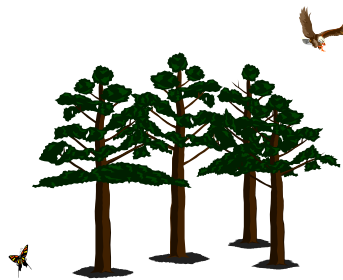




FEDERAL AVIATION ADMINISTRATION

EASTERN REGION
AIRPORTS DIVISION

**Short Environmental
Assessment Form
for
AIRPORT DEVELOPMENT
PROJECTS**



Airport Name: Pittsburgh International Airport

Identifier: PIT

Project Title: Microgrid

This Environmental Assessment becomes a Federal document when evaluated, signed, and dated by the Responsible FAA official.

Responsible FAA Official

Date

INSTRUCTIONS

THIS FORM IS FOR LIMITED USE ON SPECIFIC TYPES OF PROJECTS. AIRPORT SPONSORS MUST CONTACT YOUR LOCAL AIRPORTS DISTRICT OFFICE (ADO) ENVIRONMENTAL PROTECTION SPECIALIST (EPS) BEFORE COMPLETING THIS FORM.

This form was prepared by FAA Eastern Region Airports Division and can only be used for proposed projects in this region.

Introduction: This Short Environmental Assessment (EA), is based upon the guidance in Federal Aviation Administration (FAA) Orders 1050.1F – *Environmental Impacts: Policies and Procedures*, and the *Environmental Desk Reference for Airport Actions* and 5050.4B – *NEPA Implementing Instructions for Airport Actions*. These orders incorporate the Council on Environmental Quality's (CEQ) regulations for implementing the National Environmental Policy Act (NEPA), as well as US Department of Transportation environmental regulations, and other applicable federal statutes and regulations designed to protect the Nation's natural, historic, cultural, and archeological resources. The information provided by sponsors, with potential assistance from consultants, through the use of this form enables the FAA ADO offices to evaluate compliance with NEPA and the applicable special purpose laws.

Use: For situations in which this form may be considered, refer to the APPLICABILITY Section below. The local ADO has the final determination in the applicability of this form to a proposed Federal Action. Proper completion of the Form will allow the FAA to determine whether the proposed airport development project can be processed with a short EA, or whether a more detailed EA or EIS must be prepared. **If you have any questions on whether use of this form is appropriate for your project, or what information to provide, we recommend that you contact the environmental specialist in your local ADO.**

This Form is to be used in conjunction with applicable Orders, laws, and guidance documents, and in consultation with the appropriate resource agencies. Sponsors and their consultants should review the requirements of special purpose laws (See 5050.4B, Table 1-1 for a summary of applicable laws). Sufficient documentation is necessary to enable the FAA to assure compliance with all applicable environmental requirements. Accordingly, any required consultations, findings or determinations by federal and state agencies, or tribal governments, are to be coordinated, and completed if necessary, prior to submitting this form to FAA for review. Coordination with Tribal governments must be conducted through the FAA. We encourage sponsors to begin coordination with these entities as early as possible to provide for sufficient review time. Complete information will help FAA expedite its review. This Form meets the intent of a short EA while satisfying the regulatory requirements of NEPA for an EA. Use of this form acknowledges that all procedural requirements of NEPA or relevant special purpose laws still apply and that this form does not provide a means for circumvention of these requirements.

Submittal: When using this form for an airport project requesting *discretionary funding*, the documentation must be submitted to the local ADO by April 30th of the fiscal year preceding the fiscal year in which funding will be requested. When using this form for an airport project requesting *entitlement funding*, the documentation must be submitted to the local ADO by November 30th of the fiscal year in which the funding will be requested.

Availability: *An electronic version of this Short Form EA is available on-line at <http://www.faa.gov/airports/eastern/environmental/media/short-form-ea-final.docx>. Other sources of environmental information including guidance and regulatory documents are available on-line at http://www.faa.gov/airports_airtraffic/airports/environmental.*

APPLICABILITY

Local ADO EPSs make the final determinations for the applicability of this form. If you have questions as to whether the use of this form is appropriate for your project, contact your local EPS BEFORE using this form. Airport sponsors can consider the use of this form if the proposed project meets either Criteria 1 or Criteria 2, 3, and 4 collectively as follows:

- 1) It is normally categorically excluded (see paragraphs 5-6.1 through 5-6.6 in FAA Order 1050.1F) but, in this instance, involves at least one, but no more than two, extraordinary circumstance(s) that may significantly impact the human environment (see paragraph 5-2 in 1050.1F and the applicable resource chapter in the 1050.1F Desk reference).
- 2) The action is one that is not specifically listed as categorically excluded or normally requires an EA at a minimum (see paragraph 506 in FAA Order 5050.4B).
- 3) The proposed project and all connected actions must be comprised of Federal Airports Program actions, including:
 - (a) Approval of a project on an Airport Layout Plan (ALP),
 - (b) Approval of Airport Improvement Program (AIP) funding for airport development,
 - (c) Requests for conveyance of government land,
 - (d) Approval of release of airport land, or
 - (e) Approval of the use of Passenger Facility Charges (PFC).
- 4) The proposed project is not expected to have impacts to more than two of the resource categories defined in the 1050.1F Desk Reference.

This form cannot be used when any of the following circumstances apply:

- 1) The proposed action, including all connected actions, requires coordination with or approval by an FAA Line of Business or Staff Office other than the Airports Division. Examples include, but are not limited to, changes to runway thresholds, changes to flight procedures, changes to NAVAIDs, review by Regional Counsel, etc.
- 2) The proposed action, including all connected actions, requires coordination with another Federal Agency outside of the FAA.
- 3) The proposed action will likely result in the need to issue a Record of Decision.
- 4) The proposed action requires a construction period exceeding 3 years.

-
- 5) The proposed action involves substantial public controversy on environmental grounds.
 - 6) The proposed project would have impacts to, or require mitigation to offset the impacts to more than two resources¹ as defined in the 1050.1F Desk Reference.
 - 7) The proposed project would involve any of the following analyses or documentation:
 - a. The development of a Section 4(f) Report for coordination with the Department of the Interior,
 - b. The use of any Native American lands or areas of religious or cultural significance,
 - c. The project emissions exceed any applicable *de minimis* thresholds for criteria pollutants under the National Ambient Air Quality Standards, or
 - d. The project would require noise modeling with AEDT 2b (or current version).

If a project is initiated using this form and any of the preceding circumstances are found to apply, the development of this form must be terminated and a standard Environmental Assessment or Environmental Impact Statement (if applicable) must be prepared.

¹ A resource is any one of the following: Air Quality; Biological Resources (including Threatened and Endangered Species); Climate; Coastal Resources; Section 4(f); Farmlands; Hazardous Materials, Solid Waste, and Pollution Prevention; Historical, Architectural, Archaeological, and Cultural Resources; Land Use; Natural Resources and Energy Supply; Noise and Noise-Compatible Land Use; Socioeconomics; Environmental Justice; Children's Environmental Health and Safety Risks; Visual Effects; Wetlands; Floodplains; Surface Waters; Groundwater; Wild and Scenic Rivers; and Cumulative Impacts.

Complete the following information:

Project Location

Airport Name: Pittsburgh International Airport Identifier: PIT
Airport Address: Pittsburgh International Airport, Landside Terminal 4th Floor Mezzanine,
P.O. Box 12370
City: Pittsburgh County: Allegheny State: PA Zip: 15231-0370

Airport Sponsor Information

Point of Contact: Eric Buncher, Manager of Planning Services
Address: Pittsburgh International Airport, Landside Terminal 4th Floor Mezzanine,
P.O. Box 12370
City: Pittsburgh State: PA Zip: 15231-0370
Telephone: 412-472-5692 Fax: 412-472-3544
Email: EBuncher@flypittsburgh.com

Evaluation Form Preparer Information

Point of Contact: Stephen Culberson, Vice President
Company (if not the sponsor): Ricondo & Associates, Inc.
Address: 20 N Clark Street, Suite 1500
City: Chicago State: IL Zip: 60602
Telephone: 312-212-8812 Fax: 312-606-0706
Email: sculberson@ricondo.com

1. Introduction/Background:

The Allegheny County Airport Authority (ACAA), as owner and operator of Pittsburgh International Airport (PIT or the Airport), is proposing a microgrid project in order to address issues related to energy security and energy resilience. The microgrid project (Proposed Action) entails the development of an on-site natural gas-fired electric power plant and a solar photovoltaic (PV) array on Airport property to provide electricity for Airport facilities. This Environmental Assessment (EA) is intended to identify and consider potential environmental impacts related to the Proposed Action. This Short EA for the proposed microgrid project has been prepared pursuant to the requirements of Section 102(2) of the *National Environmental Policy Act of 1969* (NEPA) and Section 509(b)(5) of the *Airport and Airway Improvement Act of 1982*, as amended.

NEPA requires federal agencies to prepare environmental documentation that discloses to decision-makers and the interested public a clear, accurate description of potential environmental effects resulting from proposed federal actions and reasonable alternatives to those actions. Through NEPA, the U.S. Congress directs federal agencies to integrate environmental factors in their planning and decision-making processes and to encourage and facilitate public involvement in decisions that affect the quality of the human environment. Federal agencies are required to consider the environmental impacts of the proposed action, alternatives to the proposed action, and a no action alternative (assessing the potential environmental effects of not undertaking the proposed action).

This Short EA has also been prepared in accordance with Federal Aviation Administration (FAA) Order 1050.1F, *Environmental Impacts: Policies and Procedures*², and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*.³ The FAA is the lead Federal Agency to ensure compliance with NEPA for airport development actions. The ACAA has prepared this EA on behalf of the FAA, in compliance with FAA Orders 1050.1F and 5050.4B, to evaluate the potential environmental impacts of construction and operation of the proposed microgrid project which constitutes the “Proposed Action” evaluated in this EA.

PIT is located approximately 16 miles west-northwest of the city of Pittsburgh in southwestern Pennsylvania. PIT is located within Allegheny County on the borders of Findlay and Moon Townships between the Ohio River to the north and east and Interstate 376 to the south and west. The regional location of PIT is depicted on **Exhibit 1**.

2. Project Description (List and clearly describe **ALL** components of project proposal including all connected actions). **Attach a map or drawing of the area with the location(s) of the proposed action(s) identified:**

Peoples Natural Gas Company LLC (Peoples Gas) is proposing to develop a microgrid at PIT. The Proposed Action would include an on-site natural gas-fired electric power plant and a solar PV array on a capped, inactive landfill on Airport property. The ACAA is the official project sponsor for the Pittsburgh International Airport Microgrid (Proposed Action).

People’s Gas would construct a 20 megawatt (MW) natural gas-fired electric power plant at PIT that would generate electricity through the combustion of natural gas to provide electricity to PIT. This part of the Proposed Action would consist of five generators, distribution equipment, an electrical building, and a mechanical building on a 0.9-acre site located outside of the Air Operations Area (AOA), approximately 2,000 feet east of the airside terminal and 800 feet east of Taxiway T. A location map is provided as **Exhibit 2**. The site footprint of the natural gas fired generators would be approximately 182 feet wide by 238 feet long. The generators would be 35 feet tall, but exhaust stacks associated with each generator would be 45 feet tall at their highest point. A conceptual plan of the natural gas-fired electric power plant is provided on **Exhibit 3**.

The natural gas-fired electric power plant would be located approximately 400 feet west of an existing substation that is located southeast of Hangar Road on Airport property. Electrical distribution lines would run from the natural gas-fired electric power plant to the existing substation. Approximately 1,300 linear feet of new underground conduit would be installed from the substation to existing duct banks that begin adjacent to the site on Tower Road (see Exhibit 3). These existing utility raceways continue via a network of existing manholes underground and underneath the airfield to the landside terminal main distribution power utility feeds. Additionally, as shown on **Exhibit 4**, approximately 450 feet of natural gas lines ranging in diameter from 8 inches to 12 inches would be installed to provide gas to the generators.

² U.S. Department of Transportation, Federal Aviation Administration, Order 1050.1F, *Environmental Impacts: Policies and Procedures*, effective July 16, 2015.

³ U.S. Department of Transportation, Federal Aviation Administration, Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, effective April 28, 2006.

The Proposed Action would also include a 3.0 MW alternative current (AC) solar PV array that would be located outside of the AOA on the southwest corner of airport property on a former (closed) landfill (see **Exhibit 5**), approximately 1,600 feet south of the extended centerline of Runway 10R-28L and north of Interstate 376. The solar PV array would consist of 9,360 3.3-foot by 6.5-foot, 390-Watt solar panels covering approximately 13 acres. The panels would face south away from approaches to the east-west parallel runways. A glare analysis has been conducted in conjunction with the preparation of this EA and has been included in **Appendix A**.

If approved, construction would start in the 2nd/3rd quarter of 2020 and be completed within nine months. Construction staging and laydown would occur on the existing sites, which has been previously disturbed and is currently used for staging/laydown of materials and aggregates.

3. Project Purpose and Need:

The peak power demand at PIT is 14 MW and energy at the Airport is currently provided by the region's electrical grid.⁴ In response to power outages that have affected major airports across the nation, including Los Angeles International Airport and Hartsfield-Jackson Atlanta International Airport, ACAA recognizes the need to provide power redundancy and resiliency at PIT to ensure greater power reliability and uninterrupted operations for the Airport and its passengers. In addition, ACAA recognizes the need to improve sustainability at the Airport.

In order to prevent airport power outages, the natural gas-fired electric power plant and solar PV array would form a microgrid to completely power PIT, including terminals, the airfield, the Hyatt hotel, and the Sunoco gas station. A microgrid is an independent electricity source that can operate autonomously. The Airport's microgrid would be its primary power source but would remain connected to the traditional electrical grid as an option for emergency or backup power when needed due to extreme weather events or other grid interruptions.⁵ The microgrid would be fueled by three forms of electric generation to ensure reliability: natural gas-powered electric power plant, solar PV array, and connection to the traditional electric grid. The microgrid would contribute to the Airport's sustainability initiatives by providing energy to the Airport using renewable energy sources while reducing energy costs for the Airport and tenants.⁶

The proposed microgrid would ensure greater power reliability and energy sustainability and enhance public safety at PIT.

⁴ Allegheny County Airport Authority, *Powering the Future: Pittsburgh International Unveils First-of-Its-Kind Microgrid to Power Entire Facility*, October 18, 2019, <https://flypittsburgh.com/acaa-corporate/newsroom/news-releases/powering-the-future-pittsburgh-international-airport-unveils-first-of-its-kind-microgrid-to-power-entire-facility/> (accessed February 26, 2020).

⁵ Allegheny County Airport Authority, *Powering the Future: Pittsburgh International Unveils First-of-Its-Kind Microgrid to Power Entire Facility*, October 18, 2019, <https://flypittsburgh.com/acaa-corporate/newsroom/news-releases/powering-the-future-pittsburgh-international-airport-unveils-first-of-its-kind-microgrid-to-power-entire-facility/> (accessed February 26, 2020).

⁶ Allegheny County Airport Authority, *Environmental*, <https://flypittsburgh.com/acaa-corporate/about/environmental/> (accessed February 26, 2020).

4. Describe the affected environment (existing conditions) and land use in the vicinity of project:

The Proposed Action would comprise natural gas generators on a 0.9-acre site and the addition of solar panels on approximately 13 acres of graded land on ACAA property. The natural gas-fired electric power plant would be located outside of the AOA, approximately 2,000 feet east of the airside terminal and approximately 800 feet east of Taxiway T, and the solar PV array would be located at the southwest corner of PIT (outside the fenced boundary of the PIT airport on ACAA property) approximately 1,640 feet southwest of the centerline of Runway 10R-28L and north of Interstate 376 (Proposed Project Area). Exhibit 2 depicts the project sites for the natural gas generators and the solar PV array. The Proposed Project Area has been previously disturbed and consists of graded land including soil and maintained lawn.

The natural gas-fired electric power plant would be located between Tower Road and Hangar Road adjacent to a surface parking lot and hangars on land that was previously used for construction staging. The solar PV array would be located on an inactive (closed) landfill at PIT. It is a permitted municipal waste landfill by the Pennsylvania Department of Environmental Resources (DER), now known as the Pennsylvania Department of Environment Protection (PADEP), under permit number 101479.⁷ Decomposed municipal waste and spoils from a surface mining operation were discovered during the PIT Midfield Terminal Project construction. A decision was made in concert with Allegheny County, the DER, and U.S. Army Corps of Engineers, to relocate the decomposed municipal waste and spoils from a surface mining operation to another area of the PIT property in a newly constructed landfill rather than truck the contents away to an existing municipal waste facility. The landfill has a leachate treatment and monitoring system that is monitored on-site from an environmental building adjacent to the landfill.

The landfill is considered inactive and is no longer required to test and report its monitoring wells or report leachate flow levels to the Allegheny County Health Department (ACHD) or PADEP due to significantly lower flow levels in recent years relative to the yearly average.

5. Alternatives to the Project: Describe any other reasonable actions that may feasibly substitute for the proposed project, and include a description of the “No Action” alternative. If there are no feasible or reasonable alternatives to the proposed project, explain why (attach alternatives drawings as applicable):

Alternatives

There are no other reasonable alternatives that could feasibly meet the Purpose and Need. Sites considered for the natural gas generators would need to be in close proximity to the existing electrical substation to provide a connection to the existing Airport electrical utilities. No other feasible sites exist in proximity to the electrical substation that are outside the AOA and would not disturb other Airport or tenant facilities. Sites inside the AOA would have the potential to alter Airport operations and were not considered to be reasonable alternatives.

⁷ IMG Energy Solutions, *Attachment to the Form 7460 Notice of Proposed Construction*, December 13, 2019.

The land where the solar PV array would be located is the only portion of ACAA-owned property that can accommodate the proposed solar PV array. The land where the proposed solar PV array would be located is an inactive, capped landfill, facing away from airside operations on the boundary of ACAA-owned property.

As such, the Proposed Action is the only reasonable alternative that would provide power redundancy and resiliency to ensure greater power reliability and uninterrupted operations for the Airport.

No Action Alternative

Under the No Action Alternative, an Airport microgrid would not be constructed, and energy operations would continue to be provided by the existing power grid. The Airport would remain vulnerable to power outages and operations disruptions.

Explanation

Of the preliminary alternatives considered during the development of this project, the Proposed Action best meets the purpose and need, while resulting in no significant impacts. Therefore, the only two alternatives carried forward in this analysis are the No Action Alternative and the Proposed Action.

A comparison of the environmental consequences of the Proposed Action and the No Action Alternative is shown in **Table 1**.

TABLE 1 COMPARISON OF ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

RESOURCE CATEGORY	PROPOSED ACTION	NO ACTION ALTERNATIVE
Air Quality	No significant impact	No impact
Biological Resources	No significant impact	No impact
Climate	No significant impact	No impact
Coastal Resources	No impact	No impact
Section 4(f) Resources	No impact	No impact
Farmlands	No impact	No impact
Hazardous Materials, Solid Waste, and Pollution Prevention	No significant impact	No impact
Historic, Architectural, Archeological, and Cultural Resources	No impact	No impact
Land Use	No impact	No impact
Natural Resources and Energy Supply	No impact	No impact
Noise and Noise Compatible Land Use	No impact	No impact
Socioeconomics, Environmental Justice, and Children's Health and Safety Risks	No impact	No impact
Visual Effects including Light Emissions	No impact	No impact
Natural Resources (including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers)	No significant impact	No impact
Cumulative Impacts	No significant impact	No impact

SOURCE: Ricondo & Associates, Inc., February 2020.

6. Environmental Consequences – Special Impact Categories (refer to the Instructions page and corresponding sections in 1050.1F, the 1050.1F Desk Reference, and the Desk Reference for Airports Actions for more information and direction. Note that when the 1050.1F Desk Reference and Desk Reference for Airports Actions provide conflicting guidance, the 1050.1F Desk Reference takes precedence. The analysis under each section must comply with the requirements and significance thresholds as described in the Desk Reference).

(A) AIR QUALITY

(1) Will the proposed project(s) cause or create a reasonably foreseeable emission increase? Prepare an air quality assessment and disclose the results. Discuss the applicable regulatory criterion and/or thresholds that will be applied to the results, the specific methodologies, data sources and assumptions used; including the supporting documentation and consultation with federal, state, tribal, or local air quality agencies.

The Proposed Action would not cause or create significant air quality impacts. **Table 2** summarizes the annual emissions of criteria air pollutants and CO_{2e} estimated by source for construction of the Proposed Action, which would occur from 2020-2021.

The USEPA has set National Ambient Air Quality Standards (NAAQS) for six principal pollutants, which are called "criteria" air pollutants in the Clean Air Act (CAA). These include carbon

monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particle pollution (PM₁₀ and PM_{2.5}), and sulfur dioxide (SO₂). **Appendix B** describes the methods used to calculate emissions of criteria pollutants in support of this EA for construction of the Proposed Action at PIT.

The emissions analysis was conducted to develop emissions inventories pursuant to NEPA and to determine whether emissions associated with the Proposed Action would exceed applicable *de minimis* thresholds as documented in the United States Environmental Protection (USEPA) general conformity regulations. Construction-related activities are anticipated to occur in 2020 and 2021.

TABLE 2 ANNUAL POLLUTANT EMISSIONS DUE TO CONSTRUCTION OF THE PROPOSED ACTION

	EMISSIONS (TONS/YEAR)						METRIC TONS/YEAR
	CO	VOC	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO _{2E}
Natural Gas-Fired Electric Power Plant Construction							
2020	2.263	1.921	1.132	0.022	0.216	0.059	1,005.942
2021	0.396	0.096	0.376	0.003	0.044	0.024	282.885
	2.659	2.017	1.508	0.025	0.260	0.084	1,288.827
Solar PV Array Installation							
2020	1.974	0.507	1.285	0.007	0.161	0.120	784.009
2021	0.568	0.167	0.320	0.004	0.045	0.032	249.685
	2.543	0.674	1.605	0.011	0.206	0.152	1,033.694

SOURCE: Ricondo & Associates, Inc., February 2020, based on inputs to the Airport Construction Emissions Inventory Tool (ACEIT), using the U.S. Environmental Protection Agency NONROAD2008a and MOVES2014b emissions models.

An air quality permit for a minor source for the proposed natural gas-fired electric power plant has been filed with the Allegheny County Health Department. Emissions associated with operation of the natural gas-fired electric power plant were calculated as part of the permit application and are presented in **Table 3**.

TABLE 3 ANNUAL POLLUTANT EMISSIONS DUE TO OPERATION OF THE PROPOSED ACTION

	EMISSIONS (TONS/YEAR)					
	CO	VOC	NO _x	SO _x	PM ₁₀	PM _{2.5}
Natural Gas-Fired Electric Power Plant Operation	1.05	0.28	0.77	0.019	0.32	0.32

SOURCE: Peoples Natural Gas Company LLC, "Pittsburgh International Airport Project, ACHD Air Quality Installation Permit Application, 22 MW Power Project, Moon Township, Allegheny County, PA," January 2020.

(2) Are there any project components containing unusual circumstances, such as emissions sources in close proximity to areas where the public has access or other considerations that may warrant further analysis? If no, proceed to (c); if yes, an analysis of ambient pollutant concentrations may be necessary. Contact your local ADO regarding how to proceed with the analysis.

There are no Proposed Action components containing unusual circumstances, such as emissions sources in close proximity to areas where the public has access or other considerations that may warrant further analysis. The Proposed Action is not accessible to the public and is located away from publicly accessible areas.

(3) Is the proposed project(s) located in a nonattainment or maintenance area for the National Ambient Air Quality Standards (NAAQS) established under the Clean Air Act?

Allegheny County, which includes PIT, is a designated nonattainment area for PM_{2.5} and sulfur dioxide. Allegheny County, as part of a larger area designated as the Pittsburgh-Beaver Valley area, is also designated as nonattainment for ozone. The County is in attainment for the other criteria air pollutants, as shown in **Table 4**. The principal air quality concern in Allegheny County is PM_{2.5}. On April 15, 2015, the USEPA designated all of Allegheny County as a specific nonattainment area with the new 2012 EPA PM_{2.5} annual standard of 12 µg/m³.

Allegheny County and the surrounding six counties of the Pittsburgh-Beaver Valley Area are currently designated by the USEPA as marginal nonattainment for ozone. In Allegheny County, ozone concentrations have steadily decreased over the past 10 years, although the EPA standard (8-hour average) has also lowered; 0.08 parts per million (ppm) in 1997, 0.075 ppm in 2008, and 0.07 ppm as of December 28, 2015. The most recent monitoring data from Allegheny County (the annual fourth-highest daily maximum, averaged over 2014-2016, which is the USEPA indicator) indicates that the County is compliant with the current 2015 standard.

A portion of Allegheny County (the lower Monongahela Valley, approximately 20 miles southeast of PIT) was designated by the USEPA as a nonattainment area for sulfur dioxide (SO₂) in August 2013 and this status has not changed. However, PIT is located within the portion of the county designated as an attainment area for SO₂.

TABLE 4 ATTAINMENT/NONATTAINMENT DESIGNATIONS

POLLUTANT OR PRECURSOR	ALLEGHENY COUNTY STATUS
8-hour Ozone	Marginal Nonattainment
Sulfur Dioxide (SO ₂)	Nonattainment (partial county) ¹
Nitrous Oxides (NO _x)	Attainment
Carbon Monoxide (CO)	Attainment
Volatile Organic Compounds (VOCs)	Attainment
Particulate matter (PM ₁₀)	Attainment
Particulate matter (PM _{2.5})	Moderate Nonattainment

NOTE:

¹ Allegheny County is in partial non-attainment for SO₂; however, the part of the county where PIT is located is in attainment for SO₂.

SOURCE: United States Environmental Protection Agency, *Green Book: Pennsylvania Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants*, https://www3.epa.gov/airquality/greenbook/anayo_pa.html (accessed February 26, 2020).

4) Are all components of the proposed project, including all connected actions, listed as exempt or presumed to conform (See FRN, vol.72 no. 145, pg. 41565)? If yes, cite exemption and go to (B) Biological Resources. If no, go to (e).

The Proposed Action is not listed as exempt or presumed to conform.

(5) Would the net emissions from the project result in exceedances of the applicable *de minimis* threshold (reference 1050.1F Desk Reference and the *Aviation Emissions and Air Quality Handbook* for guidance) of the criteria pollutant for which the county is in non-attainment or maintenance? If no, go to (B) Biological Resources. If yes, stop development of this form and prepare a standard Environmental Assessment.

The net emissions from the project would not result in exceedances of the applicable *de minimis* thresholds for Allegheny County. **Table 5** compares the maximum annual construction emissions with the applicable *de minimis* thresholds. Even with the short-term increase in emissions from the construction of the Proposed Action, emission levels would be well below *de minimis* thresholds. Changes in criteria air pollutant emissions due to construction of the Proposed Action would not result in an adverse effect on air quality.

TABLE 5 PROPOSED ACTION CONSTRUCTION EMISSIONS SUMMARY AND COMPARISON TO DE MINIMIS THRESHOLDS

	EMISSIONS (TONS/YEAR)					
	CO	VOC	NO _x	SO _x ¹	PM ₁₀	PM _{2.5}
<i>Total Emission by Year</i>						
2020	4.238	2.428	2.417	0.029	0.377	0.179
2021	0.964	0.263	0.696	0.007	0.089	0.056
<i>de minimis</i> Threshold	100	100	100	100	n.a.	100
<i>Difference (Under)/Over de minimis threshold</i>						
2020	(95.762)	(97.572)	(97.583)	(99.971)		(99.821)
2021	(99.036)	(99.737)	(99.304)	(99.993)		(99.944)
Significant?	No	No	No	No		No

NOTES:

n.a. – Not applicable

1 For purposes of this analysis, it was assumed that estimates of SO_x emissions are equal to calculated emissions of SO₂.

