Waterbury-Oxford Airport Airport Master Plan Update



EXECUTIVE SUMMARY



Prepared for: Connecticut Department of Transportation (ConnDOT)





Prepared by:



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EXECUTIVE SUMMARY

The Waterbury-Oxford Airport (OXC) Master Plan Update (AMPU) provides long-range recommendations for the improvement and development of the Airport. The AMPU includes a detailed report and set of drawings that identify, schedule, and illustrate the projects recommended for OXC during the 20-year planning period. This summary provides an overview of the OXC activity forecasts, facility requirements, and future development recommendations.

Public involvement activities were conducted as part of the AMPU process. A website (<u>www.oxcstudies.com</u>) was developed to provide public access to meeting notices and study materials, and to enable the submission of comments and questions.

Airport Overview

The Waterbury-Oxford Airport is owned by the State of Connecticut, and is located in the Town of Oxford, approximately seven miles southwest of the City of Waterbury and one mile south of Interstate 84. A small northern portion of OXC is located in the Town of Middlebury.

The Airport does not offer scheduled airline service, but serves many charter, corporate, and personal aircraft users residing in or visiting New Haven, Fairfield, and Litchfield Counties (Connecticut's Naugatuck Valley Region). The Airport serves as a base for over 200 aircraft, including approximately 40 corporate jets. OXC is classified as a "General Aviation" (GA) facility, and is included in the National Plan of Integrated Airport Systems (NPIAS). The Airport is eligible for federal grants under the Airport Improvement Program (AIP).

The Airport was opened on December 15, 1969, and initially featured a 5,000-foot Runway 18-36, with a shorter 1,999-foot crosswind Runway 13-31 built several years later in the early-1970s. However, Runway 13-31 was abandoned in order to pursue further landside development in the early-1990s. Over OXC's 35+ year history, many improvements have been implemented, including the construction of new taxiways, various hangars and aprons, an Air Traffic Control Tower (ATCT), Runway



Safety Areas (RSAs), and extensions to both ends of Runway 18-36 (bringing the runway to its current length of 5,800 feet). Runway 36 is equipped with an Instrument Landing System (ILS), which provides added safety and capability for landings during poor weather (IFR) conditions. The existing layout of OXC is illustrated on Figure ES-1.

There are approximately 140 tiedown positions, 64 T-hangar bays, and several large hangars at OXC. Ownership of these facilities is split amongst the Airport's fixed base operator (FBO) and multiple service operators (MSOs), as well as the State of Connecticut. They store aircraft ranging in size from small single-engine Cessna's to large Gulfstream and Global Express corporate jets. There are also three fueling facilities at OXC, with fueling provided by the FBO (Keystone Aviation) and two private MSOs.



Study Issues

Several changes have occurred at OXC in recent years. In addition to the Runway 18-36 extensions, an ATCT and several corporate aircraft hangars were constructed. Development is ongoing at the Airport; however, limited available property, steep terrain, and environmental issues constrain future development options. The AMPU provides an evaluation of the following issues:

- Wetland impacts associated with the recommendations
- Existing Runway Protection Zone (RPZ) impacts
- Noise impact analysis
- Positive economic impact of OXC to the local community

Forecasts

Based aircraft forecasts are important for GA airport studies, as they determine the need for future aircraft storage facilities (i.e., hangars and tiedowns) and FAA design standard requirements. Operations forecasts provide an indication as to whether existing airfield systems (runways and taxiways) can safely sustain future activity levels. The OXC based aircraft and operations forecasts are summarized below.

The OXC based aircraft forecasts were developed using the FAA's *Aerospace Forecasts Fiscal Years 2004-2015 (General Aviation Active Fleet Forecasts).* However, the FAA's forecasts were slightly adjusted to account for the additional corporate jet activity that is anticipated due to ongoing corporate aircraft hangar development. The number of based corporate jets at OXC is forecast to increase from 37 in year 2003 to 72 by year 2023 (see Table ES-1), with total based aircraft increasing from 236 to 287.

The OXC operations forecasts were developed using traffic counts provided by the ATCT (which operates daily between the hours 6:00 a.m. and 9:00 p.m.) and the FAA's *Aerospace Forecasts Fiscal Years 2004-2015 (General Aviation Aircraft Utilization).* There were a total of 55,172 operations (includes takeoffs and landings)



recorded by the ATCT in year 2003. This number was adjusted to 66,000 to account for operations that occurred when the ATCT was closed, and to adjust for runway construction closures in year 2003. Total OXC operations are forecast to increase from 66,000 in year 2003 to 86,500 by year 2023 (see Table ES-1).

