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ATTORNEYS FOR PLAINTIFFS

TOWNSHIP OF TINICUM, DELAWARE COUNTY, PENNSYLVANIA
629 N. Governor Printz Blvd.
Essington, PA 19029

and

COUNTY OF DELAWARE
201 W. Front Street
Media, PA 19063

Plaintiffs,

v.

CITY OF PHILADELPHIA
1515 Arch St., 15th Floor
Philadelphia, PA 19102

Defendant.

IN THE COURT OF COMMON PLEAS
DELAWARE COUNTY, PENNSYLVANIA

CIVIL ACTION –DECLARATORY JUDGMENT

NO. 09-6999

COMPLAINT

Plaintiff, Township of Tinicum, Delaware County, Pennsylvania ("Tinicum Township"), by and through its undersigned counsel, Fox Rothschild LLP, and Plaintiff, County of Delaware, by and through its solicitor, John P. McBlain, Esquire, hereby file this Complaint for declaratory judgment against Defendant City of Philadelphia ("Defendant"), and in support thereof, aver as follows:

PRELIMINARY STATEMENT

1. This is an action for declaratory judgment arising out Defendant's plans in accordance with the proposed Capacity Enhancement Plan ("CEP") at Philadelphia International Airport (the "Airport") to acquire land within Tinicum Township, Delaware County, to expand the Airport. Specifically, under the CEP, Defendant's proposed purchase of land within Tinicum Township would displace seventy (70) or more residences and businesses located in Tinicum Township and Delaware County.

2. If permitted, the CEP would have a detrimental impact on Tinicum Township and Delaware County, its residents and the environment. It also would substantially and negatively affect the tax revenue of the County of Delaware and Interboro School District and Tinicum Township.

3. Tinicum Township and Delaware County seek a declaratory judgment that establishes their right to withhold consent to Defendant's proposed purchase of any land within Tinicum Township and Delaware County pursuant to 53 P.S. § 14161.

JURISDICTION AND VENUE

4. The subject matter jurisdiction of this Court is based upon 42 Pa. C.S. § 931 because the matters giving rise to this action are within the general jurisdiction of this Court.

5. Venue is proper under Pa. R. Civ. P. 2179(b) because the cause of action set forth below arose in this County and affects property within this County.

THE PARTIES

6. Plaintiff, Township of Tinicum, Delaware County, Pennsylvania, is a first-class township with a mailing address of 629 N. Governor Printz Blvd., Essington, Delaware County, Pennsylvania 19029.

7. Plaintiff, County of Delaware ("County" or "Delaware County"), is a second Class A County of the Commonwealth of Pennsylvania existing and governed by the statutes of the Commonwealth and the Home Rule Charter of the County of Delaware.

8. Defendant, City of Philadelphia, is a municipal corporation with offices at 1515 Arch Street, 15th Floor, Philadelphia, Pennsylvania 19102.

BACKGROUND

9. Defendant owns and operates the Airport.

10. Defendant oversees the day-to-day operations of the Airport through its Department of Aviation.

11. Defendant has entered into the Law Enforcement Mutual Aid Agreement pursuant to which, among other obligations, Tinicum Township's Police Department must respond to crimes and other emergencies at the Airport when summoned.

12. Tinicum Township owns and maintains major roadways and arteries that encircle the Airport as well as those that allow access to the Airport, such as Tinicum Island Road, and Hog Island Road and Scott Way leading to Route 291.

13. In addition to public parking lots, traffic control and administration, maintenance of the major Tinicum roadways and arteries, increased municipal services and heightened communications systems and support, there is a significant taxpayer impact imposed by the Airport on Tinicum Township, the expense and maintenance of which is borne solely by Tinicum Township. The County also provides services, direct and indirect, relating to the Airport, and its taxpayers are similarly burdened.

14. Important portions of the runways and terminals of the Airport are located within Tinicum Township and Delaware County.

DEFENDANT'S PLANS TO EXPAND THE AIRPORT, AND THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

15. The CEP is a major airfield redevelopment project.

16. As such, it is subject to the preparation of environmental impact statements (EIS) under the National Environmental Policy Act (NEPA).

17. The Federal Aviation Administration (FAA) has released a Draft Environmental Impact Statement (DEIS) for the proposed CEP at the Airport which contains information on the purpose and need for the proposed project; the range of reasonable alternatives considered; a description of the alternatives evaluated in detail in the DEIS; and an evaluation of the environmental consequences of the DEIS Alternatives. A true and correct copy of the Executive Summary Portion of the DEIS is attached hereto as Exhibit A.

18. Pursuant to the DEIS, the CEP would reconfigure the airfield to provide four east-west parallel runways by extending existing Runway 8-26 and adding a new runway near the Delaware River; reconfigure and expand the terminal complex; reconfigure the cargo areas and parking areas; relocate the Air Traffic Control Tower; and relocate navigational aids and lights. See Exhibit A, at S-1.

19. According to the DEIS, under the two alternatives for the Airport expansion, Defendant must acquire seventy-two (72) housing units west of the Airport in Tinicum Township and Delaware County. See Exhibit A, at S-11.

20. Defendant admits that such acquisition would result in community disruption as the entire neighborhood west of 4th Avenue would be displaced. Id.

21. In addition, under alternative A, eighty (80) businesses within Tinicum Township and Delaware County would be displaced along with an estimated 3,300 employees. Id.

22. Under alternative B, seventy-eight (78) businesses within Tinicum Township and Delaware County would be displaced along with 3,515 employees. Id.

23. Both alternatives would relocate the existing United Parcel Service facility to a new location in Tinicum Township (if UPS agreed to move). Id.

24. Defendant admits that each alternative will result in the loss of real estate taxes to Tinicum Township of approximately $216,000 per year. See Exhibit A, at S-11, S-12. Delaware County would similarly experience a loss in real estate tax. Although the DEIS makes no estimate of Delaware County's real estate tax loss, based on current real estate tax millage, the loss to the County would be estimated to be approximately $267,000 per year.

25. In addition, Defendant admits that each alternative would also reduce the real estate tax revenues for Delaware County and the Interboro School District, the district which the children who reside in Tinicum Township attend. See Exhibit A, at S-12.

26. Another financial loss Tinicum Township will suffer as a result of either alternative is the loss of parking tax revenues of approximately $226,000 per year, as Defendant also intends to acquire three privately owned parking facilities. Id.

27. The acquisition of the three private parking facilities by Defendant will also result in an annual loss of $348,000 for the Interboro School District, a loss which will ultimately affect the children of Tinicum Township. Id.

28. Defendant admits that Tinicum Township and Delaware County could experience an economic hardship as a result of the loss of taxes. Id.

29. In addition to financial concerns, the DEIS states that under either alternative, the emissions of all priority pollutants, volatile organic compounds, nitrogen oxides, carbon

monoxide, sulfer dioxide, and particulate matter, would increase and result in higher levels of emissions for each compound. See Exhibit A, at S-14.

30. During construction of the CEP, emissions of volatile organic compounds and nitrogen oxides would exceed Pennsylvania Ambient Air Quality Standards ("AAQS") for up to eight (8) years of the twelve (12) year construction period. Id.

FIRST CAUSE OF ACTION
Declaratory Judgment

31. Tinicum Township and Delaware County repeat and reallege the averments contained in the above paragraphs, as if the same were fully set forth herein.

32. Pursuant to the Declaratory Judgments Act, 42 P.S. §§ 7531-7541, this Court shall have the power to declare the rights, status, or other legal relations whether or not further relief is or could be obtained.

33. The Declaratory Judgments Act is a remedial statute intended to be liberally construed and administered for the purpose of settling uncertainty and insecurity with respect to rights, status, and other legal relations. Friestad v. Travelers Indem. Co., 452 Pa. 417, 421 (1973).

34. Pursuant to the Declaratory Judgments Act, any person whose rights are affected by a statute may have determined any question of construction or validity arising under a statute. 42 P.S. § 7533.

35. As set forth above, Defendant intends to acquire land within Tinicum Township and Delaware County as part of the CEP.

36. The Pennsylvania statute at 53 P.S. § 14161 is entitled: "Power to acquire lands," and provides:

> [a]ll cities of the first class within this Commonwealth are hereby authorized and empowered to acquire by lease, purchase, or condemnation proceedings any land lying either within or, with the consent of the local authorities where such land is situated without the limitations of said city which, in the judgment of the corporate authorities thereof, may be necessary and desirable for the purpose of establishing and maintaining municipal airdromes and aviation landing fields.

37. When the words of a statute are clear and free from all ambiguity, the letter of it is not to be disregarded. 1 P.S. § 1921(b).

38. Pursuant to the plain language of 53 P.S. § 14161, although Defendant is permitted to acquire land in Tinicum Township, it cannot do so without the consent of Tinicum Township and Delaware County.

39. An actual controversy exists between Plaintiffs and Defendant regarding Defendant's proposed acquisition of property within Tinicum Township and Delaware County as both Tinicum Township and Delaware County oppose the acquisition of any land by Defendant in the manner that Defendant has publicly proposed.

40. Plaintiffs oppose the acquisition of any land in the t ownship and County as proposed by Defendant because such acquisition will, as Defendant admits, have substantial adverse impacts on neighborhoods, businesses, tax revenues, the environment and the School District where the children of Tinicum Township attend.

41. Defendant believes, upon information and belief, that it can acquire land in Tinicum Township and/or Delaware County without Tinicum Township's and Delaware County's consent.

42. Declaratory relief will resolve this controversy.

43. Accordingly, Tinicum Township and Delaware County are entitled to a declaration from this Court that 53 P.S. § 14161 is valid and applicable, and as applied in this

case requires Defendant to obtain Tinicum Township's and Delaware County's consent prior to purchasing any land located in Tinicum Township or Delaware County.

WHEREFORE, pursuant to 42 Pa. C.S. §§ 7531-7541, Tinicum Township, Delaware County, Pennsylvania, respectfully requests that this Court enter judgment in their favor and against Defendant City of Philadelphia declaring 53 P.S. § 14161 constitutional and requiring Defendant City of Philadelphia and/or its agents, to obtain Plaintiffs Tinicum Township's and Delaware County's consent prior to purchasing any land located in Tinicum Township or Delaware County as required by 53 P.S. § 14161, and providing Plaintiffs any further relief the Court deems proper.

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John P. McBlain, Esquire
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County of Delaware

Date: May 26, 2009

VERIFICATION

I, Linda A. Cartisano, Chairman of County Council of the County of Delaware, Pennsylvania, Plaintiff in the within action, hereby verify that the statements contained in the foregoing Complaint are true and correct to the best of my knowledge, information, and belief. I understand that false statements therein are made subject to the penalties of 18 Pa. C.S. § 4904 relating to unsworn falsification to authorities.

Linda A. Cartisano

Date: May 26, 2009

VERIFICATION

I, David Schreiber, Township Mgr of Tinicum Township, Delaware County, Pennsylvania, Plaintiff in the within action, hereby verify that the statements contained in the foregoing Complaint are true and correct to the best of my knowledge, information, and belief. I understand that false statements therein are made subject to the penalties of 18 Pa. C.S. § 4904 relating to unsworn falsification to authorities.

Date: May 6, 2009

EXHIBIT A

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Executive Summary

S.1 Overview

The Federal Aviation Administration (FAA) has identified the Philadelphia International Airport (PHL) as one of the airports contributing to delays throughout the national airspace system. The FAA has determined that a capacity and delay problem exists at PHL and that one of the major causes of the delay is inadequate all-weather airfield capacity due to the airfield's current configuration. The FAA has also determined that proposed projects identified by the City of Philadelphia (the Sponsor) to alleviate this problem would require FAA to prepare an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA). FAA has prepared this Draft Environmental Impact Statement (DEIS) to identify alternatives to the Sponsor's Proposed Project and to analyze and disclose the potential environmental effects associated with the construction and operation of proposed improvements to PHL.

As described in Section S.7.3 and Table S-2, the CEP would reconfigure the airfield to provide four east-west parallel runways by extending existing Runway 8-26 and adding a new runway near the Delaware River; reconfigure and expand the terminal complex; reconfigure the cargo areas and parking areas; relocate the Air Traffic Control Tower; and relocate navigational aids and lights.

Based on this DEIS and the subsequent Final Environmental Impact Statement (FEIS), FAA will issue a Record of Decision (ROD) that contains findings on the alternatives and environmental effects, and a decision on whether FAA may or may not provide the approvals and Federal actions necessary to facilitate the Proposed Project, based on projected environmental impacts.

S.2 Public Participation

The FAA conducted a public outreach program for the Proposed Project to obtain information relevant to the study from local, regional, county, state, and Federal agencies, and to keep local officials, elected officials, community members, and other interested parties informed about the progress and results of the DEIS. The public outreach program included a scoping meeting, public information meetings, meetings with elected officials, public notifications, project newsletters, and a project web site (www.phl-cep-eis.com).

The public outreach program and preparation of this DEIS were initiated following publication of the Notice of Intent in the *Federal Register* on July 30, 2003. In addition to the public scoping meetings on August 18, 19, and 20, 2003, four sets of public meetings have been held to provide the public with information about the study, and to provide the public with the opportunity to ask the FAA questions about the study. Each public meeting was held in three to five locations to reach various segments of the affected public. Public hearings will be held following the release of the DEIS for public review and comment. The complete DEIS is available on the project web site and at public libraries throughout the Study Area. All persons on the project mailing list were provided with a copy of the Executive Summary and a CD containing the entire DEIS.

The primary issues and concerns raised during the scoping process were the Project's purpose and need; the study area; the range of alternatives evaluated by the FAA; noise analysis methods, impacts, and attenuation measures; the public health effects of air emissions from aircraft;

economic impacts, particularly concerning taxes and employment in Delaware County; airport safety; and impacts to wildlife and wetlands. These issues are addressed in the relevant chapters of the DEIS.

