

CHAPTER 7 – SCHEDULE OF IMPROVEMENTS

This Chapter provides a summary of facility improvements and estimated costs according to selected preferred alternative development scenarios identified in *Chapter 6, Development and Evaluation of Alternatives*. Also included are the reconstruction and/or replacement of facilities as they exceed their design life, as identified in *Chapter 2, Inventory of Existing Facilities, Table 2-6: Conditions of Existing Facilities*. These projects have been compiled into an overall schedule of improvements, which is organized by short-term (2019-2023), mid-term (2024-2028), and long-term (2029-2038) projects, in order to assist the airport in the development of its five-year Capital Improvement Program (CIP) according to FAA and MassDOT requirements.

7.1 CONSIDERATIONS FOR INFLATION

The total cost of implementing a particular project is based upon current (2019) estimates of construction costs, the costs of engineering and design work, and minor construction items and contingencies. These preliminary estimates are based, in most cases, on unit prices common to airport and highway construction in Massachusetts in 2019. The costs cited are estimates only and should not be construed as final or conclusive. It is important to consider that inflation will likely affect future CIP project costs. Project cost estimates should be updated at the time a project is ready to be implemented using current data in order to reflect accurate labor rates and material costs.

7.2 ENVIRONMENTAL PLANNING PROJECT COSTS

Costs associated with obtaining environmental permits are estimated using assumed scopes of work and from experience with similar types of projects and cannot be accurately estimated until a project scope of work is developed. Developing the scope of work is a process that takes place approximately one year prior to the start of a project in preparation for funding applications. Therefore, the costs of these types of projects may vary from the estimated costs due to changes in the actual scope of the project.

7.3 FORECASTED VS. ACTUAL DEMAND

It is important to note that the recommended improvement schedule presented below is predicated in part on the forecasted demand outlined in Chapter 4, and that projects may not be eligible for funding until actual demand for facility improvements is present. It is common for Airport CIPs to be adjusted on a yearly basis to accommodate actual demand by either advancing projects when demand materializes earlier than originally anticipated or delaying projects when anticipated demand does not occur as expected.

7.4 SHORT-TERM IMPROVEMENTS

This section provides summary descriptions of the individual projects included in the Airport's short-term Capital Improvement Program from FY 2019-2023. The following descriptions are for planning purposes only and may require refinement and review prior to starting work on a particular project.

7.4.1 TAXIWAY 'A' RECONSTRUCTION

The Airport is currently implementing its FY-2019 Taxiway 'A' reconstruction project, which includes reconstruction of Taxiways 'C', 'D', and 'E'; the H1 taxiway; and the terminal apron in their existing configurations. This project is also removing direct aircraft access from the Main Apron to Runway 6-24 by reconstructing Taxiway 'B' to comply with FAA design standards. The effort will consist of:

- Full-depth reconstruction including the removal of existing pavement and base materials, subgrade preparation, placement of a gravel subbase and aggregate base layers, and placement of bituminous concrete pavement;
- Reconstruction of taxiway safety areas;
- Application of taxiway markings, edge lighting, signage, etc.;
- Erosion control; and
- Restoration of disturbed areas.

Taxiway reconstruction is eligible for AIP funding assistance provided that the taxiways connect eligible facilities at the airport and the dimensions of the pavement are based on critical aircraft requirements. Based on these criteria, this project is eligible for AIP funding. The design and bidding for this project are currently complete, and construction is ongoing as of October 2019¹.

