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PIPELINE INFRASTRUCTURE IN LACKAWANNA & LUZERNE COUNTIES

An examination of the natural gas pipeline infrastructure to support energy intensive manufacturing in the region.

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Introduction

The Institute's Energy Task Force commissioned an economic and workforce development strategy to benefit Lackawanna and Luzerne Counties. Neither county experiences gas drilling activity themselves, Public indices note that nearby gas wells resulted in a lowered cost for natural gas in the region – specifically off the Transco line production has been running at about 50 percent less than the cost of gas in New York and New Jersey. As a result, this finding presented a potentially significant competitive advantage for the region's economic development. Particularly, this could provide the opportunity to pursue an economic development strategy based on attracting energy intensive manufacturing to the region. The strategy prepared by The Institute identifies several types of industries, and companies, in particular to attract to the region that would benefit from a cheap and thriving supply of natural gas. However, to further assess the plausibility of this economic development strategy, The Institute investigated the adequacy of the pipeline network in both the state at large and the region specifically.

This report details the natural gas pipeline infrastructure in Northeastern Pennsylvania, focusing especially on the existing pipeline network in Lackawanna and Luzerne counties. This report will examine the extent of the existing pipeline infrastructure, the condition of said infrastructure, and the scope of proposed pipeline projects in the area.

Existing Pipeline Infrastructure

In general, natural gas transportation networks consist of three distinct types of pipelines – gathering, transmission, and distribution lines. Gathering lines carry raw natural gas directly from production wells and drilling sites to a transmission line.¹ Interstate pipeline lines transport natural gas thousands of miles across the continental United States. Transmission pipelines are can transport natural gas from a gathering line to a processing/storage facility or to a distribution system.² Finally, distribution lines dispense natural gas to homes and businesses through a smaller system of mains and service lines.³

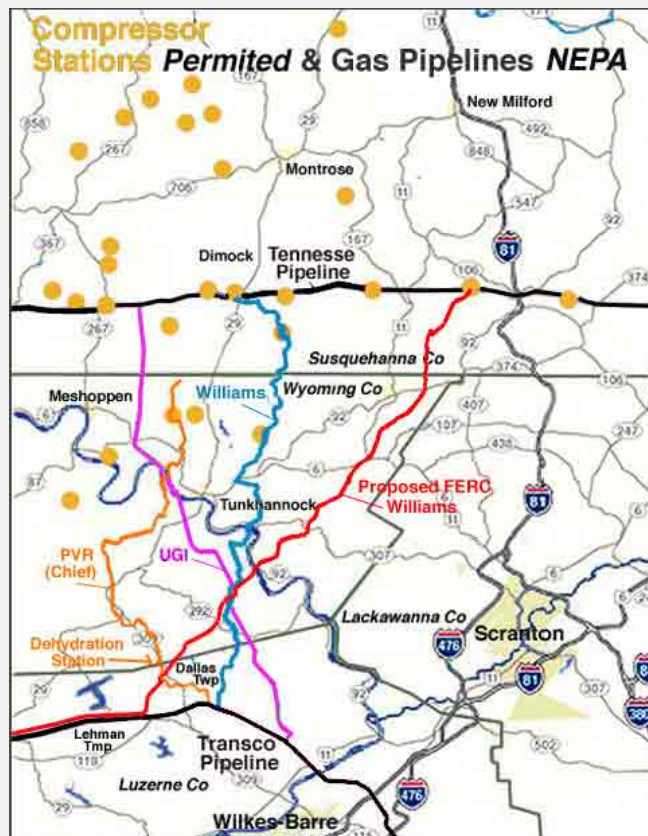
Interstate Pipelines

Pennsylvania's estimated pipeline mileage dominates the northeastern United States. According to the Energy Information Administration (EIA), Pennsylvania had the most estimated interstate pipeline mileage in the region in 2008.⁴ Although there is no single entity that regulates and tracks the official mileage of Pennsylvania pipelines, data from the EIA and the United States Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) suggest that there exists nearly 10,000 miles of natural gas interstate pipelines in the state.⁵ Furthermore, the Pennsylvania Public Utility Commission (PUC) estimated that 2535.5 miles of state-regulated pipelines served Marcellus Shale wells in 2013.⁶

