

Final Environmental Assessment for the North Cargo Facility at Lehigh Valley International Airport

Prepared for

Lehigh-Northampton Airport Authority

Prepared by

AECOM

June 27, 2024

This Environmental Assessment becomes a Federal document when evaluated and signed by the responsible FAA Official.

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CHAPTER 1: PROJECT DESCRIPTION

1.1. Introduction

The Lehigh-Northampton Airport Authority (LNAA) is proposing to develop an air cargo facility (the Proposed Action) on the north side of Lehigh Valley International Airport (ABE or herein referred to as “the Airport”) located in Hanover Township, Lehigh County, Pennsylvania (see **Figure 1**). LNAA, which owns and operates the Airport, has prepared this Environmental Assessment (EA) pursuant to Federal Aviation Administration (FAA) and Federal Highway Administration (FHWA) requirements for implementing the National Environmental Policy Act of 1969 (NEPA). The purpose of this EA is to study the expected environmental effects of the Proposed Action and to use the information to determine whether the Proposed Action has the potential to cause significant environmental effects.

This EA has been prepared in compliance with NEPA’s regulations, as amended (40 CFR 1500-1508 for FAA and 23 CFR 771 for FHWA)¹ and in accordance with Federal Aviation Administration (FAA) Orders *1050.1F, Environmental Impacts: Policies and Procedures*, and *5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, to analyze and disclose the potential environmental effects of the Proposed Action. LNAA's proposal includes the following requests for federal actions from the FAA: 1) unconditional approval of the ABE Airport Layout Plan (ALP) to depict components of the Proposed Action that are subject to FAA approval authority; and 2) requests for funding via federal grant-in-aid programs or related funding programs subject to FAA approval. These federal actions are subject to review under NEPA, as amended, and are the basis for the preparation of this EA.²

1.2. Background Information

1.2.1. Airport Description

ABE is a commercial service airport located in Hanover Township in Lehigh and Northampton Counties, in eastern Pennsylvania, seven miles north-northeast of Allentown, four miles northwest of Bethlehem, and eleven miles west-southwest of Easton. See **Figure 1**. ABE is the fourth busiest airport in Pennsylvania behind the Philadelphia, Pittsburgh, and Harrisburg International Airports, and the only commercial airport in the Lehigh Valley region. ABE serves four passenger airlines, two cargo airlines, and general aviation. LNAA also owns and operates two smaller airports, but they are not designed for commercial passenger or cargo airline operations. ABE has two air carrier runways equipped with airfield lighting and navigational aids for aircraft operations in all-weather conditions. It also has an Airport Traffic Control Tower (ATCT) and an Aircraft Rescue and Fire Fighting (ARFF) facility, both of which are staffed seven days a week.

¹ P.L. 91-190, 42 U.S.C. 4321, et. seq., National Environmental Policy Act, 1969, § 102(2)(c). A notice of proposed rulemaking was issued by CEQ on July 31, 2023, indicating that further revisions to the regulations may be forthcoming. This EA was started in October 2023 and is being prepared in accordance with the regulations in effect at that time.

² All airport development at Federally obligated airports must be done in accordance with an FAA- and sponsor-approved ALP. Furthermore, proposed development must be shown on an approved ALP to be eligible for Airport Improvement Program (AIP) funding. Conditional FAA approval of the ALP indicates that the existing facilities and proposed development depicted on the ALP conforms to the FAA airport design standards in effect at the time of the approval or that an approved modification to standard has been issued. Such approval also indicates that the FAA finds the proposed development to be safe and efficient. See FAA Advisory Circular 150/5070-6B, Change 2 to Airport Master Plans (2015).

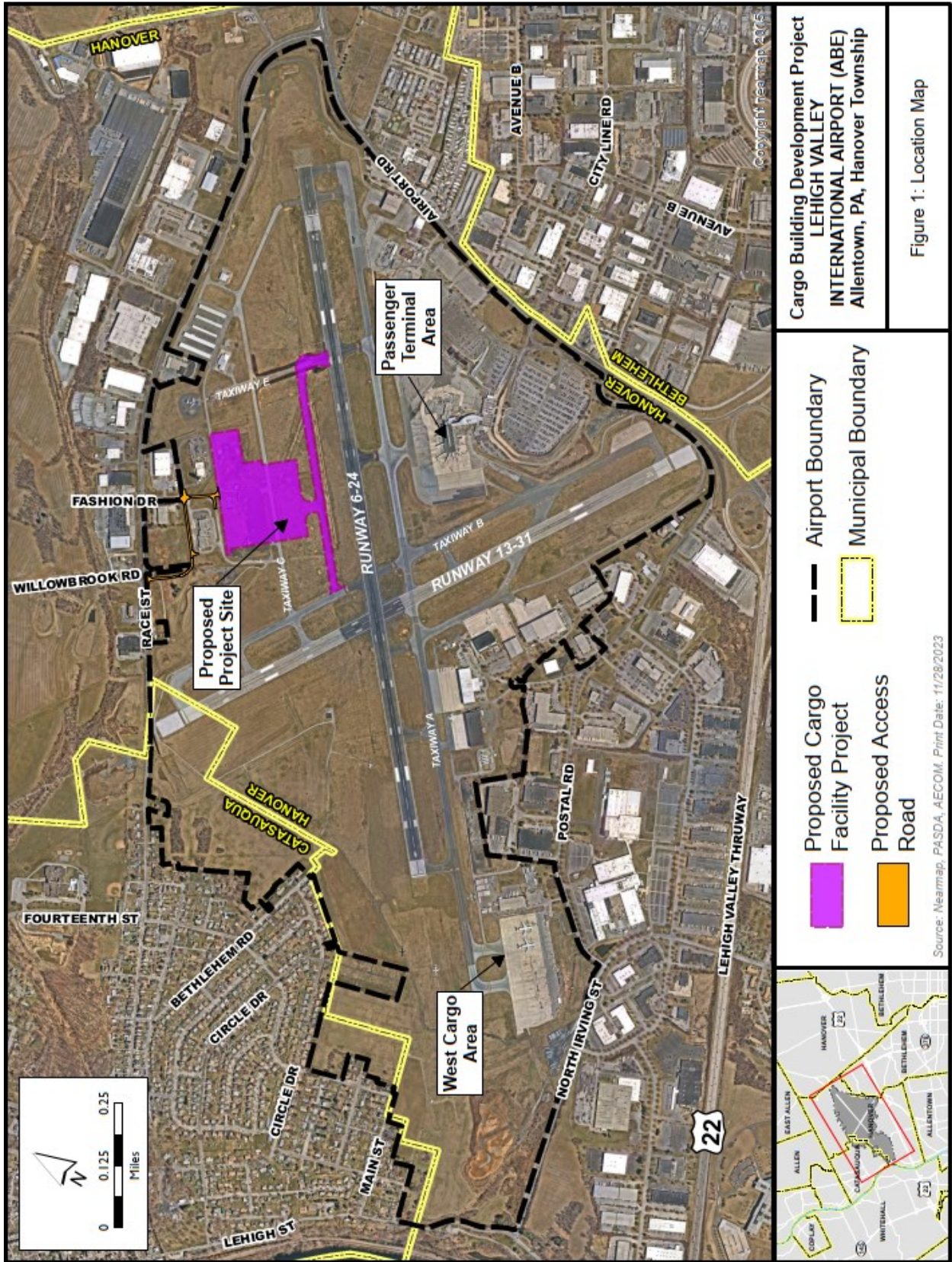


Figure 1: Location Map

1.2.2. Cargo Airline Operations

Airports play an important role in the multi-modal shipping process because cargo airlines rely on aircraft to move packages and shipments over longer distances, and they require a very smooth and efficient process. A key node in the process is the air cargo facility. The necessity to quickly and efficiently handle ever-increasing volumes of cargo between the airside and the landside requires optimum space and planning to achieve the most efficient facilities. The express carriers, to an even greater extent, require more specialized airport facilities and infrastructure support to match the highly time-dependent package processing capability of their operations.

In terms of air cargo operations, ABE is used to transfer express packages and freight between cargo aircraft and trucks on the ground.³ Inbound cargo is offloaded from the aircraft, transferred to a cargo building, broken down and separated, then built-up and consolidated near the assigned truck loading bay for over-the-road transport to local distribution centers. The process is reversed for outbound cargo. Currently, ABE has two express cargo airlines—one integrated carrier⁴ (FedEx) and one e-commerce carrier (Amazon Air). Combined, they operate six to eight inbound flights per day depending on seasonal demand, and in 2022, nearly 232 million pounds of air cargo were processed through ABE.

1.2.3. Existing Cargo Facilities

Cargo handling operations at ABE occur on the existing Cargo Apron, which is located on the southwest side of the airport along Postal Road (see **Figure 2**). There are six aircraft parking positions for on/off loading cargo aircraft, and two separate cargo buildings.⁵ Cargo Facility 1 is located on airport property, at the east end of the existing Cargo Apron.⁶ There is a 35,570-sf single-story warehouse with truck loading docks, a truck staging area, parking for ground service equipment (GSE), and employee parking. This cargo facility is associated with two (of the six) aircraft parking positions.

Cargo Facility 2 is located off airport property. There is a 60,000-sf single-story warehouse with a limited number of truck loading docks and employee parking spaces. This facility is associated with four (of the six) aircraft parking positions. Due to the lack of air cargo facilities available on airport property, the building was leased by a cargo airline (c. 2018), a restricted vehicle service road was built to connect the cargo building to the aircraft parking apron, a new GSE parking area was constructed along Taxiway A, and a truck staging area was established approximately one-half mile west along North Irving St.

³ Often referred to as a “node” within a cargo carrier’s network, the local market station is the simplest and most common type of air cargo facility. These airports represent the spoke in a hub-and-spoke air carrier network. For airport-to-airport service providers, the local market station represents the origin or destination point for the cargo they are transporting. See ACRP’s “Guidebook for Air Cargo Facility Planning.”

⁴ Integrated express carriers focus on transporting customer goods from door-to-door with shipment collection, transportation, and delivery services. Notable integrated express carriers include FedEx, UPS, and DHL. Integrated express carriers are unique in that they offer next-day and time-sensitive services and delivery of smaller packages (<70 lbs.).

⁵ One cargo building is located on Airport property and is owned by LNAA, and the other cargo building is located off Airport property and is connected to the airfield by a restricted service road.

⁶ Building No. 16 on the Airport Layout Plan.

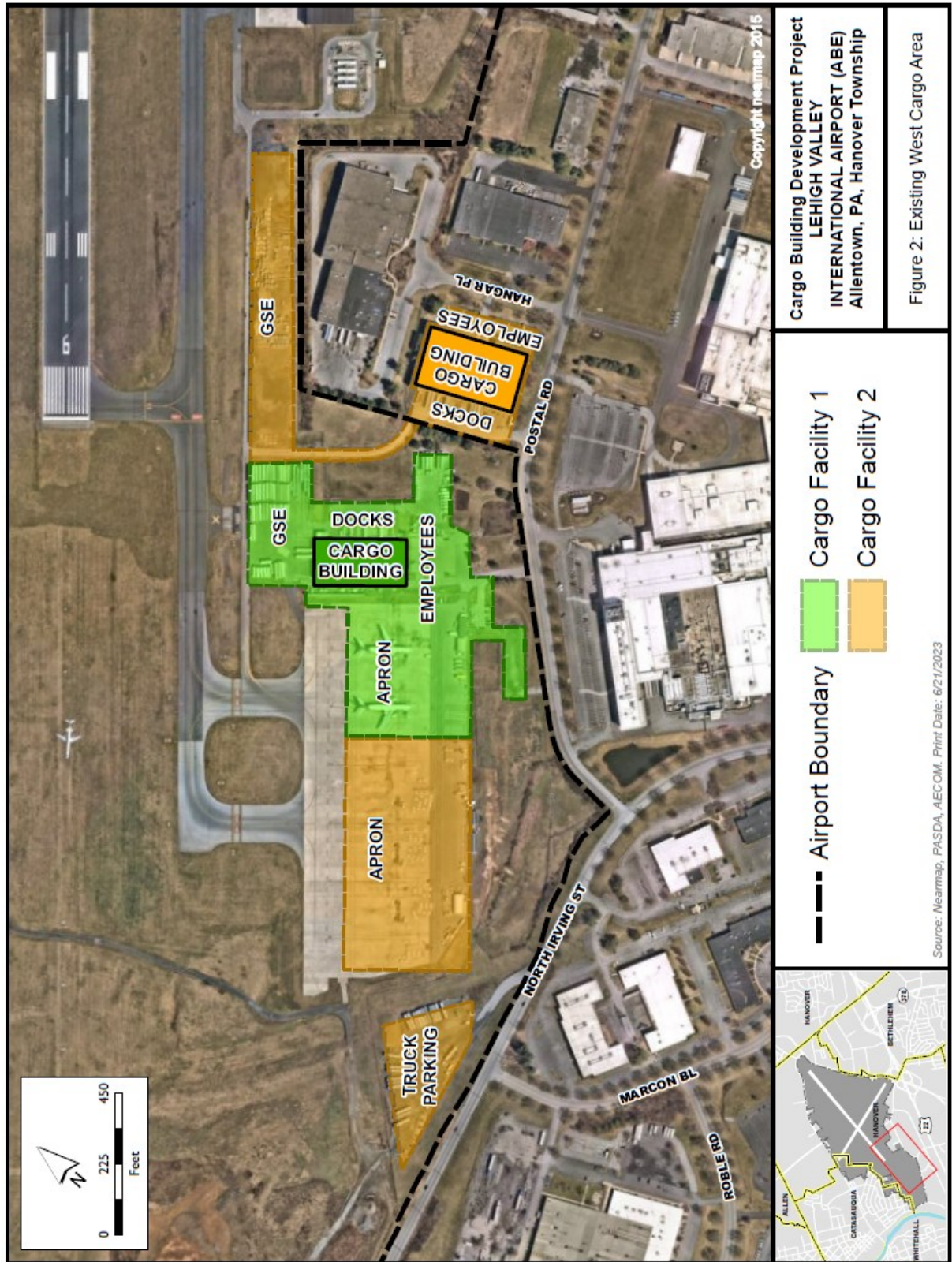


Figure 2: Existing Cargo Area

1.2.4. Cargo Facility 2 Deficiencies

Cargo Facility 1 is a centralized, consolidated, and efficient cargo operation with the cargo building and support facilities located on airport property adjacent to the aircraft parking apron. This is an ideal air cargo facility layout. In contrast, Cargo Facility 2 is an inefficient, make-shift cargo operation with an off-airport cargo building and facilities and equipment scattered throughout the area. Numerous deficiencies and/or logistical challenges are associated with Cargo Facility 2, including:

- Inbound cargo from the aircraft must be transferred to the cargo building approximately one-quarter mile away. Instead, air cargo buildings should be adjacent to the aircraft parking apron for direct cargo access and the shortest travel distance/time which offers operational and cost efficiencies. Under existing conditions, the split operation increases travel distance, time, and costs, and because Cargo Facility 1 (shown in green in Figure 2) is located in between the aircraft parking apron and Cargo Facility 2 (shown in orange in Figure 2), the cross-traffic between the different airlines' cargo vehicles and equipment causes interference, congestion, and delay on the cargo aircraft parking apron and along the airside vehicle service road.
- The split-operation requires all cargo vehicles and equipment to pass through the airport's perimeter security fence—known as a “through-the-fence” operation.⁷ Instead, air cargo buildings should be located on airport property between the airside and the landside, where GSE have free access between the aircraft and the essential warehouse portion. Under existing conditions, all personnel, vehicles, and GSE traveling between the cargo building and the aircraft parking apron must stop, and wait, for the security gate to open, and then to securely close, before proceeding on. This through-the-fence operation reduces airline efficiency by adding travel distance, time, and cost. In addition, supplemental resources are required to adequately maintain airport safety and security by having to properly control vehicle and pedestrian access to the Airport's airside infrastructure (e.g., runways, taxiways, aircraft parking areas).

Cargo Facility 2 is also deficient because the cargo building is too small, there are too few loading docks, only minimal space for truck maneuvering, and there is no on-site space available for trucks to queue and wait for a loading dock assignment.⁸ In addition, there are too few employee parking spaces during peak season operations, and parking along the Township's Road is prohibited by ordinance.

Over the last five to ten years, a clear divergence in the design requirements of regional air cargo facilities has taken place. Historically, except for cargo hubs, air cargo facilities have been long and slender buildings with depths of 100 to 150 feet, and airside frontage of 500 feet and above. Those facilities were designed for “throughput” and were basically interfaces between planes and trucks with short, if any, dwell times. Cargo handling activities were largely limited to final build up or break down of cargo (ULDs and pallets) and employee areas and amenities were few to none other than bathrooms and small break rooms.

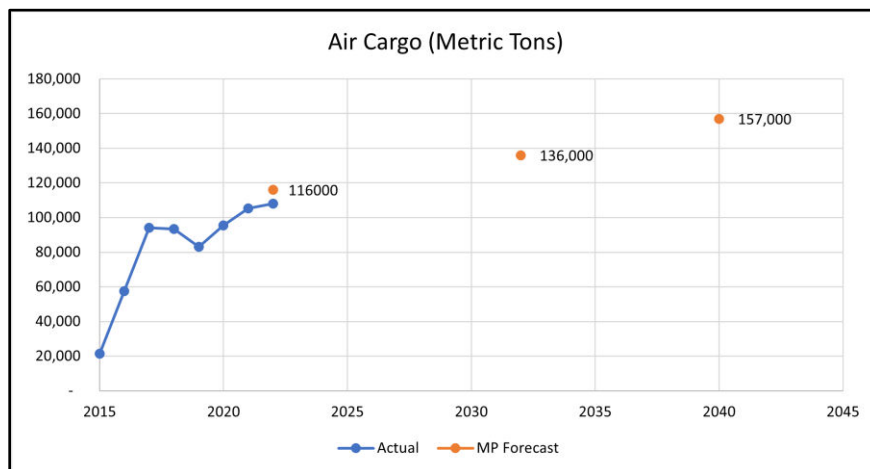
⁷ Through-the-fence (TTF) operations occur when an airport sponsor gives ground access permission to a private party (individual or firm) so that the user can access an airport's airside infrastructure and engage in associated activities from an adjacent property.

⁸ Generally, cargo facility sizing is commensurate with the type and volume of cargo processed daily. Although no airline-specific cargo tonnages or facility requirements are available for publication, LNAA confirms that Cargo Facility 2 does not have adequate facilities to accommodate current or forecast demand.

With the advent of e-commerce, optimally designed regional cargo facilities have become deeper and building footprints larger. Depths of 150 to 200 feet with larger building footprints are the current norm to accommodate a greater number of employees, increased employee amenities, and increased cargo handling activity within the facilities, which also translates to additional requirements for loading docks, truck parking and staging areas, and employee parking. Development and planning for air cargo facilities needs to employ design considerations to accommodate both traditional small footprint/high throughput users and e-commerce users who require larger buildings that have floorspace that don't result in additional cargo throughput.

1.2.5. Air Cargo Forecast Demand

ABE has experienced a five-fold increase in cargo volume in a seven-year period—from 21,000 metric tons of cargo processed in 2015 to nearly 108,000 metric tons in 2022.⁹ As shown in the following chart, air cargo activity levels started to jump in 2016 when 57,000 metric tons were processed—more than twice the previous year—then jumped again to 94,000 metric tons in 2017. This sudden and dramatic increase was due to the Airport's startup role as an intermodal connection for e-commerce packages.¹⁰ Then, activity levels fluctuated and recovered (during and after the COVID-19 pandemic) while LNAA was preparing the Airport Master Plan Update for ABE. An airport master plan is a comprehensive study that determines the air transportation needs of an airport for the next 5, 10 and 20 years, recommending a list of capital improvements needed to meet the forecast demands.



According to the Airport Master Plan and the Executive Summary,¹¹ air cargo volume at ABE is projected to increase another 49 percent over the planning horizon—reaching 157,000 metric tons by 2040.¹² However, the Airport Master Plan also identifies a lack of adequate facilities to accommodate current and forecast air cargo demand. To accommodate current and forecast cargo activity in a more efficient manner, the Airport Master Plan recommends: 1) developing a second cargo facility to accommodate current demands and near-term growth, and 2) improving the existing cargo facilities to the degree

⁹ ABE monthly traffic reports are posted online at <https://www.flyabe.com/airport-authority/documents/monthly-traffic-reports/>. For purposes of this study, air cargo volumes are discussed in metric tons.

¹⁰ In 2015, Amazon selected ABE as one of the few airports in the U.S. to be served by the company's new air freight division, Amazon Air. The Lehigh Valley was selected as a case study because of its air cargo and freight operations.

¹¹ <https://www.flyabe.com/airport-authority/documents/master-plan/>

¹² <https://www.flyabe.com/wp-content/uploads/2020/12/ABE-Master-Plan-Update-Section-4-Forecasts-of-Aviation-Demand-1.pdf>.

practicable for long-term growth.¹³ Additional supporting documentation is available in the Airport Master Plan available online at www.flyabe.com.¹⁴

1.2.6. Commercial Proposal

In 2020, LNAA requested proposals from qualified bidders and selected AFCO¹⁵ to develop a new e-commerce cargo facility on Airport property. The proposed project is intended to replace Cargo Facility 2 by relocating the existing e-commerce cargo operation to a new cargo facility that is “right-sized” to accommodate current and forecast demand. Based on AFCO’s market research and proposal, functional requirements include up to 125,000-sf of cargo building space, four cargo aircraft parking positions adjacent to the building, a truck parking/staging area, employee parking, airside access to the runways, and landside access to the local major roadway network. The industry standard for e-commerce cargo operations typically requires a building with a depth ranging between 150 and 200 feet so cargo can be sorted for faster fulfillment times. The proposed development project is advancing through the planning phase and into the design phase. Discussions with potential tenants are ongoing, but no commitments have been made pending the FAA’s review and environmental decision.

1.3. Description of the Proposed Action

This section describes the build option that LNAA is proposing to solve the operational issues associated with Cargo Facility 2 at ABE.¹⁶ Under the Proposed Action, a new cargo facility would be constructed on the north side of the Airport and the e-commerce cargo airline operation associated with existing Cargo Facility 2 would be relocated to the new site.¹⁷

1.3.1. Proposed Project Elements

As shown in **Figure 3**, the proposed project includes the following:

- *Cargo Building.* Construct a single-story warehouse type building with up to 125,000-sf of multi-use space for processing cargo from the airside to the landside quickly and efficiently. Other functional areas inside the building include offices, employee support facilities (e.g., restrooms, locker rooms, breakrooms, etc.), storage areas, and workspace to service ground service equipment (GSE).
- *Aircraft Parking Apron.* On the airside of the building, provide airfield pavement with an apron taxiway and hardstands for parking up to four widebody freighter aircraft (e.g., B767-300). Sufficient space is also required for ground handling operations associated with aircraft loading and unloading, circulation and storage areas for GSE, as well as unit load devices (ULDs) and pallet storage. Approximately 48,000-sy of new airfield pavement would be required for the cargo apron. This area includes approximately

¹³ Both projects are depicted on the current FAA-approved ALP. However, this EA covers the proposal to develop a second air cargo facility only; there is no foreseeable action to improve the existing West Cargo facility.

¹⁴ <https://www.flyabe.com/airport-authority/documents/approved-documents/masterplan/>.

¹⁵ [Aviation Facilities Company Management](#), or “AFCO.”

¹⁶ The site plan described and evaluated in this EA is representative of the size and scope of the commercial proposal including the cargo building, truck parking, and employee parking. The configuration of the facilities within the site boundary is subject to change during the engineering and design process.

¹⁷ There is no plan or proposal concerning the future use of the vacated GSE staging area or the four aircraft parking positions. For the purposes of this study, the existing cargo area would continue to operate as it did before the e-commerce airline arrived at ABE.

19,400-sy of remnant asphalt pavement (formerly used as an apron for parking small general aviation airplanes) that would be removed and replaced with full-strength concrete pavement for parking cargo aircraft.

- *Truck Docks and Maneuvering.* On the landside of the building, provide new pavement for the truck-to-building interface with berths for trucks to back-up to the overhead doors that lead directly to the cargo staging areas inside the building. Approximately 10,200-sy of pavement would be required to support approximately 36 loading docks and the truck maneuvering area.
- *Access Road and Circulation.* Extend Willow Brook Road S into the project site to provide vehicular access and egress for cargo trucks and employees. This would require minor improvements to the south side of the intersection at Race Street to align the roadway for through-traffic, and to accommodate truck turning movements, all within the existing PENNDOT right-of-way and Hanover Township right-of-way.¹⁸ Within the proposed project site, the access road extends south from Race Street, turns east, and leads to the intersection with Fashion Drive. Improvements to the intersection at Fashion Drive would also be required to accommodate truck turning movements. The gated entrance to the Airport's maintenance building would be relocated further west. The access road would connect to the truck docks, truck staging area, and employee parking. Assuming two standard 12-ft traffic lanes, approximately 10,200-sy of pavement would be required for the access roadway and circulation.
- *Employee Parking.* Provide a surface parking lot for employees. The paved area would be close-in to the cargo building but physically separated from the truck loading docks and staging area. Approximately 4,600-sy of asphalt pavement would be required to accommodate approximately 88 parking spaces.
- *Truck Parking/Staging Area.* Provide a dedicated area for cargo trucks to safely park and wait for their turn at the cargo building. This area also provides for temporary storage of tractors, trailers, and tenant equipment that is not in use. Approximately 8,800-sy would be required for the truck parking/staging area.
- *AOA Security Fencing.* Provide perimeter fencing to secure the Airport Operations Area (AOA) and controlled-access gates to prevent unauthorized access.¹⁹ The AOA includes the cargo aircraft parking apron area and Taxiway D. Approximately 2,500-lf of fence would be required to secure the project site.
- *Site Preparation.* Site development activities include ground clearing, grading, drainage, and stormwater management; installation and connection of utility services (electricity, potable water, natural gas, sanitary sewer, and communications); security lighting and airfield pavement lighting; and relocating vehicle service roads, as needed to accommodate the project. Specific locations for the ancillary items will be determined during design. No off-site utility improvements are needed to accommodate the demands of the project.

