

## 4.0 POTENTIAL LAND USE ALTERNATIVES

### *Chapter Organization*

As discussed in Chapter 2, the initial planning for the Waterbury-Oxford Airport (OXC) Federal Aviation Regulations (FAR) Part 150 Noise Study began in 2004. At that time, 2003 was the most recent full-year of recorded airport activity, with a forecast five-year period of 2008. The information presented in this chapter is primarily based on Forecast 2008 activity at OXC.

Prior to the release of the Draft Report (May 2008), the Federal Aviation Administration (FAA) requested updated noise analysis and contours for the most recent full-year of activity (2007) and a forecast five-year period (2012). Chapter 5 presents the noise contour updates for Recorded 2007 and Forecast 2012 activity at OXC. The updates in Chapter 5 were undertaken to satisfy the FAA's time-period policy for submission of a Noise Study.

### *Potential Land Use Alternatives*

This chapter identifies potential land use alternatives that are designed to reduce future noise exposure in the communities surrounding Waterbury-Oxford Airport (OXC). Land use alternatives are typically recommended for areas exposed to noise levels greater than a Day-Night Average Noise Level (DNL) of 65 dB. However, although noise levels less than 65 DNL are considered compatible with all land uses (see Table 2-2), public acceptance is not always implied. Therefore, this chapter also identifies land use alternatives for areas within the 60 DNL noise contour, and to some degree, areas beyond.

As previously mentioned in Chapter 3, early in the evaluation process, ConnDOT met individually with the Towns of Oxford, Middlebury, and Southbury to identify and discuss their land use planning and zoning activities as related to airport noise. Of interest were any associated land use policies intended to reduce noise exposure to local residents. For the Towns of Oxford and Middlebury, where airport-generated noise levels are highest, Town officials indicated that noise issues have been considered in land use planning and site plan approvals; however, no formal noise-related land use policies have been established. For additional information, see Town meeting minutes provided in Appendix C.

As such, this study uses the DNL 65 dB noise level as the threshold for land use compatibility in noise sensitive areas, as established by federal guidelines. It should be recognized that individual municipalities may establish their own airport noise compatibility guidelines. As the towns surrounding OXC have not established specific criteria at this time, the federal guidelines are employed in this study. Nevertheless, homes exposed to noise levels below DNL 65 dB were identified and evaluated throughout the alternative analysis, as noise complaints have been documented in many locations with lower airport noise exposure. However, most of the potential recommendations, or candidate alternatives, focus on mitigating noise to homes exposed to noise levels of DNL 65 dB or greater, per federal criteria. Meeting minutes, comments and

correspondence with the surrounding towns and general public are provided in Appendices C through E<sup>1</sup>.

This chapter includes the following components:

- Evaluation of Current Program
- Potential Land Use Alternatives
- Summary of Candidate Land Use Alternatives

#### **4.1 Evaluation of Current Program**

As discussed in Chapter 1, the land surrounding OXC (i.e., within and adjacent to the 60 DNL contour) is a mix of residential, industrial, and commercial zoning, as illustrated on Figures 4-1 and 4-2.

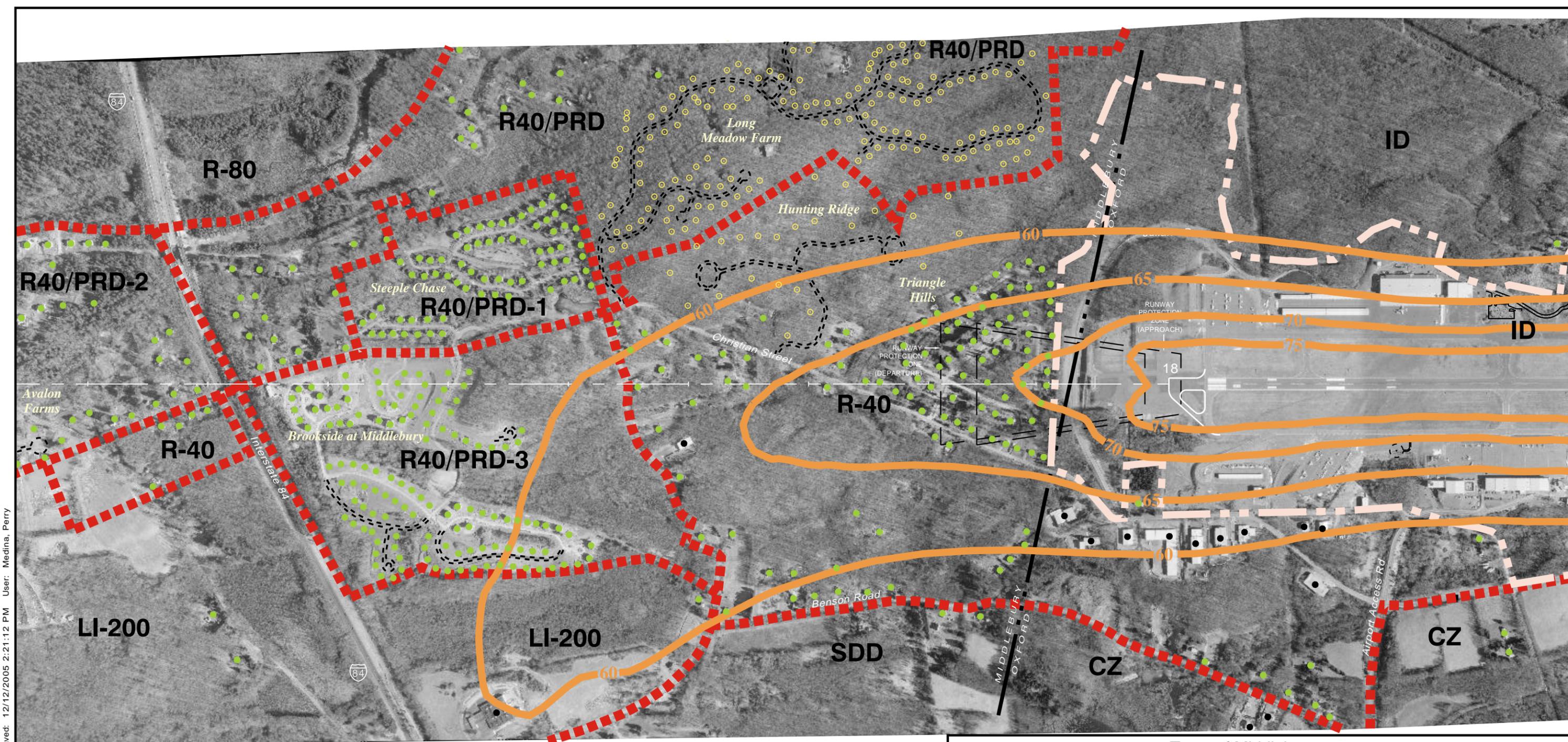
North of the Airport in Middlebury (refer to Figure 4-1), the Residential (R-40) district contains several homes adjacent to the airport property (i.e., the Triangle Hills neighborhood). Several Planned Residential Developments (PRDs) have also been constructed or proposed in Middlebury. The PRDs incorporate requirements for housing density and open space, which are measures that are encouraged for residential development near airports (see preventative measures), but were not intended for airport compatibility. Note that the undeveloped portion of the Residential (R-40/PRD-3) district (adjacent to Brookside at Middlebury) is designated as preserved open space, and the proposed Hunting Ridge development includes homes within the 60 DNL contour. Northwest of the Airport in Middlebury, the Light Industrial (LI-200) district and Special Development District (SDD) only permit non-residential land uses that are compatible with noise levels greater than 65 DNL.

In Oxford (refer to Figure 4-2), the land immediately surrounding the airport property is zoned either Industrial (ID) or Corporate (CZ). Such zoning only permits land uses that are compatible with noise levels greater than 65 DNL (i.e., non-residential). The Residential (RD-A) district located further south of the Airport in Oxford requires minimum housing densities of 2.25 acres. Within the RD-A district, residential soundproofing has been considered for proposed homes in the Glendale development to be compatible with the Airport.<sup>2</sup> Such requirements for residential density and soundproofing within the RD-A district are appropriate and encouraged for residential development near airports (see preventative measures).

