AUBURN-LEWISTON MUNICIPAL AIRPORT

AIRPORT MASTER PLAN UPDATE

PREPARED FOR:

THE CITIES OF AUBURN AND LEWISTON, MAINE

PREPARED BY:

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Auburn/Lewiston Municipal Airport

Master Plan Update

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Introduction

The consultant, Hoyle, Tanner & Associates, Inc. (HTA) was awarded the contract from the Cities of Auburn and Lewiston to conduct an update to the existing 1997 Airport Master Plan (AMP) for Auburn-Lewiston Municipal Airport (LEW). The master planning effort took place between June 2005 and October 2006. The purpose of this AMP is to:

- Provide a comprehensive update of the existing airport master plan and airport layout plan, touching on the facility, economic, environmental, organizational and governance needs of the airport;
- Present a plan for the airport that considers the growing economic development taking place within the local community and includes the findings, data and perspectives of the Androscoggin Valley Council of Governments and the Lewiston-Auburn Economic Growth Council; and
- Provide a public forum for the discussion of the airport's role that includes a diverse mix of public, private, airport and non-airport perspectives.

According to the Federal Aviation Administration (FAA) in Advisory Circular (AC) 150/5070-6A, *Airport Master Plans*, the goal of the master plan is to provide guidelines for future airport development which will satisfy aviation demand in a financially feasible, environmentally responsible manner.

In order to provide guidelines for future airport development and as part of this AMP Update for LEW, the Cities of Auburn and Lewiston formed a Planning Advisory Committee (PAC). The PAC is a review group responsible for providing input and insight on technical issues as they pertain to the airport and related elements to be addressed in the master planning process. The PAC consists of representatives from the following organizations:

- Airport Management
- Auburn-Lewiston Airport Board of Directors
- Pertinent planning staff members from the cities of Auburn and Lewiston
  - Lewiston-Auburn Economic Growth Council
  - Planning Boards
  - City Councils
- Androscoggin Valley Council of Governments
- Auburn Code Enforcement Officer
- An airport planning staff member from MDOT-OPT
- A multi-modal planning staff member from MDOT-OPT
- An airport planning staff member from FAA
- Environmental Agencies

- Airport Tenants/users – Aviation
- Airport Tenants/users – Non-Aviation
- Airport User/Pilot

The City of Auburn's Comprehensive Plan, dated 1995-2005, was reviewed to ensure that the PAC's goals and objectives as well as the development alternatives recommended by this AMP's findings were in compliance with the city's goals, policies and strategies.

CHAPTER #1 Inventory

1.0 INTRODUCTION

Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5070-6A, *Airport Master Plans*, outlines the necessary steps in the development of an Airport Master Plan (AMP). The initial step, inventory, is the collection of data pertinent to Auburn-Lewiston Municipal Airport (LEW) and the area it serves. The objective of the inventory task for the airport is to provide background information for subsequent phases of analysis and a 'snapshot' of the airport baseline conditions as of June 2005.

This data was obtained through the collection and analysis of previous airport reports and studies such as the *1997 Auburn-Lewiston Airport Master Plan Update*[1] and the *1996 Maine Aviation Systems Plan Update*, on-site investigations of the airport, interviews with the Airport Manager, Fixed Base Operator (FBO), interviews with airport tenants and airport users.

The airport inventory is described in the following sections:

- Setting and Access
- Management and Legal Structure
- Financial Structure
- Land Use
- Development History
- Aviation Services and Airport Tenants
- Facilities
- Snow Removal Equipment and Storage Building
- Fire Station and Emergency Response Facilities
- Proposed Multi-Modal Facility
- Environmental Baseline

A rendering of the existing airport is presented in **Figure 1-1**.

[1] Hoyle, Tanner & Associates, Inc., *Auburn-Lewiston Airport Master Plan Update*, July 1997

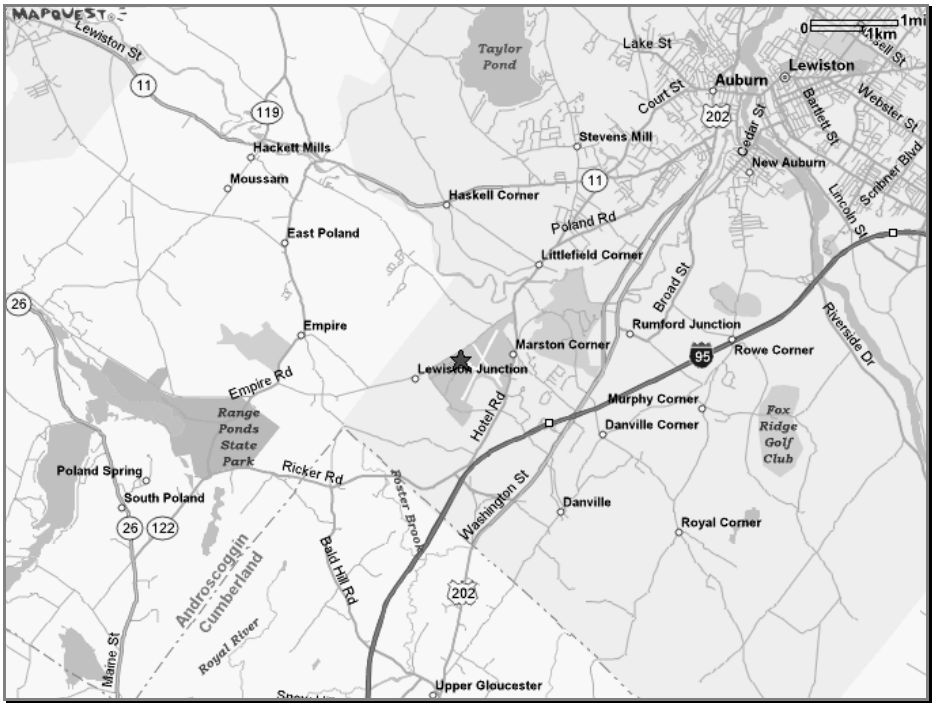
2.0 SETTING AND ACCESS

This section provides a brief and general description of LEW's location, access roadways, airport access, and airport security.

2.1 Airport Location and Airport Roadway Access

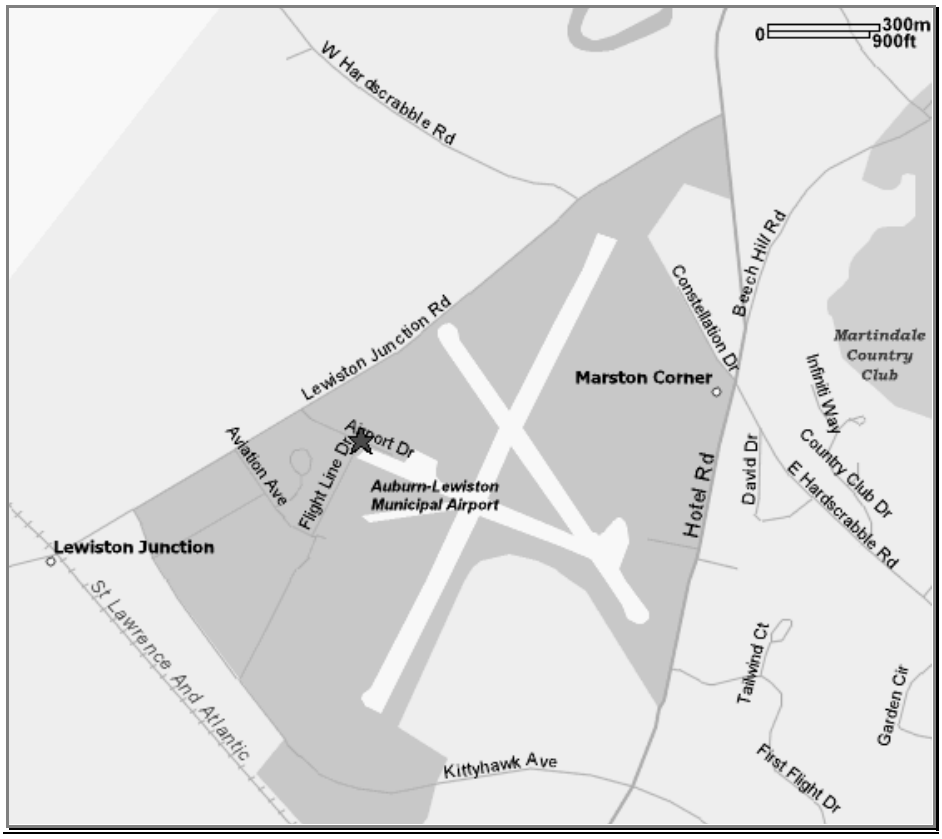
The 547-acre airport is located in southeastern Androscoggin County, Maine, in the City of Auburn, approximately 4 miles southwest of the city's center. The Maine Turnpike provides direct access to Auburn-Lewiston with two exits, and coincides with parts of I-495 and I-95. Auburn-Lewiston is also intersected by major state highways, including Routes 202, 4 and 196. City and airport locations are depicted in **Figures 1-1** and **1-2**.[2]

Figure 1-1: LEW and Vicinity



[2] Mapquest, *Auburn, ME*, 2005, http://www.mapquest.com, September 1, 2005

Figure 1-2: LEW and Surrounding Streets



The airport is 288 feet above Mean Sea Level (MSL). The Airport Reference Point (ARP), or the approximate geometric center of all useable runway surfaces, is situated at latitude 44° 02' 54.5020" N and longitude 070° 17' 00.6270"W.[3]

Commercial air service airports are located in close proximity: Bangor International Airport is approximately 112 miles to the northeast; Pease International Tradeport in New Hampshire is approximately 81 miles south-southeast; and Portland International Jetport is approximately 32 miles south of LEW.

Their is 35-acre intermodal facility located adjacent and to the west of LEW. The St. Lawrence & Atlantic Railroad Company provides a wide range of intermodal services in coordination with Canadian National Railway through its Auburn, Maine terminal.[4] The facility will be further analyzed later in this AMP.

[3] U.S. Department of Transportation, Federal Aviation Administration, *Airport Master Record, FAA Form 5010-1: LEW*, http://www.gcr1.com.

[4] Genesee & Wyoming Inc., St. Lawrence & Atlantic Railroad Company, http://www.gwrr.com.

2.2 Airport Access and Airport Security

As shown in Figure 1-3, the airport terminal area is accessible via a number of routes. Of the several routes, the Lewiston Junction Road-Airport Drive and the Kittyhawk Avenue-Flight Line Drive-Airport Drive routes are the more popular.

The airport's security fence does not encompass the entire perimeter of the airport's property line. Approximately 7,000 feet of the airport's boundary are not protected by fence currently. The fenced area has several key card-activated electric slide gates and combination/pad lock gates that allow for vehicular access. The gates are not currently marked.

3.0 MANAGEMENT AND LEGAL STRUCTURE

The Cities of Auburn and Lewiston own and operate the airport. Overall responsibility for airport operations is through the full-time Airport Manager and full-time Airport Maintenance Supervisor. The airport manager answers to a 7-member board of directors. The present airport staff and board of directors are presented in **Appendix I**, manner of appointments are as follows:

- Two positions on Board follow term in City Position, one from each city;
- Two positions on Board being a City Council Member and appointed by the Mayor for term of council member, one from each city;
- Two positions on Board being a City Representative and appointed by the Mayor for 3-year period, one from each city; and
- One position of Board being a Chamber of Commerce Representative for a 3-year period with alternating each term from Auburn to Lewiston resident with the Airport Board of Directors approval.

The Airport Board of Directors serves to manage the day-to-day operations of the airport while pursuing opportunities of growth. The Board works with airport staff to operate, maintain and improve LEW and to plan, acquire facilities for, construct and operate the airport to provide optimum air transportation service to the Cities of Auburn and Lewiston. The Board's primary objective is to stimulate aeronautical development and expansion at the airport through policies and projects that will increase airport viability and result in increased growth.

At the federal level, LEW is subject to the regulations of the U. S. Department of Transportation (USDOT) and the Federal Aviation Administration. On the state level, the airport is subject to the regulations of the Maine Department of Transportation Office of Passenger Transportation (MDOT-OPT) and Maine statutory law.

LEW also has minimum standards in place (see **Appendix II**). Adopted on March 1, 1995, these standards address airport policies and standards; define terms; list the minimum requirements for Fixed Base Operators (FBO's), flight training and aircraft rental; and identify a schedule of fees and charges for various activities at the airport.

The FAA states in Advisory Circular (AC) 150/5190-5, *Exclusive Rights and Minimum Standards for Commercial Aeronautical Activities*, that where minimum standards are adopted and established by the airport sponsor, they are to be applied evenhandedly and uniformly to all on-airport commercial aeronautical activities. Failure to do so may violate the FAA's policy on exclusive rights, in which an airport sponsor is prohibited from granting an exclusive right to a single operator for the provision of an aeronautical activity to the exclusion of others. Airport sponsors who receive federal financial assistance must agree to uphold that policy through enforcement of their minimum standards to protect the level and quality of services offered to the public. LEW also has operating rules in place, which govern activities on the airport (see **Appendix III**).

4.0 FINANCIAL STRUCTURE

The FAA designates LEW as a publicly owned, public-use facility. Under the Airport and Airways Improvement Act, the Secretary of Transportation is required to publish a national plan for the development of public-use airports. The plan is published as the **National Plan of Integrated Airport Systems** (**NPIAS**), which identifies more than 3,000 airports that are significant to the nation's air transportation system and thus eligible to receive federal grants under the Airport Improvement Program (AIP). The NPIAS comprises all commercial service airports, all reliever airports and selected general aviation airports. Development planned to receive federal funding is identified in the NPIAS for each eligible public-use airport based on an airport's role.

The NPIAS defines an airport's service level and role by the type of public service the airport provides to its community. LEW is classified as a **Reliever Airport**, which is defined as a high capacity general aviation airport in a major metropolitan area.[5]

Vision 100, the Century of Aviation Reauthorization Act (Public Law 108-176), reauthorizes federal aviation programs through fiscal year 2007 and sets spending levels for the AIP and other programs that develop and maintain facilities at airports around the country. A major component of the bill is the AIP program, which provides funding for airport rehabilitation and development projects. According to AIP, GA airports under the NPIAS receive 95 percent funding from the FAA for projects that are determined to be eligible. This is a temporary increase (applicable during federal fiscal years 2004-2007 per Vision 100) from the previous FAA funding level of 90 percent, which was applicable during federal fiscal years 2000 – 2003. This temporary increase applies to small hub and smaller airports such as LEW.

MDOT-OPT provides 2.5 percent of the total cost of federally eligible projects. The cities of Auburn and Lewiston, as the local sponsors and airport owners, fund the remaining 2.5 percent. Projects ineligible for federal funding must either be funded exclusively, or by a combination of, state, city/airport and private entity funds.

[5] U.S. Department of Transportation, Federal Aviation Administration, *National Plan of Integrated Airport Systems (2005-2009)*< http://www.faa.gov/arp/planning/npias/>

4.1 Revenue and Expenses

Table 1-1 shows the revenue and expenses incurred for the past 4 years at LEW. Airport revenues have exceeded expenses for the years indicated. Federal regulations governing airport finances dictate that all revenue, i.e., lease income, landing fees, fuel flowage fees and so on, accruing to the airport sponsor due to aviation activity be directed back into the operation, maintenance and improvement of the airport infrastructure.

Table 1-1 LEW Revenue and Expense History, FY02 Through FY05

Revenues	Actual FY 01-02	Actual FY 02-03	Actual FY 03-04	Actual FY 04-05
MDOT Snow/Gas-tax Revenues/FEMA	$6,661.00	$5,762.00	$4,491.00	$13,388.00
Tie-down Fees Collected	$6,260.00	$8,268.00	$11,844.00	$14,425.00
Landing Fees Collected	$19,674.00	$21,889.00	$8,909.00	$7,445.00
Fuel Flowage Fees Collected	$0.00	$0.00	$18,410.00	$18,266.00
Lease Fees Collected	$77,172.00	$78,765.00	$65,400.00	$67,271.00
Services (Mowing, etc) Fees Collected	NA[1]	NA[1]	$1,470.00	$2,104.00
Interest (Land fund and general account)	$23,318.00	$10,759.00	$7,317.00	$19,501.00
Subtotal Revenues	$133,085.00	$125,443.00	$117,841.00	$142,400.00
Excise Tax Revenues	$10,000.00	$10,000.00	$15,000.00	$15,126.00
Surplus (Fund balance)	$0.00	$20,000.00	$0.00	$0.00
Total Revenues	$143,085.00	$155,443.00	$132,841.00	$157,526.00
Municipal Operating Offset	$192,194.00	$254,880.00	$260,000.00	$260,000.00
Total Income	**$335,279.00**	**$410,323.00**	**$392,841.00**	**$417,526.00**
Expenses				
Personnel Subtotal	$196,784.00	$211,426.00	$202,457.00	$244,259.00
Operations Subtotal	$45,062.00	$56,723.00	$46,294.00	$57,509.00
Maintenance Subtotal	$59,853.00	$62,052.00	$64,939.00	$76,534.00
Administration Subtotal	$18,724.00	$22,370.00	$15,910.00	$22,412.00
Small Capital Costs (per audit report)	$0.00	$12,699.00	$5,900.00	$1,201.00
Total Expenses	**$320,423.00**	**$365,270.00**	**$335,500.00**	**$401,915.00**
NET	***$14,856.00***	***$45,053.00***	***$57,341.00***	***$15,611.00***

Source: Airport Records

Note: 1. Services Fees are included within line item 1, MDOT Snow/Gas-tax Revenues/FEMA, for FY 01-02 and 02-03.

4.2 Revenue: Leases

Typically, airport leases provide the single largest source of revenue at general aviation airports such as LEW. **Table 1-2** summarizes the main airport tenant leases at LEW. Airport management also currently receives income from a franchise and two local businesses for signage, from advertisements placed on the airport's web page and from royalties stemming from the excavation of Christian Hill.

Table 1-2 Current Lease Agreements

Tenant	Lease Term (Lease Period)	Premises Leased	Current Payments
Bel Air Hangar Condominium Association	20-Yr Renewable (10/1999 – 10/2019)	0.38 Acres, 16,540 SF	$2,292/Yr
Duke Energy	25 Yrs (10/1997 – 10/2022)	5.56 Acres	$7,405/Yr
Intermodal Facility	20-Yr Renewable (7/1994 – 7/2014)	4.7 Acres	$3,853/Yr
Jetport Hangar Assoc., LLC	20-Yr Renewable (9/2001- 9/2021)	12,349 SF	$7,200/Yr
Landing Strip Café	5-Yr Renewable (6/2002 – 6/2007)	800 SF	$3,000/Yr
Lifeflight of Maine, LLC	5-Yr Renewable (5/2000 – 5/2005)	60' x 70' Hangar, 5 Parking Spots	$35,856/Yr
Maine Coastal Airways	None/Easement	Parking of Two (2) Aircraft	$720/Yr
Silver Wings Aviation, Inc.	25 Yrs (8/2004 – 7/2029)	9,200 sf & Garage N of White Hangar	$1,200/Yr + 8¢/gal FFF
Skyward Aviation	None	None	$250/Yr Activity Fee
Tim Corp.	20-Yr Renewable (10/1987 – 10/2007)	20,200 SF	$881/Yr
Twin Cities Air Service	11 Yrs (2/2003 – 3/2014)	Hangars 2 and 3, Associated Ramp, Office and Terminal Space and Aviation Fuel Tanks	$29,088/Yr + 6¢/gal Fuel Flowage Fee (FFF)

Source: Airport Records

5.0 LAND USE

5.1 Land Use On-Airport

Existing on and off-airport land use is identified on the Land Use Plan, sheet 9 of 9 of the Plan Set (see Chapter #6). **Table 1-3** depicts on- and off-airport land uses applicable to LEW and the area surrounding the airport.

Table 1-3 City of Auburn Land Use Zoning Districts On and in the Vicinity of LEW

District Title	Classification	Short Title
Agriculture & Resource Protection	Resource	AG
Rural Residential	Residential	RR
Low Density Country Residential	Resource/Residential	LDCR
General Business	Commercial	GB
Neighborhood Business	Commercial	NB
Industrial	Industrial	ID

Source: *Chapter 29 Zoning Ordinance*, City of Auburn, Maine

LEW is located within two trade zones: 1) Foreign Trade Zone; and 2) Maine Pine Tree Development Zone. The zones are defined as follows:

Foreign Trade Zone – A physical place (land, warehouse or factory) located within the United States that is legally considered outside U.S. Customs territory. Imported goods can enter the zone without going through formal customs entry procedures or paying import duties. Once inside the zone, goods can be assembled, repackaged, repaired or destroyed. Duties are deferred until the imported product enters the domestic market or avoided if the imported materials are ultimately exported in raw or finished form.

Maine Pine Tree Development Zone – A qualified for-profit business engaged in financial services, manufacturing or one of seven targeted technology sectors: biotechnology, aquaculture and marine technology, composite materials technology, environmental technology, advanced technologies for forestry and agriculture, information technology and precision manufacturing technology. Benefits include:

- 100% sales tax exemption on building material and all tangible personal property;
- 100% state income tax credit for the first five years, followed by 50% tax credit for years six through ten;
- Employment Tax Increment financing will reimburse 80% of employees' state income tax withholdings to the business for ten years;

- Tax increment finance districts are established in zones are excluded from municipal and original assessed value limitations.

Inland Port of Entry Status – A Department of Homeland Security, U.S. Customs and Boarder Protection (CBP) designation. The CBP defines Auburn's Inland Port as a Service Port location, providing a full range of cargo processing functions, including inspections, entry, collections, and verification (19 CFR 101.1). The Auburn Inland Port is technically an extension of the geographic limits of the port of entry of Portland, Maine. Shipments received are cleared by customs at the existing Auburn Intermodal facility; they no longer have to be transported to the Portland facility to be cleared.

5.1.1 Airfield Area

The airfield area is defined as that space reserved for the operation of aircraft (runways and taxiways), associated supporting navigational facilities and Runway Protection Zones. The present airfield area consists of Runway 4-22 and Runway 17-35, associated taxiways, and Runway Protection Zones on both ends of each runway. The airfield area is zoned Industrial.

An Industrial Zone "is intended to provide for those manufacturing, processing, transportation and storage uses which should be separated from other uses by reason of characteristic, which may conflict with other uses. The exclusion of residential and commercial uses is intended to promote the economic welfare of the city by reserving especially suited areas for industry."[6]

5.1.2 Terminal Area

The terminal area is defined as that space occupied by aircraft aprons, hangars, a terminal building and other support buildings such as maintenance vehicle storage buildings. The principal existing terminal area, which extends from the west to the southwest of Runway 4-22, includes several multi-plane hangars, an FBO located within one of these hangars and the terminal building with a waiting area, offices and restaurant. A terminal area also exists at the southeast part of the airport in the form of one multi-plane hangar and two T-hangars. The terminal area is zoned Industrial.

5.1.3 Industrial Park

The Auburn-Lewiston Industrial Airpark is located in the southwest quadrant of the airport on the west side of Flight Line Drive. A lot subdivision was approved in a previous LEW master plan and is on record with the city as well as on airport records. The airpark tenants include small industrial manufacturing firms, warehouses and a regional distribution center for United Parcel Service (UPS). A majority of the lot parcels have been sold to the individual firms, or are currently owned by the Cities of Auburn and Lewiston. The Industrial Park is zoned Industrial.

5.2 Land Use Off-Airport

Existing off-airport land use is identified on the Land Use Plan, sheet 9 of 9 of the Plan Set presented in Chapter #6.

[6] *Chapter 29 Zoning Ordinance*, City of Auburn, Maine

6.0 AIRPORT DEVELOPMENT HISTORY

Table 1-4 depicts the status of the recommendations made in the *1997 Auburn-Lewiston Master Plan Update.*

Table 1-4 1997 LEW Airport Master Plan Update Recommendations and Current Status

1997 Recommendations	Projects Completed	Projects Not Completed
Short-Term (1997-2002)		
Environmental Assessment for Rwy 4-22 Parallel Twy		✓
Reconstruction of Portion of Itinerant Apron		✓
Site Prep for Two (2) 100-foot-by-100-foot Hangars		✓
Pavement for Two (2) 100-foot-by-100-foot Hangars		✓
One (1) 100-foot-by-100-foot Hangar		✓
Snow Removal Equipment Storage Building		✓
Site Prep for One (1) 12-space T-Hangar & Auto Parking		✓
Pavement for One (1) 12-space T-Hangar & Auto Parking		✓
One (1) 12-space T-Hangar		✓
PAPI Rwy 22	✓	
Avigation Easement Rwy 22 RPZ	✓	
Avigation Easement Rwy 17 RPZ		✓
Intermediate-Term (2003-2007)		
Twy A (Twy C to Rwy 4)		✓
Twy A (Twy C to Rwy 17-35)		✓
Twy A (Rwy 17-35 to Rwy 22)		✓
Reconstruction of Terminal Ramp		✓
Reconstruction of Twy C		✓
One (1) 100-foot-by-100-foot Hangar		✓
Site Prep for One (1) 12-space T-Hangar & Auto Parking		✓
Pavement for One (1) 12-space T-Hangar & Auto Parking		✓
One (1) 12-space T-Hangar		✓
Long-Term (2008-2017)		
Terminal Apron Extension		✓
Terminal Building Expansion		✓

Source: *1997 Auburn-Lewiston Airport Master Plan Update* and discussion with Airport Manager.

The vast majority of the projects recommended in the 1997 AMP, were scheduled during the short and mid-term phases of development. The preponderance of those projects focused on safety issues and improvements to the airfield to enhance capacity in order to meet the forecast demand.

7.0 AVIATION SERVICES AND AIRPORT TENANTS

7.1 Aviation Services: Air Carrier and Corporate Flight Services

LEW presently provides unscheduled air carrier service in conjunction with accommodating more than 260 charter customers throughout the U.S. and Canada.[7] The prospect of future scheduled air carrier service will be analyzed later in the master planning process.

7.2 Aviation Services: Fixed Base Operators

There are a number of FBO's on the airport. Twin Cities Air Service is a full-service air charter company providing a wide range of aircraft and pilot services. Services provided by Twin Cities are as follows:

- Unscheduled Passenger Service (Beech King Air, Cessna 402's)
- Cargo Service (Beech King Air, Cessna 402's, and Cessna 310's)
- Aircraft Maintenance
- Aircraft Management and Consulting
- Flight School
- Aircraft Rental
- Aircraft Fueling
- Hangar Rentals
- Rental Cars
- Scenic Flights

Twin Cities Air Service, LLC

MTM Helicopters offers helicopter training, in addition to rental and charter services.

MTM HELICOPTERS

Skyward Aviation provides aircraft engine repairs and maintenance as well as aircraft tugging services.

[7] Lewiston–Auburn Economic Growth Council http://www.economicgrowth.org/html/transportation1.htm (Sept 1, 2005)

Silver Wings Aviation provides the following:

- Charter Service
- Aviation Upholstery
- Airframe and Powerplant Repair
- Avionics and other special services
- Full and Self-serve Fueling Stations
- Crew Lounge, Showers, and Laundry

7.3 Non-Aviation Tenants

Although there are a number of non-aviation tenants operating within the Industrial Airpark located next to LEW, the airpark is no longer owned by airport management. The airpark residents own and operate their respective space. LEW provides an obvious value to these airpark businesses because many of the tenants claim to have situated their respective companies at the airpark due to its proximity to the airport as well as the interstate highway system and railroads.[8] Currently, Duke Energy, and the Landing Strip Café are the only two non-aviation tenants of LEW.

8.0 AIRPORT FACILITIES

8.1 Airport Pavement Conditions

Typically, airport pavement condition is reported as a numerical designation from 100 (best) to 1 (worst) called the Pavement Condition Index (PCI). The PCI indicates the relative condition of airport pavements (**Table 1-5**).

Table 1-5 Pavement Condition Index Legend

PCI	Pavement Condition
85-100	Excellent
70-84	Very Good
55-69	Good
40-54	Fair
25-39	Poor

Source: FAA

[8] Fly To ME http://www.flytome.com

LEW's pavement condition was inspected by MDOT-OPT in June 2002. The results of the airport's runways PCI are identified below.

Pavement	PCI	Pavement Condition
Rwy 17-35	87	Excellent
Rwy 4-22	80	Very Good
Taxiways	-	No MDOT PCI available. Visual inspection reveals west ramp to be in very good condition, while the east ramp and twy are in poor condition. These areas have cracks 2-3 inches apart in some areas and numerous frost heaves.
Ramps	-	

Source: MDOT-OPT, 2002 PCI Study. Visual survey by Study Team staff.

Existing Taxiway

East Apron

West Apron

8.2 Runways

Two active paved runways serve LEW: Runways 4-22 and 17-35. Each runway end and its existing condition are depicted below. **Table 1-6** provides a summary of runway data for LEW.

Runway End 4
MDOT-OPT 2002 PCI of 80

Runway End 22
MDOT-OPT 2002 PCI of 80

Runway End 17
MDOT-OPT 2002 PCI of 87

Runway End 35
MDOT-OPT 2002 PCI of 87

Table 1-6 LEW Runway Data

	Runway 4	Runway 22	Runway 17	Runway 35
Length, feet	5,001		2,750	
Width, feet	100		75	
Traffic pattern	Left	Left	Left	Left
Runway heading	041 magnetic, 124 true	221 magnetic, 204 true	165 magnetic, 148 true	345 magnetic 328 true
Latitude/ Longitude	44-02.534348N 070-17.283455W	44-03.283958N 070-16.812340W	44-03.098153N 070-17.108905W	44-02.714865N 070-16.775095W
Threshold Elevation, feet, MSL	270.4	263.1	255.5	287.5
PCI	80		87	
Surface Material (Condition)	Asphalt (Very Good)		Asphalt (Excellent)	
Weight Limitations, pounds	Single Wheel – 30,000 Double Wheel – 108,000 Double Tandem – 180,000		Single Wheel – 30,000	
Runway Markings (Condition)	Precision (Fair)	Nonprecision (Fair)	Basic (Good)	
Approach Lights	MALSR	REILS	None	None
Other Navigational and Visual Aids	4-light PAPI on left	4-light PAPI on left	None	None
	Wind Indicator, Segmented Circle, Airport Rotating Beacon			
Instrument Approach	ILS	None	None	None

Key
MALSR Medium Intensity Approach Landing System with Runway Alignment Indicator Lights (RAILs)
REILS Runway End Identifier Lights PAPI Precision Approach Path Indicator ILS Instrument Landing System
PCI Pavement Condition Index

Source: FAA Form 5010, *Airport Master Record*; www.airnav.com

8.3 Taxiways and Aprons

Table 1-7: LEW Taxiway and Apron Data

Area	Dimensions (Area)	Composition	Lighting or Use	Condition
Taxiway	75' x 1,570' (13,083 SY)	Asphalt	Medium Intensity Taxiway Lights	Poor
Terminal Apron	150' x 250' (4,166 SY)	Asphalt	Itinerant Parking	Good
Hangar 3	120' x 100' (1,333 SY)	Asphalt	Local Aircraft Tie-down & Storage	Fair
Hangar 2	250' x 390' (10,833 SY)	Asphalt	Aircraft Parking	Fair
Hangar 1/ White Hangar	150' x 250' (4,166 SY)	Asphalt	Aircraft Parking	Fair
Hangar 1/ White Hangar (2005 Expansion)	2,333 SY	Asphalt	Aircraft Parking	Excellent

Source: 1997 Auburn-Lewiston Airport Master Plan and discussions with LEW Airport Manager.

8.4 Airport Buildings

Descriptive data with respect to LEW's existing airport buildings are presented in **Table 1-8**. The airside entrance of the airport terminal is depicted below.

Existing Terminal Building

Table 1-8 LEW Building Data

Item	Dimensions (Area)	Composition	Use (Capacity)	Condition
Hangar 3	100' x 80' + 40' x 20' (office) (8,800 sf)	Metal Frame, Metal Sheeting	Aircraft Maintenance, Storage (10 single engine)	Undergoing Renovation
Hangar 2	80' x 100' (8,000 sf)	Metal Frame, Metal Sheeting	Aircraft Maintenance, Storage (10 single engine)	Fair
Hangar 1/ White Hangar	100' x 80' + 80' x 20' (9,600 sf)	Metal Frame, Metal Sheeting	Aircraft Maintenance, Office (10 single engine)	Undergoing Renovation
2 T-Hangars	40' x 240' each (9,600 sf)	Metal Frame, Metal Sheeting	Aircraft Storage (8 and 6 single engine)	Fair
Terminal Building	40' x 70' (2,800 sf)	Brick Exterior Walls, Flat Asphalt Covered Roof	Airport Administration, Restrooms, Restaurant	Fair
Fern Giguere Building	40' x 110' (4,400 sf)	Metal Frame, Metal Sheeting	Equipment Storage, ARFF, Vehicle Maintenance	Fair
Garage	15' x 20' (300 sf)	Metal Frame, Metal Sheeting	Equipment and Materials Storage	Poor
Storage and Maintenance Garage	30' x 75' (2,250 sf)	Metal Frame, Metal Sheeting	Storage, Maintenance	Poor
LifeFlight	(4,200 sf)	Metal Frame, Metal Sheeting	Air Rescue Service	Good
Auburn Condo Assoc.	(11,782 sf)	Metal Frame, Metal Sheeting	Private Condos	Good
Bel Air Condo Assoc.	(16,540 sf)	Metal Frame, Metal Sheeting	Private Condos	Good

Source: 1997 Auburn-Lewiston Airport Master Plan and recent discussions with Airport Manager.

8.5 Aircraft Storage and Parking

Table 1-9 Aircraft Parking and Storage at LEW

East Ramp					
T-Hangars	2 (One (1) 6- and one (1) 8-unit T-hangar	6-unit	Constructed in 1986	Unit 1	Type Aircraft Unknown
				Unit 2	ME – 1
				Unit 3	SE – 2
				Unit 4	SE – 3
				Unit 5	SE – 1
				Unit 6	SE – 1
		8-unit	Constructed in 1986	Unit 7	Type Aircraft Unknown
				Unit 8	SE – 1
				Unit 9	ME – 1
				Unit 10	SE – 1
				Unit 11	Type Aircraft Unknown
				Unit 12	SE – 1
				Unit 13	SE – 1
				Unit 14	SE – 1
Conventional Hangars	2	Silver Wings (White Hangar)	Constructed in 1927/1934; reconstructed in 2005		ME – 1, SE – 2
		Life Flight of Maine	Constructed in 2000		Helo – 1
Based Tie-Downs	9	Ramp Under Construction			
Transient Tie-Downs	5	Type Aircraft Varies			
West Ramp					
T-Hangars	2 (10-unit)	Constructed in 1999 and 2002		Type Aircraft Unknown	
Conventional Hangars	3	Twin Cities	Maintenance Hangar, Not Storage		
		Cold Storage	SE – 4		
		Twin Cities – Heated Storage	ME – 1, TJ – 1, Helo – 1		
Based Tie-Downs	61	SE – 47, ME – 1, Amphibian – 1, Empty – 12			
Transient Tie-Downs	6	Type Aircraft Varies			

Source: Study team staff.

8.6 Automobile Parking

LEW currently has approximately 132 auto parking spaces, including four handicapped parking spots.

Table 1-10 Automobile Parking

Item	Composition	Capacity (spaces)	Condition
West of Terminal Building	Asphalt	45	Fair
North of Hangar 3	Asphalt	55	Poor
Southeast of Hangar 1/White Hangar	Asphalt	10	Reclaimed asphalt
North of Maintenance/Storage Buildings	Asphalt	22	Fair

Source: 1997 Auburn-Lewiston Airport Master Plan and discussion with Airport Manager.

8.7 Fuel Facilities

Table 1-11 Fuel Facilities

Item	Type	Capacity (gallons)
Jet-A South of Terminal	Hydrant Fueling	One (1) 12,000-gallon Underground Tank
Jet-A Full/Self-Serve Fuel Station	Hydrant Fueling	One (1) 12,000-gallon Aboveground Tank
100LL/Avgas South of Terminal	Hydrant Fueling	One (1) 12,000-gallon Underground Tank
100LL Full/Self-Serve Fuel Station	Hydrant Fueling	One (1) 12,000-gallon Aboveground Tank
Split Tank	Underground at Maintenance Garage	2,000-gallon Gasoline, 6,000-gallon Diesel
#2 Oil Tank	Aboveground Inside Maintenance Garage	330
Two (2) #2 Oil Tanks	Aboveground at FBO	330 (each)

Source: 1997 Auburn-Lewiston Airport Master Plan and discussion with Airport Manager.

Self-Serve Fuel Station

8.8 Drainage

LEW's stormwater pollution prevention plan (SWPPP) is being updated concurrently with this airport master plan. A map of the drainage facilities at LEW is included in **Appendix IV** and identifies general flowpaths, drainage swales, culverts and outfall locations. Once complete, the SWPPP will be available for review through LEW management or through the planning departments of Auburn and Lewiston.

8.9 Utilities

Water and sewer are provided by Auburn Water District.

8.10 Wind

Runway orientation and usage is based on predominant wind direction and minimizing crosswind components. Review of wind data is necessary to develop and determine the wind coverage values for the various runways. Typically, wind data from on-site airport weather stations or from nearby airports/weather stations are used to compile data for the airport.

The desirable wind coverage for all airport runways is 95 percent. That means crosswinds should not exceed 13 knots for Airport Reference Codes (ARC) A-II and B-II aircraft more than five percent of the time (see further discussion on the ARC in *Chapter 2 –Existing Aviation Activity Forecasts*). According to the *2005 Maine Aviation Systems Plan Update*, the airport's critical aircraft is in **ARC B-II**.

In previous studies, LEW has used historical wind data compiled by the National Climatic Center from 1960 to 1964. For the purposes of this master plan and because airport management is not anticipating changing either runway orientation, the aforementioned historical wind data are used. The resulting wind roses are presented in **Appendix V.** A review of the wind data reveals that the desirable/critical wind coverage is 98.61% percent for all weather operations and 99.57% percent for Instrument Flight Rules (IFR), i.e., inclement weather, conditions.

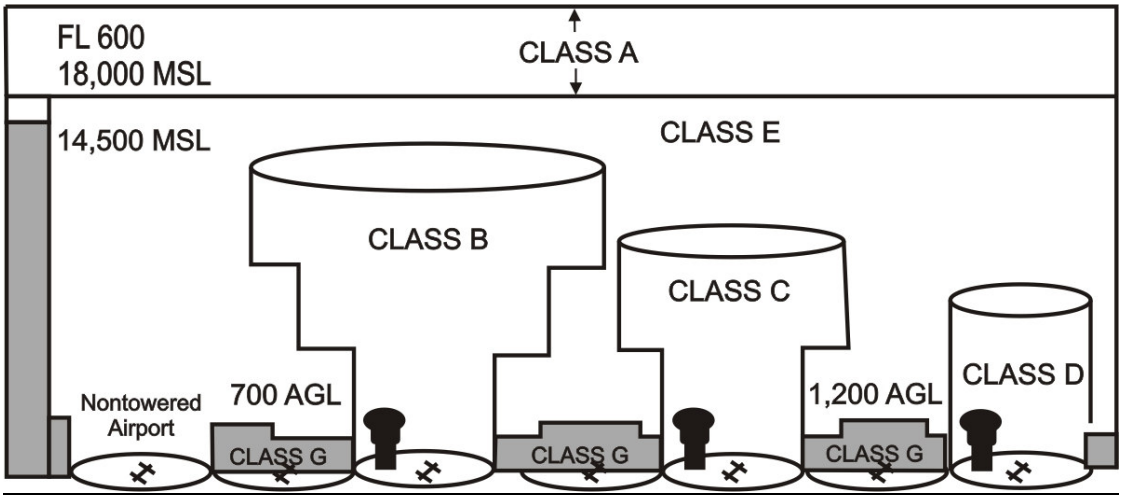
8.11 Airspace and Pattern Use

The surrounding airspace for LEW is designated as Class E, which is controlled airspace that extends upward from the surface to the overlying or adjacent controlled airspace. By definition Class E airspace is any airspace that is not defined or designated as Class A, B, C or D. A graphic depiction of the United States airspace system is provided in **Figure 1-5**.

LEW does not have an air traffic control tower, which is common for many general aviation airports. The airport does have a designated UNICOM[9], or common traffic advisory frequency (CTAF), 122.8, which pilots flying under visual flight rules (VFR) utilize to announce their position to other pilots in the area for safety purposes. Aircraft operating under instrument flight rules (IFR) contact the Portland Approach Control facility for specific flight instructions on how to approach or depart the airport. Approach data is provided in Table 1-6, LEW Runway Data, and the airport's approach plates are presented as **Appendix VI**.

At present, there are no known VFR or IFR conflicts with airports surrounding LEW airport.

Figure 1-3 U.S. Airspace System



Source: FAA website (www.faa.gov)

8.12 Obstructions

As part of this study, an Obstruction Data Sheet from the National Oceanic and Atmospheric Administration was obtained for LEW. Numerous obstructions to FAR Part 77 airport imaginary surfaces are noted. Most of the obstructions were identified to be trees and other vegetation. Drawing 8 of 9 in Chapter #6 depicts LEW's obstructions.

[9] UNICOM is a non-government communication facility, which may provide airport information at certain airports. Locations and frequencies of UNICOMs are shown on aeronautical charts and publications.

9.0 AIRPORT ACTIVITY STATISTICS

LEW's aviation activity statistics from were collected from FAA 5010 reports, MDOT-OPT as well as information provided by the Airport Manger and FBO.

Table 1-12 Aviation Activity

Year	Air Carrier & Commuter	Air Taxi	GA (Local and Itinerant)	Military	Total Annual Operations
2004	0	25,000[1]	45,200[1]	50	70,300[1]

Source: Airport Manager.
Note: 1. Figures are rounded to nearest 100.

Table 1-13 Based Aircraft, 2005

Aircraft Type	Total Based Aircraft	% Share of Total Aircraft
Single Engine Piston	69	86.6
Multi Engine Piston	7	9.0
Jet	0	0.0
Helicopters	2	2.5
Ultra-Light	2	1.9
Total	**80**	**100**

Source: Airport Manager.
Notes: 1. FAA 5010 data contained 63-based aircraft.
2. 2001 inventory conducted by Wilbur Smith & Assoc. indicated 71-based aircraft.

Table 1-14 Runway End Use, 2004

Runway	R/W 4	R/W 22	R/W 17	R/W 35
Runway Use (percent)	70		30	
	60	40	30	70

Source: Airport Manager and FBO.

Table 1-15 Aircraft Operations, 2004

Type Operation	Percentage of Total	Annual Operations[1]
Total Operations	100	70,300
Local	55	38,700
Itinerant	45	31,600
Touch-and-Go	10	7,000
Nighttime (10:00 PM – 7:00 AM)	15	10,500
Daytime (7:00 AM – 10:00 PM)	85	59,700
Visual Flight Rules (VFR)	70	49,200
Instrument Flight Rules (IFR)	30	21,000

Source: Airport Manager and FBO
Notes: 1. Figures are rounded to nearest 100.
2. Per the FAA, nighttime is designated between 10 PM and 7 AM, for purposes primarily related to noise as well as varying hours of darkness.

10.0 SNOW REMOVAL EQUIPMENT AND STORAGE BUILDING

LEW currently has two maintenance buildings. The snow removal equipment (SRE) building was constructed in 1978 and is considered in fair condition. The second building is a garage. Although the construction date on the garage is unknown, it is much older than the SRE building. The buildings do not currently provide enough storage for the airport's maintenance equipment. LEW maintenance equipment and assessments of its condition are tabulated in **Table 1-16**.

Snow Removal Equipment Building

Fernand A. Giguere
Equipment Storage Building

Table 1-16 LEW Maintenance Equipment

Equipment	Condition[1]
1980 Mac truck with 12-foot plow	Good
1998 International truck with two 11-foot plows	Good
1977 Loadstar Sander	Fair
1983 Norland snow blower	Fair
1968 FWD backup snow blower	Poor
1952 Mac truck	Poor
John Deere grader	Fair
Kubota mower L2350	Fair
Kubota mower B8200	Fair
1995 John Deere front-end bucket loader	Good
1989 Ford tractor	Fair
2005 Painting/striping machine	Good
1998 GMC pickup truck	Good
1988 Dodge Ram pickup truck	Poor
1975 Dodge utility truck	Fair
10 x 10 bulldozer	Fair
2 generators that supply power to the maintenance building, PAPI's, terminal building, runway edge lights, beacon, segmented circle, and the parking lot lights.	Fair

Source: Airport Management and Maintenance Supervisor
Note: 1. Condition assessed by sources.

11.0 FIRE STATION AND EMERGENCY RESPONSE FACILITIES

The airport does not have a dedicated fire department; however, an Auburn fire station is located approximately 2.5 miles from the airport. A Lewiston fire station provides additional resources and is located about 5.5 miles from LEW.

In the event of incident at LEW, there are two local companies whose ambulances could be called to the scene for support. Two major hospitals are within 5 miles of the airport.

12.0 PROPOSED MULTI-MODAL FACILITY

The ***Auburn-Lewiston Intermodal Transportation Center***[10] was conceived as one of a number of similar facilities planned across the state in strategic locations to facilitate improved access choices via public transportation. According to Maine DOT, the key goals and objectives of the proposed facility are as follows:

- Increase access and mobility options for all types of travelers;
- Enhance integration and connectivity of the transportation system, across and between modes throughout the state, for people and freight; and
- Protect and enhance the environment, promoting energy conservation, promoting economic growth, and improving the quality of life for Maine citizens.

Maine DOT strategically selected Auburn/Lewiston as the multi-modal facility site due to the following key elements:

- Reasonable accessibility to the Maine Turnpike (I-95);
- Proximity to LEW; and
- Proximity to the St. Lawrence Atlantic/Canadian National mainline railroad tracks (providing connecting tracks from Portland to the south and Montreal to the north).

The most advantageous site was determined to be at the southern corner of Flightline Drive and Kittyhawk Road. Transportation elements will be located on-airport and include a train station, bus station, FBO, and a curbside program. The facility will maintain freight capabilities primarily through existing off-airport facilities. The Androscoggin Valley Council of Governments (AVCOG) is currently developing a Business Plan for the project, which will be followed by an Environmental Assessment.

The final site selection/feasibility study is presented in **Appendix VII**.

[10] Maine DOT provided a final document summarizing a site selection and feasibility study for a new intermodal transportation center in Auburn-Lewiston. *Auburn-Lewiston Intermodal Transportation Center* by Bertaux • Partners, Architects, 2005.

CHAPTER #2 Existing Aviation Activity Forecasts

1.0 INTRODUCTION

The purpose of this technical memo is to present a 20-year forecast of aviation activity at LEW. The forecasts serve as the basis for planning the facilities needed to meet the area's aviation demand. These forecasts will update and replace the projections presented in the *1997 Auburn-Lewiston Municipal Airport Master Plan*. The *2005 Maine Aviation Systems Plan*[1] (MASP) was the primary tool used in developing LEW's forecasts. The MASP is being updated by the Maine Department of Transportation in conjunction with the development of this AMP. Although the MASP in its entirety is in development, the information referenced in creating LEW's forecasts is conclusive. Local and regional aviation activity influences such as local economic growth indicators need to be recognized and where appropriate, used to modify the MASP forecasts in order to reflect those trends.

Although this is the only section of the AMP, which provides detailed operational forecasts for LEW, subsequent sections will explore: 1.) General aviation, 2.) Air cargo, and 3.) Passenger service/air carrier growth scenarios for the airport. Detailed operational forecasts will not be made for these sections. Rather, representative levels of activity will be assumed and the facilities required to accommodate them identified.

The following are forecasted within this chapter, as they are key indicators of an airport's future development:

- Critical Aircraft
- Based Aircraft
- Aircraft Operations
- Fuel Flowage

2.0 CRITICAL AIRCRAFT

Airports need to be maintained and developed according to the characteristics of the most demanding aircraft expected to use the airport on a regular basis. The aircraft with the most demanding approach speed, wingspan and weight with 500 operations per year at the airport is the 'critical aircraft' as defined by the FAA. The FAA, in AC 150/5300-13 *Airport Design*, has

[1] *2005 Maine Aviation Systems Plan Update*, Wilbur, Smith & Associates, Cincinnati, OH.

established the Airport Reference Code (ARC) as the method of determining airport design criteria based on the critical aircraft.[2]

Aircraft Approach Category

Category A:	Speed less than 91 knots
Category B:	Speed 91 knots or more, but less than 121 knots
Category C:	Speed 121 knots or more, but less than 141 knots
Category D:	Speed 141 knots or more, but less than 166 knots
Category E:	Speed 166 knots or more

Aircraft	Approach Speed
Embraer Bandeirante	92 knots

Airplane Design Group

Group I:	Wingspan up to but not including 49'
Group II:	49' up to but not including 79'
Group III:	79' up to but not including 118'
Group IV:	118' up to but not including 171'
Group V:	171' up to but not including 214'
Group VI:	214' up to but not including 262'

Aircraft	Wingspan
Embraer Bandeirante	50'3"

The most demanding aircraft that utilizes LEW on a regular basis is the Embraer Bandeirante[3]. The Bandeirante's approach speeds and wing span places LEW in the aircraft approach category of B, and the airplane design group of II. The *2005 Maine Aviation Systems Plan* and 1997 master plan identified the overall design code for LEW as B-II, which also applies to Runway 04-22, the airport's primary runway. Runway 17-35 is typically utilized by aircraft of 12,500 pounds or less maximum certified takeoff weight, which is the FAA's definition of a small airplane. **The overall ARC for LEW as well as for Runway 04-22 will therefore remain B-II, while the ARC for Runway 17-35 will remain B-I, Small Aircraft Exclusively.**

LEW's design criteria, as determined by the FAA in AC 150/5300-13 *Airport Design*, are illustrated in **Table 2-1**.

[2] U.S. Department of Transportation, Federal Aviation Administration, *Airport Design*, AC 150/5300-13, Change 7, U.S. Government Printing Office, Washington, DC, October 2002, p.1.

[3] Airport Manager.

Table 2-1: LEW Existing Design Criteria

Design Elements	Design Criteria (feet)	
	B-I, Small Aircraft Exclusively	**B-II**
Runway	17-35	04-22
Runway Visibility Minimums	Not lower than ¾-statute mile	Not lower than ¾-statute mile
Runway Width	60	75
Runway Shoulder Width	10	10
Runway Blast Pad		
Length	60	150
Width	80	95
Runway Safety Area		
Length beyond runway end	240	300
Width	120	150
Runway Obstacle Free Zone		
Length beyond runway end	200	200
Width	250	400
Runway Object Free Area		
Length beyond runway end	240	300
Width	250	500
Taxiway/Taxilane		
Width	25	35
Taxiway edge safety margin	5	7.5
Taxiway shoulder width	10	10
Taxiway safety area width	49	79
Taxiway object free area width	89	131
Taxilane object free area width	79	115
Runway Separation Standards	Visual runways and runways with not lower than ¾-statute mile approach visibility	Visual runways and runways with not lower than ¾-statute mile approach visibility
Runway centerline to taxiway centerline	150	240
Runway centerline to aircraft parking area	125	250
Taxiway Separation Standards		
Taxiway centerline to Parallel taxiway centerline	69	105
Taxiway centerline to a Fixed or moveable object	44.5	65.5

Source: *AC 150/5300-13, Airport Design.*

3.0 BASED AIRCRAFT

As noted previously, the primary resource used in conducting LEW's forecasts is the 2005 MASP. According to the MASP, reliable historical general aviation data for each airport in the system is not readily available for all activity indicators. All general aviation airports in Maine are non-towered. As a result, annual operations for these airports are the operator's 'best estimate' of the takeoffs and landings at the airport. Typically, greater confidence can be placed in the historic based aircraft data; based aircraft can be more easily counted than operations. However, due to the seasonal influx of residents and visitors during the summer in Maine, based aircraft counts can also vary at each airport, depending on what time of the year they are taken. Because of these factors, it was difficult to derive statistically valid historic trends at Maine airports. The greatest confidence in this analysis is placed in the data collected in conjunction with the MASP inventory effort.

MASP tested several methodologies for each airport prior to selecting a preferred projection of based aircraft. Based aircraft were projected ultimately using a combination of three methodologies. The first methodology used a top down methodology, examining Maine's share of the nation's projected general aviation fleet. The second methodology used a socioeconomic approach based on county employment projections developed by the Maine State Planning Office. The third methodology also used a socioeconomic approach based on county employment estimates. The MASP also referenced *FAA Aerospace Forecasts Fiscal Years 2001-2012*, national forecast of general aviation activity and *FAA Terminal Area Forecasts (TAF)*, in developing forecast figures. Extrapolation was then used in order for the MASP's results suit the planning period defined within this Master Plan.

LEW's current Airport Manager supplied a list containing 80-based aircraft. The MASP's forecasting methodologies were applied to that list to determine LEW's based aircraft forecast, as shown in **Table 2-2**.

Table 2-2: Based Aircraft Forecast

Year	Total Projected ME Based Aircraft	LEW % of ME Total	Projected Based Aircraft
2004	908	8.4	80
2009	1,011	8.4	85
2014	1,061	8.4	89
2024	1,155	8.4	97

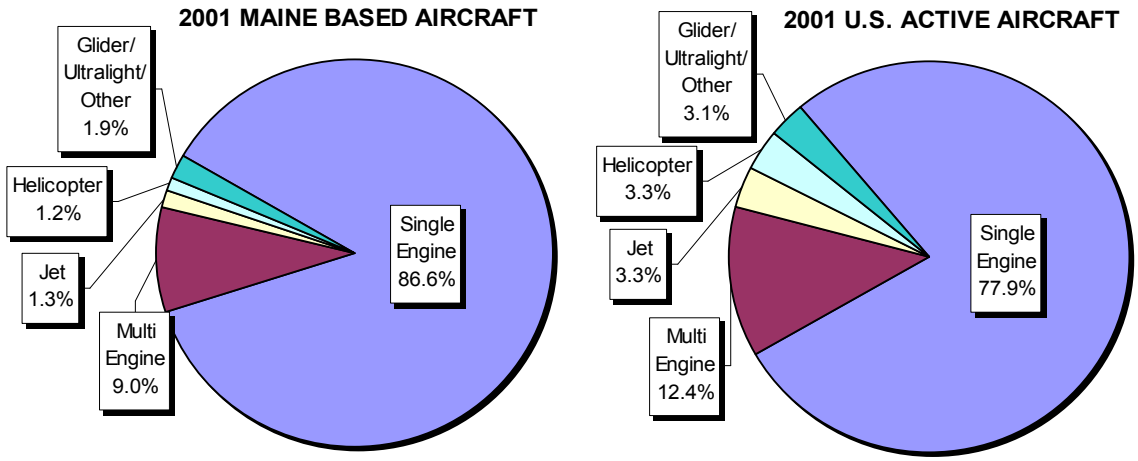
Source: Airport Manager and MASP.

3.1 Based Aircraft Fleet Mix

In projecting the statewide-based aircraft fleet mix for Maine, the MASP had to consider the continually changing national active general aviation aircraft fleet and the existing fleet mix in Maine. **Exhibit 2-1** presents the based aircraft fleet mix for Maine and the active general aviation aircraft fleet in the U.S. In 2001, single-engine aircraft accounted for 86.6 percent of the based aircraft fleet at all public airports in Maine, compared to 77.9 percent of the total U.S. fleet. The

share of multi-engine, jet, helicopter, and other aircraft of the total fleet at all U.S. airports were higher than the share at Maine airports.

Figure 2-1: Comparison of 2001 Maine Based Aircraft and U.S. Based Aircraft by Aircraft Type



Sources: Wilbur Smith Associates; FAA Aerospace Forecasts Fiscal Years 2002-2013

The FAA asserts in the *FAA Aerospace Forecasts FY 2002-2013* that there will be strong growth in active general aviation jet aircraft. This trend illustrates a movement in the general aviation community toward more sophisticated, higher performing, and more demanding aircraft. This trend will impact the types of activity occurring at general aviation airports and the types of facilities required at those airports. The FAA projects that the percentages increase in jet aircraft will significantly outpace growth in other components of the aircraft fleet. Single engine and multi-engine aircraft are projected to experience an average annual growth rate of less than 0.5 percent per year over the forecast period.

The MASP projected fleet mix for Maine and the current LEW fleet mix data provided by the Airport Manager were interpolated to project based aircraft fleet mix in the future. These data are presented in **Table 2-3**.

Table 2-3: Projected Based Aircraft Fleet Mix

Equipment Type	2004		2009		2014		2024	
	Based Aircraft	% of Total	Based Aircraft	% of Total	Based Aircraft	% of Total	Based Aircraft	% of Total
Single Engine	69	86.6	72	85.6	75	84.7	81	83.9
Multi Engine	7	9.0	8	8.7	7	8.4	8	8.0
Jet	0	0.0	2	2.2	3	2.9	4	3.6
Helicopter	2	2.5	1	1.5	2	1.8	2	2.1
Glider / Ultra-light / Other	2	1.9	2	2.0	2	2.2	2	2.4
Total	**80**	**100**	**85**	**100**	**89**	**100**	**97**	**100**

Source: Airport Manager and MASP.

4.0 AIRCRAFT OPERATIONS

As noted previously, unless an airport has an air traffic control tower, general aviation operations data often represents estimates made by airport managers/operators. In many instances, these estimates are subjective. Historic general aviation operations data for LEW are presented as **Appendix VIII**. The table clearly illustrates that operations can vary significantly by source.

MASP tested several methodologies to project general aviation operations at Maine airports. Similar to the based aircraft projections, two of these methodologies [market share methodology and operations per based aircraft (OPBA) methodology] were combined to produce a preferred general aviation operations projection for each airport. The market share methodology used each airport's share of current statewide operations to project general aviation operations. Statewide operations were projected based on the combined average growth rate for total general aviation operations implied in all current Maine airport master plans. The second methodology determined the operations per based aircraft (OPBA) ratio for each airport and projected operations based on this ratio. The result of one of these two methodologies was selected to project future annual general aviation operations.

Projections developed in the MASP were applied to current LEW data provided by the Airport Manager. The data was the result of an in-depth yearlong analysis to determine an accurate representation of annual operations at the airport. The resulting aircraft operations forecasts are shown in **Table 2-4**.

Table 2-4: Projected LEW Annual Operations

Year	LEW Annual Operations	Maine Annual Operations	LEW % of Maine Operations
2004	70,300	682,400	10.3%
2009	77,500	739,200	10.5%
2014	85,400	796,400	10.7%
2024	103,800	924,300	11.2%

Source: Airport Manager and MASP.
Note: Figures are rounded to the nearest 100.

Developing aircraft type operations forecasts was not within the scope of the MASP. Current distribution of operation type, adjusted by market trends identified in the MASP, were therefore applied in order to develop the forecasts presented in **Table 2-5** and **Table 2-6**.

Table 2-5: Aircraft Type Operations Forecast

Type Operation	Percentage of Total	2004 Operations	2009 Operations	2014 Operations	2024 Operations
Total Operations	100	70,300	77,500	85,400	103,800
Local	55	38,700	42,600	47,000	57,100
Itinerant	45	31,600	34,900	38,400	46,700
Touch-and-Go	10	7,000	7,800	8,500	10,400
Nighttime (10:00 PM – 7:00 AM)	15	10,500	11,600	12,800	15,600
Daytime (7:00 AM – 10:00 PM)	85	59,700	65,900	72,600	88,200
Visual Flight Rules (VFR)	70	49,200	54,300	59,800	72,700
Instrument Flight Rules (IFR)	30	21,100	23,300	25,600	31,100

Source: Airport Manager and MASP.

Note: Figures are rounded to the nearest 100.

Table 2-6: Operation Type Forecast

Year	Air Carrier / Commuter	Air Taxi	General Aviation (Local and Itinerant)[1]	Military	Total Annual Operations
2004	0	25,000	45,300	50	70,300
2009	0	28,000	49,500	50	77,500
2014	2,500	32,500	50,400	50	85,400
2024	4,000	39,500	60,200	50	103,800

Source: Airport Manager and MASP.

Note: Figures are rounded to the nearest 100 (except military).

1. As indicated in Table 2-5, the General Aviation figures consist of 55% local and 45% itinerant operations.

5.0 FUEL FLOWAGE FORECAST

As the primary FBO at LEW, Twin Cities Air Service indicated that although total fuel sales have remained constant over the past 5 years, the ratio of Jet-A to Avgas has consistently increased. The statistic supports MASP's market analysis trend of an increase of jet aircraft use within general aviation.

