

## Chapter 8.0 – Implementation Plan

### 8.1 Introduction

This chapter is the culmination of the analytical work accomplished in the previous chapters. The result is a prioritized list of the essential projects. The analytical process included:

- Collecting data
- Projecting future operational activity
- Comparing the projected demand to airport standards and creating a list requirements
- Evaluating the requirements and selecting a preferred alternative

The goal of the Implementation Plan is to prioritize projects with the following objectives in mind:

- Existing infrastructure is preserved
- Airport improvements meet FAA design standards
- Forecasted demand can be accommodated
- Projects are consistent with environmental policies and demonstrate environmental stewardship

The result is a tabulated list of projects highlighting the priority and time frame, as well as an “order of magnitude” estimate and suggested source of funding.

The typical airport master plan process is conducted in accordance with the FAA Advisory Circular which provides an outlook of needs over a twenty year planning period. They are separated into three phases:

- Phase I Short Term (2010-2014)
- Phase II Mid Term (2015-2019)
- Phase III Long Term (2020-2029)

The **short term** projects in a master plan typically make up the 5-year Airport Capital Improvement Plan (ACIP). The ACIP represents what RIAC considers their highest priority airport needs and therefore what they would like to see the FAA fund. During the FAA and RIAC coordination process the final FAA CIP may be pared back even further. The annual decision to fund projects in the CIP is based on:

- The discretionary funds allocated to FAA, New England Region
- The priority rating assigned to a project based on the FAA National Priority Rating (NPR) system
- The status of project preparation and environmental documentation
- Other GA projects in the RI airport system

It is important to remember that preparing the CIP is a dynamic, on-going process. The latter 3- years of the Short Term must remain flexible because:

- Airport emergencies could change the priorities
- Subsequent environmental analysis and permit requirements could alter designs and timing
- Costs could increase or decrease based on better informed designs
- FAA AIP funding appropriations could change and hence the funds available for airport projects

In summary a viable airport master is a critical component in maintaining a viable CIP.

The **mid term** projects are obviously less reliable. Planning for projects depend to a large extent on whether the forecasted activity is approached, whether the condition of the infrastructure remains intact, or whether unforeseen conditions occur. What this period does represent is an estimate of the eligible projects that should be included in the FAA National Plan of Integrated Airport System (NPIAS). The NPIAS is a report to Congress that provides a 10- year outlook of national airport needs.

**Long term** development is a very speculative range of projects for the 10 to 20-year period. It is an outlook for the future. Clearly projects will change and more than likely will be subject to re-evaluation in another AMP process. If nothing else it is extremely helpful in considering land-use development both on and off the airport. Obviously the sensitivity for projected costs should be taken with less appreciation for current financial planning.

Both the mid and long term remains a highly speculative assessment. As a result they must be reassessed as the projected years approach the “current” year. That can be re-evaluated either by updating the master plan or preparing a feasibility study for a specific project. The point is that planning and development is a dynamic process. The key to a good AMP and Airport Layout Plan (ALP) is to provide flexibility. For example in this AMP the preferred alternatives for future aircraft parking provide two options.

Realistically, financial planning is based on the assumption that 95% of the funding for the projects will be provided by the FAA Airport Improvement Program (AIP). The financial planning also considered the fact that the availability of FAA discretionary funds is based on a FAA NPR system. Finally, the costs estimates are based on planning, not engineering considerations and are considered for this purpose to be “order-of-magnitude” cost estimates.

Generally, AIP grants can be obtained for most airfield capital improvements except for terminals, hangars and non-aviation development. Eligible projects include improvements related to enhancing airport safety, capacity, security and environmental concerns. Hangar development is not eligible for FAA AIP funds, and the current RIAC policy is not to invest in hangar development. Nonetheless the master plan identified potential sites for T-Hangars if there is an interest in private investment. Regardless of the funding source, even private development must be consistent with the ALP and is therefore subject to FAA and RIAC review.

There are some elements of the implementation plan, like apron expansion, that are highly dependent on the activity forecasts. Obviously, if activity does not meet the forecasted demand, implementation of the project schedule should be re-evaluated and modified as necessary. But in the case of this AMP projects like providing and obstruction free RVZ are not activity dependent but are required to meet FAA safety standards, Others, like rehabilitating Taxiway “B”, are needed to preserve the airport infrastructure. Others, like the LPV approach is a current system need and highly dependent on the FAA program to improve airport approaches. A collateral effort to the LPV is the RIAC responsibility to clear obstructions if necessary.

