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## Section 2 – Existing Conditions

### GENERAL

The first step in the airport master planning process involves gathering information about the airport and its environment. An inventory of existing conditions provides a foundation for the subsequent Sections in this AMPU.

Information was gathered from several sources, including the following:

- 2001 Wiscasset Municipal Airport Master Plan Update
- Airport Layout Plan, including changes since the last update
- 1993 Airport Property Map, Exhibit A
- Maine Aviation System Plan Update
- Regional transportation plans
- Town of Wiscasset Comprehensive Plan
- FAA Form 5010, Airport Master Record
- FAA activity forecasts
- Local ordinances/maps
- Environmental documentation regarding airport property or the immediate vicinity
- Site visits and interviews with town employees, including the airport manager
- Various documents and information from the airport manager and other sources, including input from the Airport Board, Planning Advisory Committee, and Board of Selectman

The inventory of existing conditions includes information pertaining to location and access, historic airport projects, population and socioeconomic information, airport activity, airspace, protected imaginary surfaces, airside and landside facilities, environmental conditions, and a financial review of current revenue and expenses.

The existing inventory information gathered for this portion of the AMPU, to the extent possible, is current as of November 2014.

### HISTORIC ACTIVITY

Table 2.1 on the next page identifies past projects completed at the Wiscasset Municipal Airport. This list provides valuable insight into the types and timing of major capital projects undertaken with federal and in many cases, state funding grants.

**Table 2.1 – Airport Capital Improvement and Planning Projects**

Year	Project	Grant Number
1985	Airport Master Plan Update	3-23-0049-001-1985
1990	Acquire miscellaneous land	3-23-0049-002-1990
1994	Conduct airport master plan study and remove obstructions	3-23-0049-003-1994
1995	Remove obstructions	3-23-0049-004-1995
1996	Expand apron, improve airport drainage, and construct taxiway	3-23-0049-005-1996
1997	Improve runway safety area	3-23-0049-006-1997
1999	Airport Master Plan Update	3-23-0049-007-1999
2001	Acquire land for taxiway extension	3-23-0049-008-2001
2003	Extend taxiway (design)	3-23-0049-009-2003
2005	Extend taxiway (Phase I)	3-23-0049-010-2005
2006	Extend taxiway (Phase II)	3-23-0049-011-2006
2007	Light obstructions and rehabilitate airport beacons	3-23-0049-012-2007
2009	Purchase snow removal equipment building	3-23-0049-013-2009
2009	Construct snow removal equipment building	3-23-0049-014-2009
2010	Airport Master Plan Update	3-23-0049-015-2010
2013	Environmental Assessment	3-23-0049-016-2013

Source: FAA Grant History Report, FAA New England Airport's Division, July 2013

## AIRPORT SETTING

The Wiscasset Municipal Airport (KIWI<sup>2</sup>) is located within the municipal boundaries of the town of Wiscasset, Maine, in the county of Lincoln. The airport is located on Chewonki Neck Road, south of Route 144 and east of U.S. Route 1. KIWI is approximately 50 miles east of Portland and 10 miles east of Bath, Maine and can be accessed by U.S. Route 1 and state highways 27, 144, and 218. The airport is approximately four miles west of the village (central business district). The airport's deeded property, which was acquired over a number of years starting in 1958, covers approximately 257 acres.

<sup>2</sup> KIWI is the international identifier for the airport; IWI is the FAA identifier for domestic purposes.

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## AIRPORT LAYOUT

Sheet 2 in Appendix 2 shows the existing airport layout plan.

As shown on the current airport layout plan (Appendix 2) and discussed to a limited extent on FAA Form 5010-1, Figure 2.1, the airport consists of a single runway, 7-25, oriented northeast-southwest and a full-length parallel taxiway setback 240 feet from the runway centerline. Airport facilities, which are all located on the airport's north side include a single large aircraft parking apron, laid out with in-pavement tie down anchors, two 12-bay T-hangars, eight privately owned conventional hangars, an aircraft maintenance hangar, a combination terminal building/hangar, and a fairly new snow removal equipment building constructed in 2009. The airport infrastructure and each of these facilities will be discussed in more detail in this report.

## LAND OWNERSHIP

As shown on the airport property map (Appendix 2), the airport has 257.36 acres of land deeded as airport property in both fee simple<sup>3</sup> and through seven easements. The vast amount of this property, 246 acres is contiguous and used for both aviation operations and clear areas around the airport. The town does own a small 1.38 acre parcel of land (parcel #15 on Figure 2.4) in neighboring Edgcombe (5 mile east), which was originally purchased and maintained in support of the airport's non-directional radio beacon (NDB). The NDB was decommissioned in 2010 and the FAA issued a land release shortly thereafter. The land remains unused and the NDB equipment and shelter are still on the property. In addition, the airport has control of the following seven easements:

- A 0.14 acre aviation easement<sup>4</sup> (Parcel #14) collocated with the NDB property in Edgcombe (Parcel #13)
- Three separate and collocated aviation easements on the corner of Chewonki Neck Road and Route 144. These include a 5.0 acre, 1.2 acre, and 0.14 acre easements (Parcels #5, #17 and #18 respectively).
- A 0.52 acre hazard beacon easement (Parcel #11) in the town of Woolwich, which contains a single hazard beacon used to illuminate Whale Back Ridge, an obstruction in the FAR Part 77 Horizontal Surface.
- A 2.77 acre aviation easement over the Chewonki Campground (Parcel #12).

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<sup>3</sup>The greatest possible estate in land, wherein the owner has the right to use it, exclusively possess it, commit waste upon it, dispose of it by deed or will, and take its fruits.

<sup>4</sup>Avigation easement is an easement or right of overflight in the airspace above or in the vicinity of a particular property. It also includes the right to create such noise or other effects as may result from the lawful operation of aircraft in such airspace and the right to remove any obstructions to such overflight.