Although MASP did not forecast fuel flowage, market trends previously discussed within this chapter were applied to LEW's current figures to determine projected sales.

Twin Cities Air Service's owner estimated that 2/3 of the total gallons of fuel sold in 2005 was consumed by his own aircraft, while the remaining 1/3 were retail sales to others.

The recent addition of a second FBO who also sells fuel was taken into account when developing the annual fuel flowage forecast. A modest increase of annual fuel sales is projected for LEW as shown in **Table 2-7**.

Table 2-7: Annual Fuel Flowage Forecast

Year	Avgas/100LL (Gallons)	Jet-A (Gallons)	Total (Gallons)
2005	134,400	201,600	336,000
2009	138,200	225,500	363,700
2014	140,500	261,000	401,500
2024	146,900	342,600	489,500

Source: Airport Manager, FBO's and MASP

Note: Figures rounded to the nearest 100.

CHAPTER #3 Existing General Aviation Development Scenario

1.0 GENERAL

Chapter #1 – Inventory and *Chapter #2 – Existing Aviation Activity Forecasts* identify the airport's existing facilities and provide a 20-year projection of aviation activity for LEW. The information provided in those sections serves as the foundation for this, the Existing General Aviation Development Scenario Analysis as well as subsequent sections of the master plan.

The purpose of this chapter is to use the data collected within the inventory and aviation forecast sections to:

1) Determine if the facilities at LEW can accommodate the projected activity levels for the development scenario in which there is more of the same kind of activity, the Existing General Aviation Development Scenario;
2) Determine if the existing and future airport facilities do meet, or can meet, FAA airport design criteria; and
3) Determine the best method, or alternative design option, for future airport development.

Theoretical runway capacity levels as calculated in the *FAA Capacity Manual* were not analyzed, as operational capacity is not an issue at current and future operations levels.

1.1 Previous AMP Update Recommendations

In the context of an AMP, it is necessary to compare prior facility recommendations and analyze what has been implemented before updating the current needs. The majority of the recommended development identified in the *1997 Auburn-Lewiston Airport Master Plan* has not yet been completed. Those projects, or some variation thereof, continue to be recommended. Further detail for each project is provided within the appropriate segments of this chapter.

2.0 DEVELOPMENT CONSIDERATIONS – PROTECTED SURFACES

The primary goals of an airport manager/owner are the safe and efficient operation of the airport and the design and development of that airport to satisfy local aviation needs. To improve safety at airports, Federal regulations and standards exist that regulate airport design, development and maintenance. Those standards identify areas, both on and off of airport owned property, that are to be protected and maintained for the safety of the flying public. Those protected surfaces surround runways, taxiways, navigational aids and the airspace above airports. The following are examined:

- Airport Design Criteria;
- Navigational Aid Critical Areas;
- Imaginary Surfaces; and
- The Runway Visibility Zone

Future development must consider these protected surfaces when making recommendations for improvement and prior to the implementation of new or improved facilities.

2.1 Protected Surfaces - Airport Design Criteria

The FAA has established the Airport Reference Code (ARC) to set airport design criteria according to the type of aircraft (the critical aircraft) served. The ARC outlines the dimensional design requirements such as length and width for runways and taxiways and their associated protected surfaces, set backs and separations. As discussed in *Chapter #2 – Existing Aviation Activity Forecasts*, the current ARC for Runway 04-22 is B-II, and B-I Small Aircraft Exclusively for Runway 17-35.

Table 3-1 below reviews LEW's design criteria for Runways 04-22 and 17-35. The table indicates the area(s) where the airport does not currently meet FAA requirements with ***bold and italicized*** print. The table and its design criteria are referred to several times throughout the remainder of this chapter.

Table 3-1: LEW Ultimate Design Criteria

Design Elements	Design Criteria (feet)	
	B-I, Small Aircraft Exclusively	**B-II**
Runway	17-35	04-22
Runway Visibility Minimums	Not lower than ¾-statute mile	Lower than ¾-statute mile
Runway Width	60	100
Runway Shoulder Width	10	10
Runway Blast Pad		
Length	60	150
Width	80	120
Runway Safety Area		
Length beyond runway end	***240 (100)***	***600 (200)***
Width	120	300
Runway Obstacle Free Zone		
Length beyond runway end	200	200
Width	250	400
Runway Object Free Area		
Length beyond runway end	240	600
Width	250	***800 (500)***
Taxiway/Taxilane		
Width	25	35
Taxiway edge safety margin	5	7.5
Taxiway shoulder width	10	10
Taxiway safety area width	49	79
Taxiway object free area width	89	131
Taxilane object free area width	79	115
Runway Separation Standards	Visual runways and runways with not lower than ¾-statute mile approach visibility	Visibility minimums lower than ¾-statute mile approach visibility
Runway centerline to taxiway centerline	150	300
Runway centerline to aircraft parking area	125	400
Taxiway Separation Standards		
Taxiway centerline to Parallel taxiway centerline	69	105
Taxiway centerline to a Fixed or moveable object	44.5	65.5

Source: *AC 150/5300-13, Airport Design.*

The following defines the critical design elements listed above along with their limitations, as identified by FAA *AC 150/5300-13, Airport Design.*

Runway Protection Zone (RPZ): A trapezoidal surface on the ground, centered on the extended runway centerline, beginning 200 feet from the end of usable runway. In *AC 150/5300-13*, the FAA recommends that certain *l*and uses, such as residences and buildings for public assembly, be prohibited from within the RPZ. They also recommend the exclusion of land uses that attract wildlife within the RPZ. If the RPZ surface extends into lands that are not owned by the airport, the FAA recommends that the airport either acquire the property or obtain easements that allow the airport to control the height of objects within the RPZ.

Runway Safety Area (RSA): A graded, rectangular area, centered on the runway centerline, and extended beyond the runway ends and runway edges. The RSA must be cleared, appropriately graded and drained. It must be free of objects, except those that need to be there due to their function, such as navigational aids. It should be capable of supporting airport mobile equipment, rescue equipment, and the occasional passage of aircraft under dry conditions. Any object located within the RSA higher than three inches must be constructed with frangible supports, with the frangible point no higher than three inches above grade. The maximum permissible longitudinal grade required for the first 200 feet of the RSA, beyond the runway ends, is between 0 and 3 percent sloping downward. The maximum permissible longitudinal grade for the remainder of the safety area is a negative grade of 5 percent. The airport should own the land that constitutes the RSA so that maintenance and the control of objects can be accomplished.

Runway Object Free Area (ROFA): Requires clearing of above ground objects protruding above the RSA edge elevation, except for navigational aids as mentioned above. An airport should own the land that constitutes the ROFA.

Runway Obstacle Free Zone (ROFZ): A defined volume of airspace centered above the runway centerline. The area prohibits taxiing and parked aircraft. It is to remain free of obstacles and object penetrations, except for objects that need to be located there because of their function, such as navigational aids.

2.2 Protected Surfaces - Navigational Aid Critical Areas

Runway 04-22 has an instrument landing system (ILS) approach to Runway 04. An ILS typically consists of the following electronic components and visual aids that provide course guidance to the runway in low visibility conditions:

- Localizer Antenna
- Glideslope Antenna
- Marker Radio Beacons
- Approach Lights

Of those components, the localizer and the glide slope have safety areas, known as critical areas, which surround each piece of electronic equipment. The electronic equipment is susceptible to signal interference from sources such as power lines, fences, metal buildings, aircraft and vehicles. Therefore, those critical areas must be kept free of such objects.

2.3 Protected Surfaces - Imaginary Surfaces

Federal Aviation Regulation (FAR) Part 77, *Objects Affecting Navigable Airspace*, establishes imaginary surfaces above airports to protect navigable airspace from objects/obstructions that may penetrate the airspace. According to Part 77, obstructions are considered to be any manmade objects, objects of natural growth, such as trees or brush, and terrain (ground penetrations) that should be either removed or marked as an obstruction.

The airport's imaginary surfaces are based on the classification of the runway and the type of approach available. Logically, the dimensions of the imaginary surfaces for a precision instrument approach runway (such as Runway 04) are larger than those associated with a visual or non-precision runway approach (such as Runway 22, 17, and 35), to provide greater safety margins for operations in low visibility/instrument conditions.

The following defines the imaginary surfaces that must be protected, while **Table 3-2** depicts the existing and future FAR Part 77 airspace imaginary surfaces for LEW. **Figures 3-1** and **3-2** provide 2 and 3-dimensional graphical depictions of FAR Part 77's imaginary surfaces.

Primary Surface: A surface centered longitudinally along the runway, which at LEW extends 200 feet beyond the paved thresholds. The width is dependent on the type of approach (precision, non-precision, visual, etc.).

Approach Surface: A surface centered longitudinally on the extended runway centerline. This surface extends upward and outward from each end of the primary surface.

Horizontal Surface: A horizontal plane established 150 feet above the airport elevation. The limit of the horizontal surface is defined by a radius from the center of each end of the primary surface. Tangents connect each radius.

Conical Surface: A surface extending upward and outward from the horizontal surface at a slope of 20 feet horizontally to 1-foot vertically for a distance of 4,000 feet.

Transitional Surfaces: A surface extending outward and upward from the edges of each primary and approach surface at right angles to the runway centerline at a slope of 7 feet horizontally to 1-foot vertically. The transitional surface terminates at the horizontal surface.

Table 3-2: FAR Part 77 Airspace Surfaces – LEW

Airport Data	Runway 04		Runway 22		Runway 17		Runway 35	
	Existing	**Ultimate**	**Existing**	**Ultimate**	**Existing**	**Ultimate**	**Existing**	**Ultimate**
Runway Classification	Precision Instrument	Same	Non-Precision	Same	Visual	Same	Visual	Same
Visibility Minimums	¾-mile	< ¾-mile	¾-mile	< ¾-mile	3 miles	Same	3 miles	Same
Airport Elevation	288' MSL							
Airport Imaginary Surfaces	**Existing**	**Ultimate**	**Existing**	**Ultimate**	**Existing**	**Ultimate**	**Existing**	**Ultimate**
Horizontal Surface:								
Horizontal Surface Elevation	438' MSL							
Horizontal Surface Radius	10,000'	Same	10,000'	Same	5,000'	Same	5,000'	Same
Conical Surface:								
Conical Surface Elevation	638' MSL							
Horizontal Distance	4,000'	Same	4,000'	Same	4,000'	Same	4,000'	Same
Slope	20:1	Same	20:1	Same	20:1	Same	20:1	Same
Primary Surface:								
Length beyond runway end	200'	Same	200'	Same	200'	Same	200'	Same
Width	1,000'	Same	500'	Same	250'	Same	250'	Same
Approach Surface:								
Inner Edge Width	1,000'	Same	500'	Same	250'	Same	250'	Same
Outer Edge Width	16,000'	Same	3,500'	Same	1,250'	Same	1,250'	Same
Horizontal Distance	10,000' then 40,000' [1]	Same	10,000'	Same	5,000'	Same	5,000'	Same
Slope	50:1 then 40:1 [1]	Same	34:1	Same	20:1	Same	20:1	Same
Transitional Surfaces:	7:1	Same	7:1	Same	7:1	Same	7:1	Same

Source: *FAR Part 77, Objects Affecting Navigable Airspace*
Note:
1. Federal Aviation Regulation Part 77's approach surface standards require a horizontal distance of 10,000 feet at a slope of 50 feet (horizontally) to 1-foot (vertically) with an additional 40,000 feet at a slope of 40 feet (horizontally) to 1-foot (vertically) for all precision instrument runways, such as Runway 04. However, many airports within New England cannot meet the 50:1 slope requirements due to the mountainous terrain. Therefore, a slope of 34:1 is acceptable but the airport should strive to meet the 50:1 requirement if reasonably possible. An FAA modification to standards from 50:1 should be obtained.

Figure 3-1: Depiction of FAR Part 77's Imaginary Surfaces

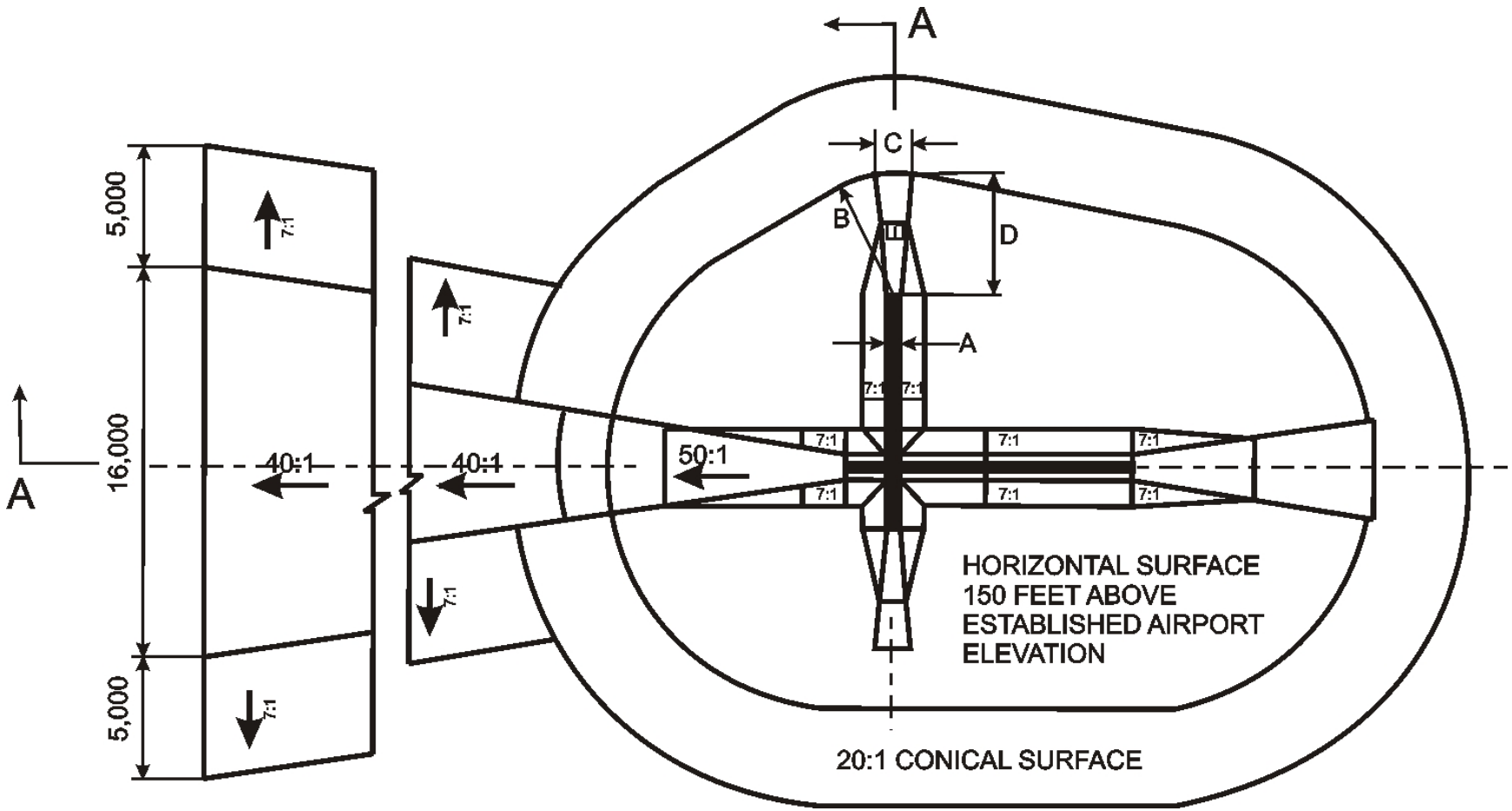
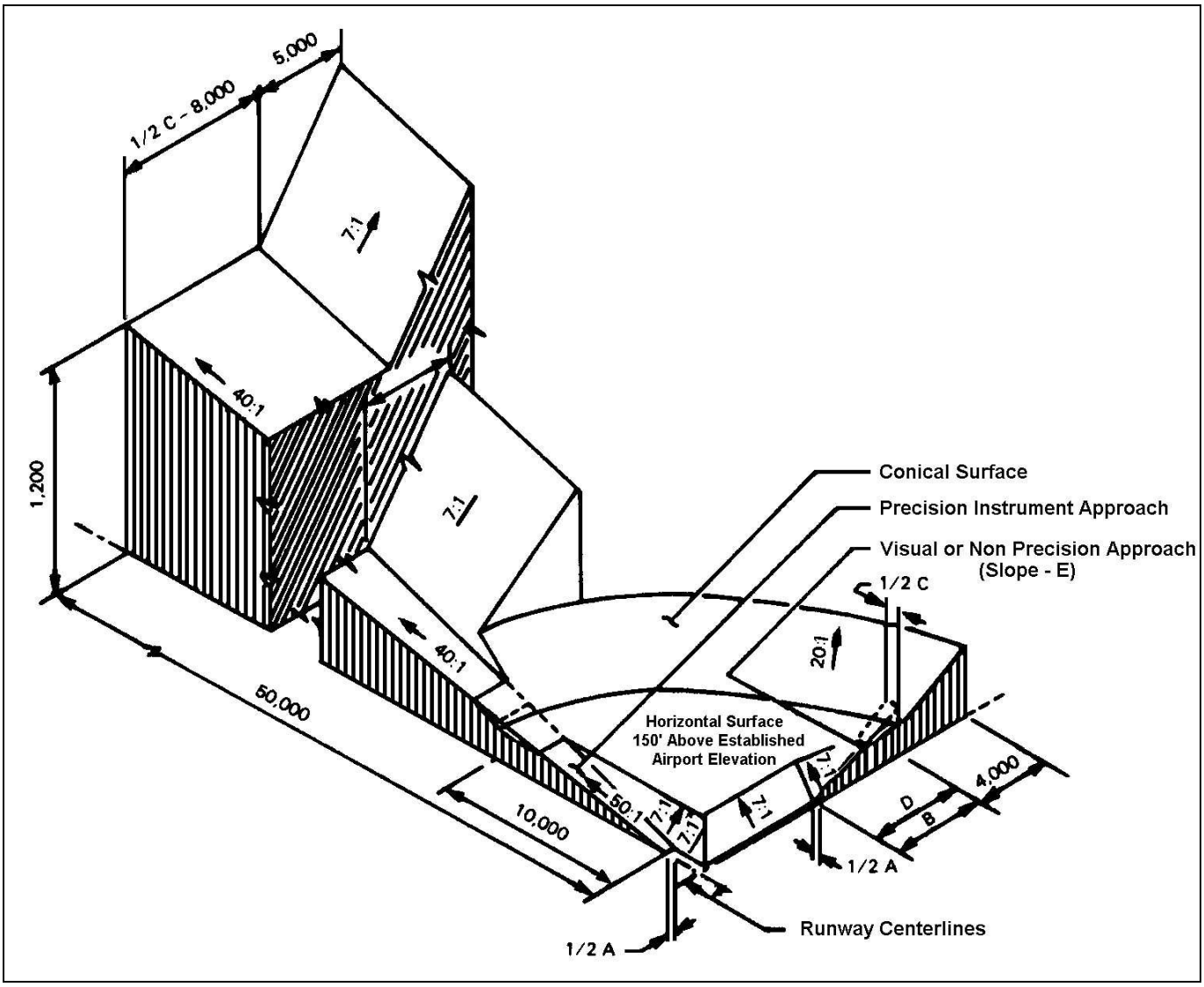


Figure 3-2: 3-Dimensional Graphic Depiction of FAR Part 77's Imaginary Surfaces



2.4 Protected Surfaces – Runway Visibility Zone

Line of sight standards are developed to allow clear visibility on individual runways from one end of the runway to the other, or for intersecting runways (similar to LEW), between intersecting runways.[1]

The FAA recommends that terrain within the visibility zone of the intersecting runways be graded and buildings sited in such a way so as to allow for unobstructed visibility.

3.0 LANDSIDE FACILITY REQUIREMENTS AND ALTERNATIVE DEVELOPMENT

The following sections assess the need for improvements to existing landside facilities and/or the need for additional facilities based on airport design criteria, known airport issues, and projected activity levels. A graphic depiction of the proposed airport projects for the Existing General Aviation Development Scenario is shown at the end of Chapter #4 with the three other development scenarios.

The following are evaluated for the Existing General Aviation Development Scenario:

- Aircraft Storage Facilities and Requirements (ramps and hangars)
    - Pavement Condition and Rehabilitation Requirements
    - Based Aircraft Storage and Requirements
    - Itinerant Aircraft Storage and Requirements
- Automobile Storage Facilities and Requirements
- Terminal Building Facility and Requirements
- Aircraft Fueling Facilities and Requirements

3.1 Aircraft Storage Facilities and Requirements

The following identifies the condition of the airport's aircraft storage facilities, the need for improvements to those facilities, and/or the need for additional facilities.

3.1.1 Ramp/Pavement Condition

The typical life of pavement is 15 to 20 years. A slurry seal was conducted on the west ramp in 1991. Upon visual inspection, its pavement is in very good condition. The east ramp pavement and taxiway are in poor condition. Crack sealing is no longer an option due to the cracks being two to three inches apart in some areas. There are also numerous frost heaves.

[1] U.S. Department of Transportation, Federal Aviation Administration, *Airport Design, AC 150/5300-13.*

Based on condition and typical life estimates, the east ramp, and taxiway are recommended for reconstruction during the short-term phase of this planning period, (within 5 years) while the west ramp will be due for reconstruction in the long-term phase (greater than 5 years).

3.1.2 Based Aircraft Storage and Requirements

As projected in *Chapter #2 – Existing Aviation Activity Forecasts*, the based aircraft fleet is expected to grow from 80-based aircraft in 2004 to 97 in 2024, adding 17-based aircraft.

Table 3-3 identifies the based aircraft storage demand for both conventional hangars, t-hangars, and aircraft tie-downs at LEW.

Table 3-3: Projected Based Aircraft Storage Demand

	2004		2009		2014		2024	
Equipment Type	**Based Aircraft**	**Aircraft Storage Space Requirements (SY)**	**Based Aircraft**	**Aircraft Storage Space Requirements (SY)**	**Based Aircraft**	**Aircraft Storage Space Requirements (SY)**	**Based Aircraft**	**Aircraft Storage Space Requirements (SY)**
Single Engine[1]	69	20,700	72	21,600	75	22,500	81	24,300
Multi-Engine[1]	7	2,100	8	2,400	7	2,100	8	2,400
Jet[2]	0	0	2	1,820	3	2,730	4	3,640
Helicopter[1]	2	600	1	300	2	600	2	600
Other: Ultralight/Glider/ Experimental[1]	2	600	2	600	2	600	2	600
Totals	**80**	**24,000**	**77**	**26,720**	**89**	**28,530**	**97**	**31,540**
Existing Based Aircraft Ramp Storage Space (SY)		18,665		18,665		18,665		18,665
Existing Based Aircraft Hangar Storage Space (SY)		7,000[3]		7,000[3]		7,000[3]		7,000[3]
Total Existing Based Aircraft Storage Space (SY)		25,665		25,665		25,665		25,665
Total Surplus (Deficit) Based Aircraft Storage Space - (SY)		**1,665**		**(1,055)**		**(2,865)**		**(5,875)**

Notes:

1. According to the FAA in *AC 150/5300-13, Airport Design,* allowing 300 square yards is typical for based aircraft parking requirements for small single engine and light multi-engine aircraft
2. The 300 SY indicated in note 1 is too small for larger, more complex and demanding aircraft. The 910 square yards per aircraft used is an average of various jets that are likely to be based/service LEW.
3. Approximate SY based on available airport records. Figure includes private hangar space.

As indicated above, current based aircraft storage space does not meet projected demand.

Typically there is more of a demand for hangars than based aircraft tie-down storage space, as aircraft owners prefer to have their aircraft under cover rather than exposed to the weather. LEW turned away 11 potential tenants in the last year due to lack of hangar space; six were businesses that preferred heated storage. The mix between hangars and tie-down development should be based on the actual market demand, i.e. responding to an actual development proposal. A local developer is currently interested in constructing four bays of 8-10 t-hangars.

3.1.3 Itinerant Aircraft Storage and Requirements

Currently, there are approximately 19 itinerant aircraft parking spaces on the terminal ramp. This number fluctuates depending on the size of itinerant aircraft using the facility. The proportion of itinerant operations is projected to remain approximately 45 percent of annual operations throughout the planning period. **Table 3-4** identifies the projected itinerant aircraft parking demand at LEW (derived from Table 2-5).

Table 3-4: Projected Itinerant Aircraft Storage Demand

	2004	2009	2014	2024
Avg Day Local Ops (10%)	11	12	13	16
Avg Day Itinerant Ops (100%)	87	96	105	128
Total	98	108	118	144
Total /2[1]	49	54	59	72
X 1.10[2]	54	59	65	79
X .5[3]	27	30	33	40
360 SY per Aircraft (SY)[4]	9,720	10,800	11,880	14,400
Existing Apron (SY)	4,166	4,166	4,166	4,166
Surplus (Deficit) SY	**(5,554)**	**(6,634)**	**(7,714)**	**(10,234)**

Source: HTA
Notes:
1. Eliminate double count (takeoff and landings).
2. *AC 150/5300-13, Airport Design*, recommends using 'busy day' figures, which are 10% greater that average daily operations.
3. *AC 150/5300-13, Airport Design*, recommends assuming 50% of itinerant aircraft on the apron at any given time.
4. According to *AC 150/5300-13, Airport Design,* allowing 360 square yards is typical for itinerant aircraft parking requirements.

West Itinerant Ramp

3.2 Automobile Storage Facilities and Requirements

LEW currently has 132 automobile parking spots, including four designated handicapped stalls.

Although the existing capacity is expected to remain sufficient per the City of Auburn's Zoning Ordinance as well as discussion with the Airport Manager, three of the four existing auto-parking areas are considered in fair to poor condition (Table 1-10). All four areas are expected to require reconstruction during the planning period.

3.3 Terminal Building Facility and Requirements

The terminal building is an old structure, and is considered in fair condition. Although the building is fully compliant with all codes, remodeling or expansion to accommodate more businesses would be difficult and costly due to the presence of asbestos and the age of structural materials.

The following terminal area calculation was developed to quantify the area needed at LEW. The calculated area should be used in the event that Maine DOT develops the proposed multi-modal facility presented in summary form as **Appendix VII** or to evaluate expansion/modification to the existing terminal.

The FAA[2] recommends using peak hour passenger levels when analyzing terminal building size requirements. A rule of thumb factor uses an average of 3 passengers (pilot and passengers) per itinerant aircraft operation and 1.5 passengers (pilot and passengers) per local aircraft operation (Table 3-4 above). Applying this method to data collected during the master plan process as well as assumptions appropriate to LEW, the following space requirements were determined (square feet):

1.	Lobby/Public Waiting Area	500
2.	Departure Area/Lounge/Miscellaneous	500
	a. Telephones	
	b. Concession Machines	
	c. Restrooms	
3.	Tenant/Office Area	
	a. Landing Strip Café	2,500
	b. Future Tenant	1,500
4.	Airport Management	
	a. Management Office	250
	b. Conference room	400
	Subtotal:	**5,650**
5.	Building mechanical systems (15 percent of gross terminal area)	850
6.	Circulation space (20 percent of gross terminal area)	1,130
	Total:	**7,630**

[2] U.S. Department of Transportation, Federal Aviation Administration, *AC 150/5360-9, Planning and Design of Airport Terminal Facilities at Nonhub Locations.*

The terminal building size requirement calculated above is more than twice that of the existing 2,800 square foot facility. Though the figures are otherwise conservative, there is an allowance of 1,500 square feet for future tenants such as an avionics and/or pilot shop.

LEW's existing terminal building is recommended for expansion/modification in the near future. However, implementation of this recommendation is very dependant on the State's plans for the proposed multi-modal facility. A new or modified terminal facility in the same general location as the existing structure would present a practical and modern 'front door' to the Cities as well as ensure adequate functionality for airport users, staff, and lessees/businesses.

3.4 Civil Air Patrol

The local Civil Air Patrol (CAP) unit operates out of LEW. As the Auxiliary of the U.S. Air Force, the CAP's primary functions include providing 95% of the nation's inland search and rescue, aerospace education, and Cadet leadership training.

The CAP does not currently have a facility at LEW. This master plan therefore recommends provision of a basic facility for the CAP's regular meetings and ceremonies.

3.5 Aircraft Fueling Facilities and Requirements

Normal maintenance of the existing fueling facilities in conjunction with the new self-service fuel station on the east ramp is projected to accommodate LEW through the planning period.

4.0 AIRSIDE FACILITY REQUIREMENTS AND ALTERNATIVE DEVELOPMENT

The following sections assess the need for improvements to existing airside facilities and/or the need for additional facilities based on airport design criteria, known airport issues, and projected activity levels. A graphic depiction of the proposed airport projects for the Existing General Aviation Development Scenario is shown at the end of Chapter #4 with the three growth scenario graphics.

The following facilities are examined for the Existing General Aviation Development Scenario:

- Runways
- Taxiways
- Visual and Navigational Aids
- Airside Obstructions/Imaginary Surfaces

4.1 Runways

The following identifies the condition of Runways 04-22 and 17-35 and identifies facility improvements where necessary.

4.1.1 Runway 04-22 Length Adequacy

According to *AC 150/5325-4A, Runway Length for Airport Design*, the length of an airport's primary runway '…should be based on the airplanes that are forecasted to use the runway on a regular basis, …' which is defined as at least 250 operations a year by the AC.

Chapter #2 identified the critical aircraft to be the Embraer Bandeirante. The aircraft requires less than the 5,001 feet of runway currently provided by Runway 04-22, which is LEW's primary runway. The existing runway length is therefore adequate for the Existing General Aviation Development Scenario.

4.1.2 Runway Pavement Condition

LEW's pavement condition was inspected by MDOT-OPT in June 2002. The results determined Runway 17-35's pavement to be 87, which is 'excellent'. The runway was overlain in 2001. Runway 04-22's pavement had a PCI rating of 80, which is 'very good'.

Although LEW's runways had 'excellent' and 'very good' PCI ratings, the life expectancy of pavement is 15 to 20 years, according to the FAA. Runways 04-22 and 17-35 will reach the end of their designed pavement life within this planning period.

Due to the data provided above, it is recommended that both runways be scheduled for rehabilitation.

4.1.3 Runway Design Criteria Condition

The following identifies deficiencies and provides recommendations for improvements of LEW's runway. The design criteria is described and illustrated in *Section 2.1, Protected Surfaces – Airport Design Criteria* of this chapter.

The RPZ for runway ends 04, 22 and 35 extend at least partially outside of existing airport property. As was recommended in the *1997 Auburn-Lewiston Airport Master Plan Update*, additional avigation easements should be obtained within the runway's RPZ to augment those existing.

Although LEW generally has done a good job of maintaining FAA design standards, the following identify criteria that are not currently being met:

1. Runways 04, 22, 17 and 35's RSA – To achieve a more appropriately graded and suitable surface at runway ends, the necessary fill, grading of surfaces and reseeding should be accomplished; and
2. ROFA near intersection of Runways 22 and 35 – Remove penetrating brush/vegetation and allow for regular mowing and maintenance.

LEW management has long had the objective to level Airport Hill, situated between runway ends 4 and 35 and a penetration of the Part 77 Surfaces. The hill has been excavated as the airport gains funding and the opportunity presents itself. Christian Hill, located off airport property south of runway end 4, remains an ongoing excavation project, which may be expanded to include excavation of Airport Hill. Airport Hill's removal is recommended for compliance with Part 77, improved visibility between the runways as well as creation of leasable, revenue-generating area.
The upland sandpiper was observed on airport property in 1998. According to the *2003 Environmental Assessment* conducted by Dufresne-Henry, the species utilizes open grasslands as breeding habitat.

Vegetation clearing and subsequent grubbing and grading activities are likely to increase upland sandpiper breeding habitat on airport property. Nonetheless, prior to commencing any safety area improvements, consultation with the Maine Department of Fisheries and Wildlife will be required.

Runway Width

As indicated in Table 3-1, the required width for Runway 04-22 is 100 feet, and 60 feet for Runway 17-35. While Runway 04-22 meets its width requirement, Runway 17-35 exceeds it by 15 feet. This master plan does not recommend reducing Runway 17-35's width as it provides additional margins of crosswind operational safety for the light, GA aircraft that primarily use the runway as well as to accommodate the occasional use by larger aircraft, with larger wheel bases, in strong wind conditions.

Runway Line-of-Sight Requirements

According to *AC 150/5300-13, Airport Design*, line-of-sight standards require that any two points five feet above the runway centerline be mutually visible for the entire length at uncontrolled airports. LEW meets this FAA design criteria. However, as described above, removal of Airport Hill will significantly improve visibility between the runways.

4.2 Taxiways

The following identifies the condition of LEW's taxiways and identifies facility improvements where necessary.

4.2.1 Taxiway Pavement Condition

LEW's taxiway is considered in poor condition. Crack sealing is no longer an option due to the cracks being two to three inches apart in some areas. There are also numerous frost heaves, some with depths reaching over eight inches.

Based on condition and typical life estimates, the taxiway is recommended for reconstruction during the short-term phase of this planning period.

4.2.2 Parallel Taxiway and Run-up/Holding Areas

According to *AC 150/5300-13, Airport Design*, basic airport design consists of providing a parallel taxiway for each runway. Constructing a full-length parallel taxiway to Runway 04-22 would offer optimum efficiency for aircraft movement at LEW. Provision of an adequate taxiway system will also eliminate aircraft back taxiing on the runway, thereby reducing the chances of a runway incursion between taxiing and airborne aircraft.

Runway 04-22 Parallel Taxiway

A run-up/holding apron and two partial parallel taxiways are also recommended for Runway 35. The parallel taxiway for Runway 04-22 takes priority, as it is the primary runway at LEW. Run-up/holding aprons are suggested as the area provides space for aircraft doing pre-takeoff engine checks or awaiting instrument clearances. Ultimately, a complete taxiway system will provide more positive separation between aircraft in the air and on the ground.

As was noted previously, Airport Hill remains a Part 77 obstruction and impairs visibility between the runways. Provision of both taxiways would assist in reducing the negative impact of Airport Hill, should it not be completely removed.

4.2.3 Taxiway Design Criteria Compliance

The following defines taxiway design criteria, identifies the existing conditions for each design element and makes recommendations for improvement for those items not meeting criteria.

Taxiway Width

B-II taxiway design standards require 35-foot wide taxiways. LEW's existing taxiway exceeds this design standard as it is 75 feet wide. This extra impervious surface is costly to maintain and is not required, this master plan recommends the taxiway's width be reduced to 35 feet when it is due for reconstruction.

Taxiway edge safety margins are the minimum acceptable distance between the outside of the airplane wheels and the pavement edge. LEW currently meets this FAA design criteria.

Taxiway shoulders are designed to provide resistance to blast erosion. They are typically designed as paved shoulders and exist to reduce the possibility of blast erosion and engine ingestion problems associated with jet engines, which overhang the edge of the taxiway pavement. Typically, soil and/or turf shoulders are not suitable for this purpose. A low cost paved surface is more desirable. LEW currently meets this FAA design criteria.

Taxiway Safety Areas (TSA) are similar to runway safety areas. The TSA is a rectangular area, centered on the taxiway centerline, which is to remain free of obstacles or rough terrain, except for objects that need to be located in the TSA because of their function, such as navigational aids. The TSA provides a suitable surface that reduces the risk of damage to aircraft in the event that an aircraft leaves the taxiway environment. LEW currently meets this FAA design criteria.

Taxiway Object Free Area (TOFA) surrounds the TSA. Service vehicle roads, parked aircraft, and fixed or moveable objects are prohibited. Only objects that need to be located in the TOFA because of their function, such as navigational aids, are allowed. LEW currently meets this FAA design criteria.

4.3 Visual and Navigational Aids

Visual Aids include any visual device on the airport surface, which provides guidance information or position data guidance to pilots maneuvering on airports. They include airport markings on paved runways, taxiways, ramps and roadways; airport lighting; and airport signs.

Navigational Aids (Navaids) include any visual or electronic device airborne or on the surface which provides point-to-point guidance information or position data to aircraft in flight.

Visual Aids – Marking Paved Areas - Runways

AC 150/5340-1J, Standards for Airport Marking, provides the standards for marking paved areas on airports (runways, taxiways, ramps, and roadways). **Table 3-5** identifies runway markings that are required for LEW based on the type of runway approach.

Table 3-5: Required Runway Marking Elements

	Runway 04	Runway 22	Runway 17	Runway 35
Approach Type	Precision	Non-Precision	Visual	Visual
Runway Length (feet)	5,001		2,750	
Runway Marking				
Designation	X	X	X	X
Centerline	X	X	X	X
Threshold marking	X	X		
Aiming Point	X[1]	X[1]		
Touchdown Zone	X			
Side Stripes	X			
Holding Position	X[2]	X[2]	X[2]	X[2]

Source: *AC 150/5340-1J, Standards for Airport Marking*

Notes:

1. On runways 4,000' or longer used by jet aircraft.
2. Used when there is no air traffic control tower and no parallel runway.

LEW currently has all required runway markings identified above. All runway markings appear to be in good to excellent condition.

In an effort to maintain runway-marking visibility, the markings should be repainted on a regular basis. An annual paint schedule is currently in place.

Visual Aids – Marking Paved Areas - Taxiways

Table 3-6 identifies the taxiway markings that are recommended/required for LEW.

Table 3-6: Taxiway Marking Elements

Taxiway Marking Element	Recommended	Required
Taxiway Centerline		X
Enhanced Taxiway Centerline	X	
Taxiway Edge	X	
Runway Holding Position		X
Runway Holding Position for an Instrument Landing System		X
Surface Painted Holding Position Signs	X	
Surface Painted Apron Entrance Point Signs	X	

Source: *AC 150/5340-1J, Standards for Airport Marking*

The current taxiway system is recommended for reconstruction within the short-term phase of the planning period. The required and recommended taxiway marking elements above should therefore be painted upon completion of the pavement reconstruction.

Visual Aids – Airport Lighting

AC 150/5340-30A, Design and Installation Details for Airport Visual Aids, provides guidance and recommendations on the installation of airport visual aids such as runway and taxiway lights.

According to *AC 150/5340-30A*, LEW's taxiway system is required to have Medium Intensity Taxiway Lights (MITLs). The current taxiway is equipped with MITLs. Although they are rather old, they are considered in good condition.

Runway 04 has a medium intensity approach light system with runway alignment indicator lights, (MALSR) which is a type of Approach Lighting System (ALS) that provides pilots with a basic means to transition from instrument flight rules to visual flight rules for landing. An ALS enhances instrument approach procedures and aid pilots in locating the approach end of a runway. The system's configuration allows for reduced visibility minimums and is required for any airport with approach visibility minimums less than ¾ of a mile.

Runway 22 is equipped with Runway End Identifier Lights, (REILs) which are a common type of economy runway approach lighting system. REILs are two synchronized flashing lights, one on each side of the runway threshold, which provide rapid and positive identification of the approach end of the runway.

Runways 04 and 22 have precision approach path indicators (PAPIs), which provide visual approach slope guidance to the runway. On runways not provided with electronic guidance, the light signals are beneficial in aiding the pilot of an aircraft to determine the correct glide slope. The presence of objects in the approach area may present a serious hazard if an aircraft descends below the normal path. This is especially true where sources of visual reference information are lacking or deceptive: i.e., hilltops, valleys, terrain grades, and remote-type airports. The PAPI assists the pilot in maintaining a safe distance above hazardous objects. The visual aiming point obtained with the PAPI reduces the probability of undershoots and overshoots.

PAPIs are recommended for Runway 17-35 per the discussion above, as the runway does not currently have any lights.

Visual Aids – Airport Signs

AC 150/5340-18D, Standards for Airport Sign Systems, provides the standards for runway and taxiway signs on airports.

According to *AC 150/5340-18D, Standards for Airport Sign Systems*, a properly designed and standardized runway and taxiway guidance sign system is essential to allow both aircraft and ground vehicles to easily determine where they are on the airport. Runway and taxiway signs should easily identify the designation or name of any taxiway or runway on which the aircraft or ground vehicle is located. The signs should readily identify routes toward a desired destination such as a directional sign indicating the route to the ramp for aircraft parking or to another runway or taxiway. Airport signs should also indicate mandatory holding positions when operating during low-visibility weather operations and to identify boundaries for approach areas, Instrument Landing System (ILS) critical areas, etc.
The required airport signage is present and is in good to excellent condition at LEW.

Navigational Aids

Discussions with airport tenants and users indicated that LEW's current systems are adequate for existing and future operations. Therefore, additional navigational aids are not warranted, therefore not recommended within this planning period.

4.4 Airside Obstructions/Imaginary Surfaces

As indicated earlier in this chapter, *FAR Part 77, Objects Affecting Navigable Airspace*, establishes imaginary surfaces above airports to protect navigable airspace from objects/obstructions that may penetrate the airspace.

Numerous imaginary surface obstructions were noted in reviewing the most recent Obstruction Data Sheet from the FAA. A graphic depiction of the airport imaginary surfaces and imaginary surface obstructions is shown in Chapter #6.

To enhance safety, it is recommended that clearing and grubbing of trees, brush, and terrain located both on and off of airport property within the airport's imaginary surfaces take place within the short-term planning period. If trees and/or terrain cannot be removed, it is recommended that the areas be identified with obstruction beacons/lighting. Although the airport currently has some avigation easements for those areas of impact, additional avigation easements are required and must be obtained prior to the removal of obstructions that are located off of airport property.

As was previously mentioned, LEW is currently in the process of clearing Christian Hill, owned by the airport but remote from the field, and intends to excavate Airport Hill, located at mid-field.

5.0 ROUNDY-THEBERGE PROPERTY

Acquisition of the Roundy-Theberge property has been a longstanding objective for LEW. In 2002, the airport obtained 2.1 acres of the original land parcel containing a total of 10.2 acres through a land swap agreement. Though the transaction was considered successful, it only partially fulfilled the objective to acquire the entire property.

When LEW has the opportunity, the airport should purchase the remaining Roundy-Theberge property for three fundamental reasons. First, the parcel continues to be part of the airport's master plan for growth and development. The land contained therein is relatively flat and free of wetlands, therefore capable of accommodating a variety of aviation and non-aviation related uses with minimum environmental impact. Secondly, obtaining full command of the property will provide additional buffer area between the airfield and the neighboring community. The importance of buffers and noise abatement for the surrounding community's quality of life was discussed at length during airport master plan PAC meetings. Lastly, acquisition of the Roundy-Theberge property would finally extinguish the undesirable current through-the-fence access agreement in place and identified in Appendix XI, Business Plan.

6.0 STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

The purpose of a SWPPP is to identify sources of pollution potentially affecting the quality of storm water discharges associated with industrial activity at an airport and to ensure implementation of practices to minimize and control pollutants in storm water discharges. A SWPPP is a continuously updated plan providing data regarding new sources of pollution and/or changes in practices to minimize and control those pollutants.

LEW's SWPPP is being updated concurrently with this AMP. The final plan will be available for review at the airport or through the Cities of Auburn and Lewiston and includes the following:

- An inventory of the activities at the airport;
- Identification of site drainage patterns;
- Recommendations for corrective and/or protective measures;
- Creation of a model for inspection, compliance evaluation and documentation; and
- Suggestions that present a method to maintain and upgrade the SWPPP as conditions and/or facility usage changes

The SWPPP's inventory of airport activities includes a review of facilities located at the airport and sources of potential pollution from those facilities. It identifies materials and chemicals stored or handled at each of those facilities.

7.0 AIRPORT WILDLIFE/SECURITY FENCING REQUIREMENTS

The airport's existing security fence does not encompass approximately 7,000' of airport property line. LEW's electronic slide gates and major buildings are not currently marked.

Although airport security fencing is not required under current FAA regulations for LEW, the FAA recommends that airports provide wildlife/security fencing as public protection in order to prevent possible wildlife hazards and inadvertent entry to the airport movement area (runways and taxiways) by unauthorized persons or vehicles. Also, increased security awareness in the wake of the September 11, 2001 attacks may result in more stringent requirements such as complete perimeter fencing and access control.

Marking and identification of LEW's electronic slide gates and major buildings allows easier direction and maneuverability by airport staff, tenants and their staff as well as airport visitors. The marking and identification would also allow expedited assistance from police, fire or emergency personnel, in the event their services were needed.

Therefore, the remaining 7,000' of the airport perimeter are recommended to be fenced and the electronic slide gates and all major buildings on the field should be marked for identification purposes.

Construction of a perimeter road is also recommended in order to facilitate regular inspections of the wildlife/security fence. A perimeter road aids in maintaining separation between automobiles and aircraft by providing ground vehicles access to most areas of the airport without having to cross runways or taxiways.

8.0 SNOW REMOVAL EQUIPMENT AND STORAGE REQUIREMENTS

8.1 Snow Removal Equipment Requirements

According to *AC 150/5220-20, Airport Snow and Ice Control Equipment*, the minimum snow removal equipment required for an airport is determined by: 1) the type airport (commercial or non-commercial); 2) the number of annual operations; and 3) the amount of annual snowfall.

LEW is considered a non-commercial service airport with approximately 70,300 annual operations for 2004, and has an average of 69.8 inches of annual snowfall reported by NOAA's National Weather Service at Portland, Maine (the closest weather station).

According to *AC 150/5220-20*, and the data provided above, the existing and future minimum snow removal equipment requirements for LEW are as follows:

- One high-speed rotary plow, which may be self propelled or attached to a supporting, all-wheel drive, carrier vehicle;
- Two displacement plows of equal capacity, two all-wheel drive carrier vehicles to support the two displacement plows and accessories; and
- Support equipment such as sweepers, wheel loaders and material spreaders to complete the removal of snow from all operational areas including secondary runways, taxiways or ramps.

Comparison of LEW's current snow removal equipment to the requirements above indicates the present equipment is sufficient. However, both the Maintenance Supervisor and Airport Manager identified the need for a new snow blower. The current snow blower is considered in poor condition and has required numerous costly repairs in recent years. According to airport records, breakdowns of the snow blower have typically cost more than a local match for a new vehicle over the last five years. The failure of this critical piece of equipment could shut the airport down for a week or more, an unacceptable level of reliability for a vital public transportation facility.

8.2 Snow Removal Equipment Building Requirements

As identified in *Chapter #1 – Inventory*, LEW's existing snow removal equipment (SRE) building and storage garage do not provide sufficient storage for airport maintenance vehicles. The facilities are currently in poor to fair condition. This master plan therefore recommends LEW's existing SRE building is reconstructed to provide shelter for all maintenance vehicles and equipment.

9.0 AIRPORT IMPROVEMENTS

Table 3-7 outlines the airport projects identified within this chapter that will allow LEW to upgrade existing airport facilities to accommodate projected planning activity levels outlined in *Chapter #2– Existing Aviation Activity Forecasts* and to meet B-II airport design criteria.

Table 3-7: LEW Requirements/Developments

Landside Requirements

- Construct four units of 10 bay t-hangars
- Develop new terminal space through modification/expansion of the existing terminal or incorporation of the proposed multi-modal facility
- Continue clearing Airport Hill
- Continue clearing Christian Hill
- Removal/lighting of FAR Part 77 obstructions
- Completion of wildlife/security fencing – Airport property boundary
- Construct airport perimeter road
- Establish identification system and marking of electronic slide gates and buildings
- Reconstruct four existing auto parking lots
- Construct SRE building
- Construct CAP facility

Airside Requirements

- Reconstruct west apron
- Reconstruct and expand west itinerant apron
- Reconstruct east apron
- Reconstruct and reduce width of existing taxiway to 35 feet
- Rehabilitate Runways 04-22 and 17-35
- Construct taxiway for Runway 04-22 (B-II criteria w/ C-III separation – 400 feet from Runway 04-22)
- Construct run-up/holding apron, and partial parallel taxiways for Runway 35
- Maintain current annual painting/marking of runways and taxiways
- Install PAPIs on Runway 17-35
- Fill, grade and seed RSA for runway 04, 22, 17, and 35
- Remove vegetation within Runway 22 ROFA
- Incorporate state proposed multi-modal facility and associated apron

Other

- Acquisition of Roundy-Theberge property
- Additional office space
- Rehabilitate hangar #2
- Replace snow blower
- Purchase airport vehicle
- Purchase wood chipper

CHAPTER #4 Combined Development Plan

1.0 GENERAL

This study's unique format called for identification of future development scenarios for a variety of aviation activity types. The objective of the Airport Board is to adopt those elements that are both reasonable to expect at LEW and do not conflict with an element of another scenario, thereby providing a flexible plan that can adapt to actual market demand. The Airport Board also expects this scenario-based approach will allow the master plan to remain up-to-date longer than previous more traditional master plans. Though there are four development scenarios, the first, Existing General Aviation Development described in Chapter #3, is considered a part of each of the other three: Enhanced General Aviation, Air Cargo and Passenger Service. All were presented to the PAC at their second meeting held on January 12, 2006. PAC consensus for the elements identified in this chapter constitutes the Combined Development Plan.

2.0 ENHANCED GENERAL AVIATION GROWTH SCENARIO

Significant use of LEW by larger class corporate jets such as the Gulfstream GV or the Boeing Business Jet (BBJ) define the scenario.

	GV
Approach Speed (knots)	156
Wing Span (feet/inches)	93/5
Length (feet/inches)	96/4
ARC	D-III
Required Runway Length (feet) (maximum gross takeoff weight)	6,110
Aircraft Parking Area (square yards)	1,010

	BBJ
Approach Speed (knots)	133
Wing Span (feet/inches)	117/4
Length (feet/inches)	110/3
ARC	C-III
Required Runway Length (feet) (maximum gross takeoff weight)	5,790
Aircraft Parking Area (square yards)	1,440

3.0 AIR CARGO GROWTH SCENARIO

There are three logical phases in the growth of air cargo services:

1) More activity of the same kind of air cargo operation – Airplane to truck, on-apron cargo transfer;
2) Airplane/truck interface through a dedicated air cargo terminal – Existing scenario aircraft types; and
3) Airplane/truck interface through a dedicated air cargo terminal – Enhanced aircraft type.

Aircraft		ARC	Runway Length Requirement (feet)	Aircraft Parking Area (square yards)
1) Embraer Bandeirante		B-II	Less than 5,000	290
2) Shorts 360		B-II	Less than 5,000	590
3) Boeing 737-200		C-III	Greater than 5,000	1,840

Source: FAA On-line Aircraft Characteristics Database, Airliners.net

4.0 PASSENGER SERVICE/AIR CARRIER GROWTH SCENARIO

There are three logical phases in the growth of air carrier passenger services:

1) Scheduled service with 9-passenger seat aircraft, i.e. non-Part 139 certification service;
2) Scheduled service with greater than 9-passenger seat aircraft, i.e. Part 139 certification service with apron level passenger loading; and
3) Scheduled service with greater than 9-passenger seat aircraft, i.e. Part 139 certification service with second level passenger loading.

Aircraft			ARC	Runway Length Requirement (feet)	Aircraft Parking Area (square yards)
1) 9 Passenger Aircraft, Non-Part 139 Certification	Cessna 402		B-I	Less than 5,000	150
2) >9 Passenger Aircraft, Part 139 Certification, Apron level loading	ATR-42		B-III	Less than 5,000	670
3) >9 Passenger Aircraft, Part 139 Certification, Second level loading	Boeing 737-200		C-III	Greater than 5,000	1,840

Source: FAA On-line Aircraft Characteristics Database, Airliners.net

5.0 ADDITIONAL FACILITY REQUIREMENTS & PAC SELECTED DEVELOPMENT ELEMENTS

5.1 Aircraft Storage Facilities and Apron Requirements

Conventional hangars best suit the larger, more demanding general aviation aircraft above due to their size, wingspan, and tail height. T-hangars are the storage method of choice for the smaller general aviation aircraft. The apron area required for aircraft parking varies greatly as indicated above. Additional itinerant apron expansions will be required to accommodate existing activity.

If removed, the Airport Hill area offers significant general aviation aircraft hangar and apron storage capacity for the Enhanced General Aviation and/or Existing General Aviation activity. The east apron is the most suitable of the existing operational areas for the hangar and apron requirements associated with enhanced corporate jet activity.

On-airport land use designations of these areas are discussed in section 5.9 of this chapter.

5.2 Terminal Building and Air Cargo Facility Requirements

The terminal building facility requirements discussed in *Chapter #3 – Existing General Aviation Development Scenario*, along with a modest expansion of both Twin Cities Air Service and Silver Wings Aviation are expected to sufficiently service the larger general aviation, and commuter aircraft which could reasonably use LEW. Both the existing terminal area and the proposed state intermodal terminal provide opportunities for development to accommodate the first two levels of air carrier development described above. Only the intermodal terminal could accommodate the third and highest level of carrier

service. Any air carrier service with aircraft accommodating greater than nine passengers would require the certification of the airport under Federal Aviation Regulations Part 139.

The reality of expanding, modifying or reconstructing the terminal area is based largely on the future demand of that space as well as the actual construction of the intermodal terminal.

Growth of LEW's air cargo operation may require a dedicated air cargo terminal. The facility will be required when cargo volumes exceed single airplane to truck capacities. The dedicated air cargo terminal and associated apron are recommended for placement in the same general location of existing cargo operations, adjacent to Twin Cities Air Service and the west based aircraft apron.

The first phase of an air cargo terminal would be approximately 3,600 square feet, serving as a conduit for processing cargo between a truck and a plane, and only short-term storage. A typical layout would include three 10-foot wide and 100-foot long truck positions at the dock, room to receive and distribute cargo, as well as office space. Growth would include a doubling of the air cargo terminal building and the addition of three more truck dock positions.

5.3 Automobile Parking and Requirements

The City of Auburn's Zoning Ordinance was referred to for automobile parking requirements for the general aviation terminal and dedicated air cargo facility. A 'best practices' approach was used to determine the appropriate number of parking spots for the facilities, as they are not specifically identified within the ordinance.

The *Institute of Transportation Engineers, Parking Generation, 3rd Edition*, suggests a range of .19 to 1.93 vehicles per daily enplanement, for commercial airport automobile parking. The majority of the data points came in under 1 vehicle. Should air carrier service occur, the use of 1 vehicle per daily enplanement would provide adequate parking at LEW.

According to the Americans with Disabilities Act (ADA) regulations, one handicapped parking space is required for every 25 spaces within a lot. A minimum of one designated handicapped space is necessary regardless of the total number of spaces. However, a handicapped van space is not required until a lot reaches the need for eight handicapped spaces.

5.4 Runway 04-22 Length Adequacy

The PAC prefers a 900-foot extension of Runway 04-22 using 600-foot long Runway Safety Area criteria for B-II aircraft. Their preference is to achieve the maximum runway length possible with the least amount of disruption possible, including preservation of the existing railroad tracks. The 900-foot extension would be achieved through lengthening each end, consequently realigning both Kittyhawk Avenue and Lewiston Junction Road for the purpose of maintaining adequate Runway Safety Areas. The Instrument Landing System (ILS) on the approach end of Runway 04 would also have to be repositioned accordingly.

The additional runway length would provide significant operational and safety improvement for the larger, more demanding aircraft associated with the Enhanced General Aviation and the upper end Air Carrier and Cargo development scenarios.

5.5 Taxiway System Adequacy

LEW's existing taxiway as well as the proposed parallel taxiway for Runway 04-22 recommended as part of the Existing General Aviation Development Scenario in Chapter #3 would best be constructed to meet existing ARC B-II design criteria, with C-III runway-taxiway separation of 400 feet. The additional separation can be achieved without disrupting any existing facilities and leaves the option open for the airport to grow to C-III criteria should the Enhanced General Aviation Scenario occur. This master plan also recommends two partial parallel taxiways for Runway 17-35, as specified in Chapter #3.

If developed, the Airport Hill and east apron areas would require a stub taxiway connecting them to the existing taxiway to provide optimum airport circulation.

5.6 Approach Instrumentation and Lighting Adequacy

LEW's existing approach instrumentation and lighting are expected to remain sufficient in conjunction with the items recommended in the Existing General Aviation Development Scenario.

5.7 Roadway/Truck Access

LEW's terminal area is accessible via Airport Drive or Flight Line Drive, then Aviation Avenue. Both are accessed by Lewiston Junction Road, are two-lane bi-directional roadways, and are considered in poor condition. Entrance to the east development area is provided via Hotel Road, then White Hangar Drive, also a two-lane bi-directional roadway considered in poor condition.

Though the roads provide sufficient vehicular access and circulation, they will require reconstruction.

General-use service roads are used to transport air cargo, goods, services, etc. in and out of an airport. While large hub airports may require designated service roads to relieve automobile congestion, at general aviation airports such as LEW, the service and primary access roads are typically coincidental.

5.8 Airport Security/Security and Wildlife Fencing Requirements

Additional security above that recommended by the Existing General Aviation Development Scenario is not warranted. However, general aviation security requirements may become more stringent as discussed, requiring more safeguards. If air carrier service is instituted, passenger screening security measures will be required in the passenger terminal area.

5.9 Land Use

The PAC elected to further define the undeveloped land within the airport property into the following categories:

- Mixed Aviation and Non-Aviation Development;
- Non-Aviation Development; and
- Preservation Zone / Buffer Area.

The primary objective of identifying the Mixed Aviation and Non-Aviation Development areas is to allow for maximum flexibility to meet the actual demand of these areas. The Non-Aviation Development areas are those that are removed from the air operations areas, therefore not likely to appeal to aviation related tenants. The Preservation Zone / Buffer Area serves to protect the existing trees and shrubs, which act as a natural buffer between aircraft noise and activity, and residents whom abut airport property.

6.0 COMBINED DEVELOPMENT PLAN

As mentioned, PAC consensus identified the facility elements which when integrated with the Existing General Aviation Developments in Chapter #3 constitutes the Combined Development Plan. Items retained in the Combined Development Plan from the three scenarios summarized in this chapter are listed below and followed by a review of the Existing General Aviation Scenario developments.

Enhanced General Aviation Elements

- East and west apron and corporate hangar expansion
- FBO expansion (Twin Cities Air Service and Silver Wings)
- 900-foot Runway 04-22 extension with B-II criteria (RSA's – 600 feet beyond the pavement ends)
- Identify Mixed Aviation and Non-Aviation Development areas (Airport Hill development contingent on the hill's removal)
- Identify Non-Aviation Development areas
- Identify Preservation Zone / Buffer Area

Air Cargo Elements

- 1,000 square yard cargo apron
- Dedicated air cargo facility

Passenger Service Elements

- Use the State's intermodal facility as the future terminal facility, if built, though only plan for carrier service for Non-Part 139 operations.