Estimated project cost: FAA Share- \$3,006,000; State Share- \$167,000; **Local Share- \$167,000**

7.4.2 ENVIRONMENTAL ASSESSMENT FOR MASTER PLAN IMPROVEMENTS, VEGETATION MANAGEMENT PLAN AND PART 77 AIRSPACE ANALYSIS

In order to move forward with the selected preferred alternative projects, the Airport must comply with requirements set forth by FAA Orders *1050.1F Environmental Impacts: Policies and Procedures* and *5050.4B National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, which provide policy and procedures for compliance with NEPA. While there are three levels of NEPA Review (*Categorically Excluded Actions, Actions Normally Requiring an Environmental Assessment, and Actions Normally Requiring an Environmental Impact Statement*), it appears that the preferred alternatives outlined in this Master Plan will be satisfied through the *Categorically Excluded* provision or through the completion of an Environmental Assessment (EA), which analyzes environmental impacts associated with proposed projects². An EA evaluates impacts of proposed actions on environmental resources such as

¹ Taxiway 'A' reconstruction was completed in 2020.

² Actions which do not individually or cumulatively have a significant effect on the human environment are considered by FAA to be "categorically excluded" and therefore do not require an EA. FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, Chapter 5 provides a listing of categorical exclusions and should be considered prior to initiating an EA.

wetlands and other water resources, land use, noise and compatible land use, archaeological resources, and biological resources (fish, wildlife, and plants), among other categories, and makes recommendations for mitigation (including avoiding the impact, minimizing the impact, rectifying the impact, rehabilitating, or restoring the environment, etc.).

This project will also include the preparation of a Vegetation Management Plan to satisfy Massachusetts Department of Environmental Protection (MassDEP) Wetland Protection Act Regulations (310 CMR 10) Limited Project Status, and a complete Part 77 airspace analysis to identify obstructions contained within the primary, transitional, horizontal and conical surfaces, not included in the 2018 airspace analysis, which included Part 77 approach surfaces only.

Estimated project cost: FAA Share- \$450,000; State Share- \$25,000; **Local Share \$25,000**

7.4.3 ACQUIRE REPLACEMENT VEHICLE FOR 2000 PICKUP TRUCK AND PLOW

The Airport is currently in the process of acquiring a pickup truck and plow through a MassDOT/AD Airport Safety and Maintenance Program (ASMP) grant. This new vehicle will replace the Airport's existing pickup truck and plow, which was originally purchased in 2000³.

Estimated project cost: FAA Share- \$0.00; State Share- \$80,000; **Local Share- \$20,000**

7.4.4 ESTABLISH A NON-PRECISION (STRAIGHT-IN) APPROACH WITH VERTICAL GUIDANCE TO RUNWAY 6-24

This project is for the establishment of a non-precision approach with vertical guidance to Runway 6-24, which will consist of multiple phases, including:

- Exploration of penetrations to the expanded primary and transitional surfaces and associated mitigation;
- Review of existing Airport Approach Protection Bylaws to determine applicability and potentially reduce or minimize the need for avigation easements;
- Coordinate with FAA Flight Procedures and examine whether a procedure could be developed on less than a 30:1 slope to reduce the number parcels requiring avigation easements and/or tree clearing while maintaining an equivalent level of safety;
- Avigation easement acquisitions over parcels in the Runway 6-24 approaches;
- Mitigation/removal of obstructions to the Runway 6-24 approaches;
- Installation of non-precision runway markings; and
- Coordination with FAA Flight Procedures to design and publish a new approach.

The Commission will consider all options and variations available to enhance airspace safety.

³ This vehicle was acquired in spring of 2019.

Easement acquisitions, obstruction mitigation, and associated coordination with FAA Flight Procedures are eligible for AIP funding assistance.

Estimated project cost: FAA Share- \$4,680,000⁴; State Share- \$260,000; **Local Share- \$260,000**

7.4.5 CONSTRUCT T-HANGAR BUILDINGS ADJACENT TO H3 BUILDINGS

This project is for the construction of two new T-hangar buildings in the vacant area adjacent to the existing H3 hangar row, which will provide the Airport with 22 additional hangar units. This project will also include the construction of vehicle parking spaces inside the fence and associated taxilanes with access points to Taxiway 'E'. It is anticipated that the T-hangar buildings will be funded privately, and that the Airport will incur no costs associated with their construction.

