Master Plan 2018

For: Bliss, Truesdale, Warrior Run & Sugar Notch Lands

Earth Conservancy

Dedicated to Mine Land Reclamation, Conservation, & Economic Development in the Wyoming Valley

Prepared By:
Borton Lawson
ENGINEERING | ARCHITECTURE

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Introduction

Earth Conservancy (EC) is a nonprofit organization dedicated to addressing the impacts of legacy coalmining in northeastern Pennsylvania. Its focus: reclamation, conservation, and economic revitalization.

EC's story began in the early 1990s, when Congressman Paul Kanjorski joined with Wilkes University, King's College, and other community leaders to secure the lands of the Blue Coal Corporation. Blue Coal, a subsidiary of the Glen Alden Coal Company, had prospered during the heyday of anthracite mining. Unfortunately, with the downturn of the coal industry, operations floundered. By the 1970s, the company had declared bankruptcy. Liquidation of the company's assets failed to progress. As a consequence, more than 16,000 acres of legacy minelands scattered in and around Wilkes-Barre languished for years, then decades. The mine-scarred tracts – barren and black – were especially dispiriting as they sat idle. Many wondered what, if anything, would happen to the land.

EC's founders offered a solution, envisioning a way to make the lands productive once again. With a mission focused on stewardship of the Blue Coal holdings, EC, in partnership with government, business, and education institutions, would recover the degraded properties through reclamation and reutilization, with the aim of improving "the economic competitiveness and quality of life in [the] community." EC was incorporated as a 501(c)(3) not for profit organization in 1992. The Blue Coal estate was finally purchased by EC in 1994.

Although some reclamation activities occurred, EC decided a comprehensive plan of action was required. As a result, EC engaged a team of consultants led by EDAW, Inc., of Alexandria, Virginia, to prepare a long-term, 25-year land use plan for its properties. Planning was conducted over a 12-month period, beginning in October 1995. Extensive collaboration among EC's original partners occurred, as well as contributions from a 38-person steering committee comprised by municipal representatives and interested citizens. Funding for the project was provided by the Appalachian Regional Commission, the Economic Development Administration within the U.S. Department of Commerce, and the Luzerne County Department of Community Development.

Since that time, EC has used the original Land Use Plan as its guide for reclamation and conservation efforts, setting priorities, timelines, and goals. EC also undertook strategic planning activities, an outcome of which was an updated vision and mission statement. EC's current vision is to lead our communities in the reclamation of mine-scarred lands and streams, returning strong economic, environmental, and social value to the region by creating a well-planned vibrant valley, protected by green ridgetops.

This is supported by its mission, which commits EC to "the reclamation and return of 16,000 acres of former coal company-owned land to the region." This will be done through collaboration with a variety of partners in order "to spearhead the creation and implementation of plans that restore the land's economic, recreational, residential, and ecological value."

At present, EC has reclaimed 2,000 mine-scarred acres, which are available for or already in productive use across a variety of sectors. EC also operates two acid mine drainage treatment systems to mitigate damage to the Nanticoke Creek and its watershed. Approximately 8,000 acres have been given over to recreation/greenspace, just 2,000 acres shy of EC's 10,000-acre goal. Additionally, EC has built three trail systems; participates in a variety of environmental education initiatives; runs a community garden; and operates a large-scale leaf and yard waste composting facility for county residents. Its work has earned numerous federal, state, and local awards, including seven Pennsylvania Governor's Awards for Environmental Excellence. All of these projects trace back to EC's overarching plan, one that seeks a more livable community now, and clears the way for positive, progressive change for future generations.

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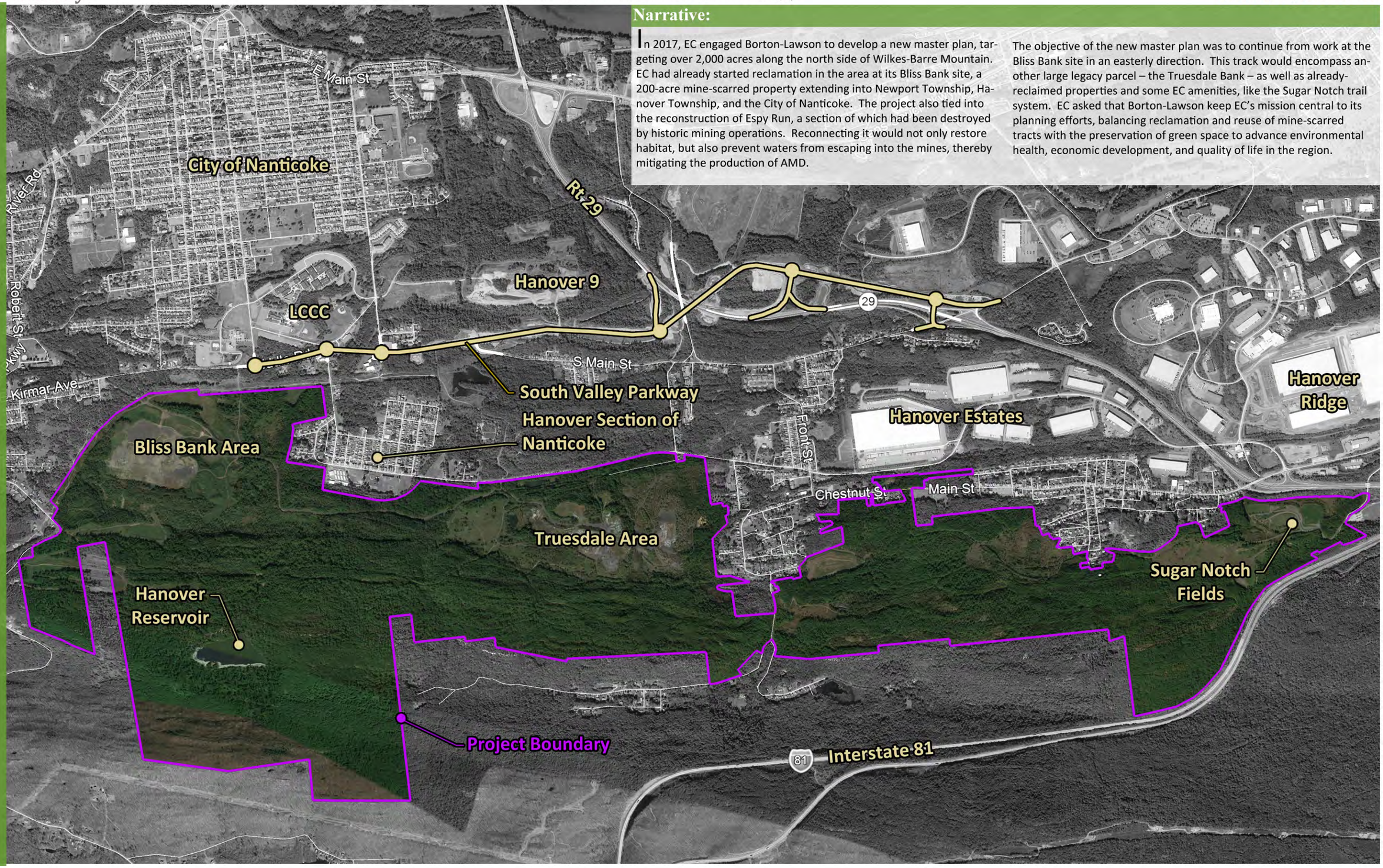
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Project Boundary

Narrative:

In 2017, EC engaged Borton-Lawson to develop a new master plan, targeting over 2,000 acres along the north side of Wilkes-Barre Mountain. EC had already started reclamation in the area at its Bliss Bank site, a 200-acre mine-scarred property extending into Newport Township, Hanover Township, and the City of Nanticoke. The project also tied into the reconstruction of Espy Run, a section of which had been destroyed by historic mining operations. Reconnecting it would not only restore habitat, but also prevent waters from escaping into the mines, thereby mitigating the production of AMD.

The objective of the new master plan was to continue from work at the Bliss Bank site in an easterly direction. This track would encompass another large legacy parcel – the Truesdale Bank – as well as already-reclaimed properties and some EC amenities, like the Sugar Notch trail system. EC asked that Borton-Lawson keep EC's mission central to its planning efforts, balancing reclamation and reuse of mine-scarred tracts with the preservation of green space to advance environmental health, economic development, and quality of life in the region.



Past Planning Efforts

Narrative:

Past Earth Conservancy planning efforts played an important role in determining potential future land use in the 2018 Master Plan.

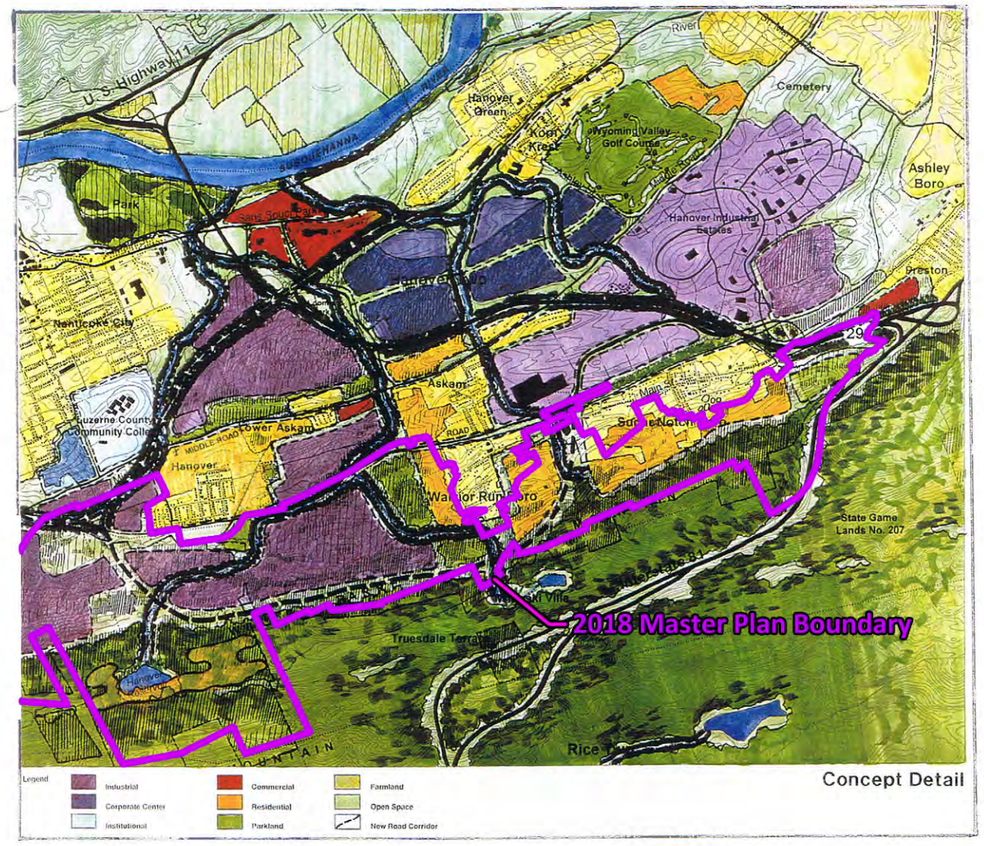
Earth Conservancy's initial Land Use Plan was completed shortly after its inception in 1995. The intent was to determine both reclamation priorities and the most responsible course for future land development and conservation. The Plan designated 2,800 acres for residential development. It also provided another 2,200 acres for industry and commerce and 10,000 acres for greenways, conservation, and recreational space. The Plan laid the groundwork for some of the zoning changes, utility extensions, and transportation improvements in the Wyoming Valley over the past 20± years. The 2018 Master Plan builds upon the 1996 initial Land Use Plan.

The Lower Wyoming Valley Open Space Plan focused on the 1996 Land Use Plan's 10,000 acres of greenways, conservation and recreation space. The Plan designated much of the project area to remain "passive" conservation and open space area as opposed to "active" recreational parkland. The Penobscot Ridge Trail was one of the passive recreation activities proposed in the conservation / open space area.

Other plans that were considered and used as reference during the 2018 Master Planning process include, the Route 29 Mixed-Use Development Master Plan/South Valley Parkway Project and the 2008 Reuse Analysis and Sustainable Redevelopment Framework., "As to not duplicate the efforts of these two plans, a less "development-intensive" approach was taken during the 2018 Master Planning Process. In this approach, the Plan proposes smaller pockets of development combined with utility and transportation improvements, all the while maintaining passive conservation areas between the proposed development areas.

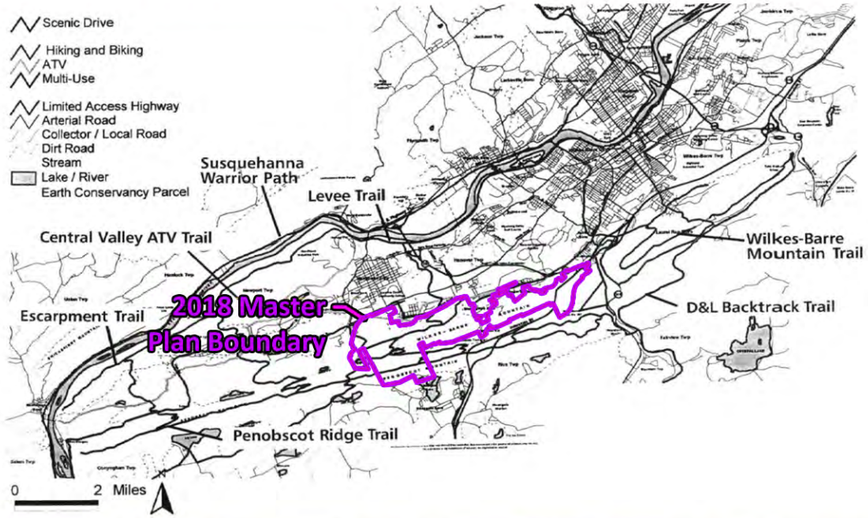
Land Use Plan (1996)

A conceptual site plan rendering from the initial Land Use Plan shows a majority of the 2018 Master Plan's project area divided between industrial, residential and conservation uses.



Lower Wyoming Valley Open Space Master Plan (1999)

The Lower Wyoming Valley Open Space Master Plan, focused only on the 1996 Land Use Plan's 10,000± conservation lands. This plan designated that much of the conservation land within the project area to remain open space and "passive recreation" including the Penobscot Ridge Trail.



Route 29 Mixed-Use Development Master Plan/South Valley Parkway Project (1999)

The Route 29 Mixed-Use Development Master Plan/South Valley Parkway plan proposed a development intense mixed use area named "Penobscot Point"

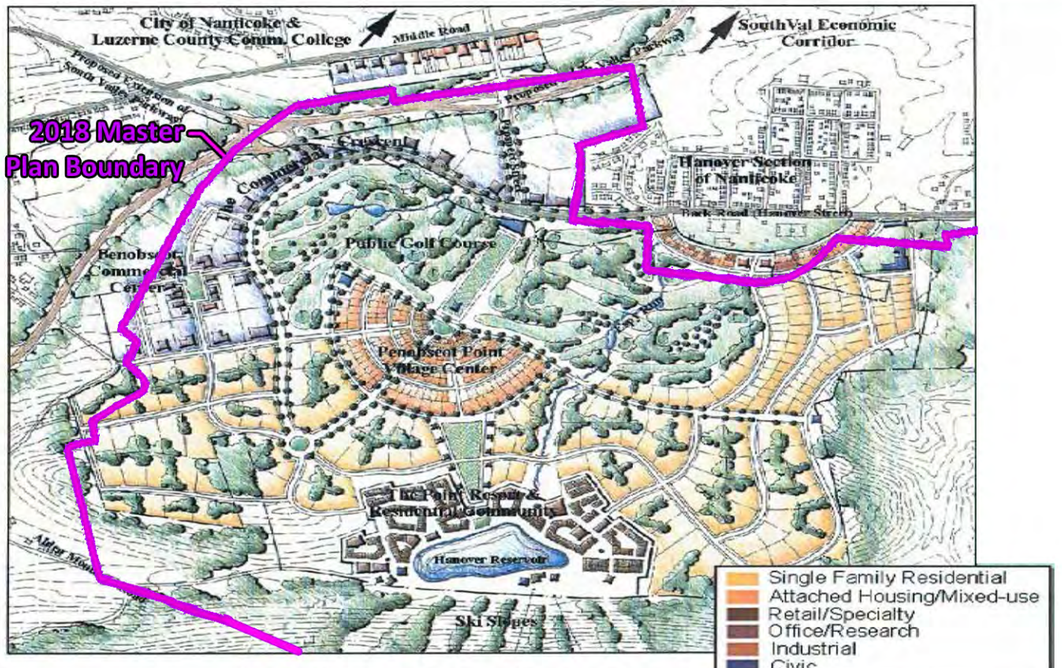


Figure V.5 Master Plan for Penobscot Point.

