Chester County

Delaware County

Philadelphia County

Burlington County

Camden County

Newcastle County

Philadelphia International Airport

Pennsylvania
New Jersey

Pennsylvania
Delaware

Legend

- INM Flight Tracks
- ARTS Flight Tracks
- Roadways
- Highways
- Railroad
- Compatible Land Uses
- Non Compatible Land Uses
- Water
- County Boundary

FAR Part 150 Noise Compatibility Study
Philadelphia International Airport

Baseline Departure Flight Tracks

FINAL

0 11000 Feet

Prepared by Landrum and Brown
p:/phl/gis/arcview/prj/flight tracks - final document.apr 05/21/02

Exhibit
C - 6

Chester County

Delaware County

Philadelphia County

Burlington County

Camden County

Newcastle County

Philadelphia International Airport

Pennsylvania
New Jersey

Pennsylvania
Delaware

AJC6 AGC4 APE3 APE4 AJA9 APF3 AGF3 AXA1 AJA5 AJA7 AJB2 AJA8 AJA6 AXA1 AJH1 AJC5 AGC3 AJD1 AXA2 AJA2 AJB1 APB1 APF2 AJA4 APF1 AJA1 APE2 AJA3 APE1 AJC2 APE3 AGC1 APC2 APC3 AGC2

Legend

- INM Arrival Flight Tracks
- ARTS Arrival Flight Tracks
- Roadways
- Highways
- Railroad
- Compatible Land Uses
- Non Compatible Land Uses
- Water
- County Boundary

FAR Part 150 Noise Compatibility Study
Philadelphia International Airport

Baseline Arrival Flight Tracks

FINAL

0 11000 Feet

Prepared by Landrum and Brown
p:/phl/gis/arcview/prj/flight tracks - final document.apr 05/21/02

Exhibit C - 7

Table C-6
FLIGHT TRACK UTILIZATION BY AIRCRAFT CATEGORY
Philadelphia International Airport

	Daytime				Nighttime			
	Jet Aircraft		Prop Aircraft		Jet Aircraft		Prop Aircraft	
Flight Track	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure
AGC1	0.84%		2.10%		1.28%		4.77%	
AGC2	1.41%		1.82%		2.02%		2.20%	
AGC3	1.25%		2.72%		1.70%		2.65%	
AGC4	0.31%		3.79%		1.61%		0.91%	
AJA1	4.47%		1.06%		3.79%		3.15%	
AJA2	7.85%		1.41%		8.21%		1.49%	
AJA3	7.85%		1.41%		8.21%		1.49%	
AJA4	7.85%		1.41%		8.21%		1.49%	
AJA5	7.00%		2.22%		5.79%		2.74%	
AJA6	7.00%		2.22%		5.79%		2.74%	
AJA7	3.60%		2.48%		1.36%		0.58%	
AJA8	7.00%		2.22%		5.79%		2.74%	
AJA9	3.60%		2.48%		1.36%		0.58%	
AJB1	0.48%				0.17%			
AJB2	4.81%				2.52%			
AJC1	0.33%				0.00%			
AJC2	5.49%				5.45%			
AJC3	6.14%				8.93%			
AJC4	3.52%				3.65%			
AJC5	3.52%				3.65%			
AJC6	3.99%				0.84%			
AJC7	0.44%				0.19%			
AJD1	1.17%				2.07%			
AJG1	0.03%				0.15%			
AJH1	0.21%		10.28%		0.58%		10.24%	
APB1	0.80%		2.33%		7.73%		2.36%	
APE1	0.06%		2.87%		0.07%		3.98%	
APE2	0.06%		2.87%		0.07%		3.98%	
APE3	0.06%		2.87%		0.07%		3.98%	
APE4	0.05%		11.91%		0.08%		8.50%	
APF1	0.33%		13.50%		1.34%		14.85%	
APF2	0.33%		13.50%		1.34%		14.85%	
APF3	0.11%		9.01%		0.83%		5.97%	
AXA1	3.60%		2.48%		1.36%		0.58%	
AXA2	4.47%		1.06%		3.79%		3.15%	

Table C-6, Continued
FLIGHT TRACK UTILIZATION BY AIRCRAFT CATEGORY
Philadelphia International Airport

	Daytime				Nighttime			
	Jet Aircraft		Prop Aircraft		Jet Aircraft		Prop Aircraft	
Flight Track	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure
DGB1		0.23%				1.13%		
DGB2		1.02%				0.22%		
DGB3		2.51%				1.05%		
DGB4		2.57%				1.20%		
DGB5		0.32%				0.26%		
DGB6		0.32%				0.26%		
DGB7		0.23%				1.13%		
DGD1		1.90%				1.27%		
DGD2		0.64%				0.40%		
DGD3		0.34%				1.45%		
DGE1		0.05%				0.56%		
DGE2		0.25%				3.28%		
DGE3		0.20%				1.66%		
DGE4		0.30%				1.66%		
DGH1		0.02%				0.14%		
DJA1		3.82%		4.26%		6.45%		2.65%
DJA2		1.16%		2.59%		2.53%		1.51%
DJA3		3.07%		3.19%		3.71%		3.79%
DJA4		0.53%		0.56%				
DJB1		2.34%						
DJB2		18.25%				13.05%		
DJB3		10.43%				10.26%		
DJB4		16.09%				13.03%		
DJB5		7.93%				6.29%		
DJC1		0.74%		0.05%		0.93%		
DJC2		1.42%		0.05%		2.08%		0.05%
DJD1		2.86%				2.35%		
DJD2		8.52%				8.34%		
DJD3		8.85%				10.43%		
DJD4		1.86%				1.70%		
DJG1		0.46%		9.79%		1.81%		14.58%
DPB1				1.30%				
DPB2				3.91%				5.49%
DPB3				8.33%				5.54%
DPB4				5.08%				4.59%
DPB5				5.99%				3.69%

Table C-6, Continued
FLIGHT TRACK UTILIZATION BY AIRCRAFT CATEGORY
Philadelphia International Airport

	Daytime				Nighttime			
	Jet Aircraft		Prop Aircraft		Jet Aircraft		Prop Aircraft	
Flight Track	Arrival	Departure	Arrival	Departure	Arrival	Departure	Arrival	Departure
DPD1				1.63%				1.23%
DPD2				1.27%				1.56%
DPD3				0.25%				
DPD4				1.50%				2.08%
DPD5				1.27%				1.56%
DPE1				2.59%				2.46%
DPE2				0.60%				1.85%
DPE3				2.25%				4.31%
DPE4				1.84%				1.23%
DPE5				2.15%				3.08%
DPF1		0.05%		4.60%		0.11%		5.54%
DPF2		0.19%		9.41%		0.22%		12.92%
DPF3		0.19%		15.06%		0.63%		12.92%
DPF4		0.33%		10.47%		0.42%		7.38%
Total %	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Landrum & Brown, 2001

Daytime= 7:00 a.m. - 9:59 p.m. / Nighttime= 10:00 p.m. -6:59 a.m.

C.4.4 AIRCRAFT WEIGHT AND TRIP LENGTH

Aircraft weight during departure is a factor in the dispersion of noise because it impacts the rate at which an aircraft is able to climb. Generally, the heavier the aircraft, the slower the rate of climb and the wider the dispersion of noise along its route of flight. Where specific aircraft weights are unknown, the INM uses the distance flown to the first stop as a surrogate for the weight, by assuming that the weight has a direct relationship with the fuel load necessary to reach the first destination. The INM groups trip lengths into seven stage length categories, and assigns various aircraft weights associated with up to all seven categories. These categories are:

Category	Stage Length
1	0-500 nautical miles
2	500-1000 nautical miles
3	1000-1500 nautical miles
4	1500-2500 nautical miles
5	2500-3500 nautical miles
6	3500-4500 nautical miles
7	4500+ nautical miles

The trip lengths flown from Philadelphia are based on a schedule of operations used for airfield simulation modeling conducted as part of the master plan project. **Table C-7** indicates the proportion of the operations that are assumed to fall within each of the seven trip length categories for both current and future operations levels.

Table C-7
DEPARTURE TRIP LENGTH DISTRIBUTION – CURRENT AND FUTURE CONDITIONS
Philadelphia International Airport

Stage Length	Cargo and Heavy Jet Aircraft	Light Air Carrier Jet Aircraft	Regional/Business Jet Aircraft	Propeller Aircraft
1	5%	27%	100%	100%
2	20%	23%	-	-
3	-	16%	-	-
4	70%	34%	-	-
5	-	-	-	-
6	5%	-	-	-
7	-	-	-	-

C.5 NOISE COMPATIBILITY PROGRAM INFORMATION

The elements of the Noise Compatibility Program set forth in Chapter 4 do not include noise abatement elements that would change the input of the INM for the production of noise contours for current or future conditions. Consequently, the 2006 baseline noise exposure contours comprise the contours of both the future Noise Exposure Map and the Noise Compatibility Program. The mitigating elements of the Noise Compatibility Program are directed at bringing those non-compatible structures that are within the area of substantial noise exposure into structured programs of sound insulation and/or similar action. Upon completion of the Noise Compatibility Program, all units within the 65 DNL contour will be made compatible with the levels of aircraft noise present in the community.

Appendix D

APPENDIX D
LAND USE ASSESSMENT METHODOLOGY

Identifying and evaluating land uses within the airport environs is an important step in the Part 150 process. This evaluation is necessary to identify residential and other noise-sensitive land uses in the airport environs. The land use assessment includes examining land use classifications and zoning patterns, surveying and mapping, local assessments of sound insulation requirements, capital improvement programs, growth risk assessment, airport environs land use compatibility plans; applying the FAA Part 150 guidelines for land use compatibility, and policies on acquisition, easements, and disclosures; and airport overlay districts. A GIS land use database may also be developed to facilitate the identification of land uses that are incompatible with airport operations. This appendix also provides the details of population and housing impacts for the existing and future conditions.

D.1 AIRPORT ENVIRONS

The airport environs (Chapter Two, *Affected Environment*) refer to the regional area that may experience the broader effects from the noise of aircraft overflight as well as social or socioeconomic impacts. All land uses below the noise level measured as 65 DNL are generally considered compatible with airport operations. Consequently, the boundary of the airport environs was formed by assessing both the location of flight tracks and the general area where noise levels would drop below 65 DNL. Areas outside the airport environs were not excluded from the Part 150 process and were assessed, however detailed land use assessments were focused on the area within the airport environs.

D.1.1 LAND USE CLASSIFICATIONS

Existing land use (Chapter Two, *Affected Environment*) data was collected from the Delaware Valley Regional Planning Commission (DVRPC). Outside of the DVRPC's jurisdiction, land use for New Castle County in Delaware was collected through the Research Data Management Service at the University of Delaware, via the Internet. Salem County, New Jersey GIS data was accessed through New Jersey Department of Environmental Protection's GIS website. Land uses in Salem and New Castle counties were classified as compatible and non-compatible based on their location outside of the airport environs. Land uses within the DVRPC area are classified into 19 categories. For this study, these land use classifications were organized into generalized categories as shown on **Table D-1.**

Table D-1
GENERALIZED LAND USE CLASSIFICATIONS
Philadelphia International Airport

Generalized Land Use Category	DVRPC
Open Space:	Agriculture
	Wooded
	Open Space
	Recreation
	Vacant
Community Services:	Community Services
Commercial/ Industrial:	Manufacturing Light
	Manufacturing Heavy
	Utility
	Commercial Services
	Mining
Residential:	Single Family
	Multi Family
	Row Homes
	Mobile Homes
Other:	Transportation
	Military
	Parking
Water:	Water
Generalized Land Use Category	**New Castle County**
Compatible:	Airports
	Bays and Coves
	Clear-cut
	Commercial
	Communication – antennas
	Confined Feeding
	Operations/Feedlots/Holding
	Cropland
	Cropland and Pasture
	Deciduous Forest
	Evergreen Forest
	Extraction
	Farmsteads and Farm Related Buildings
	Herbaceous Rangeland
	Highways/Roads/Access
	Roads/Freeways/Interstates
	Idle Fields
	Industrial
	Communication – antennas

Table D-1, Continued
GENERALIZED LAND USE CLASSIFICATIONS
Philadelphia International Airport

Generalized Land Use Category	New Castle County (Continued)
	Junk/Salvage Yards
	Man-made Reservoirs and Impoundments
	Marinas/Port Facilities/Docks
	Mixed forest
	Mixed Rangeland
	Mixed Urban or Built-up Land
	Orchards/Nurseries/Horticulture
	Other Agricultural
	Other Commercial
	Other Transportation/Communication
	Other Urban or Built-up Land
	Parking Lots
	Pasture
	Railroads
	Retail Sales/Wholesale/Professional Services
	Shrub/Brush Rangeland
	Transitional (incl. Cleared, filled, and grass)
	Truck Crops
	Utilities
	Vehicle Related Activities
	Warehouses and Temporary Storage
	Wetlands
Non-compatible:	Institutional/Governmental
	Mobile Home Parks/Courts
	Multi Family Dwellings
	Recreational
	Single Family Dwellings
Water:	Natural Lakes and Ponds
	Waterways/Streams/ Canals

Generalized Land Use Category	Salem County
Compatible:	Agricultural Wetlands (Modified)
	Altered Lands
	Atlantic White Cedar Wetlands
	Brushland/Shrubland

Table D-1, Continued
GENERALIZED LAND USE CLASSIFICATIONS
Philadelphia International Airport

Generalized Land Use Category	Salem County (Continued)
	Commercial/Services Confined Feeding Operations Coniferous Forest Coniferous Scrub/Shrub Wetlands Coniferous Wooded Wetlands Coniferous/Deciduous Forest Cropland and Pastureland Deciduous Forest Deciduous Scrub/Shrub Wetlands Deciduous Wooded Wetlands Deciduous/Coniferous Forest Disturbed Wetlands (Modified) Extractive Mining Freshwater Tidal Marshes Herbaceous Wetlands Industrial Managed Wetlands (Modified) Military Reservations Mixed Forested Wetlands (Coniferous Dom.) Mixed Forested Wetlands (Deciduous Dom.) Mixed Scrub/Shrub Wetlands (Coniferous Dom.) Mixed Scrub/Shrub Wetlands (Deciduous Dom.) Mixed Urban or Built-Up Land Natural Lakes Orchards/Vineyards/Nurseries/ Horticultural Areas Other Agriculture Other Urban or Built-Up Land Recreational Land Saline Marshes Tidal Waters Transitional Areas Transportation/Communications/ Utilities

Table D-1, Continued
GENERALIZED LAND USE CLASSIFICATIONS
Philadelphia International Airport

Generalized Land Use Category	Salem County (Continued)
	Undifferentiated Barren Lands
	Vegetated Dune Communities
	Wetland Rights-of-Way (Modified)
Non-compatible:	Athletic Fields (schools)
	Residential
Water:	Artificial Lakes
	Streams and Canals

D.1.2 LAND USE MAPPING

Data Compilation – Base map information, including roads, county and municipal boundaries, and land use were compiled using ArcView GIS, version 3.2. ArcView is an analytical software which allows manipulation and analysis of data from a variety of different sources. The base map information was supplemented by an AutoCAD drawing of Philadelphia International Airport, flight tracks and noise contours generated by the Integrated Noise Model, version 6.0b, and other data obtained from the Delaware Valley Regional Planning Commission.

Roads were obtained from the DVRPC, and supplemented by Census TIGER (Topologically Integrated Geographic Coding and Referencing System) files for Salem and Newcastle counties.

The 2000 U.S. Census data, at the block level, was combined with the GIS land use file to calculate the population and housing incompatibilities within the noise contours. For each census block, the ratio of population to housing was determined and that ratio was applied to each dwelling unit. The housing and population incompatibilities for each of the noise contours were determined by merging the noise contour data files with the GIS land use file. The number of residential structures and population within each DNL noise contour level were then determined by an automated count.

Noise-Sensitive Public Facilities – Noise-sensitive public facilities include schools, churches, libraries, hospitals, and nursing homes. Noise sensitive public facilities were derived from a number of different sources. Schools and churches initially were extracted from a national GIS data set made available by Environmental Systems Research Institute. Once compiled, the schools and churches were checked against the DVRPC's land use category of community service. Nursing homes, libraries, and hospitals originated from an on-line yellow pages directory, as well as various paper maps of the study area. Many of the noise sensitive facilities in the study area were

also field checked for accuracy. **Table D-2** lists these noise-sensitive public and community facilities that are also identified on **Exhibit D-1,** *Existing Noise-Sensitive Facilities*.

Roads – Information on the roads, highways, and interstates identified in the GIS land use database was updated using TIGER (Topologically Integrated Geographic Encoding and Referencing system provided by the US Census Bureau), DVRPC, and Chamber of Commerce maps. For discrepancies between the data sources in the street location, the street name, or the spelling of the street name, the Chamber of Commerce maps were used as the control.

D.2 LAND USE MITIGATION ALTERNATIVES

Unlike many noise abatement measures, the implementation of Part 150 land use measures is not always under the control of the airport sponsor or the FAA. Therefore, it is necessary to understand the role local jurisdictions and planning organizations may play in implementing the Part 150 NCP.

D.2.1 ROLE OF LOCAL JURISDICTIONS AND PLANNING ORGANIZATIONS IN NOISE COMPATIBILITY PLANNING

Local planners and elected officials are typically responsible for local land use zoning and control. These entities and individuals prepare comprehensive plans, as well as review and implement zoning and land use regulations in a manner that may consider the effect of those actions as they relate to aviation activity and noise exposure. These responsibilities include paying particular attention to noise impact mitigation.

The responsibility of regulating land use around an airport, in order to minimize existing and prevent future land use incompatibilities, is traditionally delegated to state and local governments. In the case of PHL, the Pennsylvania Department of Transportation, Bureau of Aviation (PennDOT, BOA) has delegated this authority to the local governments that include Tinicum Township, Delaware County and the City of Philadelphia.

In addition to regulating land uses, local municipalities may facilitate the acquisition of property or the initiation of sound insulation programs as a means to mitigate and prevent future incompatible land uses resulting from airport noise. At airports with an approved FAR Part 150 Study, an airport sponsor may apply directly to the FAA for funding of noise mitigation projects.

Table D-2
NOISE-SENSITIVE COMMUNITY FACILITIES
Philadelphia International Airport

Schools	
Map Code	**Name**
S1	Academy Park High School
S2	Aldan Elementary School
S3	Amasland Elementary School
S4	Ashland Middle School
S5	Baldwin School
S6	Bartram High School
S7	Blessed Virgin Mary School
S8	Bregy School
S9	Colwyne Elementary School
S10	Darby Township Elementary School
S11	Delaware County Area Vocational-Technical School-Folcro
S12	Delcroft Elementary School
S13	Eddystone Elementary School
S14	Edgewood School
S15	Fell School
S16	Harris School
S17	Holy Spirit School
S18	Inter Boro High School
S19	Jenks Elementary School
S20	Kedron School
S21	Lake View Elementary School
S22	Leedom Elementary School
S23	Leiperville School
S24	Maris School
S25	Norwood Elementary School
S26	Our Lady Of Fatima School
S27	Our Lady Of Peace School
S28	Our Lady Of Perpetual Help School
S29	Patterson School
S30	Penn Wood West Junior High School
S31	Prospect Park Elementary School
S32	Ridley Junior High School
S33	Ridley Senior High
S34	Saint Clements School
S35	Saint Gabriels School
S36	Saint Josephs School
S37	Saint Madeline School
S38	Saint Margaret Marys School
S39	Sharon Hill Elementary School
S40	Sharswood School
S41	Smedley School
S42	Studevan School

Table D-2, Continued
NOISE-SENSITIVE COMMUNITY FACILITIES
Philadelphia International Airport

Schools (Continued)	
Map Code	**Name**
S43	Swarthmore-Rutledge K-8
S44	Taggert School
S45	Thomas Junior High School
S46	Tilden Junior High School
S47	Walnut Street Elementary School
S48	Bartram High School
S49	Woodlyn Elementary School
S50	Beth Israel School
S51	Billingsport School
S52	Evergreen School
S53	Gateway Regional High School
S54	Lake Tract School
S55	Loudens Lager School
S56	Oakview School
S57	Red Bank School Number 1
S58	Red Bank School Number 11
S59	Saint Johns School
S60	Saint Margarets School
S61	Saint Michaels School
S62	Saint Patricks School
S63	School Number 4
S64	Verga School
S65	Walnut Street School
S66	West Deptford High School
S67	Woodbury High School
S68	Tinicum Elementary School
S69	George Pepper Middle School
S70	Penrose Elementary School
Churches	
Map Code	**Name**
C1	Bethany Church
C2	Blue Church
C3	Grace Church
C4	Grace Church
C5	Hancock Church
C6	Holy Trinity Church
C7	Karmel Church
C8	Leiper Church
C9	Princeton Church
C10	Prospect Hill Church
C11	Saint Matthews Church
C12	Saint Pauls Church

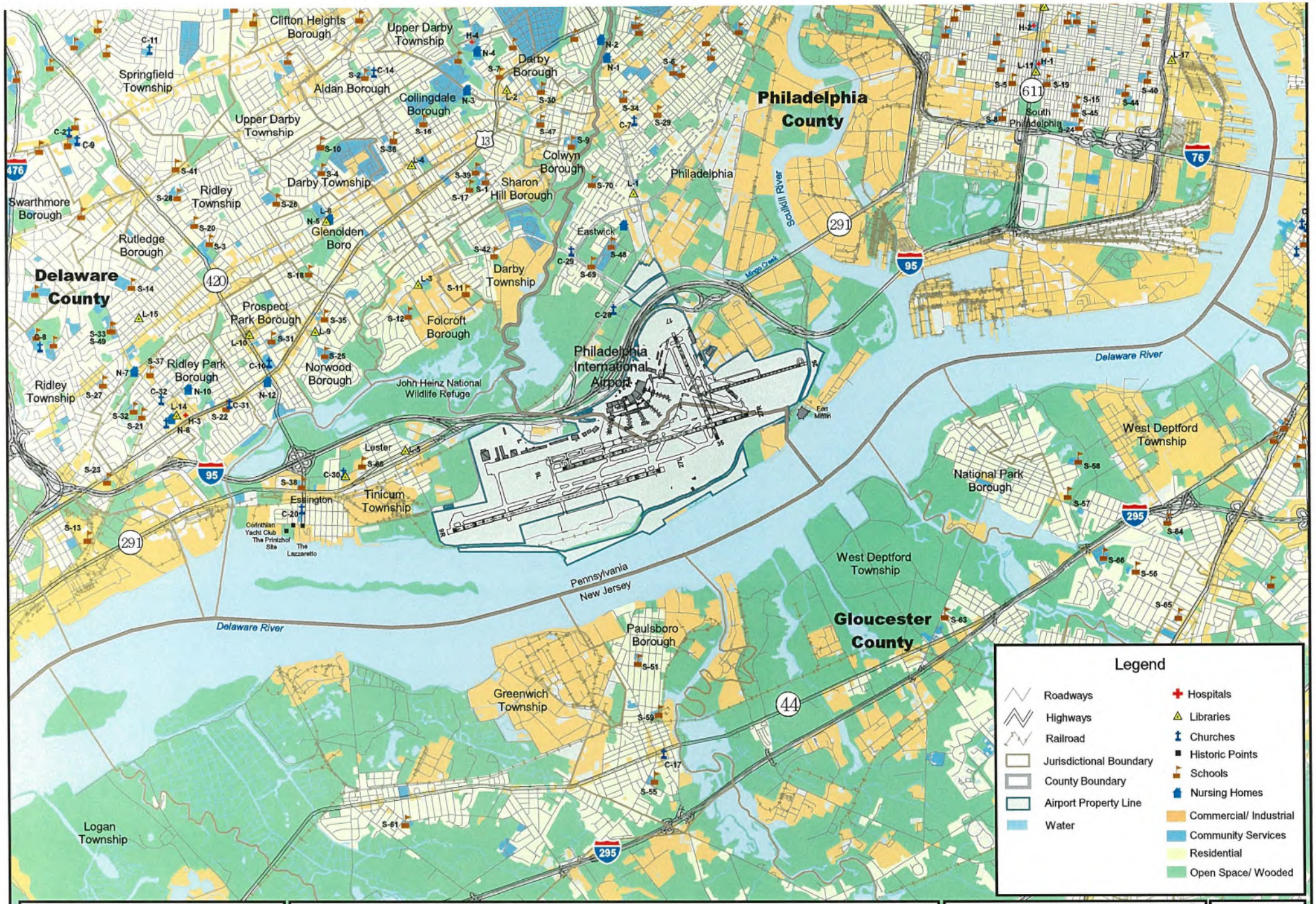
Table D-2, Continued
NOISE-SENSITIVE COMMUNITY FACILITIES
Philadelphia International Airport

Churches (Continued)	
Map Code	**Name**
C13	Temple Ohev Sholom
C14	Union Church
C15	Victoria Church
C16	Berkley Church
C17	Saint Pauls Church
C18	Southwood Church
C19	Zion Church
C20	St. Johns
C21	First Presbyterian Church
C22	First Baptist Church
C23	St. Mary's
C24	First United Methodist Church
C25	Lighthouse Baptist Church
C26	St. Maurice Catholic Church
C27	Highland Park United Methodist Church
C28	St. Paul
C29	Eastwick United Methodist Church
C30	St. John's Lutheran
C31	St. Marks
C32	Ridley Park Presbyterian
Libraries	
Map Code	**Name**
L1	Free Library of Philadelphia
L2	Darby Free Library
L3	Folcraft Public Library
L4	Collingdale Public Library
L5	Tinicum Memorial Public Library
L6	Free Library of Philadelphia
L7	Lansdowne Public Library
L8	Glenolden Library
L9	Norwood Public Library
L10	Prospect Park Free Library Assoc.
L11	Free Library of Philadelphia
L12	Audio Visual Resource Library
L13	Free Library of Philadelphia
L14	Ridley Park Public Library
L15	Ridley Township Public Library
L16	James H. Johnson Memorial Library
L17	Free Library of Philadelphia

Table D-2, Continued
NOISE-SENSITIVE COMMUNITY FACILITIES
Philadelphia International Airport

Hospitals	
Map Code	**Name**
H1	Methodist Hospital
H2	St. Agnes Hospital
H3	Taylor Hospital
H4	Fitzgerald Mercy Hospital
Nursing Homes	
Map Code	**Name**
N1	Cobbs Creek Nursing Center
N2	Holy Family Home
N3	Little Flower Manor
N4	St. Francis Country Manor
N5	Older Adults Senior Citizens
N6	Belvedere
N7	Connor Williams Nursing Home
N8	Older Adults Senior Citizens
N9	Wallingford Rehabilitation Center
N10	Ross Manor Nursing Home
N11	Manchester House
N12	Prospect Park Health and Rehab Residence
N13	Greenbriar Health Care Centers
N14	Greenbriar East

Source: Landrum & Brown, 2002.



FAR Part 150 Noise Compatibility Study
Philadelphia International Airport

Existing Noise Sensitive Facilities

FINAL

0 6000 Feet

Prepared by Landrum and Brown
p:/phl/gis/arcview/prj/contour - final document.apr 05/09/02

Exhibit D - 1

Philadelphia City Planning Commission

A nine member Philadelphia City Planning Commission (PCPC) is responsible for guiding the orderly growth and development of the City of Philadelphia. The powers and duties of the Commission include proposing zoning ordinances and amendments, administrating the regulations concerning the subdivision of land, preparing a Comprehensive Plan, and maintaining the capital program and budget.

The PCPC consists of several divisions including the Community Planning Division and the Development Division. These two particular divisions would play a role in the implementation of any recommended zoning changes that could result from this FAR Part 150 Study. Zoning and planning falls under Title 14 of the Philadelphia City Code and Home Rule Charter. Specifically, the airport is contained in Title 14-1601.

The primary duties of the Community Planning Division include reviewing planning-related problems and opportunities, maintaining a citizen participation process, reviewing development proposals which may require zoning changes, providing technical assistance to citizens and community groups on planning issues, and initiating and carrying out various planning studies within the City.

The Development Division of the PCPC is responsible for reviewing plans for new development, and examining the implications of such plans with respect to the City's Zoning Code, Land Subdivision Ordinance, federal and state environmental regulations, and other city and state land use controls. The Development Division would review any legislation changes resulting from proposed Zoning Map changes and Zoning Code amendments.

Tinicum Township and The Delaware County Planning Department

Tinicum Township Officials in conjunction with the Delaware County Planning Department (DCPC) are responsible for zoning and land use development. The mission of the DCPC is to promote sound development and redevelopment of the County through the application of contemporary planning principles and growth management concepts. It is organized into seven sections: Community Assistance, Information Services, Subdivision and Land Development, Environmental Planning, Policy Planning, Preservation Planning and Transportation Planning.

The Community Assistance section of the DCPC has been working with Tinicum Township on a revised zoning ordinance and map. The Township is responsible for implementing and adhering to the zoning, but the changes to the zoning ordinance must be approved by the DCPC and made available for public comment. The Township has proposed a Zoning Ordinance No. 2001-747 and provided the public an opportunity to offer comments. The City of Philadelphia submitted comments on the proposed zoning changes in a letter dated January 16, 2002 (included as an attachment to Appendix F, *Land Use Alternatives*).

The Delaware Valley Regional Planning Commission (DVRPC) was created by the Pennsylvania and New Jersey Legislatures in 1965 as the federally designated Metropolitan Planning Organization for the Philadelphia-Camden-Trenton Metropolitan Area. Counties the DVRPC serves that are located within the Philadelphia International Airport study area include Delaware and Philadelphia in Pennsylvania; and Burlington, Camden, and Gloucester in New Jersey. DVRPC is an interstate, inter-county, and intercity agency. As such, it is advisory in nature for planning issues such as regional policy and capital funding concerning transportation, economic development, the environment, and land use. The largest part of the DVRPC's work concerns the efficient transportation of people and goods.

The DVRPC is governed by an 18-member board made up of elected officials and three representatives from each state. The state representatives include PennDOT, NJDOT, Pennsylvania Governor's Policy Office, the New Jersey Department of Community Affairs, and appointees of both governors. The Commission has approximately 80 professional and support staff to provide technical assistance to the Board.

The DVRPC is responsible for the regional Transportation Improvement Program (TIP). A transportation project's inclusion in the TIP signifies regional agreement on the priority of the project and establishes eligibility for federal funding. The agency is currently in the process of updating its comprehensive plan called *The 2020 Plan for the Delaware Valley*.

D.2.2 LOCAL LAND USE CONTROLS

The following provides a brief discussion of the local land use controls that are the responsibility of local jurisdictions to implement.

Zoning

Zoning is one of the primary tools available to local communities to ensure land use compatibility. Zoning ordinances and regulations are intended to promote public health, safety, and welfare by regulating the use of the land within a jurisdiction based on factors such as existing and expected socioeconomic conditions.

Subdivision Regulations

Subdivision regulations apply in cases where a parcel of land is proposed to be divided into lots or tracts. They are established to ensure the proper arrangement of streets, adequate and convenient open space, efficient movement of traffic, adequate and properly-located utilities, access for fire-fighting apparatus, avoidance of congestion, and the orderly and efficient layout and use of land.

Subdivision regulations can be used to enhance noise-compatible land development by requiring developers to plat and develop land so as to minimize noise impacts or reduce the noise sensitivity of new development. The regulations can also be used to protect the airport proprietor from litigation for noise impacts at a later date. The most common requirement is the dedication of a noise or avigation easement to the local government by the land subdivider as a condition of development approval. The easement authorizes overflights of the property, with the noise levels attendant to such operations. It also requires the developer to provide noise insulation in the construction of the building.

Building Codes

Building codes regulate the construction of buildings, ensuring that they are built to safe standards. Sound insulation may be required in new homes, offices, and institutional buildings to mitigate the effects of high aircraft noise levels. Building code requirements intended for energy efficiency also provides acoustical insulation benefits. Caulking of joints, continuous sheathing, dead air spaces, ceiling and wall insulation, solid core doors, and double-pane windows can attenuate aircraft noise while conserving energy used for home heating and cooling.

Not all sound insulation needs are met by typical energy-conserving building methods. For example, field research has found that some modern and highly energy-efficient storm window designs are less efficient for sound insulation than some older designs that allow for larger dead air spaces. Other sound insulation measures that may not be justifiable for energy efficiency are vent baffling and year-round, closed-window ventilation systems.

Building codes apply to existing buildings only when remodeling or expansion is contemplated. Amendments to building codes do not help to correct noise problems in developed areas such as much of the area around PHL. In developed areas, sound insulation must be applied retroactively to existing structures.

Capital Improvements Programs

Capital improvements programs are multi-year plans, typically covering five or six years, which list major capital improvements planned to be undertaken during each year. Most capital improvements have no direct bearing on noise compatibility; few municipal capital improvements are noise-sensitive. The obvious exceptions to this are schools and, in certain circumstances, libraries, medical facilities and cultural/recreational facilities.