S.3 Consultation and Coordination

The FAA has also undertaken extensive consultation and coordination with state and Federal resource and regulatory agencies. The Proposed Project was selected by the U.S. Secretary of Transportation on October 31, 2002 as one of thirteen high-priority projects nationwide that are subject to *Presidential Executive Order 13274, Environmental Stewardship and Transportation Infrastructure Project Review*. This Order requires the Department of Transportation (DOT) to develop a list of high-priority transportation infrastructure projects for expedited agency review and to implement procedural mechanisms to enable agency coordination. In response to the designation as a High-Priority Project, an *Interagency Stewardship and Streamlining Agreement* was developed and signed by the FAA, the Sponsor, and 16 state and Federal review and resource agencies. As outlined in this Agreement, the FAA has provided information to these agencies throughout the preparation of the DEIS, and held meetings to address agency comments and gather consensus at key decision points. These key decision points include purpose and need, alternatives considered, and the avoidance, minimization, and mitigation of impacts. All agencies have concurred with the Proposed Project's Purpose and Need Statement; the range of alternatives considered in this DEIS; and the methodologies used for analysis of environmental impacts. Agency concurrence with minimization and mitigation measures will be sought for the Preferred Alternative during preparation of the FEIS.

S.4 Philadelphia International Airport

PHL is owned and operated by the City of Philadelphia (the Sponsor). Designated by the FAA as a large hub airport, PHL serves 30 scheduled passenger airlines, six cargo airlines, and general aviation. The Airport is a domestic hub and international gateway for US Airways and a hub for United Parcel Service (UPS). In 2007, PHL handled approximately 499,683 aircraft operations and 32 million passengers.[1] In 2007, it was the tenth busiest airport in the U.S. in terms of operations.[2]

PHL occupies approximately 2,300 acres of land approximately seven miles southwest of downtown Philadelphia, and is within both Tinicum Township (Delaware County) and the City of Philadelphia (Philadelphia County). As shown in Figure S-1, the Airport is south of Interstate 95 (I-95) and State Route 291 (SR 291), west of Island Avenue, north of a local road known as Hog Island Road or Fort Mifflin Road, and east of Tinicum Island Road. The Airport also owns a portion of the land between Hog Island Road and the Delaware River.

Currently, PHL (shown in Figure S-1) consists of seven terminals with 2.5 million square feet of passenger handling facilities, 107 domestic gates, and 13 international gates. There are two primary runways (the 10,500-foot long Runway 9R-27L and the 9,500-foot long Runway 9L-27R) and two secondary runways (the 5,459-foot long Runway 17-35, currently being extended to a total length of 6,500 feet, and the 5,000-foot long Runway 8-26). In addition to the terminals, airport facilities include hangars, a deicing facility, fuel facilities, a fire training facility, an 11,300-space parking garage, surface parking lots, rental car facilities, and the Southeastern Pennsylvania Transportation Authority (SEPTA) rail line with four regional rail stations.

1 Philadelphia International Airport webpage, (http://www.phl.org/activityreports/ar0712.html) accessed 20 May 2008.
2 *OPSNET Ranking Report, Federal Aviation Administration*, (http://www.apo.data.faa.gov/opsnet), 2007 OEP Data, accessed 20 May 2008.

S.5 Required Permits and Actions

This EIS is required because of the potential for Federal action by the FAA's approval of revisions to PHL's Airport Layout Plan (ALP) caused by the proposed actions as defined in FAA Order 5050.4B, and potential Federal funding for the proposed development. The No-Action Alternative would not require any new state or Federal Permits or approvals, as this alternative would not require any actions that would result in impacts to land, water, air quality, or other regulated resources other than for extending Runway 17-35 and the proposed Runway Safety Area improvements for Runway 9R. Permits for these two actions have either been issued or are under review. Alternatives A and B would require the state and Federal agency permits or approvals listed in Table S-1.

Table S-1 Permits or Approvals

Agency	Approval or Permit
Pennsylvania Department of Environmental Protection (PA DEP)	▪ Groundwater Discharge Permit - Temporary Discharge Approval ▪ Dewatering Permit ▪ Water Quality Standards Compliance ▪ Joint Permit [combines state PA DEP Water Obstruction & Encroachment Permit (Chapter 105 Permit) & Federal United States Army Corps of Engineers (USACE) Clean Water Act (CWA) Section 404 Permit] ▪ National Pollutant Discharge Elimination System (NPDES) Permit for Stormwater Discharges Associated with Construction Activities (Chapter 102 Permit) ▪ Floodplain Management Permit (Chapter 106 Permit)
U.S. Army Corps of Engineers (USACE)	▪ Joint Permit [combines state PA DEP Water Obstruction & Encroachment Permit (Chapter 105 Permit) & Federal USACE Section 404 Permit]
U.S. Environmental Protection Agency (USEPA)-Region III	▪ Safe Drinking Water Act Compliance

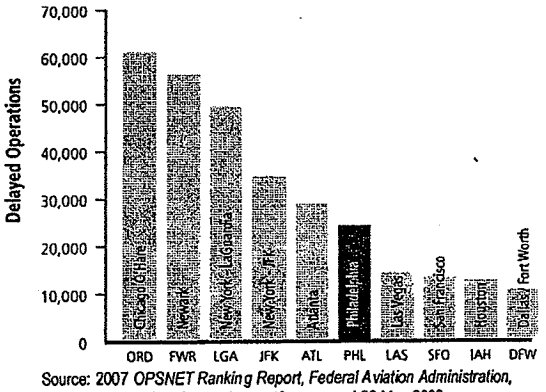
S.6 Project Purpose and Need

The purpose of the Proposed Project is to enhance airport capacity in order to accommodate current and future aviation demand in the Philadelphia Metropolitan Area during all weather conditions. In doing so, it would reduce the total delays at PHL, reduce the costs of delays, and reduce PHL's contribution to delays in the National Airspace System (NAS).

The Capacity Enhancement Program (CEP) is needed because PHL is currently one of the most delay-prone airports in the NAS, and delays are predicted to worsen in the future as aviation demand increases. Currently, the Airport suffers its most severe delays during poor weather with low visibility, as a result of the configuration of the existing airfield. Delays also occur at peak travel hours of the day, peak days of the week, and during heavy travel periods (holidays and summer vacation months) when scheduled aircraft operations exceed the Airport's total capacity even in good weather.

The CEP is also needed because delays impose substantial costs in time and money for passengers and airlines, cargo shippers, and for other users of the air transportation system, as these delays spread throughout the NAS. Figure S-2 shows the 10 most delayed airports in 2007 ranked by total delays.

Figure S-2 Top 10 Delayed U.S. Airports in 2007



Source: 2007 *OPSNET Ranking Report, Federal Aviation Administration,* (http://www.apo.data.faa.gov/opsnet/), accessed 20 May 2008.

The FAA Air Traffic Organization (ATO) has completed an EIS for the New York/New Jersey/Philadelphia Metropolitan Airspace Redesign Project (Airspace Redesign Project). In contrast to the CEP, which is designed to enhance the capacity of the airfield at PHL in order to accommodate current and future aviation demand in the Philadelphia Metropolitan Area during all weather conditions, the purpose of the Airspace Redesign Project is to increase the efficiency and reliability of the airspace structure. The Airspace Redesign Project will not alleviate all weather-related delays at PHL, nor will it increase airport capacity or efficiency. Even with the airspace efficiency gains of the Airspace Redesign Project, additional airfield capacity is needed at PHL.

The capacity of an airport is the number of passengers or aircraft operations that can be accommodated in a specified time period. It is usually determined by the capacity of the runways, which is defined as the number of aircraft operations that can land and take off in an hour. Airfield capacity is a function of the design of the airfield (especially the runways but also the taxiways and instrumentation), local weather conditions, aircraft mix, and FAA Air Traffic Control (ATC) procedures. For any airfield layout, capacity is a dynamic factor that varies with changes in wind direction, weather conditions, and the mix of arriving and departing aircraft.

The operational capacity of PHL is constrained by the layout of the existing airfield. The primary capacity deficiencies of the existing airfield occur because:

- The close spacing of the two primary runways (Runways 9R-27L and 9L-27R) prevents simultaneous arrivals or departures during poor weather.
- Runways 17-35 and 8-26 are currently not of an adequate length to accommodate most large aircraft; therefore, they are underutilized while the primary runways are congested. Runway 17-35 will not accommodate large aircraft even when extended.
- Runway 8-26 can only be used in one direction because aircraft are not allowed to fly over the Passenger Terminal Complex.
- Runways 17-35 and 9L-27R intersect, which prevents simultaneous operations on both runways. Operations on one runway must be halted while the other runway clears, creating delay and reducing the capacity of both runways.
- Weather conditions influence the operational capacity of PHL. Under optimal conditions, where winds are from the west or are calm, PHL operates in West Flow and has an operational capacity of 104 operations per hour. West Flow is the preferred overall operating mode at PHL and generally occurs about 75 percent of the time. PHL's operational capacity is higher in the West Flow operation mode because the large majority of operations are conducted in weather conditions where visibility is good and winds are light, which allows less separation between arriving and departing aircraft and use of all four runways. When weather conditions deteriorate, the Airport operates in East Flow and has a lower operational capacity of about 81 operations per hour. The operational capacity of PHL during East Flow, when winds are strong and from the east and/or visibility is poor, is considerably lower than during West Flow because greater separation is required between aircraft in low visibility weather conditions or in Instrument Meteorological Conditions (IMC) weather conditions where visibility is reduced and an airplane pilot must rely on instrument guidance for final approach and landing. The number of active runways is also reduced in IMC weather conditions.
- The taxiway system creates bottlenecks that delay taxiing aircraft and frequently create long queues.

Delays occur when aircraft operations approach or exceed the physical capacity of the airfield. At PHL, this happens primarily when the airfield capacity is reduced by weather conditions. It can occur when

the number of aircraft operations increases, or when the fleet mix changes. Delays also occur due to external factors, such as the weather conditions at other airports, but aircraft operations and airfield capacity at PHL play a much larger role in causing delays, and are causes of delay that the Airport and/or FAA have the ability to change.

S.7 Alternatives Considered

Alternatives with the potential to meet the Proposed Project purpose and need were identified and evaluated in a step-wise process. Chapter 3 of the DEIS provides detailed information on the range of alternatives potentially capable of achieving the purpose and need, the reasons why certain alternatives were eliminated from further study, and why certain alternatives were determined to be reasonable and feasible and were retained for detailed evaluation in this DEIS.

S.7.1 Candidate Alternatives

Step one of the alternatives process identified a range of candidate alternatives. These were identified in the Sponsor's Master Plan Update, as well as during the NEPA scoping process, and by the FAA. These were screened based on their potential to meet the Project purpose and need. Candidate alternatives evaluated included:

- Other airports: More extensive use of other airports in the PHL service region or construction of a new airport in the region.
- Other modes of transportation: Greater passenger use of surface roadways, rail, and/or intercity buses.
- Congestion management: Various market-based approaches that reduce demand by raising the price of using the airfield, or administrative approaches that limit the number of flights.
- Operational improvements and flight technology improvements: Technological improvements in communications, navigation, and safety that have the potential to reduce delays.
- On-airport alternatives that would enhance capacity and reduce delays by implementing physical improvements to the Airport. These alternatives included 29 options identified during the Master Plan process conducted by the City.
- A "blended alternative" consisting of on- and off-airport alternatives having incremental capacity enhancing benefits.

After analysis, FAA determined that more extensive use of other airports, greater passenger use of other modes of transportation, demand management, technology improvements, and the blended alternative were not reasonable alternatives, and could not meet the Proposed Project purpose and need. Market-based congestion management was eliminated because it would not produce sufficient delay reductions to meet the Proposed Project purpose and need.

S.7.2 Preliminary Alternatives

Step two of the process evaluated those candidate alternatives that were not eliminated in the first step. Airport infrastructure improvements were retained for analysis at the second level of the alternatives evaluation. Preliminary alternatives included:

- Alternative A – Parallel 8-26 East
- Alternative B – Parallel 8-26 West
- Alternative C – Midfield Terminal

These alternatives were evaluated to determine if they were "reasonable and feasible" (could be constructed and implemented). The analysis determined that Alternative C was not reasonable in terms of implementation issues, operational delay during construction, and project costs. Therefore, this alternative was not advanced for further analysis in the DEIS.

Two options for capacity enhancement were identified and retained: Alternative A would retain Runway 17-35, add a fourth parallel runway, extend Runway 9C-27C to the east, and extend Runway 8-26 to the east. Alternative B would eliminate

Runway 17-35, add a fourth parallel runway, extend Runway 9C-27C to the east, extend Runway 8-26 to the west, and reconfigure the terminal complex. Both alternatives were determined to be reasonable and to meet the purpose and need.

S.7.3 DEIS Alternatives

The DEIS evaluates three alternatives: the No-Action Alternative, Alternative A, and Alternative B, which are described below and summarized in Table S-2.

No-Action Alternative

The No-Action Alternative involves only periodic maintenance and minor enhancements needed to maintain safe operations at PHL. These maintenance and enhancements would occur without the CEP. It incorporates the extended Runway 17-35, and assumes that the Airspace Redesign Project procedures have been implemented. The No-Action Alternative serves as the basis for assessing the impacts of the other alternatives being considered.

The No-Action Alternative, based on a delay simulation model, would result in an average delay per operation of 19.3 minutes in 2020 and 19.1 minutes in 2025 (Figure S-5). An airport is considered to be severely congested when the average delay per operation exceeds 10 minutes.

Alternative A

Alternative A (Figure S-3) would have five runways connected by a redesigned and more efficient taxiway system than the No-Action Alternative. This alternative is estimated to cost $5.2 billion to construct. Runway 17-35 would remain as a 6,500-foot crosswind runway. This alternative would extend Runway 8-26 2,000 feet to the east, for a total length of 7,000 feet. This runway would continue to be unidirectional, serving westbound arrivals and eastbound departures. Runway 8-26 would have an Engineered Materials Arresting System (EMAS) constructed at the east end of the runway.

