



Titus Station Power Plant

Decommissioning and Redevelopment Playbook

Titus Station located in Cumru Township, Pennsylvania in Berks County



JUNE 2022

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Executive Summary



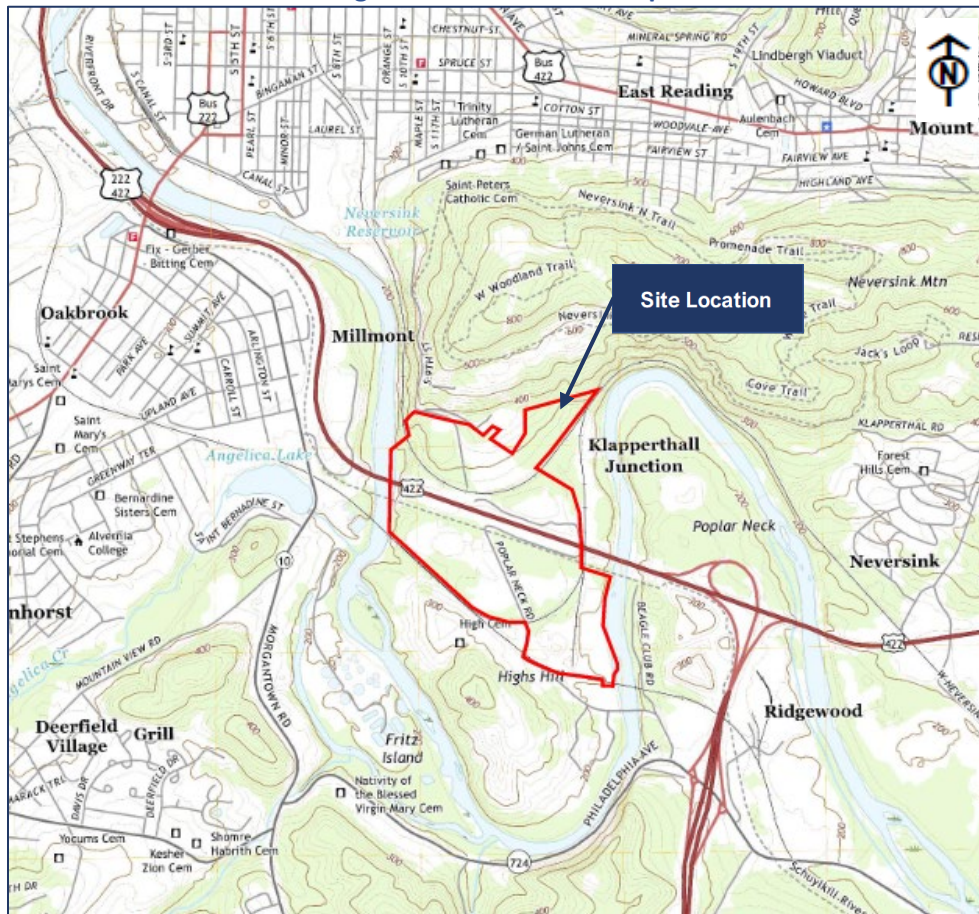


1.0 Executive Summary

Titus Station (the “Site”) is a large industrial property under single ownership in Cumru Township, Berks County, Pennsylvania, with direct railway access (see **Figure 1**). Once a 243-megawatt (MW) coal-fired power plant, the Site was retired by its previous owner (GenOn Energy Inc.) in 2013 and decommissioned in June 2014. The Site provides an excellent opportunity for redevelopment, particularly since it offers significant industrially zoned acreage with rail access that can accommodate a variety of industrial uses.

This “Playbook” offers a selection of decommissioning and redevelopment “Plays” at Titus Station. This Playbooks consists of useful Site data, detailed market information, and reuse strategies to aid industrial site selectors and the local economic development community in better understanding the redevelopment options at the Site. This Playbook is intended to facilitate future due diligence efforts by investors and interested parties regardless of their priorities and goals. Ultimately, this Playbook serves as a single, organized source of information about Titus Station to stimulate discussion, creative thought, and future considerations for site redevelopment.

Figure 1: Site Location Map



1.1 Pennsylvania's Pathway to Reclamation and Reuse

The Pennsylvania Department of Community and Economic Development (DCED) received Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) funding through the U.S. Economic Development Administration. The primary focus of this funding is to assist communities and regions affected by the downturn in Pennsylvania's coal economy. Using these funds, DCED established a framework for collaborating with property owners and local communities to ready coal-fired power plants and related assets for reuse and establish baseline information to highlight reuse potential for prospective buyers and investors.



DCED worked with Berks County to identify Titus Station to take advantage of the POWER program. One of several closed or closing coal-fired power plants across the commonwealth, successful redevelopment of Titus Station can serve as a model for other sites going forward.

TRC Environmental Corporation (TRC) and its partners were retained by DCED to prepare this Redevelopment Playbook. In collaboration with DCED and the current Site owner, Recycle the World Inc., TRC has conducted a comprehensive process of redevelopment planning for the Site, including Phase I and II Environmental Site Assessments, market analysis, redevelopment strategy options, cost estimating for demolition and "Pad-Ready" site preparation, and recommendations for actions to move the process forward.

1.2 History of the Site

Titus Station, in Cumru Township, Pennsylvania, has a long history of industrial operation, providing a staple of jobs and income to the surrounding areas. Metropolitan Edison Co. (Met-Ed) initiated construction of Titus Station in 1948. Units 1 and 2 began commercial operation in 1951; Unit 3 commenced operation in 1953. The facility had a nameplate capacity of 243 MW (each unit rated at 81 MW). Titus Station was named after former Met-Ed President Ormrod Titus. Two oil-fired combustion turbines were constructed later.

Since its construction, Titus Station ownership has been transferred several times. RRI Energy Mid-Atlantic Power Holdings, LLC (RRI Energy) acquired the Site in December 1999. In 2010, RRI Energy merged with Mirant Corporation and was renamed GenOn Energy, Inc. (GenOn). NRG acquired GenOn in 2012 and the three coal-fired units at Titus Station were in September 2013. Decommissioning activities, including the removal of the Site's fuel and process chemicals were completed by June 2014. The Titus Station equipment and buildings remain in-place.

In 2017, NRG restructured and split from GenOn. GenOn retained Titus Station, including the oil-fired Combustion Turbines, which currently remain in-service on Tract 5. In 2019, the Titus Station Site (excluding the two Combustion Turbines) was acquired by Recycle the World, Inc. with the intention to redevelop a portion of the Site (Tract 4) into a plastics recycling facility operated by Refined Plastics LLC (Refined Plastics). Recycle the World, Inc. is interested in considering having the balance of the property redeveloped with other industrial uses.

1.3 Key Highlights, Site Attributes, and Assets

- **Zoned Industrial:** Industrially zoned land is in demand in Berks County.
- **Rail Access:** The Site is served by Norfolk Southern Railway, with an existing siding located adjacent to Tract 4. It is possible to construct a separate spur from Norfolk Southern Railway tracks to service the eastern portion of Tract 5.
- **Electrical Service:** FirstEnergy substation located on Tract 5 can provide electric service adequate for most end users.
- **Nearby Passive Recreational Areas:** The Schuylkill River Trail runs through the Site (between Tracts 5 and 7). The Neversink Mountain Preserve is located approximately one-half mile away.

Titus Station consists of five (5) tracts totaling approximately 196 acres. **Figure 2** provides the approximate boundaries of these parcels. The Site is divided by easements or rights-of-way from east to west by PA State Route 422, the Schuylkill River Trail Greenway (Former Pennsylvania Central Railroad), and two lines of the Norfolk Southern Railroad. Within Tracts 5 and 8, there are properties that are not owned by Recycle the Word, Inc.: two transmission substations owned by FirstEnergy Corp (Tract 5); two Combustion Turbines, with ancillary equipment owned by GenOn (Tract 5); and the Cumru Township Firing Range (Tract 8). Various and numerous additional easements cross the Site for electrical and gas pipeline infrastructure.

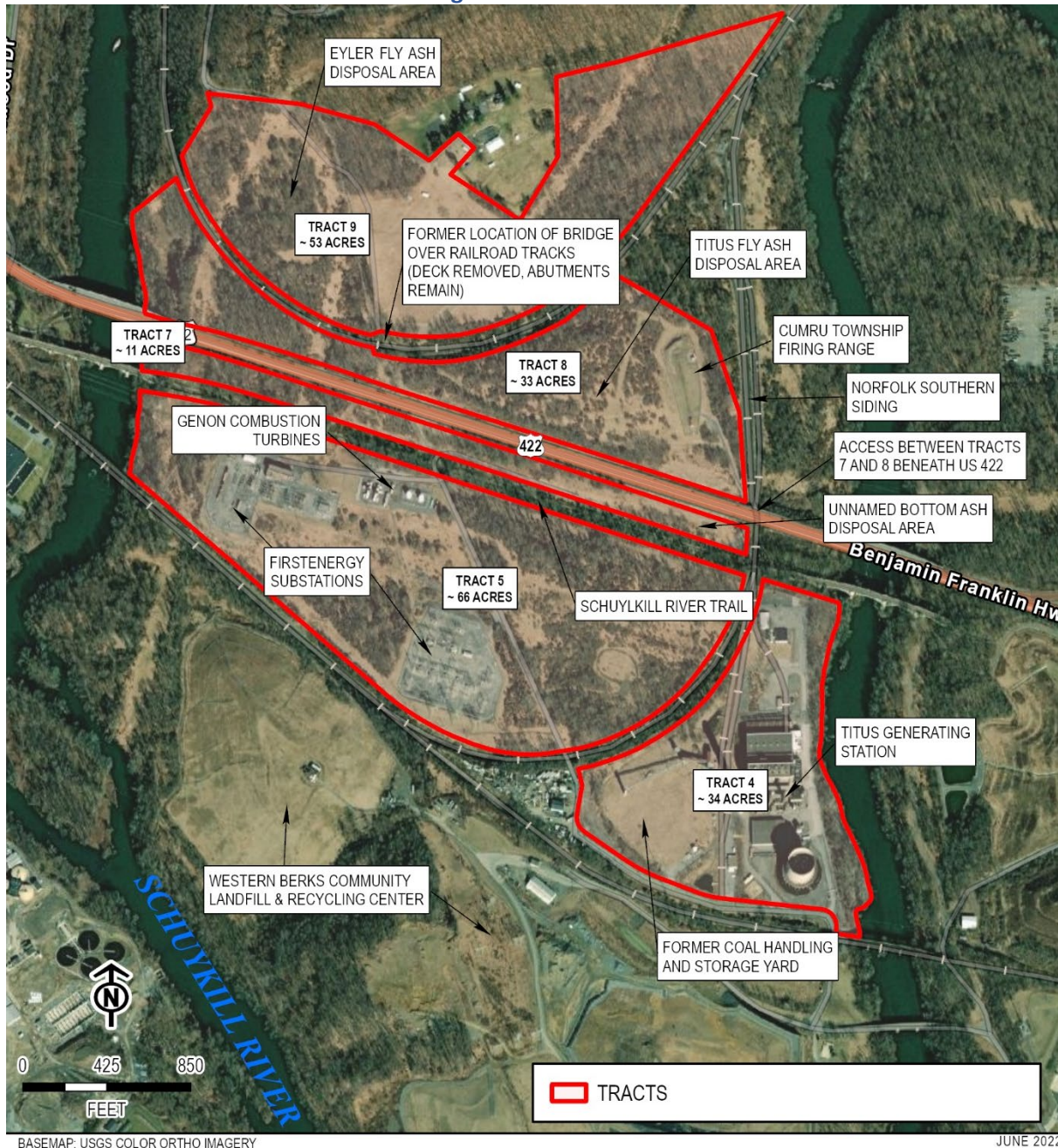
The Site is located adjacent to the City of Reading in Cumru Township, which has a population of nearly 16,000 residents. The Titus Station Site is located a little over an hour from Philadelphia, Harrisburg, and Allentown and is well connected to other major cities such as New York (125 miles) and Baltimore (100 miles) through Federal and State highways.

The Site is zoned General Industrial and is generally bounded by the Schuylkill River to the east and west, by residential and commercial land use to the north, and by industrial properties to the south.

The Site has several assets that are likely to be attractive to developers. The Norfolk Southern railroad tracks that run through and adjacent to the Site can be used for shipping and receiving goods and connect Titus Station to the Site to Northeast, Mid-Atlantic, and Midwest markets. There is an electrical substation located within Tract 5 that formerly connected Titus Station to the PJM electrical grid, which could be of value to redevelopment plays that include a new form of generation or have a large demand for electricity. **Figure 2** highlights relevant features of the site.



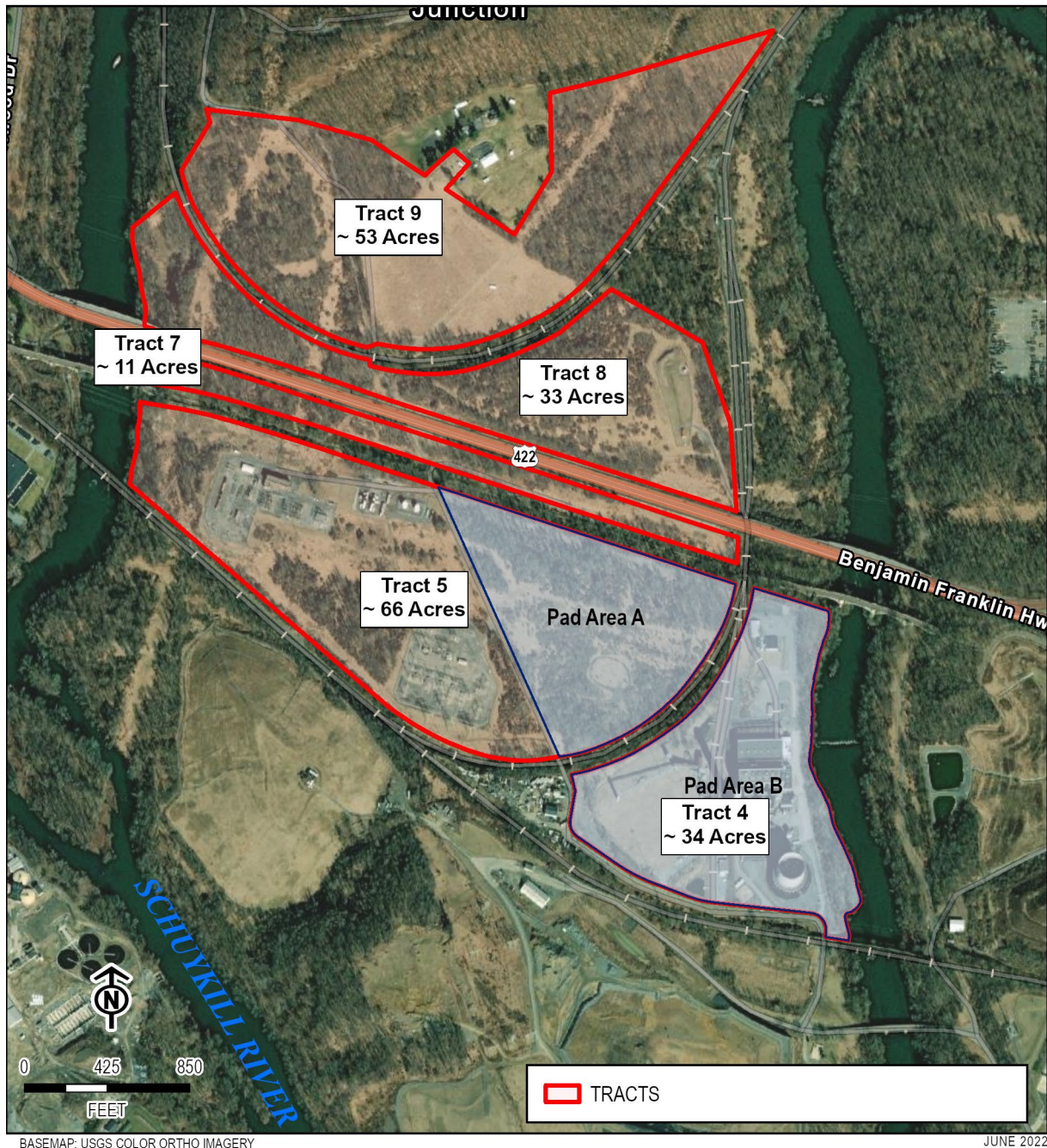
Figure 2: Site Features



The Site has two potential building pads to support redevelopment (see **Figure 3**). Pad A is an approximately 26-acre vegetated area located in Tract 5, east of Poplar Neck Road. Pad B is an approximately 34-acre that comprises the entirety of Tract 4. Pad B is presently developed with the power block, support buildings (e.g., warehouses), cooling tower, and coal handling equipment. Within Pad B there are two developable areas: the former coal pile; and the power block area, located at an elevation approximately 40 feet below the ground surface at the former coal pile.



Figure 3: Potential Building Pads



1.4 Market Analysis Summary and Stakeholder Input

Titus Station has unique potential for redevelopment that is supported by the Site's assets, the community that surrounds it, the workforce in the region, and the quality of life the area provides. The

residents and development interests in Berks County are very familiar with heavy manufacturing and energy-related industries and the potential benefits and challenges they bring.

Berks County has an extremely high location quotient (LQ, an indication that an industry or occupation is unique and specialized in the regional economy) in the Battery Manufacturing industry, which points to a local strength in that industry. Berks County has a “Lighting and Electrical Equipment” industry cluster comprised of the Battery Manufacturing, Electrical Equipment Manufacturing, and Wiring Device Manufacturing NAICS sectors.

TRC’s subcontractor, Delta Development, interviewed local and regional stakeholders representing government officials regarding potential future uses of Titus Station and desired redevelopment outcomes. These stakeholders saw the value of redeveloping the Site and expressed optimism regarding the size and abilities of the area’s skilled workforce and building trades.

1.5 Reuse Strategy Alternatives Summary

Considering input from numerous stakeholders and relying upon data collected for this Playbook, two (2) generalized strategic opportunities for reuse of the Site have been prepared, which take into consideration the physical site attributes and market drivers identified in this document. The leading areas for redevelopment of Titus Station are:

- Industrial/Manufacturing
- Energy Generation/Storage

Each reuse strategy was further evaluated to develop reasonable options that respond to various market forces, thus providing a menu of “plays” designed to appeal to a range of differing investor/developer goals. These options are further described in **Sections 5 and 6**, including a discussion of the strategy, relevant examples of similar development in Pennsylvania, advantages and disadvantages, and specific actions that may be necessary to pursue a particular option.

1.6 Recommended Actions and Schedule Summary

TRC concluded from the information obtained throughout this report that the developable portions of the Site (Tracts 4 and 5) are best suited for reuse as one of the following:

- An industrial site that is tied to battery manufacturing, material recycling, rail storage, recreation (passive), refrigerated storage, or related sectors; or
- An energy generation complex featuring natural gas combustion or biomass processing.

This conclusion is based on the Site’s rail access, proximity to FirstEnergy’s substations, the available work force, and feedback from key stakeholders. Both general reuse options can be pursued in parallel to explore site redevelopment.

Energy generation and industrial/manufacturing development, capitalize on the ability to transport large volumes of materials to and from the Site via rail and present an opportunity to create a large, well-

compensated workforce. Both options would provide a sustainable tax base and likely be a catalyst for complimentary industries in the area. The Site has two potential building sites where individual developments could occur.

With respect to Tracts 8 and 9, there may be opportunities to connect the Schuylkill River Trail and the Neversink Mountain Preserve. Passive recreation could be made compatible with the identified environmental conditions and lack of vehicular access through the development of well-defined trails.

To successfully position the Site for redevelopment, a two-phase “pre-redevelopment” strategy is recommended. This two-phase approach expedites redevelopment by administratively and physically preparing the Site for future redevelopment, while simultaneously creating a partnership with the commonwealth, Berks County, Recycle the World, Inc., and an invested and informed end user.



Project Information



2.0 Project Information

The Commonwealth of Pennsylvania's DCED organized a state-wide effort to explore the feasibility of repurposing multiple decommissioned coal-fired generation plants within the Commonwealth. Among these is the former Titus Station located in Cumru Township, Berks County, Pennsylvania. TRC Environmental Corporation (TRC), along with a team of local partners, has been engaged by the DCED to analyze the Site location and develop this playbook.

Former coal-fired generation plants present unique opportunities for project developers to repurpose large land areas for one or more compatible uses that can modernize the Site's use, support continued contributions to the local tax base, and/or create construction and permanent jobs for the local workforce. Developing underutilized industrial properties and returning them back to productive reuse is often preferred over developing "greenfield" resources, thereby acting as a means of preserving farmland, open spaces, and natural areas.

These Sites are often strategically located and endowed with legacy infrastructure assets that should be evaluated and considered for reuse for new industrial opportunities. Infrastructure at the Titus Station Site includes access to rail and existing electrical infrastructure connected to the power grid. The Titus Station Site constructed in an area where there is a strong talent base with a multitude of diverse skillsets associated with advanced manufacturing, production, transportation, logistics and material moving occupations.

2.1 Site History

The history of Titus Station Site begins in the late 1940's when Met-Ed commenced construction of the facility. The plant was named after former Met-Ed President Ormrod Titus. The plant began commercial operation of Units 1 and 2 in 1951, with Unit 3 commencing operation in 1953. The facility had a nameplate capacity of 243 MW (each unit rated at 81 MW).