Some capital improvements may have an indirect, but more profound, relationship to noise compatibility, however. For instance, sewer and water facilities may open up large vacant areas for private development of noise-sensitive residential uses. In

contrast, the same types of facilities, sized for industrial users, could commit to industrial development a noise-impacted area that might otherwise be attractive for residential development.

Growth Risk Assessment

Before evaluating the impact of aircraft noise within the study area, it is important to understand the likelihood for the future development of residential and other noise-sensitive land uses, especially in the planning time frame. Understanding of development trends in the airport vicinity is of critical importance in noise compatibility planning, because future residential growth can potentially constrain airport operations, if that growth occurs beneath aircraft flight tracks and within areas subject to high noise levels.

The growth risk analysis focuses primarily on undeveloped land which is planned and zoned for residential use. It is recognized that additional development may occur through in-filling and redevelopment of currently developed areas.

The methodology for analyzing potential growth risk is as follows:

- Identify all vacant, unplatted tracts of land zoned for future residential development with the greatest potential for being developed within the next five years.
- Calculate the area of the tracts; apply a factor accounting for development inefficiencies and the platting of streets; multiply by dwelling unit densities specified in the zoning ordinance; and multiply by household size to obtain the population holding capacity of presently vacant, unplatted land.
- Sum the above population holding levels to determine the total population holding capacity of the study area.

The final step in the growth risk analysis is to estimate whether the development is likely to occur before or after the year for which future noise exposure has been calculated. This tends to be quite speculative and should be regarded only as a general indicator of the potential risk of increases in land use incompatibility.

D.2.3 CORRECTIVE LAND USE MITIGATION ALTERNATIVES

The following is a brief discussion of typical corrective land use mitigation alternatives included in Part 150 studies.

Sound Insulation of Homes

A program for sound insulation of homes is always voluntary on part of the homeowner and is generally focused on homes located in a 65 – 70 DNL noise contour. Other than the obvious benefit of reducing interior noise levels, a sound insulation program maintains the land use of the area and generally increases the value of the properties. Unfortunately, sound insulation treatments do not reduce the noise outside the house and as such the benefits of the treatments are reduced when doors and windows are open.

Acquisition of Land or Interests in Land for Noise Compatibility

A program for property acquisition can be either voluntary (participation in the program is voluntary on the part of the property owner), or condemnation (local power of eminent domain). Acquisition as mitigation for noise impacts would always be voluntary. The FAA does not participate in the condemnation of property due to noise impacts.

Land Acquisition to Change Land Use: If the acquisition of property results in a change in land use, from incompatible to compatible with airport operations (e.g., airport/transportation, commercial, or industrial), the property owner would be eligible for relocation assistance and moving expenses, consistent with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act*. The property would be acquired, residents would be relocated, and the property would be converted to a compatible land use. This would prevent further development of incompatible land uses. The land acquisition program should assure that the subsequent land use is consistent with local land use plans and policies, including compatibility with noise exposure levels in the area. Because the acquisition is to result in a change in land use the local jurisdiction may decide to apply its power of eminent domain.

Land Acquisition Without Change to Land Use: The acquisition of incompatible property where no change in land use would result would be a "voluntary" acquisition program, where participation in the program would be voluntary on the part of the property owner. The reason for such a voluntary program is most often due to the owner's inability to the sell the property a fair market value. Acquisition procedures would be implemented in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act* and relocation benefits would not apply.

Purchase Guarantee

Purchase guarantee is a program whereby the airport Sponsor agrees to purchase a home for fair market value should the owner be unable to sell the property on the open market because of noise impacts. Participation in this program is voluntary on the part of the property owner and is implemented in areas where the land use is not going to

change. In order to protect potential buyers a stipulation of this program requires that the seller disclose to the buyer the airport noise exposure on the property and the intention of the airport Sponsor to retain an easement on the property.

Avigation Easements

Acquisition of avigation easements should be used to alleviate conflicts if no other land use controls are viable or in some cases, in lieu of outright acquisition of the land. The easement would be noted on the property deed and passed on to any subsequent owners of the property.

Amending local zoning and subdivision regulations to provide for the dedication of an easement to the airport Sponsor as a condition of approval for residential rezoning or subdivision plats within the 65 DNL noise contour would alert developers, lenders, and prospective purchasers to the proximity of the airport and to the existence of a potential noise issue. The avigation easement would also protect the airport from future litigation by purchasers of the rezoned or subdivided property.

There is a constitutional issue raised by requiring dedication of an easement as well as imposing more vigorous and expensive standards for construction within the airport environs. Government may not require a person to give up a constitutional right (i.e., a public use) in exchange for a discretionary benefit conferred by the government unless there is an "essential nexus" between a legitimate governmental objective and the condition that is imposed on the developer. Moreover, the exaction demanded by the permit or condition must have "rough proportionality" to the impact of the proposed development that is sought to be alleviated. Whether that balance exists requires an individualized determination. If it were determined not to meet these standards, then the legislation would either be unenforceable or its enforcement would constitute a taking requiring the payment of just compensation.

Full Disclosure Policy

A method can be developed insuring that buyers of residential property within the airport environs receive full disclosure of the location of the property relative to the airport by requiring that sellers of residential property in the airport environs deliver to buyers a purchase disclosure notice consisting of a copy of the Noise Overlay District Ordinance and Map with a statement that the property is located within the Airport Noise Overlay District. It may also require that all advertisements and listings for sale of residentially zoned or improved property in the Noise Overlay District include a statement about aircraft noise, such as -- "Not recommended for persons who may be easily disturbed by aircraft noise". Finally, solicitation of voluntary inclusion of the notice in Multiple Listing Services by the real estate profession alerts potential buyers of property to the noise conditions.

D.3 FAA LAND USE PLANNING INITIATIVES

In 1999, the FAA announced a package of land-use planning initiatives designed to reduce problems in aviation noise around airports. Those initiatives are based on responses from local communities, aviation interests, and environmental groups. Of particular concern is the loss of noise reductions through the phase out of Stage 2 aircraft by permitting new noise-sensitive uses in areas where the noise contours are shrinking as a result of the phase out.

The purpose of the initiatives is to enable communities and airports to work together to manage the land use areas to be economically productive and protective of the airport's futures. The five packages include communication improvements for conveying FAA noise policies and noise compatibility information to communities near airports and state aviation organizations.

The FAA also issued a notice of final policy on Part 150 approval of noise mitigation measures and the effect on the use of federal grants for noise mitigation projects. The final policy provides new limitation on the use Airport Improvement Program (AIP) funds for remedial noise mitigation projects.

Both the land use initiatives and the noise mitigation funding policy are discussed Appendix A, *FAA Policies, Guidance, and Regulations*.

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Appendix E

APPENDIX E
NOISE ABATEMENT ALTERNATIVES

The subsequent pages provide information on the alternative noise abatement measures that were suggested for inclusion in the Philadelphia International Airport Noise Compatibility Program (NCP). Each measure was evaluated for the anticipated benefits and costs associated with its implementation. The alternatives were reviewed with the membership of the Study Advisory Committee, as well as with aviation professionals in an Aviation Technical Conference. The Technical Conference included representatives of the Air Traffic Control division of the FAA, the Air Transport Association, and the air carriers serving PHL, as well as the FAA ADO, the Airport, and airport neighbors.

Based upon the comments received from the various attendees at the Technical Conference and the consultant's experience with the implementation of like measures at numerous airports throughout the United States, recommendations for the acceptance or discarding of each alternative were presented to the Study Advisory Committee prior to the development of the final recommended NCP. Copies of all the materials used at the Technical Conference, including letters of invitation, sign-in sheets, and meeting workbooks are located in Appendix H, *Public Involvement*. Attached to the end of this Appendix are materials relating to the assessment of noise abatement measures that have a relationship to the concurrent Airspace Redesign Project. This includes relevant portions of AIR 21, coordination letters sent by the FAA to Senator Biden, a presentation handout from July 12, 2001, and FAA comments on the feasibility of certain noise abatement measures that would potentially benefit northern Delaware.

Noise Compatibility Program Alternative NA-A (Became NA-1) **Exhibit: E-1**

TITLE:	**Departing Runways 9L/9R/17/35/8, Fly Runway Heading Until Reaching 2,000' AGL**

DESCRIPTION:	– This is the current procedure for these runways. – Modifications to the procedure are being evaluated by the New York/New Jersey/ Philadelphia Metropolitan Airspace Redesign Project in an effort to enhance the efficiency of operations throughout the Philadelphia/New York airspace corridor.

BENEFITS:	Takes advantage of Delaware River to the east of the airport and the generally compatible areas north and south of the airport.

DRAWBACKS:	– Not all aircraft maintain the heading until reaching 2,000' AGL (measure does not apply to light aircraft less than 12,500 pounds). – Different aircraft reach 2,000' AGL at different locations; therefore the next turn point is not fixed and flights are dispersed over large areas.

COST TO IMPLEMENT:	None.

EVALUATION METHOD:	Incorporated into the baseline noise contour modeling.

FINDINGS and RECOMMENDATION:	**Retain current procedures**, subject to potential refinement by the findings of the FAA's Airspace Redesign Project in the future.

Noise Compatibility Program Alternative NA-B (Became NA-2) **Exhibit: E-1**

TITLE:	**Departing Runway 27L, Turn left to a 255 Degree Heading Until Reaching 3,000' AGL.**
DESCRIPTION:	– This is the current procedure for this runway. – Modifications to the procedure are being evaluated by the New York/New Jersey/ Philadelphia Metropolitan Airspace Redesign Project in an effort to enhance the efficiency of operations throughout the Philadelphia/New York airspace corridor.
BENEFITS:	Takes advantage of the Delaware River to the west of the airport by keeping initial stages of takeoff over compatibly used areas.
DRAWBACKS:	– Not all aircraft maintain the heading until reaching 3,000' AGL (measure does not apply to light aircraft less than 12,500 pounds). – Different aircraft reach 3,000' AGL at different locations; therefore the next turn point is not fixed and flights are dispersed over large areas.
COST TO IMPLEMENT:	None.
EVALUATION METHOD:	Incorporated into the baseline noise contour modeling.
FINDINGS and RECOMMENDATION:	**Retain current procedures**, subject to potential refinement by the findings of the FAA's Airspace Redesign Project in the future.

Noise Compatibility Program Alternative NA-C (Became NA-3) **Exhibit: E-1**

TITLE:	**Departing Runway 27R, Turn left to a 240 Degree Heading Until Reaching 3 DME, thence fly 255 Degree Heading to 3,000' AGL.**

DESCRIPTION:	– This is the current procedure for this runway. – Modifications to the procedure are being evaluated by the New York/New Jersey/ Philadelphia Metropolitan Airspace Redesign Project in an effort to enhance the efficiency of operations throughout the Philadelphia/New York airspace corridor.

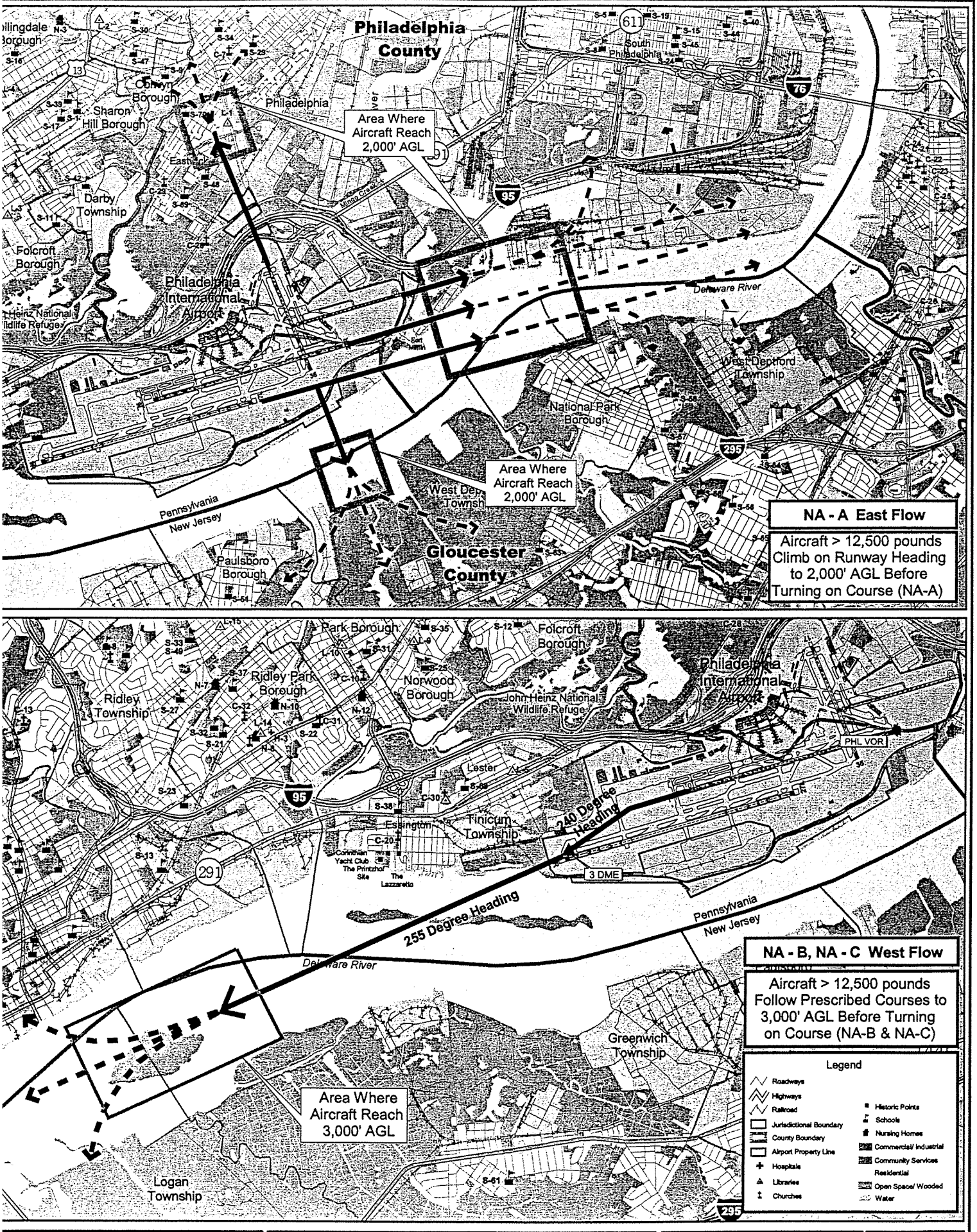
BENEFITS:	Takes advantage of Delaware River to the west of the airport.

DRAWBACKS:	– Not all aircraft maintain the heading until reaching 3,000' AGL (measure does not apply to light aircraft less than 12,500 pounds). – Different aircraft reach 3,000' AGL at different locations; therefore the next turn point is not fixed and flights are dispersed over large areas. – The measure is not used when airspace separation between aircraft is required during periods of peak operations, or when fast and slow aircraft simultaneously depart the two parallel runways.

COST TO IMPLEMENT:	None.

EVALUATION METHOD:	Incorporated into the baseline noise contour modeling.

FINDINGS and RECOMMENDATION:	**Retain current procedures**, subject to potential refinement by the findings of the FAA's Airspace Redesign Project in the future.



FAR Part 150 Noise Compatibility Study
Philadelphia International Airport

Takeoff Corridors for Noise Abatement (NA-A, NA-B, and NA-C)

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Exhibit E - 1

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Noise Compatibility Program Alternative NA-D (Became NA-4) **Exhibit: E-2**

TITLE:	**Nighttime Preferential Runway Use Program**

DESCRIPTION:	– This is the current procedure for the airport. – Between midnight and 6:00 a.m., east operations are to occur as follows: Depart Runways 9L/R and land Runway 9R; Depart Runway 17 and land Runway 35. – Between midnight and 6:00 a.m., west operations are to occur as follows: Depart Runway 27L and land Runways 27L/R; Depart Runway 17 and land Runway 35.

BENEFITS:	– Utilizes outboard runway (closest to the Delaware River) for departures on the parallels. – Utilizes the generally compatible area south of the airport for crosswind arrivals and departures.

DRAWBACKS:	None.

COST TO IMPLEMENT:	None.

EVALUATION METHOD:	Incorporated into the baseline noise contour modeling.

FINDINGS and RECOMMENDATION:	**Retain current** nighttime runway use **program**.

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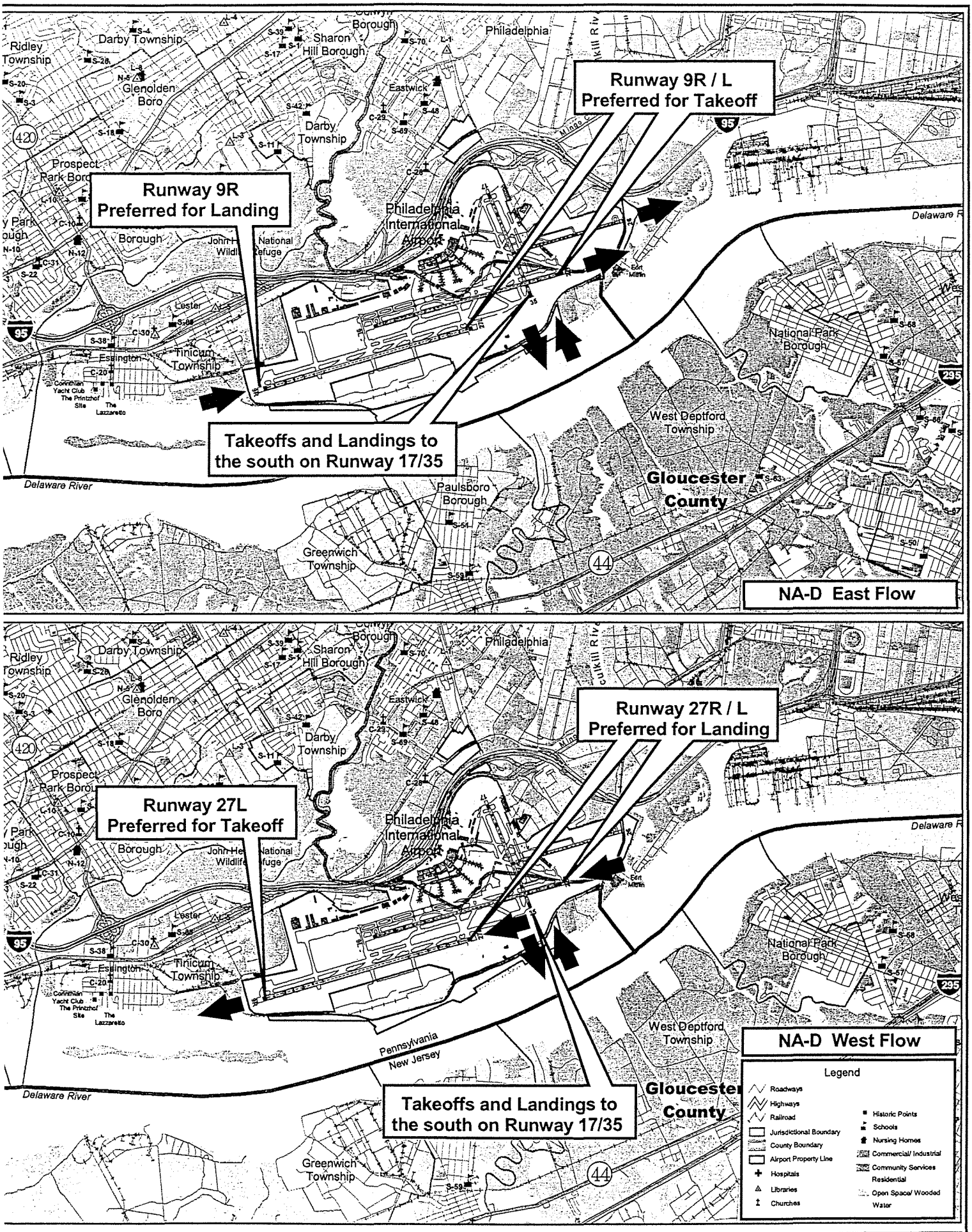

FAR Part 150 Noise Compatibility Study
Philadelphia International Airport

Preferential Nighttime Runway Use
East and West Flow (NA-D)

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05/09/02
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Exhibit
E - 2

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Noise Compatibility Program Alternative NA-E (Became NA-5) **Exhibit: E-3**

TITLE:	**Engine Run-up Restriction Procedures**

DESCRIPTION:	– These are current run-up procedures in effect: • Engine run-ups are restricted to two (2) centrally located sites on the airport. → Taxiway K at H facing east (preferred) → Taxiway P at W facing west • Engine run-ups require prior approval of airport operations and must not exceed 20 minutes in duration. • Between 11:00 p.m. and 6:00 a.m., run-ups are conducted at the preferred run-up location.

BENEFITS:	– Centrally located sites minimize the noise impact of run-ups as much as possible without constructing a barrier or berm. – Provides for nighttime run-ups to occur at the preferred site.

DRAWBACKS:	None.

COST TO IMPLEMENT:	None.

EVALUATION METHOD:	Incorporated into the baseline noise contour modeling.

FINDINGS and RECOMMENDATION:	**Retain current** nighttime run-up **program**.

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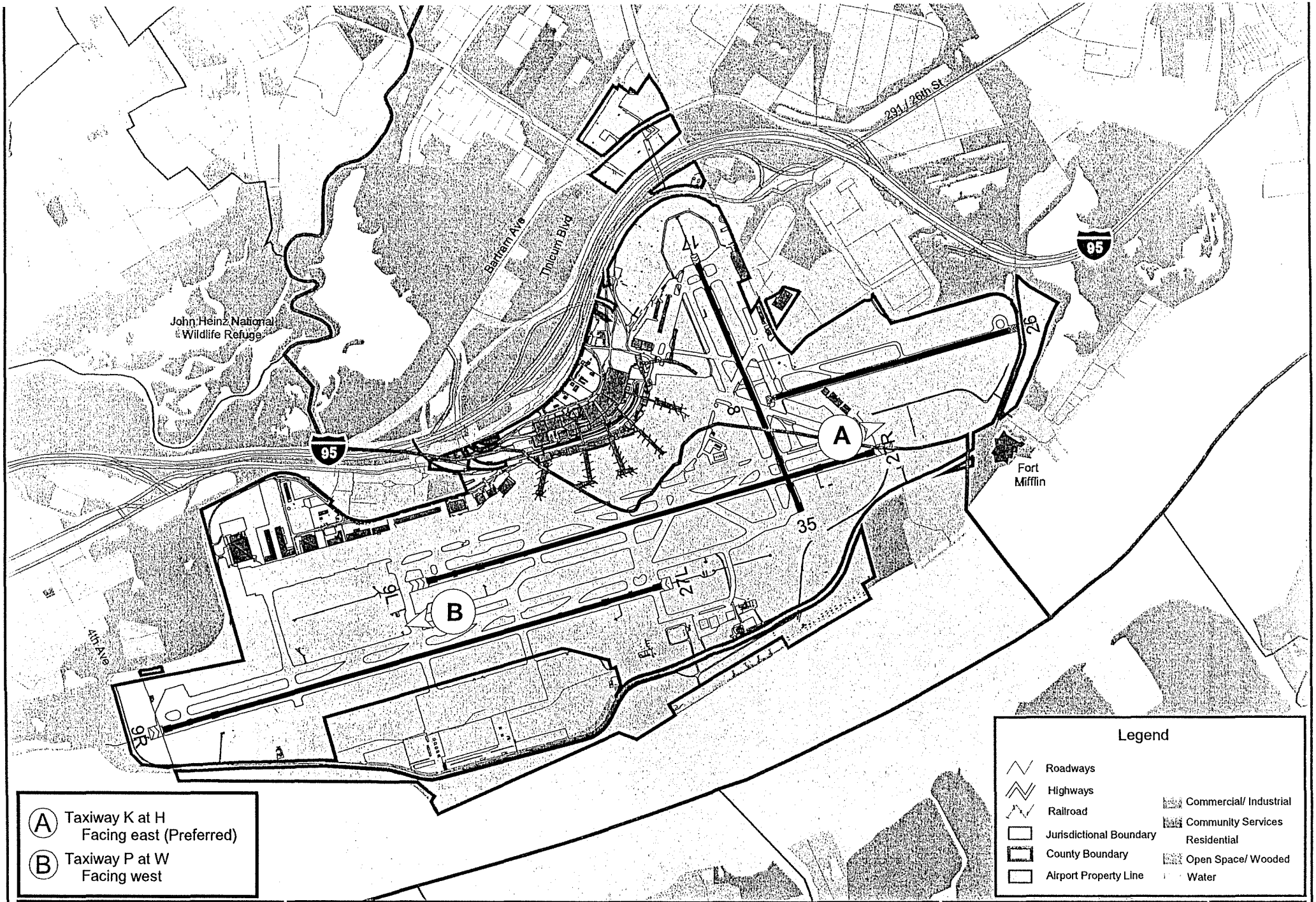

FAR Part 150 Noise Compatibility Study
Philadelphia International Airport

Existing Engine Run-Up Procedures (NA-E)

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Prepared by Landrum and Brown
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Exhibit E - 3

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Noise Compatibility Program Alternative NA-F **Exhibit: E-4**

TITLE:	**Modify/Enhance Runway 27L Departure Procedure for Aircraft Weighing More Than 12,500 Pounds**
DESCRIPTION:	Utilize RNAV and traditional navigation techniques to define a specific departure course for aircraft weighing more than 12,500 pounds that maintains the initial 240° heading until reaching a fixed location, rather than initiating turns upon reaching 3,000 MSL
BENEFITS:	– Reduce direct overflights of Tinicum by narrowing dispersion during the initial departure. – Establishes a fixed and predictable turn location – Enhances Air Traffic system with use of RNAV.
DRAWBACKS:	– Not all aircraft equipped with RNAV capability. – Reduces airspace capacity by reducing traffic controller options for the separation of aircraft. – Introduces additional delay by reducing capacity. – Requires additional Air Traffic Controller training.
COST TO IMPLEMENT:	– Cost of developing procedures and EA for implementation of all recommended measures (estimated at $400,000 to 600,000 based on similar efforts in other areas). – Cost of delay and loss of capacity from full implementation estimated to be $3.54 million annually based on 3-mile separations. – Cost of controller training. – Cost of Digital GPS equipment both on the ground and on-board user aircraft.
EVALUATION METHOD:	INM modeling of anticipated flight path.
FINDINGS and RECOMMENDATION:	– Reduces overflights and noise impacts in Tinicum when combined with NA-G. - By 1 DNL to 2 DNL in the Tinicum area - By 113 housing units – Abatement benefits are not perceptible. Efforts should be focused on mitigation. – **Not Recommended**.

Noise Compatibility Program Alternative NA-G **Exhibit: E-4**

TITLE:	**Modify/Enhance Runway 27R Departure Procedure for Aircraft Weighing More Than 12,500 Pounds**

DESCRIPTION:	Utilize RNAV and traditional navigation techniques to define a specific departure course for aircraft weighing more than 12,500 pounds that maintains the initial 255/240° heading until reaching a fixed location, rather than initiating turns upon reaching 3,000 MSL. Procedure to be used if not conflicting with 27L departures.

BENEFITS:	– Reduce (not eliminate) direct overflights of Tinicum by defining a turn point that bypasses rather than overflies the community and narrows dispersion during the initial departure. – Establishes a fixed and predictable turn location – Enhances Air Traffic system with use of RNAV.

DRAWBACKS:	– Not all aircraft equipped with RNAV capability. – Establishes a single departure stream in west flow operations when combined with Alternative NA-F or NA-B. – Reduces airspace capacity by reducing traffic controller options for the separation of aircraft. – Requires additional Air Traffic Controller training.

COST TO IMPLEMENT:	– Cost of developing procedures (see NA-F). – Cost of delay and loss of capacity from full implementation estimated to be $479,000 or 38 hours annually based on 3-mile separations. – Cost of controller training. – Cost of Digital GPS equipment both on the ground and on-board user aircraft.

EVALUATION METHOD:	INM modeling of anticipated flight path.

Noise Compatibility Program Alternative NA-G **Exhibit: E-4**
(Continued)

FINDINGS and RECOMMENDATION:	– Reduces overflights and noise impacts in Tinicum when combined with NA-F. • By 1 DNL to 2 DNL in the Tinicum Area • By 113 housing units – Abatement benefits are not perceptible. Efforts should be focused on mitigation. – **Not Recommended**

Noise Compatibility Program Alternative NA-H **Exhibit: E-4**

TITLE:	**Modify/Enhance Runway 9L Departure Procedure for Aircraft Weighing More Than 12,500 Pounds**

DESCRIPTION:	– Utilize RNAV and traditional navigation techniques to define specific departure course. • For left-turning aircraft, define a corridor that overflies the generally compatible areas along the Delaware River as it turns to the north. This action may be considered by the concurrent New York/New Jersey/Philadelphia Metropolitan Airspace Redesign Project. • For right-turning aircraft, define a corridor that overflies the compatible corridor between Camden and Gloucester Counties in New Jersey.

BENEFITS:	– Reduce overflights of South Philadelphia and heavier populated areas of Camden County, New Jersey for left-turning aircraft. – Reduce overflights of heavier populated areas of Camden County, New Jersey for right-turning aircraft. – Enhances Air Traffic system with use of RNAV.

DRAWBACKS:	– Not all aircraft equipped with RNAV capability. – Reduces Controller flexibility in efficiently moving traffic during peak operating periods – Additional Air Traffic Controller training.

COST TO IMPLEMENT:	– Cost of developing procedures (see NA-F). – Cost of controller training. – Cost of Digital GPS equipment both on the ground and on-board user aircraft.

EVALUATION METHOD:	INM modeling of anticipated flight path.

Noise Compatibility Program Alternative NA-H **Exhibit: E-4**
(Continued)

FINDINGS and RECOMMENDATION:	– Up to a 1.0 DNL reduction near the eastern tip of the 65 DNL when combined with NA-I. – **Retain current** east traffic departure **procedures**, subject to a review of efficiency by the Airspace Redesign Project.

Noise Compatibility Program Alternative NA-I **Exhibit: E-4**

TITLE:	**Modify/Enhance Runway 9R Departure Procedure for Aircraft Weighing More Than 12,500 Pounds**
DESCRIPTION:	– Utilize RNAV and traditional navigation techniques to define specific departure course. • For left-turning aircraft, define a corridor that overflies the generally compatible areas along the Delaware River as it turns to the north. This action may be considered by the concurrent New York/New Jersey/Philadelphia Metropolitan Airspace Redesign Project. • For right-turning aircraft, define a corridor that overflies the compatible corridor between Camden and Gloucester Counties in New Jersey.
BENEFITS:	– Reduce overflights of South Philadelphia and heavier populated areas of Camden County, New Jersey for left-turning aircraft. – Reduce overflights of heavier populated areas of Camden County, New Jersey for right-turning aircraft. – Enhances Air Traffic system with use of RNAV.
DRAWBACKS:	– Not all aircraft equipped with RNAV capability. – Reduces Controller flexibility in efficiently moving traffic during peak operating periods – Additional Air Traffic Controller training.
COST TO IMPLEMENT:	– Cost of developing procedures (see NA-F). – Cost of controller training. – Cost of Digital GPS equipment both on the ground and on-board user aircraft.
EVALUATION METHOD:	INM modeling of anticipated flight path.

Noise Compatibility Program Alternative NA-I **Exhibit: E-4**
(Continued)

FINDINGS and RECOMMENDATION:	– Up to a 1.0 DNL reduction near the eastern tip of the 65 DNL when combined with NA-H. – **Retain current** east traffic departure **procedures**, subject to a review of efficiency by the Airspace Redesign Project.