Runway 9L-27R would remain at its current length (9,500 feet) and location. It would support westbound departures in West Flow, and eastbound arrivals in East Flow. This alternative would extend Runway 9R-27L to the east by 1,500 feet, to a total length of 12,000 feet. This runway would be renamed Runway 9C-27C. It would function primarily as an arrival runway during West Flow operations and a departure runway during East Flow. A new runway, Runway 9R-27L, would be constructed 1,600 feet south of Runway 9C-27C. This runway would be 9,103 feet long by 150 feet wide and would serve primarily as a departure runway in West Flow and an arrival runway in East Flow. Runway 9R-27L would have EMAS installed on its west end to reduce impacts to the Delaware River.

Alternative A would upgrade and reconfigure the existing terminal complex in its existing location. This alternative would add a new commuter terminal east of Runway 17-35. The total terminal complex would consist of eight concourses with 145 to 150 gates and approximately 3.6 million square feet. An automated people mover (APM) would be constructed to transport passengers between terminals and parking facilities. The APM would have both elevated and below-grade sections, with the system elevated along the face of the terminals and below-grade under the Runway 17-35 safety area. The existing SEPTA rail line would continue to provide access to the terminals from outside the Airport and would interface directly with the APM system.

Alternative A would also include several off-airport relocations to accommodate the new and extended runways. The UPS facility south of the Airport would be relocated to a new site in Tinicum. Hog Island Road would be closed, and the freight railroad serving the USACE Fort Mifflin Dredge Disposal Facility would be relocated. Part of the Dredge Disposal Facility would be relocated to the north, and the Sunoco Hog Island

Table S-2 Summary of DEIS Alternatives

	No-Action Alternative	Alternative A	Alternative B
Runways	17-35 – 6,500 ft 8-26 – 5,000 ft 9L-27R – 9,500 ft 9R-27L – 10,500 ft	17-35 – 6,500 ft 8-26 – 7,000 ft 9L-27R – 9,500 ft 9C-27C – 12,000 ft 9R-27L – 9,103 ft	8-26 – 7,000 ft 9L-27R – 9,500 ft 9C-27C – 12,000 ft 9R-27L – 9,103 ft
Terminals	7 terminals 2.5 million sf	7 terminals 3.6 million sf	4 terminals 3.8 million sf
Air Traffic Control Tower	Remains in current location south of the airfield	Relocated[2]	Relocated[2]
Gates	120	145 to 150	152 to 157
Parking	5 garages	3 garages Ground Transportation Center	2 garages Central Headhouse
Automated People Mover	None	Above and below ground	Below ground
SEPTA	No change	No change	Ends at Terminal A
Tinicum Island Road	No change	Relocated	Relocated
Hog Island Road	No change	Closed	Closed
Island Avenue	No change	Relocated	Relocated
United Parcel Service	Expand existing	Relocated	Relocated
USACE Dredge Disposal Facility	No change	Partially relocated	No change
Sunoco Logistics	No change	Close Hog Island Pier Extend Fort Mifflin Pier	Close Hog Island Pier Extend Fort Mifflin Pier
Freight Rail Track	No change[1]	Close Conrail line south of the Airport and construct new rail line northeast of the Airport	Close Conrail line south of the Airport and construct new rail line northeast of the Airport
Estimated Construction Cost	No new costs	$5.2 Billion	$5.4 Billion

1 Constructing a railroad spur off Conrail's existing freight line within USACE facility has already been completed.
2 FAA's Airways Facilities Tower Integration Laboratory (AFTIL) has conducted an ATCT site selection study in accordance with FAA Order 6480.4, Air Traffic Control Tower Siting Criteria. The study identified several potential sites for the ATCT for each alternative within the proposed limits of disturbance.

Pier would be closed and its functions replaced by extending the existing Sunoco Fort Mifflin facility's pier to the west of its current location.

Alternative A, based on a delay simulation model, would result in an average delay of 5.2 minutes in 2020, as compared to 19.3 minutes under the No-Action Alternative, and 8.4 minutes in 2025, as compared to 19.1 minutes under the No-Action Alternative (Figure S-5).

Alternative B

Alternative B (Figure S-4) would have four runways connected by a redesigned and more efficient taxiway system. Alternative B is estimated to cost $5.4 billion to construct.

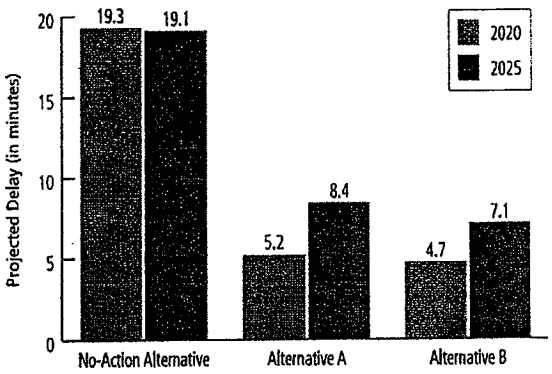
This alternative would extend Runway 8-26 by 2,000 feet to the west, for a total length of 7,000 feet. This runway would continue to be unidirectional, serving westbound arrivals and eastbound departures. Runway 9L-27R would remain at its current length (9,500 feet) and location. It would support departures in West Flow and arrivals in East Flow. This alternative would extend Runway 9R-27L to the east by 1,500 feet, to a total length of 12,000 feet. This runway would be renamed Runway 9C-27C. It would function primarily as an arrival runway during West Flow operations and a departure runway during East Flow. A new runway, Runway 9R-27L, would be constructed 1,600 feet south of Runway 9C-27C. This runway would be 9,103 feet long by 150 feet wide, and would serve primarily as a departure runway in West Flow and an arrival runway in East Flow. An EMAS would be installed on the west end of this runway to reduce impacts to the Delaware River.

Alternative B would partially replace and relocate the existing terminal complex. Existing Terminal A (East and West) would remain in its current location. The total terminal complex would consist of Terminal A and three remote concourses totaling 152 to 157 gates and approximately 3.8 million square feet. This alternative would construct an underground APM to transport passengers between terminals and a centralized headhouse. The headhouse would include drop-off and pick-up functions, rental car facilities, ticketing and baggage operations, and security. The existing SEPTA rail line would continue to provide access to the Airport, terminating at Terminal A and interfacing directly with the APM system.

Alternative B would also include several off-airport relocations to accommodate the new and extended runways. The UPS facility south of the Airport would be relocated to a new site in Tinicum. Hog Island Road would be closed, and the freight railroad serving the USACE Fort Mifflin Dredge Disposal Facility would be relocated. The Sunoco Hog Island Pier would be closed and its functions replaced by extending the existing Sunoco Fort Mifflin facility's pier to the west of its current location.

Alternative B, based on a delay simulation model, would result in an average delay per operation of 4.7 minutes in 2020, as compared to 19.3 minutes under the No-Action Alternative, and 7.1 minutes in 2025, as compared to 19.1 minutes for the No-Action Alternative. Figure S-5 compares the predicted delay for each alternative in 2020 and 2025.

Figure S-5 Comparison of Delay by Alternative



S.8 Environmental Consequences

Chapter 4 of the DEIS (*Affected Environment*) describes the existing environmental conditions within the area potentially affected by the Proposed Project. Chapter 5 of the DEIS (*Environmental Consequences*) describes the environmental consequences of the No-Action Alternative, Alternative A, and Alternative B. The discussion of environmental consequences includes the environmental impacts of the alternatives and any adverse environmental effects that cannot be avoided. The preliminary design of each alternative has been developed to minimize adverse impacts; additional minimization would be accomplished during the final design process for the selected alternative.

Information provided under each impact category includes consideration of direct and indirect effects and their significance; cumulative effects; possible conflicts between the Proposed Project and the objectives of Federal, regional, state, Tribal, and local land use plans and policies; applicable permit or license requirements; and the status of interagency coordination.

For each category, each reasonable alternative is compared to the No-Action Alternative to determine the effect (beneficial or adverse) of the alternative. Where a reasonable alternative would result in an environmental impact, the DEIS provides an analysis of whether that impact is significant, based on FAA guidance on impact thresholds for significant adverse effects provided in FAA Order 1050.1E, Appendix A and summarized in Table S-3. Table S-4, at the end of this section, summarizes the environmental consequences of the alternatives considered in this DEIS.

S.8.1 Noise

Changes in noise were assessed by comparing the noise levels for the future No-Action Alternative with the noise levels predicted for Alternatives A and B and calculating the change in noise associated with each alternative. FAA Order 1050.1E stipulates that a significant noise impact would occur if analysis shows that the proposed action will cause noise-sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the future No-Action Alternative. The Federal Interagency Committee on Noise (FICON) recommended that less than significant noise level changes also be identified for noise-sensitive locations exposed to Project-related increases. FAA Order 1050.1E recommends reporting any changes of DNL 3 dB or more between the DNL 60 and 65 dB contour, and DNL 5 dB changes between DNL 45 and 60 dB. While these recommendations only apply to cases where the significant threshold (DNL 1.5 dB or more) is met or exceeded, they are included in this DEIS in response to comments raised during scoping.

Based on the noise analysis, significant noise impacts are expected to result from either Alternative A or B in 2020 and 2025.

The total population and housing units exposed to DNL 65 dB and greater would decrease substantially under both alternatives (in both 2020 and 2025), when compared to the No-Action Alternative. These decreases would occur primarily north of the Airport in Philadelphia County, Pennsylvania as a result of eliminating Runway 17-35 or significantly reducing its use. However, increases in noise exposure of 1.5 dB or greater above the DNL 65 dB contour would occur in other areas, resulting in significant impacts in 2020 and 2025 for both Build Alternatives.

Both Alternative A and Alternative B would shift noise contours, and would reduce the number of people exposed to noise levels above DNL 65 dB. In 2020, the No-Action Alternative would expose 2,661 people to these noise levels. Alternative A (948 people) and Alternative B (915 people) would have less impact. In 2025, the No-Action Alternative would expose 4,633 people to noise levels greater than DNL 65 DB, while Alternative A would result in 1,312 people and Alternative B 1,080 people at this level.

Alternative A would result in significant impacts to 832 people and 330 housing units in 2020, and 1,196 people and 497 housing units in 2025. Alternative B would result in significant impacts to 745 people and 290 housing units in 2020 and 964 people and 392 housing units in 2025. All of the significant impacts would occur in Delaware County, Pennsylvania.

Table S-3 Impact Thresholds for Significant Adverse Effects

Impact Category	Impact Threshold: Significant Adverse Effects
Air Quality	Proposed Project would result in emissions of pollutants that would exceed National Ambient Air Quality Standards.
Biotic Communities	No specified significance thresholds for species that are not Federally-listed threatened or endangered species. Analysis should take into account population dynamics and sustainability for the affected species and the minimum population levels required for population maintenance.
Coastal Resources	State determination that the Proposed Project would not be consistent with the Coastal Zone Management Plan.
Compatible Land Use	Proposed Project would result in a significant noise impact over a noise-sensitive area within the 65 dB Day-Night Average Sound Level (DNL) contour.
Construction Impacts	Construction would create significant impacts that could not be mitigated.
Department of Transportation Act, Section 4(f) and Section 6(f)	The Proposed Project would involve more than a minimal physical use of a Section 4(f) property or would substantially impair the Section 4(f) property, and where mitigation measures would not eliminate or reduce the effects below this threshold.
Farmlands	Significant impacts are determined by the Natural Resource Conservation Service (NRCS) Form AD 1006 method. The Proposed Project would result in the loss of farmland with a Form 1006 score higher than 200.
Endangered and Threatened Species	Determination by the US Fish and Wildlife Service or National Marine Fisheries Service that the Proposed Project would be likely to jeopardize the continued existence of a Federally-listed species, or result in the destruction or adverse modification of Federally-designated critical habitat.
Floodplains	The Proposed Project would result in notable adverse impacts to natural and beneficial floodplain values.
Hazardous Materials and Solid Waste	The Proposed Project could not be designed to meet the applicable local, state, Tribal, or Federal regulations on hazardous or solid waste management.
Historical, Architectural, Archaeological, and Cultural Resources	An effect on a property listed or eligible for listing in the National Register of Historic Places may be considered a significant impact, depending on the nature and magnitude of the effect.
Light Emissions	The Proposed Project would have an adverse effect when light emissions create annoyance or interfere with normal activities.
Noise	The Proposed Project would cause noise-sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB, when compared to the No-Action Alternative.
Environmental Justice, Children's Health and Safety	The Proposed Project would have disproportionately high and adverse human health or environmental effects on minority or low-income populations, or disproportionate health and safety risks to children.
Socio-economic Impacts	The Proposed Project may have a significant effect if it results in extensive relocation of residents; extensive relocation of community business that would create severe economic hardship for the community; disruption of local traffic patterns that would substantially reduce the level of service of roads serving the airport and surrounding communities; or a substantial loss in the community tax base.
Water Quality	The Proposed Project would exceed state water quality standards, result in water quality problems that could not be avoided or mitigated, or would have difficulty in obtaining required permits.
Wetlands	The Proposed Project would adversely affect the function of a wetland to protect municipal water supplies or sole source aquifers; would substantially alter the hydrology needed to maintain wetlands; would threaten public health, safety, or welfare by substantially reducing a wetland's ability to retain floodwaters; would adversely affect wildlife habitat or fish habitat; or would be incompatible with state wetland strategies.
Wild and Scenic Rivers	No specific thresholds have been developed. Significance is determined in consultation with the Department of the Interior.

Source: *Federal Aviation Administration Order 1050.1E, Change 1, Environmental Impacts: Policies and Procedures*, Federal Aviation Administration, 20 March 2006.

One non-residential noise-sensitive site would experience significant noise impacts in 2025 as a result of either Alternative A or B – the Navy Chapel of the Four Chaplains at the at the Philadelphia Naval Shipyard (1201 Constitution Avenue).

These significant noise impacts to residential and non-residential noise-sensitive areas in 2020 and 2025 as a result of either Alternative A or B would exceed FAA's threshold of significance, and therefore would warrant mitigation measures.

S.8.2 Social and Economic Environment

Social impacts are defined as those that involve the relocation of a residence or business, the alteration of surface transportation patterns, the disruption of established communities, and any appreciable change in employment. The DEIS also examines the potential for the alternatives considered to result in induced or secondary impacts in surrounding communities, as well as the potential economic consequences of these alternatives.