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<sup>1</sup> Note that the Town of Middlebury does not agree with a number of land use alternatives (See Town of Middlebury First Selectman's comments on the draft report in Appendix E, comment C3).

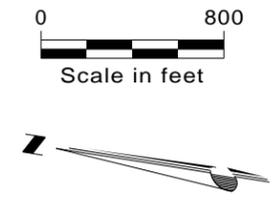
<sup>2</sup> The Glendale development is located within the 65 DNL contour of a 2003 Airport Environmental Assessment. The 2008 mitigated noise contours included in this study are based on more recent activity data, and are smaller in area than previous noise contours.



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### LEGEND

Runway Alignment (Marks every 1,000')	-----	● Single family, Existing
Town Boundary	-----	○ Single family, Proposed*
Approx. Airport Property Line	-----	● Commercial, Existing
Zoning Limit	-----	● Commercial, Future*
State Park Trail	-----	
DNL = Day-Night Average Noise Level	-----	
	-----	



Town of Middlebury	
ZONE	Description
<b>R-40</b>	Residential
<b>R-80</b>	Residential
<b>R-40/PRD</b>	Planned Residential Development
<b>LI</b>	Light Industry
<b>SDD</b>	Special Development District

Source: Official Middlebury, CT Zoning Map - May 1, 2003

Note: No schools, churches, medical facilities or multi-family dwellings are located within the photo area.

\*Per approved Site Plans provided by the Towns of Oxford and Middlebury

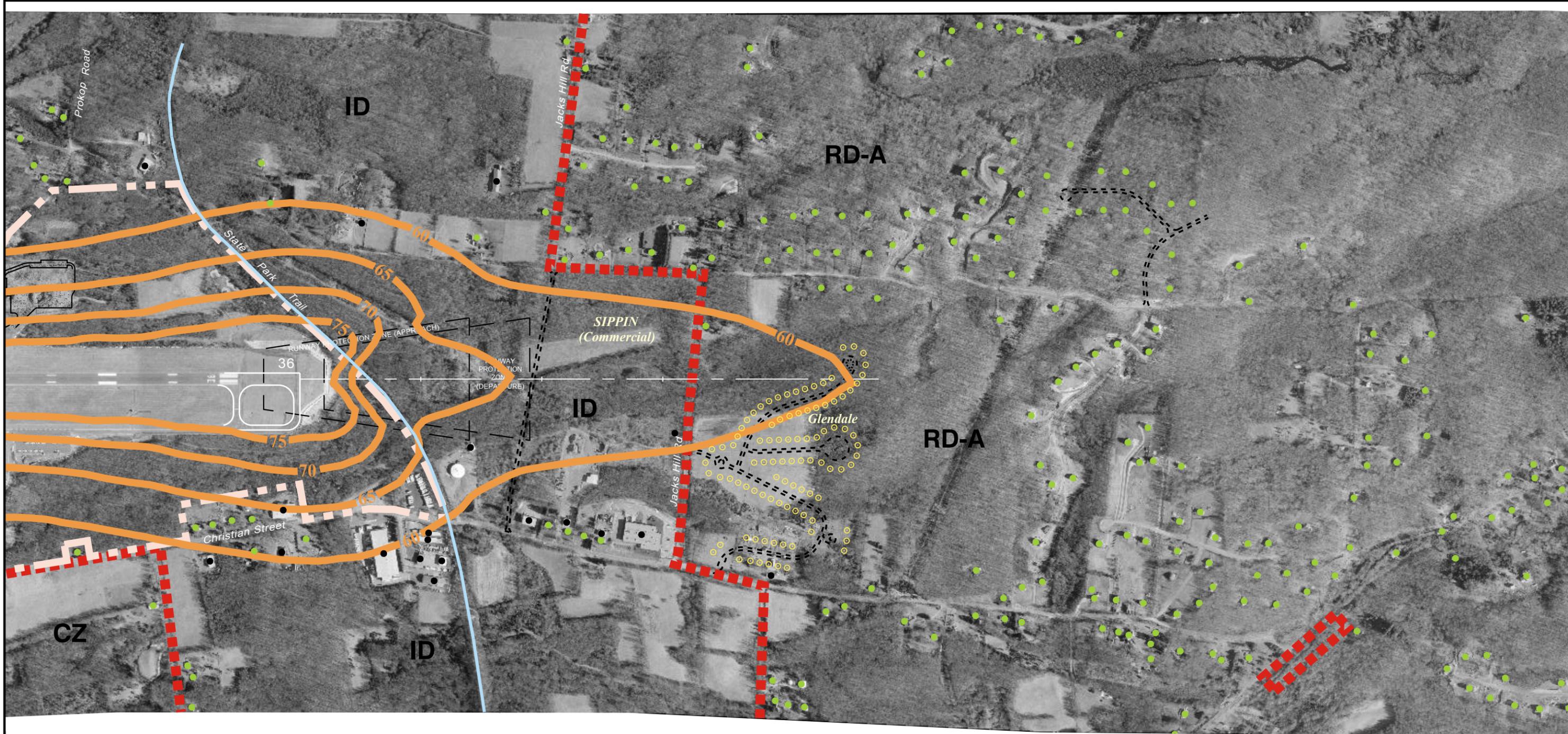


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DATE: DECEMBER 2005	SCALE: AS NOTED
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Figure 4-1  
**LAND USE AND ZONING**  
**TOWN OF MIDDLEBURY**  
Connecticut Department of Transportation  
FAR Part 150 Noise Study  
Towns of Middlebury and Oxford

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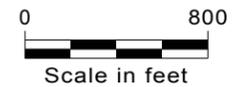
### LEGEND

- Runway Alignment (Marks every 1,000')
- Town Boundary
- Approx. Airport Property Line
- Zoning Limit
- State Park Trail
- DNL = Day-Night Average Noise Level
- 65 2008 Baseline Noise Contours with dB Level in DNL

- Single family, Existing
- Single family, Proposed\*
- Commercial, Existing
- Commercial, Future\*

Note: No schools, churches, medical facilities or multi-family dwellings are located within the photo area.

\*Per approved Site Plans provided by the Towns of Oxford and Middlebury



Town of Oxford			
ZONE	Description	ZONE	Description
<b>C</b>	Commercial	<b>ID</b>	Industrial District
<b>CZ</b>	Corporate Zone	<b>RD-A</b>	Residential District - A

Source: Oxford Zoning Map



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Figure 4-2  
**LAND USE AND ZONING**  
**TOWN OF OXFORD**  
 Connecticut Department of Transportation  
 FAR Part 150 Noise Study  
 Towns of Middlebury and Oxford

## **4.2 Potential Land Use Alternatives**

This section describes several potential land use alternatives that are designed to reduce future noise exposure in the communities surrounding OXC (i.e., Middlebury, Oxford, and Southbury). The alternatives are classified as either “preventative” or “corrective.” Preventative alternatives include strategies to restrict, limit, or impose requirements on new residential development (e.g., through changes in zoning, building codes, or other requirements). Corrective alternatives include strategies to resolve the issues of existing residential noise exposure (e.g., through voluntary property acquisition or insulation).

### **4.2.1 Preventative Land Use Alternatives**

The potential preventative land use alternatives would be applied to both the Towns of Middlebury and Oxford (unless otherwise specified), and are based on the 2008 Baseline DNL noise contours illustrated on Figures 4-1 and 4-2. *This chapter evaluates the land use based forecast 2008 activity at OXC. As described at the beginning of this chapter, Chapter 5 presents the noise contour updates for recorded 2007 and forecast 2012 activity. To be consistent with FAA’s time-period policy for submission of a Noise Study, Chapter 5 evaluates the NCP land use recommendations based on forecast 2012 activity, combined with the NCP noise abatement recommendations (i.e., 2012 Mitigated conditions).*

#### **P.1 Compatible Use Zoning**

Compatible use zoning is a common alternative considered for areas exposed to high levels of aircraft noise (e.g., greater than 60 or 65 DNL). Under such a measure, undeveloped residentially-zoned areas are re-zoned to a compatible use (e.g., industrial, commercial, agricultural, or open space). It would be the responsibility of a municipality to approve compatible use zoning, and amending planning and zoning documents and maps would be necessary. Although compatible use zoning prevents future residential development in noise-exposed areas, it can result in several disadvantages, such as a loss of development potential, as options for compatible development may be limited.

