Evaluation for Solar Farm Development

North Point Pleasant Industrial Park

Mason County, WV

July 2022

Prepared for:

WV Office Of Energy

A Division of the West Virginia Development Office

Prepared by:

Marshall University

Center for Environmental, Geotechnical and Applied Sciences and

Marshall University's WV Brownfields Assistance Center

Report financially assisted through a grant administered by the U.S. Department of Energy

ACKNOWLEDGMENT: The development of this report was financially assisted through a grant administrated by the U.S. Department of Energy. This report was prepared through a cooperative effort by the WEST VIRGINIA OFFICE OF ENERGY and Marshall University Research Corporation (MURC) and compiled by Marshall University's Center for Environmental, Geotechnical and Applied Sciences (CEGAS) and its West Virginia Brownfields Assistance Center.

DISCLAIMER: This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

TABLE OF CONTENTS

Introduction / Report Background 2
Site Name and Location 2
Current Property Owners 3
Site History and Current Status 3
Local Area Summary 4
Electric Utility Summary 4
Potential Solar Farm Use 5
Property Availability 5
The Nature Conservancy's (TNC) Resilient Land Mapping Tool Report 5
Attachments 11
Maps 12
Photos 16

Introduction / Report Background

Marshall University's Center for Environmental, Geotechnical and Applied Sciences (CEGAS) and its West Virginia Brownfields Assistance Center were retained by the West Virginia Office of Energy, a division of the West Virginia Development Office to complete limited property evaluation studies on select mine land and other properties for potential large-scale solar farm use. This specific evaluation is for the North Point Pleasant Industrial Park and includes information obtained from multiple sources regarding site-specific information and conditions, local area demographics, available electric utilities, and interaction with property owners. The purpose of this evaluation is to provide sufficient information on the subject property for potential redevelopment and/or reuse considerations by interested parties for solar farm use. CEGAS believes, to the best of its knowledge, that the information contained in the report is accurate at the time of compilation, however, no guarantees are warranted. It is ultimately the responsibility of interested parties to perform their own due diligence in fully evaluating the subject property for potential new development.

Site Name and Location

The North Point Pleasant Industrial Park is located in the western part of West Virginia (WV) in Mason County. The property is located approximately 60 miles north-west of Charleston, WV, and approximately 3 miles north of Pt. Pleasant, WV. It can be accessed from WV Route 62. A site location map is provided as an attachment.

The entire property is comprised of approximately 1,154 acres. Nine tracts associated with this report are listed on the West Virginia Property Viewer (mapwv.gov/parcel) as follows:

District: 14 Map: 0203 Parcel: 0001 Parcel Suffix: 0000 Book: 333 Page: 1
District: 14 Map: 0203 Parcel: 0001 Parcel Suffix: 0003 Book: EB21 Page: 249
District: 14 Map: 0203 Parcel: 0001 Parcel Suffix: 0004 Book: EB21 Page: 249
District: 14 Map: 0203 Parcel: 0001 Parcel Suffix: 0010 Book: 333 Page: 1
District: 14 Map: 0203 Parcel: 0001 Parcel Suffix: 0011 Book: 333 Page: 1

District: 14	Map: 0203	Parcel: 0005	Parcel Suffix: 0000	Book: 330	Page: 797
District: 14	Map: 0203	Parcel: 0052	Parcel Suffix: 0000	Book: 333	Page: 1
District: 14	Map: 0203	Parcel: 0034	Parcel Suffix: 0001	Book: 203	Page: 403
District: 14	Map: 0203	Parcel: 0076	Parcel Suffix: 0000	Book: 203	Page: 388

Current Property Owners

The tracts are owned by Deerfield Development Co., Mason County Development Authority, County Court of Mason County, and Sola Antonio RA Averion LIV TR., K W Thompson P Obregon. The contact for this property in its entirety is:

John Musgrave, Executive Director
Mason County Economic Development Authority
305 Main Street
Point Pleasant, WV 25550
mcdaadm@masoncounty.org
Tel: 304.675.1497

Site History and Current Status

The property has been utilized for farmland with wooded areas. Part of the property is currently a local airport, which may be altered, as a potential option, for new use in the future. In June 2022, a Phase I Environmental Site Assessment was completed by Triad Engineering, Inc. In the report the property was described as:

