

1.0 INVENTORY AND AFFECTED ENVIRONMENT

This chapter outlines the existing facilities and surrounding environment of the Waterbury-Oxford Airport (OXC). An inventory of the Airport, as well as a brief overview of the location, operating procedures, activity levels, and surrounding land use and zoning, is provided in the sections below. The following items are discussed:

- Airport Location and Role
- Airport Facilities
- Surrounding Land Use and Zoning
- Airport Operations and Procedures
- Airport Activity

1.1 Airport Location & Role

Waterbury-Oxford Airport is located approximately seven miles southwest of Waterbury and one mile south of Interstate 84 in Oxford, Connecticut (see Figure 1-1), with a small northern portion of the Airport within the Town of Middlebury. The Town of Southbury is located approximately one mile west of the Airport. Table 1-1 summarizes the municipal and county population and growth rate data.

New Haven County, which is home to OXC, consists of 27 towns in south central Connecticut – the Central Naugatuck Valley. The 2004 population for the County totaled 847,500. Major industries include manufacturing, retail trade, and services.

TABLE 1-1 – POPULATION				
Town	1990	2000	2004	Growth (1990-2004)
Oxford	8,685	9,281	10,298	19%
Middlebury	6,145	6,451	6,909	12%
Southbury	15,818	18,567	19,046	20%
New Haven County Total	804,219	824,008	847,502	5%
Source: Connecticut Economic Resource Center (CERC)				

Between 1990 and 2004, the Town of Oxford experienced a 19 percent growth in population while New Haven County experienced a five percent growth. Middlebury and Southbury respectively experienced 12 and 20 percent growth rates during the same period.