Potential compatible use zoning alternatives for OXC are described below.

**NOISE COMPATIBILITY PROGRAM ALTERNATIVE P.1A**

**P.1A** – In Middlebury, re-zone the undeveloped residentially-zoned areas within the 65 DNL contour to a compatible, non-residential use (e.g., SDD, LI).

Alternative P1.A is a standard consideration for any FAR Part 150 Noise Study, as it would prevent further residential development in areas exposed to high levels of aircraft noise. For this study, the affected area would include the small portion of the R-40 district (within the 65 DNL contour) located just northwest of the Triangle Hills neighborhood in Middlebury (refer to Figure 4-1). As the majority of this undeveloped area is wetland, new residential development would be unlikely in that area.

<b>TITLE:</b>	Compatible Use Zoning within the 65 DNL Contour.
<b>DESCRIPTION:</b>	Re-zone the undeveloped residentially-zoned areas within the 65 DNL contour to a compatible, non-residential use (e.g., SDD, LI). This alternative would apply to a small portion of the R-40 district in Middlebury (refer to Figure 4-1).
<b>BENEFITS:</b>	Future residential development would be prohibited within the 65 DNL contour.
<b>DRAWBACKS:</b>	As the majority of the affected area is wetland, this alternative may be unnecessary (options for residential development are currently limited). The approval of Middlebury would be required to implement this alternative, which is not anticipated (as it would not be consistent with Middlebury’s 2001 Master Plan – the <i>Middlebury Plan of Conservation and Development Update</i> ). There may also be legal challenges from affected property owners.
<b>COST TO IMPLEMENT:</b>	Middlebury (with assistance from ConnDOT) would assume the costs associated with amending their planning and zoning documents/maps. Although this can be a time-consuming process, the costs are not typically substantial.
<b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b>	As the majority of the affected area is wetland, implementing this alternative would not be overly effective (development options are currently limited). In addition, it is not anticipated that Middlebury would approve such a re-zoning (see drawbacks). Therefore, this alternative is <b><i>NOT A CANDIDATE</i></b> for inclusion in the NCP.

## NOISE COMPATIBILITY PROGRAM ALTERNATIVE P.1B

**P.1B** – Re-zone the undeveloped residentially-zoned areas within the 60 DNL contour to a compatible, non-residential use (e.g., ID, SDD, LI).

Alternative P1.B would apply to a large area of Middlebury and a small area of Oxford, and would prevent further residential development within the 60 DNL contour. Note that the FAA does not require such consideration for areas within a 60 DNL contour; however, this alternative was developed in response to the several comments received from residents within the 60 DNL contour expressing annoyance with existing aircraft noise. For this alternative to be considered as a potential recommendation, the towns would have to establish 60 DNL as a threshold of residential land use compatibility.

In Middlebury, Alternative P1.B would involve re-zoning the portions of the R-40 district located within the 60 DNL contour to a compatible use (refer to Figure 4-1). This alternative could result in opposition by property owners and developers, given that Middlebury has high property values and limited available space. Note that the Hunting Ridge development has recently been approved in the R-40 district, and contains proposed homes within the 60 DNL contour. Hunting Ridge is located just east of the Triangle Hills neighborhood, approximately a half-mile from the Airport.

Oxford would have a similar concern as Middlebury, although their affected property within the 60 DNL contour (i.e., the R-DA district) is much smaller (refer to Figure 4-2). Note that the Glendale development has recently been approved in the RD-A district, and contains proposed homes within the 60 DNL contour.

<b>TITLE:</b>	Compatible Use Zoning within the 60 DNL Contour.
<b>DESCRIPTION:</b>	Re-zone the undeveloped residentially-zoned areas within the 60 DNL contour to a compatible, non-residential use (e.g., ID, SDD, LI). This alternative would apply to a large portion of the R-40 district in Middlebury (refer to Figure 4-1) and a small portion of the RD-A district in Oxford (refer to Figure 4-2).
<b>BENEFITS:</b>	Future residential development would be prohibited within the 60 DNL contour.
<b>DRAWBACKS:</b>	Note that such consideration is not required by the FAA (i.e., developing land use alternatives within a 60 DNL contour). This alternative could result in a loss of development potential, and would likely be opposed by both Middlebury and Oxford, as well as by property owners and developers. The approval of both Middlebury and Oxford would be required to implement this alternative, which is not anticipated (as it would not be consistent with Middlebury's 2001 Master Plan – the

	<p><i>Middlebury Plan of Conservation and Development Update</i>, and because both towns continue to approve residential development within the 60 DNL contour). There may also be legal challenges from affected property owners. For this alternative to be considered as a potential recommendation, the towns would have to establish 60 DNL as a threshold of residential land use compatibility.</p>
<p><b>COST TO IMPLEMENT:</b></p>	<p>Middlebury and Oxford (with assistance from ConnDOT) would assume the costs associated with amending their planning and zoning documents/maps. Although this can be a time-consuming process, the costs are not typically substantial.</p>
<p><b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b></p>	<p>New residential developments continue to be approved within the 60 DNL contour. While it would be beneficial to implement this alternative, it is not likely that Middlebury or Oxford would approve its implementation (see drawbacks). Therefore, this alternative is <b><i>NOT A CANDIDATE</i></b> for inclusion in the NCP.</p>

**NOISE COMPATIBILITY PROGRAM ALTERNATIVE P1.C**

**P1.C** – Encourage Middlebury, Oxford, and Southbury to not re-zone commercial or industrial districts into residential districts within two miles of the OXC property line. An OXC representative should be appointed to review proposed zoning changes.

<b>TITLE:</b>	Compatible Use Zoning within the vicinity of OXC.
<b>DESCRIPTION:</b>	Encourage Middlebury, Oxford, and Southbury to not re-zone commercial or industrial districts into residential districts within two miles of the OXC property line. An OXC representative should be appointed to review proposed zoning changes.
<b>BENEFITS:</b>	An OXC representative would review proposed zoning changes to encourage zoning that is compatible with the Airport.
<b>DRAWBACKS:</b>	No major drawbacks are anticipated.
<b>COST TO IMPLEMENT:</b>	Minimal (assumed by ConnDOT).
<b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b>	To encourage Middlebury, Oxford, and Southbury to consider compatible use zoning within the vicinity of OXC, this alternative <i>IS A CANDIDATE</i> for inclusion in the NCP.

## P.2 Large-Lot Zoning

Strategies that control residential density, such as large-lot zoning, can be effective in reducing the number of persons potentially exposed to aircraft noise in the future. Large-lot zoning increases the minimum lot size for residential development (e.g., from 1 acre to 2 or more acres), which limits the number of homes that could be built. It would be the responsibility of a municipality to approve large-lot zoning, and amending planning and zoning documents and maps would be necessary.

### NOISE COMPATIBILITY PROGRAM ALTERNATIVE P.2

**P.2** – In Middlebury, a potential large-lot zoning alternative would be to re-zone the R-40 district (1 acre lots) located just north of Runway 18 to R-80 (2 acre lots) or R-120 (3 acre lots). Existing residential lots in the R-40 district would not be affected (i.e., they would be grandfathered). Note that this alternative would still allow residential development within the 60 and 65 DNL contours, which is not desirable (refer to Figure 4-1). In addition, the larger lots would likely be more expensive to purchase and develop, potentially leading to larger estate-style homes near the Airport.