¹⁸ Proposed improvements to the intersection will require a Pennsylvania Department of Transportation (PennDOT) Highway Occupancy Permit (HOP). Coordination with PennDOT is underway and will continue through the design/permitting process.

¹⁹The AOA includes areas designated and used for landing, taking off, or surface maneuvering of aircraft, including ramps, aprons, runways, and taxiways.

- *Taxiway C/Aircraft Parking Modifications.* The project requires closing and removing a segment of existing Taxiway C between Taxiway B and Taxiway E. This section of Taxiway C is currently used mostly by small aircraft moving between Runway 13-31 and the aircraft T-hangars and would be replaced by the future Taxiway D as part of the Proposed Project. The existing transient aircraft parking apron (approximately 18,000-sy) has been closed since 2020 and would be removed and incorporated into the future cargo aircraft parking apron.
- *Parallel Taxiway D.* Provide a 75-ft wide partial parallel Taxiway D along the north side of Runway 6-24, between Taxiway B and Taxiway E and a taxiway connector to the cargo aircraft parking apron.²⁰ Approximately 28,000-sy of new airfield pavement would be required to accommodate the future taxiway and connectors.
- *Stormwater Management.* Drainage improvements, such as an aboveground detention basin, grassed swales and ditches, and underground infiltration beds, would be required to adequately manage the quality and control the quantity of storm runoff from the project site.
- *Fuel Storage Facility.* Construct a fuel storage facility to provide aviation fuel²¹ for cargo aircraft operations.²² The site layout provides a space allowance to install up to four 50,000-gal above ground fuel storage tanks with an adjunct building (i.e., equipment shed) for pump control mechanisms. A perimeter roadway would be provided for over-the-road tanker trucks to deliver and offload fuel to the storage tanks, and for on-airport fuel trucks to transport fuel from the storage tanks to the cargo aircraft parking apron for refueling operations. Landside access to the facility for supplier deliveries would be through a security fence/gate connected to Willow Brook Road. Airside access for on-airport fuel trucks would be from an airport vehicle service road. This would be a commercial, self-contained, modular system installed aboveground and in compliance with all applicable federal, state, and local rules and regulations related to the safe installation and operation of aviation fuel storage facilities. No underground fuel storage, transfer or distribution system, or hydrant fueling operations are proposed.

²⁰ This segment of TW-D may be designed to be extended further east to the approach end of Runway 24, but this extension is a future project, it is not proposed at this time, and it is not included in this EA.

²¹ The proposed fuel storage facility would be used for Jet A fuel only. It would not be used for 100LL (100 octane low lead) aviation gasoline for certain aircraft engines.

²² The proposed fuel facility is a potential project that would be constructed by LNAA and is not part of the developer's commercial proposal. LNAA is the sole supplier of aviation fuel to the passenger and cargo airlines serving ABE and would ultimately decide whether to construct the facility.

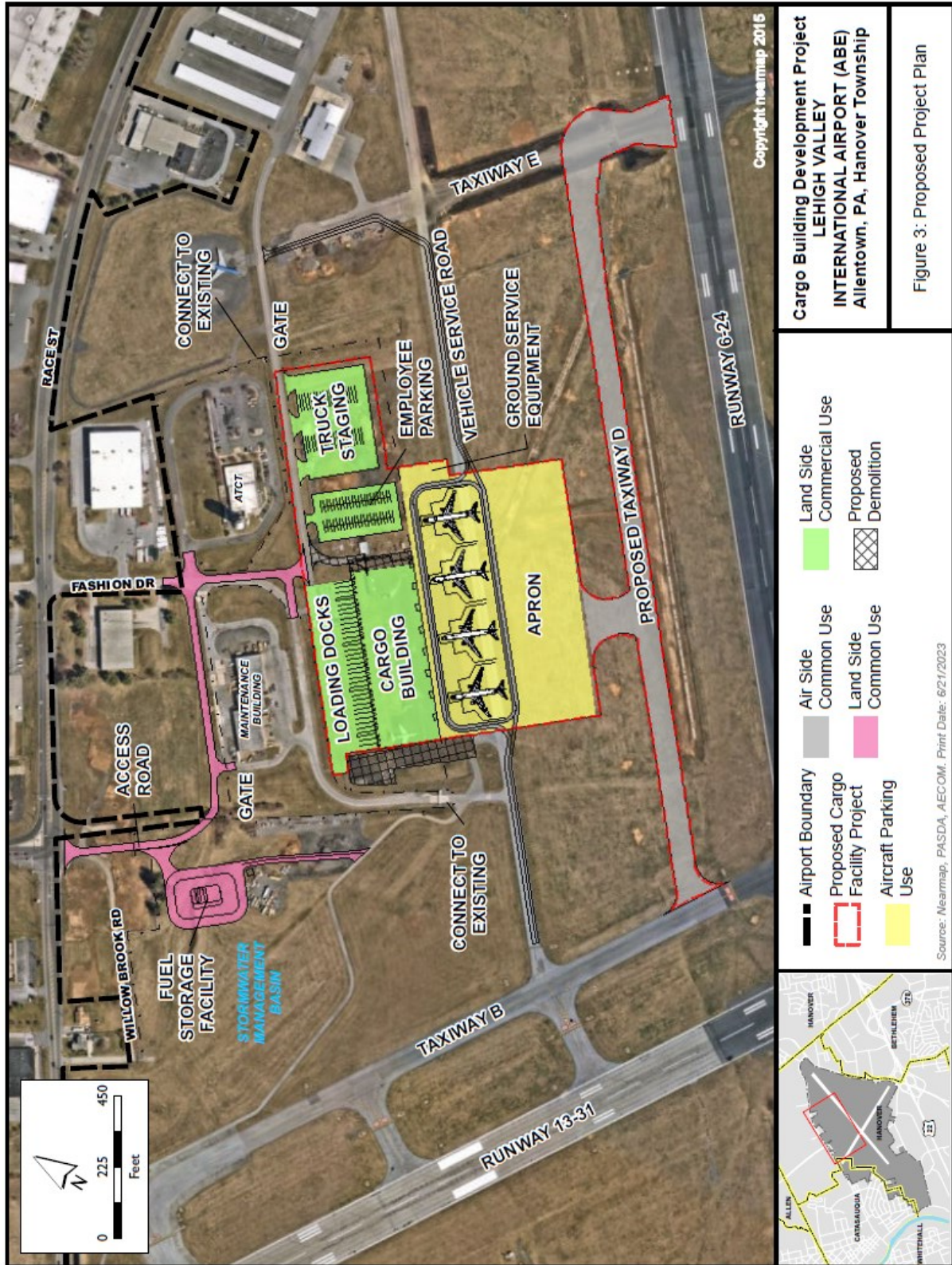


Figure 3: Proposed Project Plan

1.3.2. Project Operations

If the Proposed Action is implemented, Cargo Facility 1 would continue to operate status quo; no changes are anticipated or proposed. All existing cargo operations associated with existing Cargo Facility 2 would be relocated to the proposed new facility on the north side of the Airport, and the existing through-the-fence cargo operation would be eliminated.²³ All employee vehicles and truck traffic, and aircraft taxi operations, associated with Cargo Facility 2 would be redirected to the new facility.

No operational changes are proposed that would cause or contribute to a substantial increase in air cargo activities at ABE. However, the size of the proposed facility and layout of the site would enable a nominal increase in employee vehicles, cargo truck traffic, and cargo aircraft operations to occur, and the impacts of the potential growth are evaluated in this EA. For example, the e-commerce cargo airline in Cargo Building 2 uses four aircraft parking positions on the existing Cargo Apron and they operate up to six inbound flights per day, which is limited by the operational capacity of the existing building. If the Proposed Action is implemented, the new facility would also have four aircraft parking positions but includes a larger cargo building and facilities with additional capacity to handle more cargo. Even with the improved operational efficiencies, the proposed facility is limited in its potential growth due to the physical limitations of the building and four (4) aircraft parking positions. Assuming a maximum turnover rate of two inbound flights/per position/per day (assumed based on the physical process of loading/unloading the cargo with the proposed facility), up to eight inbound flights per day could potentially occur at the new location (a net increase of two inbound flights per day). For the purpose of this study, one additional inbound flight would occur in the one-to-five-year timeframe and the second inbound flight would be added in the six-to-ten-year timeframe, at which time the cargo aircraft parking apron would be operating at peak capacity.

1.3.3. Project Timeline

Following the FAA's decision, engineering, design, and permitting activities would commence in 2024, Assuming a three-year development program, construction activities would begin in 2025 and the proposed facility would be complete and operational by 2027.

1.3.4. Project Cost and Funding

The proposed North Cargo Facility is an \$83 million program. Commercial elements such as the cargo building, and vehicle and truck parking areas, would be paid for by the developer. The airside taxiway, landside roadway, supplemental fuel storage facility, and other ancillary elements of the proposed project would be paid for by LNAA using a combination of federal and state grants including, but not necessarily limited to, the following programs:

- Airport Improvement Program and Bi-Partisan Infrastructure Law (AIP/BIL) program
- Nationally Significant Multimodal Freight & Highway Projects (INFRA) program²⁴

Discussions related to potential cost sharing for the cargo aircraft parking apron are ongoing.

²³ LNAA does not own or control the off-airport cargo building associated with Cargo Facility 2 and therefore has no influence on what happens to the cargo building or how it is reused after the through-the-fence operation is terminated.

²⁴ FHWA Announced an award through the US DOT Infrastructure for Rebuilding America (INFRA) grant program for the ABE Airport Northside Logistics & Cargo Complex in the amount of \$40,798,046 in December, 2023.

1.3.5. Requested Federal Actions

Major aviation elements of the proposed project and their connected actions are regulated by the FAA under H.R. 302 (P.L. 115-254), the “FAA Reauthorization Act of 2018” (the Act). Under Section 163(d), the Act allows the FAA to attain legal authority to approve or disapprove those portions of the Project that affect the ALP for the revisions that “materially impact the safe and efficient operation of aircraft at, to, or from the airport.” A copy of the Section 163 determination issued by the FAA is provided in **Appendix A**. The project elements and connected actions also represent Federal Airports Program actions including:

- Unconditional approval of those portions of the ABE Airport Layout Plan to depict the Proposed Action pursuant to 49 U.S.C. §§ 40103(b), 44718, and 47107(a) (16), and determination and approval of the effects of this project upon the safe and efficient utilization of navigable airspace pursuant to 14 C.F.R. Parts 77 and 157 and 49 U.S.C. § 44718.
- Determination under 49 U.S.C. §§ 40101(d)(1) and 47105(b)(3) as to whether the Proposed Action maintains and enhances safety and security and meets applicable design and engineering standards set forth in FAA Advisory Circulars.
- Federal grant-in-aid funding from the FAA through the Airport Improvement Program (AIP) and/or approval of an application to use Passenger Facility Charges (PFCs).
- Federal grant in-aid funding from the FHWA through the INFRA Grant Program.

CHAPTER 2: PURPOSE AND NEED

The purpose of the proposed project is to accommodate the current and forecast demand for air cargo facilities on airport property that meet industry design standards for safe, secure, and efficient cargo airline operations. The need for the proposed project is based on the existing cargo area's functional deficiencies as described below.

ABE has two express cargo carriers that collectively process more than 100,000 metric tons of air cargo each year. However, the airport's existing cargo operation is hampered by an inadequate cargo facility that does not meet today's industry standards. Due to the lack of cargo facilities on airport property, Cargo Facility 2 is a make-shift cargo operation that uses a converted warehouse located off airport property, with ancillary facilities dispersed throughout the area. Chapter 1 discussed the numerous deficiencies associated with Cargo Facility 2, such as the excessive travel distance between the cargo building and aircraft parked on the apron, and the need to operate through the airport's security fence, as well as insufficient building space, loading docks, truck parking, and employee parking.

Express cargo carriers require specialized airport facilities and infrastructure to match their highly time dependent processing operations, and the key is to keep the facilities close to the aircraft. Unlike Cargo Facility 1 with its centralized layout, Cargo Facility 2 has a decentralized layout with the cargo building located off airport property. As discussed in Chapter 1, inbound cargo must be transferred from the aircraft, through the airport's perimeter security fence, to the cargo building located approximately one-quarter mile away. The added travel distance increases cargo processing time and costs, and the effects are compounded by having to comply with additional safety and security measures required to properly control vehicle and pedestrian passage through the gate. Also, the GSE storage area is not located near the cargo building or the aircraft parking apron, nor is the truck parking area.

The ongoing through-the-fence operation was initially permitted to increase utilization of ABE, and resulted in enhanced revenues for LNAA, at a time when there was no current plan or proposal to accommodate additional cargo facilities at the Airport. Although there is no specific rule or regulation prohibiting the through-the-fence operation associated with Cargo Facility 2, continuing to permit these activities, when better options are available, is not good aviation policy. As the Airport operator, one of the most important LNAA responsibilities is to ensure the safe, efficient, effective, and productive use of all Airport property. The highest and best use of Airport property is achieved through proper placement of facilities and by ensuring that facilities are developed in a way that most efficiently uses available property.

To meet the demand for an air cargo facility, the site should satisfy the following requirements:

- Provide a site that can accommodate a 125,000-sf warehouse type building for cargo airline operations, four aircraft parking positions for widebody freighters²⁵ (e.g., B767) and adequate space for loading docks, truck staging, employee parking, ancillary facilities and infrastructure that are the proper size for the proposed function and staffing levels.
- Provide airfield access for cargo aircraft to taxi efficiently to and from the runways and an airside vehicle service road for airport vehicles to travel efficiently through the air cargo facility operations.

²⁵ Up to FAA Airplane Design Group ADG-IV.

- Provide a site with an access road for cargo trucks and employee vehicles and a convenient route to major local roadways.

In addition, the proposed project site should be cost effective in terms of its readiness to be developed and availability to start construction in a timely manner.

CHAPTER 3: ALTERNATIVES (Including the Proposed Action)

This chapter presents the screening analysis conducted to identify the range of reasonable alternatives that were considered and selected for “detailed” environmental evaluation in Chapter 4 of this EA.

3.1. Alternatives Screening Procedure

This section identifies potential alternatives and describes the screening criteria used to determine whether each alternative reasonably meets the project’s Purpose and Need, and, if so, whether the alternative would be acceptable from a cost-effectiveness/constructability perspective.

3.1.1. Preliminary Alternatives

Below is the list of preliminary project alternatives (descriptions follow in the discussion of screening results):

- Alternative Site 1 – Expand the Existing Cargo Complex
- Alternative Site 2 – Construct a New Cargo Facility (North)
- Alternative Site 3 – Construct a New Cargo Facility (Northwest)
- Alternative 4 – Use Other Buildings
- Alternative 5 – Use Other Airports
- No Action Alternative

No other potentially reasonable projects or actions were identified for consideration.

3.1.2. Screening Criteria

Reasonable alternatives were identified using a two-tiered screening process developed in consultation with the FAA.²⁶ Level 1 criterion determines whether the alternative responds to the Purpose and Need for the proposed project as described below:

- *Would the alternative accommodate the demand for air cargo facilities?* To meet the Purpose and Need, the following primary goals and objectives must be accomplished:
 - Consolidate all existing e-commerce cargo airline facilities and operations into one location on existing airport property
 - Provide sufficient space and flexibility to accommodate current and forecast cargo demand (i.e., phased development).
- *Would the alternative meet current design standards for safe, secure, and efficient cargo airline operations?* To meet the Purpose and Need, the following primary goals and objectives must be accomplished.

²⁶ Under NEPA regulations, reasonable alternatives means a reasonable range of alternatives that the technically and economically feasible and can accomplish the purpose and need of the proposed action.

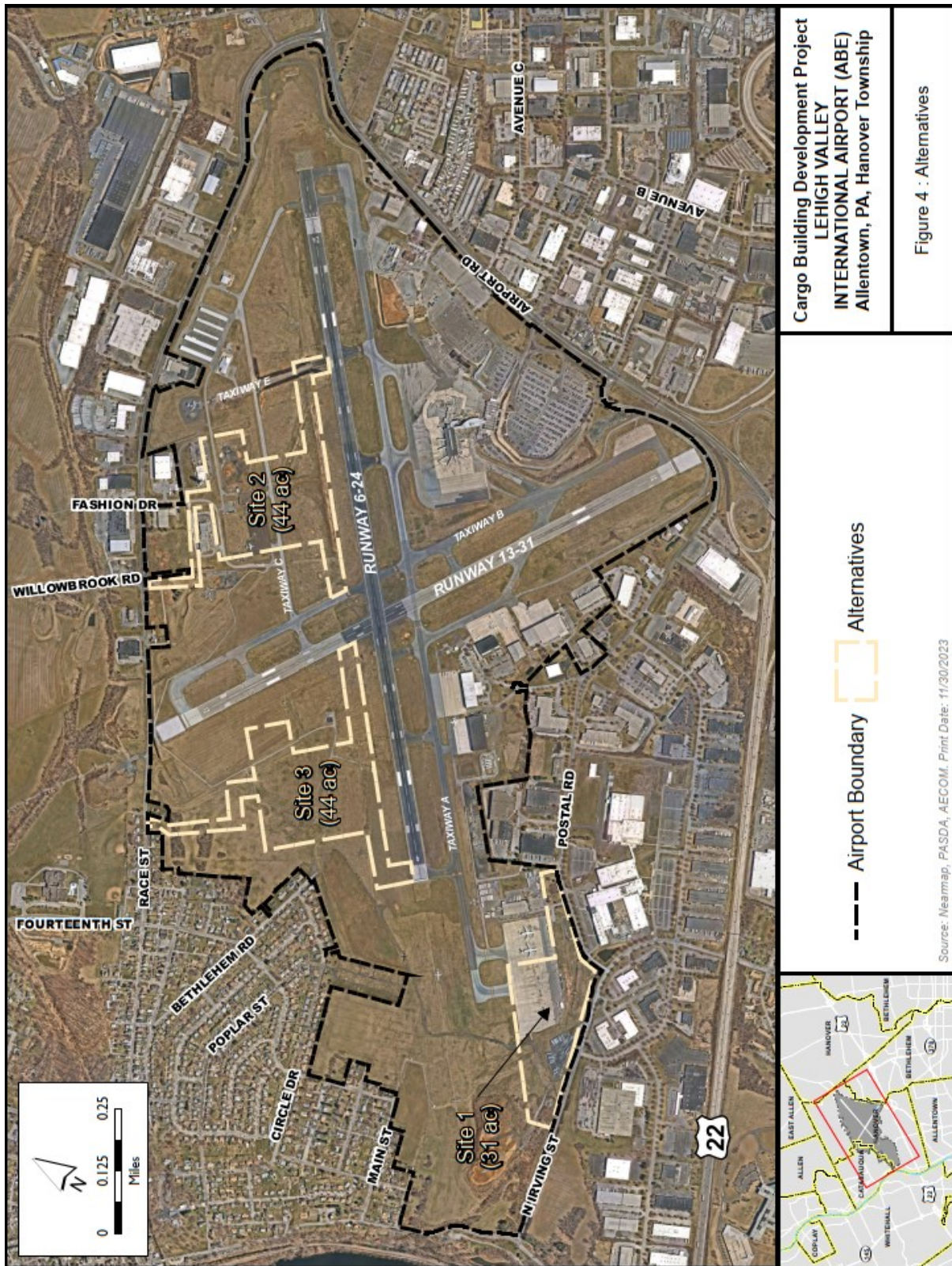


Figure 4 : Alternatives

Figure 4: Alternative Sites 1, 2 and 3

- For safety, separate e-commerce airline operations from the integrated cargo airline operations
- For security, eliminate/avoid through-the-fence cargo operations
- For efficiency, provide a modern, centralized, and consolidated cargo facility for e-commerce operations, considering emerging industry standards that indicate the need for larger cargo buildings and functional spaces for e-commerce operations as compared to traditional integrated air cargo operations.

Alternatives determined to meet the Purpose and Need for the proposed project are carried forward for Level 2 screening. Alternatives determined to not meet the Purpose and Need for the proposed project are considered not reasonable for NEPA purposes and are eliminated from further consideration. Level 2 criterion determines whether the alternative meets the secondary goals and objectives for the proposed project as described below:

- *Is the alternative reasonable in terms of cost effectiveness/constructability?* An alternative is deemed to be reasonable if the following secondary goals and objectives would be accomplished:
 - Minimizes site improvements, such as grading, drainage, stormwater management, roadway access, and utility extensions, that would otherwise result in a substantial increase in construction costs and schedule duration when compared to other similar alternatives.

Alternatives determined to meet the secondary goals and objectives for the proposed project are carried forward for detailed analysis in Chapter 4. Alternatives determined to not meet the secondary goals and objectives are considered not reasonable for NEPA purposes and are eliminated from further consideration.

3.2. Level 1 Screening - Analysis of Purpose and Need

The purpose of Level 1 screening is to identify alternatives that reasonably satisfy the Purpose and Need for the proposed project. The findings are discussed below and summarized in **Table 3-1** at the end of this section.

3.2.1. Alternative Site 1- Expand Existing Cargo Complex

Alternative Site 1 utilizes existing airport property to expand the existing cargo complex to accommodate the proposed projects to the degree practicable. As shown in **Figure 4**, Site 1 continues to use the same four aircraft parking positions for e-commerce airline operations, while the remaining vacant land adjacent to the southern and western edges of the cargo aircraft parking apron is developed for the cargo building and ancillary facilities. Existing airside access from Taxiway A, and landside access from Postal Road, would remain unchanged.

This alternative consolidates all existing e-commerce cargo airline functions into one facility on existing airport property, allowing the current through-the-fence cargo operation to be closed, thereby satisfying two of the five screening criteria. However, due to the limited space available to accommodate additional cargo facilities, the following screening criteria would not be met: it would not be practicable to expand either of the two cargo facilities in the future, potentially constraining forecast cargo demand; the two cargo facilities would not be separated, resulting in continued interaction on the existing aircraft parking apron and vehicle service roads; and, it is unlikely that the elongated shape of the site would provide an

optimal building design or site layout needed for the e-commerce facilities to operate efficiently.²⁷ Alternative Site 1 was determined to not fully meet the project's Purpose and Need. Therefore, this alternative was not carried forward for Level 2 screening and is eliminated from further consideration.

3.2.2. Alternative Site 2—Construct a New Cargo Facility (North)

Under Alternative Site 2, a new cargo facility would be constructed using existing airport property on the north side of ABE (east of Runway 13-31) as shown in **Figure 4**. All e-commerce cargo airline operations associated with existing Cargo Facility 2 would be relocated to the new site and the current facility would be closed. Ongoing integrated (FedEx) cargo airline activities at the existing Cargo Complex would continue, no improvements or changes are proposed.

This alternative consolidates all existing e-commerce cargo airline functions into one facility, and there is space available for future expansion. In addition, e-commerce and integrated cargo operations would be physically separated, through-the-fence cargo airline operations at ABE would be eliminated, and there is ample space available for an optimal building design and site layout for e-commerce facilities at the new location. Alternative Site 2 was determined to meet all five Level 1 screening criteria. Therefore, this alternative was carried forward for Level 2 screening analysis.

3.2.3. Alternative Site 3—Construct a New Cargo Facility (Northwest)

Under Alternative Site 3, a new cargo facility would be constructed using existing airport property on the north side of ABE (west of Runway 13-31) as shown in **Figure 4**. All e-commerce cargo airline operations associated with existing Cargo Facility 2 would be relocated to the new site and the current facility would be closed. Ongoing integrated (FedEx) cargo airline activities at the existing Cargo Complex would continue, no improvements or changes are proposed.

This alternative consolidates all existing e-commerce cargo airline functions into one facility, and there is space available for future expansion. In addition, e-commerce and integrated cargo operations would be physically separated, through-the-fence cargo airline operations at ABE would be eliminated, and there is ample space available for an optimal building design and site layout for e-commerce facilities at the new location. Alternative Site 3 was determined to meet all five Level 1 screening criteria. Therefore, this alternative was also carried forward for Level 2 screening analysis.

3.2.4. Alternative 4 – Repurpose Existing Facilities

LNAA investigated the possibility of converting other existing buildings on Airport property (that are not currently used as cargo buildings) to meet the need for the proposed project. There are no surplus or vacant facilities at ABE that could be repurposed for air cargo operations, or other buildings or infrastructure that could be reasonably removed to provide sufficient space for cargo airline operations. Because no buildings or sites are available to be considered, none of the Level 1 screening criteria are met with this alternative. Therefore, Alternative 4 is eliminated from further consideration.

²⁷ For information, the existing Cargo Apron area is constrained by steep slopes, utilities, roadways, and by the Airport property boundary. Substantial earthwork would be necessary to provide a level surface, and a major gas pipeline would have to be relocated. Therefore, this alternative would not have met the secondary screening criteria either.

3.2.5. Alternative 5 – Use Another Airport

This alternative would relocate the proposed project to another airport. LNAA owns and operates two other airports in the Lehigh Valley. They are Queen City Airport (XLL) in Allentown and Braden Airpark (N43) in Easton. These are small general aviation airports that are not suitable for commercial cargo airline operations such as those associated with the proposed project, and it would not be feasible or reasonable to undertake the improvements and changes required to do so. No other airports exist in the Lehigh Valley region that could reasonably substitute for the Proposed Action. None of the Level 1 screening criteria are met with this alternative. Therefore, Alternative 5 is eliminated from further consideration.

