

CHAPTER FIVE:

ALTERNATIVES ANALYSIS AND DEVELOPMENT CONCEPTS

5.1 INTRODUCTION

The purpose of this chapter of the Airport Master Plan Update (AMPU) is to present development alternatives and recommendations for the Belfast Municipal Airport (the Airport or BST) in terms of concepts and reasoning. It is the culmination of the planning process that started with **Chapter Two: *Inventory of Existing Conditions***, which presented the baseline of existing Airport data; then moved to **Chapter Three: *Projections of Aviation Demand***, which presented BST's forecasted operational activity; and then continued in **Chapter Four: *Airfield Capacity and Facility Requirements***, which defined the Airport's future facilities required by future demand.

This chapter presents alternative development concepts and utilizes evaluation criteria to select a preferred development scenario to meet the facility requirements projected in **Chapter Four**. Specifically, the objective of this analysis is to identify a reasonable range of feasible development options that allows the Airport to meet projected levels of aviation demand. Following that, each alternative is evaluated to provide recommended improvements that meet demand while also providing for future flexibility. Additionally, this chapter provides a description of the various factors and influences, which will form the basis for the Airport's long-term development program.

In concert with the role of the Airport and the community input received during the planning process, several basic assumptions have been established that are intended to direct the development of the Airport in the future.

Assumption One. The Airport will be developed and operated in a manner that is consistent with local ordinances and codes, federal and state statutes, federal grant assurances, and federal agency regulations (e.g., Federal Aviation Administration (FAA), Environmental Protection Agency, among others).

Assumption Two. The Airport will continue to accommodate general aviation (GA) activity, including corporate, air taxi, and flight training activities. Based on the market analysis and forecasts of demand, scheduled commercial air service airlines are not projected to serve BST within the planning period.

Assumption Three. This assumption relates to the size and the type of critical design aircraft that utilizes the Airport, and the resulting setback and safety criteria, which are used as the basis for the layout of associated Airport facilities.

The Alternatives Analysis is a regimented process by which development options are identified and the final Recommended Plan is established. The Recommended Plan is what is ultimately included on the resulting Airport Layout Plan.

- Runway 15-33: The design aircraft for this runway was identified in the previous chapter as the Beechcraft King Air C90, a common twin-turboprop business aircraft with a maximum takeoff weight of 10,485 pounds. The aircraft has a wing span of 53 feet, 8 inches, a tail height of 14 feet, 3 inches, and an approach speed of approximately 102 knots, resulting in a Runway Design Code of B-II. This is consistent with the existing Airport Layout Plan (ALP).

Assumption Four. This assumption relates to the need for the Airport to accommodate aircraft operations in a reliable and safe manner. The Airport's runway system should be developed with instrument approach guidance capabilities, to accommodate forecasted operations as safely as possible under most weather conditions that are prevalent within the local area. Runway 15-33 will continue to have non-precision Global Positioning System (GPS) instrument approaches to both runway ends, with visibility minimums greater than $\frac{3}{4}$ of a mile.

Assumption Five. Because the amount of available landside development area at any airport is at a premium, the plan for future Airport development strives to make the most efficient use of the area available for aviation-related activities, including GA facilities and passenger terminal facilities. Aviation use areas should be developed to be compatible with surrounding land uses.

Assumption Six. The sixth assumption focuses on the relationship of the Airport to off-Airport land uses and the compatible and complementary development of each. To the maximum extent possible, future facilities will be designed to enhance the compatibility of the Airport's operations with the local environs.

Assumption Seven. The seventh assumption is based on the need for the Airport to remain financially self-sufficient. Specifically, the Airport should establish long-term plans that anticipate, and align with, reasonable future industry trends. In doing so, the Airport will be able to establish and execute a financial plan to ensure its long-term financial growth and prosperity.

Goals and Objectives for Development

Accompanying these assumptions are several goals and objectives that have been established to provide direction to the plan and to establish continuity in the future development of the Airport. These goals and objectives consider multiple needs of the Airport in both the short term and in the long term. These include safety, noise, capital improvements, land use compatibility, financial and economic conditions, public interest and investment, and community recognition and awareness. While all are project oriented, some obviously represent more tangible activities than others; however, all are deemed important and appropriate to the future of the Airport. Note that these goals are designed to augment the AMPU objectives defined in **Chapter One: Introduction**.

- Provide effective direction for the future development of the Airport through the preparation of a rational, reasonable, and implementable plan.
- Prepare a plan that allows the Airport to fulfill the mission of facilitating and enhancing local and regional GA services by “right-sizing” to meet future demand.
- Accommodate the forecasted demand for aviation activity in a safe and efficient manner by providing the necessary Airport facilities and services.
- Ensure that the future development of the Airport will accommodate a variety of GA activities ranging from small GA users, to flight training, to corporate aviation.
- Plan and develop the Airport so that it can accommodate the future needs and requirements of Belfast and the larger surrounding service area to support regional economic development activities.
- Encourage and protect the public and private investment in land and facilities.

5.2 PREVIOUS STUDY RECOMMENDATIONS

BST’s last Airport Layout Plan Update was completed in January 2008, and it identified several projects that have not yet been constructed or implemented. As part of this AMPU, these projects should be reviewed and be considered as part of this alternatives analysis chapter. Following are descriptions of these proposed projects.

- Expand aircraft aprons. This project calls for the expansion of the terminal aircraft parking apron. This project has been constructed.
- Prepare hangar development area. This project calls for the design and construction of two areas totaling approximately 90,000 square feet for future hangar construction, including preparation of underground electric service. This project has not been constructed to date.
- Design and construct snow removal equipment building. This project involves the design and construction of a 50-foot by 50-foot snow removal equipment building. For planning purposes, it was assumed that this 2,500-square foot building would have full electrical capabilities, but no water would be installed. This project has not been constructed to date.
- Prepare west ramp area. This project involves the design and construction of an area totaling approximately 360,000 square feet for future hangar construction, including preparation of underground electric, water, and telephone services. Additionally, this project included the design and construction of a 450-foot by 35-foot lighted taxiway. No elements of this project have been constructed to date.
- Design and construct parallel taxiway. This project consists of the design and construction of a full-length (4,000 feet) lighted parallel taxiway

located along the east side of Runway 15-33, set back 240 feet from the runway centerline, with 35 feet wide stub taxiways to the existing apron. This project has not been constructed to date.

- Install precision approach path indicator lighting systems. This project consists of the design, construction, and alignment of two precision approach path indicator lighting systems, one for each end of the runway. This project has not been constructed to date.

5.3 EVALUATION OF ALTERNATIVE DEVELOPMENT SCENARIOS

To facilitate the selection of a preferred airfield development scenario, a set of evaluation criteria have been identified for use in this analysis. Through an assessment that incorporates these criteria, the potential benefits and impacts of the various alternative development scenarios can be compared, contrasted, and incorporated into the selection process. The evaluation criteria selected for this analysis include the following:

- Safety/operational factors. Each alternative is evaluated to determine its ability to safely accommodate future demand for aircraft, vehicles, and other relevant factors based on the specific facility being evaluated. This criterion evaluates alternative development concepts based on anticipated improvements to operational safety, capacity, and delay, as well as tenant convenience, and other relevant planning considerations.
- Economic factors. Historic infrastructure investment, the remaining useful life of existing Airport facilities, anticipated alternative project cost differentials, and property acquisition requirements are the economic factors that are considered in this metric. These factors provide a basis for comparing the cost-effectiveness and economic ramifications of development scenarios.
- Environmental factors. A broad evaluation of environmental factors associated with development is part of the review and comparison of alternatives. Relevant environmental factors including, but not limited to, noise, wetland, and contamination impacts, are evaluated in greater detail for the preferred alternative. Additional considerations also include potential physical impacts to the surrounding community.
- Community/implementation feasibility factors. There are often factors, both tangible and intangible, that can impact an airport's ability to implement certain development scenarios. Community and political acceptance are examples of implementation feasibility factors taken into consideration in this analysis. Alternative facility development concepts identified for the Airport are evaluated relative to each other based on the anticipated feasibility of their implementation.

Where appropriate, each alternative development scenario was quantitatively and qualitatively evaluated based on these factors. Specifically, each was assessed a score ranking from one (representing a negative impact associated with each factor), to three (representing a neutral or no impact), to five (representing a positive impact). Each airfield alternative component was then ranked relative to the others (not independently) to compare/contrast them all within each category. In addition to the evaluation criteria used above, the proposed improvements were presented to the Airport to receive feedback and input on the demand for and preferred location of each facility.

It is critical to note that the ultimate decision with respect to the various alternatives was made by a vote of the Project Advisory Committee (PAC). The ranking process described above was simply used as a point of discussion over the course of several PAC meetings to assist the group in understanding the full breadth of issues related to each of the alternatives.

5.4 AIRSIDE DEVELOPMENT CONCEPTS AND ALTERNATIVES

Because all other airport functions relate to and revolve around the basic runway/taxiway layout, airside development alternatives must be carefully examined and evaluated first. While it is essential that the initial development recommendations for BST be commensurate with the near-term needs and requirements of the Airport's users, the long-term improvement of the facility must also be considered and planned for to ensure the Airport's capability to accommodate future activity levels. Consequently, the main objective of the planning recommendations presented in this section is to identify future development that will result in a runway/taxiway system capable of accommodating the forecasted aviation activity levels.

Chapter Four: *Airfield Capacity and Facility Requirements* examined the ability of BST's existing runway/taxiway system to accommodate projected levels of activity at the Airport through the 20-year planning period. The findings of that analysis indicate that the existing airfield facilities provide sufficient operational capacity to efficiently accommodate aircraft operational demand throughout the planning period. However certain airside elements require modification to ensure that the Airport continues to comply with FAA airport design, airspace, and safety criteria.

The following sections provide overviews of the alternatives analyses for several of the key airfield infrastructure elements. Although these individual analyses are presented separately, it must be understood that they can and do impact each other (e.g., the proposed setback of the proposed parallel taxiway from the runway). Such potential interactions will be acknowledged and addressed as appropriate.

5.4.1 Runway 15-33 Extension

As its only runway, Runway 15-33 is BST's most critical infrastructure element. At 4,000 feet in length and 100 feet in width, the runway was thoroughly reviewed

within **Chapter Four** and ultimately determined to be adequate for accommodating the Airport's existing and projected design aircraft throughout the 20-year planning period. However, it was also recognized in that chapter that the FAA recommends "airport designers assess and verify the airport's ultimate development plan for realistic changes that, if overlooked, could result in future operational limitations to customers." Therefore, this study considered a potential extension of Runway 15-33, based on FAA runway length requirement criteria, as well as demand from air taxi and corporate operators that fly corporate jets.

It must be understood that this proposal is not justified based on the Airport's projected requirements over the planning period. Rather, it is being offered as a potential eventuality should area demand develop enough (through expansion of existing local and regional economic development enterprises, as well as potential new initiatives) to ultimately warrant such an extension.

It is also important to note that showing a proposed runway extension on the ALP would allow the City of Belfast (City) and the FAA to protect for this potential over the long term should the need for the runway extension ever be realized; however, inclusion of the extension on the ALP does not commit either the FAA or the City to build the extension.

This section provides an overview of the alternatives analysis conducted for the potential extension of Runway 15-33. It includes a listing of the general strategies that could be employed for meeting long-term runway length needs (note that these are consistent with standard FAA airport planning and environmental compliance requirements). Additionally, any alternatives developed in association with these strategies have been listed and graphical representations included in the following pages.

*(It must be also recognized that the runway extension concepts presented in this section were originally generated and studied in detail as part of BST Runway 15-33 Corridor Analysis, completed in August 2014. While this section includes those original alternatives, please refer to **Appendix E** to review the complete assessment.)*

Proposed Action (January 7th, 2016 PAC Meeting)

BST would extend Runway 15-33 a suitable amount given a demonstrated need and justification for the additional length, as well as funding for its construction.

Proposed Action Purpose (January 7th, 2016 PAC Meeting)

The purpose of this action would be to extend Runway 15-33 to a length that would permit small- to mid-sized corporate turbine aircraft to operate at BST on a regular basis. Interest in a runway extension for business jet purposes has been expressed by multiple companies in the Belfast area, with one specifically requesting a 5,000-foot runway. (For many companies, corporate/business aircraft are integral to their operations; therefore, immediate access to an airport capable of accommodating those aircraft is very important.)

Proposed Action Description (January 7th, 2016 PAC Meeting)

The proposed action would extend Runway 15-33 (currently 4,000 feet long) to a distance appropriate for regular mid-sized business jet operations (assumed to be up to a maximum of 5,200 feet). Such an extension would have an impact on off-Airport properties either directly (i.e., through physical construction on the ground, obstruction removal, relocated airspace, and relocated associated easements) or indirectly (through the extension of existing Airport operational activities beyond the existing footprint).

Proposed Action Alternatives (January 7th, 2016 PAC Meeting)

The *BST Runway 15-33 Corridor Analysis* study (included in Appendix E) describes the rigorous process undertaken to ultimately arrive at the nine potential runway extension alternatives that were considered. Note that this process utilized the FAA's prescribed procedures for determining runway length, as well as accommodating criteria defined in FAA Advisory Circular (AC) 150/5300-13A, *Airport Design*. Additionally, this process also factored several potential local area physical features that could be impacted by an extended runway, such as roads, ball fields and parks, and wetlands.

Of those nine original alternatives, seven were ultimately included in this AMPU and were presented to the PAC for consideration. These are listed below and are represented graphically in the pages that follow.

A. Alternative 1 - no action

Key facts include:

- "No-build" alternative (i.e., no extension), although the existing runway would still have to be maintained
- 4,000 feet of total usable runway length available for takeoff and landing
- Fulfills long-term requirements as projected in the AMPU
- Complies with all FAA airport design criteria
- No additional impacts beyond existing runway footprint
- Projected cost associated with this alternative is \$2.0 million (in 2015 dollars) for a runway rehabilitation (currently scheduled for 2024)

B. Alternative 2 - extend southeast (170 feet)

Key facts include:

- 4,170 feet of total usable runway length available for takeoff and landing
- Remains on existing Airport property
- Requires relocation of the Runway 33 approach end Runway Safety Area (RSA) to as close to Congress Street as possible without impacting the street itself (possibly requiring retaining walls) and assumes some flexibility in the application of the FAA Runway Object Free Area (ROFA) standards

- Impacts will be realized by extending existing runway corridor footprint
- Projected cost associated with this alternative is \$1.35 million to \$1.85 million (in 2015 dollars), in addition to the required \$2.0 million runway rehabilitation

C. Alternative 3 - extend southeast (170 feet) and northwest (240 feet)

Key facts include:

- 4,410 feet of total usable runway length available for takeoff and landing
- Construction remains on existing Airport property
- Requires relocation of the Runway 33 approach end RSA to as close to Congress Street as possible without impacting the street itself (possibly requiring retaining walls) and assumes some flexibility in the application of the FAA ROFA standards
- Requires relocation of the Runway 15 approach end RSA to as close to the existing Airport property line as possible without impacting it
- Impacts will be realized by extending existing runway corridor footprint
- Projected cost associated with this alternative is \$2.55 million to \$3.05 million (in 2015 dollars), in addition to the required \$2.0 million runway rehabilitation

D. Alternative 3A - Alternative 3 with declared distance application

Key facts include:

- 4,710 feet of total usable runway length available for takeoff and 4,410 feet of total usable runway length available for landing
- Requires relocation of the Runway 33 approach end RSA to as close to Congress Street as possible without impacting the street itself (possibly requiring retaining walls) and assumes some flexibility in the application of the FAA ROFA standards, requires additional 470 feet of runway pavement that would only be available for departures
- Requires relocation of the Runway 15 approach end RSA to as close to the existing Airport property line as possible without impacting it, and requires additional 540 feet of runway pavement that would only be available for departures
- Impacts will be realized by extending existing runway corridor footprint
- Projected cost associated with this alternative is \$3.75 million to \$4.25 million (in 2015 dollars), in addition to the required \$2.0 million runway rehabilitation

E. Alternative 4 - extend southeast (170 feet) and northwest (530 feet)

Key facts include:

- 4,700 feet of total usable runway length available for takeoff and landing

- Extends approximately 290 feet off existing Airport property
- Meets basic runway length operational requirements for corporate aviation operations
- Requires relocation of the Runway 33 approach end RSA to as close to Congress Street as possible without impacting the street itself (possibly requiring retaining walls) and assumes some flexibility in the application of the FAA ROFA standards
- Requires relocation of the Runway 15 approach end RSA 290 feet beyond the existing airport property line, and would impact wetlands, possibly would require retaining walls, and likely would require the relocation of the Walsh Field Recreation Area's baseball field.
- Impacts will be realized by extending existing runway corridor footprint
- Projected cost associated with this alternative is \$3.55 million to \$4.05 million (in 2015 dollars), in addition to the required \$2.0 million runway rehabilitation

F. Alternative 5 - extend southeast (170 feet) and northwest (830 feet)

Key facts include:

- 5,000 feet of total usable runway length available for takeoff and landing
- Extends approximately 590 feet off existing Airport property
- Meets optimal runway length operational requirements for corporate aviation operations
- Requires relocation of the Runway 33 approach end RSA to as close to Congress Street as possible without impacting the street itself (possibly requiring retaining walls) and assumes some flexibility in the application of the FAA ROFA standards.
- Requires relocation of the Runway 15 approach end RSA 590 feet beyond the existing Airport property line, and would impact wetlands, require the relocation of the Walsh Field Recreation Area's baseball field, and possibly would require retaining walls
- Impacts will be realized by extending existing runway corridor footprint
- Projected cost associated with this alternative is \$4.15 million to \$4.65 million (in 2015 dollars), in addition to the required \$2.0 million runway rehabilitation

G. Alternative 6 - extend southeast (170 feet) and northwest (1,008 feet)

Key facts include:

- 5,178 feet of total usable runway length available for takeoff and landing
- Extends approximately 768 feet off existing Airport property
- Exceeds optimal runway length operational requirements for corporate aviation operations
- Requires relocation of the Runway 33 approach end RSA to as close to Congress Street as possible without impacting the street

- itself (possibly requiring retaining walls) and assumes some flexibility in the application of the FAA ROFA standards
- Requires relocation of the Runway 15 approach end RSA to as close to Lincolnville Avenue as possible without impacting the street itself, and would impact wetlands, require the relocation of the Walsh Field Recreation Area's baseball field, and possibly would require retaining walls
 - Impacts will be realized by extending existing runway corridor footprint
 - Projected cost associated with this alternative is \$4.65 million to \$5.15 million (in 2015 dollars), in addition to the required \$2.0 million runway rehabilitation

Additionally, the following table presents a summary of the estimated costs (in 2015 dollars) for each of the runway extension alternatives, as well as the projected corporate aircraft operational range associated with each resultant runway length. (It should be noted that these costs do not include the rehabilitation of the existing 4,000-foot runway that will be required as early as 2024, nor do they include any extension associated with the taxiway system.)

Table 5-1: Runway Extension Alternatives Cost Comparison

	Alternative 1	Alternative 2	Alternative 3	Alternative 3A	Alternative 4 ¹	Alternative 5 ¹	Alternative 6 ¹
Takeoff distance (ft)	4,000	4,170	4,410	4,710	4,700	5,000	5,178
Landing distance (ft)	4,000	4,170	4,410	4,410	4,700	5,000	5,178
Estimated Maximum Range (nautical miles) ²	1,900	2,150	2,420	2,720	2,710	2,950	3,100
Estimated Extension Cost (low)	\$0	\$1,350,000	\$2,550,000	\$3,750,000	\$3,550,000	\$4,150,000	\$4,650,000
Estimated Extension Cost (high)	\$0	\$1,850,000	\$3,050,000	\$4,250,000	\$4,050,000	\$4,650,000	\$5,150,000
Average Cost per Linear RW Foot	NA	\$9,412	\$6,829	\$5,634	\$5,429	\$4,400	\$4,160
Average Cost per Nautical Mile (range)	NA	\$6,400	\$5,385	\$4,878	\$4,691	\$4,190	\$4,083

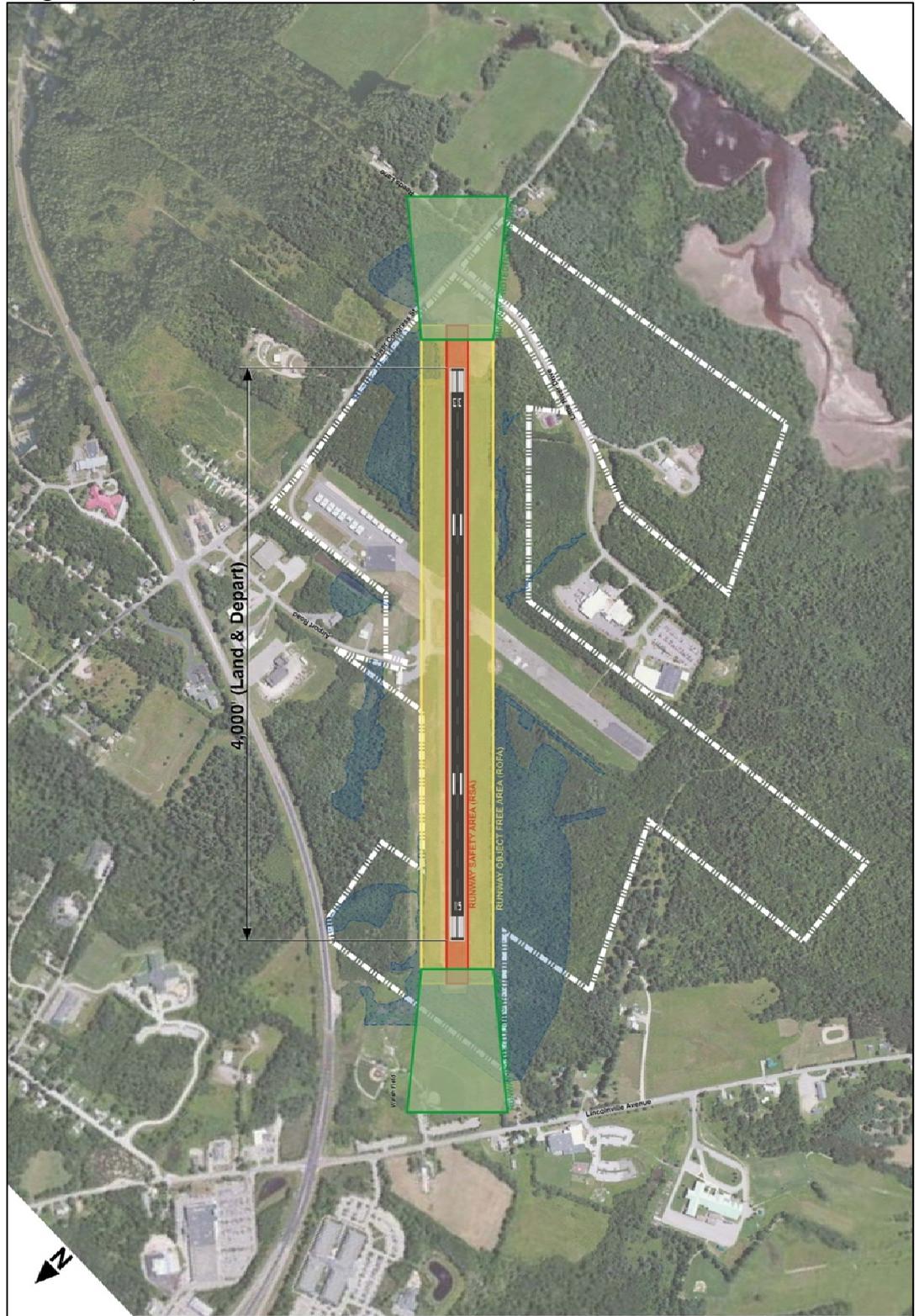
¹ Does not include any costs associated with relocation of existing ballfield complex or further extension of TW A.

² Based on manufacturers data for CL300 Challenger (no winds aloft, does not consider operator restrictions.)

Costs do not include reflect associated airspace clearance requirements, easement acquisitions and obstruction removal.

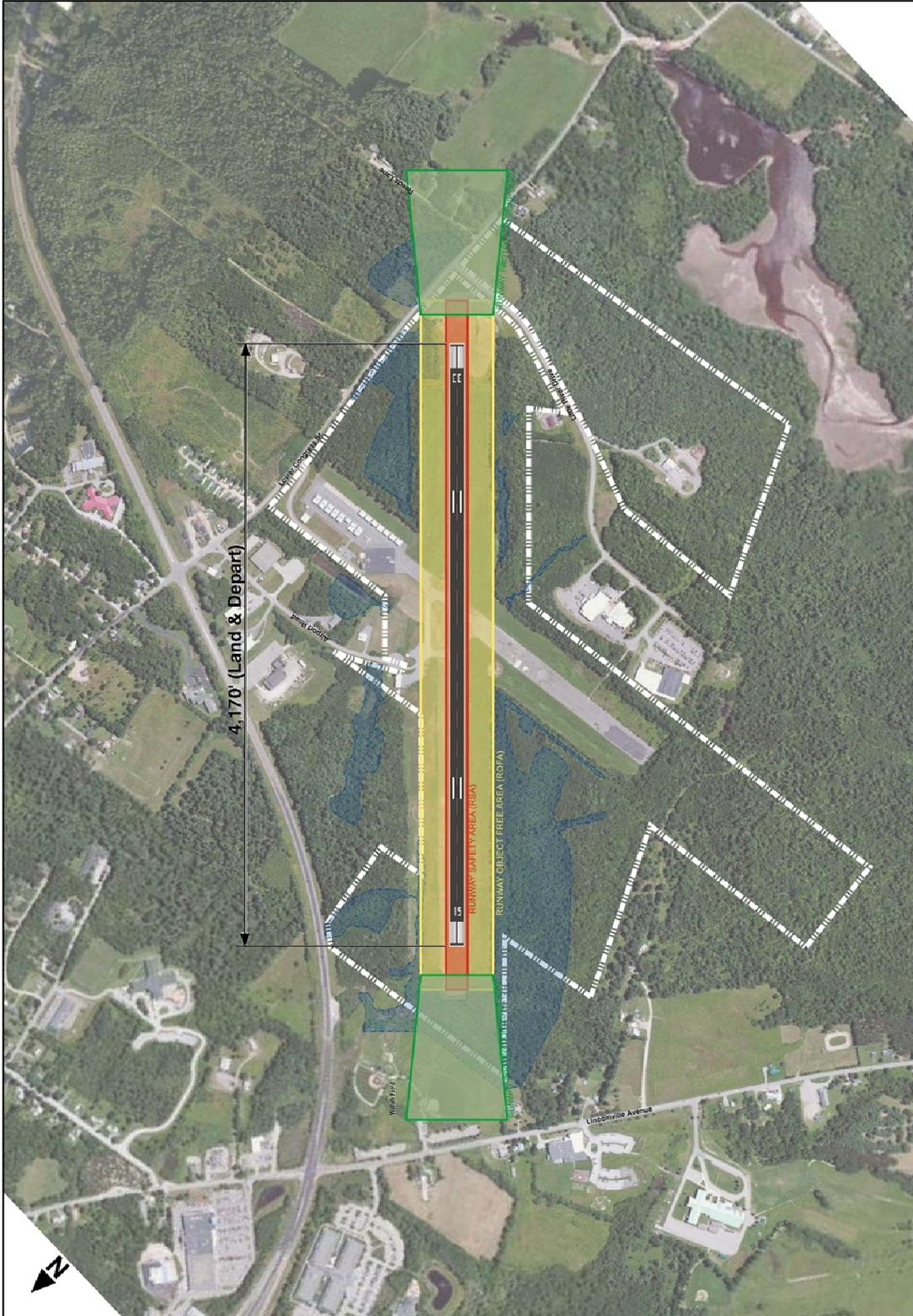
Source: Airport Solutions Group.

Figure 5-1: Alternative 1 – No Action (4,000 feet Total Usable Runway Length Available)



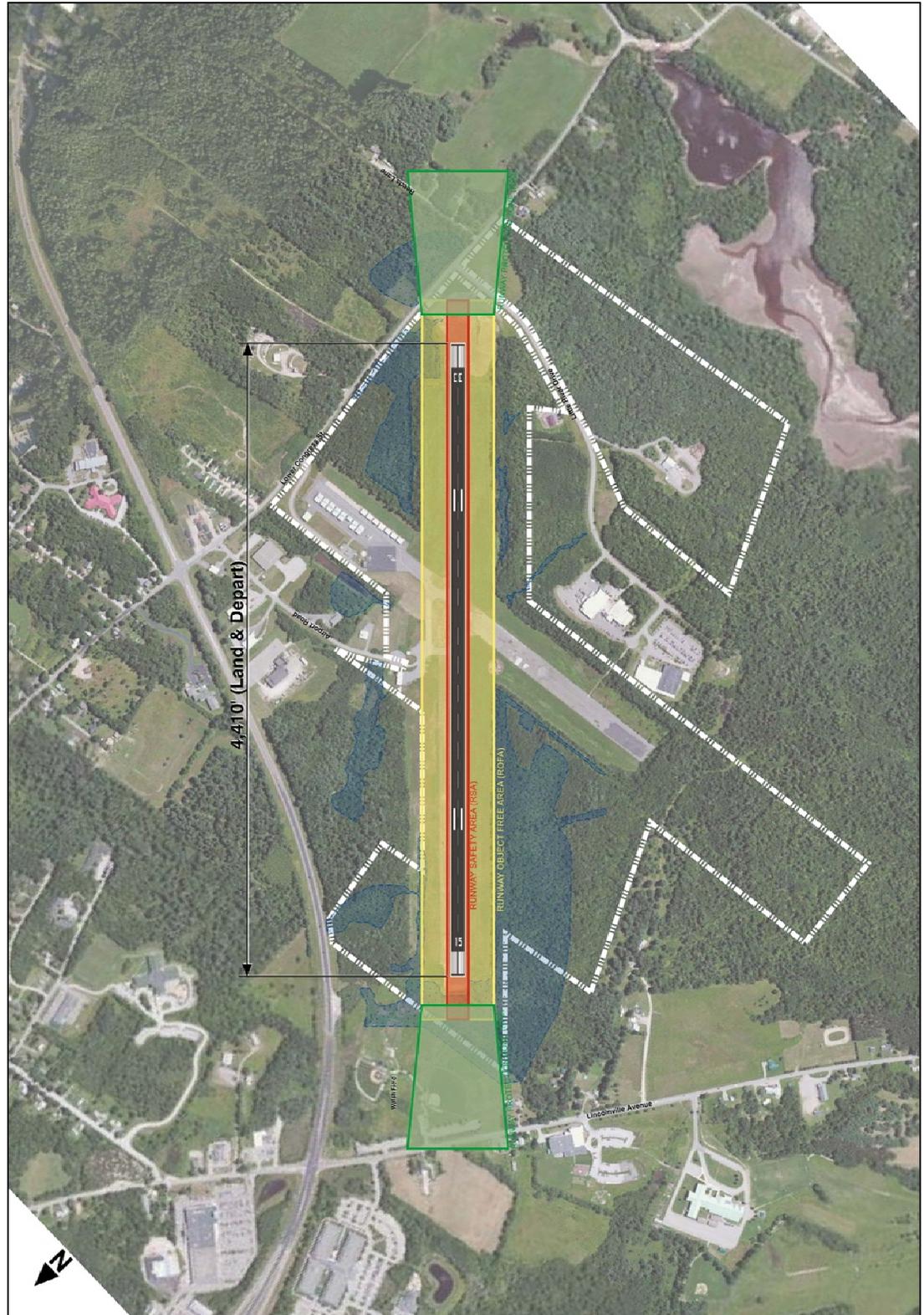
Source: Airport Solutions Group.