Estimated project cost: TBD (using private funding)

7.4.6 CONSTRUCT A NEW ADMINISTRATION BUILDING

This project is for the construction of a new administration building in the vacant area between the rear hangar and the SRE storage building. This new building will include:

- Updated facilities that meet building and ADA accessibility codes;
- Adequate space for offices, storage, flight planning, pilot lounge, and restaurant;
- A transient aircraft apron adjacent to the new building;
- Controlled access points; and
- A new, paved parking lot outside of the fence.

MassDOT/AD is in the process of upgrading airport administration buildings across the state of Massachusetts through its State Airport Administration Building (SAAB) program. Currently, the Airport is scheduled for a state-funded administration building project in FY-2023.

If this project does not receive funding through the MassDOT/AD SAAB Program, the Airport may apply for AIP funding for a terminal building project using nonprimary entitlements (discretionary funding for terminal building projects is not allowable at GA airports). However, only areas of the building considered to be "public use" areas will be eligible for federal funding. Public use areas include those spaces that passengers may need to occupy as part of their travel. The Airport will be responsible for securing funding (other than AIP funding) for those areas of the terminal that are ineligible. Examples of ineligible areas include but are not limited to administrative offices, conference rooms, airport operations areas, and janitor's closets.⁵

Estimated project cost: FAA Share- \$4,153,500; State Share- \$230,750; **Local Share- \$230,750**

⁴ Estimated costs for exploration and mitigation efforts associated with a compliant non-precision primary surface are not included in the cost estimate as survey for those surfaces was outside of the scope of this Master Plan.

⁵ FAA Order 5100.38D: Airport Improvement Program Handbook

7.4.7 RECONSTRUCT PERIMETER FENCE

This project is for the reconstruction of the entire airport perimeter fence to replace aging and damaged fencing. As defined in the Wildlife Hazard Site Visit Report, gaps under fencing and gates allow for wildlife to enter the airfield, creating a potential hazard for aircraft arriving to and departing from the airport. New fencing will also enhance security by completely enclosing the airfield. As part of this project, the following will be replaced:

- Approximately 8,700 LF of fence
- 4 pedestrian gates
- 1 motorized slide gate
- 3 swing gates

Fencing projects are eligible for AIP funding assistance.

Estimated project cost: FAA Share- \$562,500; State Share- \$31,250; **Local Share- \$31,250**

7.5 MID-TERM IMPROVEMENTS

This section provides summary descriptions of the individual projects included in the Airport's mid-term Capital Improvement Program from FY 2024-2028. The following descriptions are for planning purposes only and may require refinement and review prior to starting work on a particular project.

7.5.1 CONSTRUCT JET-A FUEL FACILITY

This project is for the construction of a Jet-A fuel facility in the area adjacent to the existing 100-LL facility, which will consist of one 10,000-gallon storage tank and fueling apron. This project will also include the installation of a containment system and electrical components.

Fuel farm construction is eligible for state and federal funding assistance provided that the construction occurs at a nonprimary airport and that nonprimary entitlement funds are used. Additionally, the fuel farm must be owned by the sponsor but may be operated by the FBO. Eligible items include the bulk fuel storage tank, containment area, pavement area, pumps, and equipment. Based on these criteria, this project is eligible for AIP funding assistance. This project will have to comply with the EPA spill prevention, control and countermeasures requirements in place at the time the project is proposed for construction.

Estimated project cost: FAA Share- \$724,500; State Share- \$40,250; **Local Share- \$40,250**

7.5.2 RESERVE LAND FOR POTENTIAL FUTURE REVENUE DEVELOPMENT AND NON-AERONAUTICAL DEVELOPMENT

This project is for the reservation of the area of land northeast of the Runway 24 end (currently occupied by the fishermen's storage area) for non-aeronautical development and the reservation of the area of land to the northwest of the Runway 24 end (currently occupied by the nondirectional beacon) for potential future revenue development. Reservation of land for non-aeronautical purposes allows the Airport to pursue the construction of revenue generating projects (i.e., solar farm, compatible storage). Reservation of land for future revenue development allows the Airport to pursue aeronautical or non-

aeronautical revenue generating projects in the future. Any project involving the use of Airport land for a non-aeronautical purpose will require FAA approval of a land release.