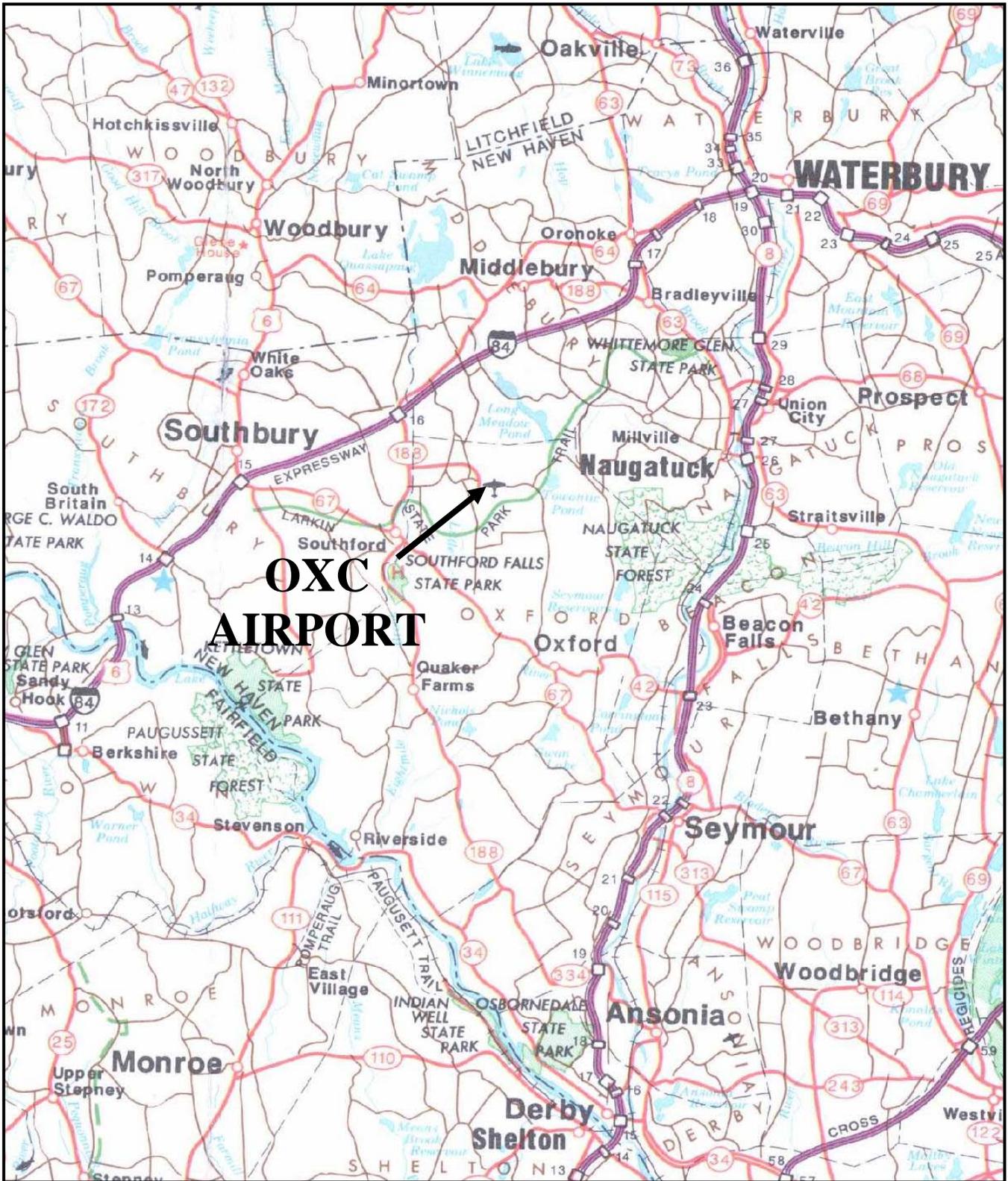


			Figure 1-1 General Location Map
	Scale 1" = 2.5 Miles	CHA File No: 13301	Waterbury-Oxford Airport FAR Part 150 Noise Study

The Airport is a premier General Aviation (GA) facility in the region, and does not offer, nor is the management pursuing, scheduled airline service. Visitors who fly on airlines into the area arrive primarily at Bradley International Airport and the three New York metro airports, LaGuardia, JFK, and Newark. Several smaller commercial airports are also located within an hour of OXC, including Westchester County, New Haven, and Stewart International Airport in Newburgh, NY. As such, airline service is not needed or anticipated at OXC. However, OXC serves many charter, corporate, and personal aircraft users residing in or visiting New Haven, Fairfield, and Litchfield Counties year-round.