In northeastern Pennsylvania, there is currently one interstate transmission pipeline within the two-county study area to support the growing natural gas production and transmission from the Marcellus Shale. This major interstate pipeline, the Transco Line, runs through northern Luzerne County. The Transco line runs from the Gulf of Mexico and through Luzerne County to the New York Metro Area.⁷ Currently, the line is roughly 10,200 miles in length.⁸ Shipments of Marcellus Shale gas using the Transco Line have increased 14-fold in the past two years.⁹ The expected expansion of this pipeline through several proposed projects, as detailed later in this brief, can be interpreted as a response to northeastern Pennsylvania's booming natural gas industry.

Another major interstate pipeline, the Tennessee Pipeline, runs just to the north of the area, in Susquehanna County. That pipeline originates in the Gulf of Mexico Coast in Texas and Louisiana and connects the southern United States with New England. It is the largest supplier of Marcellus gas to Lackawanna County.

There is a growing gathering pipeline system in Pennsylvania to support natural gas production from the Marcellus Shale. Over the next several years of construction, these proposed intrastate lines will serve the Marcellus Shale gas wells drilled but capped throughout northeastern Pennsylvania (Bradford, Susquehanna, and Wyoming County wells).¹⁰ Below is a graphic of major developments as of May 2014.



Source: gdacoalition.org

Distribution Pipelines in Lackawanna and Luzerne Counties

Most industrial parks in the Lackawanna and Luzerne County area already benefit from an existing network of intrastate natural gas distribution pipelines. Research suggests that northeastern Pennsylvania's distribution pipeline network is more developed than the distribution pipeline network of the state as a whole. According to a list of area business and industrial parks, 24 parks in Lackawanna County and 27 parks in Luzerne County have access to a UGI distribution main within their facilities.¹¹ Of the 25 parks listed in Lackawanna County, only one park reported not having access to a UGI distribution main. A comprehensive list of business and industrial parks in northeastern Pennsylvania can be found in the appendix.

An extensive network of gas distribution pipelines of varying sizes and pressures exist in 24 out of the 25 business parks in Lackawanna and Luzerne counties. Although pipeline pressures and capacity vary by location, research shows that natural gas may be provided to businesses at both high and medium pressures, suggesting that a diverse array of natural gas needs can be served by the existing infrastructure in the area. Generally, pressures range from as low as 20 PSI (pounds per square inch) to as high as 60 PSI. UGI Utilities has a flexible rate schedule when combined with the low cost of supplies makes natural gas in the region extremely competitive.

Proposed Pipelines

Currently, there exist four major interstate transmission pipeline proposals that aim to service northeastern Pennsylvania. The Williams' Transco Line Leidy Southeast Expansion Project, the PennEast Pipeline, the Williams' Transco Line Atlantic Sunrise Project, and the Williams' Diamond East Project are expected to improve gas transmission from the Marcellus Shale in the region. Additionally, there are several smaller-scale distribution line projects that seek to improve local distribution systems in Lackawanna and Luzerne counties.

Leidy Southeast Expansion Project

The Williams' Transco Line Leidy Southeast Expansion Project is expected to construct miles of additional pipeline, as well as improve and add necessary equipment. The Leidy Southeast Expansion Project would add four parallel lines and compressors in Pennsylvania and New Jersey, as well as necessary equipment upgrades in neighboring states.¹²

Two of the four parallel lines, also known as "loops," will be located in the Luzerne county area. The Dorrance Loop would add 5.27 miles of 42-inch parallel line in Conyngham, Dorrance, and Slocum townships in Luzerne County.¹³ Likewise, the Franklin Loop will add 11.47 miles of 42-inch parallel line in Buck, Tunkhannock, and Tobyhanna townships in Monroe and Luzerne counties.¹⁴

Williams filed an application with the Federal Energy Regulatory Commission (FERC) in September 2013 to seek approval to begin construction on the Leidy Southeast Project.¹⁵ If

approved, the Leidy Southeast Expansion Project is targeted to start construction in spring 2015 and begin service in December 2015.¹⁶