EXISTING General Aviation Development Scenario – Landside Elements

- Construct four units of 10 bay t-hangars
- Develop new terminal space through modification/expansion of the existing terminal or incorporation of the proposed multi-modal facility
- Continue clearing Airport Hill
- Continue clearing Christian Hill
- Removal/lighting of FAR Part 77 obstructions
- Completion of wildlife/security fencing – Airport property boundary
- Construct airport perimeter road
- Establish identification system and marking of electronic slide gates and buildings
- Reconstruct four existing auto parking lots
- Construct SRE building
- Construct CAP facility

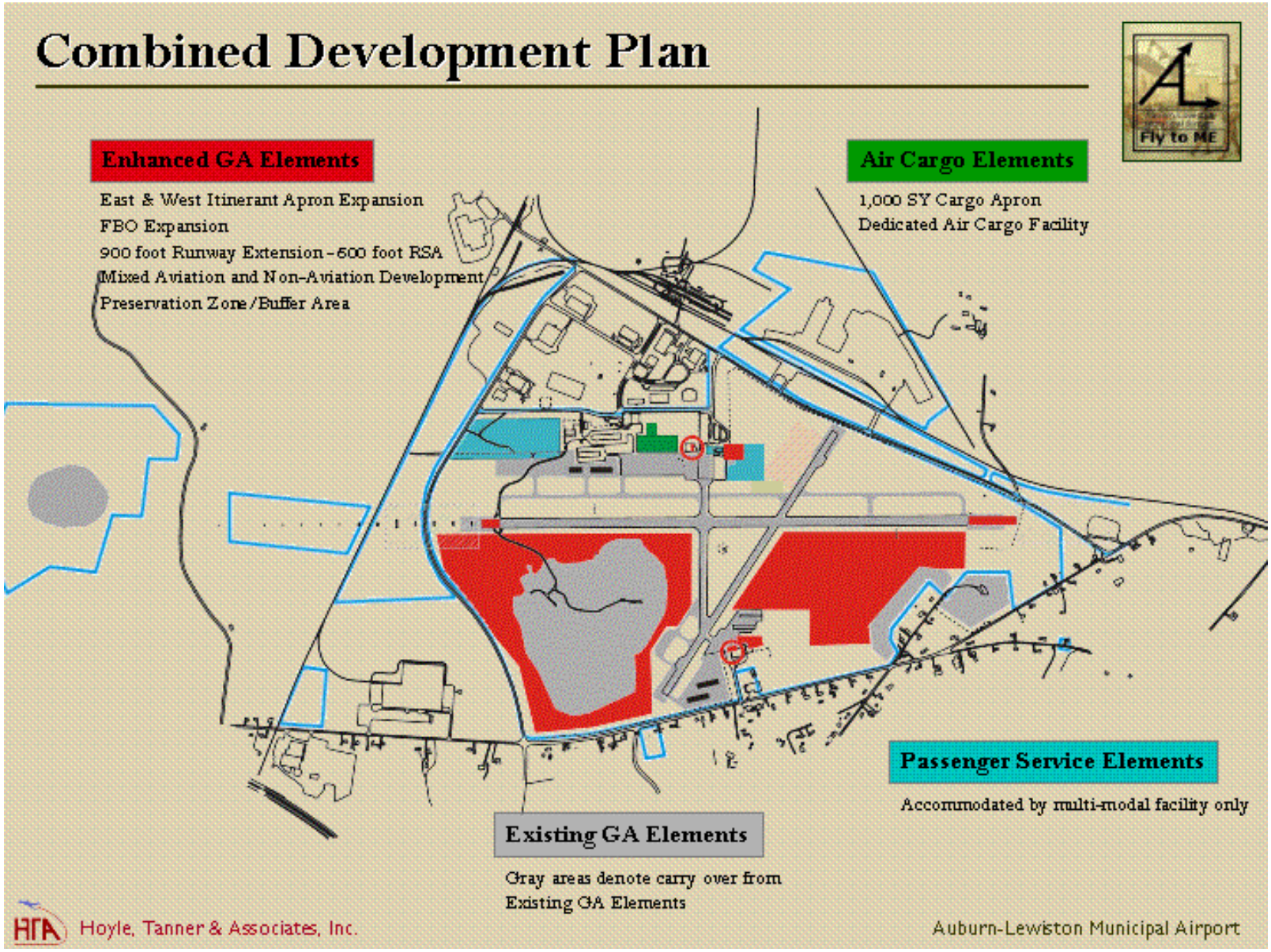
EXISTING General Aviation Development Scenario – Airside Elements

- Reconstruct west apron
- Reconstruct and expand west itinerant apron
- Reconstruct east apron
- Reconstruct and reduce width of existing taxiway to 35 feet
- Rehabilitate Runways 04-22 and 17-35
- Construct taxiway for Runway 04-22 (B-II criteria w/ C-III separation – 400 feet from Runway 04-22)
- Construct run-up/holding apron, and partial parallel taxiways for Runway 35
- Maintain current annual painting/marking of runways and taxiways
- Install PAPIs on Runway 17-35
- Fill, grade and seed RSA's for Runways 04, 22, 17, and 35
- Remove vegetation within Runway 22 ROFA
- Incorporate state proposed multi-modal facility and associated apron

Other

- Additional office space
- Rehabilitate hangar #2
- Replace snow blower
- Purchase airport vehicle
- Purchase wood chipper

A graphic representing the Combined Development Plan's primary developments is illustrated below. The Ultimate Airport Layout Plan, (ALP) drawing 3 of *Chapter #6 – Airport Plans* depicts the complete Combined Development Plan.


Combined Development Plan
Fly to ME
Enhanced GA Elements
East & West Itinerant Apron Expansion
FBO Expansion
900 foot Runway Extension - 600 foot RSA
Mixed Aviation and Non-Aviation Development
Preservation Zone/Buffer Area
Air Cargo Elements
1,000 SY Cargo Apron
Dedicated Air Cargo Facility
Passenger Service Elements
Accommodated by multi-modal facility only
Existing GA Elements
Gray areas denote carry over from
Existing GA Elements
Hoyle, Tanner & Associates, Inc.
Auburn-Lewiston Municipal Airport

CHAPTER #5 Environmental Considerations

1.0 GENERAL

The **National Environmental Policy Act** of 1969 (**NEPA**) is a key piece of federal legislation designed to raise environmental awareness of a number of industry practices. It requires affected industries, including airports, to fully consider the impacts a project would have on the environment before capital improvement projects are funded. It requires coordination with federal agencies before the issuance of any permits and calls for public involvement in the planning and environmental review process.

According to NEPA, any project funded by the federal government that affects the environment requires federal action or environmental processing. To address NEPA in airport development, FAA developed and issued *Order 5050.4B, Airport Environmental Handbook.* This document identifies three project categories:

1. Actions requiring an **environmental impact statement** (**EIS**);
2. Actions requiring an **environmental assessment** (**EA**); and
3. Actions which are **categorically excluded**.

As defined in the FAA's *Advisory Circular (AC) 150/5070-6A, Airport Master Plans*, "…actions categorically excluded are actions which have been found, in normal circumstances, to have no potential [individually or cumulatively] for significant environmental impact." Actions requiring an environmental assessment may or may not have significant environmental impacts but due to the unknown, further analysis is required. And lastly, actions with known significant impacts require an environmental impact statement.

This chapter draws upon existing documentation to present an overview of the airport environment and highlights areas of specific concern. An understanding of the existing airport environment is key to the proper planning of the airport's future as the three basic tenets of sound planning incorporating environmental concerns are:

1. **Avoidance** of impacts to the environment;
2. **Minimization** of impacts where complete avoidance is not possible; and
3. **Mitigation** of those impacts that cannot be avoided or minimized.

The following components of the existing airport environment are presented in this memo:

- Aircraft Noise
- Adjacent Land Use Impacts Related to Noise

- Water Quality/Wetlands
- Historic, Archaeological, Architectural or Cultural Resources
- Wildlife Habitat

2.0 AIRCRAFT NOISE

Noise from aircraft is one of the most controversial issues facing airports today. Aircraft noise is one of the most prominent indicators to the public that there is an airport operating locally. Even at general aviation airports such as LEW, noise complaints are commonly the most prevalent commentary regarding airports from the general public.

Potential noise impacts at LEW are evaluated using the latest version of the FAA's Integrated Noise Model (INM).[1] Using runway geometry, forecast operations, typical flight tracks and aircraft types the program creates noise contours representing areas of noise impact around the airport. The noise contours are created using annual day-night average sound levels (DNL) for LEW. The contours represent noise levels in and around the airport, with the solid contours connecting DNL levels of the same magnitude. The DNL represents average daily noise levels that occur over a 24-hour period, with a 10-decibel penalty added to the noise levels of aircraft operating between the hours of 10:00 PM and 7:00 AM. The penalty is based on the premise that there is a greater sensitivity to noise events occurring at night, when it is generally quieter and most residents are either sleeping or relaxing. The contours identify which areas are likely to have noise concerns. Generally, FAA regulations consider those residential areas falling within the 65 DNL contour to be subject to noise disturbance, whereas commercial and industrial areas are considered capable of absorbing higher noise levels given the nature and character of the land use within these classifications.

Generally, noise levels are loudest on the airport, surrounding the runway itself. Noise levels diminish with increasing distance from the runways and runway ends.

Federal Aviation Regulation (FAR) Part 150, *Airport Noise Compatibility Planning*,[2] contains federal standards on determining land use compatibility for given airport noise levels measured in terms of DNL thresholds. All land uses, which include: residential, public use, commercial use, manufacturing and production and recreational, are deemed compatible with levels less than 65 DNL. Other land uses, such as industrial and commercial, are compatible with somewhat higher DNL levels (70 DNL and above with proper soundproofing measures). Using the 65 DNL contour allows the identification of noise sensitive communities within all compatible land uses.

[1] U.S. Department of Transportation, Federal Aviation Administration, Office of Environment and Energy (AEE-100), et al. (March 4, 2003). Integrated Noise Model (Version 6.1). Washington, DC.

[2] U.S. Department of Transportation, *Federal Aviation Regulation Part 150: Airport Noise Compatibility Planning*, Office of the Federal Register, National Archives and Records Administration, Washington, DC.

3.0 ADJACENT LAND USE IMPACTS RELATED TO NOISE

As indicated in the Land Use Plan, Drawing 9 at the end of TM #6, the 65 DNL noise contours in the Existing and Ultimate Conditions/Scenarios fall as described in Table 5-1.

Table 5-1 Noise Impacts, Existing and Ultimate Conditions/Scenarios

Runway Approach End	Existing Scenario	Ultimate Scenario
4	65 DNL contour does not extend beyond airport boundaries in either scenario.	
22	A small corner of an area zoned Suburban Residential falls within the 65 DNL contour; however, much of this land is within the airport boundaries. For the most part, the 65 DNL contour falls within airport property.	A larger corner of the Suburban Residential zone falls within the 65 DNL contour but again, airport management controls much of this area. To the west, the 65 DNL contour extends across Lewiston Junction Road into areas zoned Industrial or Agriculture/ Resource Protected. FAA regulations permit higher noise levels in such districts.
17	65 DNL contour extends off-airport into area zoned Industrial, where FAA regulations allow higher noise levels.	65 DNL contour extends off-airport into areas zoned Industrial or Agriculture/ Resource Protected, where FAA regulations allow higher noise levels.
35	65 DNL contour extends off-airport in both scenarios into areas zoned General Business or Industrial, where FAA regulations allow higher noise levels.	

Given the limited areas where the 65 DNL noise contours extend into areas zoned for incompatible land uses, and given that the existing airport boundaries encompass much of these areas already, the study team determines that **there are no significant noise impacts now or projected in the future from the proposed development scenario.** (Note: See TM #4 for a discussion of the proposed development scenario.) It is recommended, however, that airport management continue to stress noise reduction/minimization measures to further reduce the very limited noise impacts.

4.0 WATER QUALITY/WETLANDS

4.1 Water Quality

Water quality standards, the control of discharges into surface and subsurface waters, the development of waste treatment management plans and practices and the issuance of permits for discharges and for dredged or fill material were established under the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977. To meet water quality standards the U.S. Environmental Protection Agency (EPA) requires owners of industrial facilities such as air transportation facilities to complete a Stormwater Pollution Prevention Plan (SWPPP), file a Notice of Intent (NOI) and obtain stormwater permits.

Stormwater Pollution Prevention Plans assure that run-off from a facility does not carry industrial pollutants into nearby Municipal Separate Storm Sewer Systems (MS4's) or any water bodies of the United States. The operator of the facility evaluates potential pollution sources at the site and selects/implements appropriate measures to prevent or control discharge of pollutants in stormwater. LEW management is updating the airport's SWPPP concurrently with this airport master plan.

Airports also are required to submit permit applications that describe the proposed airport development and specify design and mitigation measures and construction controls required to comply with federal/state/local water quality standards.[3] Therefore, drainage analyses and the acquisition of appropriate stormwater management permits are required prior to implementation of any project that may affect water quality flowing from LEW property into drainage channels and outlets beyond the airport's boundaries. As part of this process, *FAA Order 5050.4B, Airport Environmental Handbook*, recommends early consultation between local, state and federal agencies charged with implementation of water quality regulations and issuance of permits. Such consultation is being performed now as part of the SWPPP update.

4.2 Wetlands

Existing Wetlands. Wetlands are located at a number of locations within airport boundaries, reflecting the airport's/region's original and altered topography, drainage basins/watersheds and soil characteristics. Wetland boundaries as used and presented in this master plan were carried forward from previous master plans and airport studies and not updated for this master plan. Therefore, wetlands boundaries as depicted in the Existing Airport Layout Plan (ALP) and Ultimate ALP, Drawings 2 and 3 at the end of TM #6, are considered approximate and subject to future verification. **It is recommended that LEW airport management undertake more precise and more current wetland delineations as individual projects affecting these wetlands are pursued over the course of the Capital Improvement Plan.**

Eleven (11) discrete wetland areas are identified on the airfield proper. These wetlands are located on Figure 5-1 and described in Table 5-2.

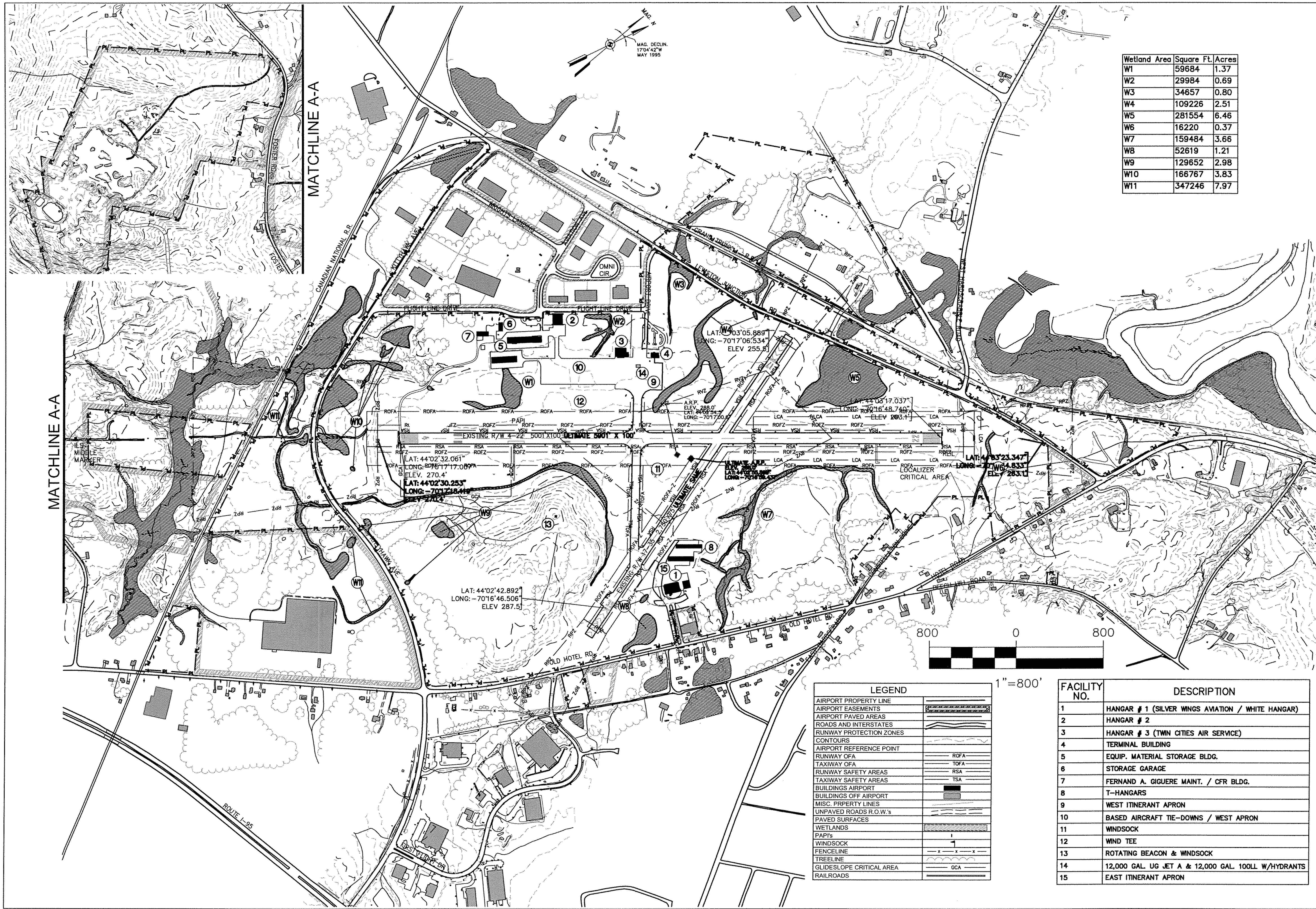
Impacts to Wetlands. Figure 5-2 and Table 5-3 illustrate and describe the potential impacts to wetlands due to the preferred development scenario. Projected impacts to wetlands are fairly extensive and will require a well-developed mitigation program (see below) to offset these impacts. Principal impacts are associated with the proposed parallel taxiway to Runway 4-22, expansion of the East Ramp and the relocation of Kittyhawk Avenue as required by a lengthening of Runway 4-22 to the south.

Mitigation Program. A proposed (and very preliminary) mitigation program entails two primary planks: 1) creation/restoration/enhancement of wetland functions and values "in place" and 2) creation/restoration enhancement "in kind."

Creating/restoring/enhancing wetland functions/values "in place" entails altering the boundaries of *existing* wetlands to be impacted to offset some or all of the impacts due to the development scenario. Such alterations are proposed for wetlands W3, W4, W5 and W11 where existing wetland boundaries can be altered and enlarged to compensate for projected impacts.

[3] U.S. Department of Transportation, Federal Aviation Administration, *Airport Environmental Handbook, Order 5050.4A, Chapter 5 – Early Planning, Preparation of Environmental Assessments, State and Local Review, Public Hearings*, 1985.

ENGINEER'S SEAL



Wetland Area	Square Ft.	Acres
W1	59684	1.37
W2	29984	0.69
W3	34657	0.80
W4	109226	2.51
W5	281554	6.46
W6	16220	0.37
W7	159484	3.66
W8	52619	1.21
W9	129652	2.98
W10	166767	3.83
W11	347246	7.97

LEGEND	
AIRPORT PROPERTY LINE	
AIRPORT EASEMENTS	
AIRPORT PAVED AREAS	
ROADS AND INTERSTATES	
RUNWAY PROTECTION ZONES	
CONTOURS	
AIRPORT REFERENCE POINT	
RUNWAY OFA	ROFA
TAXIWAY OFA	TOFA
RUNWAY SAFETY AREAS	RSA
TAXIWAY SAFETY AREAS	TSA
BUILDINGS AIRPORT	
BUILDINGS OFF AIRPORT	
MISC. PRPERTY LINES	
UNPAVED ROADS R.O.W.'s	
PAVED SURFACES	
WETLANDS	
PAPI's	
WINDSOCK	
FENCELINE	—x—x—x—
TREELINE	
GLIDESLOPE CRITICAL AREA	GCA
RAILROADS	

FACILITY NO.	DESCRIPTION
1	HANGAR # 1 (SILVER WINGS AVIATION / WHITE HANGAR)
2	HANGAR # 2
3	HANGAR # 3 (TWIN CITIES AIR SERVICE)
4	TERMINAL BUILDING
5	EQUIP. MATERIAL STORAGE BLDG.
6	STORAGE GARAGE
7	FERNAND A. GIGUERE MAINT. / CFR BLDG.
8	T-HANGARS
9	WEST ITINERANT APRON
10	BASED AIRCRAFT TIE-DOWNS / WEST APRON
11	WINDSOCK
12	WIND TEE
13	ROTATING BEACON & WINDSOCK
14	12,000 GAL. UG JET A & 12,000 GAL. 100LL W/HYDRANTS
15	EAST ITINERANT APRON

PROJECT DESIGNER

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Web Page: www.hta-nh.com

DESIGNED BY RKD | DRAWN BY DDS | CHECKED BY JRL

AUBURN-LEWISTON MUNICIPAL AIRPORT
AUBURN, MAINE

EXISTING WETLANDS LAYOUT PLAN

DATE: OCTOBER, 2006

SCALE:

REVISIONS — REV. NO. | DATE | DESCRIPTION | BY

DO NOT SCALE DRAWING

PROJ. No.: 030719
FILE NAME:
AIP No.: 3-23-0002-13-2005

FIGURE
5-1

Table 5-2 Existing Wetlands at LEW

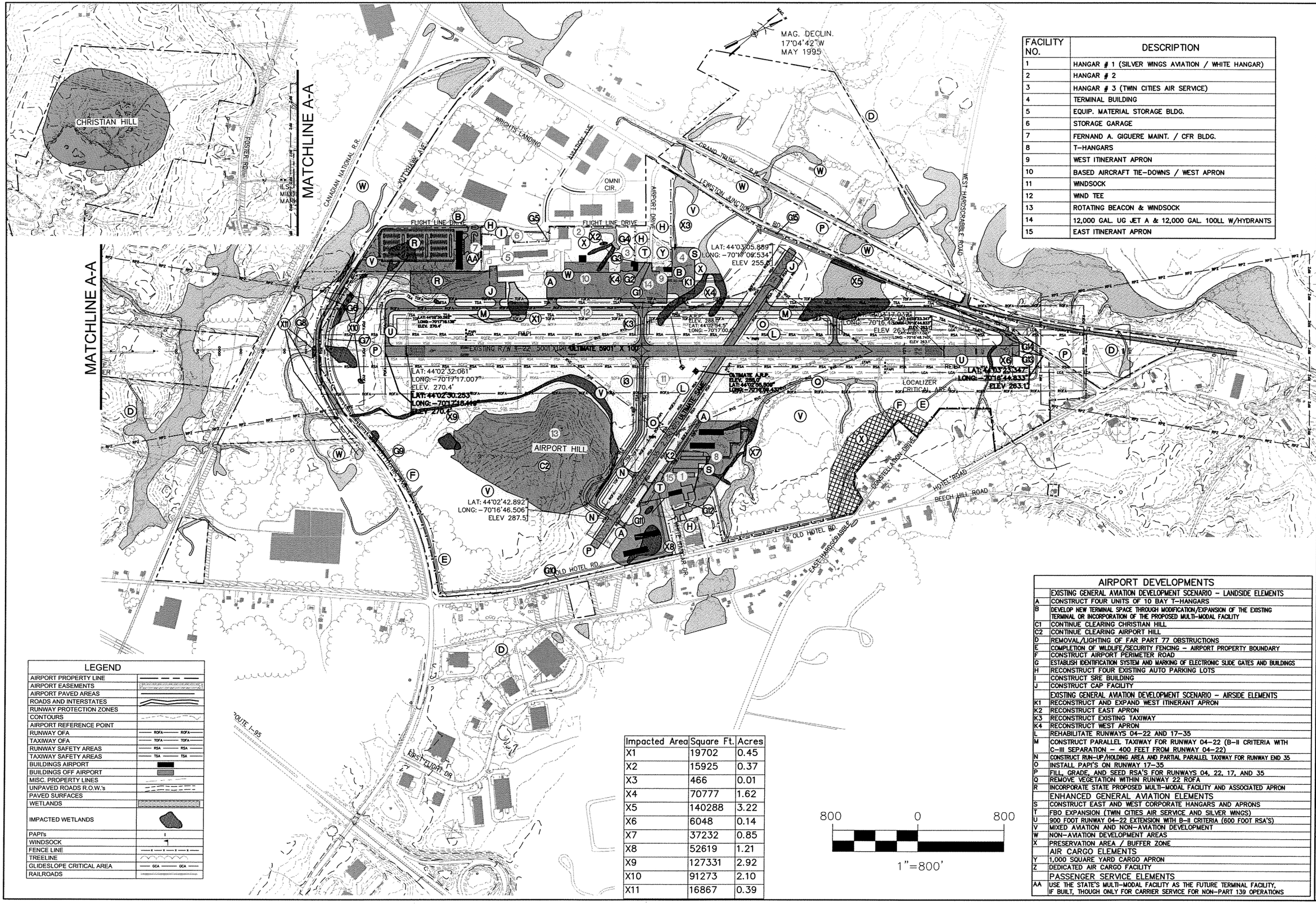
Wetland ID	Area (acres)	Drainage Outlet	Description
W1	1.37	Ground	Low-lying area of hydric soils west of Runway 4-22. No apparent outlet other than seepage to groundwater. Size of wetland in field appears smaller than that depicted in Figure 5-3. Maintained as mowed land by airport operations staff.
W2	0.69	Andros-coggin River	Series of interconnected drainage ditches which receive stormwater from the West Apron (based aircraft tie-down area) and the paved area around the condo hangars and airport buildings to the southwest. Area drains through a drainage pipe running beneath the parking lot at the airport terminal to W3 and ultimately to the Androscoggin River.
W3	0.80		Low-lying area of hydric soils. Receives stormwater from the airport terminal access road and adjacent lands, the terminal parking lot, the West Itinerant Apron and the Lewiston Junction Road. W3 drains to the west through a conduit running under Lewiston Junction Road and ultimately to the Androscoggin River.
W4	2.51		Low-lying area bounded by the West Itinerant Apron, Lewiston Junction Road, the northern end of Runway 17 and Runway 4-22. Receives stormwater from these paved areas and conveys it via a conduit beneath Lewiston Junction Road through a drainage channel that outlets at the Androscoggin River.
W5	6.46		Large area bounded by Runway 17 to the south, Lewiston Junction Road to the northwest, Runway 4-22 to the southeast and high ground to the north. Serves as a major stormwater retention basin in times of significant storm events. Receives large volumes of stormwater flowing east to west across the airport. Drainage from Old Hotel Road and the hill and upper elevations east of the airport in this area flows to W7 (see below) then beneath two large pipes running under Runway 4-22. Receives flow practically from all airport land to the northeast of Runway 17-35. Accordingly to anecdotal evidence provided by airport operations staff, this area may retain stormwater for several days following a major rain event. W5 drains through a conduit running under Lewiston Junction Road to surface drainage channels which ultimately outlet at the Androscoggin River.
W6	0.37	Ground	Small low-lying area draining area north of Runway 22. Flows via conduits beneath Lewiston Junction Road and the railroad main line to the Androscoggin River.
W7	3.66	Andros-coggin River	Large area of interconnected channels draining a large area of the airport, essentially all of the land mass north of Runway 17-35, east of Runway 4-22, west of Old Hotel Road and south of Constellation Drive. Also receives considerable flow from the golf course and higher elevations located east of Old Hotel Road. Flows to W5 via two large pipes running beneath Runway 4-22.
W8	1.21	Ground	Low-lying area of hydric soils maintained by the airport operations staff as mowed land.
W9	2.98	Moose Brook	Essentially a long drainage ditch which collects stormwater running down Airport Hill. Also drains area east of Runway 4-22 and south of the taxiway to/from Runway 33. Drains via a conduit running beneath Kittyhawk Avenue to W11, and then through a large conduit beneath the railroad spur to Moose Brook.
W10	3.83		Depressed areas alongside/east of Kittyhawk Avenue. Drains the area south of Runway 4 and the airport maintenance facilities, the turf areas east of Flight Line Drive and portions of Kittyhawk Avenue. Flows are conveyed through a conduit beneath Kittyhawk Ave. to W11 and ultimately to Moose Brook.
W11	7.97		A large area of contiguous wetlands and channels, including a large man-made stormwater detention basin built in conjunction with Kittyhawk Avenue. W11 receives stormwaters from a large land area and conveys this via a large culvert beneath the railroad spur to the Moose Brook. Given its isolation and the relatively undeveloped nature of its drainage basin, water quality within these wetlands is considered high and the wetlands are of significant value, particularly in the area of stormwater storage/retention.
	31.85		Total Area

Note: Wetland ID is keyed to Figure 5-1.

Table 5-3 Projected Impacts to Wetlands at LEW

Wetland ID[1]	Impact Area (acres)	Projected Impacts/Proposed Mitigation
W1/X1	0.45	Destroyed by proposed parallel taxiway to Runway 4-22. Replace "in kind."
W2/X2	0.37	Destroyed by proposed air cargo building and apron. Replace "in kind."
W3/X3	0.01	Impacted to a small degree by expansion of terminal area. Restore "in place" and/or resize terminal apron to avoid impacts (preferable).
W4/X4	1.62	Impacted by expanded terminal/terminal apron and by parallel taxiway. Additional impacts AVOIDED by eliminating proposed parallel taxiway to Runway 17 end. Restore "in place" by recontouring area and importing wetland soils and plant materials, if and as necessary.
W5/X5	3.22	Impacted by proposed parallel taxiway. Restore "in place" by recontouring area to the greatest extent practicable to retain stormwater retention capacity. Consider enlarging stormwater retentive capacity of wetland W7 east of the Runway 4-22 to offset capacity lost due to parallel taxiway.
W6/X6	0.14	Wetland severely impacted by proposed runway extension. Replace "in kind."
W7/X7	0.85	Impacted by proposed expansion of East Ramp. Restore "in place" by recontouring wetland boundaries. Recontour drainage channels and land mass to increase stormwater retentive capacities to offset capacity lost due to parallel taxiway.
W8/X8	1.21	Destroyed by T-hangar development. Avoid impacts by not developing this area till demand dictate otherwise, then replace "in kind."
W9/X9	2.92	Potentially impacted by removal of Airport Hill. Avoid/minimize impacts by employing extensive construction mitigation measures. Restore/enhance drainage features as hill removal proceeds. As area is reclaimed for possible airport development, restore wetland functions/values "in kind."
W10/X10	2.10	Potentially impacted by expansion of Runway 4 to the south. Restore both "in place" and "in kind.'
W11/X11	0.39	Impacted by proposed relocation of Kittyhawk Avenue due to expansion of Runway 4-22 to the south. Restore "in place" and "in kind" as component of major creation/restoration/enhancement of W11 as the primary location for "in kind" replacement of wetland functions/values destroyed elsewhere due to airport development.
	13.28	Total Projected Impacts[2]

Notes:
1. Wetland ID is keyed to Figure 5-2.
2. Total projected impact acreage likely will change as more refined engineering plans are produced for the individual projects.



FACILITY NO.	DESCRIPTION
1	HANGAR # 1 (SILVER WINGS AVIATION / WHITE HANGAR)
2	HANGAR # 2
3	HANGAR # 3 (TWIN CITIES AIR SERVICE)
4	TERMINAL BUILDING
5	EQUIP. MATERIAL STORAGE BLDG.
6	STORAGE GARAGE
7	FERNAND A. GIGUERE MAINT. / CFR BLDG.
8	T-HANGARS
9	WEST ITINERANT APRON
10	BASED AIRCRAFT TIE-DOWNS / WEST APRON
11	WINDSOCK
12	WIND TEE
13	ROTATING BEACON & WINDSOCK
14	12,000 GAL. UG JET A & 12,000 GAL. 100LL W/HYDRANTS
15	EAST ITINERANT APRON

LEGEND

AIRPORT PROPERTY LINE	
AIRPORT EASEMENTS	
AIRPORT PAVED AREAS	
ROADS AND INTERSTATES	
RUNWAY PROTECTION ZONES	
CONTOURS	
AIRPORT REFERENCE POINT	
RUNWAY OFA	ROFA ROFA
TAXIWAY OFA	TOFA TOFA
RUNWAY SAFETY AREAS	RSA RSA
TAXIWAY SAFETY AREAS	TSA TSA
BUILDINGS AIRPORT	
BUILDINGS OFF AIRPORT	
MISC. PROPERTY LINES	
UNPAVED ROADS R.O.W.'s	
PAVED SURFACES	
WETLANDS	
IMPACTED WETLANDS	
PAPI's	
WINDSOCK	
FENCE LINE	
TREELINE	
GLIDESLOPE CRITICAL AREA	GCA GCA
RAILROADS	

Impacted Area	Square Ft.	Acres
X1	19702	0.45
X2	15925	0.37
X3	466	0.01
X4	70777	1.62
X5	140288	3.22
X6	6048	0.14
X7	37232	0.85
X8	52619	1.21
X9	127331	2.92
X10	91273	2.10
X11	16867	0.39

800 0 800

1"=800'

AIRPORT DEVELOPMENTS

	EXISTING GENERAL AVIATION DEVELOPMENT SCENARIO - LANDSIDE ELEMENTS
A	CONSTRUCT FOUR UNITS OF 10 BAY T-HANGARS
B	DEVELOP NEW TERMINAL SPACE THROUGH MODIFICATION/EXPANSION OF THE EXISTING TERMINAL OR INCORPORATION OF THE PROPOSED MULTI-MODAL FACILITY
C1	CONTINUE CLEARING CHRISTIAN HILL
C2	CONTINUE CLEARING AIRPORT HILL
D	REMOVAL/LIGHTING OF FAR PART 77 OBSTRUCTIONS
E	COMPLETION OF WILDLIFE/SECURITY FENCING - AIRPORT PROPERTY BOUNDARY
F	CONSTRUCT AIRPORT PERIMETER ROAD
G	ESTABLISH IDENTIFICATION SYSTEM AND MARKING OF ELECTRONIC SLIDE GATES AND BUILDINGS
H	RECONSTRUCT FOUR EXISTING AUTO PARKING LOTS
I	CONSTRUCT SRE BUILDING
J	CONSTRUCT CAP FACILITY
	EXISTING GENERAL AVIATION DEVELOPMENT SCENARIO - AIRSIDE ELEMENTS
K1	RECONSTRUCT AND EXPAND WEST ITINERANT APRON
K2	RECONSTRUCT EAST APRON
K3	RECONSTRUCT EXISTING TAXIWAY
K4	RECONSTRUCT WEST APRON
L	REHABILITATE RUNWAYS 04-22 AND 17-35
M	CONSTRUCT PARALLEL TAXIWAY FOR RUNWAY 04-22 (B-II CRITERIA WITH C-III SEPARATION - 400 FEET FROM RUNWAY 04-22)
N	CONSTRUCT RUN-UP/HOLDING AREA AND PARTIAL PARALLEL TAXIWAY FOR RUNWAY END 35
O	INSTALL PAPI'S ON RUNWAY 17-35
P	FILL, GRADE, AND SEED RSA'S FOR RUNWAYS 04, 22, 17, AND 35
Q	REMOVE VEGETATION WITHIN RUNWAY 22 ROFA
R	INCORPORATE STATE PROPOSED MULTI-MODAL FACILITY AND ASSOCIATED APRON
	ENHANCED GENERAL AVIATION ELEMENTS
S	CONSTRUCT EAST AND WEST CORPORATE HANGARS AND APRONS
T	FBO EXPANSION (TWIN CITIES AIR SERVICE AND SILVER WINGS)
U	900 FOOT RUNWAY 04-22 EXTENSION WITH B-II CRITERIA (600 FOOT RSA'S)
V	MIXED AVIATION AND NON-AVIATION DEVELOPMENT
W	NON-AVIATION DEVELOPMENT AREAS
X	PRESERVATION AREA / BUFFER ZONE
	AIR CARGO ELEMENTS
Y	1,000 SQUARE YARD CARGO APRON
Z	DEDICATED AIR CARGO FACILITY
	PASSENGER SERVICE ELEMENTS
AA	USE THE STATE'S MULTI-MODAL FACILITY AS THE FUTURE TERMINAL FACILITY, IF BUILT, THOUGH ONLY FOR CARRIER SERVICE FOR NON-PART 139 OPERATIONS

ENGINEER'S SEAL

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DESIGNED BY RKL | DRAWN BY DDS | CHECKED BY JRL

AUBURN-LEWISTON MUNICIPAL AIRPORT
AUBURN, MAINE

IMPACTED WETLANDS ULTIMATE LAYOUT PLAN

DATE: OCTOBER, 2006 | SCALE:

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

DO NOT SCALE DRAWING

PROJ. No.: 030719
FILE NAME:
AIP No.: 3-23-0002-13-2005

FIGURE
5-2

Creating/restoring/enhancing functions/values "in kind" entails the enhancement and enlargement of the high value wetland W11 to offset impacts elsewhere. Much of W11 falls within the runway protection zone of Runway 4 and thus is already afforded the protection, i.e., limited development, of this aviation surface. Wetland W11 receives stormwaters from areas relatively free of current development and thus these flows are presumed relatively free of potential pollutants.

This mitigation program is preliminary but can serve as the basis for discussion with federal/state/local regulators.

5.0 HISTORIC, ARCHAEOLOGICAL, ARCHITECTURAL AND CULTURAL RESOURCES

The National Historic Preservation Act of 1966 and the Archeological and Historic Preservation Act of 1947 are intended to ensure that no action of the federal government will have a significant impact on any resource of historic, cultural or archeological significance. The Maine Historic Preservation Commission (MHPC) was contacted to determine the existence and location on or adjacent to LEW of any resources that may be impacted by any of the proposed projects.

MHPC determined that there is an existing easement (dated October 25, 1985) on a National Register-listed prehistoric archaeological site(s) within airport boundaries granted by LEW management to the MHPC. This tract of land, designated the Auburn/Lewiston Airport Paleoindian District, comprises approximately 20 acres located at the southern end of Runway 4, containing at least two prehistoric archaeological sites given the numbers 23.12 and 23.13 in the Maine Archaeological Survey Inventory. The easement specifically states that "No alteration to the property (including, but not limited to construction, material procurement, forest products harvesting, or ground disturbance/excavation) shall be undertaken, commenced or performed without the prior written approval of both the Grantor and the Grantee." The MHPC letter and easement are included in Appendix IX.

MHPC did acknowledge, however, that construction of Kittyhawk Avenue did 'slice' through much of the easement and stated that perhaps a redefinition of the easement would be in order. **Since construction of the proposed parallel taxiway to Runway 4-22 could possibly affect this easement, it is recommended that the environmental assessment to be prepared on the parallel taxiway include contact with the MHPC in regards to potential construction impacts to known archaeological sites south of Runway 4.**

According to MHPC, areas of sandy soils within airport boundaries that have not been previously surveyed or disturbed are considered sensitive for prehistoric archaeological sites. While this may be a broad generalization of the sensitivity of the airport, MHPC does have the authority to require a so-called Phase I (preliminary) archaeological survey to determine the presence of such sites in the areas proposed for development in the Ultimate scenario. As these development projects are brought to the fore for implementation, airport management and its designers should contact the MHPC archaeologist to discuss in greater detail whether the proposed development site exhibits any archaeological sensitivity.

A second general area identified by the MHPC archaeologist as potentially significant/sensitive is an area along and in the vicinity of the MALSR, the approach lighting system that runs to the south of Runway 4.

6.0 WILDLIFE HABITAT/FEDERALLY- AND STATE-LISTED SPECIES

Congress passed the Endangered Species Act in 1973 due to concerns that many flora and fauna species were at risk. According to the U.S. Environmental Protection Agency website, "The Endangered Species Act provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found."[4]

Both the U.S. Fish and Wildlife Service and the Maine Department of Inland Fisheries and Wildlife were contacted by HTA staff in regards to endangered species. In a letter dated October 13, 2005, the Fish and Wildlife Service replied as follows:

> **…..no federally-listed species under the jurisdiction of the Service are known to occur in the project area, with the exception of occasional, transient bald eagles (*Haliaeetus leucocephalus*). Accordingly, no further action is required under Section 7 of the [Endangered Species Act or ESA] unless: [three conditions are noted]**
>
> **The upland sandpiper (*Batramia longicauda*), a Federal species of concern (which was formerly designated as a candidate for federal listing) has been observed at the airport. This species may, or may not, be listed in the future. At this time, the upland sandpiper is afforded no protection under the Federal ESA. However, we strongly encourage you to consider this species in your project planning. The upland sandpiper is listed as threatened by Maine Inland Fisheries and Wildlife, and as such, is protected from taking.** [Letter of Mark McCollough of the U.S. Fish and Wildlife Service to Tracy McAllister of Hoyle, Tanner & Associates, Inc., with attachments, dated October 13, 2005]

In a letter dated February 22, 2006 to Tracy McAllister of HTA, Scott Lindsay of the Maine Department of Inland Fisheries and Wildlife notes the following:

> **This airport, as well as several others in the state, is known to provide nesting habitat for Upland Sandpipers (*Bartramia longicauda*); a state threatened species. This bird is about 12" tall with a wingspan of about 26". They prefer grasslands over 150 acres in size with a mix of short grass and tall grass up to 24" in height, with scattered patches of bare ground. These birds have successfully nested at some of the busiest airports in the country, including LaGuardia and JFK airports in New York. To date, this species is not considered a significant hazard to the safe operation of aircraft at these facilities.**

Upland Sandpiper

[4] United States Environmental Protection Agency, "Finding Answers," *Endangered Species Act*, 2004, < http://www.epa.gov/region5/defs/html/esa.htm > (October, 2005).

Mr. Lindsay proceeds to propose the following general recommendations for managing habitat, principally the short mowed airfield infield and runway safety areas, for the upland sandpiper:

> **Do not mow the fields between May 1 and August 1. Birds start arriving at nesting sites in early May. Many have two clutches that should be independent by the end of July.**
>
> **Mowing should be done every 1-3 years, depending on growth conditions at site. The goal is to maintain at least 50% of the grassland at a height of 4-12 inches. Other areas should be mowed to shorter grass to provide some open areas for the grassland birds, yet no so much in one place to attract gulls and geese. Small patches of around an acre should be suitable. Areas adjacent to runways should be maintained as required by safety regulations. This would function in discouraging nesting close to the runway and will also result in lower insect density adjacent to the runway.**
>
> **Burning should take place in early spring, before the arrival of birds in early May. It is best if burning is done on a rotation such that 50% or less of the grassland be burned at one time. Most fields in this part of the state should be burned at 3-6 year intervals, though specific growth conditions on the airport will determine this. Birds will return to a burned area 1- 2 years after the burn.**
>
> **Common, native grasses suitable for most sites in the northeast include warm season grasses such as big bluestem, little bluestem, Indian grass and switch grass. Some cool season species such as timothy and Kentucky bluegrass are often present on site, but are not native and generally result in lower quality nesting habitat. It may be that no seeding need occur on this site.**

It is recommended that LEW airport management undertake a detailed field assessment at the appropriate period (May-July) of the year to determine the presence or no of the upland sandpiper within the LEW areas most suited to the upland sandpiper and proposed for development in the Ultimate scenario. Consultations with the USFWS and the Maine Department of Inland Fisheries and Wildlife, including the pre-approval of survey protocols, are recommended as well.

According to the *2003 Environmental Assessment*, conducted by Dufresne-Henry for LEW, the Maine Department of Conservation has no record of state-listed threatened or endangered botanical species or exemplary natural communities occurring within the airport's boundaries.

Chapter #6 Airport Plans

1.0 GENERAL

The Airport Layout Plan (ALP) is a graphic presentation to scale of both the current airport facilities and the proposed airport development. The future development is the result of input from the Planning Advisory Committee (PAC) airport master plan meeting process and the analysis completed in previous chapters.

The ALP set consists of drawings that illustrate detail required by the FAA in AC *150/5070-6A, Airport Master Plans* and *AC 150/5300-13, Airport Design.*

The ALP set includes the following drawings:

- Cover/Title Drawing 1 of 9
- Existing Airport Layout Plan (Existing ALP) 2 of 9
- Ultimate Airport Layout Plan (Ultimate ALP) 3 of 9
- Ultimate Airport Layout Plan Data Drawing 4 of 9
- Terminal Area Plan 5 of 9
- Runway 04-22 Plan and Profile 6 of 9
- Runway 17-35 Plan and Profile 7 of 9
- FAR Part 77 Airspace Surfaces 8 of 9
- Land Use Plan 9 of 9

The airport plans provide the physical details of the 20-year development plan. The primary drawing is the Ultimate ALP, which is the overall development plan for the airport showing both the existing and ultimate facilities. The FAA, the Maine Department of Transportation – Office of Passenger Transportation (MDOT-OPT), the Cities of Auburn and Lewiston, and airport tenants and users refer to the ALP set as a guide for future airport development.

The ALP must be approved by the FAA in order for LEW to be eligible for Federal funding for airport development projects. Likewise, the plan must be approved by the MDOT for the airport to receive State funding of eligible airport development projects.

Standard 22-inch by 34-inch drawings of the ALP drawings are available through the Cities of Auburn and Lewiston, FAA and MDOT. Reduced 11 by 17 inch copies of the plans are included at the end of this chapter. A brief description of each drawing is provided in the following sections.

2.0 COVER/TITLE DRAWING

Drawing one of nine, the Cover/Title Drawing, lists the subsequent drawings within the ALP set. It also provides the reader with a map depicting the general location of the airport within the State of Maine and the City of Auburn.

3.0 EXISTING AND ULTIMATE AIRPORT LAYOUT PLANS (ALPS)

The Existing ALP, drawing two of nine, is provided as both a reference document to identify existing facilities (including runways, taxiways, buildings and other structures) and a presentation document to identify a beginning point to this study.

The Ultimate ALP, drawing three of nine, is a graphic depicting all of the existing facilities as well as the detail of the ultimate improvement for the 20-year development plan for LEW. The Ultimate ALP illustrates the developments contained within the Combined Development Plan discussed in Chapters #3 and #4.

4.0 ULTIMATE AIRPORT LAYOUT PLAN (ALP) DATA DRAWING

The ALP Data Drawing, drawing four of nine, provides a broad-spectrum of information about LEW. Data included consists of general airport data, approach slope data, property ownership data, and other key information regarding the airport.

5.0 TERMINAL AREA PLAN

This plan, drawing five of nine, depicts a detailed development plan for the operations area of the airport in the area of the terminal building and existing hangars. The drawing is a magnified version of the terminal area from the Ultimate ALP.

6.0 RUNWAY PLAN AND PROFILES

The runway plans and profiles, drawings six and seven of nine, illustrate the runways (04-22 and 17-35) and the approach areas immediately beyond the ends of the runways at LEW. The runways are shown in profile with an exaggerated vertical scale to clearly depict any obstacles located within the existing and ultimate approaches to the runways and to depict runway elevation differences.

7.0 FAR PART 77 AIRSPACE SURFACES

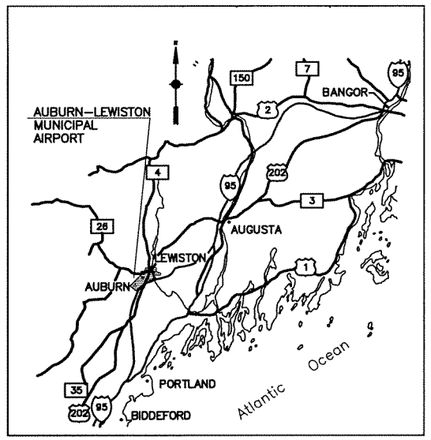
The FAA describes imaginary airspace surfaces on and around an airport in *Federal Aviation Regulations (FAR), Part 77, Obstructions Affecting Navigable Airspace.* These surfaces, when kept clear, protect aircraft from manmade and natural obstructions in the airspace around the airport.

The FAR Part 77 Airspace Surfaces, drawing eight of nine, depicts those imaginary airspace surfaces.

FAR Part 77 surfaces are utilized in zoning and land use planning adjacent to the airport to protect the navigable airspace from encroachment by hazards, which would potentially affect the safety of airport operations.

8.0 LAND USE PLAN

The Land Use Plan (City zoning) is overlain with the Noise Contour Plan, drawing nine of nine, depicts the existing and ultimate on and off-airport land use as well as the 65 DNL noise contour.

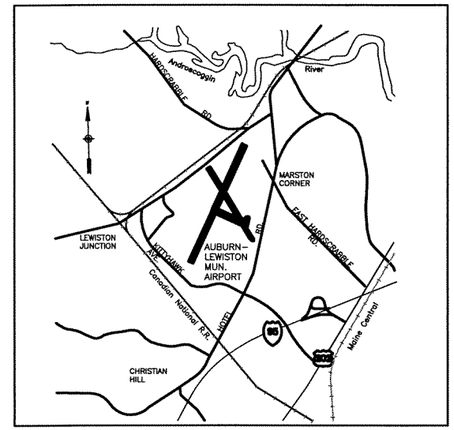


VICINITY MAP
NOT TO SCALE

Auburn-Lewiston Municipal Airport (LEW)

Auburn, Maine

MASTER PLAN UPDATE



LOCATION MAP
NOT TO SCALE

HTA PROJECT NO. 030719

FEDERAL/STATE PROJECT NO. AIP 3-23-0002-13-2005

INDEX TO DRAWINGS

October, 2006

ENGINEER'S SEAL

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AUBURN–LEWISTON MUNICIPAL AIRPORT
AUBURN, MAINE

COVER/TITLE SHEET

SCALE:

DATE: OCTOBER, 2006

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY
1			
2			
3			
4			

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PROJ. No.: 030719
FILE NAME:
AIP No.: 3–23–0002–13–2005

DRAWING NO.
1

SHEET 1 OF 9

EXISTING RUNWAY DATA		
ITEM	RUNWAY 04–22	RUNWAY 17–35
PHYSICAL LENGTH	5,001'	2,750'
WIDTH	100'	75'
PAVEMENT STRENGTH	30,000 LBS. SINGLE WHEEL	30,000 LBS. SINGLE WHEEL
SURFACE MATERIAL	BITUMINUS CONCRETE	BITUMINUS CONCRETE
CLASSIFICATION/APPROACH CATEGORY	RUNWAY 04: UTILITY/PRECISION	RUNWAY 17: UTILITY/VISUAL
	RUNWAY 22: UTILITY/NON-PRECISION	RUNWAY 35: UTILITY/VISUAL
APPROACH MINIMUMS	RUNWAY 04: NOT LOWER THAN ¾-MILE	RUNWAY 17: 3 MILES
	RUNWAY 22: NOT LOWER THAN 1-MILE	RUNWAY 35: 3 MILES
VISUAL/APPROACH AIDS	RUNWAY 04: WIND INDICATOR, SEGMENTED CIRCLE, MALSR	RUNWAY 17: WIND INDICATOR, SEGMENTED CIRCLE
	RUNWAY 22: WIND INDICATOR, REILS, SEGMENTED CIRCLE	RUNWAY 35: WIND INDICATOR, SEGMENTED CIRCLE
INSTRUMENT APPROACHES/ NAVIGATIONAL AIDS	RUNWAY 04: ILS, PAPI	RUNWAY 04: NONE
	RUNWAY 22: PAPI, REILS	RUNWAY 22: NONE
RUNWAY LIGHTING	MIRLS	NONE
RUNWAY MARKING	RUNWAY 04: PRECISION	RUNWAY 17: BASIC
	RUNWAY 22: NONPRECISION	RUNWAY 35: BASIC
CRITICAL AIRCRAFT (WING SPAN)	EMBRAER BANDEIRANTE (50.3')	EMBRAER BANDEIRANTE (50.3')
CRITICAL AIRCRAFT APPROACH SPEED	92 KTS	92 KTS
CRITICAL AIRCRAFT MTOW	13,010 LBS.	13,010 LBS.
AIRPLANE DESIGN GROUP	II	I (SMALL AIRCRAFT EXCLUSIVELY)
AIRCRAFT APPROACH CATEGORY	B	B
PARALLEL TAXIWAY	NONE	NONE
TAXIWAY LIGHTING	MITL	MITL

LEGEND	
AIRPORT EASEMENTS	
AIRPORT PAVED AREAS	
ROADS AND INTERSTATES	
CONTOURS	
AIRPORT REFERENCE POINT	
RUNWAY OBJECT FREE AREAS	ROFA ROFA
TAXIWAY OBJECT FREE AREAS	TOFA TOFA
RUNWAY SAFETY AREAS	RSA RSA
TAXIWAY SAFETY AREAS	TSA TSA
BUILDINGS - ON AIRPORT	
BUILDINGS - OFF AIRPORT	
MISC. PROPERTY LINES	
UNPAVED ROADS / R.O.W.'s	
WETLANDS	
PAPI's	
WINDSOCK	
FENCELINE	
TREELINE	
GLIDESLOPE CRITICAL AREA	GCA GCA
RAILROADS	
RW OBJECT FREE ZONE	ROFZ ROFZ
RW OBJECT FREE AREA-ZONE	ROFA-Z
RUNWAY VISIBILITY ZONE	RVZ RVZ
RUNWAY PROTECTION ZONE	RPZ RPZ
AIRPORT PROPERTY LINE	PL PL PL
LOCALIZER CRITICAL AREA	LCA LCA

FACILITY NO.	EXISTING FACILITIES
1	HANGAR # 1 (SILVER WINGS AVIATION / WHITE HANGAR)
2	HANGAR # 2
3	HANGAR # 3 (TWIN CITIES AIR SERVICE)
4	TERMINAL BUILDING/RESTAURANT
5	EQUIP. MATERIAL STORAGE BLDG.
6	STORAGE GARAGE
7	FERNAND A. GIGUERE MAINT. / CFR BLDG.
8	T-HANGARS
9	WEST ITINERANT APRON
10	BASED AIRCRAFT TIE-DOWNS / WEST APRON
11	WINDSOCK
12	WIND TEE
13	ROTATING BEACON & WINDSOCK
14	12,000 GAL. UG JET A & 12,000 GAL. 100LL W/HYDRANTS
15	EAST ITINERANT APRON
16	LIFEFLIGHT HANGAR

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AUBURN-LEWISTON MUNICIPAL AIRPORT
AUBURN, MAINE

EXISTING AIRPORT LAYOUT PLAN

SCALE: 1"=400' | DATE: OCTOBER, 2006

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

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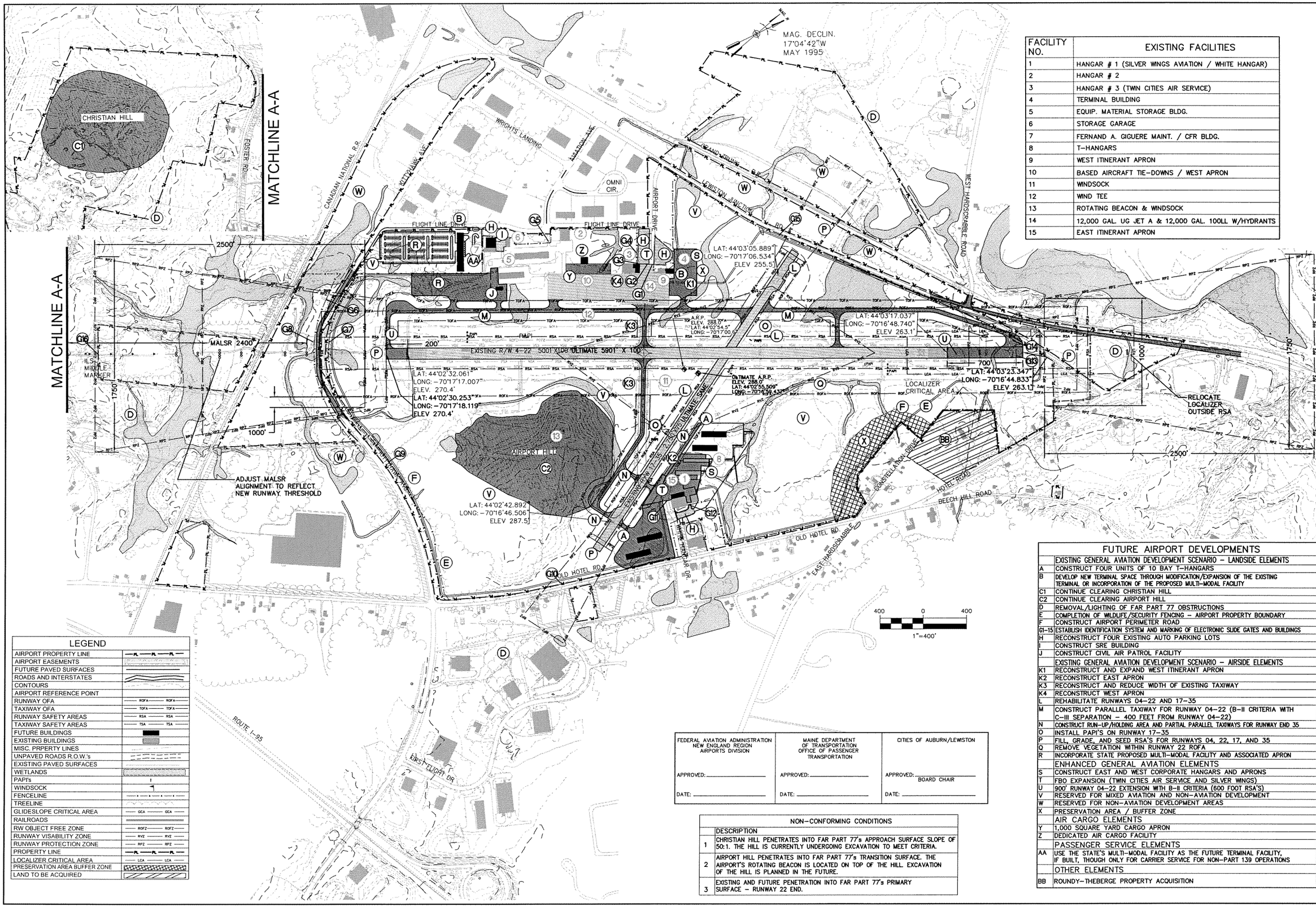
PROJ. No.: 030719
FILE NAME:
AIP No.: 3-23-0002-13-2005

DRAWING NO.
2

SHEET 2 OF 9



FACILITY NO.	EXISTING FACILITIES
1	HANGAR # 1 (SILVER WINGS AVIATION / WHITE HANGAR)
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10	BASED AIRCRAFT TIE-DOWNS / WEST APRON
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12	WIND TEE
13	ROTATING BEACON & WINDSOCK
14	12,000 GAL. UG JET A & 12,000 GAL. 100LL W/HYDRANTS
15	EAST ITINERANT APRON

LEGEND

AIRPORT PROPERTY LINE	
AIRPORT EASEMENTS	
FUTURE PAVED SURFACES	
ROADS AND INTERSTATES	
CONTOURS	
AIRPORT REFERENCE POINT	
RUNWAY OFA	ROFA
TAXIWAY OFA	TOFA
RUNWAY SAFETY AREAS	RSA
TAXIWAY SAFETY AREAS	TSA
FUTURE BUILDINGS	
EXISTING BUILDINGS	
MISC. PRPERTY LINES	
UNPAVED ROADS R.O.W.'s	
EXISTING PAVED SURFACES	
WETLANDS	
PAPI's	
WINDSOCK	
FENCELINE	
TREELINE	
GLIDESLOPE CRITICAL AREA	GCA
RAILROADS	
RW OBJECT FREE ZONE	ROFZ
RUNWAY VISABILITY ZONE	RVZ
RUNWAY PROTECTION ZONE	RPZ
PROPERTY LINE	
LOCALIZER CRITICAL AREA	LCA
PRESERVATION AREA BUFFER ZONE	
LAND TO BE ACQUIRED	

FEDERAL AVIATION ADMINISTRATION NEW ENGLAND REGION AIRPORTS DIVISION	MAINE DEPARTMENT OF TRANSPORTATION OFFICE OF PASSENGER TRANSPORTATION	CITIES OF AUBURN/LEWISTON
APPROVED: _____	APPROVED: _____	APPROVED: _____ BOARD CHAIR
DATE: _____	DATE: _____	DATE: _____

NON-CONFORMING CONDITIONS

	DESCRIPTION
1	CHRISTIAN HILL PENETRATES INTO FAR PART 77's APPROACH SURFACE SLOPE OF 50:1. THE HILL IS CURRENTLY UNDERGOING EXCAVATION TO MEET CRITERIA.
2	AIRPORT HILL PENETRATES INTO FAR PART 77's TRANSITION SURFACE. THE AIRPORT'S ROTATING BEACON IS LOCATED ON TOP OF THE HILL. EXCAVATION OF THE HILL IS PLANNED IN THE FUTURE.
3	EXISTING AND FUTURE PENETRATION INTO FAR PART 77's PRIMARY SURFACE - RUNWAY 22 END.