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Municipal Boundary

Adjoining Lands Owned by Earth Conservancy (Indicated in Yellow)



Narrative:

The project area is located within Hanover and Newport townships, Warrior Run and Sugar Notch boroughs, and the City of Nanticoke.

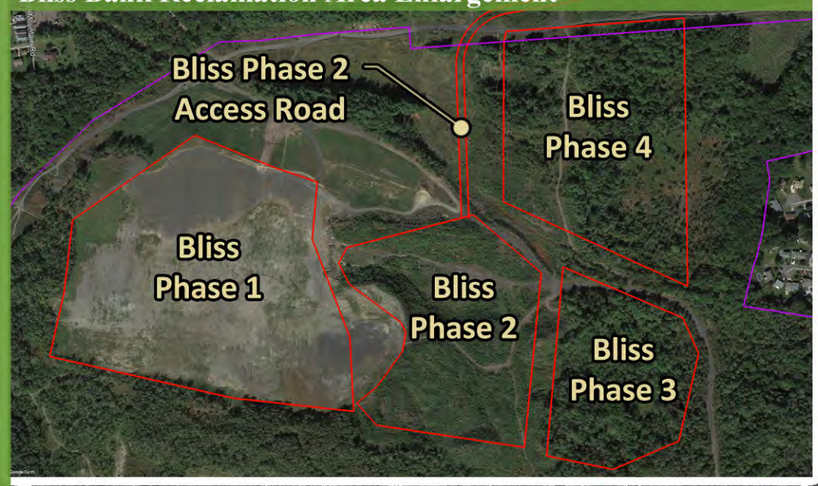
The majority of the project area (1150± acres) is located within Hanover Township; another 430± acres is located in Newport Township which includes the recently-reclaimed Bliss Phase 1 Pad. Additionally, there is only a small portion of project area (65± acres) located in the City of Nanticoke. The small portion of project area located in the City of Nanticoke is due west-northwest of the downtown area.

The Earth Conservancy owns significant portions of land in both Sugar Notch and Warrior Run boroughs. With ownership of nearly 250 acres within Warrior Run Borough, Earth Conservancy owns slightly more than 50% of the Borough's 480 total acres. Similarly, Earth Conservancy owns nearly 50% (320± acres) of the 690-acre Sugar Notch Borough. Portions of the Hanover Recreation Park as well as the Ridgetop and Munro Trails are located within the Borough of Sugar Notch.

Earth Conservancy also has significant holdings outside of the project area as shown on the map inset to the left.

Existing Projects

Bliss Bank Reclamation Area Enlargement



Narrative:

Earth Conservancy has been reclaiming portions of the project area over the past 20+ years of existence. Several of the most recent and ongoing projects include:

The 400± acre "Bliss Bank" area, which was used as a mine waste storage area during the site's 100± years of mining history, the undevelopable terrain is currently in the process of being reclaimed by the Earth Conservancy in phases. Bliss Phase 1, which was completed in 2016, resulted in approximately 37 acres of developable land. Bliss Phase 2, which is under construction as of the writing of this report, will result in an additional 22 acres of buildable land and a 2000'+ access road. While Bliss Phases 3 and 4 are still in the conceptual design phase, it is anticipated that reclamation will result in an additional 50+ acres of buildable area and extensions of existing utilities from Espy Street to the proposed project area.

The 12± acre "Warrior Run Brownfield" is another former mine dump area, which was reclaimed in 2015. The result of the reclamation project was the conversion of area once almost exclusively covered with mine spoils to a healthy meadow that is now available for redevelopment.

The recently reclaimed 39-acre "Alden Mountain East Mine Site" was once riddled with 29 mine openings. During the reclamation project, most of the openings were simply filled, but several the openings had gates installed to allow bats to enter and exit. Additionally, large amounts of soil was used to re-grade highwalls and pits left from the strip-mining activity.

The "Hanover Recreation Park" reclamation project has been completed over several phases since 2000. The project has resulted in several recreational facilities, including multipurpose fields, baseball fields, parking areas, an access road, and trail heads.



Zoning

Narrative:

Current local zoning districts helped guide the proposed land use plan.

A majority of the project area is located within either a mining, mixed use, heavy industrial, conservation or a single family residential zoning district. Listed on this page are many of the applicable land uses allowed by right or special exception within each zoning district.

Newport Township and Warrior Run Borough's zoning administration are conducted by Luzerne County. Sugar Notch and Hanover Township zoning are facilitated by local zoning boards.

M-U Mixed Use District

Use Allowed By Right:
- Single - Multi Family Dwellings
- Home Based Business
- Entertainment Facilities
- Equipment Sales and Repairs
- Institutional Uses
- Retail Facilities
- Offices
- Schools

R-1 Single Family Resid.

Use Allowed By Right:
- Single-family Detached Dwellings
- Public Utility Facilities
- Accessory Uses to the Above

Use Allowed By Special Exception:
- Home Occupations
- Public Uses
- Public Recreational Facilities
- Day Care Homes
- Place of Worship
- Accessory Uses to the Above

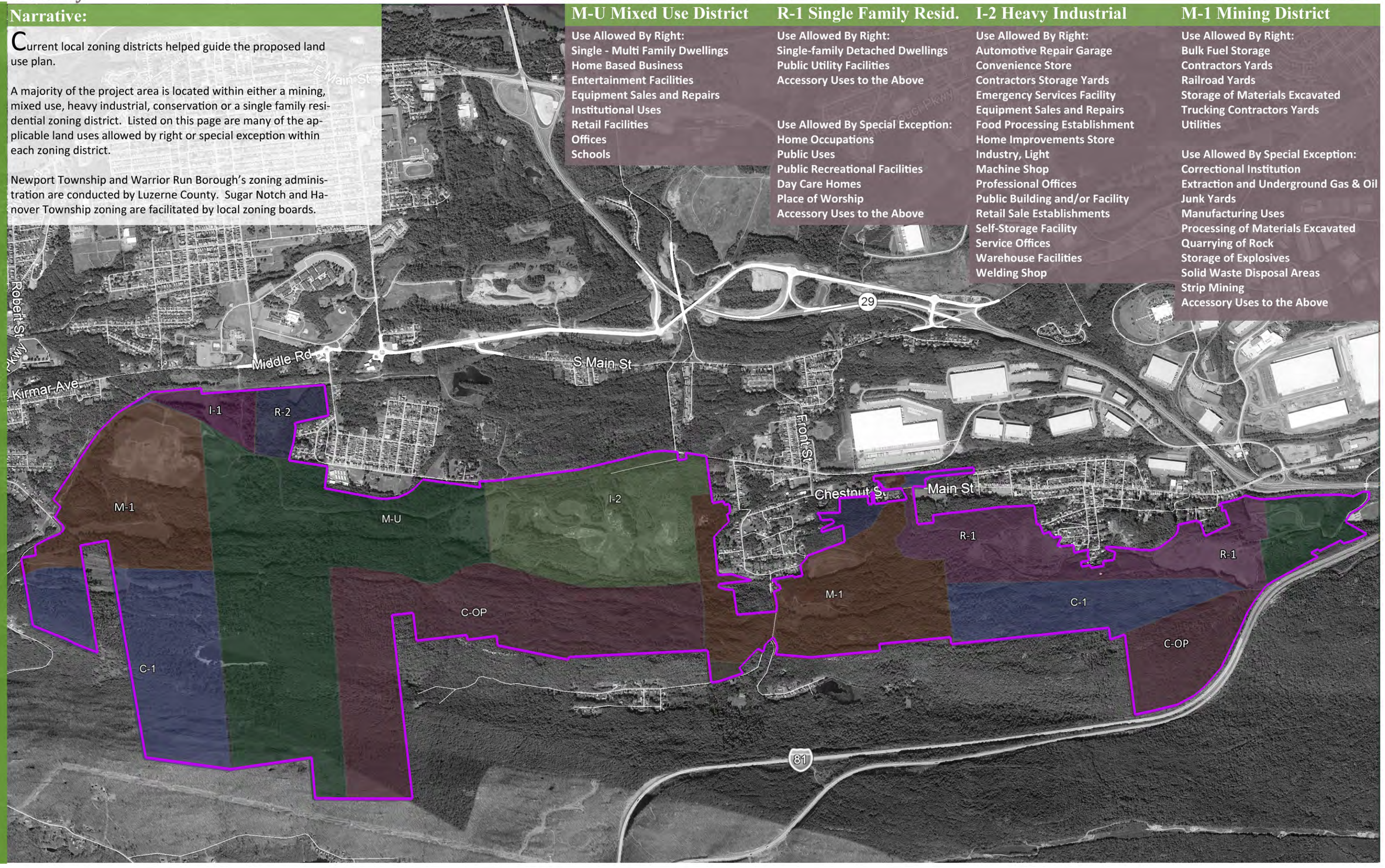
I-2 Heavy Industrial

Use Allowed By Right:
- Automotive Repair Garage
- Convenience Store
- Contractors Storage Yards
- Emergency Services Facility
- Equipment Sales and Repairs
- Food Processing Establishment
- Home Improvements Store
- Industry, Light
- Machine Shop
- Professional Offices
- Public Building and/or Facility
- Retail Sale Establishments
- Self-Storage Facility
- Service Offices
- Warehouse Facilities
- Welding Shop

M-1 Mining District

Use Allowed By Right:
- Bulk Fuel Storage
- Contractors Yards
- Railroad Yards
- Storage of Materials Excavated
- Trucking Contractors Yards
- Utilities

Use Allowed By Special Exception:
- Correctional Institution
- Extraction and Underground Gas & Oil
- Junk Yards
- Manufacturing Uses
- Processing of Materials Excavated
- Quarrying of Rock
- Storage of Explosives
- Solid Waste Disposal Areas
- Strip Mining
- Accessory Uses to the Above



Army Corps Plan

Narrative:

The project boundary is located almost entirely within the Nanticoke Creek Watershed. In March of 2005, the US Army Corps of Engineers completed a "Section 206 Ecosystem Restoration" plan for the Nanticoke Creek Watershed. The plan noted, "The Nanticoke Creek watershed is a small sub-watershed (8 sq. miles) of the larger Susquehanna River Drainage Basin. The watershed is extensively littered with mine spoil and refuse piles from more than 100 years of coal mining operations. Water quality in the headwaters of the watershed is generally good. However, a significant portion of the runoff and surface water infiltrates into deep abandoned underground mine workings. As a result, nearly 40% of Nanticoke Creek and its tributaries are dry and devoid of aquatic life. Due to the loss of surface flow there is no discernible riparian buffer zone in the middle portion of the watershed." As discussed in subsequent chapters, the master plan aims to preserve the Army Corps' Watershed Restoration Plan, limiting the need to perform additional hydrologic & hydraulic analysis.

A recommendation / next step for the Earth Conservancy would be to finalize, and if necessary amend, the Army Corps' report. By their own admission, the Corps did not complete such items as scour analysis and design, hydraulic design of stone structures, erosion and sediment control, etc. Finalizing Espy Run, Leuder Creek, and Upper Nanticoke Creek's alignments and design is critical to making this area suitable for future developers.

Espy Run Realignment & Restoration

The plan recommends for 6,100 LF of stream construction, consisting of 4,700 LF of realignment and 1,400 LF of reconstruction in-place. Two objectives are listed in the report:

1. Re-connect the portion of Espy Run that is currently disconnected by previous coal mining operations.
2. Seal the streambed to minimize infiltration into the underground mines.

Upper Nanticoke Creek Realignment & Restoration

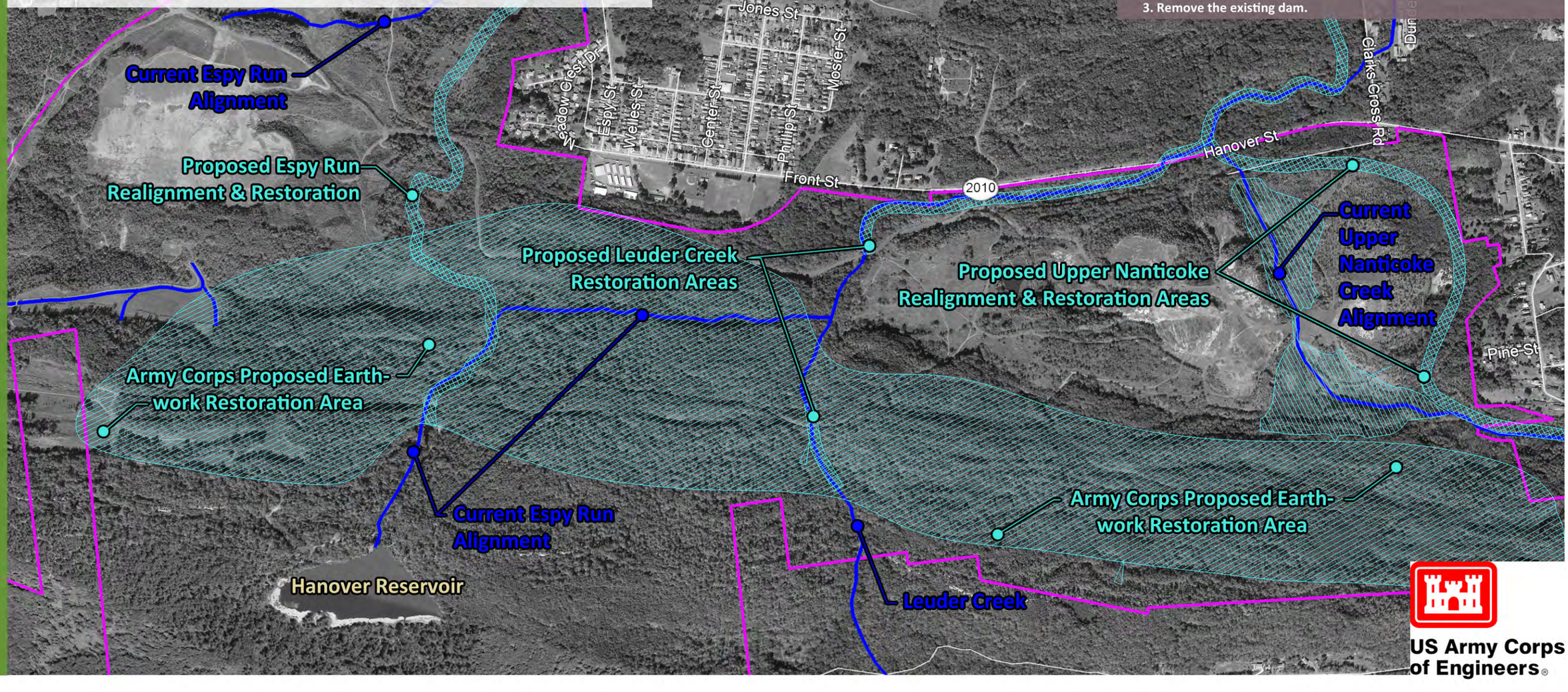
The plan recommends 6,500 LF of stream construction, consisting of 4,800 LF of realignment and 1,700 LF of reconstruction in-place. Two objectives are listed:

1. Re-connect the portion of Nanticoke Creek that is currently blocked by a pile of waste material left over from coal mining operations.
2. Seal the streambed to minimize infiltration into the underground mines.

Leuder Creek Realignment & Restoration

The proposed plan involves 4,400 LF of stream construction, consisting of dam removal, 3,100 LF of stream realignment and 1,300 LF of stream reconstruction in-place. Three objectives are listed:

1. Replace the portion of the existing concrete channel and masonry culvert that have failed.
2. Seal the streambed to minimize infiltration into the underground mines.
3. Remove the existing dam.