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION		AIRPORT MASTER RECORD			PRINT DATE: 12/03/2013 AFD EFF: 10/17/2013 Form Approved OMB 2120-0015
1 ASSOC CITY: WISCASSET		4 STATE: ME	LOC ID: IWI	FAA SITE NR: 08424 *A	
2 AIRPORT NAME: WISCASSET		5 COUNTY: LINCOLN ME			
3 CBD TO AIRPORT (NM): 03 SV		6 REGION/ADO: ANE/NONE		7 SECT AERO CHT: NEW YORK	
<b>GENERAL</b>			<b>SERVICES</b>		
10 OWNERSHIP: PU			70 FUEL: 100LL A		
11 OWNER: TOWN OF WISCASSET			71 AIRFRAME RPRS: MAJOR		
12 ADDRESS: 51 BATH RD WISCASSET, ME 04578			72 PWR PLANT RPRS: MINOR		
13 PHONE NR: 207-882-8200			73 BOTTLE OXYGEN: NONE		
14 MANAGER: ERVIN DECK			74 BULK OXYGEN: NONE		
15 ADDRESS: 96 CHEWONKI NECK ROAD, 51 WISCASSET, ME 04578			75 TSNT STORAGE: HGR, TIE		
16 PHONE NR: 207-882-5475			76 OTHER SERVICES: INSTR, RNTL		
17 ATTENDANCE SCHEDULE: ALL ALL 0800-1700					
18 AIRPORT USE: PUBLIC			<b>FACILITIES</b>		
19 ARPT LAT: 43-57-41.1000N ESTIMATED			80 ARPT BCN: CG		
20 ARPT LONG: 069-42-45.2000W			81 ARPT LGT SKED: SEE RMK		
21 ARPT ELEV: 70.2 SURVEYED			82 UNICOM: 122.800		
22 ACREAGE: 196			83 WIND INDICATOR: YES-L		
23 RIGHT TRAFFIC: 25			84 SEGMENTED CIRCLE: YES		
24 NON-COMM LANDING: NO			85 CONTROL TWR: NONE		
25 NPAS/FED AGREEMENTS: NGY			86 FSS: BANGOR		
26 FAR 139 INDEX:			87 FSS ON ARPT: NO		
			88 FSS PHONE NR:		
			89 TOLL FREE NR: 1-800-WX-BRIEF		
			<b>OPERATIONS</b>		
			100 AIR CARRIER: 0		
			102 AIR TAXI: 306		
			103 G A LOCAL: 4,274		
			104 G A ITNRNT: 2,099		
			105 MILITARY: 45		
			TOTAL: 6,724		
			OPERATIONS FOR 12 MONTHS ENDING 08/11/2011		
<b>RUNWAY DATA</b>					
30 RUNWAY IDENT: 07/25					
31 LENGTH: 3,397					
32 WIDTH: 75					
33 SURF TYPE-COND: ASPH-G					
34 SURF TREATMENT:					
35 GROSS WT: SW					
36 (IN THSDS) DW					
37 DTW					
38 DDTW					
39 PCN:					
22.0					
<b>LIGHTING/APCH AIDS</b>					
40 EDGE INTENSITY: MED					
42 RWY MARK TYPE-COND: NPI - F / NPI - F					
43 VGS: P4R / P4L					
44 THR CROSSING HGT: 40 / 40					
45 VISUAL GLIDE ANGLE: 4.00 / 3.50					
46 CNTRLN-TDZ: N - N / N - N					
47 RVR-RVV: - N / - N					
48 REIL: N / Y					
49 APCH LIGHTS: /					
<b>OBSTRUCTION DATA</b>					
50 FAR 77 CATEGORY: B(V) / B(V)					
51 DISPLACED THR: /					
52 CTLG OBSTN: TREES / TREES					
53 OBSTN MARKED/LGTD: L /					
54 HGT ABOVE RWY END: 60 / 70					
55 DIST FROM RWY END: 201 / 1,440					
56 CNTRLN OFFSET: 240R / 0B					
57 OBSTN CLNC SLOPE: 0.1 / 17.1					
58 CLOSE-IN OBSTN: N / Y					
<b>DECLARED DISTANCES</b>					
60 TAKE OFF RUN AVBL (TORA): /					
61 TAKE OFF DIST AVBL (TODA): /					
62 ACLT STOP DIST AVBL (ASDA): /					
63 LNDG DIST AVBL (LDA): /					
<b>(P) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY &gt;</b>					
110 REMARKS:					
A 016 207-504-2357 (CELL) - EMERGENCY ONLY.					
A 042 RWY 07 MARKINGS FADED.					
A 042 RWY 07 1 MARKINGS AND CENTERLINE FADED.					
A 042 RWY 25 MARKINGS FADED.					
A 058 RWY 25 8 FT TREE, 40 FT OUT, 140 FT LEFT; +2 FT BRUSH AND WEEDS 0-150 FT FM THLD 105-125 FT RIGHT.					
A 070 24 HR CREDIT CARD FUEL OPN.					
A 081 RWY APT ACTVY MRL RY 07/25; PAPI RYS 07 & 25; REIL RY 25 - CTAF.					
A 110-003 NOISE SENSITIVE AREA SOUTHEAST OFF END OF RY 07. ARPT HAS NOISE ABATEMENT PROCEDURES CTC AMGR 207-882-5475.					
A 110-004 DEER AND WILDLIFE ON & INVOLV ARPT.					
111 INSPECTOR: ( C ) 112 LAST INSP: 08/11/2011 113 LAST INFO REQ:					

Figure 2.1, FAA Master Record, Form 5010-1, dated 12/3/2013.  
Source: GCR and Associates.

## ACTIVITY

Activity at the airport is collected since the last update to be used to develop forecasts of aviation activity. Based aircraft and operations data was obtained from the *Terminal Area Forecasts*. It should be noted that Wiscasset is a non-towered airport and does not have accurate operational data. Normally, estimating annual flight operations at non-towered general aviation airports such as KIWI is an imprecise exercise subject to a range of multipliers and it's very common to have disparity between operations estimates and the number of operations detected if an actual count is done. However, in the summer of 2013, the airport installed the [General Audio Recording Device](#) (GARD). GARD monitors the airport's Unicom frequency (122.8) and records and saves transmissions to a computer hard drive. A GARD software algorithm analyzes communications and plots operations in a spreadsheet format, which provides airport management with an accurate operations count by the event, hour, day, week, etc. This operational data was used to the operational activity at the airport.

### ***BASED AIRCRAFT***

Based aircraft include any aircraft that considers Wiscasset Municipal Airport as its "home" airport. The number of based aircraft is considerably higher in the summer months during peak activity for the airport. Figure 2.2 on the next page identifies the number of based aircraft since 2001. It is important to note that Wiscasset experiences seasonal fluctuations, with based aircraft numbering as high as 75 in the summer and 30-40 in the winter, averaging 48 in 2013. Figure 2.3 shows the seasonal fluctuation during calendar year 2013. In addition, the number of based aircraft has declined about 10% since the opening of the Brunswick Executive Airport (former Naval Air Station Brunswick) located 15 miles southwest of KIWI.

### ***FLEET MIX BASED AIRCRAFT***

As shown in Figures 2.2 and 2.3, the fleet mix of aircraft based at Wiscasset is primarily single engine reciprocating (SER) type aircraft, with a few multiengine reciprocating (MER) and one helicopter. There are no turboprops or jet aircraft based at KIWI on an annual basis, however, several turboprops and an occasional jet do spend the summer at the airport. The number of aircraft calling KIWI home steadily increased over the period from 2001 to 2010. Then with the transition of the Naval Air Station Brunswick from military to civil, some aircraft owners transferred their assets primarily for convenience, and some for better facilities including availability of a large heated hangar. It is estimated that about 10% of the based aircraft fleet moved to Brunswick Executive Airport (BXM) located approximately 18 miles west of Wiscasset initially, but some have since returned. There is a winter migration to BXM because of their hangar rental availability.