FUTURE AIRPORT DEVELOPMENTS

	EXISTING GENERAL AVIATION DEVELOPMENT SCENARIO - LANDSIDE ELEMENTS
A	CONSTRUCT FOUR UNITS OF 10 BAY T-HANGARS
B	DEVELOP NEW TERMINAL SPACE THROUGH MODIFICATION/EXPANSION OF THE EXISTING TERMINAL OR INCORPORATION OF THE PROPOSED MULTI-MODAL FACILITY
C1	CONTINUE CLEARING CHRISTIAN HILL
C2	CONTINUE CLEARING AIRPORT HILL
D	REMOVAL/LIGHTING OF FAR PART 77 OBSTRUCTIONS
E	COMPLETION OF WILDLIFE/SECURITY FENCING - AIRPORT PROPERTY BOUNDARY
F	CONSTRUCT AIRPORT PERIMETER ROAD
G1-15	ESTABLISH IDENTIFICATION SYSTEM AND MARKING OF ELECTRONIC SLIDE GATES AND BUILDINGS
H	RECONSTRUCT FOUR EXISTING AUTO PARKING LOTS
I	CONSTRUCT SRE BUILDING
J	CONSTRUCT CIVIL AIR PATROL FACILITY
	EXISTING GENERAL AVIATION DEVELOPMENT SCENARIO - AIRSIDE ELEMENTS
K1	RECONSTRUCT AND EXPAND WEST ITINERANT APRON
K2	RECONSTRUCT EAST APRON
K3	RECONSTRUCT AND REDUCE WIDTH OF EXISTING TAXIWAY
K4	RECONSTRUCT WEST APRON
L	REHABILITATE RUNWAYS 04-22 AND 17-35
M	CONSTRUCT PARALLEL TAXIWAY FOR RUNWAY 04-22 (B-II CRITERIA WITH C-III SEPARATION - 400 FEET FROM RUNWAY 04-22)
N	CONSTRUCT RUN-UP/HOLDING AREA AND PARTIAL PARALLEL TAXIWAYS FOR RUNWAY END 35
O	INSTALL PAPI'S ON RUNWAY 17-35
P	FILL, GRADE, AND SEED RSA'S FOR RUNWAYS 04, 22, 17, AND 35
Q	REMOVE VEGETATION WITHIN RUNWAY 22 ROFA
R	INCORPORATE STATE PROPOSED MULTI-MODAL FACILITY AND ASSOCIATED APRON
	ENHANCED GENERAL AVIATION ELEMENTS
S	CONSTRUCT EAST AND WEST CORPORATE HANGARS AND APRONS
T	FBO EXPANSION (TWIN CITIES AIR SERVICE AND SILVER WINGS)
U	900' RUNWAY 04-22 EXTENSION WITH B-II CRITERIA (600 FOOT RSA'S)
V	RESERVED FOR MIXED AVIATION AND NON-AVIATION DEVELOPMENT
W	RESERVED FOR NON-AVIATION DEVELOPMENT AREAS
X	PRESERVATION AREA / BUFFER ZONE
	AIR CARGO ELEMENTS
Y	1,000 SQUARE YARD CARGO APRON
Z	DEDICATED AIR CARGO FACILITY
	PASSENGER SERVICE ELEMENTS
AA	USE THE STATE'S MULTI-MODAL FACILITY AS THE FUTURE TERMINAL FACILITY, IF BUILT, THOUGH ONLY FOR CARRIER SERVICE FOR NON-PART 139 OPERATIONS
	OTHER ELEMENTS
BB	ROUNDY-THEBERGE PROPERTY ACQUISITION

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AUBURN-LEWISTON MUNICIPAL AIRPORT
AUBURN, MAINE

ULTIMATE AIRPORT LAYOUT PLAN

DATE: OCTOBER, 2006

SCALE: 1"=400'

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

DO NOT SCALE DRAWING

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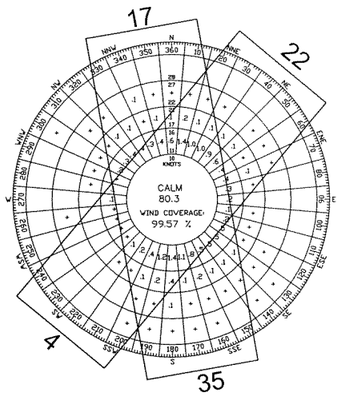
FILE NAME:

AIP No.: 3-23-0002-13-2005

DRAWING NO.

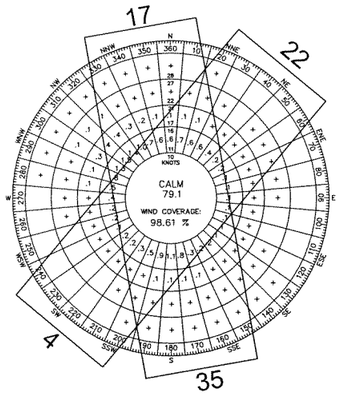
3

SHEET 3 OF 9



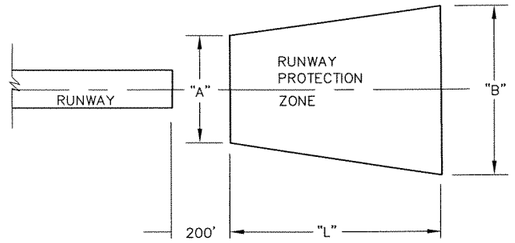
IFR

WIND DATA SUMMARY			
CROSSWIND COMPONENT (KNOTS)	R/W 4-22	R/W 17-35	R/W 4-22 & 17-35
13.0	96.75%	97.95%	99.57%
STATION:		BANGOR, MAINE #72608	
SOURCE:		NATIONAL CLIMATIC DATA CENTER/NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	
PERIOD OF OBSERVATION:		1991-2000	
OBSERVATIONS:		10,506	



ALL WEATHER

WIND DATA SUMMARY			
CROSSWIND COMPONENT (KNOTS)	R/W 4-22	R/W 17-35	R/W 4-22 & 17-35
13.0	93.2%	96.85%	98.61%
STATION:		BANGOR, MAINE #72608	
SOURCE:		NATIONAL CLIMATIC DATA CENTER/NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	
PERIOD OF OBSERVATION:		1991-2000	
OBSERVATIONS:		10,506	



RUNWAY PROTECTION ZONE DATA					
	RUNWAY	APPROACH CATEGORY	"L"	"A"	"B"
ULTIMATE	4	PRECISION INSTRUMENT	2,500	1,000	1,750
	22	NON-PRECISION	SAME	SAME	SAME
	17	VISUAL	SAME	SAME	SAME
	35	VISUAL	SAME	SAME	SAME
EXISTING	4	PRECISION INSTRUMENT	1,700	1,000	1,510
	22	NON-PRECISION	1,000	500	700
	17	VISUAL	1,000	250	450
	35	VISUAL	1,000	250	450

BASIC AIRPORT DATA		
ITEM	EXISTING	ULTIMATE
AIRPORT ELEVATION (U.S.G.S. - M.S.L.)	288.0'	SAME
AIRPORT REFERENCE POINT (ARP)	LAT. 44-02.908367N LONG. 070-17.010450W	LAT: 44-02.925150N LONG: 070-16.990617W
MEAN MAX TEMPERATURE HOTTEST MONTH	80°F	SAME
DISTANCE FROM CITY OF AUBURN	4 MILES SOUTHWEST	SAME
LAND OWNED (ACRES)/AIRPORT AREA FEE	547	556
AIRPORT AREA EASEMENTS (ACRES)	27.6	30.6
OWNER	CITIES OF AUBURN AND LEWISTON	SAME
OPERATIONAL ROLE (NPIAS)	GA	SAME
MAG. DECLINATION: (1995)	17°W	VARIES
AIRPORT REFERENCE CODE/AIRPORT DESIGN CODE	R/W 04-22: B-II	SAME
	R/W 17-35: B-I, SMALL AIRCRAFT EXCLUSIVELY	SAME

RUNWAY DATA				
ITEM	RUNWAY 04-22		RUNWAY 17-35	
	EXISTING	ULTIMATE	EXISTING	ULTIMATE
LENGTH	5001'	5,900'	2,750'	SAME
WIDTH	100'	SAME	75'	SAME
TRUE BEARING	RUNWAY 04: 024	SAME	RUNWAY 17: 148	SAME
	RUNWAY 22: 204	SAME	RUNWAY 35: 328	SAME
PAVEMENT STRENGTH	30,000 LBS. SINGLE WHEEL	SAME	30,000 LBS. SINGLE WHEEL	SAME
SURFACE MATERIAL	BITUMINOUS CONCRETE	SAME	BITUMINOUS CONCRETE	SAME
EFFECTIVE GRADIENT (%)	0.20%	SAME	1.20%	SAME
CLASSIFICATION/APPROACH CATEGORY	RUNWAY 04: UTILITY/PRECISION	SAME	RUNWAY 17: UTILITY/VISUAL	SAME
	RUNWAY 22: UTILITY/NON-PRECISION	SAME	RUNWAY 35: UTILITY/VISUAL	SAME
APPROACH MINIMUMS	RUNWAY 04: NOT LOWER THAN ¾-MILE	LOWER THAN ¾-MILE	RUNWAY 17: 3 MILES	SAME
	RUNWAY 22: NOT LOWER THAN 1-MILE	SAME	RUNWAY 35: 3 MILES	SAME
VISUAL/APPROACH AIDS	RUNWAY 04: WIND INDICATOR, SEGMENTED CIRCLE, MALSR	SAME	RUNWAY 17: WIND INDICATOR, SEGMENTED CIRCLE	SAME
	RUNWAY 22: WIND INDICATOR, SEGMENTED CIRCLE	SAME	RUNWAY 35: WIND INDICATOR, SEGMENTED CIRCLE	SAME
INSTRUMENT APPROACHES/ NAVIGATIONAL AIDS	RUNWAY 04: ILS, PAPI	SAME	RUNWAY 17: NONE	PAPI
	RUNWAY 22: PAPI, REILs	SAME	RUNWAY 35: NONE	PAPI
RUNWAY LIGHTING	MIRLS	SAME	NONE	SAME
RUNWAY MARKING	RUNWAY 04: PRECISION	SAME	RUNWAY 17: BASIC	SAME
	RUNWAY 22: NONPRECISION	SAME	RUNWAY 35: BASIC	SAME
CRITICAL AIRCRAFT (WING SPAN)	EMBRAER BANDEIRANTE (50.3')	SAME	EMBRAER BANDEIRANTE (50.3')	SAME
CRITICAL AIRCRAFT APPROACH SPEED	92 KTS	SAME	92 KTS	SAME
CRITICAL AIRCRAFT MTOW	13,010 LBS.	SAME	13,010 LBS.	SAME
AIRPLANE DESIGN GROUP	II	SAME	I, SMALL AIRCRAFT EXCLUSIVELY	SAME
AIRCRAFT APPROACH CATEGORY	B	SAME	B	SAME
PARALLEL TAXIWAY	NONE	5,900' X 35'	NONE	PARTIAL PARALLEL, APPROX. 500' LONG x 35' WIDE AT 35 END
TAXIWAY LIGHTING	MITL	SAME	MITL	SAME

AIRPORT DESIGN CRITERIA										
DESIGN ELEMENT	B-II					B-I SMALL AIRCRAFT EXCLUSIVELY				
	DESIGN CRITERIA (FT)	RUNWAY 04		RUNWAY 22		DESIGN CRITERIA (FT)	RUNWAY 17		RUNWAY 35	
RUNWAY		EXISTING	FUTURE	EXISTING	FUTURE		EXISTING	FUTURE	EXISTING	FUTURE
LENGTH		5,001	5,900	5,001	5,900		2,750	SAME	2,750	SAME
WIDTH	100	100	100	100	100	60	75	SAME	75	SAME
RUNWAY SAFETY AREA (RSA)										
WIDTH	300	150	300	150	300	120	120	SAME	120	SAME
LENGTH BEYOND RUNWAY END	600	300	600	300	600	240	240	SAME	240	SAME
RUNWAY OBSTACLE FREE ZONE (ROFZ)										
WIDTH	400	400	SAME	400	SAME	250	250	SAME	250	SAME
LENGTH BEYOND RUNWAY END	200	200	SAME	200	SAME	200	200	SAME	200	SAME
RUNWAY OBSTACLE FREE AREA (ROFA)										
WIDTH	800	500	800	500	800	250	250	SAME	250	SAME
LENGTH BEYOND RUNWAY END	600	300	600	300	600	240		SAME	240	SAME
TAXIWAY/TAXILANE										
WIDTH	35	75	35	75	35	25	75	35	75	35 (2)/25
TAXIWAY SAFETY AREA (TSA)	79	79	SAME	79	SAME	49	79	SAME	79	SAME (2)/49
TAXIWAY OBJECT FREE AREA (TOFA) WIDTH	131	131	SAME	131	SAME	89	131	SAME	131	SAME (2)/89
TAXILANE OBJECT FREE AREA WIDTH	115	115	SAME	115	SAME	79	115	SAME	115	SAME (2)/79
RUNWAY SEPARATION STANDARDS										
RUNWAY CENTERLINE TO TAXIWAY/TAXILANE CENTERLINE	300	N/A	400 (1)	240	400 (1)	150	240	SAME	240	SAME (2)/150
RUNWAY CENTERLINE TO AIRCRAFT PARKING AREA	400	250	400	400	SAME	125	250	SAME	250	SAME (2)/125
TAXIWAY/TAXILANE SEPARATION STANDARDS										
TAXIWAY CENTERLINE TO PARALLEL TAXIWAY/TAXILANE CENTERLINE	105	105	SAME	105	SAME	69	N/A	N/A	N/A	N/A
TAXIWAY CENTERLINE TO A FIXED OR MOVABLE OBJECT	65.5	65.5	SAME	65.5	SAME	44.5	65.5	SAME	65.5	SAME(2)/44.5

NOTES:
(1) PROPOSED RUNWAY 04-22 PARALLEL TAXIWAY DESIGNED TO MEET C-III SEPARATION CRITERIA OF 400 FEET. SEE DISCUSSION IN CHAPTER 3 OF AIRPORT MASTER PLAN TECHNICAL REPORT.
(2) B-II CRITERIA WILL CONTINUE TO APPLY TO EXISTING TAXIWAY. PROPOSED TAXIWAY ON THE EAST SIDE OF R/W END 35 DESIGNED TO MEET B-I SMALL AIRCRAFT EXCLUSIVELY CRITERIA.

APPROACH SLOPE DATA			
	RUNWAY	APPROACH CATEGORY	APPROACH SLOPE
FUTURE	04	PRECISION INSTRUMENT	SAME
	22	NON-PRECISION	SAME
EXISTING	04	PRECISION INSTRUMENT	50:1 then 40:1(1)
	22	NON-PRECISION	34:1
FUTURE	17	VISUAL	SAME
	35	VISUAL	SAME
EXISTING	17	VISUAL	20:1
	35	VISUAL	20:1

NOTE:
1) FEDERAL AVIATION REGULATION PART 77'S APPROACH SURFACE STANDARDS REQUIRE A HORIZONTAL DISTANCE OF 10,000 FEET AT A SLOPE OF 50 FEET HORIZONTALLY TO 1-FOOT (VERTICALLY) WITH AN ADDITIONAL 40,000 FEET AT A SLOPE OF 40 FEET TO 1-FOOT FOR ALL PRECISION INSTRUMENT RUNWAYS, SUCH AS RUNWAY 04. HOWEVER, MANY NEW ENGLAND AIRPORTS CANNOT MEET THE 50:1 SLOPE REQUIREMENTS DUE TO THE MOUNTAINOUS TERRAIN. THEREFORE, A SLOPE OF 34:1 IS ACCEPTABLE, ALTHOUGH THE AIRPORT SHOULD STRIVE TO MEET THE 50:1 REQUIREMENT WHERE POSSIBLE.

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CHECKED BY JRL
DRAWN BY DDS
DESIGNED BY TLM

AUBURN-LEWISTON MUNICIPAL AIRPORT
AUBURN, MAINE

DATA SHEET

DATE: OCTOBER, 2006
SCALE: N/A

REVISIONS

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FILE NAME:
AIP No.: 3-23-0002-13-2005

DRAWING NO.
4

SHEET 4 OF 9

STATE PROPOSED MULTIMODAL FACILITY
SRE BUILDING
STORAGE GARAGE
FLIGHT LINE DRIVE
FLIGHT LINE DRIVE
AVIATION AVENUE
OMNI CIRCLE
AIRPORT DRIVE
MIXED AVIATION & NON-AVIATION DEVELOPMENT AREA
EXISTING AUTO PARKING LOT
HANGAR #2
EXISTING HANGAR
ULTIMATE AIR CARGO FACILITY
ULTIMATE TERMINAL EXPANSION
FBO EXPANSION
ULTIMATE EXPANDED WEST ITINERANT APRON
PERIMETER ROAD
R/W 17 ELEV. 255.5'
FERNAND A. GIGUERE EQUIPMENT STORAGE BUILDING
EXISTING HANGAR
HANGAR # 3
ULTIMATE AIR CARGO APRON
EXISTING FUEL HYDRANTS
EXISTING TERMINAL BUILDING
EXISTING WEST APRON
EXISTING WEST ITINERANT APRON
STATE PROPOSED MULTIMODAL FACILITY APRON
CAP FACILITY
ULTIMATE PARALLEL TAXIWAY (B-II CRITERIA W/ C-III SEPARATION 400' FROM R/W 04-22)
EXISTING & ULTIMATE RW 17-35 2750' x 75'
EXISTING TAXIWAY
ULTIMATE R/W 04-22 5,900' x 100'
EXISTING R/W 04-22 5,001' x 100'

LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	PROPOSED NEW PAVEMENT	TSA	TAXIWAY SAFETY AREA
	EXISTING PAVEMENT	TOFA	TAXIWAY OBJECT FREE AREA
230	EXISTING CONTOUR (TYP)	RSA	RUNWAY SAFETY AREA
	WETLANDS	ROFZ	RUNWAY OBJECT FREE ZONE
	EXISTING BUILDINGS	PL	AIRPORT PROPERTY LINE
	PROPOSED BUILDINGS		HYDRANTS
	OFF-AIRPORT BUILDINGS		UTILITY POLES
			CATCH BASIN

NOTE:
SEE SHEET 3 OF 11 FOR ALL PROPOSED AIRPORT DEVELOPMENT.

100 0 100
1"=100'

ENGINEER'S SEAL

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DESIGNED BY TLM | DRAWN BY DDS | CHECKED BY JRL

AUBURN-LEWISTON MUNICIPAL AIRPORT
AUBURN, MAINE

TERMINAL AREA PLAN

DATE: OCTOBER, 2006
SCALE: 1"=100'

REVISIONS

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FILE NAME:
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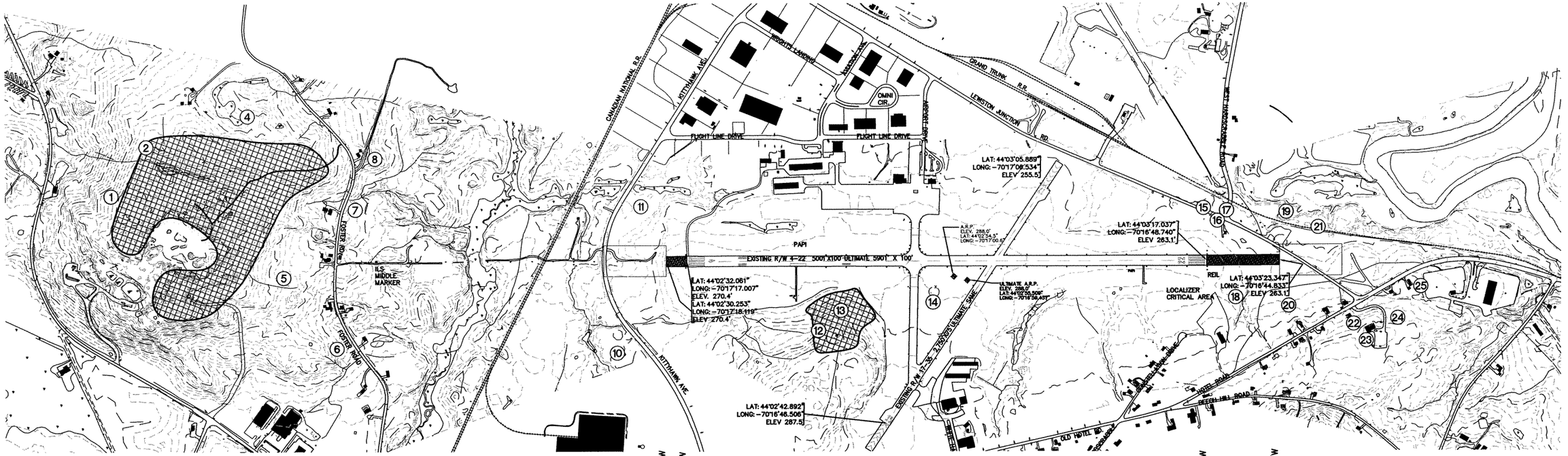
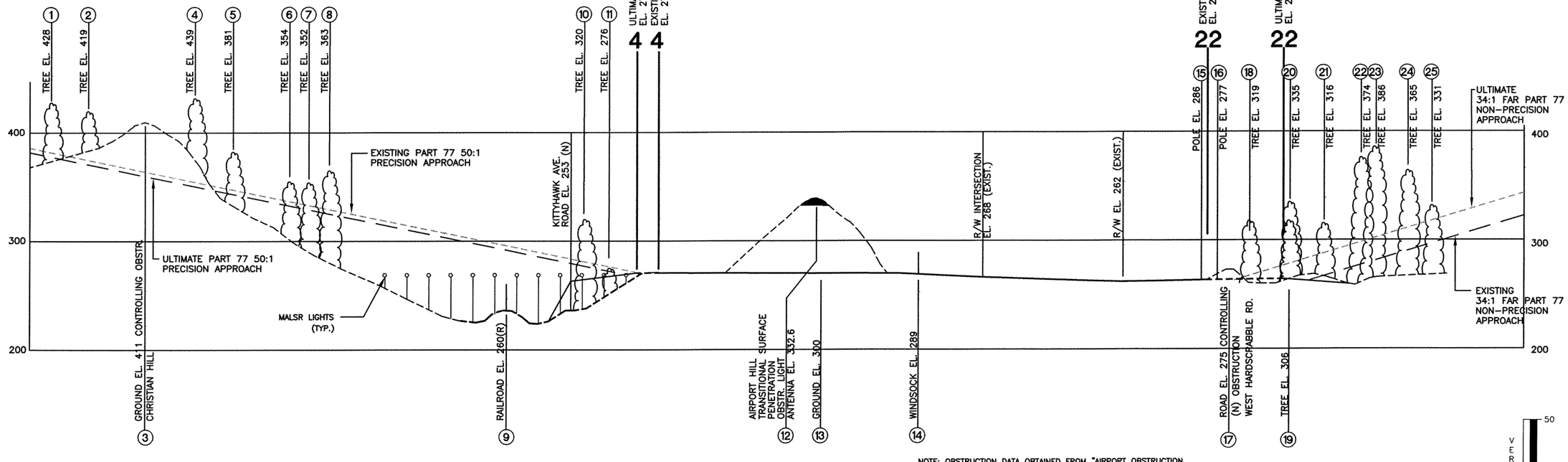
DRAWING NO.
5
SHEET 5 OF 9





PROFILE

SCALE: HORIZ. 1"=500'
VERT. 1"=50'

NOTE: OBSTRUCTION DATA OBTAINED FROM "AIRPORT OBSTRUCTION CHART, AUBURN-LEWISTON MUNICIPAL AIRPORT, AUBURN, MAINE"; PUBLISHED JAN. 1984 AND AS-BUILT DRAWINGS OF AIP PROJECT NO. 3-23-0002-05, 1990.

FOR LEGEND SEE SHEET 3 OF 9.

(N) 15 FEET ADDED TO ROAD ELEVATION PER FAR PART 77.
(R) 23 FEET ADDED TO RAILROAD ELEVATION PER FAR PART 77.

VERTICAL 50 0 50
HORIZONTAL 500 0 500

ENGINEER'S SEAL

PROJECT DESIGNER

HTA
Consulting Engineers
150 Dow Street - Manchester, NH 03101-1227
Tel 603-669-5555, Fax 603-669-4168
Web Page: www.hta-nh.com

DESIGNED BY TLM | DRAWN BY DDS | CHECKED BY JRL

AUBURN-LEWISTON MUNICIPAL AIRPORT
AUBURN, MAINE

RUNWAY 04-22
PLAN & PROFILE

SCALE: AS SHOWN | DATE: OCTOBER, 2006

REVISIONS

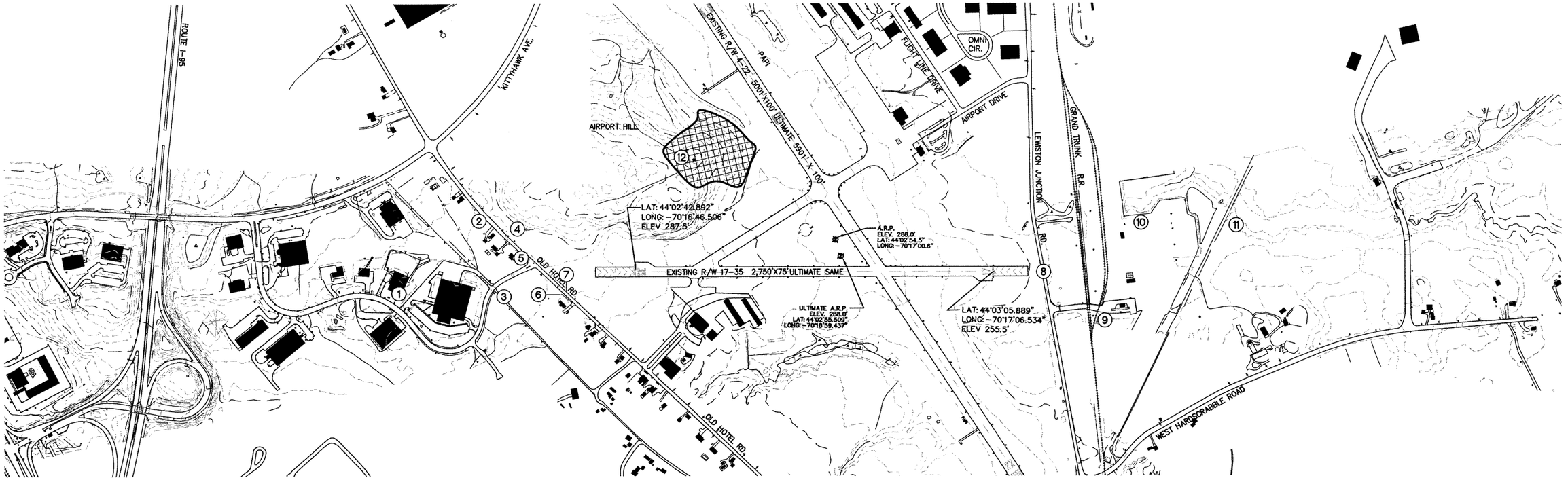
REV. NO.	DATE	DESCRIPTION	BY

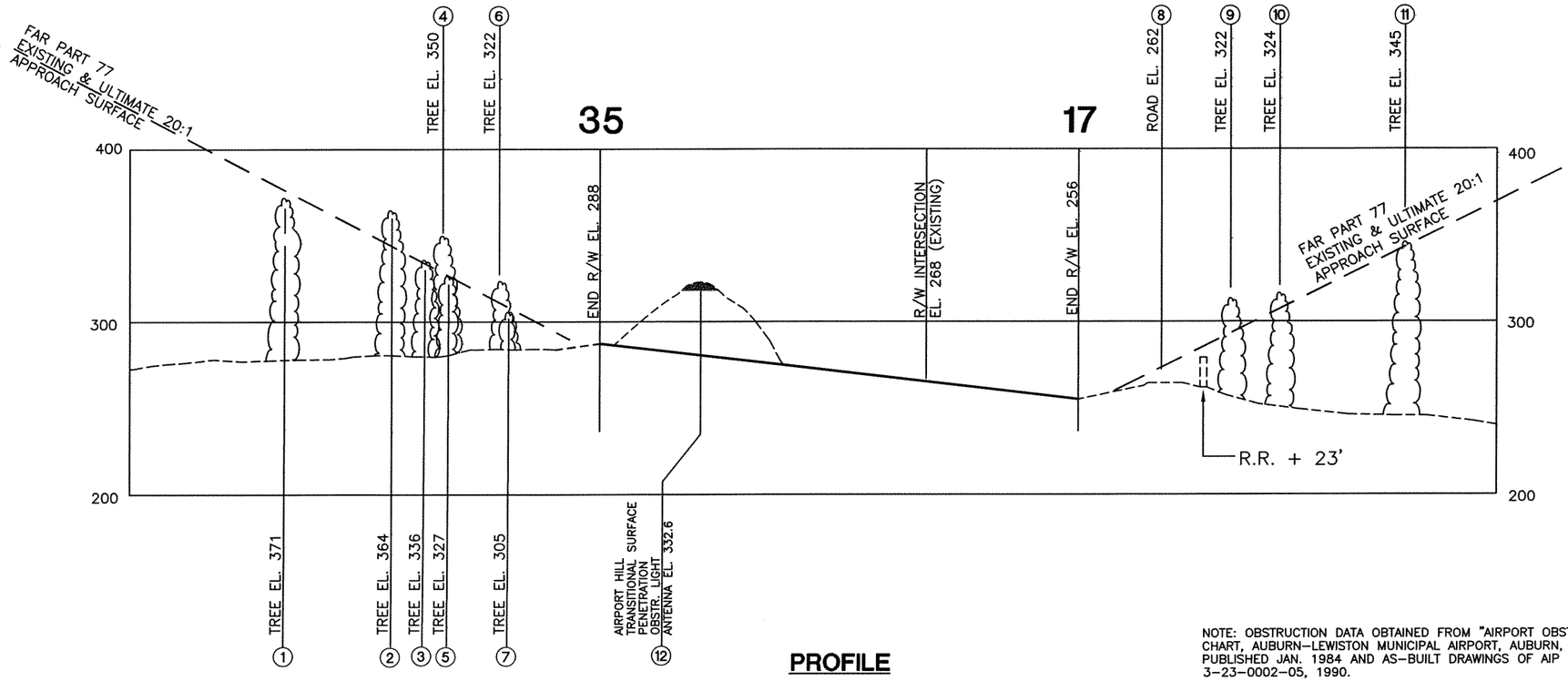
DO NOT SCALE DRAWING

PROJ. No.: 030719
FILE NAME:
AIP No.: 3-23-0002-13-2005

DRAWING NO.
6

SHEET 6 OF 9





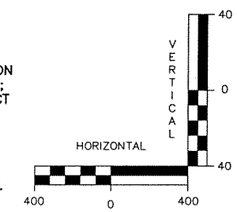
PROFILE

SCALE: HORIZ. 1"=400'
VERT. 1"=40'

NOTE: OBSTRUCTION DATA OBTAINED FROM "AIRPORT OBSTRUCTION CHART, AUBURN–LEWISTON MUNICIPAL AIRPORT, AUBURN, MAINE"; PUBLISHED JAN. 1984 AND AS–BUILT DRAWINGS OF AIP PROJECT 3–23–0002–05, 1990.

FOR LEGEND, SEE SHEET 2 OF 9.

(N) 15 FEET ADDED TO ROAD ELEVATION PER FAR PART 77.
(R) 23 FEET ADDED TO RAILROAD ELEVATION PER FAR PART 77.



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Web Page: www.hta–nh.com

DESIGNED BY: TLM | DRAWN BY: DDS | CHECKED BY: JRL

AUBURN–LEWISTON MUNICIPAL AIRPORT
AUBURN, MAINE

RUNWAY 17–35
PLAN & PROFILE

SCALE: AS SHOWN | DATE: OCTOBER, 2006

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

DO NOT SCALE DRAWING

PROJ. No.: 030719
FILE NAME:
AIP No.: 3–23–0002–13–2005

DRAWING NO.
7

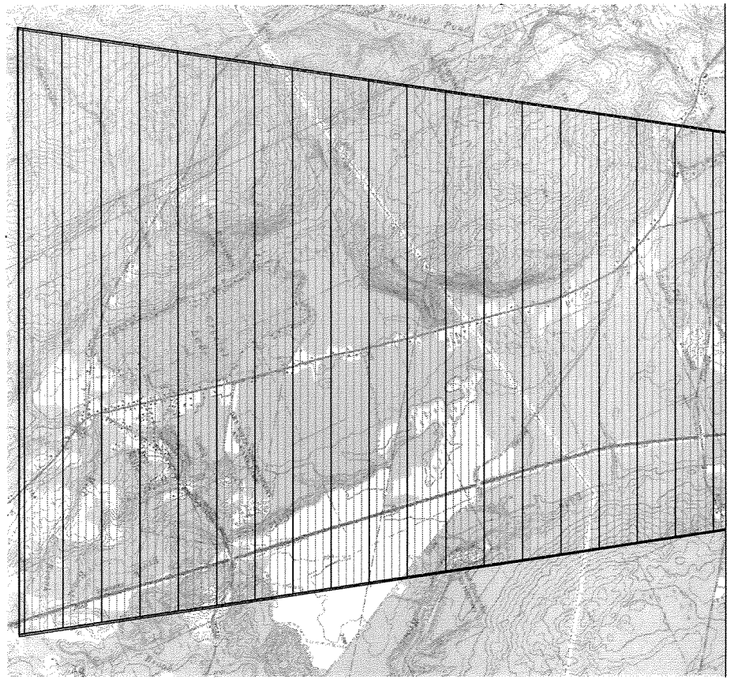
Part 77 Airspace Surfaces / Auburn–Lewiston Municipal Airport								
	Runway 04		Runway 22		Runway 17		Runway 35	
Airport Data	Existing	Ultimate	Existing	Ultimate	Existing	Ultimate	Existing	Ultimate
Runway Classification	Precision Instrument	Same	Non–Precision	Same	Visual	Same	Visual	Same
Visibility Minimums	> ¾ MILE	< ¾ MILE	1 mile	Same	3 miles	Same	3 miles	Same
Airport Elevation	288' MSL							
Airport Imaginary Surfaces	Existing	Ultimate	Existing	Ultimate	Existing	Ultimate	Existing	Ultimate
Horizontal Surface:								
Horizontal Surface Elevation	438' MSL							
Horizontal Surface Radius	10,000'	Same	10,000'	Same	5,000'	Same	5,000'	Same
Conical Surface:								
Conical Surface Elevation	638' MSL							
Horizontal Distance	4,000'	Same	4,000'	Same	4,000'	Same	4,000'	Same
Slope	20:01	Same	20:01	Same	20:01	Same	20:01	Same
Primary Surface:								
Length beyond runway end	200'	Same	200'	Same	200'	Same	200'	Same
Width	1,000'	Same	500'	Same	250'	Same	250'	Same
Approach Surface:								
Inner Edge Width	1,000'	Same	500'	Same	250'	Same	250'	Same
Outer Edge Width	16,000'	Same	3,500'	Same	1,250'	Same	1,250'	Same
Horizontal Distance	10,000' then 40,000' (1)	Same	10,000'	Same	5,000'	Same	5,000'	Same
Slope	50:1, 40:1 (1)	Same	34:1	Same	20:1	Same	20:1	Same
Transitional Surfaces:	7:1	Same	7:1	Same	7:1	Same	7:1	Same

Source: FAR Part 77, Objects Affecting Navigable Airspace
Note: 1.
Federal Aviation Regulation Part 77's approach surface standards require a horizontal distance of 10,000 feet at a slope of 50 feet (horizontally) to 1–foot (vertically) with an additional 40,000 feet at a slope of 40 feet (horizontally) to 1–foot (vertically) for all precision instrument runways, such as Runway 04. However, many airports within New England cannot meet the 50:1 slope requirements due to the mountainous terrain. Therefore, a slope of 34:1 is acceptable but the airport should strive to meet the 50:1 requirement if reasonably possible. Where the 50:1 standard cannot be met, an FAA modification to standards from 50:1 should be obtained.

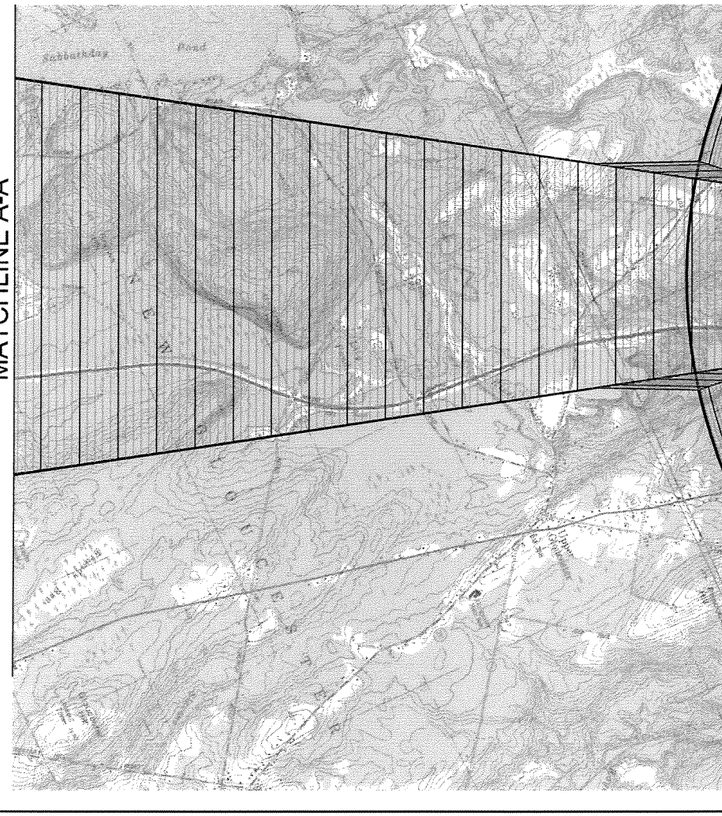
LEGEND

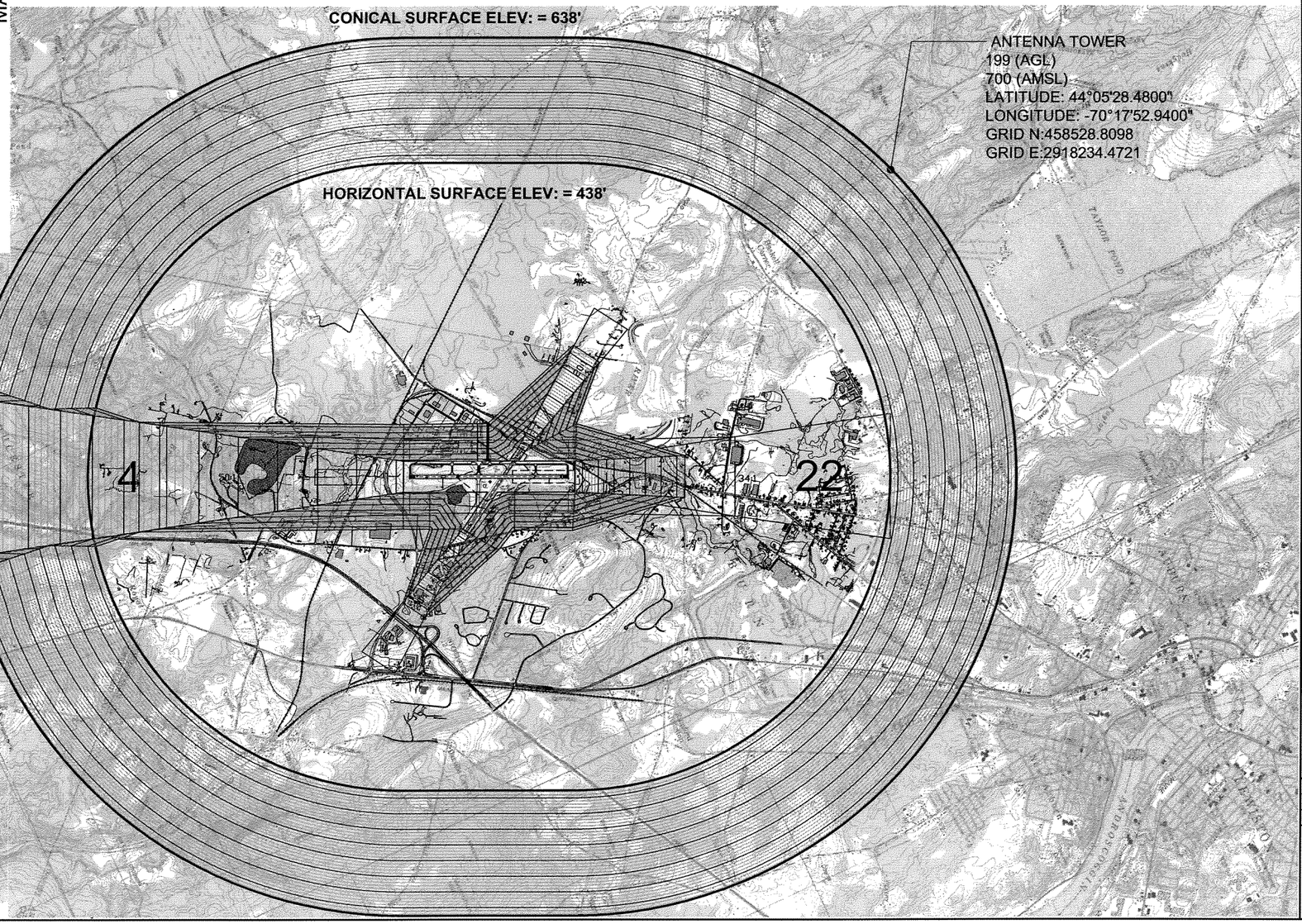
GROUND PENETRATIONS

MATCHLINE A-A



MATCHLINE A-A





ENGINEER'S SEAL

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DESIGNED BY TLM | DRAWN BY DDS | CHECKED BY JRL

AUBURN–LEWISTON MUNICIPAL AIRPORT
AUBURN, MAINE

PART 77 AIRSPACE SURFACES

SCALE: 1"=2000' | DATE: OCTOBER, 2006

REVISIONS

REV. NO.	DATE	DESCRIPTION	BY

DO NOT SCALE DRAWING

PROJ. No.: 030719
FILE NAME:
AIP No.: 3–23–0002–13–2005

DRAWING NO.

8

SHEET 8 OF 9

REVISIONS			
REV. NO.	DATE	DESCRIPTION	BY

DO NOT SCALE DRAWING

AUBURN–LEWISTON MUNICIPAL AIRPORT
AUBURN, MAINE

LAND USE PLAN WITH NOISE CONTOURS

SCALE: 1"=1000'

DATE: OCTOBER, 2006

PROJECT DESIGNER
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Web Page: www.hta-nh.com

DESIGNED BY	DRAWN BY	CHECKED BY
TLM	DDS	JRL

ENGINEER'S SEAL

PROJ. No.: 030719
FILE NAME:
AIP No. 3-23-0002-13-2005

DRAWING NO. 9

SHEET 9 OF 9

Chapter #7 CIP, Plan Implementation & Airport Governance

1.0 GENERAL

A staging plan and a financial plan are presented to describe the steps required to reach the Combined Development Plan identified in Chapter #4. The staging plan considers the demand-driven need for facilities, and necessary improvements to meet FAA standards according to *Chapter #2 – Existing Aviation Activity Forecasts*, and *Chapter #3 – Existing General Aviation Development Scenario*. The financial feasibility of construction was considered when determining the CIP.

The purpose of the Airport Economic Activity Comparison, presented as **Appendix X,** is to provide a comparison of LEW to competitive airport facilities. The report provides an analysis of the economic competitiveness of LEW and the airport's facilities relative to other regional airports in the region. The Business Plan evaluates the LEW's resources and proposes financial actions and revenue improvements and is provided as **Appendix XI** to this report.

2.0 CAPITAL IMPROVEMENT PLAN

The CIP represents a schedule and cost estimate for implementing the Combined Development Plan, which have been recommended as a result of the AMP process and approved by the PAC. Scheduling of improvements has been divided into two phases: short-term (2007-2011), and long-term (2012-2024). The CIP must be viewed as a constantly evolving document. Planning for LEW should remain flexible and should incorporate annually updated estimates of costs and priorities.

The CIP is structured in a manner that presents a logical sequence of improvements, while attempting to reflect available funding from the state (MDOT), and federal (FAA) levels. Those airport improvements, which are eligible for Airport Improvement Plan (AIP) funding, currently receive 95 percent funding from the FAA, 2.5 percent from MDOT, and the remaining 2.5 percent from the local sponsors, the Cities of Auburn and Lewiston. AIP funding contributions do fluctuate and may revert back to 90 percent federal participation in 2007, with 5 percent participation from the state and cities. Projects eligible for state funding receive 90, 80, or 50 percent funding depending on the project and funding availability. Projects ineligible for AIP funding must either be funded by the state, the airport or by private entities, such as airport businesses or private developers.

Table 6-1 and **6-2** depict the proposed airport improvements for both the short and long-term phases. The short-term phase is presented by individual fiscal years. The long-term phase includes all other projects from which LEW can select projects for implementation as the five-year CIP is accomplished and updated.

Table 7-1: Short-Term (2007-2011) CIP Estimate

Development/Improvement	Year	Local (2.5%)	State (2.5%)	Federal (95%)	Construction Cost	Engineering and Contingency Cost (25%)	TOTAL PROJECT COST
Fill, grade and seed RSA's for Rwy's 04, 22, 17, and 35	2007	$16,600	$16,600	$630,700	$531,100	$132,800	$663,900
Remove vegetation within ROFA	2007	$800	$800	$29,700	$25,000	$6,300	$31,300
Construct Rwy 04-22 parallel Twy	2007	$143,800	$143,800	$5,462,500	$4,312,500	$1,437,500	$5,750,000
Removal/lighting of FAR Part 77 obstructions	2007	$6,300	$6,300	$237,500	$200,000	$50,000	$250,000
Completion of wildlife/security fencing	2007	$10,200	$10,200	$386,000	$325,000	$81,300	$406,300
Avigation Easement	2007	$10,000	$10,000	$380,000	$0	$0	$400,000
Total	2007	$187,700	$187,700	$7,126,400	$5,393,600	$1,707,900	$7,501,500
Install PAPI's on Rwy's 17, and 35	2008	$2,200	$2,200	$83,600	$70,000	$18,000	$88,000
Reconstruct and reduce width of existing Twy to 35 feet	2008	$14,300	$14,300	$543,900	$458,000	$114,500	$572,500
Replace snow blower	2008	$8,800	$8,800	$332,500	$0	$0	$350,000
Purchase airport vehicle	2008	$30,000	$0	$0	$0	$0	$30,000
Additional office space	2008	$50,000	$0	$0	$0	$0	$50,000
Total	2008	$105,300	$25,300	$960,000	$528,000	$132,500	$1,090,500
Reconstruct and expand west itinerant apron	2009	$31,500	$31,500	$1,196,000	$1,007,100	$251,800	$1,258,900
Reconstruct East Apron	2009	$10,700	$10,700	$406,500	$342,300	$85,600	$427,900
Rehabilitate Hangar #2	2009	$83,000	$0	$0	$0	$0	$83,000
Acquisition of Roundy-Theberge property	2009	$10,000	$10,000	$380,000	$0	$0	$400,000
Establish identification system and marking of electronic slide gates and buildings	2009	$6,300	$0	$0	$5,000	$1,300	$6,300
Total	2009	$141,500	$52,200	$1,982,500	$1,354,400	$338,700	$2,176,100

Table 7-1 (continued)

Development/Improvement	Year	Local (2.5%)	State (2.5%)	Federal (95%)	Construction Cost	Engineering and Contingency Cost (25%)	TOTAL PROJECT COST
Snow Removal Equipment (SRE) building	2010	$23,400	$23,400	$890,600	$750,000	$187,500	$937,500
Rehabilitate Rwy 04-22	2010	$91,500	$91,500	$3,477,300	$2,928,300	$732,000	$3,660,300
Construct airport perimeter road	2010	$18,500	$18,500	$703,700	$592,600	$148,100	$740,700
Total	2010	$133,400	$133,400	$5,071,600	$4,270,900	$1,067,600	$5,338,500
Reconstruct 4 existing auto parking lots	2011	$755,200	$0	$0	$604,200	$151,000	$755,200
Purchase wood chipper	2011	$18,000	$0	$0	$0	$0	$18,000
Total	2011	$773,200	$0	$0	$604,200	$151,000	$773,200
Short-Term Total		$1,341,100	$398,600	$15,140,500	$12,151,100	$3,397,700	$16,879,800

Sources: FAA Order 5100.38B and HTA

Table 7-2: Long-Term (2012-2024) CIP Estimate

Development/Improvement	Local (2.5%)	State (2.5%)	Federal (95%)	Construction Cost	Engineering and Contingency Cost (25%)	TOTAL PROJECT COST
Reconstruct West Apron	$41,600	$41,600	$1,579,900	$1,330,500	$332,600	$1,663,100
Expansion of Twin Cities Air Service and Silver Wings FBO's (8,000 SF total)	$1,325,000	$0	$0	$1,060,000	$265,000	$1,325,000
Construct East and West Corporate Hangars (2 total) and Aprons (5,000 SY total)	$4,830,300	$0	$0	$3,864,200	$966,100	$4,830,300
900-foot Rwy 04-22 extension	$34,100	$34,100	$1,296,100	$1,091,400	$272,900	$1,364,300
Construct 1,000 SY air cargo apron	$13,700	$13,700	$521,000	$438,700	$109,700	$548,400
Construct 3,600 SF air cargo facility	$800,000	$0	$0	$640,000	$160,000	$800,000
Construct four units of 10 bay t-hangars (price for each)	$1,208,000	$0	$0	$966,700	$241,700	$1,208,400
Construction of partial parallel Twys for Rwy 35	$71,200	$71,200	$2,707,200	$2,279,800	$569,900	$2,849,700
Rehabilitate Rwy 17-35	$56,500	$56,500	$2,147,300	$1,808,300	$452,000	$2,260,300
Construct SRE building	$23,400	$23,400	$890,600	$750,000	$187,500	$937,500
Construct CAP facility	$5,200	$5,200	$197,100	$166,000	$41,500	$207,500
Develop new terminal space through modification/expansion of the existing terminal	$761,000	$0	$0	$608,800	$152,200	$761,000
Total	$9,170,000	$245,700	$9,339,200	$15,004,400	$3,751,100	$18,755,500

Sources: FAA Order 5100.38B and HTA

The majority of projects identified in LEW's CIP are scheduled during the short-term phase of development. These developments relate primarily to airfield safety issues, meeting FAA specified design criteria, as well as capacity enhancement to meet existing and forecast demand.

3.0 AIRPORT GOVERNANCE ANALYSIS

3.1 LEW Governance

The management and legal structure of LEW is described within section 3.0 of *Chapter #1 – Inventory* of this report. In summary, the airport is governed by a Board of Directors, which is directed by a comprehensive, two-municipality operating agreement between the Cities of Auburn and Lewiston, Maine. The Board make-up includes members from both municipalities.

Though the two-city element is unusual, LEW's organizational structure is typical of many GA airports. The Airport Manager is responsible for the overall day-to-day operation of the airport, reporting directly to the policy-making Airport Board of Directors. Operation and administration of LEW is dependant on the full-time positions of the Airport Manager, Administrative Assistant, and the Airport Maintenance Supervisor. These are clearly defined, full-time positions to address the primary operational areas of airfield maintenance and administration. The latter includes tenant liaison, funds administration and Board meeting support.

Financial accounting for the airport, by arrangement of the operating agreement, is within the accounting system of the City of Auburn. In accordance with FAA requirements, the airport accounts are maintained separately from the general accounts of the City, allowing independent tracking of airport revenues and expenditures. Such a system is critical for compliance with the FAA assurances that the airport will be operated in a way that maximizes revenue to insure the airport will be as self-sustaining as possible. The Board makes this assurance every time it accepts FAA funding for airport development. Any revenue generated on airport property as defined by the Exhibit A property map must be used for airport operating and capital development expenses. An accounting system such as that in place at LEW insures the proper application of revenues and expenses to accurately reflect the airport's financial status.

An important and challenging aspect of the Airport Manager's duties is that of advocacy for the airport, with the public, the regulatory agencies and within the municipalities. With a proactive Airport Manager in place, the advocacy role at LEW has been done well and has created a positive airport image. Additional support is available from the regional development groups such as AVCOG and LAEGC. The public involvement connected with this master planning process is an example of airport advocacy and the positive results that can be obtained.

3.2 Governance Recommendation

The management structure and political basis for LEW is basically sound and functional, not inconsistent with GA airports of similar size elsewhere in Maine. There are, however, three recommendations for improvement of the airport's management to be made. The first comes from this consultant in response to the high turnover in the airport manager position. The second and third recommendations are the result of discussion of the airport's governance with the Planning 'advisory Committee (PAC) at the fourth PAC meeting for this master plan. They are:

- A clearer understanding and consistent application of the roles of policy makers (Board) and implementer (Airport Manager).
- Addition of two additional board members to more strongly reflect the airport's economic development role for the region.
- Creation of an Airport Advisory Committee to advise the Airport Board

Each is discussed, in turn, below.

3.3 Board/Manager Roles

LEW has a well-structured management with adequate resources assigned to it. At the same time, airport management has been interrupted by frequent changes in the Airport Manager position. The average length of employment for Airport Managers at LEW has been less than two years in recent years. This elevated rate of turnover causes various adverse affects on essential aspects of the airport, including disruptions in its day-to-day operations, momentum in development projects is lost, history has to be re-learned, adjustments made, etc. This aspect of the airport's governance is clearly the primary element to be addressed by the Board, the entity charged with operation of LEW. A more consistent occupation of the Airport Manager position will significantly improve the airport's ability to achieve positive development consistent with its role of serving the citizens of Auburn, Lewiston, and the Androscoggin Valley region.

The anecdotal evidence observed by Hoyle Tanner & Associates Inc. (HTA) over almost twenty years of association with the airport is that the relationship between the Board and the Airport Manager has been allowed to become blurred over critical issues of policy implementation. This creates tension and disagreement between the two which results in frustration and leads to an end to the working relationship. Therefore, the most critical recommendation that can be made in light of these observations is for the operating and policy functions to be more clearly demarcated and that both the Board and future Managers better understand their roles as to each other.

Simply put, the Board is to set policy, the Airport Manager to recommend policy and implement the Board's decisions. The Airport Manager has the responsibility to fully inform the Board of his/her actions and to recognize the difference between an operational action and a policy decision. The Board should be prepared to set policy, not operating strategy, and support the Airport Manager in his/her operating decisions. No relationship or contact should be allowed to come between the Board and Manager. Each should scrupulously respect the role of the other and, if approached to act contrary to their respective role, decline to do so and refer the question to the proper entity. This demarcation of roles will insure proper implementation of airport policy and eliminate disagreement over who is to do what. There will always be disagreement on what policies should be implemented. But, once the Board has made a reasoned, educated decision, the Manager should move ahead in that direction with the Board's support. Discussion and debate between the Board and the Manager should be as to the best course of action for the airport and community, not how to make it happen. The Board will decide that question and the Manager will identify the best way to implement. Both must have confidence in and support the other.

3.4 Expand Board Membership

A major Board objective of this master plan has been to more closely align the regional economic development agencies, AVCOG and LAEGC, with the airport's growth and capital development plan. LEW is regarded by both Auburn and Lewiston as an economic development tool for the region and it is toward that objective the two cities provide financial and management support.

The fourth PAC meeting for this master plan focused, in part, on ways to emphasize the airport's tie to its economic development role. One simple way mentioned is for the Board to fund services by AVCOG and LAEGC in support of LEW management. While used to some extent now, many services available from those agencies are not used by the airport management. Additional budgeting to make use of the agency services such as GIS coordination, RFP/grant administration, etc. could foster closer working ties between LEW and the agencies, thereby enhancing the airport' economic development awareness.

A second, more significant, change discussed by the PAC is the addition of two new LEW Board member positions to be filled by staff from AVCOG and LAEGC. These two positions would very clearly demonstrate the economic development role of the airport in the cities' efforts to create opportunities in the Androscoggin Valley region. We endorse this Board expansion as a means to emphasize the economic and development roles of the airport.

3.5 Create Airport Advisory Committee (AAC)

There was strong support at the fourth PAC meeting for creating a committee that would provide a forum for the discussion of tenant and neighbor issues. AAC's are not uncommon at other New England airports as they provide a good venue at which communication with the airport community can happen on a wide range of topics. Such a committee should be appointed by the Board with representation by all airport tenants and 2-3 airport neighbors. The airport manager should serve as facilitator for the AAC but the chair should be elected from amongst the membership. Monthly meetings of about an hour are typical with occasional special meetings, as necessary, to deal with specific issues. The AAC should provide advisory positions on airport issues to the Board, which should give significant consideration to their advice in making decisions on airport policy. A consequence of creating an AAC is that the Board's own meetings should become more focused as public input is more structured and channeled through the AAC.

Appendix I

LEW Board Of Directors

LEW Board of Directors

	Board Member as of: February 2006	City	Appointed	Expire
*	Patricia Finnigan Auburn City Manager	Auburn	August 1994	
*	Richard Metivier Lewiston Finance Director	Lewiston	September 1980	
**	Ron Jean Lewiston City Council	Lewiston	January 2006	January 2008
**	Donna Rowell Auburn City Council	Auburn	December 2004	December 2006
***	Edouard Plourde City Representative	Lewiston	April 1999	January 2009
***	Stephen Lunt City Representative	Auburn	July 2002	January 2008
****	Ken Wolf Chamber Representative	Lewiston	February 2004	January 2007

Table Key:

* Position of Board follows term in City Position.

** Position of Board being a City Council Member and appointed by the Mayor for term of council member.

*** Position on Board being a City Representative and appointed by the Mayor for 3-year period.

**** Position of Board being a Chamber of Commerce Representative for a 3-year period with alternating each term from Auburn to Lewiston resident with the Airport Board of Directors approval.

Appendix II

LEW Minimum Standards

STATUS PAGE

Issued 1 March 1995 Changed material highlighted by vertical line in right margin.

Page 28 - Change #1 (13 April 1994) .....Deletes original pages 28-31. Remove and replace with new pages 28 & 29.

Page 29 - Change #2 (16 February 1995) .....Remove and replace page 29 with new page 29.

Page 29 - Change #3 (June 1, 1995) .....Remove and replace page 29 with new page 29.

Exhibit B - Change #4 (May 5, 2005)……Remove and replace Exhibit B

Exhibit B – Change #5 (August 11, 2005)…….Add Jet Landing Fee

End of Changes.

SECTION 1: PURPOSE, INTENT, AND REQUIREMENTS:

1.1 The purpose herein is to allow for the establishment and orderly development of a sound economic base upon which the Airport will thrive and experience a stable growth pattern; to insure that the public receives reliable, safe, adequate and nondiscriminatory service from Operators conducting commercial activities at or from the Airport; and to insure that Operators conducting aeronautical activities at the Airport receive fair, equitable, and nondiscriminatory treatment as compared to others conducting the same or similar activities at the Airport. No person, firm, or corporation shall engage in any commercial activity as a Fixed Base Operator (FBO) as herein defined unless the same is done in full compliance with the standards, rules and regulations herein set forth.

1.2 The intent herein is to categorically identify those Minimum Standards and Procedures by which all persons, firms, or other legal entities conducting commercial aeronautical activities (revenue producing) at the Airport shall conduct their respective operations.

1.3 The requirements, as set forth in these Minimum Standards and Procedures, are intended to ultimately protect the public health, safety, and other interests; and to foster and promote the continued development of the Airport in a safe and efficient manner.

1.4 These Minimum Standards for Commercial Aeronautical Activities have been written in conformance to Advisory Circular 150/5190-1A, 150/5190-2A, and the Federal Aviation Administration Assurances for Airport Sponsors.

SECTION 2. DESIGN AND APPLICATION

2.1 It is intended that the design and application of these Minimum Standards and Procedures shall be accomplished by the Auburn-Lewiston Municipal Airport Board of Directors (hereinafter ALBD) and/or its Airport Manager.

2.2 These Minimum Standards and Procedures shall be published and appended to all current Lease and Operating agreements and shall be considered a part of all Lease and Operating agreements which the ALBD may enter into relating to the Auburn-Lewiston Municipal Airport except as otherwise provided in Section 4.3.

2.3 Any person(s), firm or legal entity wishing to obtain the right to operate and/or establish a leasehold on the Airport shall make written application to the ALBD in the manner and form prescribed herein. Application for

permission to establish, acquire, and/or use Airport land or any facilities thereon shall be presented to the ALBD; however, never shall an applicant submit anything less than the following information:

a. Applicant's legal name and address.
b. Applicant's primary business.
c. Applicant's express purpose in applying for lease and operating rights at the Auburn-Lewiston Municipal Airport.
d. Applicant's express intent for utilization of the land and/or facilities to be occupied, and more important, the services which are intended to be provided to the public.
e. Applicant's estimate of costs which he/she will incur for the development and improvements of such leasehold or fee position applied for.
f. Applicant's schedule for commencement of lease term, operation and construction of leasehold improvements.
g. Applicant shall provide qualified references attesting to his/her financial responsibility and technical ability as related to his/her proposed type if business.
h. Applicant shall provide, before commencement of operations, the names, addresses, and qualifications of those key management personnel who will be involved with the day-to-day operation of the business intended.

2.4 Upon receipt of the application, it will be reviewed by the ALBD within 90 days. The ALBD reserves the right to reject any proposals presented to the ALBD at their sole discretion.

2.5 All Fixed Base Operators (FBOs) shall satisfy the ALBD that they are technically and financially able to perform the services of such FBOs before any lease of Airport property for such an operation shall be executed.

SECTION 3: GLOSSARY OF TERMS:

3.1 **ALBD**, As hereinafter defined, shall mean the Auburn-Lewiston Municipal Airport Board of Directors, or its successor, operator of the Airport.