The Site has had a history of ownership transfers over the past 30 years. RRI Energy acquired the Site in December 1999. In 2010, RRI Energy merged with Mirant Corporation and was renamed GenOn. NRG acquired GenOn in 2012 and deactivated the three coal-fired units at Titus Station in September 2013. NRG removed the Site's fuel and process chemicals. The Titus Station equipment and buildings remain in-place.

In 2017, NRG restructured and split from GenOn. GenOn retained Titus Station and the fuel-oil fired Combustion Turbines, which currently remain in-service on Tract 5.

In 2019, the Titus Station Site was acquired by Recycle the World, Inc. with the intention to redevelop a portion of the Site (Tract 4) into a plastics recycling facility (Refined Plastics). Recycle the World, Inc. is considering having the balance of the property redeveloped with other industrial uses.

2.2 Site Setting

The Site is in central Berks County, an urban county located in southeastern Pennsylvania. The largest municipality in Berks County is the City of Reading with a population of approximately 95,000 residents. The Titus Station Site is located adjacent to the City of Reading in Cumru Township, which has a population of nearly 16,000 residents. The Titus Station Site is located a little over an hour from

Philadelphia, Harrisburg, and Allentown and is well connected to other major cities such as New York (125 miles) and Baltimore (100 miles) through Federal and State highways.

By 2015, the top three industries in terms of overall employment in Berks County are trade/transportation/utilities, manufacturing, and education/health services. Goods-producing industries in Berks County are largely in the manufacturing sector. However, Berks County has shifted to service-providing economy, as there are nearly 5 times the service establishments as there are goods producing ones. This trend is likely to continue.¹

¹ Berks County Comprehensive Plan 2030 Update

3.0 Site Attributes, Assets, and Constraints

3.1 Key Highlights

- **Zoned Industrial:** Industrially zoned land is in demand in Berks County.
- **Rail Access:** The Site is served by Norfolk Southern Railway, with an existing siding located adjacent to Tract 4. It is possible to construct a separate spur from Norfolk Southern Railway tracks to service the eastern portion of Tract 5.
- **Electrical Service:** FirstEnergy substation located on Tract 5 can provide electric service adequate for most end users.
- **Nearby Passive Recreational Areas:** The Schuylkill River Trail runs through the Site (between Tracts 5 and 7). The Neversink Mountain Preserve is located approximately one-half mile away.

3.2 Site Attributes

The Site consists of five (5) separate tracts (4, 5, 7, 8, and 9) totaling approximately 196 acres in an industrial-zoned area of Cumru Township, Berks County, Pennsylvania and is generally bounded by the Schuylkill River to the east and west, by residential and commercial land use to the north, and by industrial properties to the south. The entire Site is zoned General Industrial.

3.2.1 Land Area

The Site is identified by the Berks County Tax Assessor as Parcel #39531600105762. Parcel tract numbers and acreages, as depicted on **Figure 2**, are listed in **Table 1**, below.

Table 1: Land Area and Acreage

Tract Number	Acreage
4	34.053
5	65.568
7	10.857
8	32.576
9	53.177

Site areas/features include the following:

- Generation Station (Tract 4)
- FirstEnergy Substations (Tract 5)
- Combustion Turbine Area (Tract 5)
- Bottom Ash Disposal Area (Tract 7)
- Titus Fly Ash Disposal Area (Tract 8)
- Cumru Township Firing Range (Tract 8)
- Eyler Fly Ash Disposal Area (Tract 9)

The Site is divided by easements or rights-of-way from east to west by PA State Route 422, the Schuylkill River Trail Greenway (Former Pennsylvania Central Railroad), and two lines of the Norfolk Southern Railroad. Various and numerous additional easements cross the Site for electrical and gas pipeline infrastructure. Undeveloped portions of the site generally consist of vegetated and woodland areas.

3.3 Site Assets



3.3.1 Shape, Dimensions, & Accessibility

The Site is irregularly shaped and consists of five (5) separate tracts. Site elevations range from approximately 365 feet above mean sea level in the northern portions of the Site (Tract 9) to 175 feet above mean sea level along the banks of the Schuylkill River (Tract 4). The topographic downward slope is to the south/southeast in areas north of Route 422 (Tract 8 and 9) and generally to the east towards the Schuylkill River in areas to the south of Route 422 (Tracts 4, 5, and 7). The Site is not located in a Federal Emergency Management Agency flood zone.

Tract 4

The coal-fired generation units (Power Block), the stacks, and cooling tower are located on the eastern portion of Tract 4 adjacent to the Schuylkill River. The former coal pile is in the western portion of Tract 4. The elevation of the former coal pile is approximately 40 feet above the ground surface at the Power Block.

Tract 4 is accessible from Poplar Neck Road through multiple vehicle gates. Tract 4 has rail service that connects to the Norfolk Southern-owned siding located north of Tract 4 and east of Tract 8.

Tract 5

Tract 5 is divided by the vacated portion of Poplar Neck Road, which begins in the south at the southern side of the bridge spanning the Norfolk Southern Railway tracks and terminates in the north at the southern right-of-way line of US 422. East of the vacated portion of Poplar Neck Road, is an overgrown, generally level, approximately 26-acre parcel. West of the vacated portion of Poplar Neck Road, is developed with two electrical substations and combustion turbines.

The Combustion Turbine area is approximately 2.5 acres and consists of two peaking turbines (designated Units #4 and #5, rated approximately 15 and 16 megawatts, respectively), an office trailer

inside of a fenced enclosure, a fuel unloading area, a paved 10,000-gallon capacity containment basin, associated piping, and a fenced, earthen-diked containment area containing two 103,840-gallon No. 2 fuel oil ASTs. The Combustion Turbines are operated by GenOn, which has a 30-year lease from the Site Owner.

The substations are fenced and contain electrical transformers, breakers, transmission wires, capacitors, and various associated electrical equipment. Metal-framed buildings and a two-story brick building are also associated with the substations. The substations are operated by FirstEnergy, which has multiple easements throughout the western portion of Tract 5.

Access to Tract 5 is limited to the bridge spanning the Norfolk Southern Railway tracks that connects to Poplar Neck Road.

Tract 7

Tract 7 is a linear tract located between the southern right-of-way line of US 422 and the Schuylkill River Trail. Tract 5 is overgrown and historically, bottom ash was placed in the eastern portion of Tract 7.

Access to Tract 7 is from the vacated portion of Poplar Neck Road.

Tract 8

Tract 8 is generally located between the northern right-of-way of US 422 and the Norfolk Southern tracks to the north. The eastern portion of Tract 8 is leased by Cumru Township for use as a Firing Range. Former fly ash disposal areas are in the eastern and western portions of the tract.

Access to Tract 8 is limited to a dirt road from Tract 7 that runs parallel to the Norfolk Southern Railway tracks beneath US 422. A bridge along the vacated portion of South 9th Street formerly spanned the Norfolk Southern Railway tracks and connected Tracts 8 and 9; however, the bridge deck has been removed.

Tract 9

Tract 9 is the northernmost tract and abuts a farm that includes pigs, cows, emus, guinea pigs, guinea fowl, chickens, ducks geese, goats, sheep, rabbits, and dogs. The central portion of Tract 9 is an open field, while the eastern and western portions are overgrown. A former fly ash disposal area is in the western portion of Tract 9.

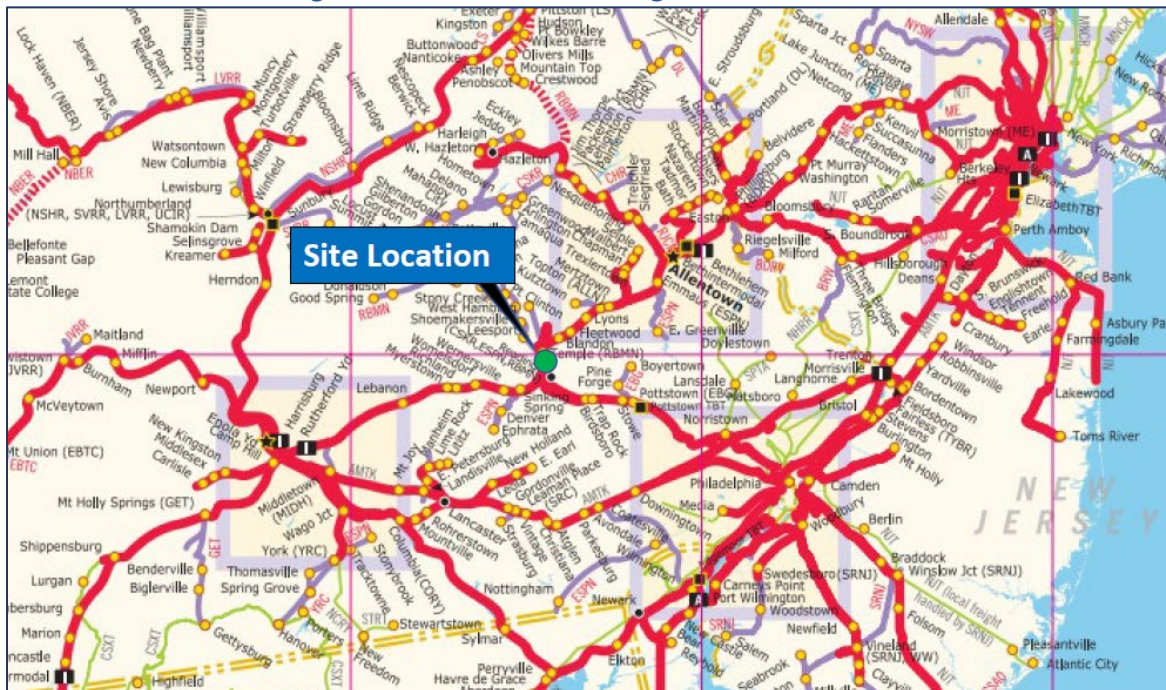
Access to Tract 9 is limited to South 9th Street, a two-lane road which leads to the City of Reading. The portions of South 9th Street that are in Cumru Township are not maintained by the Township during the winter months.



3.3.2 Railroad Access

Norfolk Southern Rail connects the Site to the Northeast, Mid-Atlantic, and Midwest markets. **Figure 4**, below, illustrates the regional Norfolk Southern Rail network.

Figure 4: Norfolk Southern Regional Rail Network

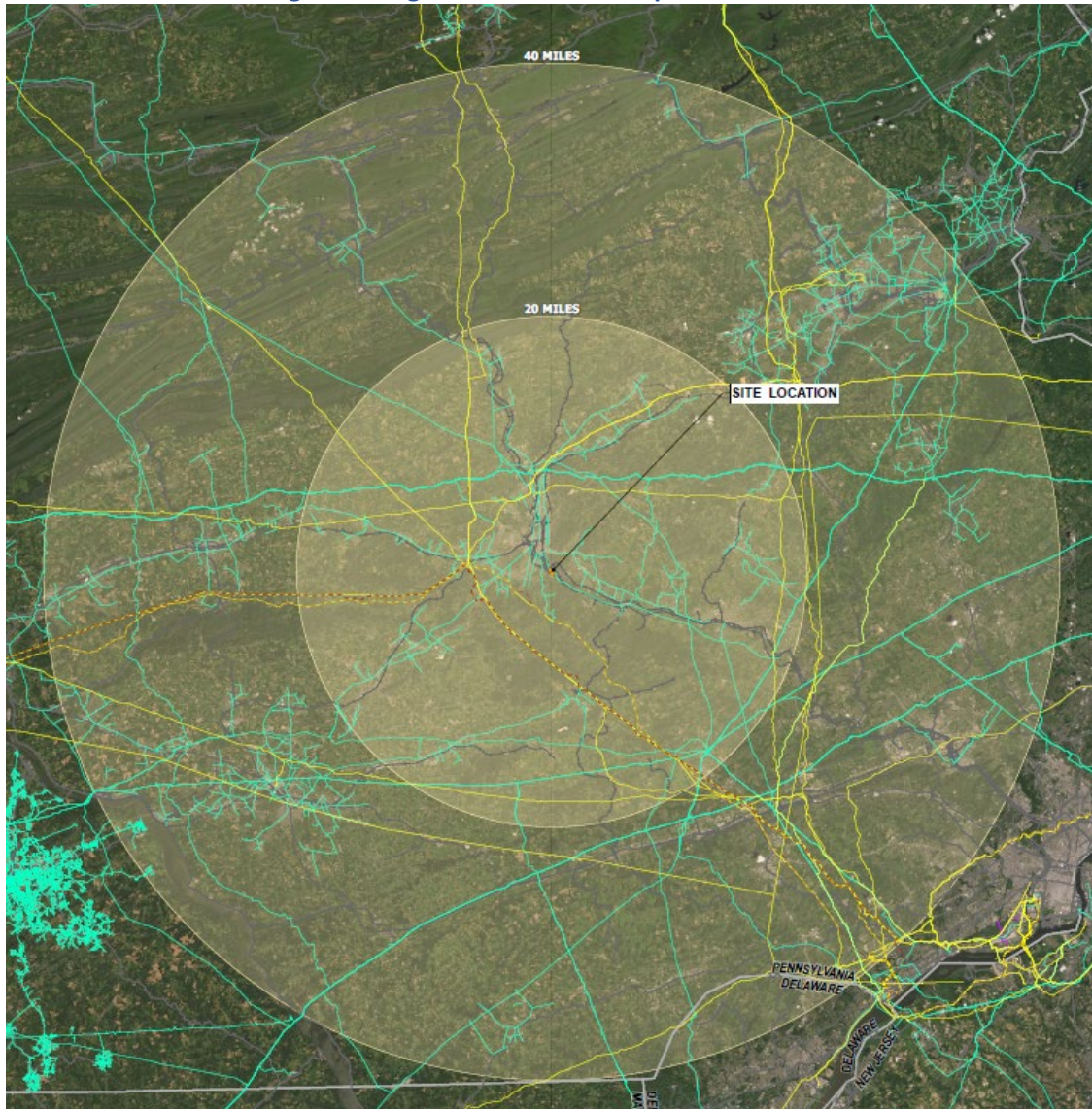


3.3.3 Electricity and Gas

Titus Station electricity generating operations ceased in 2013. According to the Site Owner, the limited onsite facilities currently energized are back fed electricity from the FirstEnergy substations on Tract 5.

Natural gas is provided to the Site by UGI Corporation. UGI has stated that firm service (also known as uninterruptible service) is not available at the Site using the existing pipeline. New pipeline would need to be constructed to provide the Site with firm service. Titus Station is located approximately three miles from a 24-inch pipeline owned by Buckeye Partners, LP. **Figure 5**, below, presents the natural gas pipelines in the vicinity of Titus Station.

Figure 5: Regional Natural Gas Pipeline Network



3.3.4 Water and Wastewater

Currently, the Site does not have access to public water or sewer. When operational, Titus Station obtained potable water from two wells located north of the Power Block, withdrew process water from production wells located adjacent to and south of the Power Block (inside the garage/warehouse building), and withdrew water from the Schuylkill River for cooling water.

The Site contains a decommissioned sanitary wastewater treatment facility that was in-service when Titus Station was operational. Sanitary wastewater was formerly treated through the sewage treatment facility before being combined with Cooling Tower blowdown which was directed to the Industrial Wastewater Treatment (IWT) mixing basin. From the IWT mixing basin, sanitary wastewater was

directed to the former sedimentation basins located on former Tract 2 south of Poplar Neck Road and south of Tract 4. (Tract 2 is no longer part of the Site.)

Current site sewage from the Coal Dock Operations Building and Engineering and Technical Center is directed to and stored in septic holding tanks and is periodically removed by trucks for offsite disposal. Portable toilets were observed in the combustion turbine area and at the Cumru Township Firing Range.

Refined Plastics has developed plans to connect the Site to public water and sewer and has received a U.S. Department of Commerce Economic Development Administration (EDA) Grant Award to design and construct approximately 1,700 linear feet of 8-inch water line and approximately 4,800 linear feet of 10" sewer line and appurtenances. Refined Plastics is in the process of securing construction permits.

3.3.4 Drainage

Stormwater in the Generating Station is conveyed via surface grades, channels, and a subsurface stormwater collection system to multiple outfalls along the eastern side of the Generating Station building to the Schuylkill River. Ten outfalls are located along the west bank of the Schuylkill River (Outfalls 001, 005, 006, 007, 008, 009, 010, 011, 012, and 013). Outfalls 001 and 002 previously discharged process water associated with the former coal-fired generating units. Currently, Outfall 001 discharges roof drain stormwater only and Outfall 002 has been decommissioned. Stormwater surface runoff in other portions of the Site, outside of the Generating Station Area, generally flows into the Schuylkill River.

3.3.5 Easements, Encroachments, & Restrictions

A title search was not conducted as part of this Playbook. TRC's evaluation assumes no adverse impacts from easements, encroachments, or restrictions, and further assumes that Refined Plastics has a clear and marketable title.

Several parcels enclosed by the Site are owned by others or are subject to restricted easements, including the electrical substations, the combustion turbines, the Cumru Township Firing Range, and high-voltage transmission lines.

3.3.6 Nearby Passive Recreation Areas

Tracts 5 and 7 are separated by the Schuylkill River Trail, which was constructed on the former Pennsylvania Railroad right-of-way. The Schuylkill River Trail is a multi-use path that will eventually extend 120 miles from Frackville in Schuylkill County, through Montgomery, Chester, and Berks Counties to Philadelphia.

The 900-acre Neversink Mountain Preserve is located approximately one-half mile north of the Site (Tract 9). The Neversink Mountain Preserve is managed by Berks Nature, a 501(c)(3) non-profit conservation organization, which maintains hiking and mountain biking trails. Neversink Mountain Preserve is accessible from the City of Reading, the Borough of Mount Penn, and Exeter Township.

3.4 Site Constraints and Challenges to Development

3.4.1 Limited Road Access

Vehicle access to the Site is via Poplar Neck Road from the south and South 9th Street from the north. Poplar Neck Road is a two-lane road that connects Interstate I-176 via Beagle Club Road and Philadelphia Avenue (PA-724). Poplar Neck Road spans the Schuylkill River and currently receives truck and other vehicle traffic accessing the Site's neighbors to the south (i.e., Western Berks Community Landfill & Recycling Center and Allegheny Towing & Salvage Co.).

The Poplar Neck Road bridge structure was inspected in March 2021 by a PennDOT District 5-0 contractor. The results of the inspection indicate that no Prompt Actions or High Priority Work (Priority Code 1) is required at this time. There are recommendations to address spalls on concrete arches, floor beams and underside of the deck (all Priority Code 2), as well as adding the repair of areas of delamination and spalling to scheduled work (Priority Code 3). The bridge structure is scheduled to be reinspected in 2025.

Access to Tract 5 from Poplar Neck Road requires vehicles to travel over a bridge spanning the Norfolk Southern Railway tracks. The bridge was included in the section of Poplar Neck Road that was vacated and abandoned by Cumru Township in 1965. There are weight restrictions (35 Tons) posted at the bridge; however, it is not known when the bridge was last inspected. The Township and Norfolk Southern Railway have confirmed that they do not own the bridge and have not recently conducted inspections. Cumru Township indicated that their heaviest firefighting vehicles exceed the posted weight limits and if Tract 5 were to be developed, would like structural improvements made so that the bridge could accommodate all their emergency vehicles.

South 9th Street runs from Tract 9 of the Site north through Cumru Township to Penn Street in the City of Reading. South 9th Street is a two-lane road with parking on either side within the City of Reading, but the parking lanes are eliminated as one approaches the Site. There are some sections of the road that may not accommodate two-way truck traffic.

While US 422 runs through the Site, there is no direct access to the Site from the roadway. PennDOT personnel indicated that construction of an entrance and/or exit from the Site to US 422 would not comply with their design standards which require more than one mile between interchanges. (The nearest interchange [US 422 and I-176] is located within one mile of the Site.)

Recommendations: Focus development on Tracts 4 and 5. Confirm ownership of bridge connecting Poplar Neck Road to Tract 5, conduct bridge inspections to confirm its condition, and make repairs required to allow access to all emergency vehicles.

3.4.2 Non-Contiguous Tracts

The 196-acre Site is divided into five (5) separate tracts. The shared tract boundaries coincide with linear features such as railroad tracks, roadways, and the Schuylkill River Trail, which are barriers to redevelopment plans that span multiple tracts. These features also hinder access to the tracts. For example, vehicular access between Tracts 8 and 9 would require replacement of the bridge deck or construction of a new bridge over the Norfolk Southern Railway tracks.

Recommendation: Focus development on Tracts 4 and 5.

3.4.3 Easements

Several parcels enclosed by the Site are subject to restricted easements, including the electrical substations, the combustion turbines, the Cumru Township Firing Range, and high-voltage transmission lines. The presence of these easements on Tract 5 renders the eastern portion of that tract undevelopable.

Recommendation: Focus development on Tracts 4 and 5.

3.4.4 Potable Water and Sanitary Sewer

The Site's current lack of access to public water and sewer is a hinderance to development.

Recommendation: The plans developed by Refined Plastics to connect the Site to public water and sewer should be implemented.

3.4.5 Environmental Issues

Environmental concerns related to the past use of the Site's coal-fired power generation will have to be addressed for any redevelopment options. The extent of investigation and remediation may vary, based on regulatory requirements and the level of residual environmental impairment appropriate for each proposed redevelopment option (i.e., a level safe for human health and the environment for applicable risk-based exposure scenarios).