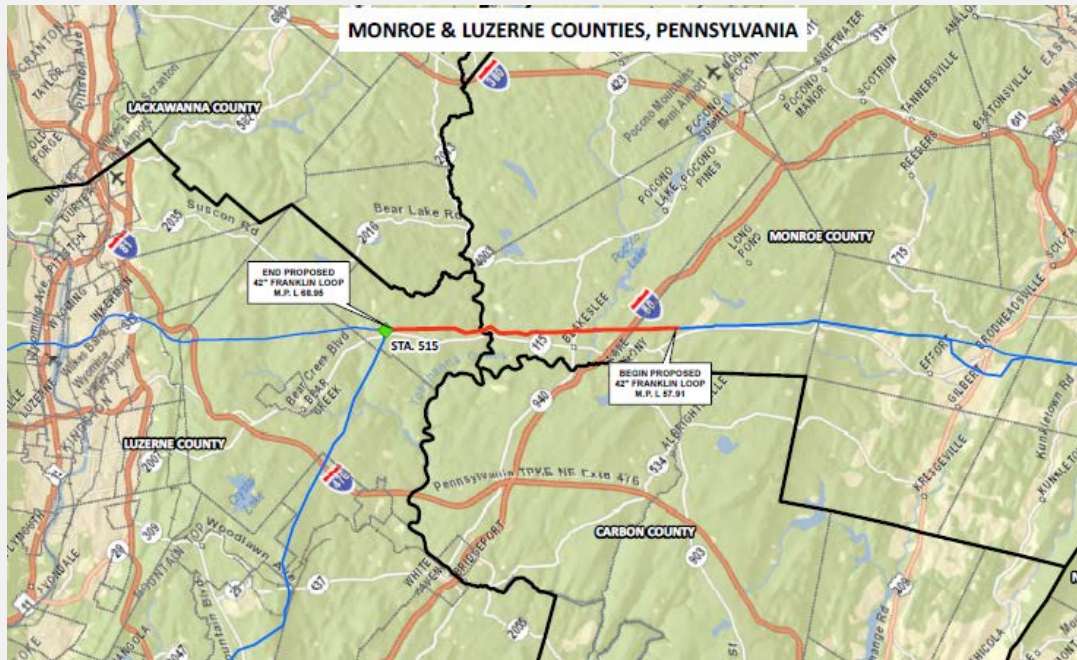


Figure 1: Leidy Southeast Pipeline Project, Franklin Loop
Source: Transcontinental Gas Pipeline Company, LLC.

PennEast Pipeline

The PennEast Pipeline will consist of a 105-mile, 30-inch pipeline connecting UGI Energy Sources' existing gathering system in Luzerne County to the Transcontinental Pipe Line Co.'s Trenton-Woodbury Lateral in Mercer County, New Jersey.¹⁷ The PennEast Pipeline is a joint venture plan involving four Atlanta-based companies: NJR Pipeline Co., a subsidiary of New Jersey Resources; South Jersey Industries, and UGI Energy Services, Spectra Energy Partners, AGL Resources, PSEG Power, LLC.¹⁸

The PennEast Pipeline is expected to begin in Luzerne County.¹⁹ The line will run through Carbon, Northampton, and Bucks counties in Pennsylvania, as well as Hunterdon and Mercer counties in New Jersey.²⁰

PennEast will begin application with FERC in October 2014. If approved, the PennEast Pipeline is expected to be operational in 2017.²¹ Upon completion, the PennEast Pipeline would be capable of shipping one billion cubic feet of gas per day.²²