3.2.6. No Action Alternative

LNAA has the option of taking no action related to cargo facility development at ABE. Under the No Action Alternative, the proposed projects would not be implemented, no construction would occur, and the ongoing cargo airline operations at ABE would continue unchanged for the foreseeable future. Consequently, e-commerce cargo facilities would not be consolidated into one location, current and future cargo demand would not be met, and safety, security, and efficiency would not be improved. The No Action Alternative does not meet any of the Level 1 screening criteria. However, for purposes of this EA, the No Action alternative is carried forward for “detailed analysis” as required by FAA Orders 1050.1F, 5050.4B, and by CEQ regulations for implementing NEPA.

3.3. **Level 2 Screening Analysis – Secondary Goals and Objectives**

The following build alternatives were recommended for additional screening analysis using Level 2 criterion to determine whether the alternative meets the secondary goals and objectives for the Proposed Action. Given two project sites that are equivalent in size, equidistant to the runways, and assuming similar buildings and pavements would be needed at both locations, the key difference between the two locations is the degree of site preparation and construction activity that would be required to ready each alternative site for commercial development.

3.3.1. Alternative Site 2—Construct a New Cargo Facility (North)

Site 2 includes approximately 44 acres consisting of existing built land that is clear, graded level, and pad-ready for development. A stormwater management basin is present and has capacity available to accommodate additional storm runoff from the project site. Two existing roadway intersections along Race Street provide convenient access to the project site. Existing utilities are available on site or nearby. On this basis, Alternative Site 2 conforms to the secondary screening criteria and was retained for detailed analysis in this EA.

3.3.2. Alternative Site 3—Construct a New Cargo Facility (Northwest)

Site 3 consists of approximately 44 acres of undeveloped land with no existing stormwater management facilities, no public access roadway, and no commercial service utilities. Consequently, substantial earthwork would be required for site grading, drainage, and stormwater management. In addition, a lighted intersection at Race Street would have to be engineered, permitted, and constructed to provide controlled access to the site. Furthermore, electric, gas, water, sewer, and communication lines would have to be developed to connect to the nearest available supply lines. Due to the additional site preparation work required, it is reasonable to conclude that it would take substantially longer and cost

considerably more to implement Site 3 when compared to Site 2. On this basis, it was determined that Alternative Site 3 does not conform to the secondary screening criteria. Therefore, this alternative was eliminated from further consideration.

3.4. Alternatives Evaluation Summary

3.4.1. Alternatives Considered But Not Carried Forward

After analyzing a range of preliminary alternatives, the following alternatives were judged “not reasonable” and were eliminated from further consideration as shown in **Table 1** and summarized below:

- Alternative Site 1 (Expand the Existing Cargo Complex) was eliminated because: it does not separate the e-commerce and integrated cargo airline operations; it does not provide sufficient development space to accommodate forecast cargo demand; and it does not provide a suitable site for safe, secure, and efficient e-commerce cargo airline operations. Therefore, this alternative does not fully meet the project’s Purpose and Need.
- Alternative Site 3 (Construct a New Cargo Facility (Northwest)) was eliminated because the added time and costs required to prepare the site are not economically feasible. Therefore, this alternative does not meet the Secondary Goals and Objectives.
- Alternative 4 (Repurpose Existing Facilities) was eliminated because there no other locations at ABE that are currently occupied with buildings or infrastructure that could be reasonably repurposed or replaced with cargo airline facilities. Therefore, this alternative does not satisfy the project’s Purpose and Need.
- Alternative 5 (Use Another Area Airport) was eliminated because there are no other airports in the Lehigh Valley region that could reasonably substitute for the proposed project. Therefore, this alternative does not satisfy the project’s Purpose and Need.

3.4.2. Alternatives Retained for Detailed Analysis

After eliminating the alternatives judged not reasonable, the range of alternatives to be carried forward for detailed environmental evaluation was limited to the Proposed Action and the No-Action Alternative.²⁸

- Alternative Site 2 (Construct a New Cargo Facility (North)) fully satisfies the project’s Purpose and Need, and it meets the Secondary Goals and Objectives. Therefore, this alternative was deemed reasonable and, therefore, is carried forward for detailed environmental evaluation. This alternative is also identified as the Sponsor’s Proposed Action and consists of the project components listed in **Section 1.3.1**.
- No Action Alternative does not meet the project’s Purpose and Need but must be retained per CEQ regulations.

²⁸ If there are no unresolved conflicts concerning alternative uses of available resources, the range of alternatives may be limited to the no action and proposed action alternatives (FAA Order 1050.1E, paragraph 405d.). No unresolved conflicts were identified.

Table 1: Alternatives Evaluation Summary

Level 1: Purpose and Need	Alternative					
	Site 1	Site 2	Site 3	Use Other Buildings	Use Other Airports	No Action
Accommodates Demand	No	Yes	Yes	No	No	No
- Consolidated Facility	Y	Y	Y	N	N	N
- Expansion Capability	N	Y	Y	N	N	N
Meets Current Design Standards	N	Yes	Yes	No	No	No
- Improves Safety	N	Y	Y	N	N	N
- Improves Security	Y	Y	Y	N	N	N
- Improves Efficiency	N	Y	Y	N	N	N
Carried Forward for Level 2 Screening	No	Yes	Yes	No	No	No
		↓	↓			
Level 2: Secondary Goals/Objectives						
Cost Effectiveness/Constructability	-	Yes	No	-	-	-
- Minimizes Site Improvements	-	Y	N	-	-	-
Retain for "Detailed Analysis"	No	Yes	No	No	No	Yes

CHAPTER 4: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter analyzes the potential impacts to environmental resources that would be affected by the Proposed Action and the No Action Alternative. To assist with the assessment, a direct impact study area was established and is shown in **Figure 5**. The limit of disturbance (LOD) is approximately 80 acres, which accounts for contractor staging, laydown areas, and haul routes to be utilized during the construction phase. Inside the LOD, the conceptual project site layout boundary is approximately 44 acres, of which approximately 29 acres is (net) new impervious cover. General study areas for indirect or secondary effects are less precise and vary by impact category as discussed throughout this chapter.

4.1. Air Quality

The following section summarizes the findings of the air quality analysis completed for construction and operation of the Proposed Action. More detailed information and supporting documentation are provided in **Appendix C: Air Quality Technical Memorandum**.

4.1.1. Existing Conditions

The Clean Air Act is the comprehensive federal law that regulates air emissions from mobile and stationary sources. This law authorizes the Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants. Areas of the country where air pollution levels persistently exceed the NAAQS are designated “nonattainment areas.” Areas that have a history of nonattainment but are now meeting NAAQS are designated “maintenance areas.”

According to the EPA’s Green Book,²⁹ the Allentown-Bethlehem-Easton area is designated as a marginal nonattainment area for ozone (O₃), and Allentown is designated as a moderate nonattainment area for fine particulate matter (PM_{2.5}). Ozone is principally formed from nitrogen oxides (NO_x) and volatile organic compounds (VOCs) through chemical reactions in the atmosphere in the presence of sunlight. Ozone at ground level is a harmful air pollutant, because of its effects on people and the environment, and it is the main ingredient in “smog.” Particulate matter, or PM_{2.5}, is very small particles in air that are 2.5 micrometers (about 1 ten-thousandth of an inch) or less in diameter. This is less than the thickness of a human hair. Particulate matter is a mixture that can include organic chemicals, dust, soot, and metals. These particles can come from cars and trucks, factories, wood burning, and other activities, and they have harmful effects when inhaled.

²⁹The Green Book Nonattainment Areas for Criteria Pollutants (as of September 30, 2023) is available online at <https://www.epa.gov/green-book>.

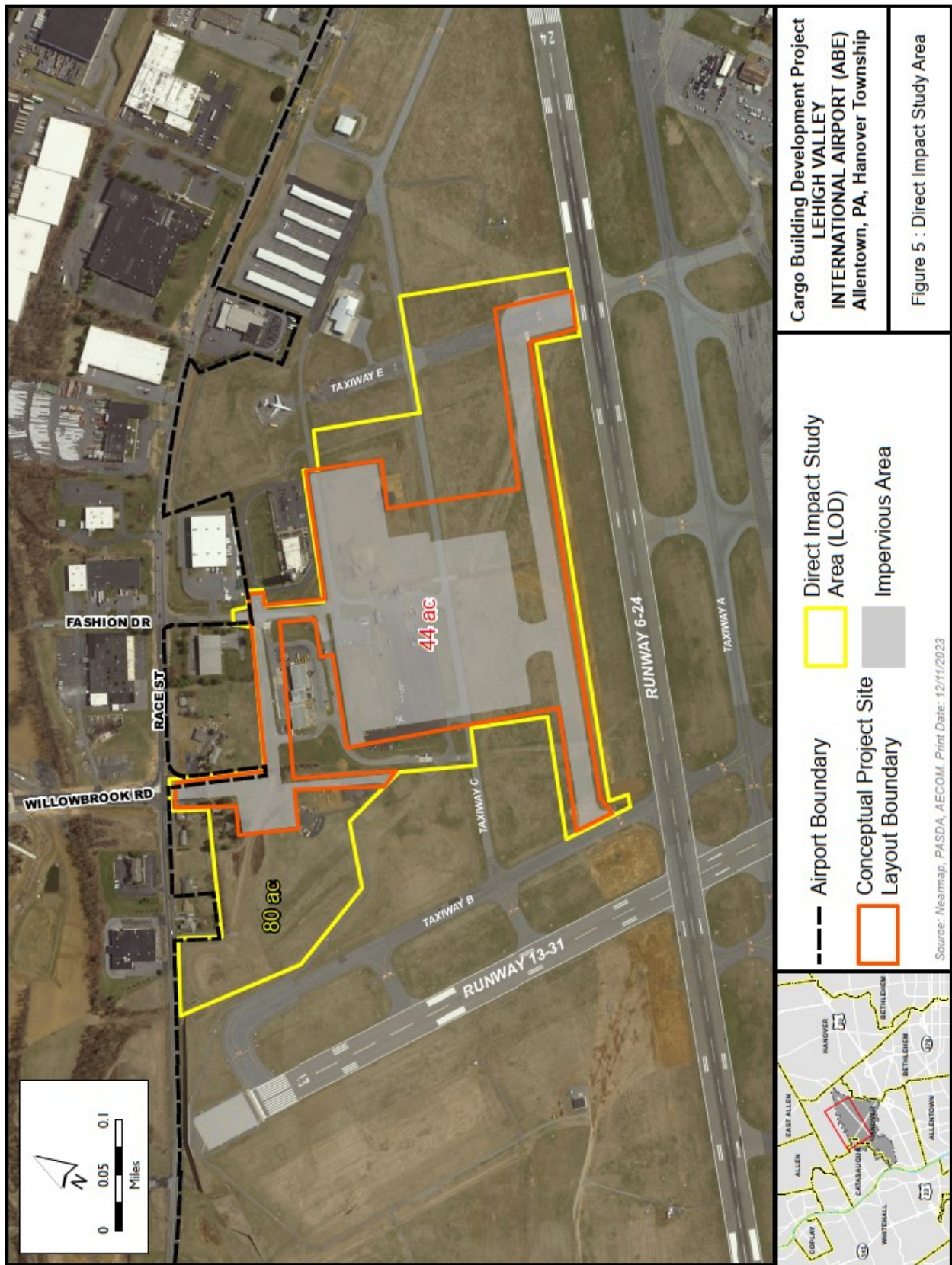


Figure 5: Direct Impact Study Area

The Proposed Action is in Allentown, Lehigh County, which means project-related air emissions would occur within an EPA designated nonattainment area for two criteria pollutants—ozone and particulate matter. The Proposed Action is not exempt from the Clean Air Act nor is the project presumed to conform³⁰ to the State Implementation Plan (SIP).³¹ Therefore, the EPA’s General Conformity Rule (40 CFR Part 93, § 93.153)³² applies to the project and an air quality analysis must be prepared. The purpose of the General Conformity Rule is to ensure that federal activities do not cause or contribute to new violations of the NAAQS, increase the frequency or worsen existing violations of the NAAQS, or delay attainment of the NAAQS.

Areas at different levels of non-attainment have emissions thresholds for the criteria pollutant below which proposed actions are determined to conform in accordance with the Clean Air Act. If the Proposed Action does not exceed these thresholds, known as *de minimis* thresholds, for the criteria pollutant, a General Conformity Determination³³ is not required.

In addition, transportation conformity is also being considered as part of the project development process. Transportation conformity is the process that is used to review the current transportation plan and program in a region to ensure they conform to the state’s air quality plan. Transportation conformity is required in areas designated nonattainment and maintenance by the EPA. Each state’s air quality plan, also known as the State Implementation Plan (SIP) determines how the states will meet National Ambient Air Quality Standards (NAAQS), for multiple sources of air pollution including transportation. In the SIP, there is a motor vehicle emissions budget as a distinct element, which is a limit on the maximum level of emissions allowable from the region’s on-road vehicles, as whole. In addition to General Conformity, which applies to the SIP as a whole, the estimated level of on-road vehicle emissions must stay within the budget for the region to demonstrate Transportation Conformity.

The Clean Air Act Amendments of 1990 set the law requiring the transportation conformity process. Transportation conformity regulations were developed by the U.S. EPA and FHWA, and are contained in Federal Regulation: Title 40, Chapter I, Part 93 - Determining Conformity of Federal Actions to State or Federal Implementation Plans.

Transportation conformity applies to projects funded or approved by the FHWA. Since the local access roadway will be funded through the FHWA INFRA grant, this portion of the project has been reviewed by federal, state, and local transportation and air quality partners to ensure that it is consistent with the air quality goals of the Lehigh Valley Region and the Pennsylvania SIP.

The LNAA, in coordination with the Lehigh Valley Transportation Study Metropolitan Planning Organization (LVTS MPO) and PennDOT, presented the project to the PA Interagency Consultation Group

³⁰ The FAA has designated a list of actions whose emissions are typically below EPA’s thresholds of significance (*de minimis*) for the various criteria pollutants. These actions, known as “presumed to conform actions” typically do not require air emissions analysis. For more information, see Federal Register/Vol. 72, No. 145 [FR Doc. 07-3695 Filed 7-25-07].

³¹ Under the Clean Air Act, states must develop SIPs that outline how they will control air pollution in designated nonattainment and maintenance areas. A SIP is a collection of regulations, programs, and policies an individual state will use to attain and maintain the NAAQS.

³² Under the Clean Air Act (§176(c)(4)) General Conformity Rule, federal agencies must work with state, tribal and local governments in a nonattainment or maintenance area to ensure that federal actions conform to the air quality plans established in the applicable state or tribal implementation plan.

³³ A Conformity Determination is the formal process and documentation required when the emissions from the proposed project or action in a non-attainment or maintenance area are at or above *de minimis* levels and are not otherwise exempt or presumed to conform.

(ICG) to determine if the project is Regionally Significant per 40 CFR Part 93.101.34 The IGC determined that the project is not a regionally significant project. Given this determination, LNAA worked with LVTS MPO to successfully add the project to the Lehigh Valley's 2023-2026 Transportation Improvement Program (TIP) (MPMS#121443). Effective June 24, 2024. This four-year plan is developed to maintain and enhance the transportation system in Lehigh and Northampton counties. The TIP is refreshed biennially, allowing for the integration of new projects. The TIP, presented in **Appendix C**, was adopted by the LVTS in June 2024 and provided to PennDOT for inclusion in the SIP.

4.1.2. Impact Analysis

A General Conformity Applicability Analysis was prepared to determine whether a conformity determination is required. Two types of emission are considered. "Direct emissions" occur at the same time and place as the project, such as construction site emissions. "Indirect emissions" are reasonably foreseeable emissions that may occur later in time and/or are farther removed from the project, such as emissions from aircraft operations and vehicular traffic. The detailed analysis and results are presented in **Appendix C** and summarized below.

Construction Phase (Direct) Emissions

Construction related air emissions include mobile source emissions from construction vehicles and equipment, and fugitive dust emissions from earthmoving activities. These emissions would be short-term, temporary, and diminishing as the project nears completion.

Construction activity levels were calculated using the Airport Construction Emissions Inventory Tool (ACEIT). ACEIT models emissions from construction activities associated with typical airport project types. For this analysis, ACEIT was used to derive the construction activity levels, including hours of operation for off-road construction equipment and vehicle miles traveled for on-road trucks and employee vehicles. Construction activities were estimated in ACEIT using estimated building sizes, earthwork quantities, concrete pavement and subbase volumes, and other applicable construction items, as well as rough order of magnitude cost estimates for each. The construction activity levels developed in the ACEIT model were then used to model emissions using current EPA versions of MOVES³⁵ for on-road vehicles, NONROAD³⁶ for off-road vehicles and equipment, and AP-42.³⁷ It is acknowledged that the current version of ACEIT contains outdated emissions factors. Therefore, ACEIT was used to develop a default (Level 1) construction equipment activity data set only, and the activity data were then used to model emissions for each construction year using current versions of MOVES3, NONROAD, and A-42. PADEP reviewed and concurred with the methodology and models used.³⁸

³⁴ 40 CFR Part 93.101 - "Regionally significant project means a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel."

³⁵ Motor Vehicle Emission Simulator (MOVES, v3.0.4).

³⁶ EPA MOVES3 Nonroad Technical Reports

³⁷ AP-42: Compilation of Air Emissions Factors

³⁸ Email from Brian Trowbridge, Air Quality Program Specialist, PADEP Bureau of Air Quality, dated January 4, 2023.

The results of the analysis are presented in **Appendix C** and summarized in **Table 2** below. The results demonstrate that the project-related construction emissions would be less than applicable *de minimis* thresholds.

Table 2: Construction Phase Emissions Inventory

Construction Year	Annual Emissions by Pollutant (tons/year)					
	NOX	VOC	PM2.5	PM10	CO	SOX
1	0.07	0.06	0.00	0.02	0.83	0.00
2	0.58	5.25	0.02	0.23	5.52	0.01
3	0.82	0.16	0.06	0.84	2.00	0.00
<i>De minimis</i> Thresholds	100	50	100	N/A	N/A	N/A
Exceeds <i>De minimis</i> ?	No	No	No	--	--	--

N/A: De minimis thresholds do not apply to pollutant concentrations that are in attainment.
 Source: AECOM analysis (see **Appendix C**).

Operation Phase (Indirect) Emissions

After construction, additional air emissions would result from the project-related increase in aircraft operations and corresponding GSE activity on the airside, and truck traffic and employee vehicles on the landside. Airside emissions were quantified using the FAA’s Aviation Environmental Design Tool (AEDT), and the landside emissions were quantified using the EPA’s MOVES3 model. Three future scenarios were modeled, and emission inventories were prepared for each scenario:

- Under the No Action Alternative, current airport operations would not change, i.e., there would be no increase in B767 operations or GSE activity on the airside, or truck traffic and employee traffic on the landside. Air emissions associated with current airport operations would not change.
- Under the Proposed Action (Build Year Plus 5 Years), this scenario includes one additional B767 landing/takeoff (LTO) cycle³⁹ and associated GSE activity on the airside, and 255 trucks per day and 325 cars per day on the landside, when compared to the No Action Alternative.
- Under the Proposed Action (Build Year Plus 10 Years), there would be two additional B767 landing/takeoff (LTO) cycles⁴⁰ and associated GSE activity on the airside, and 510 trucks per day and 650 cars per day on the landside, when compared to the No Action Alternative.

For the five- and ten-year build scenarios, the net difference in emissions was calculated by subtracting the emissions from the No Action Alternative from the Build Alternative, and the net difference was compared to the applicable annual *de minimis* thresholds. The results of the analysis are presented in **Appendix C** and summarized in **Table 3** and **Table 4** below. The results demonstrate that the project related emissions increase would be less than applicable *de minimis* thresholds under both build scenarios.

³⁹ One LTO cycle consists of two aircraft operations per day--one arrival and one departure.

⁴⁰ Two LTO cycles consist of four aircraft operations—two arrivals and two departures.

Table 3: Operations Phase Emissions Increase (Build Year Plus 5 Years)

Emissions Sources	Annual Emissions by Pollutant (tons/year)					
	NOX	VOC	PM2.5	PM10	CO	SOX
<i>Aircraft LTOs</i>	4.49	0.05	0.02	0.02	0.57	0.29
<i>Aircraft Taxi</i>	0.95	0.12	0.02	0.02	1.56	0.21
<i>Aircraft GSE</i>	0.09	0.03	0.01	0.01	0.73	0.00
<i>Aircraft APU</i>	0.15	0.01	0.01	0.01	0.07	0.02
<i>On-road Vehicles</i>	18.25	0.62	0.19	0.32	10.95	0.02
Total	23.93	0.83	0.25	0.38	13.88	0.53
<i>De minimis Threshold</i>	100	50	100	N/A	N/A	N/A
Exceeds <i>De minimis?</i>	No	No	No	--	--	--

N/A: De minimis thresholds do not apply to pollutant concentrations that are in attainment.
 Source: AECOM analysis (see **Appendix C**).

Table 4: Operations Phase Emissions Increase (Build Year Plus 10 Years)

Emissions Sources	Annual Emissions by Pollutant (tons/year)					
	NOX	VOC	PM2.5	PM10	CO	SOX
<i>Aircraft LTOs</i>	13.37	0.11	0.05	0.05	1.14	0.77
<i>Aircraft Taxi</i>	1.91	0.25	0.04	0.04	3.09	0.41
<i>Aircraft GSE</i>	0.26	0.09	0.01	0.02	2.01	0.00
<i>Aircraft APU</i>	0.40	0.02	0.04	0.04	0.18	0.04
<i>On-road Vehicles</i>	32.85	1.02	0.28	0.54	18.25	0.04
Total	48.79	1.50	0.43	0.69	24.67	1.27
<i>De minimis Threshold</i>	100	50	100	N/A	N/A	N/A
Exceeds <i>De minimis?</i>	No	No	No	--	--	--

N/A: De minimis thresholds do not apply to pollutant concentrations that are in attainment.
 Source: AECOM analysis (see **Appendix C**).

4.1.3. Significance Determination

Exhibit 4-1 of FAA Order 1050.1F provides the FAA’s significance threshold for air quality:

“The action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the Environmental Protection Agency under the Clean Air Act, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.”

Under the No Action Alternative, no emissions increase would occur. Under the Proposed Action, the net increase in construction emissions, and operations emissions, are *de minimis*. Accordingly, it can be concluded that the Proposed Action and the No Action Alternative would not cause or contribute to new violations of the NAAQS, increase the frequency or worsen existing violations of the NAAQS, or delay attainment of the NAAQS. Therefore, the Proposed Action and the No Action Alternative would not result in significant adverse impacts on air quality. No further analysis is required for Clean Air Act or NEPA purposes.

4.1.4. Mitigation

The General Conformity Applicability Analysis demonstrated that the Proposed Action would not result in a significant adverse impact on air quality, therefore, no mitigation measures are necessary to avoid a significance determination. Nevertheless, the following best management practices (BMPs) are proposed to reduce, minimize, and avoid emissions associated with the proposed project. During the construction period, contractors would be required to implement the following BMP to reduce airborne pollutants generated by diesel powered vehicles and equipment:

- Use ultra-low sulfur diesel fuel in all diesel-powered construction equipment.

Contractors would also be required to implement the following BMPs to reduce fugitive dust emissions:

- Use, where possible, of water or chemicals for control of dust in construction operations such as grading of roads or the clearing of land
- Application of asphalt, oil, water or suitable chemicals on dirt roads, material stockpiles and other surfaces which may give rise to airborne dusts, and
- Prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means.

After construction, the following BMPs may be implemented but would not be required:

- Implement single or reduced engine taxiing to reduce aircraft emissions
- Provide 400 Hz power and preconditioned air at gates to minimize or eliminate the use of auxiliary power units when an aircraft is parked, and
- Use alternative fuel (such as natural gas) or electric vehicles or equipment where practical.

4.2. Biological Resources

4.2.1. Existing Conditions

The project area consists of upland grassland, various pavements including taxiways, aircraft parking apron, and vehicle service roads, and the airport maintenance building. The built areas are non-habitat and do not support plant or animal biodiversity. The grassed areas are actively managed and mowed on a regular basis to limit wildlife attractants. No woodlands or forested areas are present. Scattered stands of tall shrubs and underbrush provide foraging habitat for common species of songbirds and small mammals. No water resources are present within or adjacent to the project site. In general, the high level of human activity limits wildlife usage to those species which can habituate to these levels of disturbance.

4.2.2. Agency Consultation

- The Pennsylvania Department of Conservation and Natural Resources (PA DCNR) PA Natural Diversity Inventory (PNDI) database was used as a screening tool to ascertain any known records for threatened or endangered species within a one-mile radius around the proposed project site as determined by the PNDI form. The results indicate “no known impact” for state listed species under the jurisdiction of the PA Game Commission (PAG), PA Fish and Boat Commission (PAFB) and the PA DCNR. No further coordination is required with these jurisdictional agencies. The PNDI receipt also documents that there are no impacts anticipated on federally listed or proposed species. Because no federally

protected species are present, no further consultation/coordination under the Endangered Species Act⁴¹ is required. A copy of the PNDI receipt is included in **Appendix D**.

4.2.3. Impact Analysis

Under the Proposed Action, approximately 44 acres of Urban land complex would be redeveloped, resulting in both short-term and long-term changes to land use and cover types that provide only marginal habitat value for locally common species of vegetation and wildlife.

Short-term and temporary impacts associated with habitat degradation during the construction period would be caused by movement and noise of construction vehicles and equipment that disrupt and/or displace wildlife in vegetated areas within and around the construction site. Total earth disturbance including grading, drainage, and stormwater management would be up to 80 acres. After construction, habitat value would improve as the site is restored and the vegetation reestablishes and matures over time, allowing displaced wildlife to either return to the project site or reestablish nearby. Long term impacts include the permanent loss of approximately 15 acres of man-dominated, upland vegetation that supports only a limited variety and number of common wildlife species. Given the urban nature of the surroundings, the net loss of terrestrial habitat would not result in a substantial loss, reduction, degradation, disturbance, or fragmentation of native species habitats or populations. Under the No Action Alternative, the Proposed Action would not be implemented, no development impacts would occur, and the project area would remain unchanged for the foreseeable future.