All potential redevelopment strategies should include an understanding of Site conditions. An evaluation of potential remedial and management strategies relative to the proposed redevelopment can be made from the Site condition assessment data. Phase I and Phase II Environmental Site Assessments (ESAs) were conducted as part of the Playbook to identify environmental conditions that could affect redevelopment plans. Copies of the Phase I ESA and Phase II ESA Reports are included in **Appendices A and B**, respectively. The results of the environmental investigations identified the following Recognized Environmental Conditions (RECs)²:

- **REC No. 1:** The building identified as the Motor Control Center (MCC) Building, which is located to the south of the Coal Breaker Building on Tract 4, contained transformers, and was observed to exhibit pooled oil and staining on the concrete floor throughout the building. Based on the likely age of current or prior transformers at this location, the former presence of polychlorinated biphenyl (PCB) containing oils is possible. Although the visible parts of the concrete pad appeared to be in good condition, visual evidence, including oil staining at and over the edge of the pad, indicated a potential release to the surrounding ground surface.

² RECs are defined as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

- REC No. 2: Two leaking 55-gallon steel drums containing an unknown black, oily liquid and an adjacent area where approximately 10 cubic yards of ash from what appeared to be relatively recently burned trash, were observed on the west side of South 9th Street at the Eyler Fly Ash Disposal Area. The ground surface area visibly impacted by material from the leaking drums was limited to the area beneath the drums.
- REC No. 3: Lead and other secondary metals such as antimony, copper, and zinc from the munitions used at firing ranges can impact soils in the impact berms and shot fall zones. The potential presence of elevated levels of metals in soils at the Cumru Township Firing Range represents a REC.
- REC No. 4: The Titus Fly Ash Disposal Area on Tract 8 represents a REC. The disposed fly ash may have the potential to impact media with constituents, such as various metals, in concentrations greater than the applicable Pennsylvania Department of Environmental Protection (PADEP) medium-specific regulatory standards. No records regarding the disposal area closure, including any regulatory involvement, were identified.
- REC No. 5: The Bottom Ash Disposal Area strip on Tract 7 represents a REC. The disposed bottom ash may have the potential to impact media with constituents, such as various metals, in concentrations greater than the applicable PADEP medium-specific regulatory standards. No records regarding the disposal area closure, including any regulator involvement, were identified.
- REC No. 6: The Eyler Fly Ash disposal area at the west end of Tract 9 represents a REC. The disposed fly ash may have the potential to impact media with constituents, such as various metals, in concentrations greater than the applicable PADEP medium-specific regulatory standards. No records regarding the disposal area closure, including any regulatory involvement, were identified.
- REC No. 7: An area west of the Garage/Warehouse Building was formerly associated with two (2) 16,000-gallon diesel Underground Storage Tanks (USTs) and one (1) 2,000-gallon gasoline UST which were removed between July 12–16, 1993. Available reports associated with the Site indicate a release not definitively associated with the USTs was identified during their removal. Although records indicate PADEP involvement, no documentation regarding PADEP approval of the UST closures was identified.
- REC No. 8: A former 16,000-gallon diesel UST was in the Coal Dock Thaw Pit. As detailed in Section 4.2, correspondence between Met-Ed and PADEP indicates that to concur with PADEP's request, Med-Ed would install monitoring wells down gradient of the Coal Dock Thaw Pit to investigate the potential presence of impacted media that could not be excavated due to adjacent structures. No analytical data from the closure of this UST or documentation indicating the monitoring wells were installed was identified. No documentation regarding PADEP approval of the UST closure was identified.

- REC No. 9: A former orchard is depicted on the western half of Tract 5 in historical aerial photographs from 1937, 1940, and 1946 is a REC. Orchards may be impacted by contaminants due to the potential former use of lead-arsenate and/or organochloride pesticides.
- REC No. 10: The transformer area located along the north end of the main Generating Station Building is a REC. This transformer area includes an oil/water separator and a sub-grade concrete vault measuring roughly 10'x10'x30' located at the east end of the area. The 2019 BAI Phase I ESA report references a transformer oil UST suspected to be in this area. Conflicting documentation references state that the UST was abandoned in place and state that it was removed. Soil samples are reported to have been collected around the transformer oil UST which reported Total Petroleum Hydrocarbon (TPH) concentrations as high as 4,900 milligrams per kilogram (mg/kg). No documentation regarding PADEP approval of the transformer oil UST closure was identified.
- REC No. 11: The area of two (2) transformers north of the Cooling Tower represents a REC. The age of these transformers is unknown but may be old enough to have formerly contained PCBs. The existing secondary spill containment systems appear to be relatively new and in good condition. However, the presence of secondary spill containment since original transformer installation is unknown and therefore there is the potential for a release to have occurred. In addition, a petroleum odor was associated with the eastern transformer area. Whether the odor was emanating from the soil surrounding the transformer or the transformer itself could not be determined.
- REC No. 12: The rail lines located between the Generating Station Building and the former Coal Handling and Storage Yard have been removed. Reports indicate that the ties, ballast, and sub ballast were also removed; however, no investigation of the remaining subsurface conditions appears to have been conducted. Due to the potential presence of contamination associated with rail lines, the area of the former rail lines represents a REC.
- REC No. 13: The industrial waste treatment (IWT) subgrade mixing basin is a REC. The basin received process water from various areas of the Generating Station and now acts as a holding tank for wastewater from limited areas of the Generating Station. The IWT basin was observed during the Site reconnaissance to be holding water and a slight petroleum-like sheen was noted on the water surface. The condition/integrity of the concrete basin could not be determined.

Additionally, the following Controlled RECs (CRECs)³ were identified by the Phase I ESA:

³ CRECs are defined as RECs resulting from past releases of hazardous substances or petroleum products that have been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (e.g., property use restrictions, AULs, institutional controls, or engineering controls).

- CREC No. 1: The Coal Handling and Storage Areas on Tract 4 is a CREC. Following decommissioning of specific features in the Coal Handling and Storage Yard, removal of visually impacted media, installation of a clean soil cover, and the recording of an environmental covenant in Berks County on April 30, 2020, to restrict groundwater usage on Tract 4 due to elevated sulfate concentrations in groundwater, PADEP issued a Final Closure Certification for this area. This approved regulatory closure and environmental covenant to restrict groundwater usage represents an activity and use limitation (AUL) and a CREC.
- CREC No. 2: Based on the PADEP-approved *October 24, 2019, Combination Report – Remedial Investigation Report, Risk Assessment Report, Cleanup Plan, Final Report* as prepared by GES, the soil, bedrock, and groundwater impacts, and separate phase liquid (SPL) caused by releases of No. 2 fuel oil and lubricating oil associated with the Combustion Turbine Area at the west end of Tract 5 appear to be delineated and addressed to the satisfaction of PADEP. Noted contaminants in this area consist of Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), and lead. Remedial activities are cited to have included excavation of impacted soil and recovery of SPL from groundwater monitoring wells. Based on the Environmental Covenant that is being pursued for this Area, and the PADEP-approved remedial investigations/actions, this area has been designated a CREC.
- CREC No. 3: The Western Berks Community Landfill & Recycling Center located immediately south of the Site, has been identified as a source of groundwater reportedly contaminated with heavy metals and organic compounds. Institutional and engineering controls for the landfill facility consist of groundwater monitoring and use restrictions, maintenance of landfill caps and leachate collection system, and restriction of land use for non-residential purposes only. Based on the impacted groundwater, higher elevation of the Western Berk Community Landfill relative to the Site and the active monitoring requirements mandating by the facility's operating permit, this represents a CREC.

TRC designed a Phase II ESA investigation based on the Phase I ESA findings with a focus on determining the presence or absence of pollutants at areas of identified RECs. The results of the Phase II ESA revealed nothing unusual or unexpected, no areas of immediate environmental concern, and except for the coal ash disposal areas, indicate it is unlikely that large-scale environmental impacts of concern to surface or subsurface media are present at the Site, particularly if onsite groundwater will not be used for potable purposes and future uses of the Site remain non-residential.

Direct contact exposure to the elevated arsenic concentration in shallow soils at the former coal storage area has been limited by the placement of a clean soil cap over the area – a remedy formerly approved by PADEP. Exposure to subsurface soil by workers excavating subsurface soils in the former coal storage area could be managed with institutional and/or engineering controls. Similar conditions exist in the coal ash disposal areas. A clean soil cover was likely placed over the Titus ash disposal area, although TRC is unaware of information which documents the nature and source of those cover soils. TRC is also unaware of the nature and source of soils placed over the Eyler ash disposal area. However, the nature of the cover soils throughout the Eyler ash disposal area could be thoroughly evaluated with further

sampling and analyses, if necessary, under various future use scenarios. The coal ash sample results suggest that the coal ash materials in each of the coal ash disposal areas are chemically relatively homogeneous.

The results of the ash disposal area material testing indicate a low potential for constituents to migrate to groundwater via leaching processes. If necessary or desired, the potential impacts to Site groundwater from the coal ash disposal areas could be further assessed via additional testing of the coal ash and a more thorough investigation of groundwater via installation of additional groundwater sampling locations (e.g., monitoring wells). If future site redevelopment plans include placement of infrastructure on or in the coal ash disposal areas, TRC recommends that potential regulatory requirements be fully assessed, and detailed engineering/constructability evaluations be performed.

If at some point the owner of the Site deems it important to obtain a release of environmental liability from PADEP, existing data indicates that taking the Site through Pennsylvania's Land Recycling Program (Act 2 or Voluntary Cleanup Program) would be relatively straight forward.

Recommendation: Consider the environmental conditions identified through the Phase I and Phase II ESAs in the preparation of plans to redevelop the Site. Maintain compliance with AULs and other restrictions. Consider enrollment in the PADEP Act 2 or Voluntary Cleanup Program.

3.4.6 Existing Permits

Table 2 lists the existing permits, licenses, and agreements that BMPP currently holds. These permits are typical for an energy generation facility. Based on TRC's review, these permits do not pose insurmountable challenges to redevelopment. Most of these are likely to be closed or amended prior to redevelopment.

Table 2: Summary of Existing Permits and Plans

Agency	Permit and Regulatory Citation	Applicability	Permit Status
U.S Environmental Protection Agency (USEPA) Region 03	Air Facility System – Major Air for Fossil Fuel Electric Power Generation	Clean Air Act (CAA) The Air Facility System (AFS) contains compliance and permit data for stationary sources of air pollution regulated by the EPA, state, and local air pollution agencies.	EPA Plant ID: 110000338064 State County Compliance number: 4201100017 State Registration Number: 52-2154847-4 Air Emissions Inventory (EIS): 3857011 Operating Synthetic Minor (PA000246171) date of last compliance monitoring activity 08/18/2021 had no violations. Identified as operating and in compliance.

Agency	Permit and Regulatory Citation	Applicability	Permit Status
USEPA Region 03	Toxics Release Inventory System (TRIS)	TRIS is a publicly available EPA database reported annually by certain covered industry groups, as well as federal facilities. It contains information about more than 650 toxic chemicals that are being used, manufactured, treated, transported, or released into the environment, and includes information about waste management and pollution prevention activities.	TRIS ID: 19508TTSST296PO Latest information on reporting is 2013 for air emission and surface water discharges.

Agency	Permit and Regulatory Citation	Applicability	Permit Status
<p>USEPA Region 03</p> <p>The Pennsylvania Department of Environmental Protection (PA DEP) Bureau of Clean Water</p>	<p>National Pollutant Discharge Elimination System (NPDES) - ICIS-NPDES Non-Major</p>	<p>Clean Water Act (CWA): The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.</p> <p>The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained: The NPDES permit program controls discharges.</p>	<p>State Minor NPDES ID: PA0010782</p> <p>NPDES Individual Permit for refuse systems was originally issued on Dec 30, 1974. The latest permit was issued on June 29, 2021, with an expiration date of June 30, 2026.</p> <p>Date of last compliance monitoring activity 09/29/2020 with no violations.</p> <p>Minor IW Facility with ELG permit renewal issued on 6/29/2021; expiration on 6/30/2026</p> <p>The permit allows for Intermittent discharge of ash landfill leachate and stormwater from ash landfill; Intermittent discharge of ash landfill leachate to the Schuylkill River.</p>

Agency	Permit and Regulatory Citation	Applicability	Permit Status
USEPA Region 03 PA DEP Bureau of Waste Management	Resource Conservation and Recovery Act (RCRA)	Hazardous Generator Captive: All generators and treatment, storage, and disposal facilities who handle hazardous waste are required to report to the EPA Administrator at least once every two years. The data collected is used to create the National Biennial RCRA Hazardous Waste Report. EPA regulates hazardous waste under the RCRA to ensure these wastes are managed in ways that protect human health and the environment.	Inactive Other (PAD000766022) Active very small quantity generator (VSQG) (PAD000766014) Date of last compliance monitoring activity 12/10/2012 with no violations. Permit PAD000766014 Hazardous Waste Generator ID, transfer request 4-9-2020 to transfer from GenOn REMA LLC to Titus Station, LP (Refined Plastics)
USEPA Region 03	Greenhouse Gas Reporting Program (GHGRP)	The GHGRP requires reporting of greenhouse gas (GHG) data and other relevant information from large GHG emission sources, fuel and industrial gas suppliers, and CO ₂ injection sites in the United States.	ID: 1000875 Emissions Last Reported: 2016 Reporting Year 2020: Discontinued reporting.

Agency	Permit and Regulatory Citation	Applicability	Permit Status
USEPA Region 03	Safe Drinking Water Act (SDWA)	EPA has established protective drinking water standards for more than 90 contaminants, including drinking water regulations issued since the 1996 amendments to the SDWA that strengthen public health protection.	<p>Permit Inactive - 2015-01-26 (PA3061051) for transient non-community system for ground water for a public/private owner.</p> <p>Permit Inactive - 1984-06-01 (PA3060814) for transient non-community system for ground water for a private owner.</p>
USEPA Region 03	Toxic Substances Control Act (TSCA)	The TSCA of 1976 provides the EPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. TSCA addresses the production, importation, use, and disposal of specific chemicals including polychlorinated biphenyls (PCBs), asbestos, radon, and lead-based paint.	<p>ID: 100608325</p> <p>TSCA Chemical: (68131-74-8) Ashes (residues)</p> <p>Last update: 08/13/2012</p>

Agency	Permit and Regulatory Citation	Applicability	Permit Status
Pennsylvania Fish and Boat Commission Bureau of Boating	Permit / License	The Pennsylvania Fish and Boat Commission is an independent Commonwealth agency with the mission to protect, conserve, and enhance the Commonwealth's aquatic resources and provide fishing and boating opportunities.	Permit 479 inactive/deleted Permit 1865 approved for Floating Structures and private aids to navigation to the PA Fish and Boating Commission. 3 warning buoys “keep out” in Schuylkill River around intake diversion weir Renewed in May 2020 and valid until 2023.

<p>Berks Enviro Tech Inc: Municipal Sewage Management</p> <p>Township of Cumru</p>	<p>Permit / License</p> <p>Maintenance agreement</p>	<p>Berks Envirotech, Inc. is a full-service sewage enforcement agency in Pennsylvania providing service to municipalities in Berks and surrounding counties.</p> <p>The Township of Cumru requires everyone who owns a building served by an on-lot sewage system to maintain that system properly and have repairs made as needed to keep the system functioning correctly, thereby minimizing groundwater pollution and environmental health hazards that result from a malfunctioning sewage system.</p> <p>Cumru Township’s sewage management requirements are a result of DEP concerns with the conditions of on-lot sewage systems throughout the Township. Cumru Township was required to undertake an Official Sewage Facilities Plan (Act 537 Plan) to address all areas of the Township not served by public sewer.</p>	<p>Commercial Holding Tank Permit Z144596 issued 2/3/2017, for Commercial holding tank.</p> <p>Holding tanks on site intended to store all wastewater from the facility until it can be pumped out and hauled away by a licensed septic waste hauler.</p> <p>Installation and Maintenance Agreement – runs with the land legally binding for all future owners so long as the holding tanks still exist:</p> <ol style="list-style-type: none"> 1) security escrow of \$5,000 still should be help by the Twp of Cumru for the life of the holding tanks 2) requirement of annual inspection including copies of pump receipts. Fee and water meter reading <p>One tank is 12,000 gal the other is 2,000 gal: is proposed change in occupancy of site then re-evaluation of proposed flows, a new permit and possible new agreement with adjusted escrow.</p>
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Agency	Permit and Regulatory Citation	Applicability	Permit Status
			Inspected in 2022

<p>PA DEP Waterways and Wetlands Program</p>	<p>Permit / License</p> <p>Department of Environmental Resources Water Obstruction and Encroachment (WOE) Permits</p>	<p>Submerged Lands License Agreements (SLLAs) are required when an applicant applies for a Chapter 105 permit to occupy submerged lands of the state for areas of submerged lands impacted of less than 25 acres. For areas greater than 25 acres, the applicant will need authorization from the General Assembly. Permits are not issued until the SLLA has been obtained.</p> <p>Transfer of permit must be done via application and approval of PADEP.</p>	<p>WOE Permit E06-034 Issued on 9/26/1980 issued for 'other activities'</p> <p>WOE Permit E06-057 Issued on 9/1/1981 issued for pipeline of conduit</p> <p>WOE Permit E06-058 Issued on 9/8/1981 issued for pipeline of conduit</p> <p>WOE Permit E06-059 Issued on 9/3/1981 issued for pipeline or conduit</p> <p>WOE Permit E06-185 Issued on 4/24/1986 issued for culvert</p> <p>WOE Permit E06-197 Issued on 9/12/1986 issued for 'other activities'</p> <p>WOE Permit E06-204 Issued on 5/29/1987 issued for pipeline of conduit includes SLLA for aerial crossing of Schuylkill River</p> <p>WOE and SLLAs: 10617, 0675729, 0675730, E06-138 transferred</p>
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			<p>from GenOn REMA, LLC to Titus Station, LP in 9/2020</p> <p>10617: Commonwealth of Pennsylvania Department of Forestry and Waters, Water and Power Resources Board: Construct of a fill, intake, and discharge structure along Schuylkill River; 4/1/1949; resubmission 10/9/2020</p> <p>0675729: Department of Environmental resources to clean and restore the intake channel and intake tunnel; 5/27/1976; resubmission 10/9/2020</p> <p>0675730: Department of Environmental Resources to construct and maintain an outfall; 5/13/1976; resubmission 10/9/2020</p> <p>E06-138: Department of Environmental Resources WOE Permit, 7/16/1984, to place and maintain 3 warning buoys by intake structure and diversion weir; resubmission 10/9/2020</p>
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Agency	Permit and Regulatory Citation	Applicability	Permit Status
Department of the Army Philadelphia District Corps of Engineers	Permit / License Authorization under Section 404	<p>Department of the Army Corps permits are necessary for any work, including construction and dredging, in the Nation's navigable waters.</p> <p>A general permit is issued for structures, work or discharges that will result in only minimal adverse effects.</p>	<p>Army Permit Nos. CENAP-OP-R-197500818 and CENAP-OP-R-198402140, transfer requested from Titus Power, LLC to ReFineD Plastics, LLC on 12/2/2021</p> <p>3/8/1977, permit to construct outfall pipe, discharge headwall and riprap gutter along river NAPOP-R-75-818-3</p> <p>6/17/1977, permit to place outfall pipe and construct discharge headwall with riprap gutter NAPOP-R-76-1055-3</p> <p>12/30/1983, permit to maintain 5 buoys in river NAPOP-R-83-0356-9</p> <p>4/27/1984, permit for three warming buoys NAPOP-R-NP84-086</p>

Agency	Permit and Regulatory Citation	Applicability	Permit Status
Delaware River Basin Commission	Permit / License	Delaware River Basin Commission is a river basin planning, development and regulatory agency that oversees the water quality protection, water supply allocation, regulatory review (permitting), water conservation initiatives, watershed planning, drought management, flood loss reduction and recreation of the Delaware River Basin.	DOCKET NO. D-1987-026 CP-4, 9/29/2014 (Application), for renewal of the docket holder's discharge associated with the Titus Generating Station (TGS). Approval of the docket holder's existing industrial process water discharge associated with the TGS, and to update the docket approval to reflect modifications to the facility operations associated with the closing of the TGS coal-fired generating units. This docket also continues the approval of a total dissolved solids (TDS) determination consisting of an average monthly concentration effluent limit of 3,500 mg/l for existing Outfall 004, which continues to intermittently discharge coal-ash leachate from the Beagle Club Ash Disposal (BCAD) site. DATE APPROVED: June 15, 2016; EXPIRATION DATE: February 28, 2021

Agency	Permit and Regulatory Citation	Applicability	Permit Status
PA DEP Bureau of Air Quality	Permit / License Air Construction Permit	PA DEP Construction Permit on behalf of US EPA Region 3 under Title V	<p>Major Facility Plan Approval State Regulation Permit Number: 06-5024A issued on 2/4/2002, extension issued on 7/1/2004.</p> <p>Major Facility Plan Approval State Regulation Permit Number: 06-5024B issued on 3/17/2003.</p> <p>Major Facility Plan Approval State Regulation Permit Number: 06-05024C issued on 1/16/2009: Modification issued on 6/23/2009.</p> <p>Extension issued on 7/27/2010. Approval issued on 10/12/2010. Transfer issued on 4/27/2011. Modification issued on 8/5/2011</p>