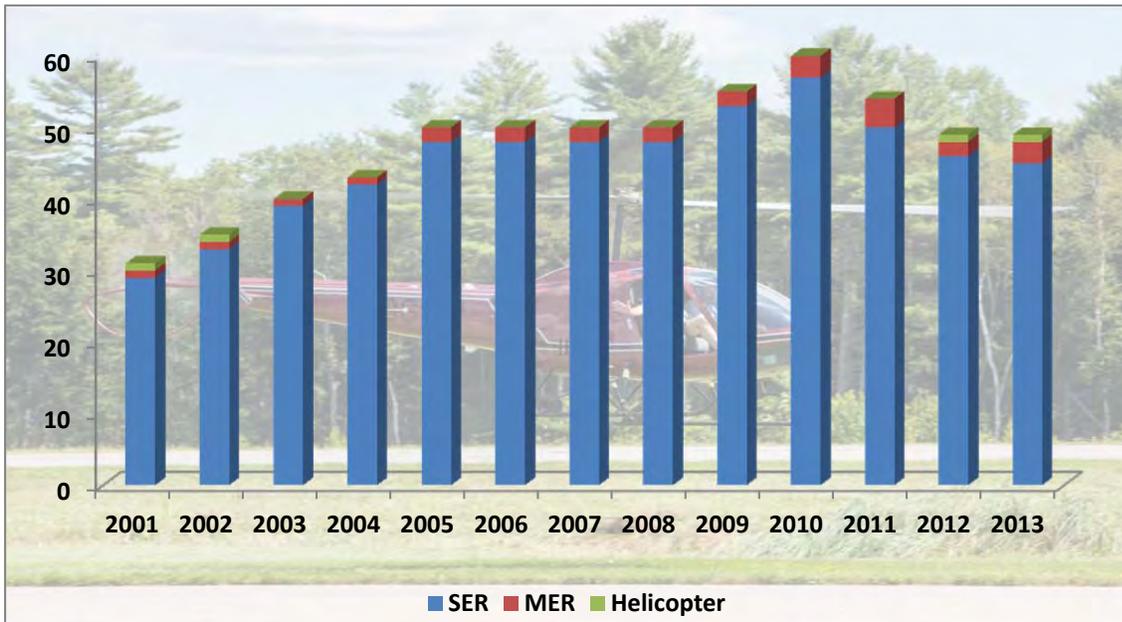


Figure 2.2 - Based Aircraft/Fleet Mix

Legend: SER – Single-engine Reciprocating; MER – Multi-engine Reciprocating

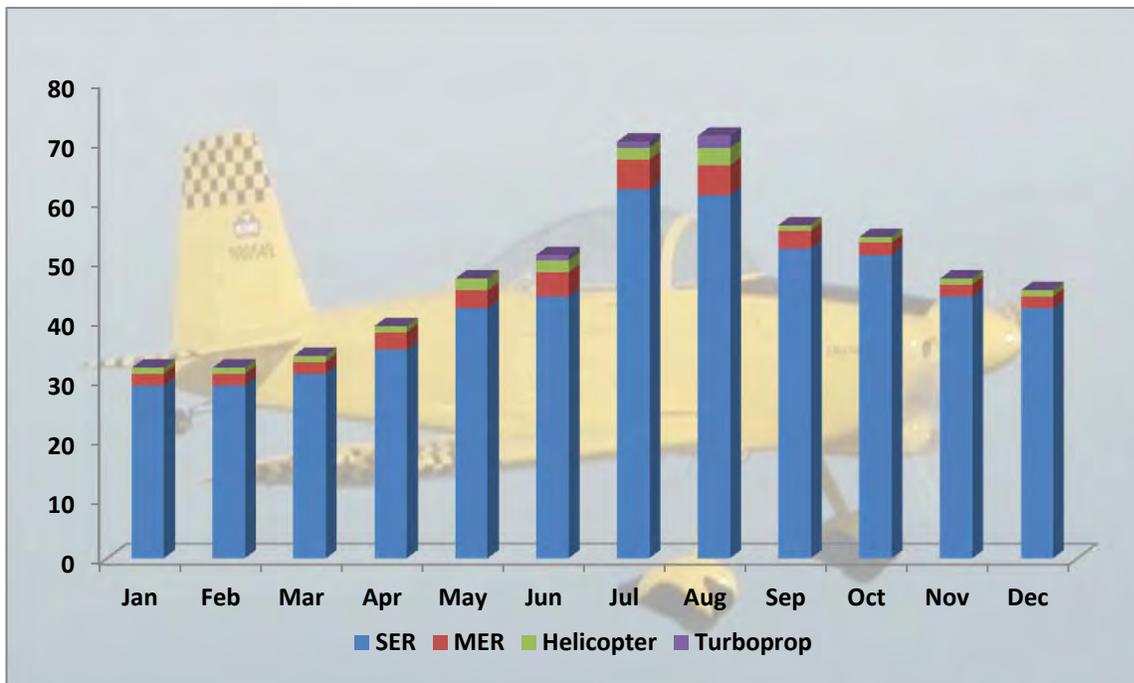


Figure 2.3 – 2014 Monthly Based Aircraft Inventory

Legend: SER – Single-engine Reciprocating; MER – Multi-engine Reciprocating

## ***OPERATIONS***

An operation consists of either a takeoff or a landing, and operations data is collected to evaluate capacity issues as well as sizing of facilities, such as aircraft parking aprons and terminal buildings. In addition, operational data if high enough can have an impact on noise and other possible environmental concerns.

As alluded to in the Activity section, counting aircraft operations at non-towered airports until recently has been largely a guessing effort. Historically, airport management calculated the number of operations using a standard planning guideline to determine validity of operational activity at an uncontrolled airport. At the time this calculation suggested total operations based on 300 to 350 per based aircraft, with the higher value based on the availability of a formal flight training program. However, with rising fuel and insurance costs, recreational flying has declined steadily over the past 10-20 years, invalidating this ratio (based aircraft to operation) calculation.

Operations at Wiscasset were thought to be in the range of 10,000 to 15,000 annually, however, with the installation of GARD as described in the Activity section, a more accurate assessment is now possible. Based on data collected from GARD during the period April through October 2014, the number of operations is now accurately defined at about 10,000 annually. Based on this analysis, previous year's data was recalculated to reflect the numbers shown in Figure 2.4 on the next page. The only assumption is the percentage of local versus itinerant operations. Based on observations and fuel sale data, it is assumed that the ratio between the two is 50/50<sup>5</sup>. And as noted earlier, with the town taking over the FBO and offering below market fuel prices, operations at KIWI have risen considerably in the past two year.

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<sup>5</sup> Communications with E. Deck, Airport Manager, October 2014.

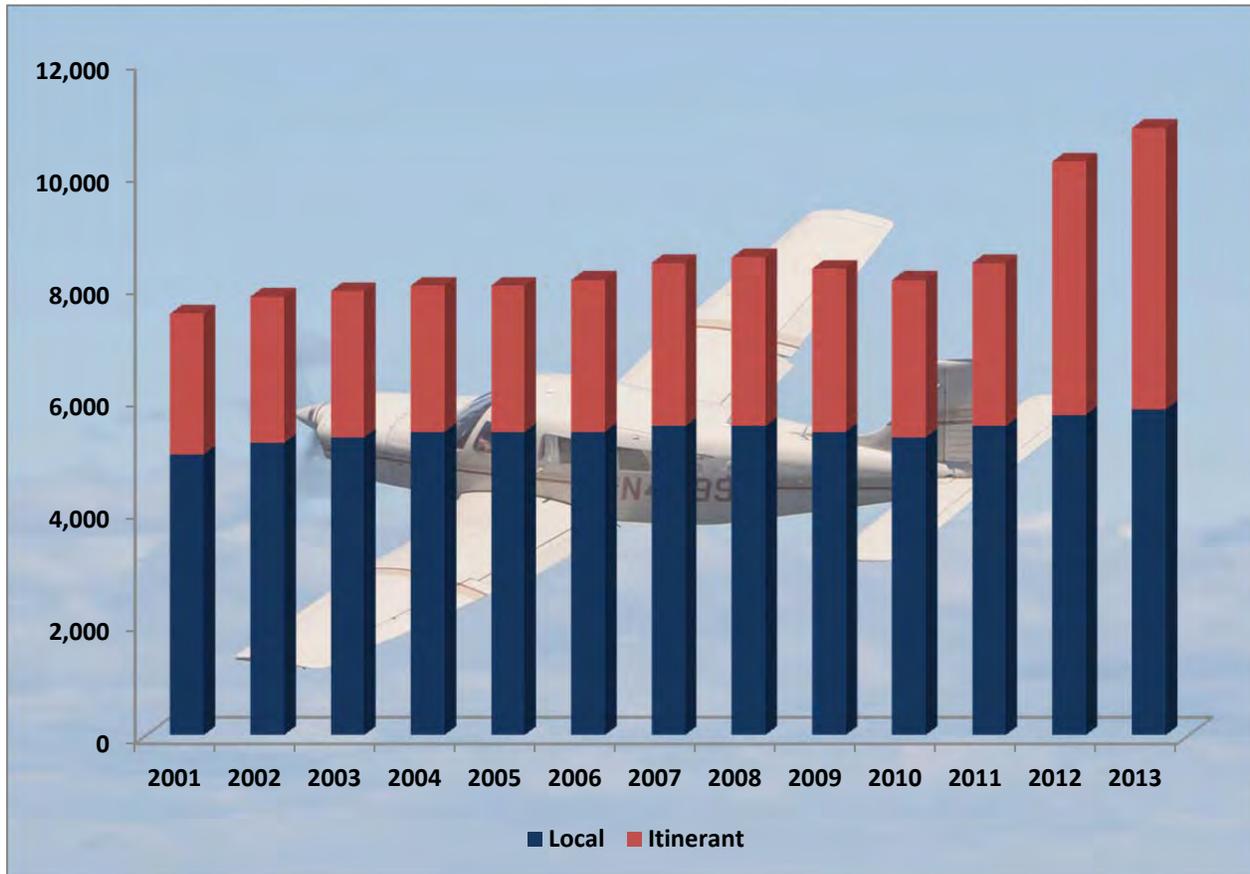


Figure 2.4 - Local v. Itinerant Operations

From data obtained from GARD, as expected, operations peak in the summer months, with July and August being the busiest period of the year. Operations are further classified as either local or itinerant. A local operation is any aircraft arriving or departing from flights within a 20-mile radius of the airport. Itinerant operations are any other operation outside of the 20-mile radius. Until about 2011 local operations were predominant, reaching about 70 percent of total operations. However, in February 2013 the town took over the FBO and fuel sales. With an aggressive marketing plan, that included selling fuel at below market prices<sup>6</sup>, itinerant operations have soared and now account for about 50% of the total.