<b>TITLE:</b>	Large-Lot Zoning in the Middlebury R-40 District.
<b>DESCRIPTION:</b>	In Middlebury, re-zone the R-40 district (1 acre lots) to R-80 (2 acre lots) or R-120 (3 acre lots). Existing homes in the R-40 district would not be affected (i.e., they would be grandfathered). Refer to Figure 4-1.
<b>BENEFITS:</b>	This alternative would reduce the future number of persons potentially exposed to aircraft noise by reducing the number of homes that could be built (through increasing the minimum lot size requirement).
<b>DRAWBACKS:</b>	The larger lots would likely be more expensive to purchase and develop, potentially leading to larger estate-style homes near the Airport. In addition, homes development within the 60 and 65 DNL contours would still be allowed (not desirable). Note that the approval of Middlebury would be required to implement this alternative, which is not anticipated (as it would not be consistent with Middlebury's 2001 Master Plan – the <i>Middlebury Plan of Conservation and Development Update</i> ). As a large portion of the R-40 district is within the 60 DNL contour, Middlebury would have to establish 60 DNL as a threshold of residential land use compatibility. There may also be legal challenges from affected property owners.

<b>COST TO IMPLEMENT:</b>	Middlebury would assume the costs associated with amending their planning and zoning documents/maps. Although this can be a time-consuming process, the costs are not typically substantial.
<b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b>	The Middlebury R-40 district is a sensitive area that experiences intense noise impacts from OXC activity. Although this alternative would reduce the future number/concentration of persons exposed to aircraft noise in the R-40 district, it is not consistent with Middlebury's 2001 Master Plan (see drawbacks). Therefore, this alternative is <b><i>NOT A CANDIDATE</i></b> for inclusion in the NCP.

### P.3 Building Codes

Building codes specify minimum requirements for the construction of new homes (or other structures) and major alterations to existing homes. In areas exposed to aircraft noise, building codes can be established that require Noise Level Reduction (NLR) measures to reduce interior noise levels. NLR measures can include insulation and central air systems, requirements for sealed windows and doors, and/or specific building materials.

#### NOISE COMPATIBILITY PROGRAM ALTERNATIVE P.3

**P.3** – For both Middlebury and Oxford, a potential alternative would be to establish building codes that require NLR for the construction of new homes (and major alterations to existing homes) within the 60 and 65 DNL contours. In order to provide a suitable living environment, the FAA recommends a target of 45 dB for interior noise levels.<sup>3</sup> As such, a minimum NLR of 15-20 dB would be suggested for the construction of new homes in this area. A revision of the *State of Connecticut Building and Fire Safety Codes* would be necessary to require specific building codes pertaining to aircraft noise exposure. However, the towns could establish similar requirements as part of their subdivision approval process (see Alternative P7). Note that the NLR requirements could result in higher construction and development costs, potentially increasing property values.

Similar NLR requirements were considered in the approval of the Glendale residential development in Oxford.<sup>1</sup> In both Oxford and Middlebury, such measures should be considered for any new residential development within the 60 and 65 DNL contours.

<b>TITLE:</b>	Building Codes within the 60 and 65 DNL Contours.
<b>DESCRIPTION:</b>	Establish building codes that require NLR for the construction of new homes (and major alterations to existing homes) within the 60 and 65 DNL contours (refer to Figures 4-1 and 4-2). NLR can be achieved through insulation and central air systems, and/or requirements for sealed windows and doors, or specific building materials. The NLR measures would be required to provide interior noise levels below 45 dB (consistent with the FAA's target).
<b>BENEFITS:</b>	Adequate NLR measures would be required for the construction of new homes within the 60 and 65 DNL contours (to reduce interior noise levels).
<b>DRAWBACKS:</b>	By implementing this alternative, the cost to develop new properties could potentially increase, potentially increasing property values. Amending the <i>State of Connecticut Building</i>

<sup>3</sup> FAA Order 5100.38C, *Airport Improvement Program Handbook*

	<p><i>and Fire Safety Codes</i> could also be challenging, particularly for such a specific location. However, the towns could establish similar requirements as part of their subdivision approval process (see Alternative P7). In order for this alternative to be considered within the 60 DNL contour, the towns would have to establish 60 DNL as a threshold for residential land use compatibility.</p>
<p><b>COST TO IMPLEMENT:</b></p>	<p>Middlebury and Oxford (with assistance from ConnDOT) would have to formally request that the State of Connecticut Building Inspector amend the <i>State of Connecticut Building and Fire Safety Codes</i>. Although this can be a time-consuming process, the costs are not typically substantial.</p>
<p><b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b></p>	<p>Because of the challenges associated with amending the <i>State of Connecticut Building and Fire Safety Codes</i>, Middlebury and Oxford should consider establishing similar requirements as part of their subdivision approval process instead (see Alternative P7). Therefore, this alternative is <b><i>NOT A CANDIDATE</i></b> for inclusion in the NCP.</p>

#### P.4 Preventative Property Acquisition

In order to prevent future residential development in the vicinity of an airport, an airport sponsor may purchase undeveloped residentially-zoned properties. Sale of the properties would be voluntary. Once sold, the properties could be retained as undeveloped open space, or converted to recreational parkland or any other appropriate land use (as stated in zoning regulations).

#### NOISE COMPATIBILITY PROGRAM ALTERNATIVE P.4

**P.4** – This alternative would consist of ConnDOT purchasing undeveloped residentially-zoned properties within the 60 and 65 DNL contours, including those in the Middlebury R-40 and Oxford RD-A districts (refer to Figures 4-1 and 4-2). Sale of the properties would be voluntary.

A similar alternative to preventative property acquisition is purchase of development rights (PDR). However, given the restrictions on development in the Middlebury R-40 and Oxford RD-A districts, there would be very little benefit to implementing PDR, and the purchase price would be comparable to outright acquisition.

<b>TITLE:</b>	Preventative Property Acquisition within the 60 and 65 DNL Contours.
<b>DESCRIPTION:</b>	ConnDOT would purchase undeveloped residentially-zoned property within the 60 and 65 DNL contours. This would apply to the Middlebury R-40 and Oxford RD-A. Sale of the properties would be voluntary. Once sold, the properties could be retained as undeveloped open space, or converted to recreational parkland or other appropriate land use (as stated in zoning regulations).
<b>BENEFITS:</b>	Future residential construction would be prohibited on undeveloped residentially-zoned property within the contours.
<b>DRAWBACKS:</b>	In order for this alternative to be considered within the 60 DNL contour, the towns would have to establish 60 DNL as a threshold for residential land use compatibility.
<b>COST TO IMPLEMENT:</b>	As both Middlebury and Oxford have relatively high property values, acquisition costs would be expensive. This alternative would be funded by the FAA and ConnDOT.
<b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b>	As this may be the only alternative with the potential to prevent future residential development within the 60 and 65 DNL contours, it <i>IS A CANDIDATE</i> for inclusion in the NCP.

## P.5 Fair Disclosure Regulations

Fair disclosure regulations can be established to legally require property owners to inform prospective buyers (or renters) that their property is exposed to specific aircraft noise levels. This provides an ethical means for conducting real estate transactions. Fair disclosure regulations typically require that an official notification be attached to property transfer documents, and be disclosed on sales contracts, promotional materials, site plans, etc. As fair disclosure may deter prospective buyers, it is often unpopular with property owners and realtors. In addition, property values and time-on-the-market periods can be negatively impacted. It would be the responsibility of a municipality to approve and implement fair disclosure regulations.

### NOISE COMPATIBILITY PROGRAM ALTERNATIVE P.5

**P.5** – For this study, a potential alternative would involve establishing fair disclosure regulations for new residential development, and for the transfer of existing homes, within the 60 and 65 DNL contours. This would apply to both Middlebury and Oxford (refer to Figures 4-1 and 4-2). Note that a substantial number of homes currently exist within the 60 and 65 DNL contours, and several residential developments have been approved within the 60 DNL contour.