Agency	Permit and Regulatory Citation	Applicability	Permit Status
US EPA Region 3 PA DEP Bureau of Air Quality	Permit / License Air Operating Permit	Federal Operating Permit under US EPA Title V	Major Facility Operating Permit Number 06-05024 issued on 8/10/2020: Amendments issued on 4/17/2008, 8/18/2008, 6/23/2009, 7/17/2009, 7/27/2010, 4/27/2011, 8/5/2011 Major Facility Operating Permit Number 06-05024 renewal issued on 5/31/2007, replaced on 3/10/2015
US EPA Region 3 PA DEP Bureau of Air Quality	Permit / License Air Operating Permit	Federal Operating Permit under US EPA Title V	Major Facility Operating Permit Number AR-06-05024: Approval Issued on 8/14/2009 for 3 combustion units. Amendment issued on 4/27/2011. Renewal issued on 5/29/2013

Agency	Permit and Regulatory Citation	Applicability	Permit Status
US EPA Region 3 PA DEP Bureau of Air Quality	Permit / License Air Operating Permit	Federal Operating Permit under US EPA Title V	Minor Source Operating Permit Number 06-05152 issued on 10/20/2015 Amendment issued on 9/24/2019 Renewal issued on 7/6/2020
PA DEP Bureau of Clean Water	Permit / License	PA Title 25 Chapter 91	Water Quality Management Part II, Industrial Wastewater Facility Permit Number 0678202: Transfer of power plant fly ash disposal issued on 7/27/2020 Transfer of power plant fly ash disposal and settling basins issued on 6/29/2021

<p>PA DEP</p> <p>Bureau of Environmental Cleanup and Brownfields</p>	<p>Aboveground Storage Tank</p>	<p>In accordance with the DEP’s mission, the Storage Tank Program will protect Pennsylvania’s air, land and water from storage tank releases and provide for the health and safety of its citizens.</p> <p>The Storage Tank and Spill Prevention Act became effective August 5, 1989, which implemented regulations for above and underground storage tanks.</p> <p>Regulations include tank registration and annual registration fee, certification of tank handling and inspection individuals and companies, permitting of tanks, establishment of technical and operational standards for aboveground and underground storage tank systems, and procedures for reporting of releases and corrective action by tank owners.</p>	<p>Site ID: 502733 Other ID: 06-05513</p> <p>597901 - 003A: Installed-12/1/1950, New Motor Oil, Removed- 6/12/2001</p> <p>597903 - 004A: Installed-12/1/1950, New Motor Oil, Removed- 6/12/2001</p> <p>597905 - 005A: Installed-12/1/1951, New Motor Oil, Removed- 6/12/2001</p> <p>597906 - 006A: Installed-Unknown, Used Oil, Closed-7/16/1993</p> <p>597907 - 007A: Installed-12/1/1978, Hazardous Substance, Permanently Closed in Place-4/8/2015</p> <p>597908 - 008A: Installed-12/1/1979, Hazardous Substance, Permanently Closed in Place-4/25/2014</p>
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			<p>597909 - 009A: Installed- 11/1/1989, Hazardous mixed with Petroleum, Exempt from State Law- 12/9/1996</p> <p>597910 - 010A: Installed- 12/1/1992, Diesel Fuel, Closed- 12/1/1992</p> <p>597911 - 011A: Installed- 12/1/1992, Heating Oil, Exempt from State Law- 12/9/1996</p> <p>597912 - 012A: Installed- 12/1/1992, Heating Oil, Permanently Closed in Place- 4/25/2014</p> <p>597913 - 013A: Installed- 10/29/1993, Used Oil, Exempt from State Law- 12/9/1996</p> <p>597914 - 014A: Installed- 3/9/1994, Hazardous Substance, Permanently Closed in Place- 6/29/2012</p> <p>597915 - 015A: Installed- 6/14/2001, New Motor Oil,</p>
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Agency	Permit and Regulatory Citation	Applicability	Permit Status
			<p>Permanently Closed in Place- 1/22/2014</p> <p>597916 - 016A: Installed- 6/21/2001, New Motor Oil, Permanently Closed in Place- 1/22/2014</p> <p>597917 - 017A: Installed- 6/28/2001, New Motor Oil, Permanently Closed in Place- 1/22/2014</p> <p>1081704 - 018A: Installed- 6/29/2012, Hazardous Substance, Permanently Closed in Place- 4/25/2014</p> <p>No Active Tanks: 2022</p>

Agency	Permit and Regulatory Citation	Applicability	Permit Status
<p>PA DEP</p> <p>Bureau of Environmental Cleanup and Brownfields</p>	<p>Underground Storage Tank</p>	<p>In accordance with the DEP’s mission, the Storage Tank Program will protect Pennsylvania’s air, land and water from storage tank releases and provide for the health and safety of its citizens.</p> <p>The Storage Tank and Spill Prevention Act became effective August 5, 1989, which implemented regulations for above and underground storage tanks.</p> <p>Regulations include tank registration and annual registration fee, certification of tank handling and inspection individuals and companies, permitting of tanks, establishment of technical and operational standards for aboveground and underground storage tank systems, and procedures for reporting of releases and corrective action by tank owners.</p>	<p>Site ID: 502733 Other ID: 06-05513</p> <p>597896 – 001: Installed-12/1/1950, Diesel Fuel, Closed-7/15/1993</p> <p>597898 – 002: Installed-12/1/1950, Diesel Fuel, Closed-7/16/1993</p> <p>597900 – 003: Installed-12/1/1950, Gasoline, Closed-7/12/1993</p> <p>597902 – 004: Installed-12/1/1950, Diesel Fuel, Closed-11/1/1993</p> <p>597904 – 005: Installed-12/1/1950, Other, Closed-9/1/1989</p> <p>No Active Tanks: 2022</p>



Market Analysis

4.0 Market Analysis

4.1 Market Analysis Highlights

- **Site Assets:** Stakeholders at the local and state levels see immense value in Titus Station's existing industrial zoning and adjacent rail lines
- **Regional Demand:** There is notable demand in Berks County for manufacturing space and ancillary uses that support manufacturers
- **Highest and Best Uses:** This analysis finds that the Site is best suited for continued industrial and manufacturing uses, albeit at a lesser scale than in the site's past

4.2 Market Analysis

Situated in southeastern Pennsylvania, Berks County is bordered by Schuylkill County to the north, Lebanon and Lancaster Counties to the west, Lehigh County to the east, and Chester and Montgomery Counties to the south. The county seat, the City of Reading, is 56 miles northwest of Philadelphia. Berks County is the northwesternmost county of the Philadelphia-Reading-Camden Combined Statistical Area (CSA). This grouping of counties, known colloquially as the "Delaware Valley", have interlinked economies, shared social attributes, and shared geographic characteristics. Therefore, the Philadelphia-Reading-Camden CSA provides a frame of reference for demographic, socioeconomic, and market analysis. Because Berks County is contained within the Commonwealth of Pennsylvania, it was also used as a reference point.

At the local level, analysis was completed for both Cumru Township (Township) and the City of Reading (City). Both municipalities exist at the center of Berks County. The municipalities are intertwined through a shared transportation network and shared local economy. The Township, immediately south of the City of Reading, is suburban and rural in nature. The Township's industrial zoned land shares a common border with the City to the north and west. The City, the fourth most populous municipality in the Commonwealth of Pennsylvania, is separated from the Township and the Site by the Schuylkill River to the east and Neversink Mountain to the south. The primary transportation connection between the two municipalities at the Site is South 9th Street, which terminates at U.S. Route 422. Although the Township and City were once connected by Poplar Neck Road (at S. 9th Street), the construction of U.S. Route 422 in the 1960s severed that transportation connection. Although transportation challenges exist between the Township and City in the vicinity of the Site, both municipalities are interconnected economically and socially. Therefore, both municipalities were included in the analysis.

The below analysis reflects a culmination of data to determine the highest and best uses of the Site. Data was gathered from a variety of primary and secondary data sources to obtain quantitative and qualitative insights, including the U.S. Census Bureau. One such source, Emsi, is a premier data aggregation tool that gathers data from trusted sources (including the U.S. Census Bureau, Bureau of Labor Statistics, etc.) and develops current year projections for demographic, socioeconomic, and industry data traits. The use of Emsi allows a user to mitigate against "data lag" from government sources. Data was examined at the local and state levels to identify trends pertinent to the reuse of the site.

4.3 Data Analysis

4.3.1 Population and Housing

Table 3: Population

	2010	2015	2020	Percent Change Between 2010 and 2015	Percent Change Between 2015 and 2020
Cumru Township	15,026	15,358	15,426	2.2%	0.4%
City of Reading	87,404	88,057	88,333	0.7%	0.3%
Berks County	407,310	413,965	419,062	1.6%	1.2%
Philadelphia-Reading-Camden CSA	6,474,404	7,147,370	7,198,025	10.4%	0.7%
Pennsylvania	12,612,705	12,779,559	12,794,885	1.3%	0.1%

Source: U.S. Census Bureau American Community Survey 2015-2020 5-Year Estimates

- The population of Berks County (+5,097) has steadily grown between 2015 and 2020. However, Cumru Township (+68) has remained relatively unchanged during this same timeframe.
- The City of Reading's population remained relatively unchanged between 2015 and 2020, only growing by 0.3 percent (+276).
- The population of the Philadelphia-Reading-Camden CSA (+672,966) experienced substantial growth between 2010 and 2015. During 2015 and 2020, the population continued to grow (+50,655) but at a much slower rate.
- Berks County, Cumru Township, and the CSA all experienced a greater percentage change in their population between 2015 and 2020 than the State of Pennsylvania.

Table 4: Households

	2010	2015	2020	Percent Change Between 2010 and 2015	Percent Change Between 2015 and 2020
Cumru Township	6,557	6,582	6,211	0.4%	-5.6%
City of Reading	30,953	30,090	30,053	-2.8%	-0.1%
Berks County	153,307	153,312	156,389	0.0%	2.0%
Philadelphia-Reading-Camden CSA	2,420,895	2,637,468	2,727,860	8.9%	3.4%
Pennsylvania	4,940,581	4,958,859	5,106,601	0.4%	3.0%

Source: U.S. Census Bureau American Community Survey 2015-2020 5-Year Estimates

- Between 2015 and 2020, Berks County saw a slight increase in the number of households (+3,077) while Cumru Township experienced a loss in households (-371). The City of Reading also experienced a loss in households (-37) during this timeframe.
- The number of households in the Philadelphia-Reading-Camden CSA has grown at a steady pace between 2015 and 2020 (+90,392)
- Pennsylvania experienced an increase in the number of households (+147,742) between 2015 and 2020 however, percentage wise, grew less than the CSA.

Table 5: Families

	2010	2015	2020	Percent Change Between 2010 and 2015	Percent Change Between 2015 and 2020
Cumru Township	4,127	4,125	3,886	0.0%	-5.8%
City of Reading	19,930	19,144	19,255	-3.9%	0.6%
Berks County	106,995	105,998	106,063	-0.9%	0.1%
Philadelphia-Reading-Camden CSA	1,591,489	1,723,600	1,772,605	8.3%	2.8%
Pennsylvania	3,231,021	3,202,874	3,254,545	-0.9%	1.6%

Source: U.S. Census Bureau American Community Survey 2015-2020 5-Year Estimates

- Cumru Township saw a drop in the number of families between 2015 and 2020 (-239) while Berks County (+65) and the City of Reading (+111) saw a slight increase.

- The number of families in the Philadelphia-Reading-Camden CSA has grown at a steady pace between 2015 and 2020 (+49,005).
- The number of families in Pennsylvania also grew between 2015 and 2020 (+51,671).

4.3.2 Household Income

The median household income in Berks County stood at \$66,154 in 2020. This figure was lower than Cumru Township (\$78,786) and the Philadelphia-Reading-Camden CSA (\$72,875) during the same year, but higher than that of the City of Reading (\$35,745) and Pennsylvania (\$63,627). In inflation-adjusted dollars, the median household income of Berks County has fluctuated between 2010 and 2020. It stood at \$63,657 in 2010 and then decreased to \$61,743 in 2015, before increasing to the 2020 value. The median household income has also fluctuated in Cumru Township between 2010 and 2020. In 2010, the median household income for Cumru Township was \$71,912 but dropped to \$67,452 in 2015 before increasing in 2020. The City of Reading also experienced a fluctuation between 2010 and 2020 but combined remained significantly lower than Cumru Township, Berks County, the CSA, and Pennsylvania.

The largest number of Berks County, the City of Reading, and Pennsylvania residents fall into the \$50,000 to \$74,999 income bracket (18% in Berks County, 17% in the City of Reading, and 17.6% in Pennsylvania). However, the largest number of residents in Cumru Township and the CSA fall into the \$100,000 to \$149,999 income bracket (18.9% in Cumru Township and 16.9% in the CSA). Cumru Township and the CSA also have the highest percentage of residents that fall into the \$200,000 or more income bracket when compared to Berks County, the City of Reading, and Pennsylvania (7.2% in Cumru Township and 10.5% in the CSA).

Table 6: Household Income, Regional Comparison

	Cumru Township			City of Reading			Berks County			Philadelphia-Reading-Camden CSA			Pennsylvania		
	2010	2015	2020	2010	2015	2020	2010	2015	2020	2010	2015	2020	2010	2015	2020
Less than \$10,000	2.3%	5.4%	3.0%	15.2%	16.9%	13.8%	5.4%	6.1%	4.9%	7.1%	7.0%	6.0%	7.3%	6.9%	5.8%
\$10,000 to \$14,999	3.3%	4.6%	2.1%	9.8%	12.5%	7.8%	5.0%	5.0%	3.5%	4.8%	4.6%	3.6%	5.9%	5.3%	4.0%
\$15,000 to \$24,999	10.8%	9.1%	4.8%	20.1%	17.7%	14.7%	10.8%	10.3%	7.7%	9.1%	9.2%	7.5%	11.3%	10.7%	8.8%
\$25,000 to \$34,999	11.2%	6.3%	8.9%	14.7%	14.4%	12.9%	11.4%	9.9%	9.1%	9.1%	8.9%	7.7%	10.9%	10.3%	9.0%
\$35,000 to \$49,999	15.9%	12.4%	10.7%	16.6%	14.4%	13.5%	14.2%	13.2%	12.2%	12.4%	12.1%	10.6%	14.3%	13.5%	12.1%
\$50,000 to \$74,999	18.9%	23.3%	15.7%	15.1%	13.2%	17.0%	21.2%	19.8%	18.0%	17.8%	16.9%	15.8%	19.0%	18.4%	17.6%
\$75,000 to \$99,999	14.5%	13.2%	17.7%	4.9%	6.1%	10.4%	13.7%	13.8%	14.2%	13.2%	12.5%	12.7%	12.4%	12.5%	13.2%
\$100,000 to \$149,999	12.9%	15.6%	18.9%	3.1%	3.5%	7.1%	12.3%	13.6%	17.6%	15.0%	15.4%	16.9%	11.7%	13.0%	15.7%

	Cumru Township			City of Reading			Berks County			Philadelphia-Reading-Camden CSA			Pennsylvania		
	2010	2015	2020	2010	2015	2020	2010	2015	2020	2010	2015	2020	2010	2015	2020
\$150,000 to \$199,999	6.3%	4.0%	11.0%	0.4%	0.8%	1.7%	3.6%	4.7%	7.0%	6.0%	6.8%	8.7%	3.8%	4.8%	6.7%
\$200,000 or more	3.9%	6.0%	7.2%	0.2%	0.5%	1.3%	2.4%	3.5%	5.7%	5.5%	6.8%	10.5%	3.5%	4.6%	7.1%
Median HH Income (Inflation Adjusted to 2020 USD)	\$71,912	\$67,452	\$78,786	\$28,197	\$26,784	\$35,745	\$63,657	\$61,743	\$66,154	\$70,824	\$67,579	\$72,875	\$60,000	\$59,164	\$63,627

Source: U.S. Census Bureau American Community Survey 2015-2020 5-Year Estimates; CPI Inflation Calculator

4.4 Workforce

4.4.1 Educational Attainment by Age (25+)

One of the most important workforce-related characteristics of any region is the level of education attained by its residents. A region with a poorly educated populace typically has lower incomes, less ability to attract new employers, and a greater need for social services. The U.S. Census Bureau presents several different measures of educational attainment, the most significant are high school graduation and the attainment of college degrees.

Table 7: Educational Attainment for Population 25 Years and Older

	Cumru Township	City of Reading	Berks County	Philadelphia-Reading-Camden CSA	Pennsylvania
Less than 9th Grade	3.0%	14.7%	5.2%	3.5%	3.1%
9th to 12th Grade, No Diploma	5.4%	15.2%	7.6%	6.0%	5.9%
High School Graduate (Includes Equivalency)	29.9%	36.3%	36.3%	29.5%	34.2%
Some College, No Degree	17.7%	16.9%	16.2%	17.0%	15.9%
Associate degree	8.6%	6.8%	8.8%	7.3%	8.6%
Bachelor's Degree	23.0%	6.9%	16.4%	21.9%	19.5%
Graduate or Professional Degree	12.3%	3.2%	9.5%	14.8%	12.8%
High school graduate or higher	91.6%	70.1%	87.2%	90.5%	91.0%
Bachelor's degree or higher	35.3%	10.1%	25.9%	36.7%	32.3%

Source: U.S. Census Bureau American Community Survey 2015-2020 5-Year Estimates

In 2020, the highest level of educational attainment for 34.2% of Pennsylvania was a high school diploma, In Berks County, this number was 36.3%, representing a slightly less educated workforce than that of Pennsylvania. 16.2% of Berks County residents have some college education (15.9% in Pennsylvania), 8.8% have an associate degree (8.6% in Pennsylvania), 16.4% have a bachelor's degree (19.5% in Pennsylvania), and 9.5% have a graduate or professional degree (12.8% in Pennsylvania). In terms of the highest level of education attained, Berks County falls behind the state and nation. Cumru Township tended to have more highly education residents than the City of Reading, Berks County, and Pennsylvania.

4.4.2 Completions by Institution

Berks County is home to 10 institutions that provide degrees or professional certifications. The institutions range greatly in their program offerings and applicability to potential reuse of the Site. However, potential end-users of the site should find interest in the breadth of potential programming provided by local educational institutions.

Table 8: Completions by Institution

Institution	Completions (2020)	Growth % YOY (2020)	Market Share (2020)	IPEDS Tuition & Fees (2020)
Kutztown University of Pennsylvania	1,817	-5.41%	46.16%	\$11,048
Alvernia University	815	6.68%	20.71%	\$38,030
Reading Area Community College	457	-9.68%	11.61%	\$9,990
Albright College	376	-7.62%	9.55%	\$26,688
Platt College-Berks Technical Institute	223	-33.43%	5.67%	N/A
Reading Hospital School of Health Sciences	157	-6.55%	3.99%	\$12,899
Empire Beauty School-Reading	37	-41.27%	0.94%	N/A
American Barber and Beauty Academy	24	4.35%	0.61%	N/A
Berks Career & Technology Center	21	-19.23%	0.53%	N/A
European Medical School of Massage	9	-25.00%	0.23%	N/A

Source: Emsi; IPEDS

4.4.3 Employment by Occupation Type

As assessment of employment in existing occupations provides a look at existing skillsets within the local and regional workforce. This assessment is particularly important to prospective new employers and site end-users, which seek to ensure that a region has a workforce with the proper skillsets and work experience. The below table shows the percentage of the workforce by occupation area type. Cumru Township (43.3%) and Berks County (33.6%) have a plurality of the workforce working in Management, Business, Science, and Arts occupations. These tend to be “white-collar” jobs. However, a plurality of the workforce in the City of Reading (31.7%) are employed in Production, Transportation, and Material Moving occupations. These tend to be “blue-collar” jobs. In total, 20.1% of Berks County’s workforce are employed in Production, Transportation, and Material Moving occupations, which exceeds both the Philadelphia-Reading-Camden CSA and the Commonwealth of Pennsylvania. Given the Site’s industrial zoning and location, prospective employers and end-users of the redeveloped site should find the composition of Berks County’s workforce attractive.

Table 9: Occupation Percentage for Civilian Population 16+

	Cumru Township	City of Reading	Berks County	Philadelphia-Reading-Camden CSA	Pennsylvania
Total	7,736	35,341	206,343	3,528,149	6,206,839
Management, Business, Science, and Arts	43.3%	18.0%	33.6%	43.4%	39.9%
Management, business, and financial	18.6%	5.9%	13.0%	17.3%	15.7%
Computer, engineering, and science	5.6%	1.2%	4.7%	6.7%	6.0%
Education, legal, community service, arts, and media	11.4%	8.1%	10.0%	12.2%	11.0%
Healthcare practitioners and technical	7.7%	2.8%	5.9%	7.2%	7.3%
Service Occupations	13.5%	23.6%	16.7%	17.0%	17.0%
Healthcare support occupations	2.4%	6.7%	3.6%	3.5%	15.7%
Firefighting and prevention	0.5%	1.3%	0.9%	1.3%	6.0%
Law enforcement workers	0.7%	0.6%	0.7%	1.1%	11.0%
Food preparation and serving related	4.7%	7.1%	5.6%	5.1%	7.3%
Personal care and service occupations	3.0%	2.8%	3.5%	3.1%	17.0%
Buildings/grounds cleaning, maintenance	2.2%	5.1%	2.4%	2.9%	3.8%
Sales and Office Occupations	23.7%	17.8%	20.8%	21.1%	20.8%
Sales and related occupations	7.7%	6.5%	8.8%	9.5%	9.4%
Office and administrative support	16.0%	11.2%	12.0%	11.6%	11.4%
Natural Resources, Construction, and Maintenance	7.2%	8.9%	8.9%	7.1%	8.0%
Farming, fishing, and forestry	0.0%	3.0%	0.8%	0.3%	0.4%
Construction and extraction occupations	3.9%	3.2%	4.0%	4.1%	4.5%
Installation, maintenance, and repair	3.3%	2.6%	4.1%	2.7%	3.1%
Production, Transportation, and Material Moving	12.3%	31.7%	20.1%	11.3%	14.2%
Production occupations	6.2%	17.3%	10.1%	4.3%	6.0%
Transportation occupations	2.3%	4.1%	4.0%	3.5%	3.9%
Material moving occupations	3.9%	10.3%	5.9%	3.5%	4.4%

Source: U.S. Census Bureau American Community Survey 2015-2020 5-Year Estimates

4.4.4 Top Growth Occupations in Berks County

Two decades of shifts in the economy result in changes to a county's growth occupations. As shown in the below table, there are a diverse array of growth occupations in Berks County spanning multiple

industry sectors. Three of note include Stockers and Order Fillers (+91%), General and Operations Managers (+107%), and Industrial Machinery Mechanics (+69%).