3.2 **Airport**, as hereinafter defined, shall mean the land, and developments thereon, either held in fee simple or as leasehold either occupied by tenants or fee holders, which are controlled, operated, and maintained by either the ALBD, its tenants and/or those to whom title in fee has been legally transferred. The Airport shall also include, but not necessarily be limited to all runways, taxiways, rights of way, ramps, aircraft and vehicle

parking areas, storage areas of all kinds and descriptions, improvements, utilities, facilities or other real property necessary or convenient, or desirable, for the landing, takeoff, accommodation and servicing of aircraft of all types.

3.3 **Aircraft**, as hereinafter defined, shall mean and include any contrivances now or hereafter used for the navigation of, or flight in air or space, including but not necessarily limited to airplanes, airships, dirigibles, helicopters, gliders, amphibians and sea planes, and ultralights.

3.4 **Applicant**, as hereinafter defined shall mean that person(s), firm, or legal entity desiring to acquire use of a portion of the Airport, or establish or use any facility on the Airport for an aeronautical activity or other purpose; and, who shall apply in writing and in the manner and form prescribed for permission to establish such operations on the Airport.

3.5 **Operator**, as hereinafter defined, shall mean any person(s), firm, or legal entity who have applied for and received written permission to engage in a commercial aeronautical activity, on or from the Airport; and have entered into and executed the required lease/operating agreement. This includes any L-FBO (see Section 3.11). An operator shall always be a tenant.

3.6 **Tenant**, as hereinafter defined, shall mean any person(s), firm, or legal entity who have applied for and received written permission from the ALBD to establish a leasehold or other right at the Airport whether for commercial activity or not.

3.7 **Commercial Activity**, as defined herein, shall mean any on-going activity conducted at, on, or from the Airport by any person(s), firm or legal entity intended to result in monetary gain to the party conducting such activity.

3.8 **Aeronautical Activities**, Shall mean any activity which involves, makes possible, or is required for the operation of aircraft, or which contributes to or is required for the safety of such operations. "Commercial" aeronautical activities shall mean any activity by any person(s), firm, or legal entity intended to result in a monetary gain.

3.9 **Standard Construction Specifications**, shall include, but not necessarily be limited to:

a. Federal Aviation Administration "Standards for Specifying Construction of Airports"
b. All other applicable Federal, State, Local building codes or other ALBD rules and/or regulations controlling construction on the airport.

3.10 **A Fixed Base Operator**, as defined herein, and hereafter referred to as "FBO," shall be any operator located on the Airport and doing any one or more of the following "FBO" categories and functions. FBOs will abide by and comply with the standards pertaining to the particular category the FBO offers as set forth below:

1. Aircraft Airframe and Engine Maintenance
2. Aircraft Charter & Air Taxi Service.
3. Flight Training.
4. Aircraft Rental.
5. Specialized Commercial Flying Services.
6. Provisions of Facilities for L-FBOs.
7. Aircraft Sales (New and/or Used).
8. Flying Clubs.

3.11 **L-FBO,** as defined herein, and hereafter referred to as "L-FBO," shall be any operator located on the Airport that is subleasing space from an FBO, and/or who is not leasing land and/or buildings directly from the Airport. **NOTE: Operators must lease from the Airport if appropriate space is available unless permission is obtained from the ALBD.** The L-FBO can do any one or more of the "FBO" categories and functions listed in 3.10. The L-FBO shall pay the fees prescribed by the ALBD, and listed in Exhibit "B."

3.12 **Leasehold Improvements**, shall include, but not necessarily be limited to any modification, alterations, or repairs, either of a structural or architectural nature, done by the Tenant at his/her sole cost and expense. Any such improvements shall be accomplished only after the ALBD has approved the Tenant's written application requesting same. In all instances, unless provided otherwise in the lease/operating agreement, upon the termination or natural expiration of a lease/operating agreement, title to such land improvements shall revert to and vest with the ALBD, at the option of the ALBD.

3.13 **Normal Operating Hours For Fueling Services**. As reasonably set by the Airport Manager. Seven (7) days a week.

7:00A.M. - 8:00P.M. June - September
8:00A.M. - 6:00P.M. April, May, & October
8:30A.M. - 5:00P.M. January, February, March, November, & December

3.14 **Normal Business Hours for FBOs**. Monday through Friday, 8:00 A.M. until 5:00 P.M. or as approved by the ALBD.

SECTION 4. STATEMENT OF POLICY:

4.1 It is the policy of the ALBD to grant a lease and/or operating rights on the Airport with the approval of ALBD, to those qualified applicants who have duly made application for said lease rights in the manner and form prescribed in Section 2.

4.2 Upon the consideration of the applicant, the ALBD shall determine whether the applicant meets the standards and qualifications as herein set out and if such application should be granted in whole or in part, and if so, upon what terms and conditions.

4.3 All present Tenants, and Operators conducting operations on the Airport, before the effective date of these Minimum Standards and Procedures, may be allowed to continue without fully complying with the portions of these Minimum Standards and Procedures relating to the floor space requirements if the ALBD determines that the continuation of such an operation is in the public interest and does not conflict with any FAA requirements, and if the ALBD determines that it would be an extreme hardship, financial or otherwise, for such an Operator to fully comply with said portions of these revised Minimum Standards and Procedures. When an existing lease of any present Tenant, who is not made to fully comply with these Minimum Standards and Procedures, expires, such Tenant shall at the time of expiration of such existing lease be required to comply with all the provisions of these Minimum Standards and Procedures.

4.4 All applicants shall meet the Minimum Standards, as recited herein and which pertain to their respective category.

4.5 It is the intent of the ALBD to examine each Applicant. Each Applicant shall be responsible for providing satisfactory evidence to the ALBD of its respective technical ability and financial responsibility, including the capability to meet the insurance requirements as stated herein.

4.6 The ALBD may review the "Minimum Standards and Procedures for the Auburn-Lewiston Municipal Airport" from time to time and may make such revisions or amendments as shall be deemed necessary under the circumstances surrounding the Airport to properly protect the health, safety, and interest of the public. Upon enactment of any such amendments, all operators and tenants shall be required to conform to such amended standards except as provided in Section 4.3.

4.7 Besides the requirements of the FAA, the ALBD may establish and carry out such rules and regulations as may be required for the (1) safe and orderly operation of the Airport, (2) the safe and orderly operation of

aircraft in the airport traffic area and airspace surrounding the airport, and (3) the safe and orderly operation of aircraft on the ground.

4.8 No person(s), firm or legal entity shall act as an Operator/Tenant or conduct any commercial activity of any kind or nature whatsoever on the Airport, until that person(s), firm or legal entity has (1) applied for and received permission to so act, and (2) has entered into an executed lease/operating agreement with the ALBD. Each successful Applicant shall, within thirty (30) business days after having received written approval of his application be ready, willing and able to enter into a written lease/operating agreement with the ALBD, in a form prescribed by the ALBD. For an air charter operation which is not based at the airport but which operates to and from the airport under an agreement with the ALBD, the payment of all applicable landing, parking or other levied fees by the non-based air charter operations shall be deemed sufficient to meet the requirements of this paragraph.

4.9 It is the intention of the ALBD to enter into and execute a lease/operating agreement with the approved Applicant as soon as convenient after such application is approved.

4.10 No applications approved or lease and/or operating agreement executed under these Minimum Standards and Procedures shall be transferable without first obtaining the prior written consent of the ALBD. Sale of a majority of the voting stock of a corporation shall be deemed to be a transfer.

4.11 All lease/operating agreements shall contain, inter alia, a covenant reciting the Operator's obligation to pay an amount for the basic monthly rental of agreed space. Any sub-lease approved by the ALBD between Lessee Operator and a sub-lessee shall provide that the sub-lessee pay the fees prescribed by the ALBD for the activity being performed as shown in Exhibit "B."

4.12 Concerning land having access to the Airport runway/taxiway system, it is the intent of the ALBD to restrict the amount of land leased to any Operator/Tenant to the minimum area reasonably required for the specific aviation purpose, which the Operator/Tenant agrees to conduct on the leased premises. The ALBD will include a provision in each lease providing for the termination of the Operator/Tenant's rights on the leased premises, or any portion thereof, on which the Operator/Tenant has not made improvements or otherwise utilized for an approved aviation purpose within eighteen (6) months of executing said lease.

4.13 Any person, firm or corporation capable of meeting the minimum standards set forth herein for any of the listed categories is eligible to

become an FBO at the Airport, subject to the execution of a written lease for five (5) years. When substantial investments are made, the ALBD may allow for longer contract terms.

4.14 An FBO or Tenant shall not engage in any business or activity on the Airport or other than that authorized under his particular category or categories. Any Operator/Tenant desiring to extend his operations into more than one category, shall first apply in writing to the ALBD for permission to do so, setting forth in detail the reasons and conditions for the request.

4.15 Ramp space other than ramp space specifically leased to the FBO or Tenants shall be for use by the general public. No FBO or Tenant shall be permitted to use any portion of public ramp space for its exclusive use.

4.16 The Airport will provide the following services to FBOs and Tenants.

a. Maintenance of the runways, taxiways, ramp and apron areas which are open to the general aviation public.

b. Maintenance and operation of runway lights, rotating light beacon and lighted wind tee to permit night flying operations seven days each week between the hours of sunset and sunrise.

4.17 The ALBD or its authorized representative shall have the right during business hours to inspect, examine, and audit all books or accounts, records and devices used in the accounting system of the business of all FBOs and Tenants. Such examination will be made at a place designated by the ALBD and to be done in a manner which will not unreasonably disrupt or interfere with operations of FBOs or Tenants.

4.18 All FBOs shall permit individual aircraft owners to effect their own preventive maintenance which do not require FAA licensed mechanics, if such owner so desires.

4.19 No construction of any kind shall be done at the Airport without the prior approval of the FAA and the ALBD and no approval shall be granted unless it is consistent with the master plan for the development of the airport.

4.20 The operating rights of the Airport owned underground fuel facility is normally leased to the Operator located in hangar #3 next to the airport terminal, however, the Airport reserves the right to operate the fuel farm. This operator and any other operator at the Airport wishing to provide into-aircraft fuel services will comply with the following:

Equipment:

1. Operator shall have two metered filter equipped dispensers for dispensing two grades of aviation fuel (Avgas and Jet-A fuel) from two storage tanks having a minimum capacity of 10,000 gallons each, with at least one tank dedicated to Avgas. In addition, if dispensing trucks are used, they shall have a total of 600 gallon minimum capacity for each grade of fuel. Separate dispensing pumps for each grade of fuel is required.

2. If the Operator uses mobile fuel dispensing equipment it shall be maintained in serviceable condition, in such quality and quantity, with reliable marking devices approved by the Federal Aviation Administration, capable of servicing, in an efficient and safe manner, the typical general aviation aircraft frequenting this Airport.

3. In conducting fuel operations, Operator shall install and use adequate electrical grounding facilities at fueling locations to eliminate the hazards of static electricity and shall provide approved types of fire extinguishers or other equipment commensurate with the hazard involved with fueling, defueling, and servicing aircraft. All fuel storage tanks will be installed above ground, unless otherwise directed by Local, State, or Federal authorities. In addition, Operator shall comply with Section 7 of the Rules and Regulations for the Auburn-Lewiston Municipal Airport.

Scope of Services/Standards:

1. Into-aircraft delivery of aviation fuels, lubricants and other related petroleum products shall be available during normal operating hours, 7 days a week.

2. Operator shall maintain an adequate inventory of at least one brand and two generally accepted grades of aviation fuel, engine oil, and lubricants. The Operator shall demonstrate, to the satisfaction of the ALBD, a written, long-term, commercially-reasonable agreement with a reputable national-brand aviation gasoline and lubricant distributor to permit the Operator to purchase fuel and oil for resale in such quality and quantities as are necessary to meet the requirements set forth herein. Aviation fuels and oils delivered to the Operator by a vendor will be considered by the ALBD to be fuels and oils dispensed by the Operator.

3. The Operator shall take all precautions necessary to insure that only non-contaminated fuel is delivered into the aircraft serviced. Fuel delivered shall be clean, bright, pure and free of microscopic organisms, water or other contaminants. Quality control of the fuel is the responsibility of the Operator/FBO. The Operator shall maintain current fuel reports on file and available for auditing at

any time by the Airport Manager, or the Federal Aviation Administration.

Personnel/Certifications:

1. Line service personnel training to include certification for fueling, defueling, quality assurance, fire safety, and hazardous material handling as required by Federal, State and Local regulations.

2. All fueling services and systems shall be subject to inspection for fire and other hazards by the Airport Manager or other representative of the Auburn Fire Department and the appropriate State and Local fire agency. Operator shall meet all applicable fire codes: Federal, State and Local laws, statutes, ordinances, rules and regulations pertaining to fire safety, including proper fire protection, electrical grounding and fire suppression.

Insurance:

1. An operator providing this service shall purchase, and for the period of the operations hereunder, maintain insurance in the types, amounts and forms set forth in Exhibit "A."

SECTION 5. DESCRIPTION OF FBO REQUIREMENTS

NOTE: The Airport will consider a reduction in minimum square footage requirements for FBOs providing multiple FBO services. Floor space requirements for multiple service FBOs **are not additive. Restrooms, customer lounge, office, etc need not be duplicated.**

AIRFRAME AND POWER PLANT MAINTENANCE:

A. Commercial Service or Activity.

1. The Operator shall provide these services to at least the minimum necessary for the typical General Aviation aircraft frequenting the Airport. This category of aeronautical services shall also include the sale of aircraft parts and accessories, but such is not an exclusive right.

B. Facilities.

1. The Operator shall lease a facility or erect a facility if none now exists, to provide a minimum of 3,200 sq. ft. of floor space for aircraft maintenance, storage and 100 sq. ft. of office space, which shall be properly heated and lighted, and shall provide telephone facilities for customer use.

2. The Operator shall provide for (under terms agreeable to the ALBD) adequate auto parking space to accommodate all the Operator's employees and customers.

C. Equipment.

1. The Operator shall provide sufficient equipment, supplies and availability of parts to perform aircraft/engine maintenance in accordance with manufacturers recommendations or equivalent.

D. Scope of Services/Standards.

1. The Operator shall have his facility open and services available 8:00 A.M. until 5:00 P.M. Monday through Friday or as approved by the ALBD.

2. The Operator shall have in his employ (and on duty during the required operating hours) trained personnel in such numbers as are required to meet these minimum standards and lease requirements in an efficient manner, but never less than one (1) person currently certified by the Federal Aviation Administration with certificates appropriate to the work being performed and who holds an airframe and power plant (A&P), and an aircraft inspector certificate.

3. Sufficient work space for any aircraft upon which airframe or engine repairs are being performed.

4. Suitable storage space for aircraft before and after repairs.

5. Adequate shop space to house the equipment, and adequate equipment and machine tools, jacks, lifts and testing equipment as required for the maintenance to be performed.

6. Sufficient equipment, supplies and availability of parts to allow timely repair of aircraft/engines.

E. Personnel.

1. An aircraft airframe, engine maintenance and repair Operator shall provide at least one (1) person currently certified by the Federal Aviation Administration with an A&P and I.A. rating appropriate to the work being performed.

F. Certifications.

1. As Required in D.2 above.

G. Insurance.

1. The Operator performing the services under this category shall purchase, and for the period of operations hereunder, maintain insurance in the types, amounts and forms set forth in Exhibit "A."

AIRCRAFT CHARTER & AIR TAXI SERVICE:

A. Commercial Service or Activity.

1. An air charter and/or taxi operator shall provide air transportation (persons or property) to the public for hire, either on a charter basis or as an air taxi operator, as defined in the Federal Aviation Act of 1958, or as said Act may be supplemented or amended from time to time. These operations are subject to Part 135 and/or Part 121 of the Federal Aviation Regulations.

B. Facilities.

1. The Operator shall lease a facility or erect a facility, if none now exists, to provide for a minimum of 3,200 sq. ft. of floor space for aircraft storage and 800 sq. ft. for office space, customer lounge, and restrooms, which shall be properly heated and lighted, and shall provide telephone facilities for customer use.

2. The Operator shall provide for (under terms agreeable to the ALBD) adequate auto parking space to accommodate all of the Operator's employees and customers.

3. The Operator shall provide or lease a paved ramp area to accommodate his own aircraft tie-downs and the movement of aircraft from the Operator's facilities to the existing Airport taxiway and/or apron system.

C. Equipment.

1. A minimum of one single-engine or twin-engine aircraft properly certificated by the Federal Aviation Administration. Aircraft shall be owned or leased by and under the exclusive control of this FBO.

D. Scope of Services/Standards.

1. The Operator shall have premises open and services available from 8:00 A.M. until 5:00 P.M. Monday through Friday or as approved by the ALBD.

E. Personnel

1. The Operator shall have in his employ, and on duty during the required operating hours, trained personnel in such numbers as are required to meet the Minimum Standards set forth in this category in an efficient manner, and appropriately rated to permit the flight activities offered by the operator.

F. Certifications.

1. Must be FAA certified under Part 135 and/or Part 121 of the Federal Aviation Regulations.

G. Insurance.

1. The Operator performing the services under this category shall purchase, and for the period of operations hereunder, maintain insurance in the types, amounts and forms set forth in Exhibit "A."

FLIGHT TRAINING:

A. Commercial Service or Activity.

1. The Operator shall instruct pilots in dual and solo flight training infixed and/or rotary wing aircraft, and provide such related ground school instruction as is necessary to take a written examination and flight check ride for the appropriate pilot certificate and ratings.

B. Facilities.

1. The Operator shall lease a facility or erect a facility if none now exists, to provide a minimum of 3,200 sq. ft. of floor space for aircraft storage and 800 sq. ft. for offices, pilot lounge, classroom, briefing room and restrooms, which shall be properly heated and lighted, and shall provide telephone facilities for customer use.

2. The Operator shall provide for (under terms agreeable to the ALBD) adequate auto parking space to accommodate all of the Operator's employees and customers.

3. The Operator shall provide or lease a paved ramp area to accommodate his own aircraft tie-downs and the movement of aircraft from the Operator's facilities to the existing Airport taxiway and/or apron system.

4. No flight training operations or operator may be allowed to operate off a tie-down only.

C. Equipment.

1. A minimum of one single-engine aircraft which is owned or leased by and under the exclusive control of this FBO. Aircraft must be properly equipped and FAA certificated for flight instruction and maintained in airworthy condition according to FAA Regulations pertaining to this category of operations.

D. Scope of Services/Standards.

1. The Operator shall have his facilities open and provide properly trained personnel in sufficient quantity on duty from 8:00 A.M. until 5:00 P.M. Monday through Friday, or as approved by the ALBD, and other hours required to support the flight training program.

2. The Operator shall have available on the premises at least one (1) flight instructor who is currently certificated by the FAA to provide the type of flight training offered.

3. Office, classroom and briefing room space required for FAR Part 61 and/or Part 141 flight training.

4. The Operator shall have in stock, and make for sale to the public, flight training textbooks, manuals and other miscellaneous pilot supplies such as plotters, computers, navigational charts, etc.

E. Personnel.

1. As Required in Section D.2.

F. Certifications.

1. Flight School operation shall be in compliance with FAR Part 61 or Part 141.

G. Insurance.

1. The Operator performing the services under this category shall purchase, and for the period of operations hereunder, maintain insurance in the types, amounts and forms set forth in Exhibit "A."

AIRCRAFT RENTAL:

A. Commercial Service or Activity.

1. The Operator shall make available the rental of aircraft to the public.

B. Facilities.

1. The Operator shall lease a facility or erect a facility if none now exists, to provide a minimum of 3,200 sq. ft. of floor space for aircraft storage and 100 sq. ft. for office space, which shall be properly heated and lighted, and shall provide telephone facilities for customer use.

2. The Operator shall provide for (under terms agreeable to the ALBD) adequate auto parking space to accommodate all of the Operator's employees and customers.

3. The Operator shall provide or lease a paved ramp area to accommodate his own aircraft tie-downs and the movement of aircraft from the Operator's facilities to the existing Airport taxiway and/or apron system.

4. No rental operations or operator may be allowed to operate off a tiedown only.

C. Equipment.

1. A minimum of one single-engine aircraft which is owned or leased and under the exclusive control of this FBO. Aircraft must be properly equipped and FAA certificated and maintained in airworthy condition according to FAA Regulations pertaining to this category of operations.

D. Scope of Services/Standards.

1. The Operator shall have premises open and provide properly trained personnel in sufficient quantity on duty from 8:00 A.M. until 5:00 P.M. Monday through Friday, or as approved by the ALBD.

2. The Operator shall have available at least one (1) flight instructor who is currently certificated by the FAA to provide the type of rental offered.

E. Personnel.

1. As Required in Section D.2.

F. Certifications.

1. As Required in Section D.2.

G. Insurance.

1. The Operator performing the services under this category shall purchase, and for the period of operations hereunder, maintain insurance in the types, amounts and forms set forth in Exhibit "A."

SPECIALIZED COMMERCIAL FLYING SERVICE:

A. Commercial Service or Activity.

1. A specialized commercial flying services Operator shall engage in air transportation for hire for the purposes listed below.

   a. Commercial glider operations.
   b. Any other operations specifically excluded from Part 135 of the FARs, and approved to operate on the Airport by the ALBD.

B. Facilities.

1. The Operator shall lease a facility or erect a facility if none now exists, to provide a minimum of 3,200 sq. ft. of floor space for aircraft storage and 100 sq. ft. for office space, which shall be

properly heated and lighted, and shall provide telephone facilities for customer use.

2. The Operator shall provide for (under terms agreeable to the ALBD) adequate auto parking space to accommodate all of the Operator's employees and customers.

3. The Operator shall provide or lease a paved ramp area to accommodate his own aircraft tie-downs and the aircraft movement from the Operator's facilities to the existing Airport taxiway and/or apron system.

C. Equipment.

1. The Operator shall provide and have based on his leasehold, either owned or under written lease to the Operator, not less than one (1) airworthy aircraft, suitably equipped for, and meeting all the requirements of the Federal Aviation Administration with respect to the type of operation to be performed.

D. Scope of Services/Standards.

1. The Operator must provide, by means of an office and a telephone, a point of contact for the public desiring to utilize Operator's services.

2. The Operator shall have in his employ, and on call during normal operating hours, trained personnel in such numbers as may be required to meet the minimum standards herein set forth in an efficient manner, but never less than one (1) person holding a current Federal Aviation Administration commercial certificate, properly rated for the aircraft to be used and type of operation to be performed.

E. Personnel.

1. As Required in D.2 above.

F. Certifications.

1. As Required in D.2 above.

G. Insurance.

1. The Operator performing the services under this category shall purchase, and for the period of operations hereunder, maintain insurance in the types, amounts and forms set forth in Exhibit "A."

PROVISION OF FACILITIES FOR L-FBOS:

A. Commercial Service or Activity.

1. The operator may provide space and facilities for sublease, license or permit, for L-FBOs otherwise qualified to operate on the Airport (see A(3)). **NOTE: Subleases for L-FBOs are allowed only if the Airport has no appropriate facilities available to lease.**

2. L-FBOs are encouraged to be tenants of FBOs and to share space, facilities, and personnel. The Airport will consider reduction in minimum square footage for combined operations (e.g. an L-FBO that is a tenant of the FBO need not duplicate facilities such as restrooms, customer lounge, etc. if its lease includes the right to use the FBO's facilities). To this end, Operators are encouraged to provide subleased facilities to L-FBOs and are encouraged to provide joint use of facilities. An FBO may provide the necessary aggregation of facilities by sublease with L-FBOs.

3. In any of these standards where the words "lease from ALBD" are used, it shall mean to lease directly from ALBD or to lease from a party who is leasing from ALBD. All such subleases must receive prior written approval from the ALBD. No party shall be allowed to sublease Airport property without the written approval of the ALBD.

B. Facilities.

1. Operator shall provide a structure with interior heated office space to accommodate his own and the L-FBOs, along with hangar space appropriate to the L-FBO.

C. Equipment.

1. As required in the Minimum Standards for the service offered.

D. Scope of Services/Standards.

1. As required in the Minimum Standards for the service offered.

E. Personnel.

1. As required in the Minimum Standards for the service offered.

F. Certifications.

1. As required in the Minimum Standards for the service offered.

G. Insurance.

1. The Operator performing the services under this category shall purchase, and for the period of operations hereunder, maintain insurance in the types, amounts and forms set forth in Exhibit "A."

AIRCRAFT SALES (NEW AND/OR USED):

A. Commercial Service or Activity.

1. An aircraft sales operator is a person engaged in the sales of new and/or used aircraft and provides such repair, services, and parts as necessary to meet any guarantee or warranty on new and/or used aircraft sold by the operator.

B. Facilities.

1. The Operator shall lease a facility or erect a facility if none now exists, to provide a minimum of 3,200 sq. ft. of floor space for aircraft storage and 100 sq. ft. for office space which shall be properly heated and lighted, and shall provide telephone facilities for customer use.

2. The Operator shall provide for (under terms agreeable to the ALBD) adequate auto parking space to accommodate all of the Operator's employees and customers.

3. The Operator shall provide or lease a paved ramp area to accommodate his own aircraft tie-downs and the movement of aircraft from the Operator's facilities to the existing Airport taxiway and/or apron system.

C. Equipment.

1. The Operator shall provide necessary and satisfactory arrangements for the repair and servicing of aircraft, but only for the duration of any sales guarantee or warranty period. Servicing facilities may be provided through written agreement with a repair shop operation at the Airport. The Operator shall provide an adequate inventory, or the availability within 24 hours or less, or spare parts for the type of new aircraft for which sales privileges are granted.

D. Scope of Services/Standards.

1. The Operator shall have facilities open and his services available from 8:00 A.M. until 5:00 P.M. Monday through Friday, or as approved by the ALBD.

E. Personnel.

1. As required.

F. Certifications.

1. As required.

G. Insurance.

1. The Operator performing the services under this category shall purchase, and for the period of operations hereunder, maintain insurance in the types, amounts, and forms set forth in Exhibit "A.

FLYING CLUBS:

1. The following requirements pertain to all flying clubs desiring to base their aircraft on the Airport and be exempt from the Minimum Standards.

   a. Flying Club Regulations: Each club must be a non-profit corporation or partnership. Each member must be a bona fide owner/part owner of the aircraft or a stockholder in the corporation. The club may not derive greater revenues from the use of its aircraft than the amount necessary for the actual use of operation, maintenance, and replacement of its aircraft. The club will file and keep current with the ALBD a complete list of the club's membership and investment share held by each member.

   b. Aircraft: The club's aircraft will not be used by other than bona fide members for rental, and by no one for commercial operations. Student instruction can be given in club aircraft to club members provided such instruction is given by a lessee based on the airport who provides flight training, or by an instructor who shall not receive remuneration in any manner for such service.

   c. Violations: In the event that the club fails to comply with these conditions ALBD will notify the club in writing of such violations. If the club fails to correct the violations in 15 days ALBD will revoke the Club's operating privileges at the Airport.

d. Insurance: The Flying Club performing the services under this category shall purchase, and for the period of operations hereunder, maintain insurance in the types, amounts, and forms set forth in Exhibit "A."

EXHIBIT "A"

INSURANCE REQUIREMENTS

The Auburn-Lewiston Airport, the City of Auburn, and the City of Lewiston shall be named as additional insureds in any policy and certificate of insurance evidencing the same and the required coverage and shall be delivered to the Airport Manager prior to or at the time of any lease of Airport Property. The Certificate of Insurance shall also provide that the Airport Manager will be notified by the insurance company, in writing, ten (10) days in advance of any cancellation of such insurance.

All Tenants, FBOs, and L-FBOs shall procure and maintain General Comprehensive Liability insurance coverage for death, personal injury and property damage occurring as a result of their respective activities at the Airport or their occupancy of the leased premises. Such insurance shall be at a minimum no less than the limitation of damages established by the Maine Tort Claims Act (Title 14 S1801 et seg.) per accident and per occurrence.

Tenants, FBOs, or L-FBOs operating hangar facilities shall also procure and maintain Hangar Keeper's Liability insurance in an amount no less than $50,000 per aircraft / $200,000 per occurrence.

SPECIAL INSTRUCTIONS:

1. Employers will provide Worker's Compensation Employee Liability Coverage as required by Maine Law.

2. Before a permit is issued to conduct any commercial aeronautical activity, profit or non-profit, the person/business firm seeking a permit must provide the ALBD with an appropriate Certificate of Insurance identifying the Airport and the Cities of Auburn and Lewiston as additional insureds and certificate holders. All Certificates of Insurance will be reviewed by the Airport Manager. Discrepancies identified must be immediately corrected.

3. It is also noted that the above outlined insurance coverages are the minimum required by the ALBD. Higher coverages may be suggested or required by the Lessee's insurance company.

Change #1 April 13, 1994 Board of Directors Meeting

EXHIBIT "B"
SCHEDULE OF FEES AND CHARGES

L-FBO Activity	Annual Activity Fee Paid to Airport
Airframe and Engine Maintenance	$250/year
Flying Club	$250/year
Flight Training	$250/year
Aircraft Charter and Air Taxi	$250/year
Aircraft Rental	$250/year
Aircraft Sales	$250/year
Specialized Commercial Flying Service	$250/year

LANDING FEES

1. Landing Fees:

Single engine	None
Multi- engine	$10.00
Jet/Turboprop	$20.00

a. Landing fees do not apply to aircraft based at the Auburn-Lewiston Airport. Based aircraft are defined as aircraft that are routinely parked/hangared at the Airport when not in use - the airport is their home base of operation (applicable parking/hangar fees apply). Fees for Contract Carrier aircraft based at the Airport are covered under separate letters of Agreement.

b. All aircraft landing for maintenance will not be charged a landing fee subject to verification by the applicable business. (maintenance facility)

c. Military/Government aircraft are exempt from landing and tie-down fees.

TIE-DOWN FEES

Overnight Parking:

Single engine	$3.00
Multi- engine	$10.00
Jet	$25.00

Monthly Parking:

	Non-Electric	Electric
Single engine	$30.00	$45.00
Multi-engine	$35.00	$55.00

Change #4 May 5, 2005 Board of Directors Meeting

Appendix III

LEW Operating Rules

AUTHORITY

1. These rules and regulations shall supersede all previously existing rules and regulations for the Airport.

2. The Board of Directors reserves the right to make any additions, deletions or corrections to these rules and regulations which may be necessary for the safety of aircraft operation on or of personnel using the Airport.

3. In any instance where these rules may be or become inconsistent with Federal Air Regulations then these rules shall be void as to such conflict. No part of these rules and regulations shall be construed as license or authorization to deviate from Federal Air Regulations.

4. These rules and regulations are promulgated under the Interlocal Agreement entered into by the Cities of Lewiston and Auburn in accordance with the State of Maine Interlocal Cooperation Statute giving the Board of Directors management responsibility of the Airport. It specifically grants to the Board of Directors the authority to provide rules and regulations governing the use of the Auburn Lewiston Municipal Airport.

SECTION 1 - SCOPE

All persons on the Airport shall be governed by these rules and regulations. The Airport Manager may deny the use of the Airport to any person who knowingly and willfully violates any rule or regulation. And, in addition, may deprive such person of further use of the Airport for such time as the Airport Board of Directors may determine. Persons shall be subject to such fines contained herein or other penalties as may established by local, State or Federal law. These Rules and Regulations may be amended by the Airport Committee.

SECTION 2 - DEFINITIONS

Whenever used in these Rules and Regulations, the following terms shall have the meanings respectively hereinafter indicated:

ALBD - Means the Auburn-Lewiston Municipal Airport Board of Directors established pursuant to the Interlocal Agreement between the Cities of Auburn and Lewiston and the State of Maine.

AIRPORT - Shall mean the Auburn-Lewiston Municipal Airport, specifically the lands and developments owned, controlled, operated and maintained by the ALBD consisting of runways, taxiways, hangars, control towers, ramps, aprons, buildings, structures, roads, streets, parking and storage areas, improvements, utilities, facilities or other real property, necessary or convenient, or desirable, for the landing, take-off, accommodation, and servicing of aircraft of all types and for any commercial, individual or other activity transpiring within the perimeter of the Airport.

AIRPORT MANAGER - Shall mean the Airport Manager appointed by the ALBD and charged with the duty to administer, protect, control and superintend the Airport or his duly authorized representative.

AIRCRAFT - Shall mean and include any and all contrivances now or hereafter used for the navigation of or flight in air or space, including, but limited to airplanes, airships, dirigibles, helicopters and gliders.

JET AIRCRAFT - Shall mean and include any and all aircraft which are not propeller driven, and which accomplish motion entirely by a direct reaction of the thrust of any engine, including, but not limited to, engines which operate on turbine, ramp, rocket, or nuclear principles.

TURBO-PROP AIRCRAFT - Shall mean and include any and all aircraft which accomplish motion by means of a jet engine having a turbine driven propeller whose thrust may or may not be supplemented by that of hot exhaust gasses issuing in a jet from the engine itself.

ITINERANT AIRCRAFT - Shall mean and include any aircraft using the Airport, the operator of which has not entered into a lease agreement or other special agreement for a period of less than thirty (30) days with the ALBD. The Itinerant Ramp is available on a first come, first serve basis and is under the control of the Airport Manager.

LANDING AREA - Shall mean and include those portions of the Airport including runways and taxiways, designated and made available temporarily or permanently by the ALBD to the general public for the landing and taking off of aircraft.

RAMP AND APRON AREA - Shall mean and include those portions of the Airport designated and made available temporarily or permanently by the ALBD to the public for loading or unloading of both passengers and cargo onto and from aircraft.

AIRPORT HIGHWAY - Shall mean and include those vehicular ways on the Airport designated and made available temporarily or permanently by the Cities of Lewiston and Auburn as ways to which the public has the right of access, within the meaning of the laws of the State of Maine applicable to regulations of motor vehicles.

AIRCRAFT PARKING AND STORAGE AREA - Shall mean and include those portions of the Airport leased by the ALBD or designated and made available temporarily or permanently by the Manager to the public for the parking of storage of Aircraft.

VEHICULAR PARKING AND STORAGE AREA - Shall mean and include those portions of the Airport designated and made available temporarily or permanently by the ALBD as vehicular parking and storage areas to which the public has the right of access within the meaning of the laws of the State of Maine applicable to regulations of motor vehicles.

MOTOR VEHICLE - Shall mean and include automobiles, trucks, buses, motorcycles, bicycles, pushcarts and any other device in or upon or by which any person or property is or may be transported, carried or drawn upon land except aircraft.

VEHICLE - Shall mean and include any self-propelled vehicle.

PERSON - Shall mean and include any individual, firm, copartnership, corporation, association, or company of the United States of America, or any foreign government or any state, political division thereof, or the United Nations, including any assignee, receiver, trustee or similar representative thereof, and shall further include aircraft operators, crew members, passengers, spectators, sightseers, pleasure and commercial vehicles, officers and employees of airlines, lessees and other persons occupying space at the Airport, persons doing business with the ALBD or the Manager, its lessees, sub-lessees and permittees and all other persons whatsoever.

OPERATOR - Shall mean and include the owner or other person, firm or corporation controlling the operations of one or more aircraft or one or more vehicles: or any person who has rented such aircraft or vehicle for the purpose of operation by his own agents.

PERMISSION - Shall mean permission granted by the Airport Manager, unless otherwise specifically provided.

POLICE - Shall mean and include the members of the Auburn and Lewiston Police Departments assigned to duty at the Auburn-Lewiston Municipal Airport, or other such members of the Auburn and Lewiston Police Departments, or other law enforcement agencies authorized by the Police Chiefs, as may be assigned temporarily to duty at Auburn-Lewiston Municipal Airport or to Airport employees authorized as special Deputies or Constables.

FUEL SERVICING VEHICLE - Shall mean and include any vehicle designated and operated for the purpose of fuel transfer handling in connection with the fuelling or defueling of aircraft.

FUEL TRANSFER HANDLING - Shall mean and include the process of transferring petroleum fuels on the Airport between a bulk storage facility and fuel servicing vehicle or between a fuel servicing vehicle and an aircraft.

FIXED BASE OPERATOR - Shall mean any person or company engaged in business as defined in the Airport Minimum Standards.

SECTION 3 - GENERAL REGULATIONS

3.1 HOLD HARMLESS

Any person using the Airport and its facilities shall do so at his own risk. The Cities of Auburn and Lewiston assume no responsibility for loss, injury, damage, personal injury or death to persons or property however caused or from fire, theft, vandalism, flood, earthquakes, or any acts of God or the public enemy, or for any other reason.

3.2 ENFORCEMENT

All powers of the Police of the Cities of Auburn and Lewiston, their duly appointed Constables and the Maine State Police are hereby extended to the area of the Airport. The Airport Manager shall at all times have authority to take such action as may be necessary in the handling, conduct, and management of the public in attendance at the Airport and enforce these regulations. In any contingencies not specifically covered by these rules and regulations, the ALBD shall be authorized to make such rules and orders and render such decisions as to it may seem proper.

3.3 PENALTY

Any person who violates any of the rules and regulations provided herein, or who fails to conform to any of the rules and regulations hereof, shall be guilty of a misdemeanor, and upon conviction thereof, shall be fined not less than five dollars ($5.00) and not more than one-hundred dollars ($100.00) for each offense. Each day each such violation or failure to comply is permitted to exist after notification thereof shall constitute a separate offense.

3.4 REPORTS OF ACCIDENTS

Any person involved in any accident on the Airport, whether it be personal, aircraft, or vehicular, causing personal injury or property damage, shall make a written report of such accident to the Airport Manager as soon as possible, which shall be in addition to any report required by law. A copy of any report required by law shall be accepted as compliance with this rule.

SECTION 4 - PUBLIC AND TENANT USAGE

4.1 CONDUCT

No person shall commit any disorderly, obscene, indecent, or unlawful act, engage in any form of gambling or commit any act of nuisance on the Airport.

4.2 PUBLIC USE

The landing area is open to the use of aircraft at all times in accordance with these rules and regulations, the Airport Minimum Standards, and the governing rules for the operation of aircraft and the conduct of airmen as promulgated by the appropriate agencies of the U. S. Government, the State of Maine and the ALBD.

4.3 COMMERCIAL USE

No person, partnership, firm or corporation shall use the Airport as a base from which to conduct a business except such person, partnership, firm or corporation be authorized to conduct a business through a lease or permit granted by the ALBD (See Auburn-Lewiston Municipal Airport Minimum Standards). Such person, partnership, firm or corporation shall be confined strictly to the conduct of only such activity as is specifically authorized by the lease or permit granted.

4.4 SCHEDULED OPERATORS

A person, partnership, firm or corporation holding a lease for the scheduled operation of aircraft on the Airport, or using the Airport as an alternate, must cause their operation to transpire through the Terminal Building, or such other building as may be designated by the ALBD as the terminal point, and a monthly record of the volume of their activity shall be submitted to the Airport Manager.

4.5 WEAPONS; FIREARMS; EXPLOSIVES

No person, except those duly authorized by law, law enforcement officers, federal or Airport employees or members of the armed forces of the United States on official duty shall carry any weapon, firearm, or explosive on the Airport without the permission of the Airport Manager, or his authorized representative, except encased sporting guns for air shipment.

4.6 RESTRICTED AREAS

No person shall enter upon the landing areas, ramps and apron areas, utilities, and service areas, or any area designated as a restricted area on the Airport posted as "No Trespassing" to the public except persons assigned to duty therein, persons authorized by the Airport Manager, or by proper agencies, or passengers under appropriate supervision enplaning or deplaning.

4.7 DAMAGE TO AIRPORT PROPERTY

No person shall destroy or disturb, in any manner, any building, equipment or flora. Any person causing or liable for any damage to Airport property shall be required to pay the full amount of such damage upon demand of the ALBD. Any person failing to do so may be deprived of the use of the Airport and its facilities until full reimbursement has been made. Tenants, lessees, and grantees shall be held fully responsible for all damage to buildings, equipment, real property, and appurtenance in the ownership of the Airport caused by negligence, abuse, or carelessness on the part of their employees, servants, agents, or customers. Any damage to, or malfunctioning of buildings, structures, utilities, or other Airport property, shall be reported at once to the Airport Manager.

4.8 STRUCTURAL OR DECORATIVE CHANGES

No person, tenants, lessee, or grantee shall make any alterations of any nature to any buildings, ramps, or other space, nor erect any structure on the Airport without prior permission in writing, from the Airport Manager, except as may be authorized in existing contracts or leases.

4.9 SOLICITING, ADVERTISING, SALES, DISPLAY

No person, unless duly authorized by the Airport Manager and under such terms and conditions as may be prescribed, shall in or upon any area of the Airport:

a. Sell, or offer for sale, rent or lease any article of merchandise.
b. Conduct any commercial activity.
c. Solicit any business or trade.
d. Solicit alms or funds for any purpose.
e. Post, distribute, or display signs, posters, hand bills, newspapers, advertisements, circulars, or any other printed or written matter.

SECTION 5 - OPERATION OF MOTORIZED EQUIPMENT

5.1 OPERATION

No person shall operate motorized equipment on the Airport unless in accordance with the following rules:

a. Vehicles must be properly registered in accordance with the laws of the State of Maine.

b. No person shall operate a motor vehicle anywhere on the Airport without a valid motor vehicle operators or chauffeur's license issued by the appropriate authority.

c. No person shall operate a vehicle in a reckless or negligent manner, or without caution, or in a manner which endangers, or is likely to endanger persons or property.

d. Pedestrians and aircraft shall at all times have the right-of-way over vehicular traffic. All vehicles shall pass to the rear of taxiing aircraft whenever possible.

e. No person shall operate a vehicle in excess of the speed limits prescribed by signs located in appropriate areas or operate a vehicle across a painted solid line.

f. No vehicles shall be operated on the landing areas, ramp and apron areas and aircraft, parking and storage areas except those specifically authorized by the Airport Manager, who may require that there be displayed on such vehicle identifying numbers, symbols, flags or lights.

g. No private passenger vehicles shall be authorized to operate on the landing areas, ramp and apron areas, aircraft parking and storage areas, except for the loading and unloading of aircraft, or those specifically authorized by the Airport Manager.

h. When parking adjacent to a runway on airport property, all vehicles must park at least 650 feet to the outside of Runway 04-22 and 275 feet to the outside of Runway 17-35 and unless such runway is officially closed by the Airport Manager or maintenance requirements dictate otherwise.

i. No person shall operate or cause to operate any type of recreation, or off-road vehicle (reference to but not limited to bicycle, motorbike, snowmobiles, go-carts, dune buggies, etc.) on the ramp, taxiway, or runway areas whatsoever.

5.2 PARKING

No person shall park a vehicle on the Airport for any purpose other than in any areas specifically established for parking and in the manner and for the time prescribed by signs, lines, or other means.

5.3 TOWING REGULATIONS

The Airport Manager may remove any vehicle which is disabled, abandoned, parking in violation of the Rules and Regulations, of which presents an

operational problem, at the owner's expense and without liability for damage which may result in the course of such moving.

SECTION 6 - AIRCRAFT OPERATIONS

6.1 AERONAUTICAL ACTIVITIES

All aircraft operations, including the departing from or arriving in the air space above, the Airport shall be conducted in conformity with the current regulations and directives of the Federal Aviation Administration and the Civil Aeronautics Board, Maine Department of Transportation, and, to the extent applicable, with order issued by the ALBD.

6.2 CLOSING OF THE AIRPORT

Whenever the Airport Manager believes the Airport facilities to be unsafe for landings or take-offs, it shall be within his authority to close the Airport.

6.3 REFUSAL OF AIRPORT USE

The Airport Manager may restrict any flight or other operation at the Airport and may refuse take-off clearance to any aircraft for any reason he believes justifiable in the interest of public safety and welfare. The Airport Manager may prohibit the use of the Airport for any purpose by any person.

6.4 AIRCRAFT ENGINE RUN-UPS

Aircraft engines shall be started and run up only in the places designated for such purposes. At no time shall engines be run up when hangars, shops, airplanes, or any buildings or persons are in the path of the propeller stream and/or jet exhaust.

6.5 TAXIING AND MOVING AIRCRAFT

No aircraft shall be taxied into or out of a hangar. No aircraft is to be taxied except at safe and reasonable speeds.

6.6 PARKING OF AIRCRAFT

The ALBD is in no way responsible for aircraft parked or stored on the Auburn-Lewiston Airport. Owners of parked aircraft shall be responsible to provide their own tie-down equipment.

6.7 REPAIR OF AIRCRAFT

No person shall repair aircraft, aircraft engines, or related apparatus in any area other than that designated by the Airport Manager.

6.8 DISABLED AIRCRAFT

All disabled aircraft and parts thereof on the Airport shall be removed promptly by the owner and/or operator after verbal or written notice by the Airport Manager. The Airport Manager shall have the right without any liability for loss or damage which may result therefrom to cause the immediate removal to a safe place on the Airport at the owner's and/or operator's expense any disabled aircraft or part thereof or any unattended or immovable aircraft which constitutes a hazard to persons or property. The Airport Manager may cause any such aircraft or part thereof not removed by the owner and/or operator to be removed from the Airport at the owner's expense without liability for any loss, provided, that he shall have first given seven days written notice of his intention to do so directed by Certified or Registered Mail to the owner's last known address.

6.9 MODEL AIRCRAFT

No person will operate model aircraft on the Airport property without the authority of the Airport Manager.

6.10 DEMONSTRATIONS

No experimental flights or parachute jumping shall be permitted unless authorized by the Airport Manager and the Federal Aviation Administration.

SECTION 7 - AIRCRAFT FUELING OPERATIONS

7.1 FUELING AREAS

No aircraft shall be fueled or drained while the aircraft engine/s is running or while the aircraft is in a hangar or an enclosed area.

7.2 AIRCRAFT GROUNDING

During all fuel operations the aircraft shall be grounded by an approved method.

7.3 OPEN FLAMES

Smoking or lighting an open flame shall be prohibited within fifty (50) feet of any fueling operation.

7.4 EQUIPMENT

All fuel dispensing equipment shall be of a modern design and shall be kept in a safe and non-leaking condition.

7.5 PARKING AREAS

Fuel trucks will be parked in areas designated by the Airport Manager.

SECTION 8 - FIRE REGULATIONS

8.1 SAFETY AND FIRE PREVENTION

All rules, regulations and recommended practices pertaining to safety and fire prevention as contained in the National Fire Codes published by the National Fire Protection Association, or promulgated by the Auburn Fire Chief or the National Board of Fire Underwriters and Fire Insurance Underwriters shall be adopted, whether or not specifically provided herein.

8.2 SMOKING

Smoking or lighting of an open flame is prohibited at places with posted signs, within fifty (50) feet of any aircraft and within fifty (50) feet of hangars, fuel, fuel trucks or fuel loading stations, and tank farms.

8.3 OPEN FIRES

No person shall start an open fire any place on the Airport without permission of the Airport Manager.

8.4 INFLAMMABLE MATERIALS

No person shall store material or equipment, use inflammable liquids or gases, or allow their premises to become in such condition so as to violate the Fire Codes of the City of Auburn.

8.5 EXTINGUISHERS

Tenants of all hangars and buildings shall provide suitable fire extinguishers and equipment and they shall be kept in good condition as recommended by the Auburn Fire Chief and inspected at least every twelve (12) months by trained personnel.

8.6 GOOD HOUSEKEEPING

Tenants and persons are required to keep their premises clean and clear of all rubbish, "junk", debris, old aircraft and vehicles, and any other unsightly objects.

Appendix IV

LEW Drainage Site Plan

ENGINEERS • SURVEYORS
1978 CES INC.
465 So. Main Street P.O. Box 639 Brewer, ME 04412
Tel: 207-989-4824 FAX 207-989-4881

APPROXIMATE

LIFEFLIGHT OF MAINE MAINTENANCE GARAGE
HANGARS
SWALE
CULVERT
CULVERT
CULVERT
CULVERT
CULVERT
OUTFALL F
CULVERT
OUTFALL A
CULVERT
SIGNIFICANT SPILL AREA
AIRCRAFT PARKING AREA
T. HANGARS
ENCLOSED SAND STORAGE SHED
EXPOSED SIGNIFICANT MATERIAL LOCATION
AIRPORT MAINTENANCE GARAGES
EXPOSED SIGNIFICANT MATERIAL LOCATIONS
BEL-AIR SERVICES FUEL FARM
OUTFALL B
CULVERT
BEL-AIR SERVICES MAINTENANCE GARAGE
OUTFALL C
OUTFALL D
CULVERT
OUTFALL E

① ② ③ ④ ⑤

LEGEND

- DRAINAGE AREA BOUNDARY
- PROPERTY LINE
- EDGE OF PAVEMENT
- STORMWATER RUNOFF FLOW PATH
- ② DRAINAGE AREA

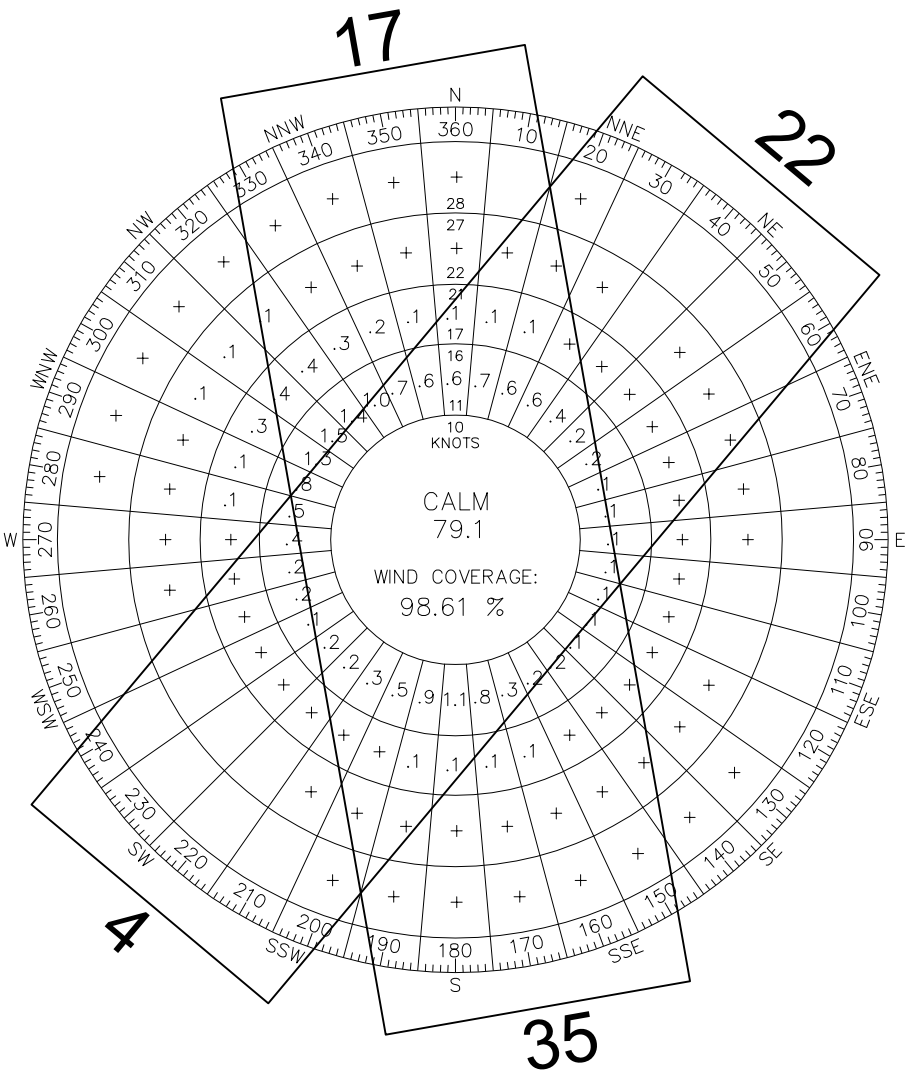
SCALE: 1"=1'
DATE: 3/4/03
BY: BH
JN: 3384
TITLE: 3384.dwg

SITE PLAN AUBURN-LEWISTON AIRPORT

AUBURN-LEWISTON, MAINE

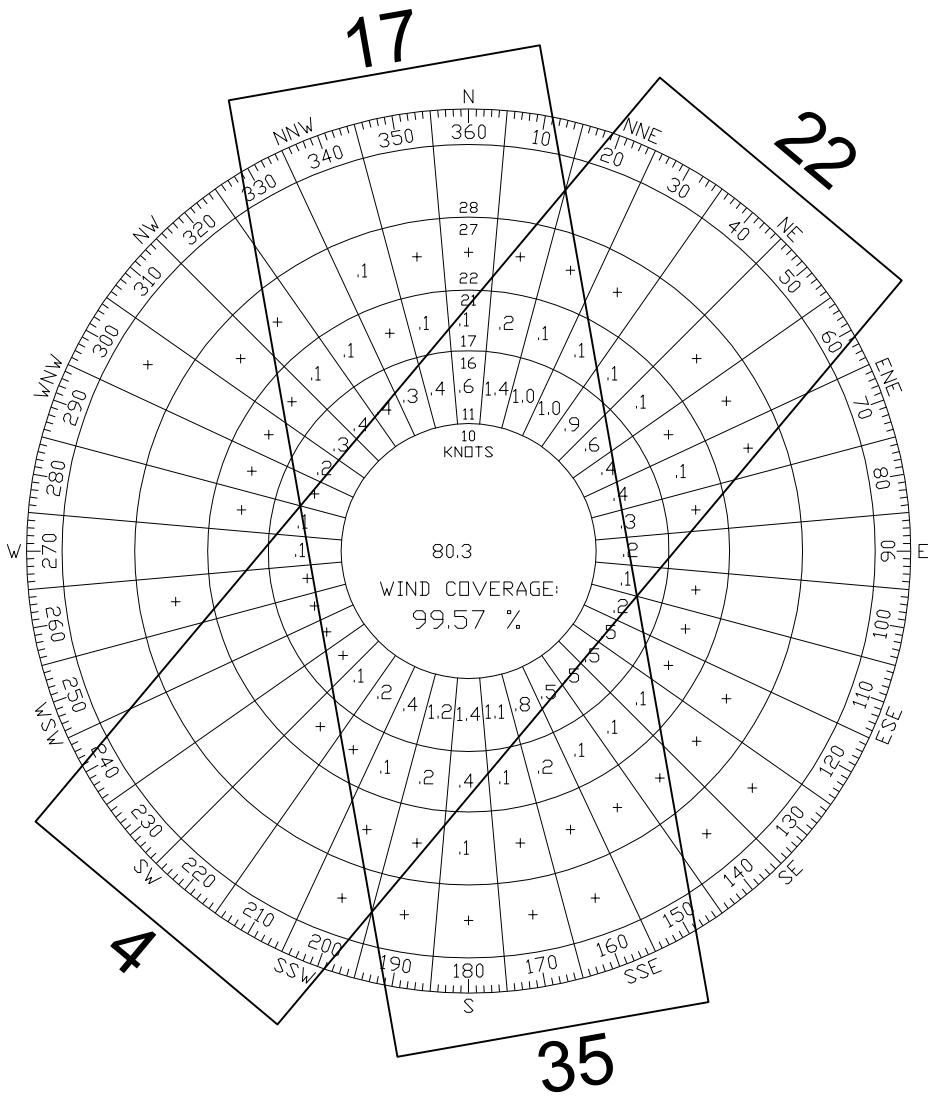
Appendix V

LEW Wind Roses



ALL WEATHER

WIND DATA SUMMARY			
CROSSWIND COMPONENT (KNOTS)	**R/W 4-22**	**R/W 17-35**	**R/W 4-22 & 17-35**
13.0	93.2%	96.85%	98.61%
STATION:		BANGOR, MAINE #72608	
SOURCE:		NATIONAL CLIMATIC DATA CENTER/NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	
PERIOD OF OBSERVATION:		1991-2000	
OBSERVATIONS:		10,506	



IFR

WIND DATA SUMMARY			
CROSSWIND COMPONENT (KNOTS)	**R/W 4-22**	**R/W 17-35**	**R/W 4-22 & 17-35**
13.0	96.75%	97.95%	99.57%
STATION:		BANGOR, MAINE #72608	
SOURCE:		NATIONAL CLIMATIC DATA CENTER/NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	
PERIOD OF OBSERVATION:		1991-2000	
OBSERVATIONS:		10,506	

Appendix VI

LEW Approach Plates

ILS or LOC RWY 4

AUBURN-LEWISTON MUNI (LEW)

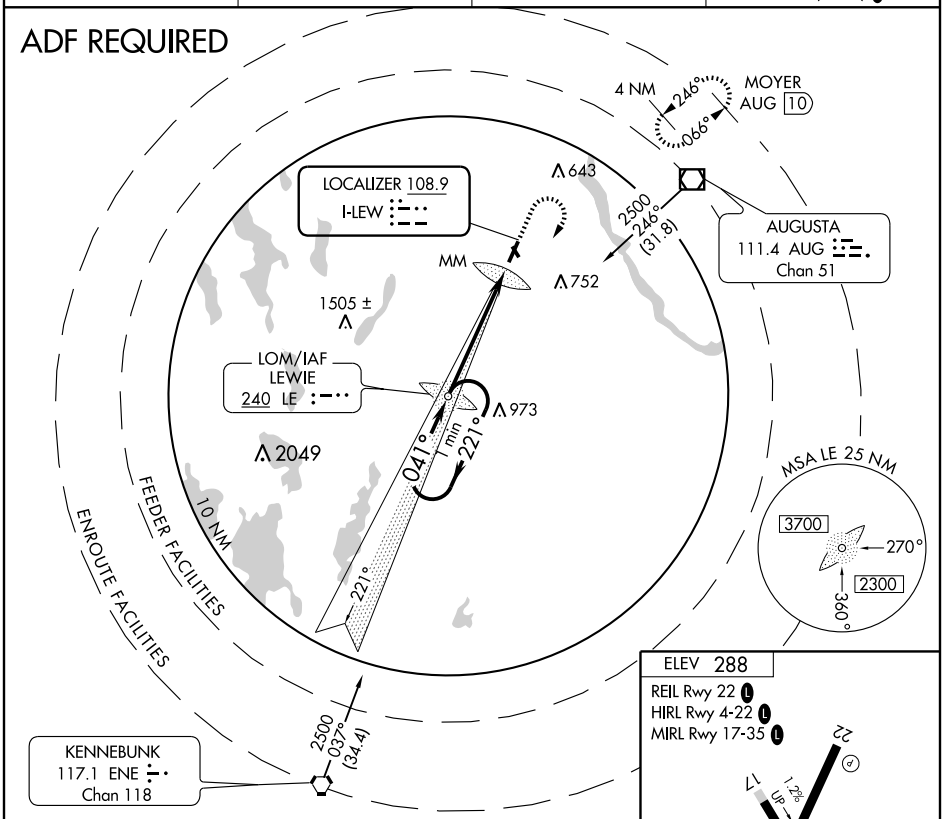
LOC I-LEW	APP CRS	Rwy Idg	5001
108.9	041°	TDZE	270
		Apt Elev	288

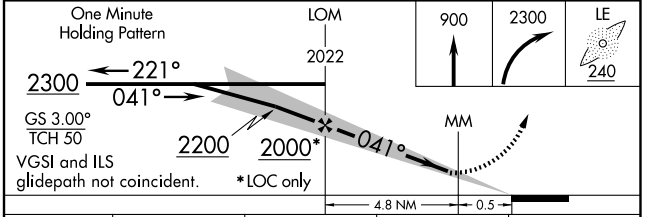
For inoperative MALSR increase S-ILS 4 visibilty to 1¼ all Cats., and increase S-LOC 4 Cats. A and B visibility to 1 mile. ADF REQUIRED.

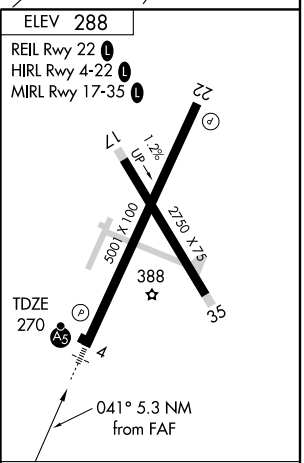
MALSR

MISSED APPROACH: Climb to 900 then climbing right turn to 2300 direct LE LOM and hold.