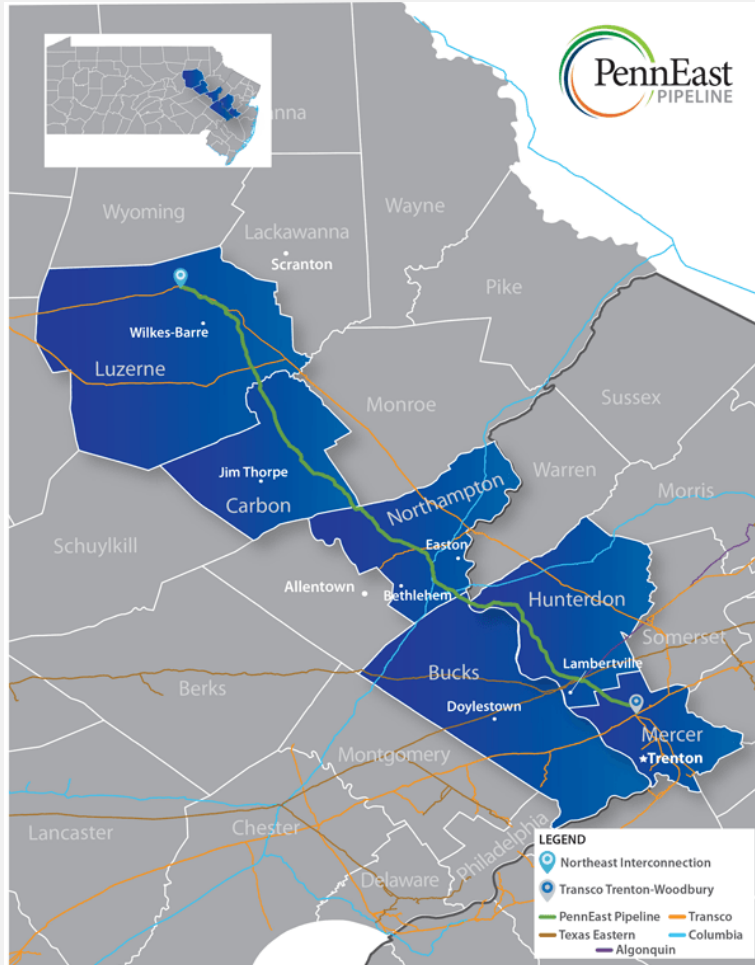


Figure 2: PennEast Pipeline Project
Source: PennEast Pipeline

Atlantic Sunrise Project

The Williams’ Transco Line Atlantic Sunrise Project will consist of the compression and looping of the existing Transco Leidy Line and the Central Penn Line.²³ The project would connect the northeastern Marcellus producing region to the Transco mainline, located near Station 195 in southeastern Pennsylvania.²⁴

Two new lines are projected to run through Luzerne County. First, the Central Penn Line North pipeline will add 56 miles of new, 30-inch pipe from nearby Susquehanna County to Transco’s existing Leidy Line in Luzerne County.²⁵ Additionally, the Central Penn Line South is expected to add 121 miles of 42-inch pipe from the Leidy Line in Luzerne County to Transco’s mainline in Lancaster County.²⁶

In the late spring of 2014, Williams held open houses and informational meetings concerning the proposed pipeline. Williams anticipates submission of their 7(c) application to FERC

sometime in early 2015. If approved, the Atlantic Sunrise project is expected to start construction in summer 2016 and begin service in the latter half of 2017.²⁷

Diamond East Project

The Williams' Diamond East Project will consist of additional compression and loop segments along their existing Transco pipeline corridor.²⁸ The Diamond East Project would include 50 miles of additional pipeline looping, as well as horsepower additions at existing Transco compressor facilities.²⁹