Figure 5-2: Alternative 2 - Extend Southeast (170 feet) (4,170 feet Total Usable Runway Length Available)



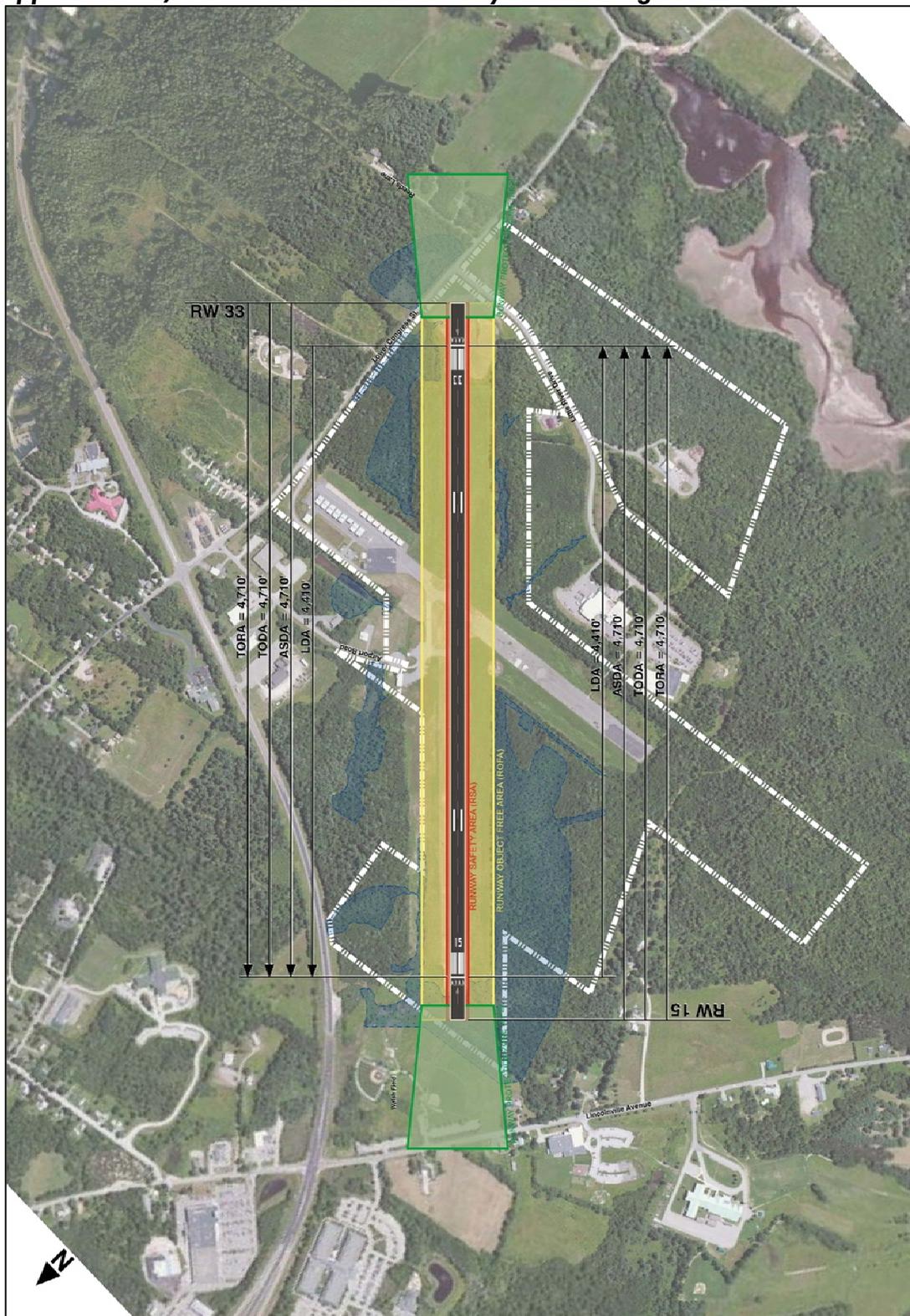
Source: Airport Solutions Group.

Figure 5-3: Alternative 3 – Extend Southeast (170 feet) and Northwest (240 feet) (4,410 feet Total Usable Runway Length Available)



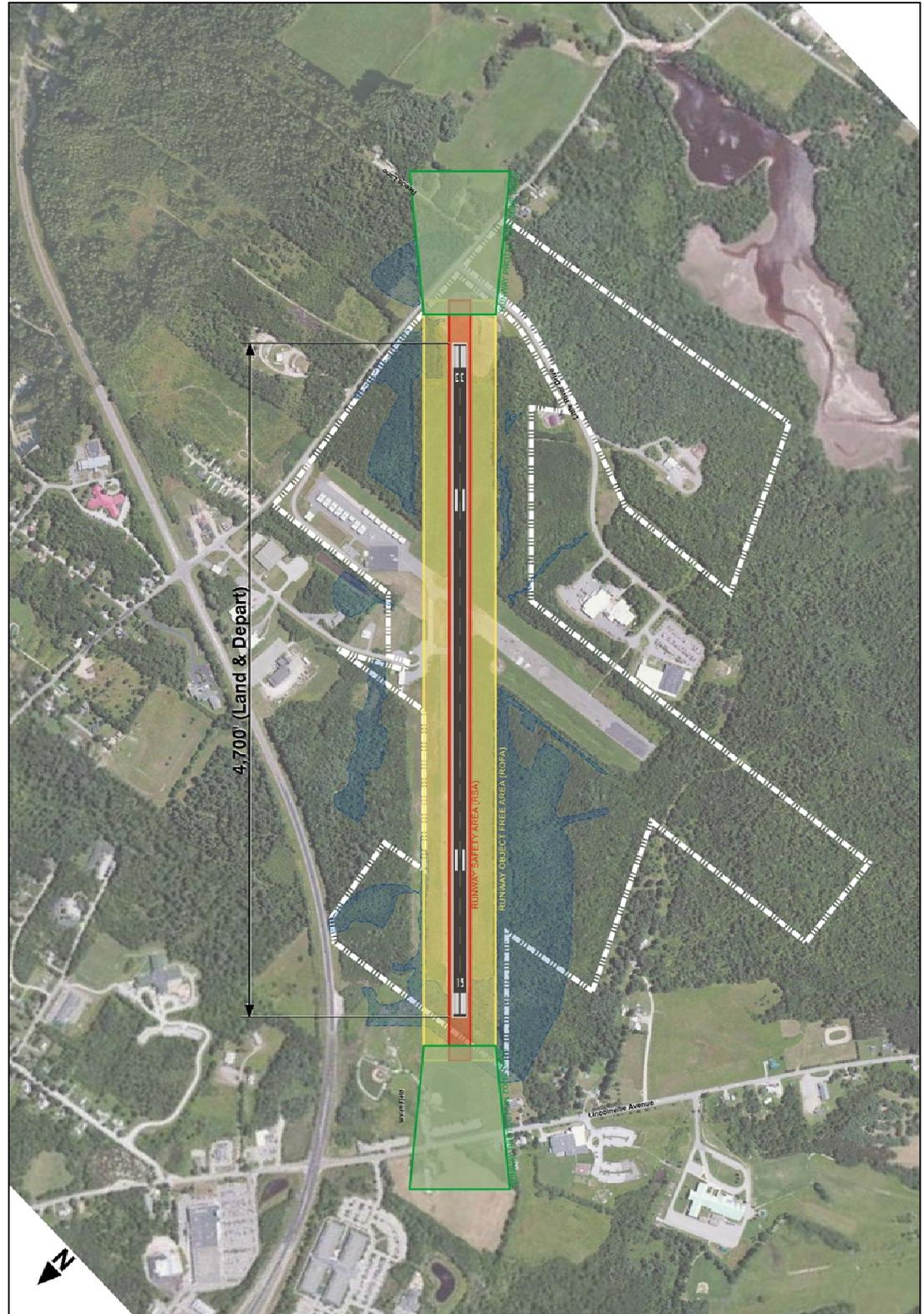
Source: Airport Solutions Group.

Figure 5-4: Alternative 3A – Alternative 3 with Declared Distance Application - 4,710 feet Total Usable Runway Takeoff Length Available



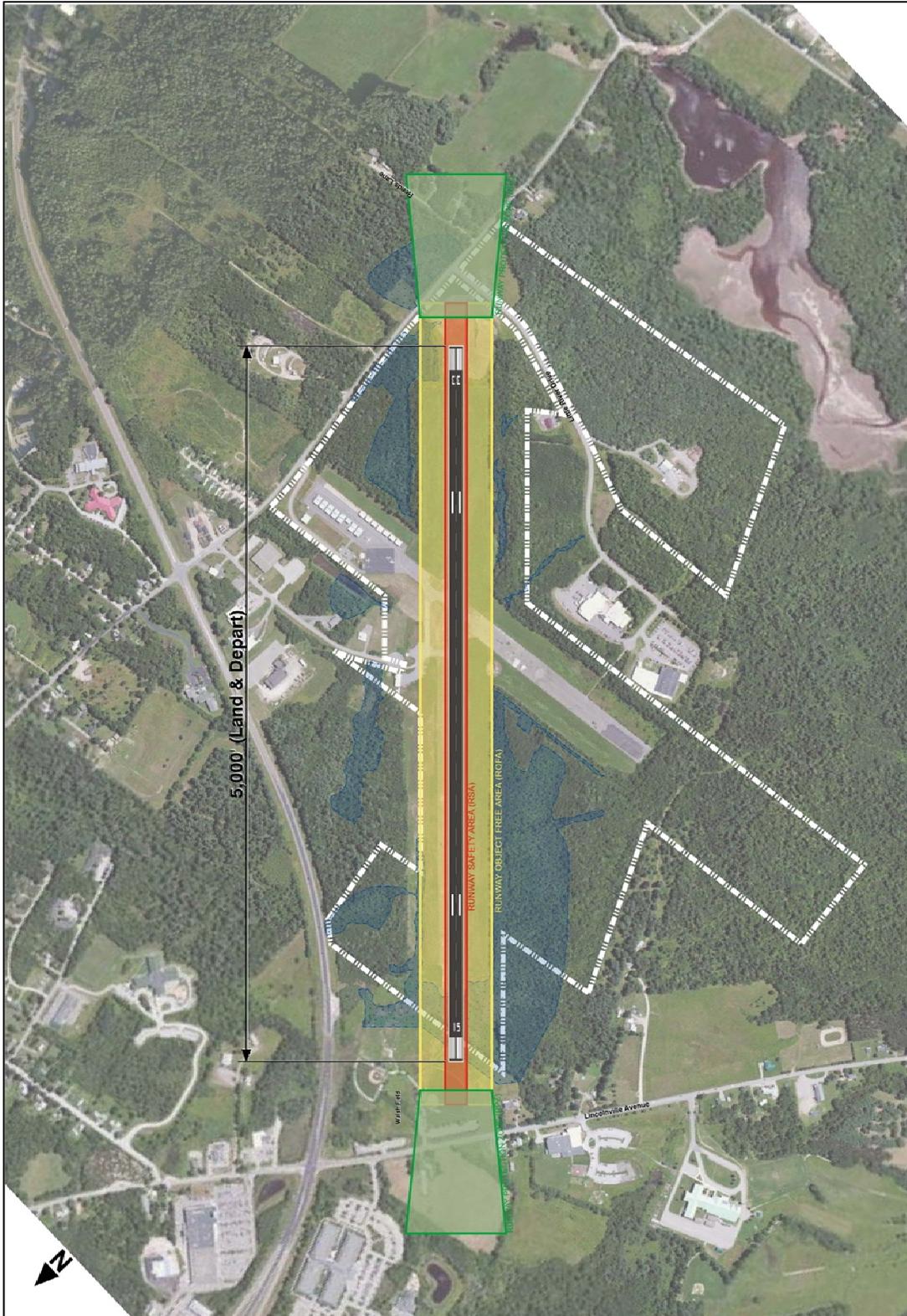
Source: Airport Solutions Group.

Figure 5-5: Alternative 4 – Extend Southeast (170 feet) and Northwest (530 feet) (4,700 feet Total Usable Runway Length Available)



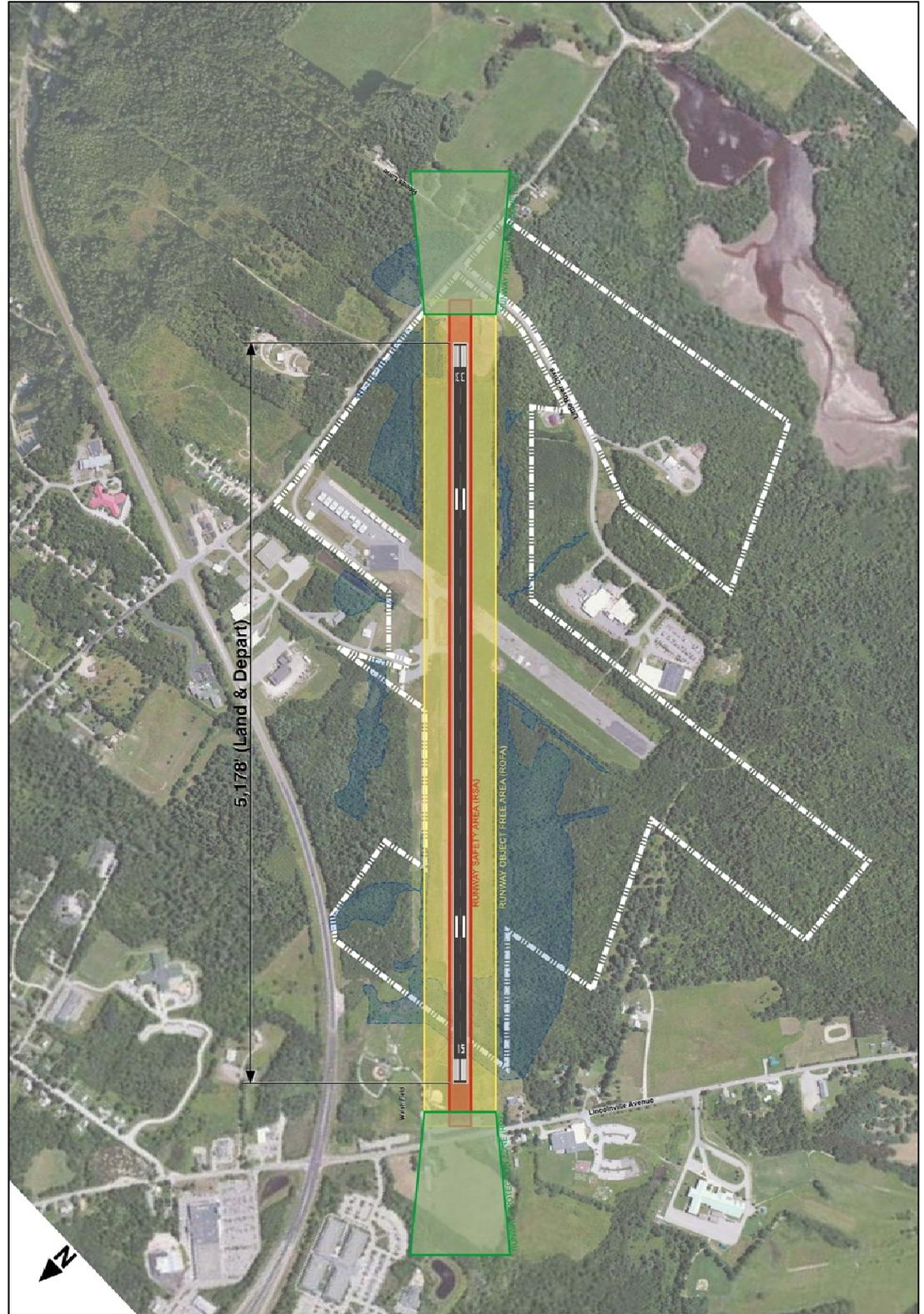
Source: Airport Solutions Group.

Figure 5-6: Alternative 5 – Extend Southeast (170 feet) and Northwest (830 feet) (5,000 feet Total Usable Runway Length Available)



Source: Airport Solutions Group.

Figure 5-7: Alternative 6 – Extend Southeast (170 feet) and Northwest (1,008 feet) (5,178 feet Total Usable Runway Length Available)



Source: Airport Solutions Group.

Preliminary Decision Matrix (January 7th, 2016 PAC Meeting)

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alternative	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
1	3	3	3	3	3.0
2	3	2	3	5	3.3
3	4	4	3	4	3.8
3A	4	5	3	5	4.3
4	5	2	1	2	2.5
5	5	1	1	1	2.0
6	5	1	1	1	2.0

Note: 1 = negative impact/least benefit; 3= no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation (January 7th, 2016 PAC Meeting)

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. A vote was taken and the results are presented below:

- A. No action: 0 votes
- B. Include Alternative 3A on the BST ALP: 8 votes
- C. Other action - continue to evaluate all impacts of proposed Alternative 3A: 1 vote

(Note that there was one abstention.)