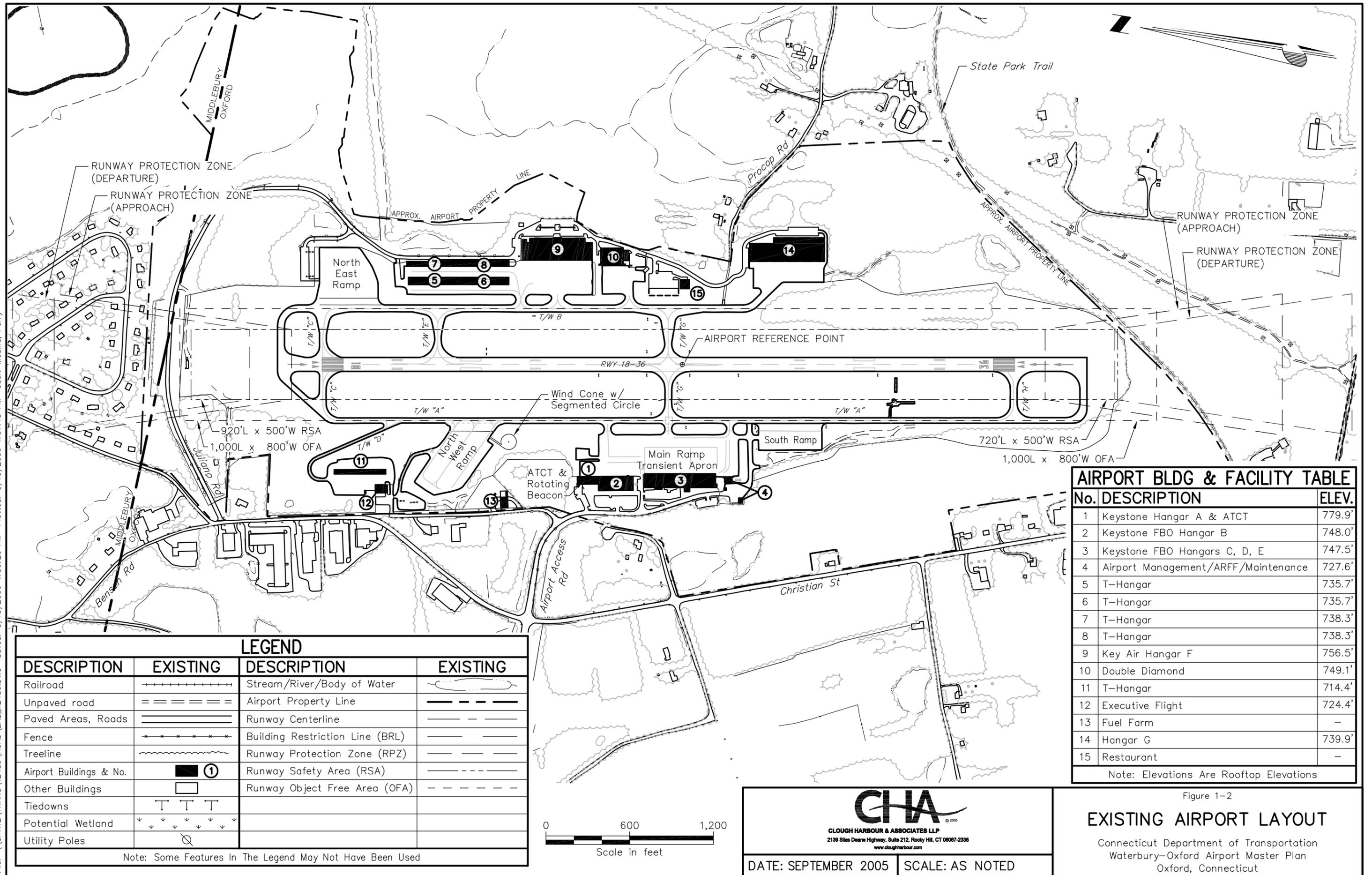
1.2 Airport Facilities

As illustrated On Figure 1-2, Waterbury-Oxford Airport consists of approximately 430 acres of property encompassing all airport facilities. Waterbury-Oxford has one paved and lighted runway (Runway 18-36). This 5,800-foot long runway is oriented on an approximate 180-360 degree magnetic alignment (north to south), and is 100 feet in width. The runway is served by a full parallel taxiway to the west and a partial parallel taxiway to the east. Runway 18-36 is equipped with High Intensity Runway Lights (HIRLs), which enable 24-hour operation of the Airport, seven days a week. However, approximately 90% of the airport activity occurs during the day (7 a.m. to 10 p.m.).

Navigational aids (navaids) are radio facilities providing approach guidance information. Runway 36 is equipped with an Instrument Landing System (ILS). An ILS is considered a precision approach landing system, which provides horizontal and vertical guidance to the pilot. Additionally, satellite-based Global Positioning System (GPS) approaches are available to both runway ends.

Hangar facilities at OXC include eight conventional (or open-bay) hangars for private and fixed-based operations, and five T-hangar buildings. The conventional hangars range from 15,000 to 62,500 square feet, and can house approximately 70 aircraft (total). The T-hangar buildings accommodate a total of 64 units. Note that a 62,500 square-foot hangar was constructed during the preparation of this study. OXC provides aircraft fuel facilities at three locations, two located on the west side of the Airport and one located on the east side of the Airport. The Air Traffic Control Tower (ATCT) is located near midfield on the west side of the Airport.

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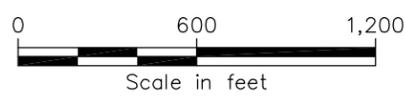


AIRPORT BLDG & FACILITY TABLE		
No.	DESCRIPTION	ELEV.
1	Keystone Hangar A & ATCT	779.9'
2	Keystone FBO Hangar B	748.0'
3	Keystone FBO Hangars C, D, E	747.5'
4	Airport Management/ARFF/Maintenance	727.6'
5	T-Hangar	735.7'
6	T-Hangar	735.7'
7	T-Hangar	738.3'
8	T-Hangar	738.3'
9	Key Air Hangar F	756.5'
10	Double Diamond	749.1'
11	T-Hangar	714.4'
12	Executive Flight	724.4'
13	Fuel Farm	-
14	Hangar G	739.9'
15	Restaurant	-