AWOS-3	PORTLAND APP CON ★	PORTLAND CLNC DEL	UNICOM
118.025	125.5	124.05	122.8 (CTAF) L







CATEGORY	A	B	C	D
S-ILS 4		642-¾	372 (400-¾)	
S-LOC 4	860-¾	590 (600-¾)	860-1 590 (600-1)	860-1¼ 590 (600-1¼)
CIRCLING	860-1¼	572 (600-1¼)	920-1¾ 632 (700-1¾)	1060-2½ 772 (800-2½)

FAF to MAP 5.3 NM

Knots	60	90	120	150	180
Min:Sec	5:18	3:32	2:39	2:07	1:46

NE-1, 29 SEP 2005 to 27 OCT 2005
NE-1, 29 SEP 2005 to 27 OCT 2005

LOM LE	APP CRS	Rwy Idg	5001
240	041°	TDZE	270
		Apt Elev	288

NDB RWY 4

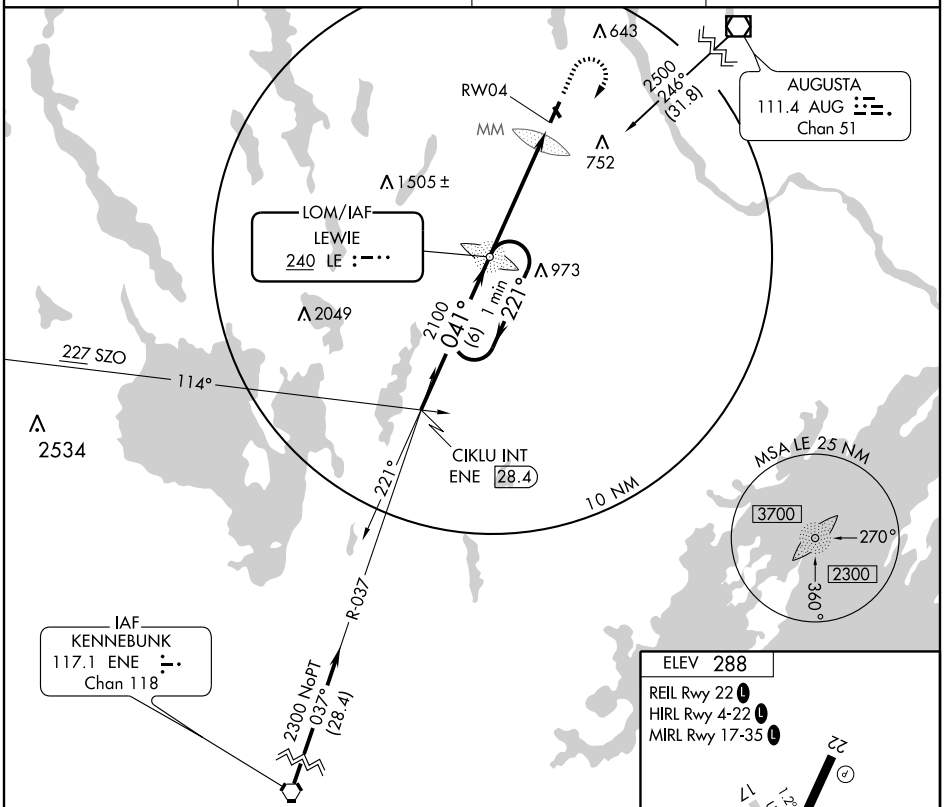
AUBURN-LEWISTON MUNI (LEW)

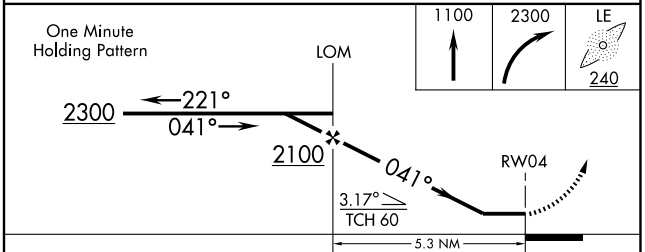
NA

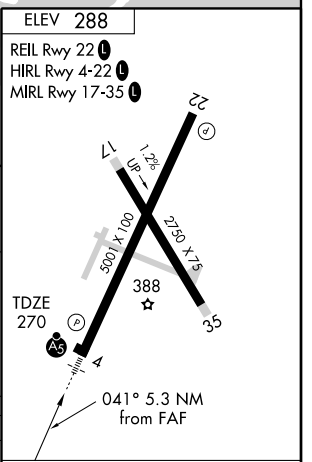
MALSR

MISSED APPROACH: Climb to 1100 then climbing right turn to 2300 direct LE LOM and hold.

AWOS-3	PORTLAND APP CON *	PORTLAND CLNC DEL	UNICOM
118.025	125.5	124.05	122.8 (CTAF) L







CATEGORY	A	B	C	D
S-4	900-¾ 630 (700-¾)		900-1¼ 630 (700-1¼)	900-1¾ 630 (700-1¾)
CIRCLING	900-1 612 (700-1)		920-1¾ 632 (700-1¾)	1060-2½ 772 (800-2½)

FAF to MAP 5.3 NM

Knots	60	90	120	150	180
Min:Sec	5:18	3:32	2:39	2:07	1:46

NE-1, 29 SEP 2005 to 27 OCT 2005

NE-1, 29 SEP 2005 to 27 OCT 2005

APP CRS	Rwy Idg	5001
041°	TDZE	270
	Apt Elev	288

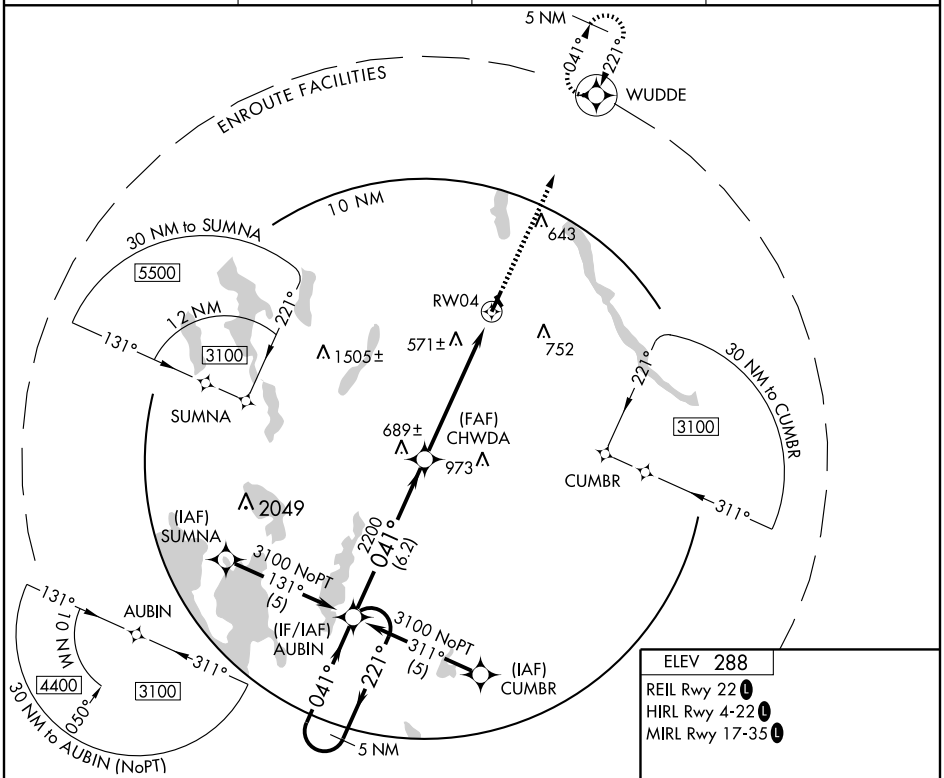
RNAV (GPS) RWY 4
AUBURN-LEWISTON MUNI (LEW)

T A W Baro-VNAV NA below -15°C (5°F). DME/DME RNP-0.3 NA. For inoperative MALSR, increase LNAV Cats. A and B visibility to 1 mile. Circling to Rwy 17, 22, 35 NA at night.

MALSR

MISSED APPROACH: Climb to 3100 direct WUDDE and hold.

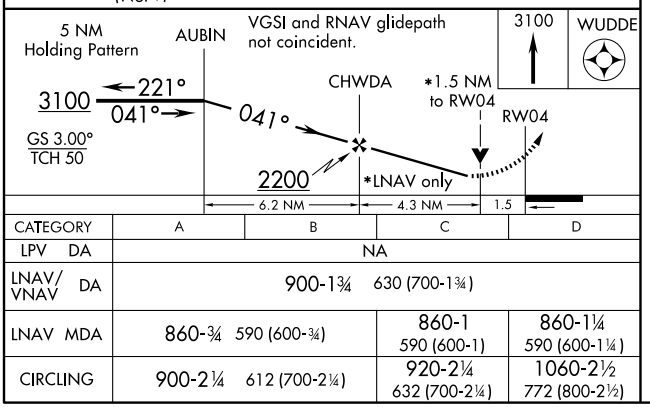
AWOS-3	PORTLAND APP CON *	PORTLAND CLNC DEL	UNICOM
118.025	125.5	124.05	122.8 (CTAF) L



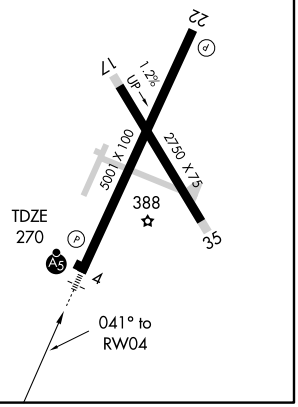
NE-1, 29 SEP 2005 to 27 OCT 2005

NE-1, 29 SEP 2005 to 27 OCT 2005

ELEV 288
REIL Rwy 22 L
HIRL Rwy 4-22 L
MIRL Rwy 17-35 L



CATEGORY	A	B	C	D
LPV DA	NA			
LNAV/VNAV DA	900-1¾ 630 (700-1¾)			
LNAV MDA	860-¾ 590 (600-¾)		860-1 590 (600-1)	860-1¼ 590 (600-1¼)
CIRCLING	900-2¼ 612 (700-2¼)		920-2¼ 632 (700-2¼)	1060-2½ 772 (800-2½)



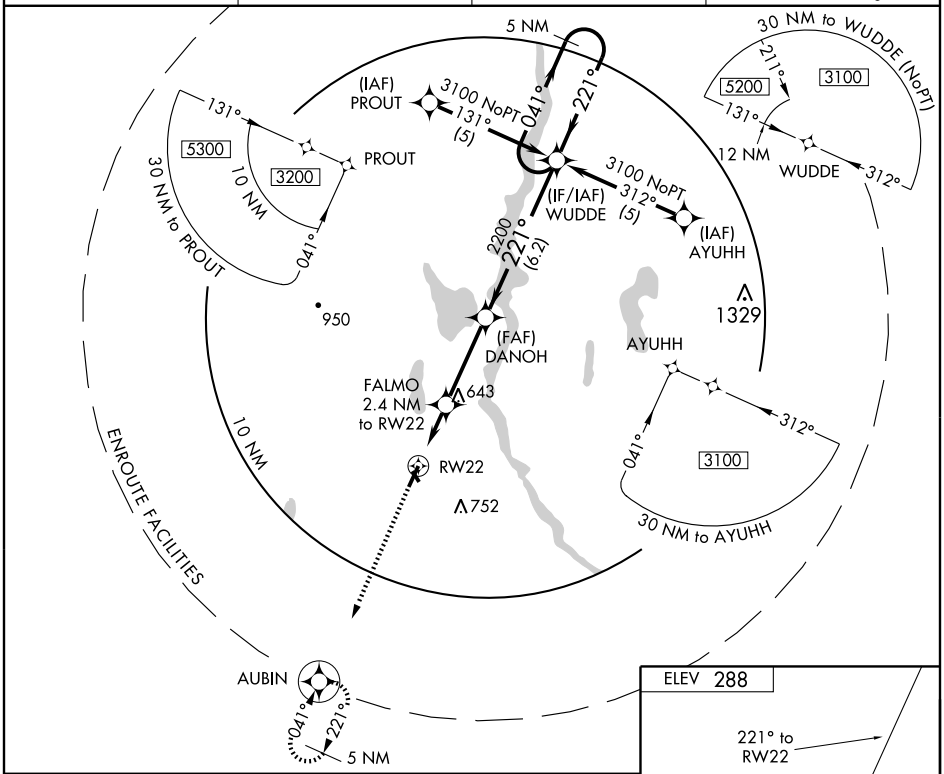
RNAV (GPS) RWY 22
AUBURN-LEWISTON MUNI (LEW)

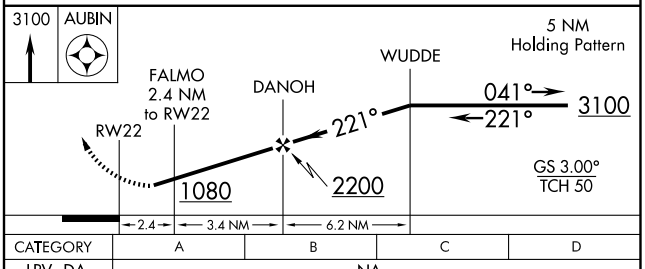
APP CRS	Rwy Idg	5001
221°	TDZE	270
	Apt Elev	288

T DME/DME RNP-0.3 NA. Baro-VNAV NA below -15°C (5°F).
A Straight-in minimums NA at night.
W Circling to Rwy 17/35 NA at night.

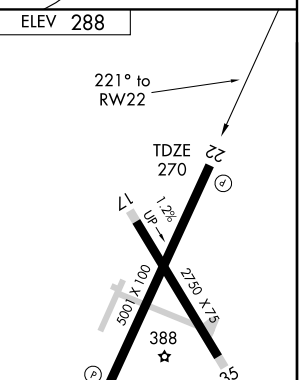
MISSED APPROACH: Climb to 3100 direct AUBIN and hold.

AWOS-3	PORTLAND APP CON ★	PORTLAND CLNC DEL	UNICOM
118.025	125.5	124.05	122.8 (CTAF) L





CATEGORY	A	B	C	D
LPV DA	NA			
LNAV/VNAV DA	860-2 590 (600-2)			
LNAV MDA	780-1 510 (500-1)		780-1½ 510 (500-1½)	
CIRCLING	860-2 572 (600-2)		920-2 632 (700-2)	1060-2½ 772 (800-2½)



REIL Rwy 22 L
HIRL Rwy 4-22 L
MIRL Rwy 17-35 L

NE-1, 29 SEP 2005 to 27 OCT 2005
NE-1, 29 SEP 2005 to 27 OCT 2005

VOR/DME AUG	APP CRS	Rwy Idg	N/A
111.4	250°	TDZE	N/A
Chan 51		Apt Elev	288

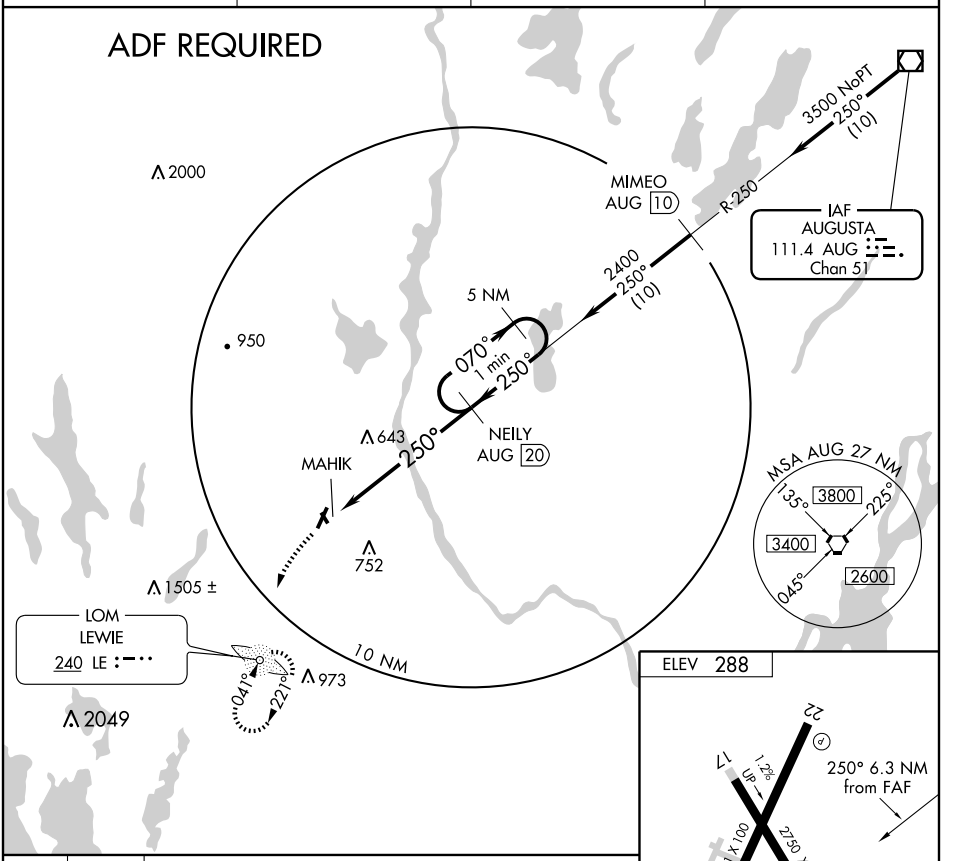
VOR/DME-A

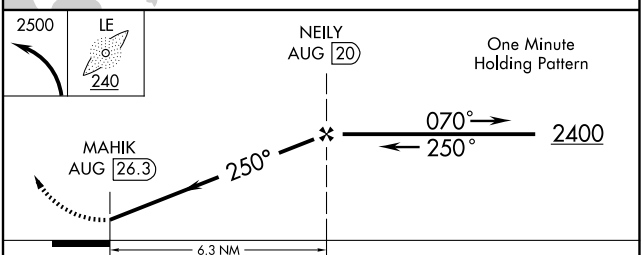
AUBURN-LEWISTON MUNI (LEW)

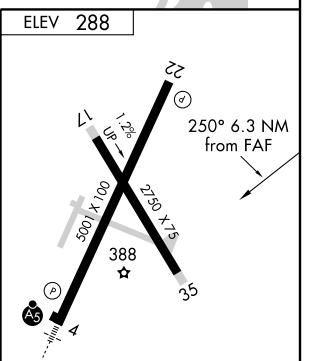
NA

MISSED APPROACH: Climbing left turn to 2500 direct LE LOM and hold.

AWOS-3	PORTLAND APP CON ★	PORTLAND CLNC DEL	UNICOM
118.025	125.5	124.05	122.8 (CTAF) L







CATEGORY	A	B	C	D
CIRCLING	1400-1¼ 1112 (1200-1¼)	1400-1½ 1112 (1200-1½)	1400-3 1112 (1200-3)	

Knots	60	90	120	150	180
Min:Sec					

NE-1, 29 SEP 2005 to 27 OCT 2005
NE-1, 29 SEP 2005 to 27 OCT 2005

Appendix VII

Auburn-Lewiston Intermodal Transportation Center Summary

contents

appendices

aerial photograph of the project study area, the preferred site shown highlighted

The study for the Auburn Lewiston Intermodal Transportation Center was completed with the assistance of the following sub-consultants:

Sebago Technics Inc.	Survey and Environmental Engineering
VHB Inc.	Civil Engineering, Environmental Permitting
Multisystems Inc.	Demand Forecasting
FXM Associates	Economic Forecasting/Market Analysis
Keville Enterprises	Cost Estimation

summary

This report is the final document summarizing the work done on a site selection and feasibility study for a new passenger intermodal transportation center in Auburn/Lewiston Maine.

This study for the siting and feasibility of an Intermodal Passenger Transportation Center in Auburn/Lewiston Maine has been made for the Maine Department of Transportation, Office of Passenger Transportation under the direction of Mr. Ron Roy, Director, and Ms. Tracy Perez, Project Manager. The Auburn/Lewiston Intermodal Passenger Transportation Center was conceived as one of a number of similar facilities planned across the state in strategic locations to facilitate improved access choices via public transportation. This strategy is described in detail in the Explore Maine, the Strategic Passenger Transportation Plan.
In concert with FTA study guidelines Maine DOT established a Purpose and Need Statement for the Auburn/Lewiston Intermodal Passenger Transportation project, from which we quote a number of the key goals and objectives of this facility:

- Increase access and mobility options for all types of travelers;
- Enhance integration and connectivity of the transportation system, across and between modes throughout the state, for people and freight; and
- Protect and enhance the environment, promoting energy conser vation, promoting economic growth, and improving the quality of life for Maine citizens.

The design and planning process utilized a professional consultant team led by the architecture and planning firm of Wallace Floyd Design Group out of Boston, Massachusetts under the direction of Leonard J. Bertaux AIA. The team included a number of consulting engineering firms with specific expertise related to certain aspects of the planning and design process for this facility. Multisystems located in Cambridge, Massachusetts provided planning expertise for demand forecasting, Sebago Technics located in Portland, Maine contributed site civil and environmental engineering expertise, VHB from Boston, Massachusetts was responsible for highway and railroad engineering as well as environmental permitting expertise and Keville Enterpris-

es from Boston, Massachusetts provided Cost Estimation services. FXM Associates from Marshfield, Massachusetts conducted the Market Survey and developed the overall Business Plan for the facility.The study methodology made use of key principles for the planning and siting of intermodal transportation facilities. Starting from a geographic area designated by Maine DOT in conjunction with its overall passenger transportation planning the study began by assembling data on the physical and environmental features and assets that relate to planning, designing and constructing new transportation facilities. These features were key to identifying those sites which for reasons of ownership, environmental, topographic or other reasons would not good candidates for the center. In order to properly size the center it was necessary to plan for the appropriate number of passengers, buses, trains and other vehicles envisioned to make up the intermodal connections. To that end an effort to establish the overall demand was made through a comprehensive ridership demand analysis with a 20 year projected horizon for growth. This demand analysis established the parameters from which a detailed facility program was developed identifying the types, sizes, numbers of vehicles and features of all aspects of the facility's physical elements. Once a physical program had been agreed upon the study design team began to analyze the area for alternative choices to site the center, taking into account access for trains, buses and other vehicles as well as proximity to the aviation assets . The alternatives were tested for fit, function and urban design considerations that in conjunction with the Advisory Group resulted in the selection of a preferred site alternative. The preferred alternative was then developed into a conceptual design of the site and buildings to establish a character and construction budget for the project.

Public participation in the process was integral to all aspect of the planning and conceptual design of the Auburn/Lewiston ITC. A formal stakeholders Advisory Group was formed under the leadership of the Androscoggin Valley Council of Governments (AVCOG) to represent the interests of all possible stakeholders in the project. AVCOG Executive Director Robert Thompson, the City of Auburn Economic Development Director Roland Miller and Lewiston Auburn Economic Growth Council President Lucien Goslin were active in leading the Advisory Group. Other participants included private and public interests from the various transportation providers, local civic and governmental authorities, state agencies, railroad owners and operators, representatives from the airport, local businesses and the general public. Meetings were held on a semi-regular basis at the AVCOG offices in Auburn Maine as

appropriate for the public input into each phase of the study. Meetings were held at key milestones in the planning process and the input of the Advisory Group provided fundamental direction of the planning and conceptual design efforts. In addition two open public meetings provided important information and solicited general input and comments on the developing project.

existing conditions survey

The study area focused upon sites with reasonable access to the Maine Turnpike (I-95), the Auburn/ Lewiston Airport and the St. Lawrence Atlantic/Canadian National mainline railroad tracks (providing connecting tracks from Portland to the south and Montreal to the north). The nexus of these three key transportation modes was an important strategic factor in the choice of Auburn/Lewiston by the State DOT in the aforementioned Strategic Passenger Transportation Plan. General physical and environmental characteristics

of the overall study area were identified using available information from an extensive GIS databases provided by the Androscoggin Valley Council of Governments (AVCOG). Within this general area an evaluation was made of the existing available and developable property taking into account a wide ranging list of factors including property availability & ownership, topography, size, sensitivity of environmental conditions, natural and historic resources, proximity to transportation resources, etc.

ridership forecast

A key effort in the early planning process was a comprehensive ridership study of the likely current and future riders for all transportation modes to be accommodated by the Passenger Intermodal Transportation Center. To that end a detailed ridership demand study was performed to identify projected ridership, by transit mode, as well as the projected growth in that ridership over a 20 year horizon. Interviews with 18 different stakeholders were conducted to ascertain their expectations for future growth. The stakeholders included representatives from the airport, AVCOG, the St. Lawrence and Atlantic Railroad, the Lewiston-Auburn Economic Growth Council, Concord Trailways, MDOT, Vermont Transit, Hudson Bus, and Western Maine Transportation Services. A follow-up meeting was held with the Advisory Committee to discuss the findings from the interviews. This meeting along with a follow-up meeting with MDOT staff established assumptions for the 20-year horizon. For each transportation mode three growth scenarios were projected, a "Do Nothing" scenario, a Middle Growth Scenario and a High Growth scenario. The likely synergies generated by an intermodal facility were factored into all the ridership projections.

In consultation with the Advisory Group the middle growth scenario was deemed the most appropriate choice for the facility. Highlights of the middle growth scenario include:

- Airport operations growth at 2%
- Seasonal daily rail service between L/A and Montreal from May through October
- Intercity buses connect air charter and rail passengers to coastal beaches and resorts
- Commuter bus service to downtown Portland
- Vanpool and carpool rideshare located at the intermodal facility

- VT Transit and Hudson buses relocated to the intermodal facility
- Local bus service connections to the intermodal facility

This scenario assumes the State of Maine vigorously markets the seasonal rail service between Montreal and Portland. Additionally the Middle Growth scenario assumed MDOT will add slip ramps to the Turnpike from Kittyhawk Road to speed access from the terminal back to the Turnpike.

Middle Growth Scenario Year 2021

Market Segment	Passenger trips per Day (Average with 375 days/year)	Peak Period Passenger Trips	Peak Period	Parking Spaces	Comment
Home based charter service	38	56	September	25	
Itinerant charter service	38	56	September	N/A	Would require rental cars or taxies 3-4 per day on average.
Corporate flights (home based and itinerant)	26	37	September	12	
Other General Aviation	205	298	September	95	
Montreal Seasonal Daily Service	248	774	July	60	Parking is needed for the L/A residents traveling to Montreal
Charter Buses Meeting Montreal Rail	No new passengers		July		12 bus bays needed on average day for peak month.
Vermont Transit	56		Thanksgiving and other school holidays	30	15 spaces used regularly. Vermont Transit would probably want at least the number of spaces they have currently.
Hudson Bus to BWI	18			8	
Concord Trailways	74		Thanksgiving and other holidays	100	Market is assumed to be different than Vermont Transit's market, and service is differentiated from Amtrak.
Commuter Rail to Portland via Pineland	465			194	Assumes no local feeder bus service.
Feeder Bus to Amtrak	48			35	
Ridesharing	76			20	
Total Passengers	1292			554	

Summary Table A/L Middle Growth Demand Forecast

The transportation service assumptions and corresponding ridership numbers developed in the Middle Growth Scenario were used as the basis for defining the facility program, including vehicular and passenger related elements. All components of the Intermodal Center were derived from the information on vehicle and passenger projections including necessary infrastructure improvements. The program as developed includes site/civil development of facilities for commuter/Amtrak train sets with a new rail spur off of the St. Lawrence/Atlantic Railroad mainline. Bus berths for over the road coaches, short and long term automobile parking, as well as pickup and drop-off for taxi/kiss and ride patrons of the proposed future commuter rail service to Portland round out the infrastructure program. A fully functional concourse building with passenger amenities, information and ticketing, support spaces for rail and bus operations, restaurant and vending space, U.S. Customs accommodation, and leasable tenant space, (potentially for use by the eventual operating entity) make up the program elements for the building proper.

Tenant lease revenues will be utilized to help underwrite the facility operating expenses. Non-transportation tenant spaces were added to the program as a result of a preliminary market analysis of the surrounding business community. A survey of the area businesses was conducted to evaluate the climate and need for tenants that could be supported by the combined demand of the intermodal facility and the immediate market . While large transportation hubs can independently support convenience retail, food and other concessions smaller venues often find difficulty in providing successful concessionaires in part due to the fluctuation of passenger traffic during day to day and seasonal variations. The market survey concluded that there was a good potential market for a full service restaurant within the market area as the adjacent office/industsrial parks have no nearby access to food services.

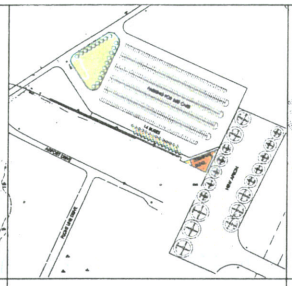
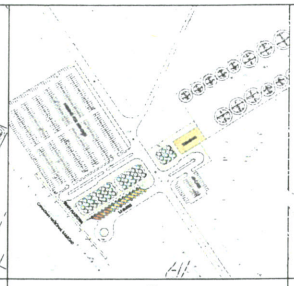
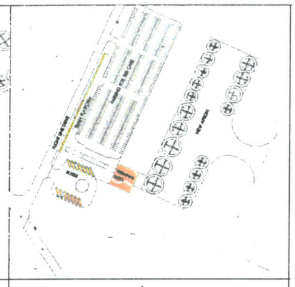
At the time of the site feasibility study phase the potential for coordinating development of a new FBO facility and expanded apron were part of the overall program. These aviation elements were subsequently eliminated from the conceptual design and left for the airport authority to develop in conjunction with regular revisions of their Airport Master Plan. Site planning and concept designs provided sufficient space to accommodate the aviation program at a future date. To maintain the ability to interface efficiently with the ground transportation infrastructure.

table of program spaces

	No.of Units	Sq. ft. /Unit	Component Suggested Area (net sq. ft.)	Component Suggested Area (sq. ft.)	Description	Comments
Train Station						
Passenger Facilities						
Platform				5,000	10' x 500'	4 Coaches, 1 Baggage & Locomotive
Custodial Room			100			
Facility Management Office			150			
Employee Locker Room			250			
Employee Lunch Room			80			
Employee Unisex Toilet			80			
First Aid Room			100			
subtotal*			**760**	**5,000**		
Bus Station						
Passenger Facilities						
Information Desk/Kiosks			150			
Vending			150			
Ticketing Office	4	50	200		Time-Saver Standards-Building Type 3rd Edition	
Ticketing Que	100	8	800		Pedestrain Planning and Design-FRUIN	
Baggage	8 Buses	50	400		Time-Saver Standards-Building Type 3rd Edition	
Passenger Waiting/Seating	300	15	4,500			Assuming a peak hour capacity of 300
Package Service			250			
Public Toilet- Men			125		2 Toilets, 1 Urinal, 1 Lavatory	
Public Toilet- Women			125		3 Toilets, 1 Lavatory	
Staff Toilet			100			
Drivers Lounge			100			
Dispatch Office			100		Time-Saver Standards-Building Type 3rd Edition	
Leasable Retail Space			2,500			
subtotal*			**9,500**			
FBO						
Passenger Facilities						
Service Desk			150			
FBO Manager's Office			100			
Custom's Office			300			
Pilot's Lounge			150			
Weather Room			100			
Passenger Waiting	30	15	450			
Catering Kitchen			100			
PublicToilet-Men			60		1 Toilet, 1 Lavatory	
PublicToilet-Women			60		1 Toilet, 1 Lavatory	
Staff Toilet			60			
General Aviation Planes	10			100,000		
Charter Planes	8			75,000		
subtotal*			**1,530**	**175,000**		
Curbside Program						
8 Bus Berths/Busway				15,000		
Taxi-cab drop off	2	200		400		60 linear feet of curb space
Private Vehicle	1	200		200		Kiss and Ride-45 linear feet of curb space
"The Bus"	1	1,000		1,000		Curb side Drop Off-90 linear feet of curb space
subtotal*				**16,200**		
Parking						
Car Parking	554	350		194,000		
Layover Bus Parking	6	1000		6,000		
subtotal*				**200,000**		
TOTAL nsf			**11,790**	**396,200**		

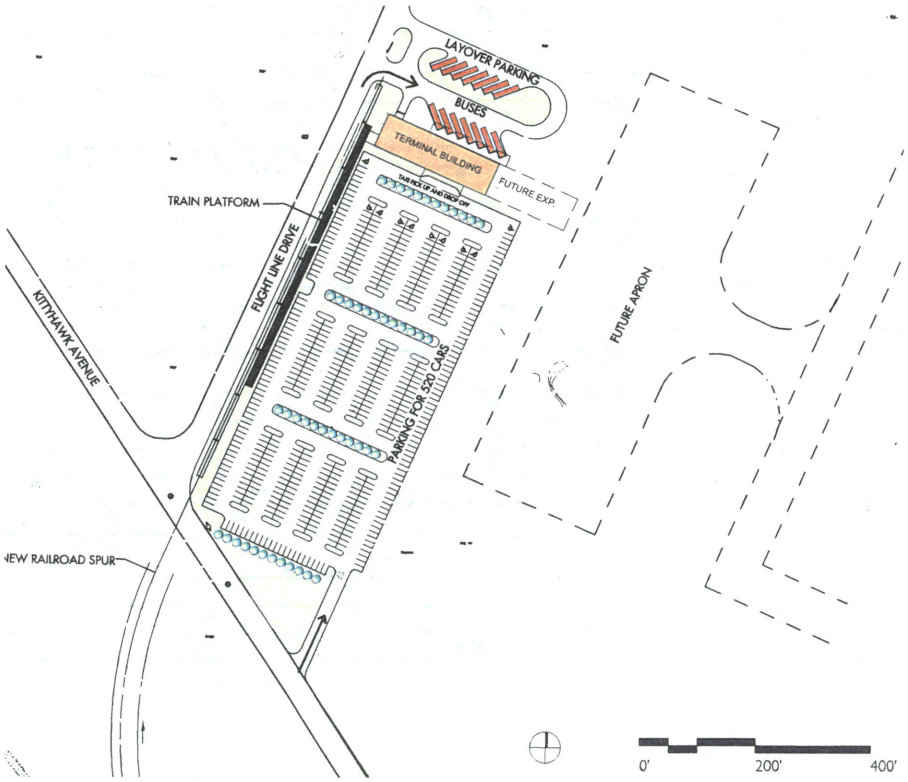
The site selection study area was limited to the immediate vicinity of the Maine Turnpike, the Saint Lawrence Atlantic Railroad mainline and the Auburn/Lewiston Airport. With the facility program established potential sites were identified and alternative diagrammatic site plans were prepared by the design team. The initial task was to determine fundamental viability of a given site as to the capacity to accommodate the overall facility program. This identified four geographic locations within the study area deemed as viable for further design development. The graphic below illustrates the four locations clustered around the airport and the railroad right-of-way. In exploring these areas further reasonable and viable alternative site plans were identified and developed. Six site development options were prepared in sufficient detail for comparative evaluation. A comprehensive evaluation

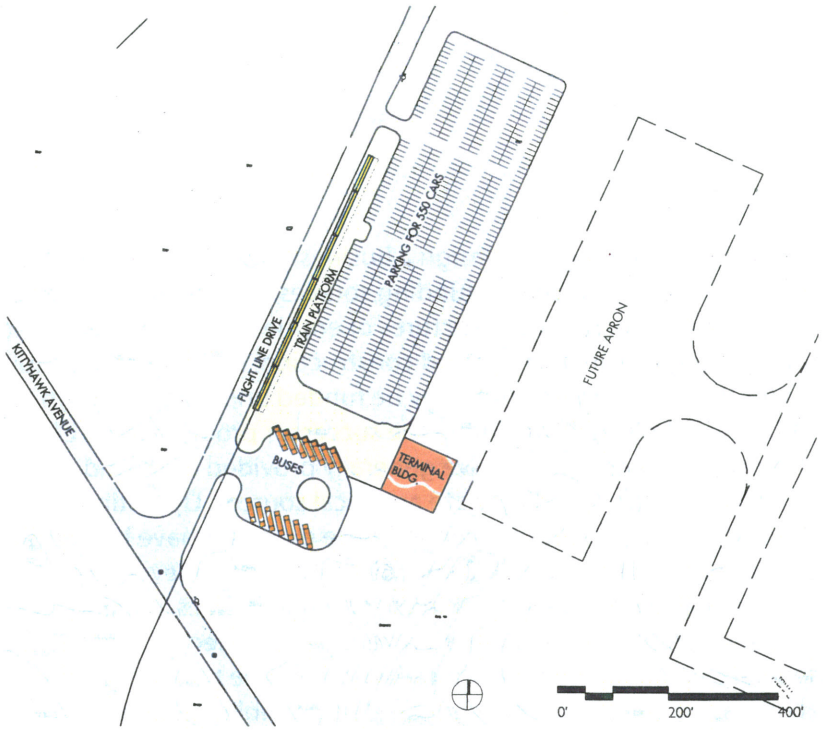
CRITERIA	1	2
ACCESSIBILTY		
- VEHICULAR ACCESS FROM THE MAINE TURNPIKE	0	0
- EASE OF ACCESS FROM KITTYHAWK AVENUE	0	0
- IMPACT ON EXISTING TRAFFIC OPERATIONS	0	0
- QUALITY OF PEDESTRIAN ENVIRONMENT AND ACCESS : SAFE, VISIBLE, CONVENIENT PEDESTRIAN CROSSINGS	+	+
SITE SIZE & CONFIGURATION ISSUES		
- ABILITY TO ACCOMODATE THE FULL TRANSPORTATION PROGRAM EFFICIENTLY	0	0
- ABILITY TO PHASE CONSTRUCTION EFFICIENTLY	0	—
ENVIRONMENTAL ISSUES		
- COMPATABILITY WITH EXISTING & POTENTIAL FUTURE LAND USE	—	—
- COMPATABILITY WITH ONGOING TRANSPORTATION AND LAND USE DEVELOPMENT INITIATIVES (EX. LEWISTON TRANSPORTATION 20000 PLAN)	0	0
- WETLAND IMPACTS	—	0
- AQUIFER IMPACTS	0	0
- PRESENCE OF HAZARDOUS MATERIALS	0	0
- INLAND FISHERIES AND WILDLIFE	—	0
- MUNICIPAL AND STATE PERMIT REQUIREMENTS	—	0
INTERMODAL OPERATION AND SERVICE ISSUES		
- ABILITY TO ENCOURAGE NEW RIDERSHIP	0	0
- FACILITATES MODAL TRANSFERS : : TRANSIT TERMINAL TO ALL MODES	+	+
: PARKING <> TRAIN	0	0
: PARKING <> BUS	0	0
: TRAIN <> BUS	0	0
: TRAIN <> PICK UP/DROP OFF	0	0
: BUS <> PICK UP/DROP OFF	0	0
: PLANE <> PICK UP/DROP OFF	0	0
- MAXIMIZES PASSENGER SAFETY	0	0
- OPERATING EFFICIENCY	—	—
- PROMOTES POSITIVE IMAGE FOR USE AS MARKETING TOOL: ABILITY TO CREATE A PROMINENT, ARCHITECTURALLY SIGNIFICANT FACILITY	0/+	0
ECONOMIC DEVELOPMENT, COST & FINANCIAL PLAN ISSUES		
- POTENTIAL REVENUE GENERATION	+	0
- POTENTIAL FOR SUPPORTING ADDITIONAL DEVELOPMENT	0	0
- COMPATABILITY WITH PUBLIC LAND USE DEVELOPMENT POLICY AND PLANNED/PROPOSED DEVELOPMENT BY OTHERS	0	0
VISIBILITY & IMAGE ISSUES		
- VISIBILITY FROM KITTYHAWK AVENUE/PROMINENT SITING	0	—
- HIGH QUALITY PEDESTRIAN ENVIRONMENT	0	0
- IMPACT ON PEDESTRIAN/VEHICULAR INTERFACE	0	0

			
3	4	5	6
0	0/ —	0	0
0	0/ —	0	0
0	0	0/ —	0
+	0	—	+
—	0	—	0
0	0	+	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
—	0/+	—	+
0	—	0	0
0	— *	0	0
0	0	0	0
0	0	0	0
0	0	0	0
— ***	0	—	0
0	—/0 *	0	0
—/—	—	—	0
0	—	0/+	+
+	0	+	+
0	0	0	0
0	0	0	0
+	—	+	+
0	0	0	0
0	—/0 *	0	0

matrix was utilized as the method to identify a preferred site. The evaluation process was careful to be even-handed and objective. A list of criteria was presented and vetted by the Advisory Group. Criteria for the site evaluation were developed cooperatively in meetings with the design team and the Advisory Group. A simplified quantitative approach was utilized assigning a positive, negative or neutral score for each of the criteria on each site. In order to maintain the simplified approach to the evaluation no relative weighting of criteria was applied. The final results of the site evaluation were assembled into an overall matrix and presented to the Advisory Group for final approval. The matrix can bee seen on the previous pages. The most advantageous site for the Auburn Lewiston Intermodal Center was determined to be the site at the corner of Flightline Drive and Kittyhawk Road, identified as Option 6 in the evaluations.

Once the preferred site had been identified the design team performed additional studies generating optional layouts for Site Option 6




KITTYHAWK AVENUE
FLIGHT LINE DRIVE
TRAIN PLATFORM
PARKING FOR 550 CARS
FUTURE APRON
BUSES
TERMINAL BLDG.
0'
200'
400'


KITTYHAWK AVENUE
FLIGHT LINE DRIV:
TRAIN PLATFORM
PARKING
PICK UP AND DROP OFF
TERMINAL BUILDING
FUTURE EXP.
BUSES
FUTURE APRON
NEW RAILROAD SPUR
0'
200'
400'

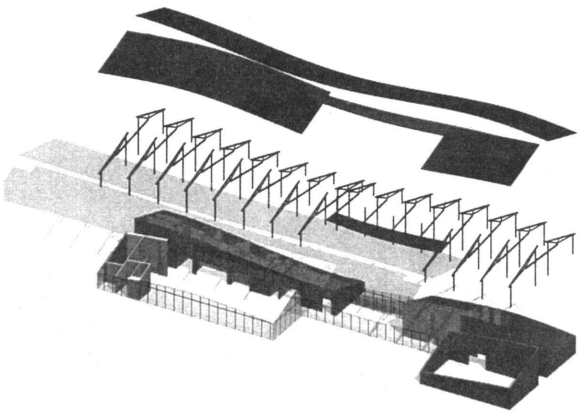
business plan

In support of the planning and design a Business Plan was prepared for the Intermodal Center to identify funding sources, operating revenues and expenses, possible operational structures or entities and an overall schedule for implementing the final design and construction. Funding of the capital costs for the Intermodal Center may be funded under a grant from the Federal Transit Administration within the successor program to ISTEA and TEA-21 programs. These grants have generally provided 80% funding with the remaining 20% provided by State and local sources. Operating expenses would require other sources of revenue. These expenses have been estimated to cost approximately $156,000 annually. Considering revenue generating opportunities within the facility from terminal use fees, parking fees tenant leases, vending and restaurant revenue it is projected that the facility may generate sufficient revenue after a period of time to cover most of its annual operating and maintenance costs. The possible funding sources for operational shortfalls have yet to be determined but could come from other State or local transportation funding streams.

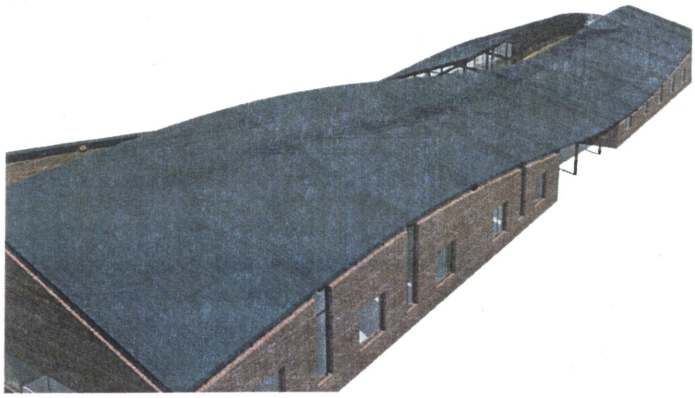
The analysis indicates that the proposed intermodal center could succeed despite the somewhat low passenger projections. Key elements include having capital costs covered by federal and state funding, using an existing management entity for operations and maintenance, and incorporating revenue-generating uses within the center that would serve local residents and employees working within the immediate area.

conceptual design

The concept design studies utilized the program developed in the course of the demand forecast and site location studies. Transportation modes were planned to work with the best efficiencies possible within the constraints of the selected site. To that end the rail vehicles, buses and private vehicles were organized on the site around the focal point of the ITC concourse building. Future accommodation of a new terminal/general aviation facility was also considered in the location of the proposed building footprint. Access to the buses is planned to the south of the concourse, rail access to the west, private vehicles to the north and the future airside access to the proposed FBO and apron expansion to the east. The Site Plan on the page opposite illustrates this overall disposition.



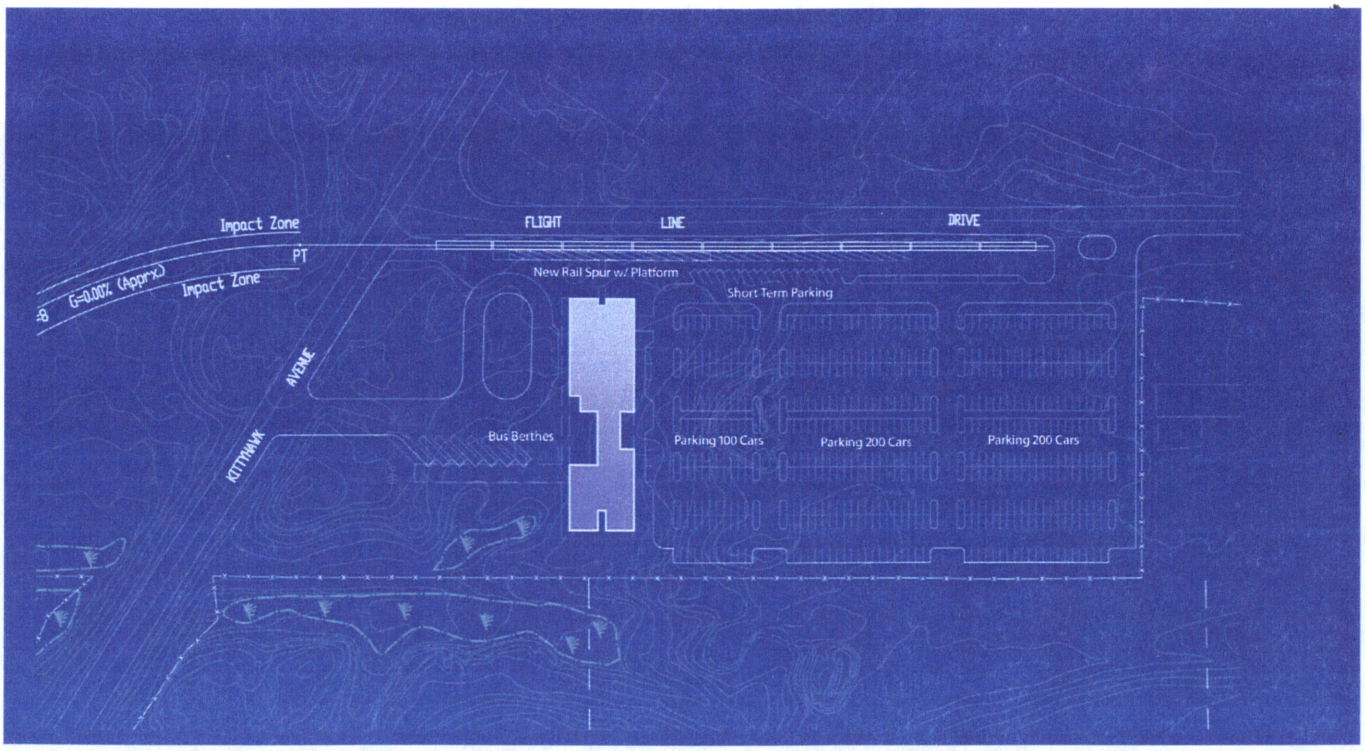
The concept design process involved three iterations of the building concept design. Initial block diagrams illustrating



north view perspective of ITC

the 3-dimensional organization and relationships of the major program elements were developed and presented to the project Advisory Group. Feed back from this presentation was then taken back to the studio for incorporation into the design and more complete alternatives were generated. Two design schemes, a two-story and a one-story, were finally developed. Key organizational principles in both schemes included access for passengers from waiting areas to boarding areas for both bus and rail, building orientation and efficient response to environment and use of a range of materials that are indigenous to the State of Maine – water-struck brick, black Moran slate, natural granite, and exposed timber structural framework. The schemes were presented at an Advisory Group meeting and the one-story scheme received near universal preference. Based upon a detailed estimate of quantities and contents the complete facility is estimated to cost $10.2 million dollars including all civil,

site plan of the ITC



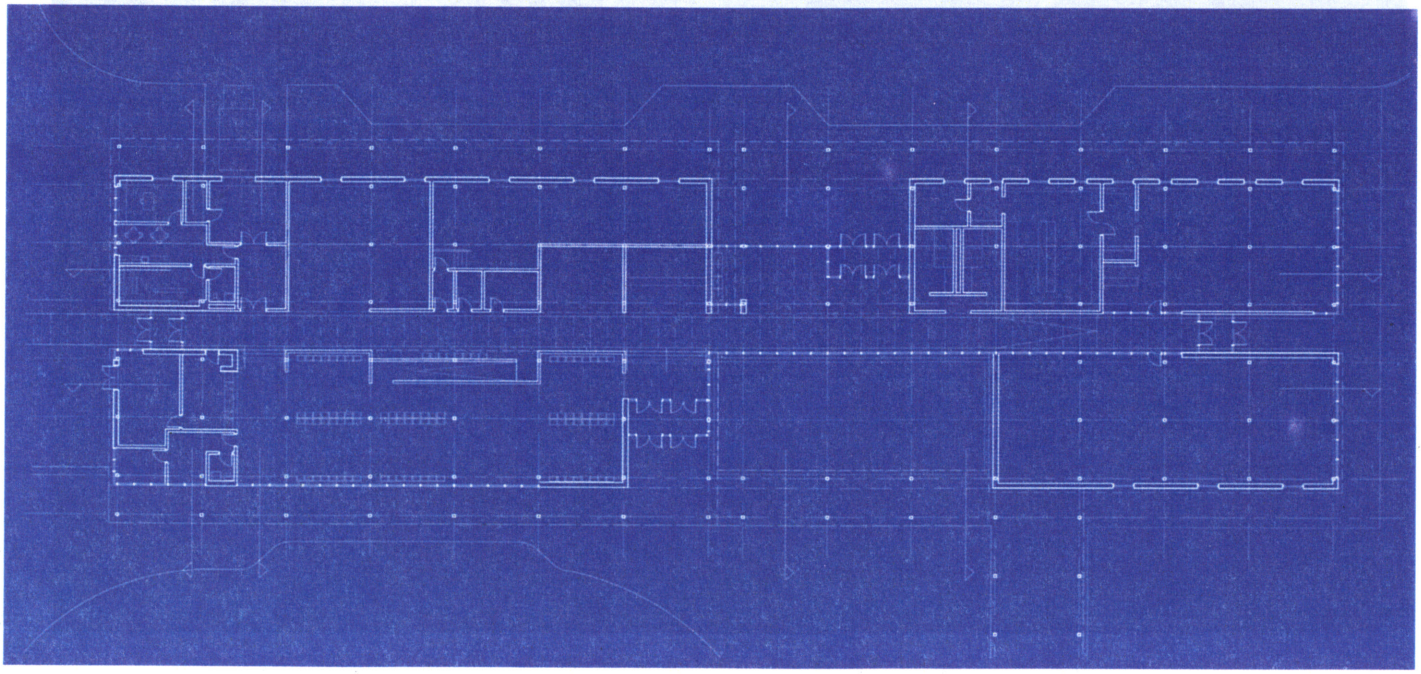
infrastructure and material costs.

The organization of the Terminal building interior spaces divides the building program into quadrants, the axes of which are formed by entrance lobbies from the north and the south and the main corridor which runs east and west. The eastern half of the terminal contains commercial/retail revenue generating functions including a restaurant facing the airfield and commercial office space facing the bus berths to the south. This commercial space could potentially be utilized by the operating entity of the ITC. On the west side of the lobbies are the public ticketing and waiting areas as well as crew support spaces for both the rail and bus personnel. A loading dock at the west end faces north to the parking area.

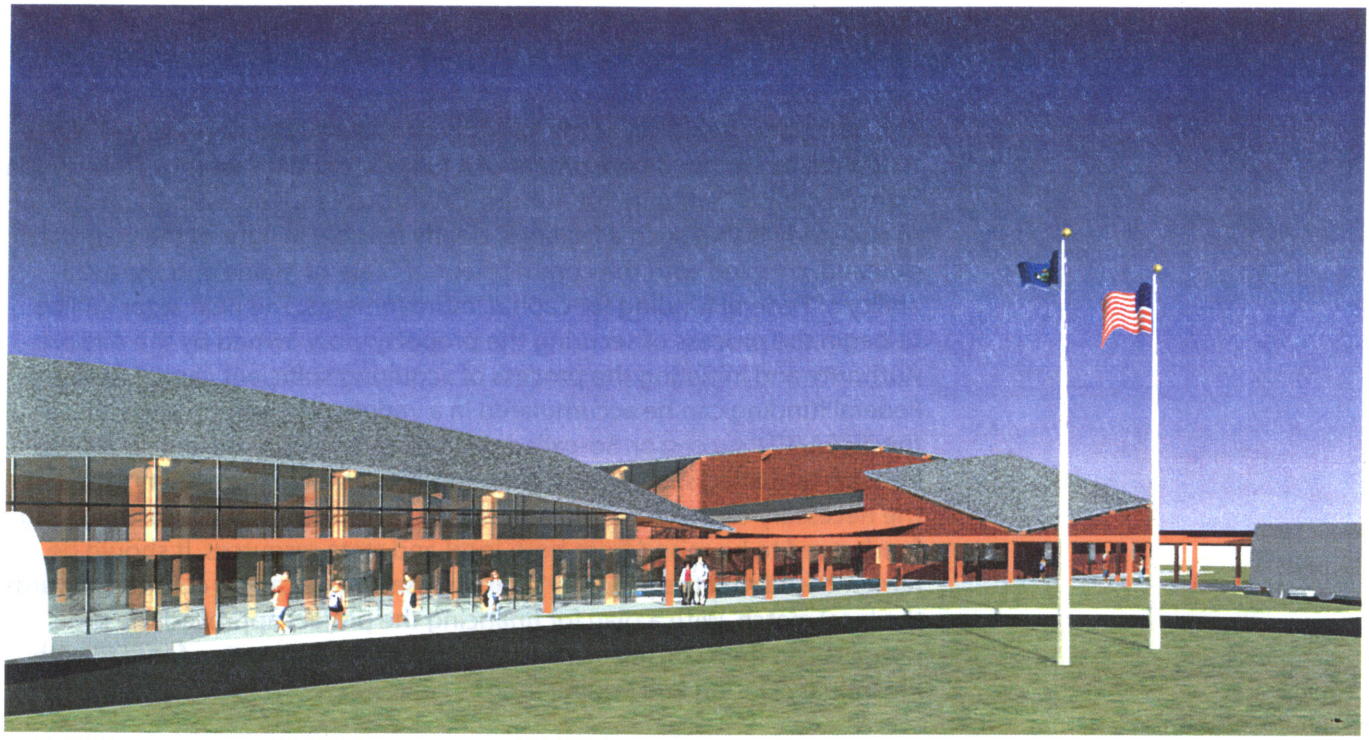
In addition to the incorporation of native Maine building materials the design looked for other means to relate the aesthetics to its place. To this end the designers developed an undulating roof form that represents, symbolically, the rolling of waves along Maine's famous shoreline. At the pragmatic level the undulating roof is used to provide volumetric meaning to major and minor spaces within the terminal, i.e. higher volume spaces are created for the restaurant, the passenger lounge, etc.

The complete Concept Design Report is included as an appendix to this report.

floor plan of the ITC



north view perspective of ITC



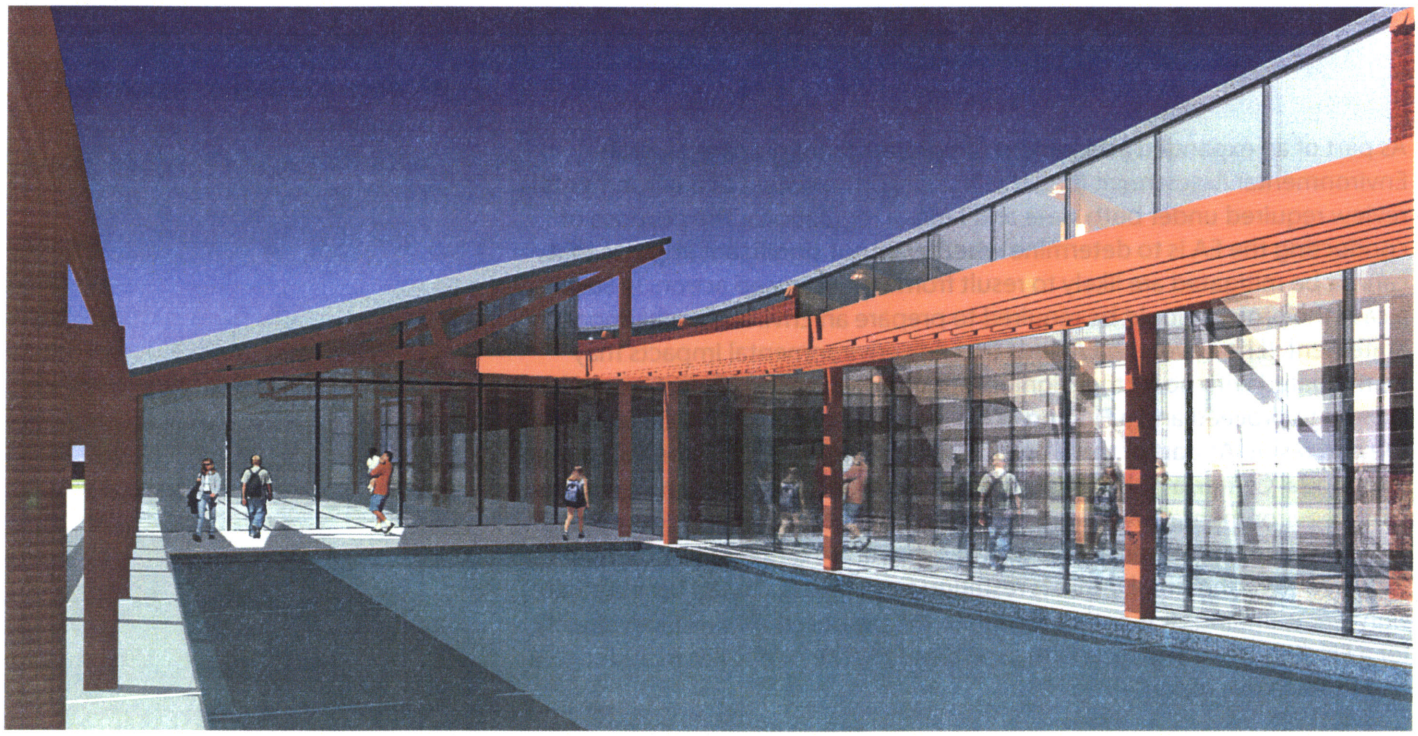
environmental assessment

As part of an expanded assignment the project team prepared a draft Environmental Assessment (EA), the first step in a process of environmental review required under both state and federal regulations. The purpose of conducting the EA is to determine whether or not significant impacts that cannot be mitigated are likely to result from the proposed action. In such a case the project would be required to prepare an Environmental Impact Statement. If however the EA finds that any environmental impacts may be mitigated with no further significant impacts then the project would be cleared to proceed and a Finding of No Significant Impact (FONSI) would be the end result. As part of the EA process for the Auburn/Lewiston Passenger Intermodal Center, a public hearing was held to receive input on the scope of the environmental investigations to be completed. This input combined with the statutory requirements for consideration examined all potential negative environmental impacts resulting from the ITC. Based upon the design teams findings it is anticipated that the proposed ITC will likely qualify for a Finding of No Significant Impact from FTA. The draft EA is included as a appendix to this report.

conclusion

This siting and feasibility study has fully considered the necessary range of issues related to the development of a fully functional Passenger Intermodal Transportation Center in the Auburn/Lewiston area. The overall conclusion of this study is that such a facility is clearly feasible in light of the projected demand, coupled with the commitment of State of Maine and the availability of Federal funding for capital improvements. The next steps will be to begin the process of securing the property, now owned by the Airport Authority and initiating the process of acquiring sufficient capital funding. Federal funding can be accumulated in a variety programs in addition to the ISTEA/T21 successor. So-called defined earmarks in the annual federal transportation legislation are often sought to assist in the accumulation of the necessary capital funds. In addition to federal funds the local matching funds need to be raised from both local and state resources. It should be remembered that the property's fair assessed value can be counted towards the local match. With a plan for financing the project approved the proponents can then consider seeking FTA approval for moving forward with Preliminary Design and Engineering.

perspective of ITC entrance court



Appendix VIII

LEW Historical Operations

LEW
Historical Operations

Year	Airport Manager	2001 MASP Inventory	FAA 5010	1997 Airport Master Plan	1995 MASP
2004	74,000		32,550		
2003					
2002					
2001		30,100			
2000			59,100		
1999			59,100		
1998			59,100		
1997				59,000	
1996				55,240	
1995				62,012	
1994				62,012	50,000
1993					60,000
1992					60,000
1991					60,000
1990					60,000
1989					55,000
1988					54,000
1987					51,000
1986					42,000
1985					45,000

Appendix IX

Environmental Agencies Letters and Responses

September 27, 2005

US Department of The Interior
US Fish and Wildlife Service – Maine Field Office
1168 Main Street
Old Town, Maine 04468

Mark McCollough:

Re: Presence of federally listed and proposed endangered or threatened species at Auburn-Lewiston Municipal Airport.