Table 10: Top 10 Growth Occupations in Berks County

Occupation	2001 Jobs	2022 Jobs	Change	% Change
Home Health and Personal Care Aides (31-1128)	1,456	5,684	4,228	290%
Stocker and Order Fillers (53-7065)	2,069	3,949	1,880	91%
Registered Nurses (29-1141)	2,363	4,007	1,644	70%
General and Operations Managers (11-1021)	1,184	2,447	1,262	107%
Customer Service Representatives (43-4051)	2,307	3,489	1,182	51%
Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other (11-9198)	563	1,554	991	176%
Cooks, Restaurant (35-2014)	722	1,366	644	89%
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel (41-3091)	222	823	601	271%
Physicians, All Other; and Ophthalmologists, Except Pediatric (29-1228)	238	693	455	191%
Industrial Machinery Mechanics (49-9041)	663	1,117	454	69%

Source: Emsi

4.4.5 Top Posted Job Titles

In addition to providing and projecting data aggregated by public sources, Emsi also curates its own data regarding job postings and the labor market. Emsi job postings are collected from various sources (Indeed, Monster.com, Glassdoor, etc.) and processed/enriched to provide information such as standardized company names, occupations, skills, and geography. The below table shows job postings spanning from January 2010 to February 2022. The top 20 job titles, in terms of total postings and number of unique postings (i.e., no duplicates of the same posting) are shown. Job titles are found primarily in the logistics, healthcare, and service sector fields.

Table 11: Top 20 Posted Job Titles

Job Title	Total Postings (Jan. 2010 - Feb. 2022)	Unique Postings (Jan. 2010 - Feb. 2022)
CDL-A Truck Drivers	8,659	3,202
Registered Nurses	9,511	2,366
Licensed Practical Nurses	9,135	2,123
Customer Service Representatives	5,667	1,979
Physical Therapists	3,984	1,447
Administrative Assistants	2,876	1,283
Sales Associates	3,199	1,250
Machine Operators	2,352	1,206
Certified Nursing Assistants	7,676	1,167
Tellers	3,578	1,142
Speech Language Pathologists	2,912	956
Assistant Store Managers	2,445	937
Maintenance Technicians	1,951	846
Forklift Operators	2,553	833
Material Handlers	2,015	789
Occupational Therapists	1,834	777
Receptionists	1,865	770
Security Officers	2,414	760
Patient Care Assistants	2,753	748
Maintenance Mechanics	1,530	743
Source: Emsi		

4.4.6 Top Requested Specialized Skills

Emsi's labor market data profiles also aggregate the top requested specialized skills within the labor market. The table below shows the frequency of requested specialized skills in job postings between January 2010 and February 2022. The requested specialized skills span many industry sectors, with many in the healthcare, manufacturing, and logistics industries.

Table 12: Top 20 Requested Specialized Skills

Skill	Frequency in Postings	Postings with Skill / Total Postings (Jan 2010 - Feb 2022)	Frequency in Profiles	Profiles with Skill / Total Profiles (2020 - 2022)
Nursing	8%	22,111 / 284,934	1%	1,666 / 122,061
Merchandising	7%	19,942 / 284,934	2%	2,600 / 122,061
Warehousing	5%	15,034 / 284,934	1%	1,822 / 122,061
Auditing	5%	13,559 / 284,934	2%	2,627 / 122,061
Selling Techniques	5%	13,502 / 284,934	1%	1,772 / 122,061
Accounting	5%	13,240 / 284,934	3%	3,755 / 122,061
Cardiopulmonary Resuscitation	4%	10,653 / 284,934	1%	1,824 / 122,061
Finance	3%	9,560 / 284,934	2%	2,288 / 122,061
Data Entry	3%	9,350 / 284,934	2%	2,267 / 122,061
Housekeeping	3%	9,132 / 284,934	0%	270 / 122,061
Basic Life Support	3%	7,942 / 284,934	1%	939 / 122,061
Forklift Truck	3%	7,473 / 284,934	0%	239 / 122,061
Home Health Care	2%	7,096 / 284,934	1%	968 / 122,061
Invoicing	2%	6,783 / 284,934	1%	1,550 / 122,061
Billing	2%	6,768 / 284,934	2%	1,887 / 122,061
Nursing Care	2%	6,502 / 284,934	0%	145 / 122,061
Rehabilitation	2%	6,089 / 284,934	1%	879 / 122,061
Purchasing	2%	5,889 / 284,934	3%	3,222 / 122,061
Call Center Experience	2%	5,876 / 284,934	0%	596 / 122,061
Safety Standards	2%	5,708 / 284,934	0%	79 / 122,061
Source: Emsi				

4.4.7 Advanced Manufacturing Workforce Attributes

In January 2021, the Berks County Workforce Development Board (BCWDB) published *Advanced Manufacturing Skills Gap in the Greater Berks Region*⁴; a comprehensive assessment of the advanced manufacturing labor market in the Greater Berks Region (defined as Berks, Chester, Lancaster, Lebanon, Lehigh, Montgomery, and Schuylkill Counties). “Advanced Manufacturing” is characterized by the adoption of automation, incorporation of technology, and the utilization of innovation processes and systems within the manufacturing process. As shown above, manufacturing plays an essential role in Berks County’s economy. Therefore, Berks County must be particularly conscious of the changing labor force and training needs within the manufacturing industry. The BCWDB’s assessment reports the following:

- Manufacturing comprises 21.5% of Berks County’s overall Gross Domestic Product (GDP)
- Within the Greater Berks Region, 28% of manufacturing firms are larger and represent half of the employment base, while 70% of firms average fewer than 50 employees
- Production occupations in the Greater Berks Region are concentrated – just 20 production occupations capture 70% of production workers
- Of the 20 production occupations that capture 70% of the workers, 10 are identified as advanced manufacturing occupations that fit into four broad categories: Computer numerical control (CNC) operators and programmers, machinists, machine operators and tenders, and welders
- The Greater Berks Region has a strong infrastructure of educational and workforce assets in place to support manufacturing

4.5 Industry Location Quotient

A local **location quotient (LQ)** is used to determine how concentrated the occupation or wage is within the county compared to a reference economy. Any LQ greater than 1.0 indicates that the county has a higher-than-average concentration of workers or wages than the reference economy. Anything below indicates that the area has a lower-than-average concentration. **For the purposes of this study, the United States has been designated the reference economy.** The LQ tool is used to measure the local economy and sectors in which the local economy may be specializing. A community highly specialized in each industry is likely exporting goods and services. If the local LQ is greater than 1.0, the local area may have a regional advantage in that sector. LQ data in the following tables is provided by Emsi, a leading labor market analytics and economic data aggregator.

4.5.1 Two-Digit NAICS Location Quotient

The two-digit NAICS level is the highest, most-overarching level of NAICS industry sectoring. It provides the highest possible overview of industry sectoring in the subject economy to the reference economy. As shown in the table below, as of 2022, Berks County’s highest two-digit NAICS LQs are in Agriculture,

⁴ https://drive.google.com/file/d/1fD_vD5lp_MM36sIDmT7sYau5AHO0pFZq/view

Forestry, Fishing, and Hunting (2.2), Manufacturing (2.1), and Management of Companies and Enterprises (2.0). In Pennsylvania, the highest LQs are found in the Educational Services (1.8), Management of Companies and Enterprises (1.5), and Health Care and Social Assistance (1.3) industry sectors. When compared to Pennsylvania, Berks County's LQ most highly exceeds Pennsylvania's in the Agriculture, Forestry, Fishing, and Hunting, Manufacturing, and Management of Companies and Enterprises sectors. Highlighted cells represent industries where the sector exceeds the 1.0 threshold.

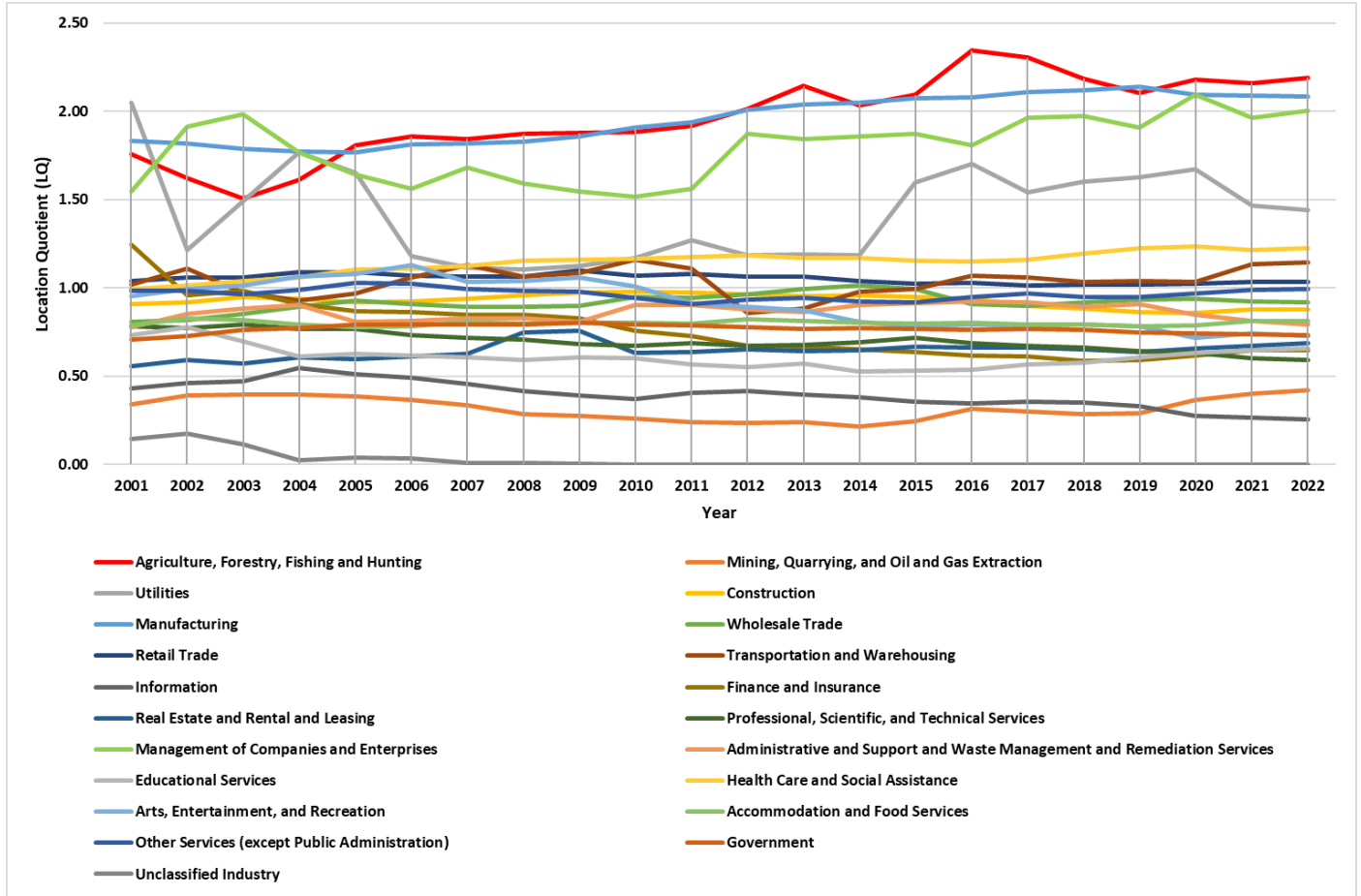
Table 13: Top 20 Requested Specialized Skills

NAICS	Description	Berks County	Pennsylvania	Berks County Compared to PA
11	Agriculture, Forestry, Fishing and Hunting	2.2	0.7	1.5
21	Mining, Quarrying, and Oil and Gas Extraction	0.4	1.1	-0.7
22	Utilities	1.4	1.1	0.4
23	Construction	0.9	0.9	0.0
31	Manufacturing	2.1	1.1	1.0
42	Wholesale Trade	0.9	0.9	0.0
44	Retail Trade	1.0	1.0	0.1
48	Transportation and Warehousing	1.1	1.2	0.0
51	Information	0.3	0.8	-0.5
52	Finance and Insurance	0.6	1.1	-0.4
53	Real Estate and Rental and Leasing	0.7	0.7	0.0
54	Professional, Scientific, and Technical Services	0.6	0.9	-0.4
55	Management of Companies and Enterprises	2.0	1.5	0.5
56	Administrative and Support and Waste Management and Remediation Services	0.8	0.8	0.0
61	Educational Services	0.7	1.8	-1.1
62	Health Care and Social Assistance	1.2	1.3	-0.1
71	Arts, Entertainment, and Recreation	0.7	1.0	-0.2
72	Accommodation and Food Services	0.8	0.8	0.0
81	Other Services (except Public Administration)	1.0	1.0	0.0
90	Government	0.7	0.8	0.0
99	Unclassified Industry	0.0	0.0	0.0

Source: Emsi 2022 Data

Examining the LQ over time can show trends in the concentration of industries within the study economy. As shown in the chart below, Berks County has experienced significant changes in many of its LQs between 2001 and 2022.

Figure 6: Berks County Change in Two-Digit Location Quotient – 2001 to 2022



Source: Emsi 2022 Data

4.5.2 Five-Digit NAICS Location Quotient - Berks County

The five-digit NAICS is a further refined sectoring scheme that provides more specific industry types. Because there are hundreds of industry sectors under the five-digit NAICS sectoring scheme, this analysis includes the top 10 five-digit industry sectors by LQ and positive net change in jobs over the past decade. Of Berks County's top 10 LQs, nine are within the manufacturing sector. As of 2022, Battery Manufacturing, Knit Fabric Mills, and Other Cut and Sew Apparel Manufacturing have the highest LQs. Of these industries, only Battery Manufacturing and Knit Fabric Mills experienced a net positive change in jobs.

Table 14: Top 10 Location Quotients – Berks County

NAICS	Description	2012 Jobs	2012 Location Quotient	2022 Jobs	2022 Location Quotient	2012 - 2022 Change	2012 - 2022 % Change
33591	Battery Manufacturing	5,524	169.46	8,346	174.48	2,822	51%
31324	Knit Fabric Mills	30	3.18	203	35.74	173	575%
31528	Other Cut and Sew Apparel Manufacturing	444	24.23	406	31.41	(38)	(9%)
33141	Nonferrous Metal (except Aluminum) Smelting and Refining	320	25.18	218	25.71	(103)	(32%)
33142	Copper Rolling, Drawing, Extruding, and Alloying	425	12.37	588	20.55	162	38%
31135	Chocolate and Confectionery Manufacturing	1,075	22.29	864	19.47	(211)	(20%)
54186	Direct Mail Advertising	789	12.27	757	17.61	(31)	(4%)
33111	Iron and Steel Mills and Ferroalloy Manufacturing	2,516	21.76	1,416	15.94	(1,100)	(44%)
33121	Iron and Steel Pipe and Tube Manufacturing from Purchased Steel	117	3.38	315	11.87	198	1.69
32616	Plastics Bottle Manufacturing	242	6.38	407	10.14	164	68%

Source: Emsi 2022 Data

4.5.3 Five-Digit NAICS Industries by Growth - Berks County

When assessed by the cumulative change in jobs over the past decade, the General Warehousing and Storage (+3,290), Battery Manufacturing (+2,822), and Services for the Elderly and Persons with Disabilities (+1,340) experienced the largest positive change.

Table 15: Top 10 Location Quotients – Berks County

NAICS	Description	2012 Jobs	2012 Location Quotient	2022 Jobs	2022 Location Quotient	2012 - 2022 Change	2012 - 2022 % Change
49311	General Warehousing and Storage	744	1.05	4,034	2.29	3,290	442%
33591	Battery Manufacturing	5,524	169.46	8,346	174.48	2,822	51%
62412	Services for the Elderly and Persons with Disabilities	2,178	1.90	3,517	1.39	1,340	62%
61131	Colleges, Universities, and Professional Schools	928	0.41	1,661	0.73	732	79%
62161	Home Health Care Services	1,476	0.95	2,178	1.19	702	48%
62111	Offices of Physicians	3,309	1.09	3,982	1.27	673	20%
52421	Insurance Agencies and Brokerages	1,000	0.90	1,640	1.14	640	64%
55111	Management of Companies and Enterprises	4,621	1.87	5,256	2.00	635	14%
62231	Specialty (except Psychiatric and Substance Abuse) Hospitals	92	0.34	626	2.24	534	580%
54161	Management Consulting Services	562	0.43	992	0.54	430	77%

Source: Emsi 2022 Data

4.5.4 Five-Digit NAICS Location Quotient - Pennsylvania

The Commonwealth of Pennsylvania, by comparison, also has a manufacturing-heavy list of top 10 five-digit NAICS sectors by LQ (seven of ten). The top three LQs were in the Chocolate and Confectionary Manufacturing, Steam and Air-Conditioning Supply, and Battery Manufacturing industries. It should be noted that Battery Manufacturing led Berks County's list of top five-digit industries by LQ. Of the listed 8,478 Battery Manufacturing jobs in the Commonwealth of Pennsylvania in 2022, 8,346 of those jobs are in Berks County.

Table 16: Top 10 Location Quotients – Pennsylvania

NAICS	Description	2012 Jobs	2012 Location Quotient	2022 Jobs	2022 Location Quotient	2012 - 2022 Change	2012 - 2022 % Change
31135	Chocolate and Confectionery Manufacturing	7,953	4.86	8,356	5.48	403	5%
22133	Steam and Air-Conditioning Supply	322	4.23	343	5.18	21	7%
33591	Battery Manufacturing	6,708	6.06	8,478	5.16	1,770	26%
33651	Railroad Rolling Stock Manufacturing	7,472	7.39	3,749	4.78	(3,724)	(50%)
32419	Other Petroleum and Coal Products Manufacturing	2,649	3.89	2,496	4.02	(153)	(6%)
51912	Libraries and Archives	4,704	4.04	4,070	4.01	(634)	(13%)
32223	Stationery Product Manufacturing	2,882	3.01	2,043	3.65	(839)	(29%)
32229	Other Converted Paper Product Manufacturing	6,397	3.37	5,921	3.42	(476)	(7%)
48541	School and Employee Bus Transportation	23,974	3.03	21,325	3.38	(2,649)	(11%)
33994	Office Supplies (except Paper) Manufacturing	1,657	2.91	1,409	3.36	(248)	(15%)

Source: Emsi 2022 Data

4.5.5 Five-Digit NAICS Industries by Growth – Pennsylvania

The top 10 five-digit NAICS industry sectors by growth are led by Services for the Elderly and Persons with Disabilities (+74,733), General Warehousing and Storage (+44,480), and Home Health Care Services (+29,930). Interestingly, none of the top 10 industry sectors by growth are within manufacturing sectors, although some industries may exist “upstream” or “downstream” of manufacturing industries (such as General Warehousing and Storage).

Table 17: Top 10 Industries by Growth – Pennsylvania

NAICS	Description	2012 Jobs	2012 Location Quotient	2022 Jobs	2022 Location Quotient	2012 - 2022 Change	2012 - 2022 % Change
62412	Services for the Elderly and Persons with Disabilities	70,508	1.81	145,241	1.67	74,733	106%
49311	General Warehousing and Storage	55,225	2.30	99,705	1.65	44,480	81%
62161	Home Health Care Services	42,179	0.80	72,109	1.15	29,930	71%
49211	Couriers and Express Delivery Services	23,084	1.11	42,260	1.09	19,176	83%
54151	Computer Systems Design and Related Services	63,405	0.86	80,845	0.83	17,441	28%
61131	Colleges, Universities, and Professional Schools	175,855	2.26	192,421	2.46	16,566	9%
54171	Research and Development in the Physical, Engineering, and Life Sciences	28,145	1.14	43,446	1.46	15,301	54%
52392	Portfolio Management	14,244	1.85	26,408	2.58	12,163	85%
45231	General Merchandise Stores, including Warehouse Clubs and Supercenters	56,436	0.79	67,535	0.81	11,099	20%
62149	Other Outpatient Care Centers	18,644	0.98	28,694	0.95	10,049	54%

Source: Emsi 2022 Data

4.5.6 Industry Cluster Analysis

Industry cluster identification is a function of Emsi that measures industry cluster performance. Measures that are taken into consideration for industry cluster analysis include earnings, job growth, regional competitiveness, regional specialization, and gross regional product (GRP). By combining and weighting these measures, Emsi identifies synergistic NAICS industries that comprise the industry cluster. Emsi also assigns an industry score (from 0 to 100) based upon how much a specific industry contributes to the identified industry cluster. The “Lighting and Electrical Equipment” industry cluster score 98 out of a total of 100 points among Berks County’s industry clusters. Below are the industries comprising this industry cluster.