Note: Elevations Are Rooftop Elevations

LEGEND			
DESCRIPTION	EXISTING	DESCRIPTION	EXISTING
Railroad	+++++	Stream/River/Body of Water	~~~~~
Unpaved road	====	Airport Property Line	-----
Paved Areas, Roads	=====	Runway Centerline	-----
Fence	* * * * *	Building Restriction Line (BRL)	-----
Treeline	~~~~~	Runway Protection Zone (RPZ)	-----
Airport Buildings & No.	■ ①	Runway Safety Area (RSA)	-----
Other Buildings	□	Runway Object Free Area (OFA)	-----
Tiedowns	T T T		
Potential Wetland	↓ ↓ ↓ ↓ ↓		
Utility Poles	⊗		

Note: Some Features In The Legend May Not Have Been Used



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Figure 1-2
EXISTING AIRPORT LAYOUT
 Connecticut Department of Transportation
 Waterbury-Oxford Airport Master Plan
 Oxford, Connecticut

1.3 Land Use and Zoning

As discussed in Section 1.1, Waterbury-Oxford Airport is located in both the Town of Middlebury and the Town of Oxford. The municipal boundary intersects the northern end of the airport property, with a small portion of the Airport in Middlebury. The majority of the Airport is in Oxford. Southbury is located less than a mile to the west of the Airport. Airport property and town boundaries are illustrated on Figure 1-2.

1.3.1 Land Use

Airport property is surrounded by a mix of open, wooded, residential, commercial, and industrial land uses. The land to the south of the Airport is predominately wooded and/or open, with light industrial establishments along Christian Street and several low density residential areas south of an electrical transmission line. The Larkin State Park Trail is just south of the runway. A wide mixture of industrial, and residential land uses are located to the north and west of the Airport along Christian Street, Route 188, and other roadways. The land to the east is predominately wooded with scattered residential areas.

Residences are scattered along virtually every roadway in the airport vicinity (excluding I-84). The highest density of housing near the Airport is located to the north of Juliano Road and west of Christian Street (e.g., Triangle Boulevard). This area includes over 50 single-family homes and is located one-quarter mile north of the runway. Land use patterns are illustrated on Figure 1-3.

1.3.2 Municipal Zoning

This subsection provides an overview of the zoning districts adjacent to and in the immediate vicinity of the airport boundaries. The zoning districts that could allow noise-sensitive land uses to encroach on the Airport are identified in Table 1-2.

Town of Oxford

The Town of Oxford Zoning Regulations, last amended in February 2004, is the official zoning regulations for the Town of Oxford. Four zoning districts are located within the vicinity of the Airport, including residential, industrial, commercial, and corporate districts (see Figure 1-3). Table 1-2 presents the specifics of each district and the allowed noise-sensitive land uses.