Additional comments and points of discussion made during the PAC meeting included the following:

- An airport master plan is a comprehensive study that describes the short-, medium-, and long-term development plans at an airport to meet future aviation demand. It provides the framework to guide (and protect for potential) future airport development that will cost-effectively satisfy current and future aviation demand, while considering environmental and community factors.
- BST is an important transportation and economic asset for Belfast that must be maintained (and developed, as appropriate) for the long-term benefit of the City and the surrounding area.
- The runway extension options had been discussed extensively at PAC meetings 1, 2, and 3, in addition to PAC meeting 4 held on January 7th, 2016.
- There is not a current justification for federal funding to support a runway extension - any extension would require a private-public partnership at a

minimum. Any alternative ultimately included on the ALP would be “protecting for potential” in the future.

- There were discussions regarding the FAA-recommended runway lengths for various fleet mix aircraft, and how they relate to actual aircraft operational requirements.
- The proposed extension would meet corporate aircraft operational demands/requirements, thereby serving multiple area businesses. It would provide “value-added” benefits to others, potentially public service operators, and multiplier economic impacts throughout the area economy.
- There were discussions related to endorsing an alternative with a runway length longer than that reflected in Alternative 3A (i.e., show a runway with a length of 5,000 feet or greater).
- It was suggested that Alternative 3A would only benefit a very limited number of aircraft. Concern was expressed regarding the benefit of enacting Alternative 3A versus the potential and unquantified impacts.
- For a runway extension to move forward, there would have to be an extensive federal environmental assessment and state permitting effort undertaken that would require additional design, alternatives, and public coordination. Such an extension project would require other/additional planning and engineering efforts.
- It was suggested that the City should not endorse the actual proposed “construction” of the extension, but rather to endorse the continued “evaluation of the possibility” of the extension. Additionally, without firm financial commitments from private entities that would be required to have this project move forward, this potential project should also not be advanced as it could unnecessarily alarm neighbors. Note that even if private money were to be offered, there is no guarantee that the City Council would endorse the construction - like all projects, it would have to be weighed, debated, and voted on in a public forum.
- It was noted that for a future runway extension even to be considered by the City, the Maine Department of Transportation, Bureau of Planning, Aviation Program (MaineDOT Aviation), and the FAA, it must be included on the ALP. Inclusion of a runway extension on the ALP does not mean that it will be built - it means that if it were to be constructed, it would have to meet federal and state airport design requirements. The FAA specifically states that their approval of an ALP does not commit them to fund any project shown on the ALP, nor does it commit either the City or MaineDOT Aviation to such funding. However, if a runway extension is not shown on the ALP, then it could not be constructed, regardless of the funding sources. To consider it in the future, a new ALP Update or master plan effort would have to be undertaken.
- Prior to construction of a runway extension, the environmental considerations must be addressed in a formal FAA Environmental Assessment (EA) – a federal action requiring public participation. In addition, state and local environmental review and permitting actions will need to be addressed.
- There was some general discussion related to the validity of the current operational numbers at the Airport.

- Before any actions are taken regarding this potential extension, the City Council must vote on whether to continue to consider the possibility.
- There was a suggestion that the runway extension should be thoroughly discussed in the AMPU, but that it not be included on the ALP.

Proposed Action (May 5th, 2016 PAC Meeting)

The PAC chose to hold an additional meeting on May 5th, 2016.

Proposed Action Purpose (May 5th, 2016 PAC Meeting)

The purpose of this additional meeting was for the PAC to reaffirm or change any of its previous votes regarding development alternatives, including the Runway 15-33 extension, taking into consideration the feedback that was generated at the public information session that was held on March 22nd, 2016.

Proposed Action Description (May 5th, 2016 PAC Meeting)

Three votes were taken at this meeting. The first of the three votes taken at this meeting was whether or not to reaffirm the PAC's original votes taken at its meeting of January 7th, 2016 on all projects except for the Runway 15-33 extension (this is discussed in section 5.7). The second and third votes taken at this meeting related specifically and exclusively to the Runway 15-33 extension and are discussed in this section.

Proposed Action Alternatives (May 5th, 2016 PAC Meeting, Vote 2 of 3)

For BST, the following alternatives were identified:

- In support of "may consider an option for a runway extension in the future": this language was offered as a (partial) replacement to the vote taken by the PAC previously at its January 7th, 2016 meeting.
- No action: this would allow the previous vote taken by the PAC at its January 7th, 2016 meeting to remain.
- Other action - continue to evaluate and make record of all impacts, both positive and negative: this language was also offered as another replacement to the vote taken by the PAC previously at its January 7th, 2016 meeting.

PAC Deliberation of Proposed Action and Recommendation (May 5th, 2016 PAC Meeting, Vote 2 of 3)

At its May 5th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. There were seven (of the ten) members of the PAC in attendance. A vote was taken and the results are presented below.

- In support of "may consider an option for a runway extension in the future": 6 votes (only PAC members who attended); 8 votes (all PAC members)

- B. No action: 0 votes (only PAC members who attended); 0 votes (all PAC members)
- C. Other action - continue to evaluate and make record of all impacts, both positive and negative: 0 votes (only PAC members who attended); 0 votes (all PAC members)

(The Airport Manager subsequently contacted all three PAC members that did not attend the meeting via e-mail, and each of them provided their votes (or abstentions), which are included above. There were two abstentions, one from a PAC member who attended the meeting, and the other from a PAC member who did not attend the meeting.)

Additional comments and points of discussion made by PAC members (either during the meeting or as part of subsequent e-mail communications with the Airport Manager) included the following:

- I would assume the wording means to say “The City” may consider.

Proposed Action Alternatives (May 5th, 2016 PAC Meeting, Vote 3 of 3)

For BST, the following alternatives were identified:

- A. In support of “if the City ever elected to pursue an option to expand the runway, then Alternative 3A would appear to be the preferred alternative”: this language was offered as a (partial) replacement to the previous vote taken by the PAC at its January 7th, 2016 meeting; it also builds upon the previous vote taken at the May 5th, 2016 meeting (vote 2 of 3) by identifying a preferred runway expansion alternative.
- B. In opposition of “if the City ever elected to pursue an option to expand the runway, then Alternative 3A would appear to be the preferred alternative”: this would prevent a preferred runway expansion alternative from being identified.

PAC Deliberation of Proposed Action and Recommendation (May 5th, 2016 PAC Meeting, Vote 3 of 3)

At its May 5th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. There were seven (of the ten) members of the PAC in attendance. A vote was taken and the results are presented below.

- A. In support of “if the City ever elected to pursue an option to expand the runway, then Alternative 3A would appear to be the preferred alternative”: 6 votes (only PAC members who attended); 8 votes (all PAC members)
- B. In opposition of “if the City ever elected to pursue an option to expand the runway, then Alternative 3A would appear to be the preferred alternative”: 0 votes (only PAC members who attended); 0 votes (all PAC members)

(The Airport Manager subsequently contacted all three PAC members that did not attend the meeting via e-mail, and each of them provided their votes (or abstentions), which are included above. There were two abstentions, one from a PAC member who attended the meeting, and the other from a PAC member who did not attend the meeting.)

Additional comments and points of discussion made by PAC members (either during the meeting or as part of subsequent e-mail communications with the Airport Manager) included the following:

- Of the alternatives that were identified in the study, alternative 3A appears to be the best one identified, from a cost, need, and impact standpoint.

Recommended Action (January 7th, 2016, and May 5th, 2016 PAC Meetings)

The final recommendation is to include Alternative 3A, a runway extension of 700 feet to a total length of 4,710 feet, on the ALP. The evaluation analysis concluded that Alternative 3A was the optimum balance between corporate jet aircraft operational needs, site constraints, compatibility with adjacent land uses, and environmental issues.

5.4.2 Runway 15-33 Airspace Clearance

Proposed Action

The proposed action is to clear critical FAA imaginary airspace surfaces of vegetative obstructions to the existing approach ends to both Runway 15 and Runway 33 at BST.

Proposed Action Purpose

The purpose of this action is to enhance the level of safety for aircraft operating at BST, for BST itself, and for neighbors abutting BST. This action is also required by FAA and MaineDOT Aviation for safety reasons.

Proposed Action Description

The FAA is responsible ensuring that aircraft have a reasonable expectation of safety when operating at a federally-supported public-use airport. To assist in reinforcing that expectation, the FAA has established a wide variety of airspace surfaces on and around all public-use airports within the United States to help keep areas clear of obstructions (e.g., towers, trees, buildings, etc.) that lead into or leave a runway. Designed and implemented for very specific purposes (e.g., maintaining clear airspace for a particular instrument approach, or for preventing general airspace from being infringed upon by off-airport development, etc.), these airspace surfaces essentially act as notification surfaces or “alarms” to alert regarding potential safety issues.

The FAA takes these alarms very seriously and in many cases will act immediately to either clear these surfaces or to impose operational restrictions on an airport to ensure an appropriate level of safety. This may be by physically removing objects

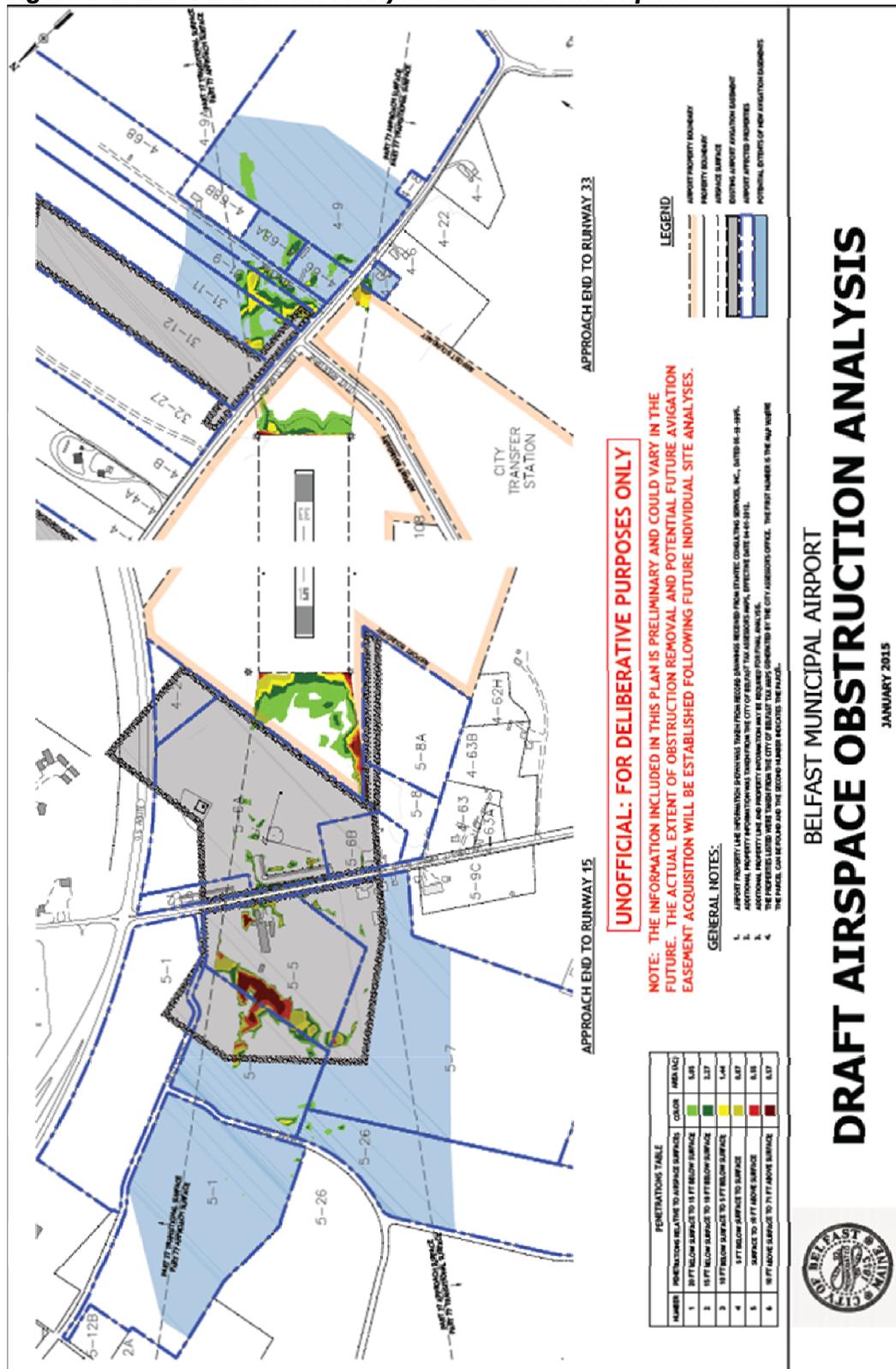
that penetrate the surfaces (i.e., obstructions), by requiring the installation of obstruction lights to provide an equivalent level of safety, by imposing restrictions on aircraft/airport operations (e.g., making instrument procedures unavailable at night), or by changing the physical characteristics of the airport facilities themselves (e.g., relocating runway ends and/or thresholds).

Proposed Action Alternatives

For BST, the following alternatives were identified:

- A. No action: This action has been deemed to be unacceptable, since it would result in unsafe operational conditions at BST. The FAA, MaineDOT Aviation, and BST are all obligated to act upon known obstructions to airspace surfaces. Therefore, this action is deemed to be unacceptable.
- B. Clear vegetative obstructions based on existing runway: This action (see **Figure 5-8**) would: promote a safe operational environment on and around BST; maintain BST in its current orientation with its current runway length; preserve BST's value as a transportation asset and economic generator; and bring the City into compliance with its federal grant assurances, among other benefits. *(It should be noted that during the master planning process, this alternative was directly selected by the Belfast City Council for all identified obstructions located either on-Airport or currently within an existing avigation easement.)*
- C. Modify airport operations to consider other less restrictive surfaces: This action would consider airspace surfaces that could have reduced impact upon off-Airport, out-of-easement obstructions, although it may compromise some existing Airport operational capabilities. (Note that through the ongoing BST EA for vegetation removal, this alternative has already been employed. The FAA effectively waived the requirement to clear the 34:1 Part 77 approach surfaces, in order to clear the 20:1 threshold siting surfaces [Note that smaller 30:1 surfaces also exist that also must be cleared.]
- D. Physically change the runway end locations: This action would result in the runway being shortened from its existing 4,000-foot length, in order to relocate the associated airspace surfaces so that they would become clear of any obstructions. A preliminary assessment of this alternative shows that in order to be able to clear the existing obstructions, the Runway 15 approach end would need to be relocated approximately 2,100 feet, which would result in the overall runway's length being reduced to 1,900 feet. This would have a dramatically negative impact on the runway's operational capabilities and would not be consistent with FAA runway length requirements associated with the current or past Airport master planning efforts.

Figure 5-8: BST Obstructions Analysis and Easement Acquisition



UNOFFICIAL: FOR DELIBERATIVE PURPOSES ONLY

NOTE: THE INFORMATION INCLUDED IN THIS PLAN IS PRELIMINARY AND COULD VARY IN THE FUTURE. THE ACTUAL EXTENT OF OBSTRUCTION REMOVAL AND POTENTIAL FUTURE AVIGATION EASEMENT ACQUISITION WILL BE ESTABLISHED FOLLOWING FUTURE INDIVIDUAL SITE ANALYSES.

GENERAL NOTES:

1. AIRSPACE PROPERTY LINE AND ANALYSIS IS BASED ON THE DATA PROVIDED BY THE AIRSPACE SERVICE, INC., UNDER 06-08-2014.
2. ADDITIONAL PROPERTY LINE AND ANALYSIS INFORMATION MAY BE REQUIRED FOR FINAL ANALYSIS.
3. THE PROPERTIES LISTED WERE TRANSFERRED TO THE CITY OF BELFAST BY THE CITY AIRBORNE OFFICE. THE FIRST NUMBER IS THE MAP SHEET NUMBER AND THE SECOND NUMBER INDICATES THE PARCEL.
- 4.

