APPENDIX F:

BST PROJECT ADVISORY COMMITTEE PRESENTATIONS

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MEETING NOTES

project:	**BST AIRPORT MASTER PLAN UPDATE (AMPU) – PHASE II**
meeting date:	MONDAY, SEPTEMBER 3, 2014 – 10:00 A.M. (EDT)
meeting no:	2
location:	CITY OF BELFAST COUNCIL CHAMBERS, BELFAST, ME
subject:	PROJECT ADVISORY COMMITTEE (PAC) MEETING

ATTENDEES:

name	Affiliation
James Truxes	AIRPORT ADVISORY COMMITTEE
Robert Dietz	AIRPORT NEIGHBOR
Donna Loomans	AIRPORT NEIGHBOR
Michael McCarthy	AIRPORT NEIGHBOR (ATTENDED VIA CONFERENCE CALL)
Jay Foster	PILOT
Joshua Dickson	BUSINESS REPRESENTATIVE
Mary Mortier	CITY OF BELFAST (COUNCILOR)
Joseph Slocum	CITY OF BELFAST (CITY MANAGER)
Thomas Kittredge	CITY OF BELFAST (BST MANAGER)
Wayne Marshall	CITY OF BELFAST (CITY PLANNER) (ATTENDED IN PLACE OF SADIE LLOYD – ASST. PLNR
Stacie Haskell	MAINEDOT AVIATION (ATTENDED VIA CONFERENCE CALL)
Ralph Nicosia-Rusin	FEDERAL AVIATION ADMINISTRATION (FAA) (COULD NOT ATTEND)
James Miklas	AIRPORT SOLUTIONS GROUP (ASG)

There were a total of 12 people invited to attend the meeting. Sign-in sheet is attached.

MEETING PURPOSE / AGENDA:

This was the first meeting of the Project Advisory Committee (PAC) for the Belfast Municipal Airport (BST) Airport Master Plan Update (AMPU) – Phase II. The primary purpose of this meeting was to serve as a project "kickoff" for the master planning effort. Additionally, as detailed in the agenda (see attached presentation for meeting agenda), the meeting focused on the following questions and elements:

1. Introductions
2. WHY are we undertaking the BST Master Plan Update?
3. WHAT is involved in conducting a Master Plan Update?
4. WHERE are we in the Master Plan Process?
5. Other Project Issues
6. Next Steps

PROJECT INTRODUCTIONS:

Prior to introductions of those attending the meeting, Thomas Kittredge (BST Manager) thanked the members of the PAC for their participation in this process and then provided an opening statement. Mr. Kittredge expressed his enthusiasm for starting this master planning effort and emphasized the importance of this effort for the future of the Airport. Mr. Kittredge then

introduced Jim Miklas (ASG), the project manager for the BST AMPU, who would also give a presentation and lead discussions during the meeting.

POINTS OF DISCUSSION:

Mr. Miklas gave a presentation (see attached) to facilitate group discussion. General points of discussion are encompassed in the following general categories and notes:

General Project Approach

- Mr. Miklas emphasized to the PAC that the AMPU process should result in a plan that reflects the long-term vision and direction of the Belfast Municipal Airport. In order to achieve this, Mr. Miklas noted that it was critical that the PAC be active participants in the planning process. A primary role of the PAC members will be to serve as project advisors to ensure the BST Master Plan addresses the key issues facing the Airport today and into the future. There will be a total of three (3) PAC meetings (including this meeting) as well as a public meeting, and a City Council briefing. It is also important that PAC members serve as liaisons to their particular agency, group, constituency, etc.
- Mr. Miklas defined an airport master plan as "a comprehensive study that describes the short- (5 year), medium- (10 year), and long-term (20 year) development plans to meet future aviation demand." He also emphasized that one of its principle purposes was to "provide the framework to guide (and protect for potential) future airport development that will cost-effectively satisfy current and future aviation demand, while considering potential environmental and community factors."
- Mr. Miklas noted the reasons for conducting an AMPU, including:
    - The last formal AMPU process occurred in 1999, and the FAA suggests that master plans be updated every seven to ten years. An airport layout plan update was undertaken in 2008.
    - BST should be examined with respect to safety enhancements, including a full-length parallel taxiway.
    - Recent inquiries by local business related potential enhancements to the existing runway should be considered within the context of an AMPU.
- In reviewing some of BST's existing planning documentation, Mr. Miklas recognized the economic impact findings of the 2006 *Economic Impacts of Airports in Maine* study for BST. Specifically, that study identified BSTN's economic benefit (both direct and indirect) for the City and surrounding area to be 62 full time jobs with a total payroll of $1.6M that generated a total economic output of $3.9M in 2005. Mr. Miklas emphasized that these were some of the underlying economic reasons for continuing to develop and maintain BST to meet the long-term needs of the area.
- Mr. Miklas provided an overview of BST's physical facilities including current airside and landside facilities, several FAA airport design standards, and airspace structures. He showed the types of aircraft that typically operate at BST

- Mr. Miklas provided an overview of the Master Planning process. This included the various steps to be undertaken, the meetings anticipated and the project deliverables. He also noted that this effort was actually Phase II of the overall AMPU effort, and that elements of the inventory, the forecasts, the facility requirements and the development alternatives had already been undertaken as part of a *BST Runway Corridor Analysis* (now classified as Phase I of the BST AMPU). He stated that the final deliverables for this planning effort will include an AMPU report and an Airport Layout Plan (ALP). Note that the ALP is a legal document that must be signed by the airport and the FAA at the conclusion of the planning effort. It should include all development plans that result from the AMPU. This is important in that if a proposed project were not included on the ALP, it would have to be added through a separate ALP Update process before that project could move forward. He also stated that simply because a proposed project is included on an ALP, it does not guarantee that the project will be funded and constructed. There is a rigorous, separate coordination process that must be undertaken with the FAA and the State that determines whether or not a given project is eligible for funding. This process occurs outside of the AMPU.
- As in the presentation, Mr. Miklas introduced the preliminary general objectives of the Master Plan. He noted that while these objectives were appropriate for this project, it was also very important that the PAC identify any additional specific goals and objectives that they would like to see addressed in this study. He also provided examples of such goals, including those that served as the basis of the *Maine Aviation Systems Plan Update*. Additionally, it is just as important to identify any issues or concerns that the PAC may have with respect to the Airport.
- Mr. Miklas noted that the planning effort must result in 20-year forecasts that are both reasonable and defensible. Additionally, forecasting is particularly important in that the forecasts themselves must be formally approved by the FAA during the course of the AMPU. (He presented the DRAFT forecasts that were generated as part of the *Runway Corridor Analysis* that could be submitted to FAA for formal review.) Mr. Miklas also stated that the second element of the AMPU that must be approved by the FAA is the Airport Layout Plan (ALP), which should occur towards the end of the project.
- Mr. Miklas said that the public coordination element of this AMPU is critical to its overall success. This plan ultimately belongs to the airport/community and it must reflect their goals. Through the course of the project, there will be two more PAC meetings, in addition to an airport committee briefing, a public information meeting, and a city council briefing.
- Mr. Miklas then provided an overview of the *Runway Corridor Analysis*, which has recently been retitled to be *Phase I of the BST AMPU*. He stated that the original intent of the analysis was to vet the potential for full AMPU. BST had previously been approached by local business interests related to runway improvements and that the FAA and MaineDOT were uncertain as to their viability. The analysis was designed to answer the following questions:

  - What are the current conditions at Belfast Municipal Airport?
  - What is the projected runway length requirement for Runway 15-33?
  - What are the reasonable alternatives for meeting the projected runway length requirements for Runway 15-33 when considering the current Airport operational and FAA regulatory environments?

  This effort included task elements related to Inventory, Forecast, Facility Requirements, & Development Alternatives from the Airport Master Plan process. The final work product was a Technical Memorandum. He noted that following the completion of that effort that both FAA and MaineDOT supported moving forward on a complete AMPU for BST. Mr. Miklas then asked that the PAC review that technical memorandum as part as their role.
- Mr. Miklas then provided a high-level review of the *Runway Corridor Analysis*, including discussions on Design Aircraft, the methodologies employed to establish runway length requirements, and the general range of alternatives that were considered.
- Mr. Miklas reviewed a listing of potential airport issues that could be considered within the BST AMPU planning process.
- Mr. Miklas concluded with a request to the PAC for comments on the following subjects:
  - Defined goals for the AMPU (and/or areas of concern related to the Airport)
  - Airport issues that should be examined within the context of the AMPU (e.g. fuel, hangar development areas, surplus property, land use compatibility, obstructions, etc.)
  - Any comments related to the *Runway Corridor Analysis*

Points of Discussion / Questions

- A question was asked about the runway length requirements of the Pilatus PC-12 for landing. The response from a local pilot was approximately 3,000 feet for standard conditions (3,500 feet for hot and humid conditions). However, this is also subject to the insurance and company requirements of the operator, which will often impose more conservative restrictions (i.e. longer runway lengths) on their aircraft. Mr. Miklas also noted that the critical runway length consideration for aircraft is takeoff distance required, since it is during takeoff that an aircraft is at its heaviest and requires the greatest distance.
- There was a question about the former Runway 10-28. This runway was closed and its former footprint has been utilized for hangar development. The following is taken from the BST 1999 AMPU:

  In 1982, the crosswind runway, Runway 10-28, was abandoned in place. This action was taken due to the poor condition of the pavement, the high cost of repairing and maintaining a new pavement surface course, and the infrequent use of the runway (the previous Airport Master Plan stated that Runway 10-28 was used no more than five to six days per year). It was felt at that time that there was too little justification at that time for keeping Runway 10-28 as an active runway.

- There was a question about accessing the southern side of the abandoned runway through the existing business park - the access area was thought to be too steep to establish a road. However, there were other anecdotal indications that this was not the case and that a road could be constructed to access the site.
- It was noted during discussions related to airspace that BST lies within "uncontrolled" airspace; in other words, it does not have an air traffic control tower (ATCT) that monitors and manages aircraft operations on and around the airport. Pilots operating at BST are responsible for "self-reporting" their positions to other pilots operating in the area. (This is a standard operational procedure that occurs at most airports.)
- Questions were raised related to Mr. Miklas' request that the PAC provide direct comment/suggestions for defining specific AMPU goals and objectives. (Note that this request could also be extended to include areas of concern/interest that could serve as the basis for identifying project goals/objectives.) Through a PAC discussion, it was decided that, rather than to submit individual feedback directly to the project management team, the PAC would meet on its own to establish a final listing of goals that would then be presented to the project management team. The date for this additional coordination was tentatively set for September 22, 2014.
- There was a question if this AMPU Phase II was considered to be a second phase for the 1999 AMPU. Mr. Miklas indicated that it was not a second phase to the 1999 AMPU, but the second phase to the recently completed *Runway Corridor Analysis*. The PAC requested that the 1999 AMPU be reviewed and its conclusions documented in the current effort.
- It was asked if the Runway Corridor Analysis forecasts had been officially accepted by the FAA. Mr. Miklas indicated that while the FAA agreed with the proposed forecasts, they have not been officially accepted. That would occur during the AMPU.
- It was stated during conversation that a jet aircraft will typically require between 4,500 feet and 5,000 feet of runway length for takeoff distance. This again is a function of the individual aircraft mission, the weather conditions, the insurance requirements of the operator, etc. It was also noted that the facility requirements analysis element of the AMPU must consider existing aircraft operational requirements (i.e. we cannot assume projected improvements to aircraft operation capabilities, such as the potential for shorter future runway length requirements).
- Related to the *Runway Corridor Analysis*, it was asked if the B-II Design Aircraft designation was appropriate for the existing conditions and if BST were close to "jumping" to a larger category. It was noted that from a practical perspective that jumping to a larger category would be a significant change for BST (i.e. moving from primarily piston aircraft with limited small/mid-sized corporate turbines/jets to large corporate jets).
- There was a question related to the potential establishment of an Instrument Landing System (ILS) or other precision approaches at BST. Mr. Miklas noted that an LPV approach is scheduled for publication at BST (estimated to be for November), but that there is likely

little to no chance for a precision approach due to FAA funding restrictions, and the associated facility requirements that would have to be enacted at the airport.

- There was a general discussion on the purpose and benefits of instrument approaches.
- A question was raised as to what the City Council expected of the PAC. It was stated that the City Council expects the PAC to participate in the AMPU process, review the materials and ultimately come back to the Council with its recommendations. It will be up to the City Council to vote on the acceptance of the overall plan.

PAC "Homework"

- Provide ideas/comments related to the following:
  - BST AMPU - overall goals and objectives for the planning effort
  - BST AMPU – potential airport issues to be examined during the course of the study
  - Runway Corridor Analysis

The meeting adjourned at approximately 11:40 AM EDT.

These meeting notes have been respectfully compiled by James Miklas (ASG). Please forward any comments/corrections to Mr. Miklas at jmiklas@airportsolutionsgroup.com

Meeting: BST AMPU 2014 - *PAC Meeting 1* Location: Belfast City Hall Date: September 8, 2014 11:00AM

SIGN IN SHEET

	NAME	REPRESENTING	PHONE	EMAIL
1	THOMAS KITTREDGE	CITY OF BELFAST	338-3370 x16	economicdevelopment@cityofbelfast.org
2	James Truxes	BST Airport Comm.	338-9935	rjttruxes@myfairpoint.net
3	JAY FOSTER	PILOTS	763-4044	JNF@TIDEWATER.NET
4	Donna Loomans	Neighbors	505-5586	jsdonna@gmail.com
5	ROB DIETZ	NEIGHBORS	~~338~~ 20606	DIETZNME@GMAIL.COM
6	Joe Slocum	City	378-3370 ext 10	jslocum@cityofbelfast.org
7	Wayne Marshall	City	338-1417x25	Wmarshall@cityofbelfast.org
8	MICHAEL MCCARTHY	STAG INDUSTRIAL		mmccarthy@stagindustrial.com
9	MARY MORTIER	CITY COUNCIL	323-1748	marym@92-94main.com
10	Josh Dickson	Business Adv. /LOM	299-7911	joshmedic@gmail.com
11	Stacy Haskell	Maine DOT		
12	James Mellas	ASG	617-320-0701	JMellas@AirportSolutionsGroup.com
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BSTT
BELFAST
Municipal Airport
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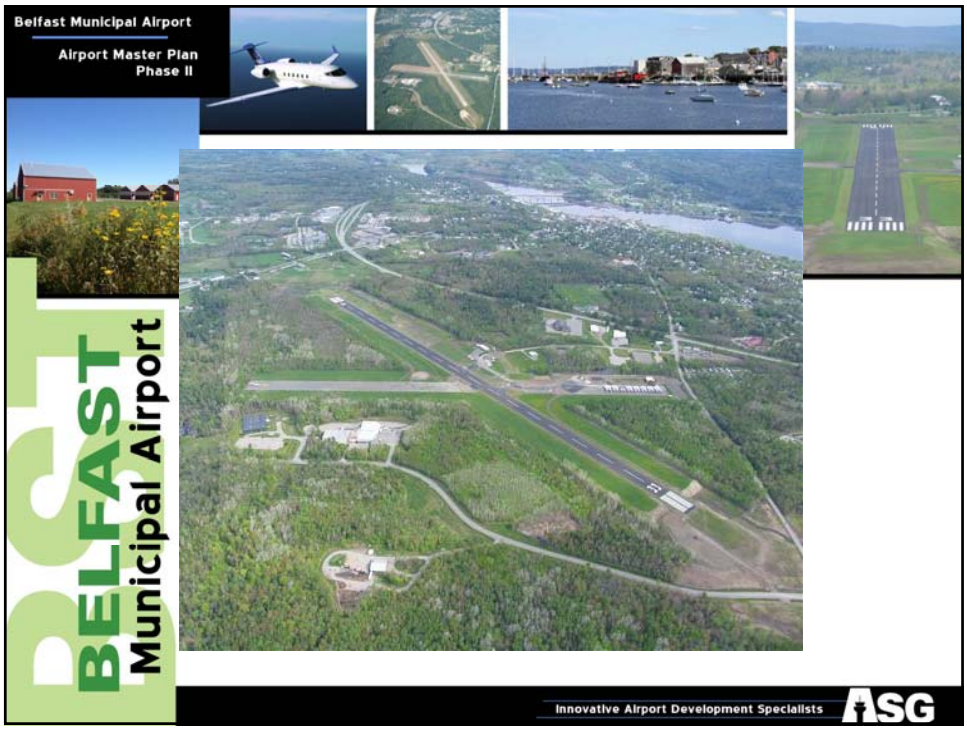
Innovative Airport Development Specialists
Project Advisory Committee Meeting # 1
September 8, 2014


Belfast Municipal Airport
Airport Master Plan
Phase II
BSTT
BELFAST
Municipal Airport
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Belfast Municipal Airport
Airport Master Plan
Phase II
Agenda
1. Introductions
2. WHY are we undertaking the BST Master Plan Update?
3. WHAT is involved in conducting a Master Plan Update?
4. WHERE are we in the Master Plan Process?
5. Other Project Issues
6. Next Steps
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Belfast Municipal Airport
Airport Master Plan
Phase II
Introductions
Project Advisory Committee (PAC) Membership
Airport Advisory Committee
James Truxes
Airport Neighbors
Robert Dietz
Donna Loomans
Michael McCarthy
Aviation Rep
Jay Foster (Pilot)
TBD
Business Rep
Joshua Dickson
City of Belfast
Mary Mortier (Councilor)
Joseph Slocum (City Manager)
Thomas Kittredge (BST Manager)
Sadie Lloyd (Asst. Planner)
Federal Aviation Administration (FAA)
Ralph Nicosia-Rusin
MaineDOT Aviation
Stacie Haskell
Project Manager*
James Miklas (ASG)
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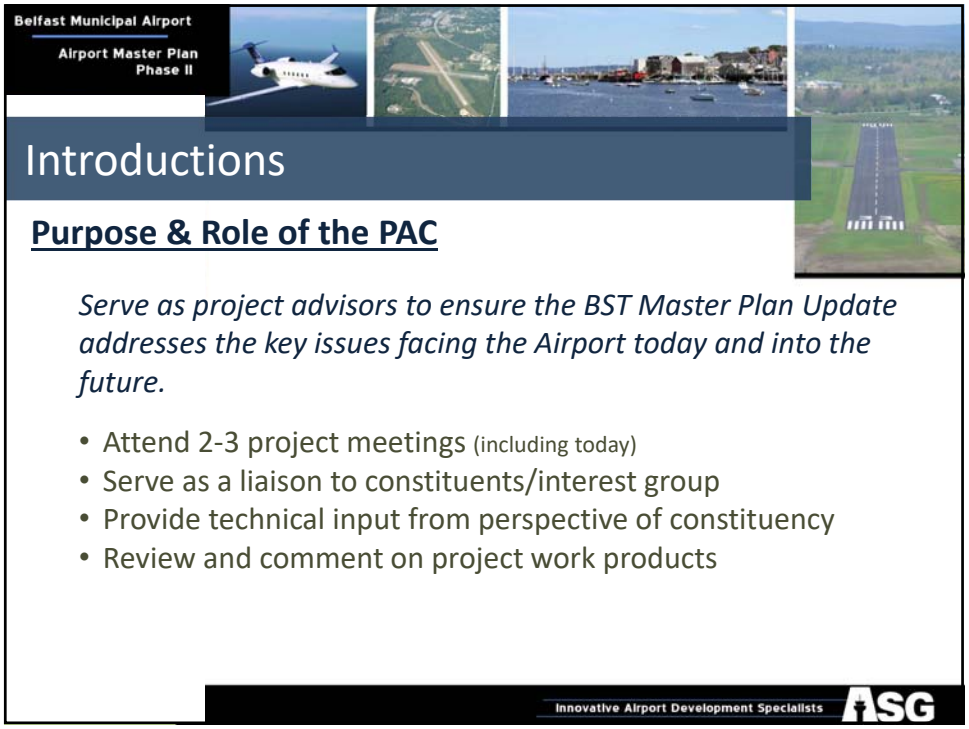
Belfast Municipal Airport
Airport Master Plan
Phase II
Introductions
Purpose & Role of the PAC
Serve as project advisors to ensure the BST Master Plan Update addresses the key issues facing the Airport today and into the future.
• Attend 2-3 project meetings (including today)
• Serve as a liaison to constituents/interest group
• Provide technical input from perspective of constituency
• Review and comment on project work products
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Belfast Municipal Airport
Airport Master Plan
Phase II
WHY are we undertaking the BST Master Plan?
Master Plan Purpose & Functions
Purpose:
A comprehensive study that describes the short-, medium-, and long-term development plans to meet future aviation demand.
Primary Functions:
• Sponsor's strategy for the development (20 year) of the airport as required by the FAA for future project funding. It should be updated every 7-10 years. (BST ALP Update Published 2008)
• Provide the framework to guide (and protect for potential) future airport development that will cost-effectively satisfy current and future aviation demand, while considering potential environmental and community factors.
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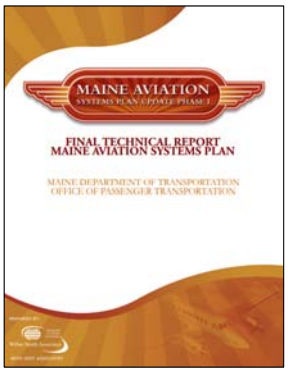
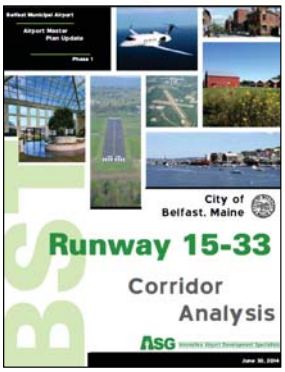
Belfast Municipal Airport
Airport Master Plan
Phase II

WHY are we undertaking the BST Master Plan?

Key Planning Interfaces





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Belfast Municipal Airport
Airport Master Plan
Phase II

WHY are we undertaking the BST Master Plan?

Key Planning Interfaces (2007 *Economic Impacts of Airports In Maine*)

TOTAL AIRPORT IMPACTS	
Jobs	62
Payroll	$1.6M
Output	$3.9M

TOTAL STATEWIDE IMPACTS	
Jobs	19,381
Payroll	$448M
Output	$1.4B

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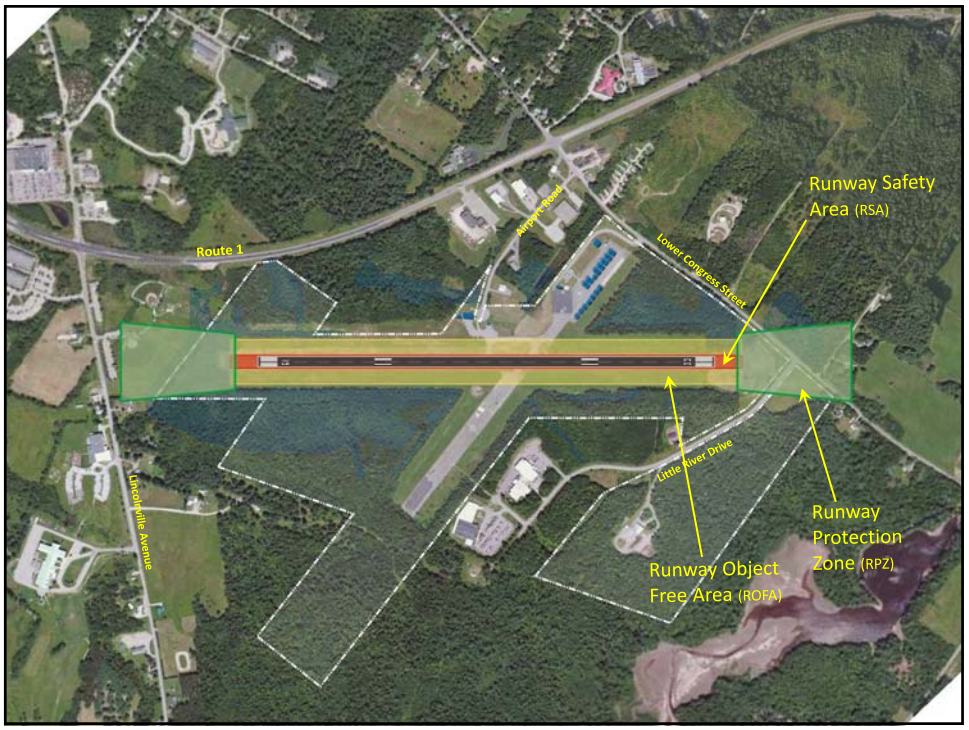
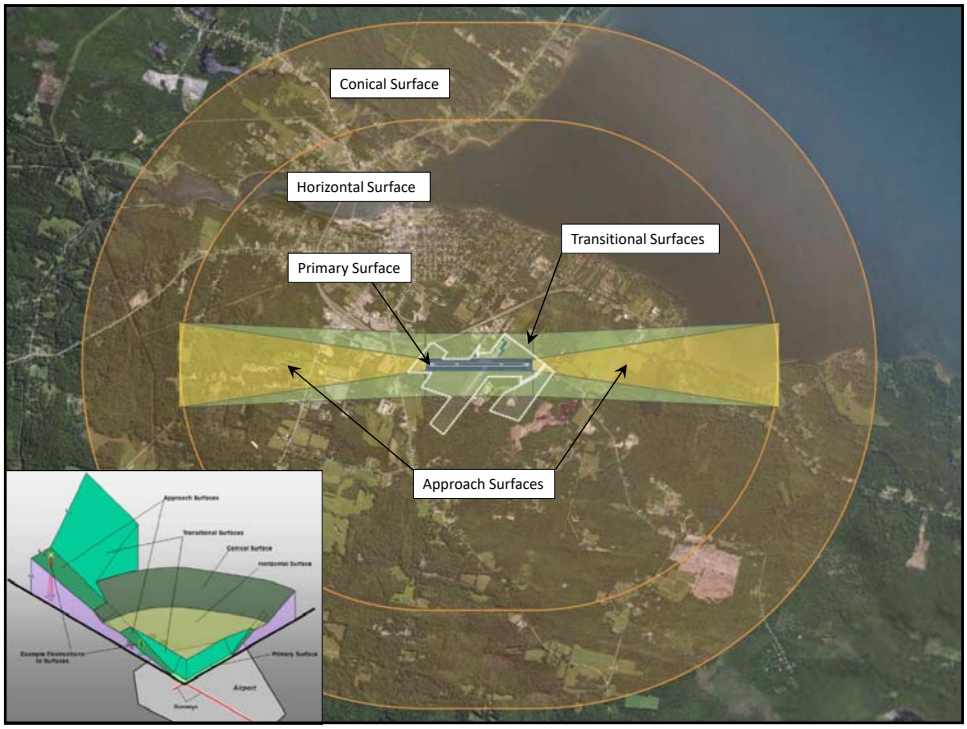
Nonprecision instrument approaches
Annual Operations = 10,000 (FAA TAF)
Based Aircraft = 17 (FAA TAF)
Route 1
Taxiway A
Airport Road
Lower Congress Street
Runway 15-33 (4,000 x 100)
Lincolnville Avenue
Little River Drive
Cessna 182
Cessna 421
Pilatus PC-12


Route 1
Airport Road
Lower Congress Street
Runway Safety Area (RSA)
Lincolnville Avenue
Little River Drive
Runway Object Free Area (ROFA)
Runway Protection Zone (RPZ)



Belfast Municipal Airport

Airport Master Plan Phase II

WHAT is involved in conducting a Master Plan?

Master Plan Objectives

- **Document the issues** that are considered/addressed at the time of the plan
- **Justify the proposed development** through the technical, economic, and environmental investigation of concepts and alternatives.
- **Graphic presentation** of development and anticipated land uses in the vicinity of the airport.
- **Realistic implementation schedule**, particularly the short-term capital improvement program (CIP).
- **Propose an achievable financial plan** to support the implementation schedule.