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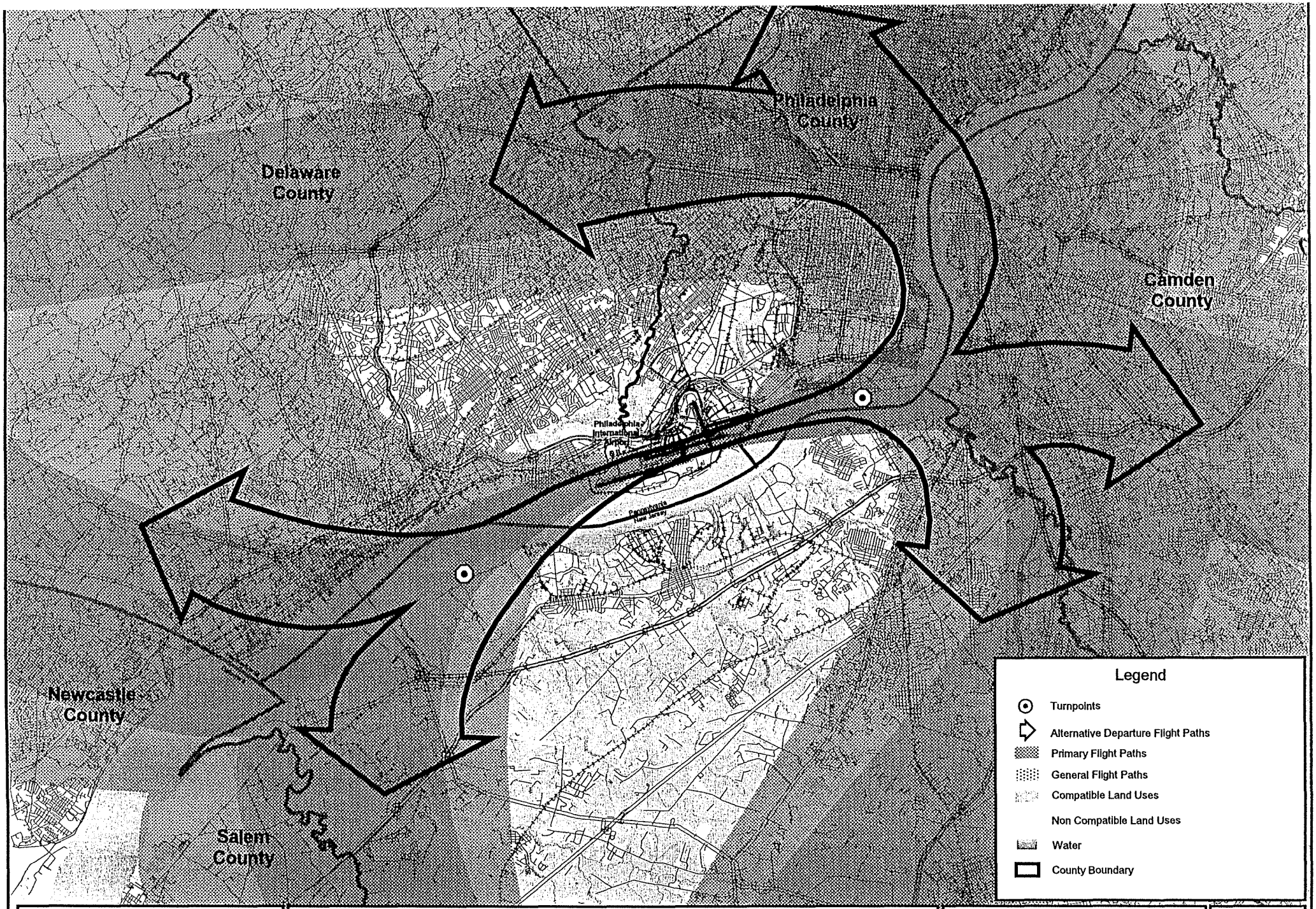

FAR Part 150 Noise Compatibility Study
Philadelphia International Airport

Alternative Departure Flight Paths (NA-F, NA-G, NA-H, NA-I)

FINAL

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Prepared by Landrum and Brown
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Exhibit
E - 4

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Noise Compatibility Program Alternative NA-J **Exhibit: E-5**

TITLE:	**Establish an RNAV Approach to Runway 9R (Modified ILS Approach)**

DESCRIPTION:	In accordance with Miscellaneous Provision 758 of PL 106-181 (AIR-21), it was the sense of the Senate that the Secretary of Transportation should "*study the feasibility, consistent with safety, of placing the approach causeway of Philadelphia International Airport's East Operations over the Delaware River (instead of Brandywine Hundred)*" – Utilize RNAV and traditional navigation techniques to define specific approach course over the Delaware River during east operations. – RNAV approach could turn right on to the current ILS approach course from an angle of about 30 degrees approximately 8 miles from the runway threshold (descending from 2,400 MSL). This would not achieve the desired river corridor, but would relocate traffic over other portions of the Wilmington area. – This action was considered by the concurrent New York/New Jersey/Philadelphia Metropolitan Airspace Redesign Project and found to not be feasible due to safety and efficiency concerns. This finding has been communicated to the congressional leaders and the citizens of northern Delaware through a letter from the FAA and a public workshop held on December 5, 2001 in northern Delaware (see Attachments at the end of this Appendix for letters and meeting materials).

BENEFITS:	– Reduce overflights of Brandywine area by about 60% of arriving large aircraft. – Enhances Air Traffic system with use of RNAV.

Noise Compatibility Program Alternative NA-J **Exhibit: E-5**
(Continued)

DRAWBACKS:	– No reduction of noise to areas exposed to more than 55 DNL. – Location of a safe merge point approximately 8 miles from the threshold of Runway 9R would route traffic west of the Delaware River, over Wilmington, intercepting the final approach at an angle of approximately 50 degrees in the vicinity of the Pennsylvania/Delaware state line. – Not all aircraft equipped with RNAV capability. – Additional Air Traffic Controller training to deal the increase in controller workload associated with the merging of aircraft from two inbound routes onto a single final approach. – Redesign of the descent areas for the downwind approach and tromboning areas necessary for application will relocate the cornerposts on the west side of the airspace and move overflights into areas of Pennsylvania, Delaware and New Jersey not currently affected by substantial over flight. – To maximize the efficiency of the operation, it may be necessary to make the procedure a 100% usage measure, further impacting on the relocation of downwind and trombone routes into new areas of impact. If this is the case, the measure would have to be defined using ground-based navaids to provide guidance to aircraft not equipped with on board GPS capabilities. – Incursion of descent areas farther to the southwest may impact upon the Potomac area airspace used for traffic control around BWI and other Washington metropolitan area airports.

COST TO IMPLEMENT:	– Cost of developing procedures (see NA-F). – Because there is presently a single approach during IFR conditions in east flow, the measure is not expected to impact adversely on capacity. – Cost of controller training. - Cost of Digital GPS equipment both on the ground and on-board user aircraft.

Noise Compatibility Program Alternative NA-J **Exhibit: E-5**
(Continued)

EVALUATION METHOD:	INM modeling of anticipated flight path.

FINDINGS and RECOMMENDATION:	– Average daily DNL would be reduced from approximately 46 under current conditions to approximately 42 over Brandywine Valley if all capable aircraft were to use the modified instrument approach procedure. – The Airspace Redesign Project has found that it would not be feasible to relocate the approach to a river corridor. – **Not justified by Part 150 noise-compatibility standards** because the measure would relocate noise from one populated area to another of similar or greater density.

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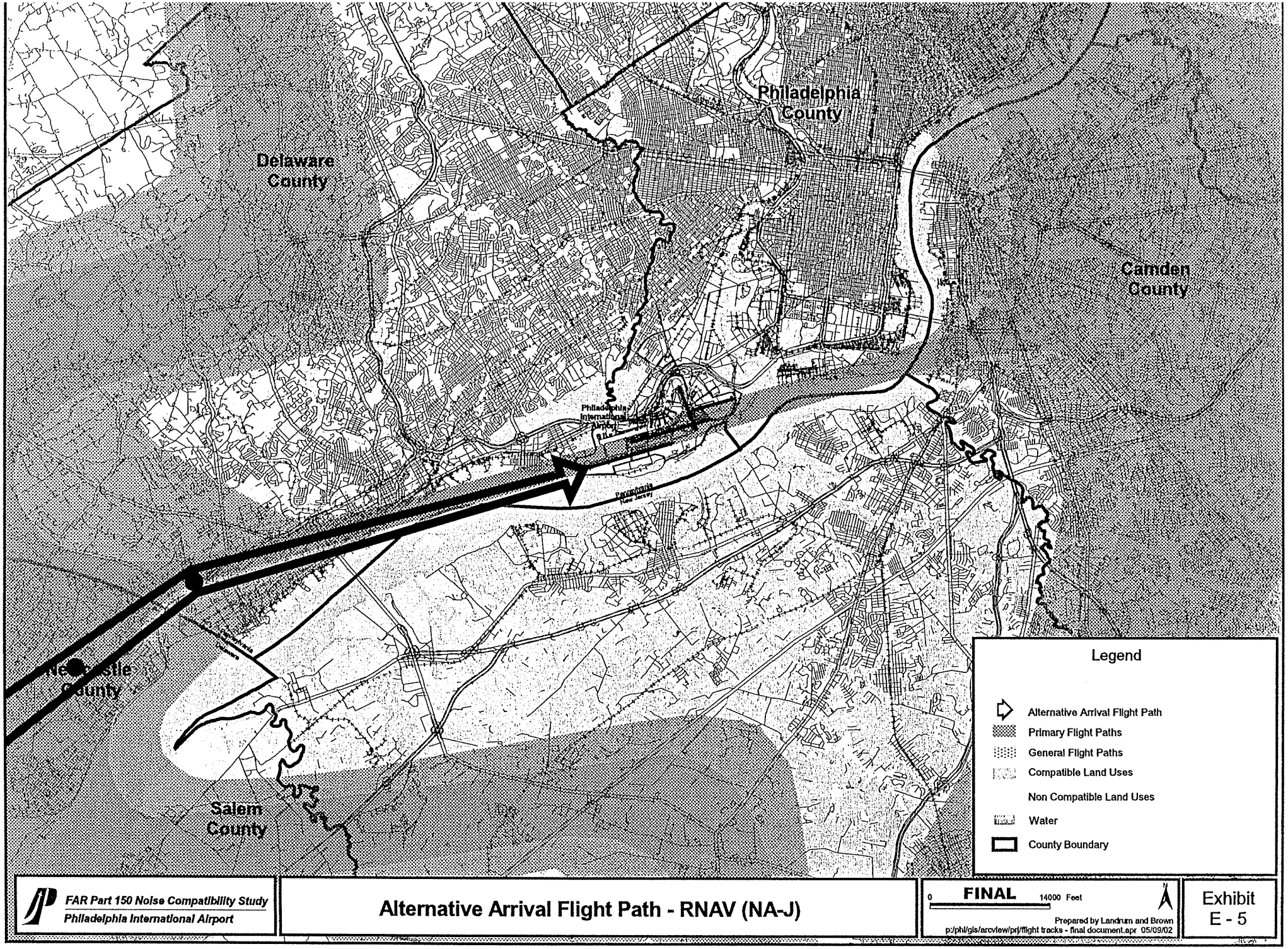

FAR Part 150 Noise Compatibility Study
Philadelphia International Airport

Alternative Arrival Flight Path - RNAV (NA-J)

0 FINAL 14000 Feet

Prepared by Landrum and Brown
p:/phl/gis/arcview/prj/flight tracks - final document.apr 05/09/02

Exhibit E - 5

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Noise Compatibility Program Alternative NA-K Exhibit: E-6

TITLE:	**Establish a SOIA Approach to Runway 9R (Modified Instrument Approach)**

DESCRIPTION:	In accordance with Miscellaneous Provision 758 of PL 106-181 (AIR-21), it was the sense of the Senate that the Secretary of Transportation should "*study the feasibility, consistent with safety, of placing the approach causeway of Philadelphia International Airport's East Operations over the Delaware River (instead of Brandywine Hundred)*" – Utilize traditional navigation techniques to define a Simultaneous Offset Instrument Approach (SOIA) course leading to landings on Runway 9R when weather is better than Category I instrument minimums. – Retain current ILS approach for Category II and III instrument conditions.

BENEFITS:	Reduce overflights of Brandywine Valley area by rerouting aircraft approximately ½ to 1 mile south of the present approach course. The measure does not meet the suggested river approach corridor, but does relocate overflights from the immediate vicinity of the current area of impact.

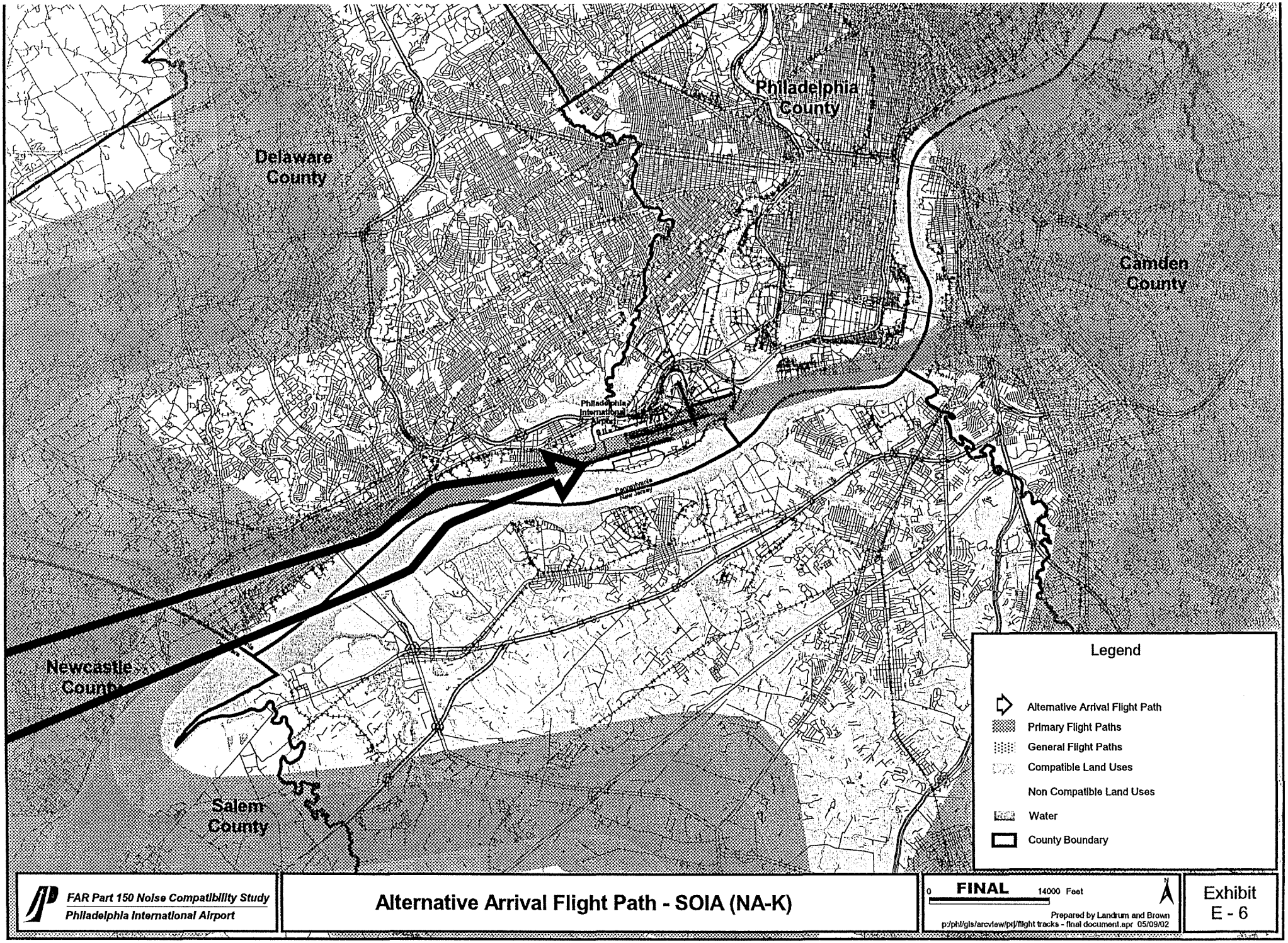
DRAWBACKS:	– No reduction of noise to areas exposed to more than 55 DNL. – Relocates traffic from one area of impact to another similarly developed area. SOIA procedures manual prohibits use of the procedure for noise abatement. – Routes all approaches to Runway 9R along a single approach course, depending on weather, eliminating short final approaches and other controller flexibility. – Additional Air Traffic Controller training. – Introduces complexity into the turn onto final approach over Chester/Tinicum, with potential overshoots into the approach to Runway 9L by smaller aircraft.

Noise Compatibility Program Alternative NA-K **Exhibit: E-6**
(Continued)

COST TO IMPLEMENT:	– Cost of developing procedures (see NA-F). – Cost of controller training. – Cost of additional instrumentation to define SOIA approach offset course.

EVALUATION METHOD:	Qualitative evaluation.

FINDINGS and RECOMMENDATION:	– Procedure is allowed for capacity enhancement and not allowed solely for noise abatement – **Not Recommended**.



FAR Part 150 Noise Compatibility Study
Philadelphia International Airport

Alternative Arrival Flight Path - SOIA (NA-K)

0 FINAL 14000 Feet

N

Prepared by Landrum and Brown
p:/phl/gis/arcview/prj/flight tracks - final document.apr 05/09/02

Exhibit
E - 6

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Noise Compatibility Program Alternative NA-L **Exhibit: E-7**

TITLE:	**Maximize Use of Current Visual Approach to Runway 9R**

DESCRIPTION:	In accordance with Miscellaneous Provision 758 of PL 106-181 (AIR-21), it was the sense of the Senate that the Secretary of Transportation should "*study the feasibility, consistent with safety, of placing the approach causeway of Philadelphia International Airport's East Operations over the Delaware River (instead of Brandywine Hundred)*" – Define a charted procedure comparable to that presently used for the visual approach to Runway 19 at Washington Reagan Airport, relying on DME arcs and radial fixes from area VORs to define specific turn points to allow maintenance of a course over the Delaware River in visual meteorological conditions. – Retain current ILS approach for Instrument Meteorological Conditions. – This action was considered by the concurrent New York/New Jersey/Philadelphia Metropolitan Airspace Redesign Project and found to not be feasible due to safety and efficiency concerns. This finding has been communicated to the congressional leaders and the citizens of northern Delaware through a letter from the FAA and a public workshop held on December 5, 2001 in northern Delaware (see Attachments at the end of this Appendix for letters and meeting materials).

BENEFITS:	– Reduce overflights of Brandywine Valley area of Delaware by rerouting traffic below about 3,000 feet MSL to a river location.

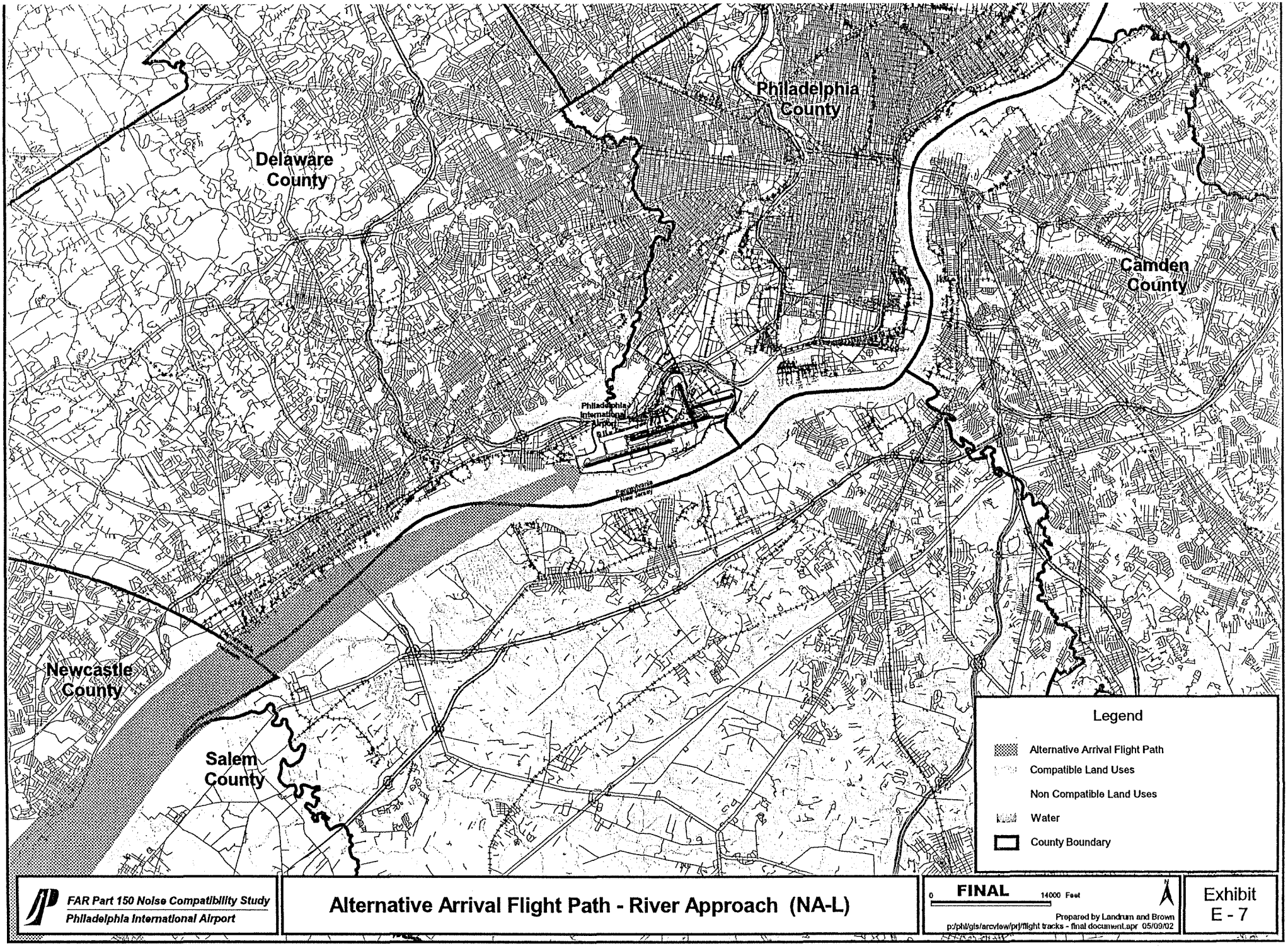
Noise Compatibility Program Alternative NA-L **Exhibit: E-7**
(Continued)

DRAWBACKS:	– No reduction of noise to areas exposed to more than 55 DNL. – Routes all approaches to Runway 9R along the same approach course, eliminating short final approaches and other controller flexibility. – Additional Air Traffic Controller training. – Introduces complexity into the turn onto final approach over Chester/Tinicum, with potential overshoots into the approach to Runway 9L by smaller aircraft. – Increases delay through procedural complexity and the need to assure safe separations between sequential aircraft. – Redesign of the descent areas for the downwind approach and tromboning areas necessary for application will relocate the cornerposts on the west side of the airspace and move overflights into areas of Pennsylvania, Delaware and New Jersey not currently affected by substantial over flight.

COST TO IMPLEMENT:	– Cost of developing procedures (see NA-F). – Cost of controller training.

EVALUATION METHOD:	INM modeling of anticipated flight path.

FINDINGS and RECOMMENDATION:	– Average daily DNL would be reduced from approximately 46 under current conditions to approximately 44 over Brandywine Valley if all capable aircraft were to use the river approach. – The Airspace Redesign Project has found that it would not be feasible to relocate the approach to a river corridor. – **Not justified by Part 150 noise-compatibility standards** because the measure would relocate noise from one populated area to another of similar or greater density



FAR Part 150 Noise Compatibility Study
Philadelphia International Airport

Alternative Arrival Flight Path - River Approach (NA-L)

FINAL

0 14000 Feet

Prepared by Landrum and Brown
p:/phl/gis/arcview/prj/flight tracks - final document.apr 05/09/02

Exhibit E - 7

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Noise Compatibility Program Alternative NA-M **Exhibit: N/A**

TITLE:	**Preferential East Flow Operation (up to 3 knot tailwind)**

DESCRIPTION:	– Establish a program of preference for operations in east traffic flow during periods when winds are less than 3 knots from any direction. – Measure reverses the preferential flow of traffic now in place. – Wind analysis indicates roughly 50/50 split between east and west flow.

BENEFITS:	– Reduce departures over incompatible properties of Tinicum and other areas west of the airport. – Financial benefits for individual eastbound flights.

DRAWBACKS:	– Incompatible with regional airspace procedures. – Increased departures over communities east of the airport (South Philadelphia and New Jersey). – Increases objectionable arrivals over Tinicum Township and the Brandywine Valley. – Only two approaches are available in east flow, while three are available in west flow (excluding activity on the crosswind). Hence there is more capacity in west flow. – Increased exposure to spool up noise in Tinicum from east bound takeoffs on 9R/L.

COST TO IMPLEMENT:	– Increased cost to airlines for west bound flights. – Increased cost associated with reduction of capacity and additional runway crossings in east flow conditions.

EVALUATION METHOD:	INM modeling of preferential east flow operation.

FINDINGS and RECOMMENDATION:	– Slight reduction in overall noise levels. • Less than 1 DNL reduction in Tinicum. • 27 fewer housing units in 65 DNL. – Abatement benefits are not perceptible. Efforts should be focused on mitigation. – **Not Recommended**

Noise Compatibility Program Alternative NA-N **Exhibit: N/A**

TITLE:	**Preferential East Flow Operation at Night (up to 5 knot tailwind)**

DESCRIPTION:	– Establish a preference for operations in east traffic flow during nighttime periods when winds are less than 5 knots from any direction. – Maintain current preference for departure operations on the outboard runway. – Maintain crosswind runway preferences for over water approaches and departures. – Wind analysis indicates approximately 74 percent east flow could be achieved at night with 5 knot tailwind component.

BENEFITS:	– Reduce departures over Tinicum and other areas west of the airport during the most sensitive hours. – Financial benefits to airlines with eastbound flights.

DRAWBACKS:	– Compatibility with regional airspace procedures. – Increased departures over communities east of the airport (South Philadelphia and New Jersey). – Increased arrivals over communities west of the airport (Tinicum Township and Delaware). – Reduction of capacity during poor weather conditions with potential increase of individual flight delays.

COST TO IMPLEMENT:	– Increased cost to airlines for west bound flights. – Cost of delays associated with reduced capacity and additional runway crossings

EVALUATION METHOD:	INM modeling of preferential nighttime east flow operation.

FINDINGS and RECOMMENDATION:	– Slight reduction in overall noise levels. • Approximately 2 DNL reduction in Tinicum. • 97 fewer housing units in 65 DNL. – Abatement benefits are not perceptible. Efforts should be focused on mitigation. – **Not Recommended**

Noise Compatibility Program Alternative NA-O **Exhibit: E-8**

TITLE:	**Increase Approach Altitude West of Airport over Brandywine Valley**

DESCRIPTION:	In accordance with Miscellaneous Provision 758 of PL 106-181 (AIR-21), it was the sense of the Senate that the Secretary of Transportation should "*study the feasibility of increasing the standard altitude over the Brandywine Intercept from 3,000 to 4,000 feet)*" – Raise intercept altitude over the Brandywine intersection for Runways 9L/R approaches (currently 3,000 at BWINE fix). – This action was considered by the concurrent New York/New Jersey/Philadelphia Metropolitan Airspace Redesign Project and found to not be feasible due to safety and efficiency concerns. This finding has been communicated to the congressional leaders and the citizens of northern Delaware through a letter from the FAA and a public workshop held on December 5, 2001 in northern Delaware (see Attachments at the end of this Appendix for letters and meeting materials).

BENEFITS:	– Increase aircraft altitude over Brandywine area will place aircraft at a position to assume a standard 3-degree approach to 9R/L. – Reduce single event levels in the Brandywine Valley by two to four decibels

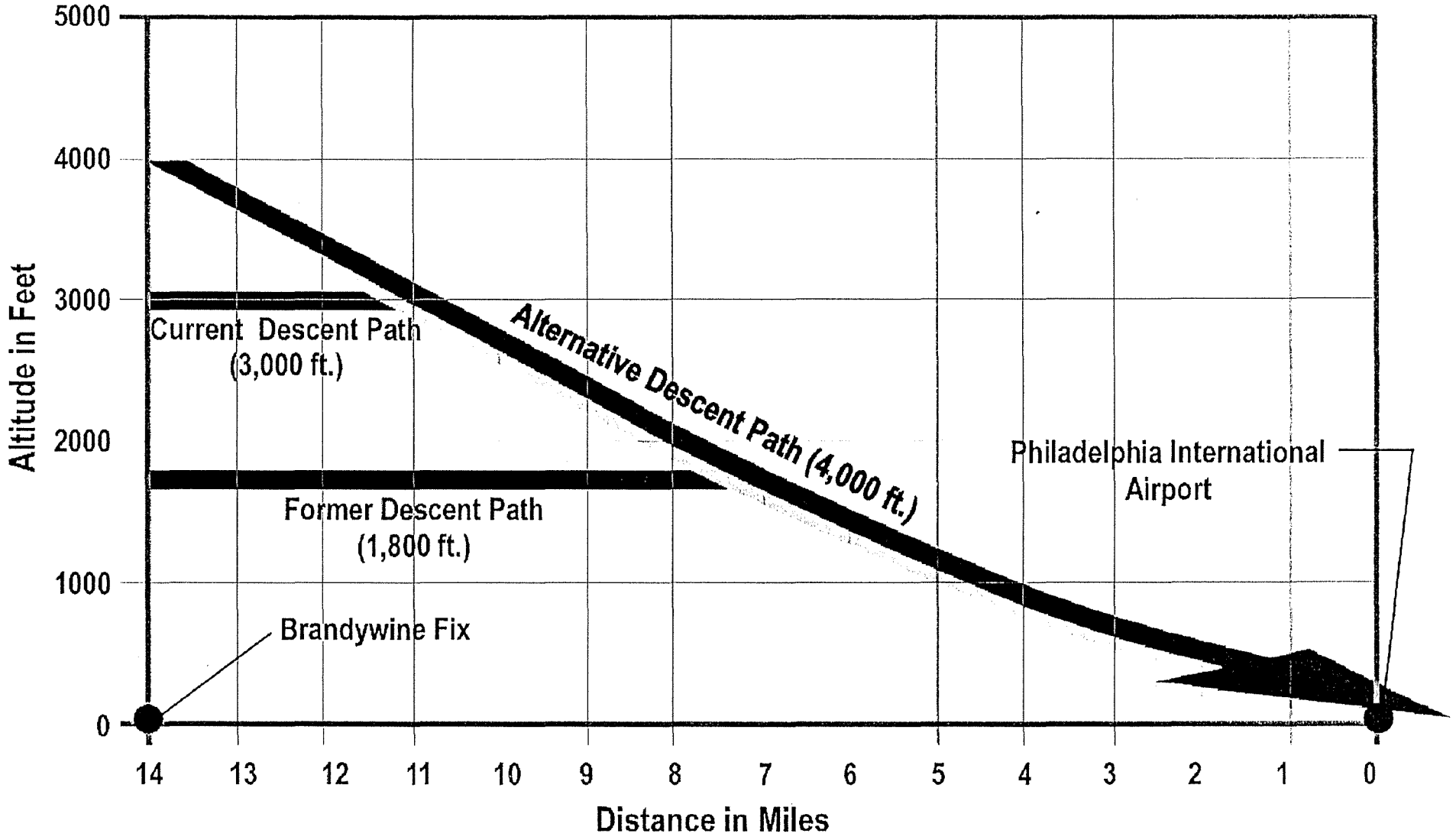
DRAWBACKS:	– Incompatible with current regional airspace procedures. – Approaches may need to be extended farther to the west to intercept the approach at 4,000 MSL.

COST TO IMPLEMENT:	No anticipated net costs.

EVALUATION METHOD:	INM noise modeling of average and single event noise levels.

Noise Compatibility Program Alternative NA-O **Exhibit: E-8**
(Continued)

FINDINGS and RECOMMENDATION:	– Average daily DNL would be reduced from approximately 49 decibels under current conditions to approximately 47 decibels if all aircraft crossed the BWINE intercept at 4,000 MSL. - The Airspace Redesign Project has found that it would not be feasible to increase the altitude over the BWINE intercept from 3,000 to 4,000 MSL. – **Not Recommended.**



FAR Part 150 Noise Compatibility Study Philadelphia International Airport	Review Increased Altitude for Approaches to Runway 9R (NA-O)	FINAL Prepared by Landrum and Brown p:/phl/gis/arcview/prj/images.apr 05/24/02	Exhibit E - 8

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Noise Compatibility Program Alternative NA-P (Became NA-6) **Exhibit: N/A**

TITLE:	**Create Area Navigation (RNAV) Overlay Procedures for selected Existing and Proposed Procedures**

DESCRIPTION:	– RNAV procedures utilize ground-based (DGPS antenna), satellite-based (GPS), and on-board (FMS/GPS) equipment to assist the pilot in navigating from point to point. – Higher accuracy is obtained than traditional navigation techniques. – Not all aircraft equipped with necessary equipment. – These measures may be evaluated as part of the Airspace Redesign Project and any effort accomplished by the Part 150 Study would likely be modified to accommodate the larger regional plan to be published in 2003.

BENEFITS:	– Increased accuracy on turns and decreased width of flight corridors. – Financial benefits to airlines all airlines through better control of flight and reduced separation requirements.

DRAWBACKS:	– Not all aircraft equipped with RNAV capability (typically, the loudest aircraft are the oldest aircraft and least likely to have RNAV on-board).

COST TO IMPLEMENT:	– Cost to airlines to equip aircraft. – Cost to FAA for additional training and development of new procedures. – Cost to the airport or FAA for DGPS equipment.

EVALUATION METHOD:	Qualitative assessment.

FINDINGS and RECOMMENDATION:	– Satellite-based navigation will likely be the prime navigational aid within the next 10 years. – **Recommended for incorporation into Part 150 as support for Airspace Redesign Project.**

Noise Compatibility Program Alternative NA-Q **Exhibit: N/A**

TITLE:	**Urge Operators of Jet Aircraft to Moderate Reverse Thrust on Landing**

DESCRIPTION:	– Airlines require that reverse thrust is used to slow the aircraft after landing. – Airlines may be requested to modify their operating manuals to allow pilots to safely moderate reverse thrust during landing. – Would require a pilot-awareness program and analysis of runway length and on-runway times before implementing.