Residential Impacts

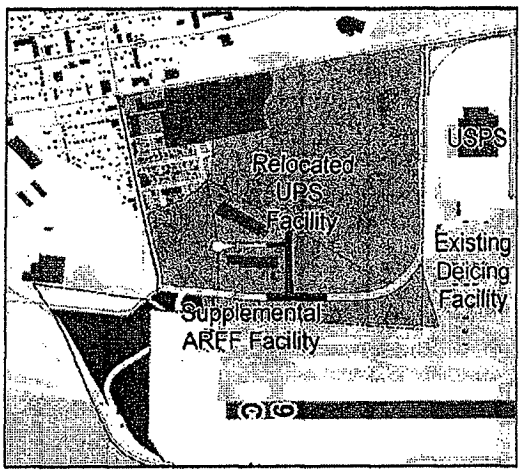
Both Alternatives would require that 72 housing units west of the Airport in Tinicum Township be acquired (Figures S-6 and S-7). This would result in community disruption, as the entire neighborhood west of 4th Avenue would be relocated. This is not anticipated to result in a significant impact, as there is sufficient replacement housing available in Tinicum. Figure S-6, at right, shows a close-up of the West Side Acquisition Area. Figure S-7 shows all land acquisition areas near the Airport.

Business and Employment Impacts

Alternative A would displace 80 businesses, with an estimated 3,300 employees. On-airport employment, as a result of the expansion of the terminals, would increase by 2,880 jobs under Alternative A.

Alternative B would displace 78 businesses, with an estimated 3,515 employees. On-airport employment, as a result of the expansion of the terminals, would increase by 4,500 jobs under Alternative B.

Figure S-6 West Side Acquisition Area



Note: Yellow denotes existing residential areas.

Both alternatives would also relocate the UPS facility on Hog Island Road to a new location west of the Airport in Tinicum, with no loss of jobs. Because many of these displaced businesses are airport-dependent, it is likely that most would choose to relocate in the immediate area, most likely in Tinicum or Eastwick. This would not result in a significant economic impact (one that would create severe economic hardship for affected communities) because the majority of displaced businesses are expected to relocate in the immediate vicinity of the Airport, and losses would be partially offset by employment gains at the Airport.

Tax Impacts

Each alternative would result in the loss of real estate taxes to the City of Philadelphia and to Tinicum Township, assuming that businesses do not relocate in the immediate area. Alternative A would result in a real estate tax loss of $1.14 million per year to the City of Philadelphia, and $216,000 per year to Tinicum. Alternative B would

result in an annual tax loss to Philadelphia of $1.87 million, and $216,000 to Tinicum.

Each alternative would also reduce the real estate tax revenues for Delaware County and the Interborough School District. The acquisition of three privately-owned parking facilities would also reduce parking tax revenues for either alternative to the City of Philadelphia (by approximately $550,000 per year), Tinicum (by approximately $226,000 per year), and the Interborough School District (by approximately $348,000 per year). These losses would be partially offset by new employment taxes generated by the new jobs at the Airport, as well as increased retail sales activity at the Airport.

The potential loss of tax revenues would not result in a severe economic hardship to the City of Philadelphia due to the size of the City's economy and tax base. Tinicum Township could experience an economic hardship due to the loss of taxes, if businesses do not relocate within the community.

Construction Impacts

Construction of either alternative would create new construction-related employment in the Delaware Valley region, with substantial direct and indirect economic benefits. The estimated total direct employment for the 12-year construction timeframe ranges from 44,700 to 46,400 jobs, with 3,700 to 3,900 jobs per year. For each $1 spent on construction, an additional $1.27 would be spent throughout the region.

Regional and Secondary Impacts

The CEP would result in an increased number of passenger enplanements, and would result in increased economic activity at the Airport and for local non-airport businesses, with increases in employment and investment. Because the projected change in passengers and operations is relatively small, the CEP alternatives are not likely to result in major regional economic gains.

S.8.3 Compatible Land Use

Land use compatibility is defined by the FAA in 14 CFR 150, *Airport Noise Compatibility Planning* (Part 150), as the "use of land that is identified as normally compatible with the outdoor noise environment."[3] The outdoor noise environment, in relation to airport noise compatibility, is measured in terms of yearly DNLs. Part 150 includes a matrix that identifies what types of land uses are incompatible with certain levels of noise exposure.

Alternative A would result in 50.0 acres (2020) and 66.8 acres (2025) of incompatible residential land at or above DNL 65 dB in Tinicum Township, Pennsylvania. When compared to the No-Action Alternative, Alternative A would substantially decrease the amount of incompatible residential land in Philadelphia, Pennsylvania (by 77.0 acres in 2020 and 161.6 acres in 2025) but would increase the amount in Tinicum Township, Pennsylvania (by 40.2 acres in 2020 and 52.3 acres in 2025).

Alternative B would result in 47.0 acres (2020) and 59.4 acres (2025) of residential land exposed to incompatible noise levels at or above DNL 65 dB in Tinicum Township, Pennsylvania. When compared to the No-Action Alternative, Alternative B would substantially decrease the amount of incompatible residential land in Philadelphia, Pennsylvania (by 77.0 acres in 2020 and 161.6 acres in 2025) but would increase the amount in Tinicum Township, Pennsylvania (by 37.2 acres in 2020 and 44.9 acres in 2025).

S.8.4 Environmental Justice and Children's Environmental Health and Safety Risks

Federal environmental impact analysis standards require review and determination to assess whether a proposed project causes a high and adverse environmental impact and, if so, whether this

3 *14 Code of Federal Regulations 150, Airport Noise Compatibility Planning*, Definitions, para. 150.7.

adverse impact falls disproportionately on any low-income or minority populations.

Although both Alternative A and Alternative B would result in significant noise impacts, the analysis shows that there are no disproportionate adverse effects to minority, low-income, or Hispanic populations. The acquisition of residential land in Tinicum would not affect a low-income or minority population.

The Proposed Project's public outreach program included an emphasis on the minority and low-income community of Eastwick, north of Runway 17-35, and published meeting notifications in area minority newspapers.

The Proposed Project, for either Alternative A or Alternative B, would not result in significant impacts to air quality, food, drinking water, recreational waters, soil, or other products or substances that a child might come into contact with or ingest. The Proposed Project would therefore not result in disproportionate health or safety impacts to children.

S.8.5 Surface Transportation

Surface transportation considers the effects of the alternatives on local roads and highways as a result of changes to the roadway systems and changes in traffic volumes as a result of future growth at the Airport.

The No-Action Alternative includes all planned or on-going physical and operational changes that would occur to the transportation infrastructure from 2003 to 2020 or 2025.

Alternative A would require closing Hog Island Road from Tinicum Island Road to the Sunoco Logistics Fort Mifflin Facility (where it becomes Fort Mifflin Road). Visitors would still have access to Fort Mifflin via Fort Mifflin Road. A new intersection would be created along the former SR 291 (Industrial Highway) for access to the Cargo City area. Six existing intersections would be modified.

Alternative A would also require closing Conrail's 60th Street Industrial Track along Hog Island Road. Replacement track would be constructed so that freight rail access is provided for current and potential customers along the 60th Street Industrial Track.

Alternative B would require similar changes to the transportation system. Alternative B includes modifications to four intersections and it would eliminate the weave area on the I-95 Northbound Collector Road and eliminate a merging area on I-95 by removing the on-ramp to I-95 northbound. The existing SEPTA rail line would continue to provide access to the Airport, ending at Terminal A and interfacing with the APM system.

Both alternatives would require that a Point of Access study be done for changes to I-95 and its ramps, in coordination with PennDOT and FHWA.

Both alternatives, in comparison to the No-Action Alternative, would increase traffic on Essington Avenue/Industrial Highway eastbound east of 4th Avenue due primarily to relocating the UPS facility and its access points. Traffic is expected to decrease on Bartram Avenue, SR 291 west of Bartram Avenue, SR 291 westbound east of 4th Avenue, and on I-95 due to airport roadway access changes in this area. The off-airport roadway relocations (Tinicum Island Road and Island Avenue) and the road closures (Hog Island Road) are not expected to impact emergency services because these roads are not part of a regional corridor that would make them critical arterials for emergency responders.

Several bicycle routes would be altered due to road closures and relocations. Closing Hog Island Road would eliminate the short roadway segment designated *Bicycle Friendly* by the Bicycle Coalition of Greater Philadelphia. Planned bicycle transportation facilities would also be affected by closing Hog

Island Road; the short-term (on-road) and long-term (off-road) Tinicum-Fort Mifflin Trails are proposed to be routed on or along Hog Island Road and would be eliminated. An additional section of the short-term (on-road) facility would be moved by relocating Island Avenue.

The CEP Alternatives would result in changes in overall intersection operations. The No-Action Alternative would result in four failing (LOS E/F) intersections during either the morning or evening peak hours in 2025. Alternatives A and B would result in three failing intersections. Alternative A would improve operations at four locations compared to the No-Action Alternative, and Alternative B would improve operations at two locations.

Compared to the No-Action Alternative, both Build Alternatives would beneficially reduce vehicle miles traveled and vehicle hours traveled (VMT and VHT) in the Study Area by reducing the roadway miles in the Study Area and shifting traffic patterns away from longer congested routes and on to uninterrupted or more direct connections.

S.8.6 Air Quality

The air quality analysis evaluated the emissions of air pollutants from both alternatives, the resulting concentrations of pollutants in the regional area, and also evaluated carbon monoxide concentrations at intersections affected by changes in traffic patterns. Air quality was also evaluated for the 12-year construction period.

Each Build Alternative was examined to evaluate if it might create a new violation of the NAAQS, increase the severity of any existing violations, or delay the attainment of the NAAQS. The analysis showed that the emissions of all priority pollutants (volatile organic compounds, nitrogen oxides, carbon monoxide, sulfur dioxide, and particulate matter) would increase with Alternative A and Alternative B, with Alternative A resulting in higher levels of emissions of each compound. However, these emission levels are not regionally significant and constitute less than 10 percent of the regional emissions.

Concentrations of these compounds would not exceed the National or Pennsylvania Ambient Air Quality Standards (AAQS) except for particulate matter smaller than 2.5 microns (PM2.5). PM2.5 concentrations with the No-Action Alternative would be at similar levels and would also exceed the standards. The analysis shows that this exceedence would not create a new violation of the AAQS nor increase the severity of the violation, but could potentially delay the attainment of the AAQS.

During the construction period, emissions of volatile organic compounds and nitrogen oxides would exceed the AAQS for up to 8 years of the 12-year construction period.

Of growing concern is the impact of proposed projects on climate change. Greenhouse gases are those that trap heat in the earth's atmosphere. Both naturally occurring and anthropogenic (man-made) greenhouse gases include water vapor (H_2O), carbon dioxide (CO_2),[4] methane (CH_4), nitrous oxide (N_2O), and ozone (O_3).[5]

Research has shown that there is a direct link between fuel combustion and greenhouse gas emissions. Therefore, sources that require fuel or power at an airport are the primary sources that would generate greenhouse gases. Aircraft are probably the most often cited air pollutant source, but they produce the same types of emissions as cars. Aircraft jet engines, like many other vehicle

4 All greenhouse gas inventories measure carbon dioxide emissions, but beyond carbon dioxide different inventories include different greenhouse gases (GHGs).

5 Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. For example, chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) are halocarbons that contain chlorine, while halocarbons that contain bromine are referred to as bromofluorocarbons (i.e., halons) or sulfur (sulfur hexafluoride: SF6).

engines, produce CO_2, water vapor, NOx, CO, SOx, VOCs, particulates, and other trace compounds.

Based on FAA data, operations activity at PHL represents less than 1 percent of U.S. aviation activity.[6] Therefore, assuming that greenhouse gases occur in proportion to the level of activity, greenhouse gas emissions associated with existing and future aviation activity at PHL would be expected to represent less than 1 percent of U.S.-based greenhouse gases. Therefore, FAA would not expect the emissions of greenhouse gases from this Project to be significant.

S.8.7 Wetlands and Waterways

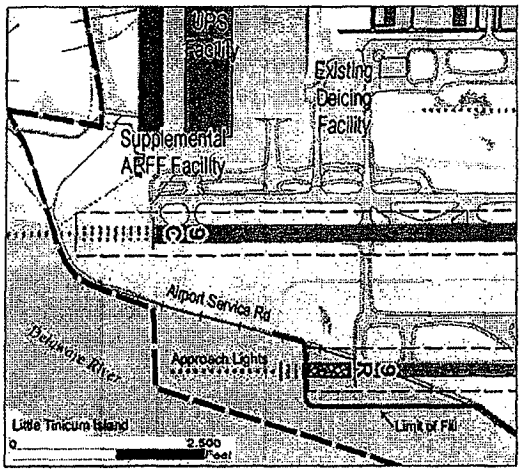
Wetlands and waterways occur throughout the Airport, in areas adjacent to the Delaware River, and within the Project Area both east and west of the Airport. The No-Action Alternative would have no impact to existing waterways.

Alternative A would result in the unavoidable loss of 81.7 acres of wetlands, including 35 acres of wetlands (primarily marshes and open water areas) on the Airport and an additional 46.7 acres of wetlands within the former Philadelphia Water Department sludge lagoons to relocate part of the USACE Fort Mifflin Dredge Disposal Facility. Alternative A would also impact 23.1 acres of waterways, and would place an additional 24.5 acres of fill in the Delaware River to construct the proposed new Runway 9R-27L, shown in Figure S-8.

Alternative B would result in the unavoidable loss of 50.7 acres of wetlands (primarily marshes and open water areas) and 33.4 acres of waterways, and would place an additional 24.5 acres of fill in the Delaware River to construct the proposed new Runway 9R-27L, shown in Figure S-8.

6 FAA Air Traffic Activity System (ATADS); In 2007, FAA's ATADS reported 60,801,288 total aircraft operations at towered airports in the U.S. PHL accounted for 499,683 aircraft operations, or 0.82 percent of the total aircraft operations at towered airports in the U.S., in 2007.