All that being said, clearly the ability to implement this Plan is highly dependent on the FAA ability to provide AIP funding for eligible work. Each phase identifies each project, the priority and the estimated cost.

## 8.2 Phase I (2010-2014) Development

1. **Conduct an Environmental Assessment (EA)** that will conform with the FAA Order 5050.4b, *NEPA Implementing Instructions for Airport Actions* for the capital projects identified in Phase I. The EA will also address the clearing requirements identified by FAA in the aeronautical study (Step 2a)
2. **Establish an LPV Approach** to improve the instrument approach minimum decision height for Runway 5 from 400 feet to 200 feet. By adding another component to the existing approach procedure it improves the level of safety for the pilot making an approach Runway 5. To achieve the minimums there are several components to the projects. Moreover, there are responsibilities for FAA and RIAC.
  - a. **Conduct an Aeronautical Survey (FAA)** to assess the LPV obstruction removal requirements.
  - b. **Remove Obstructions (RIAC)** identified in Step (a) or request FAA Aeronautical Study.
  - c. **Develop the LPV Procedure (FAA)** based on the clearing achieved by RIAC in Step (b).
3. **Clear the Runway Visibility Zone (RVZ)** by relocating the Fuel Farm and aircraft parking locations. Relocate six (6) aircraft tie downs to the front of the old terminal building. Ultimately the tie-downs in front of the old terminal will be moved to the new aircraft apron proposed in Phase II or the reconfigured area of the New England Aviation leasehold.
4. **Construct a Snow Removal Equipment Building (SRE)** to store and maintain the snow removal equipment. The snow removal equipment has been kept outdoors for years. The SRE building will protect the RIAC investment in SRE and increase the useful life of this equipment, and facilitate maintenance. While everyone recognizes the justification for this facility, it is obvious that the SRE project will receive a very low rating from the FAA NPR system. Therefore it is assumed that \$2.65 million, virtually all FAA discretionary funds, will not be available from FAA. As a result it will be an unfunded Short Term project.
5. **Construct Access Road to Connect Old and New Terminal Building** – This project is needed to bring more utility and functionality between the two terminal areas. The project will also make the Old Building more marketable to create a revenue source. Based on the modest estimate it is a reasonable to assume the project is doable.
6. **Improve the Airport Wastewater Utility System** – This project was recommended in the 2007 RIAC study to improve the wastewater connection to the airport. It provides a public sewer connection from the airport to the Lincoln public sewer at Powder Hill Road. It is assumed that funding will be provided by RIDOT as a result of the transfer agreement between RIDOT and RIAC.

**Construct Aircraft T-hangars (Phase 1)** – This project provides for one T-hangar building (10 units) Additional T-hangar facilities are planned for each of the succeeding phases and will accommodate the projected need for based aircraft hangar storage through 2020. This project will be instituted only if private investment funds are available. It is not listed with a priority ranking.

### 8.3 Phase II (2015-2019) Development

7. **Rehabilitate Apron (Phase I)** which is in poor condition.
8. **Rehabilitate Taxiway “B”** which is in poor condition.
9. **Expand Aircraft Apron (Phase 1)** to provide enough new apron space to accommodate 30 aircraft tie-downs. It will also provide space for the tie downs displaced to achieve an obstruction free RVZ.
10. **Rehabilitate the Old Terminal Building** to accommodate a combination of uses, such as, aviation use, rental space and an airport restaurant. By improving the current condition of the old terminal, RIAC can maximize the revenue generating ability of this structure. The associated cost will be determined based on the type of development and the needs of proposed use.
11. **Re-evaluate the Airport Master Plan & Airport Layout Plan** to evaluate changes in aircraft activity levels and/or the airport role in the system. Special emphasis should be placed on re-evaluating the need and schedule for proposed development noted by Priority Items No. 12, 13, and 14. If the activity levels projected by this AMP are not achieved it may warrant deferring all or some of these projects to Phase III (2020-2029).

FAA planning guidance recommends updating an AMP every 5 -8 years.

NOTE: BEFORE PROCEEDING WITH DEVELOPMENT OF PRIORITY ITEMS NO. 12, 13, AND 14 ITEM 12 – AMP UPDATE – SHOULD BE UNDERTAKEN.