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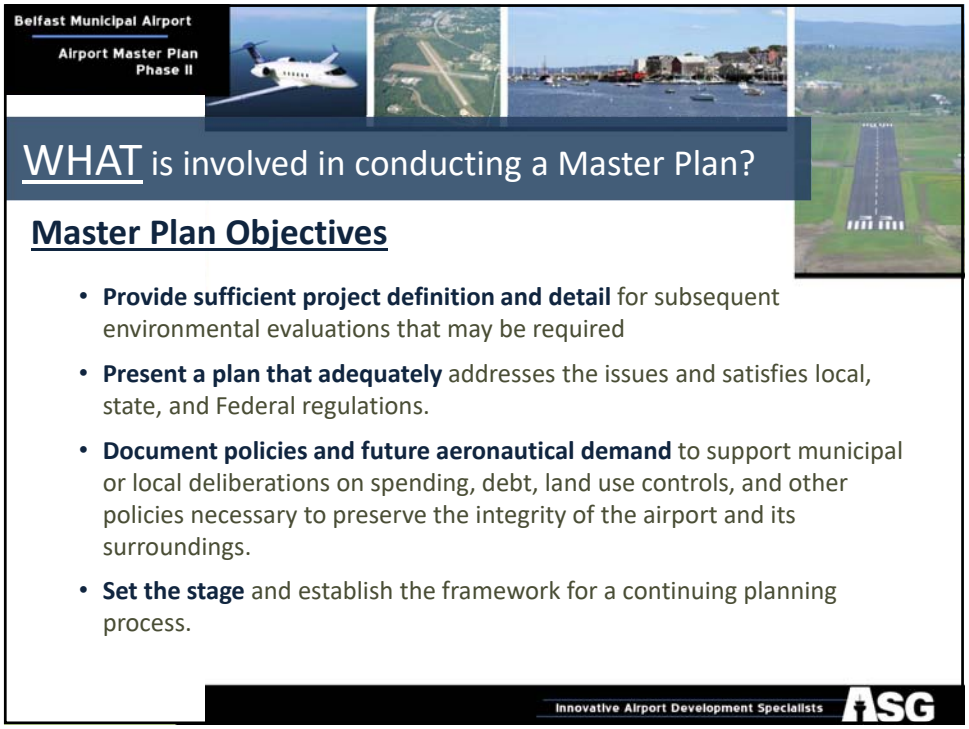
Belfast Municipal Airport
Airport Master Plan
Phase II
WHAT is involved in conducting a Master Plan?
Master Plan Objectives
• Provide sufficient project definition and detail for subsequent environmental evaluations that may be required
• Present a plan that adequately addresses the issues and satisfies local, state, and Federal regulations.
• Document policies and future aeronautical demand to support municipal or local deliberations on spending, debt, land use controls, and other policies necessary to preserve the integrity of the airport and its surroundings.
• Set the stage and establish the framework for a continuing planning process.
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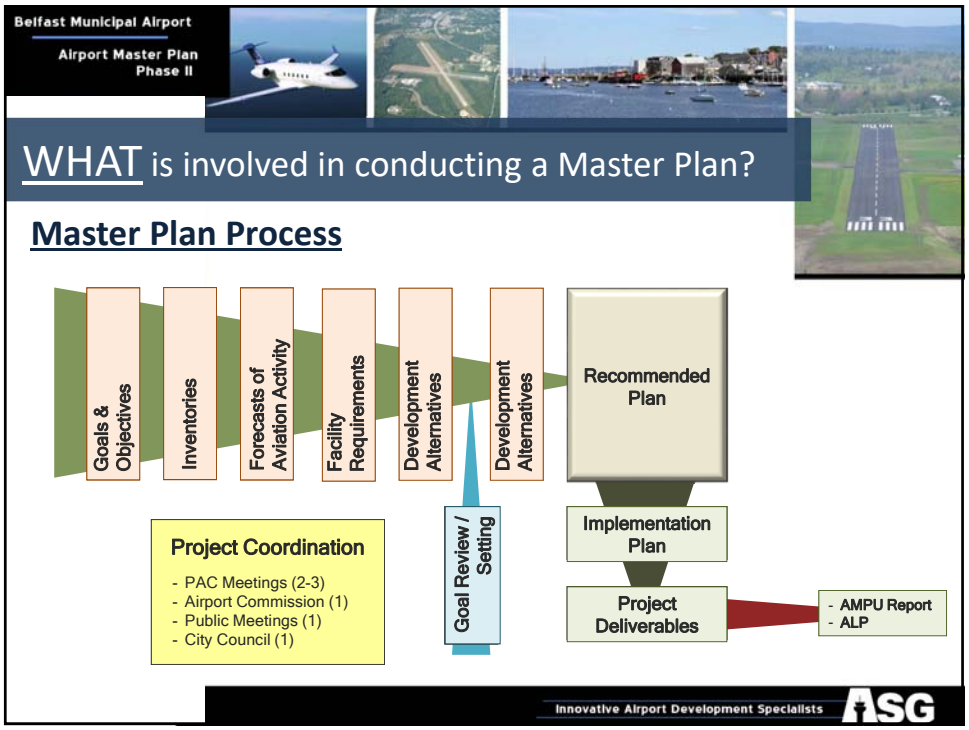
Belfast Municipal Airport
Airport Master Plan
Phase II
WHAT is involved in conducting a Master Plan?
Master Plan Process
Goals & Objectives
Inventories
Forecasts of Aviation Activity
Facility Requirements
Development Alternatives
Development Alternatives
Recommended Plan
Implementation Plan
Project Deliverables
- AMPU Report
- ALP
Goal Review / Setting
Project Coordination
- PAC Meetings (2-3)
- Airport Commission (1)
- Public Meetings (1)
- City Council (1)
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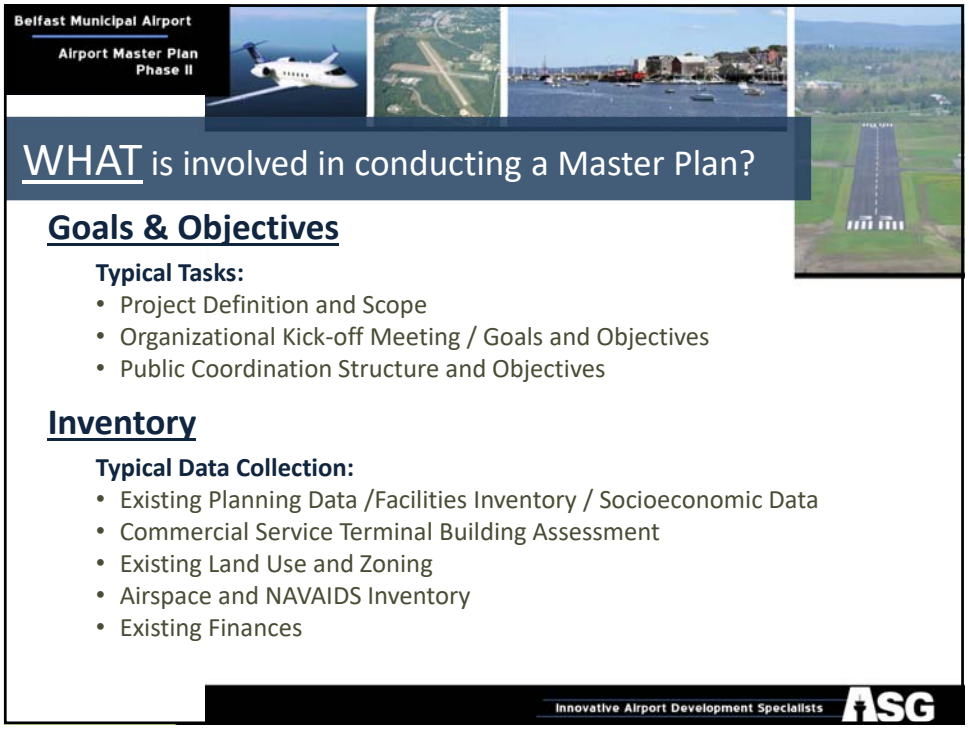
Belfast Municipal Airport
Airport Master Plan
Phase II
WHAT is involved in conducting a Master Plan?
Goals & Objectives
Typical Tasks:
• Project Definition and Scope
• Organizational Kick-off Meeting / Goals and Objectives
• Public Coordination Structure and Objectives
Inventory
Typical Data Collection:
• Existing Planning Data /Facilities Inventory / Socioeconomic Data
• Commercial Service Terminal Building Assessment
• Existing Land Use and Zoning
• Airspace and NAVAIDS Inventory
• Existing Finances
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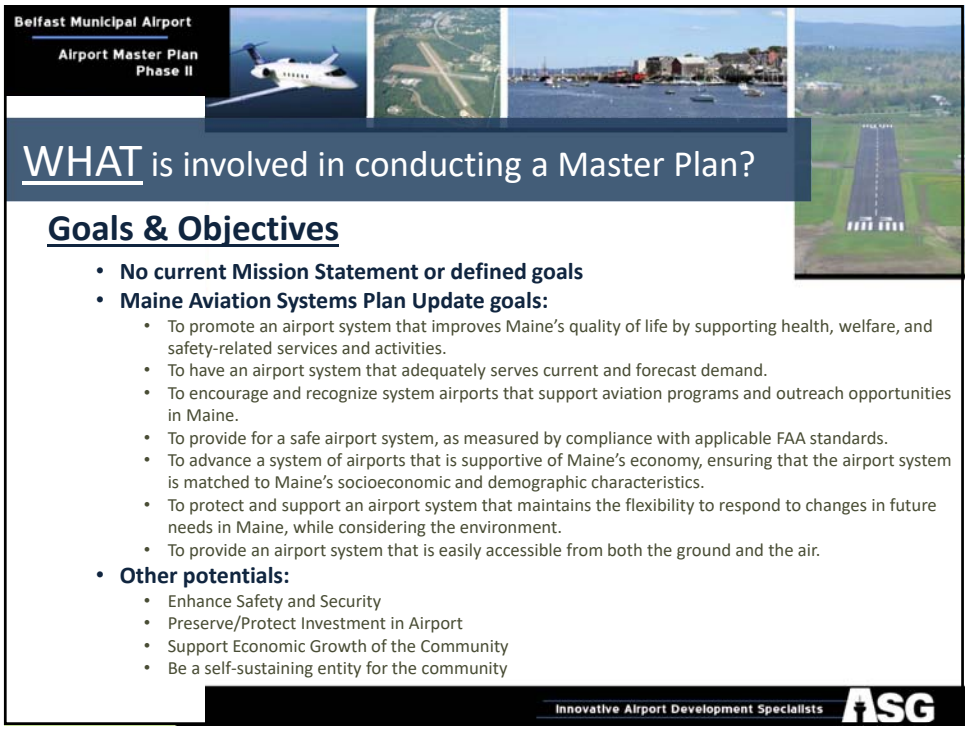
Belfast Municipal Airport
Airport Master Plan
Phase II
WHAT is involved in conducting a Master Plan?
Goals & Objectives
• No current Mission Statement or defined goals
• Maine Aviation Systems Plan Update goals:
• To promote an airport system that improves Maine's quality of life by supporting health, welfare, and safety-related services and activities.
• To have an airport system that adequately serves current and forecast demand.
• To encourage and recognize system airports that support aviation programs and outreach opportunities in Maine.
• To provide for a safe airport system, as measured by compliance with applicable FAA standards.
• To advance a system of airports that is supportive of Maine's economy, ensuring that the airport system is matched to Maine's socioeconomic and demographic characteristics.
• To protect and support an airport system that maintains the flexibility to respond to changes in future needs in Maine, while considering the environment.
• To provide an airport system that is easily accessible from both the ground and the air.
• Other potentials:
• Enhance Safety and Security
• Preserve/Protect Investment in Airport
• Support Economic Growth of the Community
• Be a self-sustaining entity for the community
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Belfast Municipal Airport
Airport Master Plan
Phase II
WHAT is involved in conducting a Master Plan?
Forecasts of Aviation Activity
Typical Forecast Elements:
• 20-year forecast
• Based aircraft by mix
• Local and itinerant operations by aircraft type and mix
• Passenger enplanements
• Military / instrument / flight training activities
• Peak-hour operations
• Last BST Forecasts approved 2008
*Must be approved by the FAA
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Belfast Municipal Airport
Airport Master Plan
Phase II
WHAT is involved in conducting a Master Plan?
Demand/Capacity & Facility Requirements
Typical Tasks:
• Airfield Demand/Capacity Analysis
• Aircraft Operational Requirements
• Design Standards Review/Evaluation
• Airside Facilities Requirements Determination
• Landside Facilities Requirements Determination
Alternatives & Recommended Plans
Typical Tasks:
• Goals review / setting
• Prepare development alternatives
• Recommended Development Plan and Program
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Belfast Municipal Airport
Airport Master Plan
Phase II
WHAT is involved in conducting a Master Plan?
Implementation Plan
Typical Tasks:
• Cost estimates
• Implementation Schedule
• Capital Improvement Plan (CIP)
• Financial plan
Project Deliverables
Products:
• Airport Layout Plan (ALP)
*Must be approved by the FAA
• Project Report
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Belfast Municipal Airport
Airport Master Plan
Phase II
WHAT is involved in conducting a Master Plan?
Public Process Involvement
Effective Communication and Stakeholder Participations is the
Key Ingredient for any Successful Airport Master Planning Effort
BST Master Plan Communications Plan:
• Project Advisory Committee (PAC)
• Public Meeting/Workshop
• Airport Committee Briefings
• City Council Briefing
• Website (posting project data)
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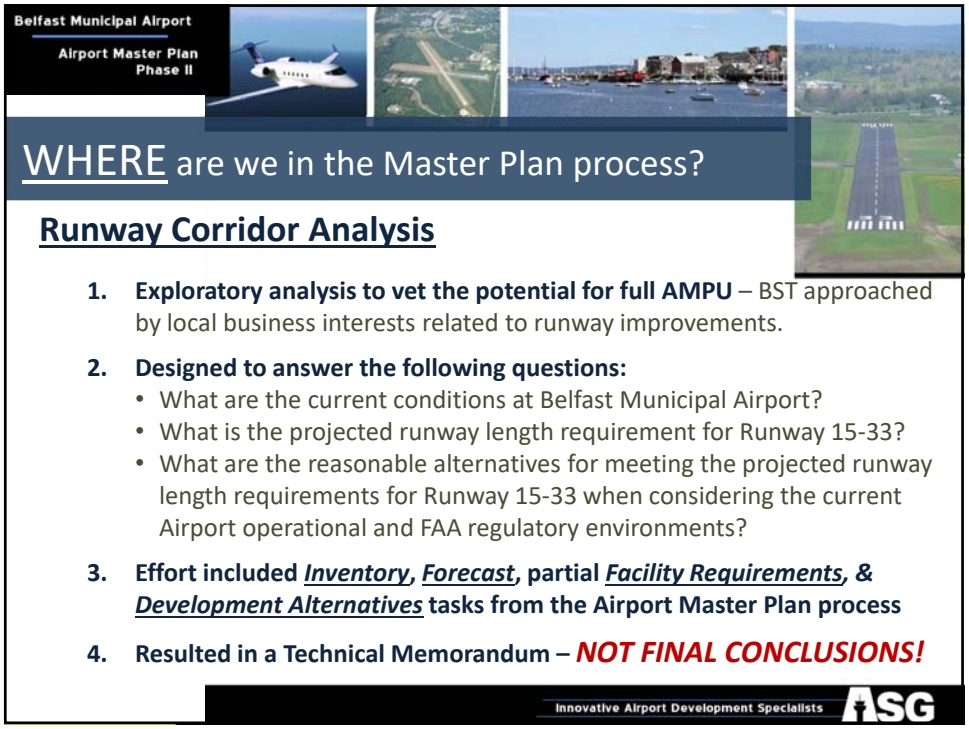
Belfast Municipal Airport
Airport Master Plan
Phase II
WHERE are we in the Master Plan process?
Runway Corridor Analysis
1. Exploratory analysis to vet the potential for full AMPU – BST approached by local business interests related to runway improvements.
2. Designed to answer the following questions:
• What are the current conditions at Belfast Municipal Airport?
• What is the projected runway length requirement for Runway 15-33?
• What are the reasonable alternatives for meeting the projected runway length requirements for Runway 15-33 when considering the current Airport operational and FAA regulatory environments?
3. Effort included Inventory, Forecast, partial Facility Requirements, & Development Alternatives tasks from the Airport Master Plan process
4. Resulted in a Technical Memorandum – NOT FINAL CONCLUSIONS!
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Belfast Municipal Airport
Airport Master Plan
Phase II
WHERE are we in the Master Plan process?
Forecasts / Design Aircraft
Aircraft Operations
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2004
2009
2014
2019
2024
2029
2034
ATADS Historical
APO TERMINAL AREA FORECAST DETAIL REPORT
TAF (HIGH)
TAF (LOW)
BST ALP Update Forecasts (2008)
FAA Active General Aviation and Air Taxi Hours Flown
Population in Market Area
Employment in Market Area
Per Capita Personal Income in Market Area
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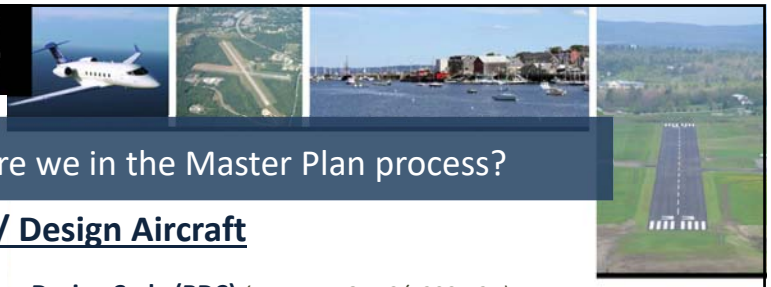
Belfast Municipal Airport
Airport Master Plan
Phase II



WHERE are we in the Master Plan process?

Forecasts / Design Aircraft

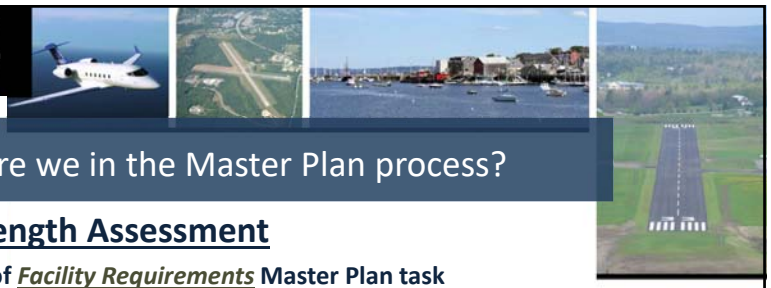
1. **Runway Design Code (RDC)** *(per FAA AC 150/5300-13A)*
   - Most demanding aircraft with 500+ annual operations
   - Existing / Future RDC: RW 12-30 (B-II)

Aircraft Approach Category (AAC)	
Approach Category	Approach Speed
A	< 91 knots
B	91 knots - < 121 knots
C	121 knots - < 141 knots
D	141 knots - < 166 knots
E	166 knots or more

Aircraft Design Group (ADG)		
Design Group	Wingspan	Tail Height
I	< 49 feet	< 20 feet
II	49 feet - < 79 feet	20 feet - < 30 feet
III	79 feet - < 118 feet	30 feet - < 45 feet
IV	118 feet - < 171 feet	45 feet - < 60 feet
V	171 feet - < 214 feet	60 feet - < 66 feet
VI	214 feet - < 262 feet	66 feet - < 80 feet

Innovative Airport Development Specialists ASG

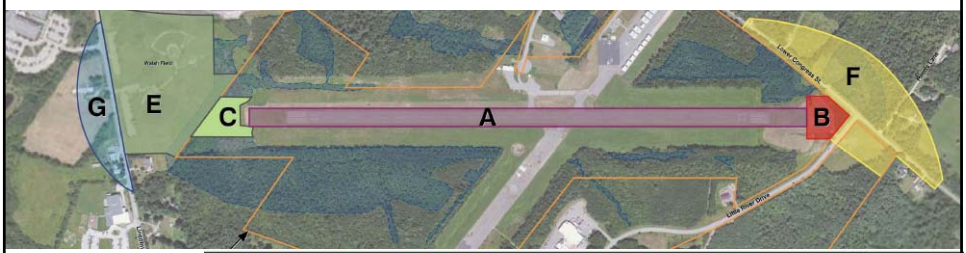
Belfast Municipal Airport
Airport Master Plan
Phase II



WHERE are we in the Master Plan process?

Runway Length Assessment

1. **Part of *Facility Requirements* Master Plan task**
2. **FAA Methodology = 4,990 feet** (existing = 4,000 feet)
3. **Assessment Recommendation = 4,700 ft**
   - Coordination with operators, users, & regulatory agencies
   - Planning/engineering analysis of existing conditions/facilities



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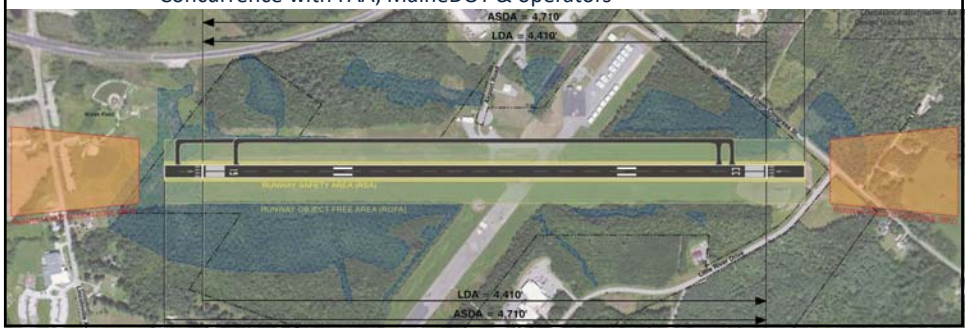
Belfast Municipal Airport
Airport Master Plan
Phase II

WHERE are we in the Master Plan process?

Runway Length Assessment

1. **Part of *Alternatives Development* Master Plan task**
   - Nine (9) alternatives analyzed
   - Recommended Alt minimizes impacts, remains on-airport, meets current & projected operational requirements
   - Concurrence with FAA, MaineDOT & operators

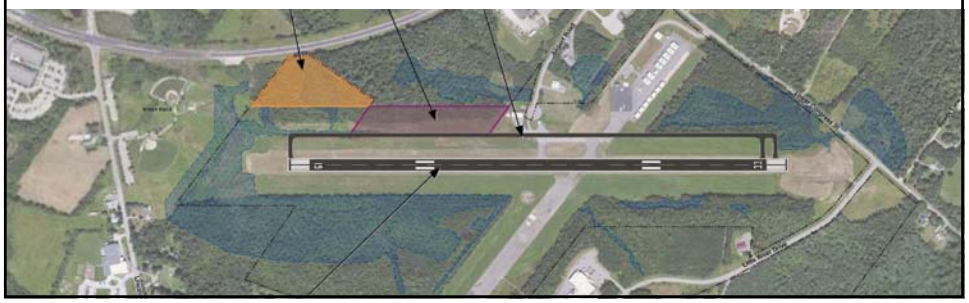


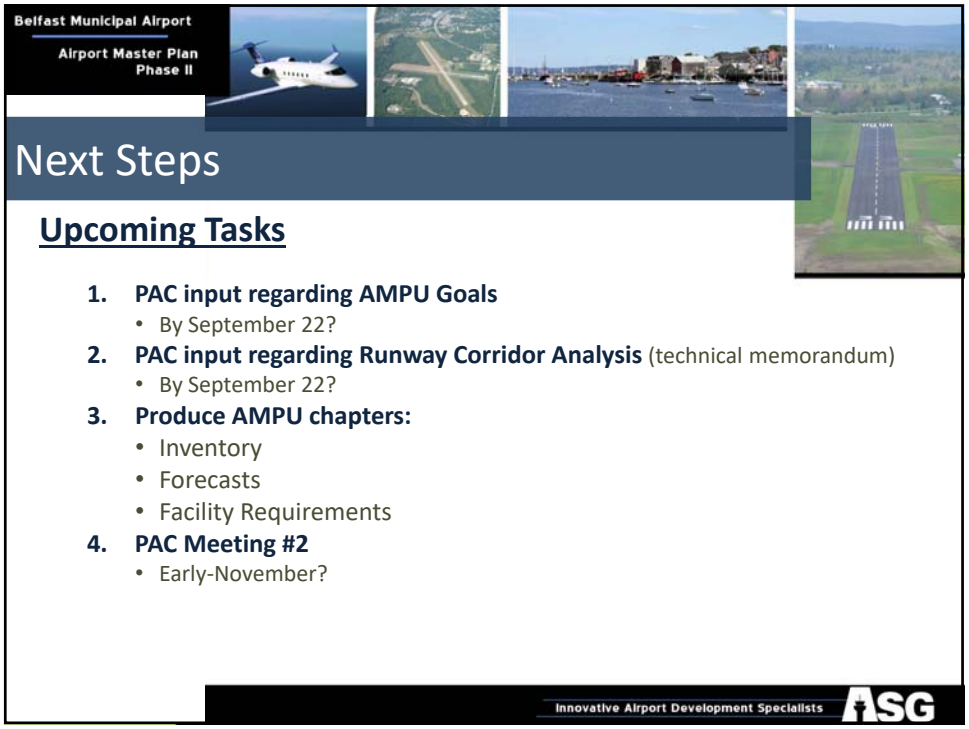
Belfast Municipal Airport
Airport Master Plan
Phase II

Other Project Issues

Potential Master Plan Issues

1. **Safety Improvements** (e.g. easements, obstruction removal, signage, wind socks, security, etc.)
2. **Taxiway A / Property Exchange**
3. **Airport Service Improvements** (e.g. FBO, maintenance, fuel, flight training, etc.)
4. **Long-term development plan** (e.g. hangar development areas, surplus property, etc.)




Belfast Municipal Airport
Airport Master Plan
Phase II
Next Steps
Upcoming Tasks
1. PAC input regarding AMPU Goals
• By September 22?
2. PAC input regarding Runway Corridor Analysis (technical memorandum)
• By September 22?
3. Produce AMPU chapters:
• Inventory
• Forecasts
• Facility Requirements
4. PAC Meeting #2
• Early-November?
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Belfast Municipal Airport
Airport Master Plan
Phase II
Questions & Comments
Thank You!
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Innovative Airport Development Specialists
ASG

Below are responses to the questions provided by members of the Belfast Municipal Airport (BST) Airport Master Plan Update (AMPU) Project Advisory Committee (PAC).

1. In consideration of the proposed Runway Length Recommendation(s) for BST's AMPU Report and ALP, please address the following questions:

First, it is important to clarify the term "recommendation" as it is utilized in the sentence above. There is a difference between a runway length "recommendation" based on a particular aircraft operational scenario (such recommendations are reflected in the previous *BST Runway Corridor Analysis*) and a runway length recommendation within the context of the Belfast Municipal Airport (BST) Airport Master Plan Update (AMPU). In the former, a length recommendation has been generated based on enhancing BST's capability of accommodating small to mid-sized corporate turbine aircraft, while also considering the physical limitations on and around BST. That resulted in what has been titled "Alternative 3A." With respect to the latter, it is critical to recognize that the AMPU has not yet provided any formal recommendations for any type of development on the Airport, including runway length. Those will only occur after being formally voted upon by the City of Belfast's City Council with input from the BST AMPU Project Advisory Committee (PAC).

a) Not including changes to current ordinances or land use zoning for abutting properties surrounding the airport, what are the anticipated, specific impacts to individual properties on a case-by-case basis? For the purpose of this question, impacts would be categorized as any change to current restrictions, if any, and/or requirements established for airport operations (e.g. glide slope and approach surfaces, building and height requirements, environmental restrictions, densities, setbacks, etc.)?

At this point in the AMPU process (where potential development alternatives are still being generated and considered), specific impacts to individual properties have not yet been calculated. However, assuming Alternative 3A were to be ultimately recommended, the following generalized impacts could reasonably be anticipated (NOTE THAT THESE ARE SUBJECT TO CHANGE BASED ON FUTURE WORK CONDUCTED BY THE PROJECT MANAGEMENT TEAM [PMT], THE PAC, AND THE CITY COUNCIL WITHIN THE AMPU PROCESS. OTHER IMPACTS MAY ALSO BE IDENTIFIED THROUGH FUTURE EFFORTS.):

1. <u>The Runway Protection Zones (RPZ) would shift with the relocated runway thresholds</u> (please see Question #2 below for a formal definition of RPZ). Alternative 3A would result in the RPZ on the Runway 15 approach end being shifted approximately 240 feet towards Lincolnville Avenue and the RPZ on the Runway 33 approach end being shifted approximately 170 feet towards Congress Street.
2. <u>Various FAA Airspace Surfaces (approach, departure, etc.) would shift with the relocated runway thresholds</u>. The FAA has established a wide range of airspace surfaces on and around airports for a variety of purposes. For this overview, the 20:1 Threshold Siting Surfaces / TERPS (United States Terminal Instrument Procedures) approach surfaces will be employed as the example since those are the surfaces currently considered most

critical to BST operations by the FAA (these surfaces are serving as the basis of the current vegetation removal project that will be conducted at BST in 2016). Similar to the RPZs, these surfaces shift with the runway thresholds/ends. Therefore, the start of the airspace surfaces on the Runway 15 approach end would shift approximately 240 feet towards Lincolnville Avenue and the surfaces on the Runway 33 approach end would shift approximately 170 feet towards Congress Street. This means that the airspace surfaces on the Runway 15 approach end would be approximately 12 feet lower than the current surfaces in any given location, whereas the surfaces on the Runway 33 approach end would be approximately 8.5 feet lower than the current surfaces. (Note that the surfaces' actual height above ground is a function of their location with respect to the runway end, as well as the actual ground elevation.)

b) Not including changes to current ordinances or land use zoning for infrastructure surrounding the airport, what are the anticipated, specific impacts to roadways, sidewalks, utilities, public recreational facilitates, density and/or traffic restrictions, etc. at either end of the runway?

Since Alternative 3A does not result in any physical facilities being located off-airport property, off-airport impacts are currently anticipated to be limited to those described above in a).

c) For both abutting properties and existing infrastructure, what potential impacts have not been and/or will not be considered within the AMPU and ALP?

All impacts are being considered appropriate for this point in the federal AMPU process. Again, at this time, alternatives are being generated and considered at a relatively broad level. However, if a project like a runway extension were to be ultimately recommended for implementation, subsequent planning efforts would be required by the FAA, including an environmental review/permitting effort that would itself have a robust public coordination effort, as well as potential additional ancillary impact analyses. Additionally, an airspace analysis would be required to determine if airspace surfaces associated with the relocated runway ends would be clear of obstructions. Again, both of these efforts would be very public planning processes sponsored by the FAA. (See www.faa.gov for additional information.)

2. What is a "Runway Protection Zone" (RPZ) and the rationale for designating an area as such?

Per FAA AC 150/5300-13A, *Airport Design*, following is the definition and description of Runway Protection Zones (RPZs). Specific dimensions and other information can be found within that AC.
(http://www.faa.gov/airports/resources/advisory_circulars/index.cfm/go/document.current/documentNumber/150_5300-13/)

310. Runway Protection Zone (RPZ).

The RPZ's function is to enhance the protection of people and property on the ground. This is best achieved through airport owner control over RPZs. Control is preferably exercised through the acquisition of sufficient property interest in the RPZ and includes clearing RPZ areas (and maintaining them clear) of incompatible objects and activities.

a. RPZ background.

(1) Approach protection zones were originally established to define land areas underneath aircraft approach paths in which control by the airport operator was highly desirable to prevent the creation of air navigation hazards. Subsequently, a 1952 report by the President's Airport Commission (chaired by James Doolittle), entitled The Airport and Its Neighbors, recommended the establishment of clear areas beyond runway ends. Provision of these clear areas was not only to preclude obstructions potentially hazardous to aircraft, but also to control building construction as a protection from nuisance and hazard to people on the ground. The Department of Commerce concurred with the recommendation on the basis that this area was "primarily for the purpose of safety and convenience to people on the ground." The FAA adopted "Clear Zones" with dimensional standards to implement the Doolittle Commission's recommendation. Guidelines were developed recommending that clear zones be kept free of structures and any development that would create a place of public assembly.

(2) In conjunction with the introduction of the RPZ as a replacement term for Clear Zone, the RPZ was divided into "extended object free" and "controlled activity" areas. The extended object free area has subsequently been renamed as the "central portion of the RPZ." The RPZ function is to enhance the protection of people and property on the ground. Where practical, airport owners should own the property under the runway approach and departure areas to at least the limits of the RPZ. It is desirable to clear the entire RPZ of all above-ground objects. Where this is impractical, airport owners, as a minimum, should maintain the RPZ clear of all facilities supporting incompatible activities. See FAA Memorandum, Interim Guidance on Land Uses Within a Runway Protection Zone, dated 9/27/2012, for guidance on incompatible activities. http://www.faa.gov/airports/planning_capacity/media/interimLandUseRPZGuidance.pdf

With respect to the FAA memorandum, the proposed changes to the runway (and associated RPZs, among other standards, requires coordination with the FAA National Airport Planning and Environmental Division, APP-400. This coordination is integrated into the ongoing AMPU.