SOURCE: Ricondo & Associates, Inc., February 2020, based on inputs to the Airport Construction Emissions Inventory Tool (ACEIT), using the U.S. Environmental Protection Agency NONROAD2008a and MOVES2014b emissions models.

Natural gas to fuel the natural gas-fired electric power plant would be derived from on-Airport sources. Emissions associated with the operation of the natural gas-fired electric power plant, compared to applicable *de minimis* thresholds is provided in **Table 6**. The increase in emissions associated with the operation of the Proposed Action would be well below *de minimis* thresholds. Changes in criteria air pollutant emissions due to operation of the Proposed Action would not result in an adverse effect on air quality.

TABLE 6 PROPOSED ACTION OPERATION EMISSIONS SUMMARY AND COMPARISON TO *DE MINIMIS* THRESHOLDS

	EMISSIONS (TONS/YEAR)					
	CO	VOC	NO _x	SO _x ¹	PM ₁₀	PM _{2.5}
Annual Emissions	1.05	0.28	0.77	0.019	0.32	0.32
<i>de minimis</i> Threshold	100	100	100	100	n.a.	100
Difference (Under)/Over <i>de minimis</i> threshold	(98.95)	(99.72)	(99.23)	(99.981)		(99.68)
Significant?	No	No	No	No		No

NOTES:

n.a. – Not applicable

¹ For purposes of this analysis, it was assumed that estimates of SO_x emissions are equal to calculated emissions of SO₂.

SOURCE: Peoples Natural Gas Company LLC, "Pittsburgh International Airport Project, ACHD Air Quality Installation Permit Application, 22 MW Power Project, Moon Township, Allegheny County, PA," January 2020.

(B) BIOLOGICAL RESOURCES

Describe the potential of the proposed project to directly or indirectly impact fish, wildlife, and plant communities and/or the displacement of wildlife. Be sure to identify any state or federal species of concern (Candidate, Threatened or Endangered).

1) Are there any candidate, threatened, or endangered species listed in or near the project area?

Non-developed areas of PIT property consist of disturbed habitats. Regenerating forests on previously strip-mined areas and shrubby or regenerating woodland borders of actively maintained utility rights of way are the two most common habitats. To a significantly lesser extent, open grasslands or meadows, wetlands, and small areas of more mature, less-disturbed woodlands are present. Developed areas of PIT are maintained for landside Airport use, providing facility access to passengers and Airport personnel; and airside Airport use, which provides secure areas for aircraft operations and associated vehicles and personnel.

ACAA maintains the Wildlife Hazard Management Plan (WHMP) that was developed and is monitored by the United States Department of Agriculture (USDA). The WHMP includes an inventory of species on PIT property and recommends control measures to ensure compatibility with Airport operations and safety requirements.

In February 2020, an online database search of state and federal threatened, endangered, and special concern species was conducted using the Pennsylvania Natural Diversity Index (PNDI) mapping tool. This database search indicates the federally listed bald eagle (*Haliaeetus leucocephalus*), Indiana bat (*Myotis sodalis*), and Northern long-eared bat (*Myotis septentrionalis*) as having potential habitat throughout Allegheny County, including the Proposed Project Area.⁸ This database search is provided in **Appendix C**.

⁸ Pennsylvania Department of Conservation and Natural Resources, *Pennsylvania Conservation Explorer, Conservation Planning and PNDI Environmental Review*, accessed: October 26, 2017, <https://conservationexplorer.dcnr.pa.gov/>.

The plant communities are predominantly native and alien invasive species and early successional species. A full inventory of invasive plants has not been undertaken at PIT, but common invasive species in southwestern Pennsylvania are known to exist in the vicinity of the Airport.⁹

The Proposed Action is within a portion of PIT that is developed and disturbed landscape comprising a parking lot, concrete rubble piles, public roadway, an electrical substation, and open field at the proposed natural gas-fired electric power plant site and maintained lawn at the proposed solar PV array site. Vegetation in the Proposed Project Area consists of grasses (*Poaceae* or *Gramineae* sp.), goldenrod (*Solidago* sp.), dandelion (*Taraxacum officinale*), ground ivy (*Glechoma hederacea*), narrow-leaved plantain (*Plantago lanceolata*), white clover (*Trifolium repens*), pokeweed (*Phytolacca americana*), black raspberry (*Rubus allegheniensis*), burdock (*Arctium minus*), black locust (*Robinia pseudoacacia*), staghorn sumac (*Rhus typhina*), and black cherry (*Prunus serotina*).¹⁰

None of the state or federal listed species identified above are present, nor have been identified in the Proposed Project Area.

(2) Will the action have any long-term or permanent loss of unlisted plants or wildlife species?

The Proposed Action would occur in portions of the Airport that are currently disturbed and graded land and consist of maintained lawn and soil that was formerly used for construction staging and a closed, capped landfill. There would be no long-term or permanent loss of unlisted plants or wildlife species.

(3) Will the action adversely impact any species of concern or their habitat?

The Proposed Action would occur in portions of the Airport that are currently disturbed and graded landscape. The PNDI mapping tool shows the bald eagle (*Haliaeetus leucocephalus*), Indiana bat (*Myotis sodalis*), and Northern long-eared bat (*Myotis septentrionalis*) as having potential habitat throughout Allegheny County, including the Proposed Project Area; however, the Proposed Project Area does not provide habitat for these species and no adverse effects to these species would be anticipated with the implementation of the Proposed Action. The Proposed Action would not adversely impact any species of concern or their habitat.

(4) Will the action result in substantial loss, reduction, degradation, disturbance, or fragmentation of native species habitats or populations?

The Proposed Action would occur in portions of the Airport that are currently disturbed and graded landscape. The Proposed Action would not result in substantial loss, reduction, degradation, disturbance, or fragmentation of native species habitats or populations.

⁹ Pennsylvania Conservation Reserve Enhancement Program, *A Guide for Identifying and Controlling Common Noxious and Invasive Weeds in Southwestern Pennsylvania*, 2016, <http://wcdpa.com/wp-content/uploads/SW-PA-Weed-Guide-Oct-2016.pdf>

¹⁰ Palustris Environmental, Correspondence with Sheffler & Company, Inc, *Regulated Waters Presence / Absence Investigation, Pittsburgh International Airport Micro Grid Project, Findlay Township, Allegheny County, Pennsylvania*, March 16, 2020.

(5) Will the action have adverse impacts on a species' reproduction rates or mortality rate or ability to sustain population levels?

The Proposed Action would occur in portions of the Airport that are currently disturbed and graded land and consist of maintained lawn and dirt that was formerly used for construction staging and a closed, capped landfill. The Proposed Action would not have adverse impacts on a species' reproduction rates or mortality rate or ability to sustain population levels.

(6) Are there any habitats, classified as critical by the federal or state agency with jurisdiction, impacted by the proposed project?

The Proposed Action would occur in portions of the Airport that are currently disturbed and graded landscape. The USFWS Critical Habitat for Threatened & Endangered Species Online Mapper was consulted to determine the presence of critical habitats within two miles of the Proposed Project Area. No critical habitat was identified. No habitats classified as critical by the federal or state agency with jurisdiction would be impacted by the Proposed Action.

(7) Would the proposed project affect species protected under the Migratory Bird Act? (If Yes, contact the local ADO).

The Proposed Action would not affect species protected under the Migratory Bird Act. The PNDI database indicates the bald eagle (*Haliaeetus leucocephalus*) as having potential habitat throughout Allegheny County, including the Proposed Project Area. The Proposed Action would not involve communications towers or wind energy. Forested areas surrounding the Proposed Project Area would not be affected by the construction of or implementation of the Proposed Action. The Proposed Action would be constructed on previously cleared land that does not provide habitat for migratory birds. As discussed above, ACAA maintains a WHMP for PIT which includes control measures to limit habitat in order to ensure compatibility with Airport operations and safety requirements. As such, limited habitat for migratory birds is present at the Proposed Project Area. No intentional or unintentional take of migratory birds or their nests is anticipated by the Proposed Action.

If the answer to any of the above is "Yes", consult with the USWFS and appropriate state agencies and provide all correspondence and documentation.

(C) CLIMATE

(1) Would the proposed project or alternative(s) result in the increase or decrease of emissions of Greenhouse gases (GHG)? If neither, this should be briefly explained and no further analysis is required and proceed to (D) Coastal Resources.

The Proposed Action would not result in a significant increase of emissions of GHG. Energy sources used to power the Airport would change from the traditional electrical grid to energy provided by the Microgrid which includes energy generated from natural gas and renewable solar power. Under the Proposed Action it is anticipated that energy consumption for Airport facility operations would emit fewer emissions than the No Action alternative due to the use of the proposed solar PV array. The Proposed Project would not result in a long-term increase in vehicle

traffic or aircraft operations. Construction activities would result in minor short-term emissions from construction vehicle exhaust.

(2) Will the proposed project or alternative(s) result in a net decrease in GHG emissions (as indicated by quantitative data or proxy measures such as reduction in fuel burn, delay, or flight operations)? A brief statement describing the factual basis for this conclusion is sufficient.

The Proposed Action would result in the net decrease of GHG given that the microgrid which utilizes energy from solar PV array in addition to a natural gas-fired electric power plant would emit fewer emissions than the No Action alternative which relies upon the electrical grid. No change to Airport operations would occur as a result of the Proposed Action. Energy consumption at the Airport is anticipated to be the same under the Proposed Action as with existing conditions.

(3) Will the proposed project or alternative(s) result in an increase in GHG emissions? Emissions should be assessed either qualitatively or quantitatively as described in 1050.1F Desk Reference or Aviation Emissions and Air Quality Handbook.

The Proposed Action would not result in a net increase in GHG emissions given that the microgrid would utilize energy from solar PV array in addition to a natural gas-fired electric power plant would emit fewer emissions than the No Action alternative which relies upon the electrical grid. No change to Airport operations would occur as a result of the Proposed Action.

(D) COASTAL RESOURCES

(1) Would the proposed project occur in a coastal zone, or affect the use of a coastal resource, as defined by your state's Coastal Zone Management Plan (CZMP)? Explain.

PIT is not located within a Coastal Zone Management Zone or near any coastal resource. The only two areas in Pennsylvania that are designated as coastal zones and managed through policies and procedures specified in Pennsylvania's Coastal Zone Management Plan (September 1980) are the 63-mile coastline of Lake Erie, which is located in Erie County in northwestern Pennsylvania (approximately 100 miles northwest of PIT), and a 57-mile stretch of coastline along the Delaware Estuary located in Bucks, Philadelphia, and Delaware counties in southeastern Pennsylvania (approximately 260 miles southeast of PIT).¹¹

(2) If **Yes**, is the project consistent with the State's CZMP? (If applicable, attach the sponsor's consistency certification and the state's concurrence of that certification).

Not applicable

(3) Is the location of the proposed project within the Coastal Barrier Resources System? (If **Yes**, and the project would receive federal funding, coordinate with the FWS and attach record of consultation).

No coastal barriers are located at or within the vicinity of the Airport.

¹¹ Pennsylvania Department of Environmental Protection, Pennsylvania Coastal Zone Management Program Fact Sheet, <http://www.dep.state.pa.us/>, (accessed February 2020).

(E) SECTION 4(f) RESOURCES

(1) Does the proposed project have an impact on any publicly owned land from a public park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance, or an historic site of national, state, or local significance? Specify if the use will be physical (an actual taking of the property) or constructive (i.e. activities, features, or attributes of the Section 4 (f) property are substantially impaired.) If the answer is “No,” proceed to (F) Farmlands.

The Proposed Action would not have an impact on any publicly owned land from a public park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance, or an historic site of national, state, or local significance. The U.S. Department of Transportation (DOT) Section 4(f) Resources on PIT property and around PIT include:

- The Great Allegheny Passage Montour Trail, including the Airport Link Trail;
- Clinton Community Park;
- Leopold Lake Park;
- Robin Hill Park;
- Moon Township Park;
- Moon Township Golf Club; and
- Aten Road and Westbury Ballfields.

The nearest park to the Proposed Project Area is Leopold Lake Park which is located approximately one mile south-southwest of the proposed solar PV array. The Airport Link Trail section of the Montour Trail is located over one mile from the Proposed Project Area. The Proposed Action would have no physical or constructive use of these resources nor any other DOT Section 4(f) resources in the vicinity of PIT.

Additionally, there are no wildlife or waterfowl refuges of national, state, or local significance, nor land of a historic site of national, state, or local significance; nor any sites of archaeological significance within the vicinity of PIT.

(2) Is a *De Minimis* impact determination recommended? If “yes”, please provide; supporting documentation that this impact will not substantially impair or adversely affect the activities, features, or attributes of the Section 4 (f) property; a Section 106 finding of “no adverse effect” if historic properties are involved; any mitigation measures; a letter from the official with jurisdiction concurring with the recommended *de minimis* finding; and proof of public involvement. (See Section 5.3.3 of 1050.1F Desk Reference). If “No,” stop development of this form and prepare a standard Environmental Assessment.

The Proposed Action would have no effect on Section 4(f) resources.

(F) FARMLANDS

Does the project involve acquisition of farmland, or use of farmland, that would be converted to non-agricultural use and is protected by the Federal Farmland Protection Policy Act (FPPA)? (If **Yes**, attach record of coordination with the Natural Resources Conservation Service (NRCS), including form AD-1006.)

The Proposed Action does not involve acquisition of farmland, or use of farmland, that would be converted to non-agricultural use and is protected by the Federal Farmland Protection Policy Act (FPPA). Prior to its development as an airport, PIT was a dairy farm, so it is expected that farmlands are still present within the PIT boundary. However, there are no farm uses on Airport property and the Proposed Action would not require the acquisition of any land. The Proposed Action would not be located on or near any existing farmland.

(G) HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

(1) Would the proposed project involve the use of land that may contain hazardous materials or cause potential contamination from hazardous materials? (If Yes, attach record of consultation with appropriate agencies). Explain.

The Proposed Action would involve the use of land that may contain hazardous materials or cause potential contamination from hazardous materials. **Exhibit 6** identifies the existing areas of environmental concern on PIT property, including one permitted landfill, one Act 2 site,¹² and several contaminated areas of concern that are the result of past industrial and airfield activities on PIT property. The proposed solar PV array component of the Proposed Action would be developed at the closed landfill site; however, this component would minimally disturb the soil cap of the landfill. The site would be closed to public access. The following permits would be obtained prior to any construction:

- Building Permit for the solar PV array from Findlay Township
- Landfill Minor Modification Permit from PADEP

The landfill at PIT was designed and constructed in 1987 during the construction of the Midfield terminal project. It is located outside the fenced portion of the PIT property while still located within the PIT property boundary. It is a permitted municipal waste landfill by the DER, now known as PADEP, under permit number 101479. The landfill is considered inactive and is no longer required to test and report its monitoring wells or leachate flow levels to the Allegheny County Health Department (ACHD) or PADEP due to significantly lower flow levels in recent years relative to the yearly average.

On Exhibit 6, areas designated as “contaminated land” are remnants of solid waste that possibly remain after construction of the existing airport in the late 1980s and early 1990s. Most of this waste was placed in the engineered landfill where a leachate system is in place and is being monitored through groundwater wells; to date, no significant groundwater contamination has been reported. None of these areas are located in the vicinity of the Proposed Project Area.

Exhibit 7 identifies areas where potential hazards exist with respect to past coal mining activities and oil/gas extraction. The Pittsburgh Coal seam was extensively mined across PIT property from elevations of approximately 1,180 and 1,200 feet Mean Sea Level (msl), whereas current land elevations across the Proposed Project Area are between about 1,150 and 1,160 feet msl.

¹² In Pennsylvania, significance thresholds for affecting a contaminated site and/or adversely affecting human health and the environment are defined under standards defined by Pennsylvania’s Land Recycling Program (Voluntary Cleanup Program), which was established by a series of legislation enacted in 1995. This package (Acts 2, 3 and 4 of 1995) serves as the basis for what is more commonly known as Act 2. Act 2 provides standards for soil and groundwater contamination that represent significance thresholds.

Accordingly, all of the coal has been removed from the Proposed Project Area and the presence of mines is not an environmental/safety concern. Coal refuse is present at the surface within areas of the Airport property; a fire that had been smoldering for decades in coal refuse apparently from the Clinton Mine was extinguished in 2014 – 2015 under supervision of the PADEP. Exhibit 7 also identifies the approximate location of old oil and gas wells that were drilled in the late 19th and early 20th century as identified on WPA (Work Projects Administration) Mine Maps prepared between 1933 and 1934. The coal mining areas, oil and gas wells, and extinguished coal refuse fire are not located within the vicinity of the Proposed Project Area. Although it is unlikely that the old wells represent a hazard for leaking natural gas, it is recommended that any geotechnical borings undertaken during the design of the proposed improvements be monitored for gas. In the unlikely event that gas is detected, ventilation of the gas will be incorporated into the foundation designs.

Subsurface contamination in the Proposed Project Area for the Proposed Action is not expected to be encountered, but should contaminated material be encountered during construction, it will be excavated and stored on site for testing. Such material will be disposed of by a certified hauler at a permitted disposal facility. Sampling, testing, handling, storage, transportation, and disposal will be conducted in accordance with all relevant PADEP regulations and guidance. As such, the Proposed Action would not be anticipated to cause contamination from hazardous materials.

(2) Would the operation and/or construction of the project generate significant amounts of solid waste? If **Yes**, are local disposal facilities capable of handling the additional volumes of waste resulting from the project? Explain.

The operation and/or construction of the Proposed Action would not generate significant amounts of solid waste. No demolition of existing structures is proposed. The Proposed Action would produce nominal amounts of solid waste. Construction debris and other solid waste resulting from the project would be removed and routed for recycling or landfill disposal. The amount of waste produced would not exceed local landfill or recycling facility capacity. All construction would comply with federal, state, and local laws. The operation of the solar PV array would not generate waste. A Hazardous/Residual Waste Permit from the PADEP for the natural gas-fired electric power plant component of the Proposed Action would be obtained prior to any construction, and all requirements and regulations would be followed to properly route any waste generated.

There are five active landfills within a 40-mile driving distance of the Proposed Project Area that are listed as “Active” by the PADEP and are accepting solid waste. **Table 7** provides details for these facilities.

TABLE 7 ACTIVE LANDFILLS IN THE VICINITY OF THE PROPOSED PROJECT AREA

FACILITY NAME	STATE FACILITY ID	ADDRESS	MUNICIPALITY	DRIVING DISTANCE (MILES)	COUNTY
Imperial Landfill	241838	11 Boggs Road	Imperial	7	Allegheny
Alex Paris Landfill	560697	Clinton Frankfort Road	Hookstown	11	Beaver
Brunner Landfill	245259	Township Road 694	Zelienople	23	Beaver
Arden Landfill	243892	200 Rangos Lane	Washington	29	Washington
Monroeville Landfill	254373	600 Thomas Street	Monroeville	34	Allegheny

SOURCE: Pennsylvania Department of Environmental Protection, Municipal Waste Landfills and Resource Recovery Facilities, <http://www.dep.pa.gov/Business/Land/Waste/SolidWaste/MunicipalWaste/MunicipalWastePermitting/Pages/MW-Landfills-and-Resource-Recovery-Facilities.aspx>, (accessed: December 29, 2017).

(3) Will the project produce an appreciable different quantity or type of hazardous waste? Will there be any potential impacts that could adversely affect human health or the environment?

The operation of the solar PV array would not generate waste. The natural gas-fired electric power plant component of the Proposed Action may generate small quantities of hazardous waste typical of the operation of gas-powered generators. A Hazardous/Residual Waste Permit from the PADEP for the natural gas-fired electric power plant component of the Proposed Action would be obtained prior to any construction. All requirements and regulations associated with this permit would be followed to properly route any waste generated.

(H) HISTORIC, ARCHITECTURAL, ARCHEOLOGICAL, AND CULTURAL RESOURCES

(1) Describe any impact the proposed project might have on any properties listed in, or eligible for inclusion in the National Register of Historic Places. (Include a record of your consultation and response with the State or Tribal Historic Preservation Officer (S/THPO)).

No known historical, architectural, archaeological, or cultural resources are present within the Proposed Project Area. There are no historic or archaeological resources within the Proposed Project Area that are listed or eligible for listing on the National Register of Historic Places.

The Pennsylvania Historic and Museum Commission's (PHMC) Cultural Resources Geographical Information System (CRGIS) data indicates that information concerning the prehistory for this region is somewhat limited. Based on this data and the archaeological record from the Upper Ohio Valley, if prehistoric sites are situated in the Proposed Project Area, they would be small in size and indicative of a transitory occupation.

The U.S. Department of the Interior, National Park Service, National Register of Historic Places (NRHP) is the United States' official list of districts, sites, buildings, structures and objects deemed worthy of preservation for their historical significance. A review of NRHP maps does not show any properties or resources located at PIT. The nearest NRHP resource is the Mooncrest Historic District located approximately 2.5 miles northeast of the Proposed Project Area. Additionally, four historic sites have been inventoried as part of previous studies in the PIT area with two of them consisting of historic farmsteads and one of them a domestic site. The site type is not stated on the

fourth historic site. A review of the historic cartographic sources indicates that several buildings/structures were once located on PIT property. However, the area where these buildings/structures were identified has been heavily surface mined and many of the standing farmsteads/homesteads were removed during the construction of PIT. Within the Proposed Project Area for the Proposed Action, all of the historic farm structures that existed prior to the construction and operation of the existing airport no longer exist. Records and previous site work indicate there are no archaeological resources known to exist within the Proposed Project Area. As the entire Proposed Project Area has experienced varying degrees of ground disturbance from historical mining, development of existing Airport facilities, and the landfill, it is unlikely any archaeological resources exist within these sites.

(2) Describe any impacts to archeological resources as a result of the proposed project. (Include a record of consultation with persons or organizations with relevant expertise, including the S/THPO, if applicable).

There would be no impacts to archeological resources as a result of the Proposed Action. No archeological resources are anticipated to fall within the Proposed Project Area for the Proposed Action.

(I) LAND USE

(1) Would the proposed project result in other (besides noise) impacts that have land use ramifications, such as disruption of communities, relocation of residences or businesses, or impact natural resource areas? Explain.

The Proposed Action would not result in other impacts that have land use ramifications. The Proposed Project Area is previously cleared and graded land on ACAA-owned property. The area consists primarily of graded soil and maintained grassy lawn. The site is designated as Heavy Industrial by Findlay Township. The Proposed Action is compatible with existing uses and no communities, residences, businesses, or natural resource areas would be affected.

(2) Would the proposed project be located near or create a wildlife hazard as defined in FAA Advisory Circular 150/5200-33, "Wildlife Hazards On and Near Airports"? Explain.

The Proposed Action would not create a wildlife hazard as defined in FAA Advisory Circular 150/5200-33. The development of a solar PV array and/or an electric power plant do not constitute wildlife hazards as defined in FAA Advisory Circular 150/5200-33, and the existing Proposed Project Area is disturbed, graded land that does not accommodate or attract wildlife.

(3) Include documentation to support sponsor's assurance under 49 U.S.C. § 47107 (a) (10), of the 1982 Airport Act, that appropriate actions will be taken, to the extent reasonable, to restrict land use to purposes compatible with normal airport operations.

The Proposed Action would not result in a significant change to land use and would not introduce any non-compatible land uses. The area near PIT is primarily suburban mixed-use development with nearby business parks, commercial and mixed density residential development. Moon Township, to the north and east of PIT, is more heavily developed than Findlay Township, located to the south and west of PIT (see **Exhibit 8**). Pursuant to 49 U.S.C. § 47107(a)(10) of the 1982 Airport and Airway Improvement Act, ACAA is committed to undertake actions to the extent

reasonable, to restrict the use of land adjacent to, or in the immediate vicinity of, PIT to activities and purposes compatible with normal airport operations. Airport zoning to restrict the use of land adjacent to, or in the immediate vicinity of, PIT to activities and purposes compatible with normal airport operations has been enacted by all surrounding municipalities.

The area directly to the north of PIT is designated for Regional Commerce use in the Moon Township Comprehensive Plan. The area also includes the University Boulevard Business Corridor and the Carnot District. These use areas are compatible with Airport use and development. The area adjacent to PIT in Findlay Township is designated for a variety of uses, including Town Center, Commercial and Industrial, Mixed Use and Medium Density Residential. These use areas are compatible with PIT use and development.

The PIT property contains airport uses, commercial uses, the Pittsburgh Air Reserve Station, a Pennsylvania Air National Guard base, natural gas wells, and open space. Additionally, the PIT property is surrounded by freeways on all sides.

(J) NATURAL RESOURCES AND ENERGY SUPPLY

What effect would the project have on natural resource and energy consumption? (Attach record of consultations with local public utilities or suppliers if appropriate)

The Proposed Action would not impact energy consumption required for Airport operations. Electricity at PIT is currently provided commercially from Duquesne Light Company through an electrical grid. The Proposed Action would change the source of energy for the Airport to rely primarily on the proposed microgrid. The Proposed Action would provide a more reliable source of energy using an on-site natural gas-fired electric power plant and more sustainable sources of energy by including renewable solar energy provided by the on-site solar PV array.

The PIT property has a long history of coal mining and oil/gas extraction. Coal mining ceased at the beginning of the 20th century. PIT property is still being used for natural gas extraction. Consol Energy is permitted to drill 47 wells from six well pads on PIT property. Production began June 28, 2016 from the six wells on Pad No. 2, and in April 2017 from seven wells on Pad No. 1. All wells produce Marcellus Shale gas, which would be used to supply the natural gas-fired electric power plant.

Energy efficiency is also achieved by running the four hot water generators operated by ACAA at PIT fueled by natural gas. ACAA has programs at PIT to minimize their energy footprint and uses Energy Service Companies (ESCOs) to improve energy efficiency by implementing individual Energy Conservation Measures (ECMs) at PIT.

Consumption of natural resources and use of energy supplies would result from construction, operation, and/or maintenance of the Proposed Action. Construction associated with the Proposed Action would require natural resources, which may include petrochemical construction materials; lumber; sand and gravel; concrete; and steel, copper, and other metals. Construction of the Proposed Action would consume energy in the form of electricity, natural gas, and transportation-related fuels, through use of construction equipment, transport of construction materials, temporary lighting, etc. In addition, construction of the Proposed Action would also require water for dust suppression, concrete production, and equipment cleaning. Construction energy consumption is

short-term and minor compared to long-term regional energy use. As such, construction of the Proposed Action would not exceed area energy supplies.

Operations of the Proposed Action would not change energy consumption of Airport facilities. No increase in Airport operations would occur as a result of implementation of the Proposed Action. Under the Proposed Action, PIT would shift some current energy consumption from existing energy resources to the proposed natural gas-fired electric power plant and solar PV array. This would result in a decrease in energy demand on local public utility suppliers. Therefore, operation of the Proposed Action would not exceed energy supply.

(K) NOISE AND NOISE-COMPATIBLE LAND USE

Will the project increase noise by DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe? (Use AEM as a screening tool and AEDT 2b as appropriate. See FAA Order 1050.1F Desk Reference, Chapter 11, or FAA Order 1050.1F, Appendix B, for further guidance). Please provide all information used to reach your conclusion. If yes, contact your local ADO.