Estimated project cost: FAA Share- \$18,000; State Share- \$1,000; **Local Share- \$1,000**

7.5.3 REHABILITATE MAIN APRON

This project is for the rehabilitation of the Main Apron as its design life is exceeded. This project will include:

- Full-depth reconstruction including removal of existing pavement and base materials, subgrade preparation, placement of a gravel subbase and aggregate base layers, and placement of bituminous concrete pavement;
- Erosion control;
- Application of apron markings; and
- Restoration of disturbed areas.

Apron construction is eligible for AIP funding assistance provided that it will be used for aircraft parking. The project cannot include pavement for auto parking, other non-aeronautical uses, or exclusive use areas (must be open to the public to park their aircraft).

Estimated project cost: FAA Share- \$2,250,000; State Share- \$125,000; **Local Share- \$125,000**

7.5.4 RECONSTRUCT HANGAR TAXILANES

This project is for the rehabilitation of the H2 and H3 taxilanes as their design life expires. This project will include:

- Full-depth reconstruction including the removal of existing pavement and base materials, subgrade preparation, placement of a gravel subbase and aggregate base layers, and placement of bituminous concrete pavement;
- Drainage improvements;
- Erosion control; and
- Restoration of disturbed areas.

As hangar row H2 is under Airport Commission ownership, it is considered eligible for AIP funding assistance, and therefore the taxilane serving it is also eligible. However, because the H3 hangar row is considered privately-owned (until it reverts back to Commission control in 2027), it is ineligible for AIP funding assistance; and therefore, the taxilane serving it is also ineligible. The Airport and/or hangar owners will be responsible for securing funding (other than AIP funding) for the H3 taxilane reconstruction.

Estimated project cost: \$1,200,000

7.6 LONG-TERM IMPROVEMENTS

This section provides summary descriptions of the individual projects included in the Airport's long-term Capital Improvement Program from FY 2029-2038. The following descriptions are for planning purposes only and may require refinement and review prior to starting work on a particular project.

7.6.1 RECONSTRUCT RUNWAY 6-24

This project is for the reconstruction of Runway 6-24 in place as it exceeds its design life, as well as the installation of new MIRLS, REILS, PAPIs, windcone, and segmented circle. This project will include:

- Full-depth construction, including the removal of existing pavement and base materials, subgrade preparation, and placement of a gravel subbase, aggregate base layers, and bituminous concrete pavement;
- Application of runway markings;
- Erosion control; and
- Restoration of disturbed areas.

Runway reconstruction projects are eligible for AIP funding assistance.

Estimated project cost: FAA Share- \$3,690,000; State Share- \$205,000; **Local Share- \$205,000**

7.6.2 REHABILITATE 100-LL FUEL FACILITY

This project is for the rehabilitation of the 100-LL fuel facility as replacement becomes necessary. Rehabilitation of fuel facilities is not eligible for AIP funding assistance even if the facility has exceeded its design life. AIP can only fund the initial construction of fuel facilities and cannot fund maintenance or repair; however, this project is eligible for ASMP funding through MassDOT/AD. This project will have to comply with the EPA spill prevention, control and countermeasures requirements in place at the time the project is proposed for construction.

Estimated project cost: FAA Share- \$0.00; State Share- \$680,000; **Local Share- \$170,000**

7.6.3 ACQUIRE NEW SNOW REMOVAL EQUIPMENT

This project is for the acquisition of a new piece of snow removal equipment (SRE) as current equipment exceeds its design life and becomes eligible for AIP funding assistance. This project would replace the following SRE and attachments:

Carrier Vehicle

- Rotary Plow
- Ramp Plow
- Rotary Broom

SRE acquisition is eligible for AIP funding assistance.

Estimated project cost: FAA Share- \$301,500; State Share- \$16,750; **Local Share- \$16,750**