NUMBER	DESCRIPTION	AREA (AC)
1	10 FT BELOW SURFACE TO 10 FT ABOVE SURFACE	0.18
2	10 FT BELOW SURFACE TO 15 FT BELOW SURFACE	0.17
3	15 FT BELOW SURFACE TO 20 FT BELOW SURFACE	0.14
4	20 FT BELOW SURFACE TO 25 FT BELOW SURFACE	0.17
5	25 FT BELOW SURFACE TO 30 FT ABOVE SURFACE	0.18
6	30 FT ABOVE SURFACE TO 35 FT ABOVE SURFACE	0.17

BELFAST MUNICIPAL AIRPORT DRAFT AIRSPACE OBSTRUCTION ANALYSIS

JANUARY 2015



Source: Airport Solutions Group.

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alternative	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A ¹	NA	NA	NA	NA	NA
B	5	3	2	2	12
C ²	2	2	3	3	10
D ³	1	1	3	3	9

Notes: 1 = negative impact/least benefit; 3= no impact/neutral benefit; 5 = positive impact/most benefit

¹ Alternative A has been determined to be unacceptable.

² Alternative C has already been partially adopted through FAA's acceptance to focus on less restrictive threshold siting surfaces rather than the more restrictive Part 77 approach surfaces.

³ Alternative D would result in a runway length that would not be consistent with FAA runway length requirements.

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. A vote was taken and the results are presented below:

- A. No action: 0 votes
- B. Clear vegetative obstructions based on existing runway: 10 votes
- C. Modify airport operations to consider other less restrictive surfaces: 0 votes
- D. Physically change the runway end locations: 0 votes

Additional comments made by the PAC membership included the following:

- Previous BST master plans have indicated the need to clear airspace surfaces.
- Even after this project is completed, the Airport needs to maintain clear surfaces in the future. Therefore, the Airport should view this as a long-term maintenance issue.
- Clearing must be conducted in an equitable fashion (i.e., preferences for clearing should not be based on property use [residential versus commercial] and that appropriate justification for the decision-making process be well-documented).
- Safety must be viewed as paramount in determining the clearance priorities.

Recommended Action

The final recommendation is to implement the proposed action, which is to clear critical FAA imaginary airspace surfaces of vegetative obstructions to the existing approach ends to both Runway 15 and Runway 33 at BST.

5.4.3 Runway 15-33 Avigation Easement Acquisition

Proposed Action

Associated with the FAA requirement to clear imaginary airspace surfaces to the existing runway approach ends, BST must acquire several avigation easements to ensure the long-term clearance of those surfaces.

Proposed Action Purpose

The proposed action is designed to preserve a fundamental level of safety for aircraft operating at BST, for BST itself, and for neighbors abutting BST by ensuring that the Airport has the legal right to maintain a clear airspace. This action has been endorsed by FAA and MaineDOT Aviation for safety reasons.

Proposed Action Description

For BST to maintain clear airspace surfaces, it must have the legal right to do so. Since airspace surfaces extend off airport property, airports often will purchase avigation easements over abutting properties for the sole purpose of preventing and/or removing obstructions to critical FAA airspace surfaces. Easement acquisition is a federally-defined and managed process by which the landowner is paid full market value for the airspace rights. Note that airspace maintenance rights, requirements for accessing the property, conditions of vegetative removal and remediation, etc. are all stipulated within the easement language.

Additionally, the following should be noted:

- Based on current aerial mapping data, there are emerging obstructions on the Runway 33 approach end.
- The easements proposed for acquisition are based on the existing runway length.

Proposed Action Alternatives

For BST, the following alternatives were identified:

- A. No action: This would result in BST not having the right to maintain its airspace over the long term. Without such rights, it is likely that either vegetative or manmade obstructions to existing airspace surfaces will arise due to future development and/or natural growth. This would result in a reduction in the overall level of safety at the Airport, as well as the potential imposition of operational restrictions.
- B. Obtain avigation easements to maintain clear FAA approach surfaces for the existing runway: By establishing rights to clear its airspace surfaces, BST would: promote a safe operational environment on and around the Airport; be able to maintain BST in its current condition (i.e., a 4,000-foot Runway 15-33); preserve BST's value as a transportation and economic generator asset; and ensure that the City will maintain compliance with its federal grant assurances. See **Figure 5-8** for a listing of required avigation easements. *(It should be noted that during the master planning process,*

this alternative was directly selected by the Belfast City Council due to the FAA requirement to act on obstructions to federal airspace surfaces.)

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	1	2	3	3	9
B	5	3	3	2	13

Note: 1 = negative impact/least benefit; 3= no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. A vote was taken and the results are presented below:

- A. No action: 0 votes
- B. Obtain aviation easements to maintain clear FAA approach surfaces for the existing runway: 10 votes

Additional comments made by the PAC membership included the following:

- This project is needed to maintain safety on and around the Airport.

Recommended Action

The final recommendation is to implement the proposed action, which is to acquire several aviation easements to ensure the long-term clearance of critical FAA imaginary airspace surfaces to the existing runway approach ends.

5.4.4 Navigational Aids - Precision Approach Path Indicator Lights



Precision Approach Path Indicator Lights

FAA’s design standards require that runways have certain pavement markings and lighting depending on the instrument approaches in place. Both Runway 15 and Runway 33 have published GPS area navigation (no-precision) instrument approaches. Both runways also have runway end identifier lights, which are strobe lights that help pilots identify the runway ends at night and during the daytime in poor weather. However, neither runway has precision approach path indicator (PAPI) lights, which provide visual guidance to pilots on approach to a runway and is recommended by FAA.

Proposed Action

In association with a future project, BST should install PAPI systems for both Runway 15 and Runway 33.

Proposed Action Purpose

The installation of a PAPI on a runway end is an aircraft operational safety enhancement. This action has been endorsed by FAA for safety reasons.

Proposed Action Description

A PAPI is the most current form of a Visual Glideslope Indicator, which is a ground-based device located immediately next to a runway that uses lights to assist a pilot in landing an airplane at an airport. The lights define a vertical approach path during the final visual approach to a runway and can help the pilot determine if the airplane is too high or too low for an optimum landing. It is a visual safety enhancement for aircraft operating at the airport. For BST, PAPIs are proposed to be installed on both ends of the runway.

Proposed Action Alternatives

For BST, the following alternatives were identified:

- A. No action: Both Runway 15 and Runway 33 would remain without any Visual Glideslope Indicator guidance.
- B. Install PAPIs at both runway ends: Both Runway 15 and Runway 33 would have PAPI units installed in the future.

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alternative	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	2	3	3	3	11
B	5	3	3	4	15

Note: 1 = negative impact/least benefit; 3= no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. A vote was taken and the results are presented below:

- A. No action: 0 votes
- B. Install PAPIs at both runway ends: 10 votes

Additional comments made by the PAC membership included the following:

- PAPIs would benefit neighbors by providing a better flight path for aircraft, avoiding “low and slow” approaches that can create unnecessary noise.

- PAPIs would likely be installed as part of some other project at the Airport.

Recommended Action

The final recommendation is to implement the proposed action, which is to install PAPI systems for both Runway 15 and Runway 33.

5.4.5 Navigational Aids – Wind Cones



Airport Wind Cone

Wind cones provide visual information to pilots regarding wind speed and direction near a runway. Pilots utilize that information to control the aircraft appropriately so that it lines up with the runway centerline during takeoff and landing. At BST there are no wind cones near the end of either Runway 15 or Runway 33.

Proposed Action

In association with a future project, BST should install wind cones near the existing runway ends.

Proposed Action Purpose

Winds can vary dramatically from one end of a runway to the other, and having additional wind cones would provide pilots operating at the Airport with additional critical data regarding the wind conditions near the landing zones. The installation of additional wind cones is an aircraft operational safety enhancement.

Proposed Action Description

BST currently has a lighted wind cone located approximately midfield and south of the runway. The proposed action would install a frangible (readily or easily broken) pole in the grass to the left side of the approach end to each runway. An unlit wind cone would be attached to this pole.

Proposed Action Alternatives

For BST, the following alternatives were identified:

- A. No action: Do not install additional wind cones.
- B. Install windsocks at both runway ends: Install additional wind cones near each runway end.

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	3	3	3	3	12
B	5	3	3	3	14

Note: 1 = negative impact/least benefit; 3= no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. A vote was taken and the results are presented below:

- A. No action: 0 votes
- B. Install wind cones at both runway ends: 10 votes

Additional comments made by the PAC membership included the following:

- Wind cones should be sited appropriately.

Recommended Action

The final recommendation is to implement the proposed action, which is to install wind cones at the approach ends of both Runway 15 and Runway 33.

5.4.6 Navigational Aids - Non-Directional Beacon

A non-directional beacon (NDB) is a low-frequency transmitter used by aircraft pilots as a navigational aid. Particularly with the advent and widespread use of much more effective GPS-based technology, the need for NDB transmitters has declined dramatically. For example, nearly all of BST's instrument approach operations are reported to be based on its existing GPS area navigation approaches to Runway 15 or Runway 33, with its NDB approach rarely used, if ever. The FAA has decommissioned nearly all the NDBs that it has operated, and many other NDB owners (e.g., airports, states, etc.) are doing the same.

Proposed Action

BST should maintain its existing NDB and its associated instrument approach.

Proposed Action Purpose

BST would assume the cost and responsibility for maintaining its NDB and its associated instrument approach.

Proposed Action Description

An NDB is a radio transmitter that was utilized by the aviation industry as a navigational aid starting in the 1940s. Signals from NDBs are tracked by an Automatic Direction Finder that has been standard equipment in most aircraft for over 40 years. An Automatic Direction Finder provides pilots with a reference to NDB locations. However; NDB technology is now obsolete, with newer technologies (e.g., GPS) having replaced its function with more effective navigational equipment, and having become difficult and expensive to maintain. Because of this, many airports and states are phasing NDBs out. Nevertheless, many aircraft still have Automatic Direction Finders and some airports are trying to keep NDBs operational.

Proposed Action Alternatives

For BST, the following alternatives were identified:

- A. Maintain NDB: This action would require the City to assume responsibility for maintaining the existing NDB and its associated instrument approach. *(Note that the costs associated with maintaining an NDB are increasing due to a lack of available parts and certified technicians.)*
- B. Do not maintain NDB: This action would decommission the existing NDB and its associated instrument approach. *(Note that BST has experienced prolonged periods where the NDB was inoperative due to technical issues, but it went unreported, with the implication being that it was not being used (otherwise it would have been reported).)*

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	3	3	3	2	11
B	3	3	3	3	12

Note: 1 = negative impact/least benefit; 3= no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. A vote was taken and the results are presented below:

- A. Maintain NDB: 0 votes
- B. Do not maintain NDB: 10 votes

Additional comments made by the PAC membership included the following:

- The new GPS-based approaches are better and eliminate the need for the NDB.

Recommended Action

The final recommendation is to discontinue the operation of BST’s existing NDB and to decertify its NDB approach.

5.4.7 Taxiway A - Extend to Full-Length Parallel Taxiway

An airport's taxiway system should provide for efficient movement and direct routing between the runways, terminal area, and aircraft parking areas. An efficient taxiway system also enhances safety and operational capacity by minimizing the amount of time that aircraft are on an active runway during takeoff and landing. The taxiway system should also allow for smooth aircraft taxiing while requiring minimum changes in aircraft speed. Principles for designing taxiways include:

- Provide each runway with a full parallel taxiway or the capability of a parallel taxiway.
- Build taxiways to provide as direct a route as possible.
- Provide bypass capability or multiple access points to runway ends.
- Ensure that taxiways ascribe to the new design criteria detailed in FAA AC 150/5300-13A, particularly preventing direct taxiway access from a parking area to a runway.
- Avoid crossing runways whenever possible.
- Avoid constructing taxiways off the ends of runways.

As stated in **Chapter Four**, the present taxiway configuration at BST is generally adequate to serve the present levels of operational activity at the Airport from an operational capacity perspective. However, there are two issues with the existing taxiway at BST: a) Runway 15-33 is served by a partial-length parallel taxiway; and b) it is too close to the runway centerline (200 feet) to meet FAA design standards (which is discussed in more detail below). Currently, since BST does not have a full-length parallel taxiway, aircraft must back taxi on Runway 15-33 prior to takeoff and after landing, thereby increasing their amount of runway occupancy time. The FAA recommends that taxiway systems should minimize runway occupancy time, thereby enhancing both safety and capacity.

Proposed Action

Partial parallel Taxiway A will be extended to the end of Runway 15 and near the end of Runway 33.

Proposed Action Purpose

This action will be a significant safety enhancement to aircraft operations at BST. A full-length parallel taxiway will allow aircraft to enter and exit the runway environment quickly and efficiently. Aircraft will no longer have to utilize back taxi operations where aircraft must occupy the active runway for far longer periods of time than they otherwise would have to with a full-length parallel taxiway. This is consistent with the FAA's current focus on reducing the possibility for runway incursions and potential aircraft conflicts in the runway environment; thus, this action has been strongly endorsed by the FAA for safety reasons. This also was a recommendation of both the 1999 BST AMPU and the 2008 BST ALP Update.

Proposed Action Description

The proposed Taxiway A will meet all FAA design standards for a Taxiway Design Group 1A (i.e., smaller aircraft), including being 25 feet wide and having its

centerline 240 feet from the runway centerline. It will have taxiway lights (blue) and maintain the existing taxiway stubs located midfield of the runway. Taxiway A will be just short of full-length (a 3,815-foot taxiway versus a 4,000-foot runway) due to terrain and environmental conditions near the Runway 33 threshold.

Proposed Action Alternatives

For BST, the following alternatives were identified:

- A. No action: Maintain existing taxiway length and continue to require all aircraft (including turbines) to back taxi on Runway 15-33.
- B. Construct full-length parallel Taxiway A: Plan for the construction of a full-length parallel taxiway (see **Figure 5-9**). Note that since it has been previously endorsed by the FAA and the 1999 and 2008 planning efforts, this alternative is the historical recommended action. In fact, construction of Phase 1 of the taxiway (from the Runway 15 end to the existing apron and the “jug handle” on the Runway 33 end) is currently planned and funded for fiscal year 2018. It must also be recognized that in a survey of area pilots and aircraft operators (including those of corporate aircraft), their highest area of concern was for a full-length parallel taxiway so that they did not have to conduct back taxi operations.