The Proposed Action would not result in any changes to Airport operations and noise from aircraft operations would not be affected by the Proposed Action. No changes would occur to existing or future aircraft noise exposure levels. The Proposed Action would not result in any permanent increases in ambient noise. The Proposed Action would occur in the middle of the PIT airfield and at an area adjacent to highway and undeveloped land. Existing ambient noise in the vicinity of the Proposed Project Area is influenced by aircraft operations and ground transportation noise from adjacent freeway traffic. The nearest residential area is located approximately 4,000 feet north of the Proposed Project Area, and the nearest school is located approximately 1.3 miles northeast of the Proposed Project Area. Due to the distance of the Proposed Project Area to sensitive noise receptors, no noise impacts are anticipated. The increase in noise levels resulting from construction would be short term and minor in duration, and would not exceed applicable standards.

(L) SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, and CHILDREN'S HEALTH and SAFETY RISKS

(1) Would the project cause an alteration in surface traffic patterns, or cause a noticeable increase in surface traffic congestion or decrease in Level of Service?

The Proposed Action would not substantially increase traffic or alter existing traffic patterns or cause a noticeable increase in surface traffic congestion or decrease in Level of Service during construction or operation. Construction activities associated with the Proposed Action is anticipated to occur from June 2020 to February 2021 during which the Proposed Action would result in increased traffic associated with construction employees and deliveries to the existing site. It is not anticipated that construction related trip increases would be substantial; existing roadways at and in the vicinity of the Airport could sustain a temporary increase in construction traffic. Construction traffic would use Interstate 376 and Interstate 376 Business to connect to on-Airport roadways. These Interstates and on-Airport roadways have the capacity to accommodate a minor increase in traffic without impacting existing Level of Service. Construction traffic would not disrupt any local communities.

Once operational the Proposed Action would not result in a substantial increase in surface traffic, as access to the site would be limited to a small number of personnel. Overall, the flow of exiting traffic volumes and the Level of Service on the local roadway network would not be substantially affected.

(2) Would the project cause induced, or secondary, socioeconomic impacts to surrounding communities, such as changes to business and economic activity in a community; impact public service demands; induce shifts in population movement and growth, etc.?

Construction activities would result in temporary positive impacts to the regional economy through the employment of construction workers, spending on materials, and spending in the local economy by construction workers. Construction of the Proposed Action would occur entirely on existing PIT property; as such, the Proposed Action would not change the availability of permanent housing, permanent employment, or retail opportunities. There would be no permanent shifts in the patterns of population movement and growth, public service demands, or changes in business or economic activity.

(3) Would the project have a disproportionate impact on minority and/or low-income communities? Consider human health, social, economic, and environmental issues in your evaluation. Refer to DOT Order 5610.2(a) which provides the definition for the types of adverse impacts that should be considered when assessing impacts to environmental justice populations.

The Proposed Action would be located entirely on existing PIT property. The nearest residences from the Proposed Action Area are approximately 4,000 feet to the northeast. Based on this distance, the Proposed Action occurring within and in the vicinity of an active airfield and terminal area, and the lack of impacts associated with noise, air quality, water, hazardous materials, vegetation, wildlife, or cultural resources, no significant impacts that disproportionately impact minority or low-income residents would occur.

(4) Would the project have the potential to lead to a disproportionate health or safety risk to children?

The Proposed Action would not have the potential to lead to a disproportionate health or safety risk to children. The nearest school, the Goddard School of Moon Township, is located approximately 1.3 miles from the Proposed Project Area. No schools, day care providers, or children's health clinics are located within 1 mile of the Proposed Project Area. Due to the distance from the project area, no impacts to the school or its students are anticipated.

The Proposed Action would not result in other impacts that would affect the health and safety of any populations near the project area. During construction, construction traffic would not travel through residential neighborhoods or near schools.

If the answer is "YES" to any of the above, please explain the nature and degree of the impact. Also provide a description of mitigation measures which would be considered to reduce any adverse impacts.

(M) VISUAL EFFECTS INCLUDING LIGHT EMISSIONS

(1) Would the project have the potential to create annoyance or interfere with normal activities from light emissions for nearby residents?

The Proposed Action would not have the potential to create annoyance or interfere with normal activities from light emissions for nearby residents. The Proposed Project Area would be located adjacent to the PIT airfield and an undeveloped area. The closest communities to the Proposed Project Area are located in Moon Township about 4,000 feet north of the Proposed Project Area. The natural gas-fired electric power plant component of the Proposed Action would not be visible from any surrounding communities. The solar PV array component of the Proposed Action would only be publicly visible from Interstate 376 and would not create an annoyance or interfere with normal community activities.

Additionally, the Greater Pittsburgh area, including PIT, is affected by light pollution, typical of urban/suburban areas surrounding a large city. The area of PIT is considered from the standpoint of light pollution as an urban/suburban transition environment where light pollution makes the entire sky light gray, strong light sources are evident in all directions, and clouds are brightly lit. Within this environment, the visual environment surrounding PIT is relatively isolated and characterized by airport land uses, including the Terminal Complex, airport roadways, runways, taxiways, and ancillary airport structures and facilities. The Proposed Action would result in minimal changes to the existing light emissions of the Airport vicinity.

(2) Would the project have the potential to affect the visual character of nearby areas due to light emissions?

The Proposed Action would not have the potential to affect the visual character of nearby areas due to light emissions. The Proposed Project Area would be located adjacent to the PIT airfield and an undeveloped area. As described above the Airport is within an urban/suburban area with existing light pollution. The Proposed Action would result in minimal change in ambient lighting and there would be no effect to the visual character of nearby areas due to light emissions.

To determine the potential effect of glare of the solar PV array, ForgeSolar conducted a glare analysis using Sandia National Labs' FAA-accepted Solar Glare Hazard Analysis Tool (SGHAT). The SGHAT result showed a "No Glare" determination. The ForgeSolar glare report is attached as **Appendix C**.

(3) Would the project have the potential to block or obstruct views of visual resources?

No visual resources are within the viewshed of the Proposed Project area.

If the answer is "YES" to any of the above, please explain the nature and degree of the impact using graphic materials. Also provide a description of mitigation measures which would be considered to reduce any adverse impacts.

(N) WATER RESOURCES (INCLUDING WETLANDS, FLOODPLAINS, SURFACE WATERS, GROUNDWATER, AND WILD AND SCENIC RIVERS)

(1) WETLANDS

(a) Does the proposed project involve federal or state regulated wetlands or non-jurisdictional wetlands? (Contact USFWS or appropriate state natural resource agencies if protected resources are affected) (Wetlands must be delineated using methods in the US Army Corps of Engineers 1987 Wetland Delineation Manual. Delineations must be performed by a person certified in wetlands delineation Document coordination with the resource agencies).

The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) was consulted to determine the presence of wetlands onsite. No wetlands were identified within the Proposed Project Area. The site is previously disturbed and consists entirely of graded land and maintained lawn. The NWI shows five wetlands near the Proposed Project Area including a 1.61-acre Freshwater Forested/Shrub Wetland habitat located approximately 500 feet west of the proposed solar PV array across Harper Road; a 2.18-acre Freshwater Emergent Wetland located approximately 700 feet west of the proposed solar PV array across Harper Road; a 0.46-acre Freshwater Emergent Wetland located approximately 1,000 feet south of the proposed solar PV array across Interstate 376 and south of the Montour Trail – Airport Trail Link; a 1.13-acre Freshwater Forested/Shrub Wetland located approximately 1,200 feet south of the proposed solar PV array across Interstate 376 and south of the Montour Trail – Airport Link Trail; and a linear, 114-acre Riverine wetland approximately 1,100 feet east of the natural gas-fired electric power plant associated with McClarens Run stream.

On March 12, 2020, the natural gas-fired electric power plant portion of the Proposed Project Area was investigated for wetlands and other regulated waters as defined by the 1987 Corps of Engineers Wetland Delineation Manual, the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0, and subsequent guidance.¹³ Additionally, on April 1, 2020, a wetland investigation of the solar PV array portion of the Proposed Project Area project site was conducted using guidelines outlined in the 1987 Corps of Engineers Wetland Delineation Manual.¹⁴ The wetland field survey reports are provided in **Appendix D**. No watercourses or areas of hydric soils or indicators of hydrology were observed in the natural gas-fired electric power plant portion or the solar PV array portion of the Proposed Project Area. As such, no wetlands or Waters of the U.S. were identified within the Proposed Project Area. The Proposed Action does not involve federal or state regulated wetlands or non-jurisdictional wetlands; therefore, no impacts to wetlands are anticipated. The NWI wetlands map is included as **Exhibit 9**.

¹³ Palustris Environmental, Correspondence with Sheffler & Company, Inc, *Regulated Waters Presence / Absence Investigation, Pittsburgh International Airport Micro Grid Project, Findlay Township, Allegheny County, Pennsylvania*, March 16, 2020.

¹⁴ Rhea Engineers & Consultants, Inc, Correspondence with Ricondo, *Microgrid Solar PV Array Site – Field Site Summary Report, On-Call Planning and Environmental Services, Pittsburgh International Airport, Moon Township, Pennsylvania*, April 8, 2020.

(b) If yes, does the project qualify for an Army Corps of Engineers General permit? (Document coordination with the Corps).

Not applicable

(c) If there are wetlands impacts, are there feasible mitigation alternatives? Explain.

Not applicable

(d) If there are wetlands impacts, describe the measures to be taken to comply with Executive Order 11990, Protection of Wetlands.

Not applicable

(2) FLOODPLAINS

(a) Would the proposed project be located in, or would it encroach upon, any 100-year floodplains, as designated by the Federal Emergency Management Agency (FEMA)?

The Proposed Action would not be located in or encroach upon any 100-year floodplains, as designated by the Federal Emergency Management Agency (FEMA). The Proposed Project Area would not be located within the 100-year or the 500-year floodplain based upon a review of FEMA Flood Insurance Rate Maps (FIRM) panels 42003C0285H and 42003C0301H. There is a Special Flood Hazard Area (Zone A) south of Interstate 376 and the Montour Trail – Airport Trail Link; however, this area is over approximately 800 feet from the solar PV array portion of the Proposed Project Area. The FEMA FIRMs for the Proposed Project Area are included as **Exhibit 10** and **Exhibit 11**.

(b) If Yes, would the project cause notable adverse impacts on natural and beneficial floodplain values as defined in Paragraph 4.k of DOT Order 5620.2, *Floodplain Management and Protection*?

Not applicable

(c) If Yes, attach the corresponding FEMA Flood Insurance Rate Map (FIRM) and describe the measures to be taken to comply with Executive Order 11988, including the public notice requirements.

Not applicable

(3) SURFACE WATERS

(a) Would the project impact surface waters such that water quality standards set by Federal, state, local, or tribal regulatory agencies would be exceeded or would the project have the potential to contaminate a public drinking water supply such that public health may be adversely affected?

The Proposed Action would not impact surface waters such that water quality standards set by Federal, state, local, or tribal regulatory agencies would be exceeded, nor would the Proposed Action have the potential to contaminate a public drinking water supply such that public health may be adversely affected. The USFWS NWI was consulted and field views were performed to

determine the presence of surface waters onsite. No surface waters are located within the Proposed Project Area. The site is previously disturbed and consists entirely of graded land and maintained lawn.

Streams dominate surface water at PIT and in the surrounding area. Two watersheds comprise the on-airport area: Raredon Run and Montour Run. Montour Run is comprised of three sub-basins in the area of PIT including McClarens Run, Enlow Run, and North Fork Montour Run. Drainage in the area is typically towards the northwest or southeast eventually draining to the Ohio River. The nearest surface water resources to the Proposed Project Area would be McClarens Run approximately 1,100 feet east of the proposed natural gas-fired electric power plant and a tributary associated with Enlow Run approximately 500 feet west of the proposed solar PV array.

Surface water sampling and testing, which is consistent with the Deicing Action Plan Update under a PADEP Consent Order, is currently undertaken at PIT as related to aircraft and airfield deicing/anti-icing activities. More general sampling is undertaken as part of PIT's existing National Pollutant Discharge Elimination System (NPDES) Permit (No. PA0203815), which covers all industrial discharges from PIT. The Airport has storm water retention basins to limit runoff from impervious (paved) areas.

ACAA has a NPDES Permit for stormwater originating from construction activities with the Allegheny County Conservation District (ACCD) under Permit No. PAC020001. Where earth disturbances cover more than an acre, the work would need to be defined and approved under a modification to the permit.

(b) Would the water quality impacts associated with the project cause concerns for applicable permitting agencies or require mitigation in order to obtain a permit?

The water quality impacts associated with the Proposed Action would not cause concerns for applicable permitting agencies or require mitigation in order to obtain a permit.

If the answer to any of the above questions is "Yes", consult with the USEPA or other appropriate Federal and/or state regulatory and permitting agencies and provide all agency correspondence.

(4) GROUNDWATER

(a) Would the project impact groundwater such that water quality standards set by Federal, state, local, or tribal regulatory agencies would be exceeded or would the project have the potential to contaminate an aquifer used for public water supply such that public health may be adversely affected?

The Proposed Action would not impact groundwater such that water quality standards set by Federal, state, local, or tribal regulatory agencies would be exceeded or have the potential to contaminate an aquifer used for public water supply such that public health may be adversely affected. Neither surface water nor the groundwater underlying PIT is used for drinking, irrigation, or industrial supply purposes. Depths of groundwater vary from the surface regionally. Groundwater flow rates vary due to the topography and hydraulic conductivity. Recharge of groundwater is similar to the regional patterns. Groundwater flow correlates closely with regional surface water flow towards major drainages.

No public groundwater sources are located within PIT property. The water supply for Moon Township is from groundwater obtained from an alluvial deposit of sand and gravel in the floodplain of and beneath the Ohio River and from the Ohio River itself. Findlay Township obtains groundwater from the Ohio River through Robinson Township, as well as obtaining water from Moon Township. None of these sources are subject to contamination from activities at PIT. Within PIT property, groundwater is monitored for evaluation of contamination at the closed landfill and other locations where soil contamination is present. The Proposed Action would not include construction or operational activities that would have the potential to impact groundwater.

(b) Would the groundwater impacts associated with the project cause concerns for applicable permitting agencies or require mitigation in order to obtain a permit?

The groundwater impacts associated with the Proposed Action would not cause concerns for applicable permitting agencies or require mitigation in order to obtain a permit.

(c) Is the project to be located over an EPA-designated Sole Source Aquifer?

The USEPA maintains a map of sole source aquifers in the United States;¹⁵ the Proposed Action would not be located over or near an EPA-designated Sole Source Aquifer.

If the answer to any of the above questions is “Yes”, consult with the USEPA or other appropriate Federal and/or state regulatory and permitting agencies and provide all agency correspondence as an attachment to this form.

(5) WILD AND SCENIC RIVERS

Would the proposed project affect a river segment that is listed in the Wild and Scenic River System or Nationwide River Inventory (NRI)? (If Yes, coordinate with the jurisdictional agency and attach record of consultation).

The Proposed Action would not affect a river segment that is listed in the Wild and Scenic River System or NRI. The Pennsylvania Department of Conservation of Natural Resources maintains a map of federally or state designated wild or scenic rivers located in Pennsylvania;¹⁶ there are no federally- or state-designated wild or scenic rivers in Allegheny County.

(O) CUMULATIVE IMPACTS

Discuss impacts from past, present, and reasonably foreseeable future projects both on and off the airport. Would the proposed project produce a cumulative effect on any of the environmental impact categories above? Consider projects that are connected and may have common timing and/or location. For purposes of this Form, generally use 3 years for past projects and 5 years for future foreseeable projects.

¹⁵ United States Environmental Protection Agency, Sole Source Aquifers, <https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b> (accessed February 21, 2020).

¹⁶ Pennsylvania Department of Conservation of Natural Resources, Pennsylvania Scenic Rivers Program, http://www.docs.dcnr.pa.gov/cs/groups/public/documents/document/DCNR_20033444.pdf (accessed February 17, 2020).

The Proposed Action would not produce a cumulative effect on any of the environmental impact categories listed. The past, present, and reasonably foreseeable actions (Cumulative Impact Projects) considered in this EA are identified in **Table 6**. For a project to have potential cumulative effects with the Proposed Action, the project must result in impacts on the same resources impacted by the Proposed Action. As documented, no significant construction or operational impacts are anticipated to occur as a result of the Proposed Action. The potential for the Proposed Action to cumulatively contribute to effects on resource categories discussed in this chapter with other past, present, and reasonably foreseeable future projects are described in **Table 7**.

No other past, present, or future projects within the Proposed Project Area have been assessed to have significant impacts or would have cumulative impacts. As shown, the implementation of the Proposed Action is not anticipated to be cumulatively significant when considered with other past, present and reasonably foreseeable actions.

TABLE 6 PAST, PRESENT, AND FUTURE ACTIONS AT PIT

PROJECT	STATUS
Past Actions	
Runway 14-32 and Taxiways Q, R, and N4 Rehabilitation	Completed in 2015
Rehabilitate Taxiways D & N	Completed in 2015
Relocate Taxiway E	Completed in 2015
Rehabilitate Taxiways A, AA, and C	Completed in 2016
Replace SRE	Completed in 2016
Terminal Building Rehabilitation	Completed in 2016
Airport Rescue Fire Fighting Station E Rehabilitation	Completed in 2016
Rehabilitate Jetways	Completed in 2016
Rehabilitate Non-Airfield Pavement	Completed in 2016
Present Actions	
Rehabilitate Deicing Pad C	Currently Ongoing
Rehabilitate Airfield Pavements	Currently Ongoing
Airfield Signage Upgrade and Replacement	Currently Ongoing
Airport Maintenance Complex	Currently Ongoing
Rehabilitate Non-Airfield Pavement	Currently Ongoing
Fire Training Facility Rehabilitation	Currently Ongoing
Buildings and Hangar Improvements	Currently Ongoing
Cargo 3 Ramp Expansion	Currently Ongoing
U.S. Air Force C17 Conversion - construction of facilities to house, fuel, and maintain C-17 Globemaster III aircraft	Currently Ongoing
Terminal Modernization Program	Currently Ongoing
Rehabilitate Airfield Pavements	Currently Ongoing
Extend Northfield Taxiways	Currently Ongoing
Rehabilitate Non-Airfield Pavement	Currently Ongoing
Buildings and Hangar Improvements	Currently Ongoing
Airport Maintenance Complex	Currently Ongoing
Ewing Road Improvements	Currently Ongoing
Oil and Gas Drilling Activity	Currently Ongoing
Airport-wide Sewage Treatment Plant	Currently Ongoing
Rehabilitate Runway 10L-28R	Currently Ongoing
Airport Rescue Fire Fighting Station E Rehabilitation	Currently Ongoing
Future Actions	
Utility Pipeline	Currently ongoing and further improvements and projects project to be completed in the future

SOURCE: Allegheny County Airport Authority, February 2020.

TABLE 7 CUMULATIVE IMPACTS SUMMARY

RESOURCE	PAST ACTIONS	PRESENT ACTIONS	PROPOSED ACTION	FUTURE ACTIONS	CUMULATIVE IMPACT
Air Quality	No significant past changes in automobile traffic, stationary sources, airport operations, or other action that would increase emissions within the Proposed Project Area.	No significant present actions in automobile traffic, stationary sources, airport operations, or other action that would increase emissions within the Proposed Project Area.	Temporary construction emissions would be generated.	No significant future change in automobile traffic. The airfield layout would experience minor modifications, however no increase in operations or emissions is anticipated.	Temporary construction emissions would occur but would not be cumulatively significant. General Conformity <i>de minimis</i> thresholds are evaluated on a project by project basis and would not need to be evaluated cumulatively with other projects at PIT.
Biological Resources	No significant past actions that would impact fish, wildlife, or plant resources within the Proposed Project Area.	No significant present actions that would impact fish, wildlife, or plant resources within the Proposed Project Area.	The Proposed Action would not significantly impact fish, wildlife, plant resources, or habitat within the Proposed Project Area.	Oil and gas drilling would require mitigation for the Indiana Bat. Other future actions would not significantly impact fish, wildlife, or plant resources within the Proposed Project Area.	No state or federal species are known to exist in the Proposed Project Area. No significant biological resources impacts would be anticipated by the past, present or proposed developments.
Climate	No past significant actions within the Proposed Project Area that would impact climate.	No present significant actions within the Proposed Project Area that would impact climate.	The Proposed Action is not anticipated to result in significant climate impacts.	No future significant actions within the Proposed Project Area that would impact climate.	No significant climate impacts would be anticipated by the past, present or proposed developments.
Coastal Resources	No past actions that would have significant impacts to Coastal Resources	No present actions that would have significant impacts to Coastal Resources	The Proposed Action would not impact Coastal Resources	No future actions that would have significant impacts to Coastal Resources	No significant Coastal Resources impacts would be anticipated by the past, present or proposed developments.
Section 4(f) Resources	No significant past actions that would impact Section 4(f) resources within the Proposed Project Area.	Oil and gas drilling would temporarily impact the Great Allegheny Passage Montour Trail, including the Airport Link; however, impacts would be temporary and are not considered a use under Section 4(f).	The Proposed Action would not impact Section 4(f) resources within the Proposed Project Area.	Temporary impacts would occur to the Airport Link Trail; however, given the nature of the path on PIT property, these would not be cumulatively significant.	Temporary impacts would occur to the Airport Link Trail; however, given the nature of the path on PIT property, these would not be cumulatively significant. No significant impacts to Section 4(f) resources within the Proposed Project Area.
Farmlands	No past actions that would have significant impacts to Farmlands	No present actions that would have significant impacts to Farmlands	The Proposed Action would not impact Farmlands	No future actions that would have significant impacts to Farmlands	No significant Farmlands impacts would be anticipated by the past, present or proposed developments.

RESOURCE	PAST ACTIONS	PRESENT ACTIONS	PROPOSED ACTION	FUTURE ACTIONS	CUMULATIVE IMPACT
Hazardous Materials, Solid Waste, and Pollution Prevention	No significant past actions that would result in hazardous materials, pollution prevention, or solid waste impacts within the Proposed Project Area.	Construction of new facilities involves the use of hazardous materials, primarily through use of motor fuels, adhesives, etc.	Construction of the Proposed Action would involve the use of hazardous materials, primarily through use of motor fuels, paints, etc. Operation of the Proposed Action would not contribute to any additional hazardous materials or solid waste.	Future airport construction would include the use of hazardous materials, primarily through use of motor fuels, adhesives, etc. Oil and gas drilling and USAF C17 Conversion at PIT would need to adhere to established guidelines.	Construction of the Proposed Action and future airport projects would involve use of hazardous materials, primarily through use of motor fuels, paints, etc. However, through adherence to established guidelines, no cumulative impacts would occur.
Historic, Architectural, Archeological, and Cultural Resources	No past actions that would have significant impacts to Historic, Architectural, Archeological, and Cultural Resources	No present actions that would have significant impacts to Historic, Architectural, Archeological, and Cultural Resources	The Proposed Action would have no impacts to Historic, Architectural, Archeological, and Cultural Resources	No future actions that would have significant impacts to Historic, Architectural, Archeological, and Cultural Resources	No significant Historic, Architectural, Archeological, and Cultural Resources impacts would be anticipated by the past, present or proposed developments.
Land Use	No significant past actions that would impact land use within the Proposed Project Area.	No significant present actions that would impact land use within the Proposed Project Area.	Proposed Action would maintain existing land use and would be constructed entirely within the PIT property boundary. The Proposed Action complies with all local plans and land use designations.	No significant future actions that would impact land use within the Proposed Project Area.	No significant changes in land use would occur. Past, present, and future projects within the Proposed Project Area would maintain existing land uses and would not result in changes to surrounding land use.
Natural Resources and Energy Supply	No significant past actions that would impact natural resources or energy supply within the Proposed Project Area.	No significant present actions that would impact natural resources or energy supply within the Proposed Project Area.	The Proposed Action would not require significant natural resource use or energy supply for construction. Operations would consume natural gas but would also generate electricity from the solar panels, resulting in a net reduction of energy compared to existing conditions.	No significant future actions that would impact natural resources or energy supply within the Proposed Project Area.	Construction of Proposed Action and other cumulative projects would increase materials and energy consumption. Development projects are not anticipated to have a significant impact to natural resource supply.
Noise and Noise Compatible Land Use	No past actions that would have significant impacts to noise and compatible land use within the Proposed Project Area.	No present actions that would have significant impacts to noise and compatible land use within the Proposed Project Area.	The Proposed Action would not result in any increase in operational noise or changes to compatible land use.	No future actions that would have significant impacts to noise and compatible land use within the Proposed Project Area.	No significant changes in noise or compatible land use would occur. Other future actions during the Proposed Action would be over 3,000 feet away and have no significant noise impacts.

RESOURCE	PAST ACTIONS	PRESENT ACTIONS	PROPOSED ACTION	FUTURE ACTIONS	CUMULATIVE IMPACT
Socioeconomic Impacts, Environmental Justice, & Children's Health	No past actions would have significant socioeconomic, environmental justice or children's health impacts.	No present actions would have significant socioeconomic, environmental justice or children's health impacts.	The Proposed Action would not result in significant socioeconomic, environmental justice or children's health impacts.	No future actions would have significant socioeconomic, environmental justice or children's health impacts.	No significant impacts to socioeconomic, environmental justice or children's health impacts.
Visual Effects including Light Emissions	No past significant actions within the Proposed Project Area that would impact light emissions or visual impacts.	No present significant actions within the Proposed Project Area that would impact light emissions or visual impacts.	Proposed Action would not result in long-term significant impacts to light emissions or visual impacts.	No future significant actions within the Proposed Project Area that would impact light emissions or visual impacts.	Other cumulative projects are not expected to impact light emissions or visual impacts.
Natural Resources (including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers)	No past significant actions within the Proposed Project Area that would impact natural resources (including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers). Rehabilitation of existing facilities would not result in the conversion of undeveloped land. Therefore, there was no increase in the amount of impervious surface of past actions. No areas of groundwater recharge in the vicinity of the Proposed Project Area. No significant impacts from past actions. No wetlands have been directly impacted from past actions within the Proposed Project Area. Storm water runoff from developed areas may affect wetlands.	No present significant actions within the Proposed Project Area that would significantly impact natural resources (including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers). The Terminal Modernization Program converts approximately 6.2 acres to impervious surfaces; expansion of the Cargo 3 Ramp converts approximately 0.6 acres to impervious surfaces; and the USAF C17 Conversion converts approximately 1.1 acres to impervious surfaces. This could change the runoff patterns of the Proposed Project Area. Oil and gas drilling stormwater runoff volumes would be controlled, and no direct stream discharge would occur. No areas of groundwater recharge in the vicinity of the Proposed Project Area.	The Proposed Action would not result in significant Natural Resources impacts. No areas of groundwater recharge in the vicinity of the Proposed Project Area. No significant impacts from the Proposed Action. The Proposed Action would avoid impacting wetlands.	Proposed development may result in increased impervious surfaces which may increase runoff. No areas of groundwater recharge in the vicinity of the Proposed Project Area. No significant impacts from future actions. No wetlands are anticipated to be directly impacted from future actions within the Proposed Project Area.	A total increase of 7.9 acres of impervious surfaces will increase storm water runoff. These impacts would be mitigated through implementation of best management practices and applicable NPDES permits. Additional guidance will include PIT's Integrated Contingency Plan and the PADEP Best Management Practices. Improvements to the existing Terminal Area drainage system would be included in the Proposed Action to accommodate any additional runoff from the project. No areas of groundwater recharge in the vicinity of the Proposed Project Area. No direct impacts to wetlands would be anticipated by the past, present or proposed developments.