US Army Corps of Engineers®

Abandoned Mine Lands

Narrative:

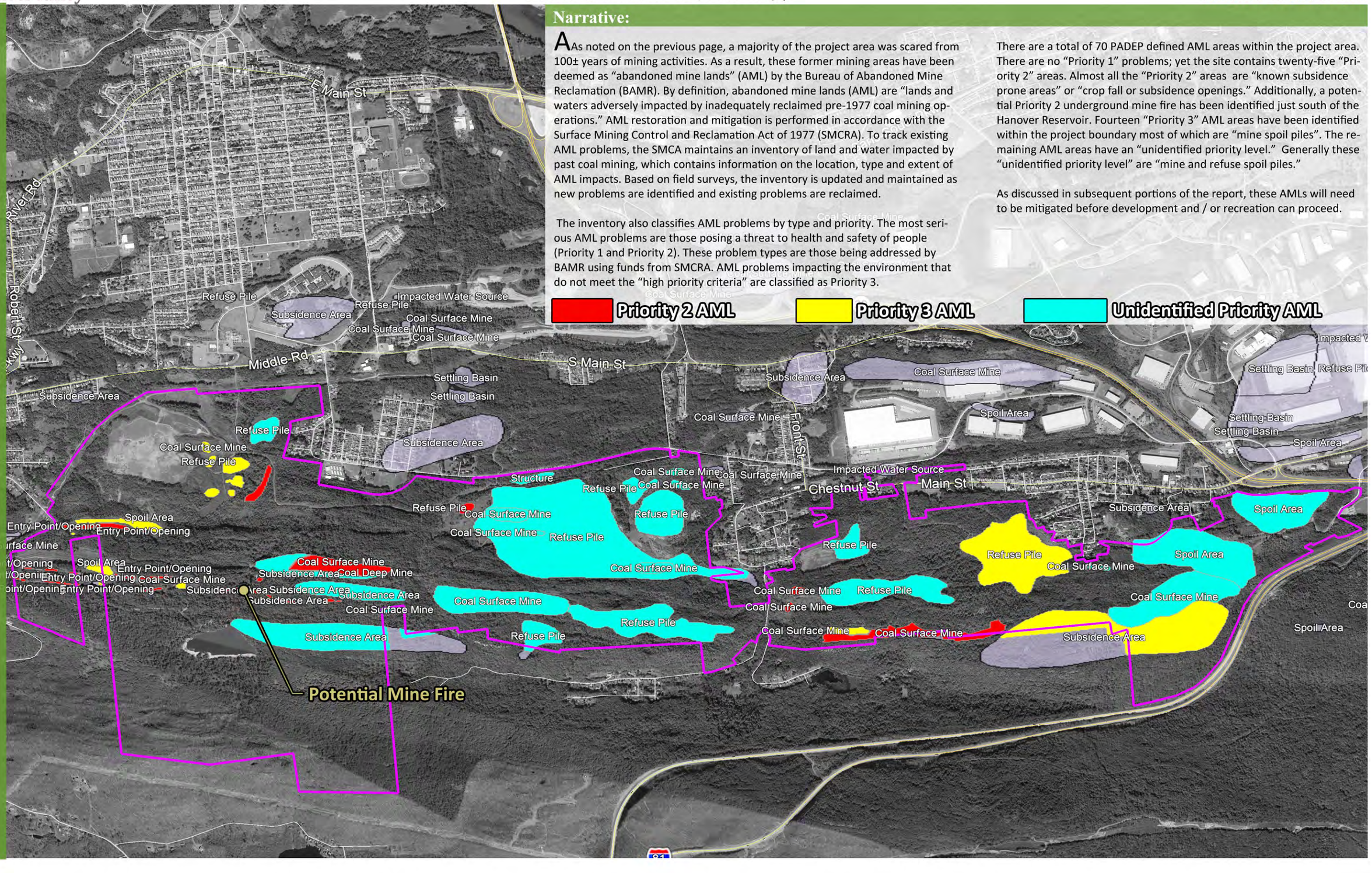
As noted on the previous page, a majority of the project area was scared from 100± years of mining activities. As a result, these former mining areas have been deemed as “abandoned mine lands” (AML) by the Bureau of Abandoned Mine Reclamation (BAMR). By definition, abandoned mine lands (AML) are “lands and waters adversely impacted by inadequately reclaimed pre-1977 coal mining operations.” AML restoration and mitigation is performed in accordance with the Surface Mining Control and Reclamation Act of 1977 (SMCRA). To track existing AML problems, the SMCA maintains an inventory of land and water impacted by past coal mining, which contains information on the location, type and extent of AML impacts. Based on field surveys, the inventory is updated and maintained as new problems are identified and existing problems are reclaimed.

The inventory also classifies AML problems by type and priority. The most serious AML problems are those posing a threat to health and safety of people (Priority 1 and Priority 2). These problem types are those being addressed by BAMR using funds from SMCRA. AML problems impacting the environment that do not meet the “high priority criteria” are classified as Priority 3.

There are a total of 70 PADEP defined AML areas within the project area. There are no “Priority 1” problems; yet the site contains twenty-five “Priority 2” areas. Almost all the “Priority 2” areas are “known subsidence prone areas” or “crop fall or subsidence openings.” Additionally, a potential Priority 2 underground mine fire has been identified just south of the Hanover Reservoir. Fourteen “Priority 3” AML areas have been identified within the project boundary most of which are “mine spoil piles”. The remaining AML areas have an “unidentified priority level.” Generally these “unidentified priority level” are “mine and refuse spoil piles.”

As discussed in subsequent portions of the report, these AMLs will need to be mitigated before development and / or recreation can proceed.

Priority 2 AML **Priority 3 AML** **Unidentified Priority AML**



Existing Infrastructure

11 Proposed Development Overview

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14 Gas Infrastructure

15 Water Infrastructure

16 Sanitary Infrastructure

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11 - Overall Land Use - Proposed Conditions

Narrative:

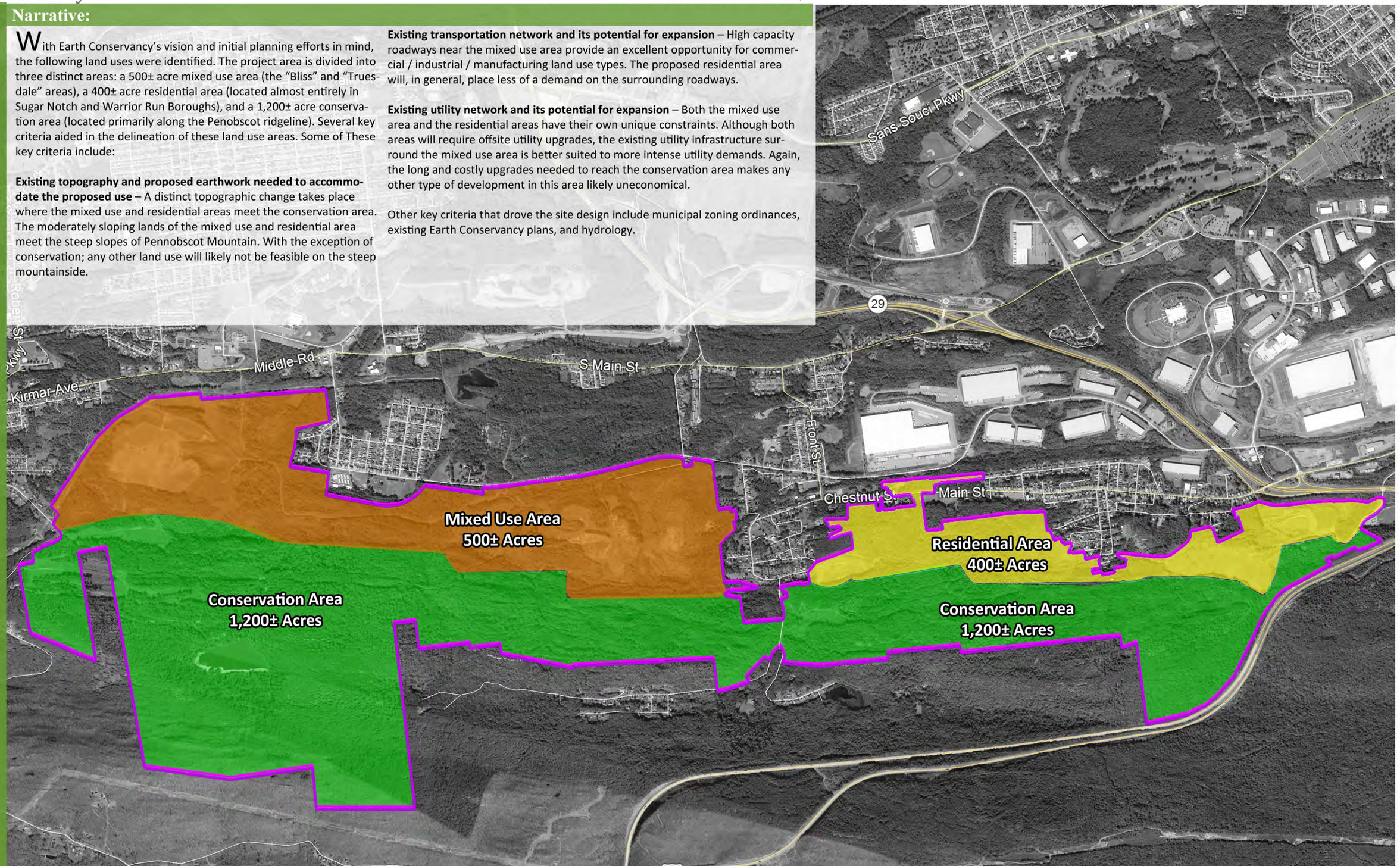
With Earth Conservancy's vision and initial planning efforts in mind, the following land uses were identified. The project area is divided into three distinct areas: a 500± acre mixed use area (the "Bliss" and "Truesdale" areas), a 400± acre residential area (located almost entirely in Sugar Notch and Warrior Run Boroughs), and a 1,200± acre conservation area (located primarily along the Penobscot ridgeline). Several key criteria aided in the delineation of these land use areas. Some of These key criteria include:

Existing topography and proposed earthwork needed to accommodate the proposed use – A distinct topographic change takes place where the mixed use and residential areas meet the conservation area. The moderately sloping lands of the mixed use and residential area meet the steep slopes of Pennobscot Mountain. With the exception of conservation; any other land use will likely not be feasible on the steep mountainside.

Existing transportation network and its potential for expansion – High capacity roadways near the mixed use area provide an excellent opportunity for commercial / industrial / manufacturing land use types. The proposed residential area will, in general, place less of a demand on the surrounding roadways.

Existing utility network and its potential for expansion – Both the mixed use area and the residential areas have their own unique constraints. Although both areas will require offsite utility upgrades, the existing utility infrastructure surround the mixed use area is better suited to more intense utility demands. Again, the long and costly upgrades needed to reach the conservation area makes any other type of development in this area likely uneconomical.

Other key criteria that drove the site design include municipal zoning ordinances, existing Earth Conservancy plans, and hydrology.

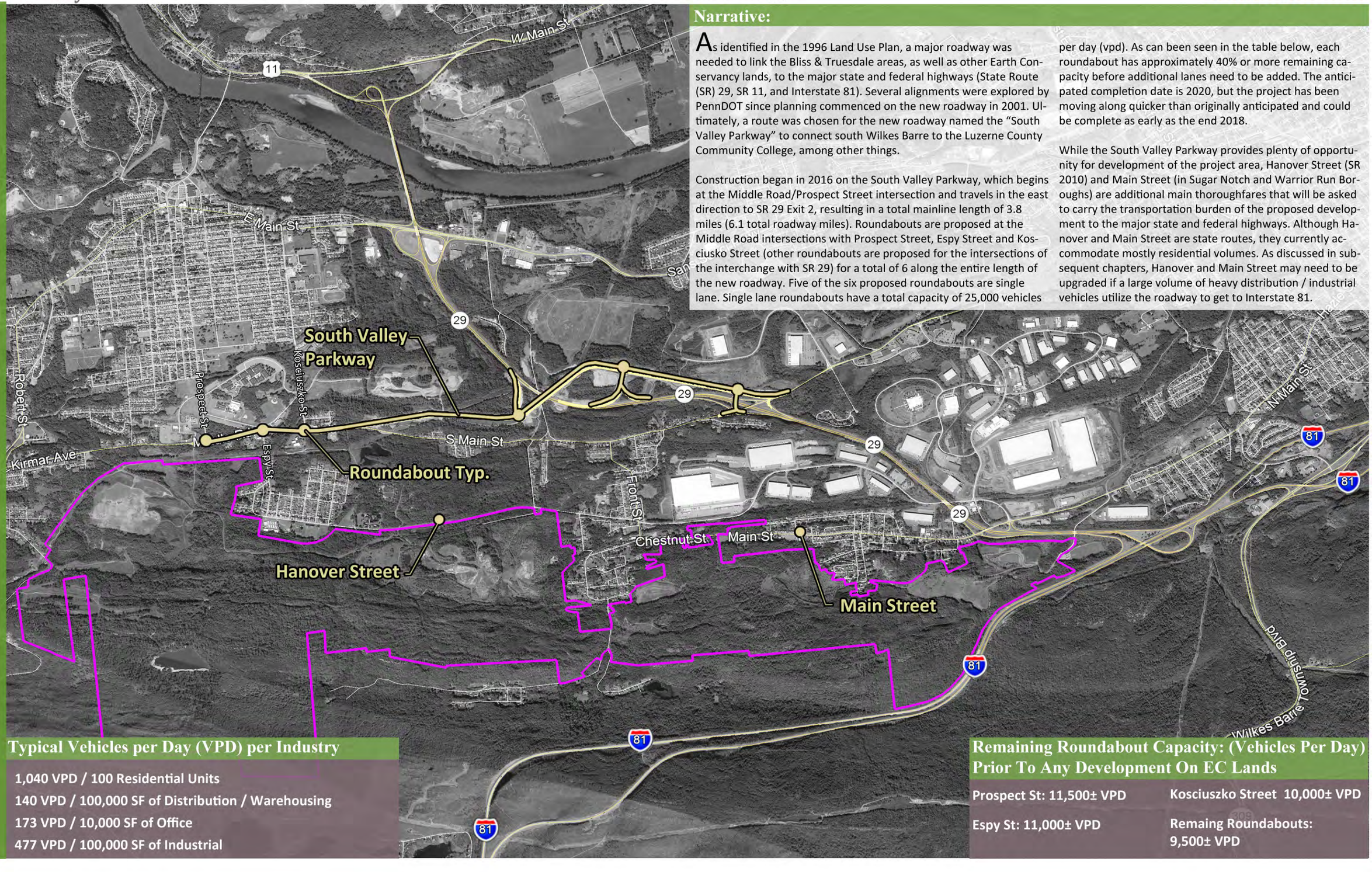


Narrative:

As identified in the 1996 Land Use Plan, a major roadway was needed to link the Bliss & Truesdale areas, as well as other Earth Conservancy lands, to the major state and federal highways (State Route (SR) 29, SR 11, and Interstate 81). Several alignments were explored by PennDOT since planning commenced on the new roadway in 2001. Ultimately, a route was chosen for the new roadway named the "South Valley Parkway" to connect south Wilkes Barre to the Luzerne County Community College, among other things.

Construction began in 2016 on the South Valley Parkway, which begins at the Middle Road/Prospect Street intersection and travels in the east direction to SR 29 Exit 2, resulting in a total mainline length of 3.8 miles (6.1 total roadway miles). Roundabouts are proposed at the Middle Road intersections with Prospect Street, Espy Street and Kosciusko Street (other roundabouts are proposed for the intersections of the interchange with SR 29) for a total of 6 along the entire length of the new roadway. Five of the six proposed roundabouts are single lane. Single lane roundabouts have a total capacity of 25,000 vehicles per day (vpd). As can been seen in the table below, each roundabout has approximately 40% or more remaining capacity before additional lanes need to be added. The anticipated completion date is 2020, but the project has been moving along quicker than originally anticipated and could be complete as early as the end 2018.

While the South Valley Parkway provides plenty of opportunity for development of the project area, Hanover Street (SR 2010) and Main Street (in Sugar Notch and Warrior Run Boroughs) are additional main thoroughfares that will be asked to carry the transportation burden of the proposed development to the major state and federal highways. Although Hanover and Main Street are state routes, they currently accommodate mostly residential volumes. As discussed in subsequent chapters, Hanover and Main Street may need to be upgraded if a large volume of heavy distribution / industrial vehicles utilize the roadway to get to Interstate 81.