3. Within an RPZ, what are required and/or recommended restrictions/guidelines? (Please list specifics)

Per FAA AC 150/5300-13A, *Airport Design*, following are the recommended land uses within RPZs.

> *310. Runway Protection Zone (RPZ).*
> ...
> *d. For RPZ land, the following land uses are permissible without further evaluation:*
>
> > *(1) Farming that meets airport design standards.*
> > *(2) Irrigation channels that meet the requirements of AC 150/5200-33 and FAA/USDA manual, Wildlife Hazard Management at Airports.*
> > *(3) Airport service roads, as long as they are not public roads and are directly controlled by the airport operator.*
> > *(4) Underground facilities, as long as they meet other design criteria, such as RSA requirements, as applicable.*
> > *(5) Unstaffed NAVAIDs and facilities, such as equipment for airport facilities that are considered fixed-by-function in regard to the RPZ.*

4. What are the specific differences between the new, proposed RPZ(s), ROFA(s) and RSA(s) based on a runway length of 4,710' and the current RPZ(s), ROFA(s) and RSA(s)?

The Runway Protection Zones (RPZs), Runway Object Free Areas (ROFAs), and Runway Safety Areas (RSAs) dimensional requirements (as defined in FAA AC 150/5300-13A) for a particular runway are rooted in the individual Runway Design Code (RDC) for that runway. Note that an RDC is a code system based on the "design aircraft" (defined as the most operationally demanding aircraft or family of aircraft that has at least 500 annual operations on that runway) for that individual runway. The RDC code is translated into the specific dimensional safety standards (e.g., RPZ, RSA, ROFA, etc.). (Also note that the RDC is a relatively new tool introduced by the FAA. Previously, the FAA primarily used a coding system known as the Airport Reference Code [ARC]. While still utilized by the FAA, the ARC designation was formerly applied in a similar manner as the RDC is now. This is relevant since previous/existing airport design standards for BST are identified as being based on the ARC and not the RDC.)

So, the important consideration in responding to the question is to recognize that the existing ARC for BST (as identified on the current Airport Layout Plan [ALP]) is a B-II. The projected RDC for BST as identified in the AMPU Phase I is also a B-II; therefore, there is no change. (Additionally, it should be noted that visibility minimums are also factored into the determination. The current condition and the future projection for BST is that visibility minimums remain "not lower than 1 mile". Again, there is no change.) Therefore, the dimensional standards will similarly not change from the existing conditions. Specifically, this translates into the following dimensional requirements for the design standards noted above (please see the FAA AC for further description of each standard):

	Length (beyond RW end)	Width (based on RW centerline)	Distance from RW end	Width (inner)	Width (outer)	Length
RSA	300	150	*NA*	*NA*	*NA*	*NA*
ROFA	300	500	*NA*	*NA*	*NA*	*NA*
RPZ	*NA*	*NA*	200	500	700	1,000

With respect to Alternative 3A, since the ARC/RDC is not being proposed to change, these dimensions will all remain the same. However, what would change are their limits and/or their actual locations. With the proposed future runway configuration, limits or location of all the design standards will move in relation to the runway ends. This means that the RSA, ROFA, and RPZ on the Runway 15 approach end will move approximately 240 feet closer to Lincolnville Avenue, while the design standards on the Runway 33 approach end will move approximately 170 feet closer to Congress Street. It should be recognized that the relocated RSA and ROFA will remain on airport property.

5. What new impacts or changes would be realized within the new, proposed RPZ(s), if any, should the runway length of 4,710' be accepted?

There will not be any changes in the RPZs' dimensions on either end of the runway, nor will there be any change in terms of recommended compatible land uses. What will change is the physical location of the RPZs, which will move in relation to the proposed relocated runway thresholds/ends (i.e., approximately 240 feet towards Lincolnville Avenue and approximately 170 feet towards Congress Street).

6. Should the proposed runway length of 4,710' be accepted, please articulate how the additional length would change Airport Operations, both take-off and landings? For example, would landing aircraft have the full length of the runway to land or would landings still be required to land within a certain area on the runway?

The proposed runway development alternative would result in the following available runway lengths:

<u>Runway 15 Operations</u>

- *Departures*: Aircraft departing on Runway 15 would be able to start their departure run from the edge of pavement on the Runway 15 approach end and be able to use runway up to the Runway 33 displaced threshold. This would result in an anticipated total takeoff distance of 4,710 feet.
- *Arrivals*: Aircraft arriving on Runway 15 would have to land at the Runway 15 displaced threshold and would be able to use runway up to the Runway 33 displaced threshold for landing. This would result in an anticipated total landing distance of 4,410 feet.

Runway 33 Operations

- *Departures*: Aircraft departing on Runway 33 would be able to start their departure run from the edge of pavement on the Runway 33 approach end and be able to use runway up to the Runway 15 displaced threshold. This would result in an anticipated total takeoff distance of 4,710 feet.
- *Arrivals*: Aircraft arriving on Runway 33 would have to land at the Runway 33 displaced threshold and would be able to use runway up to the Runway 15 displaced threshold for landing. This would result in an anticipated total landing distance of 4,410 feet.

7. For the purpose of developing the AMPU, how were previous and current Aircraft operational data points derived (i.e. 10,000 operations per year)? If based on estimated Aircraft Operations, what margin of error should be factored within this data?

Since BST does not have any full-time staff located on the airport that can conduct aircraft operational counts or provide any estimates of operational levels, it is standard industry practice to utilize the operational totals generated and provided by the FAA (e.g. FAA Terminal Area Forecasts (TAF), and/or 5010 inspections). These numbers are based on several factors including an actual airport visit, as well as several algorithms developed to project operational levels as a function of based aircraft and airport service type. The FAA and state aeronautical agencies (including MaineDOT) recognize that the reliability of this data needs to improve. So, they have been pursuing a variety of newer, technology-based applications to count aircraft operations. BST recently had a UNICOM (pilot radio system) broadcast counter installed at the Airport on a test basis that is designed to more accurately estimate the actual number of aircraft operations.

Due to the lack of hard data to provide a baseline, any "margin of error" itself would be simply an estimate, and therefore inappropriate.

8. In relation to Airport Operational data, how can BST accurately record actual operations in order to eliminate the need for estimated operational data?

Since there is not a person located on the Airport 24 hours a day and seven days a week that can physically count each and every operation, BST (like most other general aviation airports within the United States) must rely on technology solutions. Currently, the most common applications are based on either sound measurements or communication counts. However, these applications utilize operational assumptions (i.e., number of radio communications per operation) or have inherent errors (i.e., misinterpreting aircraft sound profiles); therefore, these cannot be considered to be completely accurate. Essentially, they simply provide a more refined estimate, but an estimate nonetheless.

9. Within the process to update BST's AMPU Report and ALP, please describe if/when an updated airport zoning ordinance (AZO) would be conducted by the City?

The City of Belfast Code & Planning Department has expressed an interest in updating the airport-related zoning as part of its current city-wide zoning ordinance amendment efforts. This would not be directly related to the BST AMPU process, although it would be influenced by it. The timing of this update has yet to be determined.

10. Within the process to update BST's AMPU Report and ALP, is a safety assessment conducted for persons and property on the ground within proximity to the airport? If so, when and how does this assessment take place? If not, why not?

The Federal Aviation Administration (FAA), an agency of the United States Department of Transportation, is charged by the federal government to be responsible for the advancement, safety and regulation of civil aviation, as well as overseeing the development of the air traffic control services. Since 1958, the FAA (and prior to that, the Civil Aviation Authority) has established an extensive array of safety standards for both the protection of aircraft operations and those on the ground potentially impacted by those operations. These can take the form of airport design standards (e.g., RPZs, ROFAs, RSAs, etc.), airspace surfaces, zoning/land use requirements, environmental standards in conformance with the U.S. Environmental Protection Act, among many others. These standards continue to increase in number and evolve based on the current state of the aviation industry, federal regulatory requirements, societal concerns/ consciousness, etc. They are also considered to be the current industry standard and are used either as the basis for international regulations or largely mirror those utilized by the International Civil Aviation Organization (ICAO).

The BST AMPU/ALP effort conforms to all FAA standards and requirements, which themselves are inherently designed to ensure the safety of people on the ground and in the air who are potentially impacted by aircraft operations. Generally speaking, the FAA always has the option of conducting additional analyses if it deems them to be required based on individual circumstances; however, that is not a standard practice. (Note that these types of additional analyses typically occur during environmental review/permitting processes associated with specific projects. As suggested above, any proposed runway extension actions at BST would require a separate environmental permitting effort.)

11. From the Airport Advisory Committee's perspective, on a scale of 1-5 with 5 being the highest and 1 being the lowest, please rate the following:

a) safety to users of the airport (1-5)

b) safety to persons on the ground within proximity to the airport (1-5)

This really is too subjective to answer since safety to all is paramount. We would simply suggest that in order for BST to maximize its factor of safety for those operating in aircraft and for those persons on the ground that the Airport meets all federal, state and local standards to the greatest degree practicable.

12. From the City's perspective, what are the primary reasons driving the consideration to lengthen the current runway? *(Please rank in order of importance).*

Like any other transportation asset (e.g., highway, port, rail, etc.), the fundamental purpose of an airport is to facilitate the efficient and effective movement of persons and goods for the ultimate benefit of the community and region. The term "benefit" is generally open to interpretation, but typically includes permitting and/or enhancing fundamental access to/from an area for any number of purposes (i.e., accessibility, emergency evacuation, shipping, recreation, etc.), as well as generating economic benefits for that area that could result from that accessibility. The role of an Airport Master Plan is to document the process by which an airport's host community works to marry the long-term development plan of its airport with the overall long-term development plan for that community, largely through an examination of the strengths, weaknesses, opportunities, and threats that currently exist and/or are projected to occur within its region.

It is a requirement of the BST AMPU that development alternatives be identified and vetted that may coincide with the long-term development goals of the City of Belfast. Given that two prominent local industries have expressed an interest in exploring the potential for a longer runway in order to possibly enhance their operations, and given that these industries currently figure prominently in the City's economy, it is reasonable that this possibility be explored within the context of the AMPU. It is critical to note that consideration of an alternative within the AMPU should not be construed as an endorsement of that alternative. Ultimately, that decision will be made near the end of the AMPU process by the City of Belfast's City Council with input from the AMPU PAC.

13. If the new proposed runway length is accepted by the City:

a) What are the specific, non-hypothetical, measurable gains that will be realized upon completion? *(For the purpose of this question, 'gains' are not limited to a financial return on investment but rather any changes that would be perceived as positive over the status quo by the City.)*

Focusing on the term "measurable," specific "gains" or benefits will include those defined in Question #6. Aircraft that currently operate at BST, and/or aircraft that currently do not operate at BST but would if additional runway length was provided, would be the most obvious direct beneficiaries of a runway extension. It would improve their efficiency, effectiveness and the practicability of operating at BST. There are also a wide range of other potential benefits that could be realized, including direct, indirect and multiplier financial benefits to the local and regional economy; however, at this point, those would be purely speculative and not "measurable." Beyond that, perceptions related to positive impacts as related to the "status quo" really is a function of personal opinion, and therefore, similarly speculative.

b) What are the specific, non-hypothetical, measurable costs that will be realized upon completion? *(For the purpose of this question, 'costs' are not limited to a financial loss on investment but rather any changes that would be perceived as negative over the status quo by the City.)*

The preliminary order-of-magnitude cost opinion to construct Alternative 3A ranges from $3.75M to $4.25M. (Note that this opinion does not include the required environmental review/permitting effort or potential airspace clearance, nor does it account for the extension of the parallel taxiway, among other elements.)

c) Who, specifically, benefits from the new runway length upon completion?

As stated above, aircraft that currently operate at BST and/or aircraft that currently do not operate at BST but would if there were additional runway length would be the primary beneficiaries of a runway extension. It would improve their efficiency, effectiveness and the practicability of operating at BST. One could reasonably surmise that if local businesses directly benefit by this runway enhancement (as they have indicated they would) that would have a net positive impact on the overall local economy by allowing them to improve and potentially expand their operations. However, at this point in the process, those potential benefits have not been formally identified.

d) Who, specifically, is adversely effected by the new runway length upon completion?

At this point, determining adverse impacts really is a subjective exercise. It is because of this subjectivity that the FAA has established its formal environmental review and permitting process that must be undertaken for all such projects. (See http://www.faa.gov/airports/environmental/ for additional details.) Specifically, the FAA environmental analysis (per FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*), requires the analysis of the following categories to ascertain potential adverse impacts associated with a proposed project:

- Air Quality
- Coastal Resources
- Compatible Land Use
- Construction Impacts
- Section 4(f)
- Farmlands
- Fish, Wildlife, and Plants
- Floodplains
- Hazardous Materials, Pollution Prevention, and Solid Waste
- Historical, Architectural, Archaeological, and Cultural Resources
- Light Emissions and Visual Impacts
- Natural Resources and Energy Supply
- Noise

- Secondary (Induced) Impacts
- Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks
- Water Quality
- Wetlands and Other Habitats
- Wild and Scenic Rivers

e) What are the anticipated, up-front costs in dollars and how will those expenditures be funded?

Capital improvements at nearly all general aviation airports in the United States are primarily funded by the FAA. Normally, for qualifying projects, the FAA will fund 90% of those improvements, with 5% typically being funded by the state aviation agency, and the remaining 5% being funded by the airport sponsor or owner. The preliminary order-of-magnitude cost opinion to construct Alternative 3A ranges from $3.75M to $4.25M. (Note that this opinion does not include the required environmental permitting effort or potential airspace clearance, nor does it account for the extension of the parallel taxiway.)

Based on discussions that occurred during the *BST Runway Corridor Analysis* (now termed Phase 1 of the BST AMPU), the FAA stated that while they supported the potential runway extension proposal and enhancement of BST's capabilities, the proposal did not currently rise to the level that FAA would consider providing public funding to construct it. However, FAA did say that if state, local and/or private funding could be secured for the extension, that FAA may consider contributing funding for ancillary elements of the extension effort (i.e., environmental permitting, taxiway extension, etc.) as part of an overall public/private partnership. So, principal funding to construct this extension will ultimately have to come from a combination of private, local and state sources. If that funding cannot be secured, the project will not currently move forward.

f) What are the anticipated, long-term and/or on-going costs in dollars (e.g. snow plowing, runway maintenance, etc.) and how will those expenditures be funded?

Those figures have not been determined; however, it would be reasonable that any additional cost would be commensurate to the percentage increase in the amount of airfield pavement. Funding would have to be provided out of the BST maintenance budget.

g) How will displaced wetlands be addressed and what options and/or plan does the City have to replace designated areas? *(Please specify)*

For Alternative 3A to be constructed, not only would the aforementioned FAA environmental review process have to be undertaken, a formal environmental permitting process would similarly need to be undertaken with the Maine Department of Environmental Protection (DEP). Options and alternatives for any potential wetlands impacts and mitigation would have to be formally addressed at that time.

h) How will new water and/or snow run-off from the longer runway be addressed and what options and/or tools will the City employ to ensure that non-City land surrounding the airport will not be effected?

BST is required to have and maintain National Pollutant Discharge Elimination System (NPDES) permit coverage for its stormwater discharges. As authorized by the Clean Water Act, the NPDES permit program (http://water.epa.gov/polwaste/npdes/) controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Associated with that permit, BST must also prepare and maintain a Stormwater Pollution Prevention Plan (SWPPP) (http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-Pollution-Prevention-Plans-for-Construction-Activities.cfm). The current SWPPP for BST would have to be updated to account for the increase in impervious surfaces and ensure that the Airport remains in compliance with federal stormwater runoff regulations.

MEETING NOTES

project:	**BST AIRPORT MASTER PLAN UPDATE (AMPU) – PHASE II**
meeting date:	WEDNESDAY, MARCH 4, 2015 – 3:30 PM (EST)
meeting no:	2
location:	CITY OF BELFAST COUNCIL CHAMBERS, BELFAST, ME
subject:	PROJECT ADVISORY COMMITTEE (PAC) MEETING

ATTENDEES:

name	affiliation
James Truxes	EAA
Robert Dietz	AIRPORT NEIGHBOR
Donna Loomans	AIRPORT NEIGHBOR
Michael McCarthy	AIRPORT NEIGHBOR (ATTENDED VIA CONFERENCE CALL)
Jay Foster	PILOT (ATTENDED VIA CONFERENCE CALL)
Joshua Dickson	BUSINESS REPRESENTATIVE
Mary Mortier	CITY OF BELFAST (COUNCILOR)
Joseph Slocum	CITY OF BELFAST (CITY MANAGER)
Thomas Kittredge	CITY OF BELFAST (BST MANAGER)
Wayne Marshall	CITY OF BELFAST (CITY PLANNER)
Sadie Lloyd	CITY OF BELFAST (ASST. CITY PLANNER)
Stacie Haskell	MAINEDOT AVIATION (COULD NOT ATTEND)
Ralph Nicosia-Rusin	FEDERAL AVIATION ADMINISTRATION (FAA) (COULD NOT ATTEND)
Rich Lasdin	AIRPORT SOLUTIONS GROUP (ASG)
James Miklas	AIRPORT SOLUTIONS GROUP (ASG)

ATTACHMENTS:

The following are attached to this document:

1. A copy of the presentation;
2. Meeting sign-in sheet;
3. A copy of the current BST Capital Improvement Plan (CIP);
4. A copy of neighbor questions; and
5. A copy of the comment form.

MEETING PURPOSE / AGENDA:

This was the second meeting of the Project Advisory Committee (PAC) for the Belfast Municipal Airport (BST) Airport Master Plan Update (AMPU) – Phase II. The primary purpose of this meeting was to inform the PAC on the current status of the project, discuss key issues that have been identified and to solicit feedback regarding the preliminary development of alternatives. Additionally, as detailed in the agenda (see attached presentation for meeting agenda), the meeting focused on the following questions and elements:

1. Introductions / Review
2. Where are we in the Master Plan Process?

3. Demand/Capacity & Facility Requirements
4. Runway 15-33 Development Alternatives
5. Other Development Considerations
6. Next Steps

PROJECT INTRODUCTIONS:

Prior to introductions of those attending the meeting, Thomas Kittredge (BST Manager) thanked the members of the PAC for their participation in this process and then provided an opening statement. Mr. Kittredge again emphasized the importance of this effort for the future of the Airport. He then introduced Jim Miklas (ASG), the project manager for the BST AMPU, who would also give a presentation and lead discussions during the meeting.

Mr. Miklas reminded the PAC of the following points discussed in PAC Meeting 1:

- The role of the PAC and its members is to serve as project advisors to ensure the BST Master Plan Update addresses the key issues facing the Airport today and into the future.
- 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 & future aviation demand, while considering environmental and community factors.
- BST is an important transportation and economic asset for the City of Belfast that must be maintained (and developed, as appropriate) for the long-term benefit of the City and the surrounding area. As documented in the 2007 *Economic Impacts of Airports In Maine* study produced by MaineDOT, BST was responsible for 62 jobs (on- and off-airport) having $1.6M in payroll, generating $3.9M in economic activity.

Mr. Miklas then emphasized that the primary purpose of PAC Meeting 2 was to be an open forum to review/share ideas, and that no decisions had yet been made on any of the draft alternative development concepts being presented during the meeting. He also asked that everyone in attendance sign the attendance sheet and noted that there were feedback forms available for those attending to provide written comments during or after the meeting.

POINTS OF DISCUSSION:

Mr. Miklas gave a presentation (see attached) to facilitate group discussion. Points of discussion are encompassed in the following general categories and notes. (Note that discussions related to these categories occurred at different points of the meeting; therefore, the following may not accurately reflect the chronological order in which they occurred):

General Project Status

- Mr. Miklas provided an overview on the progress of the AMPU. He said that this was the second of a scheduled three PAC meetings.

- Mr. Miklas reviewed the general project objectives as defined by FAA and MaineDOT. He also read through the specific project goals as established by the PAC for the BST AMPU (see attached presentation).
- He noted that draft chapters have been completed for the Inventory and Forecast tasks, and that the Facility Requirements chapter was nearing completion. He said that these would all ultimately be sent to the PAC for review shortly.
- Mr. Miklas provided a general overview of the airport as related to the Inventory, including a review of the typical aircraft that currently operate at BST.

AMPU Forecasts

- Mr. Miklas reminded the PAC that the AMPU Forecasts had to be formally approved by the FAA, and therefore that forecasts had to be both reasonable and defensible The FAA review of the proposed forecasts was currently in process at the time of the meeting.
- Mr. Miklas provided an overview of the proposed forecast methodologies and resultant forecast range (see attached presentation). He also mentioned some of the trends in general aviation that have been identified by the FAA. These include the continuing gradual decline in single-engine piston aircraft and the aggressive growth in turbine/jet aircraft. *(Note: These trends are projected by the FAA to continue into the foreseeable future and are in part driven to varying degrees by the following considerations, among others:*
    - *The aging and progressive retirement of the single-engine piston aircraft fleet, coupled with the increased cost of replacement aircraft;*
    - *The increased cost of operating and maintaining an aircraft (including increasing costs for fuel, insurance, maintenance, storage, etc.);*
    - *Anticipated future challenges associated with obtaining 100LL (Avgas), the costs associated with it, and the development of a potential replacement fuel; and*
    - *Increasing demand for corporate/business aviation.)*
- There were questions raised as to the source and accuracy of both the existing aircraft operations data and based aircraft data. Mr. Miklas acknowledged that collecting operational data is challenging at a non-towered airport like BST. In such cases, it is standard practice to differ to official FAA data, which was done for the BST forecast. It was noted that MaineDOT Aviation is currently sponsoring a program to equip all state airports (including BST) with "G.A.R.D" (General Audio Recording Device) system that allows the airport to track aircraft operations and should produce more accurate data based on radio transmissions. There was some discussion as to the accuracy of that methodology (current settings are 4 transmissions per takeoff and 5 transmissions per landing). A PAC member/pilot believed those numbers to be too high, which would result in under-reported operational totals. With respect to based aircraft, the existing total was derived from FAA data. Mr. Kittredge noted that he would attempt to review and potentially collect updated information.

- Mr. Miklas asked the PAC membership to report if they had any knowledge of new economic initiatives for Belfast that may have the potential to impact the forecasts.
- A question was raised regarding the defined market area for BST with respect to socioeconomic data. The three counties that were assumed to encompass the BST market area included Waldo, Knox and Hancock. *(Note that counties were used since that is how appropriate socioeconomic data is most often collected and categorized.)*

Design Aircraft

- Related to forecasting, Mr. Miklas described the importance of and process utilized in determining the "design aircraft" (defined as the most demanding aircraft with 500+ annual operations) and its associated Runway Design Code (RDC) for BST's runway. He reported that the RDC was not projected to change over the 20-year planning period from what is currently identified on its existing Airport Layout Plan (ALP). The RDC for Runway 15-33 will remain at B-II (see attached presentation for descriptions).

FAA Airfield Demand / Capacity Analysis

- Mr. Miklas stated that the projected overall capacity of BST's single runway (based on standard FAA criteria) is 230,000 annual operations. Given that BST has only 10,000 annual operations, which are not forecasted to increase significantly, it was determined that BST's current capacity is adequate to fulfill area demand throughout the 20-year planning period.

FAA Airport Design Standards

- Mr. Miklas provided a brief overview of several FAA airport design standards that must be examined/reviewed as part of an AMPU. He noted that BST is compliant in nearly all areas, other than in runway/taxiway separation requirements for Runway 15-33 and Taxiway A. That standard states that the centerline-to-centerline separation must be 240' and the existing condition is 200'. The FAA will require that this deficiency be addressed within this AMPU.
- He also said that while it appears that BST's Runway Protection Zones (RPZs) are currently generally compliant, the City should make efforts to ensure that only airport-compatible development be allowed in those zones. It was acknowledged that there are several houses located in the existing RPZs; however, this is not necessarily inconsistent with FAA recommendations.
- Mr. Miklas then provided a general introduction/overview of FAA airspace regulations and requirements.

Facility Requirements

- Mr. Miklas reviewed the range of airport facilities that are being reviewed as part of the Facility Requirements chapter. These are related to operational considerations (e.g.

RW/TW length & width, NAVAIDs / instrument approaches, airspace, facilities & services); based /transient aircraft considerations (e.g. hangar space, apron space, etc.), and potential changes to the fleet mix.

- In reviewing the facility requirement categories, he noted that BST has a partial parallel taxiway programmed for construction in 2017 (90% of that project will be funded by the FAA, 5% by the State, and 5% by the City of Belfast). This is considered to be an important project by the FAA since it will significantly enhance the level of safety at BST by allowing aircraft to minimize occupancy time on the runway. This project also will address the runway/taxiway centerline separation deficiency noted above. The project will require an exchange of properties with the Maine National Guard – this action is already underway and is expected to be resolved soon. Mr. Miklas presented a graphic showing the proposed, full-length taxiway and the proposed property transfer.
- Mr. Miklas reviewed the projected hangar and apron facility requirements based on the forecast. He noted that the forecasts show a need for additional hangar space over the 20-year planning period, but showed that this demand could be accommodated within the footprint of the existing terminal area. The current aircraft aprons are projected to be sufficient for future demand, but may require some remarking to improve efficiency. Finally, he acknowledged an additional planning consideration is that like-operations should be congregated together (i.e., commercial operations should ideally be co-located with other commercial operations). He said that would be factored into the ultimate facility alternatives. It was also noted that hangar buildings on BST are all privately constructed/owned, and that a flat rate ground lease is paid on a square footage basis.
- It was noted by a PAC member that it is important for BST to consider having hangars available for transient aircraft due to security, safety and weather/deicing considerations. Some aircraft operators simply cannot overnight at an airport if there is not hangar space available.
- Mr. Miklas then presented a graphic depicting the areas on the existing Airport that might be available for long-term development. These are areas located on-airport, outside of wetlands and outside of FAA airport design safety setbacks. He reviewed each site and described their pros/cons and potential constructability. He also noted that there may be areas available on the Airport that may be designated as being available for "non-aviation related development." There was general discussion by the PAC related to local knowledge of the various sites.

Runway Length Recommendations

- Mr. Miklas reviewed the current design standards and specifications for RW 15-33. He noted that based on the current and projected aircraft fleet mix (RDC = B-II), the existing runway length, width, and design standards are adequate to meet demand throughout the 20-year planning period. (This was confirmed through a review of FAA standard requirements and recommendations.)

- Mr. Miklas also stated that the FAA requires that an AMPU closely examine potential future airport expansion considerations. This includes anticipating increased aircraft weight (and associated runway length) if failure to do so could lead to the additional expense of reconstructing or relocating facilities in the future. As a result, the potential facility implications associated with this possibility were examined as part of this effort.
- Mr. Miklas reviewed the history of Phase 1 of the AMPU, which was termed a "Runway Corridor Analysis." He stated that the results of the effort were only preliminary and not final. Inclusion of those results in this AMPU and would be confirmed by the PAC.
- It was noted that the Runway Corridor Analysis assumed a slight shift in the fleet mix from "aircraft up to small-sized corporate" to "aircraft up to mid-sized corporate". In following FAA design standards and recommendations, this would require a runway length of up to 4,990'. However, through direct coordination with aircraft operators, that runway length requirement was refined down to 4,700 feet.
- Mr. Miklas emphasized that exploring alternatives associated with this potential scenario was neither currently justified by existing conditions, nor endorsed by the Airport, the FAA or MaineDOT Aviation. These alternatives are a planning exercise to explore possible future development that could be required at BST if opportunities presented themselves. In effect, this would "protect for future development potential" at the Airport by including it on the Airport Layout Plan, much like how a city may establish "paper roads" for potential future housing developments. Mr. Miklas also acknowledged that if an extension of RW 15-33 were to ever become more realistic, there would be multiple additional federal environmental and planning efforts that would have to be undertaken that would include extensive public coordination.
- Mr. Miklas then discussed the significant physical constraints surrounding the airport and the potential impacts associate with each. He then presented six (6) runway development alternatives, as well as an additional alternative modification that applies declared distances (see attached presentation for all alternatives). Mr. Miklas stated that the Runway Corridor Analysis recommended Alternative 3A, which resulted in a runway takeoff length of 4,710 feet (meeting the requirements of potential aircraft operators) while remaining on-airport and minimizing physical impacts.
- Mr. Miklas presented a subjective decision matrix to help weigh some of the factors that would have to be considered when choosing a recommended alternative. He said that this had simply been presented as tool to help the PAC consider some of the many factors that should be examined when reviewing the alternatives. The results shown on that matrix are not final and a decision regarding the recommended alternative has not been made.
- Mr. Miklas mentioned that potential airspace impacts would have to be considered and would be analyzed prior to the next PAC meeting.
- There was a question regarding the positioning of the RPZs with respect to Alternative 3A. Mr. Miklas said that he would review the criteria and provide a clarifying graphic. He also noted that the alternative assumed maximum application of clearways, but that may not be ultimately appropriate.

Other Development Considerations

- Mr. Wayne Marshall (City of Belfast – City Planner) provided an overview of the City's current Airport Overlay Zone. He described how that zone was established, its shortcomings, and how the City planned on updating that Zone. He said that this will be

accomplished in a planning effort that is separate from, but related to, the BST AMPU. He suggested that his staff will start working on this soon and that the Planning Board may start to address this in June. There was also a description of the extensive public coordination process that would be required associated with any zoning changes.

- Mr. Miklas noted that the Airport currently has obstruction issues as related to its existing airspace surfaces. He said that these obstructions and the associated effort to remove them are completely unrelated to any potential runway extension development concept. The existing obstructions must be removed to maintain an appropriate level of safety for the current runway environment. The City indicated that notifications had been sent out related to this issue to all neighbors that abut BST. Included in that letter was an announcement of a public informational meeting to be held on March 18, 2015.
- Mr. Miklas then reviewed several draft landside development concepts. He also listed the various NAVAID improvements that would likely be proposed for BST, as well as service improvements (i.e., fuel).