Mr. John Musgrave, the user as well as one of the owners of Parcel 26-14-0203-0052-0000, stated that the property was originally a dairy farm until approximately 1939-40 when the site was used by the government primarily as a support zone to produce TNT for World War II. The nearby manufacturing/storage/disposal areas of the facilities closed after the war. The manufacturing buildings, rails, and associated piping were removed, and the WV Ordinance Works (WVOW) was condemned. By the 1970's, Mr. Musgrave became mayor of Point Pleasant and attempted to sell the property for use in a gasification plant for Consolidated Natural Gas (CNG), CNG held an estimated 1,200 acres of the property for approximately 20 years without developing the property. By

that time, the federal government reclaimed the property and gave a portion of the property to West Virginia University's Experimental Station for agricultural studies. Approximately 25-30 years ago, a group of nine local businessmen and the county development authority purchased the other 700 acres of property. The property contains two 5-million-gallon capacity concrete-rimmed tanks left over from the WV Ordinance Works that were too large to be dismantled. The site also contains monitoring wells and an airport.

Aerial videos of each location, collected in March of 2022, can be viewed using the following web link:

Site Video:
https://youtube.com/playlist?list=PLO4Yig1CAOAmJLxFp74i3-MyzSKXPGflY

Local Area Summary

Mason County is located in western West Virginia. The population of Mason County was 25,157 in the 2021 census estimate. The local area associated with this property is within a primarily rural setting with low density residences close to the property.

Electric Utility Summary

Electric service is provided by Appalachian Power Company, a unit of American Electric Power Company, Inc. Three-phase power is available in the vicinity of the properties. The nearest substation is located less than a mile southwest of the property border. A new substation is planned for construction within the property boundaries. Two transmission lines run adjacent to the property. Each transmission line is approximately half a mile to a mile from the property border. A map depicting substations and electric transmission lines in the vicinity of area is provided as an attachment.

Potential Solar Farm Use

The property has been evaluated using DEMs derived from FEMA-purchased QL2 LiDAR collected between 2018 and 2019. Properties were evaluated using 10% and 15% maximum slope factors to determine available land potentially suitable for solar farm development. Using ESRI's ArcGIS software, slope analysis was calculated from DEM referenced data. Maps of both areas depicting slope characteristics are provided as attachments. A summary of the slope analysis is provided on the following table:

Total Acreage	10% Slope Acreage	15% Slope Acreage
~1,154	~865	~1,048

Property Availability

The primary goal of the landowners' group is to locate new tenants on the properties for manufacturing, warehousing, and related large-scale business and industry. Utilizing portions of the property for solar farm installations will be considered as a secondary business option, or as part of a larger business or industrial use package. The combined owners are interested in selling property for business and industrial use, and/or long-term (25 year plus) lease agreements on portions of the property for solar farm installations. Rooftop solar power generation systems associated with new business or industry are of significant interest. Terms for lease rates are negotiable, dependent on multiple factors including amount of property utilized, length of lease, and packaged deal options.

The Nature Conservancy's (TNC) Resilient Land Mapping Tool Report

As requested by the West Virginia Office of Energy, CEGAS utilized The Nature Conservancy's Resilient Land Mapping Tool for the property for site resiliency evaluations. TNC's Nature and Economy Program Director, Eriks Brolis, provided the following description of TNC's Resilient Land Mapping Tool.

The Nature Conservancy is working across the country to help private and public partners deliver clean, wildlife-friendly renewable power to customers faster and cheaper with the least potential conflict for people, water, and wildlife. In conjunction, the Nature Conservancy is identifying and mapping a representative, connected network of climate resilient sites which if conserved, could help sustain biodiversity into the future as it moves and changes to adapt to a changing climate. The network also protects the source water, carbon stocks, oxygen, and recreation space that people depend on.

TNC's Resilient and Connected Network (RCN) is a proposed conservation network of representative climate-resilient sites designed to sustain biodiversity and ecological functions into the future under a changing climate. The network was identified and mapped over a 10-year period by Nature Conservancy scientists using public data available at the state and national scale, and an inclusive process that involved over 250 scientists from agencies, academia and NGOs across the US. The Resilient and Connected Map quantifies and integrates three nation-wide assessments:

Climate Resilient Sites: ecologically representative sites with a diversity of connected microclimates and low human modification.