Typical Vehicles per Day (VPD) per Industry

- 1,040 VPD / 100 Residential Units
- 140 VPD / 100,000 SF of Distribution / Warehousing
- 173 VPD / 10,000 SF of Office
- 477 VPD / 100,000 SF of Industrial

Remaining Roundabout Capacity: (Vehicles Per Day) Prior To Any Development On EC Lands

Prospect St: 11,500± VPD	Kosciuszko Street 10,000± VPD
Espy St: 11,000± VPD	Remaing Roundabouts: 9,500± VPD

Electric Infrastructure

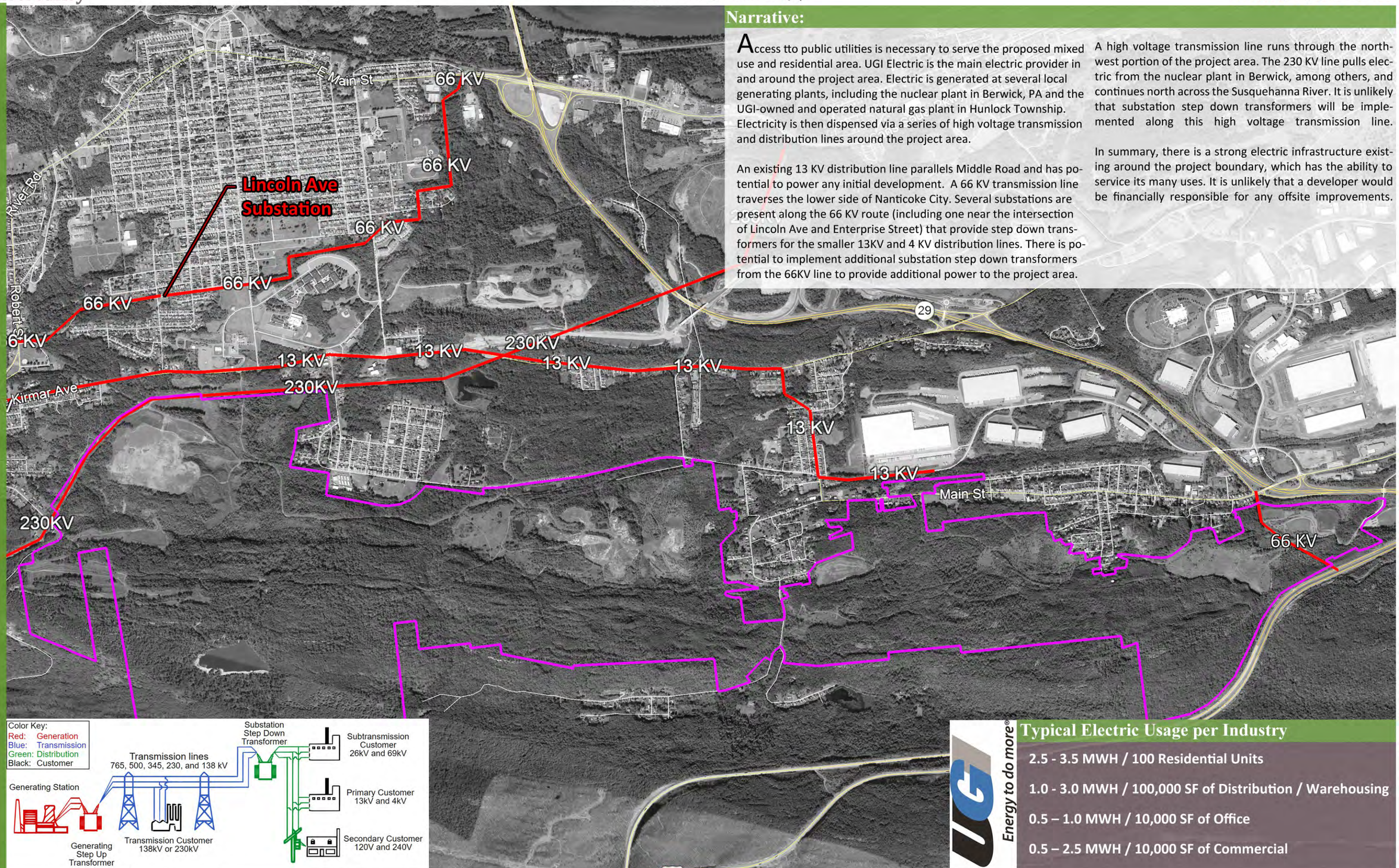
Narrative:

Access tto public utilities is necessary to serve the proposed mixed use and residential area. UGI Electric is the main electric provider in and around the project area. Electric is generated at several local generating plants, including the nuclear plant in Berwick, PA and the UGI-owned and operated natural gas plant in Hunlock Township. Electricity is then dispensed via a series of high voltage transmission and distribution lines around the project area.

An existing 13 KV distribution line parallels Middle Road and has potential to power any initial development. A 66 KV transmission line traverses the lower side of Nanticoke City. Several substations are present along the 66 KV route (including one near the intersection of Lincoln Ave and Enterprise Street) that provide step down transformers for the smaller 13KV and 4 KV distribution lines. There is potential to implement additional substation step down transformers from the 66KV line to provide additional power to the project area.

A high voltage transmission line runs through the northwest portion of the project area. The 230 KV line pulls electric from the nuclear plant in Berwick, among others, and continues north across the Susquehanna River. It is unlikely that substation step down transformers will be implemented along this high voltage transmission line.

In summary, there is a strong electric infrastructure existing around the project boundary, which has the ability to service its many uses. It is unlikely that a developer would be financially responsible for any offsite improvements.



Typical Electric Usage per Industry

- 2.5 - 3.5 MWH / 100 Residential Units
- 1.0 - 3.0 MWH / 100,000 SF of Distribution / Warehousing
- 0.5 – 1.0 MWH / 10,000 SF of Office
- 0.5 – 2.5 MWH / 10,000 SF of Commercial

Energy to do more®

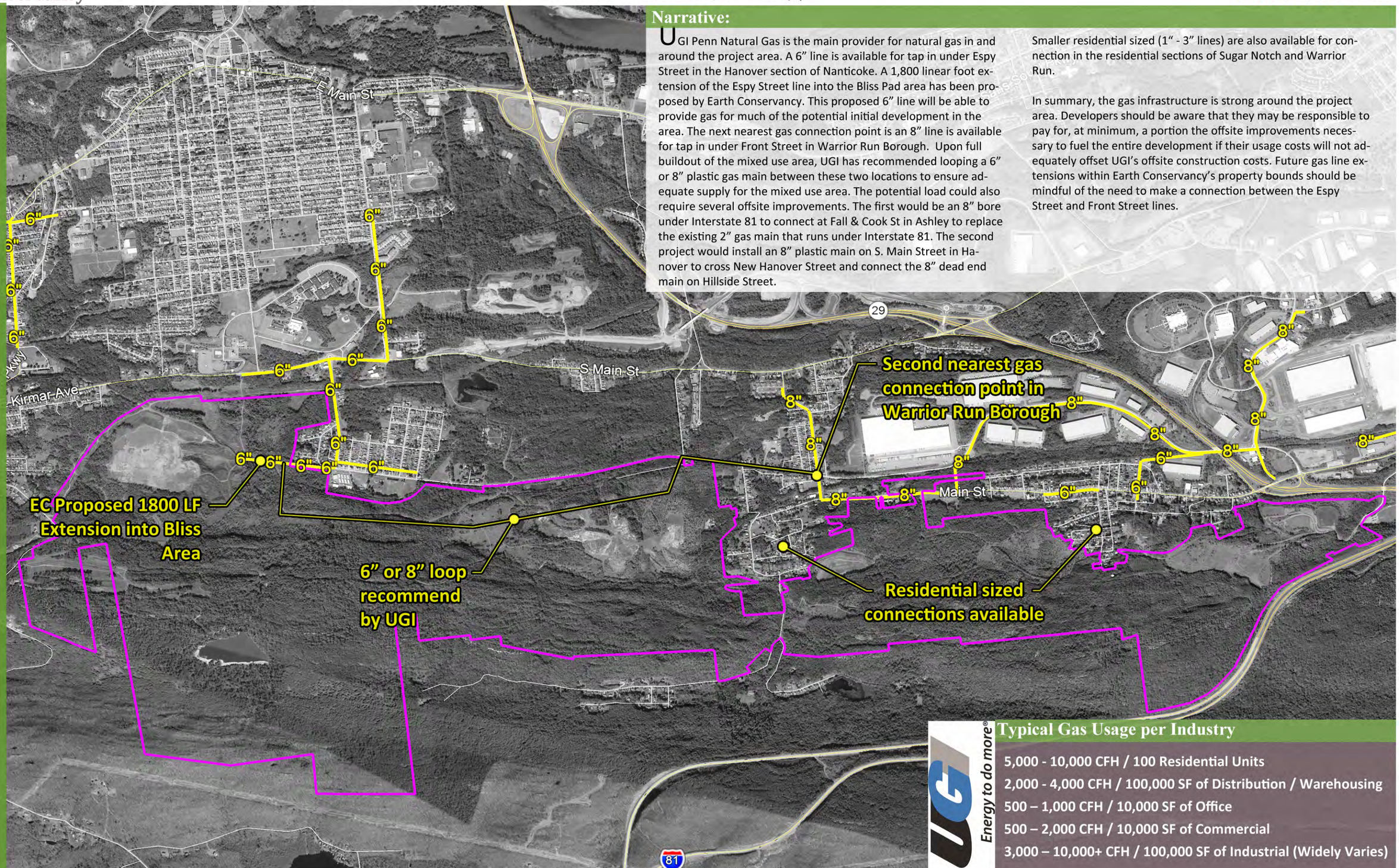
Gas Infrastructure

Narrative:

UGI Penn Natural Gas is the main provider for natural gas in and around the project area. A 6" line is available for tap in under Espy Street in the Hanover section of Nanticoke. A 1,800 linear foot extension of the Espy Street line into the Bliss Pad area has been proposed by Earth Conservancy. This proposed 6" line will be able to provide gas for much of the potential initial development in the area. The next nearest gas connection point is an 8" line is available for tap in under Front Street in Warrior Run Borough. Upon full buildout of the mixed use area, UGI has recommended looping a 6" or 8" plastic gas main between these two locations to ensure adequate supply for the mixed use area. The potential load could also require several offsite improvements. The first would be an 8" bore under Interstate 81 to connect at Fall & Cook St in Ashley to replace the existing 2" gas main that runs under Interstate 81. The second project would install an 8" plastic main on S. Main Street in Hanover to cross New Hanover Street and connect the 8" dead end main on Hillside Street.

Smaller residential sized (1" - 3" lines) are also available for connection in the residential sections of Sugar Notch and Warrior Run.

In summary, the gas infrastructure is strong around the project area. Developers should be aware that they may be responsible to pay for, at minimum, a portion the offsite improvements necessary to fuel the entire development if their usage costs will not adequately offset UGI's offsite construction costs. Future gas line extensions within Earth Conservancy's property bounds should be mindful of the need to make a connection between the Espy Street and Front Street lines.



Typical Gas Usage per Industry

- 5,000 - 10,000 CFH / 100 Residential Units
- 2,000 - 4,000 CFH / 100,000 SF of Distribution / Warehousing
- 500 – 1,000 CFH / 10,000 SF of Office
- 500 – 2,000 CFH / 10,000 SF of Commercial
- 3,000 – 10,000+ CFH / 100,000 SF of Industrial (Widely Varies)

UGI Energy to do more®

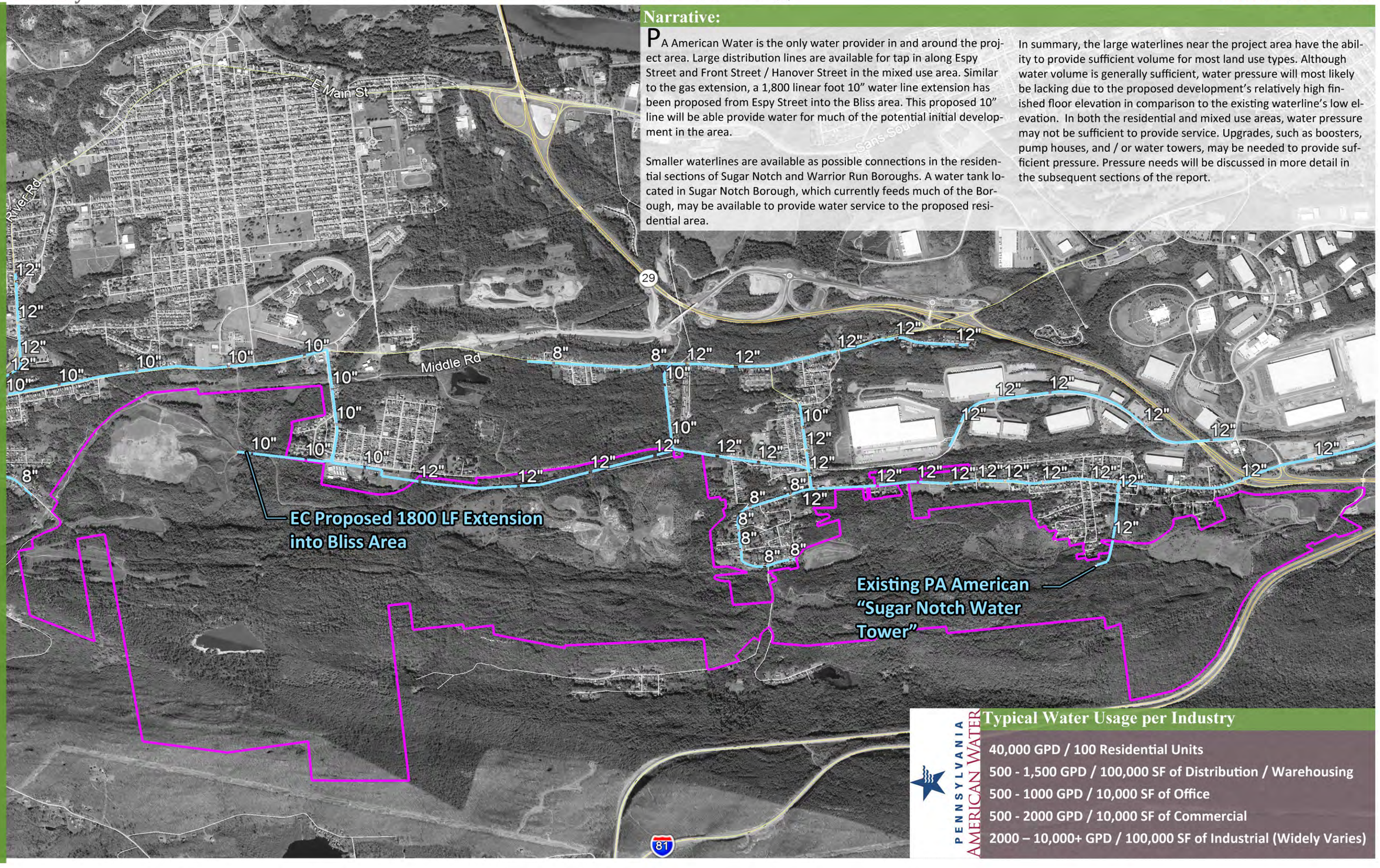
Water Infrastructure

Narrative:

PA American Water is the only water provider in and around the project area. Large distribution lines are available for tap in along Espy Street and Front Street / Hanover Street in the mixed use area. Similar to the gas extension, a 1,800 linear foot 10" water line extension has been proposed from Espy Street into the Bliss area. This proposed 10" line will be able provide water for much of the potential initial development in the area.

Smaller waterlines are available as possible connections in the residential sections of Sugar Notch and Warrior Run Boroughs. A water tank located in Sugar Notch Borough, which currently feeds much of the Borough, may be available to provide water service to the proposed residential area.

In summary, the large waterlines near the project area have the ability to provide sufficient volume for most land use types. Although water volume is generally sufficient, water pressure will most likely be lacking due to the proposed development's relatively high finished floor elevation in comparison to the existing waterline's low elevation. In both the residential and mixed use areas, water pressure may not be sufficient to provide service. Upgrades, such as boosters, pump houses, and / or water towers, may be needed to provide sufficient pressure. Pressure needs will be discussed in more detail in the subsequent sections of the report.