Points of Discussion / Questions

- A question was asked about aircraft engine noise and if that was improving. Several members of the PAC responded that aircraft engine technologies have improved drastically over the past 30 years, resulting in quieter turbine engines. It was also noted that improved technologies have allowed departing turbine aircraft to typically be at a much higher altitude leaving airport boundary, resulting quieter operations. Engine noise improvements have generally not occurred for piston-engine aircraft.
- A PAC member said that if BST is to accommodate more jet/turbine traffic in the future, it will need to have additional services and facilities. Specifically mentioned were the need for public bathrooms, the need for Jet-A on the airport (in a fuel truck), the need for deicing, and other pilot amenities (such as a flight planning room, weather services, crew cars, etc.).
- There was a question regarding if the AMPU would project the potential "build ability" of the sites identified for future hangar development. Mr. Miklas said that there would be a high-level assessment made of the general sites, as well as "order-of-magnitude" costs provided.
- There were some concern related to maintaining separation between commercial operations and other based aircraft hangar facilities.
- General questions were raised about area utilities – in particular, if sewer is projected to be available or if a septic tank/field would be required.
- There were several questions by the PAC related to the federal funding processes and how projects are ultimately prioritized. (For review and consideration by the PAC is a copy of BST's current Capital Improvement Program (CIP) that has been approved by both the FAA and MaineDOT Aviation.) Primary responses included the following:
    - The CIP must be updated by the City on an annual basis;

  - Federal funding is provided to the airport through two "pots" of money: entitlement funding and discretionary funding. The former is $150K that BST receives every year for eligible projects, and the latter must be applied for and competed against other airport projects within the FAA's New England region. Those projects that rate highest in an FAA funding prioritization methodology have the greatest likelihood of receiving discretionary funding.
  - If discretionary money has been committed by the FAA to an airport for a given year (such as the parallel taxiway) and the airport chooses to delay that project, there is no guarantee that those funds will remain available in a future year (i.e., those funds could be lost to the airport).
  - Mr. Miklas said that inclusion of a particular project on the ALP does not guarantee that the project will be provided funding by the FAA. There is a separate rigorous process that must be undertaken to qualify for project funding from the State and/or the FAA (i.e., application for discretionary funding).
- There was a question if the proposed development projects will be presented for ultimate approval by the City Council individually or as a complete plan. It was noted that some projects have to be related due to their functionality, but that the larger concepts would be addressed individually.
- There was a question if the inclusion of a particular project in the AMPU and/or the ALP commits the airport to that project in the future. The answer was "no" in that the AMPU/ALP are simply the tools used to ensure that a given proposed project complies with federal/state/local requirements. If an airport decides to not move forward with a particular project that is included in its AMPU, that project will simply be removed from the CIP and then later eliminated from the AMPU/ALP during a subsequent update (note that AMPUs are generally updated every 5 to 10 years).
- There was a question related to presenting the results of the PAC efforts to the public. There was general discussion related to how that public coordination might occur and how that would relate to the City Council. The City will work to determine the best/most effective course of action in coordinating with the public and the City Council.
- A series of questions were submitted by airport neighbors (see attached). ASG will work to prepare appropriate responses to those questions and have those available prior to PAC Meeting #3.

The meeting adjourned at approximately 5:42 PM EST.

These meeting notes have been respectfully compiled by James Miklas (ASG). Please forward any comments/corrections to Mr. Miklas at jmiklas@airportsolutionsgroup.com

Meeting: BST AMPU 2014 - *PAC Meeting 2* Location: Belfast City Hall Date: March 4, 2015 11:00AM

SIGN IN SHEET

	NAME	REPRESENTING	PHONE	EMAIL
1	Thomas Wiltrout	Belfast	338-3370 x16	economicdevelopment@cityofbelfast.org
2	Josh Dickson	LifeFlight	207-219-7911	joshmedic@gmail.com
3	Rob Dietz	Belfast	338-2444	robdietz08@gmail.com
4	Jim Truxes	EAA	338-9985	rjtruxes@myfairpoint.net
5	Donna Loomans	Neighbors	505-5586	jsdonna@gmail.com
6	Joe Slocum	City Manager	338-3370 x10	jslocum@cityofbelfast.org
7	Mary Mortier	City Council	323-1748	marym@92-94main.com
8	Jay Foster (CALL IN)	Pilot		
9	Michael McCarthy (CALL IN)	Neighbor		
10	Wayne Marshall	City Planner		
11	Sadie Lloyd	Asst. City Planner		
12	James Miklas	ASG	(281) 491-0083	JMiklas@AirportSolutionsGroup.com
13	Rich Lasden	ASG	"	RLasden@AirportSolutionsGroup.com
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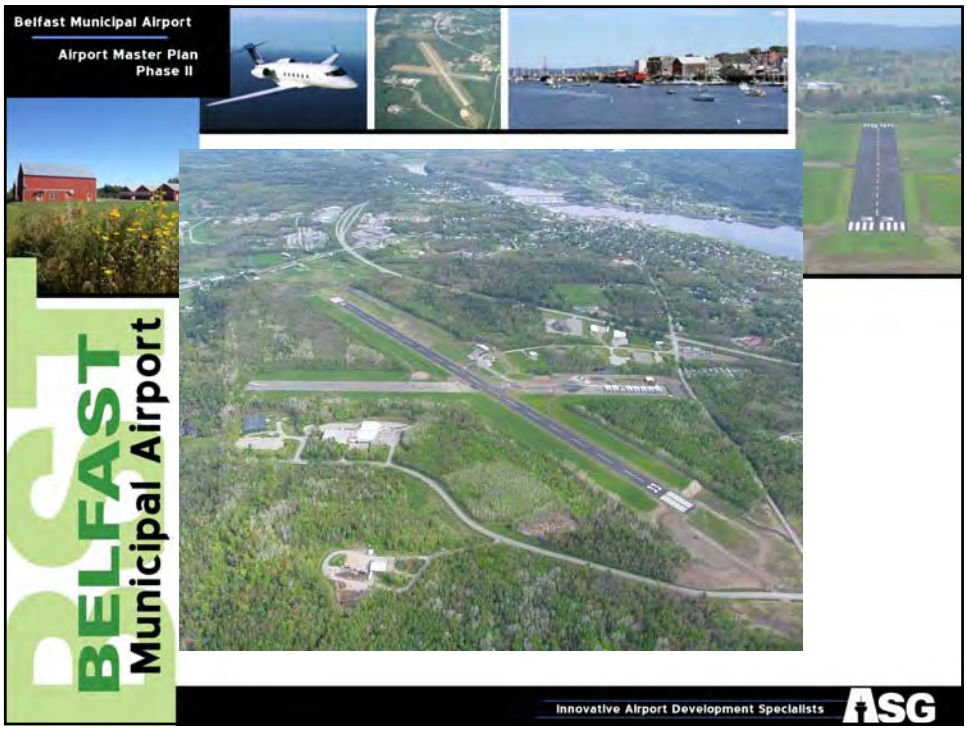
BST
BELFAST
Municipal Airport
ASG
Innovative Airport Development Specialists
Project Advisory Committee Meeting # 2
March 4, 2015


Belfast Municipal Airport
Airport Master Plan
Phase II
BST
BELFAST
Municipal Airport
Innovative Airport Development Specialists
ASG


Belfast Municipal Airport
Airport Master Plan
Phase II
Agenda
1. Introductions / Review
2. Where are we in the Master Plan Process?
3. Demand/Capacity & Facility Requirements
4. Runway 15-33 Development Alternatives
5. Other Development Considerations
6. Next Steps
BELFAST
Municipal Airport
Innovative Airport Development Specialists
ASG


Belfast Municipal Airport
Airport Master Plan
Phase II
Introductions / Review
Project Advisory Committee (PAC) Membership
Airport Advisory Committee
James Truxes
City of Belfast
Mary Mortier (Councilor)
Joseph Slocum (City Manager)
Thomas Kittredge (BST Manager)
Sadie Lloyd (Asst. Planner)
Airport Neighbors
Robert Dietz
Donna Loomans
Michael McCarthy
Federal Aviation Administration (FAA)
Ralph Nicosia-Rusin
Aviation Rep
Jay Foster (Pilot)
TBD
MaineDOT Aviation
Stacie Haskell
Business Rep
Joshua Dickson
Project Manager*
James Miklas (ASG)
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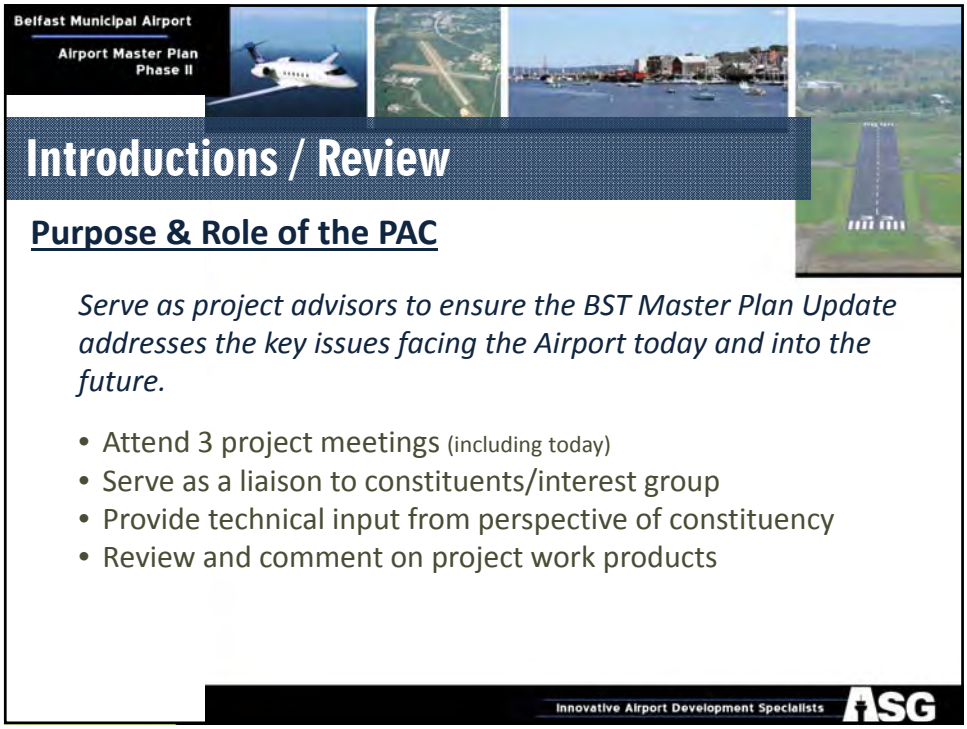
Belfast Municipal Airport
Airport Master Plan
Phase II
Introductions / Review
Purpose & Role of the PAC
Serve as project advisors to ensure the BST Master Plan Update addresses the key issues facing the Airport today and into the future.
• Attend 3 project meetings (including today)
• Serve as a liaison to constituents/interest group
• Provide technical input from perspective of constituency
• Review and comment on project work products
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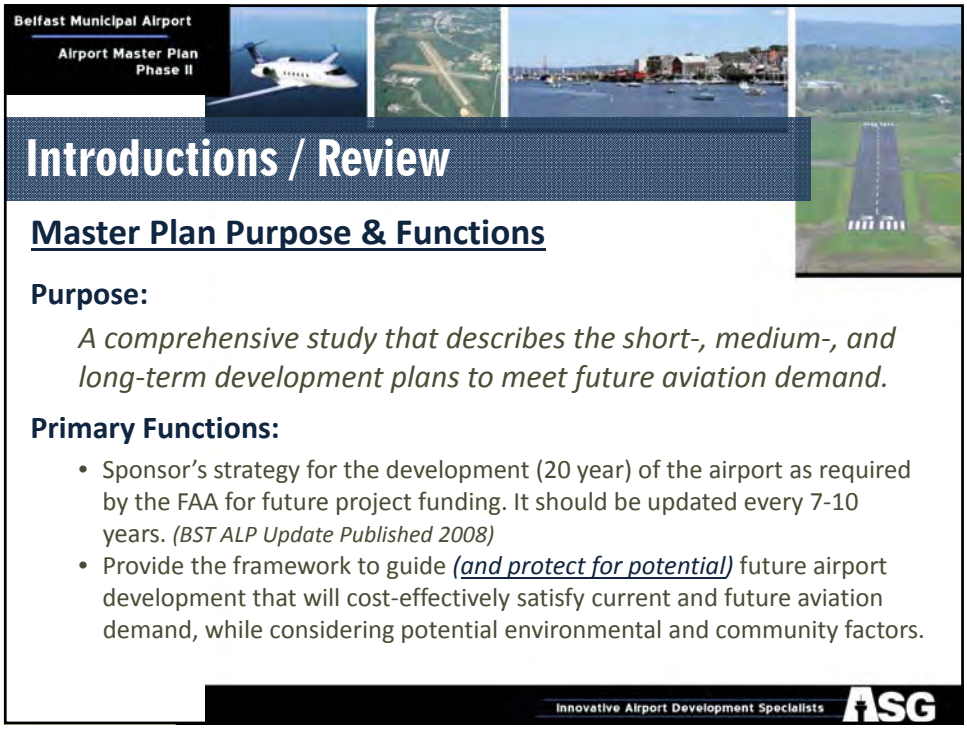
Belfast Municipal Airport
Airport Master Plan
Phase II
Introductions / Review
Master Plan Purpose & Functions
Purpose:
A comprehensive study that describes the short-, medium-, and long-term development plans to meet future aviation demand.
Primary Functions:
• Sponsor's strategy for the development (20 year) of the airport as required by the FAA for future project funding. It should be updated every 7-10 years. (BST ALP Update Published 2008)
• Provide the framework to guide (and protect for potential) future airport development that will cost-effectively satisfy current and future aviation demand, while considering potential environmental and community factors.
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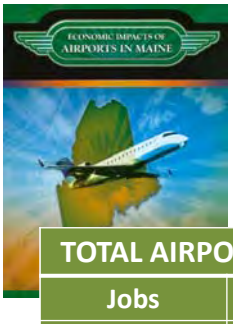
Belfast Municipal Airport
Airport Master Plan
Phase II

Introductions / Review

Key Planning Interfaces (2007 *Economic Impacts of Airports In Maine*)



TOTAL AIRPORT IMPACTS	
Jobs	62
Payroll	$1.6M
Output	$3.9M

TOTAL STATEWIDE IMPACTS	
Jobs	19,381
Payroll	$448M
Output	$1.4B

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Belfast Municipal Airport
Airport Master Plan
Phase II

Introductions / Review

Master Plan Objectives

- **Document the issues** that are considered/addressed at the time of the plan
- **Justify the proposed development** through the technical, economic, and environmental investigation of concepts and alternatives.
- **Graphic presentation** of development and anticipated land uses in the vicinity of the airport.
- **Realistic implementation schedule**, particularly the short-term capital improvement program (CIP).
- **Propose an achievable financial plan** to support the implementation schedule.

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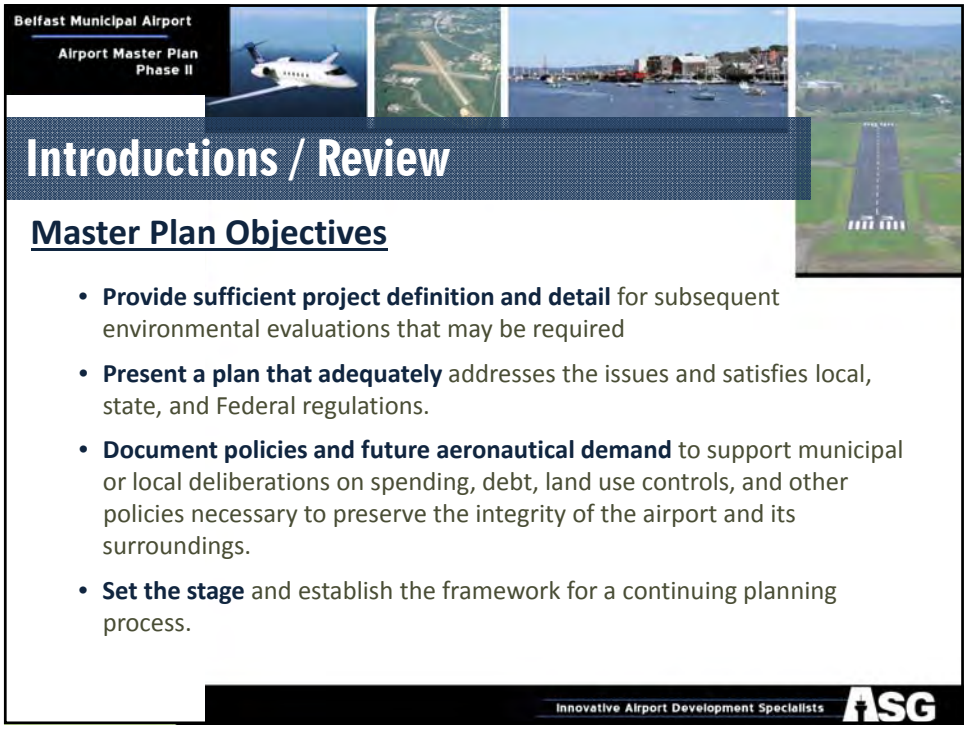
Belfast Municipal Airport
Airport Master Plan
Phase II
Introductions / Review
Master Plan Objectives
• Provide sufficient project definition and detail for subsequent environmental evaluations that may be required
• Present a plan that adequately addresses the issues and satisfies local, state, and Federal regulations.
• Document policies and future aeronautical demand to support municipal or local deliberations on spending, debt, land use controls, and other policies necessary to preserve the integrity of the airport and its surroundings.
• Set the stage and establish the framework for a continuing planning process.
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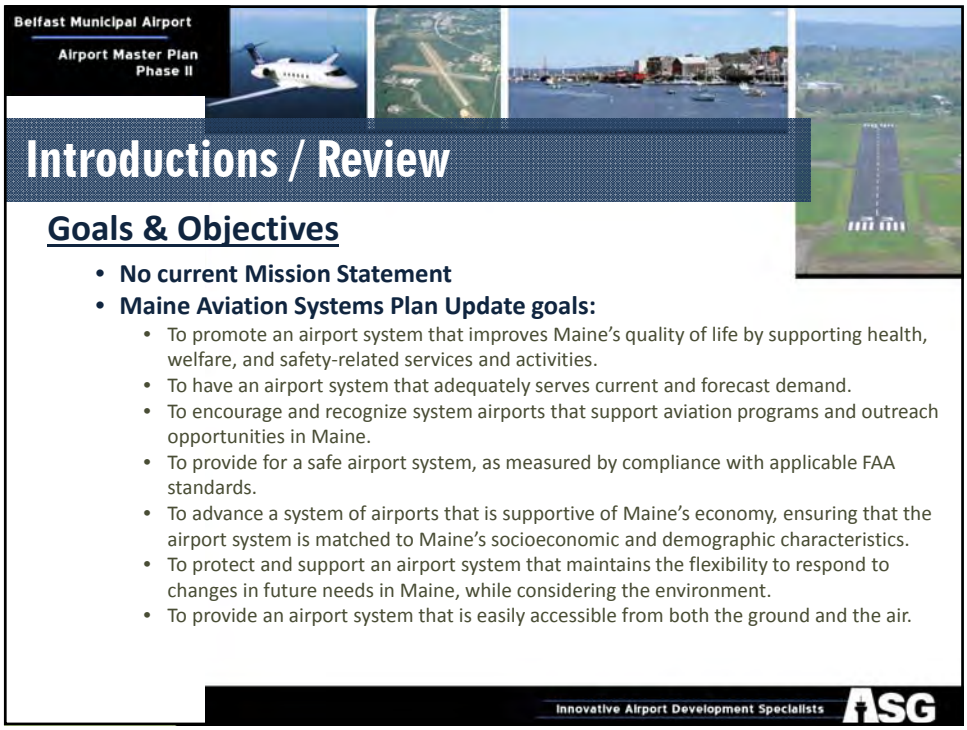
Belfast Municipal Airport
Airport Master Plan
Phase II
Introductions / Review
Goals & Objectives
• No current Mission Statement
• Maine Aviation Systems Plan Update goals:
• To promote an airport system that improves Maine's quality of life by supporting health, welfare, and safety-related services and activities.
• To have an airport system that adequately serves current and forecast demand.
• To encourage and recognize system airports that support aviation programs and outreach opportunities in Maine.
• To provide for a safe airport system, as measured by compliance with applicable FAA standards.
• To advance a system of airports that is supportive of Maine's economy, ensuring that the airport system is matched to Maine's socioeconomic and demographic characteristics.
• To protect and support an airport system that maintains the flexibility to respond to changes in future needs in Maine, while considering the environment.
• To provide an airport system that is easily accessible from both the ground and the air.
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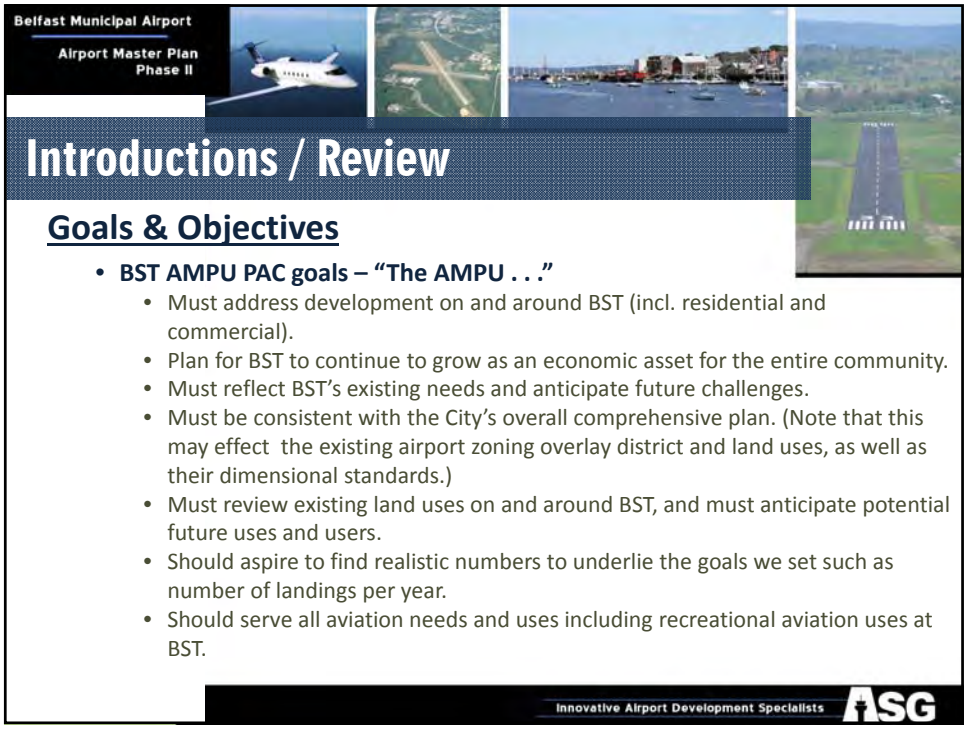
Belfast Municipal Airport
Airport Master Plan
Phase II
Introductions / Review
Goals & Objectives
• BST AMPU PAC goals – "The AMPU . . ."
• Must address development on and around BST (incl. residential and commercial).
• Plan for BST to continue to grow as an economic asset for the entire community.
• Must reflect BST's existing needs and anticipate future challenges.
• Must be consistent with the City's overall comprehensive plan. (Note that this may effect the existing airport zoning overlay district and land uses, as well as their dimensional standards.)
• Must review existing land uses on and around BST, and must anticipate potential future uses and users.
• Should aspire to find realistic numbers to underlie the goals we set such as number of landings per year.
• Should serve all aviation needs and uses including recreational aviation uses at BST.
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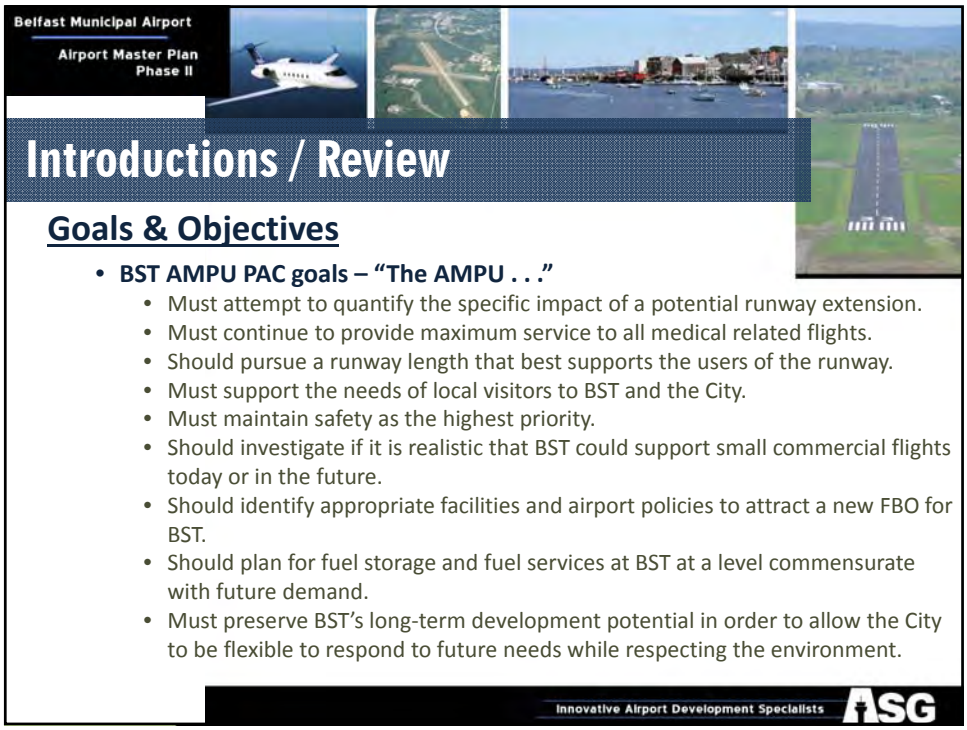
Belfast Municipal Airport
Airport Master Plan
Phase II
Introductions / Review
Goals & Objectives
• BST AMPU PAC goals – "The AMPU . . ."
• Must attempt to quantify the specific impact of a potential runway extension.
• Must continue to provide maximum service to all medical related flights.
• Should pursue a runway length that best supports the users of the runway.
• Must support the needs of local visitors to BST and the City.
• Must maintain safety as the highest priority.
• Should investigate if it is realistic that BST could support small commercial flights today or in the future.
• Should identify appropriate facilities and airport policies to attract a new FBO for BST.
• Should plan for fuel storage and fuel services at BST at a level commensurate with future demand.
• Must preserve BST's long-term development potential in order to allow the City to be flexible to respond to future needs while respecting the environment.
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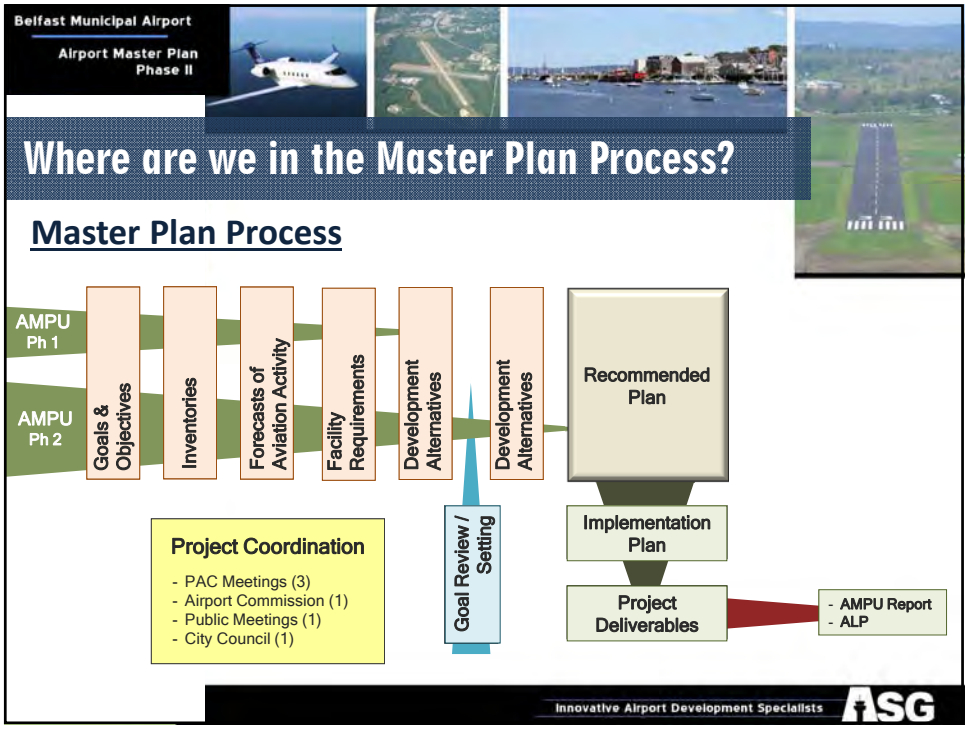
Belfast Municipal Airport
Airport Master Plan
Phase II
Where are we in the Master Plan Process?
Master Plan Process
AMPU Ph 1
AMPU Ph 2
Goals & Objectives
Inventories
Forecasts of Aviation Activity
Facility Requirements
Development Alternatives
Development Alternatives
Recommended Plan
Implementation Plan
Project Deliverables
- AMPU Report
- ALP
Goal Review / Setting
Project Coordination
- PAC Meetings (3)
- Airport Commission (1)
- Public Meetings (1)
- City Council (1)
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Belfast Municipal Airport
Airport Master Plan
Phase II
Where are we in the Master Plan Process?
Inventory
1. Airport Overview - location, history, role, economic impact, services, other data
2. Airside Facilities - runways & taxiways
3. Landside Facilities - buildings, fueling, aircraft & auto parking, hangars, terminal, access, utilities
4. Airspace & NAVAIDS – NAS, navigational aids, Part 77, TERPS (approach procedures)
5. Competition - other area airports
6. Environs - zoning, land use, socioeconomics, environmental considerations
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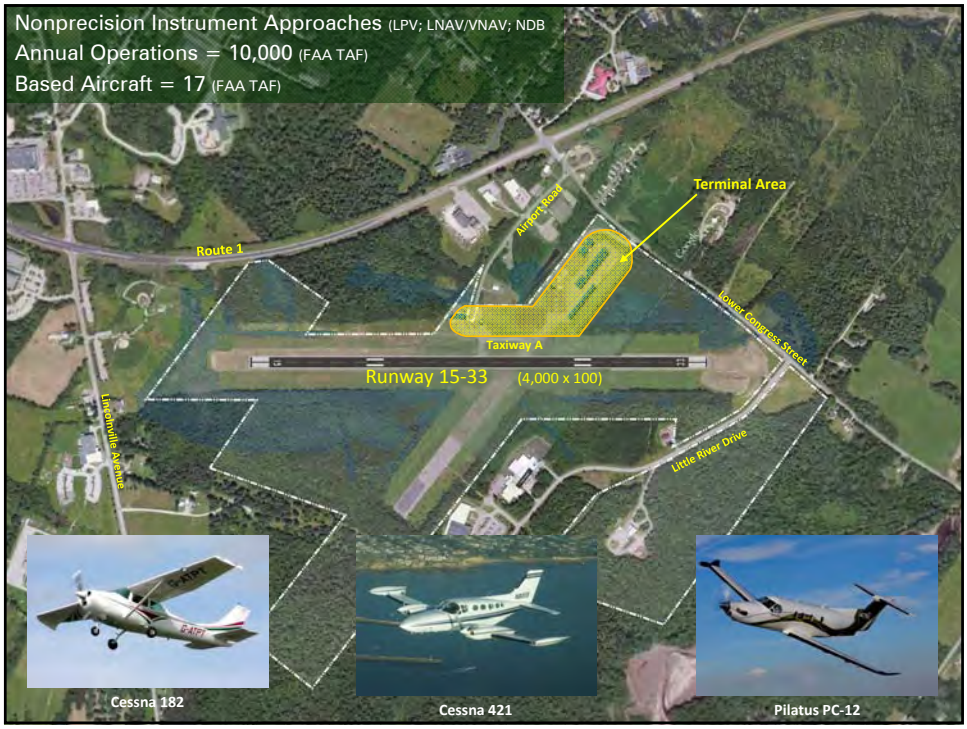
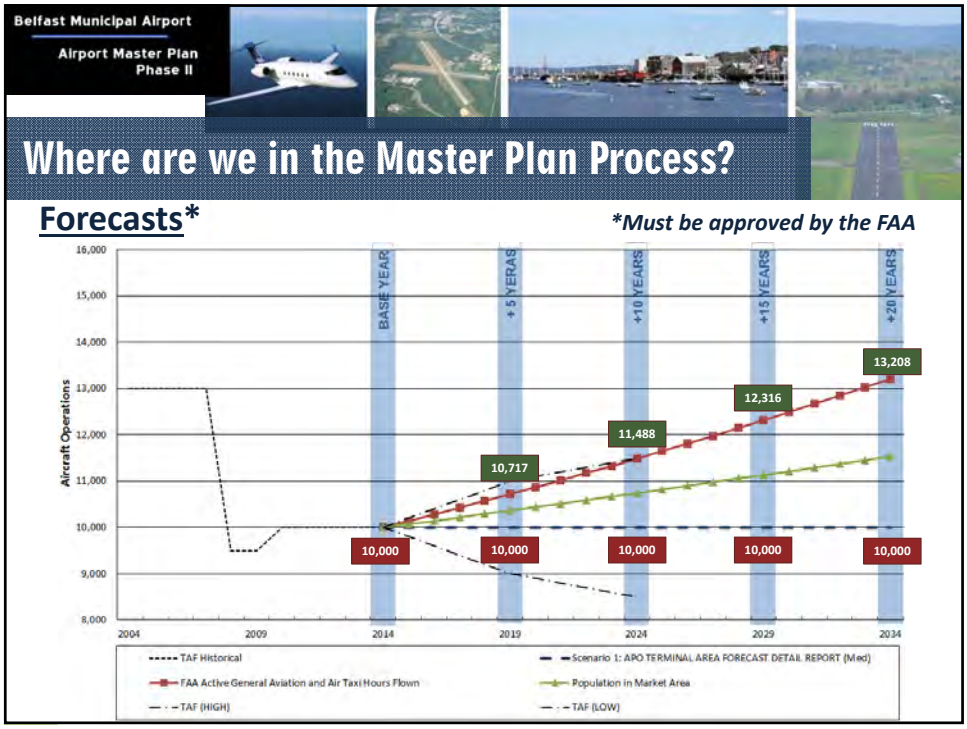
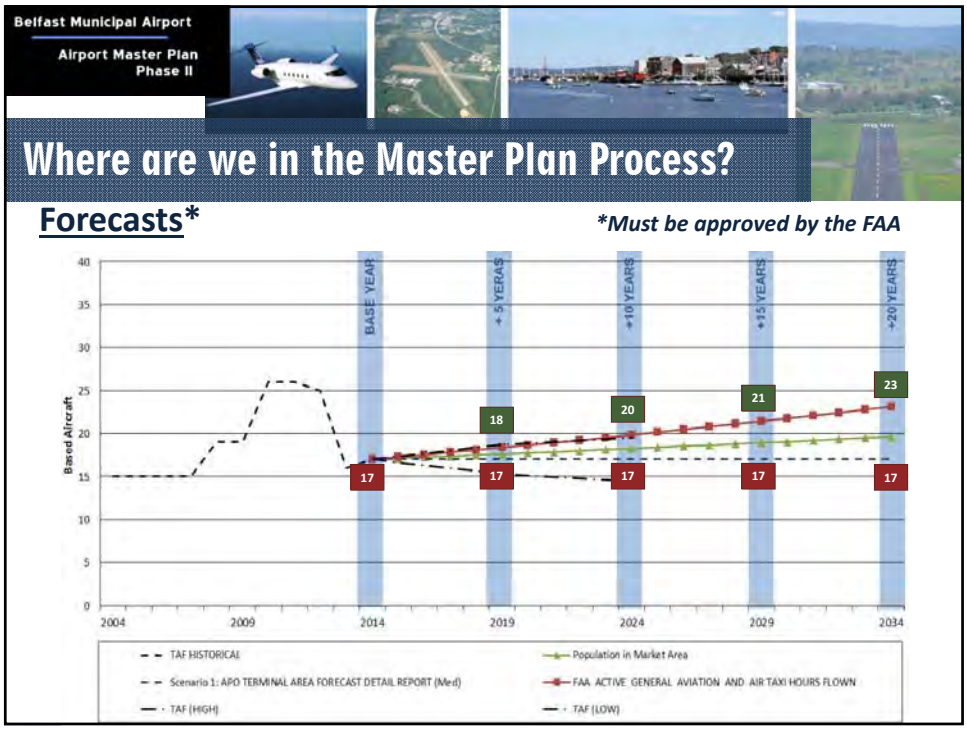
ASG