<sup>6</sup> The airport evaluates prices at Augusta State, Brunswick Executive, Knox County Regional, Belfast Municipal, Bar Harbor and other airports in the region and then sets the retail price below each of them, normally about \$0.50/gallon above wholesale for 100LL and \$1.00 above wholesale for Jet A.

## **PEAK OPERATIONS**

Using fuel sale data and operations data from GARD, peak operations occur in the summer months. Fifty-four percent (54%) of KIWI operations occur during the period June through August. Conversely, only three percent (3%) occurs during the winter months December, January and February. Figure 2.5 on the next page shows the seasonal flow of operations at Wiscasset, and as is typical of general aviation airports in northern climates, flying declines during colder months and then peaks during summer periods.

Summer activity is augmented by the Texas Flying Legends Museum, based out of Ellington Field in Houston, Texas. The Legends are a collection of WWII aircraft that selected KIWI as one of their summer homes. Three to four of their aircraft spend the summer months at Wiscasset providing both static display and aerial demonstrations.

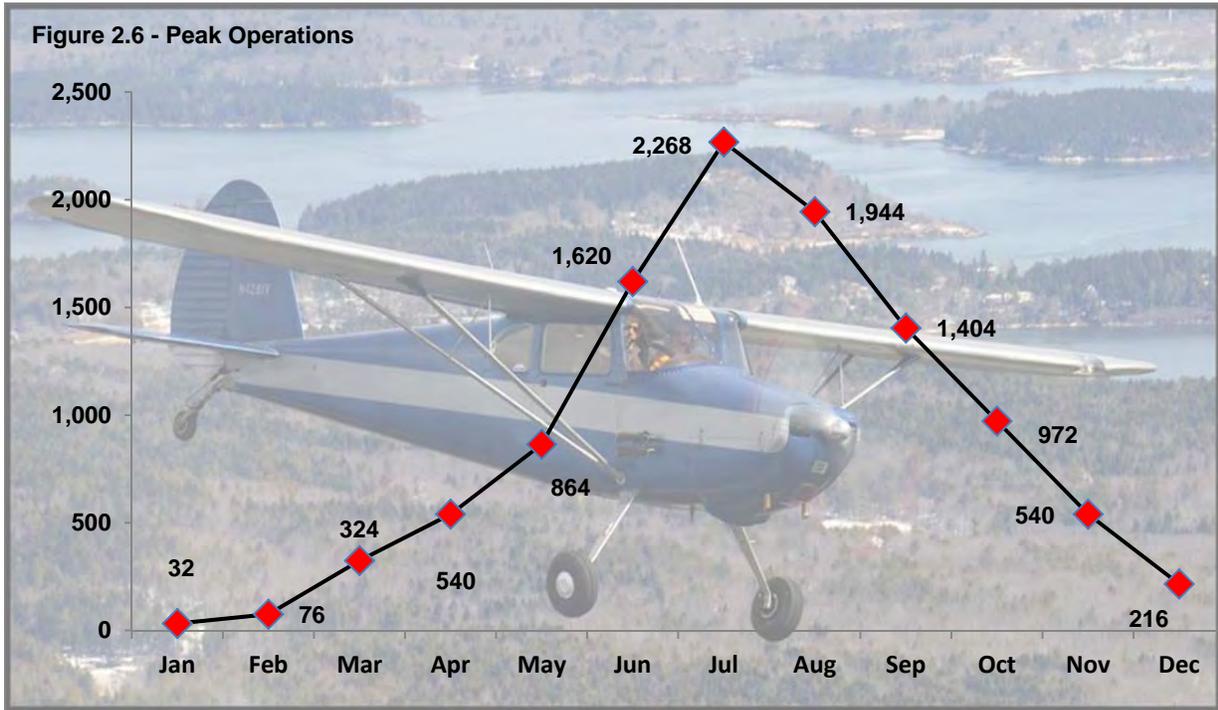
## **AIRPORT DESIGN STANDARDS**

There are several key terms used in the planning and design of airports that can have infrastructure implications in terms of geometric design of facilities. These include design aircraft, airport reference code, and runway design code. Each is discussed in the following paragraphs.

### ***DESIGN AIRCRAFT***

The design aircraft enables airport planners and engineers to design the airport in such a way as to satisfy the operational requirements of such aircraft and meet national standards for separation and geometric design (safety issues). The “design” aircraft may be a single aircraft or a composite of several different aircraft composed of the most demanding characteristics of each.

The design aircraft is the Beech King Air 200 as shown on Figure 2.6. The 12,500 pound B200 has a 54’-6” wingspan, a tail height of 15’-0”, and an approach speed of approximately 95 knots.



### ***RUNWAY DESIGN CODE***

The Runway Design Code (RDC) signifies the design standards to which a runway is built. The RDC consists of three components: design aircraft wingspan, approach category, and runway visibility minimums. Airport design first requires selecting the RDC for desired/planned level of service for each runway, and then applying the airport design criteria associated with the RDC.

The RDC has three components: aircraft approach group (category), aircraft design group (wingspan), and the runway visibility minimums (in feet). Thus, the existing RDC at KIWI for both runway ends (07 & 25) is B-II-4000, where B is the aircraft approach category, Roman numeral II is the airplane design group, and 4000 are the runway visibility minimums.

### ***AIRPORT REFERENCE CODE***

The Airport Reference Code (ARC) is an airport designation that signifies the airport's highest RDC, minus the third (visibility) component of the RDC. The ARC is used for planning and design only and does not limit the aircraft that may be able to operate safely at the airport.

As noted earlier, the design aircraft is a midsize corporate jet, such as the Beech King Air 200 shown in Figure 2.6, and the ARC is B-II.

### **AIRSIDE FACILITIES**

Airside facilities include areas where aircraft maneuver. For purposes of this AMPU, airside facilities include the runway, taxiways, and aircraft-parking apron. Sheet 2 in Appendix 2 identifies existing facilities at the airport.

### ***RUNWAY***

Wiscasset Municipal Airport has a single 3,397 foot long by 75 foot wide runway. Runway 7-25 originally was constructed in 1961 and was extended to its current length in 1968. The pavement was originally constructed to 22,000-pound single-wheel load strength. Runway overlays were completed in 1979 and 1998.

The runway has never been reconstructed, and as a result, the pavement is in poor condition with significant cracking. In addition, water is intruding into the pavement, resulting in a collapse of pavement in several areas. The airport has an ongoing maintenance program, with crack sealing work occurring over the past several years.

### ***TAXIWAYS***

The airport has three stub taxiways and one full-parallel taxiway. Taxiway 'A' is approximately 3,250 feet long by 35 feet wide and is a full parallel taxiway for Runway 7-25. Taxiways 'B' and 'C' are approximately 250 feet long by 35 feet wide and are stub taxiways connecting the runway to

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Taxiway 'A'. Taxiway 'B' is approximately 500 feet long by 35 feet wide and also is a stub taxiway connecting the runway to Taxiway 'A'. Pavements for all taxiways are in good condition as they were reconstructed in 1996. The taxiways are marked with centerline, lead-in line, and hold lines and are in excellent condition. In addition, there is a taxiway 420 feet long by 40 feet wide that connects Taxiway 'D' to a hangar located off airport property.

### ***AIRCRAFT PARKING APRON***

The aircraft-parking apron is approximately 120,000 square feet, not including a single taxilane and is marked to accommodate 34 tie downs for small aircraft. The apron pavement was reconstructed in 1996 and is currently in fair to poor condition with significant cracking.

### **LANDSIDE FACILITIES**

For the purposes of this AMPU, landside facilities include the terminal building, automobile parking lot, and hangars.

#### ***TERMINAL BUILDING***

The terminal building (Figure 2.7) is approximately 4,900 square feet with electricity, telephone, internet, cable television, sewer, and water. The building originally was constructed in 1970. A waiting area, pilot's lounge, restroom, and FBO office is available on the first floor and office space, restroom, and conference room is available on the second floor. The building can also accommodate hangar space for up to four small aircraft. The building is heated with



**Figure 2.7 - Terminal Building (December 2013)**

a forced hot-air heating system and air conditioning is available in the FBO office. The airfield lighting vault is located in the terminal building. The building is in excellent condition and recently underwent extensive remodeling and energy improvements, including a new restroom, interior wall improvements and new floor covering. In addition, the building has all new energy efficient windows and increased insulation.