SOURCE: Allegheny County Airport Authority, Consol Energy, *Environmental Assessment for Oil & Gas Drilling at Pittsburgh International Airport*, February 2014; U.S. Air Force Reserve Command, Environmental Division, *Environmental Assessment of Proposed Wing Headquarters Facility at Pittsburgh International Airport Air Reserve Station*, Pennsylvania, March 2005; Allegheny County Airport Authority, *Environmental Assessment for the Westfield Site Improvements at Pittsburgh International Airport*, February 1, 2010; Ricondo & Associates, Inc., February 2020.

7. PERMITS

List all required permits for the proposed project. Has coordination with the appropriate agency commenced? What feedback has the appropriate agency offered in reference to the proposed project? What is the expected time frame for permit review and decision?

Table 8 provides an overview of the permit applications that would be required for the Proposed Action.

TABLE 8 REQUIRED PERMITS

PERMIT	PROPOSED ACTION COMPONENT	AGENCY
Building Permit – Solar PV Array	Solar PV array	Findlay Township
Building Permit – Electric Power Plant	Natural Gas-Fired Electric Power Plant	Findlay Township
Air Permit – Installation Permit	Natural Gas-Fired Electric Power Plant	Allegheny County Health Department
Air Permit – Operation Permit	Natural Gas-Fired Electric Power Plant	Allegheny County Health Department
National Pollutant Discharge Elimination System (NPDES) Permit	Natural Gas-Fired Electric Power Plant	Allegheny County Conservation District
Glint/Glare Analysis	Solar PV Array	FAA
Hazardous/Residual Waste	Natural Gas-Fired Electric Power Plant	Pennsylvania Department of Environmental Protection
Landfill Minor Modification Permit	Solar PV Array	Pennsylvania Department of Environmental Protection

NOTE: FAA – Federal Aviation Administration

SOURCE: Allegheny County Airport Authority, February 2020.

8. MITIGATION

Describe those mitigation measures to be taken to avoid creation of significant impacts to a particular resource as a result of the proposed project, and include a discussion of any impacts that cannot be mitigated.

No significant impacts would occur as a result of the Proposed Action; therefore, no mitigation would be required to avoid significant impacts. However, for all construction activities, the construction contractor would ensure that all applicable Federal, state, and local regulations are followed.

9. PUBLIC INVOLVEMENT

Describe the public review process and any comments received. Include copies of Public Notices and proof of publication.

This Final EA along with FAA's findings will be made available to the public once FAA has completed their review and FAA issues a final environmental decision for the proposed project.

10. LIST OF ATTACHMENTS

Exhibit 1	Regional Map
Exhibit 2	Proposed Action Location Map
Exhibit 3	Proposed Action Conceptual Plan – Natural Gas-Fired Electric Power Plant and Utilities
Exhibit 4	Natural Gas-Fired Electric Power Plant – Proposed Gas Line
Exhibit 5	Proposed Action Conceptual Plan – Diagram of Solar PV Array
Exhibit 6	Areas of Environmental Concern
Exhibit 7	PIT Potential Mining and Oil and Gas Extraction Potential Hazards
Exhibit 8	PIT Area Land Uses
Exhibit 9	National Wetlands Inventory Wetlands and Surface Waters Map
Exhibit 10	Federal Emergency Management Agency Flood Insurance Rate Map – Natural Gas-Fired Electric Power Plant
Exhibit 11	Federal Emergency Management Agency Flood Insurance Rate Map – Solar PV Array
Appendix A	ForgeSolar Glare Analysis Report
Appendix B	Air Quality Analysis
Appendix C	Pennsylvania Natural Diversity Index Search
Appendix D	Wetland Field Survey Reports

Project Title: Microgrid

Identifier: PIT

11. PREPARER CERTIFICATION

I certify that the information I have provided above is, to the best of my knowledge, correct.

Stephen Culberson
Signature

April 23, 2020
Date

Stephen Culberson
Name

Vice President
Title

Ricondo & Associates, Inc.
Affiliation

312-212-8812
Phone #

12. AIRPORT SPONSOR CERTIFICATION

I certify that the information I have provided above is, to the best of my knowledge, correct. I also recognize and agree that no construction activity, including but not limited to site preparation, demolition, or land disturbance, shall proceed for the above proposed project(s) until FAA issues a final environmental decision for the proposed project(s), and until compliance with all other applicable FAA approval actions (e.g., ALP approval, airspace approval, grant approval) and special purpose laws has occurred.

Eric Buncher
Signature

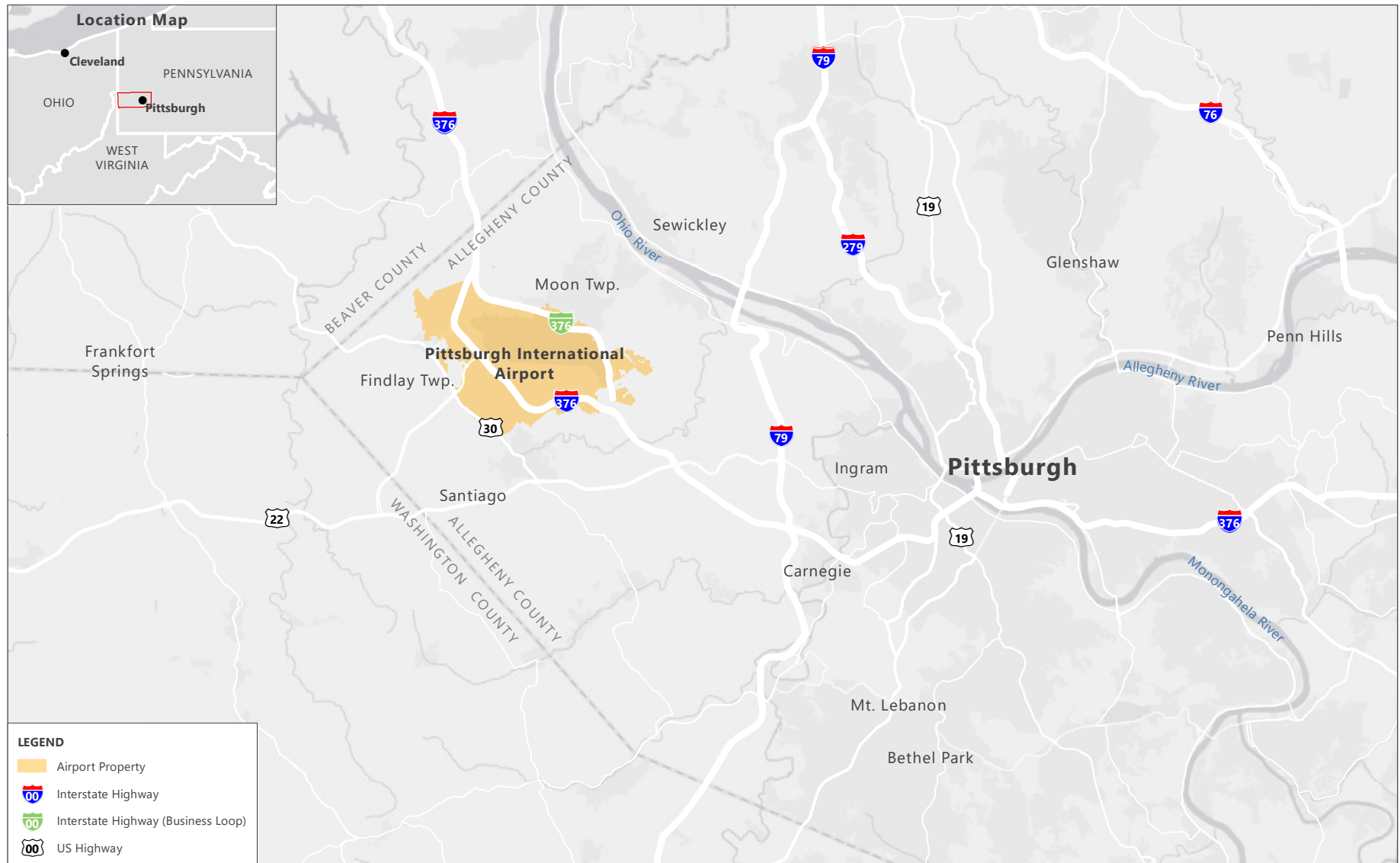
April 23, 2020
Date

Eric Buncher
Name

Manager of Planning Services
Title

Allegheny County Airport Authority
Affiliation

412-472-5692
Phone #



SOURCES: Esri, HERE, Garmin, OpenStreetMap Contributors, and the GIS User Community, January 2020 (basemap); US Census Bureau, TIGER/Line Shapefiles, 2019 (roads); Allegheny County Airport Authority, *Airport Layout Plan*, 2018 (Airport property).

EXHIBIT 1

REGIONAL MAP

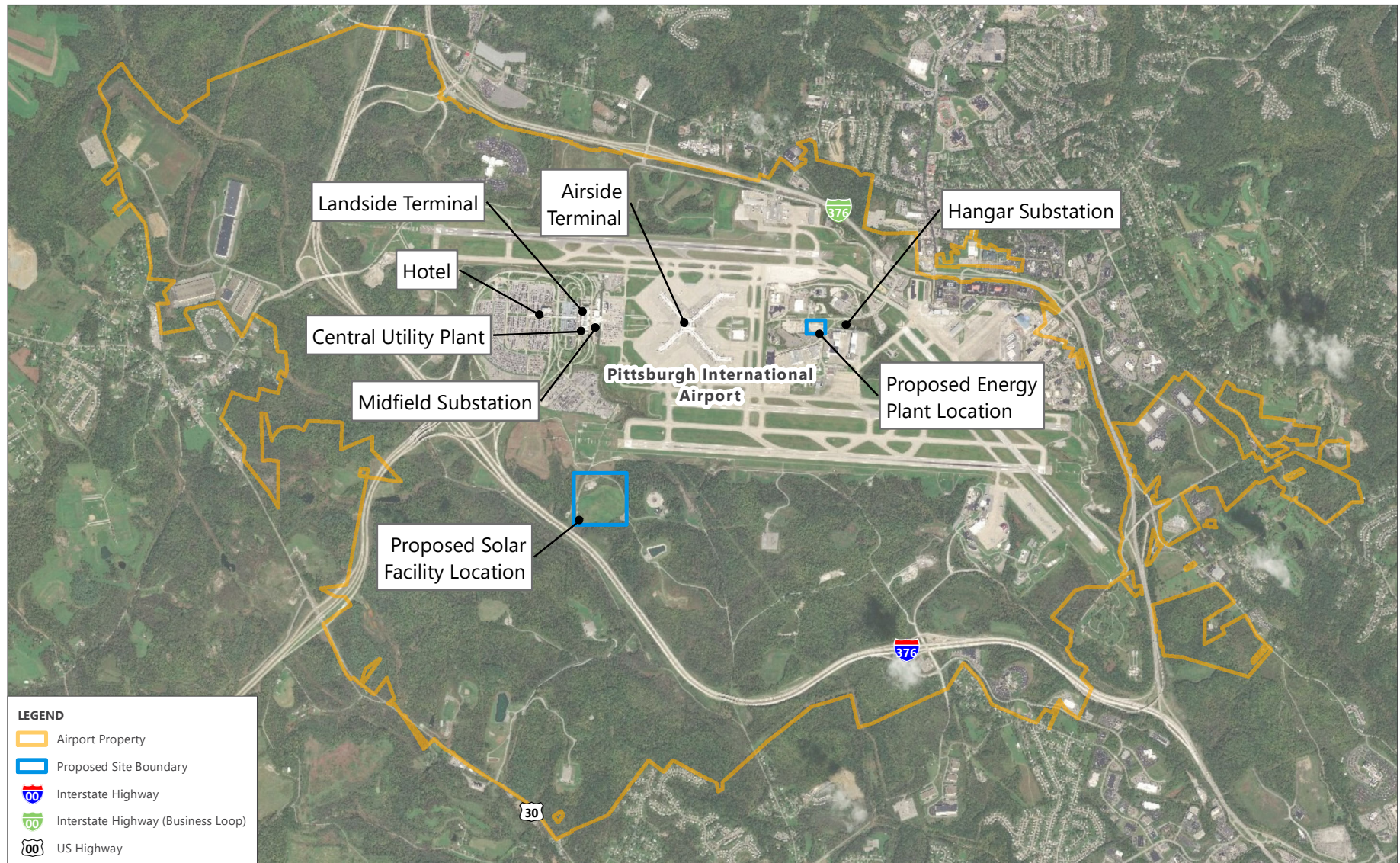
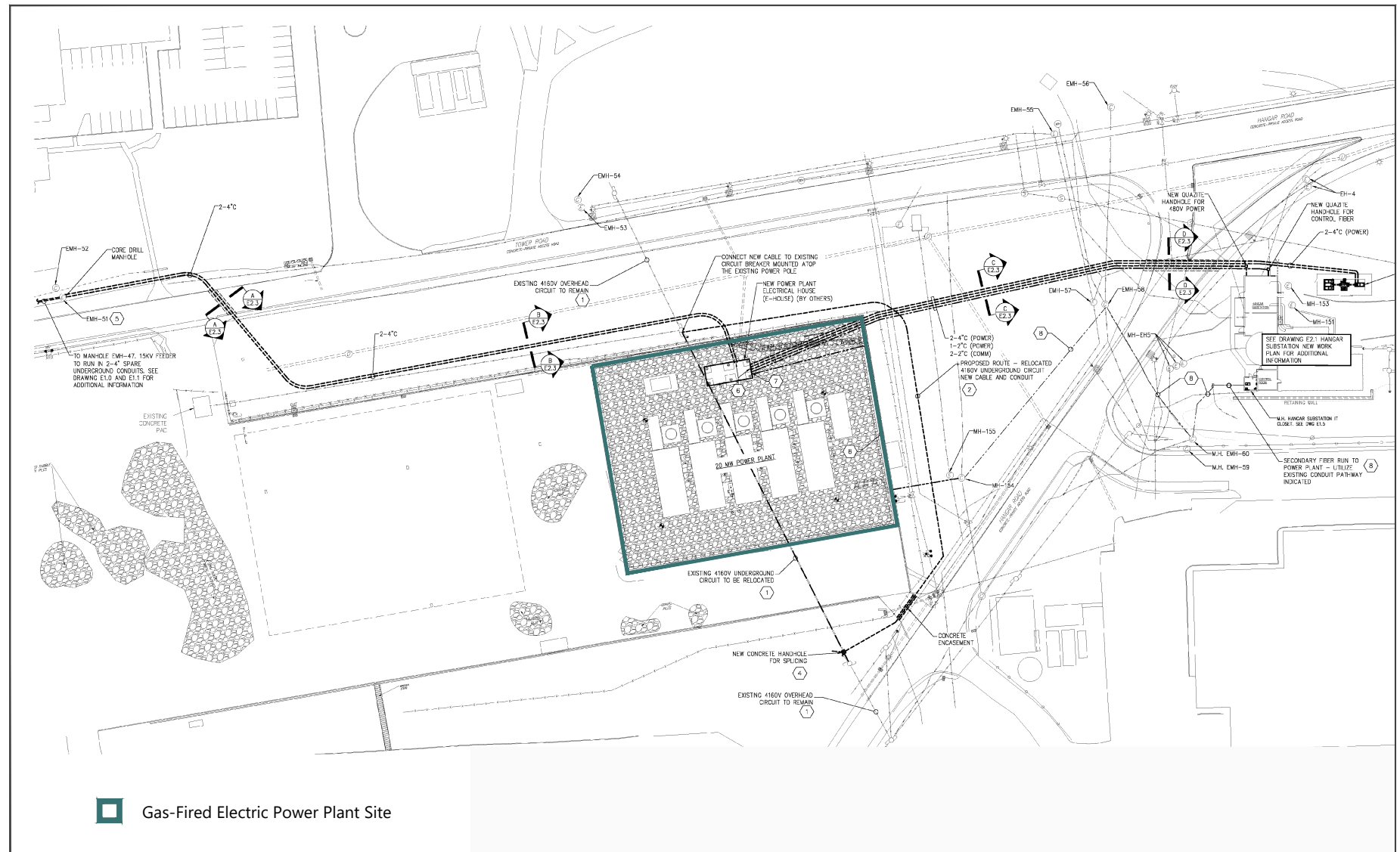


EXHIBIT 2



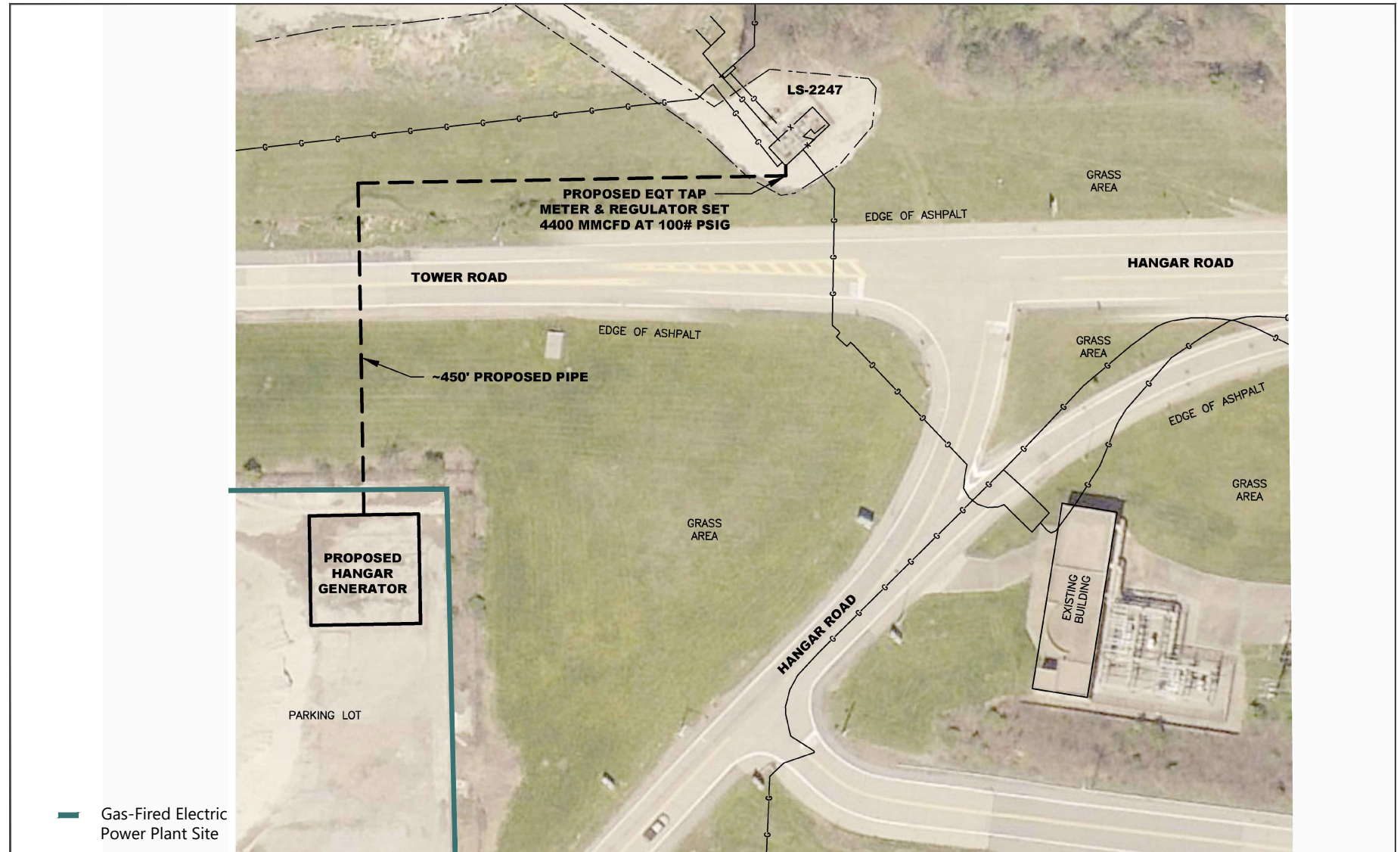
PROPOSED ACTION LOCATION MAP



SOURCE: PJ Dick, PIT Microgrid Site Plans, 2020.

**EXHIBIT 3****PROPOSED ACTION CONCEPTUAL PLAN -
NATURAL GAS-FIRED ELECTRIC POWER PLANT AND UTILITIES**

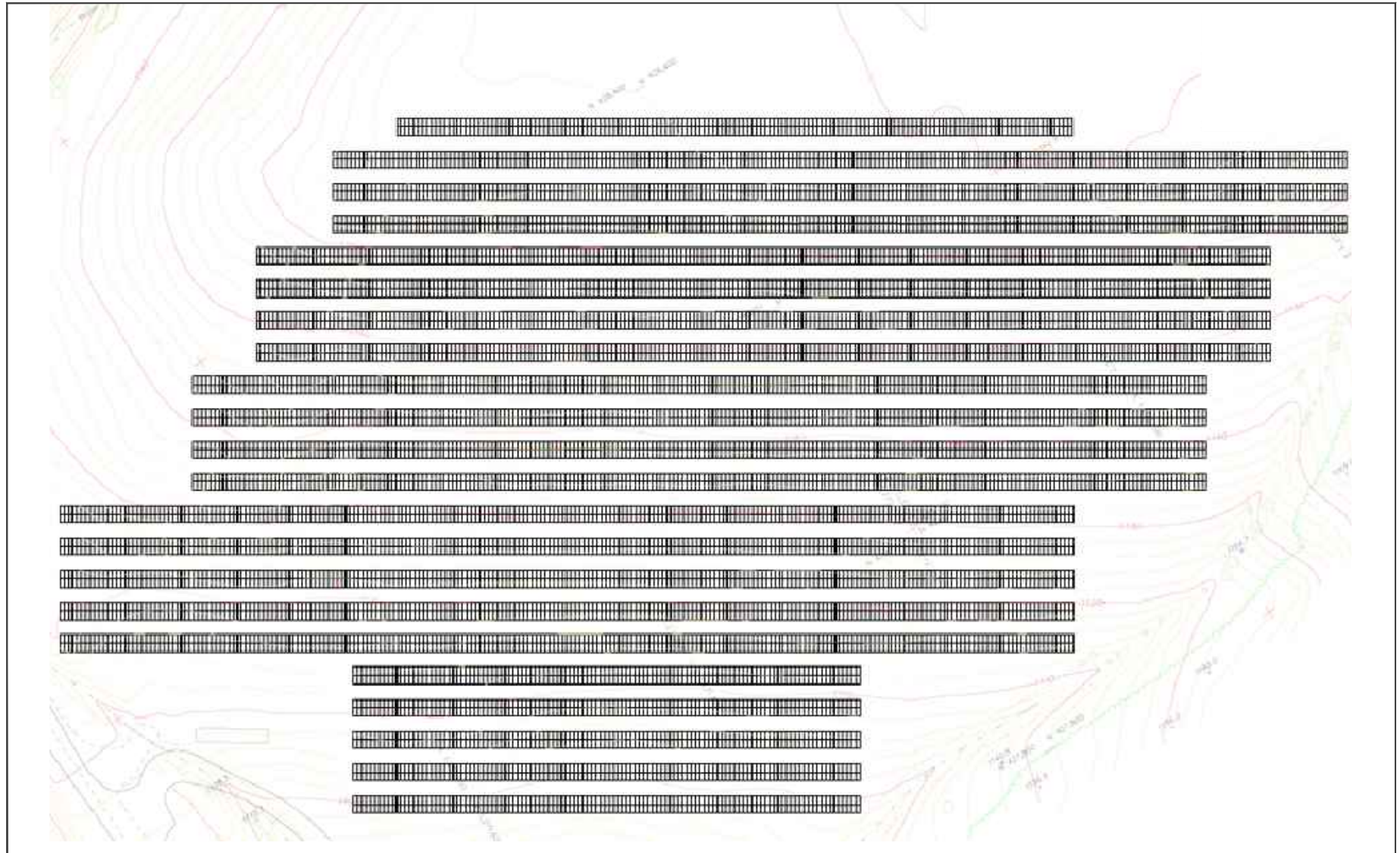
Drawing: P:\PROJECTS\ACAA (Pittsburgh)\19011159-PIT Microgrid\01 - FAA Support Services\60-Environmental\04-Drawings&Models\PIT_Microgrid_EA_20200227.dwg Layout: Exhibit 3 - Gas Plant Plotted: Apr 15, 2020, 03:40PM



SOURCE: PJ Dick, PIT Microgrid Site Plans, 2020.

**EXHIBIT 4****NATURAL GAS-FIRED ELECTRIC POWER PLANT -
PROPOSED GAS LINE**

Drawing: P:\PROJECTS\IACAA (Pittsburgh)\19011159-PIT Microgrid\01 - FAA Support Services\60-Environmental\04-Drawings&Models\PIT_Microgrid_EA_20200227.dwg Layout: Exhibit 4 - Gas Plant-GasLine Plotted: Apr 15, 2020, 03:12PM



SOURCE: IMG Energy Solutions, Attachment to the Form 7460 Notice of Proposed Construction, December 13, 2019.