Figure S-8 River Runway Location



Alternatives A and B include constructing the new Runway 9R-27L and relocating the Sunoco Hog Island offloading facility, both of which encroach into the Delaware River. Filling for Runway 9R-27L would result in minor or negligible secondary impacts from changes to river currents and sediment scour and deposition. Deposition of sediment could expand the size of intertidal mudflats and increase the available habitat for intertidal wetland communities in the Project Area.

Alternatives A and B would not have a significant impact on wetlands and waterways in the Project Area or Local Study Area according to the criteria established in FAA Order 1050.1E. Neither alternative would:

- Adversely affect the function of a wetland to protect municipal water supplies or sole source aquifers;
- Substantially alter the hydrology needed to maintain wetlands;
- Threaten public health, safety, or welfare by substantially reducing a wetland's ability to retain floodwaters;

- Adversely affect the maintenance of natural systems that support wildlife and fish habitat or economically important timber, food, or fiber resources; or
- Promote development of secondary activities or services that would affect wetland resources.

S.8.8 Water Quality

PHL is within the watershed of the Schuylkill River and the Delaware River and within the review area of the New Jersey Coastal Plain Sole Source Aquifer. PA DEP considers the Delaware River impaired by PCBs and the Schuylkill River impaired by metals, Dissolved Oxygen (DO), Biological Oxygen Demand (BOD), and PCBs.[7]

Both Alternative A and Alternative B could have a minor adverse effect on surface water quality as a result of increasing the amount of pavement for runways and associated taxiways. This would increase the Airport's use of deicing compounds on the runways and taxiways, which could result in seasonally low oxygen concentrations in the on-airport waterways. Additional deicing of runways and taxiways is expected to have a negligible effect on groundwater quality. The increased pavement area would also reduce groundwater recharge at the Airport. However, because the relatively impervious fill materials result in low recharge under existing conditions, the Proposed Project is not anticipated to affect the Sole Source Aquifer.

The Build Alternatives have the potential to increase BOD slightly due to increased glycol use, which could in turn decrease DO. However, this would also occur under the No-Action Alternative. Mitigation and management measures would reduce the discharge of additional glycol to the receiving waters and would avoid or minimize any additional impairment.

Measures to protect surface water quality would be used during construction, and additional mitigation measures would be incorporated into the project design for either alternative to provide long-term water quality protection. These measures would use Best Management Practices (BMPs) compatible with airport operations, and could include measures such as catch basins, stormwater detention areas or chambers, aeration systems, and revised spill response and containment measures.

S.8.9 Floodplains

The entire PHL property is within the 100- or 500-year tidal floodplains of the Delaware River, which covers extensive areas in Pennsylvania, New Jersey, and Delaware. This broad floodplain includes industrial, commercial, transportation, and agricultural land uses.

The No-Action Alternative would include various airport modifications that are already planned and permitted.

Alternative A would impact 347 acres within the 100-year floodplain, with a net loss of 277 acre-feet of flood storage. Alternative B would impact 761 acres within the floodplain, with a net loss of 356 acre-feet of flood storage.

These impacts are not avoidable, as the entire runway system of the Airport is within the floodplain. However, because the Project Area is subject only to tidal flooding of the Delaware River, development in the Project Area would not increase the 100-year flood elevation because tidal flooding occurs over a wide, unconstrained area. The alternatives would not result in a significant encroachment on the Delaware River floodplain, and there would be only minor impacts to natural and beneficial floodplain values, if any. Neither alternative would create a barrier or restriction to flood flows in the Delaware River.

7 Pennsylvania Department of Environmental Protection, *2006 Pennsylvania Integrated Water Quality Monitoring and Assessment Report*, 1 January 2007.

S.8.10 Biotic Communities

Biological diversity (biodiversity) is an assessment of the numbers, types, and relative abundance of plant and animal species in natural communities. Biodiversity encompasses species richness as well as the genetic differences among individuals, abundance or rarity of species in a landscape, and the variety of habitats, communities, ecosystems, and landscapes where species occur. The concept of biodiversity is a combination of the connections within, between, and among these levels, and how the interrelated elements sustain the system as a whole. For the DEIS, biodiversity is described primarily in terms of important wildlife and vegetation communities and state-listed threatened and endangered species that are known to occur in the PHL Project Area.

PHL contains primarily filled and altered land developed for airport use. In addition to paved areas, this includes upland mowed grassland; brushland/shrubland; uplands and wetlands dominated by common reed; and drainage ditches. Most habitat types within the Project Area are well-represented locally and regionally, and have low wildlife habitat value because of the lack of cover, low water quality, and active airport wildlife management practices.

The No-Action Alternative would not affect biotic communities or state-listed species.

Alternative A would result in the loss of approximately 82 acres of wetlands in the Project Area, which would have a minor impact on common mammal, bird, reptile, amphibian, and fish species using these habitats. These species would likely disperse to other suitable wetland habitat in the area. These species are also opportunistic and highly adaptable, and the incidental loss of these species from the Project Area would not cause a detrimental loss of these species from the region. The loss of estuarine intertidal emergent wetlands in the Project Area would not result in a severe loss of this critical habitat within the Local Study Area given the close proximity and abundance of similar habitat in the John Heinz National Wildlife Refuge.

Several wetlands and waterways affected by Alternative A provide habitat for state-listed bird species and amphibian and reptile species (particularly the red-bellied turtle). Alternative A would have a significant impact on six of these protected species because it would substantially reduce or eliminate the breeding and forage habitat available in the Project Area for these species.

Intertidal mudflats located along the Delaware River contain numerous threatened and endangered plant species. Both alternatives would impact approximately 6.8 acres of mudflat habitat (approximately 12.6 percent of the total habitat). Some of these populations are already small and may be eliminated from the Project Area.

Alternative B would have similar impacts to Alternative A, but would result in substantially less wetland loss (51 acres) and would have less impact on state-listed wildlife species populations associated with wetlands.

S.8.11 Threatened and Endangered Species

The state- and Federally-listed shortnose sturgeon, Atlantic sturgeon, and American bald eagle (protected under the Federal Bald Eagle and Golden Eagle Protection Act) are potentially present in the vicinity of the Airport. The National Marine Fisheries Service (NMFS) has concurred that the CEP Alternatives would not affect critical habitat of the shortnose sturgeon or Atlantic sturgeon. The U.S. Fish and Wildlife Service (USFWS) has concurred that bald eagle nests would not be affected by changes in the frequency, altitude, routing, and type of aircraft traveling in proximity to nests.

S.8.12 Historical, Architectural, Archaeological, and Cultural Resources

Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800), requires

Federal agencies to consider the effects of their undertakings on properties listed, or eligible for listing, in the National Register of Historic Places (NRHP). The FAA finds that the Proposed Project, for either Alternative A or Alternative B, would have no adverse effect on historic resources. Alternatives A and B would not result in any direct physical impacts to historic resources, because these alternatives would not destroy, damage, alter, or remove any property, nor would they change the physical features within the physical setting of any property that contributes to its historic significance. Although both alternatives would result in noise increases at several historic resources, these properties are not noise-sensitive and changes would not alter the character-defining features of these properties. The State Historic Preservation Officers (SHPOs) of Pennsylvania, Delaware, and New Jersey have concurred with this finding.

Either Build Alternative would affect areas potentially containing archaeological resources in some upland areas and potentially in the Delaware River for the relocated Sunoco Pier. Additional archaeological surveys will be conducted in these areas prior to construction to further evaluate impacts to archaeological resources and to determine appropriate mitigation measures if archaeological resources are encountered.

S.8.13 Section 4(f) Resources

The Secretary of Transportation may not approve any program or project that requires the use of any property protected under the Department of Transportation Act, Section 4(f) (publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance or land from an historic site of national, state, or local significance) unless there is no feasible and prudent alternative to the use of such land, and the project includes all possible planning to minimize harm resulting from the use.

The implementation of either Alternative A or Alternative B would not incorporate land from a Section 4(f) resource and would not impair the normal activity or aesthetic value of a public park, recreation area, or wildlife refuge. No properties listed or eligible for listing in the NRHP would be impaired by either of the alternatives in such a way that would interfere with the designation of the property. Therefore, the Proposed Project would not result in the "use" of a Section 4(f) property, and there is no need to prepare a Section 4(f) Evaluation of prudent or feasible alternatives to such use.

S.8.14 Hazardous Materials

Several potential sources of soil or groundwater contamination are within or adjacent to the Project Area, such as the former Hog Island Shipyard; dredge sediment and fill materials; known releases of petroleum products; existing and former above ground and underground storage tanks; underground pipelines; and asbestos-containing asphalt. Construction activities for either Alternative A or Alternative B may encounter contaminated soils, sediments, or groundwater, or may generate regulated and hazardous wastes. Alternatives A and B would place additional fill materials above the capped Enterprise Avenue Landfill, and would require reconstructing the cap in order to ensure the integrity of the remediation.

Although there are no feasible means of avoiding areas of potential subsurface contamination or waste materials, mitigation measures may be implemented during construction to mitigate impacts and risks. Preliminary investigations would be undertaken and coordinated with PA DEP before construction to identify any required hazardous waste and special waste management procedures, specific response actions and dust suppression measures, and to develop construction Health and Safety Plans to protect construction workers who could come into contact with contaminated materials.

S.8.15 Construction Impacts

If the CEP is approved, the total period for the phased construction of the Proposed Project would be approximately 12 years (occurring over the span of 13 calendar years). For planning purposes, this is assumed to begin in 2008 and extend through 2020.

Anticipated temporary/transient Project-related impacts during construction, and anticipated mitigation measures are summarized below:

- Due to changes in aircraft operations during construction, both Alternative A and Alternative B would result in a net decrease of approximately 1,000 to 1,500 people (373 to 678 housing units) exposed to aircraft noise above DNL 65 dB at the midpoint of construction in 2015.
- Temporary construction-related noise impacts are expected to occur in the closest communities to the Airport during various periods throughout the construction period. Increases in noise exposure greater than DNL 1.5 dB above DNL 65 dB are expected at the closest residential areas in Tinicum Township, Pennsylvania, west of the Airport. These increases would be limited to the second calendar year of construction, when construction activities are expected to occur in the areas closest to these homes. The potential for outdoor speech interference may occur periodically at these same locations, as well as in portions of Philadelphia north of the Airport, at the Fort Mifflin Historic Site, and in Paulsboro, New Jersey, throughout the construction project. Minimization measures to reduce temporary impacts would include measures to reduce noise from construction vehicle operations, vehicle loading/unloading, and routing construction vehicles on non-residential streets.
- Temporary air quality impacts could result from direct emissions from construction equipment and trucks, fugitive dust emissions from site demolition and earthwork, and increased emissions from motor vehicles and haul trucks on the on-site and off-site roads due to traffic disruption. These impacts would affect only the immediate vicinity of the construction sites and access routes.
- Mitigation measures for air quality include specifying truck routes, establishing staging areas for equipment and materials, designating parking areas for construction workers' vehicles, minimizing the number of construction vehicles during peak traffic periods, and utilizing newly-certified construction equipment that comply with emission standards. BMPs would be implemented to minimize the impacts from fugitive dust, including street sweeping and tire washes for trucks leaving the site.
- Water quality impacts (soil erosion, deposition of sediment in airport waterways, discharge of iron-contaminated water) would be minimized by implementing sediment and erosion controls and appropriately designed dewatering measures during construction phases of the Proposed Project.
- Subsurface contamination or waste materials encountered during construction would be first identified and then mitigated by conducting preliminary investigations; contaminated soil and groundwater management; asphalt paving and demolition debris management techniques; erosion and sedimentation controls; construction worker health and safety planning; assessment and remediation of known releases; and other BMPs.
- Construction may result in temporary, short-term impacts to the habitat of state-listed wildlife species (red-bellied turtles) due to temporary changes to water quality caused by increased erosion and sedimentation and operation of construction equipment. Mitigation measures could include employing BMPs, such as sediment traps and silt fences, to prevent water quality degradation; timing construction to avoid critical nesting periods (March through June);

monitoring during construction; temporarily relocating turtles, if necessary; and erecting exclusion fencing to protect the red-bellied turtles.

- No temporary impacts due to additional or rerouted traffic resulting from construction activities are expected. Minor construction impacts are expected to occur during implementation of intersection improvements. These impacts would be short-term and mitigated by implementing a construction traffic management plan.

S.8.16 *Cumulative Impacts*

Under NEPA (40 CFR 1508.7), cumulative impacts are defined as "the impact on the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." The analyses conducted for this DEIS used an appropriate time scale and geographic scope for each of the resources evaluated, generally starting in approximately 1980 and extending to 2025. The analysis of cumulative impacts for each affected resource examined whether the incremental effect of the Proposed Project would result in a serious deterioration of the resource, cause the cumulative effect to exceed any regulatory threshold or threshold of significant adverse effect, or affect the structure or function of the human community within the Study Area. The analysis shows that the combination of the action's impacts with other impacts would not result in a serious deterioration of environmental functions or exceed applicable significant thresholds.

S.9 Mitigation

Mitigation measures have been identified to minimize harm from the proposed Capacity Enhancement Program (CEP), where either Alternative A or Alternative B would result in significant adverse impacts that are either temporary in nature (occur during construction) or that would be permanent. Mitigation measures considered for the Proposed Project include design measures to avoid or reduce impacts, and measures to replace or restore lost resources and their functions. The measures identified in this DEIS are conceptual and preliminary. Following review of the DEIS by the Federal, state, and local regulatory and resource agencies, the FAA will identify a Preferred Alternative and the specific mitigation measures that would be required to mitigate for impacts.

This section describes the measures that would be used to mitigate for permanent, long-term impacts of Alternative A and Alternative B. Measures to mitigate for short-term construction impacts are described in Section S.8.15 of this Executive Summary.