Connectivity and Climate Flow: Linkages that allow species to move across sites and climate gradients.

Recognized Biodiversity Value: Places with intact habitats, rare species, or exemplary communities.

Resilience Score: The map allows users to calculate a site specific "Resilience Score". A site's Resilience Score estimates its capacity to maintain species diversity and ecological function as the climate changes. It was determined by evaluating and quantifying physical characteristics that foster resilience, particularly the site's landscape diversity and local connectedness. The score is calculated within ecoregions based on all cells of the same geophysical setting and is described on a relative basis as above or below the average. Generally,

> the higher the score the more important the land is for conservation, the lower the score the less concern for development.
>
> To learn more, please visit: https://www.conservationgateway.org/ConservationPractices/ClimateChange/Pages/Climate-Resilience.aspx

The Nature Conservancy's (TNC) Resilient Land Mapping Tool results for the Marion County Landfill and AmBit property are shown below.

Resilient Land Summary

Total land area: 1,320.8 acres (1,320.4 land, 0.5 open water) in the Northeast study area(s) in the Western Allegheny Plateau ecoregion(s).

Resilient and Connected Network Results

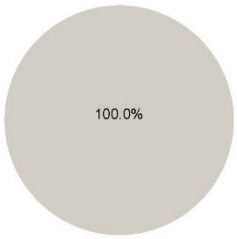
Note: These results are based on the **nationally-consistent** ecoregional data. They are derived from the detailed representations of the Resilient and Connected Networks which can be visualized under the Resilient & Connected Network Components section at right.

Resilience, Flow and Recognized Biodiversity: 0 ac.

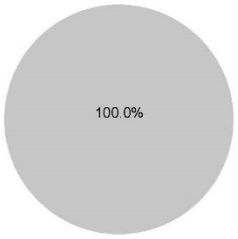
Resilience and Flow: 0 ac.

Resilience and Recognized Biodiversity: 0 ac.

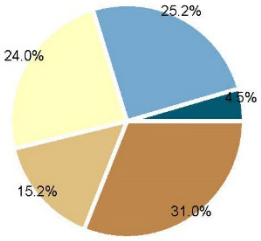
Outside Prioritized Network: 1,320.9 ac.



Biodiversity



Connectivity and Climate Flow (Continuous)

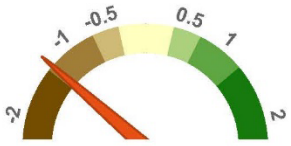


Average Terrestrial Resilience with Polygon

(all scores relative to ecoregion)

Resilience
Below Average (-1.02 SD)

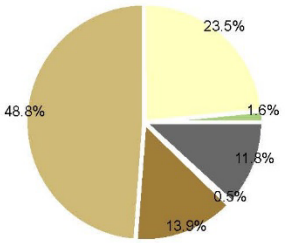
Local Connectedness
Below Average (-1.28 SD)



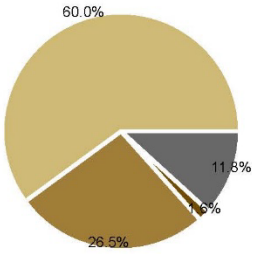
Landscape Diversity
Slightly Below Average (-0.75 SD)

Terrestrial Resilience Categories

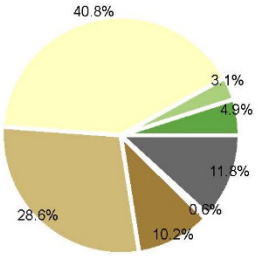
Resilience



Local Connectedness



Landscape Diversity



Geophysical Setting Results

The mean elevation in the polygon is 192.67 m (632.13 ft) and the three most common geophysical settings are:

Very Low Elevation Silt/Clay : 825 acres

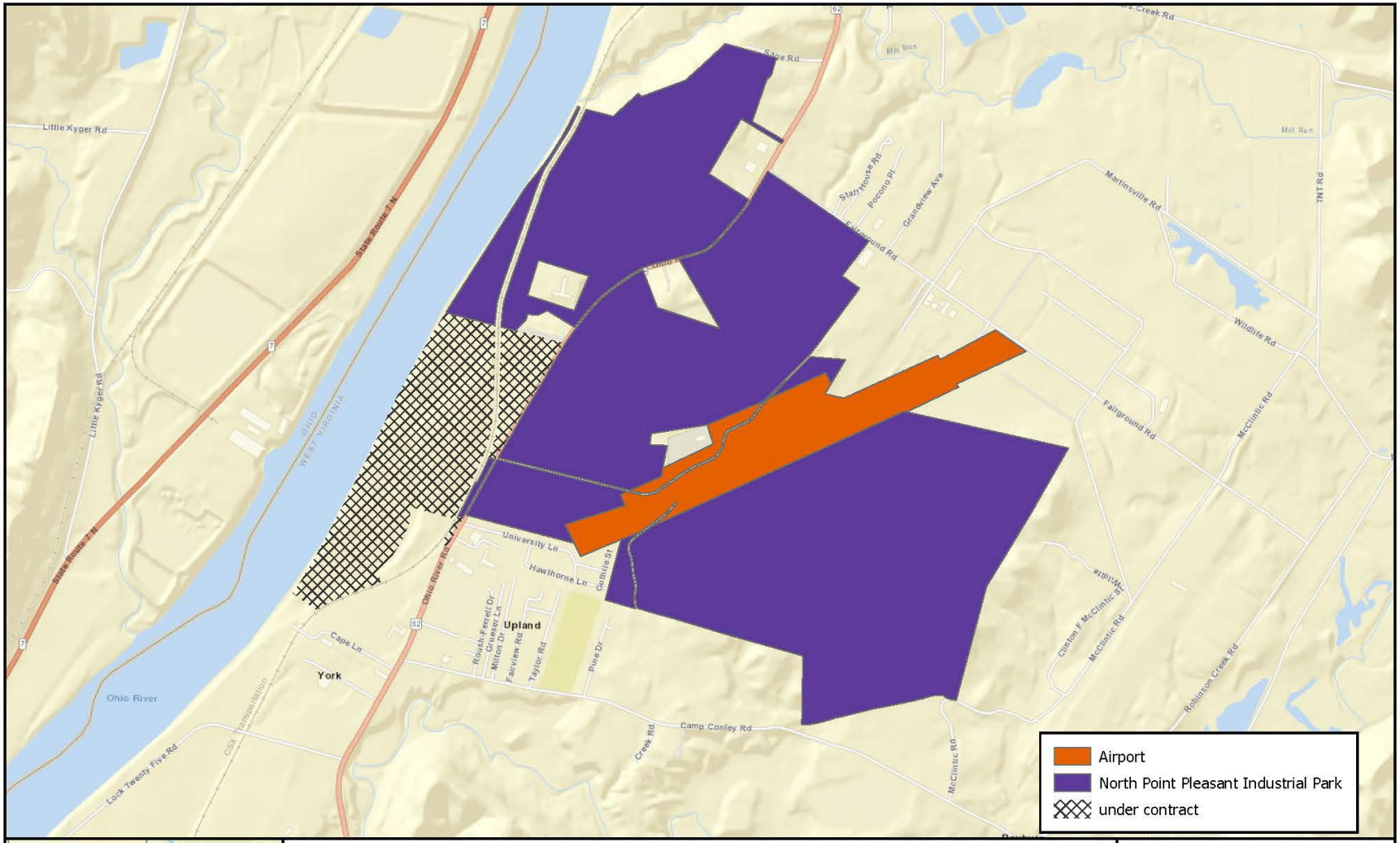
Very Low Elevation Sand : 340 acres

Very Low Elevation Loam : 116 acres

PAGE INTENTIONALLY LEFT BLANK

Attachments

Maps



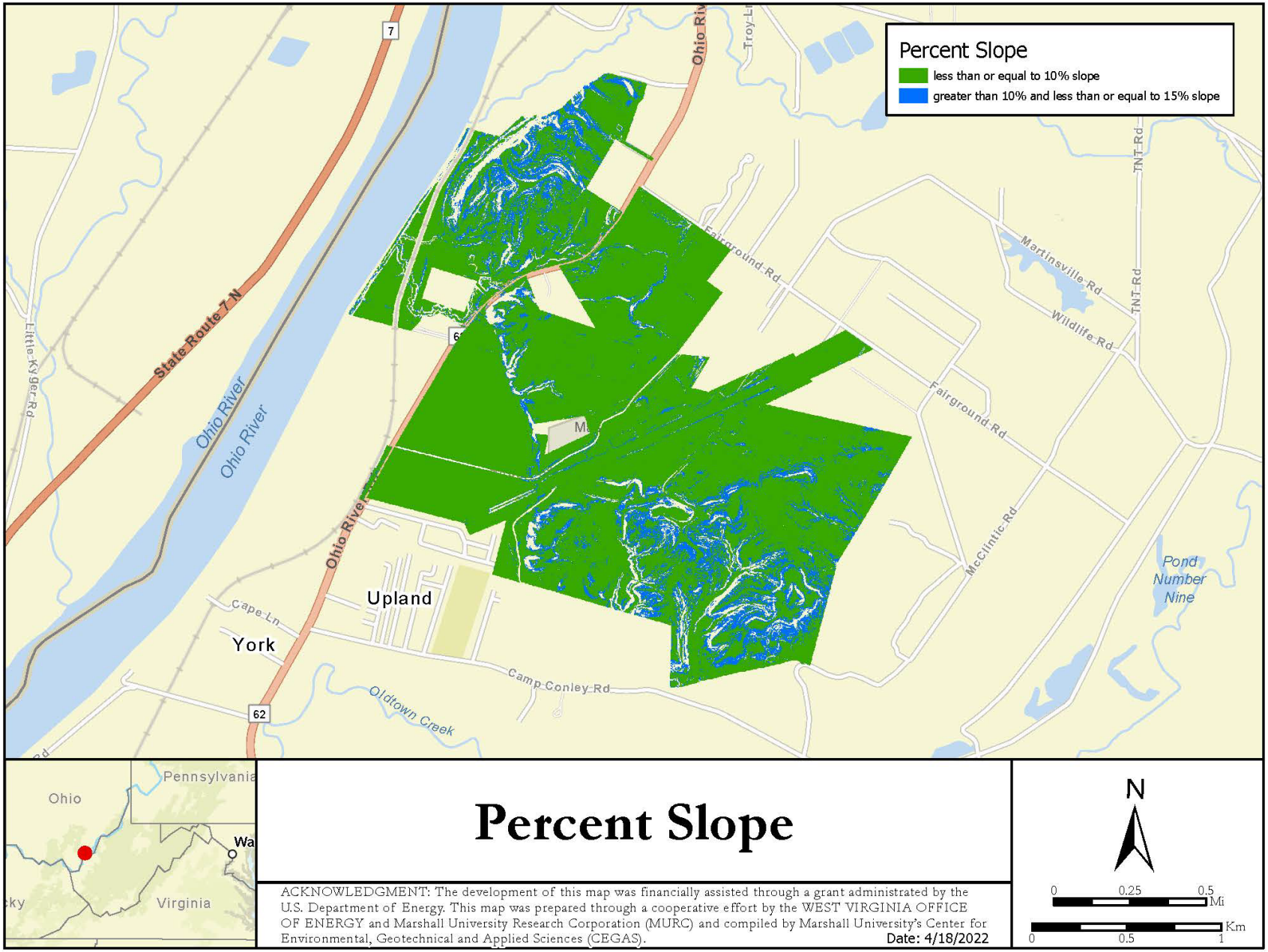
Properties

North Point Pleasant Industrial Park: approximately 1030 acres

Airport: approximately 120 acres

ACKNOWLEDGMENT: The development of this map was financially assisted through a grant administrated by the U.S. Department of Energy. This map was prepared through a cooperative effort by the WEST VIRGINIA OFFICE OF ENERGY and Marshall University Research Corporation (MURC) and compiled by Marshall University's Center for Environmental, Geotechnical and Applied Sciences (CEGAS).

