

5.2 LAND USE

This section evaluates the compatibility of existing and planned land uses in the vicinity of T.F. Green Airport (PVD) with aircraft noise modeled for each of the alternatives under consideration. The impacts of the Proposed Action and alternatives on adjoining land uses are assessed in accordance with FAA Order 1050.1D, *Policies and Procedures for Considering Environmental Impacts*. Also discussed in this section are other impacts of the Proposed Action on off-airport land uses and the consistency of the alternatives with the comprehensive plans of the surrounding communities.

5.2.1 Existing Land Use Patterns: 1998

The base map for the Environmental Impact Statement (EIS) depicts the area of southeastern Cranston and the city of Warwick, Rhode Island as well as the T.F. Green Airport environs. **Exhibit 5.2-1**, *Existing Land Use*, depicts the study area and includes existing land uses, public buildings, local roads, major highways, and political boundaries located in the vicinity of the airport.

The majority of the property surrounding the airport is residential, except for the northwest quadrant, which contains primarily industrial and institutional uses. There are also several areas of compatible open space in the vicinity of the airport: Warwick City Park is located west of Brushneck Cove;¹ and Shriners Park is located west of Warwick City Park and north of Greenwich Bay. The open land in question follows the Conrail train tracks around Apponaug Cove and also includes the areas around Shriners and Warwick City Park. Open space is also found northeast of the airport near the Providence River. This includes the area south of Spring Green, North of Hoxie, and west of the Providence River area. The main roads surrounding the airport are Warwick Avenue to the east, Post Road to the west, West Shore Road to the south and southeast, and Airport Road to the north. These main roads are lined with commercial businesses.

Most of the residential land uses within the study area consist of single-family housing. There are seven residential subdivisions located around the airport. These subdivisions are: Hoxsie to the east of the airport, Wildes Corner to the southeast, Greenwood to the southwest, Hillsgrove to the west, Lincoln Park to the northwest, Norwood to the north, and Spring Green to the northeast. Several multi-family apartment complexes are also located around the airport.

The current Noise Mitigation Program has provided sound insulation for approximately 901 homes located off all runway ends. The proposed land use mitigation in the NCP Update would provide mitigation for an additional 950 homes.

The existing land uses around the airport, shown in Exhibit 5.2-1, were primarily identified using data gathered from the Rhode Island University Geographic Information System (RIGIS), Warwick City Planning Department, and Cranston City Planning Department. All map exhibits and calculations of housing and population impacts were developed using ArcView, a Geographic Information System (GIS) computer program. Field surveys, digital base maps,

¹ Brushneck Cove on Exhibit 5.2-1 is covered by the Legend box. Please see Exhibit 4-1 for that area.

airport property maps, Chamber of Commerce maps, and U.S. Census data provided additional relevant information on roads, road names, public buildings, and compatible land uses. All of this above information has been merged into one comprehensive base map (Exhibit 5.2-1).

RESIDENTIAL/COMMERCIAL/INDUSTRIAL LAND USE - The mapping of existing residential and compatible land uses in Kent County was developed using the RIGIS. In addition to roads, road names, and public buildings, a portion of south Warwick also included building footprints. The land use data was further defined through a windshield field survey conducted in June 1998, to determine the number of dwelling units per residential structure. Land use and zoning patterns were also examined for the southeastern area of the city of Cranston due to its proximity to the airport.

The 1990 U.S. Census data, at the block level, was combined with the GIS land use database in order to calculate the numbers of 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 associated with each of the noise contours was determined by merging the noise contour data files with the GIS land use database. The number of dwelling units and population within each DNL noise contour level were then determined by an automated count.

ROADS - Information on the roads, highways, and interstates identified in the GIS land use databases were updated using TIGER maps and Chamber of Commerce maps. When discrepancies between the data sources were found in street location, the street name, or the spelling of the street name, the Chamber of Commerce maps were used as the control.