Hoyle, Tanner & Associates, Inc., is preparing a Master Plan Update for Auburn-Lewiston Municipal Airport located in Auburn, Maine. The development of this document involves collecting and evaluating data related to the airport and surrounding area, and forecasting future growth at the airport. This information is then used as the basis for planning the facilities needed to meet future aviation demands in the area.

Please provide us with any information on federally listed and/or proposed endangered or threatened species, which inhabit the area.

See the attached maps for the project location.

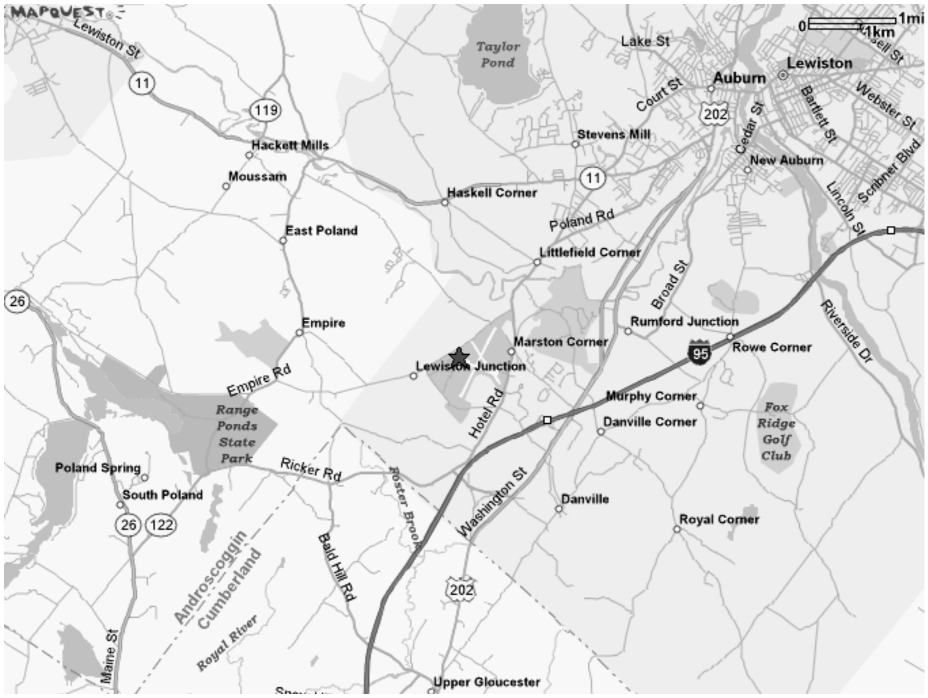
Feel free to e-mail me at tmcallister@hta-nh.com or call me at (603) 669-5555, ext. 118, if you have any questions.

Sincerely,

Tracy McAllister

Tracy McAllister, Airport Planner

HOYLE, TANNER & ASSOCIATES, INC.



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Littlefield Corner
Broad St
Empire
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Marston Corner
Rowe Corner
Lewiston Junction
Empire Rd
Hotel Rd
Murphy Corner
Danville Corner
Range Ponds State Park
Fox Ridge Golf Club
Poland Spring
Ricker Rd
South Poland
Washington St
Danville
Royal Corner
Androscoggin
Cumberland
Bald Hill Rd
Royal River
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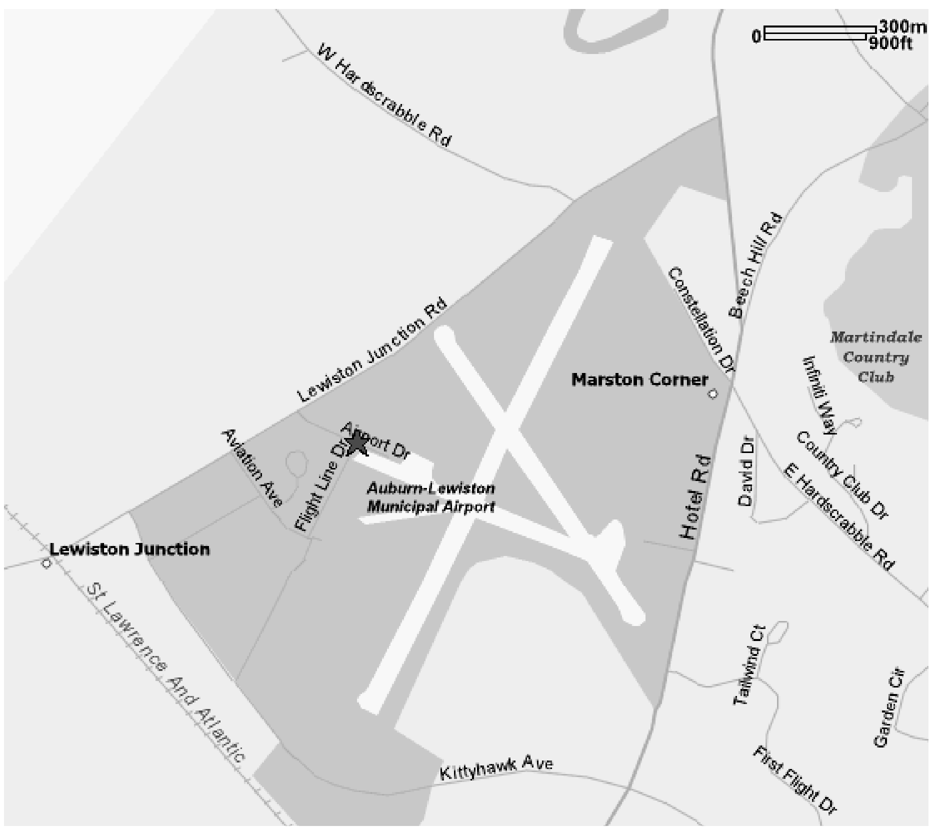

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Lewiston Junction Rd
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Airport Dr
Aviation Ave
Flight Line Dr
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Hotel Rd
David Dr
Country Club Dr
E Hardscrabble Rd
Lewiston Junction
St Lawrence And Atlantic
Tailwind Ct
Garden Cir
Kittyhawk Ave
First Flight Dr

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Field Office
1168 Main Street
Old Town, ME 04468-2023
(207) 827-5938

October 13, 2005

Tracy McAllister
Hoyle Tanner and Associates, Inc.
150 Dow St.
Manchester, NH 03101

Dear Ms. McAllister:

Thank you for your letter requesting information or recommendations from the U.S. Fish and Wildlife Service. This form provides the Service's response pursuant to Section 7 of the Endangered Species Act (ESA), as amended (16 U.S.C. 1531-1543), and the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667d).

Project Name/Location/County: Lewiston-Auburn Municipal Airport

Date of Receipt of Incoming Letter: September 20, 2005 **Log Number:** 06-029

Based on the information currently available to us, no federally-listed species under the jurisdiction of the Service are known to occur in the project area, with the exception of occasional, transient bald eagles (*Haliaeetus leucocephalus*). Accordingly, no further action is required under Section 7 of the ESA, unless: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by the identified action.

The upland sandpiper (*Batramia longicauda*), a Federal species of concern (which was formerly designated as a candidate for federal listing) has been observed at the airport. This species may, or may not, be listed in the future. At this time, the upland sandpiper is afforded no protection under the Federal ESA. However, we strongly encourage you to consider this species in your project planning. The upland sandpiper is listed as threatened by Maine Inland Fisheries and Wildlife, and as such, is protected from taking. We encourage you to contact MDIFW's Regional Office (Scott Lindsay, Maine Inland Fisheries and Wildlife, RR 1, 358 Shaker Rd., Gray, ME 04039 Phone: 207 657-2345) for more information.

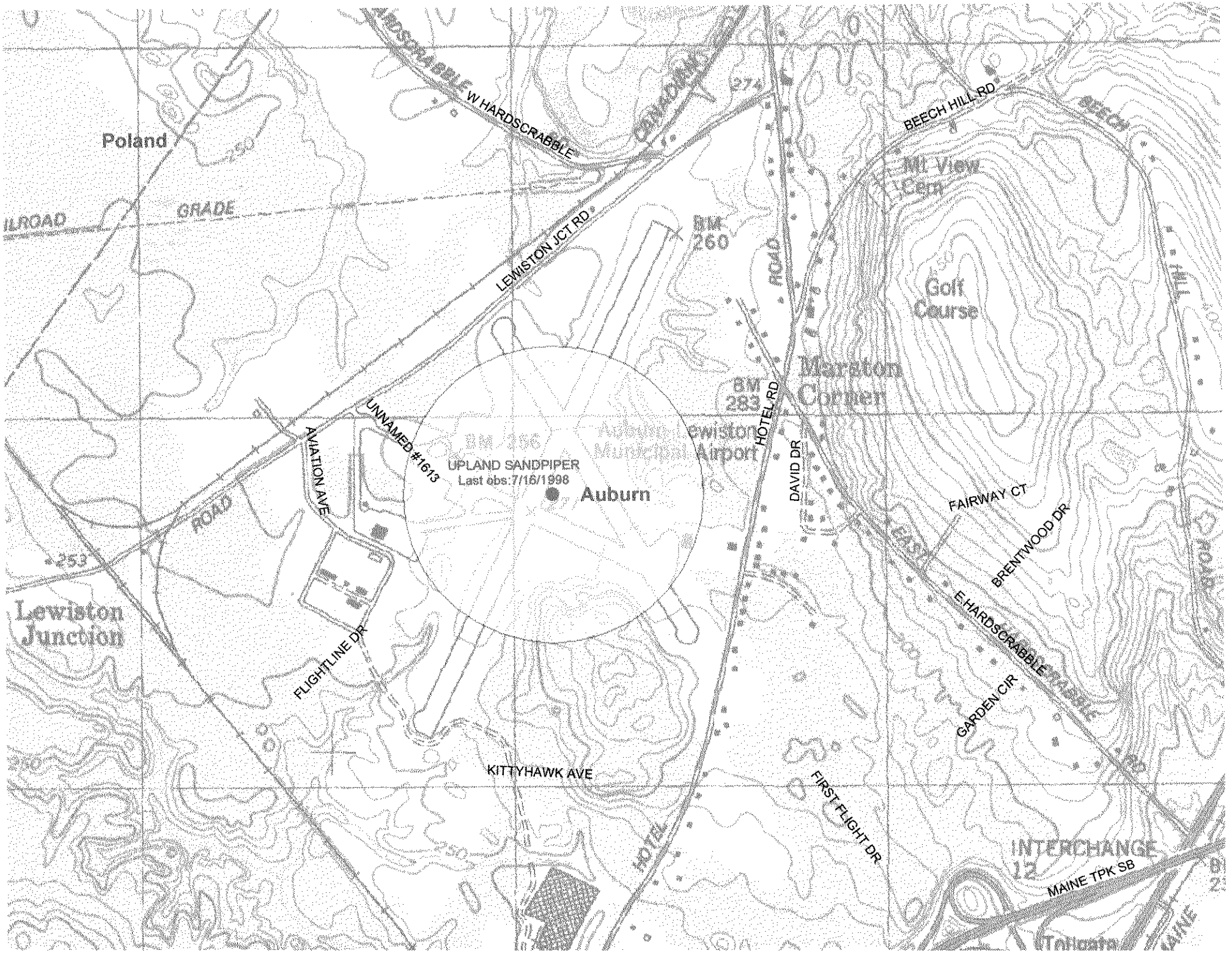
A list of federally-listed species in Maine is enclosed for your information. Please contact the Maine Department of Inland Fisheries and Wildlife and Maine Natural Areas Program for an up to date account of state-listed species in the project area.

If you have any questions, please call me at (207) 827-5938.

Sincerely,

Mark A. McCollough,
Endangered Species Biologist

Enclosure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Golf
Course
GRADE
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BM
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ROAD
Marston
Corner
BM
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Auburn-Lewiston
Municipal
Airport
HOTEL RD
DAVID DR
UNNAMED #1613
AVIATION AVE
UPLAND SANDPIPER
Last obs:7/16/1998
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BRENTWOOD DR
E HARDSCRABBLE
Lewiston
Junction
FLIGHTLINE DR
GARDEN CIR
KITTYHAWK AVE
FIRST FLIGHT DR
HOTEL
INTERCHANGE
12
MAINE TPK SB
Turnpike
MAINE

FEDERALLY LISTED, PROPOSED,
AND SPECIES OF FEDERAL CONCERN IN MAINE

(*revised April, 2003*)

Common Name		Scientific Name	Distribution	Status
Fishes:	Atlantic salmon	*Salmo salar*	Endangered in Dennys, Machias, E. Machias, Narraguagas, Pleasant, Duck Trap, Cove Brook, Sheepscot	E
	Shortnose sturgeon*	*Acipenser brevirostrum*	Kennebec, Penobscot Rivers	E
Reptiles:	Atlantic ridley turtle*	*Lepidochelys kempii*	Pelagic, summer resident	E
	Leatherback turtle*	*Dermochelys coriacea*	Pelagic, summer resident	E
	Loggerhead turtle*	*Caretta caretta*	Pelagic, summer resident	T
	Blanding's turtle	*Emydoidea blandingii*	York and Cumberland Counties	FSC
Birds:	American peregrine falcon	*Falco peregrinus anatum*	statewide	D
	Bald eagle	*Haliaeetus leucocephalus*	statewide	T
	Bicknell's thrush	*Catharus bicknelli*	Western mountains and Katahdin	FSC
	Black tern	*Chlidonias niger*	Sebasticook R. watershed, Portage L. (Aroostook Co.), and eastern Maine	FSC
	Harlequin duck	*Histrionicus histrionicus*	Coastal, Eastport to Cape Neddick, York County	FSC
	Loggerhead shrike	*Lanius ludovicianus*	Possibly statewide	FSC
	Northern goshawk	*Accipiter gentilis*	statewide	FSC
	Piping plover	*Charadrius melodus*	Coastal Sagadahoc, Cumberland, and York Co.	T
	Roseate tern	*Sterna dougallii dougallii*	Coastal statewide	E
Mammals:	Gray wolf	*Canis lupus*	Possibly northern Maine	T
	Eastern cougar	*Felis concolor couguar*	Possibly statewide	E
	Blue whale*	*Balaenoptera musculus*	Oceanic	E
	Finback whale*	*Balaenoptera physalus*	Oceanic	E
	Humpback whale*	*Megaptera novaeangliae*	Oceanic	E
	Right whale*	*Eubalaena spp. (All species)*	Oceanic	E
	Sei whale*	*Balaenoptera borealis*	Oceanic	E
	Sperm whale*	*Physeter catodon*	Oceanic	E
	Eastern small-footed bat	*Myotis leibii*	statewide	FSC
	New England cottontail rabbit	*Sylvilagus transitionalis*	York, Androscoggin, Kennebec, Sagadahoc, Lincoln Counties	FSC
	Penobscot meadow vole	*Microtus pennsylvanicus shattucki*	Penobscot Bay	FSC
	Northern bog lemming	*Synaptomys borealis*	Somerset, Piscataquis, Aroostook Counties	FSC
	Canada lynx	*Felis lynx canadensis*	Franklin, Somerset, Piscataquis, Aroostook, Penobscot Counties	T
Invertebrates:	Brook floater	*Alasmidonta varicosa*	Coastal drainages York to Washington Counties	FSC

	Yellow lampmussel	*Lampsilis cariosa*	Penobscot, St. George, lower Kennebec watersheds	FSC
	Tomah mayfly	*Siphlonisca aerodromia*	All but southern Maine	FSC
	Pygmy snaketail dragonfly	*Ophiogomphus howei*	Saco, Crooked, Aroostook, Penobscot, St. Croix, Machias Rivers	FSC
	Extra-striped snaketail dragonfly	*Ophiogomphus anomalus*	Saco, Androscoggin, Kennebec, Penobscot, Aroostook, St. Croix, and Downeast coastal Rivers	FSC
	Ringed boghaunter dragonfly	*Williamsonia linteri*	Southern York County	FSC
	Clayton's copper butterfly	*Lycaena dorcas claytoni*	Penobscot, Aroostook, Piscataquis Counties	FSC
	Ceromatic noctuid moth	*Pyreffera ceromatica*	York County	FSC
	Regal fritillary butterfly	*Speyeria idalia*	Likely extirpated	FSC
	Chestnut clearwing moth	*Synanthedon castancae*	York County	FSC
	Lateral bluet damselfly	*Enallagma laterale*	Coastal ponds from Penobscot Bay to York County	FSC

Common Name		Scientific Name	Distribution	Status
Plants:	Small whorled pogonia	*Isotria medeoloides*	York, Kennebec, Cumberland, and Oxford Co.	T
	Furbish's lousewort	*Pedicularis fusrbishiae*	Aroostook County	E
	Eastern prairie fringed orchid	*Plantanthera leucopehaea*	Aroostook County	T
	Orono sedge	*Carex oronensis*		FSC
	Variable sedge	*Carex polymorpha*		FSC
	Hawkweed	*Hieracium robinsonii*		FSC
	Blazingstar	*Liatris borealis*		FSC
	Square-stemmed monkeyflower	*Mimulus rigens colpophilus*		FSC
	Pondweed	*Potamogeton confervoides*		FSC
	Boott's rattlesnake root	*Prenanthes boottii*		FSC
	Long's bulrush	*Scirpus longii*		FSC
	Gaspe peninsula arrow-grass	*Triglochin gaspense*		FSC

KEY:

Status	Definition
E	Endangered: A taxon "in danger of extinction throughout all or a significant portion of its range".
T	Threatened: A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range".
P	Proposed: A taxon proposed for official listing as endangered or threatened.
FSC	Federal species of concern: Species which may or may not be listed in the future (formerly C2 candidate species, or species under consideration for listing for which there is insufficient information to support listing).
D	Delisted species, requiring 5 years of population monitoring.
*	Principal responsibility for these species is vested with the National Marine Fisheries Service.

October 7, 2005

Maine Department of Inland Fisheries and Wildlife
284 State Street
41 State House Station
Augusta, ME 04333-0041

To whom it may concern:

Re: Presence of federally listed and proposed endangered or threatened species at Auburn-Lewiston Municipal Airport.

Hoyle, Tanner & Associates, Inc., is preparing a Master Plan Update for Auburn-Lewiston Municipal Airport located in Auburn, Maine. The development of this document involves collecting and evaluating data related to the airport and surrounding area, and forecasting future growth at the airport. This information is then used as the basis for planning the facilities needed to meet future aviation demands in the area.

Please provide us with any information on federally listed and/or proposed endangered or threatened species, which inhabit the area.

See the attached maps for the project location.

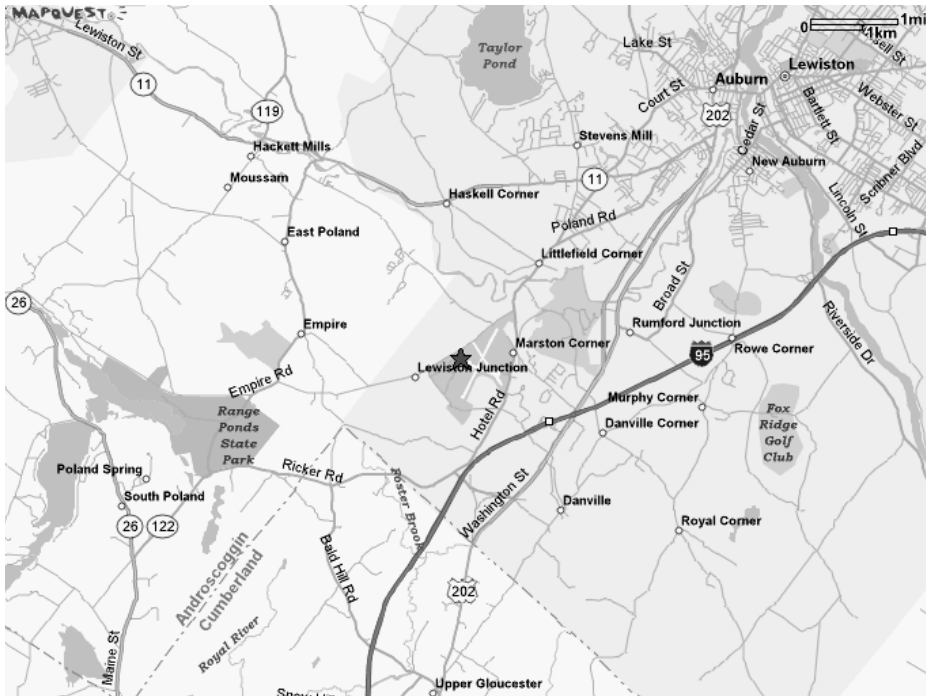
Feel free to e-mail me at tmcallister@hta-nh.com or call me at (603) 669-5555, ext. 118, if you have any questions.

Sincerely,

Tracy McAllister, Airport Planner
HOYLE, TANNER & ASSOCIATES, INC.

Enclosure

Second Request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Stevens Mill
New Auburn
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Lincoln St
Poland Rd
East Poland
Littlefield Corner
Broad St
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Empire
Rumford Junction
Riverside Dr
Marston Corner
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Rowe Corner
Lewiston Junction
Empire Rd
Murphy Corner
Hotel Rd
Range Ponds State Park
Danville Corner
Fox Ridge Golf Club
Poland Spring
Ricker Rd
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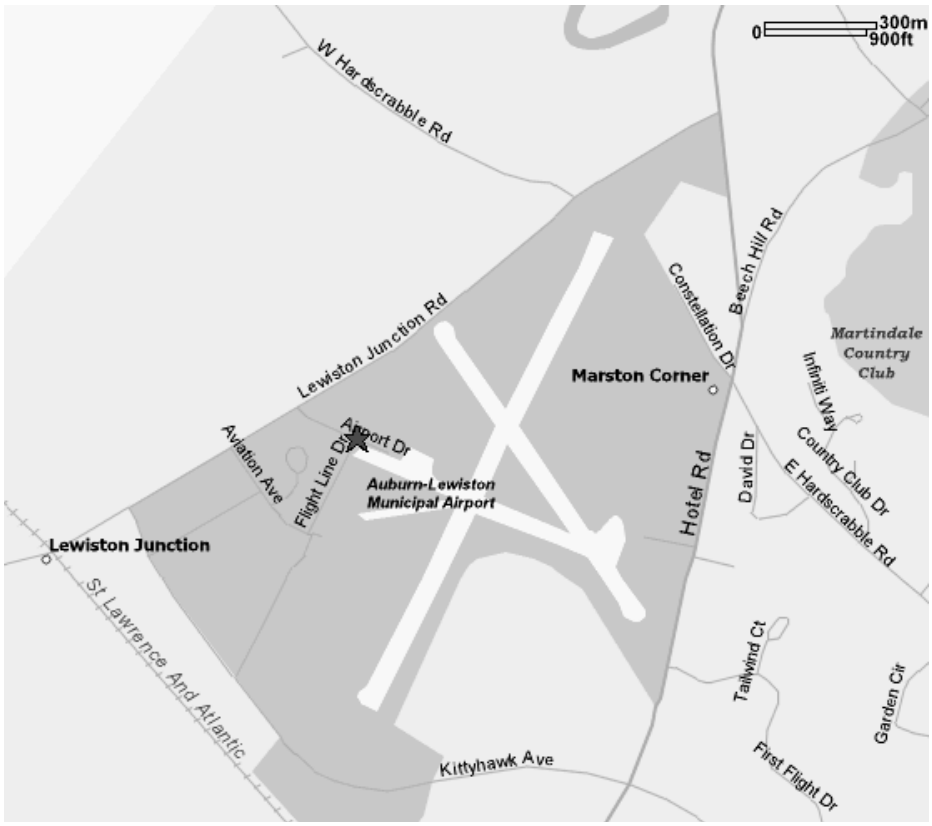
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Flight Line Dr
Auburn-Lewiston Municipal Airport
David Dr
Country Club Dr
E Hardscrabble Rd
Hotel Rd
Lewiston Junction
St Lawrence And Atlantic
Tailwind Ct
Garden Cir
Kittyhawk Ave
First Flight Dr

John E. Baldacci
Governor

Roland D. Martin
Commissioner

DEPARTMENT OF INLAND FISHERIES AND WILDLIFE

Wildlife Division – Region A
358 Shaker Rd.
Gray, ME 04039
Phone: (207) – 657-2345 x 109
Fax: (207) – 657-2980
Scott.Lindsay@maine.gov

February 22, 2006

Tracy McAllister
Hoyle, Tanner and Assoc., Inc.
150 Dow St.
Manchester, NH 03101

Dear Tracy,

You contacted this office requesting information on any known wildlife habitats of management concern occuring on the property of the Auburn-Lewiston Municipal Airport in the City of Auburn, Maine.

This airport, as well as several others in the state, is known to provide nesting habitat for Upland Sandpipers (*Bartramia longicauda*); a state threatened species. This bird is about 12" tall with a wingspan of about 26". They prefer grasslands over 150 acres in size with a mix of short grass and tall grass up to 24" in height, with scattered patches of bare ground. These birds have successfully nested at some of the busiest airports in the country, including LaGuardia and JFK airports in New York. To date, this species is not considered a significant hazard to the safe operation of aircraft at these facilities.

Following are some Best Management Practices for grassland birds at airports. Given the reduction in total acreage of grassland in southern Maine, I believe these birds benefit from this type of habitat provided by airports. Given that the presence of these birds has negligible impact on the operation of the airport, I believe efforts should be made to maintain suitable habitat. Please contact me if you have any further questions on how this can be achieved. I have attached a map showing the extent of known nesting habitat at this airport.

The general recommendations for management of habitat for these grassland birds at this airport are as follows:

Do not mow the fields between May 1 and August 1. Birds start arriving at nesting sites in early May. Many have two clutches that should be independent by the end of July.

Mowing should be done every 1-3 years, depending on growth conditions at site. The goal is to maintain at least 50% of the grassland at a height of 4-12 inches. Other areas should be mowed to shorter grass to provide some open areas for the grassland birds, yet no so much in one place to attract gulls and geese. Small patches of around an acre should be suitable. Areas adjacent to runways should be maintained as required by safety regulations - would a 50 ft. strip be permitted? This would function in discouraging nesting close to the runway and will also result in lower insect density adjacent to the runway.

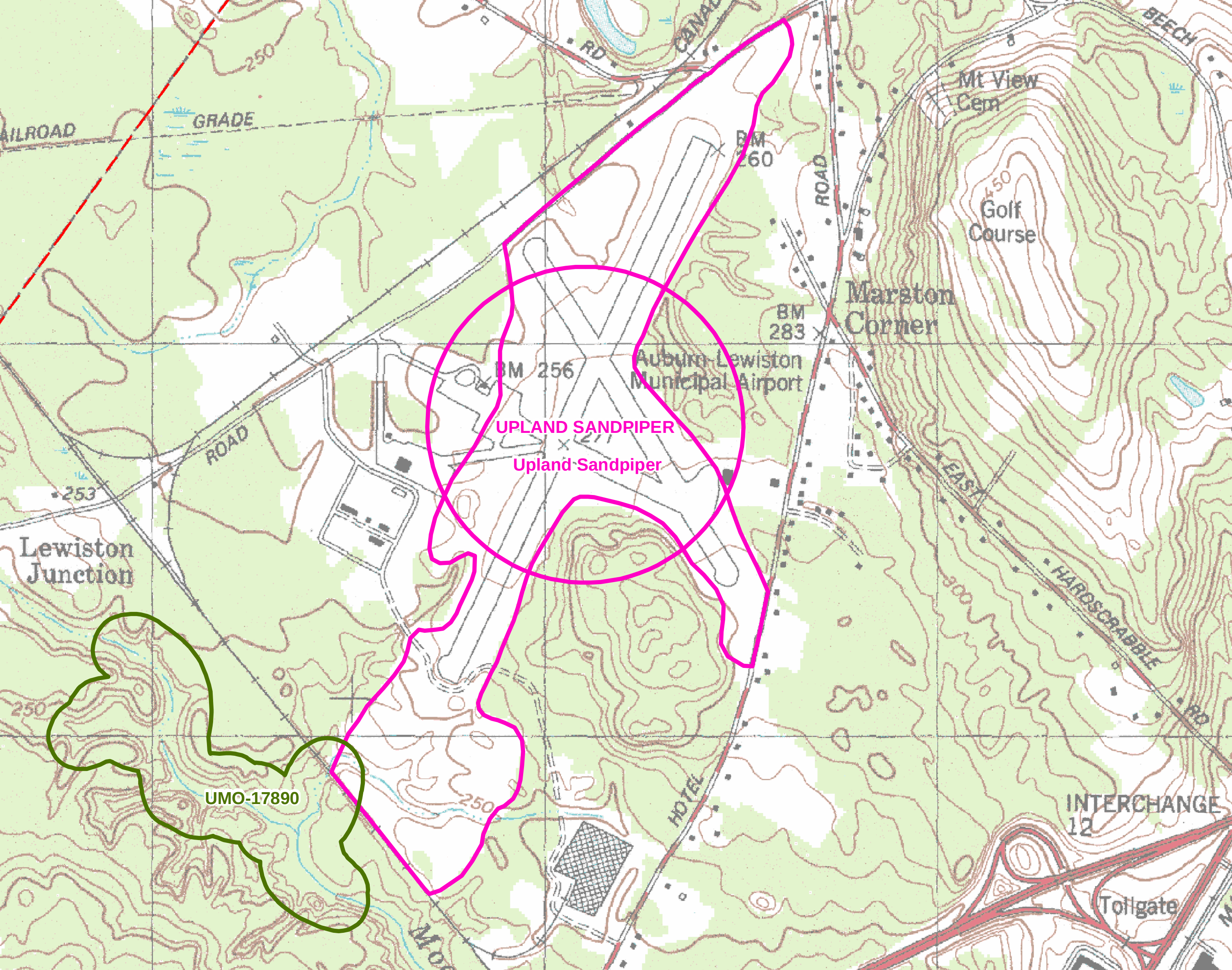
Burning should take place in early spring, before the arrival of birds in early May. It is best if burning is done on a rotation such that 50% or less of the grassland be burned at one time. Most fields in this part of the state should be burned at 3-6 year intervals, though specific growth conditions on the airport will determine this. Birds will return to a burned area 1- 2 years after the burn.

Common, native grasses suitable for most sites in the northeast include warm season grasses such as big bluestem, little bluestem, Indian grass and switch grass. Some cool season species such as timothy and Kentucky bluegrass are often present on site, but are not native and generally result in lower quality nesting habitat. It may be that no seeding need occur on this site.

Sincerely

Scott Lindsay

Scott Lindsay
Asst. Regional Wildlife Biologist


UPLAND SANDPIPER
Upland Sandpiper
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Auburn-Lewiston
Municipal Airport
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BEECH
HOTEL
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HARDSCRABBLE
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INTERCHANGE
12
Tollgate

October 7, 2005

Department of Environmental Protection
17 State House Station
Augusta, ME 04333-0017

To whom it may concern:

Re: Wetlands information of the area surrounding Auburn-Lewiston Municipal Airport

Hoyle, Tanner & Associates, Inc., is preparing a Master Plan Update for the Auburn-Lewiston Municipal Airport located in Auburn, Maine. The development of this document involves collecting and evaluating data relating to the airport and surrounding area, and forecasting future growth at the airport. This information is then used as the basis for planning the facilities needed to meet future aviation demands in the area.

Please provide us with any information regarding wetlands areas on or surrounding Auburn-Lewiston Airport. Any other environmental issues to note relevant to the project area would also be appreciated.

See the attached maps for the project location.

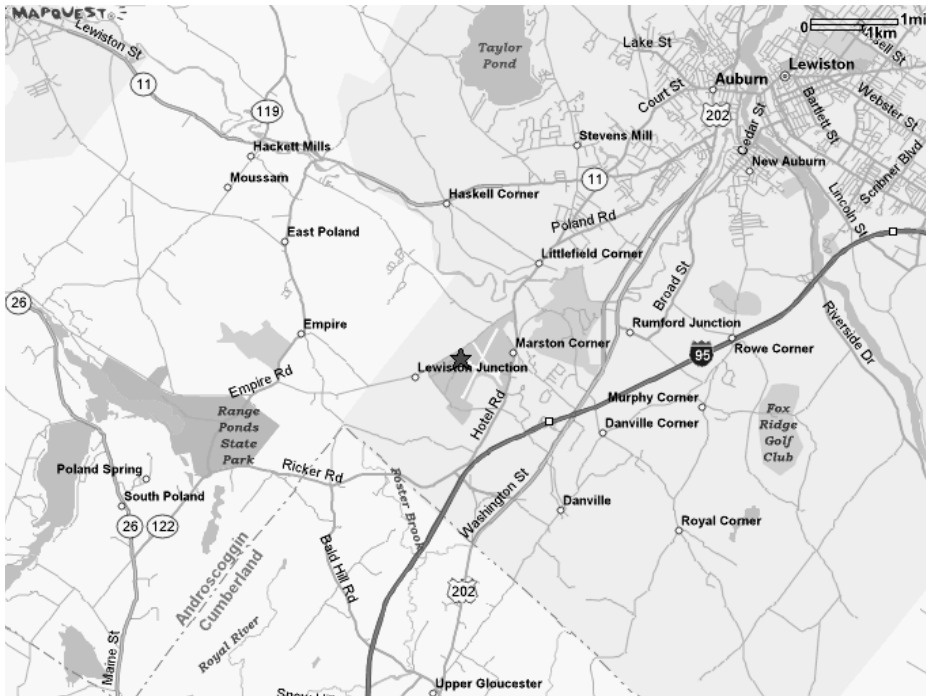
Feel free to e-mail me at tmcallister@hta-nh.com or call me at (603) 669-5555, ext. 118, if you have any questions.

Sincerely,

Tracy McAllister, Airport Planner
HOYLE, TANNER & ASSOCIATES, INC.

Enclosure

Second Request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Hotel Rd
Range Ponds State Park
Danville Corner
Fox Ridge Golf Club
Poland Spring
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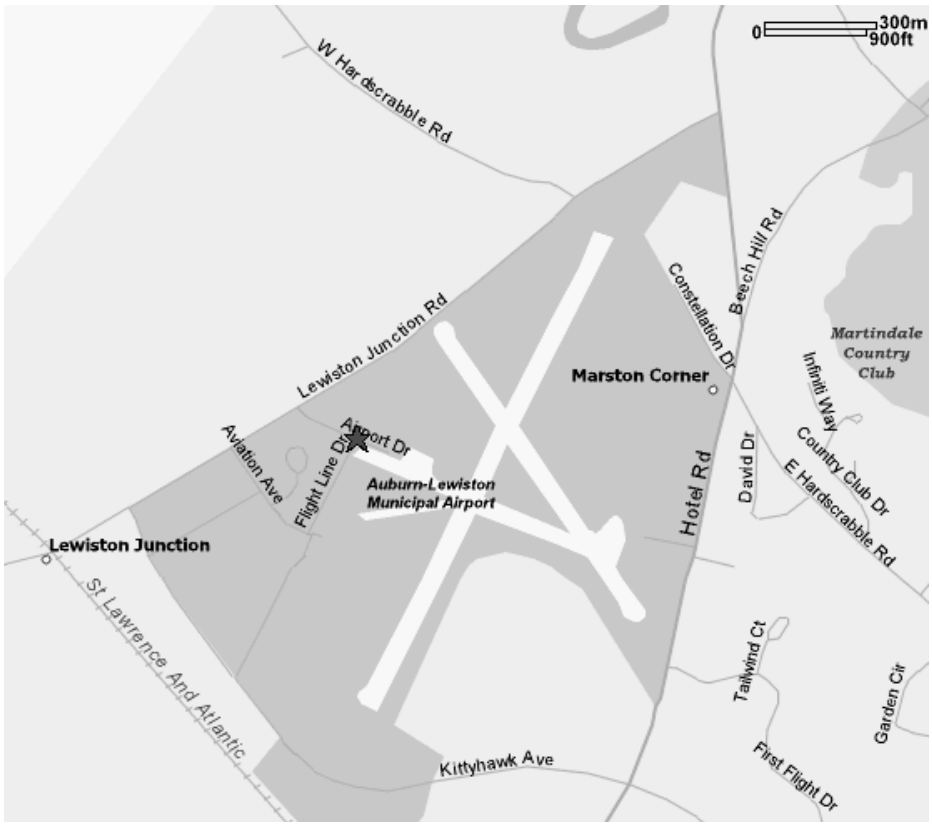
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Flight Line Dr
Auburn-Lewiston Municipal Airport
David Dr
Country Club Dr
E Hardscrabble Rd
Hotel Rd
Lewiston Junction
St Lawrence And Atlantic
Tailwind Ct
Garden Cir
Kittyhawk Ave
First Flight Dr

Tracy L. McAllister

From: Spaulding, Christopher [CSpaulding@dufresne-henry.com]
Sent: Wednesday, October 19, 2005 1:40 PM
To: tmcallister@hta-nh.com
Subject: Wetlands Files for Auburn-Lewiston

Hello:

You will find the wetland information that we utilized for the A-L EA and subsequent projects. You will notice that one file contains wetlands that were delineated and surveyed. The other file contains wetlands that we field sketched and are approximate for planning purposes.

You should get a copy or copy the 2003 Environmental Assessment that I prepared from the Airport. It contains additional environmental info concerning paleo-indian information. You should include Dr. Arthur Spiess of the MESHPO while you are preparing the AMPU. SHPO has a high degree of interest in the Airport and their future project.

Regards,

Chris

Sincerely,

Christopher S. Spaulding
Senior Environmental Scientist
Dufresne-Henry
22 Free St/Suite 205
Portland, ME 04101
Phone (207) 775-3211
Fax (207) 775-6434

From: King, Lance
Sent: Wednesday, October 19, 2005 11:34 AM
To: Spaulding, Christopher
Subject:

Lance King
Senior CADD Technician
Dufresne-Henry
22 Free Street
Portland, ME 04101
207-775-3211 ext. 114

October 20, 2005

Dr. Arthur Spiess
Maine Historic Preservation Commission
55 Capitol Street
65 State House Station
Augusta, ME 04333-0065

Dr. Spiess:

Re: Historical status of the area surrounding Auburn-Lewiston Municipal Airport

Hoyle, Tanner & Associates, Inc., is preparing a Master Plan Update for the Auburn-Lewiston Municipal Airport located in Auburn, Maine. The development of this document involves collecting and evaluating data relating to the airport and surrounding area, and forecasting future growth at the airport. This information is then used as the basis for planning the facilities needed to meet future aviation demands in the area.

Please provide us with any information regarding the status of the surrounding area as to its historic, architectural and archaeological importance. Also, identify any properties listed on or eligible for the National Register of Historic Places or the State Register of Historic Places within the project area.

See the attached maps for the project location.

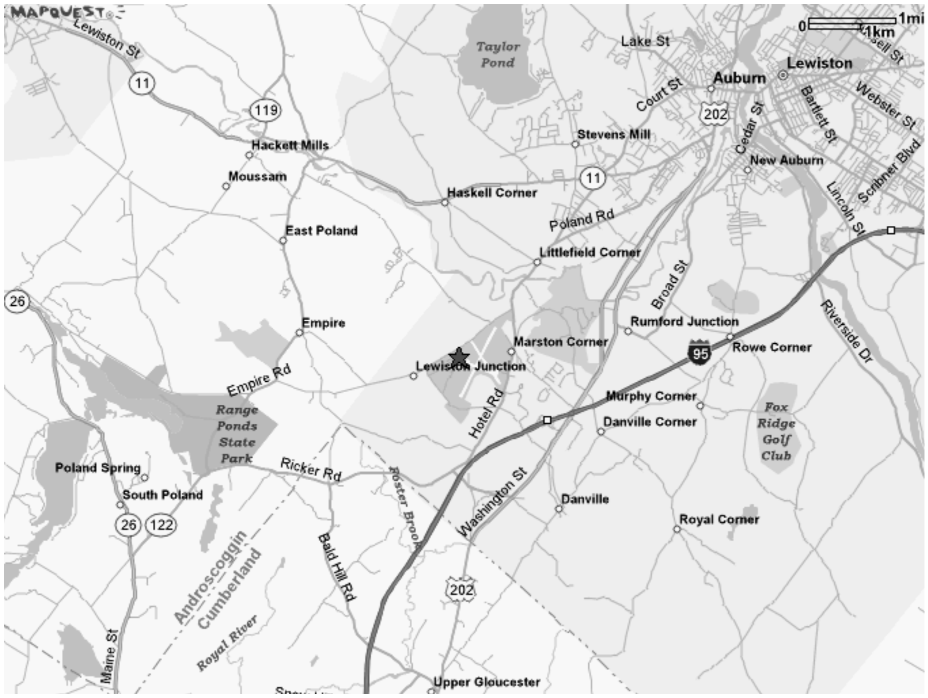
Feel free to e-mail me at tmcallister@hta-nh.com or call me at (603) 669-5555, ext. 118, if you have any questions.

Sincerely,

Tracy McAllister, Airport Planner

HOYLE, TANNER & ASSOCIATES, INC.

Enclosure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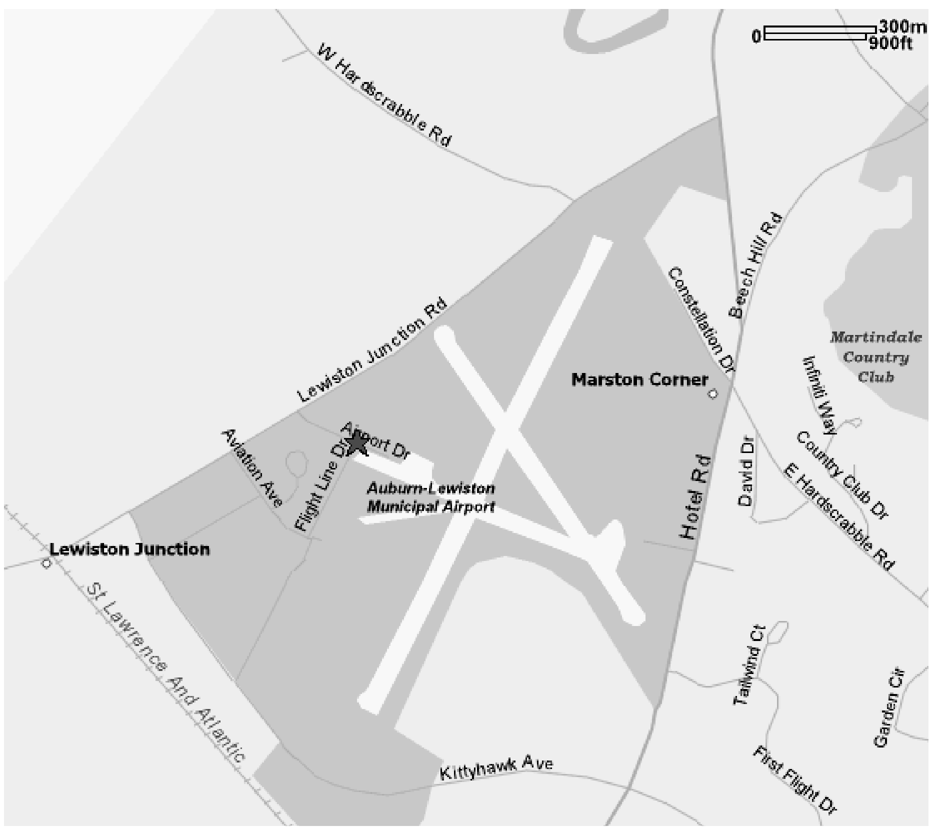
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E Hardscrabble Rd
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St Lawrence And Atlantic
Tailwind Ct
Garden Cir
Kittyhawk Ave
First Flight Dr

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JOHN ELIAS BALDACCI
GOVERNOR

EARLE G. SHETTLEWORTH, JR.
DIRECTOR

October 21, 2005

Tracy McAllister, Airport Planner
Hoyle, Tanner & Associates, Inc.
150 Dow Street
Manchester, NH 03101

Project: MHPC #2549-05 - Master Plan Update for Auburn Lewiston Municipal Airport; cultural resource analysis

Town: Auburn, ME

Dear Ms. McAllister:

In response to your recent request, I have reviewed the information received October 11, 2005 to continue consultation on the above referenced project pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended.

With regard to archaeological resources, there is an existing easement (enclosed) on a National Register listed prehistoric archaeological site within the airport boundaries. Additionally, any areas of sandy soils within the airport and master plan review boundaries that have not been previously surveyed or disturbed, are considered sensitive for prehistoric archaeological sites. Any future development of these areas is likely to require a Phase I archaeological survey to determine the presence of such sites.

Our office has no information regarding architectural resources within the Auburn-Lewiston Municipal Airport or adjacent areas. In order to for our office to complete this assessment, a reconnaissance level architectural survey will need to be completed and submitted in accordance with the Maine Historic Preservation Commission's *Survey Submission Requirements* (enclosed).

Please contact Mike Johnson of this office if we can be of further assistance in this matter.

Sincerely,

Earle G. Shettleworth, Jr.
State Historic Preservation Office

Enc:

PHONE: (207) 287-2132

FAX: (207) 287-2335

BOOK1871PAGE0314

PRESERVATION AGREEMENT

EASEMENT DEED - ARCHAEOLOGICAL SITE

THIS CONVEYANCE is made this 25 day of OCTOBER, 1985 by and between the Auburn/Lewiston Airport, hereinafter sometimes called the Grantor, and the Maine Historic Preservation Commission, hereinafter sometimes called the Grantee.

WITNESSETH

WHEREAS THE Grantor is owner of certain premises known as the Auburn/Lewiston Airport Paleoindian District in Auburn, Androscoggin County, Maine which premises have been register on the National Register of Historic Places under the National Historic Preservation Act of 1966 (P.L. 89-665, 16 U.S.C. ss 470a, et seq); and

WHEREAS THE Grantor and the Grantee desire to preclude any activity at the premises which would destroy or impair its value to the public as an archaeological site pursuant to An Act to Preserve Maine's Archaeological Heritage (27 MRSA 371-377); and

WHEREAS THE Grantor is willing to grant to the Maine Historic Preservation Commission the easement as hereinafter expressed for the purpose of insuring that the value of the premises for such purposes will not be destroyed or impaired;

NOW THEREFORE, in consideration of the sume of One Dollar and other valuable consideration paid to the Grantor, the receipt whereof is hereby acknowledged, the Grantor does hereby give, grant, bargain, sell and convey, with covenant of warranty, unto the Maine Historic Preservation Commission an easement in the following lot or parcel of land, hereinafter referred to as the "Property", located in Auburn, Androscoggin County, Maine and described in both the Androscoggin County Registry of Deeds, Book 611, Page 459, and the National Register of Historic Places Inventory-Nomination Form for the Auburn/Lewiston Airport Paleoindian District.

The easement herein granted shall be of the nature and character hereinafter expressed and shall be a covenant running with the

land, binding upon Grantor; its successors and assigns.

The Property is comprised essentially of the Auburn/Lewiston Airport Paleoindian District, which is more particularly described as follows:

> The District is a tract of land comprising some 20 acres located at the southern end of Runway 4 of the Auburn/Lewiston Airport, containing at least two prehistoric archaeological sites, given the numbers 23.12 and 23.13 in the Maine Archaeological Survey Inventory.

The foregoing description of the Auburn/Lewiston Airport Paleoindian District may be amended, replaced, or elaborated upon in more detail, and a description of the style, landscaping and similar particulars of the grounds, and any collateral or appurtenant improvements on the Property may be added, by an instrument in writing, signed by both parties hereto, making reference to this Easement Deed and filed of record in the Androscoggin County Registry of Deeds. If and when such an instrument is placed of record, it shall be deemed to be a part of this Easement Deed as if set out herein.

For the purpose of preserving and protecting the property, including its significance and value to the public as an archaeological site, the Grantor does hereby covenant and agree, on behalf of itself, its successors and assigns with the Grantee, its successors and assigns, as follows:

1. No alteration to the Property (including, but not limited to construction, material procurement, forest products harvesting, or ground disturbance/excavation) shall be undertaken, commenced or performed without the prior written approval of both the Grantor and the Grantee.

2. The Grantor shall post the Property to advise visitors to the Property of the above Clause 1.

3. The Grantee, its agents and designees shall have the right to inspect the Property at all reasonable times in order to ascertain whether or not the terms and conditions of this Easement Deed are being complied with.

4. Ownership of artifacts deriving from archaeological excavation on the Property, authorized by a permit issued by the Grantee on the concurrance of the Grantor, shall be transferred to the Maine State Museum or such other institution as designated in the excavation permit.

5. The covenant and agreements set forth herein shall be binding upon and shall inure to the benefit of the Grantor and the Grantee and their respective successors and assigns. TO HAVE AND TO HOLD the aforegranted and bargained easement with all the privileges and appurtenances thereof to the State of Maine through the Maine Historic Preservation Commission, its successors and assigns, to its and their use and behoof forever from and after the date hereof.

6. The Grantor agrees to convey to the State of Maine first right of refusal in the event that at some future time they shall wish to sell the premises referred to in this easement.

7. The Grantee agrees to conduct its archaeological activities in a safe and efficient manner so as to not interfere in any way with the operations, activities and aviation structures of the Grantor and the flying public, and to not interfere or cause any undue delay in construction of the turnpike connector road as proposed by the Maine Department of Transportation.

IN WITNESS WHEREOF, The Grantor has caused this deed to be signed by RONALD F BARRIAULT and _____, and have hereunto set hand and seal for the purpose set forth above, all as of the day and year first written above.

THE GRANTOR

By Ronald F Barriault
Ronald F. Barriault
CHAIRMAN, AIRPORT BOARD OF DIRECTORS

STATE OF MAINE

Date OCTOBER 25, 1985

Then personally appeared the above named Bruce Bernier and —, and acknowledged the foregoing instrument to be their free act and deed in said capacity and the free act and deed of the Grantor.

Before me,

June Thompson
Notary Public

June Thompson

SEAL

ANDROSCOGGIN SS.
RECEIVED NOV -7 1985
AT 4 H. 10 M. P.M.

Appendix X

Airport Economic Activity Comparison

Technical Memorandum

RKG Associates, Inc. ♦ 277 Mast Road ♦ Durham, NH 03824

To: Dick Ludders and Rick Domas – Hoyle, Tanner and Associates

From: Craig Seymour and Darren Mochrie

Subject: Airport Facilities Comparison and Economic Activity Comparison

Date: June 2006

Introduction

The purpose of this technical memorandum is to provide a comparison of the Auburn/Lewiston Municipal Airport to competitive airport facilities in Maine and New Hampshire, as well as analyze economic activities within the greater Auburn/Lewiston, Maine region. The intent of this memorandum is to provide an analysis of the economic competitiveness of the Auburn/Lewiston Municipal Airport facility relative to other regional airports.

In order to obtain data and information for this memorandum, four methods were used. The first consisted of an analysis of airport master plans and aviation-related online data sources in order to obtain airport facility information.

The second method included interviews with airport managers and/or other airport officials relative to quantitative data not available via the first method, and more qualitative information relative to the airport's economic significance within the region.

The third method included interviews and information provided by Auburn/Lewiston area economic development officials and real estate brokers relative to local economic and light industrial, warehouse, commercial, retail and office market conditions, pricing and activity.

The fourth method included an analysis of online commercial and industrial property listings determine the competitive supply of residential and industrial properties in the region.

Airport Facility Comparison

The following section compares Auburn/Lewiston Municipal Airport's facilities with those of other regional airports in order to provide a baseline of information to determine the regional competitiveness of the airport. The airports which were compared to Auburn/Lewiston Airport include:

- Bangor International Airport – Bangor, Maine

- Brunswick Naval Air Station[1] – Brunswick, Maine
- Pease Tradeport – Portsmouth, New Hampshire
- Portland International Jetport – Portland, Maine
- Sanford Regional Airport – Sanford, Maine

The key facility components that were compared at each of the airports included:

- Aircraft storage hangars and aprons
- Terminal building size and amenities
- Airport businesses (aviation and non-aviation related)
- Runways
- Navigation aids
- Roadway/highway access
- Automobile parking
- Business park/Industrial park availability
- Foreign Trade Zone status
- Other facility Components

The following provides a narrative summary of Auburn/Lewiston Municipal Airport's facilities in comparison to the other regional airports. A summary of facility information is provided in Table 1.

Aircraft Storage (Hangars and Aprons)

Based on an interview with the Auburn/Lewiston Municipal Airport Manager, the facility has approximately 37,800 SF of hangar space and approximately 345,300 SF of apron storage area and currently has eighty based aircraft. Although hangar and apron area estimates were not available for all airport facilities, Auburn/Lewiston Municipal Airport likely has the smallest amount of aircraft storage space compared to the other airports.

In terms of hangar space, outside of Brunswick Naval Air Station's 500,000 SF of hangar space, each of the other airports have sizeable hangar capacity with only Portland International Jetport having comparable hanger capacity to Auburn/Lewiston Municipal Airport at about 36,000 SF. Likewise, apron storage capacity is extensive at Brunswick Naval Air Station (134 acres), Sanford Regional Airport (409,745 SF) and Portland International Jetport (692,000 SF).

[1] NAS Brunswick is currently an active military airfield owned by the Department of Defense and operated by the Department of the Navy. It is not available for civilian use (except with prior permission). The base was included on the list of recommended closures by the BRAC Commission in September 2005. The timing of the closure and subsequent redevelopment is not certain, and is not likely to occur for at least 3-5 years. The continuation of airport operations will be determined by the Local Redevelopment Authority that will be created to oversee the reuse and transfer of the property. The viability of the airport to continue to operate as a commercial or general aviation facility is not certain, however, if it does, it could play a significant role within the state and region.

Terminal Building Size and Amenities

Although terminal building area estimates were not available for all facilities, at about 2,800 SF, it is likely that the Auburn/Lewiston Municipal Airport's terminal is the smallest of the comparable airports. Auburn/Lewiston Municipal Airport's terminal contains facilities such as airport management offices, pubic washrooms, common areas and food concessions which are found at most of the larger general aviation (GA) airports and is comparable to only Sanford Regional Airport. Terminals at Bangor International Airport, Pease Tradeport and Portland Jetport contain a full range of amenities including restaurants, baggage claim, ticket counter space, boarding areas, washrooms and customs areas.

Airport Businesses

Auburn/Lewiston Municipal Airport contains a total of 19 businesses of which four are aviation related. Sanford Regional Airport has the smallest establishment base at four (three of which are aviation related), while Pease Tradeport has 19 businesses all of which are aviation related.

Runways

With two runways at 5,001 x 100 feet and 2,750 x 75 feet each, Auburn/Lewiston Municipal Airport has the shortest and narrowest landing facilities of any of the comparable airports. Only Sanford Regional Airport would be considered somewhat comparable with two runways at 6,000 x 150 feet and 4,999 x 100 feet. Auburn/Lewiston Municipal Airport has no parallel taxiways with each of the comparable airports having at least one parallel taxiway.

Navigation Aids

With the exception of the Brunswick Naval Air Station (which instrument landing system [ILS] information was unavailable) all of the comparable airports had ILS capabilities. Additionally, both Auburn/Lewiston Municipal Airport and Sanford Regional Airport do not have control towers, all of the other comparable airports have towers.

Roadway/Highway Access

With the exception of Sanford Regional Airport, Auburn/Lewiston Municipal Airport, and all of the other comparable airport facilities, are located within immediate access to the interstate highway system. All of the airports have immediate access to local highways.

Automobile Parking

Auburn/Lewiston Municipal Airport contains approximately 132 parking spaces which is the fewest of any of the comparable airports. Only Sanford (at 140 spaces) is comparable to Auburn/Lewiston Municipal Airport with Bangor International (800 spaces), Pease Tradeport (1,100 spaces) and Portland International Jetport (over 3,200 spaces) having considerably larger parking capacity.

Business/Industrial Park Availability

With approximately 200 acres of land available for development (160 acres of which is estimated to have runway access), Auburn/Lewiston Municipal Airport contains the largest amount of developable land of any of the comparable airports. Pease Tradeport contains the second largest supply of developable land of the comparable airports at 110 acres (all of which estimated to have runway access). It should be noted that estimates of the amount of developable land were not available for both the Portland International Jetport and the Brunswick Naval Air Station. Depending on how reuse is determined, Brunswick Naval Air Station, could potentially have several hundred acres of serviced and developable land in close proximity to the airfield, and much of it with direct runway access.

Typically, airport land is leased to tenants with lease rates at Auburn Municipal Airport ($0.10/SF) and Sanford Regional Airport ($0.15) being the lowest of the comparable airports in which land lease information was available. Pease Tradeport currently leases land at $13,000 per acre (about $0.30/SF) – about double the rate of land lease rates of Auburn/Lewiston Municipal Airport and Sanford Regional Airport. Bangor International Airport sells land within their industrial parks for between $30,000 and $50,000 per acre.

It should be noted that only land located within the airport perimeter is considered as part of an airport's developable land supply. Often municipal airports have business or industrial parks which contain developable land which is "outside the fence" or beyond the airport perimeter. Typically, the majority of tenants within these business or industrial parks are not aviation dependent or related, and locate their business within the park due to affordable land costs, close proximity to customers or highways. According to the Lewiston-Auburn Economic Growth Council, the Auburn/Lewiston Municipal Airport contains 457 acres with approximately 100 acres located "outside the fence".

With the exception of Pease Tradeport (at $3.50/SF for light industrial buildings and $20 for terminal space) all of the other comparable airports either had no on-airport building space available for lease or did not have building lease rate information available.

Foreign Trade Zone Status

The Auburn/Lewiston Municipal Airport facility is located with two trade zones – a Foreign Trade Zone as well as a Maine Pine Tree Development Zone. The Airport is part of a 760 acre Foreign Trade Zone is defined as:

…A physical place (land, warehouse or factory) located within the United States that is legally considered outside U.S. Customs Territory. Imported goods can enter the zone without going through formal customs entry procedures or paying import duties. Once inside the zone, goods can be assembled, repackaged, repaired or destroyed. Duties are deferred until the imported product enters the domestic market or avoided if the imported materials are ultimately exported in raw or finished form.

A Maine Pine Tree Development Zone is defined as:

A qualified for-profit business engaged in financial services, manufacturing or one of seven targeted technology sectors: biotechnology, aquaculture and marine technology, composite materials technology, environmental technology, advanced technologies for forestry and agriculture, information technology and precision manufacturing technology. Benefits include:

- *100% sales tax exemption on building material and all tangible personal property;*
- *100% state income tax credit for the first five years, followed by 50% tax credit for years six through ten;*
- *Employment Tax Increment financing will reimburse 80% of employees' state income tax withholdings to the business for ten years;*
- *Tax increment finance districts are established in zones are excluded from municipal and original assessed value limitations.*

Neither the Portland International Jetport nor the Brunswick Naval Air Station are currently designated as either, the Pease Tradeport is located within a Foreign Trade Zone and Sanford Regional Airport is located within a Maine Pinetree Development Zone.

Other Facility Components

In addition to the facility components listed, Auburn has been granted Inland Port of Entry Status – a designation under the U.S. Department of Homeland Security, Customs and Border Protection (CBP). Auburn's Inland Port is a Service Port location, providing a full range of cargo processing functions, including inspections, entry, collections, and verification. The Auburn Inland Port is technically an extension of the geographic limits of the port of entry of Portland. Shipments received at the Auburn Intermodal Facility are cleared by customs "in house" and therefore do not have to be transported to the Portland facility to be cleared thus saving time and reducing transportation costs. It should be noted that Bangor is also designated as a Port of Entry whereby CBP personnel can are authorized to accept shipments, collect duties, and enforce customs laws.