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	2	2	3	3	10
B	5	4	2	4	15

Note: 1 = negative impact/least benefit; 3= no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. A vote was taken and the results are presented below:

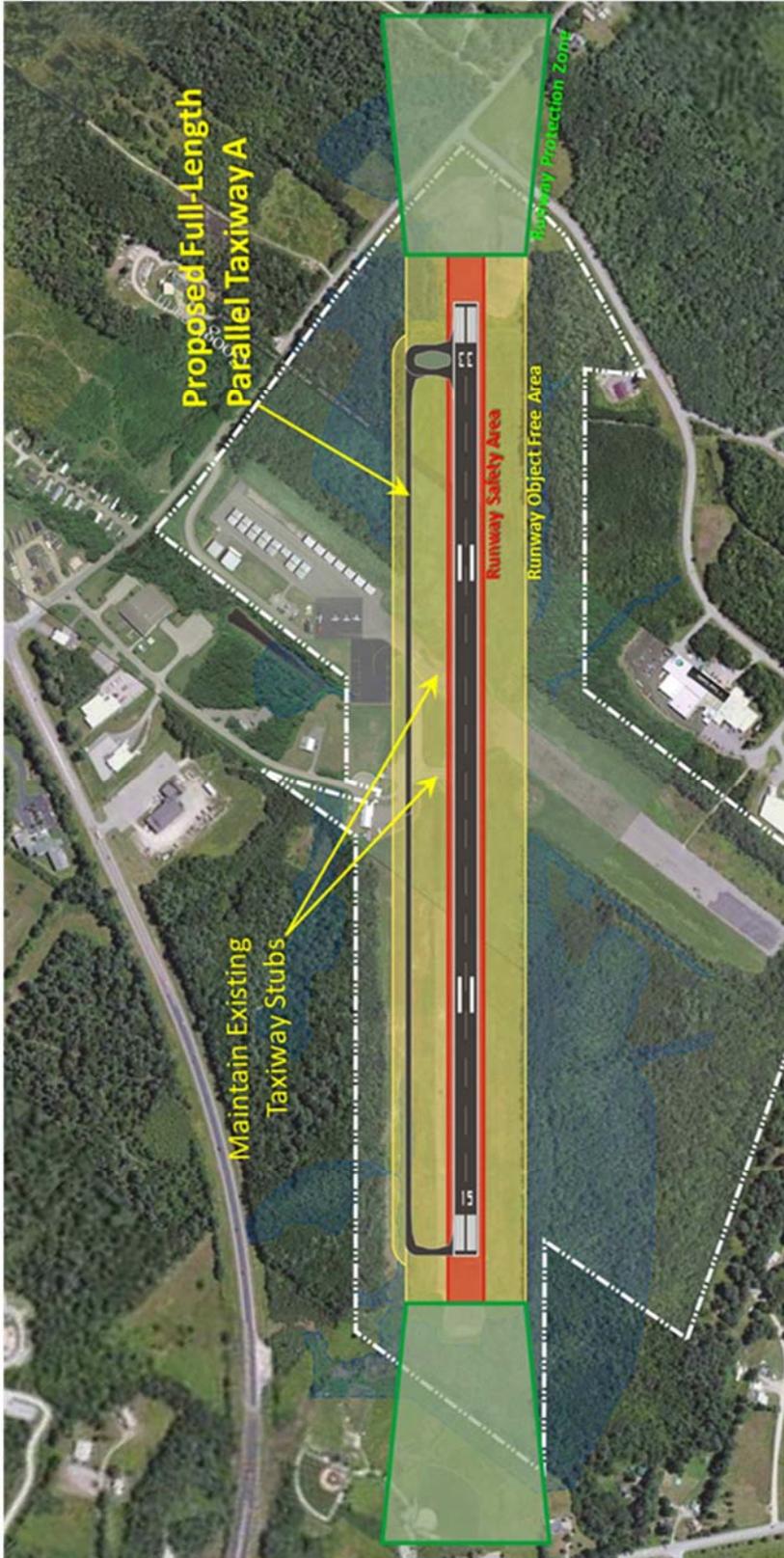
- A. No action: 0 votes
- B. Construct full-length parallel Taxiway A: 10 votes

There were no additional comments made by the PAC membership.

Recommended Action

The final recommendation is to implement the proposed action, which is to extend Taxiway A to the approach end of Runway 15 and near to the end of Runway 33.

Figure 5-9: BST Proposed Parallel Taxiway



Source: Airport Solutions Group.

5.4.8 Taxiway A – Runway/Taxiway Centerline Separation

FAA AC 150/5300-13A, *Airport Design*, states that for a utility runway with visibility minimums not lower than $\frac{3}{4}$ mile and with an Airport Reference Code of B-II, the minimum separation requirement from runway centerline to parallel taxiway centerline is 240 feet. The partial parallel taxiway centerline at BST is currently only 200 feet from the runway centerline.

Proposed Action

The centerline of Taxiway A will be relocated 40 feet further away from the centerline of Runway 15-33.

Proposed Action Purpose

The FAA minimum separation requirement from runway centerline to parallel taxiway centerline for a Runway Design Code B-II runway is 240 feet. Currently, the separation at BST is only 200 feet. At the time of its next reconstruction, the existing segment of Taxiway A will be shifted 40 feet further away from the existing runway to remedy this deficiency.

Proposed Action Description

The proposed Taxiway A will meet all FAA design standards for a Taxiway Design Group 1A (i.e., smaller aircraft), including being 25 feet wide and having its centerline 240 feet from the runway centerline. It will have taxiway lights (blue) and maintain the existing taxiway stubs located midfield of the runway. Taxiway A will fall just short of full-length (a 3,815-foot taxiway versus a 4,000-foot runway), due to terrain and environmental conditions near the Runway 33 threshold.

Proposed Action Alternatives

For BST, the following alternatives were identified:

- A. No action/request a Modification of Standards: Not meeting the design standard would require the FAA to issue a Modification of Standards for this condition. The FAA will only issue a Modification of Standards due to extreme and unusual circumstances. For BST, there is little chance that it would qualify for a Modification of Standards.
- B. Relocate Taxiway A 40 feet: At the time of its reconstruction (if not earlier), Taxiway A will be shifted 40 feet to the north to bring it into compliance with FAA standards (see **Figure 5-10**). Note that this was the recommendation of both the 1999 Master Plan and the 2008 ALP Update.
- C. Relocate Runway 15-33 40 feet: At the time of its reconstruction in 2024, Runway 15-33 will be shifted 40 feet to the south to bring it into compliance with FAA standards. Given the footprint of the runway and its associated safety and object free areas, in addition to its close proximity to terrain issues, roadway networks, and wetlands, this alternative has been determined to be cost prohibitive.

Figure 5-10: BST Parallel Taxiway Separation Requirement



Source: Airport Solutions Group.

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	2	3	3	3	11
B	5	3	3	4	15
C	1	1	1	1	4

Note: 1 = negative impact/least benefit; 3 = no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. A vote was taken and the results are presented below:

- A. No action/request Modification of Standards: 0 votes
- B. Relocate Taxiway A 40 feet: 10 votes
- C. Relocate Runway 15-33 40 feet: 0 votes

Additional comments made by the PAC membership included the following:

- This should not be a standalone project but should be affiliated with the overall extension of the taxiway.

Recommended Action

The final recommendation is to implement the proposed action, which is to relocate the centerline of Taxiway A 40 feet further away from the centerline of Runway 15-33, in association with the extension of the taxiway to the existing runway ends.

5.5 LANDSIDE DEVELOPMENT CONCEPTS AND ALTERNATIVES

This section will identify development concepts and alternatives intended to address the existing and future needs for landside facilities at BST within the 20-year planning period. In general, landside facilities consist of the terminal area development, aircraft parking aprons, support facility development, hangars, fuel storage facilities, and access roadways, among others.

5.5.1 Segregation of Operations

Some airports, particularly commercial service airports, separate different types of aviation activities to prevent potential operational conflicts (for example, airlines isolated to one side of an airport with GA and military activities on another side). Such separation of activities can provide for more efficient operations and minimizes interaction between aircraft that possess very different operating characteristics (e.g., engine types, sizes, jet blast, parking operations, etc.).

Proposed Action

BST should designate specific landside areas for different operations (e.g., business operations versus aircraft hangars/parking).

Proposed Action Purpose

At many active airports, there are designated areas for particular operations and businesses. This is designed to minimize the potential for conflicts between unlike operational types (e.g., large commercial service aircraft operations are typically separated from smaller, GA operations and from aircraft maintenance operations). At such airports, segregation of operations is a safety enhancement.

Proposed Action Description

The action would limit specific operations to designated areas, essentially acting as a zoning plan for on-Airport development. So, an individual proposing to start an aviation-related business would be limited to a specific location. It is important to recognize that depending on the circumstances of that proposal, any limitations could unduly inhibit the start of that business if the designated area were to require significant upfront infrastructure costs (e.g., utilities, ramps, hangars, etc.). The designation could also prove a hindrance if the proposer were to already have an existing hangar in an area designated for non-business use. Therefore, the determination of whether to establish segregated on-Airport functions may be a function of weighing the perceived need to increase the level of Airport safety against the value the new business activities.

However, it should also be acknowledged that there are some planning “rules of thumb” related to the separation of operations:

- The separation of smaller GA aircraft activities (including flight training) from larger, corporate aircraft activities is desirable.
- It is preferable that fixed-base operator operations (particularly maintenance and fueling) be in relatively close proximity to corporate GA operations.
- It is preferable for fueling facilities to be located in relative close proximity to based aircraft to avoid the need for fueling trucks to traverse active airfield surfaces.
- Maximizing the overall flexibility of the site through the preservation of continuous apron is desirable.
- Maintaining financial viability of an airport is paramount when considering the placement of facilities and activities.

Proposed Action Alternatives

For BST, the following alternatives were identified:

- Segregate on-Airport operations: This action would designate specific areas on-Airport for specific aviation-related functions (see **Figure 5-11**). The potential downside to this alternative is that this requirement could de-incentivize the development of new aviation-related activities.
- Do not segregate on-Airport operations: This action would allow growth to occur organically. The potential downside to this alternative is that unplanned growth could ultimately result in a less-than-desirable mixing of aircraft operations – particularly if Airport operations were to increase significantly.

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	3	2	3	2	10
B	3	3	3	3	12

Note: 1 = negative impact/least benefit; 3 = no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. Through discussion during the meeting, it was acknowledged that the City had recently begun testing the mixing of operations (aircraft maintenance operations with normal GA operations) through its current leasing agreements.

Figure 5-11: BST Potential Segregation of on-Airport Operations

Source: Airport Solutions Group.

Because this test was still ongoing and would ultimately provide important input to the PAC to make an appropriate decision, an additional alternative was added that would continue to evaluate the situation. Based on that addition, a vote was taken and the results are presented below:

- A. Segregate on-Airport operations: 0 votes
- B. Do not segregate on-Airport operations: 0 votes
- C. Other/continue to evaluate: 10 votes

Additional comments made by the PAC membership included the following:

- All ground operations are at the discretion of and the responsibility of the operating pilots.
- This decision should be tabled pending the results of the City's recent effort to allow mixing of on-Airport operations through its leasing agreements.

Recommended Action

The final recommendation is to continue to evaluate the operational conditions at the Airport to determine if the segregation of aviation operations is required to ensure safety and efficiency.

5.5.2 Identify New Development Areas

An airport's property is its most valuable resource, and determining how that finite resource is ultimately utilized is critical to its long-term effectiveness, efficiency, and financial viability. Generally, areas not identified on an ALP for specific non-aviation uses are assumed to be "reserved for future aviation-related development." However, it is occasionally desirable for an airport to permit non-aviation-related development on its property, and to do that, it must be designated as such on the ALP. Note that any such uses of airport property must be designated as being surplus for aeronautical purposes and then "released" through a specific process undertaken by the airport in association with the FAA.

At BST, there are areas on the Airport that directly abut existing business parks which could be designated as surplus for aeronautical purposes, and thereby could then be used for commercial and other non-aeronautical development. Such non-aeronautical development could generate significant revenues for the Airport.

Proposed Action

BST should identify and reserve specific areas on the Airport for future aviation-related and non-aviation-related development.

Proposed Action Purpose

As part of the AMPU process, it is important to identify those areas at the Airport available for potential future development. It is similarly important to designate whether those areas are available for long-term aviation-related purposes or for non-aviation-related purposes, if reasonable. The purpose of this action is to ensure that appropriate space is preserved to meet the Airport's long-term aviation-related needs. Additionally, it allows those Airport areas deemed to be surplus to its long-term needs to be made available for non-aviation-related development. Such development can be very important to airports in that these types of developments can result in new revenue streams. For a municipally-owned airport like BST, they can also provide locations for development with specific city interests (e.g., community gardens, transfer stations, solar farms, etc.).

Proposed Action Description

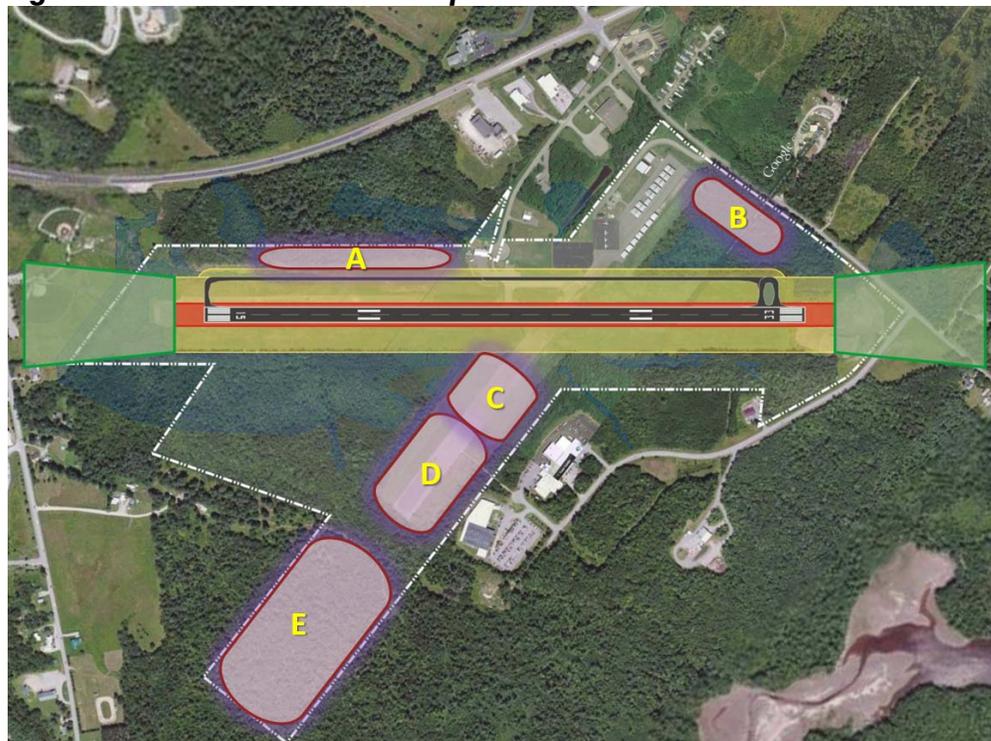
The action identifies the existing areas on the Airport that are potentially developable. The action would also designate those areas as reserved for future aviation-related or non-aviation-related uses. It should be noted that the future facility requirements established in the AMPU could all be accommodated within the footprint of the existing terminal area. Therefore, the aviation/non-aviation-related designations as part of this action are not dependent on meeting requirements within the planning period.

Proposed Action Alternatives

For BST, the following alternatives were identified:

- A. No action - all properties remain reserved for aviation-related development: Maintain Airport lands as unreserved and/or undesignated for specific purposes.
- B. Reserve areas for future aviation-related development: This action would protect Airport lands for future potential aviation-related development that exceeds the requirements identified within the AMPU. Note that as a planning consideration, aviation-related development areas should have immediate and relatively easy access to the airside environment (i.e., runway and taxiways).
- C. Designate areas for future non-aviation-related development: This action would make selected Airport lands available for future potential non-aviation-related development. Typically, these properties offer no real aviation-related value due to their proximity to the airside environment. For BST, one area of interest that is currently reserved for future aviation-related development is Area D (see **Figure 5-12**). If it is deemed that BST's existing developable aviation-related lands far exceed that which might be reasonably expected to be needed in the future, that area could be made available for non-aviation-related development, either in part or in its entirety, and could lead to additional business development abutting the existing Belfast Airport Business Park.

Figure 5-12: BST Potential Development Areas



Source: Airport Solutions Group.

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	3	2	3	2	10
B	4	4	3	4	15
C	3	4	3	4	14

Notes: 1 = negative impact/least benefit; 3= no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. A vote was taken and the results are presented below:

- A. No action - all properties remain reserved for aviation-related development: 7 votes
- B. Reserve areas for future aviation-related development: 3 votes
- C. Designate areas for future non-aviation-related development: 0 votes

Additional comments made by the PAC membership included the following:

- The Airport should strive to generate more development and revenue through its properties (aviation-related and non-aviation-related).

Recommended Action

The final recommendation is to maintain Airport property designations as they are currently reflected on the ALP.

5.5.3 Install Fuel Farm

Being able to store and sell fuel to a variety of aircraft is important both from an operational perspective and as a potential revenue source for the Airport. There are currently no fuel storage tanks at BST. The type and amount of fuel to be sold is a function of the existing and future level of traffic, as well as the type of aircraft that use the Airport and the volume of fuel that can be sold.

Proposed Action

BST should install a fuel farm that dispenses aviation fuel; this could include one or more of the primary types of aviation fuel: Avgas 100LL (100 low-lead aviation fuel); Jet-A (kerosene-based jet fuel); and/or Mogas (motor vehicle gasoline suitable for use in certain aircraft).



Typical Aviation Fuel Tank

Proposed Action Purpose

This action would satisfy an essential need for tenants at and visitors to BST. Currently, based aircraft must fly to other airports for fuel and transients must anticipate not being able to get fuel at BST. Also note that fuel is one of the primary revenue streams for any airport and therefore plays a critical role in ensuring that an airport is financially sustainable.

