic formation underlies this area, characterized by reddish sandstones and shale-imbedded conglomerate. This easily weathered rock allows watercourses to form broad flood plains with moderately deep to shallow soils, which are commonly waterlogged. The land is easy to build upon, and that is certainly evident here.

The point where the railroad crosses into Montgomery County marks a significant shift in character. The surficial geology changes from Stockton sandstones to Baltimore Gneiss. It is important to note that both the major east-west transportation corridors, I-276, the Pennsylvania Turnpike, and the Norfolk Southern Railroad, parallel this geologic boundary, and are constructed on the more forgiving Stockton formation. The alignment of the watercourses in the region can be seen to follow this boundary as well. Not uncoincidentally, the Pennypack Creek, Southampton Creek, and the Fox Chase – Newtown Rail Line all enter the hard rock formation of Baltimore Gneiss in relatively the same area.

The Baltimore Gneiss formation, composed of hornblende and granitic gneiss, is deeply weathered to a depth of 10 to 45 feet. The soils in the area have significant groundwater recharge potential and are suitable for building on the shallower slopes of the uplands. The Pennypack Creek has carved a deep, narrow valley through this area, with very steep sides and a flat bottom. The topography is hilly, as the Creek's tributaries have all produced similar channels leading to the main stem. The rail line hugs the Pennypack Creek for five miles through this geologic formation, constructed within the floodplain on causeways and blasted through the hard rock outcrops.

The crossing of the Pennypack Creek and Old Welsh Road marks another major geologic change along the rail corridor. The bedrock here becomes Ledger formation dolomite and limestone. The less-weathering resistant dolomite and limestone form the valley and stream

channels and low-lying wetland areas. It is here that the Pennypack Creek is joined by the Huntingdon Valley Creek and the Meadow Brook in a broad, wet linear floodplain. It also marks the boundary of another geologic region characterized by rolling topography with steeply incised stream valleys. The bedrock becomes the sedimentary Wissahickon Schist, a variety of schist named for the craggy valley of Wissahickon Creek where the stone was first studied. With its flecks of glittery mica and its many-toned shadings of gray, brown, tan, and blue, Wissahickon schist is so attractive that it became a common building material in the nineteenth and early twentieth centuries. Note again that both the watercourses and another east-west SEPTA rail line precisely follow this boundary to avoid the gneisses to the north. Lorimer Park lies just to the south of this point, adjacent to the rail line and Fox Chase station.



The flow pattern of the Pennypack Creek is significantly different than it was at the time of the railroad's construction. The Creek was bordered by significant oak-hickory forests, which had the effect of withholding and slowly releasing great volumes of water on a consistent basis. The Creek had much more water flow, with rapid-flowing riffles and deep, slow-moving pools. The 21 miles of the Pennypack Creek supported 35 mills and their respective communities to harness the power of the waterway. Unlike most creeks in the region, which had grist mills, the Pennypack could power sawmills. The harvesting of the forests to feed the mills ultimately changed the flow regime such that there was too little water in the channel, coupled with violent flash floods when it rained. By the 1860's, when the railroads came, the mills had reached at the end of their feasibility.

The deforestation caused by land development throughout the twentieth century has exacerbated this flood pattern to dangerous levels. Observation of the channel revealed that storm erosion has increased to levels that the railroad causeway could be potentially compromised. This may be a consideration in the ultimate choice between rail or trail.