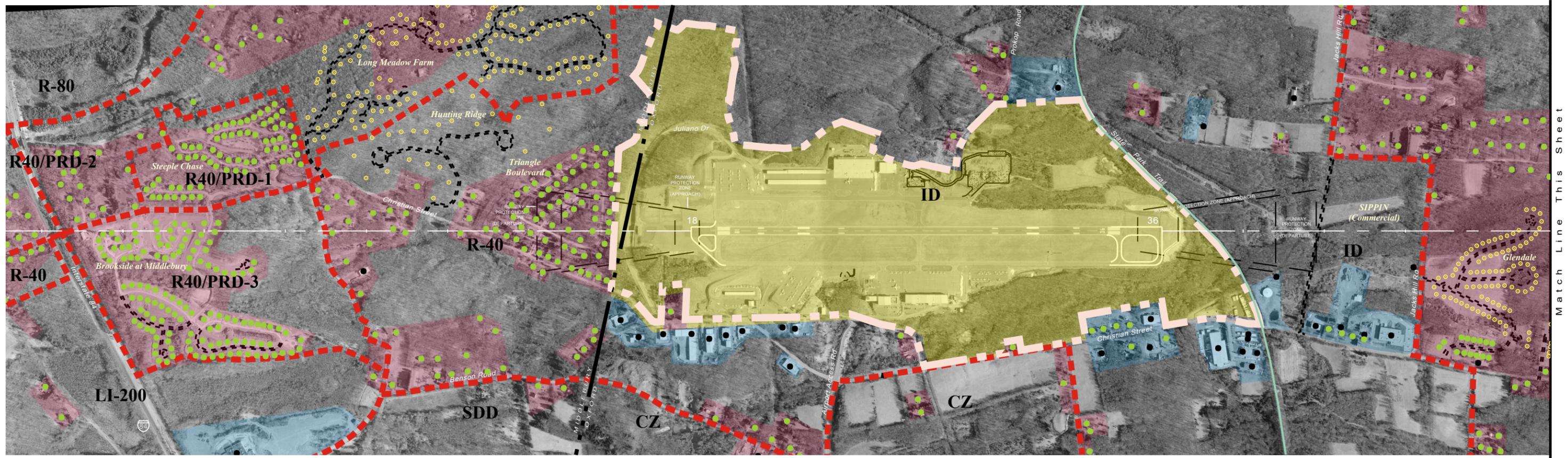
Town of Middlebury

The Town of Middlebury Zoning Regulations, last amended in March 2004, is the official zoning regulations for the Town of Middlebury. Five residential districts, one light industry district, and one special development district are located within the vicinity of the Airport (see figure 1-3). Table 1-2 presents the specifics of each district and the allowed noise-sensitive land uses.