<b>TITLE:</b>	Fair Disclosure Regulations within the 60 and 65 DNL Contours.
<b>DESCRIPTION:</b>	Establish fair disclosure regulations for new residential development, and for the transfer of existing homes, within the 60 and 65 DNL contours. This alternative would apply to both Middlebury and Oxford (refer to Figures 4-1 and 4-2).
<b>BENEFITS:</b>	Fair disclosure regulations would provide an ethical means for conducting real estate transactions, ensuring that prospective buyers are made aware of the potential for aircraft noise exposure. Fair disclosure typically requires that an official notification be attached to property transfer documents, and be disclosed on sales contracts, promotional material, site plans, etc.
<b>DRAWBACKS:</b>	Fair disclosure regulations could deter prospective buyers, and may therefore be unpopular with property owners and realtors. In addition, property values and time-on-the-market periods could be negatively impacted. In order for this alternative to be considered within the 60 DNL contour, the towns would have to establish 60 DNL as a threshold for residential land use compatibility.

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<b>COST TO IMPLEMENT:</b>	The towns agreeing to implement this alternative (with assistance from ConnDOT) would assume the costs associated with implementation, which are anticipated to be minimal.
<b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b>	As there are a substantial number of residential developments that are currently approved or being constructed within the 60 DNL contour, fair disclosure regulations should be implemented to ensure that prospective buyers are made aware of the potential for aircraft noise exposure. Note that there are approximately 100 existing homes within the OXC noise contours. Therefore, this alternative <i>IS A CANDIDATE</i> for inclusion in the NCP.

Note: The Town of Middlebury does not agree with this alternative (See Town of Middlebury First Selectman's comments on the draft report in Appendix E, comment C3). However, the alternative is included in the final report as the State's recommendation to the towns and public.

## P.6 Noise and Avigation Easements

The right to fly over a particular property, including its associated impacts (e.g., noise, vibration, dust, and exhaust), can be secured through an avigation easement. Avigation easements are typically required as part of a town's subdivision approval process, and essentially prevent property owners from filing formal complaints or taking legal action. They can also be used to limit the height of structures (e.g., trees or towers) to prevent flight obstructions. Avigation easements carry over with property transfers, as they are permanent deed incumbency restrictions. They are similar to fair disclosure in this respect, and may therefore be unpopular with realtors and developers.

### NOISE COMPATIBILITY PROGRAM ALTERNATIVE P.6

**P.6** – For this study, a potential alternative would be for Middlebury and Oxford to require avigation easements for the approval of new residential development within the 60 and 65 DNL contours (refer to Figures 4-1 and 4-2). This would ensure that homeowners are made aware of the potential for aircraft noise exposure.

<b>TITLE:</b>	Avigation Easements within the 60 and 65 DNL Contours.
<b>DESCRIPTION:</b>	The towns (with assistance from ConnDOT) would require avigation easements for the approval of new residential development within the 60 and 65 DNL contours (refer to Figures 4-1 and 4-2). Developers would grant this right to the towns as part of the subdivision approval process.
<b>BENEFITS:</b>	Avigation easements would ensure that prospective buyers are made aware of the potential for aircraft noise exposure.
<b>DRAWBACKS:</b>	Avigation easements could deter prospective buyers, and may therefore be unpopular with realtors and developers. In addition, avigation easements would continue to allow residential development within the 60 and 65 DNL contours, which is not desirable. They could also impact property values. In order for this alternative to be considered within the 60 DNL contour, the towns would have to establish 60 DNL as a threshold for residential land use compatibility.
<b>COST TO IMPLEMENT:</b>	The towns agreeing to implement the alternative, with assistance from ConnDOT would assume the costs associated with implementation. The costs would consist of revising their subdivision approval requirements, which are not typically substantial.

<b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b>	Avigation easements should be required for new residential development within the 60 and 65 DNL contours (as part of Middlebury and Oxford’s subdivision approval process). Prospective buyers would be made aware of the potential for aircraft noise exposure, thereby preventing legal action and reducing complaints against the Airport. Therefore, this alternative <b><i>IS A CANDIDATE</i></b> for inclusion in the NCP.
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Note: The Town of Middlebury does not agree with this alternative (See Town of Middlebury First Selectman's comments on the draft report in Appendix E, comment C3). However, the alternative is included in the final report as the State's recommendation to the towns and public.

## P.7 Subdivision Regulations

Subdivision regulations include specific requirements for new residential developments. In areas exposed to high levels of aircraft noise, subdivision regulations can specify requirements for density (lot size), building codes (NLR), fair disclosure, aviation easements, etc. Although such requirements for density, design and construction can result in higher development costs and impact property values, the resulting homes are generally constructed to be compatible with aircraft noise exposure (e.g., to provide effective interior NLR). It would be the responsibility of a municipality to approve and implement subdivision regulations.

### NOISE COMPATIBILITY PROGRAM ALTERNATIVE P.7

**P.7** – For both Middlebury and Oxford, a potential alternative would be to establish noise related subdivision regulations for new residential development within the 60 and 65 DNL contours (refer to Figures 4-1 and 4-2). This alternative would apply to future subdivisions in the Middlebury R-40 and Oxford RD-A districts. The subdivision regulations could include fair disclosure regulations, aviation easements, and NLR requirements.

<b>TITLE:</b>	Subdivision Regulations within the 60 and 65 DNL Contours.
<b>DESCRIPTION:</b>	Establish noise related subdivision regulations for new residential development within the 60 and 65 DNL contours. This alternative could be applied to future subdivisions in the Middlebury R-40 and Oxford RD-A districts (refer to Figures 4-1 and 4-2). The subdivision regulations could include fair disclosure regulations, aviation easements, and NLR requirements.
<b>BENEFITS:</b>	New subdivisions within the 60 and 65 DNL contours would have to be generally constructed in a way that is compatible with aircraft noise exposure (e.g., to provide effective interior NLR). In addition, this alternative would ensure that prospective buyers are made aware of the potential for aircraft noise exposure.
<b>DRAWBACKS:</b>	The subdivision regulations could result in increased development costs and property values, as well as opposition by realtors and developers. In addition, the development of homes within the 60 and 65 DNL contours would still be allowed (not desirable). In order for this alternative to be considered within the 60 DNL contour, the towns would have to establish 60 DNL as a threshold for residential land use compatibility.

<b>COST TO IMPLEMENT:</b>	The towns agreeing to implement the alternative (with assistance from ConnDOT) would assume the cost of implementation. The costs would consist of revising their subdivision regulations, which are not typically substantial.
<b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b>	This alternative should be considered for new residential development within the 60 and 65 DNL contours (see benefits), and therefore <i>IS A CANDIDATE</i> for inclusion in the NCP.

Note: The Town of Middlebury does not agree with this alternative (See Town of Middlebury First Selectman's comments on the draft report in Appendix E, comment C3). However, the alternative is included in the final report as the State's recommendation to the towns and public.

## P.8 Noise Overlay Zoning

Similar to subdivision regulations, noise overlay zoning incorporates several preventative land use measures, but also enables the establishment of different measures within different zones or DNL noise contours. Under noise overlay zoning, both the requirements of the implemented measures and the underlying-existing zoning apply. This promotes compatible development in the vicinity of an airport.

### NOISE COMPATIBILITY PROGRAM ALTERNATIVE P.8

**P.8** – The OXC noise overlay zoning would generally include the entire area within the DNL noise contours illustrated on Figures 4-1 and 4-2, in which the following candidate preventative land use alternatives would apply (if implemented):

- **P.1C** – An OXC representative would review proposed zoning changes.
- **P.5** – Fair disclosure would be required for the sale of residential property.
- **P.6** – Avigation easements would be required for new residential development.
- **P.7** – Subdivision regulations, including requirements for NLR based on noise exposure (e.g., 15 dB of NLR within the 60 DNL contour and 20 dB of NLR within the 65 DNL contour), would be implemented.