S.9.1 Noise

Mitigation for noise impacts would consist of providing sound insultation for residences and other sensitive receptors that experience a significant noise impact as a result of the CEP. Both Alternatives A and B would result in significant noise impacts to residences and to one place of worship. These receptors, exposed to a significant increase (DNL 1.5dB or more) in aircraft noise exposure, at or above DNL 65 dB, will be considered for mitigation. The Airport currently has an established Residential Sound Insulation Program (RSIP). Initiated by the Airport following the FAA's approval of the PHL *Part 150 Noise Compatibility Program* in 2003, the RSIP has provided sound insulation treatments, primarily for homes in Tinicum Township, Pennsylvania. In a current Part 150 Update, the Airport is reexamining the boundaries of its RSIP to accommodate recent changes such as the extension of Runway 17-35 and the implementation of the Airspace Redesign Project (ARD) fanned departure headings. Residences potentially experiencing significant impacts resulting from one of the CEP Build Alternatives, though not included in the current Part 150 Update, could be added to this program.

Table S-4 Comparison of the Environmental Consequences of the No-Action Alternative, Alternative A, and Alternative B

Category	No-Action Alternative	Alternative A	Alternative B
Noise	Continued increase in aircraft noise from growth in airport operations.	The number of people exposed to noise levels greater than DNL 65 dB in 2025 would decrease by 3,321 in comparison to the No-Action Alternative. Increases in noise in some locations would result in significant impacts to residents (832 in 2020; 1,196 in 2025) and housing units (330 in 2020; 497 in 2025) and one place of worship. Alternative A would reduce noise impacts north of the Airport.	The number of people exposed to noise levels greater than DNL 65 dB in 2025 would decrease by 3,553 in comparison to the No-Action Alternative. Increases in noise in some locations would result in significant impacts to residents (745 in 2020; 964 in 2025) and housing units (290 in 2020; 392 in 2025) and one place of worship. Alternative B would reduce noise impacts north of the Airport.
Social and Economic Environment	No impact	Would displace 72 residences and 80 businesses (3,300 jobs) with an increase of 2,880 on-airport jobs. Loss of real estate and other tax revenues to Philadelphia, Tinicum, Delaware County, and Interborough School District could result in economic hardship in Tinicum Township if businesses relocate elsewhere. Short-term economic benefit from the creation of 3,700 construction-related jobs per year.	Would displace 72 residences and 78 businesses (3,500 jobs) with an increase of 4,500 on-airport jobs. Loss of real estate and other tax revenues to Philadelphia, Tinicum, Delaware County, and Interborough School District could result in economic hardship in Tinicum Township if businesses relocate elsewhere. Short-term economic benefit from the creation of 3,900 construction-related jobs per year.
Land Use	Noise levels would be above FAA criteria for 86.8 acres of residential land in 2020 and 176.1 acres of residential land in 2025. Three schools and one place of worship would be exposed to incompatible noise levels.	Noise levels would be above FAA criteria for 50 acres of residential land in 2020 and 66.8 acres in 2025. One place of worship would be exposed to incompatible noise levels in both 2020 and 2025. Noise levels in residential areas in Philadelphia would decrease, but would increase in Tinicum.	Noise levels would be above FAA criteria for 47 acres of residential land in 2020 and 59.4 acres in 2025. One place of worship would be exposed to incompatible noise levels in 2025. Noise levels in residential areas in Philadelphia would decrease, but would increase in Tinicum.
Environmental Justice and Children's Environmental Health and Safety Risk	No impact	No disproportionate significant impact to minority or low-income populations, or to children's health and safety risk.	No disproportionate significant impact to minority or low-income populations, or to children's health and safety risk.
Surface Transportation	Intersection level-of-service degrades to unacceptable levels at 3 intersections due to growth in vehicular traffic.	Closing Hog Island Road is not anticipated to disrupt surface transportation. Operations at key intersections would improve in comparison to the No-Action Alternative. Would not substantially reduce the level of service on roads serving the Airport or surrounding communities.	Closing Hog Island Road is not anticipated to disrupt surface transportation. Operations at key intersections would improve in comparison to the No-Action Alternative. Would not substantially reduce the level of service on roads serving the Airport or surrounding communities. Further study is required to determine if the proposed modification to the I-95 ramps is feasible.
Air Quality	Aircraft emissions increase as a result of increasing delays and increasing airport operations. Emissions of PM2.5 would exceed the AAQS.	Emissions of priority pollutants (VOCs, NOx, SO_2, CO_2, PM10) would be greater than the No-Action Alternative but would not exceed the AAQS, result in a new violation, or delay attainment of the AAQS. Emissions of PM2.5 would exceed the standard but would not create a new violation.	Emissions of priority pollutants (VOCs, NOx, SO_2, CO_2, PM10) would be greater than the No-Action Alternative but would not exceed the AAQS, result in a new violation, or delay attainment of the AAQS. Emissions of PM2.5 would exceed the standard but would not create a new violation.

Table S-4 Comparison of the Environmental Consequences of the No-Action Alternative, Alternative A, and Alternative B (continued)

Category	No-Action Alternative	Alternative A	Alternative B
Wetlands and Waterways	No impact	Loss of approximately 82 acres of wetlands and 23 acres of open waterway would be mitigated. No significant impact in accordance with FAA Order 1050.1E.	Loss of approximately 51 acres of wetlands and 33 acres of open waterway would be mitigated. No significant impact in accordance with FAA Order 1050.1E.
Water Quality	Continued minor impacts due to deicing and discharge of other stormwater contaminants.	No significant impact. Minor increase in the discharge of stormwater pollutants. Mitigation measures would be implemented to reduce adverse effects on water quality.	No significant impact. Minor increase in the discharge of stormwater pollutants. Mitigation measures would be implemented to reduce adverse effects on water quality.
Coastal Zone *Management Act* Consistency	Not needed for existing airport	Project can be designed consistent with *Pennsylvania's Coastal Zone* Management Principles	Project can be designed consistent with *Pennsylvania's Coastal Zone* Management Principles
Floodplains	No impact	No significant impact. Placing fill in the 100-year floodplain, and extending Runway 9R-27L into the Delaware River would not affect flood levels or duration.	No significant impact. Placing fill in the 100-year floodplain, and extending Runway 9R-27L into the Delaware River would not affect flood levels or duration.
Biotic Communities	No impact	Potential significant impact to populations of state-listed bird, turtle, and plant species.	Potential significant impact to populations of state-listed bird, turtle, and plant species.
Federal Threatened and Endangered Species	No habitat enhancement measures implemented	No significant impact. Potential transient, short-term increases in turbidity in the Delaware River during construction could affect a small portion of sturgeon feeding habitat.	No significant impact. Potential transient, short-term increases in turbidity in the Delaware River during construction could affect a small portion of sturgeon feeding habitat.
Historical, Architectural, Archaeological, and Cultural Resources	No impact	No adverse effect to historical properties. Additional archaeological survey will be undertaken as stipulated in the Programmatic Agreement.	No adverse effect to historical properties. Additional archaeological survey will be undertaken as stipulated in the Programmatic Agreement.
Section 4(f) Resources	No direct or constructive use	No direct or constructive use	No direct or constructive use
Hazardous Materials	No impact	No significant impact. Preliminary testing and appropriate construction measures would meet state standards and reduce risk to construction workers and the public.	No significant impact. Preliminary testing and appropriate construction measures would meet state standards and reduce risk to construction workers and the public.
Construction Impacts	Temporary minor increases in noise and air quality emissions during construction projects anticipated in the Airport's current 5-Year Plan.	No significant impacts. Temporary minor increases in noise, air quality emissions, temporary minor adverse effects on water quality, and construction traffic impacts due to intersection improvements would be mitigated by use of appropriate best management practices.	No significant impacts. Temporary minor increases in noise, air quality emissions, temporary minor adverse effects on water quality, and construction traffic impacts due to intersection improvements would be mitigated by use of appropriate best management practices.
Cumulative Impacts	The No-Action Alternative would not result in a serious deterioration of environmental functions or exceed applicable significant thresholds.	The combination of the action's impacts with other impacts would not result in a serious deterioration of environmental functions or exceed applicable significant thresholds.	The combination of the action's impacts with other impacts would not result in a serious deterioration of environmental functions or exceed applicable significant thresholds.

The number of residences eligible for sound insulation in each future forecast year takes into account the location and number of homes in the existing RSIP; currently there are 281 homes that are eligible for sound insulation.[8] For Alternative A, there would be an additional 106 homes eligible for sound insulation in 2020, and an additional 145 in 2025. For Alternative B, there would be an additional 77 homes eligible for sound insulation in 2020 and 68 in 2025. Sound insulation would also be provided for the Navy Chapel and for additional residences that would be significantly affected by noise from the UPS facility.

S.9.2 Land Use Compatibility

Changes in the noise contours associated with Alternative A and Alternative B would result in noise levels in some areas, particularly west of the Airport, that are not compatible with residential use. The Division of Aviation, in the 2003 *FAR Part 150 Noise Compatibility Study*, developed a Noise Compatibility Plan (NCP) that included recommendations for noise mitigation measures that could be undertaken for incompatible land uses. The Airport is currently updating its *Part 150 Noise Compatibility Study*. As part of that update, the Airport would be required to examine noise abatement alternatives for which the implementation authority is a local or state agency.[9] Under Pennsylvania State Planning laws, municipalities have the primary responsibility to regulate land use activities within their jurisdiction through zoning code and subdivision regulations.

Currently, neither the City of Philadelphia nor Tinicum Township has specific requirements related to aircraft noise in their zoning or subdivision regulations. These municipalities may choose to implement several measures to prevent future development of incompatible land uses within areas exposed to noise levels greater than DNL 65 dB. Potential measures include:

- Zoning or rezoning undeveloped areas to prevent development of future incompatible land uses;
- Subdivision controls to prevent future incompatible development;
- Local regulations that require mandatory disclosure to potential developers, real estate agencies, and home purchasers within the DNL 65 dB contour that the property is impacted by aircraft noise; and
- Amending building codes to require noise reduction measures in constructing new buildings or renovating existing buildings.

S.9.3 Surface Transportation

Changes to the surface transportation network, in combination with additional traffic generated by the Airport with either of the Build Alternatives, could result in significant impacts in the absence of mitigation. The potential mitigation identified in this section would be coordinated with the appropriate local, state, and Federal agencies.

To minimize the impact of UPS trucks through residential areas of Tinicum, the proposed access design for the relocated UPS facility would direct UPS trucks leaving the facility to use the relocated Tinicum Island Road toward Scott Way (away from 4th Avenue) and then to SR 291 for regional access. Roadway design refinements will continue to reassess ways to minimize possible UPS traffic impacts through Tinicum.
Intersection improvements (changes in lane designations, new traffic signals, changes in traffic signal timing or signal phasing, or adding turning lanes) would be undertaken at four intersections for either Alternative A or Alternative B:

- Essington Avenue/Industrial Highway and Bartram Avenue/Scott Way;

8 *Philadelphia International Airport: Federal Aviation Regulations Final Part 150 Noise Compatibility Study*, Landrum & Brown Team, June 2002 (approved May 20, 2003), Exhibit 4-4, Option LU-1A.

9 FAR Part 150, Appendix B, paragraph 150.7(2)

- Bartram Avenue and Island Avenue;
- Bartram Avenue and 84th Street; and
- Bartram Avenue and Tinicum Boulevard.

Improvements at these intersections would result in Levels of Service (LOS) D or better, and would improve intersection performance in comparison to the No-Action Alternative.

S.9.4 Air Quality

The emission inventories and dispersion modeling for future-year conditions indicate that total emissions and ambient concentrations will be affected somewhat by the CEP improvements when compared to the future No-Action condition. However, these changes represent both increases and decreases in emissions and concentrations that vary based on the alternative, year, pollutant, and location. The demonstrated compliance with the General and Transportation Conformity Rules will help ensure that these changes in emissions and concentrations associated with the CEP are consistent with the future clean air goals of the area and do not constitute significant adverse affects to air quality. As further assurance that these potential impacts to air quality are minimized, specific mitigation measures will be evaluated once the Preferred Alternative is identified.

Potential mitigation measures to alleviate PM2.5 impacts include measures to:

- Reduce aircraft-related PM2.5 emissions;
- Reduce airport-related stationary source PM2.5 emissions; and
- Reduce diesel emissions from GSE, on-airport transportation, and airport support vehicles (diesel fuel combustion is a significant source of PM2.5 emissions).

S.9.5 Wetlands and Waterways

Modifications of Alternative A and Alternative B that would avoid direct impacts to the wetlands and waterways were determined to be not practicable. Wetlands and jurisdictional waterways occur throughout the southern portion of the Airport, and along the north and south sides of Runway 8-26. Modifications to the airfield, including adding a fourth parallel runway (the proposed new Runway 9R-27L) cannot be made without wetland and waterways impact. Alternative C, which would have avoided impacts to the Delaware River, was determined to be not practicable to construct, as documented in Section 3.4 of the DEIS. The only alternative that would avoid impacts to wetlands is the No-Action Alternative, which does not meet the Project purpose and need.

Minimizing impacts to wetlands will be investigated for the Preferred Alternative during the final design phase, and will consider measures such as steepened side slopes, reducing the footprint of the fire training facility, and reconfiguring the relocated UPS facility. FAA will continue to consult with the appropriate Federal and state regulatory and resource agencies when developing ways to minimize effects.

Three options for minimizing impacts to the Delaware River are being considered for proposed Runway End 9R, which would extend into the Delaware River (shown previously in Figure S-8). Design options include a solid-fill structure with rip-rap sides; a solid-fill structure with vertical bulkhead sides; and five different pile-supported structures (with different pile diameters and spacing). The practicability of these minimization options will be evaluated for the Preferred Alternative, based on a comparison of impacts and practicability (costs).

Because the Proposed Project will result in unavoidable impacts to wetlands and waterways, compensatory mitigation measures will be required to meet FAA, USACE, and PA DEP requirements of no loss of wetland area and/or functions. These compensatory mitigation measures can include

on-site or off-site restoration and/or creation of wetland and waterway habitat and/or function; purchase of credits through an established wetland mitigation bank; and improvement of existing function and value. According to Pennsylvania Code Chapter 105 guidelines and PA DEP guidelines, required wetland replacement generally has a 1:1 ratio. There is no defined ratio for waterway replacement or creation. Mitigation goals have been approved by the natural resource and regulatory agencies. The final mitigation plan will be coordinated with the appropriate agencies during final design, in accordance with the appropriate USACE mitigation guidance.