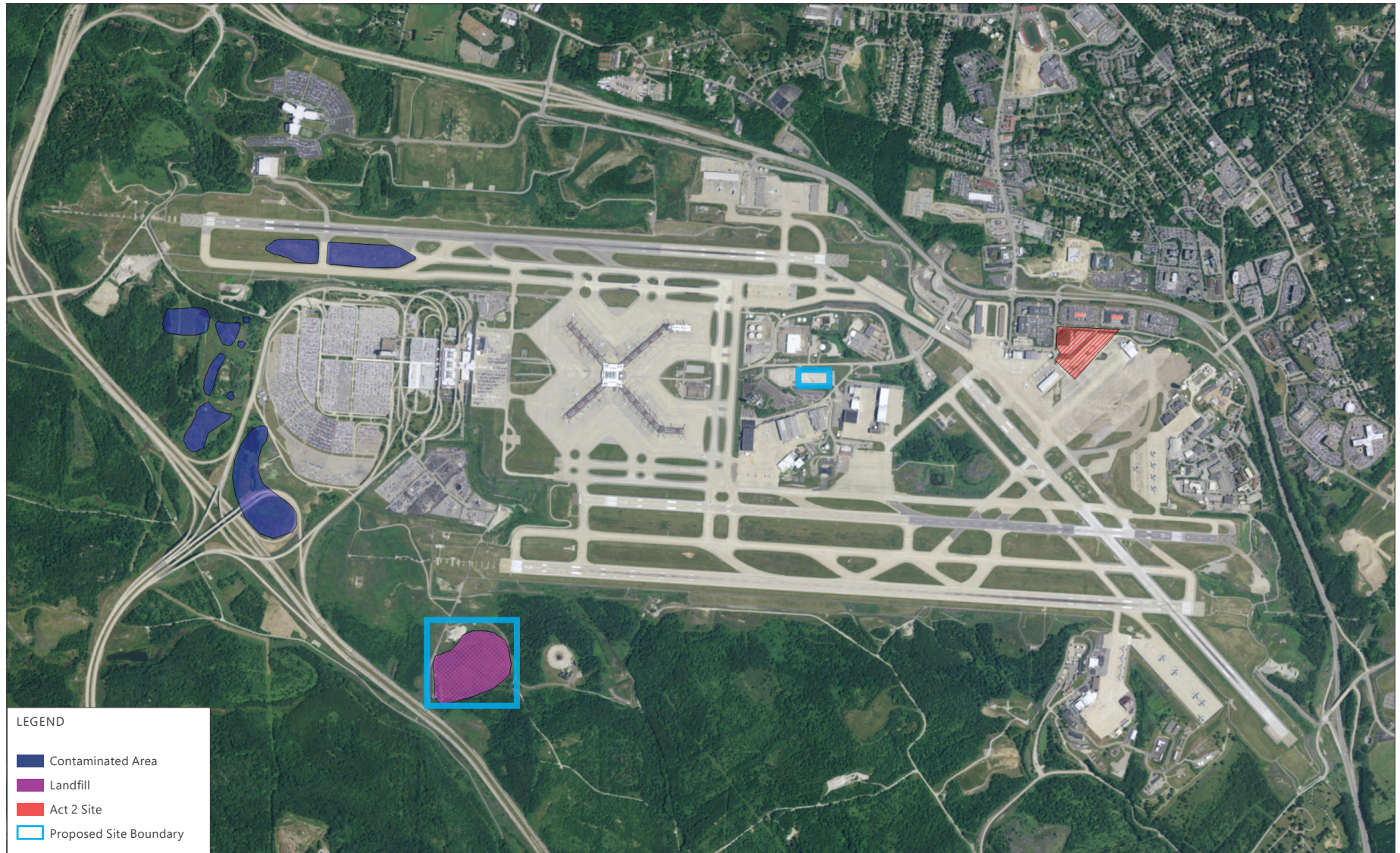


Drawing: P:\PROJECTS\IACAA (Pittsburgh)\19011159-PIT Microgrid\01 - FAA Support Services\60-Environmental\04-Drawings&Models\PIT_Microgrid_EA_20200227.dwgLayout: Exhibit 5 - Solar Plant Plotted: Apr 15, 2020, 03:28PM

Microgrid Short Environmental Assessment

EXHIBIT 5

PROPOSED ACTION CONCEPTUAL PLAN - DIAGRAM OF SOLAR PV ARRAY



SOURCE: Aerial imagery from ESRI Database, ESRI, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, acquired April 20, 2016. Overlay information from Rhea Engineers and Consultants, Inc., Environmental Assessment for Oil and Gas Drilling at Pittsburgh International Airport, February 2014.



ricondo:Shared:Drive:Corporate:Creative Services:01 Projects:01 Client Projects:2020:PIT:PIT Terminal EA Exhibits 2020:PIT Terminal EA Exhibits 2020_working.indd

Microgrid Short Environmental Assessment

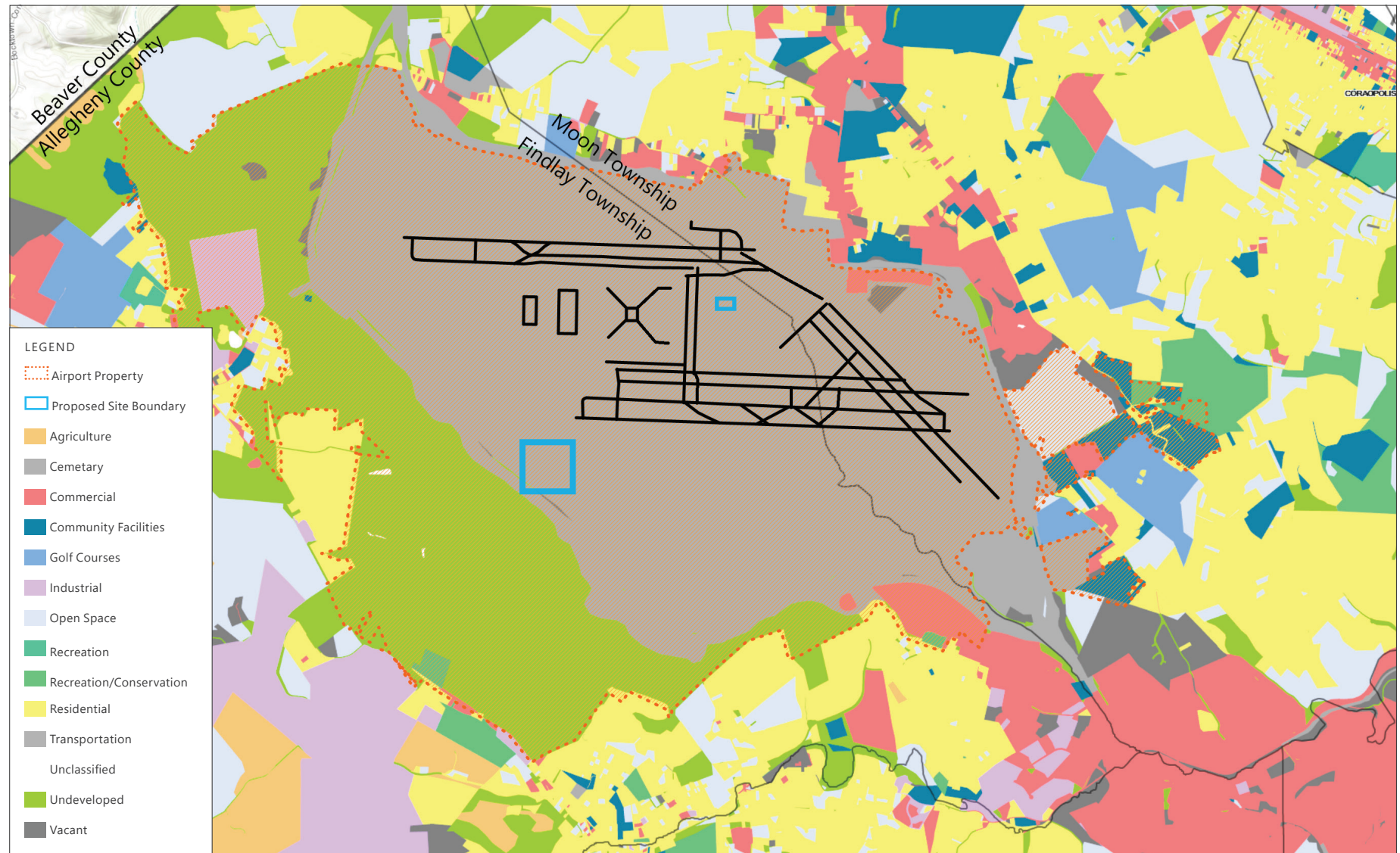
EXHIBIT 6

AREAS OF ENVIRONMENTAL CONCERN



SOURCE: Aerial imagery from ESRI Database, ESRI, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, acquired April 20, 2016. Overlay information from WPA (Work Projects Administration) Mine Maps for Beaver Sheet 9, Sewickley Sheet 7, Burgettstown Sheet 3, and Carnegie Sheet 1.

EXHIBIT 7**PIT POTENTIAL MINING, AND OIL AND GAS EXTRACTION POTENTIAL HAZARDS**



SOURCE: Allegheny Places, The Allegheny County Comprehensive Plan, webpage http://www.alleghenyplaces.com/comprehensive_plan/viewer.aspx PREPARED BY: Rhea Engineers and Consultants, August 2017.

EXHIBIT 8

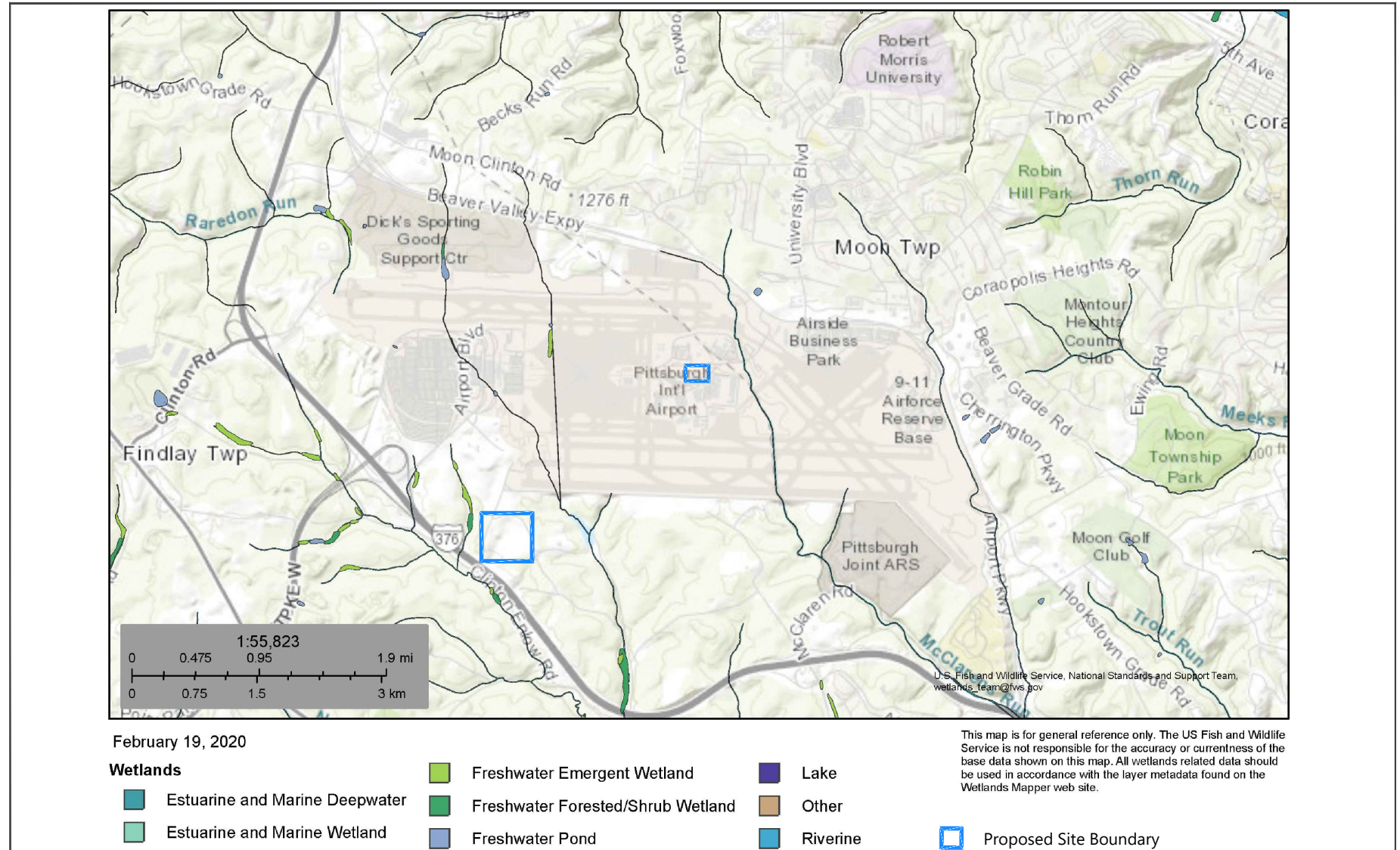
PIT AREA LAND USES

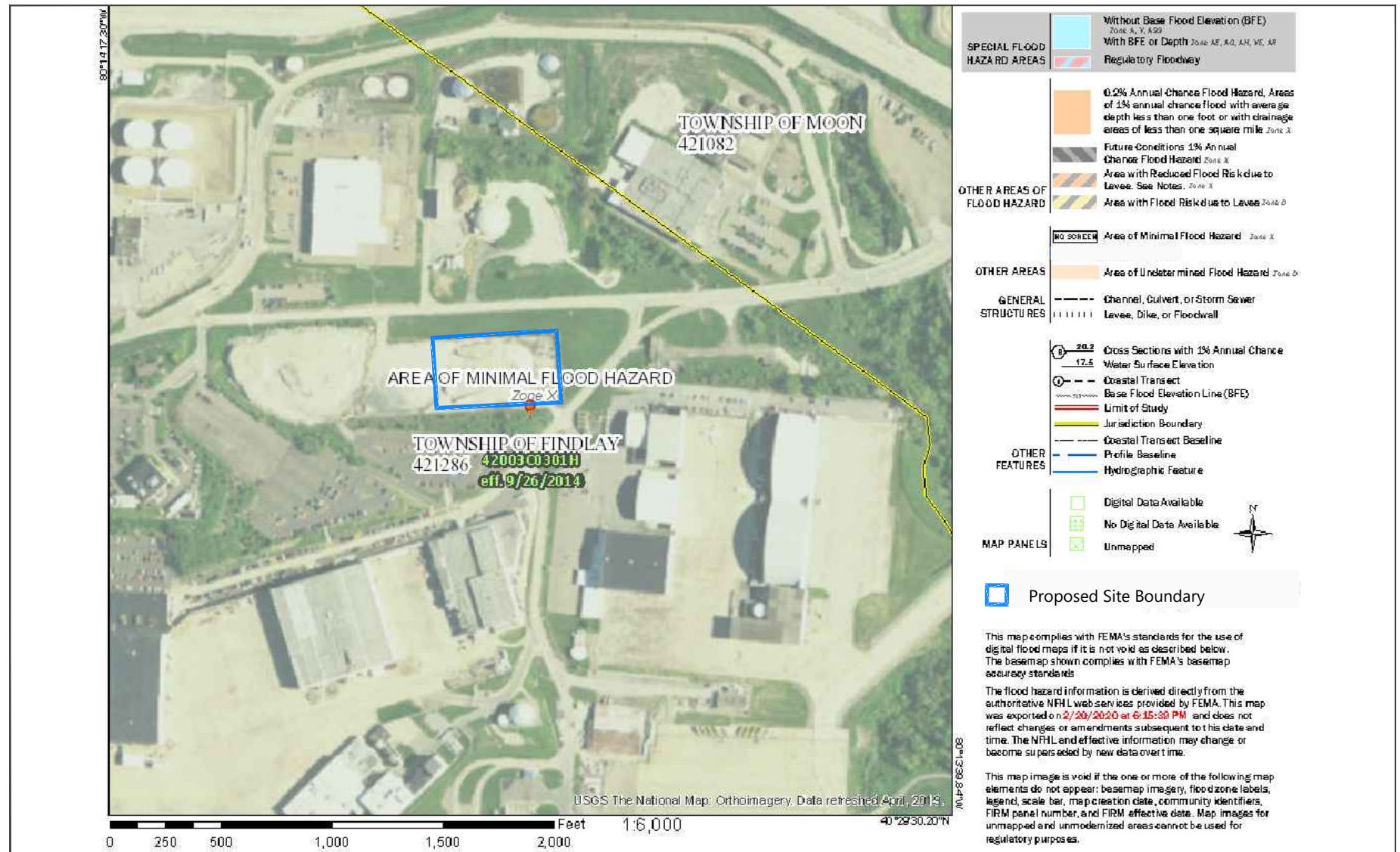


NORTH 0 Not To Scale

ricondo:Shared:Drive:Corporate:Creative Services:01 Projects:01 Client Projects:2020:PIT:PIT Terminal EA Exhibits 2020:PIT Terminal EA Exhibits 2020_working.indd

Microgrid Short Environmental Assessment





SOURCE: US Fish and Wildlife Service, National Wetlands Inventory, Accessed February 20, 2020.

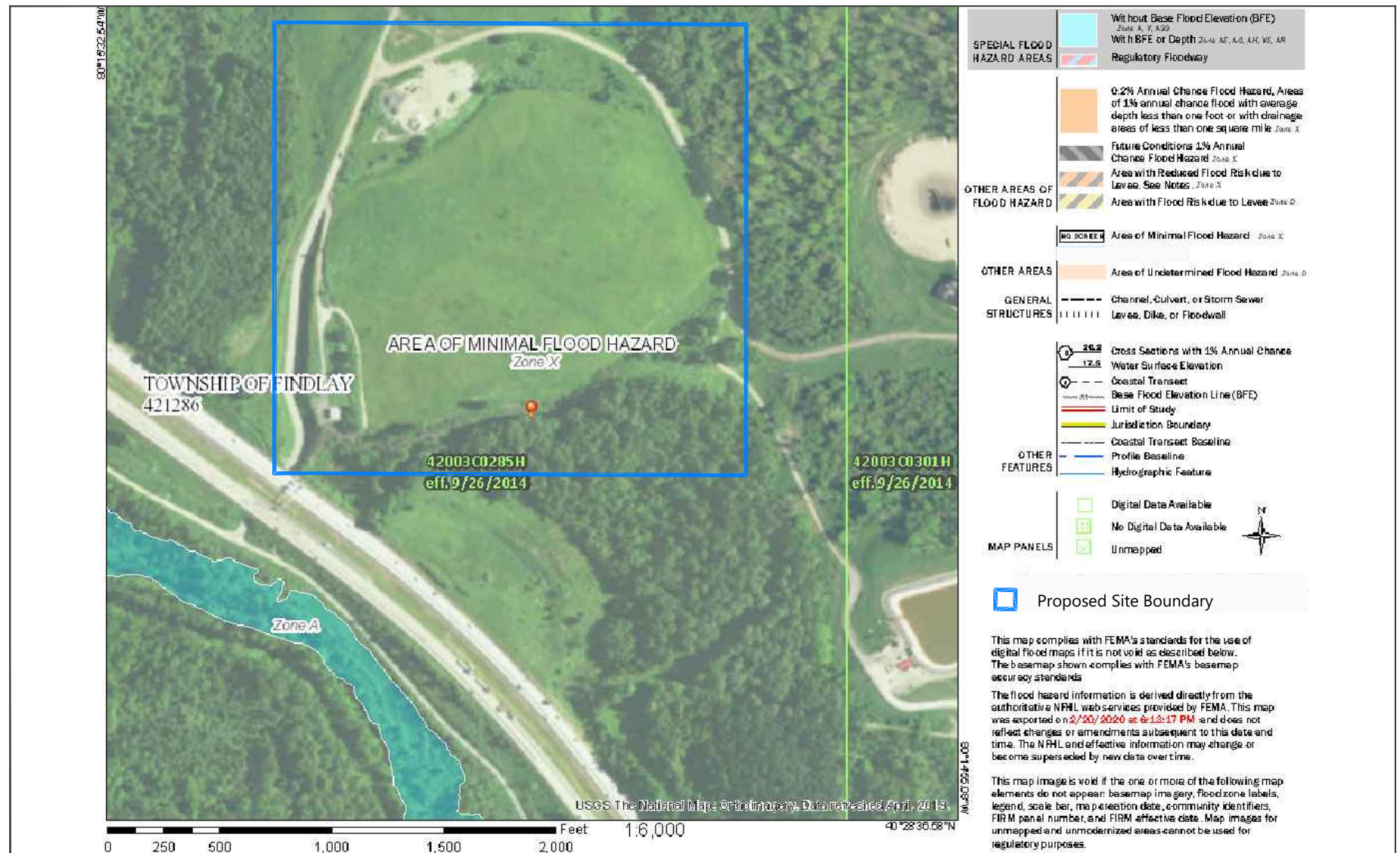


EXHIBIT 10

FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP - NATURAL GAS FIRED ELECTRIC POWER PLANT

Drawing: P:\PROJECTS\ACAA (Pittsburgh)\19011159-PIT Microgrid\01 - FAA Support Services\60-Environmental\04-Drawings&Models\PIT_Microgrid_EA_20200227.dwg Layout: Exhibit 10 - FEMA-Gas Plotted: Apr 15, 2020, 03:30PM

Microgrid Short Environmental Assessment



SOURCE: US Fish and Wildlife Service, National Wetlands Inventory, Accessed February 20, 2020.



FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP - SOLAR PV ARRAY

EXHIBIT 11

Drawing: P:\PROJECTS\IACAA (Pittsburgh)\19011159-PIT_Microgrid\01 - FAA Support Services\60-Environmental\04-Drawings&Models\PIT_Microgrid_EA_20200227.dwg Layout: Exhibit 11 - FEMA-Solar Plotted: Apr 15, 2020, 03:31 PM

Microgrid Short Environmental Assessment



APPENDIX A

ForgeSolar Glare Analysis



FORGESOLAR GLARE ANALYSIS

Project: **Pittsburgh Airport**

Proposed solar PV site on capped landfill at Pittsburgh International Airport (PIT) at 25 degree tilt

Site configuration: **PIT Solar 1**

Analysis conducted by Nicholas Hanson (nick.hanson@imgmidstream.com) at 02:15 on 05 Dec, 2019.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
Flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	PASS	Receptor(s) marked as ATCT do not receive glare

Default glare analysis parameters and observer eye characteristics (for reference only):

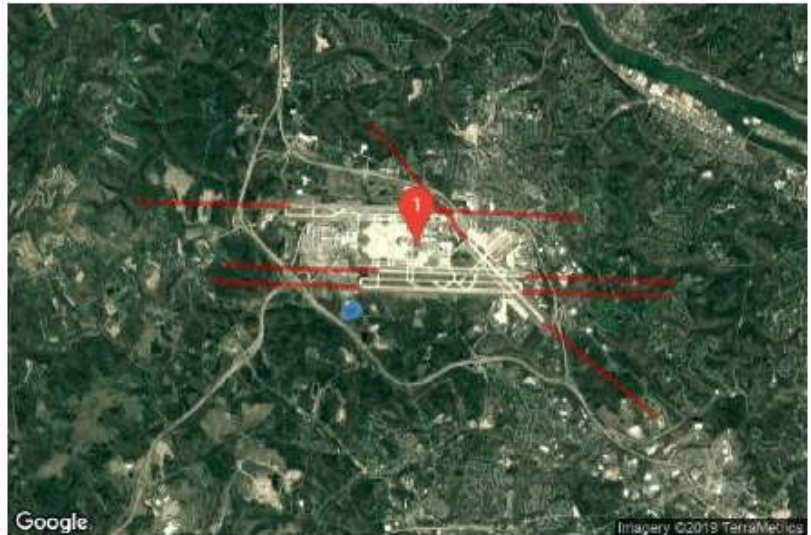
- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at <https://www.federalregister.gov/d/2013-24729>

SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m²
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 33923.6229



PV Array(s)

Name: PV array 1
Axis tracking: Fixed (no rotation)
Tilt: 25.0°
Orientation: 180.0°
Rated power: 3000.0 kW
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	40.482577	-80.256099	1126.20	10.00	1136.20
2	40.481826	-80.256142	1119.12	10.00	1129.12
3	40.480651	-80.255713	1071.85	10.00	1081.85
4	40.480969	-80.253438	1138.12	10.00	1148.12
5	40.481907	-80.251893	1167.98	10.00	1177.99
6	40.483107	-80.252430	1147.05	10.00	1157.05
7	40.483544	-80.253578	1141.41	10.00	1151.41
8	40.483484	-80.254323	1140.65	10.00	1150.65
9	40.482968	-80.255112	1139.58	10.00	1149.58

Flight Path Receptor(s)

Name: FP 1

Description:

Threshold height: 50 ft

Direction: 92.1°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	40.486763	-80.252015	1134.57	50.00	1184.57
Two-mile	40.487828	-80.290049	1227.55	510.48	1738.03

Name: FP 2

Description:

Threshold height: 50 ft

Direction: 91.6°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	40.502368	-80.270470	1202.36	50.00	1252.36
Two-mile	40.503150	-80.308525	1136.29	669.53	1805.82

Name: FP 3

Description:

Threshold height: 50 ft

Direction: 310.3°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	40.479916	-80.204894	1113.58	50.00	1163.59
Two-mile	40.461227	-80.175858	988.67	728.37	1717.04

Name: FP 4

Description:

Threshold height: 50 ft

Direction: 271.1°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	40.485779	-80.210781	1122.56	50.00	1172.56
Two-mile	40.485224	-80.172729	1121.94	604.08	1726.02

Name: FP 5

Description:

Threshold height: 50 ft

Direction: 91.9°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	40.489984	-80.247968	1140.42	50.00	1190.42
Two-mile	40.490927	-80.286009	1117.67	626.21	1743.88

Name: FP 6

Description:

Threshold height: 50 ft

Direction: 272.6°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	40.488926	-80.209266	1136.61	50.00	1186.61
Two-mile	40.487625	-80.171243	1123.15	616.92	1740.07

Name: FP 7

Description:

Threshold height: 50 ft

Direction: 272.4°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	40.501449	-80.233529	1173.59	50.00	1223.59
Two-mile	40.500243	-80.195494	1084.91	692.13	1777.04

Name: FP 8

Description:

Threshold height: 50 ft

Direction: 139.7°

Glide slope: 3.0°

Pilot view restricted? Yes

Vertical view: 30.0°

Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	40.496098	-80.225031	1146.72	50.00	1196.72
Two-mile	40.518145	-80.249656	1117.95	632.23	1750.18

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
1-ATCT	1	40.494652	-80.237800	1161.03	327.02

Map image of 1-ATCT



GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 1	25.0	180.0	0	0	6,994,000.0

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
FP 1	0	0
FP 2	0	0
FP 3	0	0
FP 4	0	0
FP 5	0	0
FP 6	0	0
FP 7	0	0
FP 8	0	0
1-ATCT	0	0

Results for: PV array 1

Receptor	Green Glare (min)	Yellow Glare (min)
FP 1	0	0
FP 2	0	0
FP 3	0	0
FP 4	0	0
FP 5	0	0
FP 6	0	0
FP 7	0	0
FP 8	0	0
1-ATCT	0	0

Flight Path: FP 1

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 2

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 3

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 4

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 5

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 6

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 7

0 minutes of yellow glare

0 minutes of green glare

Flight Path: FP 8

0 minutes of yellow glare

0 minutes of green glare

Point Receptor: 1-ATCT

0 minutes of yellow glare

0 minutes of green glare

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.

Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size.

Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.

The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

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APPENDIX B

Air Quality Analysis

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APPENDIX B AIR QUALITY ANALYSIS

B.1 INTRODUCTION

This document describes the methods used to calculate emissions of carbon monoxide (CO), volatile organic compounds (VOCs), oxides of nitrogen (NO_x), oxides of sulfur (SO_x), particulate matter less than ten microns in diameter (PM₁₀), particulate matter less than 2.5 microns in diameter (PM_{2.5}), and carbon dioxide equivalent (CO_{2e}) in support of the Environmental Assessment (EA) for construction of a natural gas-fired electric power plant and installation of a solar photovoltaic (PV) array (the Proposed Action) at Pittsburgh International Airport (the Airport).

The emissions analysis was conducted to develop emissions inventories pursuant to the National Environmental Policy Act of 1969 (NEPA), and to determine whether emissions associated with the Proposed Action would exceed applicable *de minimis* thresholds as documented in the U.S. Environmental Protection Agency (USEPA) general conformity regulations. Construction-related activities are anticipated to occur in 2020 and 2021.

B.2 REGULATORY SETTING

Under the federal Clean Air Act (CAA), as amended, the EPA has developed National Ambient Air Quality Standards (NAAQS) for the following air pollutants, referred to as criteria air pollutants: CO, nitrogen dioxide (NO₂), ozone (O₃), sulfur dioxide (SO₂), lead (Pb), PM₁₀, and PM_{2.5}. The CAA defines the need to establish two standards—primary standards, which define maximum concentrations of criteria air pollutants to protect public health, and secondary standards, which define maximum concentrations of criteria air pollutants to protect public welfare.

Individual states are required to identify general geographic areas where the NAAQS for these criteria air pollutants are not met. The USEPA designates such areas as nonattainment areas and qualifies the nonattainment status by severity of nonattainment ranging from marginal to moderate to serious to extreme nonattainment. Areas that were in nonattainment but have since attained the NAAQS are considered to be an attainment/maintenance area for several years before being designated as attainment. A state with a nonattainment or maintenance area must prepare a State Implementation Plan (SIP) that describes the programs and requirements that the state will implement to attain or maintain the NAAQS by the deadlines specified in the CAA, as well as subsequent related documents promulgated by the USEPA.

The CAA requires federal agencies to ensure that actions proposed to occur in a designated nonattainment or maintenance area conform to the appropriate SIP, also known as General Conformity. The General Conformity Rule establishes the *de minimis* levels by which a proposed action may show that it complies with the SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards. Pursuant to FAA Order 1050.1F, a proposed action would generally be considered in compliance if it would not cause emissions that exceed NAAQS *de minimis* levels. If the proposed action's emissions exceed the *de minimis* levels, a conformity determination would be required.