Table 18: Lighting and Electrical Equipment Industry Cluster – Berks County

NAICS	Description	2022 Jobs	Score
335911	Storage Battery Manufacturing	6,119	100
335314	Relay and Industrial Control Manufacturing	28	10
335312	Motor and Generator Manufacturing	111	8
335931	Current-Carrying Wiring Device Manufacturing	31	5

Source: Emsi 2022 Data

In addition to identifying the industry cluster, Emsi also tracks industry purchases to show both upstream and downstream industries that support the cluster. The below list provides the top 10 industry purchases to support the Lighting and Electrical Equipment industry cluster.

Table 19: Lighting and Electrical Equipment Industry Cluster Purchases – Berks County

NAICS	Purchase Industry	In-region Purchases	% In-region Purchases	Imported Purchases	% Imported Purchases	Total Purchases
331410	Nonferrous Metal (Except Aluminum) Smelting and Refining	\$118,871,480	99.9%	\$128,074	0.1%	\$118,999,554
331492	Secondary Smelting, Refining, and Alloying of Nonferrous Metal	\$36,685,443	62.3%	\$22,217,582	37.7%	\$58,903,024
331110	Iron and Steel Mills and Ferroalloy Manufacturing	\$24,617,443	89.1%	\$3,014,238	10.9%	\$27,631,681
551114	Corporate, Subsidiary, and Regional Managing Offices	\$18,764,277	76.3%	\$5,817,781	23.7%	\$24,582,057
331420	Copper Rolling, Drawing, Extruding, and Alloying	\$15,506,251	86.7%	\$2,386,203	13.3%	\$17,892,453
221122	Electric Power Distribution	\$8,995,661	99.9%	\$5,598	0.1%	\$9,001,259
484121	General Freight Trucking, Long-Distance, Truckload	\$7,032,822	61.0%	\$4,505,415	39.0%	\$11,538,237
332722	Bolt, Nut, Screw, Rivet, and Washer Manufacturing	\$5,368,908	84.8%	\$960,362	15.2%	\$6,329,271
423310	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers	\$5,293,885	56.0%	\$4,167,479	44.0%	\$9,461,363
331491	Nonferrous Metal (Except Copper and Aluminum) Rolling, Drawing, and Extruding	\$5,157,296	6.7%	\$71,407,189	93.3%	\$76,564,485

Source: Emsi 2022 Data

4.5.7 Industry Employment Trends

As shown in the below table, although jobs within the industry cluster have increased over the past two decades, the increases were spurred solely through the Battery Manufacturing industry sector. Since 2002, the Battery Manufacturing industry sector has experienced an increase of 4,691 jobs, which represents an increase of nearly 115%.

Table 20: Lighting and Electrical Equipment Industry Cluster Employment Trends – Berks County

NAICS	Description	2002 Jobs	2012 Jobs	2022 Jobs
33531	Electrical Equipment Manufacturing	430	334	152
33591	Battery Manufacturing	4,092	5,524	8,783
33593	Wiring Device Manufacturing	83	10	33
Total Jobs in Industry Cluster		4,604	5,868	8,968
Source: Emsi 2022 Data				
*Data Note: Trend data was examined at a 5-digit NAICS level (as opposed to 6-digit) because of re-classification of battery manufacturers under the 6-digit NAICS sectoring scheme				

4.6 Key Data Themes and Implications

As shown in the data above, Berks County’s demographics and economy have evolved in recent decades. As some industry sectors have shrunk, others have flourished and can provide new opportunities for reuse of the Site. Below are key data themes and implications to consider as part of the reuse strategy:

- Cumru Township, the City of Reading, Berks County, and the CSA are all growing in population, which provide new opportunities to bring individuals into the labor market.
- Berks County and its municipalities have a mix of “white-collar” and “blue-collar” labor, which broadens the pool of potential end-users at the Site.
- Although healthcare and logistics are the fastest growing and most in-demand industries and occupation types in Berks County, there are a handful of manufacturing industries (especially Battery Manufacturing) and related occupations that have experience growth and shown strength in Berks County.
- Berks County has an extremely high LQ in the Battery Manufacturing industry, which points to a local strength in that industry. As the world becomes more dependent upon technology, the strength of Berks County’s Battery Manufacturing industry can be effectively leveraged for the benefit of the local economy.

4.7 Market Analysis Interviews – Key/Recurring Themes

The successful execution of a reuse study demands thorough stakeholder engagement early and often throughout the process. To obtain a clearer understanding of existing assets, market trends, and reuse ideas and opportunities, the Project Team interviewed multiple stakeholders from the public and private

sectors. These interviews provided the opportunity to “ground-truth” data collected during prior quantitative analysis. The following entities were represented during stakeholder interviews:

- Berks County Economic Development/ImagineBerks
- Berks County Industrial Development Authority (BerksIDA)
- Berks County Planning Commission
- Cumru Township
- Greater Reading Chamber Alliance
- Norfolk Southern
- Pennsylvania Department of Community & Economic Development – Lehigh Valley Regional Office
- PennDOT District 5-0

Listed below are recurring themes and unique takeaways from the stakeholder interviews:

- Industrially zoned and available land within Berks County is at a premium.
- The existing rail lines are an asset; many rail-adjacent greenfield property in Berks County have environmental easements on them.
- Industrial land developed on greenfield sites have been largely spoken for by out-of-area logistics companies; this leaves little land available for existing Berks County manufacturers to expand.
- It is difficult to obtain zoning changes in Berks County, which makes the existing zoning designation at the site an asset.
- There is local demand for cold-storage facilities, outdoor storage space for manufactured products, and speculative light manufacturing facilities in the 20K, 50K, 100K, and 150K square foot range.
- The possibility of power generation at the site could be an asset for some energy-intensive end-users.
- Cumru Township is interested in the industrial development potential of the site.
- The transportation limitations at the site could be a large barrier to development, including the condition of existing bridges to the site.
- The Site will require water and sewer upgrades to facilitate additional development. The Site owner is currently advancing a waterline extension project.
- A widening project is proposed along U.S. Route 422 in the 2030-timeframe. Each direction will receive an additional lane (three-lanes in total each direction).
- A project had been advanced to develop a four-lane intersection at PA Route 724 and Beagle Club Road, but it is unknown when this project will be advanced to the implementation phase.
- Because U.S. 422 runs past the site less than a mile from U.S. Route 422’s intersection with I-176, PennDOT does not believe that there is an opportunity to create a new interchange at the site.

- For areas where intensive development is not possible, recreational space could fit into reuse plans.

4.8 Market Analysis Summary

- Throughout the market analysis data collection process, it was apparent that stakeholders in the region have a desire to maintain the Site's industrial character and use
- Industrial zoned land is at a premium in Berks County, and when it is available, smaller, and local manufacturers are often priced-out by larger manufacturing and logistics companies
- Numerous manufacturing industries, particularly Battery Manufacturing, are growing in Berks County
- Berks County has a workforce that is engaged in manufacturing activities and well-suited to continue growth of manufacturing industries
- Existing vehicular transportation constraints at the Site may limit the density and types of potential reuses
- Rail is an existing transportation asset present on the site that could be leveraged and grown with proper investment and stakeholder participation

4.9 Site Zoning

Zoning at the Site is dictated by the *Cumru Township Zoning Ordinance of 2009*⁵ (Zoning Ordinance), which was initially adopted in December of 2008 and revised in June of 2009. All land comprising the Site is contained within the "General Industrial" zoning district. According to the Zoning Ordinance, the purpose of the General Industrial zone is to:

- Accommodate commercial and industrial uses, which may be conducted on individual lots with sufficient infrastructure
- Protect the resident within the community from excessive traffic volume on local roads by locating these uses near expressways and arterial roads
- Locate and cluster certain non-residential uses that may be considered offensive to residential uses

The General Industrial zone contains numerous commercial and industrial uses by right, including, but not limited to, the following:

- Food processing facilities
- Industrial parks
- Manufacturing uses
- Municipal uses
- Commercial recreation uses
- Public utilities

⁵ <http://www.cumrutownship.com/zoningsldoorinance.html>

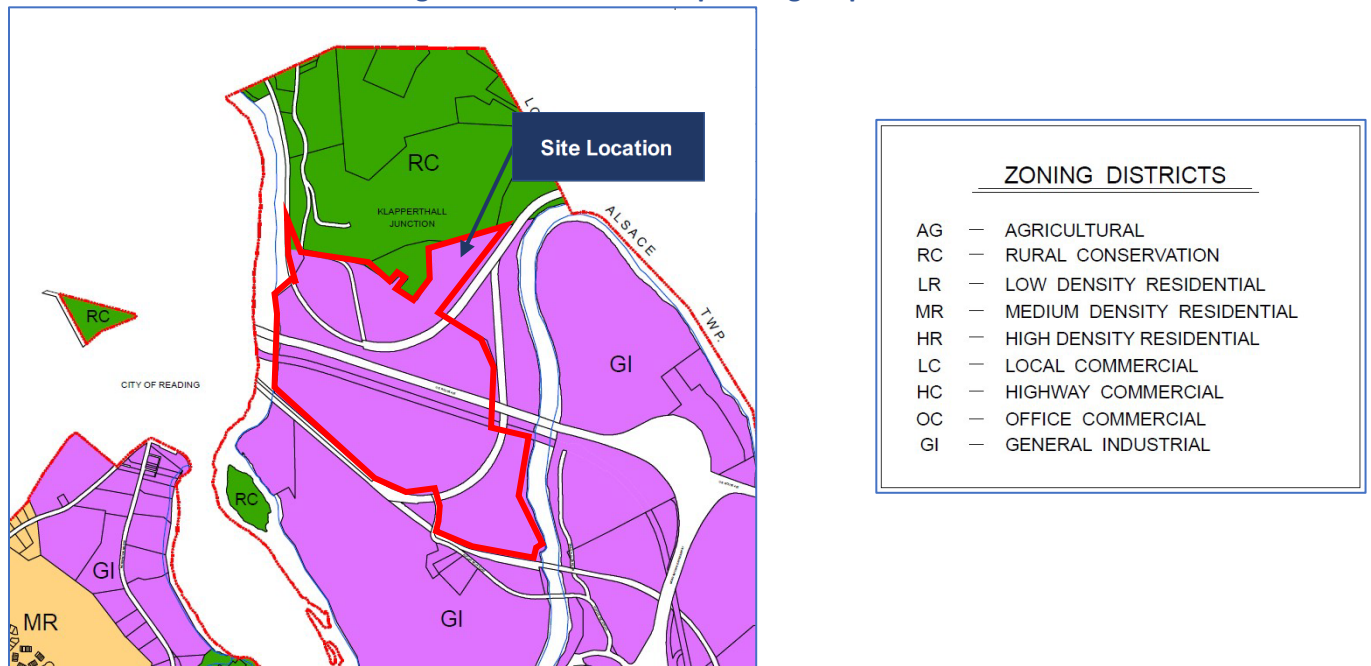
- Warehousing and freight terminal uses
- Wholesale and distribution

The General Industrial zone also contains several uses by special exception, provided that a special exception is granted by Cumru Township's Zoning Hearing Board. Uses by special exception include, but are not limited to, the following:

- Adaptive reuse and development
- Mini-warehouse and self-storage units
- Quarry and mining operations
- Research facility
- Solid waste disposal and reduction facilities
- Telecommunication facilities
- Private utilities

As shown in the below zoning map, the Site is contained solely within the General Industrial zone. It does, however, border a Rural Conservation zone to its northern extent.

Figure 7: Cumru Township Zoning Map



Source: Cumru Township Zoning Ordinance

The contents of the Zoning Ordinance were also examined for requirements relating to manufacturing end-uses. Below are zoning requirements for manufacturing uses:

- Parcel must be comprised of at least two acres of contiguous land area
- Water and sewer utilities must be public, unless an appropriate treatment facility is established on-site
- Off-Street loading space requirements are as follows:
 - i) Less than 10,000 Sq. Ft. – 1 space
 - ii) 10,000 – 50,000 Sq. Ft. – 2 spaces
 - iii) 5,000 – 100,000 Sq. Ft. – 3 spaces
 - iv) Over 100,000 Sq. Ft. – 4 spaces
- Off-Street loading space requirements are as follows:
 - i) Less than 10,000 Sq. Ft. – 1 space
- Off-Street parking space requirements are as follows:
 - i) 1 parking space per 2 employees on the 2 largest shifts combined plus 1 space for each vehicle stored on-site

4.10 Planning Consistency

4.10.1 Berks County 2030 Comprehensive Plan Update (2020)

In 2020, the Berks County Commissioners officially adopted the *Berks County Comprehensive Plan 2030 Update*⁶ (Comprehensive Plan). The Comprehensive Plan, prepared by the Berks County Planning Commission, seeks to serve as a roadmap for development over the next decade. Each Chapter of the document outlines several goals and policies to guide decision-making to strengthen Berks County. The Comprehensive Plan’s Chapter 8 (Economy) outlines several goals and policies that are pertinent to the reuse of Site, particularly regarding “Sites and Infrastructure”. Outlined policies that will impact the reuse of Site include the following:

- Policy #1: Focus on sustained economic development with redevelopment of underused commercial and industrial properties, including brownfields, and promotion of land use patterns that allows for growth of industry and manufacturing that add value to the tax base and provide employment opportunity, while protecting natural resources and agriculture. – Berks County recognizes the value of former brownfield industrial properties, such as the Site, for the continued economic growth of the County. The Site is currently zoned General Industrial, which makes it consistent with Berks County’s existing land use pattern.
- Policy #3: Work with partners to develop and preserve an inventory of high quality, competitively positioned real estate sites, and available buildings that are appropriate for a range of companies, in general—and more specifically in the county’s target industries. – Berks County is seeking to work with public and private sector stakeholders to ensure that it has a

⁶ <https://www.co.berks.pa.us/Dept/Planning/Pages/BerksCountyComprehensivePlan.aspx>

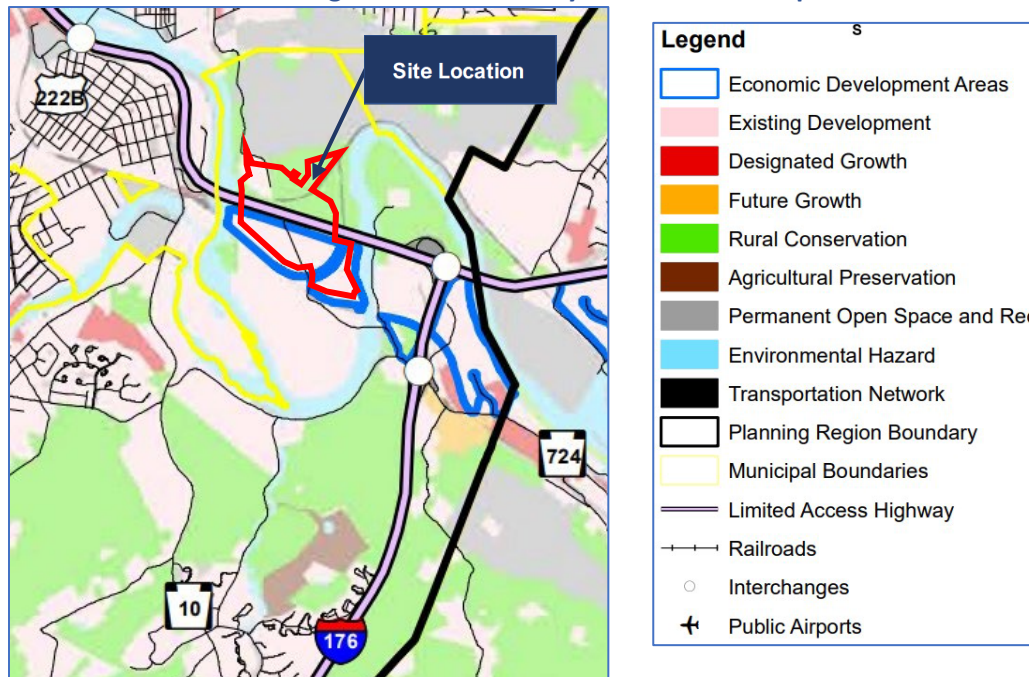
variety of real estate sites available for companies and target industries. The existing owner of the Site has indicated that they are open to marketing portions of the site for reuse.

- Policy #4: Encourage investments in forward-looking infrastructure projects that support economic development priorities, catalyst projects and additional private investment. – The existing owner of the site has been proactive in applying for competitive grant funding (including through PennDOT and the U.S. Economic Development Administration) for required infrastructure improvements to make the site marketable for additional users. Competitive grant and loan funding leverages private investment to modernize the site.
- Policy #5: Recommend that new land development fund its fair share of the cost of additional community facilities necessitated by the increased demand for services or capacity that it generates (i.e., transportation, sewer, water, emergency services, etc.). – Berks County is proposing that any land developer and new business assist with the costs of required infrastructure. Additional infrastructure investment will be required to redevelop the Site.
- Policy #7: *Work with PennDOT and the Reading Area Transportation Study (RATS) to improve and enhance the transportation infrastructure.* – Transportation infrastructure is perhaps the greatest barrier to reuse of the Site. Therefore, stakeholders engaged in the reuse of the site must work closely with PennDOT, where possible, to enhance transportation infrastructure.

In addition to creating Goals and Policies to promote economic development, the Comprehensive Plan has also identified “Economic Development Areas” that are most conducive to economic development activities. These areas were identified by taking into consideration several factors, including zoning, access to transportation assets, proximity to existing development, etc. As shown in the map below, the portion of the Site south of U.S. 422 has been identified by Berks County as an Economic Development Area.



Figure 8: Berks County Economic Development Areas



Source: Berks County 2030 Comprehensive Plan Update (2020)

4.10.2 Governor Mifflin Area Joint Comprehensive Plan (2017)

Adopted in 2017, the *Governor Mifflin Area Joint Comprehensive Plan*⁷ (Joint Comprehensive Plan) is a multi-municipal comprehensive plan for the municipalities of Brecknock Township, Cumru Township, Kenhorst Borough, Mohnton Borough, and Shillington Borough. These municipalities existing to the south and west of Reading and are primarily suburban and rural in nature. The Joint Comprehensive Plan seeks to do the following:

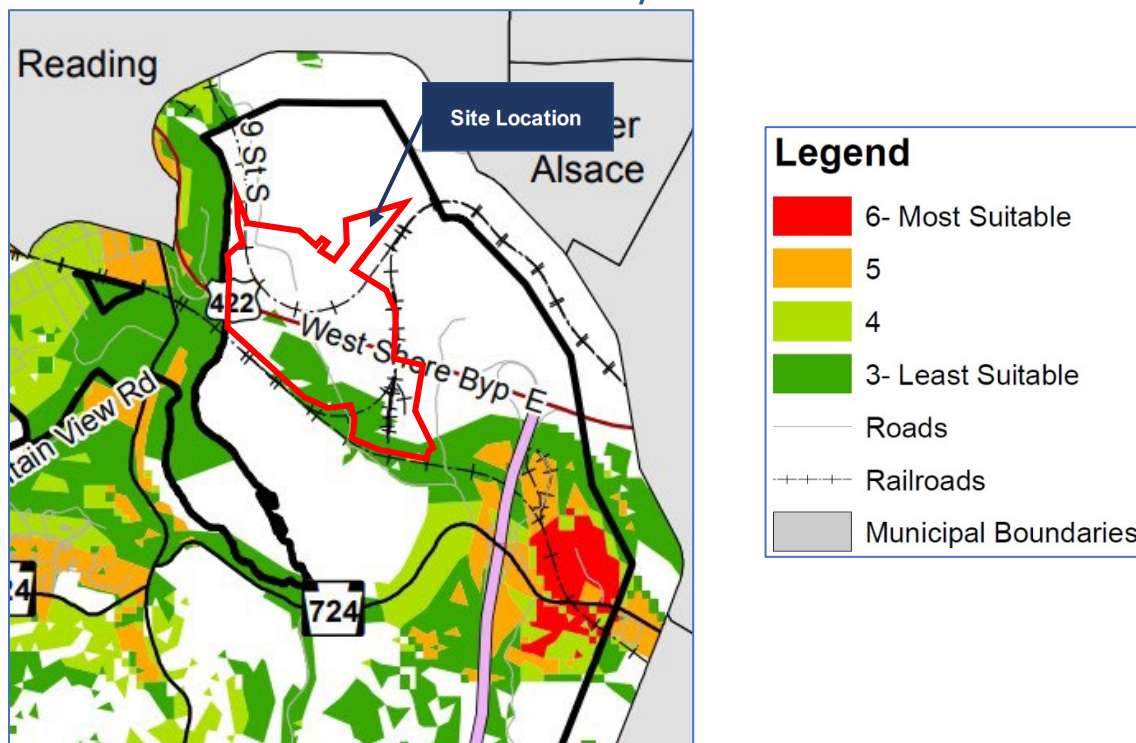
- Attract new businesses and economic development to the appropriate areas
- Direct most development to locations that can be efficiently served by public water and sewage services
- Provide recommendations to protect steeply sloped lands, wetland, creek valleys, and other important natural features, including strictly limiting the density of development on steep slopes
- Avoid excessive densities of development to avoid overwhelming the capacity of the road system, the public school system, groundwater supplies, other community services and the natural features of each site

⁷<https://www.co.berks.pa.us/Dept/Planning/Documents/MultiMunicipalPlanning/JointComprehensivePlans/GovernorMifflin/Governor%20Mifflin%20Area%20Joint%20Comprehensive%20Plan%20December%202017.pdf>

The Joint Comprehensive Plan specifically notes that Titus Generating Station, and areas around it, are uniquely suited among municipalities in the Joint Comprehensive Plan area to support heavy industrial uses. Potential heavy industrial uses suitable for the site, as noted in the Joint Comprehensive Plan, include petroleum tank farms, asphalt plants, cement plants, trash transfer stations, and hazardous chemical plants. Less intensive light industrial uses could also be supported.