The minimum mitigation goals for Alternative A would include:

- 81.7 acres of vegetated wetland, of which 66.1 acres would be palustrine (freshwater non-tidal); and 15.6 acres would be estuarine (freshwater tidal).
- Replace lost functions of state-listed endangered species habitat, floodflow alteration, sediment/toxicant retention, and fish and shellfish habitat (estuarine).
- Replace 23.1 acres of non-tidal waterways providing state-listed endangered species habitat, floodflow alteration, sediment/toxicant retention, and fish and shellfish habitat.
- Replace lost functions (wildlife habitat, fish and shellfish habitat) associated with approximately 24.5 acres of Delaware River intertidal and subtidal habitats.

The minimum mitigation goals for Alternative B would be the same, with differences in the acreage of required mitigation for these resource types:

- 50.7 acres of vegetated wetland, of which 33.8 acres would be palustrine (freshwater non-tidal); and 16.9 acres would be estuarine (freshwater tidal).
- Replace 33.4 acres of non-tidal waterways providing state-listed endangered species habitat, floodflow alteration, sediment/toxicant retention, and fish and shellfish habitat.

Mitigation measures that would compensate for the loss of wetland and waterways functions and values include restoring historically-filled wetlands, restoring degraded wetlands to enhance or restore functions, creating compensatory wetlands in areas that are currently uplands, preserving wetland-upland complexes that provide important functions, and out-of-kind mitigation measures to protect or improve water quality. Because the lost wetland areas are within Pennsylvania's Coastal Zone, replacement of wetland functions within the Coastal Zone was given priority over replacement of functions in inland locations, although locations within the watershed of the Delaware and Schuylkill River outside of the Coastal Zone were considered.

Seven potential wetland mitigation sites have been identified, in consultation with the resource agencies. There are sufficient opportunities for wetland mitigation within the Pennsylvania Coastal Zone that would meet the mitigation goals of the Proposed Project. These sites are primarily creation of new wetlands in existing upland areas, but also include restoration of historically-filled wetlands and enhancement of functions in degraded wetlands.

Numerous small mitigation opportunities are available through the Philadelphia Water Department's Southeast Regional Wetland Inventory and Water Improvement Initiative. These small wetland creation or enhancement sites, or water quality improvements, would improve water quality in the Delaware and Schuylkill River watersheds replacing water quality and floodflow protection. Additional mitigation measures associated with this program include improving

fish passage, which would partially mitigate for lost fisheries functions.

These potential mitigation measures will be further refined and specific mitigation site designs and commitments will be developed for the Preferred Alternative, in coordination with the regulatory and permitting agencies.

S.9.6 Water Quality

While Alternative A and Alternative B would have no significant impact on water quality, FAA is considering mitigation because of requirements of the state and Federal permitting process, and to ensure that water quality is not degraded as a result of the Proposed Project. FAA Order 1050.1E standards require projects to meet state water quality standards, to result in no special water-related problems, and to meet the requirements of any permits necessary for a project's construction and operation.[10]

The Project would need to meet PA DEP water quality standards for water bodies in the Study Area, which address alkalinity, dissolved oxygen (DO), iron, osmotic pressure, pH, temperature, and total residual chlorine.[11] The Project would also need to meet the requirements of the Pennsylvania Storm Water Management Act, which include maintaining a stormwater management plan for the site and either assuring that post-construction peak flows match existing conditions or managing the quantity, velocity, and direction of discharges to protect both health and property from injury. Any mitigation measures used within the City of Philadelphia would also have to conform to the Philadelphia Water Department's design requirements for water quality and channel protection.

Mitigation measures to minimize the effects of increased airport pavement and operations on the water quality in receiving waters (the Schuylkill River and Delaware River) will be incorporated into the design of the Preferred Alternative to minimize impacts from the reconstructed airport following construction. These include vegetated swales and vegetated buffers to promote infiltration and reduce sediment, metal, nutrient, and bacteria loads. Replacing the tidegates that control flow to the Delaware River would provide more control over detention times, improving water quality. Other design features for parking lots and roads would include sediment traps and structural BMPs that would reduce pollutant loading.

S.9.7 Biotic Communities

Minimizing impacts to state-listed species habitats will be investigated for the Preferred Alternative during the final design phase, and will consider measures such as steepened side slopes, reducing the footprint of the training facility, and reconfiguring the relocated UPS facility. During final design, FAA will determine whether portions of the existing ponding ditches can remain in place as open channels and designed to provide habitat for red-bellied turtles and eastern mudminnows, taking safety into consideration. If these ditch segments remain in place, currently culverted segments could be "daylighted" to create open channels when taxiways are relocated.

For each affected species, an intensive pre-construction survey would be undertaken to provide detailed and updated information on the distribution and abundance of the species within the affected habitats. This information will be used to prepare the final mitigation protocols and design post-construction monitoring protocols and goals. The mitigation program would be developed by the Airport in consultation with the appropriate natural resource agencies. A long-term monitoring and management program would be developed and implemented to measure success, and to identify

10 *Federal Aviation Administration Order 1050.1E, Environmental Impacts: Policies and Procedures*, Appendix A, Section 17.4a, Pages A-74 – A-76, Federal Aviation Administration, June 8, 2004.

11 *Pennsylvania Code Title 25, Chapter 93 Water Quality Standards*. Pennsylvania Department of Environmental Protection. October 8, 1979.

remedial measures that may be required to maintain the targeted habitat characteristics.

S.9.8 Archaeological Resources

Mitigation measures may be required for archaeological resources, although the need for such measures has not been determined at this time. Relatively few archaeologically sensitive terrestrial areas have been identified, due in large measure to the intensive modifications that have occurred to this landscape since the early twentieth century rather than to the lack of potential archaeological resources.

Additional studies required to assess and protect archaeological resources will be stipulated in the project-specific Programmatic Agreement with the Pennsylvania Historic Museum Commission, to be prepared for this Project. This Programmatic Agreement will also provide for the undertaking of mitigation (data recovery) excavations for any National Register-eligible resources identified in the future that cannot be avoided by project impacts. The Programmatic Agreement will stipulate that the FAA agrees to conduct all necessary archaeological investigations to determine the National Register-eligibility of any archaeological resources once access is obtained and that any adverse effects to those eligible resources will be mitigated prior to project development. The Programmatic Agreement will be drafted, distributed, and signed prior to the FEIS.

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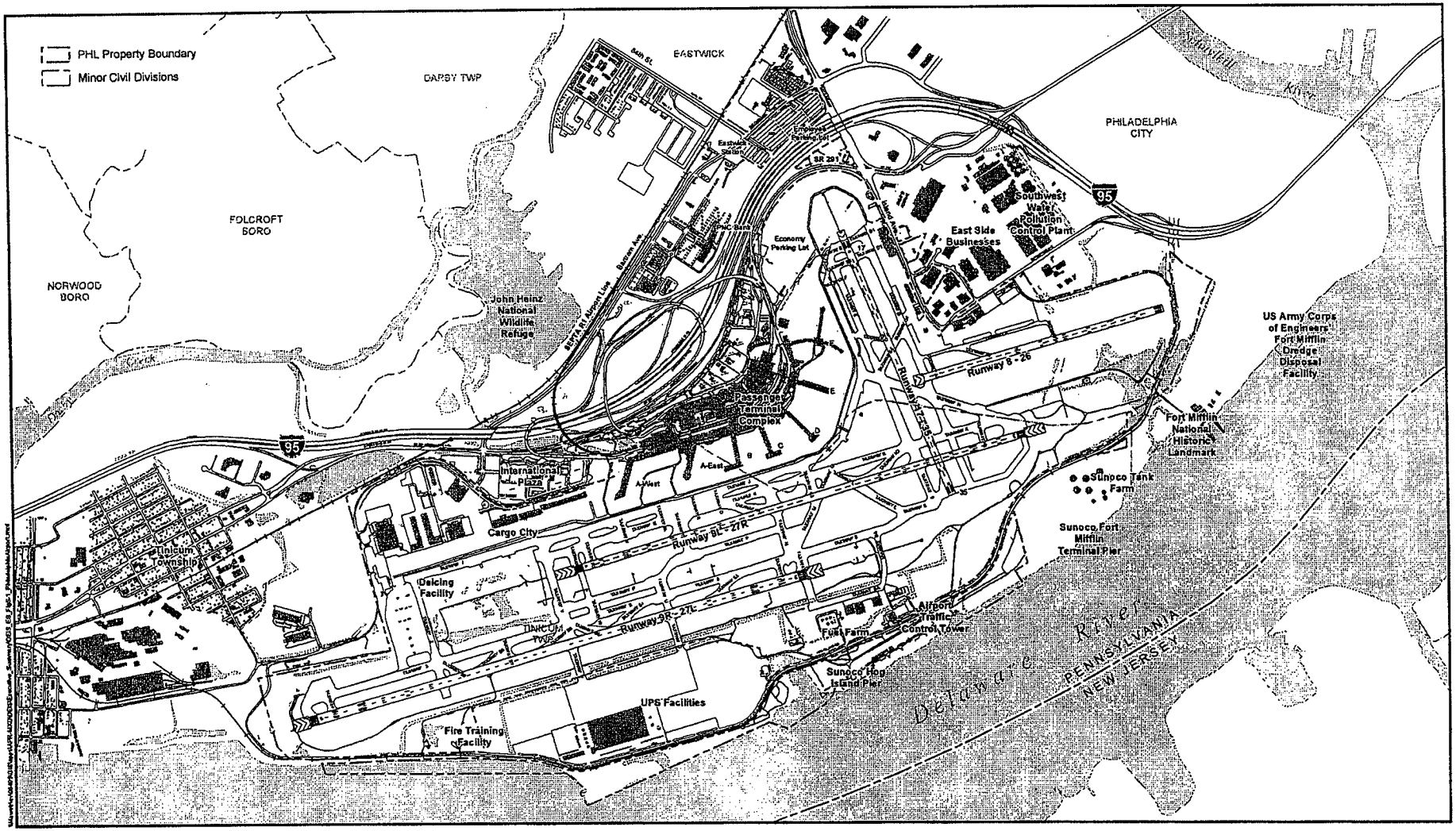

Figure S-1

Philadelphia International Airport

Source: DMJM Aviation

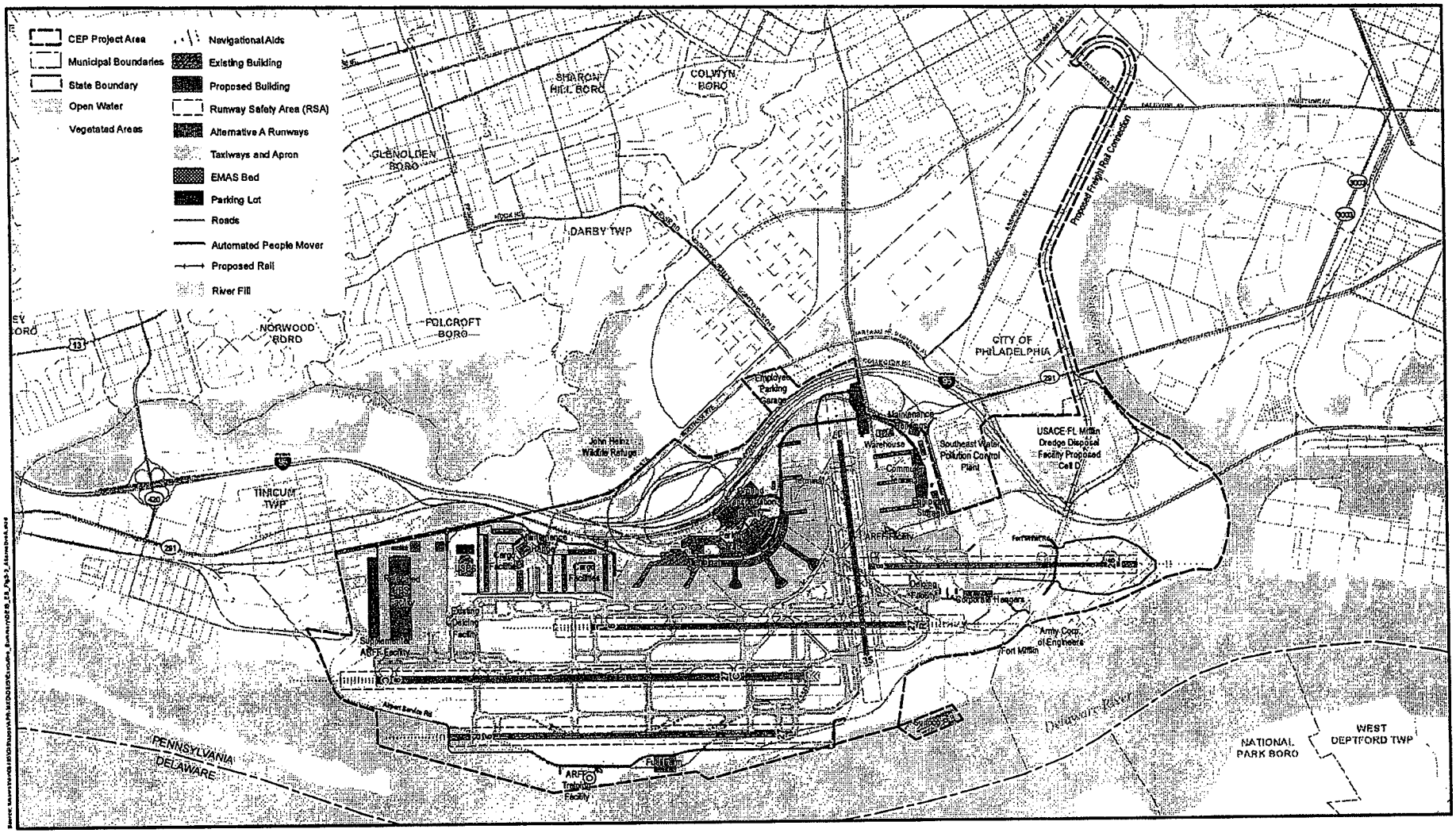

Figure S-3

Alternative A

Source: VHB, Edwards and Kelcey, CRJ & Associates, Inc.