4.2.4. Significance Determination

Exhibit 4-1 of FAA Order 1050.1F provides the FAA's significance threshold for biotic resources. A significant impact would occur when:

The U.S. Fish and Wildlife Service or the National Marine Fisheries Service determines that the action would be likely to jeopardize the continued existence of a Federally listed threatened or endangered species or would result in the destruction or adverse modification of federally designated critical habitat.

Because no such species or habitat occur near the project area, the Proposed Action and No Action Alternative would not cause a significant impact on biological resources.⁴²

4.2.5. Mitigation Measures

The Proposed Action would be designed, built, and operated in compliance with FAA AC 150/5200-33C-*Hazardous Wildlife Attractants On or Near Airports*. In addition, the following BMPs are proposed to reduce the potential for effects on biological resources during the construction period:

- Use erosion control measures, consistent with NPDES permit requirements, to protect plants and wildlife in undisturbed areas, and

⁴¹ 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.

⁴² The FAA has not established a significance threshold for non-listed species. However, Exhibit 4-1 of FAA Order 1050.1F provides additional factors to consider in evaluating the context and intensity of potential environmental impacts for biological resources. Those factors are not present at ABE and do not have the potential to occur. No further evaluation is recommended.

- Landscape restoration to reconstitute existing habitat while minimizing wildlife attractants.

4.3. Climate

Although there are no Federal standards or significance thresholds for aviation-related greenhouse gas (GHG) emissions, it is well established that GHG emissions can affect climate. The Council on Environmental Quality (CEQ) has indicated that climate should be considered in NEPA analysis.⁴³ The following section describes the potential incremental change in GHG emissions that would result from the Proposed Action compared to the No Action Alternative for the same timeframe and discusses the context for interpreting and understanding the potential changes.

4.3.1. Existing Conditions

A Lehigh Valley Gas Assessment⁴⁴ shows that the Region is emitting slightly less than 10 million metric tons of carbon dioxide equivalent (CO₂e) of heat-trapping gases annually.⁴⁵ Using a model set by the International Council for Local Environmental Initiatives (ICLEI), the assessment shows that 14.6 metric tons of CO₂e is released for every resident in the Region. Of the 9.86 metric tons of CO₂e released overall, more than 60 percent come from the Industrial Electricity & Natural Gas, and Transportation & Mobile Sources sectors. Those figures suggest the Lehigh Valley emits about 3.7 percent of Pennsylvania's total greenhouse gas emissions.

4.3.2. Impact Analysis

During the construction period, on-road vehicles and non-road equipment would increase GHG emissions. Therefore, GHG emissions were quantified for three construction years and the methodologies used to estimate GHG emissions are presented in **Appendix C**. The annual construction GHG emissions in terms of CO₂e are presented in **Table 5** below. These emissions would be short-term in nature, temporary, and would diminish as the project nears completion.

After construction, GHG emissions from additional aircraft and on-road vehicle operations would also increase under the Proposed Action. The methodologies and modeling tools used for quantifying GHG emissions for two future year scenarios are detailed in **Appendix C**. The estimated operational GHG emissions in terms of CO₂e in unit of metric tons are also listed **Table 5**.

⁴³ After the FAA initiated the NEPA process for this EA project, CEQ issued *National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change* (January 9, 2023), which updates CEQ's 2016 guidance. FAA has indicated that NEPA projects that are already underway do not need to be revised to meet the 2023 guidance but should still meet the previous guidance cited in FAA's 1050.1F Desk Reference.

⁴⁴ Lehigh Valley Planning Commission (2023).

⁴⁵ "Carbon dioxide equivalent" or "CO₂e" is a term for describing different greenhouse gases in a common unit. For any quantity and type of greenhouse gas, CO₂e signifies the amount of CO₂ which would have the equivalent global warming impact.

Table 5: Estimated CO₂e Emissions (metric tons per year) and Comparisons with County Inventory

Phase	Year	Project CO ₂ e	Bi-County Level CO ₂ e	Project CO ₂ e as % of Bi-County Level Area
Construction	1	99.38	9,924,247	0.001%
	2	977.42		0.010%
	3	843.02		0.009%
Operations	Build Year Plus 5 Years	6,573.53		0.066%
	Build Year Plus 10 Years	13,454.90		0.136%

Notes: County Level GHG Inventory Data: <https://awsedap.epa.gov/public/single/?appid=20230c40-026d-494e-903f-3f112761a208&sheet=5d3fdda7-14bc-4284-a9bb-cfd856b9348d&opt=ctxmenu,cursel>

Source: AECOM

To understand the potential contribution of GHG emissions caused by the Proposed Action, the project induced GHG emissions increases resulting from construction and operation of the Proposed Action were compared to the GHG emissions inventory for Lehigh and Northampton counties, where ABE is located. In 2020, Lehigh and Northampton Counties generated 2,304,540 and 7,619,707 metric tons of CO₂e, respectively. Using each County’s metric tons of CO₂e as a representative annual quantity (or baseline), the bi-county level inventory equates to 9,924,247 metric tons of CO₂e. As shown in **Table 5** above, CO₂e generated by the busiest construction year (2026) and operational year (2033) would account for a very small percentage (~1/100th and 14/100th of 1 percent, respectively) of the bi-county level CO₂e inventory. This information is provided for information purposes only, as there are no Federal standards or FAA thresholds established for comparison.

Under the No Action Alternative, there would be no project related GHG emissions. Current levels of GHG emissions associated with the ongoing cargo airline operation at Cargo Building 2 would remain approximately the same in 2028 and 2033, assuming this facility continues to operate at or near full capacity.

4.3.3. Significance Determination

The FAA has not established a significance threshold for climate impacts, nor has the FAA identified specific factors to consider in making a significance determination for GHG emissions in FAA Order 1050.1F. Therefore, no significant climate impacts would occur under the Proposed Action and No Action Alternative.

4.3.4. Mitigation Measures

Although no mitigation measures are required, there are areas within the scope of the proposed project where such emissions could be reduced. Based on the air quality analysis discussed in **Section 4.2**, GHG emissions reduction could come from the following measures available to reduce fossil fuel consumption:

- Implementing single or reduced engine taxiing to reduce emissions
- Providing 400 Hz power and preconditioned air at gates to minimize or eliminate the use of auxiliary power units when an aircraft is parked
- Using alternative fuel (such as natural gas) or electric vehicles or equipment where practical.

The Proposed Action is still in early phases of the development process, and no commitments have been made with potential operators. Therefore, no mitigation measures are proposed.

4.4. Coastal Resources

Pennsylvania has two coastal areas—77 miles of shoreline along Lake Erie and 112 miles of coastline along the Delaware Estuary. Because no coastal resources are present, no significant impact to coastal resources would occur under the Proposed Action and No Action Alternative.

4.5. Section 4(f) Resources

According to Pennsylvania Natural Heritage Program mapping, there are no public lands located on or adjacent to the project site. The nearest mapped Section 4(f) resource is Chestnut Grove Park. This public park/recreation area is owned and operated by Hanover Township and is located approximately one mile east of the project site. No direct or indirect environmental impacts on the Chestnut Grove are identified in this EA document. No cultural resources are present that would be considered Section 4(f) resources. Therefore, no significant impact to Section 4(f) resources would occur under the Proposed Action and No Action Alternative.

4.6. Farmlands

The Proposed Action does not involve the acquisition or use of farmland. According to the Natural Resource Conservation Service Web Soil Survey mapping, soils within the project area's limit of disturbance are classified as Urban land (see Appendix E). Urban land is not prime, unique, state, or locally important farmland soil. Because no farmland soils are present, the Proposed Action and No Action Alternative would not cause or contribute to a significant impact on farmland.

4.7. Hazardous Materials, Solid Waste, and Pollution Prevention

4.7.1. Existing Conditions

Environmental Data Resources, Inc (EDR) conducted a search of available environmental records to determine the potential for encountering hazardous waste during construction (see **Appendix F**). According to the EDR report, no federal or state listed cleanup actions are associated with the proposed project site, and no spills, releases or other reportable events are recorded for this location. Underground fuel tanks are associated with the existing airport maintenance facility adjacent to the proposed site, but the tanks would not be affected by the Proposed Action.

4.7.2. Impact Analysis

Hazardous Materials and Waste

No hazardous waste sites or soils contamination are known to exist where the proposed construction activities would occur. If construction-related activities result in the discovery of previously unknown hazardous substances, LNAA would be responsible for removing and disposing of contaminated media in accordance with state and local regulations for hazardous waste management.

Construction and operation of the Proposed Action would involve the use, transfer, handling, storage, and disposal of regulated hazardous materials and industrial wastes. During the construction phase, contractor staging areas would be located at various locations within the project site. The staging areas may include portable above ground storage tanks (ASTs) for fuel storage, as well as lubricants and solvents typically used for equipment maintenance. The general contractor would be required to develop a Spill Prevention, Control, and Countermeasures (SPCC) Plan to identify precautions, training requirements, and response measures that would be taken to prevent and contain accidental releases of hazardous materials and for the proper storage and disposal of residual wastes. After construction, the Proposed Action would involve the use of regulated substances (such as batteries, fuel, petroleum, oils, lubricants, solvents, degreasers, etc.) that are typically associated with the routine operation of an air cargo facility including building maintenance and equipment repairs.

The Resource Conservation and Recovery Act (RCRA) hazardous waste permitting program ensures the safe management of hazardous wastes. Under this program, EPA establishes requirements regarding the treatment, storage, and disposal of hazardous wastes. If a RCRA permit is required, the proposed North Cargo Facility is likely to be classified as either a Small, or Very Small, Quantify Generator.⁴⁶ The cargo airline tenant(s) would be responsible for the proper use, management, and disposal of all hazardous substances and wastes, and for compliance with applicable permit requirements including Best Management Practices (BMPs). No difficulties are expected to be encountered during the process to obtain the appropriate RCRA permit, if required.

The Proposed Action includes allowance to construct a supplemental above-ground fuel storage facility (tank farm) adjacent to the proposed project site. As described in **Section 1.3.2**, the tank farm size, layout, and operation would be similar to ABE's existing tank farm on the south side of the airport, and it would be designed for jet fuel only (no 100 Low Lead is proposed). The tank farm would be a commercial, self-contained, modular system consisting of aboveground tanks, pumps, valves, piping, and appurtenances. Fuel storage tanks would be supplied/refilled by commercial, over-the-road tanker trucks, and the fuel would be dispensed by on-airport aviation fuel trucks used specifically to refuel airline passenger and cargo jets parked on the terminal apron and the cargo apron, respectively. No underground fuel storage, transfer, or distribution system, or hydrant fueling operations are proposed. Any tank farm that stores aviation fuel must comply with the following storage and dispensing requirements: AC 150/5230-4B⁴⁷ and NFPA 407.⁴⁸ It is also noted that the FAA uses the standards contained in NFPA 407 as the agency's standard for the storage and delivery of aviation fuel in an airport environment. In addition, the proposed tank farm would be permitted, regulated, and operated in accordance with Pennsylvania's Storage Tank Program.⁴⁹ This program includes requirements for preparing and maintaining a Spill Prevention and Response Plan (SPRP).⁵⁰ The SPRP lists and describes BMPs and control measures available to reduce the

⁴⁶ EPA defines three categories of hazardous waste generators based upon the quantity of hazardous waste they generate per month: (1) Very small quantity generators (VSQGs), which generate less than 100 kilograms (kg) or 220 pounds (lbs) per month; (2) Small quantity generators (SQGs), which generate between 100 and 1,000 kg (220 and 2,200 lbs) per month; and (3) Large quantity generators (LQGs), which generate more than 1,000 kg (2,200 lbs) per month.

⁴⁷ This FAA advisory circular contains specifications and guidance for the storage, handling, and dispensing of aviation fuel on airports. Additionally, the AC provides standards and guidance for the training of personnel who conduct these activities.

⁴⁸ NFPA 407, *Standard for Aircraft Fuel Servicing*, outlines vital safety requirements for the equipment, procedures, and installations related to fuel servicing of aircraft.

⁴⁹ Pennsylvania Storage Tank and Spill Prevention Act, P.L. 169, No 32 and implementing rules set forth under the provisions of Pennsylvania's Storage Tank and Spill Prevention Program, PA Code Chapter 245.

⁵⁰ Pennsylvania Department of Environmental Protection, *Guidelines for the Development and Implementation of Environmental Emergency Response Plans*. Document ID 400-2200-001 (2001).

potential for a leak or spill to occur, and countermeasures to minimize potential risks to human health and the environment if an leak or spill were to occur.

Compliance with federal, state, and local requirements for hazardous materials and waste including BMPs and control measures provide adequate assurance that potential risks to human health and the environment would be managed effectively. No adverse impacts are anticipated. No hazardous materials or waste impacts would occur under the No Action Alternative.

Solid Waste and Pollution Prevention

Construction-generated debris and non-hazardous solid waste disposal requirements include site clearing and grubbing and removing existing pavements for foundation work related to construction of the cargo building and the aircraft parking apron. Clearing is defined as removing and disposing of all unwanted surface material, such as trees, brush, grass, weeds, downed trees, and other material. Grubbing is defined as removing and disposing of all unwanted vegetative matter from underground, such as stumps, roots, buried logs, and other debris. Pavement demolition consists primarily of removing the existing transient aircraft parking apron (asphalt) that would be replaced by proposed cargo aircraft parking apron (concrete). Other common wastes generated from construction include gypsum board, cardboard, metal, and wood. Construction wastes not diverted, recycled, or re-used would be transported to and disposed of in local permitted construction/demolition waste facilities. After construction, project-induced municipal solid waste (MSW) would not be appreciably different than existing conditions and commensurate with a typical warehouse-type building. The building tenant(s) would be responsible for using a licensed contractor/hauler to provide regularly scheduled trash pick-ups and proper disposal. The contractor would analyze the anticipated waste stream and determine the appropriate mix of commercial recycling services vs waste disposal in accordance with federal, state, and local regulations and applicable permit requirements.

Overall, there would be a temporary increase in solid waste disposal requirements during the construction period followed by a marginal increase in solid waste collection and disposal associated with the operation the Proposed Action. Neither the construction nor the operation of the proposed project would generate unusual types or inordinate amounts of solid waste. Airport construction projects do not normally generate significant amounts of perishable or non-perishable waste, other than wastes associated with large scale construction projects and/or substantial demolition work. Pollution prevention measures are available to minimize solid waste that cannot be avoided. No solid waste impacts would occur under the No Action Alternative.

4.7.3. Significance Determination

The FAA has not established a significance threshold for hazardous materials, solid waste, or pollution prevention in FAA Order 1050.1F. However, the FAA has identified the following factors to consider in evaluating the context and intensity of potential environmental impacts (see Exhibit 4-1 of FAA Order 1050.1F). Accordingly, the Proposed Action would not:

- Violate applicable Federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management.
- Involve a contaminated site (including but not limited to a site listed on the National Priorities List).
- Produce an appreciably different quantity or type of hazardous waste.

- Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity.
- Adversely affect human health and the environment.

Therefore, the Proposed Action and the No Action Alternative would not have a significant adverse impact on hazardous materials, solid waste, or pollution prevention.

4.7.4. Mitigation

All activities associated with the Proposed Action would comply with Federal, state, and local regulations and applicable permit requirements for hazardous materials and waste, including:

- A Spill Prevention, Control, and Countermeasures Plan for all construction activities that includes BMPs and control measures to reduce the potential for a leak or spill to occur, and countermeasures to minimize potential risks to human health and the environment if a leak or spill were to occur.
- An appropriate Resource Recovery and Conservation Act permit that includes hazardous waste BMPs that generally involve procedures for good housekeeping, such as: do not mix non-hazardous and hazardous wastes; do not mix different hazardous wastes; and safely storing hazardous substances and wastes in secure areas and inspecting storage areas and containers often for leaks or spills.
- A Spill Prevention and Response Plan specifically for the fuel farm that includes BMPs and control measures available to reduce the potential for a leak or spill to occur, and countermeasures to minimize potential risks to human health and the environment if a leak or spill were to occur.

No adverse impacts are identified for solid waste management or pollution prevention; therefore, no mitigation measures are proposed.

BMPs to minimize solid waste production for building design and construction planning may be considered during the project's design. For example, designing out waste by selecting standard component sizes makes the construction stage more time efficient and cost effective; using dimensional planning and other material efficiency strategies to reduce the amount of building materials needed and cut construction costs; and, establishing recycling systems onsite and making sure that both contractors and subcontractors receive instructions on sorting their own waste. Source separated recyclable materials are not wastes. This includes cardboard, glass, metals, paper, and plastics.

4.8. Historical, Architectural, Archeological or Cultural Properties

4.8.1. Existing Conditions

ABE, originally known as Allentown-Bethlehem-Easton Airport, was previously determined to be ineligible for the National Register of Historic Places as a historic district on December 19, 2014 (PA-SHARE Project # 2002PR17230). There are no existing buildings or structures located on the project site, and no historic properties have been recorded within visual range.⁵¹ In addition, the project site consists of previously

⁵¹ A site visit was conducted on July 7, 2022, by an AECOM architectural historian to survey, photograph, and document the project area (see **Appendix G**).

disturbed soils, no known archaeological sites are mapped within or adjacent to the project site, and the project footprint is reported to have very low potential to contain unrecorded archaeological resources.⁵²

4.8.2. Agency Coordination

In a memo dated July 21, 2022, a Request to Initiate Consultation form was sent to the Pennsylvania Historical and Museum Commission/State Historic Preservation (PHMC) Office via Pennsylvania's Historic and Archaeological Resource Exchange (PA-SHARE). In addition to the form, the package included a project location map showing the area of potential effect (APE), a thorough project description, current photographs of the project area. In consultation with PHMC, the FAA reviewed the information and determined that the proposed project does not have the potential to cause effects on historic properties. See **Appendix G** for PHMC/SHPO Correspondence. No further analysis or agency correspondence is required.

4.8.3. Impact Analysis

Under the Proposed Action, a new air cargo facility would be constructed and operated on the north side of the Airport. No historic properties are present within the APE. If construction activities result in the discovery of historic resources or artifacts, then those construction activities would be suspended until FAA, in consultation with the LNAA and PHMC, determines what action must be taken to address the potential for adverse effects. The No-Action Alternative would have no impact on historic properties because construction activities would occur.

4.8.4. Significance Determination

The FAA has not established a significance threshold for this impact category; however, the FAA has identified a factor to consider when evaluating the context and intensity of potential environmental impacts for historical, architectural, archeological, and cultural resources (see Exhibit 4-1 of FAA Order 1050.1F). This factor includes situations in which the proposed action or alternative(s) would result in a finding of Adverse Effect through the Section 106 consultation process. The Proposed Action has not resulted in a Finding of Adverse Effect through the Section 106 consultation process. The No-Action Alternative would have no effect on historic resources because the proposed project would not be implemented. Therefore, no significant impact to historic resources would occur under the Proposed Action and No Action Alternative.

4.8.5. Mitigation Measures

No historic resources are present; therefore, no mitigation measures are proposed.

⁵² A Pennsylvania Historic & Archaeological Resource Exchange (PA-SHARE) database search was conducted by an AECOM archeologist to determine the presence/absence of mapped archeological sites and potential sensitivity to encounter unmapped sites (see **Appendix G**).

4.9. Land Use

4.9.1. Existing Conditions

The Proposed Action occurs on the north side of ABE in Hanover Township in Lehigh County. According to Hanover Township Zoning Map⁵³, the Proposed Action is primarily located on existing Airport property that is zoned Airport Industrial and designated for future aeronautical use. In addition, the proposed improvements to Willow Brook Road S for the access road affect a medium density residential area with two occupied residences between the Airport's property boundary and the south side of Race Street. The proposed access roadway also affects the existing PENNDOT right-of-way where the signalized intersection of Race Street and Willow Brook Road would be improved.

4.9.2. Impact Analysis

Under the Proposed Action, a 44-acre area on the north side of the Airport would be developed and operated as an air cargo facility, which is a more intensive use of the site than it is today. This would have the effect of increasing traffic volume along Race Street and Willow Brook Road as discussed in **Section 4.13** and causing off-airport visual effects including light emissions to occur as discussed in **Section 4.14**. These are minor impacts that would not cause or contribute to a significant adverse impact on land uses adjacent to the Airport. No land acquisition is required, no businesses or residences would be relocated, no natural resource areas would be affected, and no zoning changes are necessary to implement the Proposed Action.⁵⁴ No other impacts have been identified that would have land use ramifications.

4.9.3. Consistency with Local Plans and Zoning for Compatible Use

The Proposed Action is located in Hanover Township (Lehigh County). The *River Central Multi-Municipal Comprehensive Plan* (the Plan) includes the Townships of Hanover (Lehigh County) and East Allen, and the Boroughs of Catasauqua, Northampton, and North Catasauqua. Objective 2.4 in the Plan addresses the need to accommodate passenger and freight air travel as follows:

- Engage Lehigh and Northampton Airport Authority on strategic planning to allow the safe and efficient growth of air cargo for the Lehigh Valley.
- Create and implement a compatible airport surface transportation access network and community plan.
- Utilize strategies in the *Lehigh Valley International Airport Area Freight Study* to manage increasing freight logistics movements.
- Review and update zoning ordinances to ensure appropriate Airport Zoning and compatible land uses.

No conflicts or inconsistencies have been identified between the Proposed Action and the objectives of the Plan. The No Action Alternative is not consistent with the objectives of the Plan.

In addition, LNAA assures that it has taken and will continue to take appropriate action, including the adoption of zoning laws, to restrict the use of land adjacent to or in the immediate vicinity of ABE to

⁵³ [Hanover Township, Lehigh County, Zoning Map](#).

⁵⁴ According to the [Hanover Township, Lehigh County, Zoning Map](#), eight parcels located on Airport Property along the south side of Race Street near Willow Brook Road are currently zoned Medium Density Residential. Except for the access roadway, the proposed North Cargo Facility avoids those parcels.

activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft.⁵⁵ This assurance is specifically related to existing and planned land uses in the vicinity of ABE and is written into the *River Central Multi-Municipal Comprehensive Plan* and the Lehigh Valley Planning Commissions' long range transportation plan—*FutureLV: The Regional Plan*.

4.9.4. Avoidance of Wildlife Attractants

The Proposed Action is not located near, nor would it create, a wildlife hazard as defined by the FAA.⁵⁶ Stormwater management facilities required for the Proposed Action would be designed to comply with FAA standards to avoid or minimize wildlife hazards.

4.9.5. Significance Determination

The FAA has not established a significance threshold for Land Use in FAA Order 1050.1F nor has the FAA provided specific factors to consider in making a significance determination for land use. The determination that significant impacts exist in the land use impact category is normally dependent on the significance of other impact categories. The Proposed Action would not cause or contribute to potentially significant land use impacts in any other impact category analyzed in this EA. The Proposed Action would not create a wildlife hazard, and the Proposed Action would not conflict with local laws, ordinances, or comprehensive or plans. Therefore, it can be concluded that no significant land use impact would occur under the Proposed Action or the No Action Alternative.

4.9.6. Mitigation

No potentially significant adverse impacts are anticipated; therefore, no mitigation measures are proposed.

4.10. Natural Resources and Energy Supply

4.10.1. Existing Conditions

ABE is in an urbanized area with ready access to local and regional suppliers of energy and natural resources that would be required to construct and operate the proposed project.

4.10.2. Impact Analysis

During the construction phase, the Proposed Action would consume natural resources used for building materials such as sand, gravel, steel, and wood, as well as energy (diesel and gasoline) for construction equipment and vehicles. After construction, the Proposed Action would require electricity for power, natural gas for heating and cooling, water for domestic use and fire protection, and fuel for aircraft, vehicles, and ground service equipment.

⁵⁵ 49 USC § 47107 - Project grant application approval conditioned on assurances about airport operations (paragraph (a)(10)). According to [FutureLV, The Regional Plan](#), Goal 2.2 identifies the protection of existing and future Lehigh Valley International Airport runway approaches. According to the [River Central Multi-Municipal Comprehensive Plan](#), Goal 2.4 includes reviewing and updating zoning ordinances to ensure appropriate Airport Zoning and compatible land uses (p. 67 and p. 128).

⁵⁶ FAA Advisory Circular 150/5200-33, "Wildlife Hazards On and Near Airports."

The Proposed Action would not require any scarce or unusual building materials, or other consumable resources known to be in short supply. The project site is in an urbanized area. All utilities are readily available on site or nearby. No upstream utility improvements or additional capacity would be needed to accommodate the Proposed Action. The demand for electricity, natural gas, and water would not exceed the supplies available from public utilities.

Under the Proposed Action, there would be a temporary increase in fuel consumption during the construction period, the effects of which would diminish with completion of the project and restoration of the site. After construction, there would be minor increases in jet fuel and gasoline consumption attributable to the increase in aircraft operations, truck trips, employee trips, and GSE activity, resulting from the addition of two inbound B767 cargo flights per day. The incremental increase in fuel consumed would not exceed the supply available from distributors.⁵⁷ Under the No Action Alternative, the Proposed Action would not be implemented, the proposed projects would not be constructed, and the project induced consumption of energy and natural resources would not occur.

4.10.3. Significance Determination

The FAA has not established a significance threshold for natural resources and energy supply in FAA Order 1050.1F; however, the FAA has identified a factor to consider when evaluating the context and intensity of potential environmental impacts for natural resources and energy supply (see Exhibit 4-1 of FAA Order 1050.1F). This factor includes, but is not limited to, situations in which the proposed action or alternative(s) would have the potential to cause demand to exceed available or future supplies of these resources. Neither the Proposed Action nor the No Action Alternative would not have the potential to cause demand to exceed available or future supplies of these resources. Therefore, no significant impacts are anticipated.