### ***AUTOMOBILE PARKING AND ACCESS***

The automobile parking lot is approximately 9,000 square feet and can accommodate 24 vehicles including two spaces that conform to Americans with Disabilities (ADA) standards. The automobile parking lot was originally constructed in 1996 and the pavement is in good condition.

A second parking lot is available adjacent to the terminal building and can accommodate approximately nine vehicles.

### ***HANGARS***

There are a total of 13 hangars at the airport, both privately and publically owned. With one exception privately owned hangars are on land leased from the town, and in addition, hangar owners pay property taxes to the town on the assessed value of the buildings. The lone exception is Hangar #12, which is located off airport with direct access via an existing through the fence agreement with the town.

Two of the 13 hangars, two are 12-bay T-hangar units, nine are privately owned conventional hangars varying in size from 1,500 to 3,000 square feet, one is adjoined to the terminal building and one is a standalone building used for aircraft maintenance and storage.

Table 2.1 lists each of the hangars, which are numbered as shown on Figure 2.9 (East Terminal Area) and Figure 2.10 (West Terminal Area) (next page).



Figure 2.9 – Buildings/Hangars in East Terminal Area



Figure 2.10 – Buildings/Hangars in West Terminal Area

Table 2.1 – Building/Hangar Inventory

Building No.	Type	Ownership	Utilities	Notes
1	Conventional	Public (Town of Wiscasset)	E, W, S, T, H, I	Combined with terminal building
2	Conventional	Public (Town of Wiscasset)	E, W, S, T, H	Aircraft maintenance hangar
3	SRE Building	Public (Town of Wiscasset)	E, W, S, H	Snow removal equipment building
A1-12	12-Unit T-hangar	Private	E	Condominium Association
B1-12	12-Unit T-hangar	Private	E	Condominium Association
C1	Conventional	Private	E	
C2	Conventional	Private	E, H	
C3	Conventional	Private	E, H, I	
C4	Conventional	Private	E, H	
C5	Conventional	Private	E, H	
C6	Conventional	Private	E, H	
C7	Conventional	Private	E, H, W, S	
C8	Conventional	Private	E, H	
D1	Conventional	Private	E, W,S.	

Notes: E-Electricity; W-Water; S-Sewer; T-Telephone; H-Heat; I-Internet

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## SUPPORT FACILITIES

The following sections discuss other facilities at the Wiscasset Municipal Airport.

### ***FIXED BASE OPERATOR***

In February 2012, the town took over running the only FBO on the airport, which provides the following services:

- Fuel and aviation oil
- Hangar space
- Apron/Tie Down Space
- Rental cars (through a third party auto dealer)
- Loaner car
- Lounge with Wi-Fi, coffee, soft drinks, and snacks

### ***NAVIGATION AIDS (NAVAIDS)***

There are no electronic navigation aids at the airport. Since the last AMPU, the airport non-direction beacon (NDB), located in Edgecomb, Maine, was decommissioned in 2009.

Portland Approach Control, operating from the Portland Jetport, provides departure and approach control service.

Visual NAVAIDS at the airport include a precision approach path indicator (PAPI)-4L to Runway 25 and a PAPI-4R to Runway 7. The glide slope angle is set at 4° for Runway 7 and 3.5° for Runway 25 and the threshold crossing height for both runways is 40 feet.

Runway end identifier lights (REILs) are located at the end of Runway 25. Runway 7-25 is lit with medium intensity runway lights (MIRLs) and the taxiways are lit with medium intensity taxiway lights (MITLs). Runways 7 and 25 are marked as non-precision approaches. These markings were redone in 2009 and are in fair condition.

There are three obstruction lights, two are located 340 feet southwest of Runway 7 on 70 foot telephone poles, and one is located 600 feet east along Route 144. A hazard beacon is located 6,000 feet north of the airport on Whaleback Ridge in Woolwich, Maine. The hazard beacon was replaced in 2009 with an LED light system. All four lights are depicted on Sheet 7 in Appendix 2.

There is a lighted wind cone with a segmented circle located southeast of Runway 25 and additional wind cones are located midfield and northeast of Runway 7.

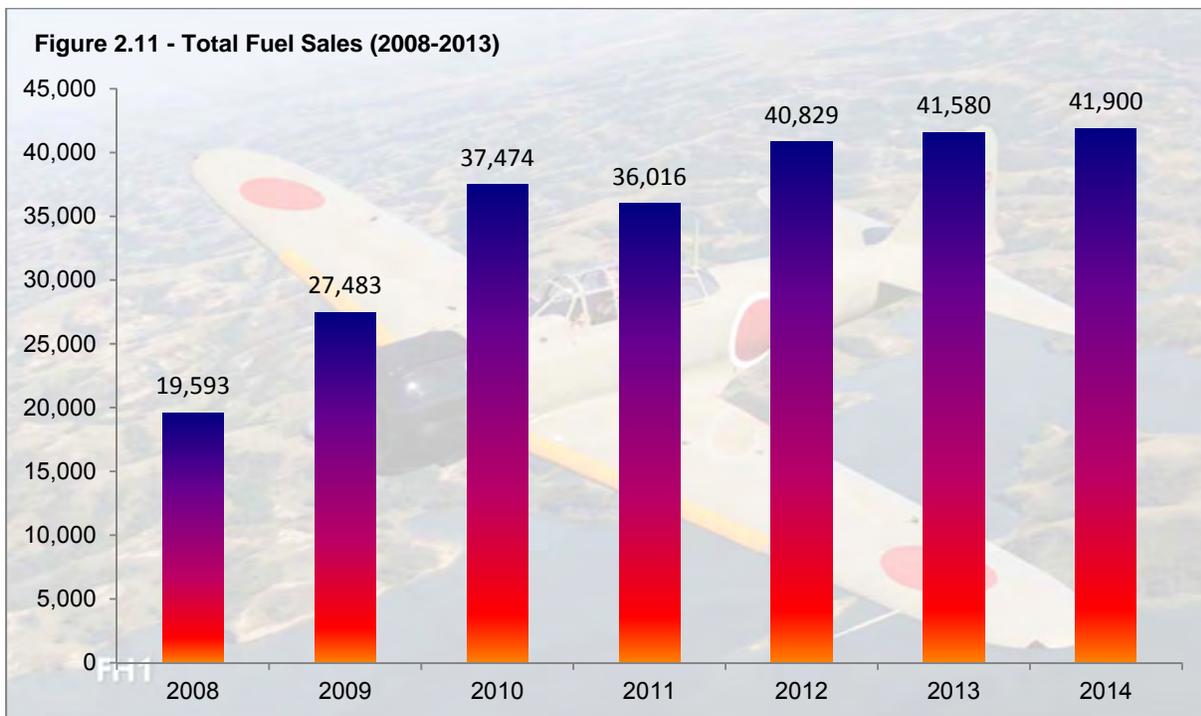
The rotating beacon, which was replaced in 2009, is located on top of a 51 foot tower located adjacent to the automobile parking area.

## COMMUNICATIONS

Communications at the airport include a common traffic advisory frequency (CTAF) operating at a frequency of 122.8. This frequency also serves as the Unicom frequency for the FBO.