Nonprecision Instrument Approaches (LPV; LNAV/VNAV; NDB
Annual Operations = 10,000 (FAA TAF)
Based Aircraft = 17 (FAA TAF)
Terminal Area
Airport Road
Route 1
Taxiway A
Runway 15-33 (4,000 x 100)
Tower Congress Street
Little River Drive
Lincolnville Avenue
Cessna 182
Cessna 421
Pilatus PC-12


Belfast Municipal Airport
Airport Master Plan
Phase II
Where are we in the Master Plan Process?
Forecasts*
1. Current Levels
• Based Aircraft: 17
• Operations: 10,000 (annual)
2. Forecasting Approach – reasonable & defensible
• "Forecasting Range"
• 10 methodologies employed (incl. socioeconomics, regression, OPBA, local econ development initiatives, other forecast comparisons)
• Three methods selected to establish range
• High: FAA Aerospace Forecasts FY2014-2033 (1.55% AAG)
• Mid: Population in the Market Area (0.72% AAG)
• Low: FAA TAF (0.00% AAG)
*Must be approved by the FAA
Innovative Airport Development Specialists
ASG


Belfast Municipal Airport
Airport Master Plan
Phase II
Where are we in the Master Plan Process?
Forecasts*
*Must be approved by the FAA
Aircraft Operations
16,000
15,000
14,000
13,000
12,000
11,000
10,000
9,000
8,000
BASE YEAR
+5 YEARS
+10 YEARS
+15 YEARS
+20 YEARS
13,208
12,316
11,488
10,717
10,000
10,000
10,000
10,000
10,000
2004
2009
2014
2019
2024
2029
2034
TAF Historical
Scenario 1: APO TERMINAL AREA FORECAST DETAIL REPORT (Med)
FAA Active General Aviation and Air Taxi Hours Flown
Population in Market Area
TAF (HIGH)
TAF (LOW)


Belfast Municipal Airport
Airport Master Plan
Phase II
Where are we in the Master Plan Process?
Forecasts*
*Must be approved by the FAA
Based Aircraft
40
35
30
25
20
15
10
5
0
BASE YEAR
+5 YEARS
+10 YEARS
+15 YEARS
+20 YEARS
23
21
20
18
17
17
17
17
17
2004
2009
2014
2019
2024
2029
2034
TAF HISTORICAL
Scenario 1: APO TERMINAL AREA FORECAST DETAIL REPORT (Med)
TAF (HIGH)
Population in Market Area
FAA ACTIVE GENERAL AVIATION AND AIR TAXI HOURS FLOWN
TAF (LOW)

Belfast Municipal Airport
Airport Master Plan
Phase II

Where are we in the Master Plan Process?

Design Aircraft

Runway Design Code (RDC) *(per FAA AC 150/5300-13A)*

- Most demanding aircraft with 500+ annual operations
- Existing / Future RDC: RW 12-30 (B-II)

Aircraft Approach Category (AAC)	
Approach Category	Approach Speed
A	< 91 knots
B	91 knots - < 121 knots
C	121 knots - < 141 knots
D	141 knots - < 166 knots
E	166 knots or more

Aircraft Design Group (ADG)		
Design Group	Wingspan	Tail Height
I	< 49 feet	< 20 feet
II	49 feet - < 79 feet	20 feet - < 30 feet
III	79 feet - < 118 feet	30 feet - < 45 feet
IV	118 feet - < 171 feet	45 feet - < 60 feet
V	171 feet - < 214 feet	60 feet - < 66 feet
VI	214 feet - < 262 feet	66 feet - < 80 feet

Innovative Airport Development Specialists ASG

Belfast Municipal Airport
Airport Master Plan
Phase II

Demand/Capacity & Facility Requirements

Task Elements

1. Airfield Demand / Capacity Analysis
2. Runway Length Recommendations
3. Design Standards Review / Evaluation
4. Airside Facilities Requirements
5. Landside Facilities Requirements

Innovative Airport Development Specialists ASG

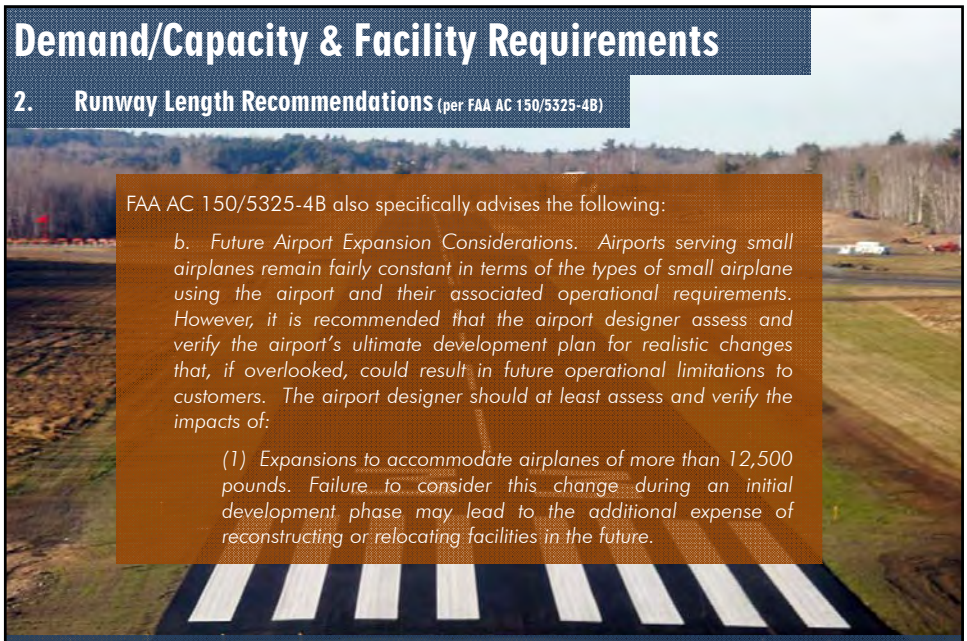
Demand/Capacity & Facility Requirements

1. Airfield Demand / Capacity Analysis (per FAA AC 150/5060-5)

Annual Service Volume (ASV)	= 230,000 operations
Hourly Capacity	= 77 ops / hr (VFR); 57 ops / hr (IFR)
Annual BST Operations (2014)	= 10,000 (4.4% capacity)

Demand/Capacity & Facility Requirements

2. Runway Length Recommendations (per FAA AC 150/5325-4B)

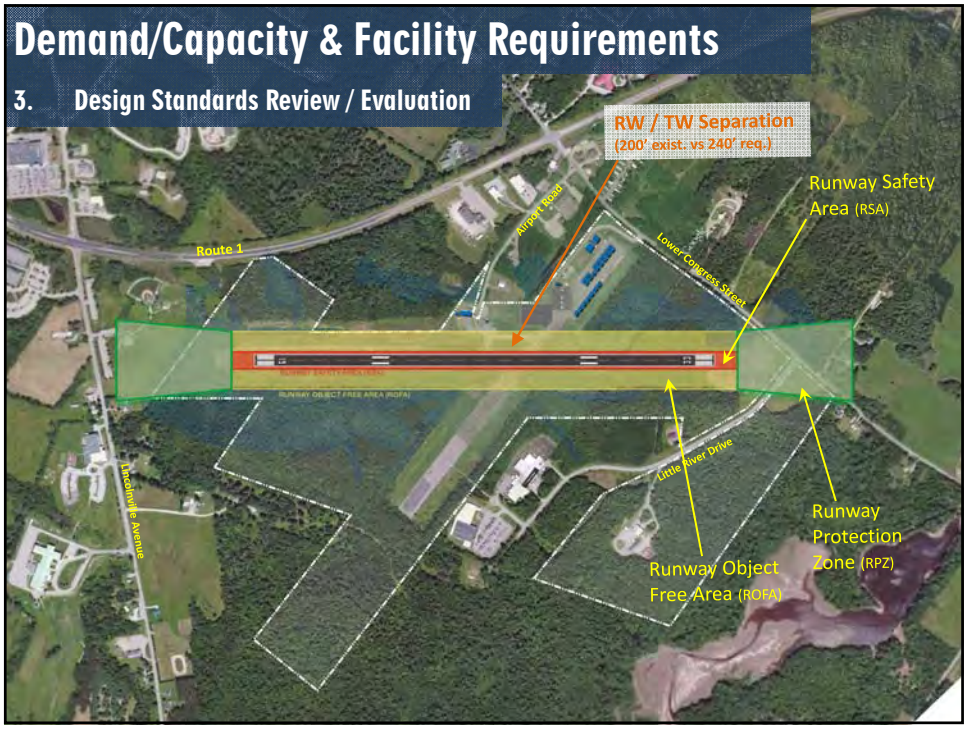


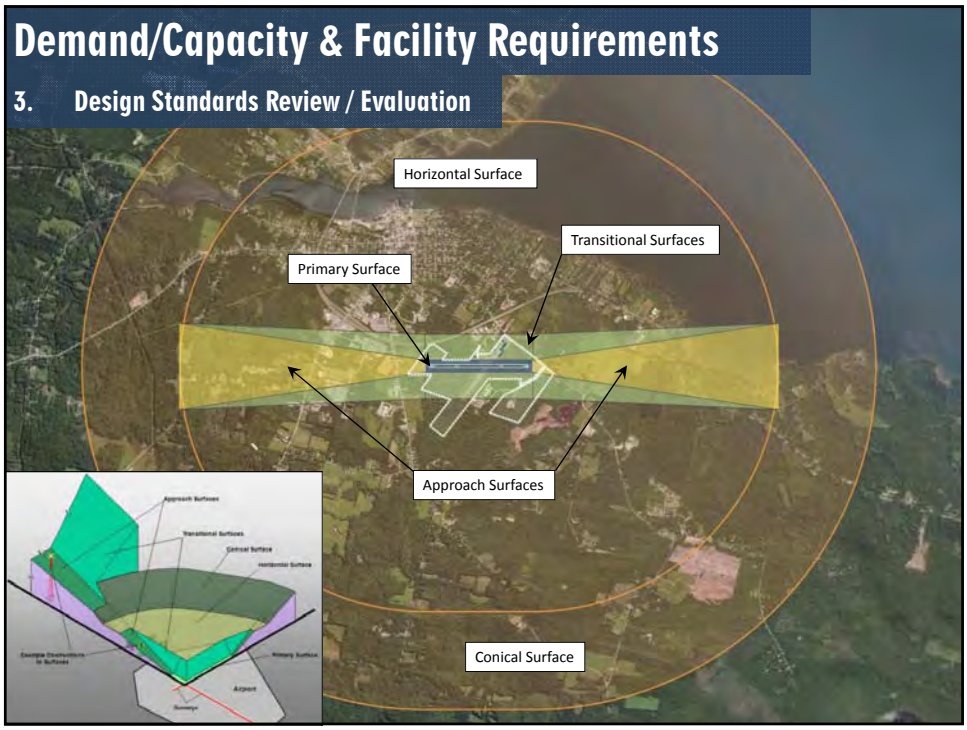
FAA AC 150/5325-4B also specifically advises the following:

b. Future Airport Expansion Considerations. Airports serving small airplanes remain fairly constant in terms of the types of small airplane using the airport and their associated operational requirements. However, it is recommended that the airport designer assess and verify the airport's ultimate development plan for realistic changes that, if overlooked, could result in future operational limitations to customers. The airport designer should at least assess and verify the impacts of:

(1) Expansions to accommodate airplanes of more than 12,500 pounds. Failure to consider this change during an initial development phase may lead to the additional expense of reconstructing or relocating facilities in the future.

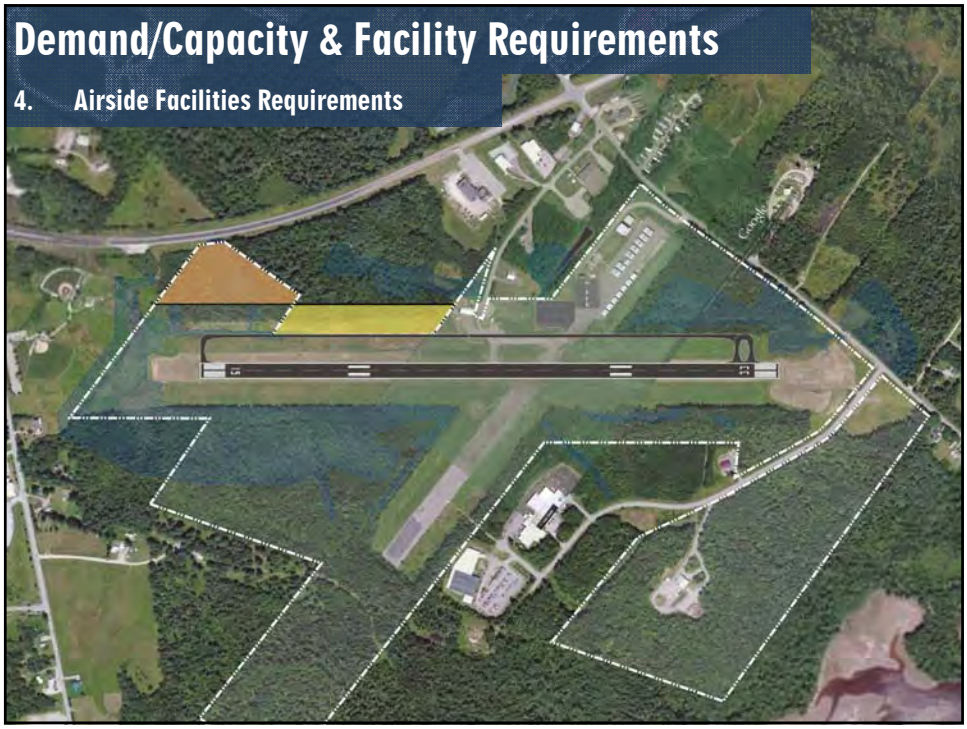
Small Airplanes with Fewer than 10 Passenger Seats	= 3,600 ft
Small Airplanes Having 10 or More Passenger Seats	= 4,050 ft


Demand/Capacity & Facility Requirements
3. Design Standards Review / Evaluation
RW / TW Separation
(200' exist. vs 240' req.)
Runway Safety
Area (RSA)
Route 1
Airport Road
Lower Congress Street
Little River Drive
Lincolnville Avenue
Runway
Protection
Zone (RPZ)
Runway Object
Free Area (ROFA)


Demand/Capacity & Facility Requirements
3. Design Standards Review / Evaluation
Horizontal Surface
Transitional Surfaces
Primary Surface
Approach Surfaces
Conical Surface

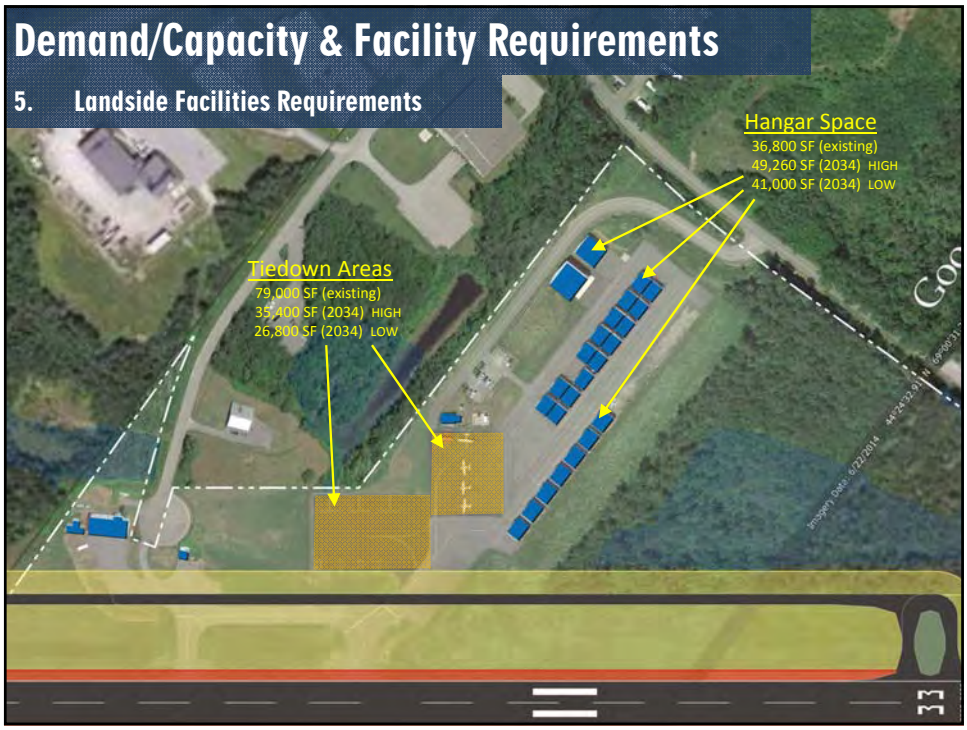
Demand/Capacity & Facility Requirements

4. Airside Facilities Requirements



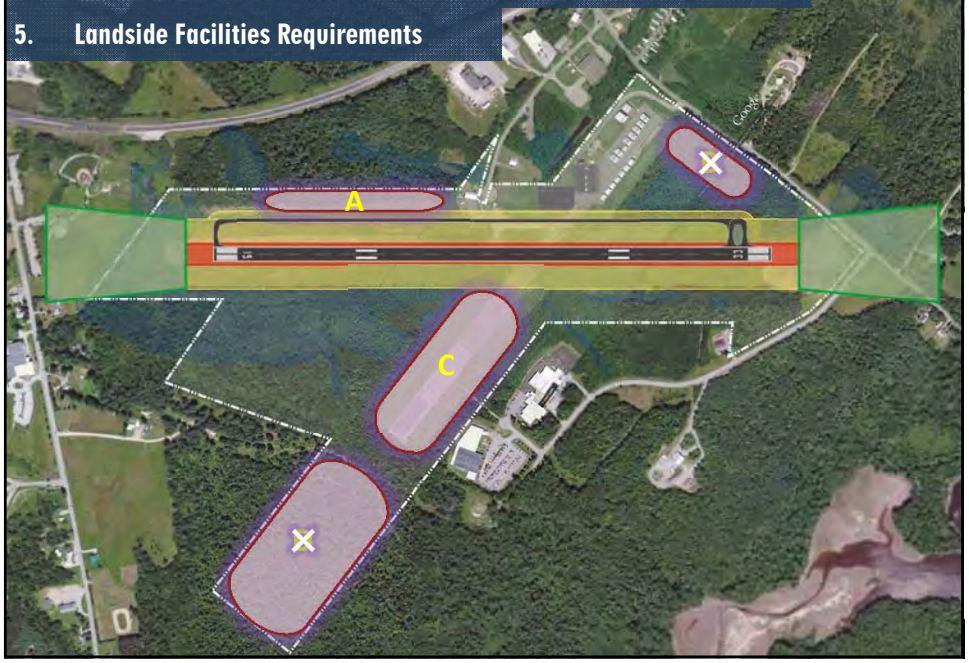
Demand/Capacity & Facility Requirements

5. Landside Facilities Requirements



Demand/Capacity & Facility Requirements

5. Landside Facilities Requirements



Demand/Capacity & Facility Requirements

2. Runway Length Recommendations (per FAA AC 150/5325-4B)

FAA AC 150/5325-4B also specifically advises the following:

b. Future Airport Expansion Considerations. Airports serving small airplanes remain fairly constant in terms of the types of small airplane using the airport and their associated operational requirements. However, it is recommended that the airport designer assess and verify the airport's ultimate development plan for realistic changes that, if overlooked, could result in future operational limitations to customers. The airport designer should at least assess and verify the impacts of:

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Small Airplanes with Fewer than 10 Passenger Seats = 3,600 ft
Small Airplanes Having 10 or More Passenger Seats = 4,050 ft

Demand/Capacity & Facility Requirements

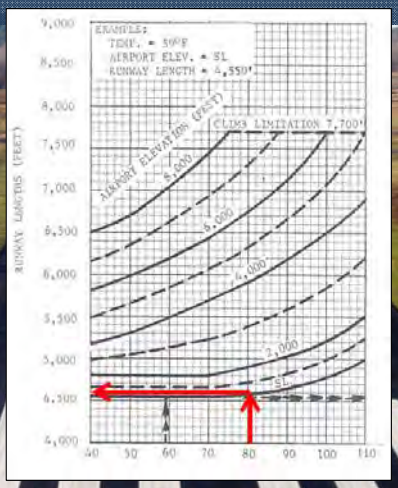
2. Runway Length Recommendations (per FAA AC 150/5325-4B)

AMPU Phase 1 - *Runway Corridor Analysis*

1. **Exploratory analysis to vet the potential for full AMPU** – BST approached by local business interests related to runway improvements.
2. **Designed to answer the following questions:**
   - What are the current conditions at Belfast Municipal Airport?
   - What is the projected runway length requirement for Runway 15-33?
   - What are the reasonable alternatives for meeting the projected runway length requirements for Runway 15-33 when considering the current Airport operational and FAA regulatory environments?
3. **Effort included *Inventory*, *Forecast*, partial *Facility Requirements*, & *Development Alternatives* tasks from the Airport Master Plan process**
4. **Resulted in a Technical Memorandum – *NOT FINAL CONCLUSIONS!***

Demand/Capacity & Facility Requirements

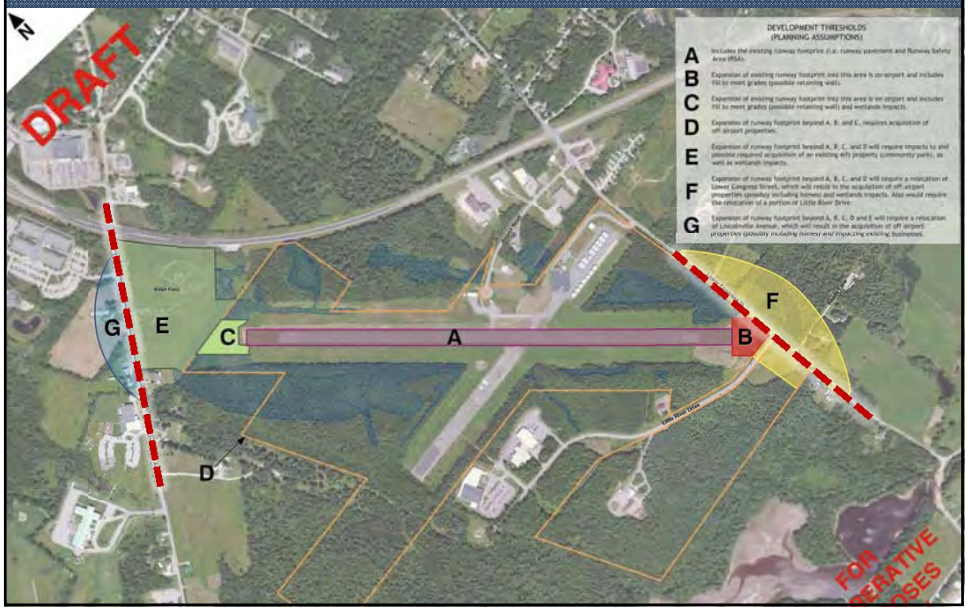
2. Runway Length Recommendation for Aircraft of more than 12,500 pounds. (per FAA AC 150/5325-4B)



FAA Runway Length Determination	= 4,600 ft
FAA Length with Runway Gradient Correction	= 4,990 ft
Coordination with Key Operators	= 4,700 ft