BENEFITS:	May reduce annoyance to residents near the airport.

DRAWBACKS:	– Reverse thrust cannot be eliminated altogether and would be up to the discretion of the individual pilot in command. – The measure may be resisted as providing less than the maximum amount of safety.

COST TO IMPLEMENT:	– No costs to airlines or FAA. – Cost to airport would include pilot awareness program.

EVALUATION METHOD:	Qualitative Assessment.

FINDINGS and RECOMMENDATION:	– The implementation of this alternative could provide some single event relief to the residents nearest the airport. – This alternative does NOT endorse the elimination of reverse thrust – **Not Recommended** owing to operating safety considerations.

Noise Compatibility Program Alternative NA-R **Exhibit: N/A**

TITLE:	**Implement Airport Operational Restrictions**

DESCRIPTION:	– Consider the potential utility of airport access restrictions for noise abatement. These may include: • Curfews • Restrictions on aircraft types or groups – Any such action is subject to the provisions of Part 161, which requires extensive proof of benefits relative to costs prior to approval by the FAA

BENEFITS:	Can resolve noise annoyance problems during the most sensitive periods or of the most annoying events.

DRAWBACKS:	Requires extensive additional evaluation, with little hope of approval given the FAA's current stance on Part 161 actions.

COST TO IMPLEMENT:	A comprehensive Part 161 study would cost $3-$5 million. Litigation would cost a similar amount. Implementation would cost additional millions, dependent upon the action undertaken.

EVALUATION METHOD:	Qualitative Assessment

FINDINGS and RECOMMENDATION:	Unlikely to meet cost/benefit assessments required under Part 161 and therefore **Not Recommended**..

Noise Compatibility Program Alternative NA-S **Exhibit: N/A**

TITLE:	**Construct a Ground Run-up Enclosure (GRE)**
DESCRIPTION:	– GREs can be implemented to reduce noise impacts associated with run-up operations. – Typically installed at airports with heavy maintenance facilities and large numbers of complaints related to run-up operations.
BENEFITS:	Can reduce jet run-up noise levels by up to 20 dB.
DRAWBACKS:	Expensive to build ($2-$3 million for facility and another $2 to build apron if not available).
COST TO IMPLEMENT:	$2-$3 million for facility and another $2 to build apron if not available.
EVALUATION METHOD:	Qualitative Assessment
FINDINGS and RECOMMENDATION:	Noise created by individual aircraft maintenance run-ups is adequately controlled by current procedures. **Not Recommended**

Noise Compatibility Program Alternative NA-T **Exhibit: E-9**

TITLE:	Construct Noise Berms/Walls

DESCRIPTION:	– Construct Noise Berms/Walls near the boundaries of the airport to reduce ground noise exposure (e.g., taxiing, takeoff spool-up thrust, reverse thrust, run-up operations). – Location of a 12-16 foot barrier near the southeast corner of Tinicum may be an acceptable location. Other locations do not appear to provide adequate potential for noise reduction. – Locations off-airport property would require community concurrence and assistance with funding.
BENEFITS:	– A 16 foot high barrier can reduce ground noise levels by up to 6-10 dB near the southeast corner of Tinicum if located along the edge of the community (around Iroquois, Manhattan, Seminole and 5th Streets, east of 4th Street) – Little potential for noticeable reduction of noise at other locations.
DRAWBACKS:	– Provides no beneficial reduction of noise from aircraft in flight. – Creates development boundaries/may be removed as land is needed for development.
COST TO IMPLEMENT:	Construction of an 8 foot T-wall on an 8-foot high earthen berm, 2200 feet long, is estimated to cost approximately $990,000, assuming the land can be acquired (cost of acquisition unknown).
EVALUATION METHOD:	Qualitative Assessment
FINDINGS and RECOMMENDATION:	Construction of a barrier to provide 6-10 decibels of ground noise reduction to approximately 20 homes and would provide no attenuation of the noise of aircraft in flight. It is more cost effective to use the $990,000 necessary to build the facility to sound insulate approximately 33 homes from both ground and flight noise effects. **Not Recommended**.

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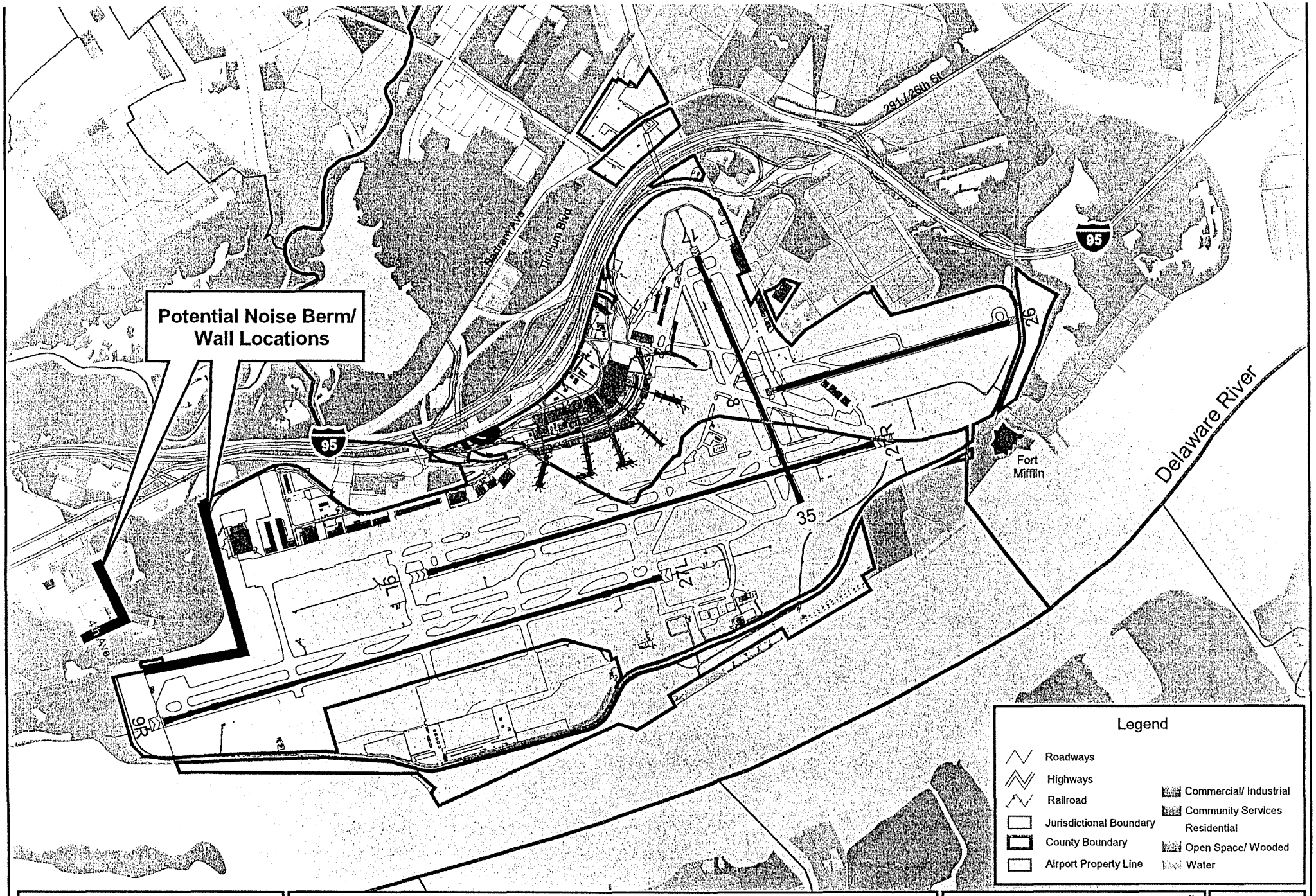

FAR Part 150 Noise Compatibility Study
Philadelphia International Airport

Potential Noise Berm/ Wall Locations (NA-T)

FINAL

0 3000 Feet

Prepared by Landrum and Brown
p:/phl/gis/arcview/prj/contour - final document.apr 05/09/02

Exhibit
E - 9

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Noise Compatibility Program Alternative NA-U (Became NA-7) Exhibit: N/A

TITLE:	**Encourage Noise Attenuating Standards in Airport Development**

DESCRIPTION:	– Consider the noise reduction benefits in the design and location of structures built on the airport through the overlapping of structural footprints between on-airport noise sources and off-airport impacted areas. – Properly located, the height, materials, shape, and location of structures can reduce ground noise for the communities nearest the airport.

BENEFITS:	Can reduce noise levels by up to 8-10 dB depending on design and location of structures.

DRAWBACKS:	None.

COST TO IMPLEMENT:	Unknown, and unknowable until the development plan for the airport is in place and structures are designed.

EVALUATION METHOD:	Qualitative Assessment

FINDINGS and RECOMMENDATION:	Attention to the attenuating characteristics of properly designed structures and their layout can benefit the noise reduction of on-airport ground sources. **Recommended.**

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Attachments

SEC. 758. EXPRESSING THE SENSE OF THE SENATE CONCERNING AIR TRAFFIC OVER NORTHERN DELAWARE.

(a) DEFINITION.—The term "Brandywine Intercept" means the point over Brandywine Hundred in northern Delaware that pilots use for guidance and maintenance of safe operation from other aircraft and over which most aircraft pass on their East Operations approach to Philadelphia International Airport.

(b) FINDINGS.—Congress makes the following findings:

(1) The Brandywine Hundred area of New Castle County, Delaware, serves as a major approach causeway to Philadelphia International Airport's East Operations runways.

(2) The standard of altitude over the Brandywine Intercept is 3,000 feet, with airport scatter charts indicating that within a given hour of consistent weather and visibility aircraft fly over the Brandywine Hundred at anywhere from 2,500 to 4,000 feet.

(3) Lower airplane altitudes result in increased ground noise.

(c) SENSE OF THE SENATE.—It is the sense of the Senate that the Secretary should—

(1) include northern Delaware in any study of aircraft noise conducted under part 150 of title 14, Code of Federal Regulations, required under the National Environmental Policy Act of 1969 for the redesign of the airspace surrounding Philadelphia International Airport;

(2) study the feasibility, consistent with safety, of placing the approach causeway for Philadelphia International Airport's East Operations over the Delaware River (instead of Brandywine Hundred); and

(3) study the feasibility of increasing the standard altitude over the Brandywine Intercept from 3,000 feet to 4,000 feet.

SEC. 759. POST FREE FLIGHT PHASE I ACTIVITIES.

Not later than August 1, 2000, the Administrator shall transmit to Congress a definitive plan for the continued implementation of Free Flight Phase I operational capabilities for fiscal years 2003 through 2005. The plan shall include and address the recommendations concerning operational capabilities for fiscal years 2003 through 2005 due to be made by the RTCA Free Flight Steering Committee in December 1999 that was established at the direction of the Federal Aviation Administration. The plan

CONCURRENCES	
ROUTING SYMBOL	521
INITIALS/SIG	WL
DATE	2/12/01
ROUTING SYMBOL	520
INITIALS/SIG	
DATE	2/12/01
ROUTING SYMBOL	501a
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FEB 13 2001

The Honorable Joseph R. Biden, Jr.
United States Senate
Washington, D.C. 20510-0802

Dear Senator Biden:

This letter is in response to your request that the Federal Aviation Administration study the possibility of reducing the noise impacts over the Brandywine Hundred community.

As we discussed, our challenge is to balance the noise impact to a community with the safe operation of aircraft. Our goal is to continually reduce the noise impact whenever possible while maintaining a safe and efficient flow of traffic. Philadelphia International Airport (PHL) is presently the busiest airport in the Eastern Region and twelfth busiest in the United States. The Brandywine Hundred community is mainly affected when PHL is on an East Operation. PHL is the most efficient when the airport operates on a West Operation, and only transitions to an East Operation when forced to by weather. Historically, this occurs less than twenty-five percent of the time.

We studied the feasibility of designing an Area Navigation (RNAV) approach into PHL runway 9R. To possibly reduce the noise impacts to the Brandywine Hundred community, this approach was going to follow the Delaware River until reaching the airport. Our review found that the approach could be designed; however due to Aviation System Standards (AVN) requirements, it could not be published as a Standard Instrument Approach Procedure (SIAP). AVN requires that for a precision approach to be published, the final approach segment has to be a minimum of 5 straight miles and aligned with the runway. An RNAV approach that is aligned with the Delaware River does not meet this requirement and would force flight crews to turn and descend in a short amount of time, placing the aircraft in an unstable environment. This approach was found not to be feasible for PHL because of the inability to publish the approach.

Further investigation into the East Operation at PHL found that the primary approach used is the Instrument Landing System to runway 9R (ILS RWY 9R). The Glide Slope Intercept Point (GSIP) for this approach is published as 1800'. This allows aircraft on the ILS RWY 9R approach to descend 1800' as soon as it is established on the approach. We are in the process of changing the GSIP from 1800' to 3000'. This would require that an aircraft established on the ILS RWY 9R approach stay at 3000' until the aircraft intercepts the glide slope. We believe this will reduce the noise impacts to the Brandywine Hundred area. Additionally, we researched the feasibility of raising this altitude to 4000'. We believe this would impact the efficiency of the traffic flow as well as increase the angle of decent for aircraft in the final stages of the approach. For these reasons it was deemed not feasible.

We have enclosed a list of upcoming Airspace Redesign Scoping meetings that are open to the public. An airspace redesign project for the northeast corridor is in the early stages of development. These meetings will be explaining the need for a total airspace redesign and will explain the different concepts that are being explored. Each meeting has time allocated for a public question and answer period.

Sincerely,

Original Signed by:
Richard J. Ducharme

F.D. Hatfield
Manager, Air Traffic Division

Enclosure

File:
WP: \\AEA500F1\VOL1\DATA\Aea520\1220 Congressional
AEA-521:MMcCUMBER:cas:718-553-4558:02/12/2001

JAN 14 2002

Dear Sir/Madam:

At the request of Senators Joseph R. Biden and Thomas R. Carper, and Congressman Michael N. Castle, the Federal Aviation Administration (FAA) held a meeting with the Brandywine Hundred community on December 5, 2001, at the Brandywine High School.

One request made at the meeting was for the FAA to verify that aircraft were following recent instructions to overfly the community at 3,000 feet. As promised, enclosed is an analysis of the improvements made in keeping the aircraft higher over the Brandywine Hundred community.

Sincerely,

ORIGINAL SIGNED BY
RICHARD J. DUCHARME

Richard J. Ducharme
Asst. Manager, Air Traffic Division

Enclosure

File: 1210
WP: H:\1210 Public Relations\Brandywine.doc
AEA-521:MMcCumber:kl:(718)553-4558:01/14/2002

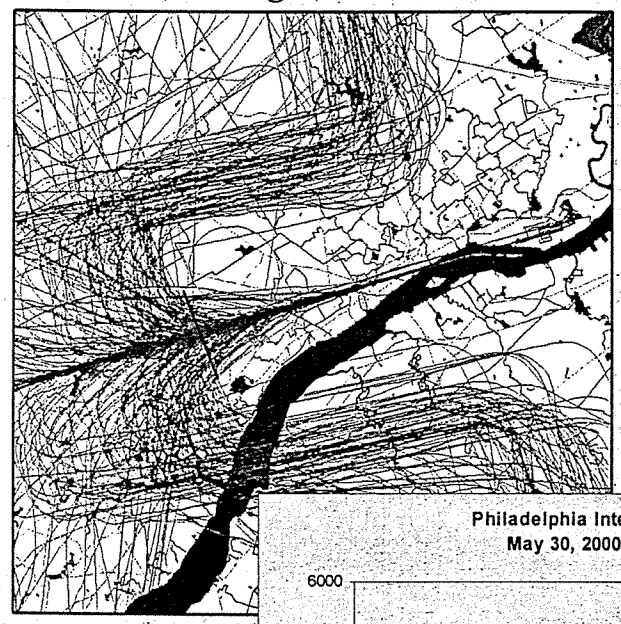
TOTAL P.02

Brandywine Hundred Study

"BWINE"
Crossing Altitudes
Before and After
July 12, 2001

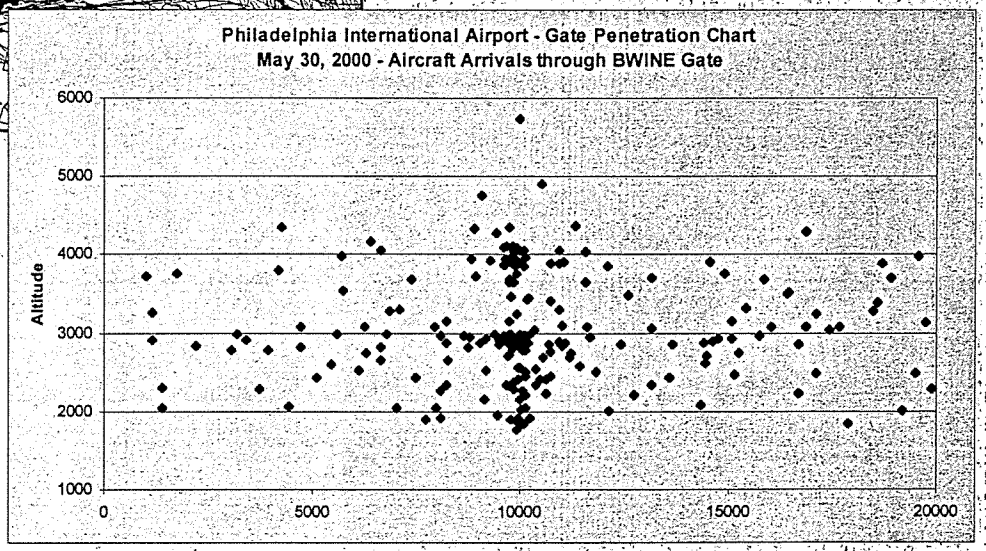
May 30, 2000

Actual Flight Tracks **



May 30, 2000 was selected to represent the altitude and location of aircraft flying into Philadelphia on a Runway 9R configuration.

Location and Altitude when Passing "BWINE" **



Altitude of aircraft when they pass "BWINE"

North of "BWINE" South of

This graph shows a majority of aircraft are below 3,000 feet. This was the standard operating practice prior to the Delaware delegation raising the noise concerns to the FAA.

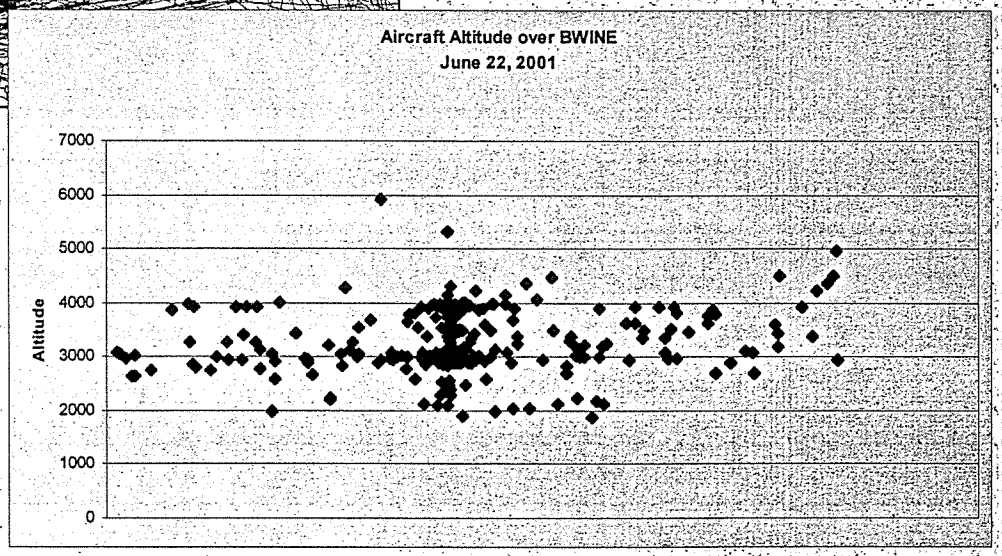
**** All data were supplied by the Philadelphia Airport Noise office.**

June 22, 2001

Actual Flight Tracks

June 22, 2001. At this point the Air Traffic Controllers at Philadelphia have been briefed on the noise issues in the Brandywine Hundred area. They have been asked to keep the aircraft at 3,000 feet until established on final approach into Philadelphia.

Location and Altitude when Passing "BWINE"

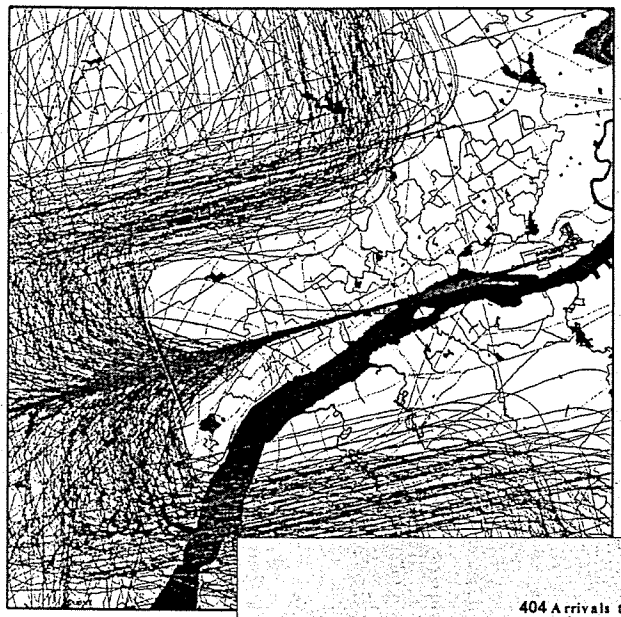


Target Altitude
3,000 feet

This graph shows an improvement in the number of aircraft kept above 3,000 feet. Air Traffic Controllers may still vector aircraft below 3,000 feet for safety and efficiency. Pilots still have the authorization to descend to 1,800 feet on their own.

July 18, 2001

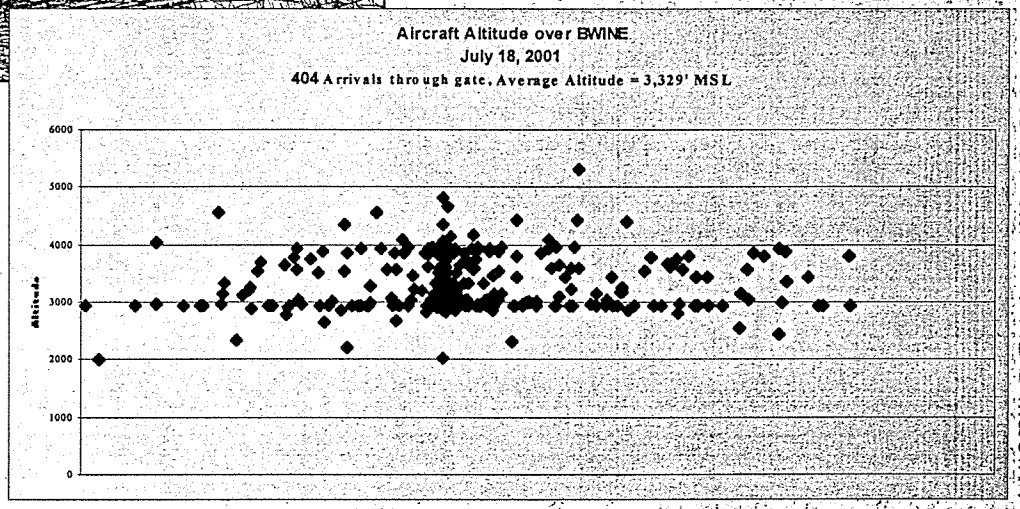
Actual Flight Tracks



On July 12, 2001 the FAA completed a change in the charting altitude for the approach into Runway 9R. The FAA raised the intercept altitude from 1,800 feet to 3,000 feet.

Air Traffic Controllers may still vector below 3,000 feet for safety and efficiency. However aircraft established on the final approach to runway 9R are required to stay above 3,000 feet until they pass "BWINE."

Location and Altitude when Passing "BWINE"



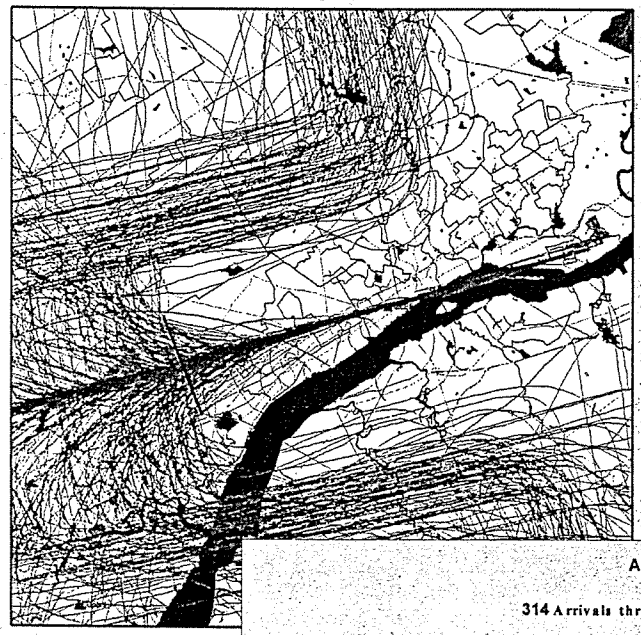
Target Altitude

3,000 feet

This graph shows that the majority of aircraft are above 3,000 feet. All Air Traffic Controllers have been trained on the change to the approach to runway 9R. The Controllers have also completed a Mandatory Briefing Item (MBI) explaining the noise concerns in the Brandywine Hundred Community.

July 20, 2001

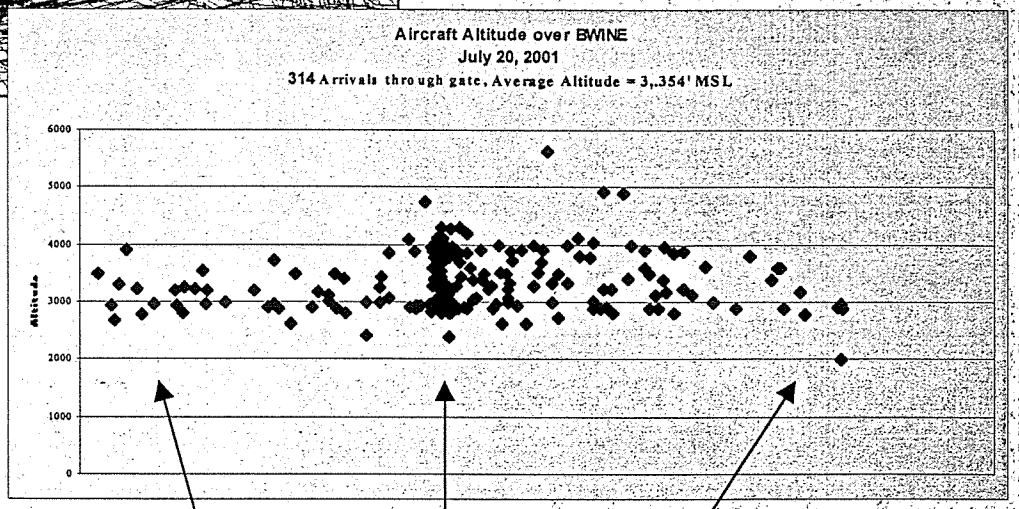
Actual Flight Tracks



The Philadelphia Airport historically operates on the Runway 9 or East operation 28% of the time. However, in 2001, it operated in an East operation 33% of the time.

The Philadelphia Airport is most efficient when operating on Runway 27 or a West operation.

Location and Altitude when Passing "BWINE"



Target Altitude

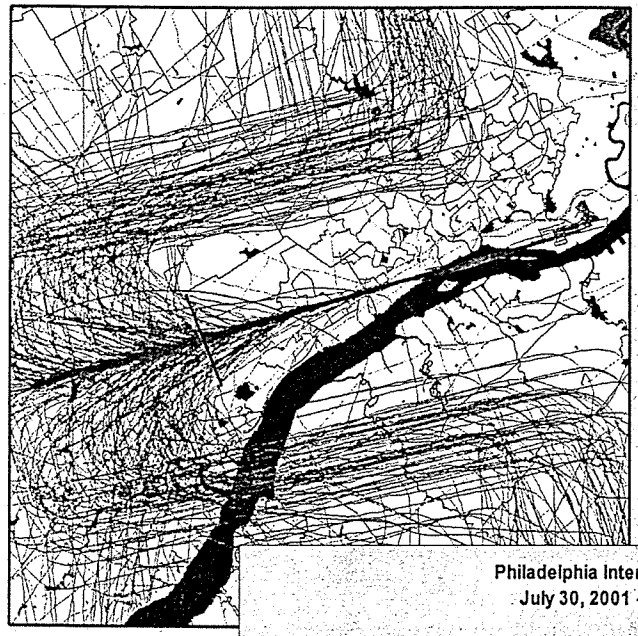
3,000 feet

North of "BWINE" South of

"BWINE" is centerline on final approach

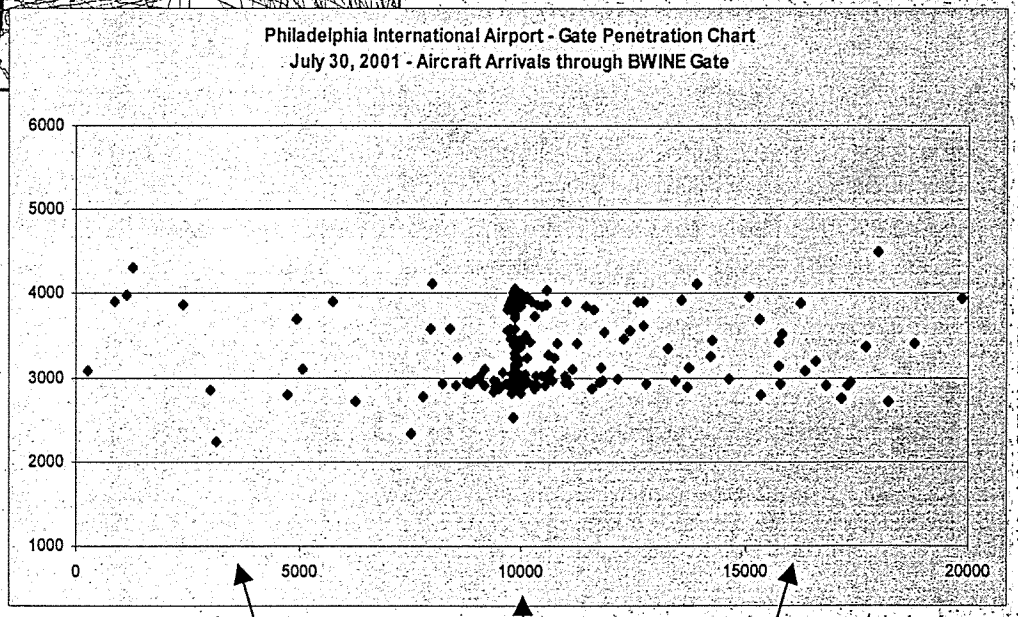
July 30, 2001

Actual Flight Tracks



This slide indicates that aircraft are no longer routinely overflying the community at 2,000 feet, as was the case before Controllers' awareness of the situation. The data show continued success in achieving the target altitude of 3,000 feet over BWINE.

Location and Altitude when Passing "BWINE"



Target Altitude
3,000 feet

North of "BWINE" South of

"BWINE" is centerline on final approach

Appendix F

APPENDIX F
LAND USE ALTERNATIVES

The subsequent pages provide information on the alternative land use management and mitigation measures that were suggested for inclusion in the Philadelphia International Airport (PHL) Part 150 Noise Compatibility Program (NCP). Each measure was evaluated for the anticipated benefits and costs associated with its implementation. The alternatives were reviewed with the membership of the Study Advisory Committee, as well as with land use planning professionals in a Land Use Technical Conference. The Technical Conference included representatives of the City of Philadelphia Planning Department, the Tinicum Township Planning Department, the Delaware Valley Regional Planning Commission, and the area Chamber of Commerce, as well as the FAA ADO, the Airport, and airport neighbors. Subsequent to the Technical Conference, detailed planning meetings were held with Tinicum Township and the City of Philadelphia Planning Agencies to focus on the applicability of various recommended measures to their local planning regulations.

Based upon the comments received from the various attendees at the Land Use Technical Conference and the consultant's experience with the implementation of like measures around numerous airports throughout the United States, recommendations for the acceptance or discarding of each alternative were presented to the Study Advisory Committee prior to the development of the final recommended NCP. Copies of all the materials used at the Technical Conference, including letters of invitation, sign-in sheets, and meeting workbooks are located in Appendix H, *Public Involvement*. Attached to the end of this Appendix are materials relating to the development of the land use alternatives, including: workbooks and meeting summaries from two meetings with the zoning and land use planners from Tinicum Township and the City of Philadelphia Planning Commission. In addition, a letter from the City of Philadelphia to the Tinicum Township Commissioners regarding the recent update to the Tinicum Zoning map is included.