## FUELING FACILITIES AND SALES

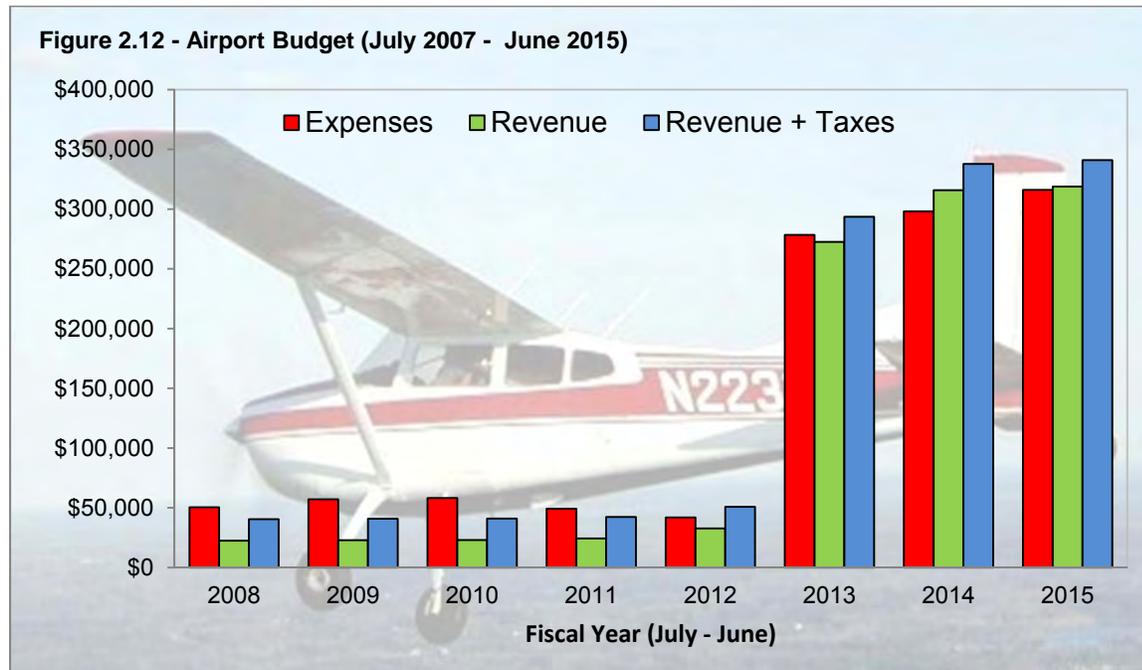
Wiscasset Municipal Airport has both 100 low lead (LL) aviation gas and Jet A fuel available 24 hours a day through a credit card self-service terminal. Both 100LL and Jet-A fuel are dispensed from two 12,000 gallon above ground tanks. As noted on Figure 2.11, fuel sales have average 39,500 gallons per year since 2010. The airport has an aggressive marketing plan for fuel sales, selling both 100LL and Jet A at prices well below most other airports in the state.



## FINANCIAL OVERVIEW

Until recently, the Airport's expenses have exceeded revenue, resulting in taxpayer assistance. Figure 2.12 identifies expenses and revenue for the airport since 2008. The fiscal year for Wiscasset is July 1 to June 30. Expenses are based on the budgeted amount and not the actual amount spent. It is important to note that historically, the airport has not produced enough direct aviation revenue to offset the cost of running the facility, which is typical of most general aviation airports. However, when property taxes are added to the equation (for private hangars), the airport has come close to if not exceeding yearly operating expenses. It is also important to note that the

2013-2014 budget was the first time in the airport’s history that aviation derived revenue (excluding property taxes) exceeded expenses by about \$17,000. The 2015 budget reflects a slightly smaller surplus, but continues to show growth and a positive cash flow for the airport.



## AIRPORT SERVICE AREA

There are seven airports located within 30-60 minutes from the airport. A 30-minute driving time has been designated as the service area for general aviation airports. A 60-minute driving time has been designated as the service area for regional/commuter commercial-service airports. These airports include Augusta State Airport and Knox County Regional Airport. A 90-minute driving time has been designated as the service area for commercial-service airports with major/national service, such as Portland International Jetport. The Brunswick Executive Airport opened in April 2011, and is about 20 minutes driving time from Wiscasset Municipal Airport. Figure 2.13 identifies the National Plan of Integrated Airport System (NPIAS) airports in the region along with their approximate air mile distance from Wiscasset.

## INSTRUMENT PROCEDURES

Wiscasset is served by instrument approach and departure service through Portland Approach Control and Boston Air Traffic Control Center. Both Runway 7 and 25 have instrument approach procedures (IAP) provided by GPS. The RNAV (GPS) 7 procedure (Figure 2.14) has a 560 foot minimum descent altitude (MDA) with minimums of 500 foot ceiling and 1 mile visibility. The RNAV (GPS) Runway 25 procedure (Figure 2.15) has a slightly higher MDA of 580 feet with

minimums of 600 feet and 1 mile. In both cases, circling is authorized to the opposite runway end, but with slightly higher minimums.



Figure 2.13 – Regional Airports

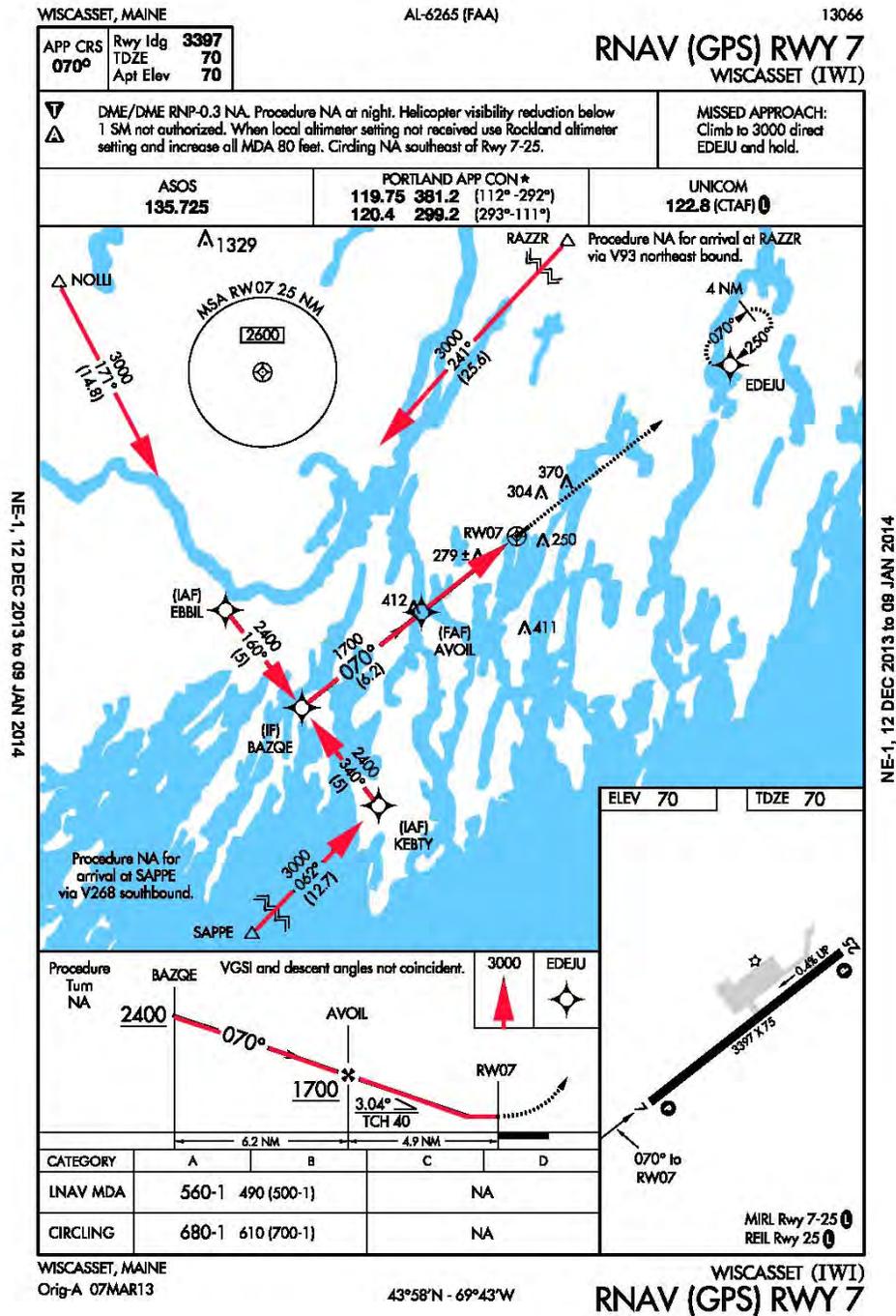


Figure 2.14 – IAP Runway 07



## **SOCIOECONOMIC DATA**

Socioeconomic characteristics such as population and economic conditions provide insights concerning an area's historic and future growth. Moreover, socioeconomic characteristics usually have a positive relationship to aviation activity and are often useful tools in preparing estimates of future airport activity. For an airport master plan, socioeconomic characteristics are collected and examined to derive an understanding of the dynamics of growth within the geographic area served by the airport. This information is typically used in forecasting aviation demand.