4.10.4. Mitigation Measures

No adverse impacts are anticipated; therefore, no mitigation measures are proposed. However, the potential for minor impacts during the construction period can be reduced, minimized, or avoided by incorporating sustainable construction techniques. Sustainability in construction means building greener by implementing sustainable practices like reducing waste, reducing carbon emissions, conserving energy use, and using recycled or renewable building materials. After construction, sustainable building practices include performing scheduled audits of energy usage to identify areas of potential improvement and testing smart sensors at control points to regularly to keep energy efficiency at optimal levels.

⁵⁷ LNAA (d/b/a Lehigh Valley Aviation Services) is the sole supplier of aviation fuel for all commercial passenger and cargo airline operations at ABE and can attest to the adequate supply of aviation fuel.

4.11. Noise and Compatible Land Use

This section discusses the noise impacts likely to occur on the land uses surrounding the airport. More detailed information, analysis, graphics, and copies of agency correspondence are provided in **Appendix H: Noise Technical Memorandum**.

4.11.1. Noise Modeling Requirements

This analysis considered noise impacts within a general study area (GSA) surrounding the Airport. Three sources of noise were modeled for impacts associated with the implementation of the Proposed Action – noise associated with additional aircraft operations, noise associated with additional roadway traffic, and construction noise.

The FAA's Aviation Environmental Design Tool (AEDT) is the required tool for analyzing aircraft noise. Per FAA Order 1050.1F, aircraft noise is required to be evaluated in terms of the DNL metric. DNL, or Day-Night Average Sound Level, reflects a person's cumulative exposure to sound over a 24-hour period, expressed as the noise level for the average day of the year on the basis of annual aircraft operations. FAA Order 1050.1F further defines that a significant impact would occur if a proposed action results in an increase of 1.5 dB or more in any noise sensitive area at or above the DNL 65 dB noise exposure level when compared to the No Action Alternative for the same timeframe. The Federal Highway Administration's (FHWA) Traffic Noise Model (TNM) is a tool that is used to analyze roadway traffic noise. While it is primarily used for analysis of the effects of highway noise barriers in the FHWA context, TNM offers the ability to evaluate roadway traffic noise against a user-defined network of noise receptors using the FAA's DNL metric. Construction noise is temporary and is evaluated qualitatively to determine if nearby residents would be adversely affected.

4.11.2. Existing Conditions

Aircraft Noise

Both the flight operations and taxiway operations were modeled for this analysis. The airborne segment of operations were developed by processing radar traffic obtained from the Performance Data and Reporting System (PDARS) database. Each flight track includes information such as the time of operation, origin or destination, aircraft type, and runway used. Details on the fleet mix associated with this dataset and additional information on how this data was processed is contained in **Appendix H**. Based on FAA OpsNet data, a total of 83,760 operations were modeled for the year 2022. This resulted in an Average Annual Day (AAD) count of approximately 229 operations at the Airport. The flight operations by runway and time of day are detailed in **Table 6**. This analysis assumes that the existing conditions are also representative of the No Build Alternative.

Table 6: Summary Data – Flight Operations by Runway - Existing (2022) Conditions

Runway	Arrivals	% Day Arrivals	% Night Arrivals	Departures	% Day Departures	% Night Departures	Total
6	13,041	88%	12%	13,402	82%	18%	26,443
13	1,534	78%	22%	702	87%	13%	2,236
24	24,084	92%	8%	24,219	85%	15%	48,303
31	3,988	82%	18%	2,790	89%	11%	6,778
Total	42,647	89%	11%	41,113	85%	15%	83,760

Source: FAA Operations and Performance Data, CountOps Report, retrieved August 2023; prepared by RoVolus, 2023.

Note: Table does not include 73 additional helicopter operations.

Taxiway operations were modeled by building a network of nodes representing taxiways in the study area in the northeast sector of the airport, which is shown in **Figure 6**. The colors of the dots in **Figure 7** correspond to the existing (2022) noise exposure levels with greater than or equal to DNL 65 dB. The dots are placed at population centroids based on the Census blocks from the 2020 U.S. Census. Noise exposure levels are not calculated for Census blocks that did not include any residential population.

Table 7 shows the baseline DNL exposure levels for each of the eleven population centroids. One population centroid includes noise exposure levels exceeding DNL 70 dB (red) while the remainder have exposure levels between DNL 60 and 65 (yellow) and 65 and 70 dB (orange). However, it is important to note that the underlying Census block upon which the red centroid is based partially includes the airport property. Since the centroid represents the center of a Census block, it is located at the center of the airport and reflects noise at that location. As the actual population associated with that centroid does not actually reside on airport grounds, noise exposure for that population is actually lower.

Under Part 150⁵⁸ regulations, all land uses are considered to be compatible with the outdoor noise environment in areas of less than DNL 65 dB. The land use in the immediate vicinity of the GSA primarily consists of commercial and light industrial users, many of which are directly associated with airport activities. However, the DNL 65 dB noise contour for Runway 6/24 does extend into residential land use west of the airport. Additionally, two potentially sensitive receptors (single-family residences) were identified approximately 550 feet west of the targeted intersection, at 1555 Race Street and 1565 Race Street. These residences fall outside the DNL 65 dB noise contour (shown in **Figure 7**). The DNL 65 dB contour covers an area of 887 acres and has 232 residents.

⁵⁸ Title 14 Code of Federal Regulations, Part 150

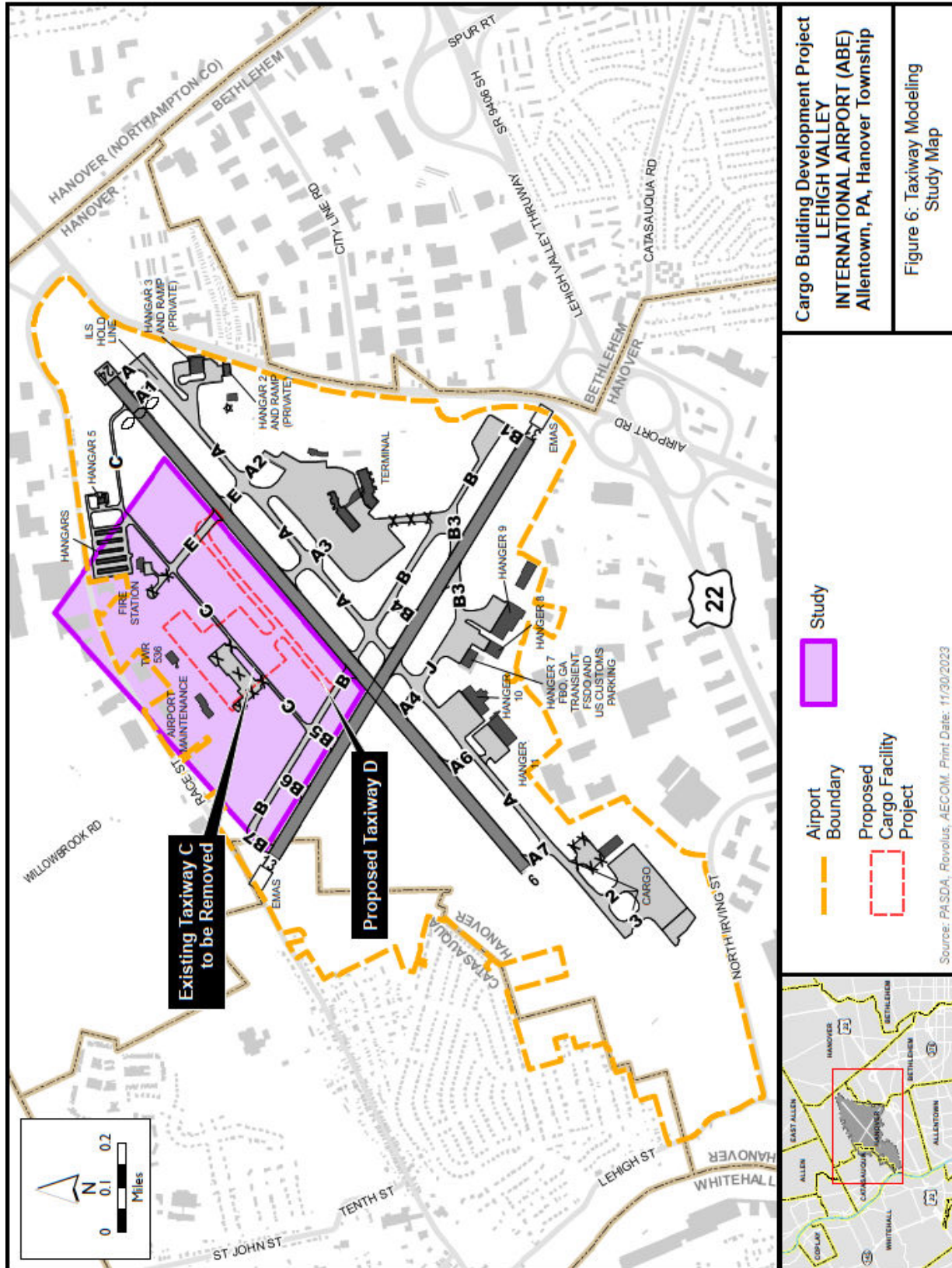


Figure 6: Taxiway Modelling Study Map

Table 7: Population Centroid Aircraft Noise Exposure –Existing (2022) Conditions

Receptor ID	Color	Population	DNL Noise Exposure (dB)
1	Yellow	60	65.00
2	Orange	57	65.58
3	Orange	20	65.16
4	Orange	8	65.32
5	Orange	7	66.44
6	Orange	5	66.93
7	Orange	10	65.82
8	Orange	9	65.98
9	Orange	11	65.62
10	Red	14	78.57
11	Orange	<u>31</u>	65.19
Total		232	--

Notes: Population values in this table represent only the population in the GSA exposed to noise associated with the Airport, not the total GSA population.

Sources: U.S. Census 2020 (population centroid data); prepared by RoVolus, 2023.

Roadway Noise

The Federal Highway Administration’s TNM was used to quantify existing noise from roadway traffic, which includes freight traffic to the nearby FedEx facility north of the Airport. **Table 8** shows the existing DNL roadway noise exposure at the two sensitive receptors located on Race Street.

Table 8: Existing DNL Roadway Noise Exposure – Identified Sensitive Receptors

Sensitive Receptor	dB (DNL)
1555 Race Street	62.63
1565 Race Street	62.33

4.11.3. Impact Analysis

Aircraft Noise

The noise analysis for the Proposed Action reflects additional Boeing 767 operations enabled by the larger cargo facility. This is expected to be two additional daily Boeing 767 operations (one arrival and one departure) five years after construction (2028) and four additional daily Boeing 767 operations (two arrivals and two departures) starting ten years after construction (2033). For the Proposed Action scenarios, the AEDT taxiway node network was modified to reflect changes to the airport taxiway network that would take place as part of the Proposed Action. This includes decommissioning Taxiway C west of Taxiway E and construction of a new taxiway, Taxiway D, south of the proposed cargo facility. Aircraft were assigned updated taxipaths as appropriate to account for differences in how they would reach their runway and parking areas, and B767 operations were added to the Proposed Action taxiway segments.

The noise analysis for the No Action Alternative is based on a no-growth scenario. This is because aircraft traffic for the past several years has remained relative steady, and there are no other projects at ABE that would increase aircraft operations in the foreseeable future. Therefore, the 2028 and 2033 average daily operations and noise contours for the future no build scenario are the same as existing conditions in the 2022 operational year model.

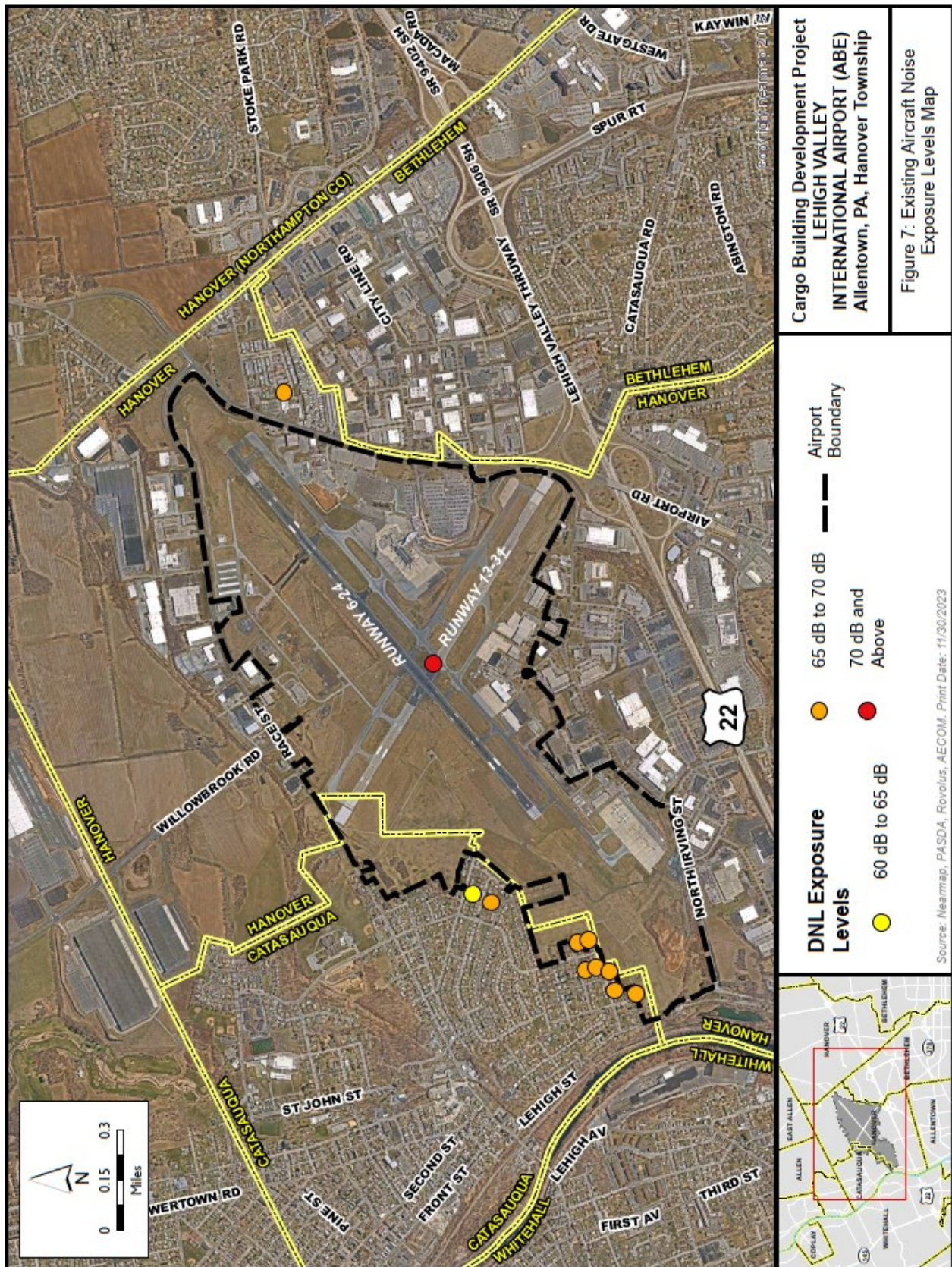


Figure 7: Existing Aircraft Noise Exposure Levels Map

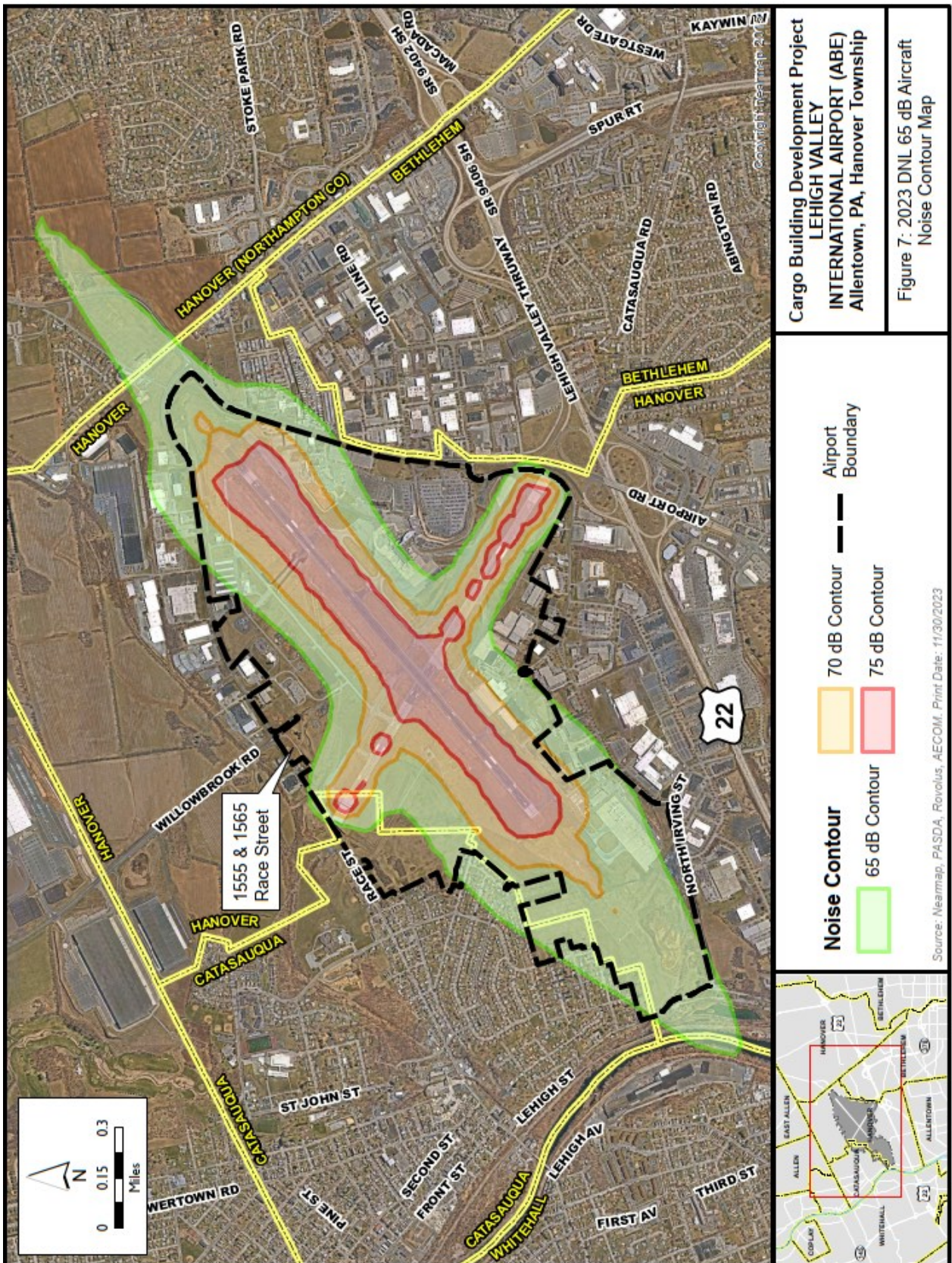


Figure 8: 2023 DNL 65dB Aircraft Noise Contour Map

Aircraft Noise 2028

Figure 9 shows the DNL 65 dB noise contour for the Proposed Action (2028) scenario. Compared to the No Action Alternative there were no significant noise impacts. While the noise contour increases slightly in area to 908 acres, the number of included residents remains the same at 232. The two potentially sensitive receptors at 1555 Race Street and 1565 Race Street remain outside of the DNL 65 dB noise contour, and no individual noise sensitive receptors, such as schools or places of worship, are located within the DNL 65 dB noise contour. Additionally, no residential land uses are included in the DNL 70 dB or higher noise contours.

Aircraft Noise 2033

The Proposed Action (2033) Alternative reflects two additional B767 operations per day in 2033. **Figure 10** shows the DNL 65 dB noise contour for the Proposed Action (2033) Alternative. Compared to the No Action Alternative there were no significant noise impacts. The noise contour increases in area to 938 acres and includes 309 residents. The two potentially sensitive receptors at 1555 Race Street and 1565 Race Street continue to remain outside of the DNL 65 dB noise contour, and no individual noise sensitive receptors, such as schools or places of worship, are located within the DNL 65 dB noise contour. Additionally, no residential land uses are included in the DNL 70 dB or higher noise contours.

Noise Associated with Additional Roadway Traffic

The proposed cargo facility is expected to have a single point of roadway access that will handle most traffic entering and exiting the area, located at the intersection of East Race Street and Willow Brook Road. This intersection is in close proximity to the previously-identified potentially sensitive receptors at 1555 Race Street and 1565 Race Street. While these residences are not within the 65 dB contour and thus are technically compatible with the outdoor noise environment, additional Race Street traffic associated with the Proposed Action was evaluated for the ability to cause potential perceptible noise impacts at these residences.

Peak-hour traffic data was captured for the intersection of Race Street and Willow Brook Road, which is currently a four way stop controlled by a traffic light. Under the Proposed Action, this intersection would experience additional traffic to and from the south as vehicles access the proposed cargo facility. The Proposed Action scenarios were modeled by applying additional traffic associated with the project to the road segments comprising the Race Street and Willow Brook Road intersection. The volume of additional vehicle traffic added was determined by the Transportation Impact Assessment (TIA) conducted for the proposed project.⁵⁹

For the 2028 Proposed Action Alternative, an AAD value of 255 trucks and 325 cars were added to the intersection traffic, while for the 2033 Proposed Action Alternative, this was 510 trucks and 650 cars. The relative difference in DNL values was then measured for significance at the two sensitive receptors at 1555 Race St. and 1565 Race St. Additional details associated with the roadway impact modeling are also located in **Appendix H**.

⁵⁹ Transportation Impact Assessment for the North Cargo Area Development, The Pidcock Company, 2022.