Proposed Action Description

This action would involve the installation of a self-contained, above-ground, double-walled 5,000-gallon Avgas 100LL fuel tank with a self-service dispenser and card reader. Eventually, the fuel farm could also be expanded to include similar tanks for Jet-A and Mogas. All fuel dispensed would be exclusively for aviation-related vehicles.

Proposed Action Alternatives

For BST, the following alternatives were identified:

- A. No action: Do not allow the installation of aviation fuel tanks and prevent fuel from being sold at the Airport to tenants and transient visitors.
- B. Conduct a phased installation of fuel tanks: This action would include a phased development of the fuel farm based on local demand requirements. So, an Avgas 100LL tank would be installed first since those are BST’s current primary operators. If turbine traffic were to increasingly request fuel services, a Jet-A tank could later be installed. Similarly, a Mogas tank could ultimately be installed if warranted by demand.

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	3	2	3	2	10
B	4	4	3	4	15

Note: 1 = negative impact/least benefit; 3= no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. A vote was taken and the results are presented below:

- A. No action: 0 votes
- B. Conduct a phased installation of fuel tanks: 10 votes

Additional comments made by the PAC membership included the following:

- If Jet-A is offered, there should be a truck available. Avgas 100LL can be self-serve.
- Sizing of the tanks and types of fuel offered should be determined based on market trends, costs, and needs.

Recommended Action

The final recommendation is to implement the proposed action, which is to conduct a phased installation of an aviation fuel farm at the Airport.

5.5.4 Adjust the design and/or usage of the new apron

Proposed Action

BST should consider adjusting the design and/or use of its newest apron.

Proposed Action Purpose

This action would ensure that the newest BST apron is utilized in a manner that meets the Airport’s long-term demand in an efficient and effective manner.

Proposed Action Description

This action would involve a reassessment of the tie down paint markings on the apron to ensure that they are appropriate for existing and projected operations. For example, the apron could be redesigned to better accommodate the Airport’s daily Pilatus operations, and/or allow for the development of a hangar on its western side.

Proposed Action Alternatives

For BST, the following alternatives were identified:

- No action: Maintain the apron’s current design.
- Adjust the apron design and use: This action would include a reassessment of the existing apron configuration and potentially formulate a new usage design based on current and projected operational requirements.

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	3	3	3	3	12
B	4	4	3	3	14

Note: 1 = negative impact/least benefit; 3= no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. A vote was taken and the results are presented below:

- A. No action: 0 votes
- B. Adjust the apron design and use: 10 votes

There were no additional comments made by the PAC membership.

Recommended Action

The final recommendation is to implement the proposed action, which is to adjust the design and use of the apron to better reflect existing and projected operational requirements.

5.5.5 Maintain/Update Terminal/Administration Building

Proposed Action

BST should continue to maintain and possibly update the existing terminal/administration building.

Proposed Action Purpose

This action would ensure that the terminal/administration building remains available for public use and possible leasing.

Proposed Action Description

The terminal/administration building is not currently leased, and it is primarily used by pilots for planning and resting. For it to remain available for potential future use and/or lease, the structure must be maintained appropriately. Additionally, it must be noted that the building does not comply with Americans with Disabilities Act requirements for public access. This action would involve intentionally maintaining and updating the facility for potential future use.

Proposed Action Alternatives

For BST, the following alternatives were identified:

- A. No action: Allow the building to remain in its current condition.
- B. Maintain/update the terminal/administration building: This action would include maintain and potentially updating the building to meet current building codes.

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.



BST Terminal/Administration Building

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	2	3	3	3	11
B	4	4	3	3	14

Note: 1 = negative impact/least benefit; 3 = no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. A vote was taken and the results are presented below:

- A. No action: 0 votes
- B. Maintain/update the administration building: 10 votes

There were no additional comments made by the PAC membership.

Recommended Action

The final recommendation is to implement the proposed action, which is to maintain the existing structure and update it to meet building code requirements, as needed.

5.5.6 Establish Enhanced Airport Security Measures

Proposed Action

BST should ensure that its current security measures are consistent with current industry standards.

Proposed Action Purpose

This action would ensure that BST is consistent with current airport industry security practices, standards, and requirements.

Proposed Action Description

This action would involve an assessment of BST's current security measures, a comparison with current industry practices and standards, and implementing any required upgrades. This could include an update to the Airport's security plan, extending Airport security fencing, expanding access control measures, installing security cameras, and/or implementing other measures.

Proposed Action Alternatives

For BST, the following alternatives were identified:

- A. No action: Maintain the Airport's security measures as they are currently constituted.

- B. Establish enhanced airport security measures: This action would include reviewing, updating, and implementing the Airport’s current security measures.

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	3	3	3	3	12
B	5	3	3	3	14

Note: 1 = negative impact/least benefit; 3 = no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. A vote was taken and the results are presented below:

- A. No action: 0 votes
- B. Establish enhanced airport security measures: 10 votes

Additional comments made by the PAC membership included the following:

- Encompasses a variety of potential measures that will be further defined in the future.
- Consider any cameras being web-accessible.
- Consider keypad entry for gates.

Recommended Action

The final recommendation is to implement the proposed action, which is to ensure that BST’s current security measures are consistent with current industry standards.

5.5.7 Improve/Expand Automobile Parking

Proposed Action

BST should improve and expand its automobile parking areas.

Proposed Action Purpose

This action would improve and expand the Airport’s automobile parking areas to meet current and projected demand, as well as to improve their security.



BST Automobile Parking Lot

Proposed Action Description

BST currently experiences temporary increases in demand for automobile parking during the summer months, which creates parking shortages. It has also been previously requested by users of the Pilatus that the Airport provide additional parking in a secure area, as those users' vehicles may stay unattended for several days. Additionally, an increased number of based aircraft at the Airport will result in an overall increase in demand for automobile parking. This action will identify and construct additional automobile parking on Airport property.

Proposed Action Alternatives

For BST, the following alternatives were identified:

- A. No action: Make no changes to the Airport's current automobile parking lot.
- B. Improve/expand automobile parking: This action would identify a secure on-Airport area to construct additional automobile parking.

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	2	3	3	3	11
B	4	3	3	3	13

Note: 1 = negative impact/least benefit; 3 = no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. A vote was taken and the results are presented below:

- A. No action: 0 votes
- B. Improve/expand automobile parking: 10 votes

There were no additional comments made by the PAC membership.

Recommended Action

The final recommendation is to implement the proposed action, which is to improve and expand its automobile parking areas.

5.5.8 Establish Aircraft Deicing Facilities or Protocols

Proposed Action

BST should establish aircraft deicing facilities or protocols to support wintertime aircraft operations.

Proposed Action Purpose

This action would establish an additional aircraft support service at BST that would be of critical importance during wintertime aircraft operations.

Proposed Action Description

BST currently does not have any aircraft deicing operations to support wintertime aircraft operations. At most airports, deicing operations are provided by the local fixed-base operator, a local aircraft maintenance provider, the airport itself, or by the pilots (in the case of based aircraft). Depending on the frequency of such deicing operations and the volume of deicing fluid utilized, airports may create dedicated facilities to contain and capture effluent for proper disposal. Alternatively, instead of utilizing deicing fluid, aircraft can be stored in heated hangars to melt any existing ice or snow that may have accumulated. It should be noted that the applicability of this option is limited due to the inconsistency of hangar availability, the time it takes to melt ice, and the lack of anti-icing capabilities (i.e., once a deiced aircraft leaves a hangar, icing could immediately start again unless some anti-icing capability has been applied, which itself is deicing fluid).

This action would investigate aircraft deicing options at BST and implement solutions.

Proposed Action Alternatives

For BST, the following alternatives were identified:

- A. No action: Make no changes to the Airport’s current operations.
- B. Establish new aircraft deicing operations: This action would investigate, identify and implement aircraft deicing operations at the Airport.

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	2	3	3	3	11
B	4	3	3	3	13

Note: 1 = negative impact/least benefit; 3 = no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. Through discussion during the meeting, it was recognized that providing this new service at BST would require additional investigation and coordination regarding who would be providing the deicing, how that would be accomplished, and what would be the potential environmental considerations, among other questions and concerns.

Because of these uncertainties, the PAC requested that the Airport continue to explore answers to those questions so that they could then make an educated decision. Therefore, an additional alternative was added that would be to continue to evaluate the potential for adding deicing services to the Airport. Based on that addition, a vote was taken and the results are presented below:

- A. No action: 0 votes
- B. Establish new aircraft deicing operations: 0 votes
- C. Other/continue to evaluate: 10 votes

Additional comments made by the PAC membership included the following:

- The Airport needs to have a better definition of the operators' needs and the options that are available.
- This may be more appropriately defined in the Airport's rules and regulations and/or minimum standards documents.

Recommended Action

The final recommendation is to continue to investigate options for providing aircraft deicing operations at the Airport.

5.6 AIRPORT ADMINISTRATION RECOMMENDATIONS

This section will address several additional airport management planning recommendations. These are generally all related to operating the airport consistent with current best management practices that are reflective of today's industry. These are addressed in the sections below.

5.6.1 Establish Airport Land Use Compatibility Plan

Proposed Action

BST and the City should establish an Airport Land Use Compatibility Plan (ALUCP).

Proposed Action Purpose

Airport land use compatibility is the reconciliation of how land development and airports function together. Specifically, airport-compatible land uses are defined as "those uses that can coexist with a nearby airport without either constraining the

safe and efficient operation of the airport or exposing people living or working nearby to unacceptable levels of noise or (safety) hazards.” Compatibility concerns include any airport impact that adversely affects the livability of surrounding communities, as well as any community characteristic that can adversely affect the viability of an airport.

Incompatible development near an airport can lead to a politically contentious relationship between an airport and the communities around it, resulting in complaints and demands for restrictions on airport operations, ultimately threatening the airport’s ability to operate efficiently and serve its function in the local economy.

An ALUCP will help ensure the long-term viability of BST by preventing development in specific areas that is inherently incompatible with airport operations (e.g., towers, residential development, schools, hospitals, etc.). Additionally, this plan would help ensure that those who develop and/or occupy areas of future growth are not located in an area that would have them realize direct and unreasonable impacts due to regular airport operations.

Proposed Action Description

Establish a plan through formal City planning protocols that will define specific areas around the Airport based its current and projected operational patterns. This will then be followed by a description of those areas and definitions of development that would be considered to be compatible with potential Airport-related impacts that could be realized in those areas.

Proposed Action Alternatives

For BST, the following alternatives were identified:

- A. No action: Do not establish an ALUCP. This will effectively allow for future growth around BST to occur in an unplanned manner with respect to the Airport and its potential operational impacts. In the future, this action would likely result in incompatibilities and conflicts between the Airport and other future development initiatives, inevitably leading to airport restrictions and/or impacts to values of abutting properties.
- B. Establish an ALUCP: This would endorse establishing a plan to ensure that future development around BST will be compatible with Airport operations.

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	1	2	2	1	6
B	4	4	4	5	17

Note: 1 = negative impact/least benefit; 3 = no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. A vote was taken and the results are presented below:

- A. No action: 0 votes
- B. Establish an ALUCP: 10 votes

Additional comments made by the PAC membership included the following:

- Should consider integrating current protocols for unmanned aircraft systems operations.

Recommended Action

The final recommendation is to implement the proposed action, which is to establish an ALUCP for BST.

5.6.2 Other Airport Best Management Practices

Proposed Action

Consistent with industry standards and requirements associated with a professionally-operated airport, the City and BST should review, update, and/or establish the following:

- Airport Rules and Regulations: A document that defines the specific rules and regulations required for operating on a particular airport.
- Airport Minimum Standards: A document that defines the specific minimum standards required for operating a business on a particular airport.
- Airport Security Plan: A document that defines the extent of an airport's security initiatives, as well as specific standards and actions related to specific potential events.
- Airport Emergency Response Plan: A document that details an airport's specific response to potential emergency situations.
- Airport Wildlife Hazard Assessment and Action Plan: A document that describes the wildlife environments around an airport, as well as actions to be undertaken to minimize the potential for aircraft conflicts with wildlife. The FAA requires that airports like BST undergo an airport wildlife hazard

assessment. The results of that assessment will determine whether an action plan needs to be established or not.

- Vegetation Management Plan: A document that describes the specific actions to be taken by an airport to manage on- and off-airport vegetation in a regular and timely manner.
- Rates/Charges Assessments: A regular review of area airports’ typical leasing rates and charges, to assess the existing market and to, if necessary, adjust the airport’s rate structure to reflect it.
- Lease Review/Adjustment/Alignment: Regular review of an airport’s leasing agreements to assure their currency with appropriate legal, insurance, and best management practices.
- Storm Water Pollution Prevention Plan: An Environmental Protection Agency requirement of the National Pollutant Discharge Elimination System that regulates water quality when associated with construction or industrial activities.
- Spill Prevention, Control, and Countermeasure Plan: An Environmental Protection Agency requirement designed to help prevent any discharge of oil into navigable waters or adjoining shorelines.

Proposed Action Purpose

Some or all of these actions could be undertaken over the long term for the purpose of increasing levels of safety, security, and service at BST.

Proposed Action Description

Each plan or activity has specific requirements and procedures associated with them. They would have to be addressed individually.

Proposed Action Alternatives

For BST, the following alternatives were identified:

- A. No action: Do not follow industry best management practices.
- B. Enact airport best management practices: This endorses establishing elements of the airport best management practices listed above, as required.

Preliminary Decision Matrix

For deliberative purposes, a preliminary decision matrix was prepared for this project to help consider a comprehensive range of potential impacts.

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	1	1	1	1	4
B	5	5	5	5	20

Note: 1 = negative impact/least benefit; 3 = no impact/neutral benefit; 5 = positive impact/most benefit

PAC Deliberation of Proposed Action and Recommendation

At its January 7th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. All ten members of the PAC were in attendance. A vote was taken and the results are presented below:

- A. No action: 0 votes
- B. Enact airport best management practices: 10 votes

Additional comments made by the PAC membership included the following:

- Should consider integrating current protocols for unmanned aircraft systems operations.

Recommended Action

The final recommendation is to implement the proposed action, which is to implement best airport management practices listed above, as required.

5.7 PROJECT ADVISORY COMMITTEE MEETING OF MAY 5TH, 2016

Proposed Action

As referenced in section 5.4.1, the PAC chose to hold an additional meeting on May 5th, 2016.

Proposed Action Purpose

The purpose of this additional meeting was for the PAC to reaffirm or change any of its previous votes regarding development alternatives, taking into consideration the feedback that was generated at the public information session that was held on March 22nd, 2016.

Proposed Action Description

Three votes were taken at this meeting. The first of the three votes taken at this meeting was whether or not to reaffirm the PAC's original votes taken at its meeting of January 7th, 2016 on all projects except for the Runway 15-33 extension. (The second and third votes taken at this meeting related specifically and exclusively to the Runway 15-33 extension, and are discussed in section 5.4.1.)

Proposed Action Alternatives

For BST, the following alternatives were identified:

- A. In support of reaffirming the PAC's original votes taken at its January 7th, 2016 meeting, on all projects except the runway extension: this was to choose to retain the PAC's original votes regarding the vast majority of the AMPU's development alternatives (projects).

- B. In opposition of reaffirming the PAC's original votes taken at its January 7th, 2016 meeting, on all projects except the runway extension: this was to choose to discard the PAC's original votes regarding the vast majority of the AMPU development alternatives (and would have required additional votes for specific development alternatives (projects).

PAC Deliberation of Proposed Action and Recommendation

At its May 5th, 2016 meeting, the PAC reviewed the alternatives associated with this proposed action. There were seven (of the ten) members of the PAC in attendance. A vote was taken and the results are presented below.

- A. In support of reaffirming the PAC's original votes taken at its January 7th, 2016 meeting, on all projects except the runway extension: 7 votes (only PAC members who attended)
- B. In opposition of reaffirming the PAC's original votes taken at its January 7th, 2016 meeting, on all projects except the runway extension: 0 votes (only PAC members who attended)

(The Airport Manager subsequently contacted all three PAC members that did not attend the meeting via e-mail and requested them to identify any development alternatives for which they wished to change their previous votes. These three PAC members did not identify any development alternatives for which they wished to change their previous votes.)

There were no additional comments made by the PAC membership (either by those who were in attendance or those who were not in attendance).

Recommended Action

The final recommendation is to retain the votes taken by the PAC at its meeting of January 7th, 2016 regarding all development alternatives except for the Runway 15-33 extension.