5.2.2 Noise-Sensitive Facilities

Data from RIGIS and Chamber of Commerce maps were used to develop the GIS database of noise-sensitive facilities within the study area. To verify the existence and location of these facilities (schools, churches, hospitals, libraries, and nursing homes), a windshield field survey was conducted. New facilities, facilities which no longer exist, and facilities that have had name changes were found through this windshield field survey and added to the base map. **Table 5.2-1** lists the noise-sensitive facilities located in the study area. There are only two noise-sensitive facilities within the 65 DNL in existing (1998) conditions only. Both are highlighted in Table 5.2-1. For future (2003) conditions, only the Kingdom Hall of Jehovah's Witnesses remains in the impact area. These existing facilities were evaluated against 1998 and 2003 conditions noise contours for all of the alternatives presented in this evaluation.

Table 5.2-1
EXISTING NOISE-SENSITIVE FACILITIES WITHIN THE STUDY AREA
T.F. Green Airport

<u>Schools</u>	
Map Code	Name
S 1	Rhodes Elementary
S 2	Aldrich Junior High
S 3	Norwood Elementary
S 4	Oaklawn Elementary
S 5	Holliman Elementary *
S 6	St. Peter Elementary/Middle
S 7	Pilgrim High *
S 8	Francis Elementary
S 9	St. Francis Elementary
S10	Randall Holden Elementary
S11	Cottrell F. Hoxie Elementary
S12	Sherman Elementary
S13	N.E. Institute of Technology
S14	Greenwood Elementary
S15	St. Kevin Elementary/Middle
S16	John Wickes Elementary *
S17	E.G. Robertson Elementary
S18	Lippitt Elementary
S19	Warwick Vets Memorial High *
S20	Bishop Hendricken High
S21	John Greene Elementary
S22	Gorton Junior High
S23	Oaklawn Beach Elementary
S24	Park Elementary
S25	Eleanor Briggs
S26	Cedar Hill Elementary
S27	Warwick Neck Elementary
S28	Overbrook Academy Middle
<u>Libraries</u>	
L 1	Apponaug Branch
L 2	N.E. Institute of Technology
L 3	Warwick Public
L 4	Pontiac Free
L 5	Department of Corrections Educational Services
L 6	Eleanor Slater Hospital Reagan Building
L 7	Eleanor Slater Hospital Psychiatric Services
L 8	Conimicut Branch
L 9	Norwood Branch
L10	Rhode Island Training School DCIF

* Previously sound insulated by RIDOT/RIAC

<u>Hospitals</u>	
Map Code	Name
H1	Eleanor Slater Hospital
<u>Nursing Homes</u>	
N1	Greenwood House
N2	Father Olsen Terrace
<u>Churches</u>	
C 1	St Francis of Assisi
C 2	St. Barnales Episcopal
C 3	St. Catherine
C 4	Warwick Central Baptist
C 5	St. Gregory
C 6	Our Lady of Providence
C 7	Pilgrim Lutheran
C 8	St. Timothy
C 9	St. Peters
C10	Samuel Priest Chapel
C11	Friendship Baptist
C12	St. Rose of Lima *
C13	St. Timothy Convent
C14	United Methodist
C15	Chapel (unknown)
C16	Episcopal Church of Resurrection
C17	First Congressional Church of Warwick
C18	St. Ritas
C19	Kingdom Hall of Jehovah's Witnesses
C20	St. Rose in Clement
C21	Buttonwood Bible Chapel
C22	Spring Green Memorial
C23	Church of Jesus Christ of LDS
C24	St. Benedicts
C25	Reorganized Church of Jesus
C26	Center for Positive Living
C27	St Marcs Episcopal
C28	Warwick Christian Fellowship
C29	Warwick Bible Chapel
C30	Assembly of God

Only C-19 remains in the Proposed Action noise contours.