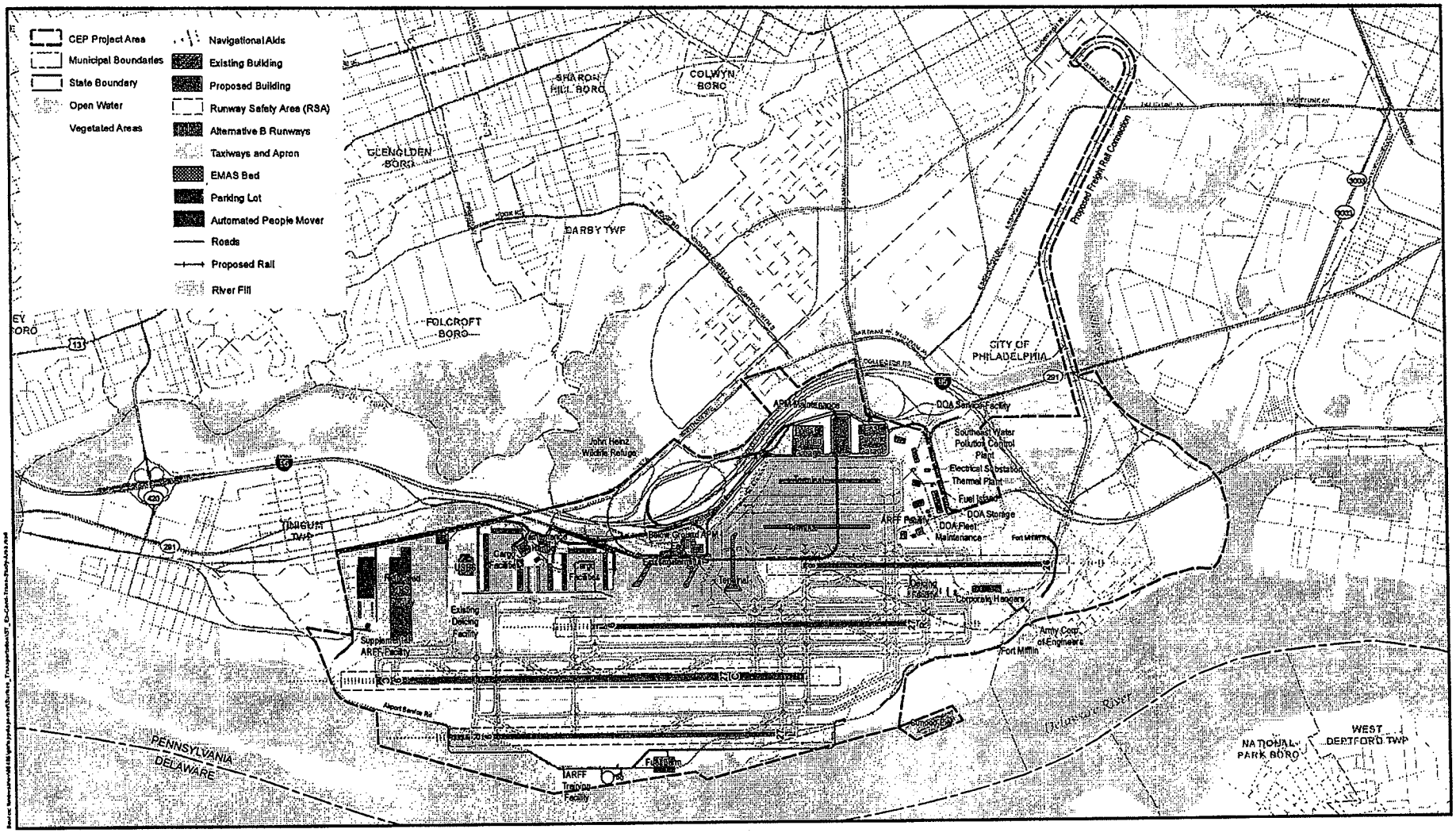

Figure S-4

Alternative B

Source: VHB, Edwards and Kelcey, CRJ & Associates, Inc.

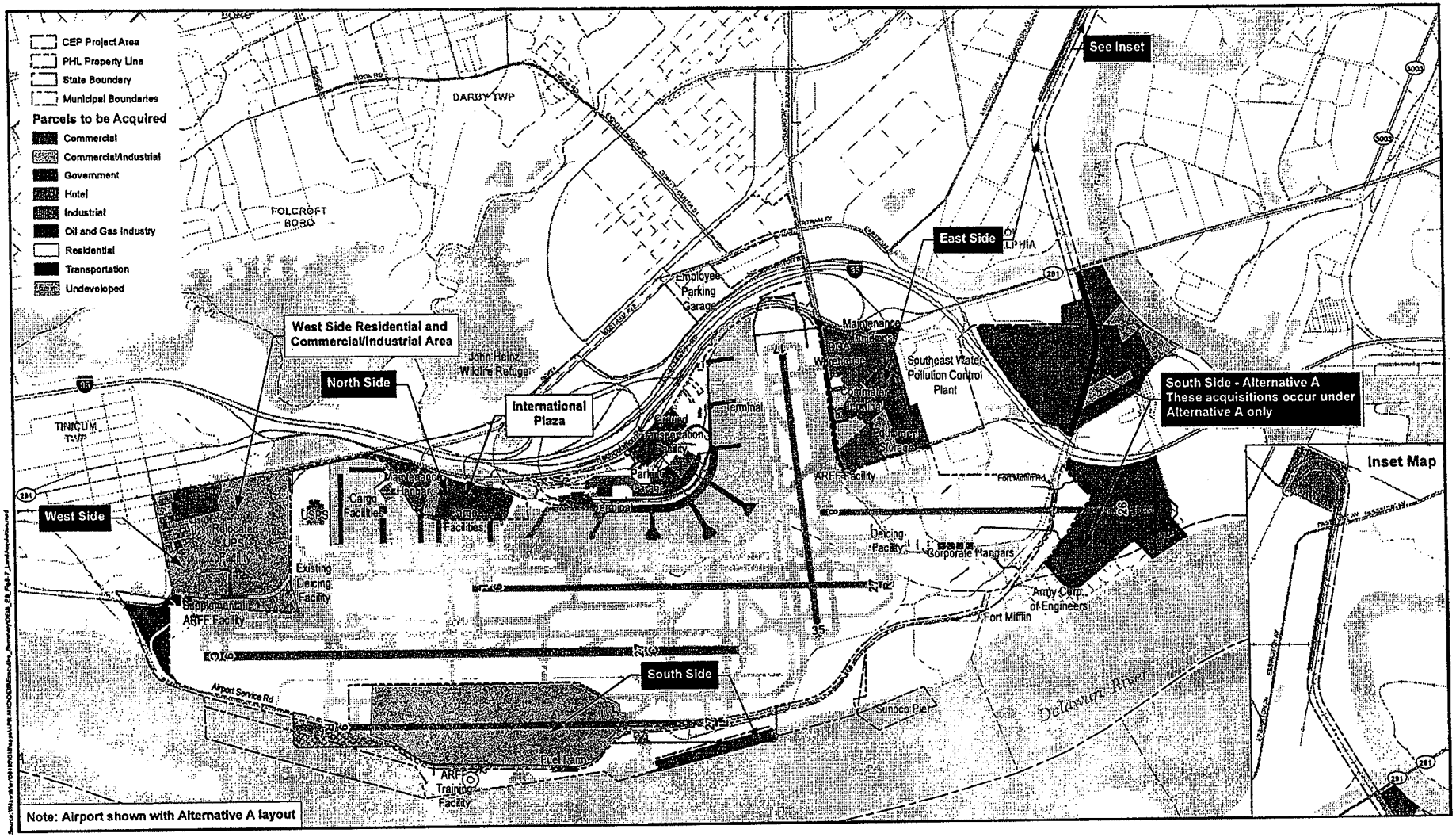

Figure S-7
Land Acquisition Areas for Alternatives A and B

Source: VHB, RKG Associates, Inc.

CIVIL COVER SHEET AND ENTRY OF APPEARANCE

Delaware County Court of Common Pleas

09-6999

1. Case Caption:
TOWNSHIP OF TINICUM, DELAWARE COUNTY PENNSYLVANIA, and COUNTY OF DELAWARE,
Plaintiffs,
v.
CITY OF PHILADELPHIA,
Defendant.

Court Term & No.:
____ Jury
__X__ Non Jury
____ Arbitration
($0-$50,000)

2a. Plaintiff(s)
(Name and address)
Township of Tinicum
629 N. Governor Printz Blvd.
Essington, PA 19029

County of Delaware
201 W. Front Street
Media, PA 19063

2b. Defendant(s)
(Name and address)
City of Philadelphia
1515 Arch St., 15th Floor
Philadelphia, PA 19102

FILED
2009 MAY 26 AM 11:40
OFFICE OF JUDICIAL SUPPORT
DELAWARE CO. PA.

3a. Related Cases? ____ Yes __X__ No
If yes, show Caption and Case Numbers

3b. Case Subject to Coordination Order? __ Yes X No
If yes, show Caption and Date of Order

4. Entry of Appearance

To the Office of Judicial Support:
Kindly enter my appearance on behalf of Township of Tinicum, Plaintiff in this action. Papers may be served at the address set forth below.

Francis G.X. Pileggi, Esquire
Attorney for party named above

49223
Attorney I.D. Number

Address: Fox Rothschild LLP
Suite 1300
919 N. Market Street
Wilmington, DE 19801

Telephone: (302) 655-3667 Fax: (302) 656-8920

E-Mail: fpileggi@foxrothschild.com

F.G.X. Pileggi
Attorney Signature

5-26-09
Date

Reverse side must be completed

Choose only the one description which best reflects the principal type of case or relief sought from the list.

Case Description

APPEAL

Minor Court
- Money Judgement ____
- Landlord and Tenant ____
- Code Enforcement ____
- Personal Injury ____
- Breach of Contract ____
- Other _____ ____

Local Agency
- Civil Service ____
- Motor Vehicle ____
- Licenses and Inspections ____
- Liquor Control Board ____
- Tax Assessment Boards ____
- Zoning Board ____
- Other _____ ____

Proceedings Commenced by Petition
- Appointment of Arbitrators ____
- Change of Name ____
- Compel Medical Examination ____
- Election Matters ____
- Eminent Domain ____
- Leave to Issue Subpoena ____
- Mental Health Proceedings ____
- Other _____ ____

ACTIONS COMMENCED BY WRIT OF SUMMONS OR COMPLAINT

- Abuse of Process ____
- Action for Wrongful Death ____
- Class Action ____
- Confession of Judgement/Money ____
- Confession of Judgement/ Real Property ____
- Contract ____
  - Construction ____
  - Insurance/Bad Faith ____
  - Negotiable Instruments ____
  - Other _____ ____
- Intentional Tort ____
  - Assault and Battery ____
  - Libel and Slander ____
  - Defamation ____
- Employment/Wrongful Discharge ____
  - False Imprisonment ____
  - Fraud ____
  - Malicious Prosecution ____
- Negligence
  - Motor Vehicle ____
  - Real Property ____
  - Premises Liability ____
  - Product Liability ____
  - Toxic Tort ____
    - Asbestos ____
    - DES ____
    - Implant ____
  - Toxic Waste ____
  - Other _____ ____
- Professional Malpractice
  - Dental ____
  - Legal ____
  - Medical ____
  - Other _____ ____
- Equity
  - Real Property ____
  - Stockholders Derivative Action ____
  - Waste Prevention ____
  - Other _____ ____
- Declaratory Judgement X
- Ground Rent ____
- Mandamus ____
- Real Property
  - Ejectment ____
  - Quiet Title ____
  - Mortgage Foreclosure ____
  - Mechanics Lien ____
  - Partition ____
  - Prevent Waste ____
- Replevin ____
- Saving Action Um/Uim ____
- Quo Warranto ____
- Other _____ ____

FOX ROTHSCHILD LLP
BY: FRANCIS G.X. PILEGGI, ESQUIRE
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JOHN P. MCBLAIN, ESQUIRE
IDENTIFICATION NO. 65287
SOLICITOR
COUNTY OF DELAWARE
201 WEST FRONT STREET
GOVERNMENT CENTER BLDNG, ROOM 205
MEDIA, PA 19063
(610) 891-4072

ATTORNEYS FOR PLAINTIFFS

TOWNSHIP OF TINICUM, DELAWARE COUNTY, PENNSYLVANIA
629 N. Governor Printz Blvd.
Essington, PA 19029

and

COUNTY OF DELAWARE
201 W. Front Street
Media, PA 19063

Plaintiffs,

v.

CITY OF PHILADELPHIA
1515 Arch St., 15th Floor
Philadelphia, PA 19102

Defendant.

IN THE COURT OF COMMON PLEAS
DELAWARE COUNTY, PENNSYLVANIA

CIVIL ACTION –DECLARATORY JUDGMENT

NO.

NOTICE TO DEFEND

You have been sued in court. If you wish to defend against the claims set forth in the following pages, you must take action within twenty (20) days after this Complaint and Notice are served by entering a written appearance personally or by an attorney and filing in writing with the Court your defenses or objections to the claims set forth against you. You are warned that if you fail to do so, the case may proceed without you and a judgment may be entered against you by the Court without further notice for any money claims in the Complaint or for any other claim or relief requested by the Plaintiff. You may lose money or property or other rights important to you.

YOU SHOULD TAKE THIS PAPER TO YOUR LAWYER AT ONCE. IF YOU DO NOT HAVE A LAWYER OR CANNOT AFFORD ONE, GO TO OR TELEPHONE THE OFFICE SET FORTH BELOW TO FIND OUT WHERE YOU CAN GET LEGAL HELP.

Lawyer Referral Services
Delaware County Bar Association
Front & Lemons Streets
Media, PA 19063
610-566-6625