Noise Compatibility Program Alternative LU-A (Became LU-1) **Exhibit: F-1**

TITLE:	**Implement a Residential Sound Insulation Program**

DESCRIPTION:	– Offer sound insulation to all single-family owner occupied residential homes located within or adjacent to the 65 DNL and higher levels of the 2006 Noise Compatibility Plan (NCP) noise contour. Sound insulation should be accomplished on a most impacted basis, where the homes in the highest noise levels are insulated first. – In order to not unfairly separate the community by sound insulating only in selected areas, all residential properties falling within other definable boundaries would be eligible for sound insulation. – Avigation easements would be required to be attached to the property deed for all properties participating in this program.

BENEFITS:	– Reduces the interior noise levels of participating homes. – Properties would have an avigation easement attached, which would guarantee the right of flight over them. – Typically increases the value of the homes receiving sound insulation treatment and makes them more energy efficient.

DRAWBACKS:	– May require a manager or consultant to implement and run the program. – Does not mitigate outdoor noise levels.

COST TO IMPLEMENT:	– Costs are expected to range between $25,000 and $35,000 per residence. Assuming 100 percent participation by all residences, the cost of this project could range between $7,000,000 and $10,000,000. – If the program is extended to include an area larger than the 65 DNL, then the costs would increase.

Noise Compatibility Program Alternative LU-A (Became LU-1) (Continued) **Exhibit: F-1**

EVALUATION METHOD:	Qualitative Assessment

FINDINGS and RECOMMENDATION:	**Recommended for implementation as part of the final Noise Compatibility Program.**

Noise Compatibility Program Alternative LU-B (Became LU-2) **Exhibit: F-1**

TITLE:	Offer a Purchase and Resell Program

DESCRIPTION:	– A purchase and resell program would be offered as a substitution to Alternative LU-A, Residential Sound Insulation Program, for eligible homes that do not qualify for the insulation program within the 65 DNL and higher levels of the 2006 Noise Compatibility Plan (NCP) noise contour. For example, if a home did not meet local building codes it would not qualify for sound insulation, therefore the homeowner would have a second option available. – Under this program the Airport would purchase an eligible home at fair market value and attempt to resell the home to a new owner. The home may be sound insulated prior to resale and would have an avigation easement attached to the property deed.

BENEFITS:	– Provides an option for eligible residents who may not qualify for the sound insulation program. – Properties would have an avigation easement attached, which would guarantee the right of flight over them.

DRAWBACKS:	– May require a program manager or consultant to implement and run. – May be difficult to sell properties that are disclosed as being within an airport noise zone.

COST TO IMPLEMENT:	– Costs are expected to be minimal to run the program, however the cost to provide an internal manager or consultant would be required at the start. – Costs for acquiring homes would be determined by the number of homes participating in the program.

EVALUATION METHOD:	Qualitative Assessment

Noise Compatibility Program Alternative LU-B (Became LU-2) (Continued) **Exhibit: F-1**

FINDINGS and RECOMMENDATION:	**Recommended for implementation as part of the final Noise Compatibility Program.**

Noise Compatibility Program Alternative LU-C (Became LU-3) **Exhibit: F-1**

TITLE:	**Encourage Local Land Use Controls**
DESCRIPTION:	Encourage local municipalities to implement various Land Use Controls, such as re-zoning and disclosure, for areas within the 2006 NCP DNL 65 dB noise contour.
BENEFITS:	– Prevents future development of incompatible land use within the DNL 65 dB noise contour. – Disclosure will advise potential developers, real estate agents, and homebuyers that the property is impacted by aircraft noise. – Inexpensive measure to implement. – Protects land uses that are already compatible with the Airport.
DRAWBACKS:	– Requires the cooperation of the local government and businesses to implement. – Controls can be very restrictive.
COST TO IMPLEMENT:	Costs are expected to be minimal to implement the program. Some costs to the local communities involved are to be expected.
EVALUATION METHOD:	Qualitative Assessment
FINDINGS and RECOMMENDATION:	**Recommend land use controls be further analyzed and considered for implementation as part of the final Noise Compatibility Program.**

Noise Compatibility Program Alternative LU-D (Became LU-4) **Exhibit: F-1**

TITLE:	**Encourage Local Development Controls**
DESCRIPTION:	Encourage local municipalities to amend their building codes to require any new construction and major alteration/addition within or adjacent to the DNL 65 dB NCP noise contour to meet an interior Noise Reduction Level (NRL) standard of 45 dB.
BENEFITS:	– Prevents new incompatible development. – Ensures that any new construction or alteration will utilize materials that will minimize the amount of noise exposure on the interior of a structure. – Inexpensive measure to implement.
DRAWBACKS:	– Requires community and developer cooperation to implement. – May meet resistance from local development companies. – Adds costs to construction.
COST TO IMPLEMENT:	Costs are expected to be minimal to implement the program. Some costs to the local communities and developers are expected.
EVALUATION METHOD:	Qualitative Assessment
FINDINGS and RECOMMENDATION:	**Recommend for implementation as part of the final Noise Compatibility Program.**

Noise Compatibility Program Alternative LU-E **Exhibit: F-1**

TITLE:	**Purchase Avigation Easements**
DESCRIPTION:	Purchase the right to operate aircraft over homes within and adjacent to the 2006 NCP DNL 65 dB noise contour.
BENEFITS:	– Less costly to implement than other land use programs. – Fairly easy to implement.
DRAWBACKS:	– Does not mitigate noise impacts. – Difficult to place a value on the easements.
COST TO IMPLEMENT:	– Costs are expected to be minimal to run the program, however the cost to provide an internal manager or consultant manager would be required at the start. – At an estimated cost of $2,500 per dwelling, the program could cost approximately $500,000.
EVALUATION METHOD:	Qualitative Assessment
FINDINGS and RECOMMENDATION:	An avigation easement program is **not recommended for further analysis or implementation as part of the final Noise Compatibility Program**. However, Avigation Easements should be placed on all properties that participate in either the sound insulation program or purchase and resell program.

Noise Compatibility Program Alternative LU-F **Exhibit: F-1**

TITLE:	**Establish Acquisition Program within 65 DNL**
DESCRIPTION:	Purchase and remove residential dwellings within and adjacent to the 2006 NCP DNL 65 dB noise contour.
BENEFITS:	– Removes single family residential homes and its residents from impacted areas. – Converts purchased properties to uses compatible with airport operations.
DRAWBACKS:	– Expensive. – Resistance from local communities. – Can breakup a local community. – Funding may not be available from federal sources.
COST TO IMPLEMENT:	The average cost to acquire a home, provide relocation expenses, and raze the property would range from an estimated $135,000 to $150,000 per home. There are 210 homes within the 65DNL contour equating to a total cost of $28.35 to $31.5 million.
EVALUATION METHOD:	Qualitative Assessment
FINDINGS and RECOMMENDATION:	**Not recommended for implementation as a part of the final NCP.**

Noise Compatibility Program Alternative LU-G **Exhibit: F-1**

TITLE:	**Establish Guaranteed Purchase Assurance Program**
DESCRIPTION:	The Airport would guarantee the purchase of impacted properties within the 65 DNL and higher levels of the 2006 Noise Compatibility Plan (NCP) noise contour if their current owners were unable to sell them for their appraised value. The Airport could then resell them with an easement or convert them to an airport compatible land use.
BENEFITS:	– Provides an option to sound insulation for those who would not consider or whose homes were not eligible for insulating their dwellings or structures. – Properties would have an avigation easement attached, which would guarantee the right of flight over them. – Reselling properties funds the purchase of more impacted properties for mitigation purposes.
DRAWBACKS:	– Requires a program manager or consultant to implement and run. – Somewhat costly.
COST TO IMPLEMENT:	Costs would be variable based on purchase prices, relocation costs, and demolition costs.
EVALUATION METHOD:	Qualitative Assessment
FINDINGS and RECOMMENDATION:	**Not recommended for implementation as part of the final Noise Compatibility Program.**

Noise Compatibility Program Alternative LU-H (Became LU-5) **Exhibit: F-1**

TITLE:	**Conduct Study to Determine Feasibility to Sound Insulate Portions of the Historic Fort Mifflin**
DESCRIPTION:	The intent of this measure is to authorize and fund a detailed study to determine if potential noise mitigation measures, such as sound insulation, could be effective in reducing the interior noise levels at that location. Key to the effort will be identifying suitable and effective mitigation measures that would not alter the character of this historic resource. Areas of concentration should include those facilities at Fort Mifflin that are commonly used for educational purposes, daily business activities, and the caretaker's quarters.
BENEFITS:	Effective mitigation could reduce the interior noise levels of the areas within Fort Mifflin used for caretaker housing as well as the portion of the visitor's center that is used for educational purposes and staff business offices.
DRAWBACKS:	– Requires a program manager or consultant to perform study. – Somewhat costly.
COST TO IMPLEMENT:	Approximately $125,000 to $175,000
EVALUATION METHOD:	Qualitative Assessment
FINDINGS and RECOMMENDATION:	**Recommended for implementation as part of the final Noise Compatibility Program.**

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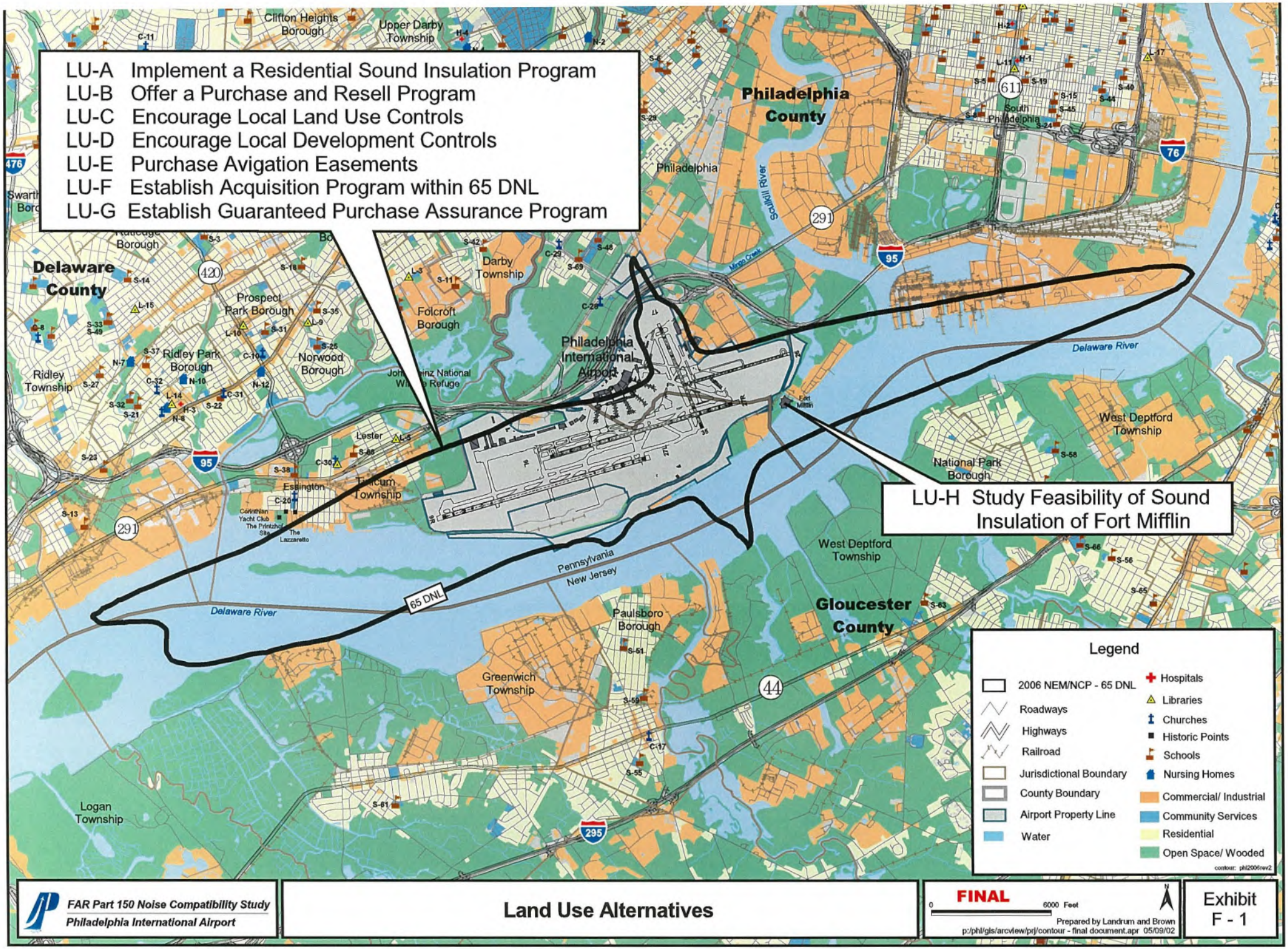


FAR Part 150 Noise Compatibility Study
Philadelphia International Airport

Land Use Alternatives

FINAL

0 6000 Feet

Prepared by Landrum and Brown
p:/phl/gis/arcview/prj/contour - final document.apr 05/09/02

Exhibit F - 1

Attachments

DMJM Aviation
260 South Broad Street
Suite 1400
Philadelphia, PA 19102
Tel: 215-399-4300
Fax: 215-399-4350

MEMORANDUM

September 13, 2001

To: **Mr. Martin Soffer, City of Philadelphia**
Mr. Jeff Lehrbaum, City of Philadelphia
Jon Woodward, Landrum & Brown
Rob Adams, Landrum & Brown

From: **Dave Ingram, DMJM Aviation**

Date: **September 12, 2001**

Subject: **FAR Part 150 Land-Use Meeting with Philadelphia City Planning Commission**

The following is a recap of a Federal Aviation Regulation (FAR) Part 150 Noise Compatibility Program land-use meeting with the Philadelphia City Planning Commission, the Philadelphia Division of Aviation, DMJM Aviation and Landrum & Brown:

Attendees

Mr. Martin Soffer, Philadelphia City Planning Commission

Mr. Jeff Lehrbaum, Philadelphia Department of Commerce, Division of Aviation

Mr. Rob Adams, Landrum & Brown (via telephone)

Ms. Lisa Mastropieri, DMJM Aviation

Mr. Bill Allen, DMJM Aviation

Mr. Dave Ingram, DMJM Aviation

The meeting convened at approximately 10:30 A.M. in the offices of the Philadelphia City Planning Commission.

DMJM Aviation began by explaining the purpose of the meeting as being discussing the recommended Noise Compatibility Program (NCP), developing local support for the

recommended NCP land use alternatives, and developing an action plan to achieve the goals of the airport as well as the communities. DMJM also explained the FAR Part 150 planning process and noise impacts and land-use guidance used by the Federal Aviation Administration for mitigation and planning to prevent future land use incompatibilities with airport noise exposure.

The Federal guidelines and policies on local land use were reviewed and their policy of community responsibility for land use planning around airports was emphasized. Constructive knowledge was also reviewed to ensure the group understood that knowledge of noise exposure maps could eliminate damage recovery by those purchasing residences within noise impact areas.

The land use measures of the recommended NCP were then discussed. It was explained that the primary mitigation effort would be in sound insulating residents within and contiguous to the noise impacts areas around Philadelphia International Airport.

It was also explained that the noise exposure maps expected to be used for mitigation in the Part 150 Study do not encompass any incompatible areas in Eastwick or to the east of the airport in the former Navy Ship Yards.

Mr. Soffer mentioned that the George Pepper School in Eastwick is located in a residential area closest to the Runway 17/35 noise contour area north of the airport. It was agreed that as part of the action plan DMJM Aviation would conduct a noise analysis on the school to determine if it was feasible to ask the Federal Aviation Administration for funding to sound insulate the school through the FAR Part 150 program. The area in question is well outside of the noise contour area and therefore is likely to not be eligible for sound insulation or other land use mitigation efforts. It was agreed that a proactive approach to prevent future incompatibilities would be the most feasible way to implement Part 150 actions in the Eastwick area. Therefore, land use controls and development controls should be considered.

- Land Use Controls – rezoning and disclosure of impacts from aircraft noise. It is possible that rezoning will not be necessary for areas falling within the jurisdiction of the Philadelphia City Planning Commission. Disclosure, however, may be an option for those neighborhoods closest to the airport in Eastwick.

- Development Controls – encourage the amendment of building codes to ensure sound insulation techniques are required for new construction or additions/alterations to existing structures in areas near the airport.

These two measures were presented as the two most likely to be recommended in the final NCP for the Philadelphia Planning Commission's areas of concern.

Mr. Soffer informed the group that there were currently plans to reuse the former officer housing in the shipyards in some fashion, including the possibility that they could be used for residential purposes. Because these housing units are considered to be

"historic" they should be considered in the land use planning of the Part 150 Study. He provided maps of the area in question and will provide other information as needed. DMJM Aviation will study this issue and make a recommended action regarding the reuse of the Shipyard Officer's Housing.

Sample land use control documents provided in the meeting handout were reviewed with the group. They included:

- Mandatory Disclosure Statutes from Hawaii;
- Sample Avigation Easements from Raleigh-Durham International Airport;
- Airport Overlay District documents from Loudon County, Virginia; and
- Real Estate Disclosure Forms from California.

A bibliography of air transportation compatible land use plans/model zoning ordinances were also provided in the handout and were briefly mentioned as a resource in developing similar programs for the NCP.

A question was posed to Mr. Soffer about the reasonableness of implementing land use controls or development controls for the Philadelphia Planning Commission's areas of responsibility around the airport environs. He indicated that it was feasible and may only require administrative actions to implement. He also felt that these actions could be accomplished within the same general timeline as the Part 150 Study, which is expected to be completed in the Summer of 2002.

It was agreed that DMJM Aviation would, as part of the action plan, provide the Philadelphia City Planning Commission with the following:

- Noise contours to the 60 DNL levels with suggested boundaries in which land use controls and development controls would be implemented.
- Example documents specific to the Philadelphia International Airport's Part 150 Study. This will include disclosure statements/checklists, easements, and development control language.
- Results of the analysis of the George Pepper School.
- Recommendations for the reuse of the Navy Shipyard Officer's Housing Area.
- Follow-up reports on future meetings with other planning agencies in Delaware County.

The Philadelphia City Planning Commission as part of the action plan will:

- Provide DMJM with additional information on the community plan for the Navy Shipyards Officer's Housing Area.

- Research and report on the feasibility of administratively implementing Part 150 land use and development controls in their area of jurisdiction near the Philadelphia International Airport.

- Research and report on what legislative requirements would be required to implement the Part 150 controls as part of the planning code, should the administrative actions not be possible.

The meeting was adjourned at approximately 11:30 A.M.

Philadelphia International Airport

F.A.R. Part 150 Study
Land Use Meetings

September 12, 2001

DMJM Aviation

50 Since 1949 Landrum & Brown Team

AGENDA
PHILADELPHIA INTERNATIONAL AIRPORT
FAR PART 150 STUDY
LAND USE MEETINGS
9/12/01

I. Meeting Purpose

- Discuss the Recommended Land Use Mitigation Program
  - A draft Noise Compatibility Program (NCP), with land use mitigation, is to be completed in October 2001. A Public Hearing is anticipated in November or December.
  - Land use mitigation will focus on sound insulating residences inside and outside of the noise contour area. However, other controls and mitigation measures are needed to support the main focus.

- Develop Local Community/Planning Agency Support for the Mitigation Program
  - Adoption of local controls and programs to prevent future incompatibilities.
  - Adoption of local standards of disclosure in and around noise impact areas.

- Develop Action Plan to Achieve the Development of Local Controls
  - Determine if it is feasible to develop and implement local land use controls for the Part 150 Study.
  - Determine how to develop and implement the local standards.
  - Discuss/develop a timeline to implement the local standards.

II. Federal Guidelines

- FAA Policy on Local Land Use – Community's responsibility.

- Mitigating Outside Noise Exposure Area – Precedent has already been set at other airports and in FAA correspondence. Some support from the FAA is expected
- Control New Incompatibilities – FAR Part 150 requires a description of measures proposed to reduce or eliminate present and future non-compatible land uses.
- Constructive Knowledge – Knowledge of the existence of noise exposure maps, actual or constructive, can eliminate damages recoveries for purchasers.

III. Local Land Use Planning Issues

- Land Use Controls – Local municipalities implement controls such as re-zoning and disclosure. Controls are intended to prevent future development of incompatible land uses within the noise exposure boundaries. Discloses to potential developers, real estate agents and home purchasers the impacts of aircraft noise on properties.

  - The NCP recommends that undeveloped areas within or near the noise exposure areas be zoned or rezoned to prevent development of future incompatible uses in areas where mitigation programs are to be implemented.
  - The NCP recommends implementation of other controls (subdivision controls, redevelopment controls, etc.) necessary to prevent future incompatible development where mitigation programs are to be implemented.
  - The NCP recommends disclosures with noise exposure maps or overlay zones attached be provided, on a mandatory basis, to potential developers, real estate agents and home purchasers within impact zones and contiguous areas identified in the Part 150 Study, particularly where mitigation programs are proposed for implementation.

- Development Controls – Local municipalities amend building codes to require noise reduction techniques in construction of new buildings or renovations of existing ones within noise impact or overlay zones.

  - The NCP will recommend controls on construction sound insulation standards in new or redeveloped areas within or contiguous to the impact zones or and/or contiguous areas identified in the Part 150 Study. These are typically the same as the mitigation program areas.

IV. Action Plan Open Discussion

- Develop Land Use/Development Controls Action Plan

  - Are Local Land Use/Development Controls feasible?
  - Should they be included in the final Noise Compatibility Program?
  - Are the local communities and planning agencies willing to commit to the implementation of Land Use/Development Controls?
  - What is the process to follow in developing and implementing these controls?
  - What is a reasonable time required to develop and implement these controls?
  - Coordinate a draft action plan with the communities and agencies concerned.
  - Plan a follow-up meeting to finalize the action plan.
  - Fully describe the action plan and include it in the final NCP.

V. Closure

- Consensus on action item responsibilities.
- Set tentative date for follow-on meeting.
- Prepare and distribute meeting minutes.

Federal Policy for Airport Noise Compatibility Planning around Airports

Aviation Noise Abatement Policy

Land Use around Airports - Local Responsibility

The primary obligation to address the land use compatibility problem always has been and remains a local responsibility.

Airport Noise Compatibility Planning Involves a Partnership

"Each of the participants in the noise abatement effort - the airport users, aircraft manufacturers, the airport proprietors, federal, state and local governments, and residents in communities surrounding airports - must take specific steps that are essential in reducing the number of people adversely affected by noise..."

Federal Government's Responsibilities

"The Federal Government provides financial and technical assistance to airport proprietors for noise reduction planning and abatement activities and, working with the private sector, conducts continuing research into noise abatement technology."

State/Local Governments & Planning Agencies Responsibilities

"State and local governments and planning agencies must provide for land use planning and development, zoning, and housing regulations that will limit the use of land near airports to purposes compatible with airport operations."

Airport Proprietors' Responsibilities

"Airport proprietors are primarily responsible for planning and implementing action designed to reduce the effect of noise on residents of the surrounding area."

FAA LAND USE COMPATIBILITY GUIDELINES

YEARLY DAY-NIGHT AVERAGE SOUND LEVEL (DNL) IN DECIBELS

LAND USE	Below 65	Over 65-70	70-75	75-80	80-85	85
RESIDENTIAL						
Residential, other than mobile homes and transient lodgings	Y	N[1]	N[1]	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N[1]	N[1]	N[1]	N	N
PUBLIC USE						
Schools, hospitals, nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y[2]	Y[3]	Y[4]	N[4]
Parking	Y	Y	Y[2]	Y[3]	Y[4]	N
COMMERCIAL USE						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail -- building materials, hardware, and farm equipment	Y	Y	Y[2]	Y[3]	Y[4]	N
Retail trade, general	Y	Y	25	30	N	N
Utilities	Y	Y	Y[2]	Y[3]	Y[4]	N
Communication	Y	Y	25	30	N	N
MANUFACTURING AND PRODUCTION						
Manufacturing, general	Y	Y	Y[2]	Y[3]	Y[4]	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y[6]	Y[7]	Y[8]	Y[8]	Y[8]
Livestock farming and breeding	Y	Y[6]	Y[7]	N	N	N
Production, and extraction	Y	Y	Y	Y	Y	Y
RECREATIONAL						
Outdoor sports arenas and spectator sports	Y	Y	Y[5]	N[5]	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusement, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables, and water recreation	Y	Y	25	30	N	N

SEE NOTES ON FOLLOWING PAGE

LAND USE COMPATIBILITY GUIDELINES - FAR PART 150
(PAGE 2 OF 2)

The designations contained in the above table do not constitute a Federal determination that any use of land covered by the program is acceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

Key To Table 4

Y (Yes) Land Use and related structures compatible without restrictions.

N (No) Land Use and related structures are not compatible and should be prohibited.

NLR Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure

25, 30, 35 Land Use and related structures generally compatible; measures to achieve or NLR of 25, 30, or 35dB must be incorporated into design and construction of structure.

Notes for Table 4

1. Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25dB and 30dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR or 20dB, thus, the reduction requirements are often stated as 5, 10, or 15dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.
2. Measures to achieve NLR of 25dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
3. Measures to achieve NLR of 30dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
4. Measures to achieve NLR of 35dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
5. Land use compatible provided special sound reinforcement systems are installed.
6. Residential buildings require a NLR of 25.
7. Residential buildings require a NLR of 30.
8. Residential buildings not permitted.

Source: *FAR Part 150 Airport Noise Compatibility Planning*, Appendix A, Table 1.

ALTERNATIVE:	**LU-A Residential Sound Insulation Program**

DESCRIPTION:	– Offer sound insulation to all single-family owner occupied residential homes located within or adjacent to the 65 DNL and higher levels of the 2006 Noise Compatibility Plan (NCP) noise contour. Sound insulation should be accomplished on a most impacted basis, where the homes in the highest noise levels are insulated first. – Determine sound insulation boundaries through comparative analysis of cumulative (65 DNL) and single event (85 decibels). Determine where single event levels exceed cumulative levels and include those areas within the sound insulation boundaries. In order to not unfairly separate the community by sound insulating only in selected areas, all residential properties falling within other definable boundaries would be eligible for sound insulations. For example, in Tinicum Township, properties south of the railroad tracks adjacent to State Highway 291 should be eligible for this program. The railroad tracks are a recognizable man made boundary outside the noise contour area that would be a logical stopping point for the sound insulation area. – Avigation easements would be required to be attached to the property deed for all properties participating in this program.

BENEFITS:	– Reduces the interior noise levels of participating homes. – Properties would have an avigation easement attached, which would guarantee the right of flight over them. – Typically increases the value of the homes receiving sound insulation treatment and makes them more energy efficient.

DRAWBACKS:	– Requires a manager or consultant to implement and run the program. – Does not mitigate outdoor noise levels.

EXPECTED COST:	– Costs are expected to range between $25,000 and $35,000 per residence. Assuming 100 percent participation by all 203 residences within the 65 DNL noise contours, the cost of this project could range

	between $5,000,000 and $7,000,000. – If the FAA accepts a program to include all residences south of the railroad tracks (approximately 589), costs could increase to $20,615,000 or more.

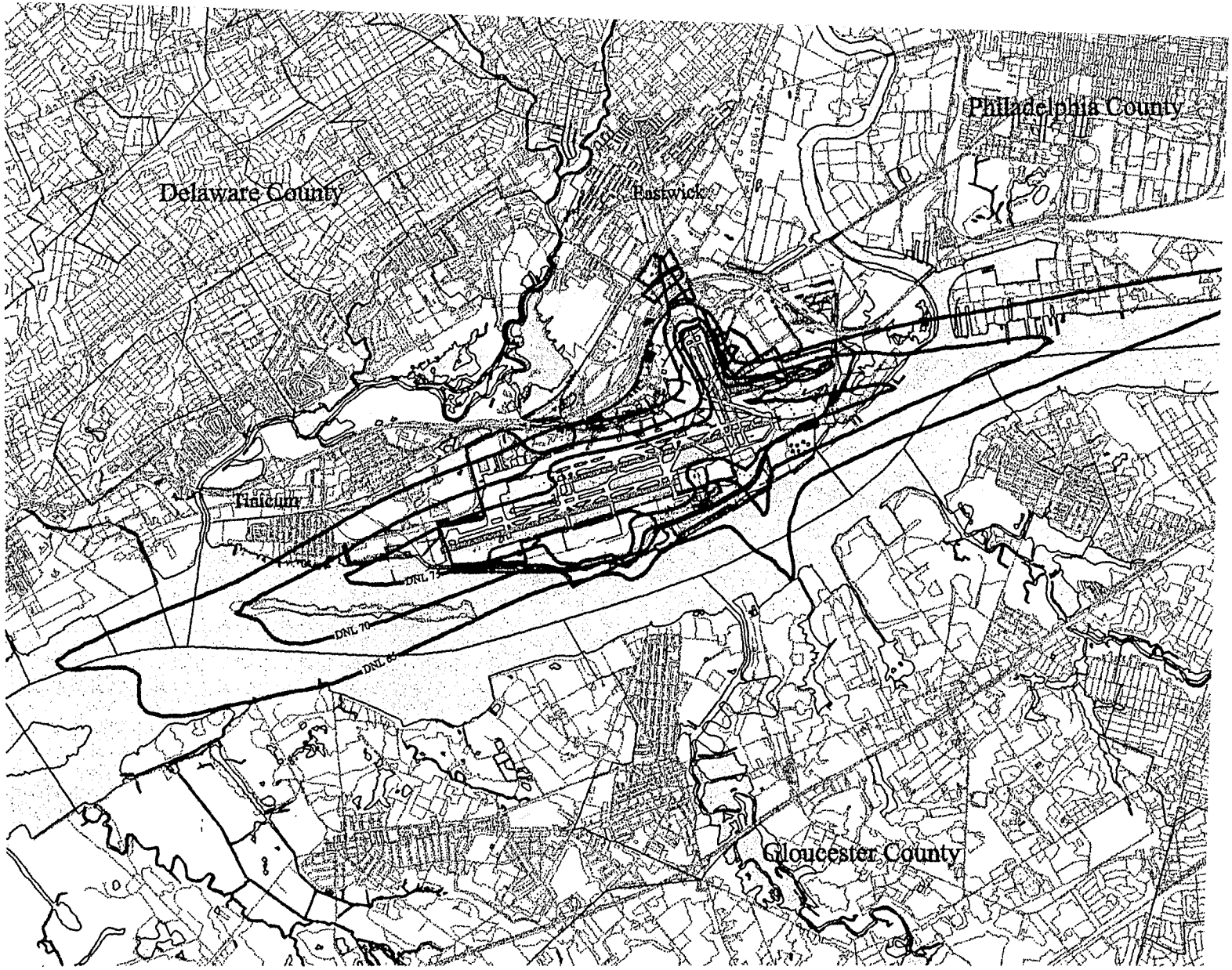
EVALUATION METHOD:	– Qualitative Assessment

RECOMMENDATION:	– **Recommended for implementation as part of the final Noise Compatibility Program.**

SCALE: 1" = 1800'

LEGEND:
- 2006 DNL Contours
- Township Boundary
- Residential Areas

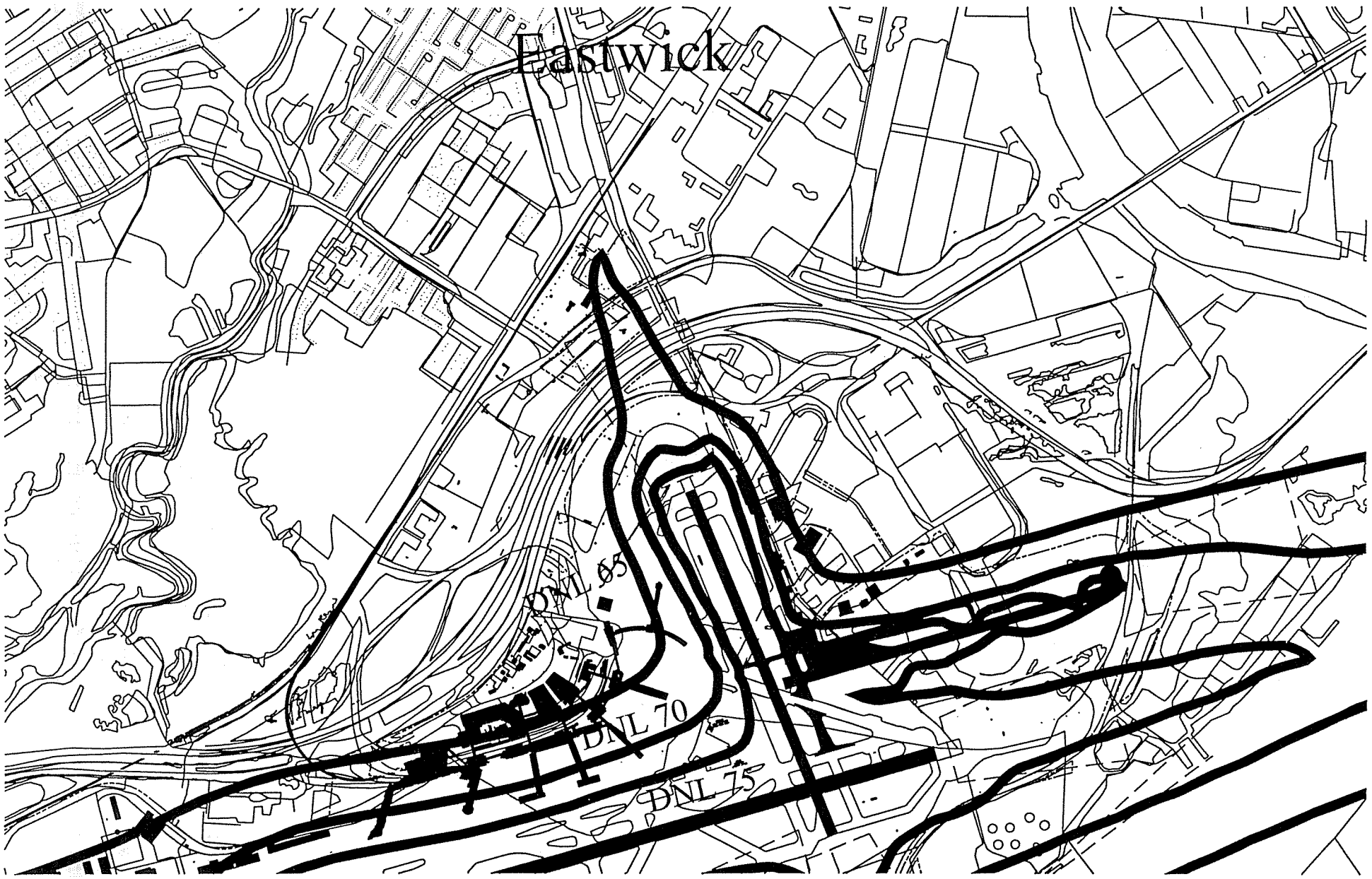
NOISE IMPACTS Land Area (Sq. Miles includes airport property)	
2006	
65-70 DNL	5.6
70-75 DNL	2.6
> 75 DNL	2.2
ESTIMATED POPULATION	
2006	
65-70 DNL	857
70-75 DNL	0
> 75 DNL	0
ESTIMATED HOUSING UNITS	
2006	
65-70 DNL	203
70-75 DNL	0
> 75 DNL	0



FAR Part 150 Study

DMJM Aviation | Landrum & Brown Team

2006 NOISE CONTOURS



FAR Part 150 Study

Landrum&Brown Team

2006 NOISE CONTOURS

Philadelphia International Airport

ALTERNATIVE:	**LU-B Purchase and Resell Program**

DESCRIPTION:	– A purchase and resell program would be offered as a substitution to Alternative LU-A, Residential Sound Insulation Program, for eligible homes that do not qualify for the insulation program. For example, if a home did not meet local building codes it would not qualify for sound insulation, therefore the homeowner would have a second option available. – Under this program the Airport would purchase an eligible home at fair market value and attempt to resell the home to a new owner. The home may be sound insulated prior to resale and would have an avigation easement attached to the property deed.