12. **Extend Taxiway “A”** to increase the operational efficiency by reducing the back taxiing distance on an active runway. It also will provide an exit taxiway for many landing aircraft that don't require the full length of Runway 33.
13. **Upgrade the Runway 5 MALSF to MALSR** to optimize the benefits of the LPV approach proposed in Phase I. A MALSR system can reduce the visibility minimums to ½ mile (lowest possible for LPV). This also includes the costs associated to acquire additional land that may be required.
14. **Expand Aircraft Apron (Phase 2)** to provide enough apron expansion to accommodate the forecasted apron deficiency through 2017.

**Redevelop the New England (NE) Aviation Hangar.** The lease for the New England Aviation hangar expires in 2011. To provide the highest and best use, the hangar should be redeveloped to optimize its use as a conventional hangar. There are two scenarios. If it is increased from the current 7000 square feet to 10,000 square feet it can accommodate the forecasted need for itinerant aircraft storage through 2017. If it is redeveloped to a size of 12,500 feet, it will accommodate the forecasted itinerant storage needs through the 2020. The cost shown in table 8.2 assumes an increase in size from 7,000 to 10,000 square feet.

**Construct Aircraft T-hangars (Phase 2)** to provide for another set of one T-hangar (10 units). This will accommodate the projected based aircraft hangar storage through 2020. This project will be pursued if private investment funds are available.

### 8.3 Phase III (2020-2029) Development

15. **Rehabilitate Runway 15/33** The runway was rehabilitated a few years ago and the runway pavement is currently in good condition. However by the 2025 the pavement will show wear after 20 plus years of use and will essentially have reached the end of its “useful life”. Future AMP updates will continue to monitor its condition.
16. **Extend Perimeter Fencing.** Consistent with existing perimeter fencing, this project will provide an estimated 7,450 linear feet of fencing and secure the entire airport.
17. **Expand Aircraft Apron (Phase 3).** Constructing the third and final phase of the apron development (approximately 29,000 SY) will satisfy the demand projected for aircraft apron space. Although the alternatives analysis states the need for roughly 29,000 square yards of apron, the actual amount of entire apron is estimated to be 46,500 square yards if expansion were to include the airport’s proposed tie-down configuration. This development requirement will also be monitored and reassessed in subsequent AMP Updates.
18. **Rehabilitation of Runway 5/23** The runway was rehabilitated a few years ago and the runway pavement is currently in excellent condition. However by the 2026 the pavement will show wear after 20 plus years of use and will essentially have reached the end of its “useful life”. Future AMP updates will continue to monitor its condition.

**Construct T-hangar (Phase 3).** The project provides for the third and final set of nested T-Hangar (10 units) and meet the facility requirements projected by this master plan through 2027.

**Construct a Conventional Hangar** This project protects for a conventional or corporate hangar development in the eastern quadrant of the airport adjacent to the Rosetti hangar along the end of Runway 23. The approximate area available for this development is 300,000 square feet. Although various design combinations are possible, if the design were similar to the Rosetti facility, the area could accommodate three (3) similar 10,000 square foot facilities. However, it is recommended that the hangar development starts on the southern most edge and expands outward to the northeast. When it occurs, it is likely that the actual design will differ depending on private developer.

**Table 8.1 Phase I (2010-2014)**  
**Project Priority and Estimated Costs (2009 Dollars)**

Priority	Project Description	Total Cost	FAA Funds	RIAC Funds	Other
1	Conduct an EA	\$200,000	\$190,000	\$10,000	\$0
2	a. Provide an LPV Approach <sup>1</sup>	N/A	N/A	0	0
	b. Conduct an Aero. Survey	N/A	N/A	0	0
	c. Clear LPV Obstructions	N/A	N/A	N/A	0
	d. Develop the LPV Procedure	N/A	N/A	0	0
3	Provide Obstruction Free RVZ				
	a. Relocate Fuel Farm <sup>2</sup> b. Relocate Aircraft Tie-Downs	979,500 9,500	930,525 9,025	48,975 475	0 0
4	Construction of SRE Building <sup>3</sup>	2,650,000	2,517,500	132,500	0
5	Construct Access Road Connecting Old and New Terminal Building	134,500	0	134,500	0
6	Upgrade Wastewater Utility System <sup>4</sup>	380,000	0	0	380,000
<b>Phase I Total</b>		<b>\$4,353,500</b>	<b>\$3,647,050</b>	<b>\$326,450</b>	<b>\$380,000</b>