As of 2010, the total Maine population was 1,328,361, which grew 4.19% since 2000, and the Lincoln County Population was 34,457, a growth of 2.5% during the same period. The state's population growth rate is much lower than the national average rate of 9.71%, and the County's growth rate is lower than the state average of 4.19%.

Maine's median household income was \$45,815 in 2010 and grew by 23.03% since 2000. The income growth rate is higher than the national average rate of 19.17%. In Lincoln County, the median household income was \$47,678 in 2010 and grew by 23.24% since 2000. The income growth rate is about the same as the state average rate of 23.03% and is higher than the national average rate of 19.17%.

## **ENVIRONMENTAL OVERVIEW**

The following narrative presents an analysis and inventory of environmental resources occurring on and within the vicinity of the airport. The purpose of this inventory and analysis is to provide preliminary information concerning these resources in an effort to define and identify critical resources to be considered prior to the implementation of proposed airport planning recommendations.

### ***AIRPORT ENVIRONMENT***

Airport property is comprised of approximately 257 acres (247 in fee simple and an additional 10 acres in easement). Northern regions of airport property consist primarily of paved runway, taxiway and apron surfaces, aircraft hangars and a terminal building. Land adjacent to airport infrastructure is comprised of regularly mowed meadow. Southern regions of airport property consist of mature coniferous and mixed hardwood forest habitat.

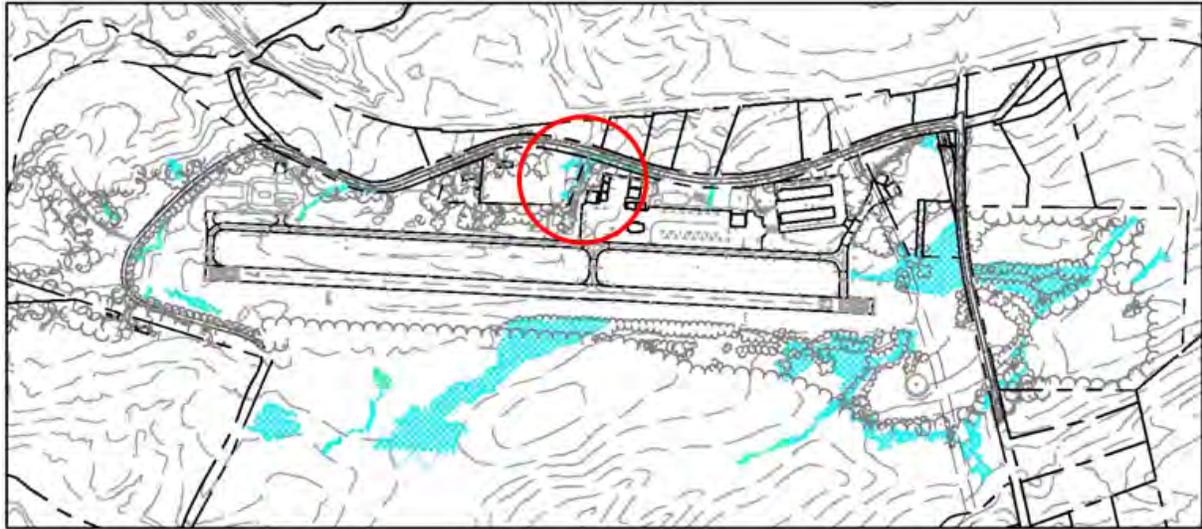


Figure 2.16 – Wetlands

### ***WETLANDS***

Wetlands are present at various locations on the airfield, as shown on Figure 2.16. Emergent and wet-meadow wetlands associated with local drainage regimens occur in isolated areas north, east and west of Runway 7-25. Forested wetlands are the dominant wetland type located south of the runway. In December 2009, at the request of the Town Code Enforcement Officer, MaineDEP issued a statement indicating that the area noted by the circle on Figure 2.16 had an open emergent section (less than 20,000 square feet) and as a result would not have any setbacks from future development<sup>7</sup>.

### ***WATER RESOURCES***

Montsweag Brook abuts the western extent of airport property. The southern region of airport property is bound, in part, by Chewonki Creek. These two tidal resources drain to the Back River, which discharges to the Kennebec and Sheepscot Rivers.

### ***WILDLIFE***

Airport property provides habitat to a number of species common within the mid-coast region. White-tailed deer and wild turkey are frequently observed on airport grounds. Coyote also utilize the area. Raptors including red-tailed hawks prey on rodents and other small mammals found in

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<sup>7</sup> MaineDEP, Bureau of Land and Water Quality, Field Determination #8277 dated 12/29/2009.

the open fields of the airport. Seagulls also congregate on airfield pavement and turf areas at various times of the year.

### **LAND USE**

Wiscasset Municipal Airport is located in the Rural District and subject to zoning regulations established in Article VI (Zoning) of the *Town of Wiscasset Ordinances, November 2008 Edition*. The Town's ordinances do not include an airport zoning district nor do they regulate activities within proximity to the airport. Permitted uses within the Rural District include those uses permitted within the Resource Protection, Residential or Business Districts as well as "any other building or use, unrestricted." Zoning districts abutting airport property include the Shoreland Residential District located to the west of the airfield and the Shoreland Resource Protection District located to the south of the airport. In 1998, an eight acre parcel of airport property was designated as conservation area. The conservation area, located in the south-central region of airport property, abuts Chewonki Creek. Future development of land within the conservation area is prohibited.

Residential development along Chewonki Neck Road located to the north and west of airport property is sparse. The Chewonki Campground, a 50-acre public campground is located approximately 1,000 feet southwest of the Runway 7 threshold. The Chewonki Foundation's Center for Environmental Education is located on Chewonki Neck Road approximately two miles south of the airport.

The airport's land use map is Sheet 8 of 8 in Appendix 2.

### **PROTECTED AIRSPACE**

Three different and unique protected airspace surfaces were analyzed as part of this AMPU. These include FAR Part 77 surfaces<sup>8</sup>, Terminal Instrument Procedures (TERPS)<sup>9</sup>, and Threshold Siting Surface (TSS)<sup>10</sup>. Each is discussed in the following paragraphs.

#### **FAR PART 77**

FAR Part 77 serves as Federal statute dealing with objects that affect navigable airspace, and contains six subparts with specific functions. For the purposes of this discussion, only Subpart C is relative. Subpart C specifies the standards for classifying objects as obstructions to air navigation. These standards apply to the use of navigable airspace by aircraft and to existing navigation facilities, and among other things, it provides protection of airspace for civil airports and for flight

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<sup>8</sup> 14 CFR Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace.

<sup>9</sup> FAA Order 8260.3, United States Standard for Terminal Instrument Procedures.

<sup>10</sup> FAA Advisory Circular 5300.13A.

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procedures. Part 77.25 defines the various civil airport imaginary surfaces, the dimensions of which are dependent on runway and approach types (utility, visual, non-precision, and precision). Therefore, the runway and approach types must be established first. Until circa 1990, Runway 7-25 was visual runway; however, with development of the non-precision IAPs, the runway became a non-precision runway. This change resulted in a change in the size of the primary and approach surfaces. The airport imaginary surfaces at Wiscasset are:

- **Primary Surface.** The primary surface is an imaginary planar surface centered along and at the elevation of the runway centerline. The width of this primary surface is 500 feet, extending beyond each end of the runway by 200 feet.
- **Approach Surface.** The approach surfaces are centered on the extended runway centerline, beginning 200 feet from the runway ends. Approach surfaces are trapezoid in shape, and at Wiscasset, the inner width is 500 feet, outer width of 2,000 feet, and length of 5,000 feet. These dimensions are based on Runway 7-25 being classified as a utility runway. Approach surfaces rise outward and upward at a slope of 20 feet (horizontal) to 1 foot (vertical).<sup>11</sup>
- **Transitional Surfaces.** Transitional surfaces rise outward and upward at a slope of 7 feet (horizontal) to 1 foot (vertical), and terminate where the surfaces are 150 feet above the airport elevation of 71.4 feet MSL.
- **Horizontal Surface.** The horizontal surface extends 5,000 feet from the ends of the primary surface at 150 feet above the airport's elevation.
- **Conical Surface.** A conical surface begins at the edge of the horizontal surface, rising outward and upward at a slope of 20 feet (horizontal) to 1 foot (vertical) for an additional 4,000 feet.