5.2.3 14 CFR Part 150 Land Use Guidelines

The FAA has developed criteria for identifying uses of land normally compatible or incompatible with various noise exposure levels. These guidelines are defined in the Code of Federal Regulations, 14 CFR Part 150 (Table 1 of Appendix A), *Land Use Compatibility With Yearly Day-Night Average Sound Levels*. These guidelines, shown in **Table 5.2-2**, delineate the compatibility parameters for residential, public (schools, churches, nursing homes, hospitals, libraries), commercial, manufacturing and production, and recreational land uses.

Table 5.2-2
LAND USE COMPATIBILITY GUIDELINES – 14 CFR PART 150

<u>LAND USE</u>	YEARLY DAY-NIGHT AVERAGE SOUND LEVEL (DNL) IN DECIBELS					Over 85
	Below 65	65-70	70-75	75-80	80-85	
<u>RESIDENTIAL</u>						
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
<u>PUBLIC USE</u>						
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
<u>COMMERCIAL USE</u>						
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
<u>MANUFACTURING AND PRODUCTION</u>						
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
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
<u>RECREATIONAL</u>						
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
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables, and water recreation	Y	Y	25	30	N	N

Table 5.2-2, Continued
LAND USE COMPATIBILITY GUIDELINES – 14 CFR PART 150

The designations contained in this 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 14 CFR 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 5.2-2

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 a NLR of 25, 30, or 35 dB must be incorporated into design and construction of structure.

Notes for Table 5.2-2

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 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10, or 15 dB 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 25 dB 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 30 dB 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 35 dB 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 uses compatible provided special sound reinforcement systems are installed.
6. Residential buildings require a NLR of 25 dB.
7. Residential buildings require a NLR of 30 dB.
8. Residential buildings not permitted.

5.2.4 Land Use Impacts – Existing Conditions: 1998

To assess the impacts of existing noise levels on non-compatible land uses within the study area, the 1998 Existing Conditions noise contours were overlaid on the digital base map of the generalized existing land use. Using GIS, the number of residential structures located within each noise contour band was determined. The 1998 Existing Baseline exhibit, (See Exhibit 5.1-7) shows the 1998 existing condition noise contours with the generalized existing land use.

Land use impacts are described in terms of the number of housing units, population, and noise-sensitive public facilities exposed to noise levels of 65 DNL and greater. **Table 5.2-3** summarizes the land use impacts that occur as a result of the 1998 Existing Condition. A total of 3,342 housing units and approximately 8,675 people are affected by noise levels of 65 DNL and greater. Of the 3,342 housing units, 901 (27 percent) have been mitigated through the airport's current land use mitigation program developed under the previous NCP Study. No land use mitigation programs have been developed for the 1998 existing conditions noise contour. However, approximately 950 of the remaining 1,491 unmitigated homes would be eligible for sound insulation through the land use mitigation program recommended in the 1999 NCP.

There are four noise-sensitive facilities located within the 1998 existing condition 65-70 DNL noise contours: two schools, and two churches (Table 5.2-3). The two churches are the Kingdom Hall of Jehovah's Witness and the Spring Green Memorial Church. The two schools are Pilgrim High School and John Wickes Elementary School. Both of the schools have received sound insulation under the airport's current mitigation program.

5.2.5 Land Use Impacts – Future Conditions: 2003

Land use trends under the future condition are not expected to change significantly from the existing conditions. The area around three sides of the airport is densely populated with residential and commercial uses. The area northwest of the airport will likely continue to be used for industrial and institutional uses.

To assess the impacts of future noise levels on non-compatible land uses within the study area, the future noise contours were overlaid on a digital base map of the generalized existing land use. Using GIS, the number of residential structures located within each noise contour band was determined.

Alternative 1: 2003 Baseline Condition (No-Build/No-Action)

The 2003 Baseline Condition assumes growth forecasted by the Rhode Island Airport Corporation (RIAC) supplemented by specific information provided to this study by the airline operators. This alternative assumes no change from the current operating procedures at the airport. The 2003 Baseline exhibit, (See Exhibit 5.1-8) shows the 2003 Baseline Condition (No-Build/No-Action) noise contour over the generalized existing land use. There is little open land remaining in which to build or develop near the airport. Therefore, there are limits on the future uses of those lands.