TABLE ES-1 – FORECAST SUMMARY									
Aircraft Type	2003	2008	2013	2018	2023				
BASED AIRCRAFT									
Single-Engine/Multi-Engine Piston	188	191	194	197	200				
Single-Engine/Multi-Engine Turboprop	10	11	12	13	14				
Corporate Jet	37	65	67	69	72				
Rotorcraft	1	1	1	1	1				
Total	236	268	274	280	287				
OPERATIONS BY FLEET MIX									
Single-Engine/Multi-Engine Piston	58,656	61,884	65,378	68,950	72,600				
Single-Engine/Multi-Engine Turboprop	3,120	3,564	4,044	4,550	5,082				
Corporate Jet	3,700	6,695	7,169	7,659	8,280				
Rotorcraft	473	497	522	548	576				
Total	65,949	72,640	77,113	81,707	86,538				

Facility Requirements & Development Alternatives

Based on the OXC forecasts, the AMPU identified facility requirements for the 20-year planning period. The identified airfield facility requirements included a full-parallel taxiway (east side), additional exit taxiways, MALSR approach lighting system, GPS-based LPV approaches, and obstruction removal (electrical towers/lines). The identified landside facility requirements included additional T-hangar bays, conventional hangars, and an equipment building.



To address the facility requirements, over 20 individual development alternatives were created for OXC. Each alternative was evaluated against a set of criteria, including their environmental impacts, operational efficiency, safety, cost, etc., and several were recommended for development, as discussed below.

Airfield Recommendations

The primary airfield safety improvement for OXC is a full-parallel taxiway for the east side of the runway (Taxiway "B" extension). This is particularly important because Runway 36 is the primary departure runway, and large numbers of based aircraft are located on the east side of the Airport. Although the recommended alignment of Taxiway "B" would result in wetland impacts, they have been reduced by incorporating a 45-degree angled entrance to Runway 36 (see Figure ES-2).

Three exit taxiways are also recommended for the OXC airfield, as well as a service road to separate aircraft and ground vehicles, a MALSR approach lighting system for Runway 36, and obstruction removal (NE Utilities towers/lines and selective trees).



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Landside Recommendations

The landside recommendations include the development of 36 T-hangar bays both on and adjacent to the existing Northeast Ramp, an additional conventional hangar adjacent to Hangar "G," apron and tiedown expansion in various locations, and an equipment building (see Figure ES-2).

Airport Capital Improvement Plan

The Airport Capital Improvement Plan (ACIP) lists the recommended projects and associated cost estimates for the 20-year planning period. Grant-eligible projects at OXC may receive 95% federal funding, with ConnDOT responsible for the remaining 5%. These projects include planning and environmental studies, runway and taxiway development/rehabilitation, airport lighting, security enhancements, aircraft parking aprons, access roads, obstruction removal, land acquisition, and navigational aids. In some cases, ConnDOT may fund the total cost of an eligible project with a lower FAA priority (such as an equipment building).

Projects that are ineligible for funding include those that generate revenue and do not directly benefit the general public, such as hangars, fuel farms, and office buildings. A private party/developer (FBO or corporation) may fund and construct grant-ineligible projects under a lease agreement with ConnDOT.

In addition to potential new developments, OXC must also continually rehabilitate its existing airfield facilities and replace maintenance equipment. As such, the ACIP includes these additional costs. Although these items are not considered new capital developments, the associated costs can comprise the majority of an airport's annual capital investment. Recommendations of the OXC FAR Part 150 Noise Study may also require substantial expenditures for a potential multi-year property acquisition and/or noise insulation program. As such, the potential noise mitigation expenditures are also included in the ACIP.

Note that the ACIP does not constitute a commitment on behalf of the FAA or ConnDOT to fund any of the projects. In addition, the ACIP does not imply that the projects would receive environmental approvals. Thus, the ACIP serves as a planning document that must remain flexible. The ACIP should undergo regular updates as project priorities and demands indicate.

Table ES-2 summarizes the 20-year ACIP for OXC, with the AMPU recommendations organized into the following three implementation phases:

Phase I (0 to 5 years)

- *1A* Extension of parallel Taxiway "B" south to the runway end (design, EA, permitting)
- 1B Extension of exit Taxiway "E" on the west side of the runway to Taxiway "A"
- *IC* Airport service road construction parallel to Taxiway "A" (west side of airfield)
- *1D* T-hangar development adjacent to the Northeast Ramp
- *IE* T-hangar construction on the existing Northeast Ramp

- *IF* Expansion of the South Ramp
- 1G Expansion of the Executive Flight Ramp
- 1H Equipment Building Construction

Phase II (6 to 10 years)