The Pennsylvania Department of Environmental Protection's Bureau of Air Quality is responsible for achieving the goals of the CAA and the Pennsylvania Air Pollution Control Act. The bureau develops air quality regulations, conducts meteorological tracking and air quality modeling studies and reviews; develops transportation control measures, and other mobile source programs.

The Airport is in Allegheny County. For the NAAQS, Allegheny County is designated as marginal nonattainment for 8-hour ozone and moderate nonattainment for PM_{2.5}. A portion of the county is also in nonattainment for SO₂. A

portion of Allegheny County was historically a nonattainment area for CO, but in January 2003 it was re-designated to attainment for the CO NAAQS and remains designated as a maintenance area.

B.3 METHODOLOGY

In support of evaluating air quality effects, an emissions inventory was prepared for the criteria air pollutants (or their precursor compounds) that may be affected by construction of the Proposed Action.

B.3.1 MODELS

The Airport Construction Emissions Inventory Tool (ACEIT) was used to estimate the construction emissions associated with the Proposed Action. ACEIT was developed in conjunction with the Transportation Research Board's Airport Cooperative Research Program Report 102, which provides guidance in developing airport construction emissions inventories.¹ ACEIT provides default values for most input data required to produce construction emissions inventories, including activity data and emission factors, and allows for the manipulation of various parameters to better define and refine a project analysis.

ACEIT calculates emissions for CO, VOC, NO_x, SO₂, PM₁₀, PM_{2.5}, carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) for both onroad and off-road construction sources.² The model uses the USEPA's nonroad equipment emissions model (NONROAD2008a) for nonroad construction vehicle/equipment emissions and the Motor Vehicle Emissions Simulator (MOVES2010b) for onroad vehicle emissions.³ Because MOVES 2010b has been replaced with MOVES2014b, the latter model was used outside of the ACEIT model to derive onroad emission factors for use in this analysis. In addition to exhaust emissions, MOVES estimates fugitive emissions related to non-exhaust and non-equipment sources, including evaporative (VOC) emissions and brake and tire wear (PM) emissions. Fugitive emissions from other sources, including batch plants, asphalt drying, soil handling, and material movement, are also included in the model, using methodologies from the USEPA's AP-42.⁴

B.3.2 THRESHOLDS OF SIGNIFICANCE

The evaluation of significance involves identifying if the Proposed Action would cause pollutant concentrations to exceed one or more of the NAAQS for any of the time period(s) analyzed or would increase the frequency or severity of any such existing violations. Established under the CAA, the General Conformity Rule applies to proposed federal actions in a nonattainment or maintenance area if the total of direct and indirect emissions of the relevant criteria air pollutants and precursor pollutants caused by a project would equal or exceed defined *de minimis* amounts. If the project would cause an exceedance of *de minimis*, then the federal agency would need to make a determination of General Conformity. If project emissions would not exceed the *de minimis* thresholds, the federal agency can determine that the General Conformity Rule does not apply and no further analysis or documentation is required.

As a designated moderate nonattainment area for ozone, *de minimis* thresholds of 100 tons per year apply for emissions of VOC and NO_x (ozone precursor pollutants). A *de minimis* threshold of 100 tons of CO per year is established because Allegheny County is a maintenance area for CO. The part of Allegheny County that includes the

¹ Transportation Research Board, Airport Cooperative Research Program Report 102, *Guidance for Estimating Airport Construction Emissions*, 2014.

² For purposes of this analysis, it was assumed that estimates of SO_x emissions are equal to calculated emissions of SO₂.

³ The latest MOVES model incorporates the NONROAD2008a model for estimating emissions from nonroad construction vehicles and equipment.

⁴ U.S. Environmental Protection Agency, AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition., January 1995, as amended.

Airport is in attainment with federal SO₂ standards, but for inventory purposes, emissions of SO_x were estimated, and it was assumed that estimates of SO_x emissions are equal to calculated emissions of SO₂. A *de minimis* threshold of 100 tons per year of PM_{2.5} is also established, since Allegheny County is designated as nonattainment area for PM_{2.5}. These applicable *de minimis* thresholds were compared to emissions associated with the Proposed Action. If the project emissions do not exceed the *de minimis* thresholds, the FAA can determine that the General Conformity Rule does not apply and no further analysis or documentation is required.

B.4 ASSUMPTIONS

Construction of the Proposed Action would result in short-term changes in air emissions from sources such as: exhaust emissions from nonroad construction equipment, haul trucks, and construction worker vehicles; fugitive VOC emissions from paving; and fugitive dust emissions from grading, materials handling, and vehicles traveling on paved and unpaved roads.

B.4.1 PROPOSED ACTION COMPONENTS

For purposes of this analysis, the Proposed Action was assumed to consist of the following components and schedule. Area estimates were used to scale construction activity in ACEIT and are consistent with information presented in Section 1 of this EA.

- **Power Plant Construction:** Construction of the natural gas-fired electric power plant includes the construction/installation of five generators, an electrical building, and a mechanical building. The site area is estimated at approximately 43,000 square feet, with the entire site assumed to comprise a poured concrete pad upon which the generators and buildings would be constructed. Each generator is estimated to be approximately 60 feet long and 20 feet wide (1,200 square feet). The electrical and mechanical buildings were each estimated to be approximately 1,000 square feet. Therefore, for purposes of emissions modeling, a total of approximately 8,000 square feet of building area would be constructed. Electrical and gas utility infrastructure would be located underground. The analysis assumes 1,300 linear feet of trenching at three feet wide and three feet deep to accommodate the utility connections. Construction of the entire natural gas-fired electric power plant project is assumed to occur from June 2020 to February 2021.
- **Solar PV Array Installation:** The Proposed Action includes the installation of 9,360 solar panels on an approximately 13-acre site. Since the project area covers a landfill area, no grading is anticipated since the soil cap covering the landfill is to be minimally disturbed. For purposes of this analysis, it was assumed that up to a quarter of the project site would require some amount of site preparation, such as tree/shrub removal, rough grading, landscaping, and the provision of utility service connections. Construction of the solar PV array is assumed to occur from June 2020 to February 2021.

B.4.2 CONSTRUCTION ACTIVITY

Construction emissions analyses generally require information such as the type of construction equipment to be used, the amount of time the equipment will operate, estimates of required construction material, areas to be paved, and the number of employees anticipated to be on site. Such data was largely unavailable for purposes of conducting this analysis. The use of the ACEIT was particularly appropriate for this analysis due to the model's ability to estimate nonroad and onroad activity data for a variety of standard airport projects, including associated activity types and the equipment used in each activity. Based on project dimensions, ACEIT scales these activities. **Table B-1** presents the construction activities that were assumed to comprise each project component.

TABLE B-1 PROPOSED ACTION PROJECT ACTIVITIES

CONSTRUCTION ACTIVITY BY PROJECT COMPONENT ¹		
Power Plant Paved Pad	Power Plant Building Construction	Solar PV Array Installation
Asphalt Placement	Concrete Foundations	Construction Mob & Layout
Clearing and Grubbing	Construction Mob & Layout	Site Clearing- Remove Trees & Shrubs
Drainage - 24 inch SICPP	Exterior Wall Framing	Landscaping (Curbing)
Drainage - 6 inch Perforated Underdrain	Interior Build-Out/ Finishes	Landscaping (Rough Grading)
Dust Control	Roofing	Landscaping (Top Soil Seed and Plantings)
Excavation (Borrow)	Security & Safety Systems	Underground Services to 5 ft. of Building
Excavation (Cut to Fill)	Structural Steel Erection	
Excavation (Topsoil Stripping)		
Fencing	Power Plant Utility Connections	
Grading	Drainage – 24-inch SICPP	
Hydroseeding	Hydroseeding	
Markings	Soil Erosion/Sediment Control	
Soil Erosion/Sediment Control	Topsoil Placement	
Subbase Placement	Drainage – 24-inch Reinforced Concrete Pipe	
Topsoil Placement	Drainage Structures	
Concrete Placement		
Lighting		
Sealing/Fuel Resistant		

NOTE:

¹ It should be noted that the construction activities listed correspond to activities for which the Airport Construction Emissions Inventory Tool (ACEIT) model assigns construction activity, such as equipment types and hours. Due to the specialized nature of the construction/installation of the power plant generators and solar panels, it is recognized that the activities listed may not correspond directly to activities necessary to construct the project. However, these activities were selected to be representative of the level of activity required to complete the project for purposes of air quality modeling.

SOURCE: Ricondo & Associates, Inc., February 2020.

For each construction activity, default construction (nonroad) equipment and usage hours were assumed, as assigned by ACEIT. Default equipment usage hours are estimated in ACEIT based on the overall size of the project and activity rates based on expert engineering judgment. A summary of equipment types and usage hours for each construction year is presented in **Table B-2**.

TABLE B-2 NONROAD EQUIPMENT AND HOURS OF OPERATION

EQUIPMENT	2020 HOURS	2021 HOURS	EQUIPMENT	2020 HOURS	2021 HOURS
40 Ton Crane	240	240	Log Chipper	443	127
Air Compressor	16	--	Man Lift	1,200	1,200
Asphalt Paver	6	--	Man Lift (Fascia Construction)	120	120
Backhoe	1,650	700	Material Deliveries	8	8
Bob Cat	266	76	Mulcher	443	127
Bulldozer	443	127	Off-Road Truck	5	0
Chain Saw	13	--	Other General Equipment	296	32
Chain Saws	443	127	Pickup Truck	394	32
Chipper/Stump Grinder	13	--	Pumps	5	0
Compacting Equipment	266	76	Roller	591	154
Concrete Ready Mix Trucks	326	136	Rubber Tired Loader	16	--
Concrete Saws	16	--	Scraper	20	--
Concrete Truck	69	--	Seed Truck Spreader	177	51
Distributing Tanker	13	--	Skid Steer Loader	22	--
Dozer	181	27	Slip Form Paver	16	--
Dump Truck	162	30	Small Dozer	266	76
Dump Truck (12 cy)	151	--	Surfacing Equipment (Grooving)	24	--
Excavator	123	30	Survey Crew Trucks	121	42
Flat Bed or Dump Trucks	887	253	Ten Wheelers	443	127
Flatbed Truck	99	--	Tool Truck	400	400
Fork Truck	1,706	1,659	Tractor	887	253
Forktruck (Hoist)	887	253	Tractor Trailer- Material Delivery	1,092	435
Front Loader	443	127	Tractor Trailer- Steel Deliveries	16	16
Grader	5	--	Tractor Trailer with Boom Hoist- Delivery	266	76
Grub the site down 2'	443	127	Tractor Trailers Temp Facility	48	17
High Lift	440	440	Tractors/Loader/Backhoe	25	--
Hydroseeder	5	--	Water Truck	1,680	--
Loader	109	27	Total	18,446	7,749

SOURCE: Airport Construction Emissions Inventory Tool (ACEIT), based on project input selections by Ricondo & Associates, Inc., February 2020.

Onroad construction vehicle trips include construction worker vehicle trips to and from the job site, off site hauling trips, and material delivery trips. The number of roundtrips per year for each type of onroad activity was calculated within ACEIT based on project dimensions and required quantities of various construction materials. Default roundtrip distances were assumed. Vehicle miles traveled (VMT) for each onroad activity was calculated by multiplying the total number of vehicle roundtrips by the roundtrip distance. **Table B-3** summarizes the onroad activity for the Proposed Action.

TABLE B-3 ONROAD VEHICLE ACTIVITY ASSUMPTIONS

TRIP TYPE BY YEAR	EQUIPMENT CATEGORY	FUEL	ROUND TRIP DISTANCE (MILES)	ROUNDTRIPS PER YEAR	VEHICLE MILES TRAVELED
2020					
Concrete Delivery	Single Unit Short-haul Truck	Diesel	40	366	14,643
Construction Worker Trips	Passenger Car	Gasoline	30	18,750	562,500
Material Delivery	Combination Short-haul Truck	Diesel	40	62	2,479
Subbase Material Delivery	Single Unit Short-haul Truck	Diesel	40	195	7,808
Total 2020				19,373	587,430
2021					
Concrete Delivery	Single Unit Short-haul Truck	Diesel	40	116	4,626
Construction Worker Trips	Passenger Car	Gasoline	30	2,107	63,210
Material Delivery	Combination Short-haul Truck	Diesel	40	224	8,960
Subbase Material Delivery	Single Unit Short-haul Truck	Diesel	40	62	2,466
Total 2021				2,508	79,262

SOURCE: Airport Construction Emissions Inventory Tool (ACEIT), based on project input selections by Ricondo & Associates, Inc., December 2019.

The following types of onroad construction trips were assumed in the analysis:

- Cement delivery – Delivery of pre-mixed cement to the project site in 10-cubic-yard cement mixers for power plant pads/foundations.
- Construction worker trips – Travel of construction workers to/from the project site in passenger cars and truck.
- Material delivery – Delivery of general construction materials and supplies to the project site on large delivery/flatbed trucks. This includes delivery of the solar panels, electrical equipment, piping, and various building materials.
- Subbase material delivery – Delivery of base material used for concrete paving.

B.4.3 EMISSION FACTORS

Along with activity data, emission factors are key inputs for the estimation of construction emissions. ACEIT can produce emission factors for nonroad and onroad construction equipment, as well as fugitive sources, using USEPA-approved and industry standard models and methodologies. The integration of the USEPA's MOVES and NONROAD emissions models allows ACEIT to determine emission factors for all onroad and nonroad construction vehicles for which activity data for the Proposed Action was developed. However, as stated previously, ACEIT includes MOVES2010a, which has been replaced as the USEPA's approved model for developing onroad emissions with MOVES2014b. Therefore, onroad emission factors were developed using MOVES2014b and applied to estimates of VMT, as derived using ACEIT.

The following assumptions were used to develop appropriate emission factors for use in estimating construction emissions for the Proposed Action:

- Construction years—Vehicle age affects the emission factors assigned to a specific vehicle or piece of equipment. Emission factors were derived for each construction year: 2020 and 2021.

- Project location—Emission factors can be derived on a national or local basis. National average emission factors, as distributed to Allegheny County using default distribution assumptions, were assumed in this analysis.
- Equipment type—Default nonroad construction equipment was selected based on construction activities specific to each project component. Default onroad vehicles were assumed to include light-duty, gasoline passenger cars for construction worker trips, and heavy-duty, diesel long-haul trucks for material transport (i.e., 18-wheeler, tractor trailer, cement mixer, and dump truck).
- Fuel type—By default, all nonroad construction equipment was assumed to be diesel. Default fuel types for onroad vehicles were based on equipment type, as noted above.
- Fugitive emissions—Equipment-related emission factors for sources of fugitive emissions were derived from ACEIT for evaporative emissions, brake and tire-dust emissions, and re-suspended dust emissions. Dust emission factors in the analysis included dust emissions associated with activities such as earth moving, wind erosion, material handling, travel on paved and unpaved roads, demolition, and material batching.

Table B-4 presents the default nonroad equipment specifications assumed in the analysis, while **Table B-5** shows the nonroad emission factors for each piece of construction equipment by year and by season, as applicable.

TABLE B-4 NONROAD CONSTRUCTION EQUIPMENT SPECIFICATIONS

EQUIPMENT	FUEL	HORSE-POWER	LOAD-FACTOR	EQUIPMENT	FUEL	HORSE-POWER	LOAD-FACTOR
40 Ton Crane	Diesel	300	0.43	Log Chipper	Diesel	100	0.43
Air Compressor	Diesel	100	0.43	Man Lift	Diesel	75	0.21
Asphalt Paver	Diesel	175	0.59	Man Lift (Fascia Construction)	Diesel	75	0.21
Backhoe	Diesel	100	0.21	Material Deliveries	Diesel	600	0.59
Bob Cat	Diesel	75	0.21	Mulcher	Diesel	100	0.43
Bulldozer	Diesel	175	0.59	Off-Road Truck	Diesel	600	0.59
Chain Saw	Diesel	11	0.7	Other General Equipment	Diesel	175	0.43
Chain Saws	Diesel	11	0.7	Pickup Truck	Diesel	600	0.59
Chipper/Stump Grinder	Diesel	100	0.43	Pumps	Diesel	11	0.43
Compacting Equipment	Diesel	6	0.43	Roller	Diesel	100	0.59
Concrete Ready Mix Trucks	Diesel	600	0.59	Rubber Tired Loader	Diesel	175	0.59
Concrete Saws	Diesel	40	0.59	Scraper	Diesel	600	0.59
Concrete Truck	Diesel	600	0.59	Seed Truck Spreader	Diesel	600	0.59
Distributing Tanker	Diesel	600	0.59	Skid Steer Loader	Diesel	75	0.21
Dozer	Diesel	175	0.59	Slip Form Paver	Diesel	175	0.59
Dump Truck	Diesel	600	0.59	Small Dozer	Diesel	175	0.59
Dump Truck (12 cy)	Diesel	600	0.59	Surfacing Equipment (Grooving)	Diesel	25	0.59
Excavator	Diesel	175	0.59	Survey Crew Trucks	Diesel	600	0.59
Flat Bed or Dump Trucks	Diesel	600	0.59	Ten Wheelers	Diesel	600	0.59
Flatbed Truck	Diesel	600	0.59	Tool Truck	Diesel	600	0.59
Fork Truck	Diesel	100	0.59	Tractor	Diesel	100	0.21
Forktruck (Hoist)	Diesel	100	0.59	Tractor Trailer- Material Delivery	Diesel	600	0.59

EQUIPMENT	FUEL	HORSE-POWER	LOAD FACTOR	EQUIPMENT	FUEL	HORSE-POWER	LOAD FACTOR
Front Loader	Diesel	100	0.21	Tractor Trailer- Steel Deliveries	Diesel	600	0.59
Grader	Diesel	300	0.59	Tractor Trailer with Boom Hoist- Delivery	Diesel	600	0.59
Grub the site down 2'	Diesel	40	0.59	Tractor Trailers Temp Facility	Diesel	600	0.59
High Lift	Diesel	100	0.59	Tractors/Loader/Backhoe	Diesel	100	0.21
Hydroseeder	Diesel	600	0.59	Water Truck	Diesel	600	0.59
Loader	Diesel	175	0.59				

SOURCE: Airport Construction Emissions Inventory Tool (ACEIT).

TABLE B-5 NONROAD CONSTRUCTION EQUIPMENT EMISSION FACTORS

EQUIPMENT BY YEAR-SEASON	EMISSION FACTORS (GRAMS PER HORSEPOWER-HOUR)						
	CO	VOC	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO _{2E}
2020							
40 Ton Crane	0.241	0.158	1.095	0.003	0.047	0.043	530.564
Air Compressor	1.105	0.209	1.794	0.003	0.158	0.145	589.735
Asphalt Paver	0.437	0.160	1.004	0.003	0.094	0.087	536.345
Backhoe	3.970	0.620	3.074	0.004	0.548	0.504	694.122
Bob Cat	4.304	0.837	4.674	0.004	0.629	0.578	693.462
Bulldozer	0.371	0.154	0.855	0.003	0.076	0.070	536.364
Chain Saw	293.535	61.888	1.323	0.140	9.748	8.968	685.996
Chain Saws	293.535	61.888	1.323	0.140	9.748	8.968	685.996
Chipper/Stump Grinder	1.698	0.350	3.014	0.003	0.294	0.271	589.309
Compacting Equipment	4.454	0.612	4.443	0.004	0.390	0.359	588.515
Concrete Ready Mix Trucks	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Concrete Saws	0.523	0.168	3.313	0.003	0.072	0.066	595.649
Concrete Truck	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Distributing Tanker	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Dozer	0.371	0.154	0.855	0.003	0.076	0.070	536.364
Dump Truck	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Dump Truck (12 cy)	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Excavator	0.292	0.148	0.701	0.003	0.054	0.050	536.382
Flat Bed or Dump Trucks	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Flatbed Truck	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Fork Truck	0.464	0.141	0.404	0.003	0.022	0.020	595.731
Forktruck (Hoist)	0.464	0.141	0.404	0.003	0.022	0.020	595.731
Front Loader	3.970	0.620	3.074	0.004	0.548	0.504	694.122
Grader	0.243	0.148	0.754	0.003	0.038	0.035	536.383
Grub the site down 2'-0	0.523	0.168	3.313	0.003	0.072	0.066	595.649

EQUIPMENT BY YEAR-SEASON	EMISSION FACTORS (GRAMS PER HORSEPOWER-HOUR)						
	CO	VOC	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO _{2E}
High Lift	0.464	0.141	0.404	0.003	0.022	0.020	595.731
Hydroseeder	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Loader	0.478	0.165	1.117	0.003	0.105	0.097	536.332
Log Chipper	1.698	0.350	3.014	0.003	0.294	0.271	589.309
Man Lift	3.949	0.785	4.754	0.004	0.538	0.495	693.619
Man Lift (Fascia Construction)	3.949	0.785	4.754	0.004	0.538	0.495	693.619
Material Deliveries	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Mulcher	1.698	0.350	3.014	0.003	0.294	0.271	589.309
Off-Road Truck	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Other General Equipment	0.384	0.176	1.401	0.003	0.092	0.085	530.510
Pickup Truck	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Pumps	4.459	0.640	4.594	0.004	0.418	0.384	588.429
Roller	1.304	0.176	1.307	0.003	0.157	0.144	595.622
Rubber Tired Loader	0.478	0.165	1.117	0.003	0.105	0.097	536.332
Scraper	0.545	0.154	1.354	0.003	0.080	0.074	536.363
Seed Truck Spreader	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Skid Steer Loader	4.304	0.837	4.674	0.004	0.629	0.578	693.462
Slip Form Paver	0.437	0.160	1.004	0.003	0.094	0.087	536.345
Small Dozer	0.371	0.154	0.855	0.003	0.076	0.070	536.364
Surfacing Equipment (Grooving)	2.379	0.472	4.459	0.004	0.353	0.325	594.727
Survey Crew Trucks	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Ten Wheelers	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Tool Truck	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Tractor	3.970	0.620	3.074	0.004	0.548	0.504	694.122
Tractor Trailer- Material Delivery	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Tractor Trailer- Steel Deliveries	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Tractor Trailer with Boom Hoist-Delivery	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Tractor Trailers Temp Fac.	0.220	0.142	0.628	0.003	0.025	0.023	536.401
Tractors/Loader/Backhoe	3.970	0.620	3.074	0.004	0.548	0.504	694.122
Water Truck	0.220	0.142	0.628	0.003	0.025	0.023	536.401
2021							
40 Ton Crane	0.203	0.154	0.926	0.003	0.038	0.035	530.577
Backhoe	3.677	0.564	2.798	0.004	0.497	0.458	694.290
Bob Cat	4.005	0.768	4.522	0.004	0.577	0.531	693.671
Bulldozer	0.310	0.150	0.706	0.003	0.059	0.054	536.377
Chain Saws	293.535	61.888	1.323	0.140	9.748	8.968	685.996

EQUIPMENT BY YEAR-SEASON	EMISSION FACTORS (GRAMS PER HORSEPOWER-HOUR)						
	CO	VOC	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO _{2E}
Compacting Equipment	4.455	0.606	4.412	0.004	0.380	0.350	588.533
Concrete Ready Mix Trucks	0.196	0.141	0.530	0.003	0.021	0.019	536.404
Dozer	0.310	0.150	0.706	0.003	0.059	0.054	536.377
Dump Truck	0.196	0.141	0.530	0.003	0.021	0.019	536.404
Excavator	0.248	0.145	0.582	0.003	0.041	0.038	536.390
Flat Bed or Dump Trucks	0.196	0.141	0.530	0.003	0.021	0.019	536.404
Fork Truck	0.441	0.140	0.363	0.003	0.018	0.017	595.732
Forktruck (Hoist)	0.441	0.140	0.363	0.003	0.018	0.017	595.732
Front Loader	3.677	0.564	2.798	0.004	0.497	0.458	694.290
Grub the site down 2'-0	0.445	0.159	3.228	0.003	0.057	0.053	595.674
High Lift	0.441	0.140	0.363	0.003	0.018	0.017	595.732
Hydroseeder	0.196	0.141	0.530	0.003	0.021	0.019	536.404
Loader	0.400	0.159	0.935	0.003	0.083	0.077	536.350
Log Chipper	1.582	0.327	2.789	0.003	0.270	0.248	589.378
Man Lift	3.684	0.722	4.590	0.004	0.493	0.454	693.810
Man Lift (Fascia Construction)	3.684	0.722	4.590	0.004	0.493	0.454	693.810
Material Deliveries	0.196	0.141	0.530	0.003	0.021	0.019	536.404
Mulcher	1.582	0.327	2.789	0.003	0.270	0.248	589.378
Off-Road Truck	0.196	0.141	0.530	0.003	0.021	0.019	536.404
Other General Equipment	0.331	0.168	1.203	0.003	0.077	0.071	530.533
Pickup Truck	0.196	0.141	0.530	0.003	0.021	0.019	536.404
Pumps	4.456	0.629	4.537	0.004	0.402	0.370	588.462
Roller	1.092	0.167	1.085	0.003	0.122	0.113	595.650
Seed Truck Spreader	0.196	0.141	0.530	0.003	0.021	0.019	536.404
Small Dozer	0.310	0.150	0.706	0.003	0.059	0.054	536.377
Survey Crew Trucks	0.196	0.141	0.530	0.003	0.021	0.019	536.404
Ten Wheelers	0.196	0.141	0.530	0.003	0.021	0.019	536.404
Tool Truck	0.196	0.141	0.530	0.003	0.021	0.019	536.404
Tractor	3.677	0.564	2.798	0.004	0.497	0.458	694.290
Tractor Trailer- Material Delivery	0.196	0.141	0.530	0.003	0.021	0.019	536.404
Tractor Trailer- Steel Deliveries	0.196	0.141	0.530	0.003	0.021	0.019	536.404
Tractor Trailer with Boom Hoist-Delivery	0.196	0.141	0.530	0.003	0.021	0.019	536.404
Tractor Trailers Temp Fac.	0.196	0.141	0.530	0.003	0.021	0.019	536.404
Tractors/Loader/Backhoe	3.677	0.564	2.798	0.004	0.497	0.458	694.290

SOURCE: Airport Construction Emissions Inventory Tool (ACEIT), using the U.S. Environmental Protection Agency NONROAD2008a emissions model.

Onroad vehicle emission factors by year are presented in **Table B-6**. Key assumptions and notes regarding the modeling of these factors are as follows:

- CO emission factors were modeled for winter; all other pollutant factors were modeled for summer
- Road type: urban unrestricted
- Fuel type: passenger car (gasoline); trucks (diesel)
- CO emission factors include running exhaust, crankcase running exhaust, and crankcase start exhaust
- VOC emission factors include running exhaust, evaporative permeation and fuel vapor venting, crankcase running exhaust, refueling displacement vapor loss, and refueling spillage loss
- NO_x emission factors include running exhaust and crankcase start exhaust
- SO_x emission factors include running exhaust and start exhaust
- PM emission factors include running exhaust, brakewear, tirewear, and crankcase running exhaust
- CO_{2e} emission factors include running exhaust

TABLE B-6 ONROAD CONSTRUCTION VEHICLE EMISSION FACTORS

VEHICLE CATEGORY	EMISSION FACTORS (GRAMS PER MILE)						
	CO	VOC	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO _{2E}
2020							
Passenger Car	2.812	0.005	0.051	0.106	0.024	0.004	425.599
Single Unit Short-haul Truck	1.818	0.081	1.528	0.053	0.147	0.052	1,541.945
Combination Short-haul Truck	2.112	0.071	2.475	0.029	0.223	0.074	2,295.232
2021							
Passenger Car	2.755	0.004	0.042	0.107	0.020	0.004	406.936
Single Unit Short-haul Truck	1.656	0.070	1.345	0.052	0.125	0.043	1,509.299
Combination Short-haul Truck	1.921	0.063	2.161	0.029	0.189	0.063	2,272.667

SOURCE: Ricondo & Associates, Inc., February 2020, using the U.S. Environmental Protection Agency MOVES2014b emissions model.