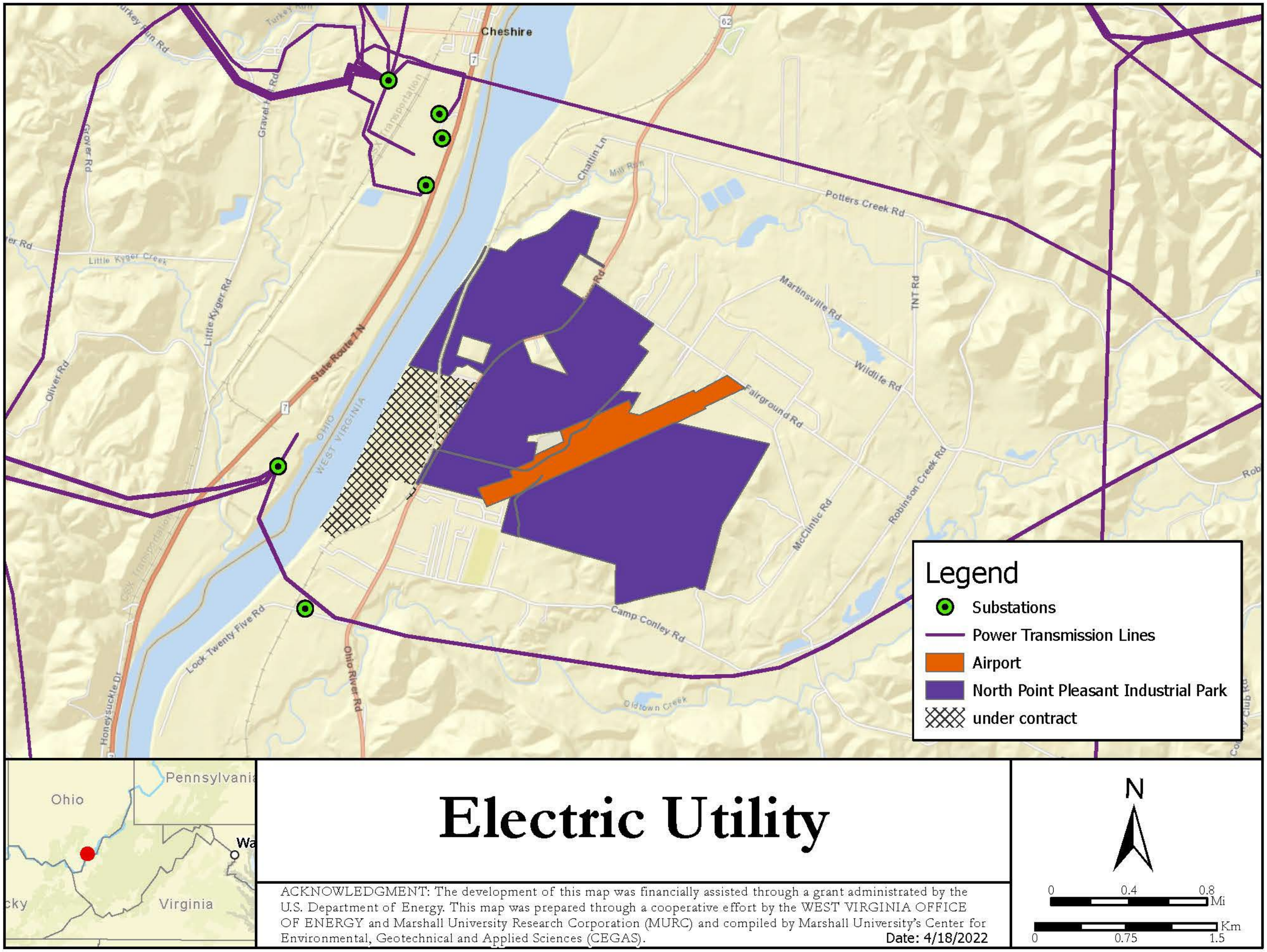
Date: 4/15/2022



Percent Slope

ACKNOWLEDGMENT: The development of this map was financially assisted through a grant administrated by the U.S. Department of Energy. This map was prepared through a cooperative effort by the WEST VIRGINIA OFFICE OF ENERGY and Marshall University Research Corporation (MURC) and compiled by Marshall University's Center for Environmental, Geotechnical and Applied Sciences (CEGAS).

Date: 4/18/2022



Electric Utility

ACKNOWLEDGMENT: The development of this map was financially assisted through a grant administrated by the U.S. Department of Energy. This map was prepared through a cooperative effort by the WEST VIRGINIA OFFICE OF ENERGY and Marshall University Research Corporation (MURC) and compiled by Marshall University's Center for Environmental, Geotechnical and Applied Sciences (CEGAS).

Date: 4/18/2022

Photos