Table 5.2-3
1998 EXISTING CONDITION - HOUSING, POPULATION, and
NOISE-SENSITIVE FACILITY INCOMPATIBILITIES
T.F. Green Airport

	65-70 DNL	70-75 DNL	75 + DNL	TOTAL
AREA (SQ. MILES)	2.29	0.92	0.68	3.89
Housing Units				
Total	2,735	601	6	3,342
Current Mitigation	405	490	6	901
Unmitigated	2,330	111	0	2,441
Population				
Total	7,091	1,568	16	8,675
Current Mitigation	1,050	1,332	16	2,398
Unmitigated	6,041	236	0	6,277

Noise-Sensitive Public Facilities				
Churches				
Total				
Current Mitigation				
Unmitigated*	2	0	0	2
Schools				
Total	2	0	0	2
Current Mitigation	2	0	0	2
Unmitigated	0	0	0	0

Reference: 97bs01
Source: Landrum & Brown, 1999

Table 5.2-4 summarizes the land use impacts that occur as a result of the 2003 Baseline Condition or No-Action alternative. Noise levels of 65 DNL and greater would impact approximately 1,986 housing units and 5,148 people. Of the housing units in the 65 DNL and greater noise contour, approximately 1,151 are not included in the airport's current land use mitigation program. The 32 percent growth in aircraft operations anticipated for this airport by the year 2003 would be offset by the mandatory phase out of Stage 2 aircraft, and therefore the noise contours would decrease in size and impact. By the year 2003, Stage 3 aircraft will make up nearly 100 percent of the fleet operating at T.F. Green Airport. The main exceptions are military aircraft and general aviation aircraft such as the Lear 25 that does not meet the weight requirements for mandatory upgrade to Stage 3. There would be one church, The Kingdom Hall of Jehovah's Witness, located within the 2003 Baseline Condition noise contour.

Table 5.2-4
ALTERNATIVE 1 - 2003 BASELINE CONDITION (NO-BUILD/NO-ACTION)
HOUSING, POPULATION, and NOISE-SENSITIVE FACILITY
INCOMPATIBILITIES
T.F. Green Airport

	65-70 DNL	70-75 DNL	75 + DNL	TOTAL
AREA (SQ. MILES)	1.59	0.58	0.53	2.70
Housing Units				
Total	1,898	88	0	1,986
Current Mitigation	747	88	0	835
Unmitigated	1,151	0	0	1,151
Population				
Total	4,932	216	0	5,148
Current Mitigation	2,018	216	0	2,234
Unmitigated	2,914	0	0	2,914

Noise-Sensitive Public Facilities				
Churches				
Total	1	0	0	1
Current Mitigation	0	0	0	0
Unmitigated	1	0	0	1
No Schools are located within the noise contours				

Reference: 03bs01
Source: Landrum & Brown, 1999

There are no public schools within the baseline 2003 65+ DNL noise contours. Consequently there are no public schools within those same levels of noise exposure for any of the 2003 alternatives scenarios. There are two schools being considered for sound insulation as a result of the NCP update, but they both fall just outside the incompatible zones.

Alternative 2:
2003 Air Traffic Actions from the NCP Update

The 2003 Air Traffic Actions from the NCP Update noise contours, shown on Exhibit 5.1-11, represent the expected future (five year) condition of noise exposure, with the proposed NCP noise abatement measures in place. The purpose of the noise abatement measures is to define flight corridors over areas of more compatible land use. Chapter Three of this EIS describes the individual noise abatement measures that make up the 1999 NCP Update.

Table 5.2-5 summarizes the land use impacts that would occur as a result of the 2003 Air Traffic Actions from the NCP Update condition. Noise levels of 65 DNL and greater would impact approximately 1,775 housing units and 4,662 people. This would be a reduction of 1,567 housing units when compared to the 1998 Existing Condition. The reduction in impact to housing units is due to the mandatory phase out of Stage 2 aircraft, as well as the air traffic noise abatement measures proposed in the NCP Update.