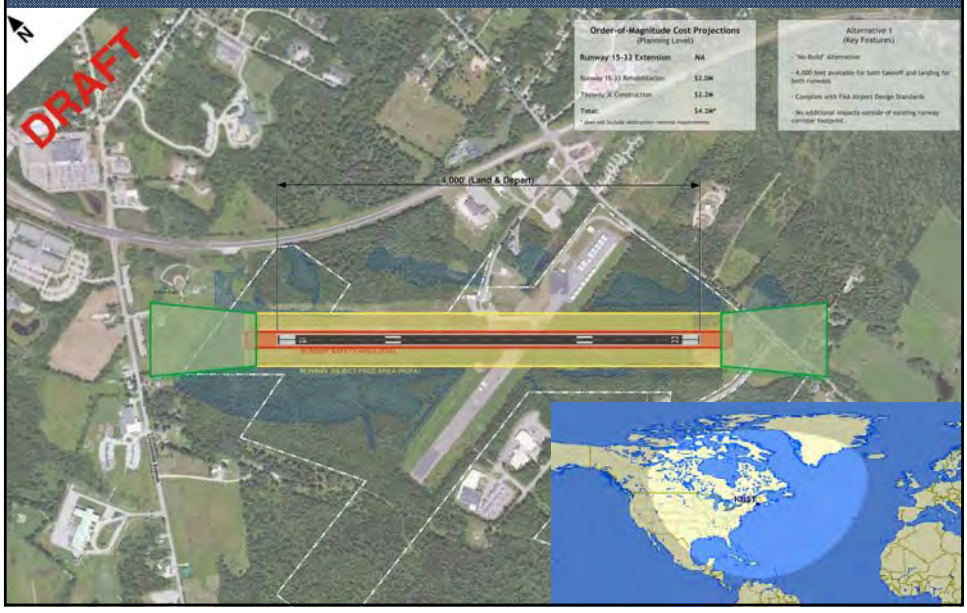
Runway 15-33 Development Alternatives

Key Site Development Impact Thresholds



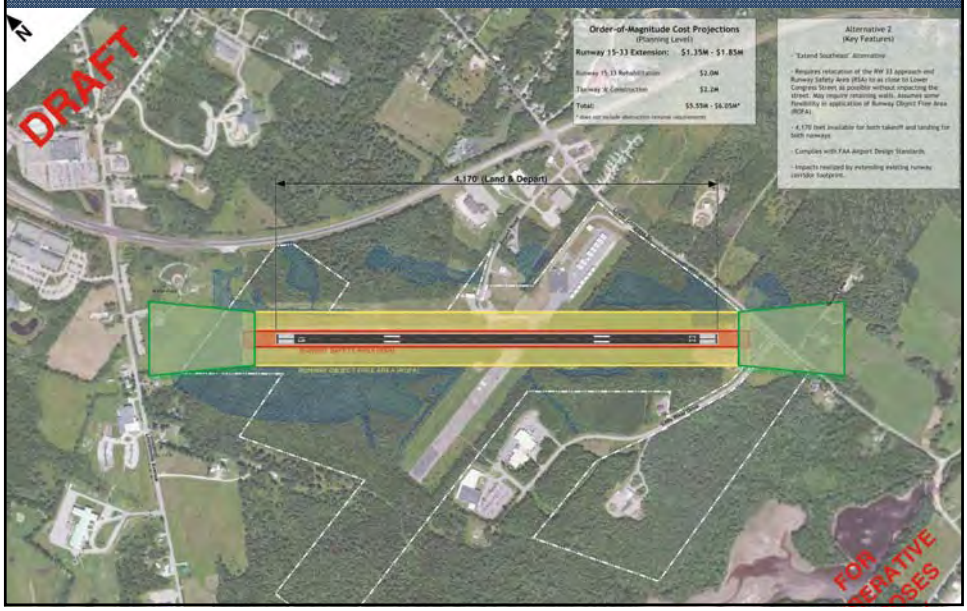
Runway 15-33 Development Alternatives

Alternative 1 – Existing Conditions



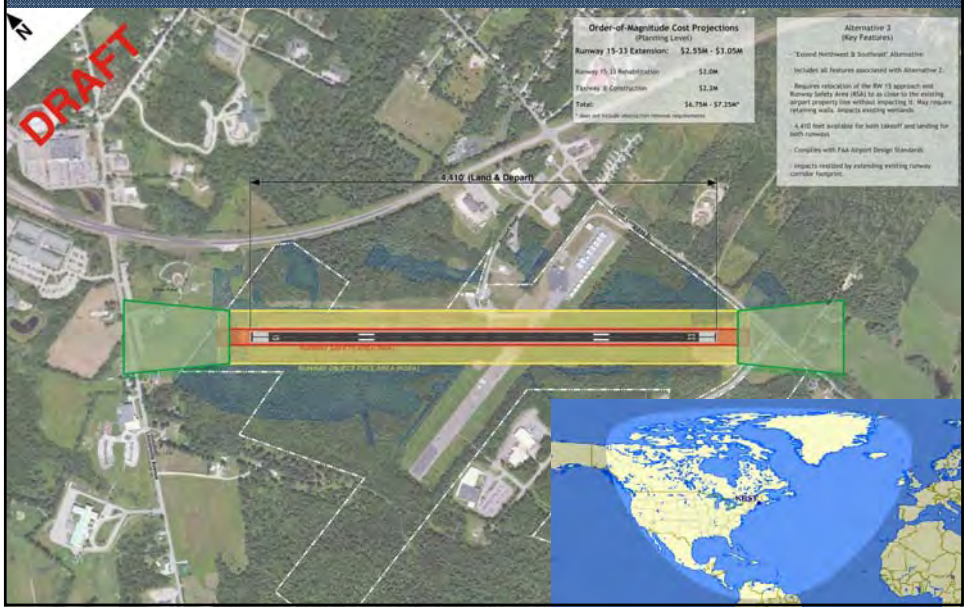
Runway 15-33 Development Alternatives

Alternative 2 – Extend Southeast (Total 170') – Remain On-Airport



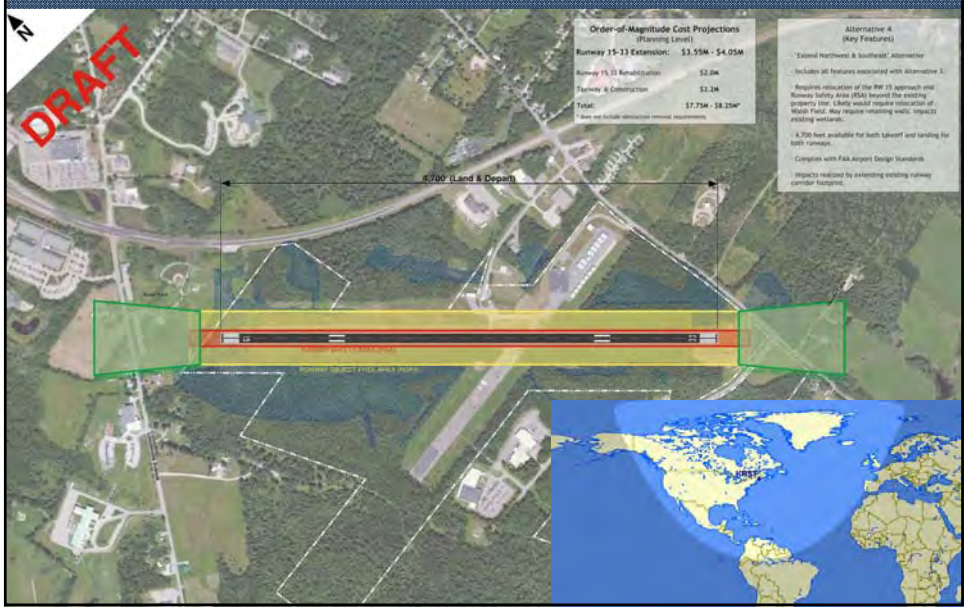
Runway 15-33 Development Alternatives

Alternative 3 – Extend Southeast (170') & Northwest (240') – Remain On-Airport



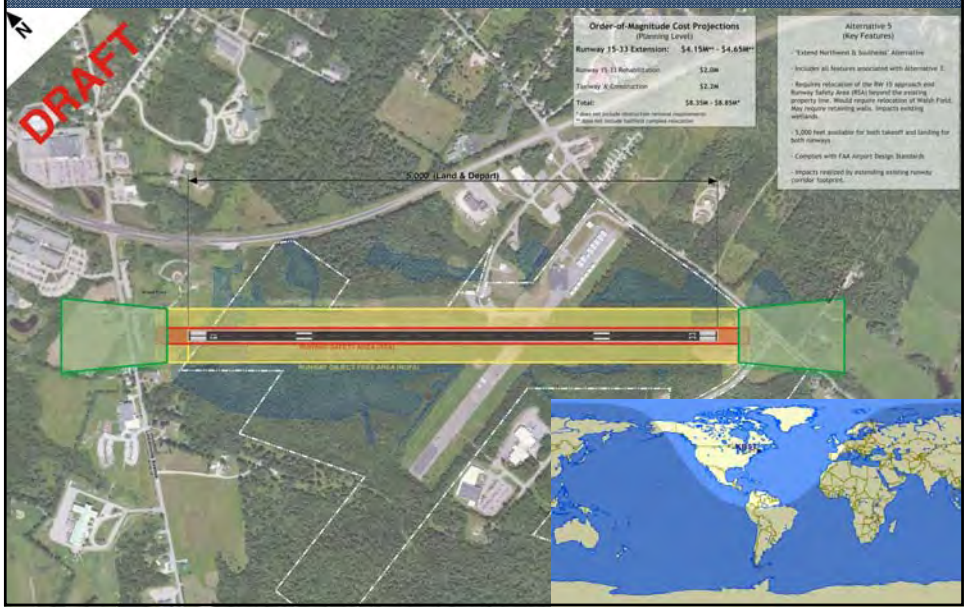
Runway 15-33 Development Alternatives

Alternative 4 – On-Airport Development & Extend Northwest (290') – Off-Airport Impacts



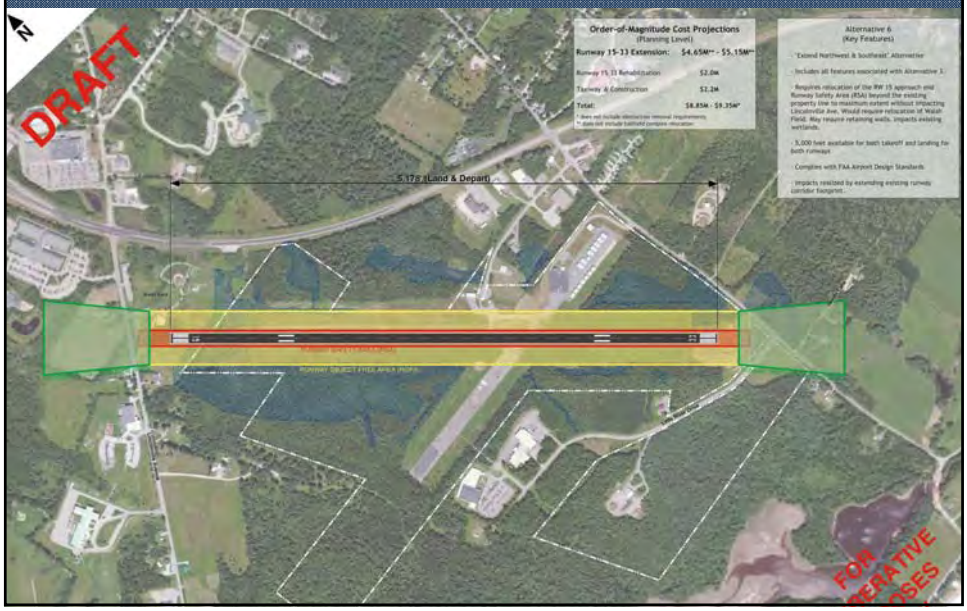
Runway 15-33 Development Alternatives

Alternative 5 – On-Airport Development & Extend Northwest (590') – Off-Airport Impacts



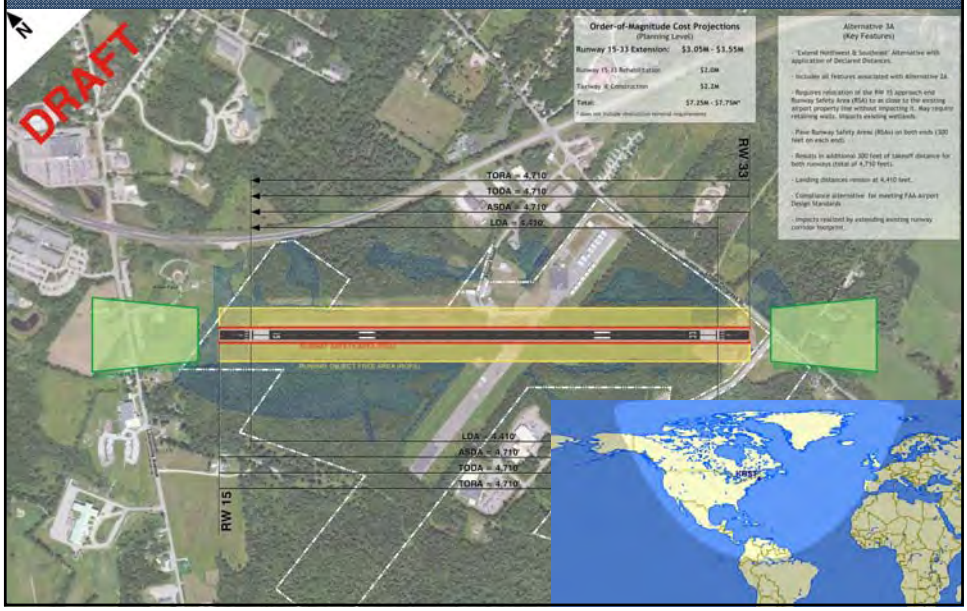
Runway 15-33 Development Alternatives

Alternative 6 – On-Airport Development & Extend Northwest (768') – Off-Airport Impacts



Runway 15-33 Development Alternatives

Alternative 3A (Declared Distances) – Extend Southeast (Total 170') – Remain On-Airport



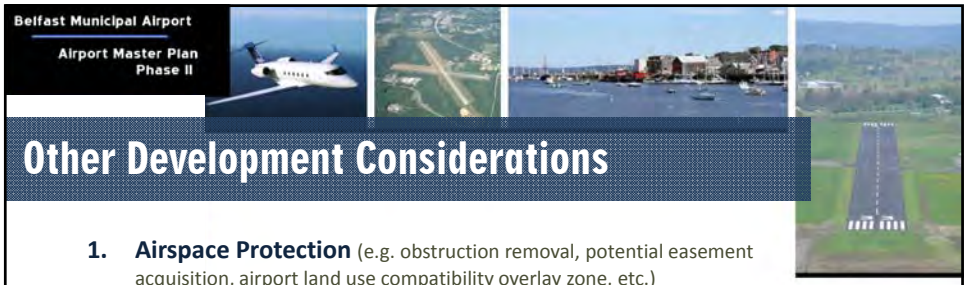
Runway 15-33 Development Alternatives

Evaluation Matrix

Alternatives	Impact / Benefit Factors				
	Safety / Operations	Economic	Environmental	Implementation	Avg. Total
a) No Action					
Alternative 1	3	3	3	3	3.0
b) Extend Runway					
Alternative 4	5	2	1	2	2.5
Alternative 5	5	1	1	1	2.0
Alternative 6	5	1	1	1	2.0
c) RW Relocation					
	NA	*NA*	*NA*	*NA*	*NA*
d) RW Realignment					
	NA	*NA*	*NA*	*NA*	*NA*
e) RW Shift					
	NA	*NA*	*NA*	*NA*	*NA*
f) Reduce Length					
Alternative 2	3	2	3	5	3.3
Alternative 3A	4	5	3	5	4.3
Alternative 3	4	4	3	4	3.8
g) Combination					
	NA	*NA*	*NA*	*NA*	*NA*

Source: Airport Solutions Group.
Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit
NA = Deemed not acceptable for other reasons

Category Definitions
Safety / Operations: ability to safely accommodate future demand for aircraft, vehicles, and other relevant factors
Economic: cost-effectiveness and economic benefits / ramifications
Environmental: environmental factors associated with development
Implementation: factors that can impact an airport's ability to implement certain development scenario, including community and political acceptance



Other Development Considerations

1. **Airspace Protection** (e.g. obstruction removal, potential easement acquisition, airport land use compatibility overlay zone, etc.)
2. **Safety Improvements** (e.g. VGSI/PAPIs, signage, wind socks, security, etc.)
3. **Airport Service Improvements** (e.g. FBO, fuel farm, aircraft maintenance, flight training, deicing pad, etc.)
4. **Long-term development planning** (e.g. hangar development areas, segregation of operational services, aviation & non-aviation related property, surplus property, etc.)

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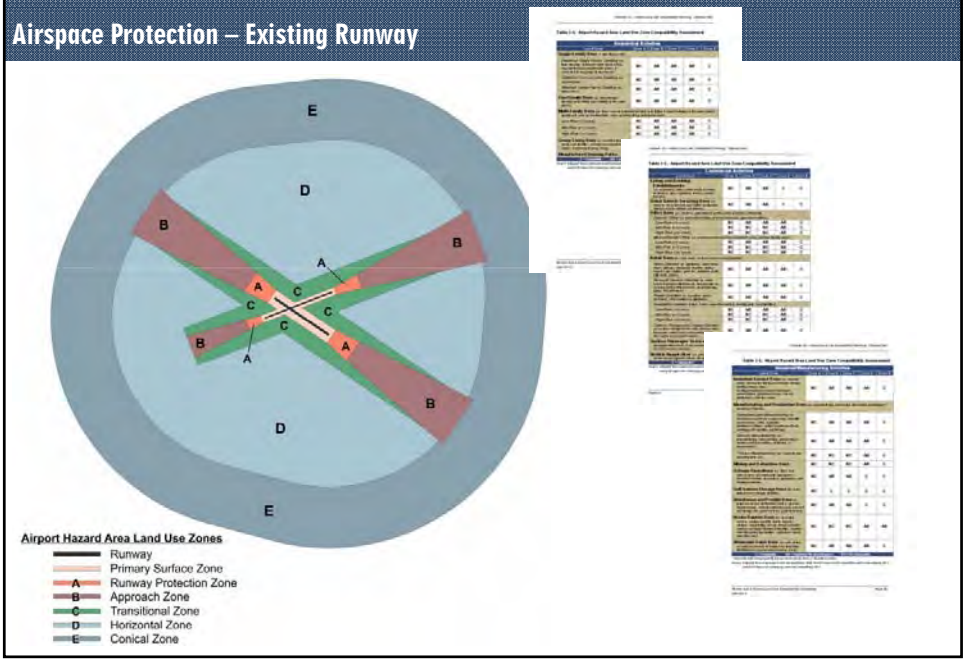
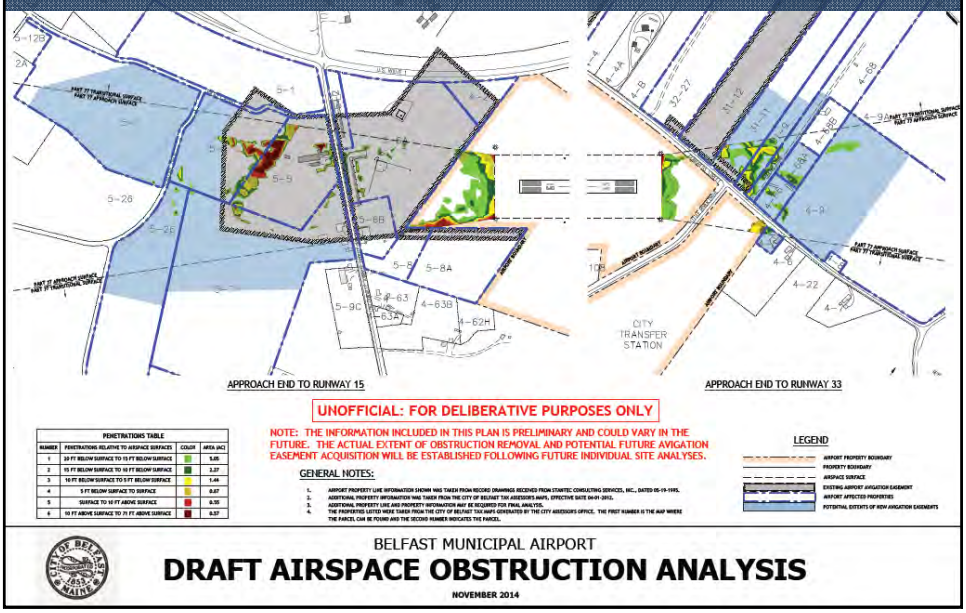
Other Development Considerations

Airspace Protection – Existing Runway



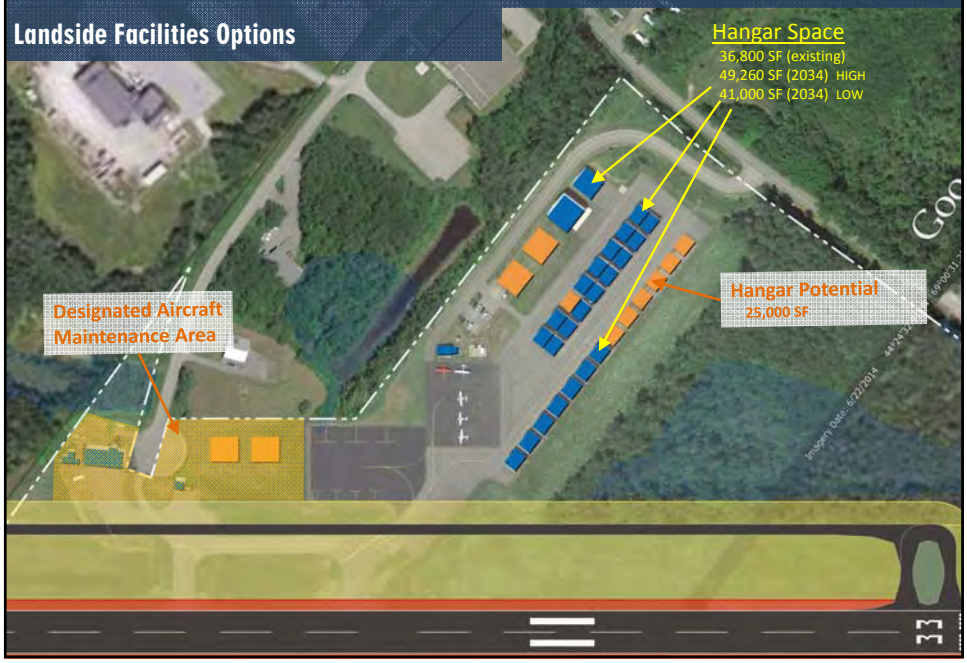
Other Development Considerations

Airspace Protection – Existing Runway



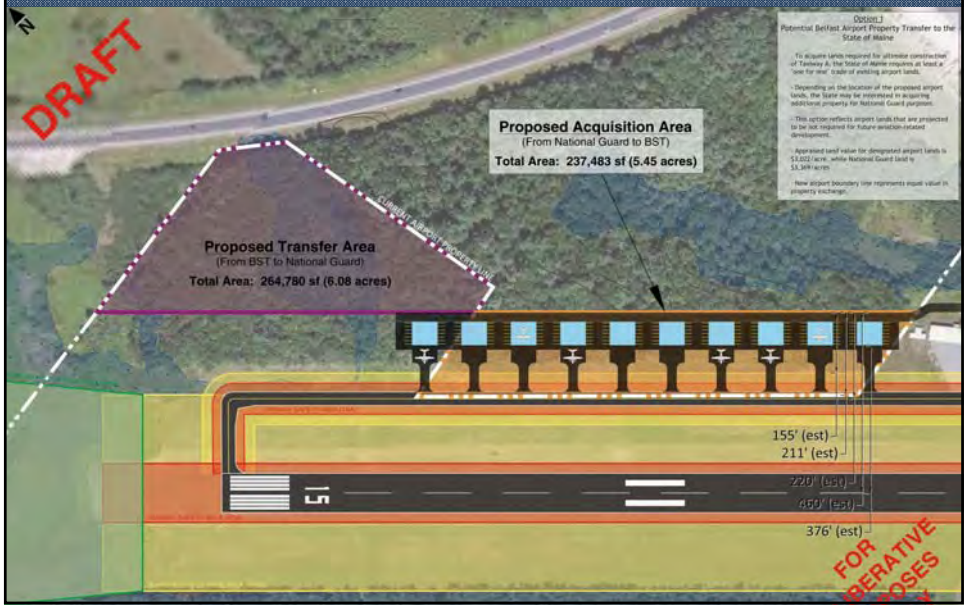
Other Development Considerations

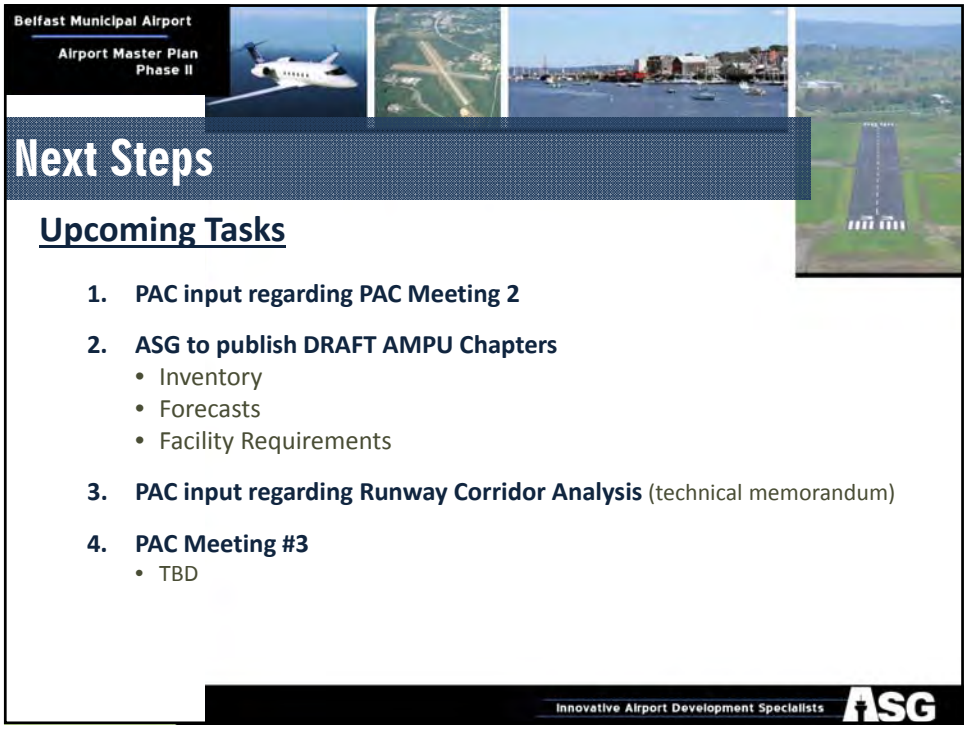
Landside Facilities Options



Other Development Considerations

Landside Facilities Options




Belfast Municipal Airport
Airport Master Plan
Phase II
Next Steps
Upcoming Tasks
1. PAC input regarding PAC Meeting 2
2. ASG to publish DRAFT AMPU Chapters
• Inventory
• Forecasts
• Facility Requirements
3. PAC input regarding Runway Corridor Analysis (technical memorandum)
4. PAC Meeting #3
• TBD
Innovative Airport Development Specialists
ASG


Belfast Municipal Airport
Airport Master Plan
Phase II
Questions & Comments
Thank You!
Primary Project Team Contact:
James Miklas
Airport Solutions Group
Cell: 617.320.0701
jmiklas@airportsolutionsgroup.com
Innovative Airport Development Specialists
ASG

BELFAST MUNICIPAL AIRPORT

PROJECT ADVISORY COMMITTEE (PAC) MEETING 2

March 4, 2015, 3:30 PM

COMMENT SHEET

(Please print clearly)

Please identify the general focus of your comment:

☐ Airport Development ☐ Airport Operations ☐ Airport Maintenance ☐ Other

Comments:

Please provide your contact information for reference and possible follow-up:

Please mail additional comments to: Thomas Kittredge, Economic Development Director, City of Belfast, 131 Church St., Belfast, ME 04915; Or

Email additional comments to: James Miklas (ASG): Jmiklas@airportsolutionsgroup.com

Belfast Municipal Airport [BST]

AIP Capital Improvement Program

Revised 1/26/2015

FFY 2015 - 2019

			Funding Breakdown		
2015		**Total Cost**	**FAA**	**State**	**Airport**
	EA/Permits/Geotech for Partial Parallel Taxiway	$ 165,000	$ 148,500	$ 8,250	$ 8,250
			$ -	$ -	$ -
	Subtotal -- 2015	**$ 165,000**	**$ 148,500**	**$ 8,250**	**$ 8,250**
2016		**Total Cost**	**FAA**	**State**	**Airport**
	Easement Acquisition for RW15-33 Approaches	$ 150,000	$ 135,000	$ 7,500	$ 7,500
	Phase I Tree Clrg - RW15	$ 134,000	$ 120,600	$ 6,700	$ 6,700
	Subtotal -- 2016	**$ 284,000**	**$ 255,600**	**$ 14,200**	**$ 14,200**
2017		**Total Cost**	**FAA**	**State**	**Airport**
	Construct RW15 Partial Parallel Taxiway (2,020' x 35') & RW33 By-Pass TW	$ 2,200,000	$ 1,980,000	$ 110,000	$ 110,000
	Subtotal -- 2017	**$ 2,200,000**	**$ 1,980,000**	**$ 110,000**	**$ 110,000**
2018		**Total Cost**	**FAA**	**State**	**Airport**
	Automated Fuel Farm	$ 430,500	$ 387,450	$ 21,525	$ 21,525
	Subtotal -- 2018	**$ 430,500**	**$ 387,450**	**$ 21,525**	**$ 21,525**
2019		**Total Cost**	**FAA**	**State**	**Airport**
	Phase II Tree Clrg - RW33	$ 153,000	$ 137,700	$ 7,650	$ 7,650
	Subtotal -- 2019	**$ 153,000**	**$ 137,700**	**$ 7,650**	**$ 7,650**

Notes / Assumptions:

1. All projects are assumed to be funded 90% FAA, 5% State and 5% Local.
2. Opinions of construction cost represent preliminary values; the CIP will be refined in further revisions - detailed construction cost opinions will be developed as part of the design phase for each project.
3. All proposed projects are subject to final FAA and State agency review and approval and do not represent a commitment for funding.
4. FY2018 is shown with a fuel farm project in the hopes of acquiring Non-Primary Entitlement from a neighboring airport to pay for the entire project.
5. FY2019 is shown without a project as a backup plan in case Note #5 does not materialize.
6.

Future Projects Include (timing may vary):

* Extend / Construct Runway 33 Parallel Taxiway
* Reconstruct Runway 15-33 (Not Including New RW Extensions). Runway 15-33 was last constructed in 2004 (source: 2008 ALP Update).
* Expand Hangar Development Area/T-Hangars
* Install PAPIs
* Establish Airport Land Use Compatibility Plan
* Project
* Project

Project Advisory Committee (PAC) Questions from 9/22/14 Meeting

Submitted by: Robert Dietz, PAC Member
Sunday, November 9, 2014

1. In consideration of the proposed Runway Length Recommendation(s) for BST's AMPU Report and ALP, please address the following questions:

    a) Not including changes to current ordinances or land use zoning for abutting properties surrounding the airport, what are the anticipated, specific impacts to individual properties on a case-by-case basis? *For the purpose of this question, impacts would be categorized as any change to current restrictions, if any, and/or requirements established for airport operations (e.g. glide slope and approach surfaces, building and height requirements, environmental restrictions, densities, setbacks, etc.)?*

    b) Not including changes to current ordinances or land use zoning for infrastructure surrounding the airport, what are the anticipated, specific impacts to roadways, sidewalks, utilities, public recreational facilitates, density and/or traffic restrictions, etc. at either end of the runway?

    c) For both abutting properties and existing infrastructure, what potential impacts have not been and/or will not be considered within the AMPU and ALP?