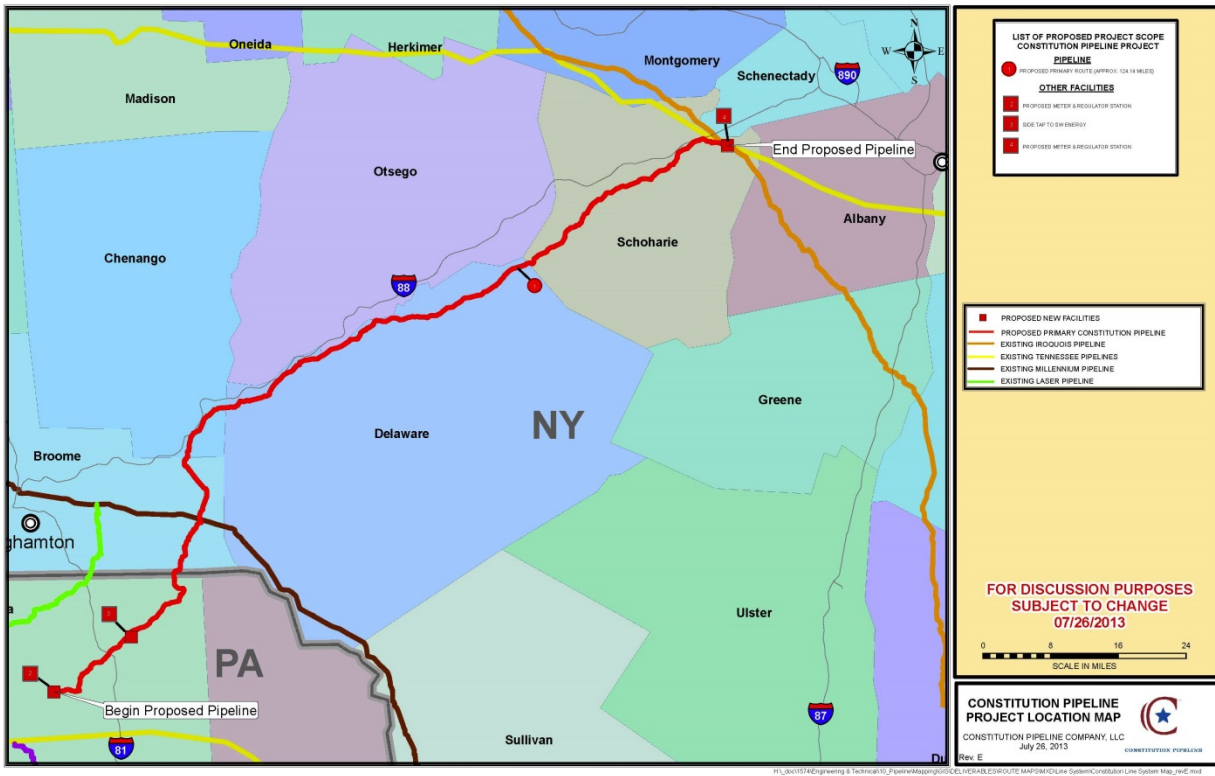
The project is designed to provide up to one billion cubic feet per day of new natural gas transportation along the Leidy Line, which currently runs through Lycoming and Luzerne counties.³⁰ The Diamond East project would link natural gas from Northeastern Pennsylvania to Transco's Market Pool, located at Station 210 in Mercer County, New Jersey.³¹ The construction of additional gas transportation from northeastern Pennsylvania to this point would improve supply diversity for Transco's northeast market of Pennsylvania, New Jersey, and New York local distribution companies and power generators.³²

Williams recently launched an open season from August 26 through September 23, 2014 to attract users interested in capacity on the project.³³ The Diamond Project is expected to begin service by mid-2018.

Constitution Pipeline

The Constitution Pipeline is a 124-mile Constitution Pipeline from Susquehanna County in Pennsylvania to Schoharie County, New York – specifically to connect to the Iroquois Gas Transmission and Tennessee Gas Pipeline system. The proposed pipeline will have a capacity to transport 650,000 dekatherms of natural gas per day (enough natural gas to serve approximately 3 million homes). The route stretches from Susquehanna County, Pa., into Broome County, N.Y., Chenango County, N.Y., Delaware County, N.Y., and terminates in Schoharie County, N.Y.

Constitution Pipeline will allow local municipalities or public utilities to connect to the pipeline to provide residential, commercial, and industrial natural gas service. Constitution's partner, Leatherstocking plans to install four delivery interconnects along Constitution's proposed pipeline route for the purpose of facilitating potential local natural gas service. Leatherstocking's plan is to develop local natural gas distribution systems within Broome, Chenango, Delaware, and Madison Counties in New York State and Susquehanna County in Pennsylvania in locations currently without natural gas service.³⁴ The project is anticipated to be operational in late 2015 or early 2016.



Source: www.constitutionpipeline.com

There are several pipelines in planning stages to service New York and New England. Any expansions into other markets have the potential to provide significant competition for Lackawanna and Luzerne Counties, because if suppliers in New York can match the natural gas prices currently offered in Lackawanna and Luzerne Counties, the region will need to rely on other competitive factors such as incentives, workforce attributes, transportation network, or lower land/building costs. There is even a stronger possibility that Susquehanna County could be more appealing, if the distribution costs were competitive, however the Lackawanna-Luzerne region has a larger population from which to draw the workforce and a stronger transportation infrastructure.