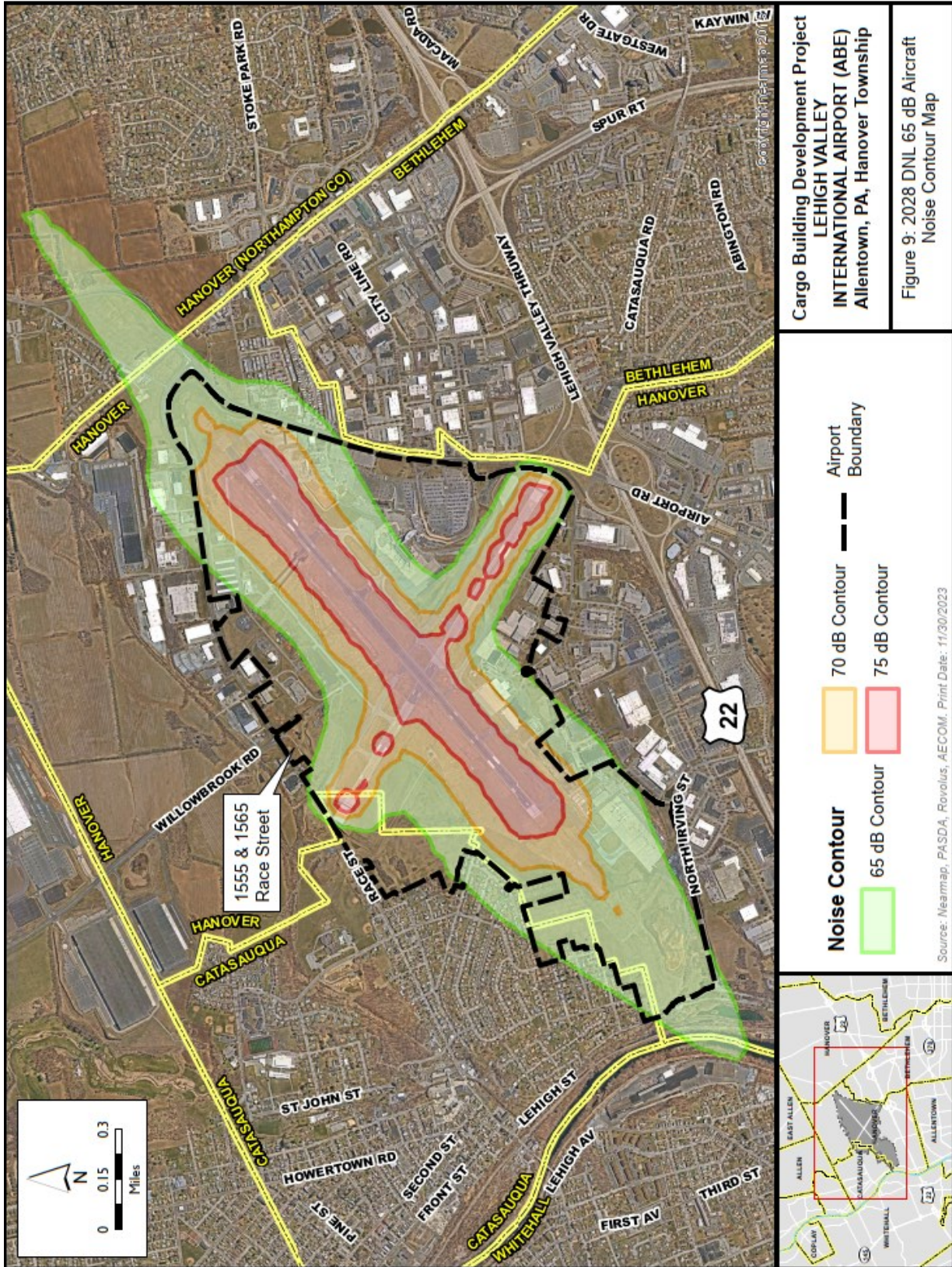


Figure 9: 2028 DNL 65dB Aircraft Noise Contour Map

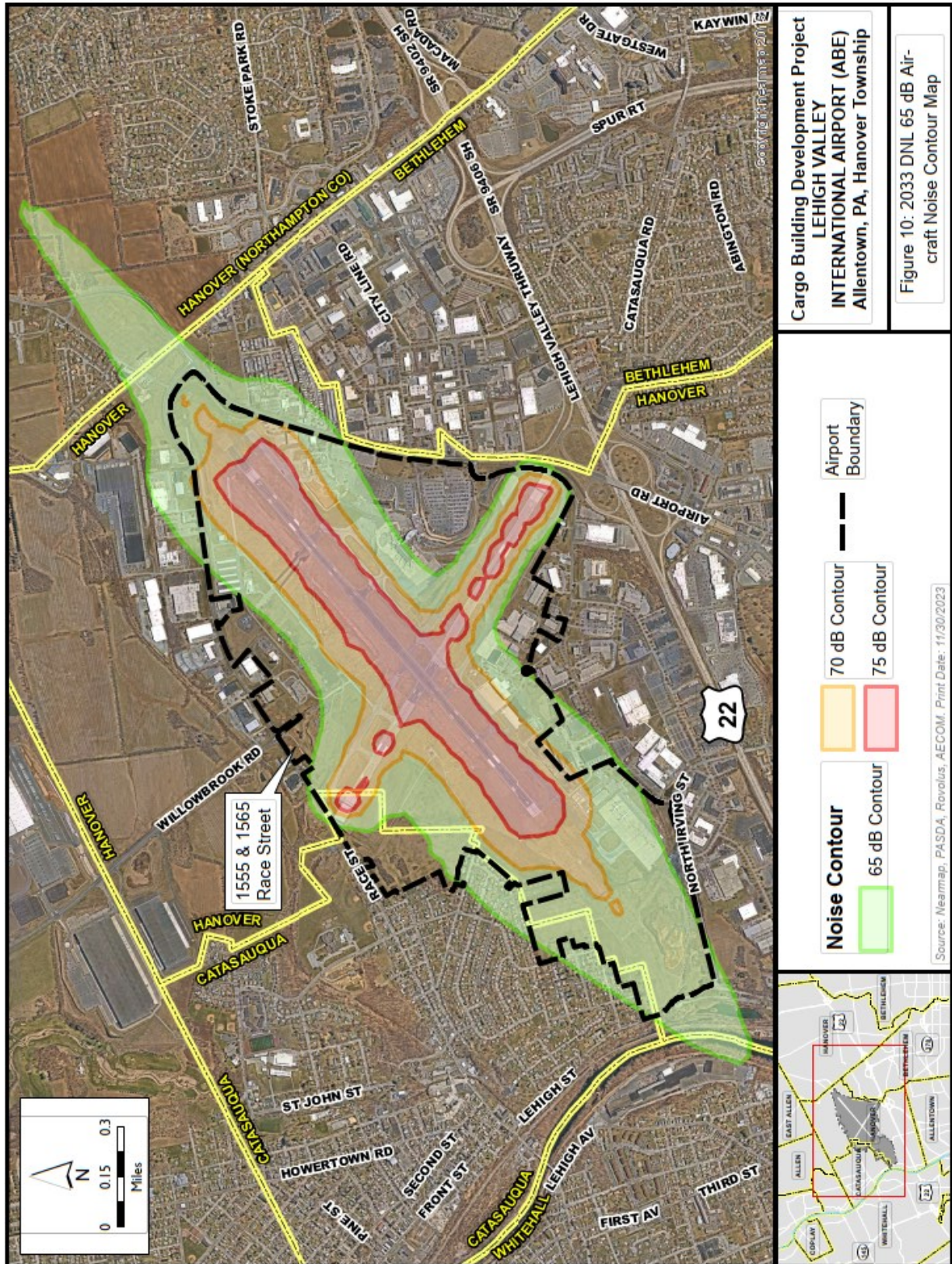


Figure 10: 2033 DNL 65dB Aircraft Noise Contour Map

Roadway Noise 2028

Table 9 shows the 2028 DNL roadway noise exposure at the two sensitive receptors located on Race Street. The Proposed Action is anticipated to add 255 trucks and 325 cars to the AAD traffic for the study intersection. This portion of Race Street is currently zoned as industrial and designed to handle cargo truck operations. The approximately DNL 0.1 dB increase at each site relative to the No Action Alternative does not indicate a noise impact due to additional roadway traffic, as changes in sound pressure levels (SPL) of less than 1 dB are not perceptible to the human ear, except in laboratory settings.⁶⁰

Table 9: DNL Roadway Noise Exposure (2028) – Identified Sensitive Receptors

Sensitive Receptor	dB (DNL)
1555 Race Street	62.72
1565 Race Street	62.45

Roadway Noise 2033

Based on the addition of 510 trucks and 650 cars relative to the existing conditions of AAD traffic for the study intersection. **Table 10** shows the 2033 DNL roadway noise exposure at the two sensitive receptors located on Race Street. The approximately DNL 0.2 dB increase at each site relative to the No Action Alternative does not indicate a perceptible noise impact due to additional roadway traffic.

Table 10: DNL Roadway Noise Exposure (2033) – Identified Sensitive Receptors

Sensitive Receptor	dB (DNL)
1555 Race Street	62.81
1565 Race Street	62.56

Aircraft Noise and Roadway Noise Combined (2028 and 2033)

Aircraft noise and roadway noise were then logarithmically combined for the two sensitive receptors located on Race St. yielding a single noise exposure value for these two noise sources. For the 2028 and 2033 analysis years, this combined noise value was then compared against the existing 2023 combined noise exposure value, which reflects noise associated with the No Action Alternative. **Table 11** and **Table 12** below show the combined noise exposure at each of the sensitive receptors for the 2028 and 2033 Proposed Action Scenarios. Note that the combined noise exposure values are provided for informational purposes only – the FAA does not have a significance threshold for combined aircraft and roadway noise and values should not be compared against regulatory thresholds adopted by FAA for evaluation of changes in aircraft noise associated with agency actions. However, as previously stated, 1dB of SPL change is generally necessary for the human ear to perceive a change in sound level.

⁶⁰ https://www.faa.gov/sites/faa.gov/files/13_SAT_DEA_App_F.pdf

Table 11: Cumulative Aircraft and Roadway Noise Exposure—Identified Sensitive Receptors (2028)*

Sensitive Receptor	Aircraft Noise Exposure – 2028 Proposed Action (dB)	Roadway Noise Exposure – 2028 Proposed Action (dB)	Combined Noise Exposure – 2028 Proposed Action (dB)	Combined Noise Exposure - No Action (dB)	Change (dB)
1555 Race Street	63.38	62.72	66.07	65.88	0.19
1565 Race Street	62.64	62.45	65.55	65.35	0.20

* Provided for informational purposes only – no FAA threshold exists for changes in combined aircraft and roadway noise exposure.

Table 12: Cumulative Aircraft and Roadway Noise Exposure—Identified Sensitive Receptors (2033)*

Sensitive Receptor	Aircraft Noise Exposure – 2033 Proposed Action (dB)	Roadway Noise Exposure – 2033 Proposed Action (dB)	Combined Noise Exposure – 2033 Proposed Action (dB)	Combined Noise Exposure - No Action (dB)	Change (dB)
1555 Race Street	63.67	62.81	66.27	65.88	0.39
1565 Race Street	62.95	62.56	65.77	65.35	0.42

* Provided for informational purposes only – no FAA threshold exists for changes in combined aircraft and roadway noise exposure.

4.11.4. Significance Determination

The FAA’s threshold of significance for noise impact related to an agency action is DNL 1.5 dB for areas that meet or exceed DNL 65 dB upon the completion of the action. While this significance threshold is relevant to noise associated with changes in aircraft operations due to the proposed agency action, roadway noise was also quantitatively evaluated to provide a more comprehensive accounting of noise exposure in the immediate airport environment. The maximum noise increase found when analyzing combined aircraft and roadway noise at the two identified sensitive receptors is approximately DNL 0.4 dB, at 1565 Race Street. When considering aircraft noise alone, the maximum increase is approximately DNL 0.6 dB, also at 1565 Race Street. While only the aircraft noise increase values are critical to the regulatory determination of significance, both the aircraft and combined noise values are clearly below the FAA significance threshold for noise, at a level of impact that is well below the human capacity for perceptibility in changes in noise, where a change of 3 dB is considered “just perceptible” at mid-range noise frequencies.⁶¹ Therefore, it can be determined that the Proposed Action and No Action Alternative would not result in a significant increase in noise.

Construction activities would temporarily increase noise exposure in the immediate vicinity of the proposed project site. Earth moving, pile driving, and pavement removal are the typically the loudest, with some equipment capable of generating noise levels up to 95 dB within close proximity of operation. Distance rapidly decreases construction-related noise levels, and given the North Cargo Area’s primary construction site is well within airport boundaries, area residents are unlikely to experience an increase in noise due to direct construction activities. Additionally, heavy equipment is limited to accessing the site from the east and north, as access is restricted by a low bridge westbound on Race Street from the project

⁶¹ *Fundamentals of acoustics*, Hansen, Colin. January 1951 (accessed October 11, 2023).

site. However, some enabling projects, such as the extension of Willow Brook Road to the south to connect to the North Cargo Area, could cause some increase in noise during active hours.

4.11.5. Mitigation

The potential noise impacts associated with construction, and specifically, the operation of on-site machinery would be temporary and can be reduced using a variety of BMPs. BMPs available for noise associated with construction are optional. They may include, but are not limited to, the following:

- Use of construction timing and staging to minimize construction during night-time and other times of high potential annoyance.
- Maintenance of construction equipment to manufacturers' operating specifications.
- Provide appropriate manufacturer's noise reduction devices for equipment operating on-site.
- Ensure that engine housing doors are kept closed on equipment with internal combustion engines.
- Cover appropriate equipment with noise insulating fabric.
- Operate devices at lower engine speeds to the maximum extent possible.
- Use operational controls, such as limiting engine idling on-site.
- Restrict certain activities (such as blasting) to specific times of day.
- Use quiet or ambient-sensitive back-up alarms on equipment whenever possible.
- Strategically position construction vehicles to minimize operation near sensitive receptors.
- Direct construction vehicles away from receptors when traveling to and from the work site.
- Use noise pathway controls, including noise barriers and enclosures, placed as close as possible to construction sites.

4.12. Socioeconomics, Environmental Justice, and Children's Health and Safety Risks

4.12.1. Existing Conditions

Socioeconomics

The Lehigh Valley is one of the fastest growing areas of northeastern Pennsylvania and covers approximately 726 sq mi. The area has a population of almost 700,000 residents, and with an annual growth of approximately 4,000 residents year over year. Allentown, Bethlehem, and Easton are the region's primary population centers. Much of the region's working population works in the healthcare profession, which is the region's largest and fastest growing employment sector. The unemployment rate in the Lehigh Valley is 5 percent compared to 4.4 percent nationally (2017) and the median income, at roughly \$58,500, is higher than the state and national median. Approximately 80 percent of the adult population are high school graduates and 30 percent have a bachelor's degree.⁶²

Environmental Justice

E.O. 12898 requires Federal agencies to minimize the disproportionate impact of their actions on minority or low-income populations. When evaluating whether a proposed project complies with the Executive Order, two factors need to be considered:

⁶² *Lehigh Valley Planning Commission DATA LV.*

“Whether the project is likely to have adverse human health or environmental impacts on minority or low-income populations (in addition to the total population), and, if so, whether those adverse impacts are disproportionately high on minority or low-income populations.”

Environmental justice (EJ) communities in the vicinity of ABE were identified using the FAA’s Aviation Environmental Design Tool (AEDT). The AEDT contains an Environmental Justice module that is used to analyze a general study area (GSA) at the U.S. Census block group level, defining Census block groups for minority and/or low-income populations as follows:

- A *minority population Census Block Group* is a group having a minority population percentage greater than the average minority population percentage in the region surrounding the airport. Based on the 2020 Census data, the average percentage of minority population residing in the GSA was 25.8 percent. Therefore, every Census block group with a percentage of minority population greater than 25.8 percent was identified as a Census block group of EJ concern.
- A *minority low-income population Census Block Group* is a group having a low-income population percentage greater than the average low-income population percentage in the GSA. Based on the 2020 Poverty Guidelines identified by the Department of Health and Human Services (HHS), the poverty threshold for a household of three persons was set at \$21,720 for the 48 contiguous states, and therefore is applicable to the GSA. For the purposes of identifying low-income population census tracts, the HHS threshold of \$21,720 was used. Based on 2020 Census data, the average percentage of low-income population residing in the GSA was 5.8 percent. Therefore, every Census block group with a percentage of low-income population greater than 5.8 percent is identified as a Census block group of EJ concern.

Section 4.12 in this document identified the 2023 DNL 65 dB noise exposure contour surrounding the runways at ABE. Each Census block group that touches the noise contour is included in this EJ analysis.

Figure 11 depicts the areas of EJ concern located within the general study area. Four Census block groups of EJ concern and one Census block group not of EJ concern were identified within the GSA. Demographics associated with these Census block groups are shown in **Table 13**. Accordingly,

- Block Group 1, Census Tract 57.02 (yellow, exceeds low-income threshold)
- Block Group 1, Census Tract 59.02 (blue, exceeds both minority and low-income thresholds)
- Block Group 1, Census Tract 177.02 (orange, exceeds minority threshold)
- Block Group 2, Census Tract 59.01 (no EJ concerns)
- Block Group 2, Census Tract 177.04 (orange, exceeds minority threshold)

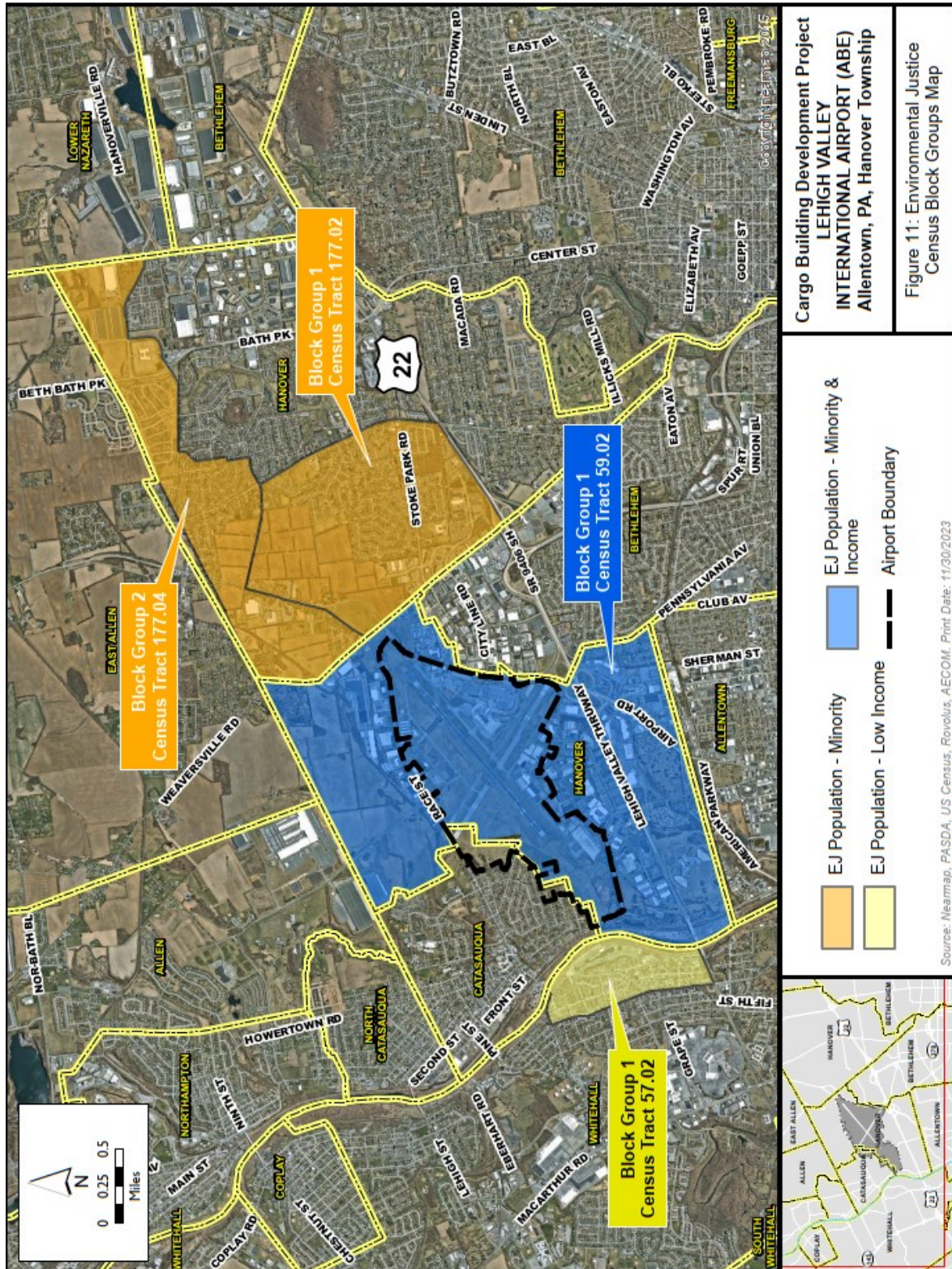


Figure 11: Environmental Justice Census Block Groups Map

Table 13: Census Block Group Demographic Information (Census 2020)

	Block Group 1, Census Tract 57.02	Block Group 1, Census Tract 59.02	Block Group 1, Census Tract 177.02	Block Group 2, Census Tract 59.01	Block Group 2, Census Tract 177.04
Location					
County	Lehigh County, PA	Lehigh County, PA	Northampton County, PA	Lehigh County, PA	Northampton County, PA
Race					
White	92.2%	70.6%	70.5%	93.6%	74.1%
African-American	5.5%	11.2%	11.8%	3.7%	6.6%
American Indian or Alaska Native	0.0%	0.5%	1.4%	0.0%	0.0%
Asian	0.0%	1.0%	7.7%	0.0%	19.4%
Native American or Pacific Islander	0.0%	0.9%	0.0%	0.0%	0.0%
Other/Two or More Races	2.3%	15.9%	8.6%	2.7%	0.0%
Ethnicity					
Hispanic or Latino	11.4%	30.5%	12.5%	10.9%	2.3%
Not Hispanic or Latino	88.6%	69.5%	87.5%	89.1%	97.7%
Income					
Above Poverty Threshold	90.3%	89.5%	97.4%	95.4%	96.3%
Below Poverty Threshold	9.7%	10.5%	2.6%	4.6%	3.7%
*Note: Census Tracts 59.02 and 177.02 are composed of one Block Group each.					

As shown in **Figure 11**, the orange shading northwest of ABE is a Census block group that exceeds the average minority population of the study area. The yellow shading southwest of ABE is a Census block group that exceeds the average low-income population of the study area. The blue shading over and around ABE is a Census block group that exceeds both low income and minority population of the study area. In examining **Figure 11**, it is important to note that population distribution is not necessarily uniform across a Census block group. The GSA contains a large proportion of Census block groups that exceed EJ thresholds on all sides of the airport. However, these EJ Census block groups are particularly concentrated to the south and west of the airport, which are the primary areas of change due to the Proposed Action.

Children’s Health and Safety Risks

Pursuant to Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks 62 Federal Register 19885, (April 21, 1997), federal agencies are directed, as appropriate and consistent with the agency’s mission, to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. The nearest known resource, Sheckler Elementary School, is located approximately one mile west of the proposed project site. No other schools, public parks or recreational areas, commercial day-car centers, or children’s health clinics are identified within a one-mile radius of project site.

4.12.2. Impact Analysis

Socioeconomics

Under the Proposed Action, development of the North Cargo area would result in a short term and temporary increase in construction-related employment and spending, the effects of which would diminish as the project nears completion. After construction, the existing e-commerce cargo airline operation would relocate from one side of the airport to the other. Because ABE is located in a large metropolitan area, these project related changes would not have the effect of causing or contributing to a major shift or change in population, income, employment, or public service demands in the community. Additionally, no property would be acquired. Therefore, there would be no relocation of residences or businesses, no division of established communities, and no changes to the community tax base. No alterations to roadways would occur that would temporarily or permanently restrict traditional community access or disrupt local transportation patterns or substantially reduce levels of service of roads serving the Airport or the surrounding community. On this basis, no adverse social or economic impacts are anticipated to occur under the Proposed Action. Under the No Action Alternative, the proposed project would not be implemented, and no changes would occur.

Environmental Justice

Potential impacts to environmental justice (EJ) populations encompass either significant impacts in other environmental impact categories or impacts on the physical or natural environment that affect an EJ population in a way that the FAA determines is unique and significant to that population. In other words, an impact to an EJ population may not meet the significance threshold but could be considered significant if that impact is found to disproportionately affect that EJ population when compared to the larger population. Additionally, impacts that are considered unique to the culture of an EJ population could be considered significant in certain cases – an example of this would be increased sensitivity to overflights for areas associated with cultural sites for Native American tribes.

An EJ screening analysis was conducted to consider the potential for the Proposed Action to cause disproportionate and adverse effects on low-income or minority populations in the vicinity of ABE. If potentially significant adverse effects were determined to be present, applicable mitigation may be warranted to ensure that no minority or low-income populations bear a disproportionate burden of those effects. Minor impacts on the physical and natural environments that could potentially affect residential areas adjacent to the Airport include increased air pollution and greenhouse gas emissions, increased risks associated with hazardous materials and wastes, increased noise from aircraft and traffic operations, changes to the visual landscape, and changes in the quality and quantity of storm runoff. Though some of these impacts are temporary and none approach significance thresholds for the associated environmental resource categories, EJ communities border the airport near both ends of the primary runway, as well as directly north of the airport where roadway changes associated with access to the proposed project would take place. Non-EJ communities within the GSA border the airport in the vicinity of the secondary runway, which is much less intensively utilized, and there are no non-EJ communities near the intersection of Willow Brook Road and Race Street, where impacts associated with surface transportation changes would be focused.

Regarding the potential for two added cargo flights per day (one additional flight in the one- to five-year timeframe, and a second additional flight in the six- to ten-year timeframe), the Proposed Action would

not introduce aircraft overflights or noise to a previously unaffected area, and the minor increase in noise levels would be distributed approximately equally to EJ areas beyond the east and west ends of Runway 6-24. There would be a minor increase in carbon monoxide (CO) emissions over an area with a high concentration of EJ Census block groups, but because the added flights represent less than 2 percent of the total aircraft operations at ABE, the project related effects would be minor and likely not detectable to the overflown EJ population.

On this basis, no disproportionate adverse impacts to an EJ population would occur under the Proposed Action. Under the No Action Alternative, the proposed project would not be implemented, and no changes would occur.

Children's Health and Safety Risks

Potential impacts to children's environmental health and safety were considered in the context of the other resource categories. The proposed project would not cause or contribute to potentially significant adverse impacts to air quality or water quality, significantly change aircraft or traffic noise levels, require the relocation of businesses or residences, or alter the social fabric of the community. In addition, the Proposed Action would not create or make more readily available any products or substances that could potentially harm children via contact or ingestion through air, food, drinking water, recreational waters, or soil. On this basis, no adverse health or safety risks are identified that would disproportionately affect children. Under the No Action Alternative, the proposed project would not be implemented, and no changes would occur.

4.12.3. Significance Determination

According to FAA Order 1050.1F, the FAA has not established a significance threshold for socioeconomics, or for environmental justice, or for children's environmental health and safety risks; however, the FAA has identified factors to consider when evaluating the context and intensity of potential environmental impacts for each category (see Exhibit 4-1 of FAA Order 1050.1F). Having considered each of these factors, it can be determined that the Proposed Action and No Action Alternative would not have the potential to cause significant socioeconomic impacts or have the potential to lead to a disproportionately high and adverse impact to an environmental justice population or have the potential to lead to disproportionate health or safety risk to children.

4.12.4. Mitigation Measures

No adverse impacts are anticipated for socioeconomics, environmental justice, or children's environmental health and safety. Therefore, no mitigation measures are proposed.

4.13. Traffic

This section discusses the traffic impacts likely to occur on the local roadways that would serve the proposed project site. More detailed information, analysis, graphics, and copies of agency correspondence are provided in **Appendix I: Roadways and Traffic**.

4.13.1. Agency Coordination

A traffic impact analysis was conducted in consultation with PENNDOT. A scoping meeting was held, and a Transportation Impact Assessment (TIA) was prepared.⁶³ PENNDOT concurred with the findings in the TIA and advised the Highway Occupancy Permit (HOP) process to proceed.⁶⁴ Any work within the PENNDOT right-of-way requires an HOP. Accordingly, traffic engineering and roadway (intersection) design is proceeding under PENNDOT HOP Application No. 272245. There are no issues or concerns with obtaining the HOP from PENNDOT.

4.13.2. Existing Conditions

The proposed project is located on the south side of Race Street, east of the signalized intersection at Willow Brook Road. Race Street (S.R. 1004) is an east-west five-lane roadway with two travel lanes in each direction. There are dedicated turn lanes, or a center left-turn only lane east of Willow Brook Road. North of Race Street, Willow Brook Road N provides two travel lanes in each direction. Southwest of Race Street, Willow Brook Road S is a loop road with one travel lane in each direction, extending clockwise around two residences.⁶⁵ The signalized intersection was improved c. 2018 to accommodate light-industrial development that is underway along Willow Brook Road N. See **Figure 1** for a depiction of the local roadway network.

4.13.3. Impact Analysis

Under the Proposed Action, ongoing cargo activities associated with existing Cargo Facility 2 on the west side of the Airport (along Postal Road) would relocate to the proposed air cargo facility on the north side of the Airport (along Race Street). This would have the effect of decreasing traffic volume on Postal Road and increasing traffic volume on Race Street and through the signalized intersection (Willow Brook Road S) that would serve the proposed project site. To accommodate increased turning movements and larger vehicles, the Proposed Action includes minor modifications to the intersection to achieve the following: (1) provide an improved entrance road to the proposed cargo facility; (2) accommodate safe truck turning paths; and (3) maintain efficient traffic operations during and after construction.