2. What is a "Runway Protection Zone" (RPZ) and the rationale for designating an area as such?

3. Within an RPZ, what are required and/or recommended restrictions/guidelines? *(Please list specifics)*

4. What are the specific differences between the new, proposed RPZ(s), ROFA(s) and RSA(s) based on a runway length of 4,710' and the current RPZ(s), ROFA(s) and RSA(s)?

5. What new impacts or changes would be realized within the new, proposed RPZ(s), if any, should the runway length of 4,710' be accepted?

6. Should the proposed runway length of 4,710' be accepted, please articulate how the additional length would change Airport Operations, both take-off and landings? *For example, would landing aircraft have the full length of the runway to land or would landings still be required to land within a certain area on the runway?*

7. For the purpose of developing the AMPU, how were previous and current Aircraft Operational data points derived (i.e. 10,000 operations per year)? If based on estimated Aircraft Operations, what margin of error should be factored within this data?

8. In relation to Airport Operational data, how can BST accurately record actual operations in order to eliminate the need for estimated operational data?

9. Within the process to update BST's AMPU Report and ALP, please describe if/when an updated airport zoning ordinance (AZO) would be conducted by the City?

10. Within the process to update BST's AMPU Report and ALP, is a safety assessment conducted for persons and property on the ground within proximity to the airport? If so, when and how does this assessment take place? If not, why not?

11. From the Airport Advisory Committee's perspective, on a scale of 1-5 with 5 being the highest and 1 being the lowest, please rate the following:

    a) safety to users of the airport (1-5)

    b) safety to persons on the ground within proximity to the airport (1-5)

Submitted by: Robert Dietz, PAC Member
Sunday, November 9, 2014

12. From the City's perspective, what are the primary reasons driving the consideration to lengthen the current runway? *(Please rank in order of importance).*

13. If the new proposed runway length is accepted by the City:

    a) What are the specific, non-hypothetical, measurable gains that will be realized upon completion? *(For the purpose of this question, 'gains' are not limited to a financial return on investment but rather any changes that would be perceived as positive over the status quo by the City.)*

    b) What are the specific, non-hypothetical, measurable costs that will be realized upon completion? *(For the purpose of this question, 'costs' are not limited to a financial loss on investment but rather any changes that would be perceived as negative over the status quo by the City.)*

    c) Who, specifically, benefits from the new runway length upon completion?

    d) Who, specifically, is adversely effected by the new runway length upon completion?

    e) What are the anticipated, up-front costs in dollars and how will those expenditures be funded?

    f) What are the anticipated, long-term and/or on-going costs in dollars (e.g. snow plowing, runway maintenance, etc.) and how will those expenditures be funded?

    g) How will displaced wetlands be addressed and what options and/or plan does the City have to replace designated areas? *(Please specify)*

    h) How will new water and/or snow run-off from the longer runway be addressed and what options and/or tools will the City employ to ensure that non-City land surrounding the airport will not be effected?

MEETING NOTES

project:	**BST AIRPORT MASTER PLAN UPDATE (AMPU) – PHASE II**
meeting date:	WEDNESDAY, OCTOBER 23, 2015 – 9:00 AM (EDT)
meeting no:	3
location:	CITY OF BELFAST COUNCIL CHAMBERS, BELFAST, ME
subject:	PROJECT ADVISORY COMMITTEE (PAC) MEETING

ATTENDEES:

name	affiliation
James Truxes	AIRPORT ADVISORY COMMITTEE
Robert Dietz	AIRPORT NEIGHBOR
Donna Loomans	AIRPORT NEIGHBOR
David Aldrich	AIRPORT TENANT
Jay Foster	PILOT
Joshua Dickson	BUSINESS REPRESENTATIVE
Duke D. Tomlin	AIRPORT TENANT
Joseph Slocum	CITY OF BELFAST (CITY MANAGER)
Thomas Kittredge	CITY OF BELFAST (BST MANAGER)
Sadie Lloyd	CITY OF BELFAST (ASST. CITY PLANNER)
Stacie Haskell	MAINE DOT AVIATION (ATTENDED VIA CONFERENCE CALL)
Michelle Ricci	FEDERAL AVIATION ADMINISTRATION (FAA) (ATTENDED VIA CONFERENCE CALL)
Luke Garrison	FEDERAL AVIATION ADMINISTRATION (FAA) (ATTENDED VIA CONFERENCE CALL)
Rich Lasdin	AIRPORT SOLUTIONS GROUP (ASG)
James Miklas	AIRPORT SOLUTIONS GROUP (ASG)

ATTACHMENTS:

The following are attached to this document:

1. A copy of the presentation;
2. Meeting sign-in sheet; and
3. A copy of the comment form.

MEETING PURPOSE / AGENDA:

This was the third meeting of the Project Advisory Committee (PAC) for the Belfast Municipal Airport (BST) Airport Master Plan Update (AMPU) – Phase II. The primary purpose of this meeting was to provide the PAC with an overview of the various alternatives identified for BST, to facilitate discussion for each of the alternatives, and to identify any other potential alternatives. Additionally, if possible, it was hoped that the PAC could come to consensus on recommendations for some of the more basic potential projects. Additionally, as detailed in the agenda (see attached presentation for meeting agenda), the meeting focused on the following questions and elements:

1. Introductions / Review
2. Where are we in the Master Plan Process?
3. Review of Goals
4. Development Alternatives
5. Next Steps / Questions & Comments

PROJECT INTRODUCTIONS:

Prior to introductions of those attending the meeting, Thomas Kittredge (BST Manager) thanked the members of the PAC for their participation in this process and then provided an opening statement. Mr. Kittredge again emphasized the importance of this effort for the future of the Airport. He then introduced Jim Miklas (ASG), the project manager for the BST AMPU, who would also give a presentation and lead discussions during the meeting.

Mr. Miklas reminded the PAC of the following points discussed in PAC Meeting 2:

- The role of the PAC and its members is to serve as project advisors to ensure the BST Master Plan Update addresses the key issues facing the Airport today and into the future.
- 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 & future aviation demand, while considering environmental and community factors.
- BST is an important transportation and economic asset for the City of Belfast that must be maintained (and developed, as appropriate) for the long-term benefit of the City and the surrounding area. As documented in the 2007 *Economic Impacts of Airports In Maine* study produced by MaineDOT, BST was responsible for 62 jobs (on- and off-airport) having $1.6M in payroll, generating $3.9M in economic activity.

Mr. Miklas then emphasized that the primary purpose of PAC Meeting 3 was to be an open forum to review/share ideas, and that no decisions had yet been made on any of the draft alternative development concepts being presented during the meeting. He said that the primary goals of the meeting (if possible given the time constraints) were as follows:

- Identify / Review Potential Projects
- Identify / Review Alternatives/Implications
- Establish PAC opinion / dissenting opinions for submittal to City Council.

He also asked that everyone in attendance sign the attendance sheet and noted that there were feedback forms available for those attending to provide written comments during or after the meeting.

POINTS OF DISCUSSION:

Mr. Miklas gave a presentation (see attached) to facilitate group discussion. Points of discussion are encompassed in the following general categories and notes. (Note that discussions related to these categories occurred at different points of the meeting; therefore, the following may not accurately reflect the chronological order in which they occurred):

General Project Status

- Mr. Miklas provided an overview on the progress of the AMPU. He said that this was the third PAC meeting (there were three PAC meetings originally scheduled); however, he noted that based on recent discussions, it was decided to add a fourth and fifth PAC meeting.
- He noted that draft chapters have been completed for the Inventory, Forecast, and Facility Requirements tasks, and that the PAC should have electronic copies of all. He also said that the project team assembled responses to a listing of questions submitted by a PAC member (based on interactions with other airport neighbors), and that those too have been distributed to the PAC.

Review of Project Goals

- Mr. Miklas said that at this point in the project, it was important to review the original project goals not only as a reminder, but also to modify them if, due to findings of the previous efforts to date, the PAC desired to shift or realign some of the study direction.
- He reviewed the general project objectives as defined by FAA and MaineDOT. He also read through the specific project goals as established by the PAC for the BST AMPU (see attached presentation).
- The PAC determined that the original goals were appropriate, but suggested that the following be added: "The AMPU must include an opportunity for general public review and input prior to presentation to the City Council."

Preliminary Development Alternatives Presentation Process

- Mr. Miklas noted that the development alternatives presented during the meeting should all be considered to be DRAFT and subject to change/addition/modification based on PAC discussions.
- He also noted that while PAC comments and feedback are extremely important to the process, the PAC is not a "voting" body. The ultimate decision/vote will be taken by the Belfast City Council, although they will certainly consider the PAC recommendations.
- He described the preliminary alternatives evaluation process as follows:
    a. Review Each Potential Project
    b. Identify Alternatives
    c. Present Preliminary Decision Matrix
    d. Questions / Comments
    e. Document Results
- Mr. Miklas noted that a preliminary decision matrix had been established for each alternative by the consultant team. Note that this is an UNOFFICIAL and very SUBJECTIVE TOOL. It is being employed simply as a means to set a baseline and spur conversation with the PAC to ensure that the many potential facets (i.e., safety/operational, economic,

environment, and community/implementation) of a project are considered in the decision making process.

- Mr. Miklas then reviewed the potential projects individually, starting with Airside, then Landside, then others. The potential Runway 15-33 extension was left to the end to focus on that particular issue.
- Mr. Miklas also emphasized to the PAC that if a project were to be ultimately included on the Airport Layout Plan, that DOES NOT mean that it will be constructed or instituted. It simply means that it is possible and consistent with the defined FAA safety, planning and airspace regulations. Inclusion on the ALP DOES NOT guarantee federal, local or state funding – federal project funding is subject to a tightly controlled, rigorous process. Inclusion on the ALP DOES NOT mean that there will not have to be additional planning and/or environmental efforts undertaken. All federal projects are subject to the requirements of the National Environmental Protection Act (NEPA), while state/local actions are likewise subject to state laws and permitting. Whether a project at Belfast Municipal Airport is constructed or not is ultimately a function of all of the above considerations, as well as the ultimate vote of the Belfast City Council.

Potential Airside Projects & Alternatives

(Note that the following potential projects and associated alternatives are based on the existing condition of Runway 15-33 (100' x 4,000') and are not dependent on an extended runway. However, they could be adapted to reflect an extended runway – see below)

1. *Airspace Clearance*
   - Mr. Miklas reviewed the information included in the presentation (see attached).
   - There were questions related to if the existing approach airspace surfaces would change if the typical type of aircraft operating on the runway were to change. Mr. Miklas said that some of the surfaces would be different if the change in aircraft type were to be significant enough to warrant a significant change in the Runway Design Code (RDC). However, he noted that such a significant change has not been proposed in the AMPU documentation produced to date. Additionally, specific to BST, such a change would not be supported by FAA and would have dramatic other physical impacts on the airport itself beyond just airspace – all of which result in the potential of such a change being very remote. Again, that is not being proposed within this AMPU.
   - The City expressed its desire to clear vegetative obstructions based on the existing runway, as reflected in the ongoing vegetative obstruction removal environmental assessment.
   - It was noted that the FAA will pay for vegetation removal at an airport within a given area only once, so it is important that the removal be completed bearing in mind that the airport must maintain those areas on their own in the future.

- There were no other questions or comments from the PAC and no decisions/endorsements were made.

2. *Easement Acquisition*
   - Mr. Miklas reviewed the information included in the presentation (see attached).
   - There was a discussion related to the extent that the City should try to acquire easements. Mr. Miklas explained that the yellow area on the graphic represented the estimated area where naturally occurring vegetation had the potential to impact the Airport's most restrictive airspace surfaces, and therefore, should be a potential concern for the City. However, since the Airport has previously installed some obstruction lights, he noted that the areas of focus should be within the approach surfaces to either runway (and not necessarily those surfaces that exist along the sides of the runways).
   - While the ideal condition for the City would be to acquire avigation easements within all of the "yellow areas", financial limitations require that easement acquisition be prioritized. Since the approach areas are the most safety-critical for the Airport, the City and the FAA, those are the areas that have the highest priority.
   - It was noted that easement acquisition is required to address vegetative obstructions issues, but that the City must also implement compatible airport land use zoning in order to address future development. (That effort is referenced below.)
   - In response to a question, it was stated that FAA will pay for 90% of the easement acquisition, with Maine DOT paying for 5%, and the City paying the remaining 5%.
   - There was a concern expressed by the PAC that the easement acquisition prioritization appeared to favor residential properties as opposed to any commercial properties. Mr. Miklas explained that while he understood that could be the perception, it was simply coincidence in that the areas that have the greatest likelihood of having future vegetative obstructions in the near term happen to be residential properties. If the money were available, the City would certainly choose to address all avigation easements at one time; however, given the current availability of funding, the City must choose to allocate limited financial resources to those properties that have the greatest chance of having airspace obstructions (based on the currently available survey data). It will be important to clearly explain the prioritization methodology to help alleviate potential public concerns regarding which properties have been identified.
   - There were several comments questioning the practical need to meet the FAA standards. Mr. Miklas noted that the Airport was obligated to meet FAA design criteria based on compliance with assurances associated with receiving federal grants.
   - There were no other questions or comments from the PAC and no decisions/endorsements were made.

3. *NAVAIDs (VGSI/PAPIs)*
   - Mr. Mr. Miklas reviewed the information included in the presentation (see attached).

- There was a question if the proposed lights would be visible off-airport. It was noted that they would only be visible to pilots that were landing on a particular runway. Note that these are not the "landing or approach lights" as commonly understood.
- No PAC members expressed any opposition to the installation of the PAPIs on airport property for safety reasons.

4. *NAVAIDs (Wind Socks)*
   - Mr. Mr. Miklas reviewed the information included in the presentation (see attached).
   - It was noted that additional windsocks would provide pilots with additional data regarding wind conditions that can fluctuate dramatically from one runway end to the other.
   - No PAC members expressed any opposition to the installation of windsocks on airport property for safety reasons.

5. *NAVAIDs (Non-Directional Beacon / NDB)*
   - Mr. Mr. Miklas reviewed the information included in the presentation (see attached).
   - It was noted that the NDB is currently inoperative, is rarely (if ever) used any more, and would expensive to re-establish and maintain. The FAA no longer support maintaining NDBs. With the advent of GPS approaches, NDBs are now considered to be obsolete.
   - No PAC members expressed any opposition to the decommissioning of the existing NDB on the Airport.

6. *RW to TW Centerline Separation*
   - Mr. Mr. Miklas reviewed the information included in the presentation (see attached).
   - There was general discussion regarding the airport design standards and the associated design aircraft. It was noted that this standard is applicable for existing conditions and the existing design aircraft. (It was also noted that since the RDC of the runway was not proposed to change in the future, even with a potential runway extension, it would be consistent with all potential future conditions.)
   - The relocation of the taxiway centerline would occur when the taxiway is next reconstructed.
   - No PAC members expressed any opposition to the relocation of the taxiway centerline at the time of its next reconstruction in order to comply with FAA design standards.

7. *Extend TW A to Full-Length Parallel*
   - Mr. Mr. Miklas reviewed the information included in the presentation (see attached).
   - Mr. Miklas stated that this proposed taxiway has been on the Airport's ALP since 1999, and that there is currently an Environmental Assessment being undertaken to investigate the potential development impacts associated with the project.
   - This project is a high priority for FAA in that it would be a significant safety enhancement for the Airport in that it would ultimately eliminate "back-taxi" operations. It would be constructed in two phases.

- There were no other questions or comments from the PAC and no decisions/ endorsements were made.

Potential Landside Projects & Alternatives

1. *Segregation of Operations*
   - Mr. Mr. Miklas reviewed the information included in the presentation (see attached).
   - There were no significant questions or comments from the PAC and no decisions/endorsements were made.

2. *Identify New Development Areas*
   - Mr. Mr. Miklas reviewed the information included in the presentation (see attached).
   - There were no significant questions or comments from the PAC and no decisions/endorsements were made.

3. *Install Fuel Farm*
   - Mr. Mr. Miklas reviewed the information included in the presentation (see attached).
   - It was noted that a fuel farm is considered to be revenue producing project, and is therefore a lower priority for FAA.
   - It was suggested that if the City wanted to install a fuel farm in the near term, it could do so in the hope that it would be reimbursed by the FAA in the future. However, this would be contingent upon funding availability and airport compliance with other FAA safety criteria.
   - There were no other questions or comments from the PAC and no decisions/ endorsements were made.

4. *Other Various Improvements*
   - Mr. Mr. Miklas reviewed the information included in the presentation (see attached).
   - It was noted that the Airport should have some mechanism to deice an aircraft (whether it be actual deicing or use of a heated hangar.
   - There were no other questions or comments from the PAC and no decisions/ endorsements were made.

Potential Airport Administration Projects & Alternatives

1. *Airport Land Use Compatibility Plan*
   - Mr. Mr. Miklas reviewed the information included in the presentation (see attached).
   - There were no significant questions or comments from the PAC and no decisions/endorsements were made.

2. *Other Various Improvements*

- Mr. Mr. Miklas reviewed the information included in the presentation (see attached).
- There were no significant questions or comments from the PAC and no decisions/endorsements were made.

Runway 15-33 Extension

- Mr. Mr. Miklas reviewed the information included in the presentation (see attached).
- Since the Airport currently meets the FAA runway length requirements for the existing aircraft fleet mix, an extension designed to accommodate a slightly larger fleet mix would likely have to be funded through either a private initiative, or some sort of private-public partnership.
- There were general discussions related to the runway length requirements as defined by the FAA, the operators and their insurance providers.
- There was a discussion related to estimated project construction costs, as well as longer-term maintenance costs.
- It was noted that the ultimate goal of this master plan effort with respect to this potential extension is to have in included on the airport layout plan (ALP) to preserve it as a potential future project. (Again, inclusion on the ALP does not guarantee that a project will be funded or constructed. However, for a project to be constructed in the future, it must be on an approved ALP.)
- There was a discussion regarding how the airspace surfaces associated with extended runway would impact the airport neighbors. Mr. Miklas noted that it was a function of which airspace surface was being considered, but that the surfaces could be lowered between 5 and 12 vertical feet at any given point.
- There were no other questions or comments from the PAC and no decisions/ endorsements were made.

Other Points of Discussion / Questions

- Multiple questions were raised with respect to how the project coordination process with the PAC, the City Council and the Public should proceed. Several ideas were debated. Subsequent to the meeting, the following coordination plan was established by the City (note that dates have yet to be established):
    - PAC Meeting #4 to finalize Draft Recommendations (added to the original schedule)
    - Public Meeting to review Draft Recommendations
    - PAC Meeting # 5 to establish Final Recommendations (added to the original schedule)
    - Formal Presentation to the City Council

  - Public Hearing and City Council vote on Final Recommendations (vote could also take place at a time separate from the Public Hearing)
- The PAC decided that there should be some mechanism by which the PAC makes their official recommendation. It was suggested that there be a simply list put together of the potential projects with a request that each PAC member express their preference in regards to the various alternatives. (Note that since the PAC is a "non-voting" body, this would not be considered to be an official vote.)

The meeting adjourned at approximately 11:31AM EDT.

These meeting notes have been respectfully compiled by James Miklas (ASG). Please forward any comments/corrections to Mr. Miklas at jmiklas@airportsolutionsgroup.com

Meeting: BST AMPU - *PAC Meeting 3* Location: Belfast City Hall Date: October 23, 2015 9:00AM

SIGN IN SHEET

	NAME	REPRESENTING	PHONE	EMAIL
1	JAY FOSTER	PILOTS	763-4044	JNF@TIDEWATER.NET
2	Donna Loomans	Neighbors	505-5586	jsdonna@gmail.com
3	ROB DIETZ	ABUTTER	207 338 2666	DIETZNME@GMAIL.com
4	THOMAS KITTREDGE	CITY OF BELFAST	207 338 3370 x16	economicdevelopment@cityofbelfast.org
5	JOSH Dickson	Business / Life Flight	207-299-7411	joshmedic@gmail.com
6	Sadie Lloyd	City of Belfast	207-338-1417x18	slloyd@cityofbelfast.org
7	Joe Slocum	City of Belfast	338-3370 ext 10	jslocum@cityofbelfast.org
8	David Aldrich	Self	338-0298	DGALDRICH@EMBARQMAIL.COM
9	DUKE D TOMLIN	Self	323-0616	duketomlin@myfairpoint.net
10	MICHELLE RICCI	FAA	VIA CONFERENCE CALL	
11	LUKE GARRISON	FAA	"	" "
12	STACIE HASKELL	MaineDOT	"	" "
13				
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Page ______ of ______

BELFAST MUNICIPAL AIRPORT

PROJECT ADVISORY COMMITTEE (PAC) MEETING 3

October 23, 2015, 9:00 AM

COMMENT SHEET

(Please print clearly)

Please identify the general focus of your comment:

☐ Airport Development ☐ Airport Operations ☐ Airport Maintenance ☐ Other

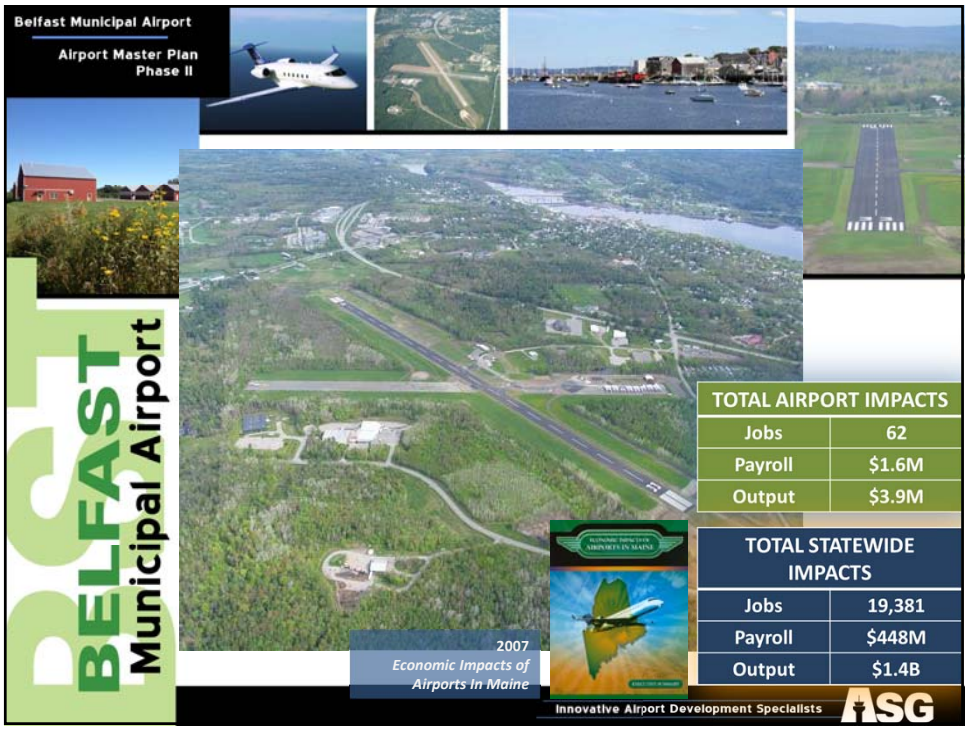
Comments:

Please provide your contact information for reference and possible follow-up:

Please mail additional comments to: Thomas Kittredge, Economic Development Director, City of Belfast, 131 Church St., Belfast, ME 04915; Or

Email additional comments to: James Miklas (ASG): Jmiklas@airportsolutionsgroup.com


BSTT
BELFAST
Municipal Airport
ASG
Innovative Airport Development Specialists
Project Advisory Committee Meeting #3
October 23, 2015


Belfast Municipal Airport
Airport Master Plan
Phase II
BSTT
BELFAST
Municipal Airport
TOTAL AIRPORT IMPACTS
Jobs 62
Payroll $1.6M
Output $3.9M
TOTAL STATEWIDE IMPACTS
Jobs 19,381
Payroll $448M
Output $1.4B
2007
Economic Impacts of Airports In Maine
Innovative Airport Development Specialists
ASG


Belfast Municipal Airport
Airport Master Plan
Phase II
Agenda
1. Introductions / Review
2. Where are we in the Master Plan Process?
3. Review of Goals
4. Development Alternatives
5. Next Steps / Questions & Comments
Meeting Goals:
- Identify / Review Potential Projects
- Identify / Review Alternatives/Implications
- Establish PAC opinion / dissenting opinions for submittal to City Council
BELFAST Municipal Airport
Innovative Airport Development Specialists
ASG


Belfast Municipal Airport
Airport Master Plan
Phase II
Introductions / Review
a. James Miklas (ASG) – Project Manager
b. PAC Members - Serve as project advisors to ensure the BST Master Plan Update addresses the key issues facing the Airport today and into the future.
c. Master Planning Process Review
- A comprehensive study that describes the short-, medium-, and long-term development plans to meet future aviation demand.
- Provides the framework to guide (and protect for potential) future airport development that will cost-effectively satisfy current & future aviation demand, while considering environmental and community factors.
d. Purpose of PAC Meetings - SHARE IDEAS
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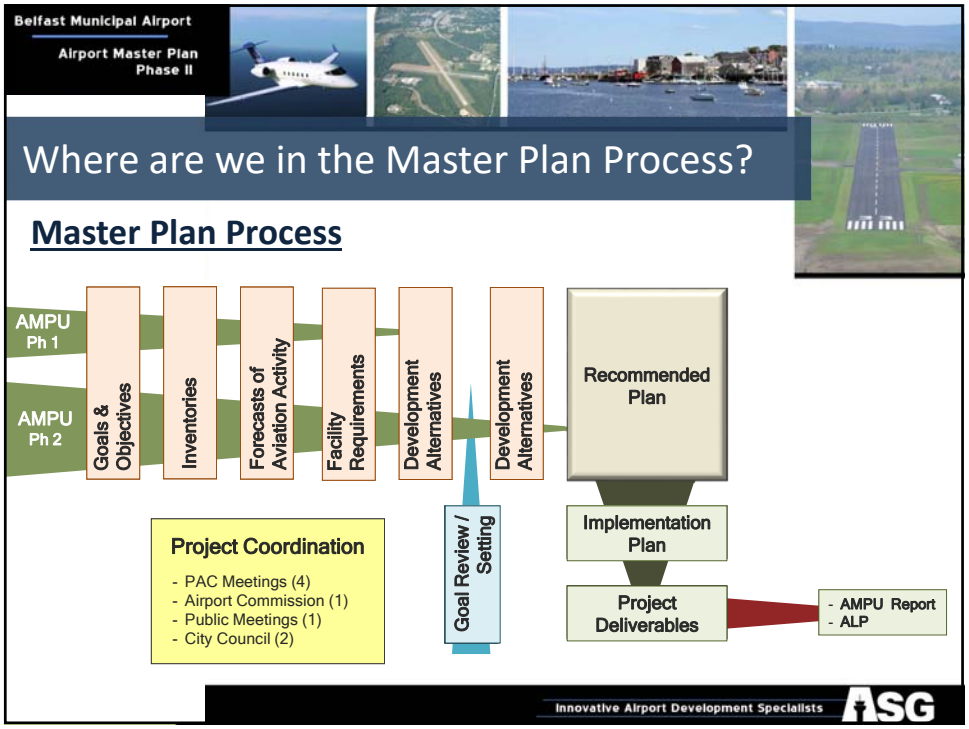
Belfast Municipal Airport
Airport Master Plan
Phase II
Where are we in the Master Plan Process?
Master Plan Process
AMPU Ph 1
AMPU Ph 2
Goals & Objectives
Inventories
Forecasts of Aviation Activity
Facility Requirements
Development Alternatives
Development Alternatives
Recommended Plan
Implementation Plan
Project Deliverables
- AMPU Report
- ALP
Goal Review / Setting
Project Coordination
- PAC Meetings (4)
- Airport Commission (1)
- Public Meetings (1)
- City Council (2)
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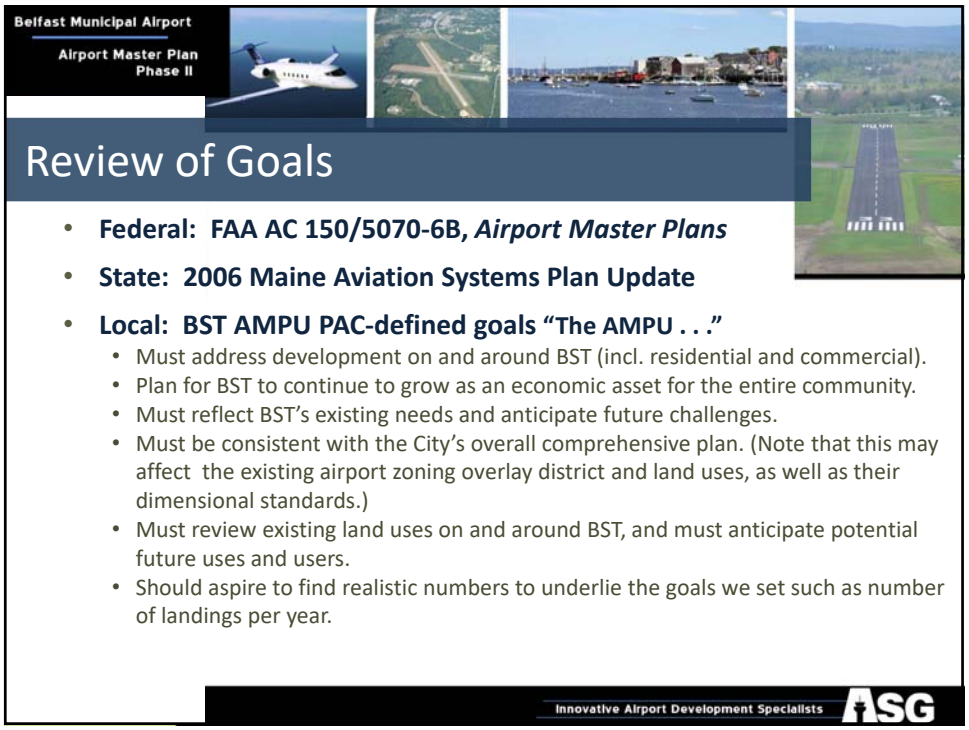
Belfast Municipal Airport
Airport Master Plan
Phase II
Review of Goals
• Federal: FAA AC 150/5070-6B, Airport Master Plans
• State: 2006 Maine Aviation Systems Plan Update
• Local: BST AMPU PAC-defined goals "The AMPU . . ."
• Must address development on and around BST (incl. residential and commercial).
• Plan for BST to continue to grow as an economic asset for the entire community.
• Must reflect BST's existing needs and anticipate future challenges.
• Must be consistent with the City's overall comprehensive plan. (Note that this may affect the existing airport zoning overlay district and land uses, as well as their dimensional standards.)
• Must review existing land uses on and around BST, and must anticipate potential future uses and users.
• Should aspire to find realistic numbers to underlie the goals we set such as number of landings per year.
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Belfast Municipal Airport
Airport Master Plan
Phase II
Review of Goals
• Local: BST AMPU PAC-defined goals (continued)
"The AMPU . . ."
• Should serve all aviation needs and uses including recreational aviation uses at BST.
• Must attempt to quantify the specific impact of a potential runway extension.
• Must continue to provide maximum service to all medical related flights.
• Should pursue a runway length that best supports the users of the runway.
• Must support the needs of local visitors to BST and the City.
• Must maintain safety as the highest priority.
• Should investigate if it is realistic that BST could support small commercial flights today or in the future.
• Should identify appropriate facilities and airport policies to attract a new FBO for BST.
• Should plan for fuel storage and fuel services at BST at a level commensurate with future demand.
• Must preserve BST's long-term development potential in order to allow the City to be flexible to respond to future needs while respecting the environment.
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Belfast Municipal Airport
Airport Master Plan
Phase II
Development Alternatives
• Evaluation Process
• Review Each Potential Project
• Identify Alternatives
• Present Preliminary Decision Matrix
• Questions / Comments
• Document Results
(NOTE: THIS IS AN ADVISORY COMMITTEE – NOT A VOTING ONE)
• Preliminary Decision Matrix
Unofficial – this is simply a tool to help in decision-making
• Safety / Operational - ability of a project to accommodate future demand safely and efficiently
• Economic - cost-effectiveness, cost-benefit and economic ramifications of a project
• Environmental - broad evaluation of environmental factors associated with a project
• Community / Implementation - factors that can impact the ability to implement certain projects, including community and political acceptance.
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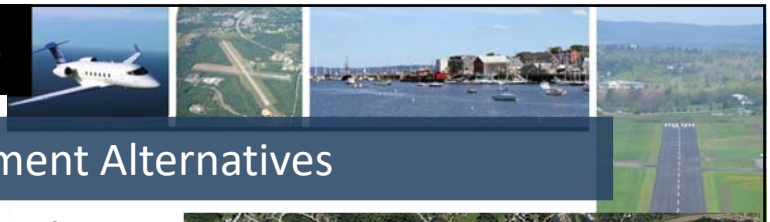
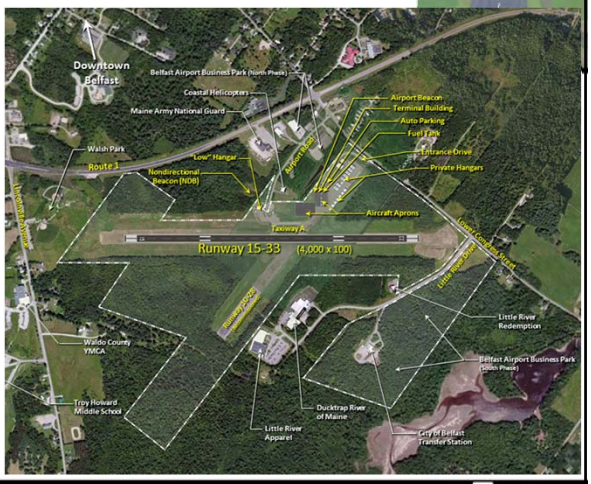
Belfast Municipal Airport
Airport Master Plan
Phase II