BENEFITS:	– Provides an option for eligible residents who may not qualify for the sound insulation program. – Properties would have an avigation easement attached, which would guarantee the right of flight over them.

DRAWBACKS:	– Requires a program manager or consultant to implement and run. – May be difficult to sell properties that are disclosed as being within an airport noise zone.

EXPECTED COST:	– Costs are expected to be minimal to run the program, however the cost to provide an internal manager or consultant would be required at the start. – Costs for acquiring homes would be determined by the number of homes participating in the program

EVALUATION METHOD:	– Qualitative Assessment

RECOMMENDATION:	– **Recommended for implementation as part of the final Noise Compatibility Program.**

ALTERNATIVE:	**LU-C Land Use Controls**

DESCRIPTION:	Encourage local municipalities to implement various Land Use Controls, such as re-zoning and disclosure, for areas within the 2006 NCP DNL 65 dB noise contour.

BENEFITS:	– Prevents future development of incompatible land use within the DNL 65 dB noise contour. – Disclosure will advise potential developers, real estate agents and homebuyers that the property is impacted by aircraft noise. – Inexpensive measure to implement. – Protects land uses that are already compatible with the Airport.

DRAWBACKS:	– Requires the cooperation of the local government and businesses to implement. – Controls can be very restrictive.

EXPECTED COST:	– Costs are expected to be minimal to implement the program. Some costs to the local communities involved are to be expected.

EVALUATION METHOD:	Qualitative Assessment

RECOMMENDATION:	**Recommend land use controls be further analyzed and considered for implementation as part of the final Noise Compatibility Program.**

ALTERNATIVE:	**LU-D Development Controls**

DESCRIPTION:	– Encourage local municipalities to amend their building codes to require any new construction and major alteration/addition within or adjacent to the DNL 65 dB NCP noise contour to meet an interior Noise Reduction Level (NRL) standard of 45 dB.

BENEFITS:	– Prevents new incompatible development. – Ensures that any new construction or alteration will utilize materials that will minimize the amount of noise exposure on the interior of a structure. – Inexpensive measure to implement.

DRAWBACKS:	– Requires community and developer cooperation to implement. – May meet resistance from local development companies. – Adds costs to construction.

EXPECTED COST:	Costs are expected to be minimal to implement the program. Some costs to the local communities and developers are expected.

EVALUATION METHOD:	Qualitative Assessment

RECOMMENDATION:	**Recommend for implementation as part of the final Noise Compatibility Program.**

ALTERNATIVE:	**LU-E Avigation Easements**

DESCRIPTION:	– Purcahse the right to operate aircraft over homes within and adjacent to the 2006 NCP DNL 65 dB noise contour.

BENEFITS:	– Less costly to implement than other land use programs. – Fairly easy to implement.

DRAWBACKS:	– Does not mitigate noise impacts. – Difficult to place a value on the easements.

EXPECTED COST:	– Costs are expected to be minimal to run the program, however the cost to provide an internal manager or consultant manager would be required at the start. – At an estimated cost of $2,500 per dwelling, the program could be in the $500,000 dollar range.

EVALUATION METHOD:	Qualitative Assessment

RECOMMENDATION:	An avigation easement program **is not recommended for further analysis or implementation as part of the final Noise Compatibility Program.** However, Avigation Easements should be placed on all properties who participate in either the sound insulation program or purchase and resell program.

ALTERNATIVE:	**LU-F Acquisition Program**

DESCRIPTION:	– Purchase and remove residential dwellings within and adjacent to the 2006 NCP DNL 65 dB noise contour.

BENEFITS:	– Removes single family residential homes and its residents from impacted areas. – Converts purchased properties to uses compatible with airport operations.

DRAWBACKS:	– Resistance from local communities. – Can breakup a local community. – Funding may not be available from federal sources.

EXPECTED COST:	– Expensive. In this case, the average cost to acquire a home, provide relocation expenses, and raze the property would range from an estimated $135,000 to $150,000 per home. There are 203 homes within the 65DNL contour equating to a total cost of $27.4 to $30.45 million.

EVALUATION METHOD:	– Qualitative Assessment

RECOMMENDATION:	– **Not recommended for implementation as a part of the final NCP.**

ALTERNATIVE:	LU-G Guaranteed Purchase Assurance Program

DESCRIPTION:	– The Airport would guarantee the purchase of impacted properties if their current owners were unable to sell them for their appraised value. The Airport could then resell them with an easement or convert them to an airport compatible land use.

BENEFITS:	– Provides an option to sound insulation for those who would not consider or whose homes were not eligible for insulating their dwellings or structures. – Properties would have an avigation easement attached, which would guarantee the right of flight over them. – Reselling properties funds the purchase of more impacted properties for mitigation purposes.

DRAWBACKS:	– Requires a program manager or consultant to implement and run. – Somewhat costly.

EXPECTED COST:	– Costs would be variable based on purchase prices, relocation costs and demolition costs.

EVALUATION METHOD:	– Qualitative Assessment

RECOMMENDATION:	– **Not recommended for implementation as part of the final Noise Compatibility Program.**

APPENDIX

SAMPLE LAND USE CONTROL DOCUMENTS

Hawaii Statute - Chapter 508D, Mandatory Seller Disclosures In Real Estate Transactions.

§508D-15 Notification required; ambiguity.

(a) When residential real property lies:

(1) Within the boundaries of a special flood hazard area as officially designated on Flood Insurance Administration maps promulgated by the United States Department of Housing and Urban Development for the purposes of determining eligibility for emergency flood insurance programs;
(2) Within the boundaries of the noise exposure area shown on maps prepared by the department of transportation in accordance with Federal Aviation Regulation Part 150-Airport Noise Compatibility Planning (14 Code of Federal Regulations Part 150) for any public airport;
(3) Within the boundaries of the Air Installation Compatibility Use Zone of any Air Force, Army, Navy, or Marine Corps airport as officially designated by military authorities; or
(4) Within the anticipated inundation areas designated on the department of defense's civil defense tsunami inundation maps;

Subject to the availability of maps that designate the four areas by tax map key (zone, section, parcel), the seller shall include such material fact information in the disclosure statement provided to the buyer subject to this chapter. Each county shall provide, where available, maps of its jurisdiction detailing the four designated areas specified in this subsection. The maps shall identify the properties situated within the four designated areas by tax map key number (zone, section, parcel) and shall be of a size sufficient to provide information necessary to serve the purposes of this section. Each county shall provide legible copies of the maps and may charge a reasonable copying fee.

(b) When it is questionable whether residential real property lies within any of the designated areas referred to in subsection (a) due to the inherent ambiguity of boundary lines drawn on maps of large scale, the ambiguity shall be construed in favor of the seller; provided that a good faith effort has been made to determine the applicability of subsection (a) to the subject real property. [L 1994, c 214, pt of §2; am L 1996, c 161, §15]

SAMPLE AVIGATION EASEMENT
(Extracted from RDU's Ordnance)

STATE OF:

COUNTY OF:

THIS DEED OF EASEMENT, made and entered into as of this day of_____199_, by and between _____ and _____, Grantors, and _____ **AIRPORT AUTHORITY**, Grantee;

WITNESSETH;

THAT **WHEREAS**, Grantors own that certain lot or parcel of real property located and situate in _____(county)_____, _____(state)_____, which said property is more particularly described in Exhibit A attached hereto and incorporated herein by reference and which property is located within the area of the Airport Overlay District and is exposed to noise associated with aircraft overflight; and

WHEREAS, Grantee is a municipal corporation organized and existing under the laws of the State of _____ for the purpose of operating _____ Airport, located in _____(city/county)_____, _____(state)_____; and

WHEREAS, Grantee is a public body having the power of eminent domain under the laws of the State of _____; and

WHEREAS, Grantors have applied to subdivide or develop the property for residential purposes and an required by the Airport Overlay District Ordinance have agreed to grant to Grantee this avigation easement as a condition for approval to subdivide or develop the property described in Exhibit A. Grantors have agree to convey this Avigation Easement to Grantee upon the terms and conditions herein expressed;

NOW, THEREFORE, Grantors have and by these presents do hereby transfer, assign, bargain, sell, grant and convey to grantee a perpetual right and easement for the free and

unobstructed flight of aircraft (being defined as any contrivance now or hereafter used for flight in the air) over and in the vicinity of the property described in Exhibit A attached hereto, including jet-powered air carrier aircraft in landing and take-off operations and other flight activities associated therewith, together with the right to cause such noise, vibrations, odors, vapors, particulates, smoke, dust or other effects as may be inherent in the operation of aircraft of all types.

This Easement shall be appurtenant to and shall run with the real property now owned and hereafter acquired and used for airport purposes by Grantee or its successors in interest. This Easement and the burden thereof, together with all incidents and effects of or resulting from use and enjoyment thereof shall constitute a permanent burden and tenement upon the subject property which shall be binding upon and enforceable against the Grantors, their heirs, assigns and/or successors in interest.

TO HAVE AND TO HOLD said rights and easement unto the said Grantee and its successors forever, it being agreed that the right and easement herein granted are appurtenant to and run with all property now or hereafter acquired and used as part of _____ Airport.

And the said Grantors covenant that they are seized and possessed of all right, title and interest in and to the subject real property in fee simple and have the right to convey same free and clear of all encumbrances, and will warrant and defend the right and easement herein granted against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, the said Grantors have hereunto set their hands and seals as of the date and year first above written.

_____(SEAL)

_____(SEAL)

Loudoun County, Virginia

Department of Building and Development
1 Harrison Street, S.E., P.O. Box 7000, Leesburg, VA 20177-7000
Administration: 703/777-0397 Fax: 703/771-5215
Inspections Information Only: 703/777-0220 Fax: 703/771-5522

ARTICLE IV
DIVISION C: ENVIRONMENTAL IMPACT DISTRICTS

Section 4-1400 AI-Airport Impact Overlay District

4-1401 **Purpose.** This district is established to acknowledge the unique land use impacts of airports, regulate the siting of noise sensitive uses, ensure that the heights of structures are compatible with airport operations, and complement Federal Aviation Administration regulations regarding noise and height.

4-1402 **District Boundaries.**

(A) The Airport Impact (AI) Overlay District boundaries shall be based on the 60 and 65 Ldn noise contours and an area that extends one (1) mile beyond the 60 Ldn contours. The Board shall use as a basis for delineating the Ldn noise contour the following sources:

(1) Washington Dulles International Airport: The FAA Part 150 Noise Compatibility Programs, Washington Dulles International Airport, August, 1992, and

(2) Leesburg Municipal Airport: Environmental Assessment Report, October, 1985.

(B) For the purpose of administering these regulations the Airport Impact Overlay District shall have three (3) components:

(1) Ldn - 65 or higher.

(2) Ldn 60 - Ldn 65.

(3) Within the A-I overlay district, but outside the Ldn 60 contour.

4-1403 **Overlay District Established.** The Airport Impact (AI) Overlay District is hereby established as an overlay district, meaning that it is a district overlaid upon other districts. Land within the Airport Impact (AI) Overlay District may be used as permitted in the underlying district, subject to the additional regulations of this district.

4-1404 **Use Limitations.** In addition to the use limitations and regulations for the zoning district over which an Airport Impact (AI) Overlay District is located, the following use limitations shall apply:

(3) **Avigation Easements.** For all residential dwelling units to be constructed between the Ldn 60-65 aircraft noise contours. Prior to the approval of a Record Plat creating residential lots or for existing lots of record, prior to the issuance of a zoning permit, the owner(s) of such parcel or parcels shall dedicate an *avigation easement* to the Metropolitan Washington Airports Authority, indicating the right of flight to pass over the property, as a means to securing the long-term economic viability of Washington Dulles International Airport.

(C) In Airport Noise Impact areas of Ldn 65 or higher, residential dwellings shall not be permitted. However, new dwelling units and additions to existing dwellings may be permitted, provided that:

(1) The lot was recorded or had record plat approval prior to the effective date of adoption of this Ordinance.

(2) The new dwelling unit or addition complies with the acoustical treatment requirements for residential districts set forth in the [Virginia Uniform Statewide Building Code].

(D) No building or other structure shall be located in a manner or built to a height which constitutes a hazard to aerial navigation. Where a structure is proposed in a location or to be built to a height which may be hazardous to air traffic such structure shall not be erected without certification from the Federal Aviation Administration that it will not constitute a hazard to air traffic.

4-1405 **Disclosure.** A disclosure statement shall be placed on all subdivision plats, site plans, and deeds to any parcel or development within the AI District, clearly identifying any lot which is located within the AI District and identifying the component of the AI District (i.e., Section 4-1402(B)(1), 4-1402(B)(2), or 4-1402(B)(3)) in which the lot is located.

[4-1406 **Definitions.** Unless otherwise specially provided, or unless clearly required by the context, the words and phrases defined in this subsection shall have the following meanings when used in Section 4-1400.

(A) Ldn: The symbol for "yearly day-night average sound level", which means the 365-day average, in decibels, for the period from midnight to midnight, obtained after the addition of ten decibels to sound levels for the periods between 10 p.m. and 7 a.m., local time.

(A) For areas outside of, but within one (1) mile of the Ldn 60.

(1) **Full Disclosure Statement.** For all residential dwelling units to be constructed outside of, but within one (1) mile of the Ldn 60. The applicant shall disclose in writing to all prospective purchasers that they are located within an area that will be impacted by aircraft overflights and aircraft noise. Such notification will be accomplished by inclusion of this information in all sales contracts, brochures and promotional documents, including the *Illustrative Site Plan(s)* on display within any sales related office(s), as well as in Homeowner Association Documents, and by inclusion on all subdivision and site plans, and within all *Deeds of Conveyance*.

(B) For areas between the Ldn 60-65 aircraft noise contours:

(1) **Full Disclosure Statement.** For all residential dwelling units to be constructed between the Ldn 60-65 aircraft noise contours, the applicant shall disclose in writing to all prospective purchasers that they are located within an area that will be impacted by aircraft overflights and aircraft noise. Such notification will be accomplished by inclusion of this information in all sales contracts, brochures and promotional documents, including the *Illustrative Site Plan(s)* on display within any sales related office(s), as well as in Homeowner Association Documents, and by inclusion on all subdivision and site plans, and within all *Deeds of Conveyance*.

(2) **Acoustical Treatment.** For all residential units located between the Ldn 60-65 aircraft noise contours, the applicant shall incorporate acoustical treatment into all dwelling units to insure that interior noise levels within living spaces (not including garages, sunrooms, or porches) do not exceed [an average sound level of 45 db(A) Ldn. Compliance with this standard shall be based upon a certification from an acoustical engineer licensed in the Commonwealth of Virginia, submitted at the time of zoning permit issuance, that the design and construction methods and materials to be used in the construction of the dwelling are such that the foregoing standard will be met, assuming exterior noise levels between 60-65 Ldn].

REAL ESTATE TRANSFER DISCLOSURE STATEMENT

(CALIFORNIA CIVIL CODE 1102, ET SEQ.)

CALIFORNIA ASSOCIATION OF REALTORS® (CAR) STANDARD FORM

THIS DISCLOSURE STATEMENT CONCERNS THE REAL PROPERTY SITUATED IN THE CITY OF _____, COUNTY OF _____, STATE OF CALIFORNIA, DESCRIBED AS _____.
THIS STATEMENT IS A DISCLOSURE OF THE CONDITION OF THE ABOVE DESCRIBED PROPERTY IN COMPLIANCE WITH SECTION 1102 OF THE CIVIL CODE AS OF _____, 19____. IT IS NOT A WARRANTY OF ANY KIND BY THE SELLER(S) OR ANY AGENT(S) REPRESENTING ANY PRINCIPAL(S) IN THIS TRANSACTION, AND IS NOT A SUBSTITUTE FOR ANY INSPECTIONS OR WARRANTIES THE PRINCIPAL(S) MAY WISH TO OBTAIN.

I
COORDINATION WITH OTHER DISCLOSURE FORMS

This Real Estate Transfer Disclosure Statement is made pursuant to Section 1102 of the Civil Code. Other statutes require disclosures, depending upon the details of the particular real estate transaction (for example: special study zone and purchase-money liens on residential property).

Substituted Disclosures: The following disclosures have or will be in connection with this real estate transfer, and are intended to satisfy the disclosure obligations on this form, where the subject matter is the same: _____

(LIST ALL SUBSTITUTED DISCLOSURE FORMS TO BE USED IN CONNECTION WITH THIS TRANSACTION)

II
SELLER'S INFORMATION

The Seller discloses the following information with the knowledge that even though this is not a warranty, prospective Buyers may rely on this information in deciding whether and on what terms to purchase the subject property. Seller hereby authorizes any agent(s) representing any principal(s) in this transaction to provide a copy of this statement to any person or entity in connection with any actual or anticipated sale of the property.

THE FOLLOWING ARE REPRESENTATIONS MADE BY THE SELLER(S) AND ARE NOT THE REPRESENTATIONS OF THE AGENT(S), IF ANY. THIS INFORMATION IS A DISCLOSURE AND IS NOT INTENDED TO BE PART OF ANY CONTRACT BETWEEN THE BUYER AND SELLER.

Seller ☐ is ☐ is not occupying the property.

A. The subject property has the items checked below (read across):

☐ Range	☐ Oven	☐ Microwave
☐ Dishwasher	☐ Trash Compactor	☑ Garbage Disposal
☐ Washer/Dryer Hookups	☐ Window Screens	☐ Rain Gutters
☐ Burglar Alarms	☐ Smoke Detector(s)	☐ Fire Alarm
☐ T.V. Antenna	☐ Satellite Dish	☐ Intercom
☐ Central Heating	☐ Central Air Conditioning	☐ Evaporator Cooler(s)
☐ Wall/Window Air Conditioning	☐ Sprinklers	☐ Public Sewer System
☐ Septic Tank	☐ Sump Pump	☐ Water Softener
☐ Patio/Decking	☐ Built-in Barbecue	☐ Gazebo
☐ Sauna	☐ Pool	☐ Spa ☐ Hot Tub
☐ Security Gate(s)	☐ Automatic Garage Door Opener(s)*	☐ Number of Remote Controls _____
Garage: ☐ Attached	☐ Not Attached	☐ Carport
Pool/Spa Heater: ☐ Gas	☐ Solar	☐ Electric
Water Heater: ☐ Gas	☐ Solar	☐ Electric
Water Supply: ☐ City	☐ Well	☐ Private Utility ☐ Other _____
Gas Supply: ☐ Utility	☐ Bottled	

Exhaust Fan(s) in _____ 220 Volt Wiring in _____
Fireplace(s) in _____ ☐ Gas Starter
☐ Roof(s): Type: _____ Age: _____ (approx.)
☐ Other: _____
Are there, to the best of your (Seller's) knowledge, any of the above that are not in operating condition? ☐ Yes ☐ No If yes, then describe. (Attach additional sheets if necessary.): _____

B. Are you (Seller) aware of any significant defects/malfunctions in any of the following? ☐ Yes ☐ No **If yes, check appropriate space(s) below.**

☐ Interior Walls ☐ Ceilings ☐ Floors ☐ Exterior Walls ☐ Insulation ☐ Roof(s) ☐ Windows ☐ Doors ☐ Foundation ☐ Slab(s)
☐ Driveways ☐ Sidewalks ☐ Walls/Fences ☐ Electrical Systems ☐ Plumbing/Sewers/Septics ☐ Other Structural Components
(Describe: _____)

If any of the above is checked, explain. (Attach additional sheets if necessary): _____

*This garage door opener may not be in compliance with the safety standards relating to automatic reversing devices as set forth in Chapter 12.5 (commencing with Section 19890) of Part 3 of Division 13 of the Health and Safety Code.

Buyer and Seller acknowledge receipt of copy of this page, which constitutes Page 1 of 2 Pages.
Buyer's Initials (_____) (_____) Seller's Initials (_____) (_____)

OFFICE USE ONLY
Reviewed by Broker or Designee _____
Date _____

BUYER'S COPY

C. Are you (Seller) aware of any of the following:

1. Substances, materials, or products which may be an environmental hazard such as, but not limited to, asbestos, formaldehyde, radon gas, lead-based paint, fuel or chemical storage tanks, and contaminated soil or water on the subject property. ☐ Yes ☐ No
2. Features of the property shared in common with adjoining landowners, such as walls, fences, and driveways, whose use or responsibility for maintenance may have an effect on the subject property. ☐ Yes ☐ No
3. Any encroachments, easements or similar matters that may affect your interest in the subject property. ☐ Yes ☐ No
4. Room additions, structural modifications, or other alterations or repairs made without necessary permits. ☐ Yes ☐ No
5. Room additions, structural modifications, or other alterations or repairs not in compliance with building codes. ☐ Yes ☐ No
6. Landfill (compacted or otherwise) on the property or any portion thereof. ☐ Yes ☐ No
7. Any settling from any cause, or slippage, sliding, or other soil problems. ☐ Yes ☐ No
8. Flooding, drainage or grading problems. ☐ Yes ☐ No
9. Major damage to the property or any of the structures from fire, earthquake, floods, or landslides. ☐ Yes ☐ No
10. Any zoning violations, nonconforming uses, violations of "setback" requirements. ☐ Yes ☐ No
11. Neighborhood noise problems or other nuisances. ☐ Yes ☐ No
12. CC&R's or other deed restrictions or obligations. ☐ Yes ☐ No
13. Homeowners' Association which has any authority over the subject property. ☐ Yes ☐ No
14. Any "common area" (facilities such as pools, tennis courts, walkways, or other areas co-owned in undivided interest with others). ☐ Yes ☐ No
15. Any notices of abatement or citations against the property. ☐ Yes ☐ No
16. Any lawsuits against the seller threatening to or affecting this real property. ☐ Yes ☐ No

If the answer to any of these is yes, explain. (Attach additional sheets if necessary.): _____

Seller certifies that the information herein is true and correct to the best of the Seller's knowledge as of the date signed by the Seller.

Seller _____ Date _____

Seller _____ Date _____

III

AGENT'S INSPECTION DISCLOSURE

(To be completed only if the seller is represented by an agent in this transaction.)

THE UNDERSIGNED, BASED ON THE ABOVE INQUIRY OF THE SELLER(S) AS TO THE CONDITION OF THE PROPERTY AND BASED ON A REASONABLY COMPETENT AND DILIGENT VISUAL INSPECTION OF THE ACCESSIBLE AREAS OF THE PROPERTY IN CONJUNCTION WITH THAT INQUIRY, STATES THE FOLLOWING:

Agent (Broker Representing Seller) _____ By _____ Date _____
(PLEASE PRINT) (ASSOCIATE LICENSEE OR BROKER-SIGNATURE)

AGENT'S INSPECTION DISCLOSURE

(To be completed only if the agent who has obtained the offer is other than the agent above.)

THE UNDERSIGNED, BASED ON A REASONABLY COMPETENT AND DILIGENT VISUAL INSPECTION OF THE ACCESSIBLE AREAS OF THE PROPERTY, STATES THE FOLLOWING:

Agent (Broker obtaining the Offer) _____ By _____ Date _____
(PLEASE PRINT) (ASSOCIATE LICENSEE OR BROKER-SIGNATURE)

V

BUYER(S) AND SELLER(S) MAY WISH TO OBTAIN PROFESSIONAL ADVICE AND/OR INSPECTIONS OF THE PROPERTY AND TO PROVIDE FOR APPROPRIATE PROVISIONS IN A CONTRACT BETWEEN BUYER AND SELLER(S) WITH RESPECT TO ANY ADVICE/INSPECTIONS/DEFECTS.

I/WE ACKNOWLEDGE RECEIPT OF A COPY OF THIS STATEMENT.

Seller _____ Date _____ Buyer _____ Date _____

Seller _____ Date _____ Buyer _____ Date _____

Agent (Broker Representing Seller) _____ By _____ Date _____
(PLEASE PRINT) (ASSOCIATE LICENSEE OR BROKER-SIGNATURE)

Agent (Broker obtaining the Offer) _____ By _____ Date _____
(PLEASE PRINT) (ASSOCIATE LICENSEE OR BROKER-SIGNATURE)

A REAL ESTATE BROKER IS QUALIFIED TO ADVISE ON REAL ESTATE. IF YOU DESIRE LEGAL ADVICE, CONSULT YOUR ATTORNEY.

BUYER'S COPY

Page 2 of ____ Pages.

OFFICE USE ONLY
Reviewed by Broker or Designee _____
Date _____

EQUAL HOUSING OPPORTUNITY

Air Transportation Planning Program

Bibliography of Air Transportation Compatible Land Use Plans / Model Zoning Ordinances

The following bibliography includes airport zoning ordinances, compatible land use planning handbooks and guidelines, and other planning resources, and is designed to assist local communities in their planning for compatible land uses around Sea-Tac Airport. The bibliography will be updated as new materials become available. Materials listed in this bibliography are available for review in the Regional Council Information Center.

For the latest information, see Air Transportation Planning Program Overview.

Airport Compatible Land Use Design Handbook, prepared by Denver Regional Council of Governments (DRCOG), 1998.

Airport Compatible Land Use Guidance for Florida Communities, prepared by Florida Department of Transportation, 1994.

Airport Compatibility Guidelines (Volume VI of the *Oregon Aviation System Plan*), prepared by Oregon Department of Transportation Aeronautics Division, 1981.

Airport Compatibility Guidelines: Compatibility Planning, Height Hazard Zoning, and Compatible Land Use Zones for Texas Airports, prepared by Texas Department of Transportation, Division of Aviation, January 1992.

Airport Land Use Planning Handbook, prepared for California Department of Transportation (CalTrans) Division of Aeronautics by Hodges & Shutt, December 1993.

Airport Land Use Planning Handbook, prepared for California Department of Transportation (CalTrans) Division of Aeronautics by MTC and ABAG, July 1983.

Airport Noise Overlay Zoning District (Section 14-03-01 of the *Bismarck Code of Ordinances*), prepared by the City of Bismarck, North Dakota, 1991.

Airport Noise Regulations -- Planning Advisory Service Report Number 437, prepared by the American Planning Association, May 1992.

Airport Zoning (*State of Florida Statutes and Rules*, Chapter 333), prepared by State of Florida, 1994.

Airport Zoning Ordinance (*Indian River County Land Development Regulations*, Chapter 911.17), prepared by Indian River County, Florida, 1993.

Airport Zoning Ordinance, prepared by Michigan Department of Transportation Aeronautics Commission.

Airports and Compatible Land Use, Volume 1: An Introduction and Overview for Decision-Makers, prepared by Washington State Dept of Transportation, Aviation Division, 1999.

Arizona State Aviation System Plan Update, Volume V: Land Use Compatibility Guide, prepared by TRA Airport Consulting for the Arizona Department of Transportation, 1988.

Dealing with Airport Growth -- Lessons for the Hudson Valley, prepared by Scenic Hudson, Inc., 1992.

Effectiveness Evaluation of the 1991 Airport Safety and Land Use Compatibility Study Commission Recommendations, prepared by Airport Safety and Land Use Compatibility Study Commission, Florida, 1993.

Final Policy on Part 150 Approval of Noise Mitigation Measures: Effect on the Use of Federal Grants for Noise Mitigation Projects (14 CFR Part 150), Federal Aviation Administration. *Federal Register* (vol.63, no.64), April 3, 1998

Guide for Land Use Planning Around Airports in Wisconsin, prepared by Wisconsin Department of Transportation, 1989.

Initial Review of Comprehensive Land Use Plans for Community Areas Within Sea-Tac Airport's Projected Noise Contour, prepared by Puget Sound Regional Council, 1999.

Installation Compatible Use Zone (ICUZ) Study: Fort Lewis Military Reservation, Washington, prepared for Fort Lewis Environmental and Natural Resources Division by Shapiro and Associates, August 1996.

Joint Land Use Study: a Study of Land Uses Compatible With or Adjacent to McChord Air Force Base and Fort Lewis, Washington, February 1992.

Land Use Compatibility: a Guide to Local Control of Land Use Around Airports, prepared by Cutler & Stanfield, L.L.P., 1998.

Land Use Encroachment - Technical Assistance, prepared by Washington State Department of Transportation, Aviation Division, 1996.

Land Use Guidelines Study (Volume VIII of the *Washington State Airport System Plan*), prepared by Washington Department of Transportation

Aeronautics Division, March 1991.

Land Use Plan for Areas Surrounding Airports in Santa Clara County, adopted by the Santa Clara County Airport Land Use Commission (ALUC), 1991.

Model Airport Noise Regulations for Port Columbus International Airport, prepared by Mid-Ohio Regional Planning Commission.

Model Airport Overlay Zone Ordinance, Appendix B of the *Regional Airport System Plan*, prepared by Puget Sound Council of Governments, September 1988.

A Model Zoning Ordinance to Limit Height of Objects Around Airports (*FAA Advisory Circular* AC 150/5190-4A), prepared by the Federal Aviation Administration (FAA), December 14, 1987.

Noise Control and Compatibility Planning for Airports (*FAA Advisory Circular* AC 150/5020-1), prepared by the Federal Aviation Administration (FAA), August 5, 1983.

Objects Affecting Navigable Airspace (14 CFR Part 77).

Off-Airport Land Use Development Plan for General Mitchell Field and Environs - 1977, prepared by the Southeast Wisconsin Regional Planning Commission, May 1977.

Portland International Airport Noise Impact Zone (Title 33, Planning and Zoning, *Portland Municipal Code*), prepared by the City of Portland, Oregon, 1990.

Report of Findings and Recommendations, prepared by Airport Safety and Land Use Compatibility Study Commission, Florida, 1991.

Washington State Aeronautics Laws and Regulations: Sections of the Revised Code of Washington (RCW) and the Washington Administrative Code (WAC) Pertaining to Aviation in Washington State, prepared by the Washington State Department of Transportation Aeronautics Division, December 1990 [in particular, see Chapter 14.13 RCW -- *Airport Zoning*; and Chapter 12-24 WAC -- *Obstruction Marking and Lighting*].