Table B-7 indicates the types of fugitive emissions sources for which ACEIT calculated emissions based on project-specific specifications, as well as methodologies included in the U.S. EPA's AP-42.

TABLE B-7 FUGITIVE EMISSIONS SOURCES

PROJECT COMPONENT	ASPHALT DRYING (VOC)	ASPHALT STORAGE AND BATCHING (CO, VOC NO _x , SO _x , PM ₁₀)	MATERIAL MOVEMENT (PM ₁₀)	SOIL HANDLING (PM ₁₀)	UNSTABILIZED LAND AND WIND EROSION (PM ₁₀)	CONCRETE MIXING/BATCHING (PM ₁₀)
Natural Gas-Fired Electric Power Plant	●	●	●	●	●	●
Solar PV Array			●	●	●	

SOURCE: Airport Construction Emissions Inventory Tool (ACEIT), based on project input selections by Ricondo & Associates, Inc., December 2019.

B.5 SUMMARY OF CONSTRUCTION EMISSIONS

Emissions for nonroad and onroad construction equipment were estimated using the following equations:

*Nonroad Equipment Emissions (tons/year) = emission factor (grams per horsepower-hour) * size (horsepower) * load factor * hours per year * (1 pound/453.592 grams) * 1 ton/2,000 pounds)*

*Onroad Vehicle Emissions (tons/year) = emission factor (grams per vehicle-mile) * miles per year * (1 pound/453.592 grams) * 1 ton/2,000 pounds)*

Table B-8 summarizes the annual emissions of criteria air pollutants and CO_{2e} estimated by source for construction of the Proposed Action, which would occur from 2020-2021.

TABLE B-8 ANNUAL POLLUTANT EMISSIONS DUE TO CONSTRUCTION OF THE PROPOSED ACTION

	EMISSIONS (TONS/YEAR)						METRIC TONS/YEAR
	CO	VOC	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO _{2E}
Natural Gas-Fired Electric Power Plant Construction							
2020	2.263	1.921	1.132	0.022	0.216	0.059	1,005.942
2021	0.396	0.096	0.376	0.003	0.044	0.024	282.885
	2.659	2.017	1.508	0.025	0.260	0.084	1,288.827
Solar PV Array Installation							
2020	1.974	0.507	1.285	0.007	0.161	0.120	784.009
2021	0.568	0.167	0.320	0.004	0.045	0.032	249.685
	2.543	0.674	1.605	0.011	0.206	0.152	1,033.694

SOURCE: Ricondo & Associates, Inc., February 2020, based on inputs to the Airport Construction Emissions Inventory Tool (ACEIT), using the U.S. Environmental Protection Agency NONROAD2008a and MOVES2014b emissions models.

Table B-9 compares the maximum annual emissions with the applicable *de minimis* thresholds. Even with the short-term increase in emissions from the construction of the Proposed Action, emission levels would be well below *de minimis* thresholds. Changes in criteria air pollutant emissions due to construction of the Proposed Action would not result in an adverse effect on air quality.

TABLE B-9 PROPOSED ACTION CONSTRUCTION EMISSIONS SUMMARY AND COMPARISON TO DE MINIMIS

	EMISSIONS (TONS/YEAR)					
	CO	VOC	NO _x	SO _x ¹	PM ₁₀	PM _{2.5}
Total Emission by Year						
2020	4.238	2.428	2.417	0.029	0.377	0.179
2021	0.964	0.263	0.696	0.007	0.089	0.056
<i>de minimis</i> Threshold	100.000	100.000	100.000	100.000	n.a.	100.000
Difference (Under) / Over <i>de minimis</i> threshold						
2020	(95.762)	(97.572)	(97.583)	(99.971)		(99.821)
2021	(99.036)	(99.737)	(99.304)	(99.993)		(99.944)
Significant?	No	No	No	No		No

NOTE:

n.a. – Not applicable

¹ For purposes of this analysis, it was assumed that estimates of SO_x emissions are equal to calculated emissions of SO₂.

SOURCE: Ricondo & Associates, Inc., February 2020, based on inputs to the Airport Construction Emissions Inventory Tool (ACEIT), using the U.S. Environmental Protection Agency NONROAD2008a and MOVES2014b emissions models.



APPENDIX C

Pennsylvania Natural Diversity Index Search

Introduction

This Conservation Planning Report compiles names, descriptions, maps, locations, measurements, links and references for Natural Heritage Areas (core and supporting habitats), Important Bird Areas, State Lands, and agency designated water resources that are coincident with an area of interest defined by the user of the Pennsylvania Conservation Explorer tool. For an overview and additional details, please be sure to visit the website at www.naturalheritage.state.pa.us and download the applicable County Natural Heritage Inventory report(s).

Site Area: 61.34 acres

County(s): Allegheny

Township/Municipality(s): FINDLAY

Quadrangle Name(s): CLINTON; OAKDALE

Watersheds HUC 8: Upper Ohio

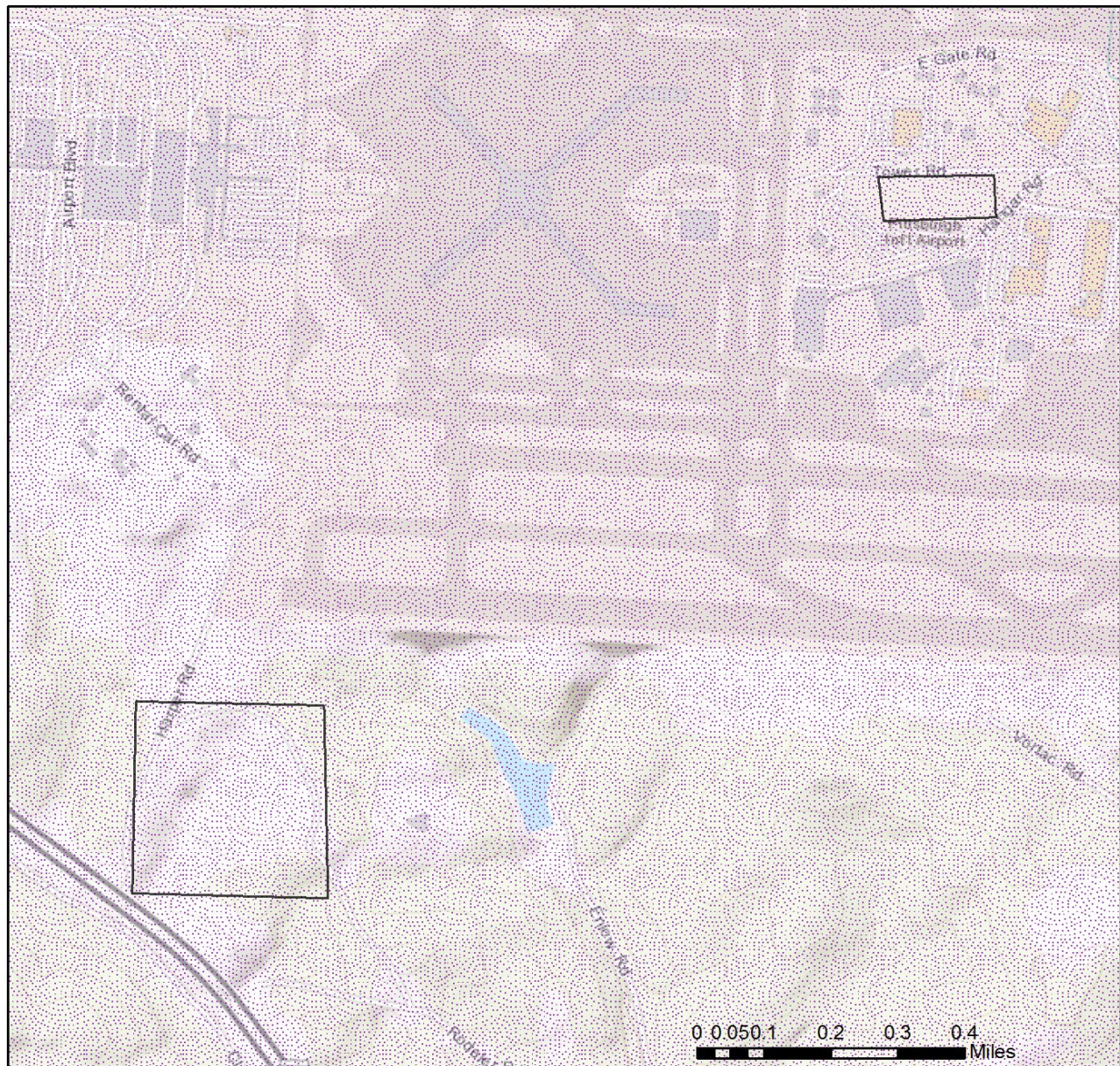
Watersheds HUC 12: Montour Run



Decimal Degrees: 40.483739 N, -80.251595 W

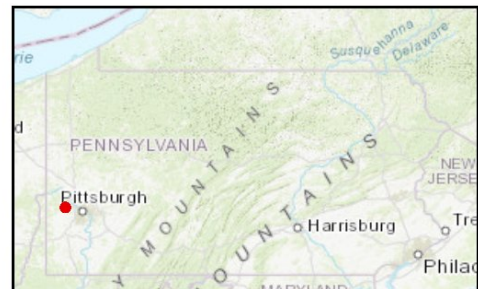
Degrees Minutes Seconds: 40° 29' 1.4606" N, 80° 15' 5.7420" W

No summary table to report.

PIT Microgrid



-  Project Boundary
-  Supporting Landscapes



Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo,

For additional information about the Pennsylvania Natural Heritage Program, visit the website at www.naturalheritage.state.pa.us or you can email your questions and comments to RA-HeritageReview@pa.gov.



Pennsylvania Natural Heritage Program

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Environmental Review

- ☐ PGC Threatened and Endangered Species
- ☐ PGC Species of Special Concern
- ☐ PFBC Threatened and Endangered Species
- ☐ PFBC Species of Special Concern
- ☐ DCNR Threatened and Endangered Species
- ☐ DCNR Species of Special Concern
- ☐ Combined State Agency Species
- ☒ Federal Species
 - ☐ Running Buffalo Clover
 - ☐ Piping Plover Critical Habitat
 - ☐ Small-whorled Pogonia
 - ☐ Northeastern Bulrush
 - ☐ Eastern Massasauga
 - ☐ Bog Turtle
 - ☒ Bald Eagle
 - ☐ Indiana Bat
 - ☐ Northern Long-eared Bat
 - ☐ Federally-listed Aquatic Species - East
 - ☐ Federally-listed Aquatic Species - West

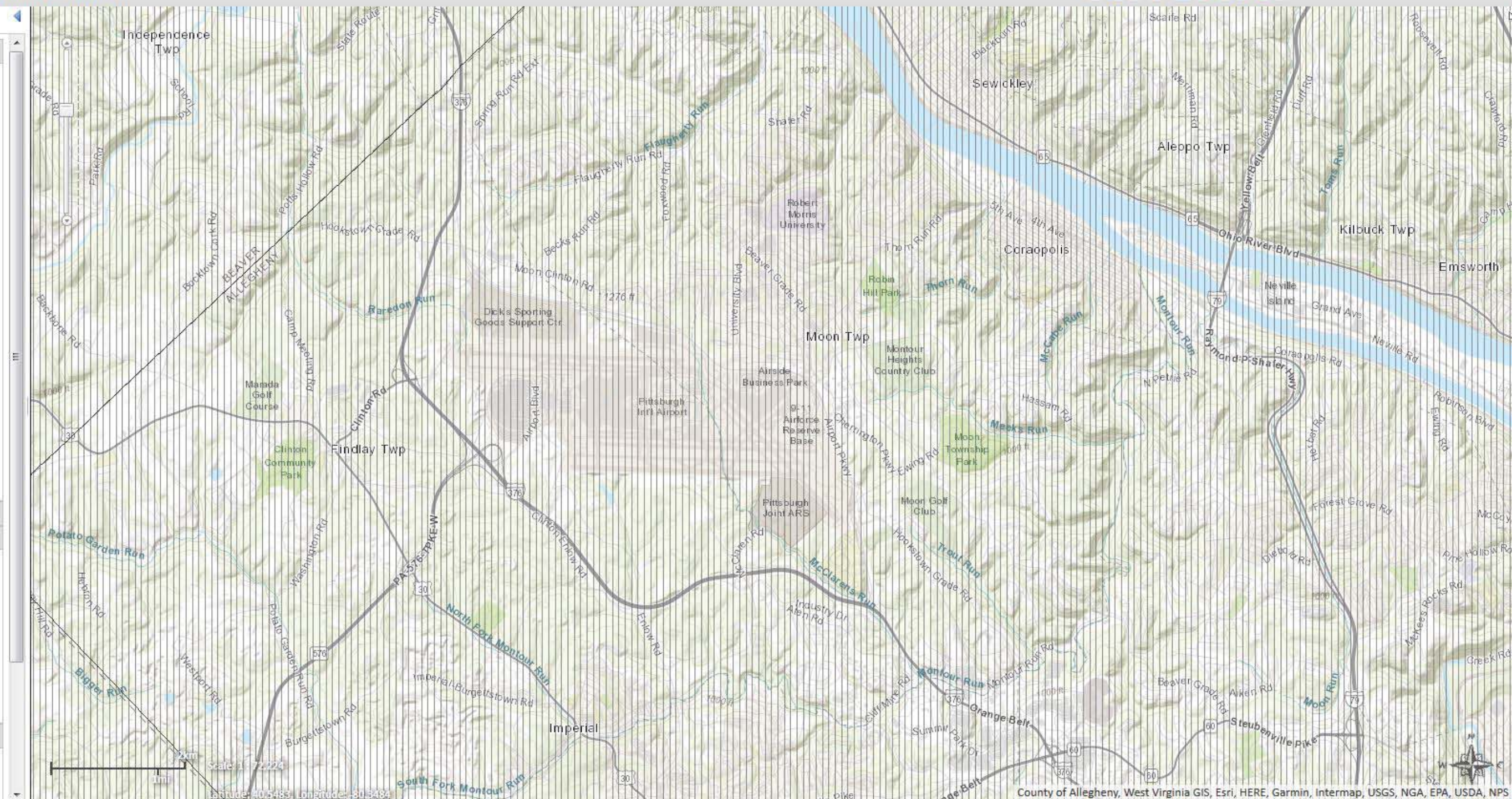
Conservation Planning

Protected Lands

- ☐ State Wild and Natural Areas (DCNR)
- ☐ State Forests
- ☐ State Parks
- ☐ State Game Lands
- ☐ Federal Lands
- ☐ Other Lands
- ☐ Local Parks

Reference Layers

- ☐ Counties
- ☐ HUC 8 Watersheds



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Layers

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Environmental Review

- ☐ PGC Threatened and Endangered Species
- ☐ PGC Species of Special Concern
- ☐ PFBC Threatened and Endangered Species
- ☐ PFBC Species of Special Concern
- ☐ DCNR Threatened and Endangered Species
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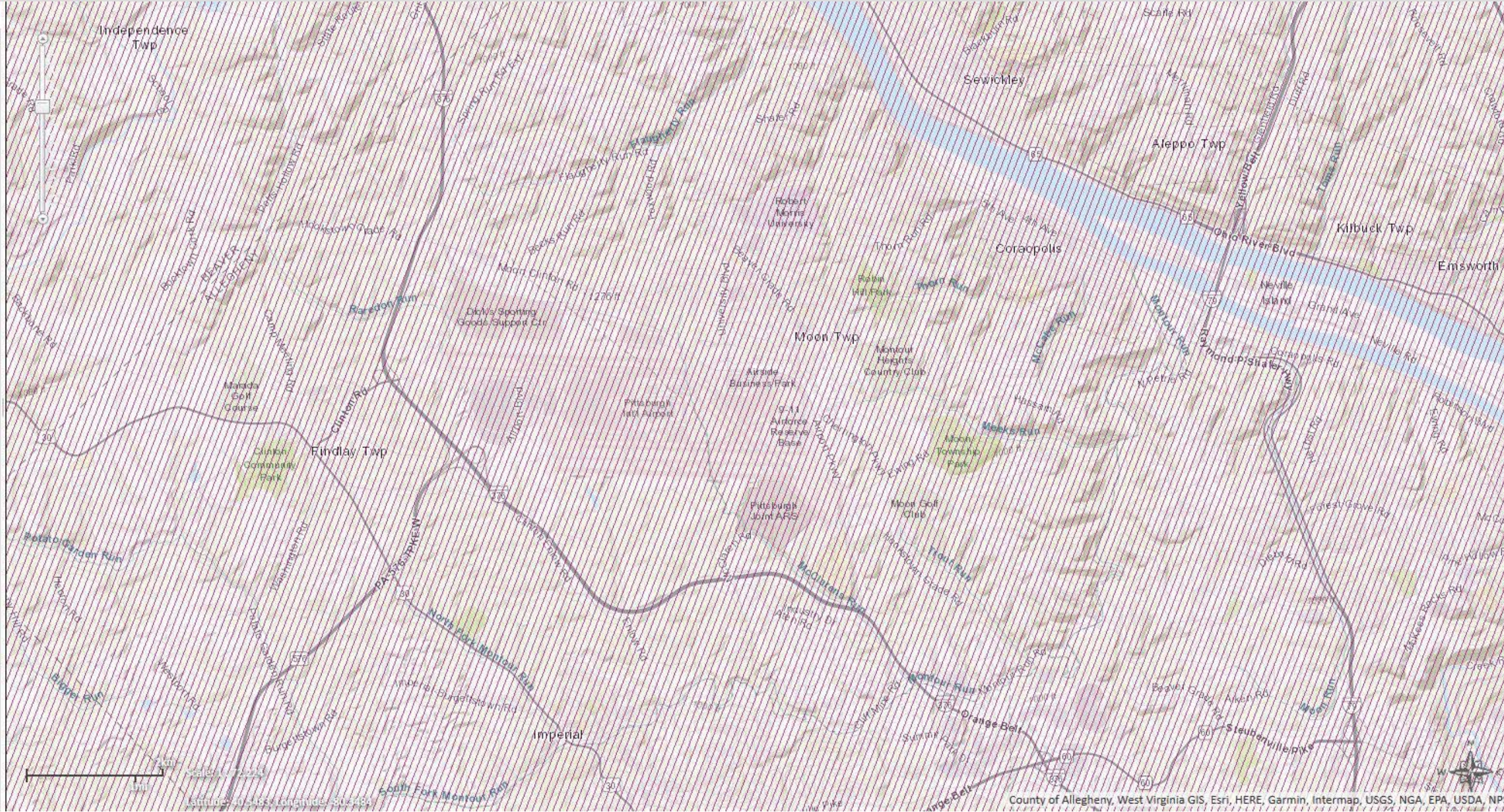
Conservation Planning

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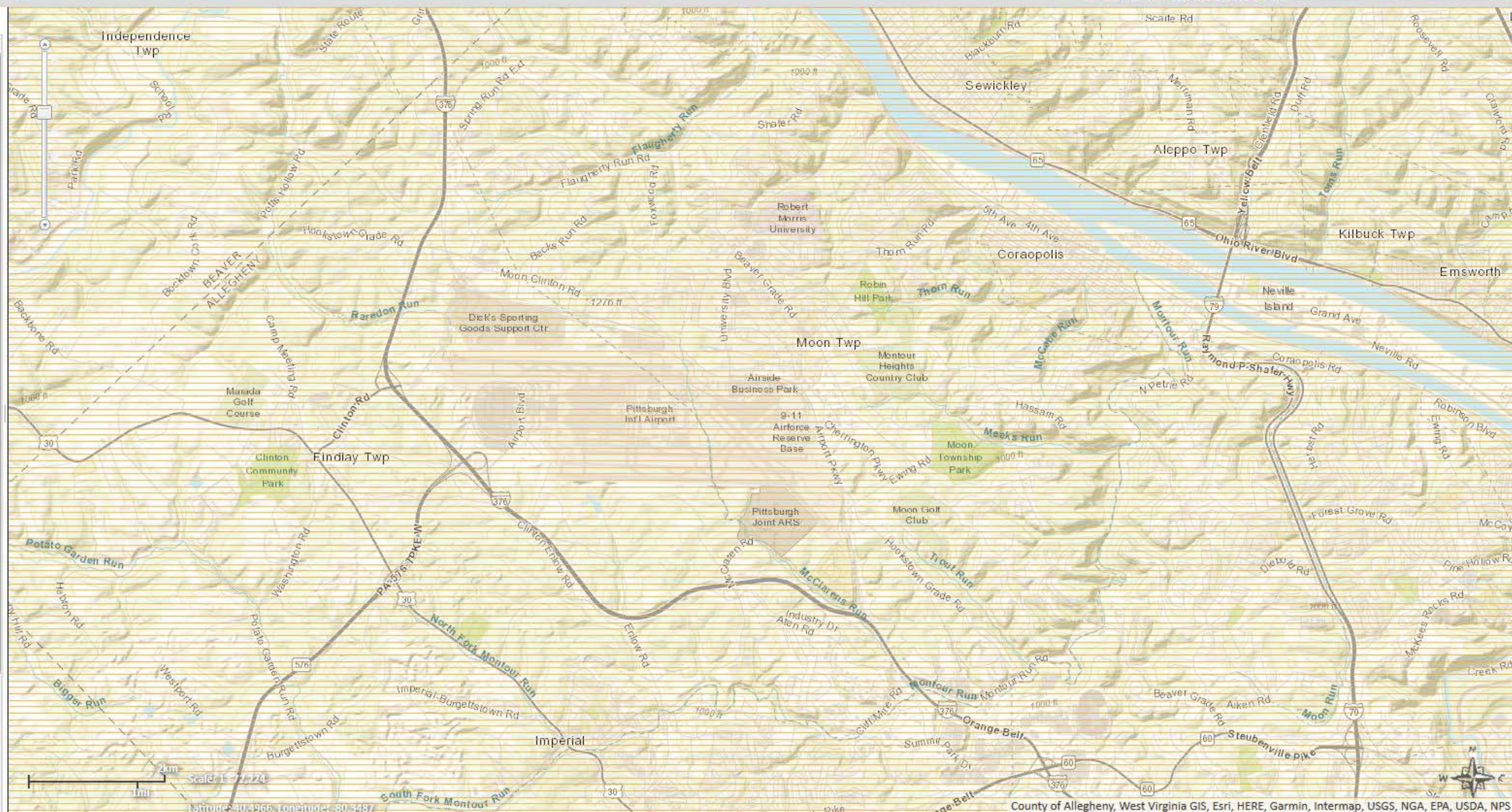
Conservation Planning

Protected Lands

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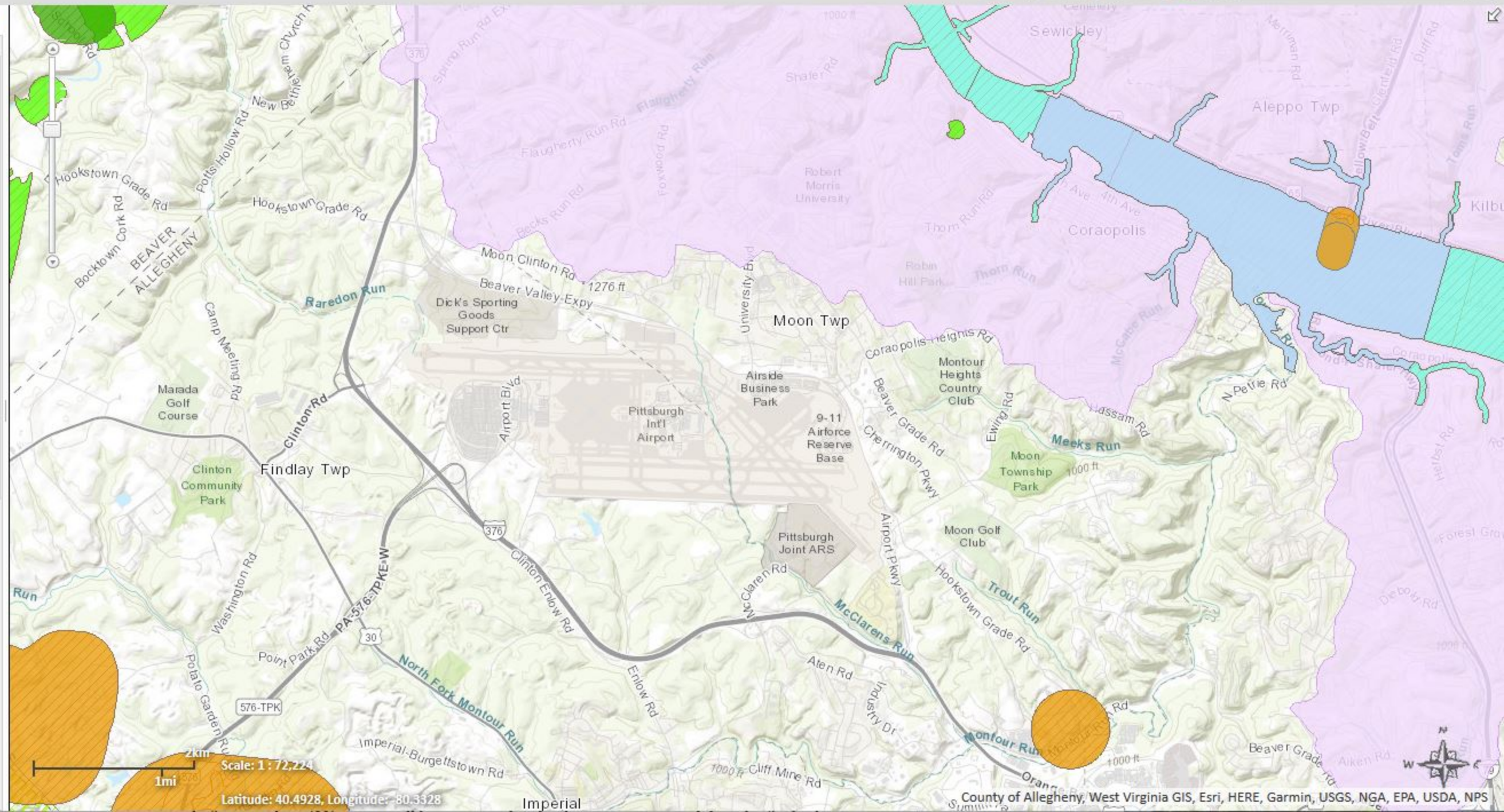
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Conservation Planning

Protected Lands



County of Allegheny, West Virginia GIS, Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS



APPENDIX D

Wetland Field Survey Reports



140 Lamplighter Drive | Morgantown, WV 26508 | (304) 308-3309

March 16, 2020

Mr. James J. Klacik, P.E.
Sheffler & Company, Inc.
1712 Mount Nebo Road
Sewickley, PA 15143-8526

**Re: Regulated Waters Presence/Absence Investigation
Pittsburgh International Airport Micro Grid Project
Findlay Township, Allegheny County, Pennsylvania**

Dear Mr. Klacik:

Palustris Environmental, LLC (Palustris) is pleased to provide you with this letter report summarizing a regulated waters presence/absence investigation recently completed at the above-referenced project area located west of the Tower Road and Hangar Road intersection in Findlay Township, Allegheny County, Pennsylvania. The Area of Investigation (AOI) is approximately 12.5 acres in size and is centered on approximate coordinates 40.495818N, 80.233637W (NAD83). The AOI consists of a parking lot, concrete rubble piles, public roadway, an electrical substation, forest, and open field. A Site Location Map is provided as Attachment 1 and an Existing Environmental Conditions aerial map is provided as Attachment 2.