Typical Water Usage per Industry

PENNSYLVANIA AMERICAN WATER

- 40,000 GPD / 100 Residential Units
- 500 - 1,500 GPD / 100,000 SF of Distribution / Warehousing
- 500 - 1000 GPD / 10,000 SF of Office
- 500 - 2000 GPD / 10,000 SF of Commercial
- 2000 – 10,000+ GPD / 100,000 SF of Industrial (Widely Varies)

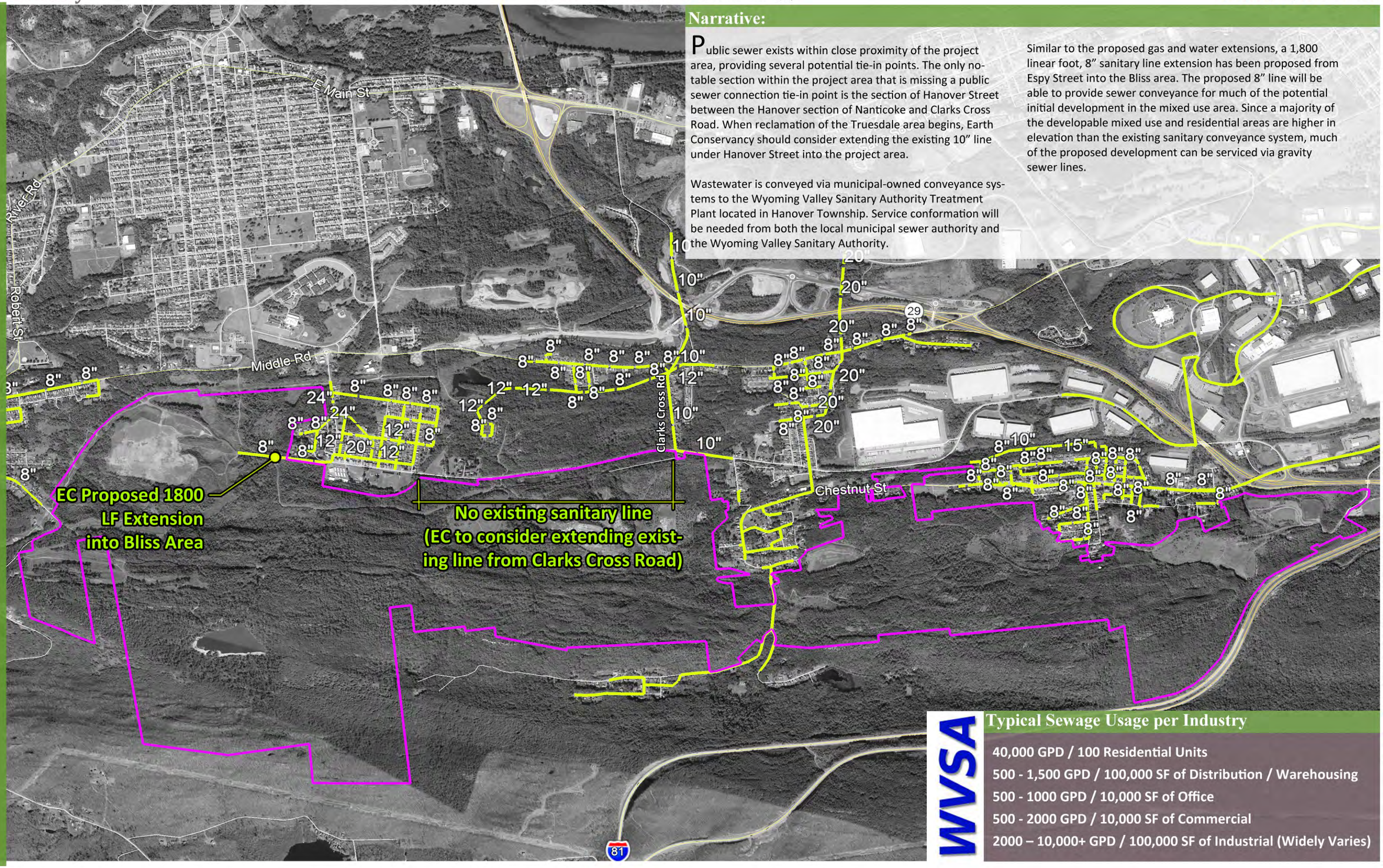
Sanitary Sewer Infrastructure

Narrative:

Public sewer exists within close proximity of the project area, providing several potential tie-in points. The only notable section within the project area that is missing a public sewer connection tie-in point is the section of Hanover Street between the Hanover section of Nanticoke and Clarks Cross Road. When reclamation of the Truesdale area begins, Earth Conservancy should consider extending the existing 10" line under Hanover Street into the project area.

Wastewater is conveyed via municipal-owned conveyance systems to the Wyoming Valley Sanitary Authority Treatment Plant located in Hanover Township. Service conformation will be needed from both the local municipal sewer authority and the Wyoming Valley Sanitary Authority.

Similar to the proposed gas and water extensions, a 1,800 linear foot, 8" sanitary line extension has been proposed from Espy Street into the Bliss area. The proposed 8" line will be able to provide sewer conveyance for much of the potential initial development in the mixed use area. Since a majority of the developable mixed use and residential areas are higher in elevation than the existing sanitary conveyance system, much of the proposed development can be serviced via gravity sewer lines.



WVSA

Typical Sewage Usage per Industry

- 40,000 GPD / 100 Residential Units
- 500 - 1,500 GPD / 100,000 SF of Distribution / Warehousing
- 500 - 1000 GPD / 10,000 SF of Office
- 500 - 2000 GPD / 10,000 SF of Commercial
- 2000 – 10,000+ GPD / 100,000 SF of Industrial (Widely Varies)

Proposed Development

17 Mixed Use Area – Site Plan
18 Mixed Use Area – Utility Plan
19 Mixed Use Area – Transportation Plan
20 Mixed Use Area – Transportation Plan Cont.
21 Residential Area – Site Plan
22 Residential Area – Utility Plan
23 Residential Area – Transportation Plan
24 Conservation Area
25 Conservation Area - Trails
26 Recommendations / Next Steps
27 Conclusions

Mixed Use Area - Site Layout

Narrative:

Due to the past mining actives of the Bliss and Truesdale areas, recent completion of the South Valley Parkway and nearby utility connection points, this 500± acre portion of land is ripe for site reclamation and subsequent development.

Ideally, a wide array of development types would populate the mixed use area similar to the development proposed in the Route 29 Mixed-Use Development Master Plan. Yet developers of the Wyoming Valley are currently looking for large tracks of land for mostly distribution and industrial uses. Thus, the 2018 Master Plan focuses primarily on distribution and industrial uses for the mixed use area in the subsequent portions of the report.

An onsite road is proposed starting where the Bliss Phase 2 access road ends, then paralleling Front / Hanover Street, and finally exiting onto Hanover Street between Clarks Cross Rd and Warrior Run Borough. The onsite should be able to remain under a 5% grade the entire length of the roadway creating an easily accessible route for many types of vehicles. Another potential access was explored from Hanover / Front Street at EC's current access point across from the Concrete City entrance. But due to the length of road needed to reach the elevation of the internal loop road and at least one stream crossing, this third entrance was deemed infeasible.

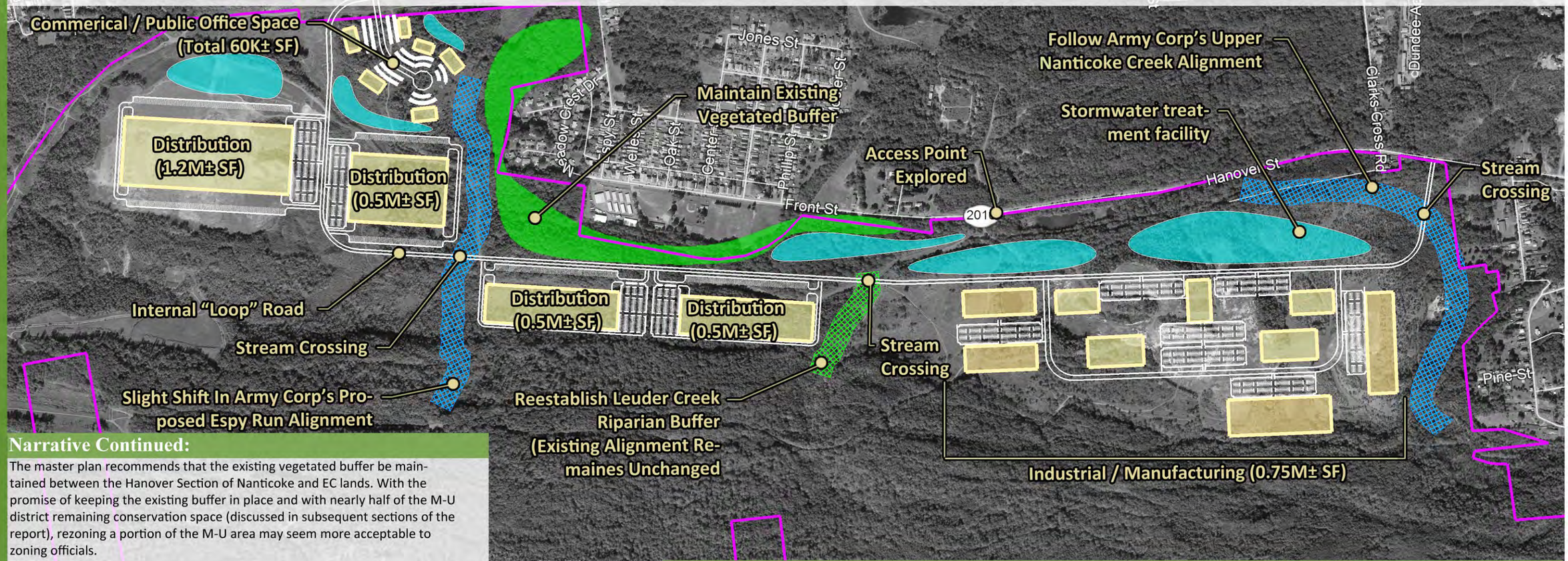
A large amount of earthwork is needed to reclaim the mined scared undulating landscape.

Rough earthwork estimates indicate that approximately 16,000,000 cubic yards of earthwork (8,000,000 cut and 8,000,000 fill) will be needed to flatten the topography to an elevation of 740± feet. These earthwork numbers exclude the previously reclaimed / conceptualized Bliss Phase 1 -4 areas. The amount of total earthwork necessary to prepare the land for development could be substantially reduced if the 300+ acre area was subdivided into a series of pads (similar to Bliss 1 -4 areas) at differing elevations.

The proposed site layout shifts the Army Corp's proposed Espy Run alignment slightly east to circumvent the proposed Bliss 3 pad. Leuder Creek will remain in its existing location and the existing 100' buffer on each side will be protected and/or enhanced.

Upper Nanticoke Creek will be rerouted per the Army Corps plan making way for future development. Three stream crossings are needed to accommodate the loop road. Per the Army Corps' 2005 report, a minimum 10' x 8' culvert is needed to accommodate each stream.

A portion of the mixed use area is zoned M-U (mixed use). Activities such as warehousing and manufacturing / industrial uses are not permitted. EC may want to preemptively approach Hanover Township to gauge their interest in rezoning a portion (250± acres of the total 500± acres) of this district should a large warehousing or manufacturing developer express interest in the parcel. The master plan recommends that the existing vegetated buffer be maintained between the Hanover Section of Nanticoke and EC lands.



Narrative Continued:

The master plan recommends that the existing vegetated buffer be maintained between the Hanover Section of Nanticoke and EC lands. With the promise of keeping the existing buffer in place and with nearly half of the M-U district remaining conservation space (discussed in subsequent sections of the report), rezoning a portion of the M-U area may seem more acceptable to zoning officials.

Stormwater treatment facilities will need to be implemented to accommodate the potentially large amount of impervious surfaces from the mixed use development. A 5: 1 ratio of impervious area to stormwater treatment area is generally a good rule of thumb when calculating stormwater treatment land use area. Stormwater facilities shown below are conceptual in nature but could exceed 40 acres in total area if large amounts of impervious surfaces are proposed.

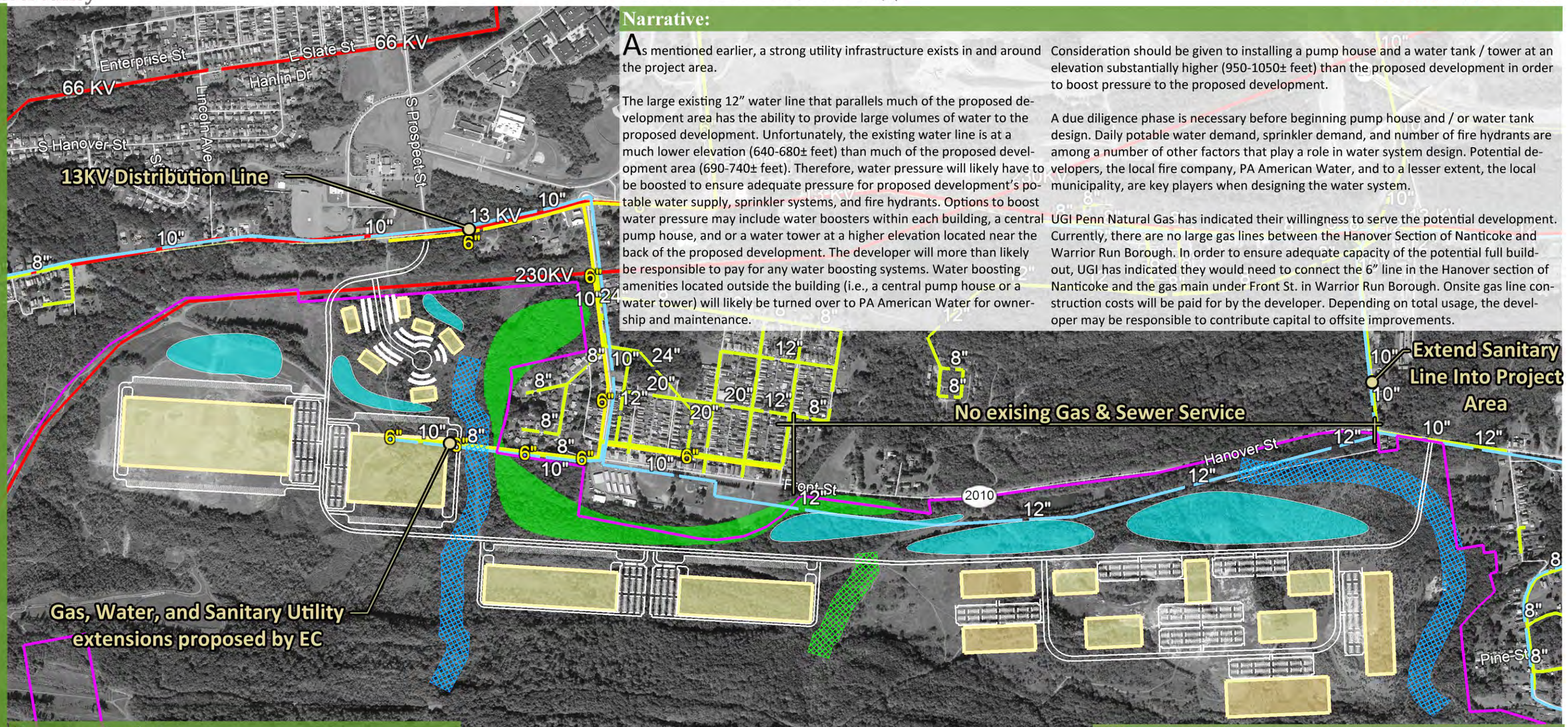
Site Development Opportunities:

- Bliss pads and accompanying access road offer potential developers opportunity to development with little to no additional earthwork needed.
- Large amount land accessible via proposed gently graded loop road
- Army Corps proposed stream re-alignments allow for large sections of potentially developable land.

Site Development Constraints:

- Large amount of earthwork needed to reclaim remaining portion of the mixed use area
- Extensive stormwater infrastructure will need to be implemented to accommodate the potentially vast amount of impervious surfaces.
- Potentially costly stream crossing culverts
- Unknown geotechnical / structural properties of the existing material

Mixed Use Area - Utility Connections



Narrative:

As mentioned earlier, a strong utility infrastructure exists in and around the project area.

The large existing 12" water line that parallels much of the proposed development area has the ability to provide large volumes of water to the proposed development. Unfortunately, the existing water line is at a much lower elevation (640-680± feet) than much of the proposed development area (690-740± feet). Therefore, water pressure will likely have to be boosted to ensure adequate pressure for proposed development's potable water supply, sprinkler systems, and fire hydrants. Options to boost water pressure may include water boosters within each building, a central pump house, and or a water tower at a higher elevation located near the back of the proposed development. The developer will more than likely be responsible to pay for any water boosting systems. Water boosting amenities located outside the building (i.e., a central pump house or a water tower) will likely be turned over to PA American Water for ownership and maintenance.