Watts-Woodland Airport Comprehensive Land Use Plan, prepared by the Sacramento Area Council of Governments, December 1988.

The materials listed above are available for review in the Puget Sound Regional Council Information Center. The Information Center's public hours are 10am-3pm weekdays, with other hours by appointment. Visitors are welcome. To make an appointment, phone (206) 464-7532 or email infoctr@psrc.org.

DMJM Aviation

260 South Broad Street
Suite 1400
Philadelphia, PA 19102
Tel: 215-399-4300
Fax: 215-399-4350

MEMORANDUM

To: **Mr. Norrbert Poloncarz, Tinicum Township**
Mr. Michael S. Elabarger, Delaware County Planning Dept.
Jon Woodward, Landrum & Brown
Rob Adams, Landrum & Brown

Cc: **Mr. Charles Isdell, City of Philadelphia**
Mr. Mark Gale, City of Philadelphia
Ms. Phyllis Vanlstendal, City of Philadelphia
Mr. Jim Byers, FAA Harrisburg

From: **Dave Ingram, DMJM Aviation**

Date: **October 31, 2001**

Subject: **FAR Part 150 Land-Use Meeting with Tinicum Township**

The following is a recap of the FAR Part 150 Noise Compatibility Program land-use meeting with Tinicum Township, Delaware County Planning Department, DMJM Aviation and Landrum & Brown:

Attendees

Mr. Norrbert Poloncarz, Tinicum Township
Mr. William R. Wasch, Tinicum Township, Commissioner (President)
Mr. Pete P. Romano, Tinicum Township, Code Enforcement
Mr. James W. MacCombie, Tinicum Township Engineer
Mr. Joe Wunder, Tinicum Township, Commissioner
Mr. Michael S. Elabarger, Delaware County Planning Department
Mr. Rob Adams, Landrum & Brown
Mr. Jon Woodward, Landrum & Brown
Mr. Royce Bassarab, Landrum & Brown
Ms. Lisa Mastropieri, DMJM Aviation
Mr. Bill Allen, Philadelphia International Airport – Noise Office / DMJM Aviation
Mr. Dave Ingram, DMJM Aviation

The meeting convened at approximately 1:30 P.M. in the Tinicum Township Municipal Building.

Dave Ingram of DMJM Aviation began by explaining the agenda and purpose of the meeting. The purpose of the meeting is to obtain support for the Noise Compatibility Program (NCP) elements from Tinicum Township and to develop an action plan that will lead to successful implementation of those elements. Support would take the form of the Township's ability to apply local land use controls to prevent future incompatible land uses located within the 2006 NCP noise maps.

N. Poloncarz asked when we would be meeting with the public to present the final recommendations. J. Woodward indicated that he had hoped to have another Part 150 Study Advisory Committee (SAC) meeting in November and possibly schedule the public hearing in November or December.

D. Ingram also explained the FAR Part 150 planning process for noise impacts, the land-use guidance used by the Federal Aviation Administration for mitigation, and the planning options to limit future land use incompatibilities with airport noise exposure.

The Federal guidelines and policies on local land use were reviewed and their policy of community responsibility for land use planning around airports was emphasized. The concept of "constructive knowledge" was also reviewed to ensure the group understood that publication of noise exposure maps after acceptance by the FAA could eliminate damage recovery by those parties purchasing or constructing residences within noise impact areas.

It was explained that the primary mitigation effort in Tinicum Township that could provide some relief to residents living within or contiguous to the 2006 65 DNL contour, would be the sound insulation of homes. The insulation program that will be recommended to the City of Philadelphia for implementation was then explained. It was stressed that the planning team was working with the FAA's Harrisburg Area District Office planning personnel to determine the extent of the eligible homes located outside, but contiguous to, the 65 DNL contour. In some instances, the area of eligible homes may extend further than others if a "natural boundary" such as a railroad or highway exists as a reasonable defining limit for a neighborhood.

- Sound Insulation

As part of a proposed sound insulation program the airport, a qualified acoustical consultant, would conduct a "pilot program". The "pilot program" is recommended as a starting point to identify the most impacted homes to be insulated first and select a cross section of the various types of home construction present in Tinicum Township. The selected homes would be used to test and model the types of sound insulation that would be most effective in reducing interior noise levels.

Once the pilot program is complete, a more extensive program of general sound insulation within the program area would be initiated. Owners of eligible dwellings would be contacted by the program management to determine their interest in

participation. As a condition of sound insulation, a homeowner would be required to sign an avigation easement to the airport. N. Poloncarz asked what would happen if some residents did not want to participate. The answer provided was that since participation would be voluntary, sound insulation would be offered to other homeowners instead, but the program could be structured to provide limited future opportunities to participate.

If it were determined in the "pilot program" that a certain type of home construction could not be insulated to adequately meet the desired interior noise level reductions, then a Purchase and Resale option might be offered by the airport to those homeowners.

N. Poloncarz suggested that we include in the sound insulation program the cost to upgrade electrical systems if homes are currently incapable of supporting central heat and air conditions systems. This could be one issue that could be resolved during the pilot program.

- Land Use Controls – rezoning and disclosure of impacts from aircraft noise.

–J. Woodward stressed that the FAA would prefer that a local community subject some of its land uses to some type of development controls within the 65 DNL or greater. N. Polancarz and M. Elabarger indicated that the Township is currently in the process of developing a revised zoning map in conjunction with the Delaware County Planning Department. A draft of this map was provided for review at the meeting and demonstrated a proactive position on the part of the Township to zone using compatible land uses. Once finalized and approved, the map may be included in the Part 150 document.

B. Wasch indicated that it would be important to have the noise contours on the zoning map as well so that people who do buy property within Tinicum Township have the opportunity to review and determine if they would be located within an "airport noise impacted area". He also asked if we could provide contours further out than just the 65 DNL for the zoning map since most people feel the noise is just as bad in areas below 65 DNL. DMJM Aviation indicated that was possible, but that Landrum & Brown would have to make the determination of when the contours could be released by the Airport.

Development Controls were encouraged to amend building codes to ensure that sound insulation techniques are required for new construction or additions/alterations to existing structures in areas located within or near the noise impacted areas that will be defined on the Township Zoning Map.

N. Poloncarz offered the following comments:

- The Township would need guidelines for building inspections where sound insulation has been required of a developer. B. Allen told Mr. Poloncarz that

sample programs from other airports could be shared with Tinicum to provide them a guide for developing their own program.

- How will public comments be handled? R. Adams indicated that all comments from previous meetings have been catalogued and those received through the upcoming Hearing process will be also addressed in the same manner. Comments will be responded to by category.

- Is Tinicum missing anything? J. Woodward indicated that acquisition of property is frequently sought by homeowners, but is not being addressed in this case, given the existing agreements between the Township and the Airport relative to property acquisition for Airport uses. He also indicated that since Part 150 is a continuing program, an appropriate time to review and determine if there's anything else that can be provided for relief is in the Part 150 Update period (usually in 5 years). At that time any major airport changes that may be planned or have been implemented (i.e. flight patterns due to airspace redesign study, or runway configuration due to master planning) can be reevaluated. The environmental process for the ongoing master plan will also have to address any new impacts associated with any proposed developmental changes.

- The Township does not want land acquisition. B. Allen agreed, indicating that the airport was also not in favor of an acquisition program, and did not recommend it as a part of the final NCP.

- Restrictive Actions? J. Woodward indicated that they are not possible due to legal implications. PHL already has preferential runway program at night for departures using Runway 27L. Restrictions cannot be mandated by local communities, but are preempted by federal control over the use of airspace.

Other:
Sample land use control documents provided in the meeting handout were reviewed with the group. They included:

- Mandatory Disclosure Statutes from Hawaii;
- Sample Avigation Easements from Raleigh-Durham International Airport;
- Airport Overlay District documents from Loudon County, Virginia; and
- Real Estate Disclosure Forms from California.

A bibliography of air transportation compatible land use plans/model zoning ordinances were also provided in the handout and were briefly mentioned as a resource in developing similar programs for the NCP.

It was agreed that the Delaware County Planning Department would provide a draft Tinicum Township Zoning Map for use in the Part 150 NCP once it is final and approved.

Meeting was adjourned at approximately 3:30 p.m.

ACTION PLAN

- DMJM Aviation will prepare and distribute draft meeting minutes.
- DMJM Aviation will provide additional guidance on the next steps to be taken.
- DMJM Aviation will provide Tinicum and the Delaware Planning Department with example program information from other airports.
- Tinicum and the Delaware Planning Department will consider the recommendations addressed at the meeting to determine if controls and disclosure actions can be implemented. It was determined that at this time rezoning does not appear to be warranted.

Philadelphia International Airport

F.A.R. Part 150 Study
Land Use Meetings

October 25, 2001

PMJM Aviation

50 Since 1949 Landrum & Brown Team

AGENDA
PHILADELPHIA INTERNATIONAL AIRPORT
FAR PART 150 STUDY
LAND USE MEETINGS
10/25/01

I. Meeting Purpose

- Discuss the Recommended Land Use Mitigation Program

  - A draft Noise Compatibility Program (NCP), with land use mitigation, is to be completed in October 2001. A Public Hearing is anticipated in November or December.
  - Land use mitigation will focus on sound insulating residences inside and outside of the noise contour area. However, other controls and mitigation measures are needed to support the main focus.

- Develop Local Community/Planning Agency Support for the Mitigation Program

  - Adoption of local controls and programs to prevent future incompatibilities.
  - Adoption of local standards of disclosure in and around noise impact areas.

- Develop Action Plan to Achieve the Development of Local Controls

  - Determine if it is feasible to develop and implement local land use controls for the Part 150 Study.
  - Determine how to develop and implement the local standards.
  - Discuss/develop a timeline to implement the local standards.

II. Federal Guidelines

- FAA Policy on Local Land Use – Community's responsibility.

- Mitigating Outside Noise Exposure Area – Precedent has already been set at other airports and in FAA correspondence. Some support from the FAA is expected
- Control New Incompatibilities – FAR Part 150 requires a description of measures proposed to reduce or eliminate present and future non-compatible land uses.
- Constructive Knowledge – Knowledge of the existence of noise exposure maps, actual or constructive, can eliminate damages recoveries for purchasers.

III. Local Land Use Planning Issues

- Land Use Controls – Local municipalities implement controls such as re-zoning and disclosure. Controls are intended to prevent future development of incompatible land uses within the noise exposure boundaries. Discloses to potential developers, real estate agents and home purchasers the impacts of aircraft noise on properties.

  - The NCP recommends that undeveloped areas within or near the noise exposure areas be zoned or rezoned to prevent development of future incompatible uses in areas where mitigation programs are to be implemented.
  - The NCP recommends implementation of other controls (subdivision controls, redevelopment controls, etc.) necessary to prevent future incompatible development where mitigation programs are to be implemented.
  - The NCP recommends disclosures with noise exposure maps or overlay zones attached be provided, on a mandatory basis, to potential developers, real estate agents and home purchasers within impact zones and contiguous areas identified in the Part 150 Study, particularly where mitigation programs are proposed for implementation.

- Development Controls – Local municipalities amend building codes to require noise reduction techniques in construction of new buildings or renovations of existing ones within noise impact or overlay zones.

  - The NCP will recommend controls on construction sound insulation standards in new or redeveloped areas within or contiguous to the impact zones or and/or contiguous areas identified in the Part 150 Study. These are typically the same as the mitigation program areas.

IV. Action Plan Open Discussion

- Develop Land Use/Development Controls Action Plan

  - Are Local Land Use/Development Controls feasible?
  - Should they be included in the final Noise Compatibility Program?
  - Are the local communities and planning agencies willing to commit to the implementation of Land Use/Development Controls?
  - What is the process to follow in developing and implementing these controls?
  - What is a reasonable time required to develop and implement these controls?
  - Coordinate a draft action plan with the communities and agencies concerned.
  - Plan a follow-up meeting to finalize the action plan.
  - Fully describe the action plan and include it in the final NCP.

V. Closure

- Consensus on action item responsibilities.
- Set tentative date for follow-on meeting.
- Prepare and distribute meeting minutes.

Federal Policy for Airport Noise Compatibility Planning around Airports

Aviation Noise Abatement Policy

Land Use around Airports - Local Responsibility

The primary obligation to address the land use compatibility problem always has been and remains a local responsibility.

Airport Noise Compatibility Planning Involves a Partnership

"Each of the participants in the noise abatement effort - the airport users, aircraft manufacturers, the airport proprietors, federal, state and local governments, and residents in communities surrounding airports - must take specific steps that are essential in reducing the number of people adversely affected by noise..."

Federal Government's Responsibilities

"The Federal Government provides financial and technical assistance to airport proprietors for noise reduction planning and abatement activities and, working with the private sector, conducts continuing research into noise abatement technology."

State/Local Governments & Planning Agencies Responsibilities

"State and local governments and planning agencies must provide for land use planning and development, zoning, and housing regulations that will limit the use of land near airports to purposes compatible with airport operations."

Airport Proprietors' Responsibilities

"Airport proprietors are primarily responsible for planning and implementing action designed to reduce the effect of noise on residents of the surrounding area."

FAA LAND USE COMPATIBILITY GUIDELINES

YEARLY DAY-NIGHT AVERAGE SOUND LEVEL (DNL) IN DECIBELS

LAND USE	Below 65	Over 65-70	70-75	75-80	80-85	85
RESIDENTIAL						
Residential, other than mobile homes and transient lodgings	Y	N[1]	N[1]	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N[1]	N[1]	N[1]	N	N
PUBLIC USE						
Schools, hospitals, nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y[2]	Y[3]	Y[4]	N[4]
Parking	Y	Y	Y[2]	Y[3]	Y[4]	N
COMMERCIAL USE						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail -- building materials, hardware, and farm equipment	Y	Y	Y[2]	Y[3]	Y[4]	N
Retail trade, general	Y	Y	25	30	N	N
Utilities	Y	Y	Y[2]	Y[3]	Y[4]	N
Communication	Y	Y	25	30	N	N
MANUFACTURING AND PRODUCTION						
Manufacturing, general	Y	Y	Y[2]	Y[3]	Y[4]	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y[6]	Y[7]	Y[8]	Y[8]	Y[8]
Livestock farming and breeding	Y	Y[6]	Y[7]	N	N	N
Production, and extraction	Y	Y	Y	Y	Y	Y
RECREATIONAL						
Outdoor sports arenas and spectator sports	Y	Y	Y[5]	N[5]	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusement, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables, and water recreation	Y	Y	25	30	N	N

SEE NOTES ON FOLLOWING PAGE

LAND USE COMPATIBILITY GUIDELINES - FAR PART 150
(PAGE 2 OF 2)

The designations contained in the above table do not constitute a Federal determination that any use of land covered by the program is acceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

Key To Table 4

Y (Yes) Land Use and related structures compatible without restrictions.

N (No) Land Use and related structures are not compatible and should be prohibited.

NLR Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure

25, 30, 35 Land Use and related structures generally compatible; measures to achieve or NLR of 25, 30, or 35dB must be incorporated into design and construction of structure.

Notes for Table 4

1. Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25dB and 30dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR or 20dB, thus, the reduction requirements are often stated as 5, 10, or 15dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.
2. Measures to achieve NLR of 25dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
3. Measures to achieve NLR of 30dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
4. Measures to achieve NLR of 35dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
5. Land use compatible provided special sound reinforcement systems are installed.
6. Residential buildings require a NLR of 25.
7. Residential buildings require a NLR of 30.
8. Residential buildings not permitted.

Source: *FAR Part 150 Airport Noise Compatibility Planning*, Appendix A, Table 1.

ALTERNATIVE:	LU-A Residential Sound Insulation Program

DESCRIPTION:	– Offer sound insulation to all single-family owner occupied residential homes located within or adjacent to the 65 DNL and higher levels of the 2006 Noise Compatibility Plan (NCP) noise contour. Sound insulation should be accomplished on a most impacted basis, where the homes in the highest noise levels are insulated first. – Determine sound insulation boundaries through comparative analysis of cumulative (65 DNL) and single event (85 decibels). Determine where single event levels exceed cumulative levels and include those areas within the sound insulation boundaries. In order to not unfairly separate the community by sound insulating only in selected areas, all residential properties falling within other definable boundaries would be eligible for sound insulations. For example, in Tinicum Township, properties south of the railroad tracks adjacent to State Highway 291 should be eligible for this program. The railroad tracks are a recognizable man made boundary outside the noise contour area that would be a logical stopping point for the sound insulation area. – Avigation easements would be required to be attached to the property deed for all properties participating in this program.

BENEFITS:	– Reduces the interior noise levels of participating homes. – Properties would have an avigation easement attached, which would guarantee the right of flight over them. – Typically increases the value of the homes receiving sound insulation treatment and makes them more energy efficient.

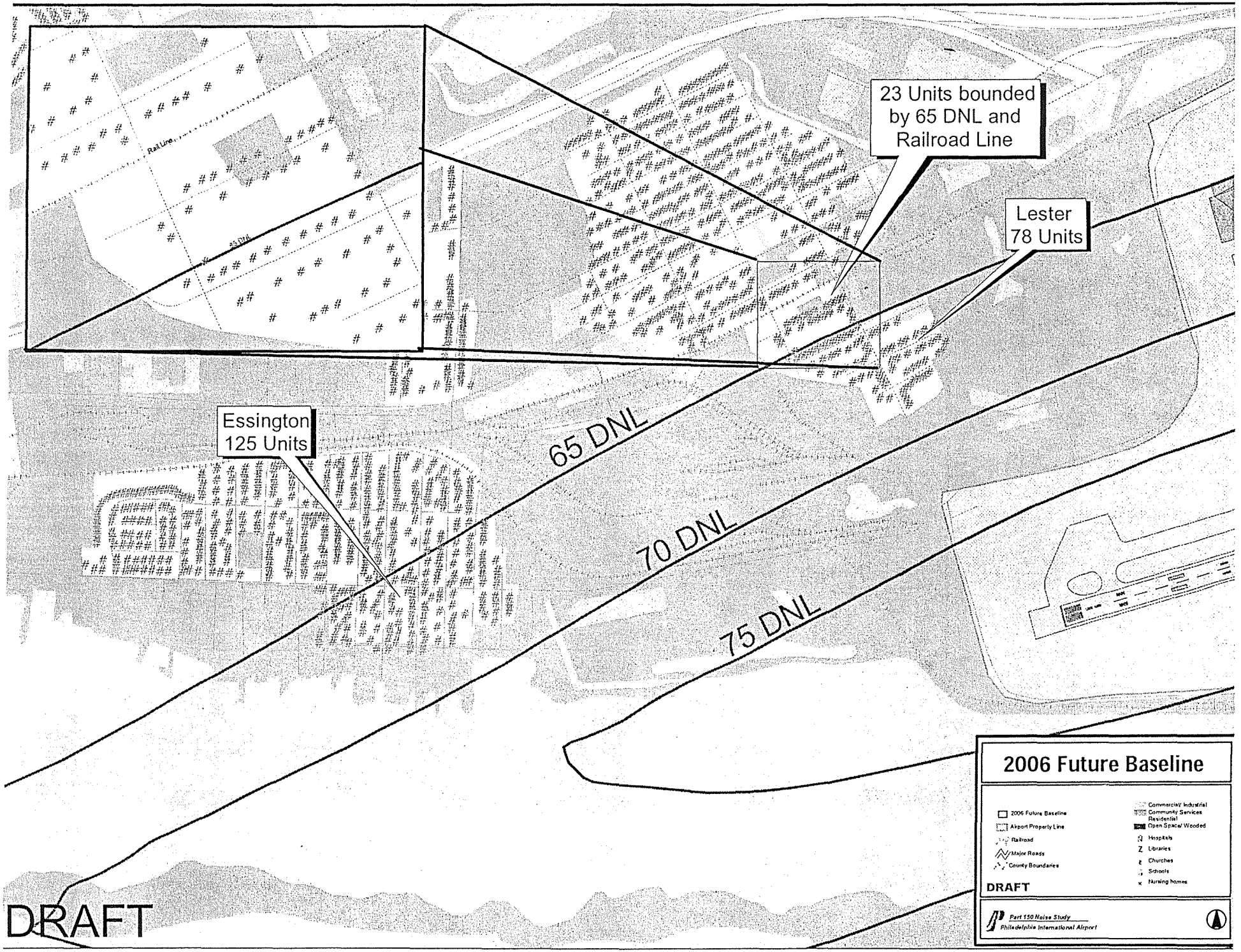
DRAWBACKS:	– Requires a manager or consultant to implement and run the program. – Does not mitigate outdoor noise levels.

EXPECTED COST:	– Costs are expected to range between $25,000 and $35,000 per residence. Assuming 100 percent participation by all 203 residences within the 65 DNL noise contours, the cost of this project could range

	between $5,000,000 and $7,000,000. – If the FAA accepts a program to include all residences south of the railroad tracks (approximately 589), costs could increase to $20,615,000 or more.

EVALUATION METHOD:	– Qualitative Assessment

RECOMMENDATION:	– **Recommended for implementation as part of the final Noise Compatibility Program.**


23 Units bounded by 65 DNL and Railroad Line
Lester 78 Units
Essington 125 Units
65 DNL
70 DNL
75 DNL
Rail Line
65 DNL
2006 Future Baseline
2006 Future Baseline
Airport Property Line
Railroad
Major Roads
County Boundaries
Commercial/ Industrial
Community Services
Residential
Open Space/ Wooded
Hospitals
Libraries
Churches
Schools
Nursing homes
DRAFT
Part 150 Noise Study
Philadelphia International Airport
DRAFT

ALTERNATIVE:	**LU-B Purchase and Resell Program**

DESCRIPTION:	– A purchase and resell program would be offered as a substitution to Alternative LU-A, Residential Sound Insulation Program, for eligible homes that do not qualify for the insulation program. For example, if a home did not meet local building codes it would not qualify for sound insulation, therefore the homeowner would have a second option available. – Under this program the Airport would purchase an eligible home at fair market value and attempt to resell the home to a new owner. The home may be sound insulated prior to resale and would have an avigation easement attached to the property deed.

BENEFITS:	– Provides an option for eligible residents who may not qualify for the sound insulation program. – Properties would have an avigation easement attached, which would guarantee the right of flight over them.

DRAWBACKS:	– Requires a program manager or consultant to implement and run. – May be difficult to sell properties that are disclosed as being within an airport noise zone.

EXPECTED COST:	– Costs are expected to be minimal to run the program, however the cost to provide an internal manager or consultant would be required at the start. – Costs for acquiring homes would be determined by the number of homes participating in the program

EVALUATION METHOD:	– Qualitative Assessment

RECOMMENDATION:	– **Recommended for implementation as part of the final Noise Compatibility Program.**

ALTERNATIVE:	**LU-C Land Use Controls**

DESCRIPTION:	Encourage local municipalities to implement various Land Use Controls, such as re-zoning and disclosure, for areas within the 2006 NCP DNL 65 dB noise contour.

BENEFITS:	– Prevents future development of incompatible land use within the DNL 65 dB noise contour. – Disclosure will advise potential developers, real estate agents and homebuyers that the property is impacted by aircraft noise. – Inexpensive measure to implement. – Protects land uses that are already compatible with the Airport.

DRAWBACKS:	– Requires the cooperation of the local government and businesses to implement. – Controls can be very restrictive.

EXPECTED COST:	– Costs are expected to be minimal to implement the program. Some costs to the local communities involved are to be expected.

EVALUATION METHOD:	Qualitative Assessment

RECOMMENDATION:	**Recommend land use controls be further analyzed and considered for implementation as part of the final Noise Compatibility Program.**

ALTERNATIVE:	**LU-D Development Controls**

DESCRIPTION:	– Encourage local municipalities to amend their building codes to require any new construction and major alteration/addition within or adjacent to the DNL 65 dB NCP noise contour to meet an interior Noise Reduction Level (NRL) standard of 45 dB.

BENEFITS:	– Prevents new incompatible development. – Ensures that any new construction or alteration will utilize materials that will minimize the amount of noise exposure on the interior of a structure. – Inexpensive measure to implement.

DRAWBACKS:	– Requires community and developer cooperation to implement. – May meet resistance from local development companies. – Adds costs to construction.

EXPECTED COST:	Costs are expected to be minimal to implement the program. Some costs to the local communities and developers are expected.

EVALUATION METHOD:	Qualitative Assessment

RECOMMENDATION:	**Recommend for implementation as part of the final Noise Compatibility Program.**

ALTERNATIVE:	**LU-E Avigation Easements**

DESCRIPTION:	– Purcahse the right to operate aircraft over homes within and adjacent to the 2006 NCP DNL 65 dB noise contour.

BENEFITS:	– Less costly to implement than other land use programs. – Fairly easy to implement.

DRAWBACKS:	– Does not mitigate noise impacts. – Difficult to place a value on the easements.

EXPECTED COST:	– Costs are expected to be minimal to run the program, however the cost to provide an internal manager or consultant manager would be required at the start. – At an estimated cost of $2,500 per dwelling, the program could be in the $500,000 dollar range.

EVALUATION METHOD:	Qualitative Assessment

RECOMMENDATION:	An avigation easement program **is not recommended for further analysis or implementation as part of the final Noise Compatibility Program.** However, Avigation Easements should be placed on all properties who participate in either the sound insulation program or purchase and resell program.

ALTERNATIVE:	**LU-F Acquisition Program**

DESCRIPTION:	– Purchase and remove residential dwellings within and adjacent to the 2006 NCP DNL 65 dB noise contour.

BENEFITS:	– Removes single family residential homes and its residents from impacted areas. – Converts purchased properties to uses compatible with airport operations.

DRAWBACKS:	– Resistance from local communities. – Can breakup a local community. – Funding may not be available from federal sources.

EXPECTED COST:	– Expensive. In this case, the average cost to acquire a home, provide relocation expenses, and raze the property would range from an estimated $135,000 to $150,000 per home. There are 203 homes within the 65DNL contour equating to a total cost of $27.4 to $30.45 million.

EVALUATION METHOD:	– Qualitative Assessment

RECOMMENDATION:	– **Not recommended for implementation as a part of the final NCP.**

ALTERNATIVE:	LU-G Guaranteed Purchase Assurance Program

DESCRIPTION:	– The Airport would guarantee the purchase of impacted properties if their current owners were unable to sell them for their appraised value. The Airport could then resell them with an easement or convert them to an airport compatible land use.

BENEFITS:	– Provides an option to sound insulation for those who would not consider or whose homes were not eligible for insulating their dwellings or structures. – Properties would have an avigation easement attached, which would guarantee the right of flight over them. – Reselling properties funds the purchase of more impacted properties for mitigation purposes.

DRAWBACKS:	– Requires a program manager or consultant to implement and run. – Somewhat costly.

EXPECTED COST:	– Costs would be variable based on purchase prices, relocation costs and demolition costs.

EVALUATION METHOD:	– Qualitative Assessment

RECOMMENDATION:	– **Not recommended for implementation as part of the final Noise Compatibility Program.**

APPENDIX

SAMPLE LAND USE CONTROL DOCUMENTS

Hawaii Statute - Chapter 508D, Mandatory Seller Disclosures In Real Estate Transactions.

§508D-15 Notification required; ambiguity.

(a) When residential real property lies:

(1) Within the boundaries of a special flood hazard area as officially designated on Flood Insurance Administration maps promulgated by the United States Department of Housing and Urban Development for the purposes of determining eligibility for emergency flood insurance programs;
(2) Within the boundaries of the noise exposure area shown on maps prepared by the department of transportation in accordance with Federal Aviation Regulation Part 150-Airport Noise Compatibility Planning (14 Code of Federal Regulations Part 150) for any public airport;
(3) Within the boundaries of the Air Installation Compatibility Use Zone of any Air Force, Army, Navy, or Marine Corps airport as officially designated by military authorities; or
(4) Within the anticipated inundation areas designated on the department of defense's civil defense tsunami inundation maps;

Subject to the availability of maps that designate the four areas by tax map key (zone, section, parcel), the seller shall include such material fact information in the disclosure statement provided to the buyer subject to this chapter. Each county shall provide, where available, maps of its jurisdiction detailing the four designated areas specified in this subsection. The maps shall identify the properties situated within the four designated areas by tax map key number (zone, section, parcel) and shall be of a size sufficient to provide information necessary to serve the purposes of this section. Each county shall provide legible copies of the maps and may charge a reasonable copying fee.

(b) When it is questionable whether residential real property lies within any of the designated areas referred to in subsection (a) due to the inherent ambiguity of boundary lines drawn on maps of large scale, the ambiguity shall be construed in favor of the seller; provided that a good faith effort has been made to determine the applicability of subsection (a) to the subject real property. [L 1994, c 214, pt of §2; am L 1996, c 161, §15]

SAMPLE AVIGATION EASEMENT
(Extracted from RDU's Ordnance)

STATE OF:

COUNTY OF:

THIS DEED OF EASEMENT, made and entered into as of this day of_____199_, by and between _____ and _____, Grantors, and _____ **AIRPORT AUTHORITY**, Grantee;

WITNESSETH;

THAT WHEREAS, Grantors own that certain lot or parcel of real property located and situate in _____(county)_____, _____(state)_____, which said property is more particularly described in Exhibit A attached hereto and incorporated herein by reference and which property is located within the area of the Airport Overlay District and is exposed to noise associated with aircraft overflight; and

WHEREAS, Grantee is a municipal corporation organized and existing under the laws of the State of _____ for the purpose of operating _____ Airport, located in _____(city/county)_____, _____(state)_____; and

WHEREAS, Grantee is a public body having the power of eminent domain under the laws of the State of _____; and

WHEREAS, Grantors have applied to subdivide or develop the property for residential purposes and an required by the Airport Overlay District Ordinance have agreed to grant to Grantee this avigation easement as a condition for approval to subdivide or develop the property described in Exhibit A. Grantors have agree to convey this Avigation Easement to Grantee upon the terms and conditions herein expressed;

NOW, THEREFORE, Grantors have and by these presents do hereby transfer, assign, bargain, sell, grant and convey to grantee a perpetual right and easement for the free and

unobstructed flight of aircraft (being defined as any contrivance now or hereafter used for flight in the air) over and in the vicinity of the property described in Exhibit A attached hereto, including jet-powered air carrier aircraft in landing and take-off operations and other flight activities associated therewith, together with the right to cause such noise, vibrations, odors, vapors, particulates, smoke, dust or other effects as may be inherent in the operation of aircraft of all types.

This Easement shall be appurtenant to and shall run with the real property now owned and hereafter acquired and used for airport purposes by Grantee or its successors in interest. This Easement and the burden thereof, together with all incidents and effects of or resulting from use and enjoyment thereof shall constitute a permanent burden and tenement upon the subject property which shall be binding upon and enforceable against the Grantors, their heirs, assigns and/or successors in interest.

TO HAVE AND TO HOLD said rights and easement unto the said Grantee and its successors forever, it being agreed that the right and easement herein granted are appurtenant to and run with all property now or hereafter acquired and used as part of _____ Airport.

And the said Grantors covenant that they are seized and possessed of all right, title and interest in and to the subject real property in fee simple and have the right to convey same free and clear of all encumbrances, and will warrant and defend the right and easement herein granted against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, the said Grantors have hereunto set their hands and seals as of the date and year first above written.

_____(SEAL)

_____(SEAL)

Loudoun County, Virginia

Department of Building and Development
1 Harrison Street, S.E., P.O. Box 7000, Leesburg, VA 20177-7000
Administration: 703/777-0397 Fax: 703/771-5215
Inspections Information Only: 703/777-0220 Fax: 703/771-5522

ARTICLE IV
DIVISION C: ENVIRONMENTAL IMPACT DISTRICTS

Section 4-1400 AI-Airport Impact Overlay District

4-1401 **Purpose.** This district is established to acknowledge the unique land use impacts of airports, regulate the siting of noise sensitive uses, ensure that the heights of structures are compatible with airport operations, and complement Federal Aviation Administration regulations regarding noise and height.

4-1402 **District Boundaries.**

(A) The Airport Impact (AI) Overlay District boundaries shall be based on the 60 and 65 Ldn noise contours and an area that extends one (1) mile beyond the 60 Ldn contours. The Board shall use as a basis for delineating the Ldn noise contour the following sources:

(1) Washington Dulles International Airport: The FAA Part 150 Noise Compatibility Programs, Washington Dulles International Airport, August, 1992, and

(2) Leesburg Municipal Airport: Environmental Assessment Report. October, 1985.

(B) For the purpose of administering these regulations the Airport Impact Overlay District shall have three (3) components:

(1) Ldn - 65 or higher.

(2) Ldn 60 - Ldn 65.

(3) Within the A-I overlay district, but outside the Ldn 60 contour.

4-1403 **Overlay District Established.** The Airport Impact (AI) Overlay District is hereby established as an overlay district, meaning that it is a district overlaid upon other districts. Land within the Airport Impact (AI) Overlay District may be used as permitted in the underlying district, subject to the additional regulations of this district.