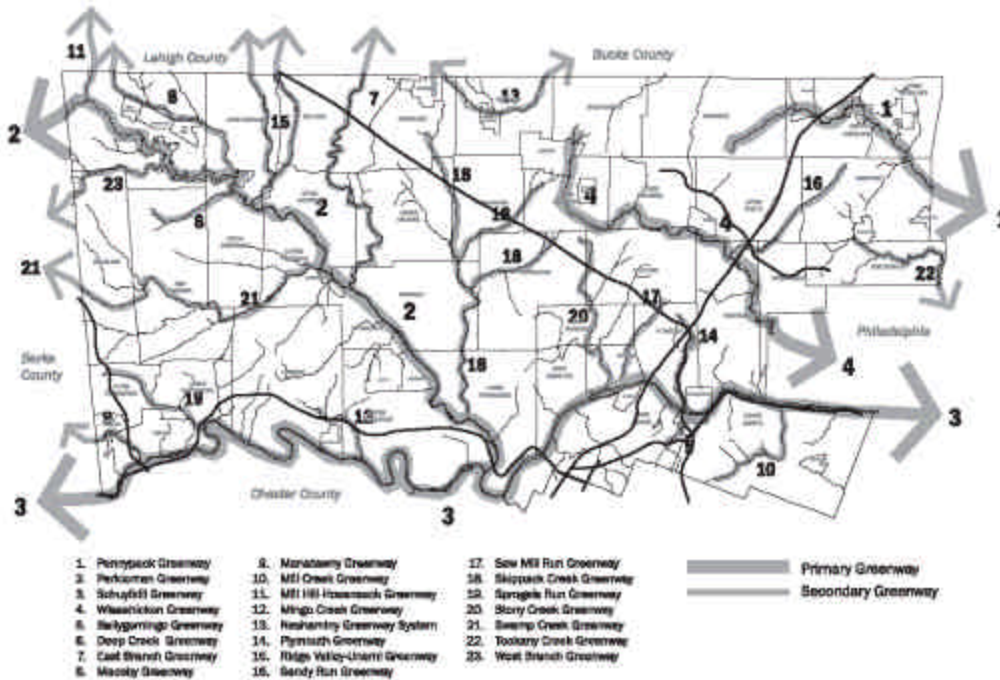
Landcover

Mapping the landcover of this region reveals that there is precious little open space remaining and what remains is highly fragmented. The leftover pieces of natural land exist predominantly where it was too difficult to build, either steep rocky slopes or low, wet floodplains. The Pennypack Ecological Restoration Trust (PERT), Lorimer Park, and Pennypack Park are clearly the only significant “natural” lands remaining, while local parks, golf courses and institutional places contain appreciable “managed” open space. It is also evident that the Fox Chase – Newtown Rail Line is the only potential spine that intersects these places.

Trail Analysis / Recommendations

The use of this rail line as a greenway makes eminent good sense. Its position at the “back end” of many land parcels is an advantage in that it would allow linkage through these open spaces without the hazards of sharing public roads.

Connections



Note how the proposed Pennypack Trail (labeled as number 1 in the above map) links to the Montgomery County Proposed Primary Trail Network. Strategically, the Pennypack Trail would allow Montgomery County connections from the Cross County Trail and the Power

Line Trail to the green infrastructure of Bucks County to the north and Philadelphia County to the south and east.

Many parks and institutional spaces are near or adjacent to rail line: Pennypack Park in Philadelphia county, Lorimer Park, Pennypack Ecological Restoration Trust, and Mason's Mill Park in Montgomery county, and Core Creek Park, Tamanend Park, Tyler State Park, and Churchville Park in Bucks county.

The rail line is adjacent to twenty eighteenth century mill sites, the oldest stone arch highway bridges in the country (two on PERT property alone), and the world-class architecture of the Bryn Athyn Cathedral.