MARC II

Crestwood Midstream Partners LP is in the planning stages of a new natural gas pipeline to extend from Sullivan County into Luzerne County. The MARC II pipeline would connect to the existing Transco line (Williams) and the PennEast pipeline in Dallas, PA. This allows for increased Marcellus gas to be transported into other states in the Mid-Atlantic and New England regions.



Source: The Scranton Times

Intrastate Infrastructure Improvement Projects

UGI Utilities has a long-term infrastructure improvement plan which includes various locations throughout Lackawanna and Luzerne counties. These projects will primarily consist of the replacement of hundreds of miles of antiquated cast iron and bare steel mains with contemporary materials such as high density plastic or cathodically protected steel.³⁵ Additionally, such pipeline improvement projects will be accompanied by routine capital projects, including pressure reinforcements, service line and meter replacements, and regulator station maintenance.³⁶ UGI will eventually replace all pipes with state of the art materials to enhance pipeline safety.

Moreover, UGI has two similar ongoing infrastructure improvement projects in Forty Fort and Scranton. One project site is located on River Street in Forty Fort.³⁷ The second project location is on Harrison Avenue in Scranton.³⁸

Conclusion

Building upon The Institute’s 2013 report *Marcellus Shale Economic Development Strategy for Lackawanna and Luzerne Counties*, the existing pipeline infrastructure in Lackawanna and Luzerne counties appears to support that the region has the potential to attract increased manufacturing jobs. The existing pipeline network, the counties’ proximity to the shale play, education infrastructure, and availability of commercial real estate with natural gas access make Lackawanna and Luzerne counties potentially competitive and lucrative areas for manufacturing industries.

Since the gas will be produced from the Marcellus wells in northeastern Pennsylvania, the current limitations of existing interstate pipeline infrastructure in the region does not pose any limitation for current business endeavors in the area. The proposed pipeline projects projected to run through Luzerne County will further strengthen the existing gathering and distribution network. Furthermore, given that the four aforementioned pipeline projects are targeted to begin service between 2015 and 2018, one can anticipate more opportunities in the region arising from natural gas within the next three to five years.

The region does, however need to act quickly to establish its competitive position. Part of the Constitution line runs into New York and up to New England. Additionally, Kinder Morgan's Northeast Energy Direct project runs a pipeline from Sullivan County across Bradford and Sullivan Counties through Wayne and Pike into New Jersey ending in Bergen County.

The distribution pipeline infrastructure appears to be relatively well developed and diverse. Based on research collected about utilities usage in various industrial parks in the area, records suggest that most industrial parks in Luzerne and Lackawanna counties are sufficiently equipped to handle the immediate natural gas needs of patrons, both current and new, in those parks. Moreover, smaller scale pipeline improvement projects demonstrate that the maintenance and safety of the local distribution network is a top priority. The strength of the intrastate pipeline infrastructure presents good news for local businesses linked with the shale industry, as well as for potential industries looking for commercial real estate in the area. The natural gas play has created this economic development opportunity for Lackawanna and Luzerne Counties, the pipelines are the vehicle to make the economic benefit a regional reality.