<b>TITLE:</b>	Noise Overlay Zoning.
<b>DESCRIPTION:</b>	Establish noise overlay zoning for the following candidate preventative land use alternatives: P.1C, P.5, P.6, and P.7.
<b>BENEFITS:</b>	This alternative would illustrate the areas where the candidate preventative land use alternatives would apply, thereby promoting compatible development in the vicinity of OXC.
<b>DRAWBACKS:</b>	Same as the drawbacks of the candidate preventative land use alternatives (could deter prospective buyers, unpopular with property owners and developers, negatively impact property values, increase development costs, approval difficulties, etc.).
<b>COST TO IMPLEMENT:</b>	The towns agreeing to implement the alternative (with assistance from ConnDOT) would assume the costs associated with implementation, which are anticipated to be minimal.

<b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b>	In order to illustrate the area in which the implemented preventative land use measures apply, noise overlay zoning would be beneficial for Middlebury and Oxford. Therefore, this alternative <b><i>IS A CANDIDATE</i></b> for inclusion in the NCP.
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Note: The Town of Middlebury does not agree with this alternative (See Town of Middlebury First Selectman's comments on the draft report in Appendix E, comment C3). However, the alternative is included in the final report as the State's recommendation to the towns and public.

#### **4.2.2 Corrective Land Use Alternatives**

The potential corrective land use alternatives would be applied to the Town of Middlebury, and are based on the 2008 Baseline DNL noise contours illustrated on Figures 4-1 and 4-2. *This chapter evaluates the land use based forecast 2008 activity at OXC. As described at the beginning of this chapter, Chapter 5 presents the noise contour updates for recorded 2007 and forecast 2012 activity. To be consistent with FAA's time-period policy for submission of a Noise Study, Chapter 5 evaluates the NCP land use recommendations based on forecast 2012 activity, combined with the NCP noise abatement recommendations (i.e., 2012 Mitigated conditions).*

As noted earlier, the Town of Middlebury does not agree with a number of land use alternatives (See Town of Middlebury First Selectman's comments on the draft report in Appendix E, comment C3).

#### **C.1 Property Acquisition**

Property acquisition is the most direct way to achieve airport land use compatibility, and typically consists of an airport sponsor purchasing existing homes exposed to high levels of aircraft noise. A property acquisition program for OXC would be voluntary (i.e., eminent domain would never be considered), and property owners are notified in advance of the airport sponsor's intentions.

As required when federal funds are utilized under the *Uniform Relocation and Real Property Acquisition Policies Act*, independent appraisals determine the fair market value (FMV) of a property. In addition to providing FMV, compensation is also provided for relocation expenses. Although property acquisition is generally only approved for homes within a 65 DNL contour (or higher), an incidental number of homes may be acquired within a 60 DNL contour (or lower) for neighborhood continuity and equitable planning purposes, but must be consistent with the planning goals and actions of local land use authorities (see Appendix C).<sup>4</sup>

For Middlebury, property acquisition alternatives focus on homes within the vicinity of the Triangle Hills neighborhood (refer to Figure 4-1). For planning purposes, an average acquisition cost was estimated to be \$350,000 per home, which includes the FMV, as well as compensation for relocation and demolition expenses. Actual costs would be determined at the time of acquisition. There are several potential issues associated with property acquisition, other than the considerable costs, which are discussed below.

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<sup>4</sup> For example, in locations where the 65 DNL contour divides a block or neighborhood, homes located outside of the 65 DNL contour may still be acquired as part of the NCP, if desired by the homeowners and consistent with the planning goals and actions of local land use authorities.

**NOISE COMPATIBILITY PROGRAM ALTERNATIVE C.1A**

**C.1A** – Voluntary acquisition of all homes within the 70 DNL contour in Middlebury (up to 5 homes). Preliminary estimated cost: approximately \$1.8 million. Actual costs would be determined at the time of acquisition.

Voluntary acquisition of all homes within the 70 DNL contour should be considered. These homes would be purchased and demolished, as no land use is permitted in the R-40 district that is compatible with noise levels greater than 70 DNL. Following demolition, redevelopment of the associated parcels would be prohibited.

It is worth noting that property values in Middlebury have increased significantly in recent years. The homes in the Triangle Hills neighborhood may have a lower average FMV than similar homes in Middlebury. It may be difficult for residents to find comparable housing elsewhere in Middlebury for the amount of money they would receive under a property acquisition program. In addition, this alternative might seem arbitrary to other residents in the Triangle Hills neighborhood (not within the 70 DNL contour) who wish to have their home acquired for noise reasons. These types of concerns would be addressed in an EA or EIS study, prior to acquisition.

<b>TITLE:</b>	Voluntary Property Acquisition within the 70 DNL Contour.
<b>DESCRIPTION:</b>	Voluntary acquisition of all homes within the 70 DNL contour in Middlebury (up to 5 homes). These homes would be purchased and demolished, as no land use is permitted in the R-40 district that is compatible with noise levels greater than 70 DNL. Following demolition, redevelopment of the associated parcels would be prohibited.
<b>BENEFITS:</b>	The residents exposed to incompatible noise levels (greater than 70 DNL) would be provided with the opportunity to relocate. The homes would be demolished, with the associated parcels converted to open space.
<b>DRAWBACKS:</b>	The participating residents may have difficulty finding comparable housing elsewhere in Middlebury for the amount of money they would receive (as homes within the vicinity of the Triangle Hills neighborhood may have a lower average FMV). This alternative might also seem arbitrary to other residents in the Triangle Hills neighborhood (not within the 70 DNL contour) who wish to have their home acquired for noise reasons. These types of concerns would be addressed in an EA or EIS study, prior to acquisition.

<b>COST TO IMPLEMENT:</b>	Approximately \$1.8 million (funded by the FAA and ConnDOT). Actual costs would be determined at the time of acquisition.
<b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b>	As 70 DNL is a noise level that is incompatible with residential development, this alternative <i>IS A CANDIDATE</i> for inclusion in the NCP.

**NOISE COMPATIBILITY PROGRAM ALTERNATIVE C.1B**

**C.1B** – Voluntary acquisition of all homes within the 65 and 70 DNL contours in Middlebury (up to 58 homes). Preliminary estimated cost: approximately \$20 million. Actual costs would be determined at the time of acquisition.

This alternative would involve the voluntary acquisition of all homes within the 65 and 70 DNL contours in Middlebury. All of the issues associated with Alternative C1.A would apply, with up to 58 homes that could be acquired and demolished. Redevelopment of the associated parcels would be prohibited. This alternative would largely split the Triangle Hills neighborhood, as 13 homes within the 60 DNL contour would not be included. These types of concerns would be addressed in an EA or EIS study, prior to acquisition.

<b>TITLE:</b>	Voluntary Property Acquisition within the 65 and 70 DNL Contours.
<b>DESCRIPTION:</b>	Voluntary acquisition of all homes within the 65 and 70 DNL contours in Middlebury (up to 58 homes). These homes would be purchased and demolished, as no land use is permitted in the R-40 district that is compatible with noise levels greater than 65 DNL. Following demolition, redevelopment of the associated parcels would be prohibited.
<b>BENEFITS:</b>	The residents exposed to incompatible noise levels (greater than 65 DNL) would be provided with the opportunity to relocate. The homes would be demolished, with the associated parcels converted to open space.
<b>DRAWBACKS:</b>	The participating residents may have difficulty finding comparable housing elsewhere in Middlebury for the amount of money they would receive (as homes within the vicinity of the Triangle Hills neighborhood may have a lower average FMV). This alternative might also seem arbitrary to other residents in the Triangle Hills neighborhood (those within the 60 DNL contour) who wish to have their home acquired for noise reasons. These types of concerns would be addressed in an EA or EIS study, prior to acquisition.
<b>COST TO IMPLEMENT:</b>	Approximately \$20 million (funded by the FAA and ConnDOT). Actual costs would be determined at the time of acquisition.
<b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b>	As 65 and 70 DNL are noise levels that are incompatible with residential development, this alternative <i>IS A CANDIDATE</i> for inclusion in the NCP.