- 2A Extension of parallel Taxiway "B" south to the runway end (wetland mitigation)
- 2B Extension of parallel Taxiway "B" south to the runway end (construction)
- *2C* Airport service road construction parallel to Taxiway "B" (east side of airfield)
- 2D Burial/lowering of Northeast Utilities electrical lines and selective tree removal
- 2E Expansion of the Transient Apron
- 2F Construction of a bi-directional exit taxiway for Runway 18 landings
- 2G Installation of MALSR approach lights for Runway 36

Phase III (11 to 20 years)

- 3A Extension of exit Taxiway "H" on the east side of the runway to Taxiway "B"
- 3B Airport service road construction north of Runway 18
- *3C* Airport service road construction to the Fuel Farm
- *3D* Hangar development south of Hangar "G"
- *3E* Taxiway "D" relocation

TABLE ES-2 – AIRPORT CA	TABLE ES-2 – AIRPORT CAPITAL IMPROVEMENT PLAN								
	Total	Anticipated Funding Source							
Project	Estimated Cost	FAA	State	Private					
PHASE I - (0 TO 5 YEARS)									
1.A. Extend Taxiway "B" (Design, EA, Permitting)	\$430,000	\$408,500	\$21,500						
1.B. Extend Exit Taxiway "E"	\$325,000	\$308,750	\$16,250						
1.C. Service Road Construction (West Side Airfield)	\$300,000	\$285,000	\$15,000						
1.D. T-Hangar Development	\$2,300,000			\$2,300,000					
1.E. T-Hangar Construction (NE Ramp)	\$860,000			\$860,000					
1.F. Expand South Ramp	\$420,000			\$420,000					
1.G. Expand Executive Flight Ramp	\$750,000			\$750,000					
1.H. Construct Equipment Building	\$450,000		\$450,000						
Equipment & Security Improvements	\$330,000		\$330,000						
Noise Implementation Program	\$500,000	\$475,000	\$25,000						
Implementation of Noise Study Recommendations*	\$5,000,000	\$4,750,000	\$250,000						
Phase I Subtotal	\$11,665,000	\$6,227,250	\$1,107,750	\$4,330,000					
PHASE II - (6 TO 10 YEARS)									
2.A. Extend Taxiway "B" (Wetland Mitigation)	\$1,600,000	\$1,520,000	\$80,000						
2.B. Extend Taxiway "B" (Construction)	\$3,110,000	\$2,954,500	\$155,500						
2.C. Service Road Construction (East Side Airfield)	\$200,000	\$190,000	\$10,000						
2.D. Burial/Lowering Elec. Lines & Tree Removal	\$5,000,000	\$2,375,000	\$125,000	\$2,500,000					
2.E. Expand Transient Apron	\$170,000	\$161,500	\$8,500						
2.F. Exit Taxiway Construction	\$420,000	\$399,000	\$21,000						
2.G. Runway 36 MALSR Installation	\$700,000	\$700,000							
Vehicle/Equipment Purchase	\$250,000	\$237,500	\$12,500						
Pavement Rehabilitation Projects	\$8,370,000	\$7,951,500	\$418,500						
Implementation of Noise Study Recommendations*	\$5,000,000	\$4,750,000	\$250,000						
Phase II Subtotal	\$24,820,000	\$21,239,000	\$1,081,000	\$2,500,000					
PHASE III - (11 TO 20 YEARS)									
3.A. Extend Exit Taxiway "H"	\$325,000	\$308,750	\$16,250						
3.B. Service Road Construction (North Runway 18)	\$460,000	\$437,000	\$23,000						
3.C. Service Road Construction (Fuel Farm)	\$150,000	\$142,500	\$7,500						
3.D. Hangar Development	\$10,000,000			\$10,000,000					
3.E. Taxiway "D" Relocation	\$1,000,000	\$950,000	\$50,000						
Vehicle/Equipment Purchase	\$500,000	\$475,000	\$25,000						
Pavement Rehabilitation Projects	\$7,400,000	\$5,291,500	\$278,500	\$1,830,000					
Implementation of Noise Study Recommendations*	\$5,000,000	\$4,750,000	\$250,000						
Phase III Subtotal	\$24,835,000	\$12,354,750	\$650,250	\$11,830,000					
GRAND TOTAL	\$61,320,000	\$39,821,000	\$2,839,000	\$18,660,000					
Note: Additional details are provided in the AMPU report. *This value is a pleasholder for long term planning purposes and does not represent anticipated funding. Proliminary cost									

^{*}This value is a placeholder for long-term planning purposes and does not represent anticipated funding. Preliminary cost estimates are provided in the FAR Part 150 Noise Study. Actual costs would be determined at the time of implementation.