Appendix A: Penn's Northeast Business and Industrial Parks

Park Name	Location	City	County	UGI Distribution Main in Park
Abington Executive Park	Off of Country Club road	Clarks Summit	Lackawanna	yes
Barnum Industrial Park	Clark Road	Duryea	Luzerne	yes
Benton Park	Franklin Valley Road	Benton Township	Lackawanna	yes
Briar Creek Business Park	Columbia Blvd	Berwick	Luzerne	yes
Business Park at Carbondale Yards	Enterprise Drive	Carbondale	Lackawanna	yes
CAN DO Corporate Center	Corporate Drive	Drums	Luzerne	yes
CenterPoint Commerce & Trade Park East	CenterPoint Blvd	Jenkins Township	Luzerne	yes
CenterPoint Commerce & Trade Park West	Enterprise Way	Pittston Township	Luzerne	yes
CenterPoint Commerce and Trade Park North	TBD	TBD	Luzerne	yes
CenterPoint Commerce and Trade Park South	Gateway Drive	Jenkins Township	Luzerne	yes
CLIDCO Industrial Park	Scott Street	Carbondale	Lackawanna	yes
Corporate Center at East Mountain	East Mountain Blvd	Plains Township	Luzerne	yes
Covington Industrial Park	First Ave	Covington Township	Lackawanna	no
Crestwood Industrial Park	Crestwood Drive	Mountain Top	Luzerne	yes
Diamond Corporate Park	Wilkes-Barre Public Square	Wilkes-Barre	Luzerne	yes
Dickson City Industrial Park	Boulevard Ave	Dickson City	Lackawanna	yes
Duryea KOZ Industrial Park	Boylan Drive (off McAlpine Street)	Duryea	Luzerne	yes
East Mountain Corporate Center	Baltimore Drive	Plains Township	Luzerne	yes
Glenmaura Corporate Center	Glenmaura National Blvd	Moosic	Lackawanna	yes
Grimes Industrial Park	Commerce Road	Pittston Township	Luzerne	yes
Hanover Crossings	Great Valley Blvd	Hanover Township	Luzerne	yes
Hanover Industrial Estates	New Commerce Blvd	Hanover Township	Luzerne	yes
Hazleton Commerce Center	SR 424	Hazleton	Luzerne	yes
Highland Park	Highland Ave	Wilkes-Barre	Luzerne	yes
Humboldt Industrial Park	SR 924 & Commerce Drive	Hazle Township	Luzerne	yes
Humboldt Industrial Park East	SR 924 & Commerce Drive	Hazle Township	Luzerne	yes

Humboldt Industrial Park East Commercial	SR 924 & Commerce Drive	Hazle Township	Luzerne	yes
Humboldt Industrial Park North	SR 924 & North Park Drive	Hazle Township	Luzerne	yes
Humboldt Industrial Park Northwest	SR 924 & North Park Drive	Hazle Township	Luzerne	yes
Humboldt Industrial Park West	SR 924 & Green Mountain Rd	Hazle Township	Luzerne	yes
Ivy Industrial Park	Griffin Pond Road	South Abington Township	Lackawanna	yes
Keyser Valley Industrial Park	North-South Road	Scranton	Lackawanna	yes
Keystone Industrial Park	Keystone Park Drive	Dunmore/Throop	Lackawanna	yes
Marvine Properties	Boulevard Ave	Scranton	Lackawanna	yes
MEYA Park	Mellow Drive	Jessup	Lackawanna	yes
Mid Valley Industrial Park	Lackawanna Ave	Throop	Lackawanna	yes
Mount Pleasant Corporate Center	Linden Street	Scranton	Lackawanna	yes
O'Hara Industrial Park	Armstrong Road	Pittston/Jenkins Township	Luzerne	yes
Old Forge Industrial Park	Moosic Road	Old Forge	Lackawanna	yes
PEI Power Park	Power Blvd	Archbald	Lackawanna	yes
Quackenbush Industrial Park	Oak & Brown Streets	Pittston	Luzerne	yes
Rocky Glen Industrial Park	Rocky Glen Road	Moosic	Lackawanna	yes
Scott Technology Park	SR 632/Discovery Drive	Scott Township	Lackawanna	yes
Shady Lane Business Park	Skyline Road	South Abington Township	Lackawanna	yes
South Scranton Industrial Park	Davis Street	Scranton	Lackawanna	yes
South Valley	South Cross Valley Expressway	Newport/Hanover Township	Luzerne	yes
Stafford Avenue Business Park	Stafford Ave	Scranton	Lackawanna	yes
Stauffer Industrial Park	Stauffer Industrial Park Road	Taylor	Lackawanna	yes
Valley View Business Park Phases I & 2	Valley View Drive	Jessup	Lackawanna	yes
Valley View Business Park/Jessup Sm. Business Ctr.	Valley View Drive	Jessup	Lackawanna	yes
Valmont Industrial Park	Jaycee Drive	West Hazleton & Hazle Township	Luzerne	yes
W.W. Scranton Office Park at Montage	Preate Drive	Scranton/Moosic	Lackawanna	yes
York Avenue Industrial Park	York Ave	Duryea	Luzerne	yes

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