4-1404 **Use Limitations.** In addition to the use limitations and regulations for the zoning district over which an Airport Impact (AI) Overlay District is located, the following use limitations shall apply:

(3) **Avigation Easements.** For all residential dwelling units to be constructed between the Ldn 60-65 aircraft noise contours. Prior to the approval of a Record Plat creating residential lots or for existing lots of record, prior to the issuance of a zoning permit, the owner(s) of such parcel or parcels shall dedicate an *avigation easement* to the Metropolitan Washington Airports Authority, indicating the right of flight to pass over the property, as a means to securing the long-term economic viability of Washington Dulles International Airport.

(C) In Airport Noise Impact areas of Ldn 65 or higher, residential dwellings shall not be permitted. However, new dwelling units and additions to existing dwellings may be permitted, provided that:

(1) The lot was recorded or had record plat approval prior to the effective date of adoption of this Ordinance.

(2) The new dwelling unit or addition complies with the acoustical treatment requirements for residential districts set forth in the [Virginia Uniform Statewide Building Code].

(D) No building or other structure shall be located in a manner or built to a height which constitutes a hazard to aerial navigation. Where a structure is proposed in a location or to be built to a height which may be hazardous to air traffic such structure shall not be erected without certification from the Federal Aviation Administration that it will not constitute a hazard to air traffic.

4-1405 **Disclosure.** A disclosure statement shall be placed on all subdivision plats, site plans, and deeds to any parcel or development within the AI District, clearly identifying any lot which is located within the AI District and identifying the component of the AI District (i.e., Section 4-1402(B)(1), 4-1402(B)(2), or 4-1402(B)(3)) in which the lot is located.

[4-1406 **Definitions.** Unless otherwise specially provided, or unless clearly required by the context, the words and phrases defined in this subsection shall have the following meanings when used in Section 4-1400.

(A) Ldn: The symbol for "yearly day-night average sound level", which means the 365-day average, in decibels, for the period from midnight to midnight, obtained after the addition of ten decibels to sound levels for the periods between 10 p.m. and 7 a.m., local time.

(A) For areas outside of, but within one (1) mile of the Ldn 60.

(1) **Full Disclosure Statement.** For all residential dwelling units to be constructed outside of, but within one (1) mile of the Ldn 60. The applicant shall disclose in writing to all prospective purchasers that they are located within an area that will be impacted by aircraft overflights and aircraft noise. Such notification will be accomplished by inclusion of this information in all sales contracts, brochures and promotional documents, including the *Illustrative Site Plan(s)* on display within any sales related office(s), as well as in Homeowner Association Documents, and by inclusion on all subdivision and site plans, and within all *Deeds of Conveyance*.

(B) For areas between the Ldn 60-65 aircraft noise contours:

(1) **Full Disclosure Statement.** For all residential dwelling units to be constructed between the Ldn 60-65 aircraft noise contours, the applicant shall disclose in writing to all prospective purchasers that they are located within an area that will be impacted by aircraft overflights and aircraft noise. Such notification will be accomplished by inclusion of this information in all sales contracts, brochures and promotional documents, including the *Illustrative Site Plan(s)* on display within any sales related office(s), as well as in Homeowner Association Documents, and by inclusion on all subdivision and site plans, and within all *Deeds of Conveyance*.

(2) **Acoustical Treatment.** For all residential units located between the Ldn 60-65 aircraft noise contours, the applicant shall incorporate acoustical treatment into all dwelling units to insure that interior noise levels within living spaces (not including garages, sunrooms, or porches) do not exceed [an average sound level of 45 db(A) Ldn. Compliance with this standard shall be based upon a certification from an acoustical engineer licensed in the Commonwealth of Virginia, submitted at the time of zoning permit issuance, that the design and construction methods and materials to be used in the construction of the dwelling are such that the foregoing standard will be met, assuming exterior noise levels between 60-65 Ldn].

REAL ESTATE TRANSFER DISCLOSURE STATEMENT

(CALIFORNIA CIVIL CODE 1102, ET SEQ.)

CALIFORNIA ASSOCIATION OF REALTORS® (CAR) STANDARD FORM

THIS DISCLOSURE STATEMENT CONCERNS THE REAL PROPERTY SITUATED IN THE CITY OF _____, COUNTY OF _____, STATE OF CALIFORNIA, DESCRIBED AS _____.
THIS STATEMENT IS A DISCLOSURE OF THE CONDITION OF THE ABOVE DESCRIBED PROPERTY IN COMPLIANCE WITH SECTION 1102 OF THE CIVIL CODE AS OF _____, 19____. IT IS NOT A WARRANTY OF ANY KIND BY THE SELLER(S) OR ANY AGENT(S) REPRESENTING ANY PRINCIPAL(S) IN THIS TRANSACTION, AND IS NOT A SUBSTITUTE FOR ANY INSPECTIONS OR WARRANTIES THE PRINCIPAL(S) MAY WISH TO OBTAIN.

I
COORDINATION WITH OTHER DISCLOSURE FORMS

This Real Estate Transfer Disclosure Statement is made pursuant to Section 1102 of the Civil Code. Other statutes require disclosures, depending upon the details of the particular real estate transaction (for example: special study zone and purchase-money liens on residential property).

Substituted Disclosures: The following disclosures have or will be in connection with this real estate transfer, and are intended to satisfy the disclosure obligations on this form, where the subject matter is the same: _____

(LIST ALL SUBSTITUTED DISCLOSURE FORMS TO BE USED IN CONNECTION WITH THIS TRANSACTION)

II
SELLER'S INFORMATION

The Seller discloses the following information with the knowledge that even though this is not a warranty, prospective Buyers may rely on this information in deciding whether and on what terms to purchase the subject property. Seller hereby authorizes any agent(s) representing any principal(s) in this transaction to provide a copy of this statement to any person or entity in connection with any actual or anticipated sale of the property.

THE FOLLOWING ARE REPRESENTATIONS MADE BY THE SELLER(S) AND ARE NOT THE REPRESENTATIONS OF THE AGENT(S), IF ANY. THIS INFORMATION IS A DISCLOSURE AND IS NOT INTENDED TO BE PART OF ANY CONTRACT BETWEEN THE BUYER AND SELLER.

Seller ☐ is ☐ is not occupying the property.

A. The subject property has the items checked below (read across):

☐ Range	☐ Oven	☐ Microwave
☐ Dishwasher	☐ Trash Compactor	☑ Garbage Disposal
☐ Washer/Dryer Hookups	☐ Window Screens	☐ Rain Gutters
☐ Burglar Alarms	☐ Smoke Detector(s)	☐ Fire Alarm
☐ T.V. Antenna	☐ Satellite Dish	☐ Intercom
☐ Central Heating	☐ Central Air Conditioning	☐ Evaporator Cooler(s)
☐ Wall/Window Air Conditioning	☐ Sprinklers	☐ Public Sewer System
☐ Septic Tank	☐ Sump Pump	☐ Water Softener
☐ Patio/Decking	☐ Built-in Barbecue	☐ Gazebo
☐ Sauna	☐ Pool	☐ Spa ☐ Hot Tub
☐ Security Gate(s)	☐ Automatic Garage Door Opener(s)*	☐ Number of Remote Controls _____
Garage: ☐ Attached	☐ Not Attached	☐ Carport
Pool/Spa Heater: ☐ Gas	☐ Solar	☐ Electric
Water Heater: ☐ Gas	☐ Solar	☐ Electric
Water Supply: ☐ City	☐ Well	☐ Private Utility ☐ Other _____
Gas Supply: ☐ Utility	☐ Bottled	

Exhaust Fan(s) in _____ 220 Volt Wiring in _____
Fireplace(s) in _____ ☐ Gas Starter
☐ Roof(s): Type: _____ Age: _____ (approx.)
☐ Other: _____
Are there, to the best of your (Seller's) knowledge, any of the above that are not in operating condition? ☐ Yes ☐ No If yes, then describe. (Attach additional sheets if necessary.): _____

B. Are you (Seller) aware of any significant defects/malfunctions in any of the following? ☐ Yes ☐ No **If yes, check appropriate space(s) below.**

☐ Interior Walls ☐ Ceilings ☐ Floors ☐ Exterior Walls ☐ Insulation ☐ Roof(s) ☐ Windows ☐ Doors ☐ Foundation ☐ Slab(s)
☐ Driveways ☐ Sidewalks ☐ Walls/Fences ☐ Electrical Systems ☐ Plumbing/Sewers/Septics ☐ Other Structural Components
(Describe: _____)

If any of the above is checked, explain. (Attach additional sheets if necessary): _____

*This garage door opener may not be in compliance with the safety standards relating to automatic reversing devices as set forth in Chapter 12.5 (commencing with Section 19890) of Part 3 of Division 13 of the Health and Safety Code.

Buyer and Seller acknowledge receipt of copy of this page, which constitutes Page 1 of 2 Pages.
Buyer's Initials (_____) (_____) Seller's Initials (_____) (_____)

OFFICE USE ONLY
Reviewed by Broker or Designee _____
Date _____

BUYER'S COPY

Subject Property Address: _____ _____, 19 ____

C. Are you (Seller) aware of any of the following:

1. Substances, materials, or products which may be an environmental hazard such as, but not limited to, asbestos, formaldehyde, radon gas, lead-based paint, fuel or chemical storage tanks, and contaminated soil or water on the subject property. ☐ Yes ☐ No
2. Features of the property shared in common with adjoining landowners, such as walls, fences, and driveways, whose use or responsibility for maintenance may have an effect on the subject property. ☐ Yes ☐ No
3. Any encroachments, easements or similar matters that may affect your interest in the subject property. ☐ Yes ☐ No
4. Room additions, structural modifications, or other alterations or repairs made without necessary permits. ☐ Yes ☐ No
5. Room additions, structural modifications, or other alterations or repairs not in compliance with building codes. ☐ Yes ☐ No
6. Landfill (compacted or otherwise) on the property or any portion thereof. ☐ Yes ☐ No
7. Any settling from any cause, or slippage, sliding, or other soil problems. ☐ Yes ☐ No
8. Flooding, drainage or grading problems. ☐ Yes ☐ No
9. Major damage to the property or any of the structures from fire, earthquake, floods, or landslides. ☐ Yes ☐ No
10. Any zoning violations, nonconforming uses, violations of "setback" requirements. ☐ Yes ☐ No
11. Neighborhood noise problems or other nuisances. ☐ Yes ☐ No
12. CC&R's or other deed restrictions or obligations. ☐ Yes ☐ No
13. Homeowners' Association which has any authority over the subject property. ☐ Yes ☐ No
14. Any "common area" (facilities such as pools, tennis courts, walkways, or other areas co-owned in undivided interest with others). ☐ Yes ☐ No
15. Any notices of abatement or citations against the property. ☐ Yes ☐ No
16. Any lawsuits against the seller threatening to or affecting this real property. ☐ Yes ☐ No

If the answer to any of these is yes, explain. (Attach additional sheets if necessary.): _____

Seller certifies that the information herein is true and correct to the best of the Seller's knowledge as of the date signed by the Seller.

Seller _____ Date _____

Seller _____ Date _____

III

AGENT'S INSPECTION DISCLOSURE

(To be completed only if the seller is represented by an agent in this transaction.)

THE UNDERSIGNED, BASED ON THE ABOVE INQUIRY OF THE SELLER(S) AS TO THE CONDITION OF THE PROPERTY AND BASED ON A REASONABLY COMPETENT AND DILIGENT VISUAL INSPECTION OF THE ACCESSIBLE AREAS OF THE PROPERTY IN CONJUNCTION WITH THAT INQUIRY, STATES THE FOLLOWING:

_____

_____

_____

Agent (Broker Representing Seller) _____ By _____ Date _____
(PLEASE PRINT) (ASSOCIATE LICENSEE OR BROKER-SIGNATURE)

IV

AGENT'S INSPECTION DISCLOSURE

(To be completed only if the agent who has obtained the offer is other than the agent above.)

THE UNDERSIGNED, BASED ON A REASONABLY COMPETENT AND DILIGENT VISUAL INSPECTION OF THE ACCESSIBLE AREAS OF THE PROPERTY, STATES THE FOLLOWING:

_____

_____

_____

Agent (Broker obtaining the Offer) _____ By _____ Date _____
(PLEASE PRINT) (ASSOCIATE LICENSEE OR BROKER-SIGNATURE)

V

BUYER(S) AND SELLER(S) MAY WISH TO OBTAIN PROFESSIONAL ADVICE AND/OR INSPECTIONS OF THE PROPERTY AND TO PROVIDE FOR APPROPRIATE PROVISIONS IN A CONTRACT BETWEEN BUYER AND SELLER(S) WITH RESPECT TO ANY ADVICE/INSPECTIONS/DEFECTS.

I/WE ACKNOWLEDGE RECEIPT OF A COPY OF THIS STATEMENT.

Seller _____ Date _____ Buyer _____ Date _____

Seller _____ Date _____ Buyer _____ Date _____

Agent (Broker Representing Seller) _____ By _____ Date _____
(PLEASE PRINT) (ASSOCIATE LICENSEE OR BROKER-SIGNATURE)

Agent (Broker obtaining the Offer) _____ By _____ Date _____
(PLEASE PRINT) (ASSOCIATE LICENSEE OR BROKER-SIGNATURE)

A REAL ESTATE BROKER IS QUALIFIED TO ADVISE ON REAL ESTATE. IF YOU DESIRE LEGAL ADVICE, CONSULT YOUR ATTORNEY.

BUYER'S COPY

OFFICE USE ONLY
Reviewed by Broker or Designee _____
Date _____

Air Transportation Planning Program

Bibliography of Air Transportation Compatible Land Use Plans / Model Zoning Ordinances

The following bibliography includes airport zoning ordinances, compatible land use planning handbooks and guidelines, and other planning resources, and is designed to assist local communities in their planning for compatible land uses around Sea-Tac Airport. The bibliography will be updated as new materials become available. Materials listed in this bibliography are available for review in the Regional Council Information Center.

For the latest information, see Air Transportation Planning Program Overview.

Airport Compatible Land Use Design Handbook, prepared by Denver Regional Council of Governments (DRCOG), 1998.

Airport Compatible Land Use Guidance for Florida Communities, prepared by Florida Department of Transportation, 1994.

Airport Compatibility Guidelines (Volume VI of the *Oregon Aviation System Plan*), prepared by Oregon Department of Transportation Aeronautics Division, 1981.

Airport Compatibility Guidelines: Compatibility Planning, Height Hazard Zoning, and Compatible Land Use Zones for Texas Airports, prepared by Texas Department of Transportation, Division of Aviation, January 1992.

Airport Land Use Planning Handbook, prepared for California Department of Transportation (CalTrans) Division of Aeronautics by Hodges & Shutt, December 1993.

Airport Land Use Planning Handbook, prepared for California Department of Transportation (CalTrans) Division of Aeronautics by MTC and ABAG, July 1983.

Airport Noise Overlay Zoning District (Section 14-03-01 of the *Bismarck Code of Ordinances*), prepared by the City of Bismarck, North Dakota, 1991.

Airport Noise Regulations -- Planning Advisory Service Report Number 437, prepared by the American Planning Association, May 1992.

Airport Zoning (*State of Florida Statutes and Rules*, Chapter 333), prepared by State of Florida, 1994.

Airport Zoning Ordinance (*Indian River County Land Development Regulations*, Chapter 911.17), prepared by Indian River County, Florida, 1993.

Airport Zoning Ordinance, prepared by Michigan Department of Transportation Aeronautics Commission.

Airports and Compatible Land Use, Volume 1: An Introduction and Overview for Decision-Makers, prepared by Washington State Dept of Transportation, Aviation Division, 1999.

Arizona State Aviation System Plan Update, Volume V: Land Use Compatibility Guide, prepared by TRA Airport Consulting for the Arizona Department of Transportation, 1988.

Dealing with Airport Growth -- Lessons for the Hudson Valley, prepared by Scenic Hudson, Inc., 1992.

Effectiveness Evaluation of the 1991 Airport Safety and Land Use Compatibility Study Commission Recommendations, prepared by Airport Safety and Land Use Compatibility Study Commission, Florida, 1993.

Final Policy on Part 150 Approval of Noise Mitigation Measures: Effect on the Use of Federal Grants for Noise Mitigation Projects (14 CFR Part 150), Federal Aviation Administration. *Federal Register* (vol.63, no.64), April 3, 1998

Guide for Land Use Planning Around Airports in Wisconsin, prepared by Wisconsin Department of Transportation, 1989.

Initial Review of Comprehensive Land Use Plans for Community Areas Within Sea-Tac Airport's Projected Noise Contour, prepared by Puget Sound Regional Council, 1999.

Installation Compatible Use Zone (ICUZ) Study: Fort Lewis Military Reservation, Washington, prepared for Fort Lewis Environmental and Natural Resources Division by Shapiro and Associates, August 1996.

Joint Land Use Study: a Study of Land Uses Compatible With or Adjacent to McChord Air Force Base and Fort Lewis, Washington, February 1992.

Land Use Compatibility: a Guide to Local Control of Land Use Around Airports, prepared by Cutler & Stanfield, L.L.P., 1998.

Land Use Encroachment - Technical Assistance, prepared by Washington State Department of Transportation, Aviation Division, 1996.

Land Use Guidelines Study (Volume VIII of the *Washington State Airport System Plan*), prepared by Washington Department of Transportation

Aeronautics Division, March 1991.

Land Use Plan for Areas Surrounding Airports in Santa Clara County, adopted by the Santa Clara County Airport Land Use Commission (ALUC), 1991.

Model Airport Noise Regulations for Port Columbus International Airport, prepared by Mid-Ohio Regional Planning Commission.

Model Airport Overlay Zone Ordinance, Appendix B of the *Regional Airport System Plan*, prepared by Puget Sound Council of Governments, September 1988.

A Model Zoning Ordinance to Limit Height of Objects Around Airports (*FAA Advisory Circular* AC 150/5190-4A), prepared by the Federal Aviation Administration (FAA), December 14, 1987.

Noise Control and Compatibility Planning for Airports (*FAA Advisory Circular* AC 150/5020-1), prepared by the Federal Aviation Administration (FAA), August 5, 1983.

Objects Affecting Navigable Airspace (14 CFR Part 77).

Off-Airport Land Use Development Plan for General Mitchell Field and Environs - 1977, prepared by the Southeast Wisconsin Regional Planning Commission, May 1977.

Portland International Airport Noise Impact Zone (Title 33, Planning and Zoning, *Portland Municipal Code*), prepared by the City of Portland, Oregon, 1990.

Report of Findings and Recommendations, prepared by Airport Safety and Land Use Compatibility Study Commission, Florida, 1991.

Washington State Aeronautics Laws and Regulations: Sections of the Revised Code of Washington (RCW) and the Washington Administrative Code (WAC) Pertaining to Aviation in Washington State, prepared by the Washington State Department of Transportation Aeronautics Division, December 1990 [in particular, see Chapter 14.13 RCW -- *Airport Zoning*; and Chapter 12-24 WAC -- *Obstruction Marking and Lighting*].

Watts-Woodland Airport Comprehensive Land Use Plan, prepared by the Sacramento Area Council of Governments, December 1988.

The materials listed above are available for review in the Puget Sound Regional Council Information Center. The Information Center's public hours are 10am-3pm weekdays, with other hours by appointment. Visitors are welcome. To make an appointment, phone (206) 464-7532 or email infoctr@psrc.org.

CITY OF PHILADELPHIA

JAMES J. CUORATO
City Representative and
Director of Commerce

January 16, 2002

Commissioners of Tinicum Township
C/o Norbert Poloncarz
Memorial Building
629 North Printz Boulevard
Essington, Pennsylvania 191029-1119

Re: Zoning Ordinance No. 2001-747

Dear Mr. Poloncarz:

The City of Philadelphia (the City) values its relationship with Tinicum Township, our neighbor in Delaware County. We consider that relationship to be one of mutual respect and cooperation. In that spirit, we appreciate the opportunity to submit comments on and raise certain objections to proposed Zoning Ordinance No. 2001-747 (the "Ordinance").

1. **Article 1 (Purpose, Districts and Administration).**

The City objects to the fact that the proposed Ordinance does not meet the enumerated purposes set forth in Section 101 (Purposes) to promote, among other things, "the public health, safety, morals, the general welfare , . . . transportation" and to "accommodate reasonable overall community growth, including . . . employment." In reference to Section 102 (Community Objectives) of the proposed Ordinance, the City also believes that the community goals and objectives stated in the Tinicum Township Comprehensive Plan Update of 1981 are outdated and do not form a reasonable basis for the proposed Ordinance.

The City also objects that Section 104.2 (Existing Uses and Structures) is unreasonable in that existing nonconforming buildings, structures and land are made subject to the regulations of the proposed ordinance. This is of particular importance with respect to Philadelphia International Airport ("Airport") property, as to which certain structures and uses are required under federal law and by the needs of the public.

1515 Arch Street - 12th Floor, Philadelphia, PA 19102
james.cuorato@phila.gov
(215) 683-2001

2. Article 2 (Definitions).

The City objects to the definitions of the terms "Airport Dependent Use" and "Airport Related Use" in the proposed Ordinance in that such uses are unreasonably and arbitrarily singled out for different treatment versus other landowners.

The City objects to the definition of the term "Buffer" in that the term as defined is unreasonably restrictive when specifically applicable to presently owned Airport property.

The City objects to the definitions of the terms "Nonconforming Building or Structure," "Nonconforming Lot" and "Nonconforming Use," which unreasonably and arbitrarily make Airport property subject to the proposed Ordinance.

Finally, the City objects to the definition of the term "Sound Barrier" in that "Airport Dependent Uses" are unreasonably and unfairly singled out in the definition of "Sound Barrier."

3. Article 10 (C-3 Planned Commercial Office District) and Article 11 (C-4 Commercial-Industrial District).

The City objects that Sections 1001.5 (Uses Permitted by Right) and 1101.12 (Uses Permitted by Right) of the proposed Ordinance unreasonably and arbitrarily expressly exclude from the category of "Uses Permitted by Right" both aircraft (as defined in the proposed Ordinance) and "Airport Dependent Uses."

Furthermore, the City objects that Section 1102.1 (Uses Permitted by Special Exception) unreasonably requires that an airport parking lot, including multilevel airport parking garages (as defined in the proposed Ordinance), be granted a special exception before it may be a permitted use.

The City also objects that Sections 1004.6 (Area and Bulk Regulations) and 1105.6 (Area and Bulk Regulations) impose an unreasonable and unduly burdensome height restriction of seventy (70) feet and fifty (50) feet, respectively.

4. Article 12 (C-4A Commercial-Industrial District).

The City objects that Section 1202.1 (Uses Permitted by Special Exception) unreasonably and arbitrarily requires that a special exception be obtained for "Airport Dependent Uses." The City also objects that Section 1205.6 (Area and Bulk Regulations) imposes an unreasonably and unduly burdensome height restriction of fifty (50) feet. The City objects that Section 1204.1 (Special Development Regulations) imposes unreasonable and arbitrary requirements and restrictions on Airport property, with respect to screening and sound barriers. Finally, the City objects that Section 1205.6 (Area and Bulk Regulations) imposes an unreasonable and unduly burdensome height restriction of fifty (50) feet.

5. Article 13 (I-B Industrial Business District).

The City objects that Section 1301.4 (Uses Permitted by Right) of the proposed Ordinance unreasonably and arbitrarily expressly excludes from the category of "Uses Permitted by Right" both aircraft (as defined in the proposed Ordinance) and "Airport Dependent Uses."

6. Article 20 (General Regulations).

The City objects that, except for residential districts, Section 2003.3 (Accessory Uses and Structures) of the proposed Ordinance requires unreasonable and arbitrary height restrictions in zoning districts. The City also objects that Section 2008.1 (Screening) imposes unreasonable requirements when applied to "Airport Dependent Uses" and Airport property.

7. Article 21 (Standards for Special Exceptions).

The City objects that, despite the requirement of Sections 1102.1 (Uses Permitted by Special Exception) and 1202.1 (Uses Permitted by Special Exception) that special exceptions be obtained for an airport parking lot (including multilevel airport parking garages) and "Airport Dependent Uses," respectively, nowhere in Article 21 (Standards for Special Exceptions), or elsewhere in the proposed Ordinance, is there set forth the standards governing the granting of special exceptions for those uses described in Sections 1102.1 and 1202.1.

8. Article 24 (Performance Standards).

The City objects to being made subject to the performance standards set forth in Article 24 of the proposed Ordinance. The Airport is subject to a variety of federal laws, including, for example, laws governing Airport operation and the environment, all of which the City believes preempt the performance standards described in Article 24 of the proposed Ordinance.

9. Miscellaneous Objections.

The Airport is a regional asset and serves Citizens throughout the Greater Philadelphia area. Given its value as an economic catalyst for the region and the importance of its continued growth and vitality, we have endeavored to conduct an inclusive Master Planning process to ensure its future success.

The City objects that the adoption of this Ordinance would be premature at a time when the airport, as directed by the federal government, is considering how to revise its Master Plan for the benefit of all area citizens. The Township has been an active participant in this planning process since 1999. The Township Commissioners are aware that, in the interest of harmony, the airport has deferred action on land acquisitions until the Master Plan update is completed this year.

The City objects that the Ordinance appears specifically directed at certain transactions known to be under consideration.

The City objects that the Ordinance appears designed to take property rights without compensation.

The City also objects that the proposed ordinance unreasonably fails to address community concerns relating to alleged Airport-created noise, which should have been addressed by excluding residential development within noise contours.

The City hereby reserves any and all legal and equitable rights that it might have with respect to the proposed Ordinance. Nothing contained in this letter shall be construed as a waiver of any such rights.

The City respectfully requests that this letter be made part of the official record of the public hearing scheduled to be held on Wednesday, January 16, 2002, with respect to the proposed Ordinance.

Very Truly Yours,

JAMES J. CUORATO

cc: John F. Street, Mayor
Nelson A. Diaz, Acting City Solicitor
Charles Isdell, Director of Aviation

Appendix G

APPENDIX G
PROGRAM MANAGEMENT ALTERNATIVES

The subsequent pages provide information on the alternative implementation and program management measures that were suggested for inclusion in the Philadelphia International Airport (PHL) Part 150 Noise Compatibility Program (NCP). Each measure was evaluated for the anticipated benefits and costs associated with its implementation. The alternatives were reviewed with the membership of the Study Advisory Committee, as well as with the members of the Land Use Planning Technical Conference. The Technical Conference included representatives of the Air Traffic Control division of the FAA, the Air Transport Association, and airport users, as well as the FAA ADO, the Airport, and airport neighbors.

Based upon the comments received from the various attendees at the Technical Conference and the consultant's experience with the implementation of like measures around numerous airports throughout the United States, recommendations for the acceptance or discarding of each alternative were presented to the Study Advisory Committee prior to the development of the final recommended NCP. Copies of all the materials used at the Technical Conference, including letters of invitation, sign-in sheets, and meeting workbooks are located in Appendix H, *Public Involvement*.

Noise Compatibility Program Alternative PM-A (Became PM-1) **Exhibit: N/A**

TITLE:	**Establish a Noise Abatement Advisory Committee**

DESCRIPTION:	– Establish a Noise Abatement Advisory Committee (NAAC) at Philadelphia International Airport. – Utilize membership of the Part 150 Study Advisory Committee (SAC) as the base membership for the committee. – Request volunteers from local municipalities to serve on the committee. – Committee meetings would be open to the public, however any comments by the public would be reserved for a comment session towards the end of the meeting. – Meet on a quarterly basis.

BENEFITS:	– Opens and maintains regular communication and the exchange of ideas between the Airport and the surrounding communities. – Would enhance community understanding of constraints on airport users and operators. – Builds a level of trust between the communities and the airport that the communities concerns are being heard. – Enhances dissemination of information to the community. – Can be implemented in the near term.

DRAWBACKS:	Increased workload of the Noise Office staff.

COST TO IMPLEMENT:	– This measure would require someone to administer the committee, produce agendas, meeting minutes, reports, etc. – There may be some cost to produce handouts and literature for the committee members.

FINDINGS and RECOMMENDATION:	**Recommended for implementation as part of the final Noise Compatibility Program.**

Noise Compatibility Program Alternative PM-B (Became PM-2) **Exhibit: N/A**

TITLE:	**Enhance the Airport's Noise Monitoring System**
DESCRIPTION:	– The existing Airport Noise Monitoring System (ANMS) is over five years old and could benefit from updating the computer hardware. – Replace the hardware of the ANMS to increase the reliability of the ANMS and the efficiency of the Noise Office staff.
BENEFITS:	– Increases the speed and reliability of the ANMS. – Will increase the efficiency of the Noise Office staff. – Could be implemented in the near term.
DRAWBACKS:	None
COST TO IMPLEMENT:	$100,000 to $150,000
FINDINGS and RECOMMENDATION:	**Recommended for implementation as a part of the final Noise Compatibility Plan.**

Noise Compatibility Program Alternative PM-C (Became PM-3) **Exhibit: N/A**

TITLE:	**Install additional Noise Monitors in various communities surrounding the airport.**

DESCRIPTION:	– Evaluate the location and number of noise monitors existing at Philadelphia International Airport. – Relocate existing or install additional noise monitors in locations that would be beneficial to the airport and the community. – Specific recommendations could include an additional noise monitor in Tinicum Township and an additional monitor be installed in the Brandywine Hundred section of Northern Wilmington DE. – Other monitor locations could be determined with the assistance of the noise abatement advisory committee (PM-A)

BENEFITS:	– Better utilization of existing noise monitors. – Increase the amount of data that can be used in evaluating future noise contours. – Ability to share actual noise levels in communities who are being impacted by aircraft noise. – Can respond with actual reports to noise complaints placed from communities where monitors are located.

DRAWBACKS:	– May raise expectations that the monitors will reduce the amount of noise in a particular community. – Placement and number of monitors may be controversial. – Noise monitors are expensive.

COST TO IMPLEMENT:	Specialized Consultant may need to be hired for installation. Could range from $40,000 - $50,000 for each additional noise monitor.

FINDINGS and RECOMMENDATION:	**Recommend for implementation as a part of the final Noise Compatibility Plan.**

Noise Compatibility Program Alternative PM-D (Became PM-4) **Exhibit: N/A**

TITLE:	**Establish a Full Time Noise Office with Staff**

DESCRIPTION:	– The role of the noise office will greatly increase with the adoption of this NCP; therefore the staffing levels of the noise office will need to be increased to meet the future work requirements. – The current noise office staff consists of one part time contracted consultant under the Public Affairs Division. – Staffing levels should be determined as the workload increases.

BENEFITS:	– The Airport would have a full time, dedicated noise office staff. – A quarterly aircraft activity and noise monitoring report could be compiled to present updated information, noise complaints, meeting notes from the NAAC and other areas of interest in terms of noise. – Increased staffing levels will aid in the timely implementation of the NCP.

DRAWBACKS:	Increase financial requirements by the Airport to fund this office.

COST TO IMPLEMENT:	Yearly salary requirements and operating budget would depend on the number of staff.

FINDINGS and RECOMMENDATION:	**Recommended for implementation as a part of the final Noise Compatibility Program.**

Noise Compatibility Program Alternative PM-E (Became PM-5) **Exhibit: N/A**

TITLE:	**Establish a Pilot/Community Awareness Program**

DESCRIPTION:	– A Pilot/Community Awareness Program would provide information to air carriers, air traffic control personnel, and local communities on the airport and the noise office. – Information gathered as a part of this program would be shared with a Noise Committee (PM-A). – Noise information would be published for pilots and would be given to the airlines and fixed based operators (FBOs) to place in locations where pilots would pick up the materials. – This program would include the creation of a web page and written reports dedicated to providing information and education to the public.

BENEFITS:	– Shows the airport as being pro-active to the concerns to the local communities. – Provides for the sharing of information and education on the airport's noise program to local citizens and aviation professionals.

DRAWBACKS:	None

COST TO IMPLEMENT:	The expected initial cost for the development of a web page and the costs of printing materials for the program could be approximately $150,000.

FINDINGS and RECOMMENDATION:	**Recommended for implementation as a part of the final Noise Compatibility Program.**

Noise Compatibility Program Alternative PM-F (Became PM-6) **Exhibit: N/A**

TITLE:	Update Noise Compatibility Program

DESCRIPTION:	– Periodic updates, every 2 to 3 years, of the noise exposure maps (NEMs) are required by the Part 150 regulation. – The Noise Compatibility Program should be re-evaluated and updated every 5 years, as required by FAR Part 150. – The Airport is currently in the middle of a Master Plan Study, which could alter the existing layout of the airport or how the airport operates. Should the airport environs change; the NEMs and NCP should be re-evaluated.

BENEFITS:	– Would disclose any future incompatible land uses which may occur from changes in the airport facilities or its operations. – Show local communities that the airport is seriously committed to mitigating noise impacts.

DRAWBACKS:	None foreseeable

COST TO IMPLEMENT:	The cost of updating the NEM's and NCP could range from $500,000 to $1,000,000.

FINDINGS and RECOMMENDATION:	**Recommended for implementation as a part of the final Noise Compatibility Program.**

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