During the construction period, Willow Brook Road S would be realigned to allow for a new access road to be extended east into the proposed project site, and the southwest corner of Race Street and Willow Brook Road S would be revised to accommodate truck turning movements. Other potential modifications include lengthening the westbound left turn as needed to provide 175-ft of queuing/storage by restriping the gore area, and restriping and signing the eastbound the Race Street approach to provide a dedicated right turn lane without impacting overall or eastbound approach operations. Based on PENNDOT's direction, these modifications are not required for this project at this time. The need for the potential modifications will be determined during the design process in coordination with PENNDOT and Hanover Township. Correspondence with PENNDOT is included in **Appendix I**.

⁶³ Transportation Impact Assessment for the North Cargo Area Development. Prepared for the Lehigh-Northampton Airport Authority by The Pidcock Company (March 31, 2022).

⁶⁴ Letter to Ryan Meyer (LNAA) from Brian Boyer (PENNDOT) dated August 22, 2022.

⁶⁵ All but two residences along Willow Brook Road S have been removed, and the two remaining residences have driveways that connect to Race Street. Willow Brook Road S is not used for vehicular access to the two properties.

Roadwork would be implemented in accordance with a PENNDOT approved HOP. Every HOP is prepared with a Maintenance and Protection of Traffic Plan (MPT). The MPT Plan gives direction to the contractor about when it can work on the roadway, take out lanes of traffic, detour traffic, etc. This direction is based on analysis of traffic flow and is sensitive to peak traffic volumes. Under the HOP program, PENNDOT takes reasonable measures to accommodate traffic through a work zone but there are instances where travel lanes must be restricted to properly construct a facility. Willow Brook Road S. is a two-lane loop road around two existing residences: 1555 E. Race Street and 1565 E. Race Street. According to the TIA, the homeowner's ability to access their properties would not be affected during (or after) construction.

After construction, the Proposed Action would increase traffic volumes along Race Street and through the intersection at Willow Brook Road S leading to and from the proposed cargo facility. The TIA analyzed the potential effects of the Proposed Action on the surrounding roadway network. The TIA included Race Street and Willow Brook Road. Traffic volumes and capacity analyses were developed for the 2022 Existing Condition, the first operational year No Build Condition, and the first operational year Build Condition.⁶⁶ According to the TIA, the Proposed Action has the potential to generate 104 AM Peak hour trips and 116 PM Peak hour trips, with 51 truck trips during each peak hour. Car traffic is anticipated to follow existing traffic patterns. Truck traffic is anticipated to be to and from Route 22.

The TIA is based on level of service (LOS). Level of service is a qualitative measure used to describe the operating conditions of a roadway (intersection) based on factors such as speed, travel time, maneuverability, delay, and safety. The LOS of a facility is designated with a letter, A to F, with A representing the best operating conditions and F the worst. No LOS analysis was performed for the construction period because temporary impacts would be managed by the MPT Plan. After construction, the LOS analysis presented in the TIA assumes the worst-case traffic situation by assuming all future project related traffic demand would occur in the first operational year. By bounding the analysis, if the LOS under the Build condition is acceptable, it can be determined that the incremental increase in traffic volume over time would also be acceptable.⁶⁷

The results of the TIA are as follows:

- Under the 2022 Existing Condition, the Race Street/Willow Brook Road intersection operates at LOS B during the AM and PM Peak hours.
- Under the first operational year No Build Condition, the Race Street/Willow Brook Road intersection operates at a **LOS C** during the AM and PM Peak hours (LOS C is an acceptable level of service).
- Under the first operational year Build Condition, the Race Street/Willow Brook Road intersection operates at a **LOS C** during the AM and PM Peak hours.

Based on these findings:

- The intersection at Race Street/Willow Brook Road intersection is expected to decrease from LOS B in 2022 to LOS C in the No Build Condition; this is due to projected background growth.
- The additional traffic generated by the Proposed Action would not have the effect of further lowering the LOS at this intersection.

⁶⁶ The TIA refers to calendar year 2024 for the first operational year based on the development schedule at the time the TIA was prepared. Although the first operation year is likely to be 2025 or 2026, this would have no effect on the results of the traffic analysis or the findings contain in the TIA.

⁶⁷ As an added measure, Build traffic volumes were conservatively estimated based on a 200,000 square foot cargo building. Under the Proposed Action, actual traffic volumes based on a 125,000 square foot cargo building would be considerably less.

- The LOS at this intersection would not decrease below an acceptable level for any foreseeable traffic scenario.

Under the No-Action Alternative, the Proposed Action would not be implemented, and the project related traffic volumes would not occur. The LOS would still decrease from LOS B to LOS C, even without the proposed project.

4.13.4. Significance Determination

Exhibit 4-1 of FAA Order 1050.1F provides the FAA's significance threshold for traffic impacts:

The action would "disrupt local traffic patterns and substantially reduce the levels of service of roads serving an airport and its surrounding communities."

Under the Proposed Action, the roadway elements of the proposed project would proceed under PENNDOT's HOP permit program and in coordination with Hanover Township. During the construction period, there would be a short-term and temporary increase in construction-induced traffic volume and work-related activities near the intersection of Race Street and Willow Brook Road, the effects of which would diminish as the project nears completion. Compliance with PENNDOT's HOP program including the MPT plan provides adequate assurance that potential traffic impacts would be less than significant. After construction, there would be additional traffic volume through the intersection, which would have only a minor effect on delay during peak hours in the morning and/or in the afternoon. The LOS for this intersection would not decrease below acceptable levels based on PENNDOT standards. Therefore, it can be concluded that the operational impacts on surface traffic would also be less than significant. Under the No-Action Alternative, the Proposed Action would not be implemented, and the project related traffic impacts would not occur. Therefore, no significant traffic impacts are anticipated under the Proposed Action and the No Action Alternative.

4.13.5. Mitigation

During the construction period, maintenance and protection of traffic would be carried out in accordance with PENNDOT's requirements including an HOP permit. After construction, potential traffic mitigation measures may include lengthening the westbound left turn as needed to provide 175-ft of queuing/storage by restriping the gore area, and restriping and signing the eastbound the Race Street approach to provide a dedicated right turn lane without impacting overall or eastbound approach operations. However, these additional measures are not required at this time and the need for these measures would be determined during the roadway design process and in coordination with PennDOT and Hanover Township.

4.14. Visual Effects

4.14.1. Existing Conditions

Light Emissions

Light emissions include any light that emanates from light sources in the surrounding environment. Existing airport lighting in the vicinity of the proposed project site includes airfield pavement lights, obstruction lights, navigational aids, and area lighting associated with roadways and parking lots. In

addition, high mast lighting illuminates the transient aircraft parking apron, Fashion Drive, and the roadway intersection at Race Street and Willow Brook Road. Except for two residences near the project site, no other land uses in the vicinity of the project are identified as potentially sensitive to airport light emissions. There are no known issues or concerns regarding existing airport light emissions.

Visual Resources and Visual Character

Land uses adjacent to the proposed project site include runways and taxiways, the airport maintenance building, the airport traffic control tower, the airport rescue and firefighting station, aircraft storage hangars, several commercial buildings, and two residences⁶⁸ located on the south side of Race Street and west of Willow Brook Road S.⁶⁹ The two residences notwithstanding, there are no buildings, sites, traditional cultural properties, or other natural or landscape features that are visually important or have unique characteristics with aesthetic value.

4.14.2. Impact Analysis

Light Emissions

The determining factor in evaluating light emissions is not the existence of lighting components in the project, but rather the existence of, or potential for, an annoyance problem in the community. Thus, the potential impact is determined by evaluating the proposed project's lighting components in terms of the adjacent environmental setting.

Under the Proposed Action, nighttime activities are not anticipated during the construction phase. If construction is necessary after dark, portable light towers would typically be used to illuminate a specific work area only. In which case, the light emissions would be localized and temporary. After construction, the introduction of cargo airline operations on the north side of the Airport including nighttime activities would have the potential to increase ambient lighting within and around the proposed project site. On the airside, high mast lights associated with the existing transient aircraft parking apron would be removed and replaced with area flood lighting necessary for safety, security, and nighttime cargo apron operations. Apron lights would be mounted on the south side of the cargo building and directed towards the aircraft and GSE activities. Ground level pavement edge lights would not be visible beyond the project site. On the landside, high mast lighting for safety and security would be installed along the access roadway and around the employee and truck parking areas. However, these lighting elements and the corresponding light intensity would be consistent with other airport lighting and roadway lighting in the project area. The proposed project does not involve high intensity runway or taxiway lights, sequenced flashing/strobe lights, or other types of directional lighting required for pilot navigation.

Commercial/industrial land uses near the proposed project site are compatible with light emissions from airport activities including nighttime cargo operations. The Proposed Action may be visible or partially visible from two residences—1555 and 1565 Race Street. The distance from both residences to the proposed cargo facility is approximately 1,100 feet, and the line-of-sight would be obstructed, or at least partially obstructed, by terrain and vegetation. Even if the project related lighting is visible from either residence, the light emissions would not be directional, and because the residences would be more than

⁶⁸ The local street names are: 1555 E Race Street and 1565 E Race Street.

⁶⁹ All other residential structures along the south side of Race Street in the vicinity of the project site that may appear on maps or aerial photos have since been acquired by LNAA and removed.

1,000 away, flood lighting required to illuminate the project area would not be expected to shine directly into either residence, thus reducing the potential for annoyance.

Existing traffic area lighting at the intersection of Race Street and Willow Brook Road would be modified as needed to accommodate changes to the access road and curb alignments. Because the intersection is already lighted and no major changes to the intersection are proposed, roadway lighting under the Proposed Action would not be appreciably different. However, the Proposed Action would increase turning movements through the intersection, thereby increasing the potential for vehicular headlights to be directed at the nearest residence as cargo trucks and employee vehicles arrive and depart the proposed project site using Willow Brook Road S. To reduce the potential for annoyance, a visual buffer or barrier such as landscaping would be placed between the proposed entrance road (source of traffic light emissions) and the sensitive receptor (the nearest home(s)).

Under the No-Action Alternative, the Proposed Action would not be implemented, and the project induced changes in light emissions would not occur.

Visual Resources and Visual Character

Under the Proposed Action, the cargo facility would be developed thereby altering the visual character of the study area as well as the viewshed from land uses adjacent to the project site. The most prominent visual change would be the proposed cargo building and cargo aircraft taxiing and parking where they were not visualized before. Other visual changes would include the presence of above ground fuel storage tanks, and employee and truck parking areas. Paved surfaces such as the taxiway extension would not be visible from locations off airport property. The proposed air cargo facility is consistent with the nature of the visual character of the area, and it would be surrounded by other aviation support facilities, so there would be very little contrast.

If No Action is taken, the proposed project would not be implemented, and the existing visual character of the project site and the surrounding area would remain unchanged.

4.14.3. Significance Determination

The FAA has not established a significance threshold for visual effects in FAA Order 1050.1F; however, the FAA has identified factors to consider when evaluating the context and intensity of potential environmental impacts for visual effects (see Exhibit 4-1 of FAA Order 1050.1F). Under the Proposed Action, there would be a minor increase in ambient light emissions and a minor increase in headlight emissions near the two residences at 1555 and 1565 Race Street, the potential effects of which would be mitigated using BMPs. Therefore, project related light emissions are not anticipated to create a significant annoyance or interfere significantly with normal activities near the proposed project. Minor changes in lighting conditions would not adversely affect the visual aesthetic quality of the area. Because no resources in the area are identified as visually important or possessing unique characteristics with aesthetic value, no intrusive or adverse visual impacts are anticipated. Under the No Action Alternative, there would be no change in light emissions or to the existing visual character of the area. Therefore, no significant visual impacts are anticipated under the Proposed Action or the No Action Alternative.

4.14.4. Mitigation

The following BMPs are proposed to be implemented to lessen the effects of light emissions and the potential for annoyance:

- Shielding or angular adjustments of lights (dark-sky compliant lighting)
- Alternative placement of lights consistent with operational requirements

After construction, if vehicular headlights are determined to be causing annoyance to nearby residences, LNAA could install a visual buffer or barrier between the proposed entrance road and the nearest homes.

4.15. Water Resources

4.15.1. Existing Conditions

Wetlands

According to the U.S. Fish and Wildlife Service (USFWS), wetlands are defined as “lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water.” The project site consists of upland terrain mapped as Urban land, much of which is covered with pavement and the remainder is meadow grass. USFWS National Wetlands Inventory (NWI) mapping indicates there are no wetlands or water bodies in the project area (see **Appendix J**). The nearest mapped wetland is located approximately 0.45 miles north of the proposed project site. No wetlands would be affected by the Proposed Action or the No-Action Alternative.

Floodplains

The Federal Emergency Management Agency (FEMA) defines a floodplain as “any land area susceptible to being inundated by floodwaters from any source.” FEMA mapping indicates there are no designated flood hazard zones in the project area (see **Appendix J**). The nearest mapped floodplain is located approximately 1.65 miles to the southwest. No floodplains would be affected by the Proposed Action or the No Action Alternative.

Surface Waters

No surface water resources are located on or near the project site. No wetlands, floodplains, or hydric soils are present. The nearest surface water feature is the Catasauqua Creek, located approximately one-half mile north of the proposed project site and eventually drains to the Lehigh River. No drinking water resources, or public water supply wells, are present. The nearest public water supply well is located approximately one mile west of the project site. No wild or scenic rivers are present. The nearest waterbody designated as a National Wild and Scenic River is a segment of the Delaware River (Lower) and is 14 miles east of the airport, and north of Easton, PA. No surface water resources would be affected by the Proposed Action or the No-Action Alternative.

Groundwater

According to the EPA’s EnviroMapper website, the nearest EPA-designated Sole Source Aquifer (SSA) is the New Jersey Coastal Plain aquifer, which extends inland to Easton, PA, approximately ten miles east of

ABE (see **Appendix J**). Geotechnical information for the project site indicates that groundwater exists in the hydrostatic water table below the proposed project site; however, no groundwater was encountered in 20 test borings up to 95 feet deep. No public drinking water wells are located on or adjacent to the proposed project site. The nearest known drinking water resources are four municipally owned and operated groundwater wells located within 1,200 feet of the Catasauqua Water Plant, at Walnut and St. John Streets, approximately one mile west of the proposed project site.⁷⁰

4.15.2. Agency Coordination

A NPDES pre-application meeting was held with the Lehigh Valley Conservation District (LCCD) on August 25, 2022. Meeting notes are provided in **Appendix J**. No issues or concerns have been identified that would make it difficult to obtain the state and local permits and approvals required to implement the Proposed Action.

4.15.3. Impact Analysis

Surface Water

No surface water features are present within or adjacent to the proposed project site. No direct impacts to surface waters would occur. The potential for indirect impacts would be managed by the applicable development permitting processes as discussed below.

The potential for soil erosion and degradation of surface water quality is greatest during the construction period when topsoil is exposed, thereby making it more susceptible to erosion that can contribute to increased sediment loading on downstream receiving waters. In addition, when stormwater flows over a construction site, it can pick up other pollutants such as debris, chemicals, concrete wash-out, etc., and transport them to nearby water bodies. Stormwater runoff from the project site discharges to the Catasauqua Creek and then downstream to the Lehigh River, under a NPDES/Pennsylvania Chapter 102 Erosion and Sediment Control permit. Stormwater runoff during construction would be covered by the NPDES/102 permit, which requires the implementation of a Stormwater Pollution Prevention Plan (SWPPP) to reduce or prevent stormwater contamination during construction activities. It also requires the submission of a completed Notice of Intent (NOI) advising PADEP and the public of LNAA's request for additional permit coverage for construction phase activities.

Under the NPDES permit process, water quality best management practices (BMPs) would be recommended to deal with sedimentation and erosion control, containment of construction materials (hydraulic fluids, fuel, etc.), washing of construction vehicles, cleaning of concrete mixers, etc. These BMPs would be incorporated into the project's construction documents and become an obligation of the contractor. LNAA would monitor compliance with these practices and assure that the stormwater management systems are protected. All contractors would be required to comply with applicable federal, state, and local laws and regulations, including FAA guidance contained in AC 150/5370-10F, Standards for Specifying Construction of Airports, including Item P-156 Temporary Air and Water Pollution, Soil Erosion and Siltation Control; AC 150/5320-15A, Management of Airport Industrial Waste; AC 150/5320-5C (including Change 1) Subsurface Drainage Design, and AC 150/5200-33C-Hazardous Wildlife Attractants on or near Airports. No construction activity would occur within any regulated wetland or

⁷⁰The official map depicting the wellhead protection areas is on-file at the Catasauqua Borough offices. These maps are not publicly available electronically to either view or download.

surface water body. No Clean Water Act, Section 404 permit would be required to implement the Proposed Action.

After construction, the addition of approximately 15 acres of new impervious surface would have the potential to increase stormwater runoff volumes and pollution concentrations when compared to existing conditions. The resulting increase in storm runoff volume would be managed on-site through project-related improvements to the existing drainage system including BMPs and control measures as needed to permit the Proposed Action to be implemented in compliance with NPDES/102 requirements including a Post Construction Stormwater Management (PCSM) Plan.

The PCSM Plan for the proposed airside Taxiway D modifications and new cargo apron as well as the landside roadway improvements, will be permitted as part of a Major Amendment No. 5 to the approved NPDES General Permit PAC390061 for Stormwater Discharges Associated with Construction Activities. The PCSM Plan will document the stormwater analysis for permanent site conditions following construction of the project and address the stormwater management BMPs implemented to control the stormwater runoff volume, peak flow, and water quality. The project is located within Subareas 22 and 25 of the Catasauqua Creek Act 167 Plan. The proposed development will use existing aboveground detention basins and new underground infiltration beds to maintain peak rate control for all storm events. Final pavement increase totals may necessitate the construction of an additional underground stormwater detention basin to assist in controlling the peak runoff rates. New underground infiltration beds and soil amendment areas, located within the airside limits of the project, will be used to provide the required volume control for the 2-year storm event.⁷¹ Additionally, existing impervious surfaces will be removed to minimize the net increase in proposed runoff. Water Quality BMPs include street sweeping, soil amendments, and the subsurface infiltration beds. These facilities will be designed in accordance with PADEP standards and will be implemented as a method of protecting the integrity of stream channels and maintain and protect the physical, biological, and chemical qualities of the receiving stream.

Groundwater

Construction and operation of the Proposed Action could have harmful effects on groundwater resources if not managed correctly. Virtually any activity whereby chemicals or wastes may be released to the environment, either intentionally or accidentally, has the potential to pollute groundwater.

During construction, up to 80 acres of upland terrain would be temporarily impacted by clearing, grading, drainage, trenching, excavation, and other construction phase activities, i.e., limit of disturbance. Since these activities involve the use of vehicles and equipment, fuels and lubricants, and the storage of construction materials, there is a risk of release or spills of hazardous materials or petroleum products that could reach groundwater below the land surface and be transported within the aquifer. Groundwater and contamination can move slowly, or rapidly, depending on the aquifer formation. Under the Proposed Action, project specific BMPs and SWPPPs (discussed above) would prevent or minimize the potential release of contaminants into groundwater. The BMPs and SWPPPs require measures to prevent spills, offer swift response to accidental spills, and define acceptable on-site storage of fuel and lubricants.

⁷¹ The 2-year storm event encompasses 95 percent or more of the annual volume of precipitation across the state. Practically speaking, the 2-year storm event is a defined storm event throughout the state that designers use for peak rate control standards, and designers can use methodologies currently used for stormwater management calculations.

Groundwater was not encountered during test borings. Therefore, groundwater control measures, other than stormwater drainage in excavations, is not anticipated to be required.

After construction, impervious cover across the project site would increase by approximately 15 acres, which would potentially increase storm runoff volume by reducing the limited area available for stormwater infiltration and groundwater recharge. To compensate for the predicted (net) increase in storm runoff, drainage swales incorporated into the stormwater management system would allow for the brief and temporary collection and infiltration of stormwater resulting from a moderate 2-year storm event consistent with AC 150/5200-33C, Hazardous Wildlife Attractants On or Near Airports. By design, these vegetated swales rely on the infiltration process, which is when water soaks into the ground and eventually recharges groundwater. Under the Proposed Action, stormwater would be directed or conveyed to enter the swales and infiltrate through the grass and soil. Pollutants in the stormwater would be removed by the grass and soil in this infiltration process, thereby helping to protect groundwater resources from contamination.

The primary risks to groundwater are related to the use, handling, storage, disposal and/or release of hazardous substances and pollution sources associated with the proposed industrial use of the site for cargo airline operations. Potential pollution sources include contaminated stormwater runoff, aircraft fuel storage and refueling, and winter deicing operations. Surface water quality issues were discussed previously. Most of the stormwater runoff resulting from the Proposed Action would be from buildings and paved areas associated with the air cargo facility. Typical pollutants associated with stormwater runoff include fuel, oils, greases, heavy metals, and other industrial compounds. The proposed stormwater drainage improvements would be designed to treat and attenuate stormwater runoff generated from new impervious surfaces associated with the Proposed Action. In addition, overland flow on the adjacent grassed infield areas and vegetated upland buffers may effectively treat runoff from the aircraft parking apron and taxiway pavement. These BMPs would be carried out to minimize the accidental release of pollutants and to meet applicable water quality standards for stormwater discharge.

Hazardous materials, including aircraft fuel storage and fueling operations, are discussed in **Section 4.8**. Regulated substances (such as batteries, used fuel, petroleum, oils, lubricants, solvents, and degreasers, etc.) are typically associated with the routine operation of a cargo facility including building maintenance and equipment repairs. Hazardous waste BMPs generally involve procedures for good housekeeping, including safely storing all hazardous substances and wastes in secure areas and routinely inspecting storage areas and containers for leaks or spills. The building tenant would be responsible for the proper management and disposal of all hazardous substances and wastes, and for compliance with applicable permit requirements. The proposed fuel storage facility (described in **Section 1.3.2** and discussed further in **Section 4.8**) would include leak and spill prevention features. In addition, the proposed tank farm would be permitted, regulated, and operated in accordance with PADEP's Storage Tank Program. This program includes requirements for preparing and maintaining a Spill Prevention and Response Plan (SPRP). The SPRP lists and describes BMPs and control measures available to reduce the potential for a leak or spill to occur, and countermeasures to minimize potential risks to human health and the environment if a leak or spill were to occur. The SPRP would be developed during the design phase and would identify appropriate BMPs.

Deicing operations would be performed occasionally during winter months. This process involves spraying various deicing and anti-icing fluids to melt snow, ice, and frost from an aircraft's surface and to prevent reformation. These fluids, typically composed of ethylene glycol (EG) or propylene glycol (PG), have a high biochemical oxygen demand (BOD), which can have harmful effects on receiving waters, if not managed

correctly.⁷² Stormwater associated with deicing operations is regulated through the airport's NPDES industrial permit and would be subject to various BMP requirements as well as effluent limits. Carefully configured systems of BMPs play a key role in maintaining compliance with permit requirements. The Proposed Action would include a plan to isolate, capture, collect, store, and properly dispose of deicing stormwater before it reaches receiving waters. Aircraft deicing BMPs would avoid or minimize the potential for groundwater degradation. The following factors were also considered:

- No airport rescue/firefighting training is associated with the Proposed Action.⁷³
- No underground fuel storage, transfer or distribution system, or hydrant fueling operations are proposed.
- No drinking water wells, or other types of injection or extraction wells, are proposed.

The City of Allentown sources its water from two large springs, Little Lehigh Creek, and the Lehigh River. About half the water is drawn from Schantz Spring and Crystal Spring, and the well fields are located southwest of Allentown and about ten miles southwest of ABE. The other half comes from surface water—with the majority of that coming from the Little Lehigh Creek. The Lehigh River acts as a secondary water source. The City of Bethlehem sources its water from the Wild Creek Reservoir located in the Pocono Mountains in Carbon County. These surface and groundwater resources would not be affected by the Proposed Action. The nearest known drinking water resources are four municipally owned and operated groundwater wells located within 1,200 feet of the Catasauqua Water Plant, at Walnut and St. John Streets, approximately 1.0 mile west of the project site. The proposed Action would occur outside the designated Half Mile Default Wellhead Protection Area (WPA) associated with each of those facilities.

4.15.4. Significance Determination

Exhibit 4-1 of FAA Order 1050.1F provides the FAA's significance threshold for surface water and groundwater resources. A significant impact on surface water exists if *"the action would (1) exceed water quality standards established by Federal, state, local, and tribal regulatory agencies; or (2) contaminate public drinking water supply such that public health may be adversely affected."* Exhibit 4-1 of FAA Order 1050.1F also provides the FAA's significance threshold for groundwater resources. A significant impact on surface water exists if *"the action would: (1) exceed groundwater quality standards established by Federal, state, local, and tribal regulatory agencies; or (2) contaminate an aquifer used for public water supply such that public health may be adversely affected."* Under the Proposed Action, compliance with PADEP permit requirements, including an approved Erosion and Sedimentation Control Plan, Long-Term Stormwater Operation and Maintenance Plan, and water quality BMPs included in the project's design, provide adequate assurance that the Proposed Action would not cause or contribute to a significant adverse impact on surface water and groundwater resources. Any residual effects would be less than significant. The No Action Alternative would have no significant impact on surface water resources.

4.15.5. Mitigation

Water quality BMPs and control measures would be determined during the project's design and permitting processes. As a condition for FAA environmental approval, LNAA would:

⁷² Essentially these compounds deplete oxygen levels in the water and deprive aquatic life of oxygen, as well as being toxic to many types of aquatic and mammalian organisms.

⁷³ The use of firefighting Aqueous Film Forming Foams (AFFF) containing Poly Fluorinated Alkyl Substances (PFAS) are effective for fire suppression, but also pose health and environmental concerns including soil and groundwater contamination.