Reuse could, however, be complicated by some constraints at the Site. The Joint Comprehensive Plan includes “Economic Development Land Suitability” analysis. By using factors such as zoning designation, transportation access, proximity to residential areas, environmental considerations, etc., land within the Joint Comprehensive Plan area was scored on a scale of 3-6. On this scale, 3 is the least suitable for development, and 6 is the most suitable for development. As shown in the map below, most of the Site scored in the lowest suitability category, partially due to existing transportation constraints. These constraints must be overcome to position the site to its highest potential.

Figure 9: Governor Mifflin Area Joint Comprehensive Plan Economic Development Land Suitability Analysis



Source: Governor Mifflin Area Joint Comprehensive Plan (2017)



Energy Development

5.0 Energy Development

Since Titus Generating Station was historically used for energy generation, emphasis is brought to evaluate potential end uses that could continue to supply energy to eastern Pennsylvania, but the Playbook may not promote these end use cases.

5.1 Re-Use Options

Repurposing retired coal-fired generation plants for electrical power generation and storage can make sense both economically and environmentally. The abundance of existing infrastructure at a Site can be used to support modernization of the plant at a potentially lower cost than construction of a new baseload power generation facility. In some cases, this approach allows energy companies to continue to employ staff, tap into their knowledge and experience, and remain a part of the community's economic well-being. The most likely energy generation option is to replace the coal-burning generation units with natural gas-fired generation units, which results in a higher thermal efficiency (40 to 60 percent greater efficiency than coal, which is typically around 30 to 35 percent), much less pollution generated (no acid gases or heavy metals, no fly ash or combustion residuals), and a smaller land-use footprint.

Our evaluation of potential reuse scenarios for Titus Station includes several alternate operations that can be either stand alone or in conjunction with other compatible redevelopment options to maximize the full reuse of the Site. This section of the Playbook presents an analysis of the feasibility and efficacy of selected power generation redevelopment options at the Site.

Titus Station could become a multi-purpose industrial hub for eastern Pennsylvania, providing both good paying construction jobs and long-term operational employment. Providing lower carbon energy to the area will be increasingly attractive to surrounding businesses meeting their Environmental and Social Governance (ESG) and decarbonization goals in a carbon-constrained world.

The following are descriptions of the three potential re-use options and potential activities related to evaluating and promoting them.

5.1.1 Wind Generation

The most critical component to a cost-effective wind energy installation is the presence of a strong wind resource. Wind maps are one way to begin the process of investigation of a site's wind power resource, but nothing replaces on-site data collected from an anemometer placed near the hub height of the proposed turbine installation. Most wind installations will be characterized by "capacity factors," (the percent of power generated in a year compared to what the turbine would produce operating at its full generator capacity) on the order of 20-40%. Higher capacity factors are better but should not be compared with fossil generation capacity factors, nor should they be the deciding factor in selection of a turbine for a site (economics should be the driver).

Pennsylvania is one of the East Coast leaders in wind energy in the U.S. due its good wind resource and incentives provided by the state government. Pennsylvania is also close to several potential offshore

sites along the Atlantic coast. Gamesa, one of the largest wind turbine manufacturers in the world, located its U.S. headquarters in Philadelphia and has built several wind farms in the state.

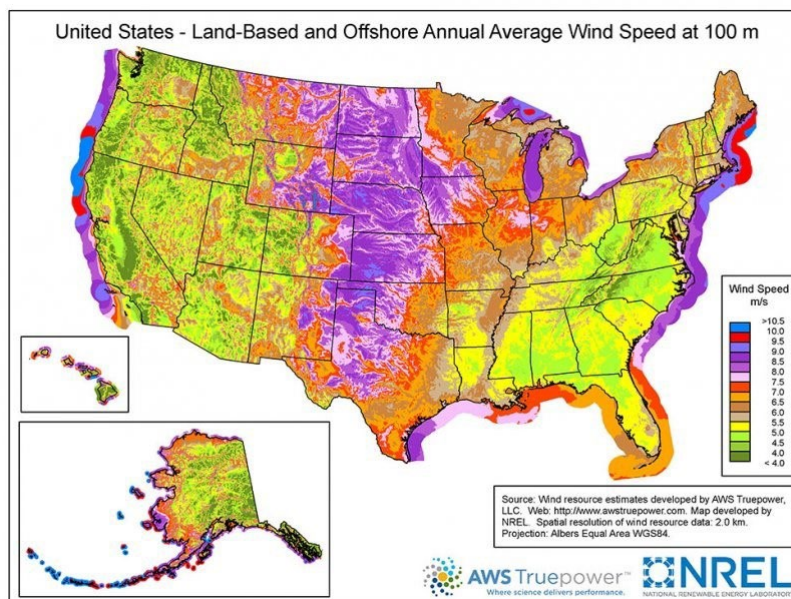
Wind energy is also providing many economic advantages in the state, including lessening our dependence on fossil fuels, providing a steady income to landowners, increasing the property tax base for rural counties, reducing emissions, and providing tax credits.

Although wind power plants have relatively little impact on the environment compared to fossil fuel power plants, concerns have been raised over the sound produced by the rotor blades and aesthetics. Wind turbines produce some sound when they operate, but most of the turbine sound is masked by the sound of the wind itself. The sound at a distance of 1/2 mile is similar to an airplane passing over in the distance. Shadow flicker may also occur for several minutes per day at certain times of the year, which can irritate nearby residents. Proper siting decisions can help alleviate these concerns.

To fully benefit from wind power, the average wind at hub height (100 meters) should be at least 7.5 meters/second (m/s) sustained (16.7 miles per hour [mph]). There are no available wind studies for Berks County, which would be required to vet the feasibility of a wind farm on this property. Also, Berks County does not have any wind farms or even a single utility-grade turbine installation, which would require legislative efforts to produce the required regulations within the County and Borough to allow such installations.

Data from National Renewable Energy Laboratory (see below) provides wind speed averages, at 100 m, across the entire state. The site address is shown to average between 4.5 - 5.5 m/s (10 – 12 mph), well below the required average speed to operate a profitable wind farm.

Figure 10: Annual Average Wind Speed at 100 m



Based on the available information, wind turbines at the Site would not be feasible.

5.1.2 Solar Energy Generation with or without Energy Storage

The demand for renewable energy has been increasing in recent years as utilities, municipalities, and industries strive to meet decarbonization goals and renewable portfolio standard requirements. This demand for renewable energy is increasingly being met by solar power development because of declining costs and rapid deployment.

Once the power plant and unneeded infrastructure are demolished and other parcels are cleared and graded, the preliminary total available output, based on a developable land area of 130 acres, is potentially 10 to 15 MW. This can be supplemented with on-Site energy storage.

Battery storage enables power system operators and utilities to store energy for later use. A battery energy storage system (BESS) is an electrochemical device that charges (or collects energy) from a power plant and then discharges that energy when needed. Combining a BESS with a utility-scale solar farm allows the Site to generate and deliver renewable energy when it is most valuable, improving the reliability and sustainability of the local power grid and extending the hours of solar-generated power provision into evening and nighttime.

Additionally, distributed on-Site energy generation could be provided for future tenants. This may be particularly attractive to technology or software companies, which desire energy backup for risk minimization and resiliency and data centers that could power a portion of their operations with a commercial-grade solar farm.

Strategy	<ul style="list-style-type: none"> ➤ Determine solar / photovoltaic (PV) viability and interest in the Pennsylvania power market. ➤ Determine solar / photovoltaic (PV) viability and interest in the Pennsylvania power market. ➤ Work with prospective solar developers to understand their interest and the feasibility of a solar or solar + battery storage option. ➤ Create a hybrid reuse option to include solar development on the Site to support commercial/ industrial development on another section of the Site
Example	<ul style="list-style-type: none"> ➤ Chambersburg, PA: Solar for Pennsylvania’s Largest Public Power System: https://suntribesolar.com/case-study/chambersburg-pennsylvania-solar/
Advantages	<ul style="list-style-type: none"> ➤ Development promotes growth of renewable energy in the area. ➤ Very low environmental impact. ➤ PV system Site development costs are lower than most other reuse options and can be incentivized with investment tax credits. ➤ Solar array size can be scaled to work with other potential Site redevelopments to create a balanced path forward for jobs and economic stimulation.
Disadvantages	<ul style="list-style-type: none"> ➤ Fewer permanent jobs created relative to other options, unless incorporated into a regional technology hub, or similar commercial operation.
Strategic Actions	<ul style="list-style-type: none"> ➤ Establish specific design characteristics for a PV array. ➤ Assess the combination of solar development with other primary reuse options. ➤ Identify candidate firms from the (EPA’s) Green Power Partnership (GPP). These firms (> 1,300) made a commitment to use renewable energy and make similar investments moving forward.

5.1.3 Biomass Processing

An emerging trend in the power generation sector to meet near-term decarbonization goals is to develop new or retrofit existing new power generation assets into biomass processing plants. Biomass has been in use since people first began burning wood to cook food and keep warm. Wood is still the largest biomass energy resource today. Other sources include food crops, grassy and woody plants, residues from agriculture or forestry, oil-rich algae, and the organic component of municipal and industrial wastes. Even the fumes from landfills (which contain methane, the main component in natural gas) can be used as a biomass energy source. Biomass can be used for fuels, power production, and products, such as chemicals, materials, and other products that would otherwise be made from fossil fuels.

A biomass facility will be capable of processing multiple waste streams, including solid and liquid organic waste, to (i) provide a renewable waste management solution that reduces nutrient runoff (nitrogen and phosphorus) from large agricultural operations, thereby mitigating agricultural run-off into the Susquehanna River basin, extend the life of existing, and nearby landfills by reducing organic waste disposal, generate renewable energy in the form of electricity and synthetic biogas (syngas); mitigate air quality issues associated with the field application of manure and off-gassing of organic waste from area landfills; and produce marketable products such as organic fertilizer and biochar, which is an inert byproduct of the process that can be marketed and sold as a filtering medium.

Biomass power to support industrial facilities can assist with attracting business to the location and region, providing both good paying construction and long-term operations employment. The Site can take advantage of the local and regional transportation and industrial resources.

Strategy	<ul style="list-style-type: none"> ➤ Incorporate the local agricultural community needs as mentioned during the Berks Co. Planning Commission meetings ➤ Include non-hazardous waste concerns that take advantage of existing infrastructure (rail, water, natural gas, and electricity). ➤ Solar could be added on excess land to provide additional power and battery storage.
Example	<ul style="list-style-type: none"> ➤ Biomass Energy in Pennsylvania: Implications for Air Quality, Carbon Emissions, and Forests https://www.pfpi.net/wp-content/uploads/2012/12/PFPI-PA-Biomass-Energy-Report_12_18_12.pdf
Advantages	<ul style="list-style-type: none"> ➤ Consistent with current land use. ➤ Located next to a regional landfill. ➤ Existing infrastructure for transportation and utility inputs are available. ➤ High number of temporary construction jobs and permanent/long term operations/technical jobs.
Disadvantages	<ul style="list-style-type: none"> ➤ Existing operations would need to be closed and removed. ➤ Existing infrastructure would likely need updated/upgraded.
Strategic Actions	<ul style="list-style-type: none"> ➤ Assess the desire for biomass processing in the region. ➤ Determine costs for demolishing old infrastructure and estimate sizing of new plant. ➤ Establish specific design characteristics and land use requirements for biomass processing.

5.2 Summary

The Titus Generating Station Site has potential for repurposing efforts to support less carbon intensive forms of energy production, such as solar and biomass processing, but there are many hurdles to overcome regardless of the path forward.



Reuse Strategy Alternatives

6.0 Reuse Strategy Alternatives

6.1 Conceptual Site Planning

6.1.1 Reuse Scenario Considerations

Based upon data collected in prior sections, it is recommended that a reuse strategy leverage existing assets (particularly the site's zoning designation and available rail access) while recognizing that significant transportation access challenges persist. The suggested reuse strategy took the following principles into consideration:

- The lack of adequate transportation infrastructure north of U.S. 422 make that portion of the Site unusable for vehicle-dependent manufacturing or commerce.
- Although the portion of the Site south of U.S. 422 has connections to the larger transportation grid via Poplar Neck Road, the fair-to-poor condition of existing bridges limit the extent and intensity of vehicular traffic and transportation of heavy equipment for construction.
- Creating alternative access to both the north and south portions of the Site through the construction of new bridges or underpasses would be cost-prohibitive.
- Establishing a new interchange off U.S. Route 422 would not be permitted due to the Site's proximity to U.S. Route 422's interchange with Interstate 176.
- Industrial zoned land in Berks County is at a premium, which lends the Site to continued manufacturing uses.
- The Site's abundance of rail infrastructure is an asset that can be leveraged for reuse.
- The Site's relatively steep topography north of U.S. Route 422 further limits development opportunities.
- Manufacturing uses are by-right within the Cumru Township Zoning Ordinance.
- Planning at the multi-municipal and county levels support continued use of the Site for manufacturing.

6.1.2 Land Use Feasibility Assessment

With the above considerations in-mind, the Project Team analyzed potential future land uses at the Site. The below table outlines the feasibility of various land uses for reuse of the Site.

Table 21: Potential End Use Feasibility

	Potential Feasibility	Limited Feasibility	No Feasibility
Heavy Industry/Manufacturing	X		
Light Industry/Manufacturing	X		
Material Recycling	X		
Rail Storage	X		
Recreation (Passive)	X		
Refrigerated Cold Storage	X		
Warehouse/Distribution/Logistics		X	
Intermodal Transfer		X	
Recreation (Active)		X	
Agriculture		X	
Residential			X
Retail & Dining			X
Lodging and Hospitality			X
Office			X
Healthcare/Medical			X

The feasibility options with the highest potential feasibility, listed above, were scored in relation to the location/market, site features, transportation, available utilities, and potential jobs to be created.

Table 22: Potential End Use Assessment

Potential End Use			Evaluation Criteria						
1 Low Potential	2 Moderate Potential	3 High Potential	Location & Market	Site Features	Transportation	Electric and Gas Utilities	Water and Sewer Infrastructure	Labor	Total
			3	3	2	3	1	3	15
			3	3	1	3	1	3	14
			3	3	2	3	1	3	15
			3	2	3	2	3	1	14
			2	2	2	2	3	1	12
			2	2	1	2	1	2	10

6.2 Reuse Scenario #1 – Maintain Power Block Structure

Figure 11: Southeast Perspective of Reuse Scenario #1



Figure 12: Northeast Perspective of Reuse Scenario #1

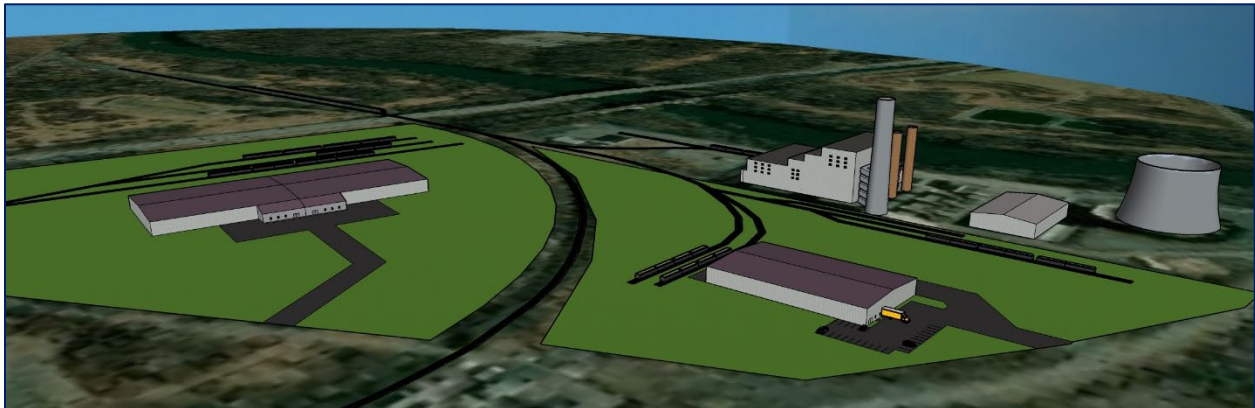


Figure 13: View of Power Block Facility from Trailhead



6.2.1 Key Reuse Scenario Attributes

- Maintain the existing “Power Block” and select ancillary structures to support the operation and growth of ReFineD Plastics.
- Utilize the former “Coal Pile” for a new manufacturing building to support ReFineD Plastics.
- Use the “Pie-Shaped Parcel” for the construction of a new light manufacturing building and the creation of three (3) new rail spurs.
- Utilize cleared portions north of U.S. Route 422 for passive recreation.

6.2.2 Industries of Emphasis

- NAICS 56292 – Materials Recovery Facilities
- NAICS 33591 – Battery Manufacturing
- NAICS 33531 – Electrical Equipment Manufacturing
- NAICS 33593 – Wiring Device Manufacturing
- NAICS 49312 – Refrigerated Warehousing and Storage
- NAICS 22111 – Electric Power Generation

6.2.3 Scenario Advantages

- Leverages existing rail infrastructure and power generation facilities
- Encourages uses that are not as heavily dependent upon vehicular/truck traffic
- Promotes environmentally sustainable passive recreation opportunities

6.2.4 Scenario Disadvantages

- Does not maximize possible buildable land south of U.S. 422 (site of the Power Block)

6.2.5 Estimated Economic Impact

IMPLAN economic impact modeling software was used to project the economic impacts of the proposed redevelopment scenarios. IMPLAN economic impact models capture two phases of reuse: construction

(one-time impacts) and operational (annual impacts). By providing inputs, such as construction costs and estimated employment figures, IMPLAN will generate indirect and induced employment that results from direct construction or operational activity, labor income, value added, output, and tax impact. IMPLAN is also used to estimate employee compensation (wages plus benefits) for employees engaged in project activities. The impacts, broken out into direct, indirect, and induced impacts, can be defined in the following manner:

- Direct Impact: Employment and spending impact of the activity being directly modeled.
- Indirect Impact: Business-to-business purchases in the supply chain resulting from the direct input (referred to as business-to-business or business-to-supplier impact).
- Induced Impact: Household-to-business transactions in the economy resulting from spending in the supply chain (referred to as household-to-business impact).

Collectively, the indirect and induced impacts can be referred to as “secondary impacts” that result from the direct impact.