Table 5.2-5
ALTERNATIVE 2 - 2003 WITH NCP AIR TRAFFIC ACTIONS
T.F. Green Airport

	65-70 DNL	70-75 DNL	75 + DNL	TOTAL
AREA (SQ. MILES)	1.52	0.59	0.53	2.64
Housing Units				
Total	1,683	92	0	1,775
Current Mitigation	736	92	0	828
Unmitigated*	947	0	0	947
Population				
Total	4,430	232	0	4,662
Current Mitigation	1,983	232	0	2,215
Unmitigated*	2,447	0	0	2,447

Noise-Sensitive Public Facilities				
Churches				
Total	1	0	0	1
Current Mitigation	0	0	0	0
Unmitigated*	1	0	0	1
No Schools are located within the noise contours				

* All unmitigated housing units and population, are included in the 1999 NCP Update Noise Compatibility Program (NCP) and will be eligible for participation in the NCP mitigation programs.

Reference: 03AL15

Source: Landrum & Brown, 1999

All of the 2003 alternative conditions assume the same fleet mix and number of operations. However, this evaluation has found that the implementation of the NCP air traffic noise abatement procedures would further reduce the number of impacted housing units by 211 from the 2003 Baseline (No-Build/No-Action) Alternative. While the overall number of homes within the 65 DNL decreases under this condition, it should be noted that some homes would receive increased noise levels as a result of the implementation of the NCP

measures when compared to the No-Build/No-Action Alternative. The land use measures in the NCP Update recommend that the unmitigated housing units within the 65 DNL and greater noise contour be eligible for land use mitigation.

Table 5.2-6
ALTERNATIVE 3 - PROPOSED ACTION
T.F. Green Airport

	65-70 DNL	70-75 DNL	75 + DNL	TOTAL
AREA (SQ. MILES)	1.51	0.59	0.53	2.63
Housing Units				
Total	1,679	92	0	1,771
Existing Mitigation	739	92	0	831
Unmitigated*	940	0	0	940
Population				
Total	4,400	232	0	4,632
Current Mitigation	1,990	232	0	2,222
Unmitigated*	2,410	0	0	2,410

Noise-Sensitive Public Facilities				
Churches				
Total	1	0	0	1
Current Mitigation	0	0	0	0
Unmitigated*	1	0	0	1
No Schools are located within the noise contour				

* All unmitigated housing units and population are included in the 1999 NCP Update Noise Compatibility Program (NCP) and will be eligible for participation in the NCP mitigation programs.

REFERENCE: 03AL16

Source: Landrum & Brown, 1999

Alternative 3:
2003 Air Traffic Actions and Increased Utilization of SWAP Route (Proposed Action)

Table 5.2-6 summarizes the land use impacts that would occur as a result of the Proposed Action. Noise levels of 65 DNL and greater would impact approximately 1,679 housing units and 4,400 people. This would be a reduction of 1,571 housing units from the 1998 Existing Condition, a reduction of 215 housing units from the 2003 Baseline Condition, or No-Build/No-Action Alternative and a four housing unit reduction from the 2003 with NCP Air Traffic Actions condition. While the overall number of homes within the 65 DNL decreases under this condition, it should be noted that some homes would receive

increased noise levels as a result of the implementation of the NCP measures and the implementation of the Severe Weather Alternative Procedure (SWAP) route when compared to the No-Build/No-Action Alternative. The difference between the Proposed Action condition and the 2003 with NCP Air Traffic Actions condition is the increased utilization of the SWAP route. A comparison of the two conditions finds that there would be a small reduction in housing unit and population impacts with Alternative 3, the Proposed Action. This is a result of the small number of aircraft that would use this operational procedure and the effectiveness of the NCP Update air traffic measures to focus noise over compatible areas. The land use measures in the NCP Update recommend that the unmitigated housing units within the 65 DNL and greater noise contour be eligible for land use mitigation. **Table 5.2-7** provides a comparison of the land use impacts for the 1998 Existing Condition and all of the 2003 alternative conditions.