**NOISE COMPATIBILITY PROGRAM ALTERNATIVE C.1C**

**C.1C** – Voluntary acquisition of all homes in the vicinity of the Triangle Hills neighborhood (up to 71 homes). This would include the 58 homes within the 65 and 70 DNL contours, as well as the 13 homes within the 60 DNL contour. Preliminary estimated cost: approximately \$25 million. Actual costs would be determined at the time of acquisition.

This alternative would involve the voluntary acquisition of all homes within the vicinity of the Triangle Hills neighborhood, and was identified for noise compatibility, neighborhood continuity, and equitable planning purposes. All of the issues associated with Alternatives C1.A and C1.B would apply, with up to 71 homes that could potentially be acquired and demolished. Redevelopment of the associated parcels would be prohibited. These types of concerns would be addressed in an EA or EIS study, prior to acquisition. In order for this alternative to be considered within the 60 DNL contour, Middlebury would have to establish 60 DNL as a threshold for residential land use compatibility.

<b>TITLE:</b>	Voluntary Property Acquisition (Entire Triangle Hills Neighborhood).
<b>DESCRIPTION:</b>	Voluntary acquisition of all homes within the vicinity of the Triangle Hills neighborhood (up to 71 homes), including homes within the 60, 65, and 70 DNL contours. These homes would be purchased and demolished, and redevelopment of the associated parcels would be prohibited. This alternative was identified for noise compatibility, neighborhood continuity, and equitable planning purposes.
<b>BENEFITS:</b>	This alternative would promote equity in the Triangle Hills neighborhood (by including all 71 homes within the 60, 65, and 70 DNL contours), and would remove homes from incompatible noise levels (greater than 65 DNL).
<b>DRAWBACKS:</b>	The participating residents may have difficulty finding comparable housing elsewhere in Middlebury for the amount of money they would receive (as homes within the vicinity of the Triangle Hills neighborhood may have a lower average FMV). In order for this alternative to be considered within the 60 DNL contour, Middlebury would have to establish 60 DNL as a threshold for residential land use compatibility. The FAA would also have to determine that this alternative is necessary for neighborhood continuity and equitable planning purposes. These types of concerns would be addressed in an EA or EIS study, prior to acquisition.

<b>COST TO IMPLEMENT:</b>	Approximately \$25 million (funded by the FAA and ConnDOT). Actual costs would be determined at the time of acquisition.
<b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b>	Although receiving funding and approval would require an additional determination by the FAA (because of the 13 homes within the 60 DNL contour), this alternative should be considered to achieve equity in the Triangle Hills neighborhood. Therefore, this alternative <i>IS A CANDIDATE</i> for inclusion in the NCP.

## C.2 Purchase Assurance

Purchase assurance is a voluntary program that guarantees homeowners fair market value (FMV) for their home if and when they choose to sell. To qualify, their home must be on the market for a set period of time without receiving a reasonable offer (e.g., within 95% of FMV), and a “bona fide effort” to sell must be demonstrated.

Purchase assurance can be implemented in areas exposed to high levels of aircraft noise where the sale of homes can be difficult. An airport sponsor would acquire participating homes at FMV after the established “time-on-the-market” period and a “bona fide effort” to sell has been made by the homeowner. Compensation for relocation and other expenses would not be provided to the homeowner. Following acquisition, depending on their noise exposure level, homes would either be demolished or potentially be resold with sound insulation and an aviation easement<sup>5</sup>.

For this study, potential purchase assurance alternatives focus on homes within the vicinity of the Triangle Hills neighborhood (refer to Figure 4-1). A purchase assurance program would be similar to outright acquisition, but some homes could potentially be resold with sound insulation and an aviation easement. Issues with purchase assurance are similar to those discussed under the property acquisition alternatives. However, there is also the added issue associated with handling residential upgrades and resale.

Potential purchase assurance alternatives are described below.

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<sup>5</sup> The Town of Middlebury does not agree with this alternative (See Town of Middlebury First Selectman's comments on the draft report in Appendix E, comment C3). However, the alternative is included in the final report as the State's recommendation to the towns and public.

**NOISE COMPATIBILITY PROGRAM ALTERNATIVE C.2A**

**C.2A** – In Middlebury, offer a voluntary purchase assurance program to all 58 homes within the 65 and 70 DNL contours.

ConnDOT would offer a voluntary purchase assurance program to all 58 homes within the 65 and 70 DNL contours in Middlebury. This would likely include the demolition of the homes that choose to participate, except for select homes within the 65 DNL that could potentially be resold with sound insulation and an avigation easement (i.e., homes located outside of the Runway Protection Zone). ConnDOT would be responsible for the insulation and resale of several homes within the 65 DNL contour.

<b>TITLE:</b>	Purchase Assurance within the 65 and 70 DNL Contours.
<b>DESCRIPTION:</b>	ConnDOT would offer a voluntary purchase assurance program to all 58 homes within the 65 and 70 DNL contours in Middlebury. This would likely include the demolition of the homes that choose to participate, except for select homes within the 65 DNL contour that could potentially be resold with sound insulation and an avigation easement (those located outside of the Runway Protection Zone).
<b>BENEFITS:</b>	This alternative would guarantee residents FMV for their home if they wish to sell.
<b>DRAWBACKS:</b>	The participating residents may have difficulty finding comparable housing elsewhere in Middlebury for the amount of money they would receive (as homes within the vicinity of the Triangle Hills neighborhood may have a lower average FMV). This alternative might also seem arbitrary to other residents in the Triangle Hills neighborhood (those within the 60 DNL contour) who wish to have their home acquired for noise reasons. These types of concerns would be addressed in an EA or EIS study, prior to implementation.
<b>COST TO IMPLEMENT:</b>	The costs associated would depend upon the level of participation, and would be funded by the FAA and ConnDOT.
<b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b>	This alternative could allow for the potential resale of several homes within the 65 DNL contour (with sound insulation and an avigation easement), which is not desirable. As outright property acquisition is preferred (Alternative C1.B), this alternative is <b><i>NOT A CANDIDATE</i></b> for inclusion in the NCP.

**NOISE COMPATIBILITY PROGRAM ALTERNATIVE C.2B**

**C.2B** – In Middlebury, offer a voluntary purchase assurance program to all 71 homes within the vicinity of the Triangle Hills neighborhood.

ConnDOT would offer a voluntary purchase assurance program to all 71 homes within the vicinity of the Triangle Hills neighborhood. This would include homes within the 60, 65, and 70 DNL contours, and was identified for neighborhood continuity and equitable planning purposes. All of the issues associated with Alternative C2.A would apply, with an additional 13 homes that would be included. In order for this alternative to be considered within the 60 DNL contour, Middlebury would have to establish 60 DNL as a threshold for residential land use compatibility.

<b>TITLE:</b>	Purchase Assurance (Entire Triangle Hills Neighborhood).
<b>DESCRIPTION:</b>	For neighborhood continuity and equitable planning purposes, ConnDOT would offer a voluntary purchase assurance program to all 71 homes within the vicinity of the Triangle Hills neighborhood, including homes within the 60, 65, and 70 DNL contours. This would likely include the demolition of the homes that choose to participate, except for select homes within the 60 and 65 DNL contours that could potentially be resold with sound insulation and an aviation easement (those located outside of the Runway Protection Zone).
<b>BENEFITS:</b>	This would guarantee residents FMV if they wish to sell.
<b>DRAWBACKS:</b>	The participating residents may have difficulty finding comparable housing elsewhere in Middlebury for the amount of money they would receive (as homes within the vicinity of the Triangle Hills neighborhood may have a lower average FMV). In order for this alternative to be considered within the 60 DNL contour, Middlebury would have to establish 60 DNL as a threshold for residential land use compatibility. The FAA would also have to determine that this alternative is necessary for neighborhood continuity and equitable planning purposes. These types of concerns would be addressed in an EA or EIS study, prior to implementation.
<b>COST TO IMPLEMENT:</b>	The costs associated would depend upon the level of participation, and would be funded by the FAA and ConnDOT.
<b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b>	As homes within the 60 DNL contour would be included (in the Triangle Hills neighborhood), receiving funding and approval for this alternative could be difficult. Therefore, this alternative is <b><i>NOT A CANDIDATE</i></b> for inclusion in the NCP.