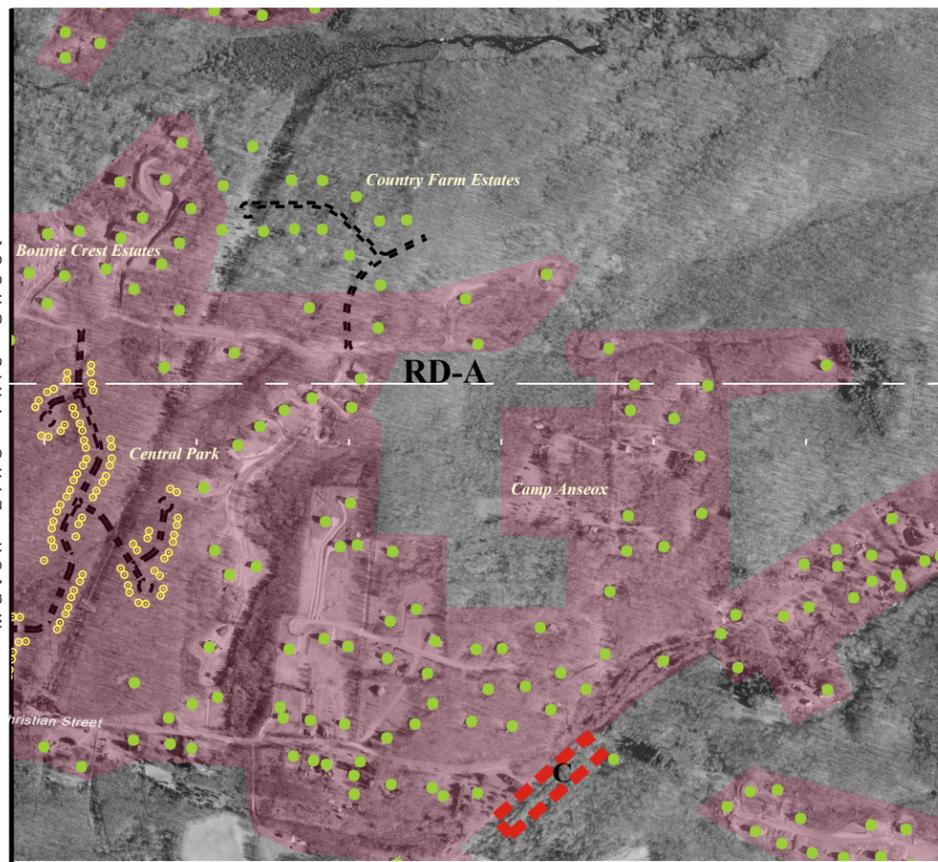
**TABLE 1-2 – MUNICIPAL ZONING REGULATIONS
RELATED TO NOISE-SENSITIVE USES**

Town	Zoning District	Noise Sensitive	Permitted Uses	Min. Lot Size Per Dwelling
Oxford	Residential District-A (RD-A)	Yes	Single-Family Residential, Accessory Apts., Government Buildings, Farms, Garden Supply Centers, Nurseries	2.25 Acres
	Commercial (C)	No	Day Care, Banks, Retail, Medical Offices, Business Offices, Theaters	2 Acres
	Corporate Zone (CZ)	No	Corporate Offices, Professional Offices, Manufacturing, R&D	4 Acres
	Industrial District (ID)	No	Public Utility, Corporate Offices, Professional Offices, Banks,	3.75 Acres
Middlebury	Residential-40 (R-40)	Yes	Single-Family Dwellings, Schools, Parks, Playgrounds, Farms, Garden Centers	40,000 sq ft
	Residential-80 (R-80)	Yes	Single-Family Dwellings, Schools, Parks, Playgrounds, Farms, Garden Centers	80,000 sq ft
	Planned Residential Development (PRD R-40)	Yes	Single-Family Dwellings, Schools, Parks, Playgrounds, Farms, Garden Centers	40,000 sq ft*
	Light Industry (LI)	No	Light Manufacturing, Warehouse, Office, Research, Public Utilities Company, Farm	200,000 sq ft
	Special Development District (SDD)	No	Subject to Public Commission Hearing	400,000 sq ft

*PRD districts are intended to enable higher development densities in clusters, in order to protect sensitive environmental areas and enable more efficient construction. The actual density allowed is based upon a calculation involving total acreage, roads, wetlands, and slopes.



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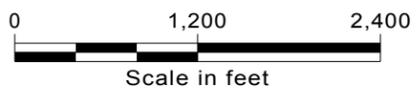


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ZONING	
Runway Alignment (Marks every 1,000')	—+—+—+—+—+—+—
Town Boundary	—+—+—+—+—+—+—
Approx. Airport Property Line	—+—+—+—+—+—+—
Zoning Limit	—+—+—+—+—+—+—
Town of Oxford	
ZONE	Description
C	Commercial
CZ	Corporate Zone
ID	Industrial District
RD-A	Residential District - A
Source: Oxford Zoning Map	
Town of Middlebury	
ZONE	Description
R-40	Residential
R-80	Residential
R-40/PRD-1	Planned Residential Development
R-40/PRD-2	Planned Residential Development
R-40/PRD-3	Planned Residential Development
LI	Light Industry
SDD	Special Development District
Source: Official Middlebury, CT Zoning Map - May 1, 2003	

LAND USE	
	Airport Property
	Undeveloped, Open, Wooded
	Residential
	Commercial/Industrial
	State Park Trail

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




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Figure 1-3
LAND USE & ZONING
 Connecticut Department of Transportation
 FAR Part 150 Noise Study
 Towns of Middlebury and Oxford

1.4 Airport Operating Procedures

At OXC, air traffic is directed by local Air Traffic Control Tower (ATCT) personnel during the hours of 6:00 a.m. to 9:00 p.m., and by pre-established airport traffic patterns when the ATCT is closed. Tower personnel direct airport operations based on three primary factors: wind, established flight procedures, and weather conditions.

Ideally, all takeoffs and landings are conducted into the wind in order to reduce aircraft speed and improve safety. The predominant winds at OXC are from the north and northwest. Runway 36 is used by aircraft departing to the north and approaching from the south. Thus, it has been estimated that 73 percent of the takeoffs and landings occur on Runway 36. The 27 percent remainder of the flights would occur on Runway 18 by aircraft approaching from the north and departing to the south.

During fair weather conditions, Visual Flight Rules (VFR) are in effect. VFRs allow aircraft to fly many different flight patterns as directed by the air traffic controllers. Primary patterns include flying straight-in or straight-out from either runway end, or standard rectangular traffic patterns with left-or right-hand turns; the turn direction depends mostly on the destination of or origin of the aircraft. Chapter 2 provides more detailed descriptions of flight patterns at OXC for use in the noise analysis.

Aircraft must file instrument flight plans during poor weather or Instrument Flight Rules (IFR) conditions (visibility under three-miles and a cloud ceiling of \leq 1,000 feet above ground level). IFR flight procedures at OXC are affected by the established airspace of the two regional air traffic facilities in New York and Hartford (referred to as New York and Bradley Approach Control).