Benefits

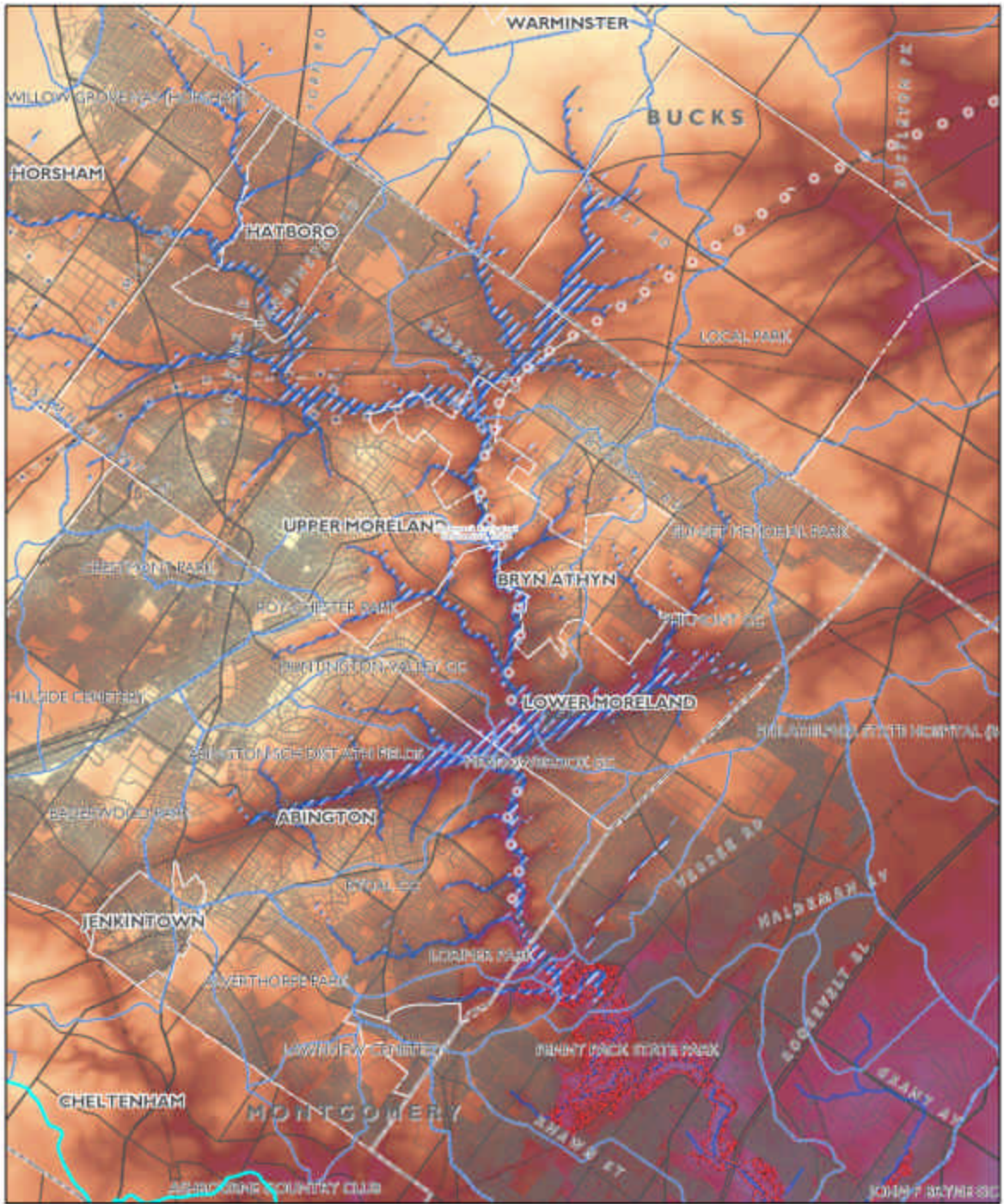
Conversion of the rail line to a greenway offers significant potential benefits to the region, including:

- Ecological buffers and linkages
- Recreation
- Education
- Transportation
- Enhancement of property values

Issues

As with all projects of this nature and scope, there are issues to be resolved, including:

- Crossing treatment
- Safety & vehicular access restrictions
- Treatment of trail surface
- Infrastructure upgrades (bridges, etc.)
- Insurance/liability
- Funding
- Fencing
- Safety and security
- Maintenance / garbage collection
- NIMBY's
- Multi-jurisdictional management



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