Palustris investigated for any regulated waters within the AOI. The analyses contained in this document are relevant only in the context of the conditions of the AOI as observed at the time of this study. This letter report details the methodology and findings of the investigation conducted at the subject site.

METHODOLOGY

The study area was investigated for wetlands and other regulated waters on March 12, 2020, as defined by the 1987 Corps of Engineers Wetland Delineation Manual (1987 Manual), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0 (Regional Supplement), and subsequent guidance. The 1987 Manual is the current Federal delineation manual used in the Clean Water Act Section 404 regulatory program for the identification and delineation of wetlands. The approach requires positive evidence of hydrophytic vegetation, hydric soils, and wetland hydrology for the determination that an area is a wetland.

Wetlands and watercourses are regulated within the Commonwealth of Pennsylvania by the United States Corps of Engineers (USACE) and the Pennsylvania Department of Environmental Protection (DEP). Both USACE and DEP define wetlands as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. The DEP defines watercourses as a channel or conveyance of surface water having defined bed and banks, whether natural or artificial, with perennial or intermittent flow.

SITE DESCRIPTION

The AOI consists mostly of developed property. Vegetation in the AOI consists of grasses (*Poaceae* or *Gramineae* sp.), goldenrod (*Solidago* sp.), dandelion (*Taraxacum officinale*, FACU), ground ivy (*Glechoma hederacea*, FACU), narrow-leaved plantain (*Plantago lanceolata*, UPL), white clover (*Trifolium repens*, FACU), pokeweed (*Phytolacca americana*, FACU), black raspberry (*Rubus allegheniensis*, FACU), burdock (*Arctium minus*, FACU), black locust (*Robinia pseudoacacia*, FACU), staghorn sumac (*Rhus typhina*, NI), and black cherry (*Prunus serotina*, FACU).



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The AOI drains to McClarens Run. McClarens Run is within the Montour Run watershed. The Montour Run basin is listed within the DEP's Chapter 93 Water Quality Standards for protection of Trout Stocking (TSF). No watercourses were observed within the AOI.

One suspect wet area was observed in a manmade drainage ditch in the southwest portion of the AOI, as represented by Study Plot 1 (Attachment 3). The suspect area was dominated by a hydrophytic dominant community of narrow-leaved cattail (*Typha angustifolia*, OBL) and included indicators of hydrology as the soils were saturated to the surface. However, the soils are not considered hydric as they were a light yellowish brown (2.5Y 6/3) compact silty clay from zero to six inches, and a light yellowish brown (2.5Y 6/3) compact silty clay with yellowish brown (10YR 5/8) mottles from six to 20 inches. Therefore, the suspect wet area in vicinity of Study Plot 1 is not considered a wetland because it does not contain all three of the necessary criteria to be determined a wetland.

No other areas of hydric soils or indicators of hydrology were observed within the AOI. Likewise, no hydrophytic dominated plant community was observed within the AOI. Therefore, the AOI is considered upland since no areas within the AOI contained the three necessary criteria for wetlands, including a hydrophytic dominated plant community, hydric soils, and indicators of hydrology. Color photographs of the project area are included as Attachment 4.

SUMMARY

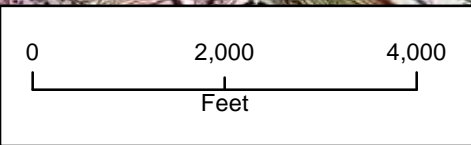
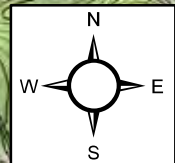
Palustris Environmental, LLC investigated for the presence of regulated waters within a 12.5-acre Area of Investigation in Findlay Township, Allegheny County, Pennsylvania. No areas containing the three necessary criteria for wetlands were observed within the AOI. Additionally, no watercourses were observed.

I appreciate the opportunity to be of service to you. Should you have any questions regarding this investigation, please feel free to contact me at 304.308.3309.

Sincerely,
Palustris Environmental, LLC

Andrew J. Longenecker
Owner/Biologist

- Attachment 1: Site Location Map
- Attachment 2: Existing Environmental Conditions Map
- Attachment 3: Wetland Determination Data Forms
- Attachment 4: Site Photographs
- Attachment 5: Investigator Resume



Pittsburgh International Airport Micro Grid

20 MW Power Plant

Location Map
(Oakdale, PA Quad)
Findlay Township, Allegheny County, Pennsylvania

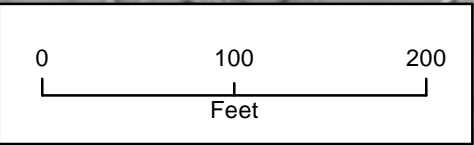
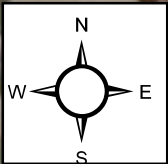
Legend



Area of Investigation



Date: 03/12/2020
A. Longenecker



Pittsburgh International Airport Micro Grid 20 MW Power Plant

Existing Environmental Conditions Map
Findlay Township, Allegheny County, Pennsylvania



Date: 03/12/2020
A. Longenecker

Legend

- Study Plot
- Stormwater Culvert
- Stormwater Channel
- Area of Investigation

NWI Wetland Map

WETLAND TYPE

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine





WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site:		Pittsburgh International Airport Micro Grid Project		Sampling Date:		March 12, 2020		Sampling Point:		sp-1	
Applicant/Owner:						Location:		Findlay Township, Allegheny County, PA			
Investigator(s):				A. Longenecker		Subregion (LRR or MLRA):					
Landform (hillslope, terrace, etc.):						Local relief (concave, convex, none):				none	
Slope (%):		NA		Lat:		40.4954708093522		Long:		-80.2344869593326	
Datum:		NAD83		Soil Map Unit Name:		Urban land-Culleoka complex, gently sloping (UCB)		NWI classification:			
Are climatic / hydrologic conditions on the site typical for this time of year?						Yes		X		No	
						(If no, explain in Remarks.)					
Are "Normal Circumstances" present?				Yes		X		No			
Are Vegetation,		No		Soil,		No		or Hydrology		No	
										significantly disturbed?	
Are Vegetation,		No		Soil,		No		or Hydrology		No	
										naturally problematic?	
(If needed, explain any answers in Remarks.)											

SUMMARY OF FINDINGS –

Hydrophytic Vegetation Present?		Yes		X		No				Is the Sampled Area within a Wetland?		Yes				No		X	
Hydric Soil Present?		Yes				No		X											
Wetland Hydrology Present?		Yes		X		No				If yes, optional Wetland Site ID:									
Remarks: (Explain alternative procedures here or in a separate report.) <i>Suspect wet area in manmade drainage feature.</i>																			

HYDROLOGY

Wetland Hydrology Indicators:																			
Primary Indicators (minimum of 1 is required)								Secondary Indicators (min. of 2 required)											
				Surface Water (A1)								Aquatic Fauna (B13)							
				High Water Table (A2)								True Aquatic Plants (B14)							
X				Saturation (A3)								Hydrogen Sulfide Odor (C1)							
				Water Marks (B1)								Oxidized Rhizospheres on Living Roots (C3)							
				Sediment Deposits (B2)								Presence of Reduced Iron (C4)							
				Drift Deposits (B3)								Recent Iron Reduction in Tilled Soils (C6)							
				Algal Mat or Crust (B4)								Thin Muck Surface (C7)							
				Iron Deposits (B5)								Other (Explain in Remarks)							
				Inundation Visible on Aerial Imagery (B7)															
				Water-Stained Leaves (B9)															
Field Observations:																			
Surface Water Present?		Yes				No		X		Depth (inches):									
Water Table Present?		Yes				No		X		Depth (inches):									
Saturation Present? (includes capillary fringe)		Yes		X		No				Depth (inches):		0							
								Wetland Hydrology Present?				Yes		X		No			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:																			
Remarks:																			



VEGETATION

Sampling Point:
sp-1

Tree Stratum		(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:			
1.						Number of Dominant Species That Are OBL, FACW, or FAC:		1	(A)
2.						Total Number of Dominant Species Across All Strata:		1	(B)
3.						Percent of Dominant Species That Are OBL, FACW, or FAC:		100	(C)
4.									
5.									
6.									
7.									
50% of Total Cover =				=Total Cover		Total % Cover of:		Multiply by:	
20% of Total Cover =									
Sapling Stratum		(Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status	OBL species	X 1=		
						FACW species	X 2=		
						FAC species	X 3=		
						FACU species	X 4=		
						UPL species	X 5=		
50% of Total Cover =				=Total Cover		Totals (A)		(B)	
20% of Total Cover =									
Shrub Stratum		(Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index =		B/A =	
1.									
2.									
3.									
4.									
5.									
6.									
50% of Total Cover =				=Total Cover					
20% of Total Cover =									
Herb Stratum		(Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status	Problematic Hydrophytic Vegetation ¹ (Explain)			
1.	<i>Typha angustifolia</i>		100	Yes	OBL	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic			
2.									
3.									
4.									
5.									
6.									
50% of Total Cover = 50				=Total Cover					
20% of Total Cover = 20									
Woody Vine Stratum		(Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status	Woody vines – All woody vines greater than 3.28 ft in height.			
1.									
2.									
3.									
4.									
5.									
50% of Total Cover =				=Total Cover					
20% of Total Cover =									
Remarks: (Include photo numbers here or on a separate sheet.)									



SOIL

Sampling Point: sp-1

Profile Description:								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	2.5Y 6/3	100					Silty Clay	Compact
6-20	2.5Y 6/3	98	10YR 5/8	2	C	M	Silty Clay	Compact

¹ Type; C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :	
Histosol (A1)		Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
Histic Epipedon (A2)		Polyvalue Below Surface (S8) (MLRA 147, 148)	Coast Prairie Redox (A16) (MLRA 147, 148)
Black Histic (A3)		Thin Dark Surface (S9) (MLRA 147, 148)	Piedmont Floodplain Soils (F19) (MLRA 136, 147)
Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)		Depleted Matrix (F3)	Other (Explain in Remarks)
2 cm Muck (A10) (LRR N)		Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)		Depleted Dark Surface (F7)	
Thick Dark Surface (A12)		Redox Depressions (F8)	
Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)		Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
Sandy Gleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122)	
Sandy Redox (S5)		Piedmont Floodplain Soils (F19) (MLRA 148)	
Stripped Matrix (S6)		Red Parent Material (F21)(MLRA 127, 147)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed)		Hydric Soil Present?	Yes	No	X
Type					
Depth (inches):					
Remarks:					



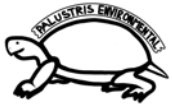
Pittsburgh International Airport Micro Grid Photo Log



Photograph 1: West view of southwest portion of AOI.



Photograph 2: East view of southeast portion of AOI.



Pittsburgh International Airport Micro Grid Photo Log



Photograph 3: West view of Study Plot 1.



Photograph 4: West view of northern portion of AOI.



Pittsburgh International Airport Micro Grid Photo Log



Photograph 5: South view of eastern portion of AOI.

Andrew J. Longenecker
140 Lamplighter Drive, Morgantown, WV 26508
PHONE: (304) 308-3309; EMAIL: longenecker@palustrisenviron.com

EDUCATION

Marshall University, Huntington, WV 25755, *M.S., Biological Sciences, May 2000*
West Virginia University, Morgantown, WV 26060, *B.S., Wildlife and Fisheries Resources, May 1997*

EMPLOYMENT

June 2016-Present **Palustris Environmental, LLC** – Morgantown, WV
(FKA: **Ajay Environmental Consulting, LLC**)
Owner/Biologist
Provide environmental consulting services, including natural resource investigations, permitting services, Environmental Site Assessments, stream restoration, wetland mitigation design and monitoring, and threatened and endangered species investigations to clients across WV, PA, OH, KY, IN, and MD. Clients span the oil & gas industry (pipelines and pads), commercial and residential land development, and the transportation sector.

April 2013-June 2016 **CESO, Inc.** – Bridgeville, PA
Environmental Program Director
Created the environmental department at CESO, hiring and managing seven dedicated staff. Responsible for the management of all environmental related projects within CESO, with majority of projects related to regulated waters delineations and Nationwide Permit/PADEP Permit authorizations for Oil and Gas clients in Utica and Marcellus formations. Clients include energy and pipeline companies, as well as commercial development, throughout WV, PA, and OH. Project manager for several energy companies, with specific emphasis in WV and OH.

May 2012-April 2013 **Herbert, Rowland & Grubic, Inc.** – Morgantown, WV
Natural Resources Regional Service Group Manager
Responsible for the management of projects involving wetland identification and delineation, wetland mitigation design, permitting, bog turtle habitat screenings, Indiana bat habitat surveys, Phase I ESAs, and coordination with the various state and federal agencies over a multi-state area including PA, WV, and OH.

Sept. 2006-May 2012 **Liberty Environmental, Inc.** – Reading, PA
Project Manager, Pennsylvania Qualified Bog Turtle Surveyor
In charge of the day-to-day management of the Natural Resources Group with specific oversight of all wetland/ecological investigations, permitting, and site selection pertaining to the Marcellus and Utica shale formations, commercial and residential developments, and roadway design. Additional duties include wetland field delineations, regulated waters impact permitting, Phase I, II, and III Bog Turtle Surveys, Phase I ESAs, threatened/endangered/rare species investigations, habitat restoration plans, and groundwater sampling.

Sept. 2005-Sept. 2006 **Aqua-Terra Environmental Ltd.** – Reading, PA
Biologist
Experience in Bog Turtle Surveys, wetland delineation, permitting, and RTE species investigations.

February 2002-Sept. 2005 **Skelly and Loy, Inc.** – Harrisburg, PA
Wildlife Biologist/Environmental Scientist
Experience in wetland identification and delineation, study and evaluation of aquatic ecosystems, stream and river classification, threatened/endangered/rare species investigations, and environmental permitting and documentation. Assisted with biological assessments for benthic macroinvertebrates and fish, ambient water quality evaluations, and physical habitat evaluations. Participated in field surveys and radio telemetry studies for bog turtles. Field team leader that applied the principles of fluvial geomorphology to natural stream channel design projects. Routinely participated in site evaluation, stream type classification, regional curve development, restoration plan design, permitting, and construction management. Assessed watersheds, wrote comprehensive watershed plans, and assisted in Phase II bog turtle surveys.

June 2000-February 2002 **Berks County Conservancy** – Reading, PA
Natural Resource Specialist
Assessed watersheds and wrote comprehensive watershed plans, performed ecological surveys and sampling, conducted stream rehabilitation projects, monitored water quality, sampled benthic macroinvertebrates, GIS, bog turtle radio telemetry, bog turtle habitat assessment and protection, composed grant proposals, ran education programs, and conducted habitat workshops.

TRAINING

Ohio Rapid Assessment Method for Wetlands (ORAM)
Wetlands Construction Design, Rutgers NJAES Office of Continuing Professional Education
River Morphology and Applications; Applied Fluvial Geomorphology, Wildland Hydrology, Inc.
Natural Stream Design Workshop, Villanova University
ArcView – GIS, Penn State University
OSHA 8-Hour HAZWOPER Refresher
MSHA 24 Hour Apprentice Miner - Surface



April 8, 2020
Project No. 2241
Via Email

Mr. Brian Philiben
Managing Consultant
Ricondo
20 N Clark Street, Suite 1500
Chicago, IL 60602
bphiliben@ricondo.com

**Re: Microgrid Solar PV Array Site – Field Summary Report
On-Call Planning and Environmental Services
Pittsburgh International Airport
Moon Township, Pennsylvania**

Dear Mr. Philiben:

Rhea Engineers and Consultants, Inc. (Rhea) has completed a wetland investigation in support of the proposed Solar Photovoltaic (PV) Array Microgrid Project located on a capped and inactive landfill (henceforth referred to as “project site”), located south of the Pittsburgh International Airport (PIT) in Moon Township, PA (Figure 1).

SITE DESCRIPTION

The project site is roughly 30 acres in size, is located due south of PIT, and is bounded primarily by vacant, wooded land to the east, west, and south. Interstate 376 / Airport Expressway is located immediately to the south and Harper Road generally follows the perimeter of the landfill to the west, north, and east until it reaches the ARFF Fire Training Facility, located to the east of the project site. A man-made drainage swale encircles the entire landfill site. The swale surrounding the southern portion of the landfill is primarily lined with riprap, while the northern portion of the swale is primarily naturally vegetated. It should be noted that this investigation covers the entirety of the landfill boundary; however, Rhea understands that the proposed Solar PV Microgrid Project will be located primarily on the southern half of the landfill (Figure 1). Selected photographs of general site conditions (Photos #1 through #5) at the time of the wetland investigation are provided in Attachment A.

WETLAND INVESTIGATION

Rhea was tasked with conducting a wetland investigation of the project site, shown on Figure 1, using general guidelines outlined in the *US Army Corps of Engineers (USACE) Wetlands Delineation Manual* (Environmental Laboratory, 1987). USACE standards require that three criteria be met in order for an area to be classified as a jurisdictional wetland: the presence of hydric soils, the dominance of hydrophytic vegetation, and the evidence of wetland hydrology.

Prior to the field investigation, Rhea personnel reviewed available documentation in order to identify known wetland areas located at, or adjacent to, the project site. This search included a review of the National Wetland Inventory (NWI) database via the Wetland Mapper program, as well as a review of preliminary site development drawings and site topography. As a result of Rhea's preliminary data review, no known wetlands were identified within the project site.

Rhea's wetland investigation was completed at the project site on April 1, 2020. Mr. Zachary Wicks, Wetland Professional in Training (WPIT), and Mr. Michael Stoehr of Rhea conducted the investigation, which consisted of traversing the project site and performing a visual inspection of the site for indicators of wetland conditions. As a result of this investigation, 1 potential wetland area and 12 areas of concern (AOCs) related to significant standing water were identified. In addition, 1 area of potential acid mine drainage (AMD) was identified near the southernmost portion of the project site.

The potential wetland area identified by Rhea is approximately 596 square feet and is located within the man-made drainage swale in the northeastern portion of the project site (see Figure 1 and Attachment A - Photo #6). This potential wetland is outside of the proposed Solar PV Microgrid Project location; therefore, it is unlikely that impacts will occur as a result of site development activities.

Twelve AOCs pertaining to significant standing water within low-lying areas were identified throughout the project site. The majority of these areas were located to the north / east of the proposed Solar PV Microgrid Project footprint. Although heavy rains prior to the site visit may have accounted for much of the standing water present, it should be noted that most of the AOCs contained at least two inches of standing water. In addition, soft rush (*Juncus effuses*), a common marsh plant known to grow in saturated soil or water, was present within each AOC (Photo #20). The AOCs, which range in size from approximately 167 square feet to 7,300 square feet, are identified on Figure 1 and in Attachment A as Photos #7 through #19). Rhea does not currently define these areas as wetlands; however, due

to their location on the landfill cap, it is recommended that they be addressed as necessary to encourage proper drainage before true wetlands can be established.

During the site visit, excess stormwater runoff was observed to be flowing from AOCs 10, 11, and 12 in a southward direction towards an outfall pipe located within the riprap-lined swale (see Photo #21). It is assumed that this pipe drains stormwater from the swales into the large retention pond / wetland area located south of the project boundary (Figure 1). A leachate sump was also observed at this location (Photo #22).

As a result of Rhea's site investigation, one area of stained soil possibly attributed to AMD was observed along the access road in the southernmost portion of the project site. The area, approximately 18 linear feet in length, is identified on Figure 1 and Photo #23.

Rhea is pleased to submit this Field Summary Report to Ricondo. If you have any questions or concerns regarding our findings and/or the information contained herein, please do not hesitate to contact me at your earliest convenience at zach.wicks@rhea.us and/or 724-443-4111.

Respectfully submitted,
Rhea Engineers & Consultants, Inc.

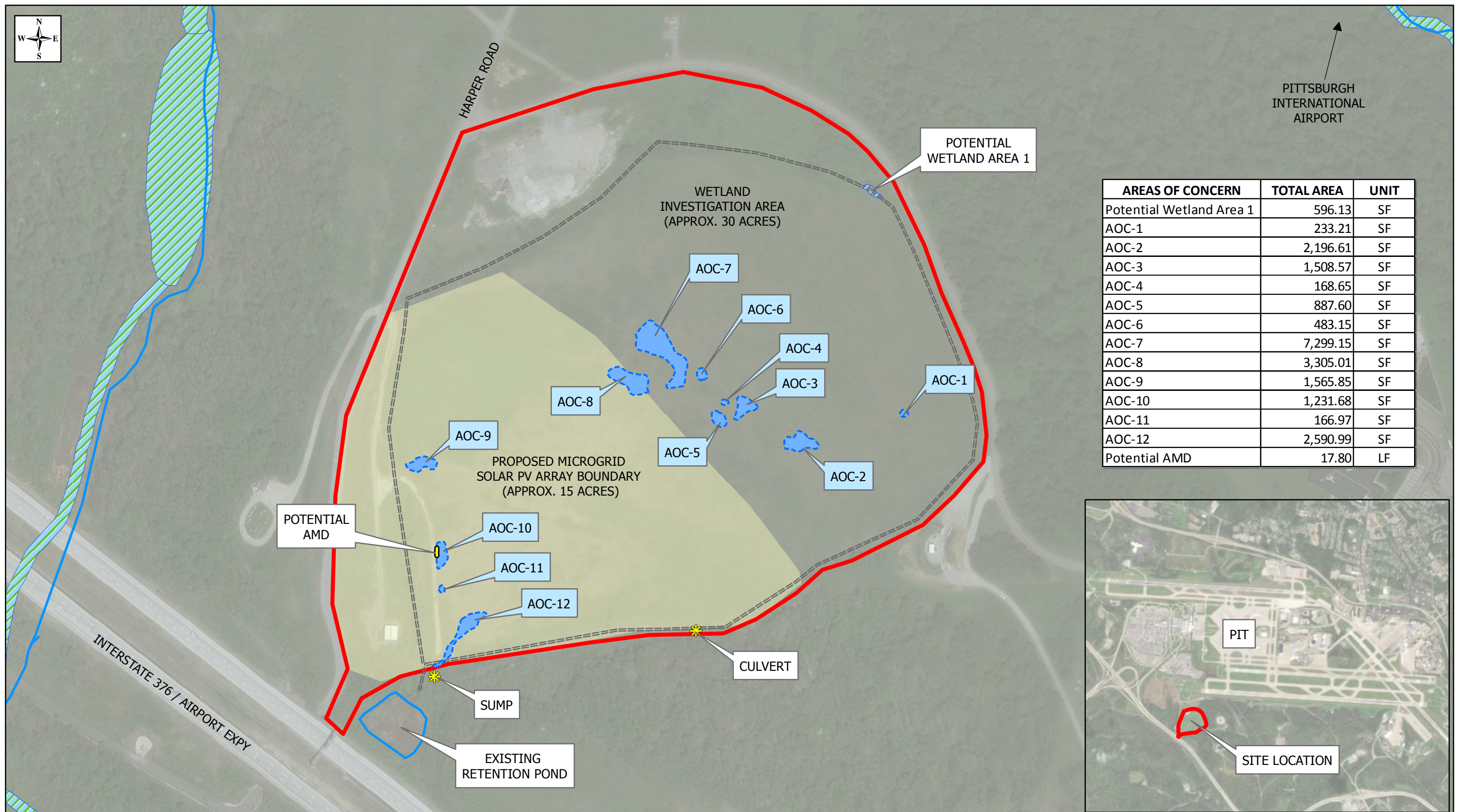


Zachary Wicks, WPIT
Project Manager/Scientist III

ZDW/mrs

Attachments:
Figure 1 – Site Layout Map
Attachment A – Site Photograph Log

FIGURES



AREAS OF CONCERN	TOTAL AREA	UNIT
Potential Wetland Area 1	596.13	SF
AOC-1	233.21	SF
AOC-2	2,196.61	SF
AOC-3	1,508.57	SF
AOC-4	168.65	SF
AOC-5	887.60	SF
AOC-6	483.15	SF
AOC-7	7,299.15	SF
AOC-8	3,305.01	SF
AOC-9	1,565.85	SF
AOC-10	1,231.68	SF
AOC-11	166.97	SF
AOC-12	2,590.99	SF
Potential AMD	17.80	LF

Legend

Wetland Investigation Area

Potential Wetland Area

Chapter 93 Documented Stream

Proposed Solar PV Facility

Standing Water

Swale

National Wetland Inventory

Notes:

AMD = Acid Mine Drainage

AOC = Area of Concern

LF = Linear Feet

SF = Square Feet

0

100

200

400

Feet

RHEA

ENGINEERS & CONSULTANTS, INC.

FIGURE 1

Site Layout Map

Microgrid Solar PV Array

Pittsburgh International Airport

Drawn By	Checked By	Date	Project	Sheet No.
ZW	MRS	4/7/20	2241	1

ATTACHMENT A

Site Photograph Log

ATTACHMENT A – SITE PHOTOGRAPH LOG



Photograph #1

Site Overview – center of site looking southwest



Photograph #2

Site Overview – southern portion of site looking northeast

ATTACHMENT A – SITE PHOTOGRAPH LOG



Photograph #3 | Drainage swale, northern perimeter of the site



Photograph #4 | Drainage swale, northeastern perimeter of the site

ATTACHMENT A – SITE PHOTOGRAPH LOG



Photograph #5 | Vegetated and riprap lined drainage swale, southeastern perimeter of site



Photograph #6 | Potential Wetland 1 – northern perimeter of site in drainage swale

ATTACHMENT A – SITE PHOTOGRAPH LOG



Photograph #7

AOC-1: standing water/soft rush, eastern portion of site



Photograph #8

AOC-2: standing water/soft rush, eastern/central portion of site

ATTACHMENT A – SITE PHOTOGRAPH LOG



Photograph #9

AOC-3: standing water/soft rush, eastern/central portion of site



Photograph #10

AOC-4: standing water/soft rush, eastern/central portion of site

ATTACHMENT A – SITE PHOTOGRAPH LOG



Photograph #11 | AOC-5: standing water/soft rush, eastern/central portion of site



Photograph #12 | AOC-6: standing water/soft rush, central portion of site

ATTACHMENT A – SITE PHOTOGRAPH LOG



Photograph #13

AOC-7: standing water/soft rush, central portion of site



Photograph #14

AOC-8: standing water/soft rush, central portion of site

ATTACHMENT A – SITE PHOTOGRAPH LOG



Photograph #15 | AOC-9: standing water/soft rush, southwestern portion of site



Photograph #16 | AOC-10: standing water/soft rush, southwestern portion of site

ATTACHMENT A – SITE PHOTOGRAPH LOG



Photograph #17

AOC-11: standing water/soft rush/cat-tails, southwestern portion of site



Photograph #18

AOC-12: standing water/soft rush, southern portion of site

ATTACHMENT A – SITE PHOTOGRAPH LOG



Photograph #19

AOC-12: drainage pattern towards southern portion of site



Photograph #20

Soft rush (*Juncus effuses*) observed within each AOC

ATTACHMENT A – SITE PHOTOGRAPH LOG



Photograph #21 | Outfall pipe located at convergence of drainage swale, southernmost portion of site.



Photograph #22 | Leachate sump, southern portion of site

ATTACHMENT A – SITE PHOTOGRAPH LOG



Photograph #23	Stained soil possibly resulting from AMD, southern portion of site
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