**Table 8.2 Phase II (2015-2019)**  
**Project Priority and Estimated Costs (2009 Dollars)**

Priority	Project Description	Total Cost	FAA Funds	RIAC Funds	Other
7	Rehabilitate Apron (Phase I)	\$3,660,000	\$3,477,000	\$183,000	\$0
8	Rehabilitate Taxiway "B"	3,141,000	2,983,950	157,050	0
9	Expand Aircraft Apron (Phase 1)	1,787,000	1,697,650	89,350	0
10	Rehabilitate Old Terminal Building	N/A	N/A	N/A	0
11	Update AMP & ALP	200,000	190,000	10,000	0
12	Extend Taxiway "A"	772,000	733,400	38,600	0
13	Upgrade R/W 5 MALSF to MALSR	519,500	493,525	25,975	0
14	Expand Apron (Phase 2)	1,463,000	1,389,850	73,150	0
<b>Phase II Total</b>		<b>\$11,542,500</b>	<b>\$10,965,375</b>	<b>\$577,125</b>	<b>\$0</b>

<sup>1</sup> To determine with any degree of certainty the project cost it is necessary to complete the aeronautical study and EA.

<sup>2</sup> Access road development for Items 3 and 4 include about \$800,000 in both estimates. The costs will be incurred with the project that occurs first.

<sup>3</sup> A critical airport need with a low FAA National Priority Rating

<sup>4</sup> The cost of this project is a responsibility RI/DOT. It is a condition of the airport transfer agreement.

**Table 8.3 Phase III (2020-2029)  
Project Priority and Estimated Costs (2009 Dollars)**

Priority	Project Description	Total Cost	FAA Funds	RIAC Funds	Other
15	Rehabilitate Runway 15/33	\$4,353,500	\$3,647,050	\$326,450	\$ 0
16	Extend Perimeter Fencing	591,000	561,450	29,550	0
17	Expand Aircraft Apron (Phase 3)	1,575,000	1,496,250	78,750	0
18	Rehabilitate Runway 5/23	5,800,000	5,510,000	290,000	0
	<b>Phase III Total</b>	<b>\$11,216,000</b>	<b>\$10,655,200</b>	<b>\$560,800</b>	<b>\$ 0</b>

**Table 8.4  
20-Year Summary of Estimated Airport Improvement Costs (2009 Dollars)**

Phase	Time Frame	Total Cost	FAA Funds	RIAC Funds	Other
I	2010-2014	\$4,353,500	\$3,647,050	\$326,450	\$380,000
II	2015-2019	11,542,500	10,965,375	577,125	0
III	2020-2029	11,216,000	10,655,200	560,800	0
	<b>Grand Total</b>	<b>\$27,112,000</b>	<b>\$25,267,625</b>	<b>\$1,464,375</b>	<b>\$380,000</b>

**Table 8.5  
20-Year Summary of Estimated Private Development Costs (2009 Dollars)**

Phase	Time Frame	Private Development	Cost
I	2010-2014	10 Unit T-Hangars	\$2,100,000
II	2015-2019	10 Unit T-Hangars Redevelop NE Aviation Hangar	1,400,000 1,100,000
III	2020-2029	10 Unit T-Hangar 1 Corporate or Conventional Hangar	3,000,000
	<b>Grand Total</b>		<b>\$7,600,000</b>

## 8.4 Financial Resources

This section describes the funding sources available to RIAC for the proposed projects. As previously noted the Airport Improvement Program (AIP) is expected to be the primary source of funding for all the eligible projects. There are three categories of AIP funds to draw from:

- **Apportionment Funds** – Funding provided to each State based on the area and population. It is to be used for GA airports in the state based on need and priority.
- **Non-Primary Entitlement Funds** – Funding allocated to GA airports and it is currently set at a maximum of \$150,000 per airport, per year.
- **Discretionary Funds** – Awarded at the discretion of the FAA to airport projects which meet a nationwide FAA NPR system.

The apportionment and non-primary entitlement funds can be accumulated over a 3 year period. The key to developing a viable and effective Implementation Plan is for RIAC to work closely with FAA on a routine basis. The vagaries of the FAA funding program are so dependent on the New England Region's allocation of discretionary funding from Washington, as well as the national and regional priorities that each project is highly dependent on those decisions. What this Implementation Plan has done is to establish priorities from a RIAC perspective with consideration of the national ratings. The focus of this financial planning is for the 5-year period.