The Airport falls within the airspace controlled by New York Approach Control, which affects the departure procedures under IFR conditions. For OXC, IFR departures on Runway 36 are directed to climb straight-out until reaching 400 feet above the Airport, followed by an immediate left turn. This left turn retains the departing aircraft within the NY Approach Control airspace. No such turn is required for aircraft departing to the south on Runway 18, which are directed to fly straight-out. As jet aircraft regularly file IFR flight plans even during fair weather conditions, these procedures are the predominant departure patterns for jet aircraft at OXC. These procedures therefore influence noise patterns at the Airport, as documented in Chapter 2.

ConnDOT has contacted the FAA Air Traffic Division to address the airspace boundaries and procedures at the Airport. Any changes that are implemented may affect flight patterns and noise exposure at OXC, and would be incorporated into this study.

1.5 Airport Activity

Aircraft activity at OXC consists of corporate, charter, and private general aviation use. Table 1-3 shows the number of annual aircraft operations conducted at OXC in 2003, and the projected 2008 operations. An aircraft operation is defined as either a landing or a takeoff. Thus, each flight includes at least two operations – one takeoff and one landing.

Total annual operations in 2003 were 66,000; projected total annual operations for 2008 are 72,700. Piston aircraft comprised nearly 90 percent of total annual operations for 2003 at OXC. However, while piston aircraft operations are projected to increase by 2008, their share of total annual operations is projected to decrease to 85 percent. Turboprop and jet aircraft operations in 2003 accounted for approximately 10 percent of total annual operations, which is expected to increase to 14 percent by 2008. The total share of jet operations is projected to increase from six to nine percent by 2008.

TABLE 1-3 – ANNUAL AIRCRAFT OPERATIONS					
Engine	Aircraft	2003		2008	
		Operations	Percent	Operations	Percent
Piston	Single-Engine	49,445	75%	52,105	72%
	Multi-Engine	9,255	14%	9,795	13%
	Total	58,700	89%	61,900	85%
Turboprop		3,100	5%	3,600	5%
Jet	Small	970	1%	1,740	2%
	Medium	1,380	2%	2,450	3%
	Large	1,350	2%	2,510	3%
	Total	3,700	6%	6,700	9%
Rotor		500	1%	500	1%
Total Annual Operations:		66,000	100%	72,700	100%

Figure 1-4 provides example illustrations of each aircraft type. Table 1-4 summarizes the existing and forecast based aircraft at OXC.

TABLE 1-4 – BASED AIRCRAFT		
Aircraft	2003	2008
Single and Multi-Engine Piston	188	191
Turboprop	10	11
Jet	37	48
Rotor	1	1
Total	236	251

As discussed earlier (see Foreword, page i), activity updates for the most recent full-year (2007) and five year forecast (2012) was undertaken. Table 1-5 shows the number of annual aircraft operations conducted at OXC in 2007, and the projected 2012 operations. Total annual operations in 2007 were 64,132; projected operations for 2012 are 69,485. While total jet operations have increased since 2003, the noisier stage II jet operations are decreasing. Majority of stage II are being replaced by less noisy newer-generation jets. This trend is anticipated to continue, and is reflected in the 2012 forecast.

TABLE 1-5 – COMPARISON OF OPERATIONS					
Aircraft Type	Year			Change (2003-2007)	Change (2007-2012)
	2003	2007	2012 (forecast)		
SE Piston	49,445	45,348	47,908	(8.3%)	5.6%
ME Piston	9,255	9,288	9,812	0.4%	5.6%
Turboprop	3,100	3,196	3,627	3.1%	13.5%
Jet (Stage III)	2,583	4,968	6,993	92.3%	40.7%
Jet (Stage II)	1,117	832	620	(25.5%)	(25.5%)
Helicopter	500*	500*	525	0.0%	5.0%
Total Operations	66,000	64,132	69,485	(2.8%)	8.3%

* Plus 3,000 annual helicopter flyovers

**FIGURE 1-4 – WATERBURY-OXFORD AIRPORT
SAMPLE AIRCRAFT**

Piston Aircraft



Turboprop Aircraft



Jet Aircraft