Table 5.2-7
NOISE INCOMPATIBILITIES - 1998 EXISTING, 2003 ALTERNATIVE CONDITIONS
T.F. Green Airport

Condition	HOUSING UNITS											
	TOTAL (All Residential Units)				Residential Units in Present Mitigation Program				Unmitigated* Residential Units			
	65-70 DNL	70-75 DNL	75+ DNL	Total	65-70 DNL	70-75 DNL	75+ DNL	Total	65-70 DNL	70-75 DNL	75+ DNL	Total
Existing 1998	2,735	601	6	3,342	405	490	6	901	2,330	111	0	2,441
Alternative 1	1,898	88	0	1,986	747	88	0	835	1,151	0	0	1,151
Alternative 2*	1,683	92	0	1,775	736	92	0	828	947	0	0	947
Alternative 3*	1,679	92	0	1,771	739	92	0	831	940	0	0	940
Condition	POPULATION											
	TOTAL Population				Population in Present Mitigation Program				Unmitigated* Population			
	65-70 DNL	70-75 DNL	75+ DNL	Total	65-70 DNL	70-75 DNL	75+ DNL	Total	65-70 DNL	70-75 DNL	75+ DNL	Total
Existing 1998	7,091	1,568	16	8,675	1,050	1,332	16	2,398	6,041	236	0	6,227
Alternative 1	4,932	216	0	5,148	2,018	216	0	2,234	2,914	0	0	2,914
Alternative 2*	4,430	232	0	4,662	1,983	232	0	2,215	2,447	0	0	2,447
Alternative 3*	4,400	232	0	4,632	1,990	232	0	2,222	2,410	0	0	2,410

* Unmitigated residential units located in the Alternative 2 or Alternative 3 noise contours would be eligible for land use mitigation under the 1999 NCP Update.

Source: Landrum & Brown, 1999.

5.2.6 Consistency with Comprehensive Plans

Lands within and adjacent to the airport environs occur in two jurisdictions - the city of Warwick and the city of Cranston. Future noise impacts will occur almost entirely in the city of Warwick. The following section will describe the comprehensive plans for each jurisdiction and their relevance in relationship to the airport.

The City of Warwick

The city of Warwick's first Comprehensive Plan is currently in the process of being approved. It is expected to be completed and ready for adoption in 1999. The Land Use Element section of draft plan states that the airport owned land in Warwick has increased by over 100 acres since 1972. Most of the increase has been the result of the state's acquisition of land off Warwick Industrial Drive and land south of Main Avenue (known as the airport's clear zone). The 1985 total of 958 acres included vacant state holdings abutting the active areas of the airport now in use.² Proposed land use measures in the 1999 NCP Update recommend the development of an Airport District within which the noise impact of the airport on the surrounding land uses can be addressed through the use of zoning, building codes, and fair disclosure policies.

The City of Cranston

The City of Cranston, Rhode Island Comprehensive Plan was adopted in February 1993. The plan's goals and policies represent an important step in the process of developing strategies for allocating areas for various land uses, managing residential and commercial growth, protecting natural resources and open space providing necessary infrastructure to support development, and directing other aspects of Cranston's future growth. The southeastern portion of the city of Cranston that is affected in the study area is mainly industrial and institutional. The *City of Cranston, Rhode Island Comprehensive Plan* does not include recommendations related to T.F. Green Airport.³

5.2.7 Impacts Due to a 3 dB Increase in Noise Exposure

To assess the potential noise impacts of the Proposed Action, a comprehensive noise analysis was conducted under the policy recommendations of the Federal Interagency Committee on Noise (FICON). FICON was formed to review and make recommendations on Federal policies that govern the assessment of airport noise impacts. Under one of its policy recommendations FICON concluded that it is prudent to provide for a systematic analysis of noise levels below 65 DNL in NEPA documents using the following screening procedures:

1. If screening analysis shows that noise-sensitive areas will be at or above 65 DNL and will have an increase of 1.5 dB or more, further analysis should be conducted of noise-sensitive areas between 60-65 DNL having an increase of 3 dB or greater due to the airport's Proposed Action.