Consideration should be given to installing a pump house and a water tank / tower at an elevation substantially higher (950-1050± feet) than the proposed development in order to boost pressure to the proposed development.

A due diligence phase is necessary before beginning pump house and / or water tank design. Daily potable water demand, sprinkler demand, and number of fire hydrants are among a number of other factors that play a role in water system design. Potential developers, the local fire company, PA American Water, and to a lesser extent, the local municipality, are key players when designing the water system.

UGI Penn Natural Gas has indicated their willingness to serve the potential development. Currently, there are no large gas lines between the Hanover Section of Nanticoke and Warrior Run Borough. In order to ensure adequate capacity of the potential full build-out, UGI has indicated they would need to connect the 6" line in the Hanover section of Nanticoke and the gas main under Front St. in Warrior Run Borough. Onsite gas line construction costs will be paid for by the developer. Depending on total usage, the developer may be responsible to contribute capital to offsite improvements.

Narrative Continued:

The existing 13KV distribution line that parallels Middle Road has capacity to power some of the initial potential development in the mixed use area. The nearby 66KV line has capacity to power the entire development but substations and / or distribution lines will likely be installed to get additional electric capacity to the site. Although right-of-way or easements may need to be donated to UGI electric to run additional lines into the mixed use area, most likely the offsite construction costs will be funded by UGI Electric.

Moderately sized sanitary lines exists in both the Hanover section of Nanticoke and along Clarks Cross Road. These sanitary lines should have the capacity to convey and treat the relatively low sanitary loads generated from such facilities as warehousing and offices, while heavy sanitary user (such as certain industrial uses) may be limited by the existing sanitary system.

Consideration should be given to extending the 10" sanitary line under Clarks Cross Road into the project area to provide future sanitary service. As stated earlier, since the proposed development's elevation is substantially higher than the existing water system, the entire onsite sanitary system should be able to remain a gravity system. Both of the extensions (from Espy St and Clarks Cross Road) could parallel the proposed access road and provide sanitary sewer to the entire developable area.

Utility Constraints:

- No existing electric distribution, sanitary and gas lines between the Hanover section of Nanticoke and Clarks Cross Road / Warrior Run Borough.
- Boosting of water pressure via a central pump house, and or a water tower, etc. will likely be on EC / developer.
- Developer may be required to contribute to offsite utility upgrades.

Utility Opportunities:

- Proposed utility extensions by EC can serve some of the initial development.
- All utility companies indicated a willingness to serve the potential development.
-All utility companies have utilities located within close proximity to the project boundary.

Mixed Use Area - Transportation

Narrative:

With any type of proposed development that has the potential to generate large traffic volumes, offsite improvements to the existing roadway network and intersections may be necessary.

The type of traffic (i.e., trucks vs cars), timing of traffic (i.e., peak traffic hours), and direction of traffic (i.e., north vs south, east vs west travel) all play a role in traffic planning. Each use type presents its own unique opportunities and constraints. For instance, commercial and office space traffic will likely be coming from many different areas (Nanticoke, Wilkes Barre, Dallas, Berwick, etc.). Therefore, traffic congestion will quickly lessen as you move away from the site. Yet a majority of the traffic traveling to and from these sites will generally be arriving / leaving at the same time each day, which may create congestion problems during peak traffic hours.

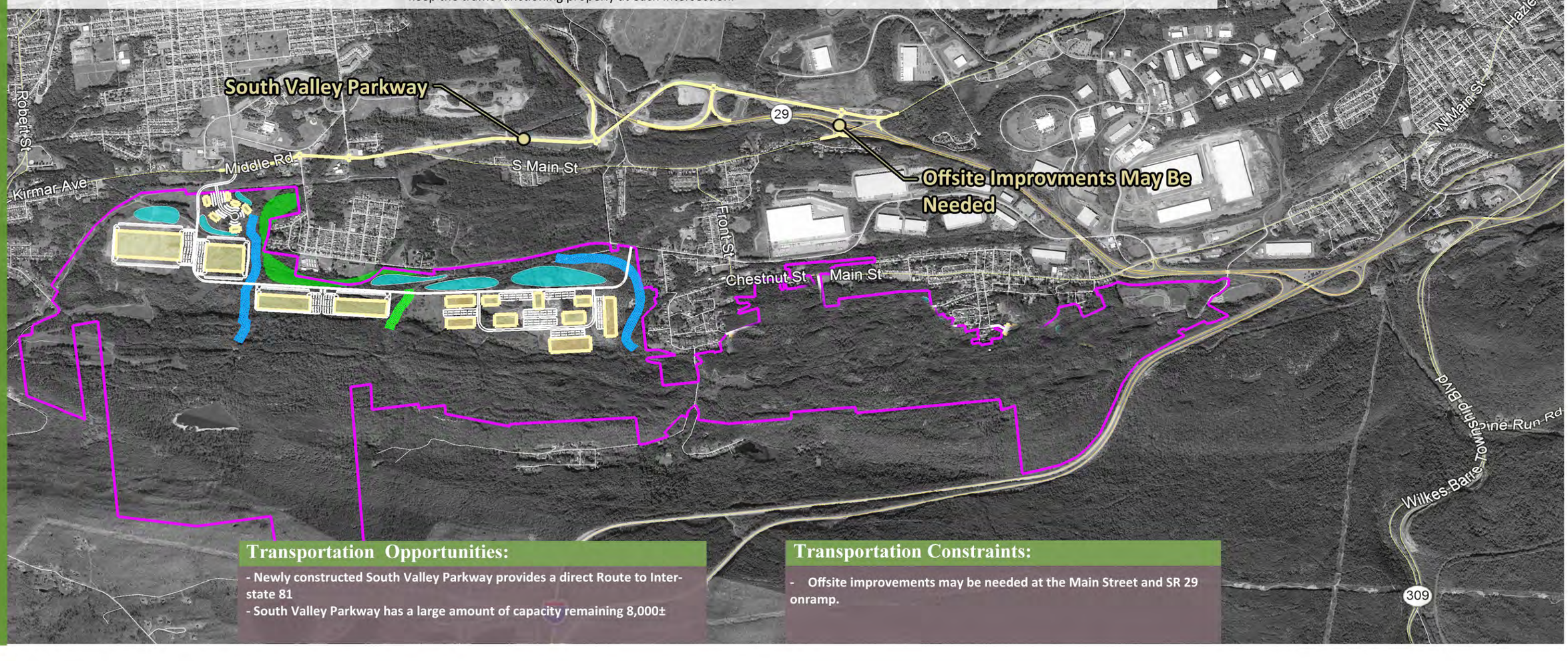
In contrast, most traffic from distribution centers is generally scattered throughout the day, but routinely taking the same route (i.e., South Valley to SR 29 to Interstate 81). Thus due to the lack of traffic dispersion, traffic improvements may need to be made far from the proposed development (i.e., the Main Street SR 29 onramp located approximately 3 miles from the proposed development).

Since different land uses generate their own unique set of difficulties, a mixed use land development will allow for the most development with the least amount of offsite improvements necessary.

In general, the existing roadway network has the capacity to support the proposed development without the need to build additional travel lanes. Yet due to possible congestion at a number of intersections, offsite improvements at several intersection may be necessary. Such offsite improvements could include lengthening of turn lanes, addition of turn lanes, and /or the addition of traffic signals, which may be required to keep the traffic functioning properly at each intersection.

It is anticipated that the commercial / office space will almost exclusively use the South Valley Parkway and Middle Road. The existing roadway infrastructure can handle the anticipated 425± VPD (Vehicles per Day) volume, but some offsite intersection improvements may be necessary, especially along Middle Road to the west of the proposed tie-in point.

The distribution centers will exclusively utilize the newly constructed South Valley Parkway. The 1,900 anticipated VPD from the Distribution Centers will still be well below the remaining 8,000± VPD capacity of the Parkway. Since a large portion of the traffic generated from the distribution centers will be tractor trailer trucks, much of the anticipated traffic will be making its way to Interstate 81 via the South Valley Parkway and SR 29. While there are no capacity concerns associated with these roadways, offsite intersection improvements may be necessary at the Main Street and SR 29 onramp.



Transportation Opportunities:

- Newly constructed South Valley Parkway provides a direct Route to Interstate 81
- South Valley Parkway has a large amount of capacity remaining 8,000±

Transportation Constraints:

- Offsite improvements may be needed at the Main Street and SR 29 onramp.

2 Mixed Use Area - Transportation cont.

Narrative:

A large portion of the traffic from the Truesdale area will likely utilize the nearby Hanover Street. The proposed 750,000 SF industrial / manufacturing area will generate approximately 1,300 VPD. As previously mentioned, this roadway services primarily residential traffic and was never constructed to service the heavy tractor trailer trucks associated with distribution and warehousing. Several offsite improvements may be necessary including:

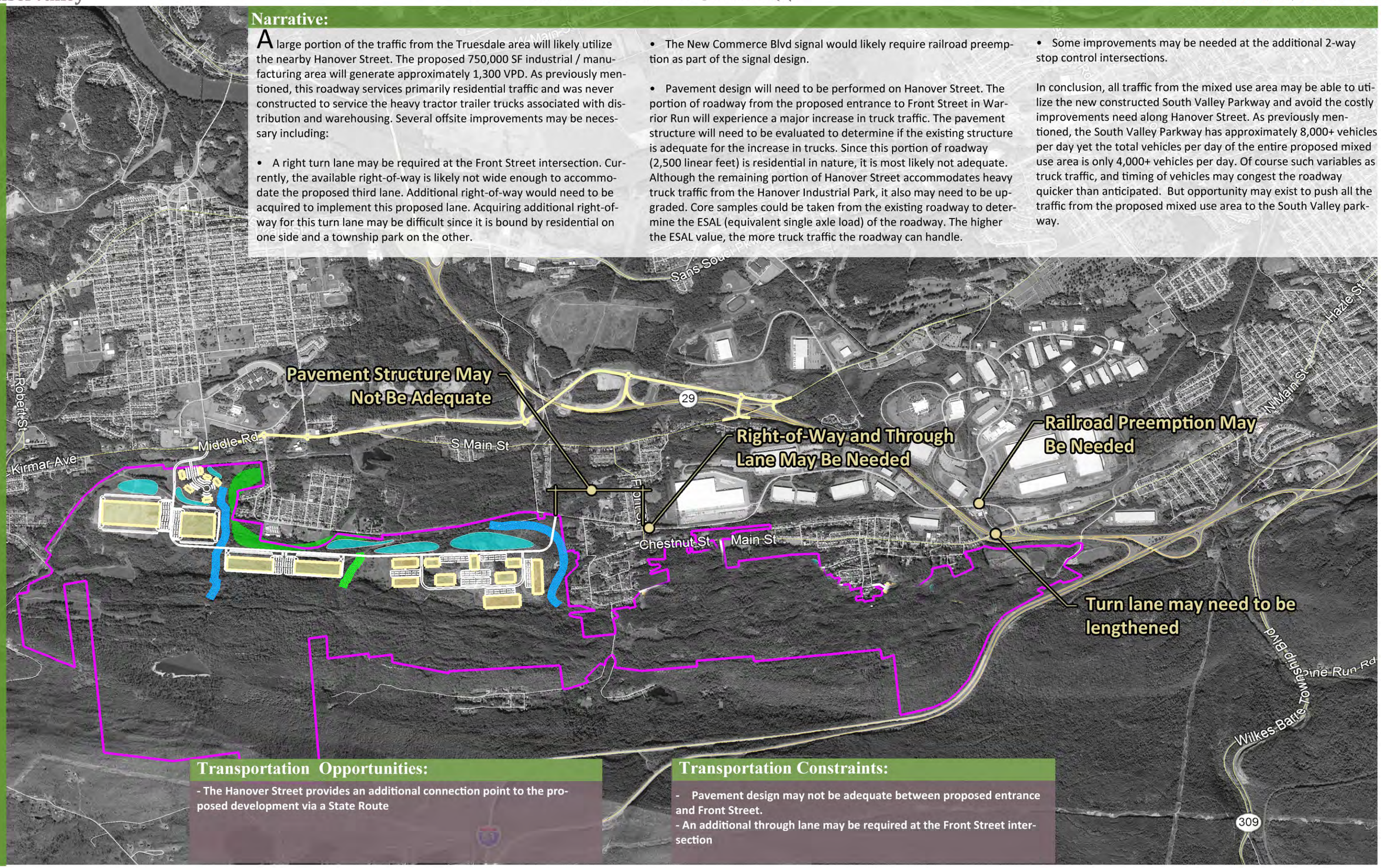
- A right turn lane may be required at the Front Street intersection. Currently, the available right-of-way is likely not wide enough to accommodate the proposed third lane. Additional right-of-way would need to be acquired to implement this proposed lane. Acquiring additional right-of-way for this turn lane may be difficult since it is bound by residential on one side and a township park on the other.

- The New Commerce Blvd signal would likely require railroad preemption as part of the signal design.

- Pavement design will need to be performed on Hanover Street. The portion of roadway from the proposed entrance to Front Street in Warrior Run will experience a major increase in truck traffic. The pavement structure will need to be evaluated to determine if the existing structure is adequate for the increase in trucks. Since this portion of roadway (2,500 linear feet) is residential in nature, it is most likely not adequate. Although the remaining portion of Hanover Street accommodates heavy truck traffic from the Hanover Industrial Park, it also may need to be upgraded. Core samples could be taken from the existing roadway to determine the ESAL (equivalent single axle load) of the roadway. The higher the ESAL value, the more truck traffic the roadway can handle.

- Some improvements may be needed at the additional 2-way stop control intersections.

In conclusion, all traffic from the mixed use area may be able to utilize the new constructed South Valley Parkway and avoid the costly improvements need along Hanover Street. As previously mentioned, the South Valley Parkway has approximately 8,000+ vehicles per day yet the total vehicles per day of the entire proposed mixed use area is only 4,000+ vehicles per day. Of course such variables as truck traffic, and timing of vehicles may congest the roadway quicker than anticipated. But opportunity may exist to push all the traffic from the proposed mixed use area to the South Valley parkway.



Transportation Opportunities:

- The Hanover Street provides an additional connection point to the proposed development via a State Route

Transportation Constraints:

- Pavement design may not be adequate between proposed entrance and Front Street.
- An additional through lane may be required at the Front Street intersection

Residential Area - Site Layout

Narrative:

Three separate residential pockets are planned within the residential area.

Residential Pocket #1 is a small, 10-15 single family community planned for development on the recently reclaimed Warrior Run parcel. Since this area has been reclaimed by Earth Conservancy, minimal earthwork will be needed to accommodate the proposed development. Additionally, many potential environmental concerns, such as wetlands and mining contaminants, were addressed in the reclamation project.

Primary access is available from Brislin / Slope Street. A secondary access road may be implemented to accommodate the proposed development. The secondary 1,200-foot access road could provide a more direct route to Chestnut / Main Street but, due to the length and Warrior Creek crossing, the secondary access may prove to be too costly for the small residential development.

Residential Pocket #2 is proposed near the border of Sugar Notch and Warrior Run. This larger 80-120 single family unit development (1/4 acre lots) takes full advantage of the plateau near the ends of Grove and Riley Streets. All units will rest at an elevation between 800 and 900 feet.