Table 23: Construction Impacts of Scenario #1

Scenario #1 - Construction (One-Time) Impacts					
Impact	Employment	Labor Income	Value Added	Output	Tax Impact
1 - Direct	628	\$47,118,731	\$64,896,086	\$136,822,500	\$10,986,523
2 - Indirect	190	\$11,102,160	\$19,273,661	\$32,914,576	\$5,460,173
3 - Induced	222	\$11,317,856	\$19,194,093	\$32,960,087	\$4,305,938
Total	1040	\$69,538,747	\$103,363,840	\$202,697,163	\$20,752,634
	Direct	Indirect	Induced	Total	
Employee Compensation	\$30,107,464	\$9,497,157	\$9,986,017	\$49,590,638	

Source: IMPLAN

Table 24: Operational Impacts of Scenario #1

Scenario #1 - Operational (Annual) Impacts					
Impact	Employment	Labor Income	Value Added	Output	Tax Impact
1 - Direct	251	\$18,713,067	\$27,864,727	\$67,111,260	\$5,790,830
2 - Indirect	100	\$6,527,293	\$9,934,185	\$19,323,251	\$2,251,491
3 - Induced	92	\$4,681,620	\$7,940,951	\$13,631,804	\$1,782,693
Total	443	\$29,921,981	\$45,739,863	\$100,066,315	\$9,825,014
	Direct	Indirect	Induced	Total	
Employee Compensation	\$18,336,907	\$5,589,911	\$4,129,553	\$28,056,371	

Source: IMPLAN

6.3 Reuse Scenario #2 – Demolish Power Block Structure for New Light Manufacturing/Industrial Buildings

Figure 14: Northeast Perspective of Reuse Scenario #2

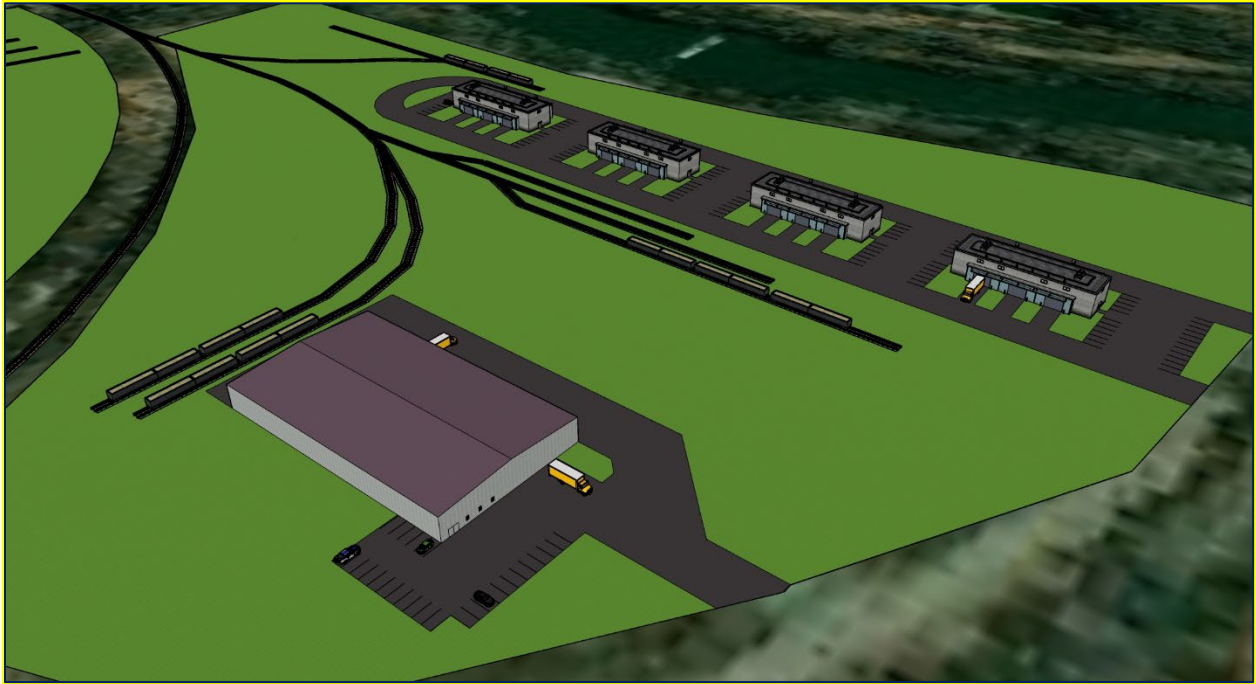


Figure 15: Alternate Northeast Perspective of Reuse Scenario #2



6.3.1 Key Reuse Scenario Attributes

- Demolish the “Power Block” and use the land for new light manufacturing and industrial facilities
- Utilize the former “Coal Pile” for a new light manufacturing building
- Use the “Pie-Shaped Parcel” for the construction of a new heavy manufacturing building and the creation of three (3) new rail spurs
- Utilize cleared portions north of U.S. Route 422 for passive recreation

6.3.2 Industries of Emphasis

- NAICS 33591 – Battery Manufacturing
- NAICS 33531 – Electrical Equipment Manufacturing
- NAICS 33593 – Wiring Device Manufacturing
- NAICS 49312 – Refrigerated Warehousing and Storage
- NAICS 22111 – Electric Power Generation

6.3.3 Scenario Advantages

- Leverages existing rail infrastructure
- Maximizes use of buildable land south of U.S. Route 422
- Allows for an integrated business park where smaller, ancillary upstream and downstream industries can support a larger heavy industrial end-user
- Promotes environmentally sustainable passive recreation opportunities

6.3.4 Scenario Disadvantages

- End-users in the new light manufacturing/industrial space may be vehicle/truck dependent
- Number of jobs at the Site may require creative solutions to address existing transportation infrastructure deficiencies (such as a partnership with BARTA to provide workforce transportation service to the Site)

6.3.5 Estimated Economic Impact

IMPLAN economic impact modeling software was used to project the economic impacts of the proposed redevelopment scenarios. IMPLAN economic impact models capture two phases of reuse: construction (one-time impacts) and operational (annual impacts). By providing inputs, such as construction costs and estimated employment figures, IMPLAN will generate indirect and induced employment that results from direct construction or operational activity, labor income, value added, output, and tax impact. IMPLAN is also used to estimate employee compensation (wages plus benefits) for employees engaged in project activities. The impacts, broken out into direct, indirect, and induced impacts, can be defined in the following manner:

- Direct Impact: Employment and spending impact of the activity being directly modeled.
- Indirect Impact: Business-to-business purchases in the supply chain resulting from the direct input (referred to as business-to-business or business-to-supplier impact).

- Induced Impact: Household-to-business transactions in the economy resulting from spending in the supply chain (referred to as household-to-business impact).

Collectively, the indirect and induced impacts can be referred to as “secondary impacts” that result from the direct impact.

Table 25: Construction Impacts of Scenario #2

Scenario #2 - Construction (One-Time) Impacts					
Impact	Employment	Labor Income	Value Added	Output	Tax Impact
1 - Direct	273	\$20,632,295	\$20,640,926	\$36,953,000	\$4,251,906
2 - Indirect	31	\$2,120,245	\$3,503,590	\$6,073,285	\$900,423
3 - Induced	86	\$4,405,286	\$7,471,008	\$12,829,116	\$1,676,047
Total	390	\$27,157,826	\$31,615,523	\$55,855,401	\$6,828,376
	Direct	Indirect	Induced	Total	
Employee Compensation	\$13,851,940	\$1,784,449	\$3,886,865	\$19,523,254	

Source: IMPLAN

Table 26: Operational Impacts of Scenario #2

Scenario #2 - Operational (Annual) Impacts					
Impact	Employment	Labor Income	Value Added	Output	Tax Impact
1 - Direct	361	\$35,922,359	\$47,604,889	\$130,607,257	\$10,224,220
2 - Indirect	108	\$8,011,420	\$13,052,972	\$27,390,745	\$3,023,630
3 - Induced	157	\$8,009,105	\$13,585,276	\$23,320,269	\$3,050,048
Total	626	\$51,942,884	\$74,243,137	\$181,318,270	\$16,297,898
	Direct	Indirect	Induced	Total	
Employee Compensation	\$ 36,047,921	\$ 6,831,926	\$ 7,064,431	\$ 49,944,278	

Source: IMPLAN



Recommended Actions, Funding Options, and Highest & Best Use

7.0 Recommended Actions, Funding Options, and Highest & Best Use

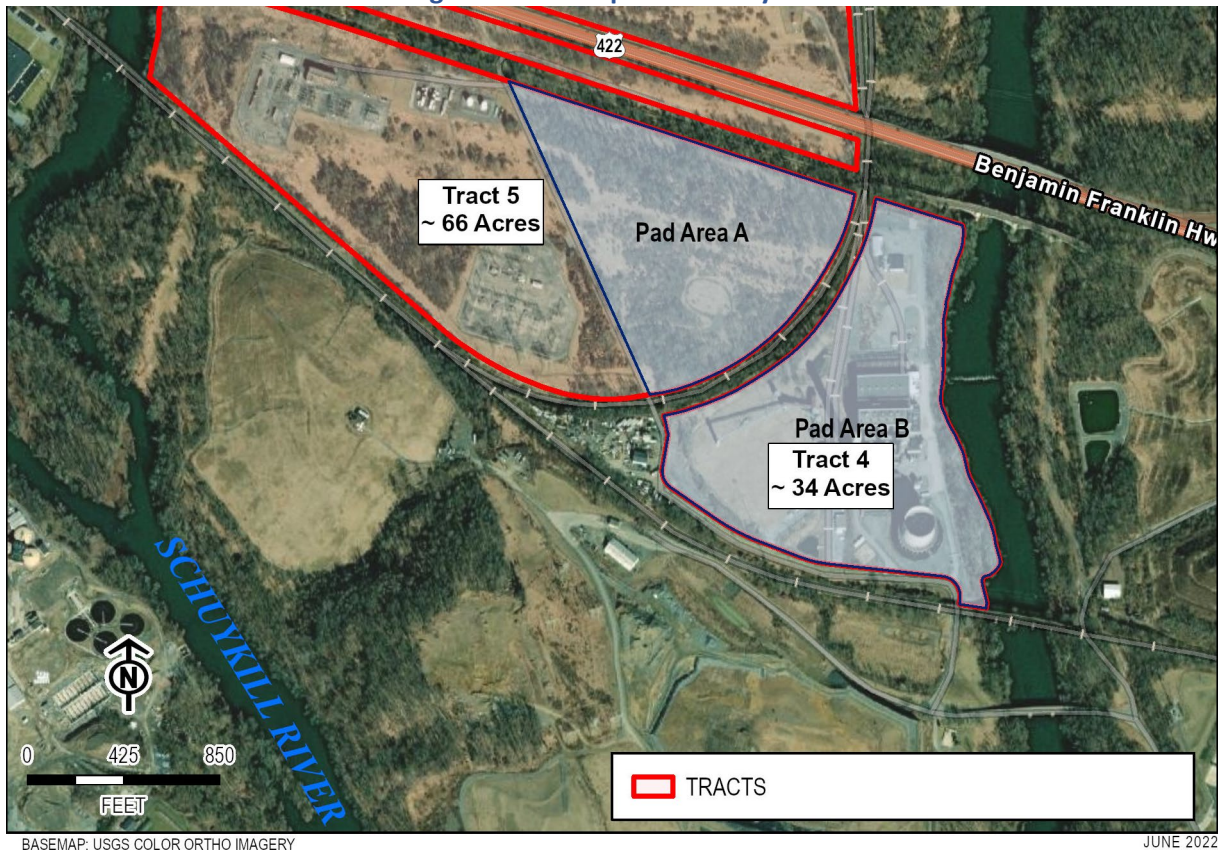
The purpose of this section is to recommend a market-responsive path forward as a means for moving the Site toward successful redevelopment as a viable business enterprise in the near term. As part of the implementation of the Playbook, it is recommended that DCED continue serving a lead role in the redevelopment of Titus Station. This role involves the coordination of permit approvals for multiple federal, state, and local agencies, marketing of the Site, and supporting public funding opportunities from multiple sources.

7.1 Cost Estimates for Future Site Use

Two (2) viable pad areas exist for future building sites, though all three require grading to maximize the available acreage. These building sites, labeled as Pads A and B in **Figure 16** below, are 26 and 34 acres, respectively. Costs and relevant scopes of work associated with preparing these discrete areas for “Pad-Ready” use are presented in **Appendix C**. The cost for leveling both areas is approximately \$250,000.

To prepare the Pad Area B, demolition of the existing structures must first occur. TRC and its partner Manafort Brothers, Inc., developed a preliminary demolition and abatement plan and a Type 2 cost estimate for Titus Station; the preliminary plan is presented in **Appendix D**. TRC’s demolition cost estimate is \$9,400,000, which includes approximately \$6,400,000 for asbestos abatement and hazardous materials removal and a credit of \$5,200,000 for sale of scrap metals resulting from the demolition.

Figure 16: Conceptual Pad Layout



7.2 Recommended Actions

As part of the implementation of the Playbook, the Project Team provides the following recommendations for achieving the highest and best uses of the Site:

- **Continue Coordination and Collaboration with the Site Owner:** During the Project Team’s Site visits, the current Site owner expressed great willingness to position the Site for reuse. DCED can continue to foster this relationship to position the Site for its highest and best uses.
- **Promote the Playbook and its Recommendations:** The Playbook presents several considerations and benefits for reuse of the Site. DCED and local economic development organizations can use the Playbook as a marketing tool for parties interested in the Site’s reuse.
- **Assess the Condition of Bridges Throughout the Site:** The condition of the bridges at the Site are a crucial component of any reuse alternatives. The existing vehicular bridge adjacent to Allegheny Towing & Salvage Company is in an unknown physical condition, and the age of the Poplar Neck Road bridge over the Schuylkill River may warrant additional structural examination to determine when the bridge will need replaced.

- **Forge Public-Private Partnerships for Infrastructure Improvements:** Successful reuse of the Site will require strong public-private partnerships between the Site owner, end-users, local governments, and economic development agencies. These public-private partnerships will become particularly important in permitting, funding, and managing infrastructure improvements required to develop the site.

7.3 Funding Opportunities

As shown in the above analysis, the Site requires water, sewer, and transportation infrastructure improvements to accommodate additional end-users. The acquisition of public funding will be an essential component of any reuse strategy. In 2019⁸, the current Site owner (in partnership with the Redevelopment Authority of the County of Berks) was awarded a \$2.35 million U.S. Economic Development Administration (EDA) grant for the design and construction of new water and sewer lines to the site (present infrastructure deficiencies). Additional funding resources are available to undertake infrastructure projects required for additional site development:

7.2.1 Advanced Energy Manufacturing and Recycling Grants

Federal Grant

Administering Agency: U.S. Department of Energy

Eligible Applicants: Manufacturers with gross annual sales of \$100 million, fewer than 500 employees at the plant site of the manufacturing firm, and annual energy bills of which total more than \$100,000 but less than \$2.5 million

Uses: Grants to small and medium-sized manufacturers to enable them to build new or retrofit existing manufacturing and industrial facilities to produce or recycle advanced energy products in communities where coal mines or coal power plants have closed. Eligible uses include the re-equip, expansion, or establishment of a manufacturing or recycling facility for the production or recycling of advanced energy technologies (including clean electricity, industrial decarbonization, clean transportation, clean fuels, etc.); or to re-equip an industrial or manufacturing facility with equipment designed to reduce greenhouse gas emissions of that facility.

Amount: \$750 million available in total; grant award amounts are to be determined.

Resource Link: <https://www.energy.gov/bil/advanced-energy-manufacturing-and-recycling-grants>

⁸ <https://eda.gov/archives/2021/news/press-releases/2019/09/25/king-of-prussia-pa.htm>

7.2.2 Business in Our Sites Grants/Loans (BOS)

State Grant or Loan

Administering Agency: Pennsylvania Department of Community and Economic Development

Eligible Applicants: Municipalities, municipal authorities, redevelopment authorities, industrial development agencies, private developers

Uses: All site development activities that are required to make a site shovel ready. This program is for speculative projects only. Funds cannot be used for projects that are primarily residential or recreational. Sites must be previously utilized property or undeveloped property that is planned and zoned for development.

Amount: No maximum or minimum loan amount. However, the amount of the grant may not exceed \$4,000,000 or 40% of the total combined grant and loan award, whichever is less. Private developers are only eligible for loans.

Terms: Loans will be patient – no repayment until property is sold or leased or 5 years from the date of closing, whichever comes first. Loans will be repaid over a period not to exceed 20 years. The interest rate for the loan will be 2% or 3% depending on the unemployment rate of the county where the project is located when the Commonwealth Financing Authority is in a first lien position. If the Commonwealth Financing Authority is in a subordinate lien position, the interest rate will be 8% or 9% based on the unemployment rate of the county where the project is located.

Resource Link: <https://dced.pa.gov/programs/business-in-our-sites-grants-and-loans-bos/>

7.2.3 Brownfield Assessment Grants (Site-Specific)

Federal Grant

Administering Agency: U.S. Environmental Protection Agency

Eligible Applicants: Counties, municipalities, school districts, councils of governments, land clearance authority (or similar quasi-governmental entity), government entity created by a state legislature, redevelopment agencies, state, non-profit organizations, limited liability corporations in which all managing members are 501(c)(3) nonprofit organizations

Uses: Site-specific environmental assessments of contaminated brownfield sites

Amount: Maximum grant request of up to \$200,000; a waiver may be secured for grants of up to \$350,000 under special circumstances

Resource Link: <https://www.epa.gov/brownfields/brownfields-assessment-grants>

7.2.4 Brownfield Cleanup Grants

Federal Grant

Administering Agency: U.S. Environmental Protection Agency

Eligible Applicants: Counties, municipalities, school districts, councils of governments, land clearance authority (or similar quasi-governmental entity), government entity created by a state legislature, redevelopment agencies, state, non-profit organizations, limited liability corporations in which all managing members are 501(c)(3) nonprofit organizations

Uses: Implementation projects to undertake cleanup activities at brownfield sites

Amount: Maximum grant request of up to \$500,000, with \$650,000 grant requests considered under special circumstances

Note: The applicant must own the site for which it is requesting funding

Resource Link: <https://www.epa.gov/brownfields/brownfields-cleanup-grants>

7.2.5 Economic Adjustment Assistance (EAA) and Public Works Programs

Federal Grant

Administering Agency: U.S. Economic Development Administration

Eligible Applicants: Counties, municipalities, special district government, public and state-controlled institutions of higher education, 501(c)(3) nonprofit organizations, state governments, private institutions of higher education, Native American tribal governments, and other nonprofit organizations

Uses: Planning (including design/engineering) and construction projects that advance new ideas and creative approaches to advance economic prosperity in distressed communities, including those impacted negatively by the decline of the coal industry. Applications are accepted on a rolling basis.

Amount: Grants awarded between \$100,000 - \$30.0 million; most grants are between \$1.5 - \$3.0 million.

Resource Link: <https://www.eda.gov/funding-opportunities/>

7.2.6 Industrial Sites Reuse Program (ISRP)

State Grant or Loan

Administering Agency: Pennsylvania Department of Community and Economic Development

Eligible Applicants: Public entities, private nonprofit economic development entities, companies involved in reuse of former industrial land, entities that did not cause or contribute to environmental contamination

Uses: Phase I, II and III environmental assessments; Remediation of hazardous substances

Amount: Grants and loans up to \$200,000 for environmental assessments; Grants and loans up to \$1 million for remediation

Terms: Interest rates of 2%; Terms up to 5 years for assessments and 15 years for remediation projects; A 25% match is required for grant and loan projects

Resource Link: <https://dced.pa.gov/programs/industrial-sites-reuse-program-isrp/>

7.2.7 Multimodal Transportation Fund (MTF) - Commonwealth Financing Authority (CFA) and PennDOT

State Grant

Administering Agencies: Pennsylvania Department of Community and Economic Development (DCED) and the Pennsylvania Department of Transportation (PennDOT)

Eligible Applicants: Municipalities, councils of government, businesses, economic development organizations, public transportation agencies, and ports-rail/Freight

Uses: Funds may be used for the development, rehabilitation, and enhancement of transportation assets to existing communities, streetscape, lighting, sidewalk enhancement, pedestrian safety, connectivity of transportation assets and transit-oriented development.

Amount: Grants are available for projects with a total cost of \$100,000 or more. Grants shall not exceed \$3,000,000 for any project.

Note: DCED and PennDOT administer their own separate versions of the MTF Program; eligibility and uses for both programs are identical.

Resource Links:

- <https://dced.pa.gov/programs/multimodal-transportation-fund/>
- <https://www.penndot.pa.gov/ProjectAndPrograms/MultimodalProgram/pages/default.aspx>

7.2.9 Local Share Account (LSA) Statewide

State Grant or Loan

Administering Agency: Pennsylvania Department of Community and Economic Development

Eligible Applicants: Counties, municipalities, municipal authorities, economic development agencies, and redevelopment authorities

Uses: Acquisition, construction, demolition, infrastructure improvements, or purchase of vehicles and machinery for projects in the public interest that improve the quality of life for citizens in the community.

Amount: Maximum grant amount of \$1.0 million.

Note: Eligible projects must be owned and maintained by an eligible applicant or a nonprofit organization.

Resource Link: <https://dced.pa.gov/programs/local-share-account-lsa-statewide/>

7.2.10 PennVEST

State Loan

Administering Agency: Pennsylvania Infrastructure Investment Authority

Eligible Applicants: Counties, municipalities, public authorities

Uses: Projects that enhance the condition of water, sewer, and stormwater infrastructure throughout the Commonwealth; projects must have a demonstrated positive impact of water quality in the area

Terms: Vary by project activity and subcategory

Resource Link: <https://www.pennvest.pa.gov/Information/Funding-Programs/Pages/default.aspx>

7.2.11 Redevelopment Assistance Capital Program (RACP)

State Grant

Administering Agency: Pennsylvania Office of the Budget

Eligible Applicants: Local units of government, public authorities, local development districts, and industrial development agencies

Uses: For acquisition, demolition, remediation, sitework, and construction for projects of a regional economic, cultural, civic, recreational, and historic nature.

Amount: No maximum award amount; most grants are between \$500,000 - \$3.0 million; total project cost must be at least \$1.0 million

Note: Private sector businesses and non-profit organizations can be beneficiaries of a RACP grant but must select and eligible public grantee; RACP projects are authorized in the Redevelopment Assistance section of a Capital Budget Itemization Act, have a regional or multi-jurisdictional impact, and generate substantial increases or maintain current levels of employment, tax revenues, or other measures of economic activity

Resource Link: <https://www.budget.pa.gov/Programs/RACP/Pages/Main%20Page.aspx>

7.4 Highest & Best Use

Considering input from numerous stakeholders and relying upon data collected for this Playbook, the TRC team has identified Industrial Manufacturing and/or Energy Generation/Storage as the Highest & Best Uses for the developable portions of Titus Station. For both options, it is anticipated that the existing buildings and ancillary structures would need to be demolished and replaced. With respect to Tracts 8 and 9, passive recreational uses could be explored.

Industrial Manufacturing

The next future use that best fits this property is for a new industrial operation related to materials recovery, battery manufacturing, electrical equipment manufacturing, wiring device manufacturing, and refrigerated warehousing and storage that can take advantage of the rail service available at the Site.

Energy Generation/Storage

A future use involving energy generation is likely to feature either natural gas combustion or renewable energy (e.g., a natural gas-fired combined heat and power facility or a biomass processing facility). The existing FirstEnergy substations support an energy generation future use.

Passive Recreation

With respect to Tracts 8 and 9, there may be opportunities to connect the Schuylkill River Trail and the Neversink Mountain Preserve. Passive recreation could be made compatible with the identified environmental conditions and lack of vehicular access through the development of well-defined trails.

Except for passive recreational, these general future-use options would provide a sustainable tax base along with a well-compensated workforce and a likely catalyst for complimentary industry in the area. The Site has two potential building sites where individual developments could occur.

To successfully position the Site for redevelopment, a two-phase “pre-redevelopment” strategy is recommended. This two-phase approach expedites redevelopment by administratively and physically preparing the Site for future redevelopment, while simultaneously creating a partnership with the commonwealth, Berks County, Recycle the World, and an invested and informed end user.