5.8 ENVIRONMENTAL SCREENING

The above airside and landside alternatives were developed to meet anticipated Airport needs over the 20-year planning period; however, given the multiple environmental considerations presented in **Chapter Two: *Inventory of Existing Conditions***, the final recommendations should be screened to assess the potential environmental impacts of each proposed option. This section provides a preliminary environmental screening that considers the proposed alternatives relative to the impact categories listed in FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*. Additionally, while this section is not a formal EA, it provides a high-level analysis of the environmental elements described in FAA AC 150/5070-6B, *Airport Master Plans*, FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects*, and relevant State of Maine environmental regulations and procedures.

Per FAA Order 5050.4B, Section 602, NEPA requirements must be met when implementing projects identified on the ALP. While this may require the preparation of an EA or an Environmental Impact Statement, many of the proposed airport improvement projects may often be exempt from the need to prepare those documents through the application of a categorical exclusion (CATEX). CATEXs are defined as categories of actions that do not individually or cumulatively have a significant effect on the human environment and that have been found to have no such effect in procedures adopted by a federal agency in implementation of NEPA. CATEXs are listed in FAA orders 1050.1F and 5050.4B, which describe types of actions that do not normally require an EA or an Environmental Impact Statement, if they do not exceed the threshold of acceptable impacts involving extraordinary circumstances (FAA Order 5050.4, Table 6-3) that would create a requirement for an EA. While the high-level assessment provided herein will help guide BST regarding potential extraordinary circumstances relevant to proposed alternatives, the responsible FAA official, as defined by FAA Order 5050.4B, paragraph 9.r., must determine whether a proposed action is within the scope of a CATEX listed in the Orders.

Although the FAA does not perform formal approval of every aspect of airport master plans, they do require that sponsors seeking a grant for airport improvements have the proposed improvement shown on an FAA-approved ALP. Unless the improvements consist solely of items that are categorically excluded, an EA in accordance with NEPA and FAA Order 5050.4B must be completed.

The purpose of this section is to conduct a general assessment of the environmental effects of the preferred alternatives described for all the projects in the 20-year planning period and to define the potential extent of future environmental analyses that are needed to implement the airfield improvements shown on the ALP. Since the existing (2016) environmental considerations for BST were described in depth in **Chapter Two**, this section will focus only on the potential impacts that the recommended actions could have on the various environmental impact categories. (Please refer to **Chapter Two** for a full description of the various impact categories.)

5.8.1 Environmental Impact Categories

Air Quality

Several of the proposed development scenarios involve construction activities that are expected to result in a potential, albeit temporary and short-term, effect on air quality. The use of vehicles and equipment, the occurrence of construction activities, and the use of materials during construction could affect air quality due to fugitive dust emissions, emission of air pollutants originating as the byproduct of construction equipment fuel combustion, land clearing, demolition, burning, and working with toxic materials. Long-term air quality impacts could also result from an increase in the number of overall annual operations or an increase in aircraft size, which could result from proposed airside improvements.

However, air pollutant emissions would be minimized by the relatively short duration of proposed projects, the limited amount of earth disturbance associated with each, and the use of construction best management practices. Additionally, the number and size of aircraft expected to utilize BST following various improvement projects is not expected to markedly change and therefore would not significantly alter air quality. Air quality in the vicinity of BST is currently well below respective National Ambient Air Quality Standards. Given the size of the Airport and the small scope of the proposed projects, it is unlikely that any concentration increases would contribute to a violation of the National Ambient Air Quality Standards or FAA air quality standards.

The appropriate mitigation measures identified in FAA AC 150/5370-10, *Standards for Specifying Construction at Airports*, should be followed during the proposed projects. In addition, FAA specifications included in FAA AC 150/5370-10, Item P-156, *Temporary Air and Water Pollution, Soil Erosion, and Siltation Control*, should be included in the project contract documents to ensure that construction impacts to air quality be minimized.

Finally, any federal actions, or actions obtaining federal funding must assure conformity. Section 176(c) of the Clean Air Act requires that any entity of the federal government that engages in, supports, or in any way provides financial support for, licenses or permits, or approves any activity must demonstrate that the action conforms to the area's commitment of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards and achieving expeditious attainment of those standards.

Coastal Resources

BST is located entirely outside of Maine's coastal zone, and none of the potential development scenarios will affect any coastal resources.

Compatible Land Use

The entirety of the Airport is included within the City's Business Park-Airport District, which permits aviation and uses accessory to aviation. Additionally, the City's zoning districts located to the west and north (Airport Growth District) and to the south and south east (General Purpose "B" District) of the Airport also permit aviation and uses accessory to aviation. The City's zoning districts located to the east of the Airport (Residential 2 District and Residential 3 District) do not permit aviation or uses accessory to aviation. All proposed projects would be located on existing Airport property, on land owned by the Airport or by the City, or on properties under easement to the Airport for approved uses (and therefore consistent with aviation uses). An easement acquisition alternative would need to move forward before tree removal activities could take place in any areas currently not owned by, or under easement to, the Airport.

Construction Impacts

Typical construction impacts could result from runway extension activities, tree clearing, taxiway construction activities, and parking area expansions, and could include noise, emissions, and dust impacts generated by typical construction equipment and methodology. To address these, prior to any new construction at BST, a Construction Management Plan must be prepared. The Construction Management Plan will address potential environmental impacts that generally result from construction projects and will describe measures to be implemented to avoid or minimize such impacts. It will also address impacts specific to each development scenario or proposed project that will involve construction activities. Potential environmental issues would be identified and impacts would be minimized and mitigated to the extent feasible as outlined in the Construction Management Plan.

Any alternative involving construction activities would need to comply with measures such as a National Pollutant Discharge Elimination System Construction General Permit, the Storm Water Pollution Prevention Plan, and Maine's Stormwater, and Erosion and Sediment Control, Best Management Practices.

Section 4(f)

The Walsh Field Recreation Area and the Belfast Dog Park are both owned by the City and are located immediately to the north of BST on the approach end of Runway 15. Although none of the proposed alternatives directly impact these areas, there is always the potential for obstruction removal to be required by the FAA to clear critical safety-related airspace surfaces and meet other FAA-related safety criteria. Such an action could require easements or permissions to remove vegetation on 4(f) lands.

Farmlands

There is no active farmland on the Airport. Some of the area surrounding the Airport is active farmland, but there would be no irreversible conversion of prime farmland to nonagricultural uses due to any of the proposed alternatives.

Fish, Wildlife, and Plants

No state-designated significant wildlife habitats or species of concern are known to occur on the Airport. However, the Project site falls within a designated zone for Northern Long-Eared Bat, which is a threatened species under the United States Endangered Species Act. Most of the proposed actions take place on previously disturbed areas or on areas maintained as grassland. It is likely that any tree removal activities associated with the proposed alternatives would impact a very small area relative to forest availability near the Airport and would not result in prohibited incidental take as outlined in the United States Fish and Wildlife Service's Northern Long-Eared Bat final 4(d) rule. As such, tree removals would most likely be allowed under the 4(d) rule, so long as they do not take place near a known

hibernacula or maternity roost. No Northern Long-Eared Bat hibernacula or maternity roost sites are known to exist near BST. Impacts can be further minimized using seasonal timing restrictions that prohibit tree removal activities from May through August, the peak breeding/roosting season for wildlife such as migratory birds and bats.

Two amphibian breeding areas are known to occur within areas proposed for several project activities, and other breeding areas or vernal pools may exist elsewhere on or near the Airport. The two known locations do not qualify for designation as significant wildlife habitat under Maine's National Resource Protection Act, but could be regulated by the United States Army Corps of Engineers which could impose up to a 750-foot protection zone around the feature. Consultation with the United States Army Corps of Engineers and the Maine Department of Environmental Protection is required for any of the proposed projects that could impact an amphibian breeding area or a potential vernal pool.

Although the Northern Long-Eared Bat is the only known listed-species likely to occur at BST, state and federal wildlife agencies must be contacted prior to implementation of any of the proposed alternatives that could affect wildlife and wildlife habitat to ensure compliance with Section 7 of the United States Endangered Species Act and Maine's Endangered Species Act. Agency staff will help to determine if any new species are present and if so, the regulatory implications.

Floodplains

There are no Federal Emergency Management Agency-designated floodplains or flood hazard areas on BST or in proximity to the proposed actions. Designated floodplain areas do occur near the Airport (see **Chapter Two, Figure 2-20**), but development activities are not expected to take place in these areas.

Hazardous Materials, Pollution Prevention, and Solid Waste

Waste disposal during project actions will be managed separately from normal Airport solid waste management operations.

The proposed phased installation of an aviation fuel farm, beginning with an Avgas 100LL tank, would introduce new hazardous materials into the area. Additionally, an increase in the number of aircraft on site may also have the potential to increase the volume of hazardous materials stored on site.

Aside from products directly related to aircraft operations and maintenance, the Airport makes concerted efforts in the areas of pollution prevention, waste reduction, and solid waste recycling. The Airport holds a current Storm Water Pollution Prevention Plan and has prepared a Spill Prevention, Control, and Countermeasure Plan that establishes procedures for storage and handling of

hazardous materials; these plans will be updated as necessary for each proposed development opportunity.

Historical, Architectural, Archaeological, and Cultural Resources

There are no known archaeological resources within BST property and no sites believed to be eligible for listing located adjacent to the Airport; however, no archaeological surveys of the Airport have been conducted.

Coordination with Maine Historic Preservation Commission is required prior to implementing any of the proposed alternatives which may disturb soil or potentially historic structures.

Light Emissions and Visual Impacts

Development at BST is unlikely to have undue light emission or visual impacts. Lighting associated with a runway extension, a taxiway extension, or the installation of PAPI systems would be consistent with current lighting and would be unlikely to be visible from residential neighborhoods located near the Airport. Additionally, it is anticipated that appropriate mitigation measures such as shielded lights and strategic positioning of light sources will be used to minimize impacts to wildlife, contribution to artificial illumination of the night sky, hazards to drivers, and impacts to adjacent communities. All construction work is expected to be performed during daylight hours further minimizing light emissions or impacts to visual aesthetics for any adjacent landowners.

Natural Resources and Energy Supply

Executive Order 13123, *Greening the Government through Efficient Energy Management* (Federal Register Volume 64, page 30851, June 8, 1999), encourages each federal agency to expand the use of renewable energy within its facilities and in its activities. Executive Order 13123 also requires each federal agency to reduce petroleum use, total energy use and associated air emissions, and water consumption in its facilities.

Maintenance and updates to the existing terminal/administration building would result in higher energy efficiency than what it currently possesses. Energy to support the proposed projects would largely involve the use of additional fuels in construction and excavation machinery. None of the proposed airport alternatives require the use of unusual materials that are in short supply; therefore, energy supplies and natural resources are not affected by the proposed projects.

Noise

Based on forecast analysis presented in **Chapter Three**, BST is projected to experience minor growth in aircraft operations over the next 20 years (ranging from 0.00% to 1.55% compound annual growth rate, with 0.25% being the preferred forecast).

Even under the High-Growth Scenario, all forecasts project that the Airport will have fewer than its 2008 level of operations by 2034. By that time, it is reasonable to assume that many of the aircraft using BST will have been replaced by newer, quieter aircraft, so noise impacts reasonably should not be expected to return to pre-2008 levels until well after 2034. Additionally, the Airport has already established voluntary noise abatement procedures established to reduce potential noise impacts on the surrounding community.

Projected development, including the Runway 15-33 extension and full-length parallel taxiway may result in an increase in noise since a slightly increased number of aircraft are expected to utilize the Airport following these improvements. Depending on the scale of these developments, a new noise analysis may be required prior to their construction.

Secondary (Induced) Impacts

Secondary (induced) impacts on surrounding communities are anticipated to be generally positive in terms of providing for economic development and new educational opportunities. Any potential environmental impacts related to proposed development are anticipated to be limited and will be mitigated as required. Note that with farmland present nearby, a significant increase in air traffic or change in the size/type of aircraft utilizing BST as a result of improvements could potentially affect any livestock that may be present.

Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks

All Environmental Justice populations are located more than three miles from BST, and the proposed development is not anticipated to affect any of these populations. Similarly, they are not expected to disproportionately affect children. Economic impacts of the proposed projects are likely to be positive, with additional revenue accruing to the Airport and to the larger community. The proposed projects do not require the acquisition of property or the displacement of persons.

Water Quality

Runway extension, tree removal efforts, and parallel taxiway construction projects all have the potential to affect water quality. Smaller projects such as installation of PAPI lighting, installation of an aviation fuel farm, or an expansion of parking areas could also impact water quality depending on the location and size of the project footprint. However, each project will be designed to meet current regulatory standards. Projects that disturb more than one acre of land will require coverage under the National Pollutant Discharge Elimination System General Permit for Construction. Development and redevelopment projects will also require the preparation and implementation of a Storm Water Pollution Prevention Plan and strict adherence to Maine's Stormwater, and Erosion and Sediment Control, Best Management Practices.

Wetlands and Other Habitats

No significant wildlife habitats or critical habitat are known to occur on or near BST, but wetlands are located throughout the Airport and adjacent properties. Additionally, some areas of BST have not yet been screened for wetland resources. Proposed development, especially the potentially larger-scale disturbances associated with tree removals, the Runway 15-33 extension, and parallel taxiway extensions, are located within or near wetlands which are regulated by the United States Army Corps of Engineers and the Maine Department of Environmental Protection and would require permitting and a demonstration that the proposed work conforms to regulatory performance standards. Smaller projects such as installation of PAPI lighting, installation of an aviation fuel farm, or expansion of parking areas, could also impact wetland resources depending on the location and size of the project footprint.

Wild and Scenic Rivers

There are no Wild and Scenic Rivers near BST or any project site. Therefore, none of the proposed development scenarios will affect Wild and Scenic Rivers and/or any tributaries to a designated Wild and Scenic River.

5.8.2 Environmental Screening Summary

At a preliminary high-level assessment, the recommended projects for the 20-year planning period would not likely result in a significant impact on the surrounding community or environment. Specifically, the proposed development on the Airport is unlikely to affect environmental resources other than wetland resource areas, which could be impacted under some of the development alternatives. Any such impacts will be avoided where possible or minimized and mitigated as required.

However, to fully evaluate each project and potential impacts, there will be a need to complete coordination with federal, state, and local agencies, and to conduct a detailed review of project impacts per NEPA when the recommended projects are initially designed. This can be done on a per-project basis or as a group, and given the limited impacts anticipated, will most likely be in the form of an EA, as opposed to an Environmental Impact Statement. However, for FAA-funded activities, the responsible FAA official will determine whether a proposed action may fall within the scope of a CATEX or if an EA or an Environmental Impact Statement is needed. Note that EAs would need to be conducted for both short- and long-term development. Potential additional permitting, reviews, and approvals are listed in **Table 5-2** below.

Table 5-2: Potentially Required Permits, Reviews, and Approvals

Agency	Permit, Review, and Approvals
Federal Aviation Administration	<ul style="list-style-type: none"> • Federal funding approval • Finding of No Significant Impact or Record of Decision under National Environmental Policy Act • Section 4(f) Determination • Section 106 Finding • Section 7 Endangered Species Act Consultation with United States Fish and Wildlife Service
United States Environmental Protection Agency	<ul style="list-style-type: none"> • Coverage under the National Pollutant Discharge Elimination System General Permit for Construction
United States Army Corps of Engineers	<ul style="list-style-type: none"> • Section 404 Permit • Section 106 Finding • Section 7 Endangered Species Act Consultation with United States Fish and Wildlife Service
United States Fish and Wildlife Service	<ul style="list-style-type: none"> • Project evaluation for protected wildlife and critical habitat - Section 7 Endangered Species Act Finding
Maine Department of Environmental Protection	<ul style="list-style-type: none"> • Project review • Natural Resource Protection Act • Stormwater Permit • Site Law
Maine Department of Inland Fisheries and Wildlife	<ul style="list-style-type: none"> • Project review for protected wildlife and significant habitats
Maine Historic Preservation Commission	<ul style="list-style-type: none"> • Project review for Section 106 Finding
Maine Natural Areas Program	<ul style="list-style-type: none"> • Project review for protected plants and natural communities

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