² *City of Warwick, Rhode Island Comprehensive Community Plan*, prepared by City Plan Commission, 1998, p. 17.

³ *City of Cranston, Rhode Island Comprehensive Plan*, prepared by City Plan Commission, February 1992, pp. 5, 23, 51, and 75.

2. If the 65 DNL screening test calls for further analysis between 60-65 DNL, agency mitigation options may include noise-sensitive areas between 60-65 DNL that are projected to have an increase of 3 dB or greater as a result of the airport's Proposed Action.

For purposes of this screening analysis the noise exposure for both Alternative 2, 2003 with NCP Air Traffic Actions, and Alternative 3, 2003 with NCP Air Traffic Actions and Utilization of SWAP Route, were evaluated against Alternative 1, the 2003 Baseline Condition, or No-Build/No-Action Alternative. The 2003 Baseline Condition or No-Build/No Action Alternative includes only the forecast increase in the number of aircraft operations with no change to operating procedures at the airport. Alternative 2, 2003 with NCP Air Traffic Actions, represents the condition on which the Noise Compatibility Plan noise contour was based and differs from the 2003 Baseline Condition only through the implementation of the flight corridor measures. Alternative 3, the Proposed Action, includes the NCP Air Traffic Actions, as well as the utilization of the SWAP route.

**Alternative 2:
2003 Air Traffic Actions from the NCP Update**

The first step of the screening analysis is to determine if a 1.5 dB increase exists within the 65 DNL noise contours when Alternative 2 is evaluated against Alternative 1. Exhibit 5.1-12 depicts the results of the evaluation and shows an area within the 65 DNL noise contours where a 1.5 dB increase would exist. This area is located north of the airport along the Runway 5R flight corridor and consists of both residential uses and open space. The 1.5 dB increase is a result of focusing the noise over the more compatible corridor north of the airport.

Since a 1.5 dB increase within the 65 DNL noise contour exists, the second step of the screening analysis must be performed, which is to determine if a 3 dB increase exists between the 60 - 65 DNL noise contour. The areas where 3 dB increases were seen are located along the Runway 5R departure corridor to the north of the airport, along the Runway 34 departure course off to the northwest, and south of the airport along the western and eastern edges of the Runway 23L departure course. The area located to the northwest is over industrial and institutional land uses, which are both compatible with the level of noise exposure. Likewise, the area to the south of the airport is located west of downtown Appounaug where the land uses are predominately commercial, open space, and industrial. The area to the north of the airport exposed to a 3 dB increase is mainly residential with a small area of commercial and open space. Those areas to the north that would be expected to experience the 3 dB increase are outside the level considered to be incompatible (65+ DNL), therefore no mitigation would be expected in those areas under the NCP update.

**Alternative 3:
2003 Air Traffic Actions and Increased Utilization of the SWAP Route (Proposed
Action)**

This evaluation showed that there would be no area within the 65 DNL noise contour where a 1.5 dB increase would exist. Since there would be no 1.5 dB increase within the 65 DNL noise contour, an evaluation of the noise levels and potential mitigation policies between the 60 - 65 DNL noise contour is not required under FICON.

5.2.8 Conclusions

Based on the evaluations conducted for the Proposed Action (Alternative 3), there would be no trigger for further analysis or mitigation based on FICON recommendations. However, if the SWAP route included as part of the Proposed Action was not implemented, then it would be necessary to review the policy recommendations and mitigation techniques suggested by FICON. There is no proposed mitigation for the area between 60-65 DNL.