Additionally, the Auburn/Lewiston Municipal Airport contains rail access. Rail access may be a direct and/or indirect benefit for manufacturing or warehousing end-users who mobilize large quantities of products or supplies used in their manufacturing process, or may potentially have the need to ship high volume or high weight products to national or international customers.

Airport Facility Summary

The Auburn/Lewiston Municipal Airport offers advantages over competing airports including close proximity to Interstate 95 and state highway systems, competitively priced available industrial land, and foreign trade zone and Maine Pine Tree Development Zone designations. All of these assets are considered desirable for industrial, warehouse, flex and office space end-users. However, outside of the airport's stated assets, the facility does not contain any competitive advantage relative to the other comparable airports.

Table 1. Airport Facilities Summary
Lewiston/Auburn Airport and Other Regional Airports

Airport	Aircraft Storage		Terminal Building		Airport Businesses		Runway(s)			Full Parallel Taxiway	NPIAS Role	Enplanements	Operations	Based Aircraft	Navigation Aids		Highway Access		# Parking Spaces	Business Park Availability						Trade Zone
	Hangar Space	Apron Space	Size (SF)	Amenities	Aviation Related	Non-Aviation	Designation	Length (FT)	Width (FT)						ILS	Tower	Local Highway	Interstate		Runway Access Acres	Non-Access Acres	Total Acres	Price($)/Acre	Building (SF)	Lease Rate($)/SF	
Auburn/Lewiston Mun. Airport	37,800 SF	345,300 SF	2,800	Offices, food, washrooms	4	15	4-22 [1]	5,001 [1]	100 [1]	No [2]	Airport Reliever (RL) [3]	N/A	70,278	80	Yes	No	Yes	Yes	132	160	40	200	Lease @ $0.10/SF	0	N/A	Foreign Trade Zone & Maine Pine Tree Zone
							17-35 [1]	2,750 [1]	75 [1]	No [2]																
Bangor Int'l Airport	N/A	N/A	N/A	All services	5	7	15-33 [1]	11,440 [1]	200 [1]	Yes [2]	Commercial Service - Primary (PR) [3]	241,634 [3]	61,704 [1]	82 [1]	Yes	Yes	Yes	Yes	800	N/A	78	78	$30,000-$50,000/Acre	N/A	N/A	Foreign Trade Zone & Maine Pine Tree Zone
Brunswick NAS	503,000 (SF)	134 Acres	N/A	N/A	N/A	N/A	01L-19R [1]	8,000 [1]	200 [1]	No [2]	N/A	N/A	0 [1]	0 [1]	N/A	Yes	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
							01R-19L [1]	8,000 [1]	200 [1]	Yes [2]																
							09-27 [1]	6,000 [1]	100 [1]	No [2]																
Pease Int'l Tradeport	N/A	N/A	52,000	All services	19	199	16-34 [1]	11,321 [1]	150 [1]	Yes [2]	Commercial Service - Primary (PR) [3]	43,932 [3]	37,970 [1]	135 [1]	Yes	Yes	Yes	Yes	1,100	110	0	110	Lease @ $13,000/Acre	28,400	$3.50/SF (industrial) $20/SF office/terminal	Foreign Trade Zone
Portland Int'l Jetport	36,500 SF	692,000 SF (150 aircraft)	160,000	All services	N/A	N/A	11-29 [1]	7,200 [1]	150 [1]	Yes [2]	Commercial Service - Primary (PR) [3]	701,219 [3]	85,610 [1]	43 [1]	Yes	Yes	Yes	Yes	3,253	N/A	N/A	N/A	N/A	N/A	N/A	N/A
							19-36 [1]	5,001 [1]	150 [1]	No [2]																
Sanford Reg. Airport	178,565 SF (46 aircraft)	409,745 SF (43 aircraft)	26,400	Offices, food, washrooms	3	1	7-25 [1]	6,000 [1]	150 [1]	No [2]	Reliever Airport (RL) [3]	N/A	65,800 [1]	67 [1]	Yes	No	Yes	No	140	10	0	10	Lease @ 0.15/SF	0	N/A	Maine Pine Tree Zone
							14-32 [1]	4,999 [1]	100 [1]	Yes [2]																

[1] U.S. Department of Transportation, Federal Aviation Administration, Airport Master Record, FAA Form 5010-1, effective July 7, 2005 <http://www.gcr1.com>
[2] U. S. Department of Transportation, Federal Aviation Administration, U.S. Government Flight Information Publication, U.S. Terminal Procedures, Northeast (NE), Volume 1 of 4, Effective July 7, 2005.
[3] U.S. Department of Transportation, Federal Aviation Administration, National Plan of Integrated Airport Systems (2005-2009) <http://www.faa.gov/arp/planning/npias/>

Economic Activity Comparison

The following provides an analysis of the Auburn and Lewiston regional commercial and industrial real estate market with particular attention paid to aviation-related and airport-dependent business establishments.

Regional Employment and Business Trends

According to at-place employment estimates provided by the Maine Department of Labor, the Auburn and Lewiston Metropolitan Statistical Area (MSA) had a 2004 employment base of about 47,200 jobs representing an increase of 510 jobs (1.1%) since 2001. As shown in Table 2, over the same time period, aviation-related or airport-dependent industry sectors (identified as manufacturing; information; trade, transportation and utilities; professional and business services; and, finance services sectors) lost over 1,000 jobs (4%). Without the increase of 335 jobs experienced within the finance services sector over the time period, over 1,300 jobs would have been lost.

Table 2. Lewiston-Auburn MSA Employment Trends: 2001-2004

	2001	2004	# Change	% Change
Natural Resources and Mining	284	288	4	1.4%
Construction	2,665	2,820	155	5.8%
Manufacturing	7,015	6,259	-756	-10.8%
Trade, Transportation, Utilities	10,306	10,090	-216	-2.1%
Wholesale Trade	*1,312*	*1,403*	*91*	*6.9%*
Retail Trade	*7,175*	*7,021*	*-154*	*-2.1%*
Information	850	779	-71	-8.4%
Financial Services	2,741	3,076	335	12.2%
Professional & Business Services	5,176	4,832	-344	-6.6%
Education & Health Services	11,797	13,102	1,305	11.1%
Leisure and Hospitality	3,279	3,451	172	5.2%
Other Services	1,244	1,146	-98	-7.9%
Public Administration	1,321	1,345	24	1.8%
Aviation-Related/Airport Dependent Subtotal	*26,088*	*25,036*	*-1,052*	*-4.0%*
Total	46,677	47,187	510	1.1%

Lewiston-Auburn MSA Business Establishment Trends: 2001-2004

	2001	2004	# Change	% Change
Natural Resources and Mining	38	28	-10	-26.3%
Construction	373	391	18	4.8%
Manufacturing	192	196	4	2.1%
Trade, Transportation, Utilities	721	685	-36	-5.0%
Wholesale Trade	*131*	*130*	*-1*	*-0.8%*
Retail Trade	*459*	*446*	*-13*	*-2.8%*
Information	25	32	7	28.0%
Financial Services	250	249	-1	-0.4%
Professional & Business Services	330	348	18	5.5%
Education & Health Services	369	375	6	1.6%
Leisure and Hospitality	226	237	11	4.9%
Other Services	252	242	-10	-4.0%
Public Administration	63	68	5	7.9%
Aviation-Related/Airport Dependent Subtotal	*1,518*	*1,510*	*-8*	*-0.5%*
Total	2,839	2,851	12	0.4%

*Note: Aviation-Related/Airport Dependent sectors shaded grey
Source: Maine Department of Labor

Between 2001 and 2004, the Auburn and Lewiston MSA's business establishment base decreased by 12 firms (less than one percent). Over the same time period, the number of firms within aviation-related or airport-dependent firms decreased by 8 (less than one percent).

Supply and Demand for Industrial Land

Based on an analysis of listings for available industrial land within the Auburn/Lewiston region, there is approximately 270 acres of vacant (mostly serviced with water and sewer infrastructure) industrial land available for immediate development. These land parcels are contained within both established industrial parks as well as isolated sites.

According to interviews with industrial brokers, there is a limited supply of "shovel-ready" industrial land within the region. However, according to the Lewiston-Auburn Economic Growth Council, the supply of serviced land will increase in 2006 by 288 acres with the development of a two new industrial parks adjacent to the Auburn/Lewiston Municipal Airport. The addition of the 288 acres is part of an overall plan to develop 700 acres for industrial uses over the next twenty years.

Industrial brokers in the region indicated that although the current supply of "shovel-ready" land is limited, there appears to be modest demand for small (5 acres or less), serviced industrial sites with highway access. These sites generally appeal to light industrial and warehouse end-users who have specialized building needs (20+ foot clear-span ceilings, loading docks and office space). Due to the current limited supply of land, quantifying absorption is difficult. However, it is estimated that ten acres or less (one to two lots) per year are absorbed by end-users within the region. Depending on pricing and location, the increase in the supply of serviced industrial land should increase the absorption of industrial lots by various end-users. Industrial land prices vary widely due to available infrastructure, location, topography, transportation access, etc. However, industrial land is currently selling for between $30,000 and $100,000 per acre with the average price being approximately $40,000 to $50,000 per acre.

Supply and Demand for Light Industrial, Flex and Warehouse Buildings

It is estimated that the Auburn and Lewiston region contains approximately 400,500 SF of available light industrial, flex and warehouse space available for lease or sale.

With the downturn of the economy and the decline of manufacturing employment, potential industrial users have many choices should they require space. Interviews with local real estate development professionals indicates that with recent low interest rates, some industrial users are moving out of their older existing (possibly leased) space and building new (owner-occupied) space which specifically meets their current and projected future needs. These needs may include higher ceilings, loading docks, office space, etc. and have lower operating costs. According to the Lewiston-Auburn Economic Growth Council, approximately 1.9 million square feet of new industrial, flex and warehouse buildings have been built or have been permitted to be built in Lewiston or Auburn.

As a result of the development of modern space, some of the space formerly occupied by these users sits vacant and is generally considered to be functionally obsolete. Current lease rates for older industrial, warehouse and flex space ranges between $3 and $4.50 per SF with more modern space leasing for $5 to $7 per SF.

Supply and Demand for Mill Buildings

Based on a search of mill properties within the region, there is an extensive supply of space estimated at approximately 1.15 million SF available for lease or sale and is generally contained within four mills: the Pepperell Mill; Hill Mill; Bates Mill; and Continental Mill. The total supply of mill space in Lewiston and Auburn is estimated to be approximately 3 million square feet.

The ample supply of mill space presents different types of users with a multitude of space options depending on their budget and space requirements. For example, the Bates Mill has undergone extensive renovations since the late 1990s and has become a desirable property for office, commercial and light industrial uses. Lease rates within this mill are in the $5 to $7/SF range depending on interior finish. Users may also find "shell" or unfinished mill space for storage or light industrial uses within the $2 to $4/SF range.

Supply and Demand for Office Buildings

Based on a search of available office and retail listings, the region contains approximately 170,000 SF of available office and retail space. According to the Lewiston-Auburn Economic Growth Council, approximately 340,000 square feet of office space has been developed, redeveloped or is slated to be (re)developed in Lewiston and Auburn.

Historically, the Auburn and Lewiston region has generally contained mostly class "B" and "C" office space. However, as shown with the increase in finance service employment as well as the increase in professional and business service firms within the market, the demand for office space is increasing. Recent class "A" office (re)developments have taken place in the region with lease rates within the $12 to $14/SF range. Class "B" office space is available within the $9 to $11/SF range. Depending on the performance of the regional and New England economy, there could be a continued regional demand for office space primarily within the "back office", call center and financial service segments.

Supply and Demand for Commercial and Retail Buildings

There is approximately 116,000 SF of available commercial and retail space within the region with most of the space being small 3,000 SF to 7,000 SF traditional ground floor storefront space.

According to the Lewiston-Auburn Economic Growth Council, over 800,000 square feet of commercial and retail space has be built in Lewiston and Auburn over the past five years with almost three-quarters of the development being "big box" or department store retailers.

Retail space within secondary locations is currently leasing within the $6 to $8/SF range with space within primary locations (Route 4 and downtown districts) leasing for $10 to $12/SF. With population projections within the Lewiston/Auburn MSA between 2005 and 2010 to increase modestly 2.6%, the demand for retail space should remain stable or increase modestly. The recent development of big box retailers indicates that Lewiston and Auburn are capturing consumer demand from within the region which, prior to development of these establishments, used to spend their retail dollars in other retail destinations (such as Augusta or the greater Portland area for example).

Demand for Aviation-Related and Airport-Dependent Land and Buildings

Based on interviews with airport managers and real estate professionals and analysis of commercial, industrial and office real estate listing information, there appears to be minimal demand by aviation-related or airport-dependent businesses within southern Maine and the New Hampshire Seacoast region. The exception is the addition of Allegiant Air, LLC, a discount commercial air carrier, to Pease Tradeport in August, 2005 which represents the newest and largest airport-dependent user to the market in several years. It is clear that many non-aviation related and non-airport dependant light industrial, warehouse and flex end-users have located to airport industrial parks due to competitively priced land located near major road (and to a lesser extent rail) transportation corridors, rather than due to the airport facility itself.

Economic Summary

The following points summarize the relevant economic findings for the Auburn and Lewiston region and the Auburn/Lewiston Municipal Airport:

- Manufacturing sector employment is shrinking which results in very little demand for manufacturing space;
- The projected increase in supply of serviced industrial land could attract end-users to the region with specific or specialized building space requirements;
- The finance services sector has experienced growth with a resulting modest increased demand for office space within the regional market;
- There is an abundant supply of mill and functionally obsolete light industrial and mill space within the region;
- There is minimal demand for land and building space for aviation-related or airport dependent businesses within the regional market.

Appendix XI

Business Plan

Technical Memorandum

RKG Associates, Inc. ♦ 277 Mast Road ♦ Durham, NH 03824

To: Dick Ludders and Rick Domas – Hoyle, Tanner and Associates

From: Craig Seymour and Darren Mochrie

Subject: LEW Airport Business Plan

Date: June 2006

Introduction

The purpose of this technical memorandum is to provide a draft *Business Plan* for the Auburn/Lewiston Municipal Airport (LEW) as part of the Airport Master Plan Update (AMPU). The draft plan addresses key operational and economic attributes of the airport and provides financial forecasts for the alternatives discussed in the AMPU.

A business plan is a decision support tool that provides an analysis of the fiscal structure of the airport and makes recommendations for improvements. The analysis includes an examination of the airport's current and historical fiscal condition, as well as the projected conditions based on the proposed future development scenarios. The last business plan for the airport was completed in 1992 by the then airport manager and addressed a series of revenue enhancement approaches felt necessary to improve the financial position of the facility and provide support for future operations.

In order to obtain data and information for this analysis, three approaches were relied upon. The first consisted of an analysis of airport master plans and aviation-related online data sources in order to obtain airport facility information. The second method included interviews with airport managers and/or other airport officials relative to quantitative data not available via the first method, and more qualitative information relative to the airport's economic significance within the region. The third method included an analysis of current and historical airport financial data and lease information as provided by the airport.

The following sections include a description of various revenue sources and expense categories for the airport, followed by a comparison of these at other airports and at LEW. This is then followed by forecasts of future revenues and expenses based on the assumptions derived from the latest Combined Development Plan chapter of this master plan.

Airport Revenue

Airports generate revenue through a variety of means for both aviation dependent users (commercial and general aviation aircraft operators), aviation-related activities (terminal tenants, etc.) as well as and non-aviation sources such as leases from tenants who are not connected to the airport (other than by location). Some revenues, such as fuel flowage fees, are directly related to

the amount of aviation activity that takes place at the facility, while others (rents) are less so. The following are examples of the streams of revenue that most airports rely on, including how LEW's rates and charges compare to other airports in the region.

Land Rent: Land is an airport's major resource with tenants compensating the facility for its use. Airport land is typically leased (on a per acre or square foot basis </SF>) at rates comparable to prevailing commercial and industrial rates within the airport's market area. Airports typically do not sell land, due to restrictions placed on the facility by the Federal Aviation Administration as part of that agency's grant programs. Land at comparable airports in southern Maine and New Hampshire is currently leasing for between $0.10/SF to $0.15/SF per year with varying lease terms. Property on which tenants build their own facility often carries lease terms of 30-40 or more years in order for the tenant to obtain conventional financing. Typically, the land lease includes a reversionary clause in which any improvements revert back to the airport after a predetermined period (twenty to forty years).

Facility Rent: Airports are compensated by users who rent or lease space in airport-owned facilities, e.g. terminal buildings and offices, hangars, aprons, etc. Although lease rate information was not available for many airports, terminal office and large hangar space is currently leasing for between $2/SF and $20/SF per year. Tie-downs for aircraft range from $5 to $25 per day for transient users to between $30 and $110 per month for based aircraft. So-called T-hangars or other covered facilities for the storage of aircraft range in price between $100 and $250 per month depending on the condition of the hangar and whether heat and utilities are provided. Large hangars (typically enclosed and heated) range in price from $50 to $400 per night and/or $265 to $1,335 per month depending on the size of aircraft housed and services required. Transient rentals are usually charged by the Fixed Base Operator (FBO) who essentially sub-leases space within their larger hangar.

Gross Receipts Fee (GRF): Airports may charge a fee to aircraft operators in order to maintain the common areas and other airport facilities and is typically charged based on an operators gross receipts.

Access Fees: There are instances when the owner of a public airport permits access to the public landing area by independent operators offering an aeronautical activity or by aircraft based on land adjacent to, but not a part of, the airport property. This type of arrangement is commonly called a "through-the-fence" operation. Through-the-fence operations include businesses or individuals that have access to the airport infrastructure from outside airport property, or that utilize airport property to conduct a business but do not rent land or facilities from the airport sponsor/owner. Typically, through-the-fence operations are discouraged, as they tend to dilute the market available to on-airport tenants. There is one through-the-fence agreement with an abutting landowner at LEW (M. Roundy/Constellation aircraft) for which a fee is paid to the airport.

Fuel Flowage Fee: The fuel flowage fee is a predetermined charge owed to the airport for each gallon of fuel purchased by the users of the airport. Currently, LEW assesses $0.06 for every gallon of fuel sold by its FBO, Twin Cities Aviation and $0.08 per gallon for SilverWings Aviation, Inc. Fuel flow fees range from no fee (for GA aircraft) at Portland Jetport and Bangor, to

$0.07/gallon at Sanford. These fees, along with aircraft parking and tie-down fees, are collected by the airport.

Service Fees: These are charges to direct users of the airport. Typical examples are fees assessed to transient aircraft for apron parking and landing fees. The latter are negatively regarded by most airport users and can be very difficult to collect at airports without an air traffic control tower, such as LEW. LEW currently charges a landing fee of between $10 and $25 depending on the size of aircraft landing which is comparable to Bangor (at $15 to $22), while the other comparative airports do not currently charge landing fees (for GA aircraft).

Per Federal regulations, any revenues generated from airport land and facilities must remain in an airport's account to be used to offset any airport expenses. The airport has a dedicated fund, into and from which airport revenues and expenses are deposited and withdrawn. This accounting practice ensures the airport's revenues are specifically used for airport improvement purposes and also allows greater accuracy when tracking the airport's finances. Table 1 shows a summary of various fees and charges currently assessed at comparative airports near LEW.

Table 1 Current Comparative Airport Fee Schedule

Airport	Fuel Price/Gallon[1]		Fuel Flow Fee	Tie Down Fee	Hangar Fee		Land Lease Rate	Landing Fee	Building Lease Rate	Ramp Fee
Auburn/L:ewiston Mun. Airport	Jet A	$3.50 to $3.80	$0.06 - $0.08/gal	$5 to $25/Night $30 to $55/Month	T-Hangar	$100-$200/Month	$0.04 to $0.12/SF/Year	$10 to $25	N/A	$25
	100LL	$3.45 to $4.01			Large Hangar	$50 to $200/Night				
Bangor Int'l Airport	Jet A	$3.55	None	$33 to $110/Month	T-Hangar	$250/Month	$30,000 to $50,000/Acre (sale)	$22 to $15 for GA	N/A	N/A
	100LL	$3.89			Large Hangar	$42 to $388/Night				
Brunswick NAS	Jet A	N/A	N/A	N/A	T-Hangar	N/A	N/A	N/A	N/A	N/A
	100LL	N/A			Large Hangar					
Pease Int'l Tradeport	Jet A	$3.90 to $4.10	$0.015	$65/Month	T-Hangar		$13,000/Acre	None for GA	$3.50/SF (hangar) & $20/SF for terminal	N/A
	100LL	$4.35 to $4.65			Large Hangar	$65 to $300/Night				
Portland Int'l Jetport	Jet A	$4.65	None for GA	$75/Month	T-Hangar	Aircraft LxWx$.103		None for GA		N/A
	100LL	$3.95			Large Hangar					
Sanford Reg. Airport	Jet A	$3.25 to $3.50	$0.07	$45/Month	T-Hangar	$100/Month	$0.15/SF	None	$2.31/SF or $1,300.Month	$8
	100LL	$3.45 to $4.25			Large Hangar	$265-$280 Month				
AAAE Average [2]		N/A	$0.068	45.6/Month	T-Hangar	$181 to $244/Month		$5 to $13	$12 to $22/SF	
					Large Hangar	$365 to $1,335/Month				

[1] As of April, 2005
[2] American Association of Airport Executives. *Survey of Airport Rates and Charges Volume 2*: 1998.

Airport Revenue Trends

Airport revenues are divided into two categories – operating and non-operating revenues. Operating revenues are generated through direct airport activities such as rent for buildings and land, fuel flowage fees, landing fees and services provided to tenants and users. Included in the historic operating revenue reported for the airport is revenue from land rents for airport property not used by aviation-related entities. Non-operating revenues are generated through interest on accounts and excise taxes on aircraft. As shown in Table 2, in FY 2005, the airport generated

$385,400 in operating revenue, representing an increase of about $2,800 since FY 2004 (or less than 1%). The projected airport budget for FY 2006 reports total operating revenues of about $460,000 (representing an increase of about 22% over FY 2005). The increase in revenue is projected to be attributed to increases in rents, fuel flowage fees and municipal subsidy.

Table 2. LEW Annual Revenue Trends: FY 2004 to FY 2006

	FY 2004	FY 2005	FY 2006 [1]
Operating Revenues			
Rents (all sources)	$80,700	$82,571	$89,000
Tie-Down Fees	$11,844	$14,425	$17,200
Landing Fees	$8,909	$7,445	$12,200
Fuel Flowage	$18,410	$18,266	$24,400
Municipal Operating Subsidy[2]	$260,000	$260,000	$272,538
State Snow/Gas Refund	$1,037	$0	$0
Surplus Sales	$280	$594	$0
Services	$1,470	$2,104	$1,500
Total Operating Revenues	$382,650	$385,405	$460,868
Non-operating Revenues			
Land Fund Interest	$5,709	$14,048	$15,000
Airport Interest	$1,608	$5,453	$5,000
Excise Tax	$15,597	$15,126	$15,000
Total Non-operating Revenues	$22,914	$34,627	$35,000

[1] Projected by Airport Manager
[2] The cities of Lewiston and Auburn equally contribute to the operations of the airport through annual appropriations.

Source: LEW Airport Financial Statements

Municipal operating subsidies have risen slightly over the years to $260,000 in FY2005, and are expected to increase in FY2006 by approximately 4.8% and by 8.5% in 2007, according to the airport's budget projections. .

Non-operating revenues in FY 2005 totaled nearly $34,700 representing an increase of over 50% since FY 2004. Projections for the FY 2006 budget indicate that non-operating revenues should remain essentially unchanged from FY 2005 at $35,000.

Airport Expenditure Trends

LEW's expenditures are divided into two categories – operating expenditures and capital expenditures. Operating expenditures are those costs associated with running the day-to-day operations of the airport (such as staff salaries, insurance and fuel oil). Most operating expenses at the airport are fixed – that is they do not vary significantly with the level of aviation activity. Capital expenditures are those costs associated with building, renovating or maintaining large infrastructure items (such as the construction of a terminal building or reconstruction of a runway or apron) and are described in more detail below.

As shown in Table 3, LEW's operating expenditures totaled about $402,000 in FY 2005 representing an increase of about $66,400 or 30% over FY 2004. The largest individual cost areas for the airport include salaries, fringe benefits, and facility maintenance.

Table 3 - LEW Annual Expenditure Trends: FY 2004 to FY 2006

	FY 2004	FY 2005	FY 2006 [1]
Operating Expenditures			
Salaries	$145,418	$171,664	$178,476
Fringe Benefits	$50,157	$63,004	$83,682
Overtime	$6,882	$9,591	$7,785
Advertising	$2,123	$3,635	$2,250
Telephone	$3,221	$2,599	$3,250
Insurance	$11,701	$12,173	$12,545
Legal Fees	$3,315	$6,903	$14,400
Professional Services	$7,129	$10,763	$10,401
Lights and Power	$15,481	$15,857	$16,000
Fuel Oil	$2,352	$4,516	$4,480
Water and Sewer	$972	$1,063	$1,168
Building Maintenance	$12,952	$12,757	$18,800
Electrical Maintenance	$6,267	$5,065	$6,000
Vehicle Maintenance	$26,321	$9,605	$10,000
Airfield Maintenance	$2,447	$19,362	$10,750
Radio Maintenance	$1,952	$2,028	$2,000
Runway Cracksealing	$5,500	$22,800	$5,500
Runway Striping	$9,500	$4,917	$9,500
Office Machine Repairs	$1,184	$1,641	$3,350
Dues and Memberships	$700	$1,183	$1,090
Travel	$1,320	$5,307	$10,328
Office Supplies	$4,065	$3,896	$2,950
Operating Supplies	$2,260	$3,256	$2,865
Oil and Gasoline	$6,381	$7,129	$18,500
Small Capital Costs	$5,900	$1,201	$0
Total Expenditures	**$335,500**	**$401,915**	**$436,070**

[1] Proposed budget

Source: LEW Airport Financial Statements

The proposed airport FY 2006 budget projects expenditures of about $436,000 representing an increase of 8.5% over FY 2005. The increase in spending over FY 2005 is projected to be attributed to fuel costs, legal fees, fringe benefits as well as additional employees.

Capital Improvements Program

Major expenditures for infrastructure and equipment at LEW are made through a capital improvements program (CIP) that is generated from the Master Plan process. Facilities needed to meet future operational levels are forecast and costs are estimated for each element. Funding for capital items at airports is typically provided by a combination of federal grants, state funding and funding by the airport or others. As described elsewhere in the AMPU, LEW is eligible for 95% FAA funding for approved projects, with 2.5% matched by Maine DOT and the rest provided locally. Except for $150,000 of non-primary entitlement guaranteed to airports like Au-

burn Lewiston under the current FAA grant program, federal funding is competitively based. Only a small portion of applications submitted by all airports are funded in any given annual funding cycle.

According to the FAA Office of Airports, since 1982, a total of $5.2 million has been expended at LEW on a series of key projects, including runway rehabilitation, master plan studies, acquiring land and snow removal equipment. Since 1994, State and local funding sources have contributed over $732,000 towards capital improvements at the airport, with about 73% of the funding coming from State sources. The 1997 AMPU identified a long list of possible projects, of which only two have been completed. Most of these projects have carried over into the current CIP. According to the master plan consultant, the airport has not taken full advantage of available grant funding for capital improvements in past years, resulting in the deferral of several projects identified in past CIP and AMPU documentation.

The current CIP developed for LEW[1] has a total of 31 separate projects with an estimated cost of approximately $34.3 million. These include both airside improvements and landside construction, rehabilitation and support activities that have been determined necessary to meet the objectives set out in the Combined Development Plan (CDP). Tables 4A and 4B lists these projects and the specific development planning concept with which each is connected, the year in which they have been allocated for funding in the CIP, and the breakout of anticipated local, state and federal share of funding.

Just over $4 million, or about 12% of the total CIP, addresses landside projects considered necessary to continue and/or enhance the current General Aviation activity levels at LEW. Another $21 million (61%) would be needed to fully build-out the airside infrastructure needs to meet the Existing General Aviation scenario described in the Combined Development Plan. These projects cover a wide range of needs, some of which were identified for funding in previous master plans. Approximately $7.7 million (22% of CIP) could be used to meet the Enhanced General Aviation scenario, primarily for extending Runway 4-22 and construction of corporate hangars and expanding the FBO facilities. Lastly, approximately $1.3 million (4%) has been estimated to construct a cargo facility and supporting apron space in order to carry out the Air Cargo scenario of the CDP. No specific dollar estimates were available for the costs associated with preparing the airport for passenger service (construction of a new passenger terminal), although this scenario could occur in the future.

Not all of the projects listed above would necessarily qualify for FAA funding, or would be considered as competitively viable in the near future. Some of the projects could potentially be funded without federal participation, including the use of Airport/municipal debt or via 100% private funding (particularly for the FBO, corporate and air cargo facilities).

[1] HTA, Inc. DRAFT CIP - Tech Memo #7; undated, but received by RKG on 5/23/06

Table 4A
Auburn-Lewiston Municipal Airport
Capital Improvement Projects - 2006 Airport Master Plan Update

#	Description	Amount	Year	Development Plan: Existing GA - Landside	Existing GA - Airside	Enhanced GA	Air Cargo
D	Remove/Light P77	$ 250,000	2007	$ 250,000			
E	Wildlife-Security Fence	$ 406,300	2007	$ 406,300			
M	Runway 4-22 Parallel Taxiway	$ 5,750,000	2007		$ 5,750,000		
N	Fill-Grade RSAs	$ 663,900	2007		$ 663,900		
	Avigation Easement	$ 400,000	2007		$ 400,000		
O	Remove Runway 22 ROFA Vegetation	$ 31,300	2007		$ 31,300		
		$ 7,501,500		$ 656,300	$ 6,845,200		
I3	Reconstruct Existing Taxiway	$ 931,100	2008		$ 931,100		
	New Runway 17-35 PAPI	$ 88,000	2008		$ 88,000		
	Purchase Snowblower	$ 350,000	2008		$ 350,000		
	Purchase Airport Vehicle	$ 30,000	2008	$ 30,000			
	Additional Office Space	$ 50,000	2008	$ 50,000			
		$ 1,449,100		$ 80,000	$ 1,369,100		
G	Bldg-Gate IDS	$ 6,300	2009	$ 6,300			
	Reconstruct East Apron	$ 427,900	2009		$ 427,900		
I1	Reconstruct West Itinerant Apron	$ 1,258,900	2009		$ 1,258,900		
	Rehab Hangar #2	$ 83,000	2009		$ 83,000		
		$ 1,776,100		$ 6,300	$ 1,769,800		
F	Perimeter Road	$ 740,700	2010	$ 740,700			
	Rehab Runway 4-22	$ 3,660,300	2010		$ 3,660,300		
	Snow Removal Equipment Bldg.	$ 937,500	2010		$ 937,500		
		$ 5,338,500		$ 740,700	$ 4,597,800		
H	Reconstruct Parking Lot #1	$ 192,200	2011	$ 192,200			
H	Reconstruct Parking Lot #2	$ 223,000	2011	$ 223,000			
H	Reconstruct Parking Lot #3	$ 181,000	2011	$ 181,000			
H	Reconstruct Parking Lot #4	$ 159,000	2011	$ 159,000			
	Purchase Wood Chipper	$ 18,000	2011	$ 18,000			
		$ 773,200		$ 773,200	$ -		
A	10 Unit T-Hangars (per structure)	$ 1,208,400	Long Term	$ 1,208,400			
B	Modify & Expand Terminal Bldg	$ 761,000	Long Term	$ 761,000			
I1	Reconstruct West Apron	$ 1,663,100	Long Term		$ 1,663,100		
J	Rehab Runway 17-35	$ 2,260,300	Long Term		$ 2,260,300		
L	Runway 35 End Parallel Taxiway	$ 2,540,200	Long Term		$ 2,540,200		
Q	Construct East & West Corporate Hanga	$ 4,830,300	Long Term			$ 4,830,300	
R	Expand East-West FBO's	$ 1,325,000	Long Term			$ 1,325,000	
S	Extend Runway 4-22 (900' + 600' SA)	$ 1,364,300	Long Term			$ 1,364,300	
	Construct CAP Facility	$ 207,500	Long Term			$ 207,500	
W	Construct Air Cargo Apron	$ 548,400	Long Term				$ 548,400
X	Construct Air Cargo Facility (3,600 sf)	$ 800,000	Long Term				$ 800,000
		$ 17,508,500		$ 1,969,400	$ 6,463,600	$ 7,727,100	$ 1,348,400
	Totals	$ 34,346,900		$ 4,225,900	$ 21,045,500	$ 7,727,100	$ 1,348,400
	Source: HTA, Inc.- Tech Memo #7 DRAFT CIP Plan. Tables 7-1 and 7-2			$	25,271,400		

Table 4B
Capital Improvements Program
Source of Funding

#	Description	2.5% Local	2.5% State	95.0% Federal
D	Remove/Light P77	$ 6,250	$ 6,250	$ 237,500
E	Wildlife-Security Fence	$ 10,158	$ 10,158	$ 385,985
M	Runway 4-22 Parallel Taxiway	$ 143,750	$ 143,750	$ 5,462,500
N	Fill-Grade RSAs	$ 16,598	$ 16,598	$ 630,705
	Avigation Easement	$ 10,000	$ 10,000	$ 380,000
O	Remove Runway 22 ROFA Vegetation	$ 783	$ 783	$ 29,735
		$ 187,538	$ 187,538	$ 7,126,425
I3	Reconstruct Existing Taxiway	$ 23,278	$ 23,278	$ 884,545
	New Runway 17-35 PAPI	$ 2,200	$ 2,200	$ 83,600
	Purchase Snowblower	$ 8,750	$ 8,750	$ 332,500
	Purchase Airport Vehicle	$ 30,000		
	Additional Office Space	$ 50,000		
		$ 114,228	$ 34,228	$ 1,300,645
G	Bldg-Gate IDS	$ 6,300		
	Reconstruct East Apron	$ 10,698	$ 10,698	$ 406,505
I1	Reconstruct West Itinerant Apron	$ 31,473	$ 31,473	$ 1,195,955
	Rehab Hangar #2	$ 83,000		
		$ 131,470	$ 42,170	$ 1,602,460
F	Perimeter Road	$ 18,518	$ 18,518	$ 703,665
	Rehab Runway 4-22	$ 91,508	$ 91,508	$ 3,477,285
	Snow Removal Equipment Bldg.	$ 23,438	$ 23,438	$ 890,625
		$ 133,463	$ 133,463	$ 5,071,575
H	Reconstruct Parking Lot #1	$ 192,200		
H	Reconstruct Parking Lot #2	$ 223,000		
H	Reconstruct Parking Lot #3	$ 181,000		
H	Reconstruct Parking Lot #4	$ 159,000		
	Purchase Wood Chipper	$ 18,000		
		$ 773,200	$ -	$ -
A	10 Unit T-Hangars (per structure)	$ 1,208,400		
B	Modify & Expand Terminal Bldg	$ 761,000		
I1	Reconstruct West Apron	$ 41,578	$ 41,578	$ 1,579,945
J	Rehab Runway 17-35	$ 56,508	$ 56,508	$ 2,147,285
L	Runway 35 End Parallel Taxiway	$ 63,505	$ 63,505	$ 2,413,190
Q	Construct East & West Corporate Hanga	$ 4,830,300		
R	Expand East-West FBO's	$ 1,325,000		
S	Extend Runway 4-22 (900' + 600' SA)	$ 34,108	$ 34,108	$ 1,296,085
	Construct CAP Facility	$ 5,188	$ 5,188	$ 197,125
W	Construct Air Cargo Apron	$ 13,710	$ 13,710	$ 520,980
X	Construct Air Cargo Facility (3,600 sf)	$ 800,000		
		$ 9,139,295	$ 214,595	$ 8,154,610
	Totals	$ 11,819,090	$ 1,009,390	$ 38,356,820

Airport Financial Model

In order to determine how the airport's cash flow will be affected relative to the proposed development scenarios, a financial spreadsheet model was developed for the twenty-year planning period between 2004 and 2024. Actual revenues and expenditures for FY 2004 and FY 2005, and budgeted FY 2006 data were inputted into the model based on financial documents supplied by the airport. The financial model is used to evaluate the airport's financial conditions under the different alternatives described in the AMPU. The baseline model tracks the Existing General Aviation Elements found in the Combined Development Plan, and represent the airport's operations necessary to continue effectively serving its customers. Additional analyses look at the incremental changes to this baseline in order to carry out the Enhanced General Aviation and Air Cargo elements. The Passenger Service element discussed in the Combined Plan is not analyzed in this business plan due to lack of data on operational levels and demands.

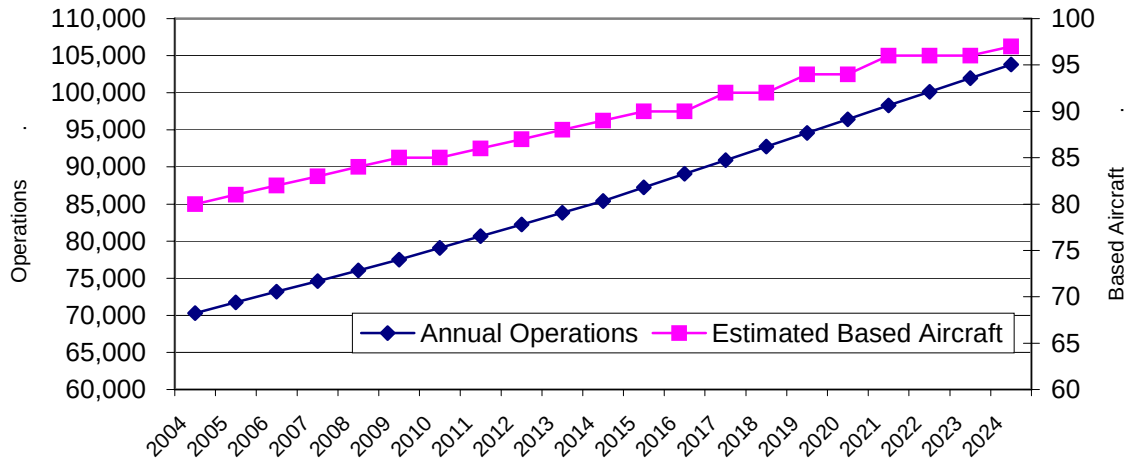
In order to forecast the financial future of the airport, several assumptions regarding revenues and expenditures were made, based on information in the AMPU or the consultant's best estimates.

Revenues

The following summarizes how operating revenue estimates for each line-item were carried forward from FY 2006 to FY 2024:

- Based Aircraft & Number of Operations were extrapolated on an annual basis from the estimates made in the Existing General Aviation Development Scenario for the years 2004, 2009, 2014 and 2024. Figure 1 below indicates how these levels are anticipated to change over the 20 year forecast period.
- Existing Rents and Service revenue were projected to increase from FY 2005 levels based on an annual inflation rate of 3%. It is understood that several of the rents are based on leases that may or may not limit future increases in rent. These will be updated as data becomes available. Future Property Lease Revenues are discussed separately below.
- Tie Down Fees: Annual tie down fees per based aircraft were generated for FY 2004 through FY 2006, which indicated an increase from $148 per year to $180. The forecast uses $190 per year, multiplied by the forecasted number of based aircraft and was adjusted modestly upward in 2015 (to $195) and 2020 (to $200).

Figure 1. Auburn Lewiston Municipal Airport
Forecast of Operations & Based Aircraft



- Fuel Flowage fees were calculated based on fuel flowage estimates provided in the master plan multiplied by the current fuel flow fee of $0.06 per gallon. They increase modestly from just over $20,000 per year to nearly $30,000 in 2024. The Airport's budget for FY2006 has estimated a large increase in fee revenue from fuel sales (due to the presence of a second FBO at the airport and more competitive fuel prices); however, the AMPU forecast for fuel flowage and number of operations indicate that a constant average of 4.7 gallons per aircraft operation is maintained throughout the forecast period, and is therefore used in the plan.
- Landing Fees: Annual landing fee revenue per operation was generated for FY 2004 through FY 2006 and then multiplied by the projected number of annual operations throughout the planning period. Landing fee revenue per operation was inflated annually by 3%.
- Excise Taxes are currently generating approximately $15,000 per year (or about $185 per based aircraft) are expected to increase at an annual inflation rate of 3%.
- State Snow/Gas Refund and Surplus Sales revenues have been minimal and were conservatively projected to be nil through the planning period.
- Municipal Operating Subsidies, provided by the cities of Auburn and Lewiston are currently at $260,000 and estimated by Airport management to increase to $295,811 in the next fiscal year. These are forecast to increase at an annual inflation rate of 3% per year for the remainder of the forecast period, increasing to $489,000 in 2024.
- Non-operating revenues were carried forward throughout the planning period based on an annual inflation rate of 3%.

Total revenues, excluding the Municipal Subsidy, are currently approximately $200,000 per year, which grow to about $300,000 annually by 2024. The funding from the cities brings the current total to nearly $500,000 and total revenues in 2024 to $830,000, as shown in Table 5.

TABLE 5
AUBURN-LEWISTON MUNICIPAL AIRPORT
BUDGET TRENDS AND PROJECTIONS

	Actual		Projected	Budget	Forecast ------->		
Fiscal Years:	2004	2005	2006	2007	2008	2019	2024
Operating Revenues							
Existing Rents	$80,700	$82,571	$89,000	$122,195	$125,861	$174,221	$201,970
Tie-Down Fees	$11,844	$14,425	$17,200	$15,564	$15,960	$18,330	$19,400
Landing Fees	$8,909	$7,445	$12,200	$10,700	$13,452	$23,160	$29,460
Fuel Flowage	$18,410	$18,266	$24,400	$32,000	$21,600	$27,000	$29,370
State Snow/Gas Refund	$1,037	$0	$0	$0	$0	$0	$0
Surplus Sales	$280	$594	$0	$0	$0	$0	$0
Services	$1,470	$2,104	$1,500	$1,500	$1,545	$2,139	$2,479
Total Operating Revenues	$122,650	$125,405	$144,300	$181,959	$178,418	$244,850	$282,679
Non-operating Revenues							
Land Fund Interest	$5,709	$14,048	$15,000	$15,000	$15,450	$21,386	$24,793
Airport Interest	$1,608	$5,453	$14,000	$5,000	$5,150	$7,129	$8,264
Excise Tax	$15,597	$15,126	$15,000	$15,000	$15,450	$21,386	$24,793
Total Non-operating Revenues	$22,914	$34,627	$44,000	$35,000	$36,050	$49,902	$57,850
Total Revenues before Subsidy	$145,564	$160,032	$188,300	$216,959	$214,468	$294,751	$340,529
Municipal Operating Subsidies	*$260,000*	*$260,000*	*$272,538*	*$295,811*	$304,685	$421,756	$488,931
			4.8%	8.5%	3.0%	3.0%	3.0%
Total Revenues with Subsidy	**$405,564**	**$420,032**	**$460,838**	**$512,770**	**$519,154**	**$716,507**	**$829,459**

Expenditures

A similar analysis was completed for annual airport operating expenditures. Because these expenses are considered relatively "fixed", all expenditure line items were carried forward based on a 3% annual inflation rate with the planning period. This assumes that current staffing and operational support levels funded by the airport remain the same throughout the forecast period.

Total operating costs are approximately $436,000 currently and will rise to over $700,000 by the end of the forecast period in 2024, as shown in Table 6.

Depreciation, which is an accounting concept dealing with the hypothetical value of assets, is not included in the business plan cash flow analysis, therefore the numbers reported here may differ from the *Net Income* reported in the airport's formal financial statements.

TABLE 6
AUBURN-LEWISTON MUNICIPAL AIRPORT
BUDGET TRENDS AND PROJECTIONS

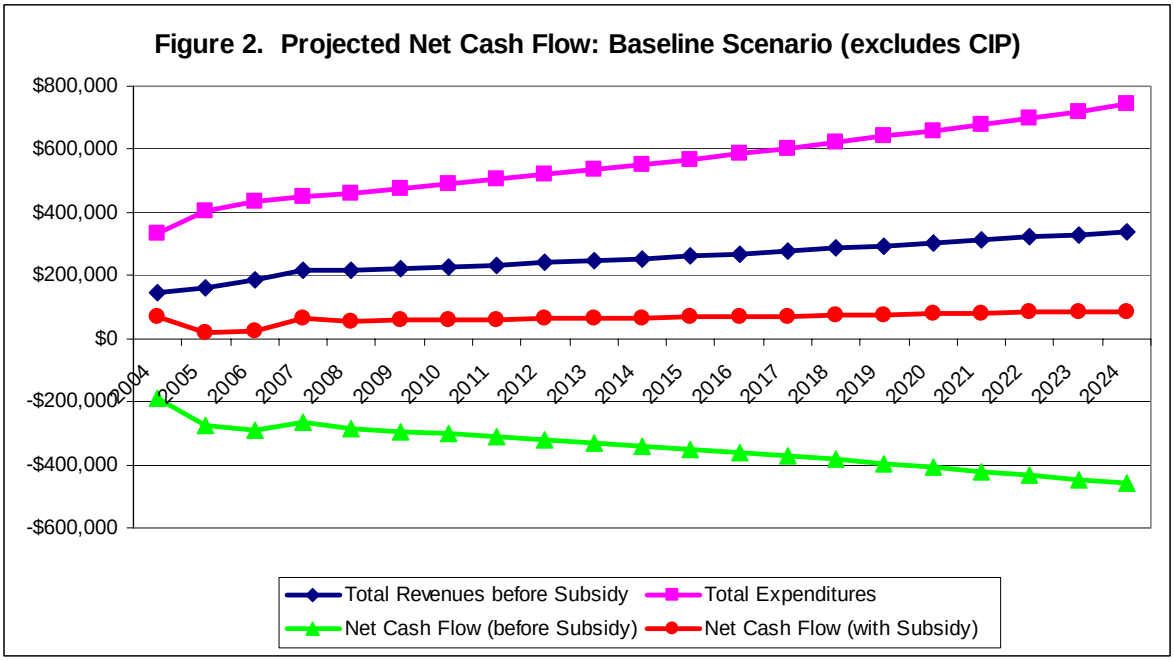
	Actual		Projected	Budget	Forecast ------->		
Fiscal Years:	2004	2005	2006	2007	2008	2019	2024
Expenditures							
Salaries	$145,418	$171,664	$178,476	$183,830	$189,345	$262,098	$303,843
Fringe Benefits	$50,157	$63,004	$83,682	$86,192	$88,778	$122,890	$142,463
Overtime	$6,882	$9,591	$7,785	$8,019	$8,259	$11,433	$13,253
Personnel	*$202,457*	*$244,259*	*$269,943*	*$278,041*	*$286,383*	*$396,420*	*$459,560*
Advertising	$2,123	$3,635	$2,250	$2,318	$2,387	$3,304	$3,830
Telephone	$3,221	$2,599	$3,250	$3,348	$3,448	$4,773	$5,533
Insurance	$11,701	$12,173	$12,545	$12,921	$13,309	$18,423	$21,357
Legal Fees	$3,315	$6,903	$14,400	$14,832	$15,277	$21,147	$24,515
Office Machine Repairs	$1,184	$1,641	$3,350	$3,451	$3,554	$4,920	$5,703
Dues and Memberships	$700	$1,183	$1,090	$1,123	$1,156	$1,601	$1,856
Travel	$1,320	$5,307	$10,328	$10,638	$10,957	$15,167	$17,583
Office Supplies	$4,065	$3,896	$2,950	$3,039	$3,130	$4,332	$5,022
Operating Supplies	$2,260	$3,256	$2,865	$2,951	$3,039	$4,207	$4,877
Professional Services	$7,129	$10,763	$10,401	$10,713	$11,034	$15,274	$17,707
Administrative	*$37,018*	*$51,356*	*$63,429*	*$65,332*	*$67,292*	*$93,148*	*$107,984*
Lights and Power	$15,481	$15,857	$16,000	$16,480	$16,974	$23,497	$27,239
Fuel Oil	$2,352	$4,516	$4,480	$4,614	$4,753	$6,579	$7,627
Water and Sewer	$972	$1,063	$1,168	$1,203	$1,239	$1,715	$1,988
Oil and Gasoline	$6,381	$7,129	$18,500	$19,055	$19,627	$27,168	$31,495
Utilities	*$25,186*	*$28,565*	*$40,148*	*$41,352*	*$42,593*	*$58,959*	*$68,349*
Building Maintenance	$12,952	$12,757	$18,800	$19,364	$19,945	$27,608	$32,006
Electrical Maintenance	$6,267	$5,065	$6,000	$6,180	$6,365	$8,811	$10,215
Vehicle Maintenance	$26,321	$9,605	$10,000	$10,300	$10,609	$14,685	$17,024
Airfield Maintenance	$2,447	$19,362	$10,750	$11,073	$11,405	$15,787	$18,301
Radio Maintenance	$1,952	$2,028	$2,000	$2,060	$2,122	$2,937	$3,405
Runway Cracksealing	$5,500	$22,800	$5,500	$5,665	$5,835	$8,077	$9,363
Runway Striping	$9,500	$4,917	$9,500	$9,785	$10,079	$13,951	$16,173
Small Capital Costs	$5,900	$1,201	$0	$0	$0	$0	$0
Maintenance	*$70,839*	*$77,735*	*$62,550*	*$64,427*	*$66,359*	*$91,857*	*$106,487*
Total Expenditures	$335,500	$401,915	$436,070	$449,152	$462,627	$640,383	$742,380

Baseline Net Cash Flow

Based on the stated revenue and expenditure assumptions, the net operating cash surplus or loss was then determined, both before and after the municipal subsidy is considered, as shown in Table 7 and graphically in Figure 2.

TABLE 7
AUBURN-LEWISTON MUNICIPAL AIRPORT
BUDGET TRENDS AND PROJECTIONS

	Actual		Projected	Budget	Forecast ------->		
Fiscal Years:	2004	2005	2006	2007	2008	2019	2024
Total Operating Revenues	$122,650	$125,405	$144,300	$181,959	$178,418	$244,850	$282,679
Total Non-operating Revenues	$22,914	$34,627	$44,000	$35,000	$36,050	$49,902	$57,850
Total Revenues before Subsidy	$145,564	$160,032	$188,300	$216,959	$214,468	$294,751	$340,529
Municipal Operating Subsidies	*$260,000*	*$260,000*	*$272,538*	*$295,811*	$304,685	$421,756	$488,931
			4.8%	8.5%	3.0%	3.0%	3.0%
Total Revenues with Subsidy	**$405,564**	**$420,032**	**$460,838**	**$512,770**	**$519,154**	**$716,507**	**$829,459**
Total Expenditures	$335,500	$401,915	$436,070	$449,152	$462,627	$640,383	$742,380
Net Cash Flow (before Subsidy)	*-$189,936*	*-$276,510*	*-$291,770*	*-$267,193*	*-$284,208*	*-$395,534*	*-$459,701*
NET CASH FLOW (with Subsidy)	**$70,064**	**$18,117**	**$24,768**	**$63,618**	**$56,527**	**$76,124**	**$87,079**



As shown in Figure 2, and based on the assumptions stated, the projected net cash flow (assuming no municipal subsidy) for the airport under the baseline scenario is consistently negative over the entire planning period. Under the assumption that the airport will continue to receive a municipal subsidy (assumed to be about $296,000 inflated at 3% to 2024), the projected net cash flow from operations remains positive over the entire planning period.

An airport cannot allow its cash flow to go negative. Either additional municipal subsidy would be required or a combination of higher revenues and/or lower expenditures for operating costs. The following paragraphs describe potential development scenarios and options affecting the financial status of LEW.

This operating cash flow analysis does not include local funding for capital improvements. The airport financial statements reported expenditures of $35,000 in FY2004 and $52,250 in FY2005, and the projected FY2006 budget includes $76,700 for capital expenditures (local cost only). The Capital Improvement Program described earlier, if funded, would add substantially to the outflow of funds from the airport and reduce the overall net cash flow.

Combined Development Plan

The Airport Master Plan Update presents four future scenarios for LEW. These call for various investments in capital improvements to continue to service the existing customer/user base, or to attract new and expanded users and activity to the airport.

Existing General Aviation Development Scenario

Under this scenario, the CIP estimates shown in Table 8, totaling $25.3 million, are assumed to be expended over the 20 year forecast period in order to maintain the present levels of general aviation activity and operations reported in the AMPU. This includes approximately $4.2 million for landside improvements and $21 million for needed airside improvements. Long term projects, totaling $8.4 million, are then evenly allocated on an annual basis over the remaining 13 years of the forecast period. The airport's share of these costs depends on several factors, including whether or not the projects that make up the CIP are included in the FAA's grant allocations in any given year. It is assumed that these monies will be approved for funding by the FAA, which will assume 95% of the cost of most projects (see Table 4B for the breakout by project), with the State of Maine assuming 2.5% and the remaining 2.5% (or more on non-eligible projects) being the responsibility of the airport. This means that the airport must come up with $3.26 million over the course of the forecast period, with the State's contribution totaling $526,000 and the federal total $19.97 million.

Table 8
Existing GA - CIP by Year and Funding Source

	Local	State	Federal	Total
2007	$ 187,538	$ 187,538	$ 7,126,425	$ 7,501,500
2008	$ 114,228	$ 34,228	$ 1,300,645	$ 1,449,100
2009	$ 131,470	$ 42,170	$ 1,602,460	$ 1,776,100
2010	$ 133,463	$ 133,463	$ 5,071,575	$ 5,338,500
2011	$ 773,200	$ -	$ -	$ 773,200
Long Term	$ 2,130,990	$ 161,590	$ 6,140,420	$ 8,433,000
Total	$ 3,470,888	$ 558,988	$21,241,525	$ 25,271,400

Source: Airport CIP, HTA & RKG Associates

Adding this expected outflow of funds to the airport cash flows would impact the positive cash flow conditions shown in the first few years in Figure 2. However, additional revenues resulting form enhanced service levels due to the capital investments made, might offset some of these additional costs. In addition, the local share might be able to be financed, reducing the annual cash outflow in order for the airport to remain within budget.

Air Cargo Scenario
Under the air cargo scenario, capital costs would be approximately $1.35 million with the required match from the local municipalities being approximately $814,000, consisting mostly of the air cargo facility costs which are not considered eligible for federal funding. This scenario assumes that FAA funding for the air cargo apron is available.

Any decision to have the airport build an air cargo facility and associated apron space would most likely require the presence of one or more tenants to lease the facility in order to cover debt service, which would hopefully lead to a significant increase in operations and subsequent increases in fuel flowage and landing fees. If the facility were privately constructed, the airport could increase revenues by collecting lease revenue from the land utilized for the project without generating additional operating costs.

Enhanced GA Scenario
Under the enhanced GA scenario, capital costs would be approximately $7.7 million consisting primarily of the construction of new corporate hangars, expansion of the FBOs and an extension of Runway 4-22 to accommodate larger business jet aircraft. Only the latter project would be eligible for federal funding. The required local investment for this scenario is approximately $7.52 million. Based on the stated assumptions, in order to offset the local costs from this scenario, airport revenues would have to be increased significantly. If this occurred, an increase in the number of operations and fuel flow would likely occur, increasing cash flow to the airport. Similarly, if larger, more valuable aircraft were based at LEW, then excise tax revenues would also be higher.

Revenue Enhancement Opportunities

Leasing Available Airport Land

According to the Airport Layout Plan, there is approximately 170 acres of airport land adjacent to the airfield that may be suited for additional development. Within this 170 acres, approximately 140 acres are designated for mixed-aviation and non-aviation development (including 16 acres earmarked for a multi-modal facility), and another 30 acres designated for non-aviation development. Assuming that 60% of this land is suitable for development (due to topography, wetlands or other issues), this leaves a net of 102 acres available for development. Assuming a lease rate of $0.10/SF/year (which equates to a current land value of approximately $40,000 to $50,000 per acre), inflated at 3% per year over the planning period, as well as an absorption rate of 2 acres per year on average throughout the remainder of the planning period (which represents approximately 25% of the industrial land market in the region), annual airport revenues from land leases would increase steadily and peak at about $244,000 in 2024. *This income offsets the forecasted negative cash flows from the baseline conditions, and could support a substantial amount of CIP funding over the years.*

Due to the highly competitive nature of the regional commercial and light industrial market, the following elements are suggested relative to the airport's available developable land:

- Evaluate existing undeveloped land, determine developable portions and prepare sites to be "shovel ready" (site improvements and infrastructure);
- Market the developable portions of the undeveloped land to airport dependent and non-airport dependent end-users with marketing emphasis on the airports locational (Interstate highway, rail and airfield) and tax benefits (Pine Tree and Free Trade zones);
- Understand that unique marketing efforts will be required relative to airport land in that some prospective end-users may be hesitant or unknowledgeable relative to leasing land;
- Land bank a portion (up to 25%) of the developable land with runway access for aviation dependent users;
- Be price competitive relative to other regional industrial or business parks;
- Specifically market the remaining developable land to non-airport dependent end-users with specific or specialized building needs. These may include small light manufacturers, contractors, warehouse and distribution companies. Marketing effort should also be extended to office end-users within the financial services sector;
- Leverage the resources, assets and knowledge of the Androscoggin Valley Council of Governments and other agencies to market and promote the airport and the non-aviation land.

Construct T-Hangars

The Existing General Aviation Development scenario includes the construction of 10 unit T-hangars for lease to aircraft owners. A preliminary pro-forma based on information provided by airport management indicates that if the airport could lease individual hangar stalls at $375 per month (assuming an 80% occupancy rate), then it could cover it's debt service on a 5% bond to build the hangars and pay itself land rent of over $15,000 per year. This land rent in turn, could support up to $600,000 in CIP funding under the current FAA grant program. Construction of additional T-hangars would also increase airport operating revenues such as fuel flow fees, landing fees, etc. Although anecdotal information suggests that there is demand for more T-hangars, a more detailed market analysis of this option is recommended.

Increase Rates and Charges for Services

Although highly competitive, the airport should continually evaluate its fee structure and land lease terms, relative to other regional airports, as it may have the potential for increasing some of its rates and charges for services. Those fees and charges that are below market average might be raised over time to generate additional revenue for the airport.

Appendix XII

Acronyms

Acronyms

AAAE	Assoc. of American Airport Executives	LEW	Auburn-Lewiston Municipal Airport
ABDC	Auburn Business Development Corp.	LOC	Localizer
AC	Advisory Circular	MIRL	Medium Intensity Runway Lights
ADA	Admerican Disabilities Act	MASP	Maine Aviation Systems Plan
AIP	Airport Improvement Program	MDOT-OPT	Maine Department of Transportation-Office of Passenger Transportation
AirNow	Air Freight Charter Service		
ALBD	Auburn-Lewiston Board of Directors	MITL	Medium Intensity Taxiway Lights
ALP	Airport Layout Plan	Navaids	Navigational Aids
AMP	Airport Master Plan	NDB	Non-Directional Beacon
ARFF	Airport Rescur and Fire Fighting	NOTAM	Notice to Airmen
AWOS	Automated Weather Observation System	NPIAS	National Plan of Integrated Airport Systems
CAP	Civil Air Patrol	OFA	Object Free Area
CIP	Capital Improvement Plan	OFZ	Object Free Zone
dB	Decibel	OPBA	Operations Per Based Aircraft
DEP	Department of Environmental Protection	PAC	Planning Advisory Committee
DHS	Department of Homeland Security	PAPI	Precision Approach path Indicator
DNL	Day-Night Average Sound Level	PCI	Pavement Condition Index
FAA	Federal Aviation Administration	REIL	Runway End Identifier Lights
FAR	Federal Aviation Regulation	RPZ	Runway Protection Zone
FBO	Fixed Base Operator	RSA	Runway Safety Area
FSDO	Flight Standards District Office	RVZ	Runway Visibility Zone
GA	General Aviation	Rwy	Runway
GPS	Global Positioning System	SRE	Snow Removal Equipment
HTA	Hoyle, Tanner & Associates, Inc.	TFR	Temporary Flight Restrictions
IFR	Instrument Flight Rules	TSA	Taxiway Safety Area
ILS	Instrument Landing System	VFR	Visual Flight Rules
IMC	Instrument Meteorological Conditions	VMC	Visual Meteorological Conditions
INM	Integrated Noise Model		
LAEGC	Lewiston Auburn Economic Growth Council		