### C.3 Sound Insulation

Within existing homes exposed to high levels of aircraft noise, NLR can be achieved through insulating or by implementing other soundproofing measures. NLR measures can include replacement of windows, doors, siding, roofs, air conditioning systems, etc. A typical sound insulation program can provide up to 15 decibels of interior NLR. The FAA requires that homes in such a program achieve a NLR of at least five decibels. The specific NLR required depends upon the noise exposure level and composition of a home. An airport sponsor would assume the costs associated with implementing a sound insulation program. Note that the FAA will not typically authorize a sound insulation program for homes within a 70 DNL contour (or higher), or within a Runway Protection Zone.

For this study, potential sound insulation alternatives focus on homes within the vicinity of the Triangle Hills neighborhood (refer to Figure 4-1). An average cost was estimated to be \$30,000 per home, which would be funded by the FAA and ConnDOT. Actual costs would be determined at the time of implementation. As DNL contours often shift or expand over time, FAA approval of a sound insulation program for this area would require that long-term DNL contours not indicate increased noise levels that will ultimately require acquisition. Note that the five homes within the 70 DNL contour would not likely be eligible for sound insulation.

In order to provide a suitable living environment, the FAA recommends a target of 45 dB for interior noise levels. As such, appropriate NLR measures would be designed for each home to satisfy the FAA's target (where feasible).

Potential sound insulation alternatives are described below.

**NOISE COMPATIBILITY PROGRAM ALTERNATIVE C.3A**

**C.3A** – In Middlebury, offer a voluntary sound insulation program to all 53 homes within the 65 DNL contour. Preliminary estimated cost: approximately \$1.6 million. Actual costs would be determined at the time of implementation. Acquire all homes within the 70 DNL contour (as stated in Measure C1.A).

<b>TITLE:</b>	Sound Insulation within the 65 DNL Contour.
<b>DESCRIPTION:</b>	In Middlebury, offer a voluntary sound insulation program to all 53 homes within the 65 DNL contour. Acquire all homes within the 70 DNL contour (as stated in Alternative C.1A). An avigation easement would be included for the insulated homes.
<b>BENEFITS:</b>	Homes would be adequately equipped to provide effective NLR.
<b>DRAWBACKS:</b>	This alternative might seem arbitrary to other residents in the Triangle Hills neighborhood (those within the 60 DNL contour) who wish to have their home insulated for noise reasons. This alternative does not include the insulation of homes within the 70 DNL contour (typically not authorized by the FAA). In addition, the FAA would not likely authorize the insulation of the homes within the Runway Protection Zone (31 homes).
<b>COST TO IMPLEMENT:</b>	Approximately \$1.6 million (funded by the FAA and ConnDOT). Actual costs would be determined at the time of implementation.
<b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b>	To provide residents with an alternative option to voluntary acquisition, this alternative <i>IS A CANDIDATE</i> for inclusion in the NCP.

**NOISE COMPATIBILITY PROGRAM ALTERNATIVE C.3B**

**C.3B** – In Middlebury, offer a voluntary sound insulation program to all 66 homes within the vicinity of the Triangle Hills Neighborhood (within the 60 and 65 DNL contours). Preliminary estimated cost: approximately \$2 million. Actual costs would be determined at the time of implementation. Acquire all 5 homes within the 70 DNL contour (as stated in Measure C1.A). In order for this alternative to be considered within the 60 DNL contour, Middlebury would have to establish 60 DNL as a threshold for residential land use compatibility. The FAA would also have to determine that this alternative is necessary for neighborhood continuity and equitable planning purposes.

<b>TITLE:</b>	Sound Insulation (Triangle Hills Neighborhood).
<b>DESCRIPTION:</b>	In Middlebury, offer a voluntary sound insulation program to all 66 homes within the vicinity of the Triangle Hills Neighborhood (within the 60 and 65 DNL contours). Acquire all 5 homes within the 70 DNL contour (as stated in Alternative C.1A). An aviation easement would be included for the insulated homes.
<b>BENEFITS:</b>	Homes would be adequately equipped to provide effective NLR.
<b>DRAWBACKS:</b>	In order for this alternative to be considered within the 60 DNL contour, Middlebury would have to establish 60 DNL as a threshold for residential land use compatibility. The FAA would also have to determine that this alternative is necessary for neighborhood continuity and equitable planning purposes. This alternative does not include the insulation of homes within the 70 DNL contour (not typically authorized by the FAA). In addition, the FAA would not likely authorize the insulation of the homes within the Runway Protection Zone (31 homes).
<b>COST TO IMPLEMENT:</b>	Approximately \$2 million (funded by the FAA and ConnDOT). Actual costs would be determined at the time of implementation.
<b>FINDINGS AND PRELIMINARY RECOMMENDATION:</b>	To provide residents with an alternative option to voluntary acquisition, this alternative <i>IS A CANDIDATE</i> for inclusion in the NCP.

### **4.3 Summary of Candidate Land Use Alternatives**

In summary, the following OXC land use alternatives are candidates for inclusion in the draft Noise Compatibility Program (NCP). These alternatives are candidates based on the anticipated benefits associated with their implementation (i.e., preventing further aircraft noise exposure or correcting existing aircraft noise exposure). Based on meetings with both Middlebury and Oxford elected officials, implementing zoning changes (e.g., compatible use or large-lot zoning) was not considered.

*This chapter evaluates the land use based forecast 2008 activity at OXC. As described at the beginning of this chapter, Chapter 5 presents the noise contour updates for recorded 2007 and forecast 2012 activity. To be consistent with FAA's time-period policy for submission of a Noise Study, Chapter 5 evaluates the NCP land use recommendations based on forecast 2012 activity, combined with the NCP noise abatement recommendations (i.e., 2012 Mitigated conditions).*

#### **Preventative Land Use Alternatives**

- **P.1C** – Encourage Middlebury, Oxford, and Southbury to not re-zone commercial or industrial districts into residential districts within two miles of the OXC property line. An OXC representative should be appointed to review proposed zoning changes.
- **P.4** – Preventative acquisition of undeveloped residentially-zoned property within the 60 and 65 DNL contours (through voluntary sale).
- **P.5** – Establish fair disclose regulations for new residential development, and for the transfer of existing homes, within the 60 and 65 DNL contours.
- **P.6** – Require avigation easements for the approval of new residential development within the 60 and 65 DNL contours (in both Middlebury and Oxford). Developers would be required to grant the easements as part of the subdivision approval process.
- **P.7** – Establish noise related subdivision regulations for new residential development within the 60 and 65 DNL contours. The subdivision regulations could include fair disclosure regulations, avigation easements, and NLR requirements.
- **P.8** – Establish noise overlay zoning for the following candidate preventative land use alternatives: P.1C, P.5, P.6, and P.7.

#### **Corrective Land Use Alternatives**

- **C.1A** – Voluntary acquisition of all homes within the 70 DNL contour (up to 5 homes)
- **C.1B** – Voluntary acquisition of all homes within the 65 and 70 DNL contours (up to 58 homes).
- **C.1C** – Voluntary acquisition of all homes within the vicinity of the Triangle Hills neighborhood (up to 71 homes), including homes within the 60, 65, and 70 DNL contours.

- **C.3A** – Offer a voluntary sound insulation program to all 53 homes within the 65 DNL contour. Acquire all 5 homes within the 70 DNL contour (as stated in Alternative C.1A).
- **C.3B** – Offer a voluntary sound insulation program to all 66 homes within the 60 and 65 DNL contours. Acquire all 5 homes within the 70 DNL contour (as stated in Alternative C.1A).