### ***THRESHOLD SITING SURFACE (TSS)***

TSS includes a set of criteria that determines whether or not an object and a runway threshold or departure end would be compatible, based on the object's height and proximity to the end of the runway, and the type of runway and flight procedures authorized for the runway. These criteria

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<sup>11</sup> It is important to note that until approximately 15 years ago, Runway 7 was a visual runway and had a 250 foot wide approach surface at the threshold. With development of the RNAV (GPS) procedure to that runway end, the surface was widened to 500 feet.

function to ensure the areas immediately around the ends of runways are clear of obstacles for approaching and departing aircraft.

At Wiscasset, the TSS inner width is 400 feet, the outer width is 3,800 feet, and the length is 10,000 feet, which extends outward at a slope of 20:1 (20 feet horizontal to 1 foot vertical).

### ***TERPS VISUAL AREA SURFACE***

The final approach segment of any TERPS approach is the segment in which alignment and descent for landing are accomplished. The final approach segment considered for obstacle clearance begins at the Final Approach Fix (FAF) and ends at the runway or missed approach point, whichever is encountered last. Final approach may be made to a runway for a straight-in landing or to an airport for a circling approach. The visual area begins 200 feet from the runway threshold at the threshold elevation and extends 10,000 feet along the track of the runway centerline extended at a 20:1 slope. The beginning width of the visual area is 4,500 feet (200 feet either side of the runway centerline). The sides splay outward relative to the runway centerline. The width of the area at any distance “d” from its origins is calculated using the following formula:  $1/2W = (0.15d) + 200$  (where  $1/2@$  = perpendicular distance from the runway centerline to the edge of the area. Thus, at Wiscasset, the width is 3,160 feet.

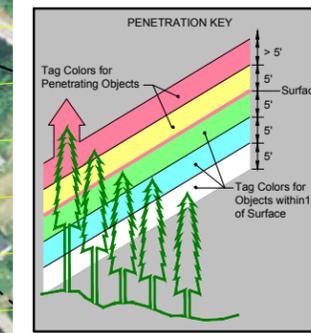
### ***OBSTRUCTION ANALYSIS***

In assessment each of the previous three surfaces (Part 77, TERPS, and TSS), it was determined that the FAR Part 77 surfaces are the most restrictive, and are used in evaluated obstructions (the other two areas, TERPS and TSS lie within the Part 77 approach surface). Appendix 3 contains three sheets that divide the airport into three sections, identify obstructions to the FAR Part 77 surfaces. As noted, the airport has considerable penetrations to the Part 77 approach and transitional surfaces. The level of penetration can be determined by the Penetration Key on each of the three figures.

Runway 7 (Figure 2-17) - Most of the obstructions on the Runway 7 end are occurring off airport on the Chewonki Campground. It should be noted that the airport does have a small aviation easement on this property, but the easement does not fully contain all obstructions. As noted earlier, the size of the Part 77 approach surface increased when the current non-precision procedure was developed.

Middle (Figure 2-18) – Obstructions in this area are largely contained in the transitional surfaces on the north and south side of the runway.

Runway 25 (Figure 2-19) - This area contains obstructions in the transitional surfaces (north and south side of the runway) as well as some obstructions in the Runway 25 approach surface.



- AIRPORT PROPERTY LINE
- ABUTTER PROPERTY LINE
- FAR PART 77 AIRSPACE SURFACE
- 20:1 TERPS SURFACE
- 20:1 THRESHOLD SITING SURFACE
- AIRSPACE SURFACE CONTOUR
- FAR PART 77 OBSTRUCTION ID TAG
- WETLAND BOUNDARY



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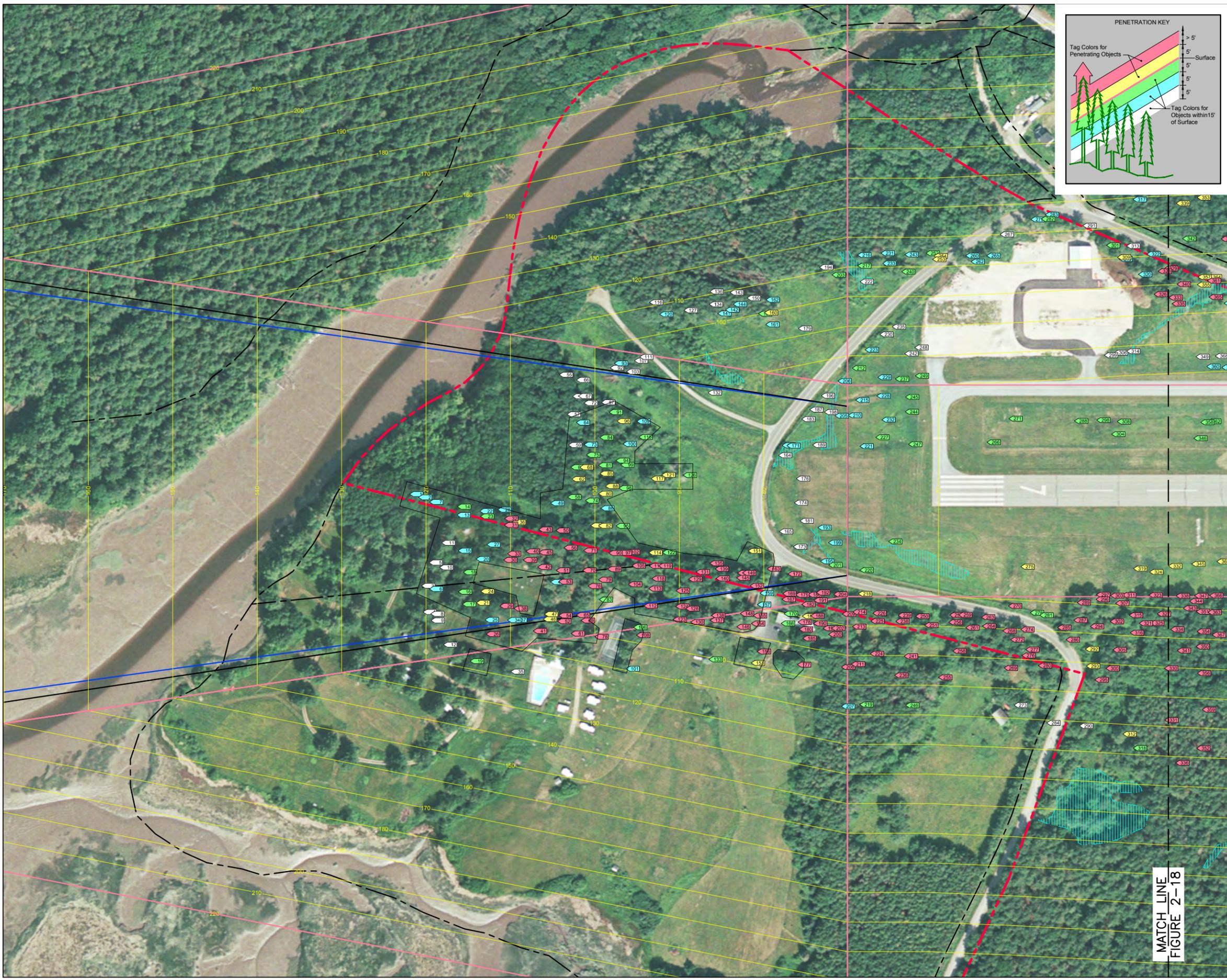
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Client/Project  
 WISCASSET MUNICIPAL AIRPORT  
 AIRPORT MASTER PLAN UPDATE  
 WISCASSET, MAINE

Title  
 FAR PART 77  
 NON-PRECISION 20:1 APPROACH  
 ANALYSIS TO RUNWAY 7

Project No.	Scale
195210458	AS SHOWN

Figure No.	Sheet	Revision
2-17	of	0



MATCH LINE  
FIGURE 2-18