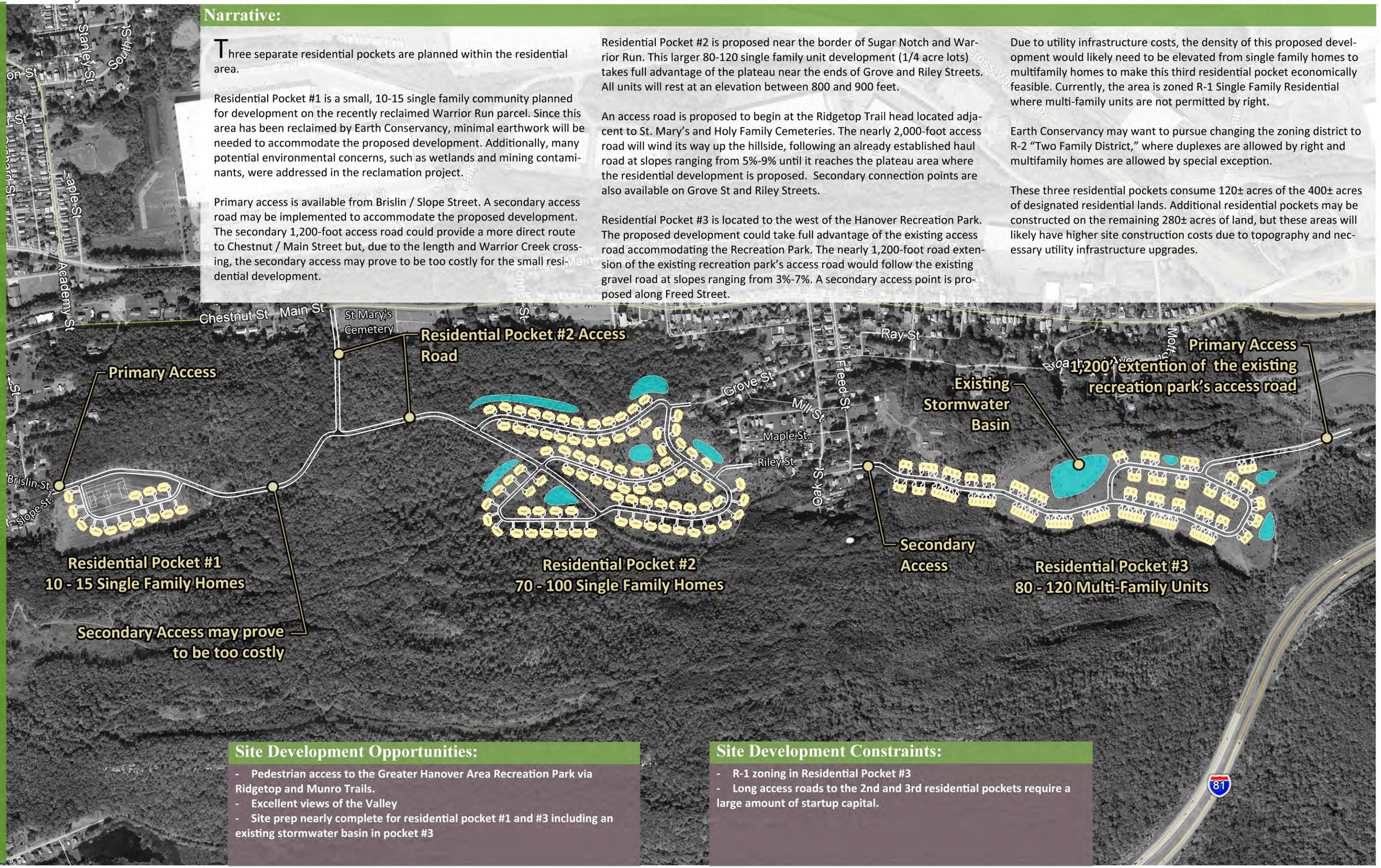
An access road is proposed to begin at the Ridgetop Trail head located adjacent to St. Mary's and Holy Family Cemeteries. The nearly 2,000-foot access road will wind its way up the hillside, following an already established haul road at slopes ranging from 5%-9% until it reaches the plateau area where the residential development is proposed. Secondary connection points are also available on Grove St and Riley Streets.

Residential Pocket #3 is located to the west of the Hanover Recreation Park. The proposed development could take full advantage of the existing access road accommodating the Recreation Park. The nearly 1,200-foot road extension of the existing recreation park's access road would follow the existing gravel road at slopes ranging from 3%-7%. A secondary access point is proposed along Freed Street.

Due to utility infrastructure costs, the density of this proposed development would likely need to be elevated from single family homes to multifamily homes to make this third residential pocket economically feasible. Currently, the area is zoned R-1 Single Family Residential where multi-family units are not permitted by right.

Earth Conservancy may want to pursue changing the zoning district to R-2 "Two Family District," where duplexes are allowed by right and multifamily homes are allowed by special exception.

These three residential pockets consume 120± acres of the 400± acres of designated residential lands. Additional residential pockets may be constructed on the remaining 280± acres of land, but these areas will likely have higher site construction costs due to topography and necessary utility infrastructure upgrades.



Site Development Opportunities:

- Pedestrian access to the Greater Hanover Area Recreation Park via Ridgetop and Munro Trails.
- Excellent views of the Valley
- Site prep nearly complete for residential pocket #1 and #3 including an existing stormwater basin in pocket #3

Site Development Constraints:

- R-1 zoning in Residential Pocket #3
- Long access roads to the 2nd and 3rd residential pockets require a large amount of startup capital.

Residential Area - Utilities

Narrative:

The first residential pocket will be able to take full advantage of the 8” water line and recently installed 8” sanitary line under Slope Street. Small gas and electric lines are also available for tap-in near this residential area.

The second residential pocket will have access to 6” and 8” sanitary and water lines under Grove Hill and Riley Streets. Due to elevation of some of the residential units, grinder pumps and / or a low pressure system may be needed for several of the units’ sanitary service. Conversely, a portion of the houses located at the highest elevations may need to have their water pressure boosted to provide adequate flow.

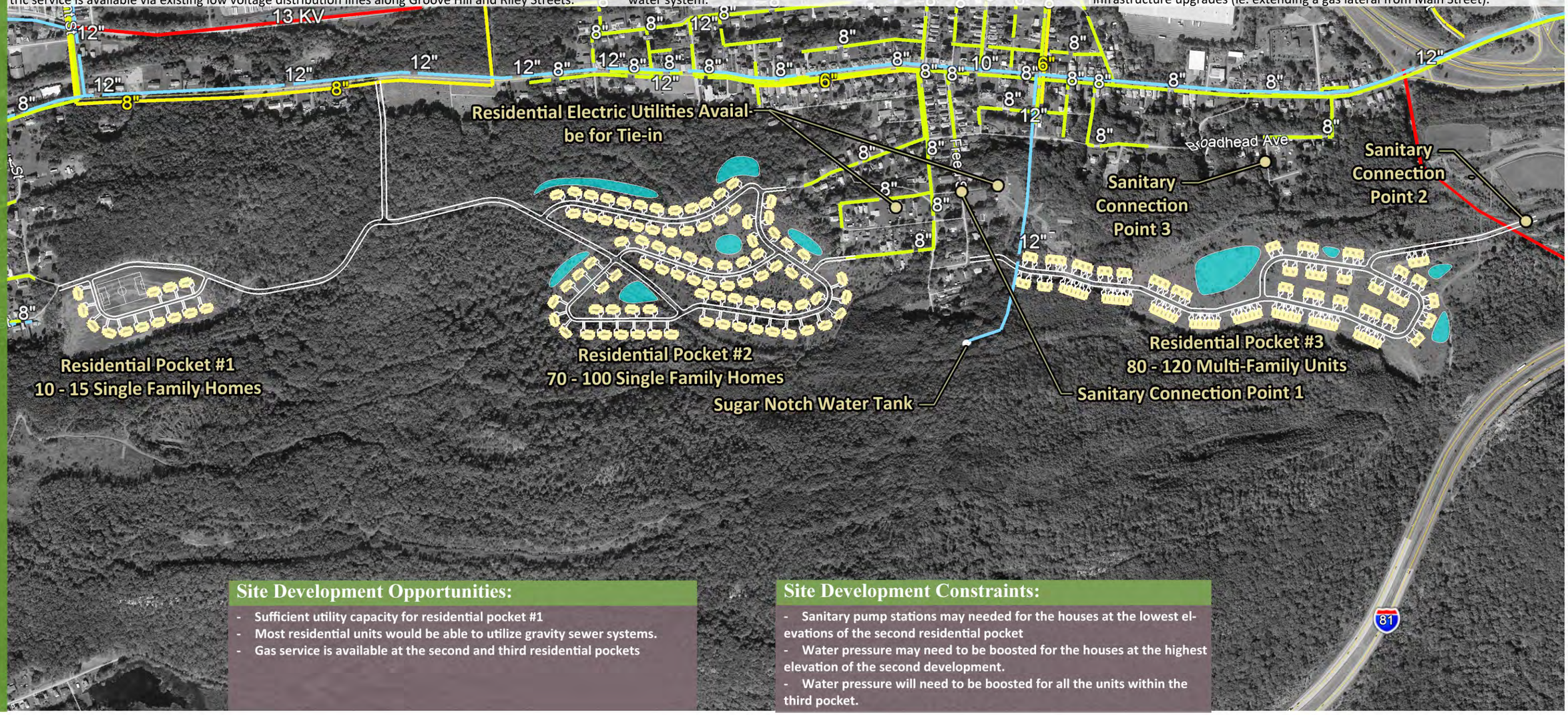
Residential sized (2” and 3”) gas laterals, located under Grove and Riley Streets, are available for tie-in. UGI has indicated that if these units are heavily-gas dependent (i.e., heated with natural gas), supply could be limited without offsite infrastructure upgrades. Potential developers of this area should keep in mind that a new sewer lateral may be needed from the existing gas mains under Main / Chestnut St. Electric service is available via existing low voltage distribution lines along Groove Hill and Riley Streets.

The third residential pocket has access to water via the Sugar Notch Tank. Yet due to the elevation of the tank (930± feet) and the proposed elevation of the residential units (920-960± feet), water pressure will not be sufficient. Options to boost water pressure include a central pump house and / or a water tower located near the back of the proposed development at a higher elevation.

Similar to the mixed use area, a due diligence phase is necessary before beginning pump house and / or water tank design. While sprinkler demand will not be as high in comparison to the mixed use area (single family homes and duplexes do not have to be sprinklered), daily potable water demand will be substantial. The local fire company may also require a hydrant or two be located throughout the development. Again, potential developers, the local fire company, and PA American Water need to be consulted when designing the water system.

Several options exist for the sanitary connection for the third pocket. Connection Point #1 (?) would require extending the 8” gravity line up Freed Street approximately 700 linear feet and into the potential development. A second option would be to extend gravity line under Preston / Earth Conservancy Road for approximately 1 mile to the proposed development. Although this option would undoubtedly be the most expensive, the Hanover Recreation Park could benefit from sewer service. If grant opportunities are pursued for this option, it may also be incumbent upon Earth Conservancy to look into providing water service to the Recreation Park as well.

Similar to the second residential pocket, residential-sized gas line laterals extend under Freed Street for potential tie-in. Again, UGI has indicated that if these units are heavily-gas dependent supply could be limited without offsite infrastructure upgrades (ie. extending a gas lateral from Main Street).



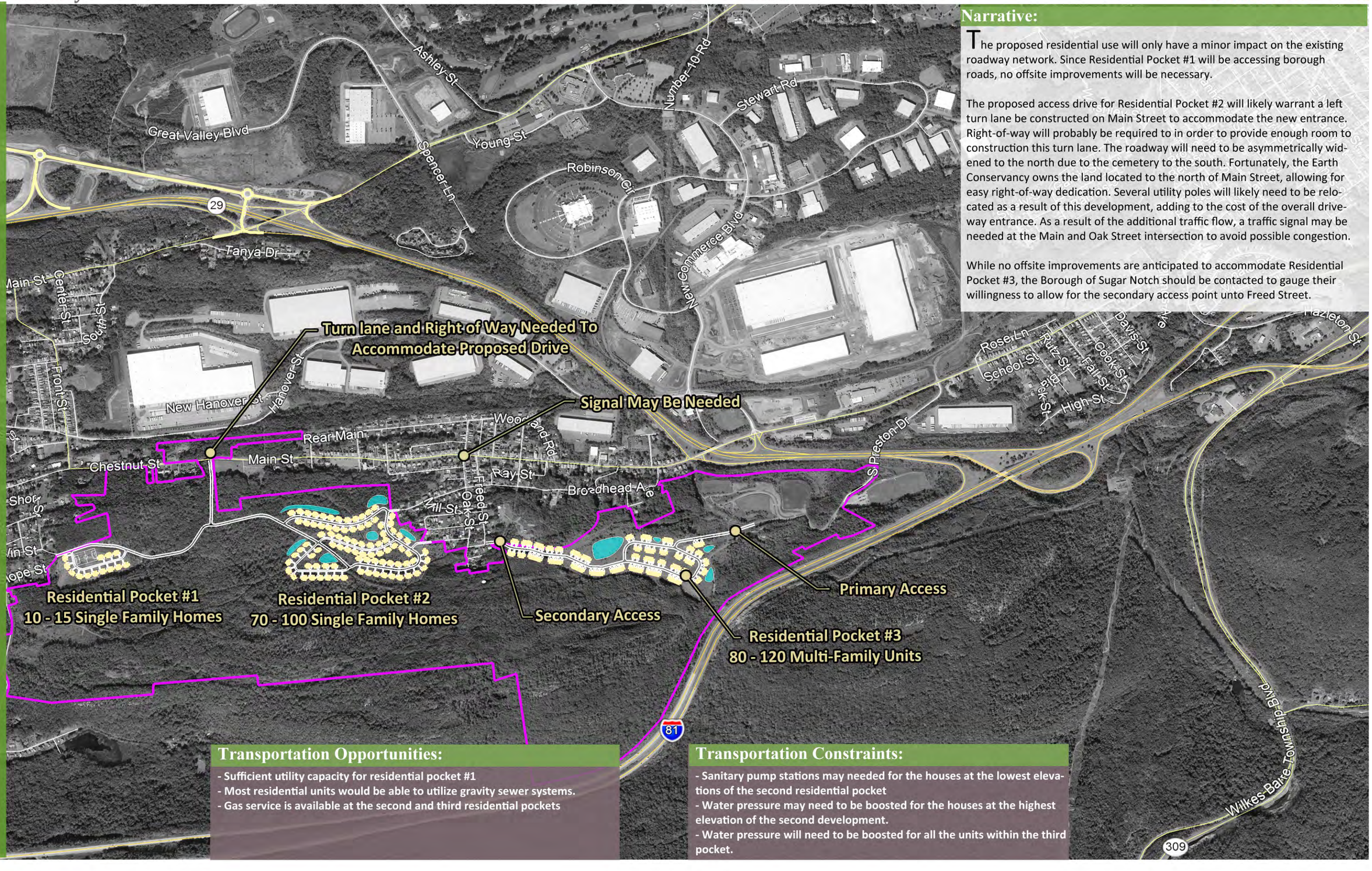
Site Development Opportunities:

- Sufficient utility capacity for residential pocket #1
- Most residential units would be able to utilize gravity sewer systems.
- Gas service is available at the second and third residential pockets

Site Development Constraints:

- Sanitary pump stations may needed for the houses at the lowest elevations of the second residential pocket
- Water pressure may need to be boosted for the houses at the highest elevation of the second development.
- Water pressure will need to be boosted for all the units within the third pocket.

Residential Area - Transportation



Narrative:

The proposed residential use will only have a minor impact on the existing roadway network. Since Residential Pocket #1 will be accessing borough roads, no offsite improvements will be necessary.

The proposed access drive for Residential Pocket #2 will likely warrant a left turn lane be constructed on Main Street to accommodate the new entrance. Right-of-way will probably be required to in order to provide enough room to construction this turn lane. The roadway will need to be asymmetrically widened to the north due to the cemetery to the south. Fortunately, the Earth Conservancy owns the land located to the north of Main Street, allowing for easy right-of-way dedication. Several utility poles will likely need to be relocated as a result of this development, adding to the cost of the overall driveway entrance. As a result of the additional traffic flow, a traffic signal may be needed at the Main and Oak Street intersection to avoid possible congestion.

While no offsite improvements are anticipated to accommodate Residential Pocket #3, the Borough of Sugar Notch should be contacted to gauge their willingness to allow for the secondary access point unto Freed Street.

Transportation Opportunities:

- Sufficient utility capacity for residential pocket #1
- Most residential units would be able to utilize gravity sewer systems.
- Gas service is available at the second and third residential pockets

Transportation Constraints:

- Sanitary pump stations may needed for the houses at the lowest elevations of the second residential pocket
- Water pressure may need to be boosted for the houses at the highest elevation of the second development.
- Water pressure will need to be boosted for all the units within the third pocket.