- Adhere to NPDES/Chapter 102 permit terms and conditions for minimizing, reducing, and avoiding potential impacts to surface water and groundwater resources including preparing a Stormwater Pollution Prevention Plan to reduce or prevent stormwater contamination during construction activities, design measures to reduce the quantity and improve the quality of storm runoff and discharges, and a Post Construction Stormwater Management Plan for monitoring compliance with water quality standards.
- Adhere to PADEP’s Storage Tank Program for the construction, operation, maintenance, and routine inspection of Aboveground Storage Tanks (AST) related to the proposed fuel storage facility including requirements for preparing and maintaining a Spill Prevention and Response Plan that lists and describes BMPs and control measures available to reduce the potential for a leak or spill to occur, and countermeasures to minimize potential risks to human health and the environment if a leak or spill were to occur.
- Adhere to applicable RCRA permit requirements including BMPs that generally involve good housekeeping, including safely storing all hazardous substances and wastes in secure areas and routinely inspecting storage areas and containers for leaks or spills.

4.16. Cumulative Effects

CEQ regulations require that all federal agencies consider the cumulative effects of proposed actions. Cumulative effects are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions.” Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. This cumulative impact analysis was conducted to comply with the intent of FAA Order 1050.1F, DOT Order 5610.1C, January 1997 CEQ guidance, and the FAA’s Environmental Desk Reference for Airport Actions.

If the Proposed Action would not cause direct or indirect impacts on a resource, then it may be concluded that it would not cause or contribute to a cumulative impact on the resource. As identified in prior sections, the Proposed Action is not likely to have a potentially significant adverse effect on any environmental resource categories. Although these impacts may not be significant themselves, cumulative impacts from one or more projects can result in the degradation of important resources. The other projects included in this analysis occur in the same general study area as the Proposed Action, and may occur in the past, present, or reasonably foreseeable future.

5.16.1. Geographic and Temporal Boundaries

The geographic boundary of the cumulative effects analysis varies by resource but generally includes the existing Airport property and adjacent properties along Race Street. The temporal boundary (timeframe) for the analysis extends three years into the past (2020-2022) and three years into the future (2024-2026).

4.16.1. Completed Projects (2020-2022)

LNAA completed six projects at ABE in the past three years including airside, terminal, and landside improvements. They are:

- Hangar 11 Development
 - 54,000 square foot bulk hangar with 2,500 square feet of office space (a Documented Categorical Exclusion form was approved by FAA on 1/22/2018; the project was completed in 2020)
- Runway 6-24 Rehabilitation (Airfield Drainage Improvements)
 - Multi-phase project to rehabilitate the 7,600-foot x 150-foot primary runway that includes new drainage outside of the RSA (a Documented Categorical Exclusion form was approved by FAA on 1/7/2017; the project was completed in 2021)
- Hangar 7 Apron Repairs
 - Crack and joint sealant repair on the concrete apron (completed in 2020)
- Short Term Parking Lot/Booth Rehabilitation
 - Pavement rehabilitation in the short-term parking lot with new LED lighting and revenue control equipment; the ticket booth was also rehabilitated (a Documented Categorical Exclusion form was approved by FAA on 6/30/2020; project completed in 2022)
- Terminal Loop Rehabilitation
 - Rehabilitate the arrivals and departures roadways (completed)
- Race Street Property Demolitions
 - Demolish and clear properties acquired through the FedEx Ground road widening project (covered under the FedEx Ground EA/FONSI approved on 6/30/2015; project completed in 2022)

Except for constructing Hangar 11, the remaining projects were generally routine maintenance. Hangar 11 is an aircraft storage hangar located on the south side of the Airport adjacent to several other general aviation aircraft storage and maintenance hangars. No past projects at ABE were challenging or controversial on environmental grounds, and no difficulties were reported in obtaining the requisite development permits or approvals.

The only other major development project recently completed in the vicinity of the Proposed Action is the FedEx Ground Distribution Center located on Willow Brook Road N.⁷⁴ LNAA sold 270 acres of farmland north of ABE to the Rockefeller Group to develop the 850,000-sf cargo facility. An EA was prepared, impacts were thoroughly evaluated, and the FAA determined that the land release and subsequent development of the FedEx project would have no significant adverse impacts on the environment.⁷⁵ The FedEx center opened in November 2018 and is located approximately one-half mile north of the Proposed Action. That cargo development project was nonaeronautical and is unrelated to the proposed air cargo facility discussed in this EA.

4.16.2. Projects Underway (2023)

The following projects are ongoing:

- Main Terminal Apron Rehabilitation
 - Concrete joint replacement, crack repair, and slab replacement on the air carrier apron (anticipated to be completed in 2024)
- Terminal Security Checkpoint (Connector) Improvements

⁷⁴ Although the FedEx Ground Distribution Center project occurred outside the temporal boundary for cumulative effects in this EA, the roadway widening project completed in 2022 was related to that project, so the information seemed relevant and is included for information and disclosure purposes.

⁷⁵ Federal Aviation Administration, Finding of No Significant Impact/Record of Decision, Environmental Assessment for Land Release: FedEx Ground Distribution Center (June 30, 2015).

- New 4-lane TSA checkpoint and terminal improvements (CatEx approved by FAA 01/21/2021; project scheduled to be completed in 2024)
- New Corporate Hangar (by Others)
 - Existing airport tenant is building a new hangar (EA/FONSI approved by FAA on 10/6/2022; project scheduled for completion in 2024)
- Runway 6-24 Rehabilitation (Taxiway Fillets & Shoulder Construction)
 - Shoulder construction for the recently completed Runway 6/24 rehabilitation (scheduled for completion in 2024).

The terminal apron rehabilitation is a routine pavement maintenance project. The security checkpoint improvements are located inside the terminal building. A new corporate hangar is under construction on the south side of the Airport. These projects are not challenging or controversial on environmental grounds, and no difficulties were reported in obtaining the requisite development permits or approvals. No other major projects are underway at ABE or nearby.

4.16.3. Reasonably Foreseeable Projects (2024-2026)

The following projects are planned to be undertaken at ABE within the next three years:

- Old Administration (Government) Building Demolition
 - Currently vacant and a safety concern.
- Parking Garage Construction
 - LNAA is currently reviewing design proposals with anticipation for design completion in 2025 and ultimate construction to be completed by 2028.
- Non-aeronautical commercial development (terminal area)
 - LNAA reviewing options for commercial development within the terminal area for revenue generating opportunities.
 - LNAA is currently discussing with a developer the possibility for a hotel within the terminal area.
- Aircraft Charging Equipment (By-Others)
 - Beta Technologies is working to install an electric aircraft charging station at ABE. Beta Technologies is responsible for all permits and approvals.
- Solar Development (By-Others)
 - LNAA is discussing the ability to install solar panels with a developer on property currently being used for agriculture use. The developer is responsible for all permits and approvals. They are currently in the conceptual stage.
- Re-Align Airport Access & Terminal Roadway
 - LNAA is reviewing conceptual layouts to re-align ABE's main airport entrance to improve safety and efficiency. Currently in the planning stages.
- Terminal Modernization & Americans with Disabilities Act (ADA) Improvements
 - LNAA is in the planning stages of performing interior upgrades to the terminal facilities to upgrade the appearance and improve ADA accessibility.
- Rehabilitate Air Carrier Apron
 - LNAA is in the planning stages of rehabilitating the main air carrier apron serving ABE.

Temporary construction impacts notwithstanding, these projects that would not be expected to cause or contribute to adverse environmental consequences.

One major development project is being considered east of ABE. LNAA and Majestic Realty have entered into a lease agreement to develop 297 acres along Airport Road from Schoenersville Road to north of Orchard Lane in Hanover Township, Northampton County.⁷⁶ Majestic builds "master plan business parks," which may include office buildings, medical offices, light industrial and research centers, and "flex" buildings. The Los Angeles based company presented their latest plans to the Northampton Township Board of Supervisors in July 2023. The current plan includes 10 buildings totaling approximately 150,000-sf of building space. The site is located in the Township's aircraft flightpath highway business district (AFHBD). Bulk and area regulations in this district include 50 percent impervious coverage, 30 percent building coverage, and 300-foot setbacks from residential districts. This equates to a relatively low-density plan. The project is currently in the planning and development phase. If approved, the next steps would include final design, bidding and awards, followed by construction.

4.16.4. Discussion

Air Quality

As discussed in **Section 4.2**, construction and operation of the Proposed Action would increase emissions of air pollution in the study area, and the increase was determined to be *de minimis*. Incremental impacts that are so small as to be *de minimis* may be determined to be not cumulatively considerable and to not trigger the need to prepare an EIS. Because no other past, ongoing, or reasonably foreseeable projects or actions referenced in this section of the EA are identified as having a potentially significant adverse effect on air quality in the study area, the project related emissions increase under the Proposed Action would **not** be expected to cause or contribute to a potentially significant cumulative effect.

Climate

Construction and operation of the Proposed Action would emit greenhouse gases into the atmosphere as discussed in **Section 4.4**. There are currently no significance thresholds for GHS emissions. Therefore, it may be determined that the incremental increase in GHG emissions would **not** cause or contribute to a potentially significant cumulative effect.

Hazardous Materials, Solid Wastes, and Pollution Prevention

As discussed on **Section 4.8**, implementation of the Proposed Action would involve the use, handling, transport, storage, and disposal of hazardous materials and waste products. No other past, ongoing, or reasonably foreseeable projects or actions referenced in this section of the EA are identified as having potentially significant effects on human health or the environment in the general study area. Compliance with state and local permit requirements provides adequate assurance that the incremental increase in regulated activities associated with the Proposed Action would **not** pose a significant risk to health, safety, or property.

Natural Resources and Energy Supply

Under the Proposed Action, there would be an incremental increase in the consumption of energy and natural resources as discussed in **Section 4.11**. Because no other past, ongoing, or reasonably foreseeable

⁷⁶ The proposed site is owned by LNAA, from which Majestic has leased the land and plans to diversify for purposes beyond aviation use. LNAA has coordinated the land lease with FAA for their review and comment, similar to the process required for all nonaeronautical land leases that should be discussed with the FAA.

projects or actions referenced in this EA section are identified as causing a substantial increase in the demand for energy utilities, water supplies and treatment, natural resources, or fossil fuels, it can be determined that the Proposed Action would **not** have the potential to cause or contribute to demands that would exceed available supplies.

Noise and Noise-Compatible Land Use

As discussed in **Section 4.12**, under the Proposed Action there would be a minor increase in aircraft overflights and noise levels near the ends of Runway 6-24, and a minor increase in ground-level aircraft noise and vehicular traffic noise levels in proximity to the proposed cargo facility. No other past, ongoing, or reasonably foreseeable projects or actions referenced in this EA section are identified as contributing to aircraft operations and noise levels at ABE. Regarding ground-level noise near the two residences closest to the proposed project site (1555 and 1565 Race Street), the FedEx Ground Distribution Center on Willow Brook Road N (opened in 2018) increased traffic through the Race Street intersection. However, even with the effects of this previous project, both roadway-derived noise exposure and aircraft-derived noise exposure at both residences remains below DNL 65 dB. When these noise sources are logarithmically combined, the combined noise exposure value at the residences exceeds DNL 65 dB, but noise increases attributable to the Proposed Action do not exceed DNL 0.4 dB in the 2033 Proposed Action Alternative. Therefore, it may be determined that the noise impacts of the Proposed Action when combined with the cumulative noise impacts from past, present, and reasonably foreseeable projects would **not** cause or contribute to a significant noise increase. Additional details on the noise analysis can be found in **Appendix H**.

Traffic

The Proposed Action would cause a minor increase in traffic volumes on the north side of ABE, along Race Street, and through the signalized intersection at Willow Brook Road, as discussed in **Section 4.14**, and most of the traffic would access and egress the area using Airport Road. For the past several years, the same roadways have experienced increased traffic volume after the FedEx Ground Distribution Center opened on Willow Brook Road N in 2018, which required major improvements to the Race Street intersection. These improvements, undertaken by PENNDOT, were based on projected traffic growth rates and included an allowance for additional growth. As a result, the intersection currently performs at a high level of service. According to the Traffic Impact Assessment prepared for the Proposed Action, there is sufficient capacity in the roadway system to accommodate the proposed North Cargo Facility and capacity remaining for additional growth. Other than temporary construction traffic, no forecast traffic demand is associated with the future demolition of the Old Administration Building or construction of the parking garage. Non-aeronautical commercial development in the terminal area could result in additional traffic along Airport Road but those projects are not yet defined, and no traffic information is available to consider. The proposed “master-planned flex center” would also be expected to increase traffic volume along Airport Road, if approved and implemented. PENNDOT is responsible for Airport Road, and they have considered and concurred with the Proposed Action. In the future, it would be incumbent upon PENNDOT to consider potential future traffic volumes associated with the proposed master-planned flex center, as an addition to the traffic associated with the Proposed Action, which is already accounted for. Neither PENNDOT nor Hanover Township would be expected to approve the traffic plan for that development project if significant traffic impacts were likely to occur. Therefore, it may be determined that the incremental increase in traffic volume associated with the Proposed Action would **not** cause or contribute to a significant decrease in the level of service on the affected roadways.

Visual Effects

The proposed cargo building, and associated aircraft activities, may be partially visible from the two remaining residences at 1555 and 1565 Race Street. This would be a minor change of the view of the area from this specific vantage point, as discussed in **Section 4.15**. In addition, LNAA recently cleared the lots it owns to the east of the two residences, and they removed a hedgerow along the Airport property line south of the two residences, some portion of which may have fully or partially obscured the resident's view of the Proposed Action. No other past, ongoing, or reasonably foreseeable projects or actions referenced in this EA section are identified as having visual effects on the two residences. The nature of the visual character of the affected area is not particularly unique or locally important nor are there are visual resources that possess remarkable aesthetic value. Therefore, it may be determined that the incremental visual impact of the Proposed Action would **not** rise to a level of significance.

Water Resources

Under the Proposed Action, project related changes in the quality and quantity of storm runoff would occur in compliance with state and local permit requirements, as discussed in **Section 4.16**. The proposed changes are included as an ongoing amendment to the current NPDES permit that covers the proposed project site and surrounding area. In addition, the same permit included recently completed improvements to Taxiway E as well as changes to grading and stormwater management along Runway 6-24. It will also include proposed near-term improvements and changes along Taxiway A. Given that this single NPDES permit covers past, present, and reasonably foreseeable permitted airport projects and their effects on the same receiving waters, it is reasonable to conclude that the incremental impacts attributable to the Proposed Action would not cause or contribute to a potentially significant cumulative impact on water resources in the study area.

4.16.5. Summary

No potentially significant impacts are identified with the Proposed Action in any environmental impact category analyzed in this EA, and no environmental impact category has been identified as potentially vulnerable to the cumulative effects of ongoing development at or near the proposed project site, except for noise levels near 1555 and 1565 Race Street, which have been analyzed and are less than significant. Therefore, it can be determined that the incremental effects of the Proposed Action are not likely to cause or contribute to a potentially significant cumulative effect on the environment when added to other past, ongoing, or reasonably foreseeable projects at or near the Airport.

4.17. List of Permits

Implementation of the Proposed Action would require the following permits and/or approvals:

- A National Pollution Discharge Elimination System permit from the Lehigh County Conservation District for construction and operation of the project. No difficulties are anticipated to complete the permit process.
- A Highway Occupancy Permit from PENNDOT for intersection improvements that involve construction in PENNDOT's right-of-way. PENNDOT reviewed and concurred with the Traffic Impact Assessment. No difficulties are anticipated to complete the permit process.

- A Resource Conservation and Recovery Act permit from PADEP for the use, handling, storage, and disposal of regulated hazardous materials and industrial wastes. No difficulties are anticipated to complete the permit process.
- Fuel storage tanks in the Commonwealth of Pennsylvania must be registered and permitted with PADEP. Operation and maintenance of the aircraft fuel storage tanks is covered under 25 PA Code Section 245. No difficulties are anticipated to complete the permit process.

Local permits required for land development plan approval include the following: Civil Permit, Building Permit, Independent Electrical Permit, Independent Plumbing Permit, and Independent Pile Foundation Permit. No issues or concerns are anticipated. Code search for project compliance with all applicable permit requirements would be completed by the Engineer-of-Record as part of the design phase.

4.18. Summary of Mitigation Measures

Reasonable measures to lessen the effects of the Proposed Action on the environment have been discussed in each impact category. This section summarizes the BMPs and mitigation measures that would be implemented under the Proposed Action.

Air Quality

As discussed in **Section 4.1**, to reduce emissions from construction phase activities, the following BMPs would be implemented during the construction period:

- Use ultra-low sulfur diesel fuel in all diesel-powered construction equipment
- Use, where possible, of water or chemicals for control of dust in construction operations such as grading of roads or the clearing of land
- Application of asphalt, oil, water or suitable chemicals on dirt roads, material stockpiles and other surfaces which may give rise to airborne dusts, and
- Prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means.

Biological Resources

As discussed in **Section 4.2**, during the construction phase, contractor would be required to implement the following BMPs to reduce the potential for adverse effects on biological resources:

- Use erosion control measures, consistent with NPDES permit requirements, to protect plants and wildlife in undisturbed areas
- Landscape restoration to reconstitute existing habitat while minimizing wildlife attractants.

Accordingly, the project components would be designed in such a way as to reduce the potential to cause or enhance wildlife hazards to aviation as follows:

- Adhere to AC 150/5200-33C - Hazardous Wildlife Attractants on or near Airports.

Hazardous Materials, Solid Waste, and Pollution Prevention

As discussed in **Section 4.8**, during the construction phase, contractors would be required to implement the following strategy to mitigate potential risks to human health and the environment:

- Develop and adhere to an approved Spill Prevention, Control, and Countermeasures Plan that includes BMPs and control measures to reduce the potential for a leak or spill to occur, and countermeasures to minimize potential risks to human health and the environment if a leak or spill were to occur.

After construction, the tenant/operator(s) would be required to:

- Obtain and adhere to the appropriate Resource Recovery and Conservation Act permit that includes hazardous waste BMPs that generally involve procedures for good housekeeping related to procurement, proper storage, handling, spill preparedness, disposal, and training.
- Develop and maintain a Spill Prevention and Response Plan that includes BMPs and control measures to reduce the potential for a leak or spill to occur, and countermeasures to minimize potential risks to human health and the environment if a leak or spill were to occur.

Traffic

As discussed in **Section 4.14**, during the construction period, LNAA would implement the following strategy to accommodate vehicular traffic through the work zone:

- Develop and adhere to a PENNDOT approved Maintenance and Protection of Traffic Plan that gives direction to the contractor about when it can work on the roadway, take out lanes of traffic, detour traffic, etc.

In addition, the following design measures may be implemented if PENNDOT determines they are necessary and includes them in the Highway Occupancy Permit:

- Lengthen the westbound left turn as needed to provide 175-ft of queuing/storage by restriping the gore area, and/or
- Restripe and sign the eastbound the Race Street approach to provide a dedicated right turn lane without impacting overall or eastbound approach operations.

Visual Impacts

As discussed in **Section 4.15**, the project components would be designed in such a way as to lessen the effects of light emissions and the potential for annoyance:

- Shielding or angular adjustments of lights (dark-sky compliant lighting)
- Alternative placement of lights consistent with operational requirements

After construction, if vehicular headlights are determined to be causing annoyance to nearby residences, LNAA could decide to:

- Install a visual buffer or barrier between the proposed entrance road and those residences.

Water Resources

As discussed in **Section 4.16**, appropriate water quality BMPs and control measures would be determined during the project's design and permitting processes. As a condition for FAA environmental approval, LNAA would:

- Adhere to NPDES/Chapter 102 permit terms and conditions for minimizing, reducing, and avoiding potential impacts to surface water and groundwater resources including, but not limited to, preparing a Stormwater Pollution Prevention Plan to reduce or prevent stormwater contamination during construction activities, design measures to reduce the quantity and improve the quality of storm runoff and discharges, and a Post Construction Stormwater Management Plan for monitoring compliance with applicable water quality standards.

CHAPTER 5: PUBLIC INVOLVEMENT

5.1. History

The proposed project was identified and addressed during the 2019 Airport Master Plan Update, it has been openly discussed during airport board meetings, and it will continue to be addressed during state and local permitting and approval processes—all of which are public processes with opportunity for public comments.

5.2. Airport Master Plan

The Master Plan documents are posted on LNAA's website.⁷⁷ The Master Plan included a Public Involvement Plan (PIP). Public participation came from Project Advisory Group (PAG) meetings, LNAA Board of Governors briefings, a regional context workshop, and two public information meetings. Interim documents and other information were also posted on the LNAA website and various social media outlets.

Five PAG meetings were conducted between October 2016 and April 2018. Attendees included representatives from: Federal Aviation Administration, Pennsylvania Department of Transportation, Lehigh Valley Planning Commission, Lehigh Valley Economic Development Corporation, East Allen Township, Hanover Township, Bethlehem Township, Whitehall Township, and several airport tenants.

Besides the ability to review documents on the website and provide comments, the public had two opportunities to review project materials and provide their feedback on the master plan. The first public information meeting was an open-house style workshop held on April 20, 2017. That meeting provided an overview of the regional context, existing conditions inventory, and forecasts of aviation demand. More than 100 people attended the first public meeting. The second public meeting was also an open-house style workshop and held on May 10, 2018. In addition to providing information presented in the first public meeting, this meeting provided information related to the phasing of the preferred development concept, including the proposed project. More than 100 people attended the second public meeting.

All information and materials associated with the Public Involvement Plan for the master plan including meeting presentations, marketing and advertisement notifications, meeting notes, and a summary of public comments, are included with the master plan documents.⁷⁸ A copy of those documents is included in **Appendix K**.

5.3. Airport Board Meetings

The proposed project has been addressed during regularly scheduled meetings of the LNAA Board of Governors, which are open to the public. Each month, meeting agendas and meeting minutes are posted on the LNAA's website.⁷⁹ The meetings are also video recorded and posted online.⁸⁰ Actions related to the proposed project include, but are not necessarily limited to, the following:

⁷⁷ [Master Plan - Lehigh Valley International Airport \(ABE\) \(flyabe.com\)](#)

⁷⁸ 2019 Airport Master Plan Update, Appendix B: Public Involvement Materials

⁷⁹ [Meeting Information - Lehigh Valley International Airport \(ABE\) \(flyabe.com\)](#)

⁸⁰ [\(125\) LNAA Board Meetings - YouTube](#)

- On March 30, 2021, the Board adopted Resolution #7200 to approve a Master Development Agreement with AFCO, LLC. Under this agreement, AFCO is obligated to study the airport's cargo capacity, and to plan and develop facilities to handle the growing flow of cargo.
- Also on March 30, 2021, the Board adopted Resolution #7201 to approve a Form Ground Lease Agreement with AFCO, LLC. Under this agreement, AFCO is obligated to submit plans and specifications for development of the proposed project.

In addition, opportunities for agency/public comment are embedded into applicable permitting processes:

- The proposed project requires an NPDES permit. NPDES permits issued by PADEP and the Lehigh County Conservation District (LCCD) are a matter of public record. When the project's design is complete, and LCCD issues the NPDES permit, public notice will be published in the Pennsylvania Bulletin, pursuant to 25 PA Code §102.32(c). Persons aggrieved by the permit action may request an informal hearing with DEP within 30 days of publication.
- The proposed project does not require a local zoning change or conditional use permit that would otherwise require review by the Hanover Township Zoning Hearing Board. However, local land development plans are subject to Township approval and are required to be discussed at Town Council meetings, which are held the 1st and 3rd Wednesdays of each month and are open to the public.⁸¹

The proposed project has been addressed in several public forms. No public comments have been presented to the LNAA that oppose the proposed project. No impacts have been identified on properties protected under Section 106 of the National Historic Preservation Act, Section 4(f), or floodplain or wetland resources. No adverse impacts are identified in this EA that cannot be satisfactorily managed with best management practices. The project is not expected to be highly controversial on environmental grounds.⁸² No public information meeting or formal public hearing is recommended.

The Draft EA document was available for public review and comment for 30 days (April 17 – May 17, 2024). To ensure the public was aware, LNAA published a Notice of Availability (NOA) in the Express Times and posted the NOA and Draft EA on the Airport's website at <https://www.flyabe.com/airport-authority/documents>. LNAA also sent certified letters to the property owners at 1555 and 1565 East Race Street informing them of the availability of the Draft EA.

There were no comments received or requests for a Public Hearing during the 30 day comment period. See **Appendix K** for the Draft EA notification materials.

⁸¹ <https://www.hanleco.org/council.html>

⁸² The term "highly controversial on environmental grounds" means there is a substantial dispute involving reasonable disagreement over the degree, extent, or nature of a proposed action's environmental impacts or over the action's risks of causing environmental harm. See FAA Order 1050.1F, Section 5-2.b.(10).

CHAPTER 6: LIST OF PREPARERS

Name Affiliation	Project Responsibilities	Education	Years of Experience
Ryan Meyer LNAA	Owner, Project Manager	BS, Aviation Management MS, Aeronautical Science and Management	16
Bryan Oscarson AECOM	Technical Lead	BBA, Airport Management MS, Engineering Management	34
Lynn Keeley AECOM	Sr Environmental Planner	BS, Urban Planning MA, Environmental Studies	36
Chris Salvatico AECOM	Sr Environmental Planner/GIS	BA, Geography MA, Geography	30
Stephen Forney AECOM	Transportation Planner	BS, Biology MS, Environmental Science	7
Brian Harsh, PE AECOM	Technical Review, QA/QC	BS, Civil Engineering Technology	38
Fang Yang, P.E. AECOM	Air Quality Technical Lead	MS, Atmospheric Science	35
Erik Aleksanyan AECOM	Air Emissions Analyst	BS, Physics	2
Darcy Zarubiak, PE RoVolus	Noise Technical Lead	B.Eng., Mechanical Engineering M Sc. Mechanical and Aerospace Engineering	29
Donovan Johnson RoVolus	Noise Analyst	BS, Flight Education MS, Community and Regional Planning	17
Steven Augustine RoVolus	Noise Analyst	BS, Physics and Computer Science	33

APPENDICES