Conservation Area

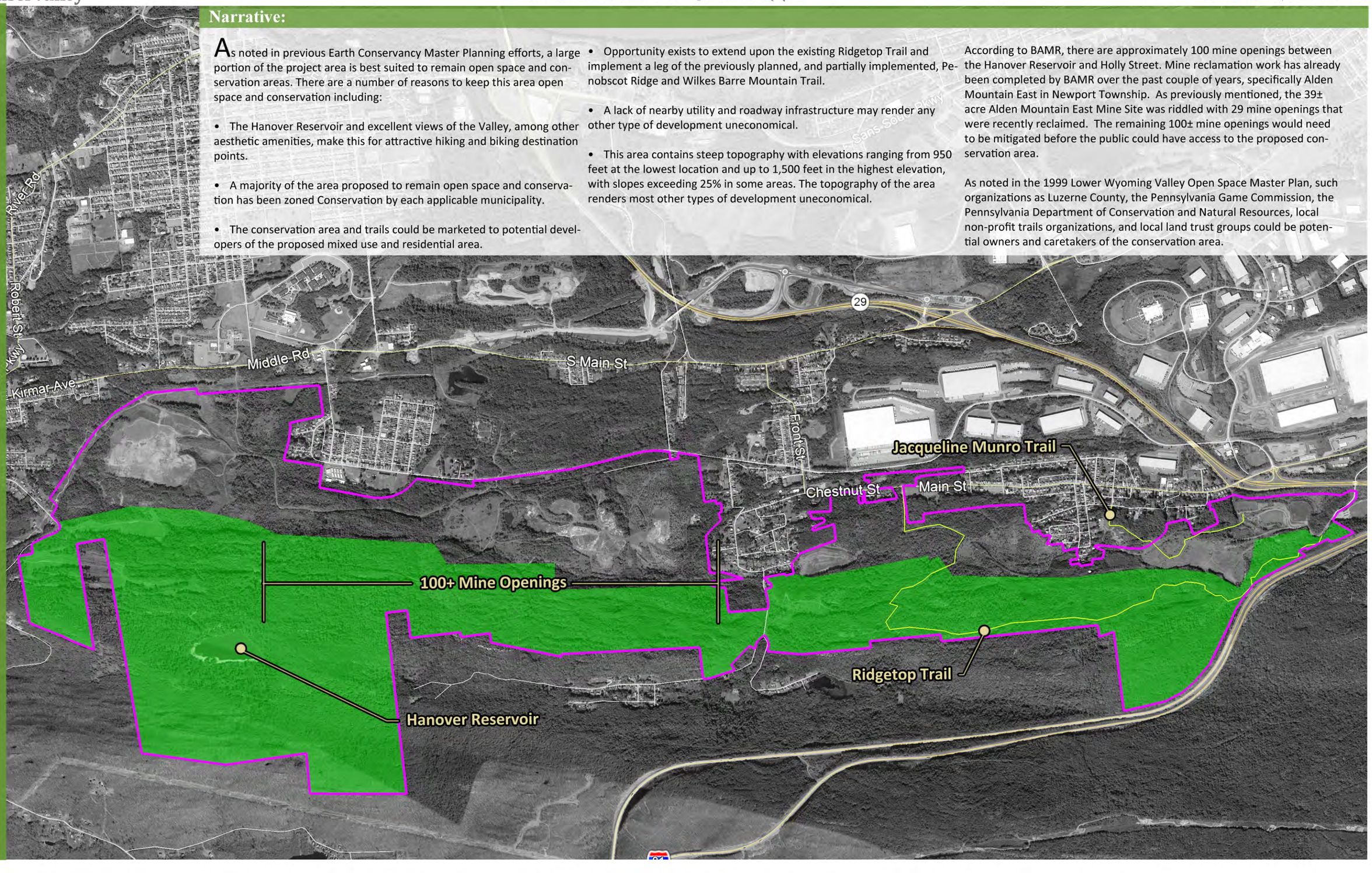
Narrative:

As noted in previous Earth Conservancy Master Planning efforts, a large portion of the project area is best suited to remain open space and conservation areas. There are a number of reasons to keep this area open space and conservation including:

- The Hanover Reservoir and excellent views of the Valley, among other aesthetic amenities, make this for attractive hiking and biking destination points.
- A majority of the area proposed to remain open space and conservation has been zoned Conservation by each applicable municipality.
- The conservation area and trails could be marketed to potential developers of the proposed mixed use and residential area.
- Opportunity exists to extend upon the existing Ridgetop Trail and implement a leg of the previously planned, and partially implemented, Penobscot Ridge and Wilkes Barre Mountain Trail.
- A lack of nearby utility and roadway infrastructure may render any other type of development uneconomical.
- This area contains steep topography with elevations ranging from 950 feet at the lowest location and up to 1,500 feet in the highest elevation, with slopes exceeding 25% in some areas. The topography of the area renders most other types of development uneconomical.

According to BAMR, there are approximately 100 mine openings between the Hanover Reservoir and Holly Street. Mine reclamation work has already been completed by BAMR over the past couple of years, specifically Alden Mountain East in Newport Township. As previously mentioned, the 39± acre Alden Mountain East Mine Site was riddled with 29 mine openings that were recently reclaimed. The remaining 100± mine openings would need to be mitigated before the public could have access to the proposed conservation area.

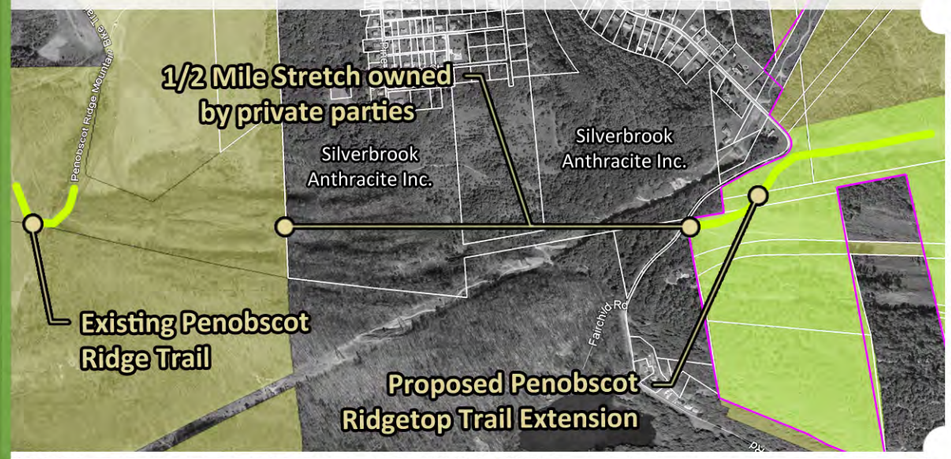
As noted in the 1999 Lower Wyoming Valley Open Space Master Plan, such organizations as Luzerne County, the Pennsylvania Game Commission, the Pennsylvania Department of Conservation and Natural Resources, local non-profit trails organizations, and local land trust groups could be potential owners and caretakers of the conservation area.



Conservation Area

Penobscot Ridge Mt Trail & Proposed Trail Connection

A half mile stretch of land owned by private property owners is preventing a connection from the Existing Penobscot Ridge Trail to the proposed extension. A single land owner Silverbrook Anthracite Inc. could provide the necessary link between the existing and proposed trail. The small Wilkes-Barre based Silverbrook Anthracite Inc. may have interest in extending a trail through their property.



Narrative:

Along with preservation of the 1,200± acre forested area, passive recreation opportunities, including hiking and biking trails, should be implemented to further enhance the conservation area. As previously mentioned, spur trails could be implemented to connect the proposed mixed use development and residential areas to the conservation area creating a unique marketing opportunity to potential developers.

The Penobscot Ridge and Wilkes-Barre Trail, originally proposed in the 1999 Lower Wyoming Valley Open Space Master Plan, was designed to begin at the Susquehanna River south of Mocanaqua to the Tubs Natures Area east of Wilkes-Barre. In 2005, the Earth Conservancy completed a leg of the trail with their 1.2 mile Penobscot Ridge Mountain Bike Trail that is south of Wanamie.

Opportunity exists to implement an additional leg of the trail within the conservation area. The nearly 3.5 mile proposed trail could take full advantage of the Hanover Reservoir as well as the numerous scenic views along the mountain range. The trail would begin at a trail head off Alden Mountain Road, wind its way across the ridgetop, and connected to the existing Ridgetop Trail that is located primarily in Sugar Notch.

Recommendations / Next Steps

The following next list of recommendations and next steps have been developed generally in chronological order.

Mixed Use Area

- Update and finalize the Army Corps 2005 report. Meet with regulatory agencies to finalize best routes, stream bed stabilization practices, cost estimates, and riparian buffer implementation for Espy Run, Leuder Creek, and Upper Nanticoke Creek.

- Inventory structural / geotechnical properties of existing material, within the mixed use area, for future pad creation.

- Perform a Phase 1 Environmental Assessment & Wetland Delineation for the entire mixed use area. Review findings with PADEP. Create mitigation / conservation plan. Note: Wetland delineations must be renewed every 4 years.

- Create an all-encompassing schematic grading / earthwork plan for the remainder of the Bliss area as well as the entire Truesdale area. This schematic grading / earthwork plan will guide future restoration projects, access road design, and utility extensions, including water service.

- Approach Hanover Township about the potential M-U zoning district change, should a large warehousing or manufacturing developer express interested in the parcel.

- Consult with PA American Water and local fire department to develop a plan to supply the area with water service.

- Approach Hanover Township about extending their existing 10” sanitary line under Clarks Cross Road into the Truesdale area for future development connections.

- Drill pavement cores to determine pavement structure adequacy (ie ESAL Value) of Front St/Hanover Street.

- Present Mixed Use Area to PennDOT District 4 for their input and guidance on current and proposed traffic.

Residential Area

- Approach Sugar Notch Borough about rezoning Residential Pocket #3 to R-2 “Two Family District” and assess their willingness to grant a special exception to allow multi-family dwelling units in an R-2 zone.

- Perform a Phase 1 Environmental Assessment & Wetland Delineation for residential pocket #2.

- Consult with PA American Water and local fire department about supplying the entire development area with water service. Negotiate with PA American Water about sharing pressure boosting costs necessary for pocket’s #2 and #3.

-Explore the most economical option for sewer service for connection to Residential Pocket #3: Speak with Sugar Notch Borough about the use of Evergreen Road for sanitary connection(s)?. Explore grant opportunities to run a gravity sewer line up Preston / Earth Conservancy Road to provide sewer service not only to the residential pocket, but also the Hanover Recreation Park. Grant opportunities should also be sought to supply water service to the Hanover Recreation Park.

- Present residential area to PennDOT District 4 & Sugar Notch Borough for their input and guidance on current and proposed traffic.

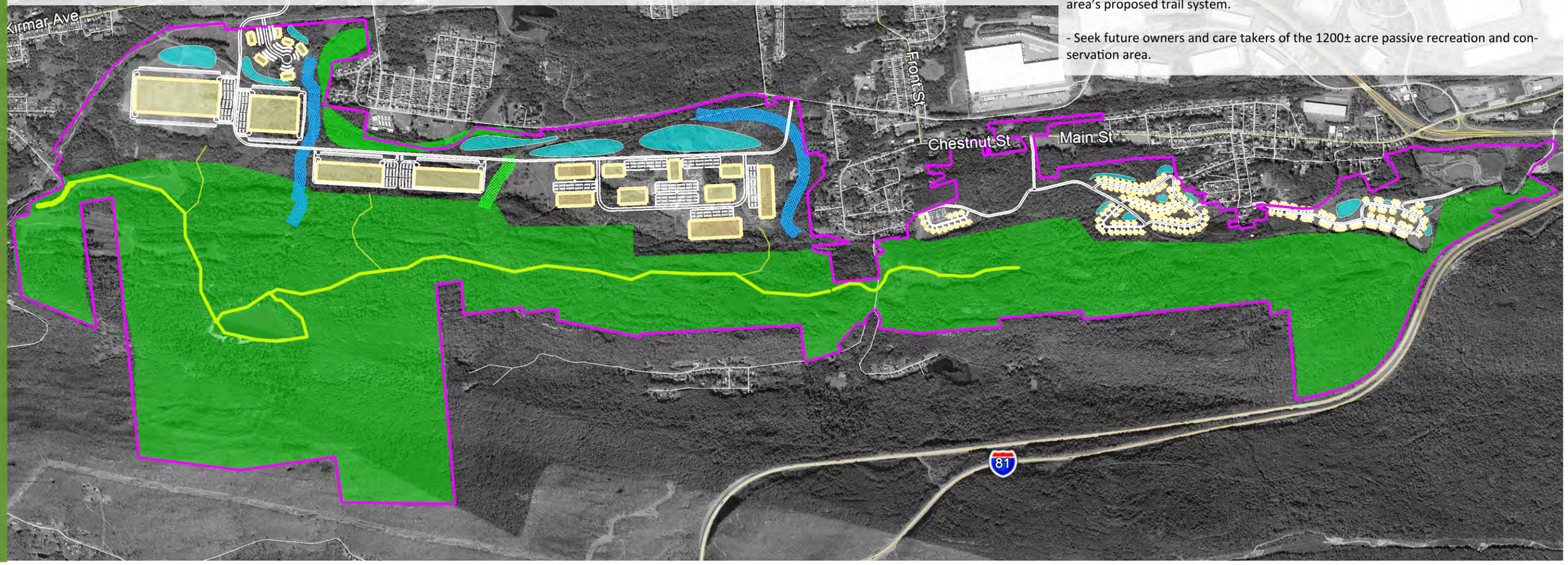
Conservation Area

- Update and build upon the Army Corps 2005 report. Meet with regulatory agencies to finalize best routes, stream bed stabilization practices, cost estimates, and riparian buffer implementation for Espy Run, Leuder Creek, and Upper Nanticoke Creek.

-Consult with PADEP, BAMR, etc. to formulate a plan to mitigate the 100+ mine opening and other AMLs in the conservation area. - Consult with hiking and biking recreation groups to formulate trail routes and spearhead grant opportunities for trail implementation.

- Speak with adjacent land owners concerning the possibility securing easements to link the existing Penobscot Ridge Trail in Newport Township to the conservation area’s proposed trail system.

- Seek future owners and care takers of the 1200± acre passive recreation and conservation area.



Conclusion:

With the soon to be completed South Valley Parkway, great opportunity exists for development of Bliss and Truesdale areas. Additionally, the large amount of jobs associated with recently constructed Hanover Ridge Trade Center and numerous job opportunities from the Hanover 9, Bliss and Truesdale areas will create a strong demand for housing in the surrounding communities.

Upon completion, the South Valley Parkway and its six roundabouts, will have enough of capacity to handle a majority of the proposed development in the mixed use area without upgrading the pavement structure or adding additional lanes. Hanover Street will also service the mixed use development by providing a direct route to Interstate 81. Unfortunately, three separate offsite improvements may be needed including a costly reconstruction of a portion of the roadway's pavement structure. Although, for the most part, the roadway network has sufficient capacity to handle the proposed development, offsite improvements at key intersections, such as turn lanes and new traffic signals, may be needed to service the development. Roadway capacity may become an issue on the South Valley if all the traffic from the mixed use area are forced to take the route. Also, it is worth noting, that the Earth Conservancy has substantial holdings south of the project area in Newport and Conynham Township that will benefit from remaining capacity on the South Valley.

In addition to the South Valley Parkway, a strong utility infrastructure also adds to the opportunity for abundant development. Currently, the Earth Conservancy has plans to bring utilities into the Bliss area, creating a cost effect starting point for any developer. Again, it must be noted, that several offsite utility upgrades may be necessary to accommodate the entire build-out of the proposed development. Most notably water service. Although PA American Water has indicated a willingness to service the project area and has sufficient water volume to do so, they likely do not have sufficient pressure to service much of the proposed development. Offsite improvements needed to boost the water pressure will likely be on the developer.

A potential next step for any developer would be a due diligence report focused on their particular development. The due diligence report should involve at a minimum:

- Development of a conceptual / schematic plan of the proposed project to generate traffic volumes, utility demands, and stormwater requirements.

- Meet with EC to make sure their development aligns with the goals and future plans of the organization.

- Meet with all local municipal officials to discuss their project ensuring conformance with the local municipal codes and ordinances.

- Survey their particular project area for any environmental, wetland, and geotechnical issues.

- Meet with PennDOT District 4 to discuss traffic volumes and potential offsite intersection improvements.

- Meet with respective utility companies to see what offsite improvements, and possible contributions, may be necessary for their utility demands.

Finally, the proposed 1,200+ acre conservation area will build upon initially objectives established in the 1996 Land Use Plan and the 1999 Open Space Master Plan. The conservation area has many opportunities including, preservation of approximately 4+ mile stretch of Penobscot Ridge, cleanup of the Nanticoke Creek Watershed's headwaters and implementation of 5+ miles of passive recreation trails. Additional opportunity exists to connect the proposed trail network in the conservation area to Earth Conservancy's existing Ridgetop and Penobscot Ridge Trail. Several agencies including the Pennsylvania Game Commission and the Pennsylvania Department of Conservation and Natural Resources may be willing to become the owner and care taker of this 1,200+ acre conservation area.