Development Alternatives

- **Airside Facilities**
  - Runway 15-33 (existing)
    1. Airspace
    2. Easements
    3. NAVAIDS
  - Taxiway A
    1. CL Separation
    2. Full-length
  - ***Runway 15-33 (extended)***
- **Landside Facilities**
  - Operational Areas
  - Development Areas
  - Fuel Farm
  - Other Improvements
- **Other Issues**



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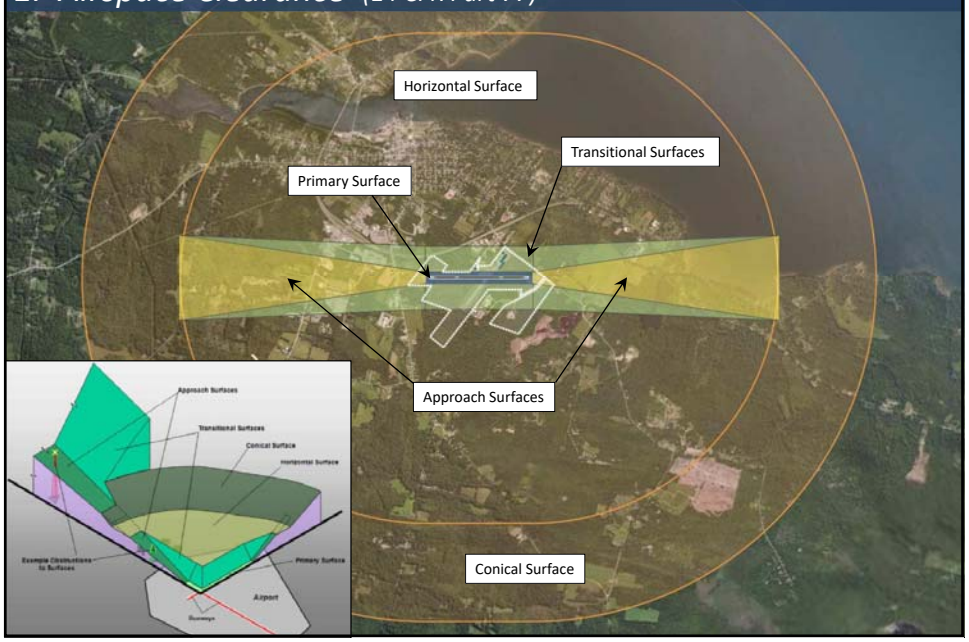
Belfast Municipal Airport
Airport Master Plan
Phase II

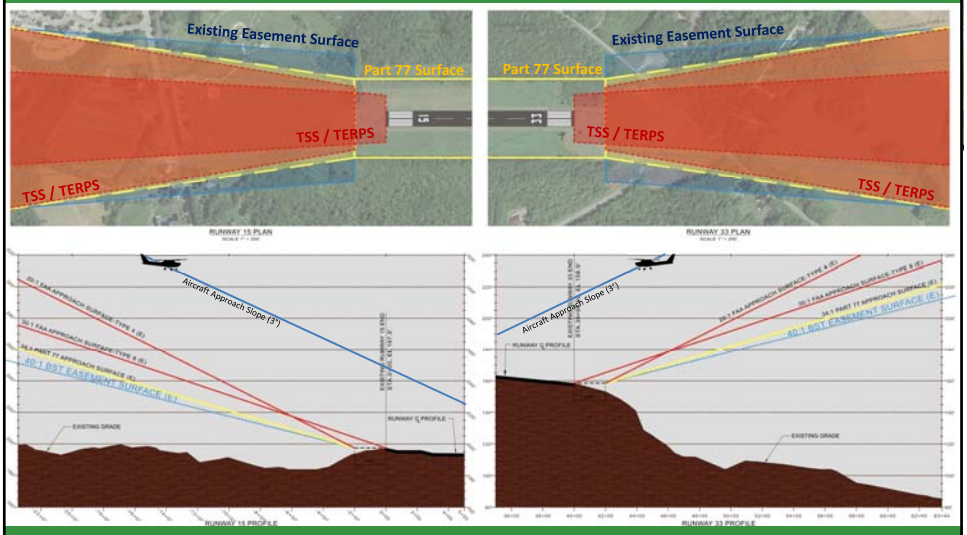
Airside: Runway 15-33 (existing)

- **Runway Facts**
  - Primary/Only Runway; Nonprecision Approaches (LPV 33 - 250’ AGL, 7/8 mi)
  - 4,000 ft x 100 ft; Surface = Paved
  - Airspace Obstructions
- **Facility Requirements**
  - Design Aircraft = Pilatus PC-12 /King Air C90
  - RDC = B-II (91-<121 kts; 49’-<79’ wingspan)
  - FAA Rec. Length (existing) = 3,650 ft
  - FAA Rec. Width (existing) = 75 ft
- **Planning Considerations**
  - Existing Avigation Easements/Lighting
  - Existing Obstructions
  - FAA Grant Assurances
  - City / Airport Liability Exposure

Airside: Runway 15-33 (existing)
1. Airspace Clearance (14 CFR Part 77)

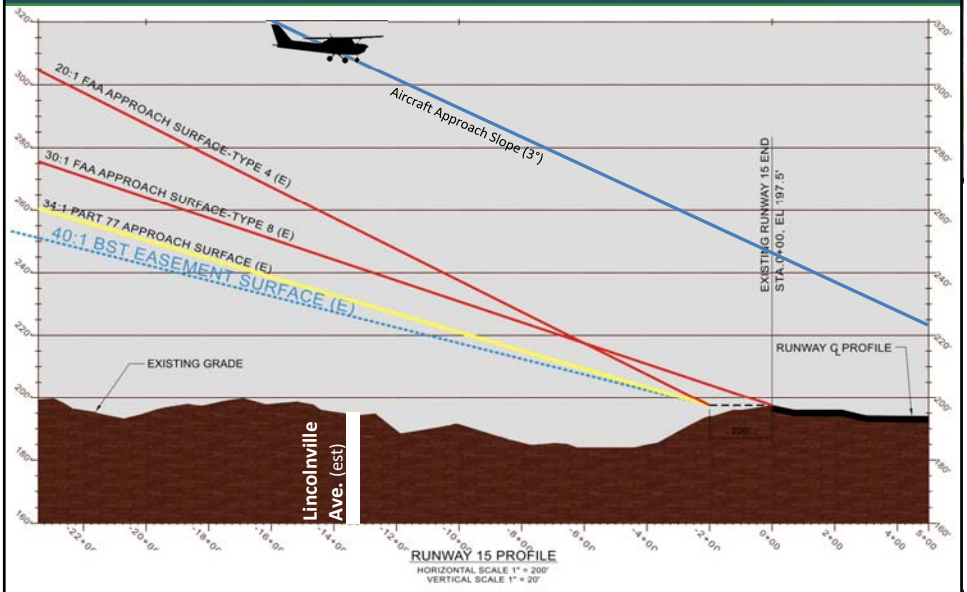


Airside: Runway 15-33 (existing)
1. Airspace Clearance



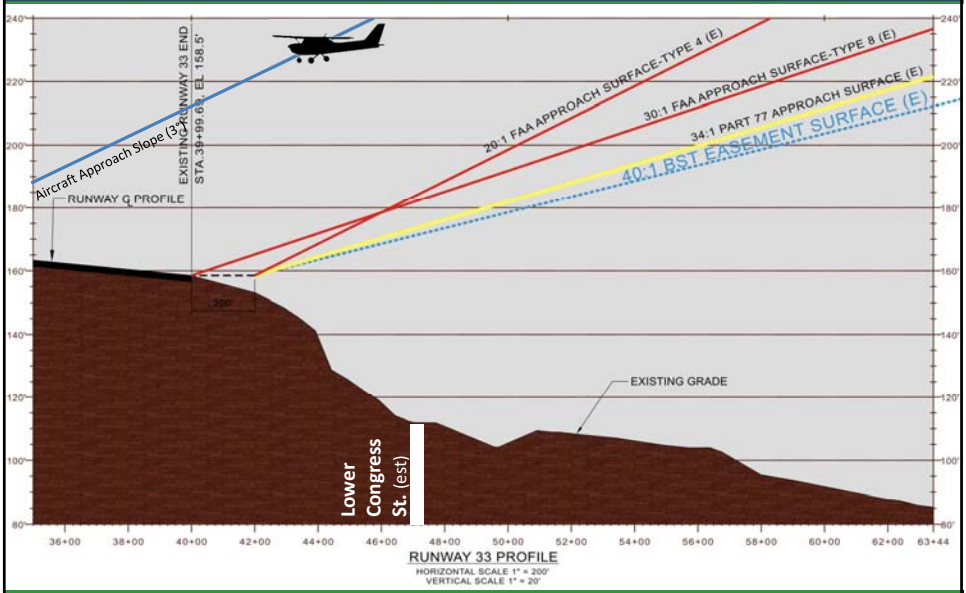
Note: The "BST Easement Surface" only applies to areas where the Airport has existing easements.

Airside: Runway 15-33 (existing)
1. Airspace Clearance



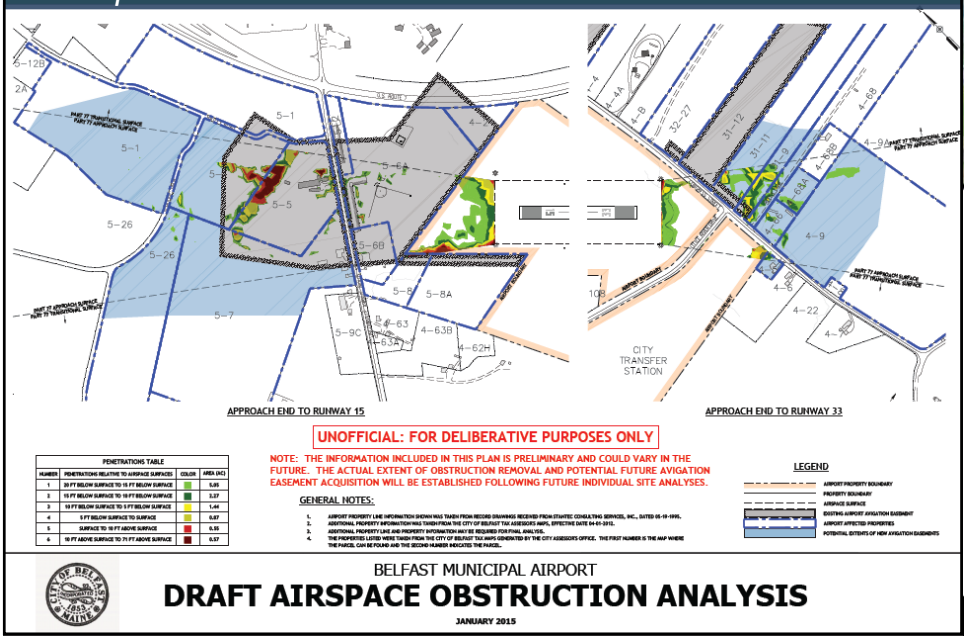
Note: The "BST Easement Surface" only applies to areas where the Airport has existing easements.

Airside: Runway 15-33 (existing)
1. Airspace Clearance



Note: The "BST Easement Surface" only applies to areas where the Airport has existing easements.

Airside: Runway 15-33 (existing)
1. Airspace Clearance



Airside: Runway 15-33 (existing)
1. Airspace Clearance

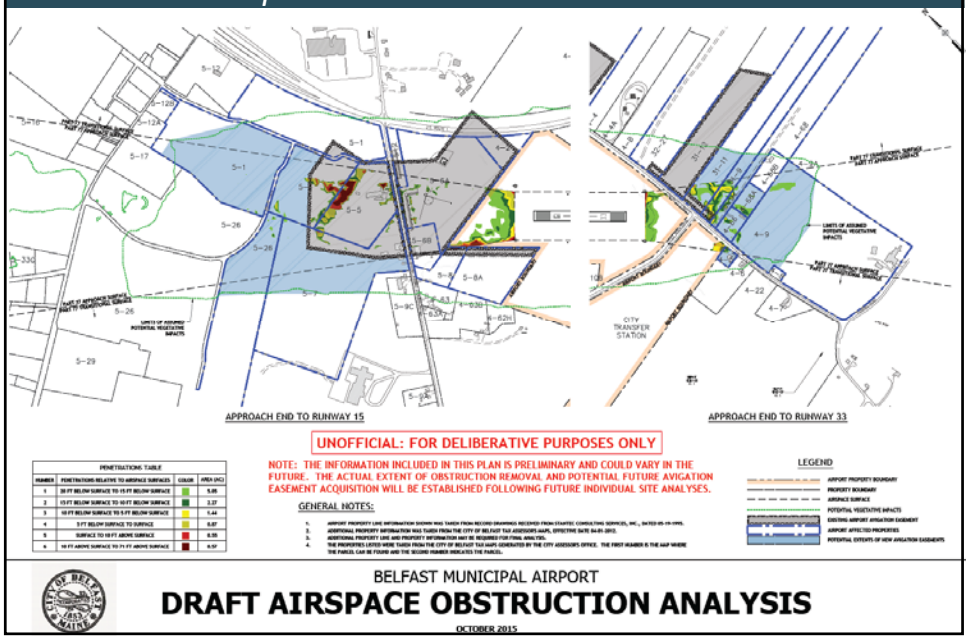
Evaluation Process

- **Identified Alternatives**
  - A. No Action
  - B. Clear vegetative obstructions based on existing runway
  - C. Modify airport operations to consider other less restrictive surfaces
  - D. Physically change the runway end locations
  - E. Other?
- **Preliminary Decision Matrix**

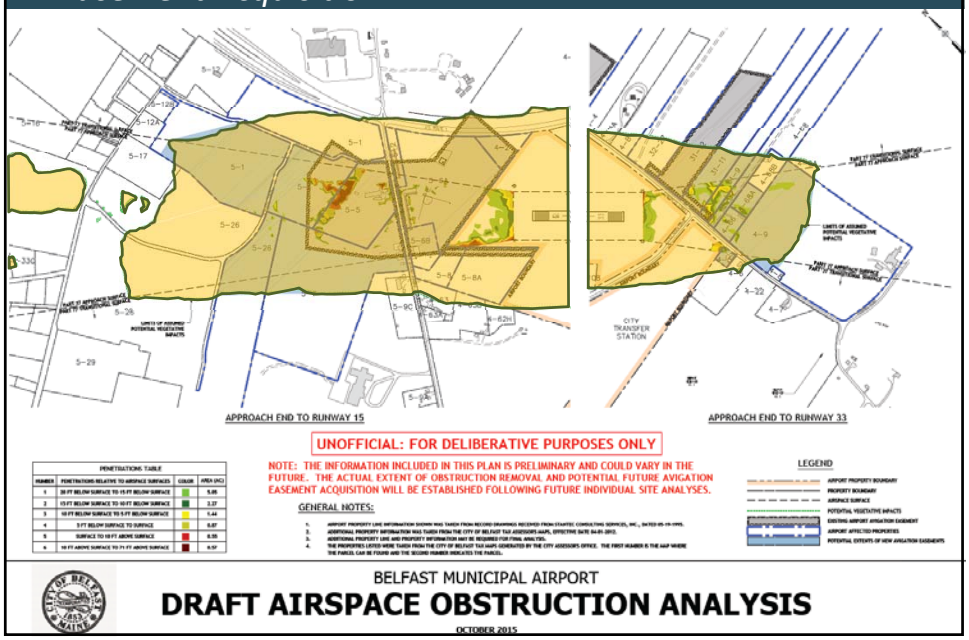
Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A[1]	*NA*	*NA*	*NA*	*NA*	***NA***
B	5	3	2	2	**12**
C	2	2	3	3	**10**
D	1	1	3	3	**9**

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit
[1] Alternative A is deemed to be unacceptable.

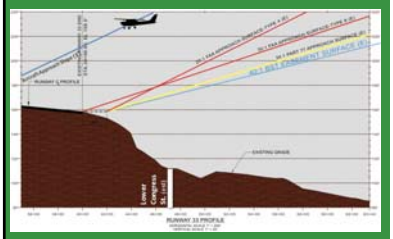
Airside: Runway 15-33 (existing)
2. Easement Acquisition

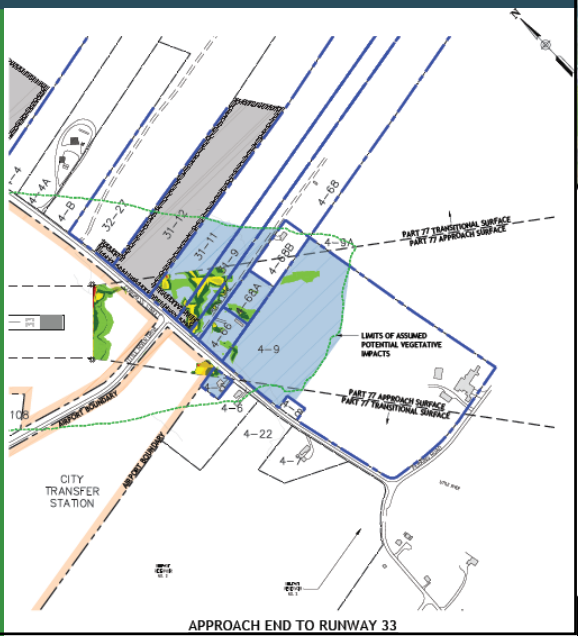


Airside: Runway 15-33 (existing)
2. Easement Acquisition

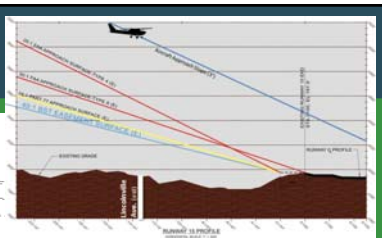


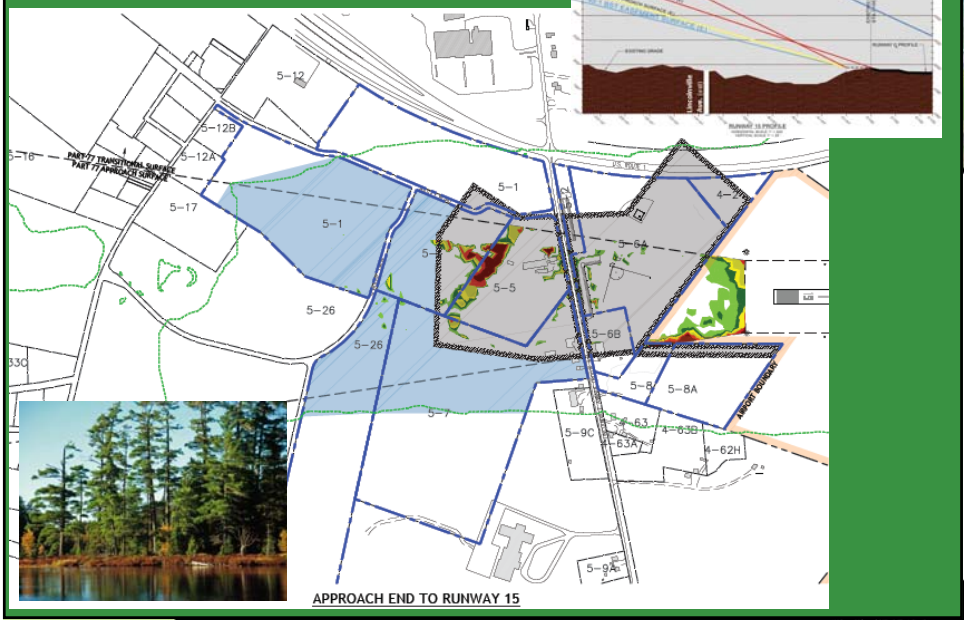
Airside: Runway 15-33 (existing)
2. Easement Acquisition





Airside: Runway 15-33 (existing)
2. Easement Acquisition





Airside: Runway 15-33 (existing)
2. Easement Acquisition

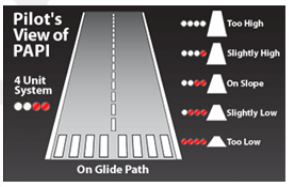
Evaluation Process

- **Identified Alternatives**
  A. No Action
  B. Obtain avigation easements to maintain clear FAA approach surfaces for the existing runway
  C. Other?
- **Preliminary Decision Matrix**

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

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit

Airside: Runway 15-33 (existing)
3. NAVAIDs (VGSI/PAPIs)



Evaluation Process

- **Relevant Notes**
  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.
- **Identified Alternatives**
  A. No Action
  B. Install PAPIs on both ends
  C. Other?
- **Preliminary Decision Matrix**

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

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit

Airside: Runway 15-33 (existing)
3. *NAVAIDs (Wind Socks)*

Evaluation Process

- **Relevant Notes**

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

- **Identified Alternatives**
  - A. No Action
  - B. Install Wind Socks on both ends
  - C. Other?

- **Preliminary Decision Matrix**

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

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit

Airside: Runway 15-33 (existing)
3. *NAVAIDs (Non-Directional Beacon / NDB)*

Evaluation Process

- **Relevant Notes**

  An NDB is a radio transmitter that was utilized by the aviation industry as a navigational aid starting in the 1940s. An ADF provides pilots with a reference to the NDB locations. NDB technology is now obsolete, difficult and expensive to maintain, and newer technologies (i.e., GPS) have replaced its function with more effective navigational equipment.

- **Identified Alternatives**
  - A. Maintain NDB
  - B. Do Not Maintain NDB
  - C. Other?

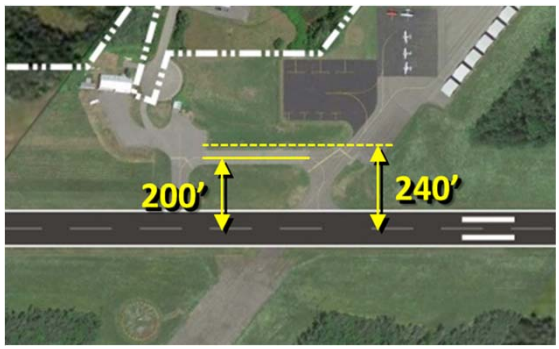
- **Preliminary Decision Matrix**

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

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit

Airside: Taxiway A
1. RW to TW Centerline Separation

- **Relevant Notes**
  - Existing = 200 ft; Design standard = 240 ft (for RDC B-II)
  - FAA Design deficiency (per FAA AC 150/5300-13A, *Airport Design*, Table 3-5).
  - Compliance with FAA design standards is a prerequisite condition for receiving future federal Airport Improvement Program (AIP) grants, as dictated in the associated grant assurances.
  - This action has been endorsed by FAA for safety reasons and was a recommendation of both the 1999 BST AMPU and the 2008 BST ALP Update.



Airside: Taxiway A
1. RW to TW Centerline Separation

Evaluation Process

- **Identified Alternatives**
  - A. No Action / Request Modification of Standards (MOS)
  - B. Relocate Taxiway A Centerline 40 feet
  - C. Relocate Runway 15-33 Centerline 40 feet
  - D. Other?

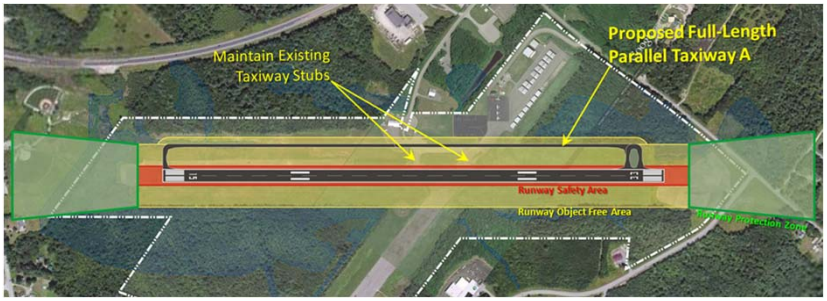
- **Preliminary Decision Matrix**

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

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit
[1] Alternative would likely not be acceptable to FAA.
[2] Alternative would likely be cost-prohibitive.

Airside: Taxiway A
2. Extend TW A to Full-Length Parallel

- **Relevant Notes**
  - Based on existing 4,000 ft Runway 15-33
  - Allows aircraft to enter and exit the runway environment quickly and efficiently.
  - Significant safety enhancement - limits/eliminates "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.
  - Consistent with current FAA focus on reducing the potential for runway incursions and potential aircraft conflicts in the runway environment.
  - This action has been endorsed by FAA for safety reasons and was a recommendation of both the 1999 BST AMPU and the 2008 BST ALP Update.



Airside: Taxiway A
2. Extend TW A to Full-Length Parallel

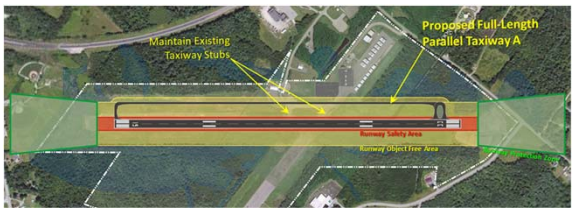
Evaluation Process

- **Identified Alternatives**
  A. No Action
  B. Construct Full-Length Parallel Taxiway A (two phases)
  C. Other?

- **Preliminary Decision Matrix**

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

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit



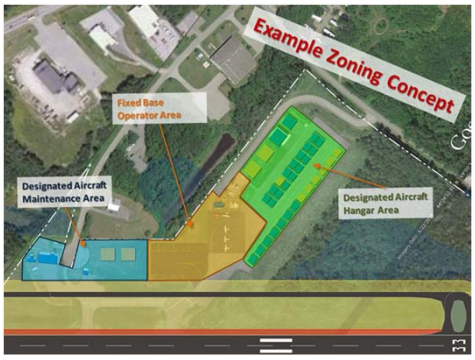
Landside: Segregation of Operations

- **Relevant Notes**
  - 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 (i.e., large commercial service aircraft operations are typically separated from smaller, general aviation operations, or aircraft maintenance operations). At such airports, segregation of operations is considered to be a safety enhancement.
  - Landside planning "rules of thumb":
    - The separation of smaller general aviation aircraft activities (including flight training) from larger, corporate aircraft activities is desirable.
    - It is preferable that FBO operations (particularly maintenance and fueling) be located in relatively close proximity to corporate general aviation operations.
    - It is preferable for fueling facilities to be located in relative close proximity to based aircraft in order 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.
  - Depending on site locations, can significantly increase capital expenditure requirements to start business.

Landside: Segregation of Operations

Evaluation Process

- **Identified Alternatives**
  - A. Segregate On-Airport Operations
  - B. Do Not Segregate On-Airport Operations
  - C. Other?



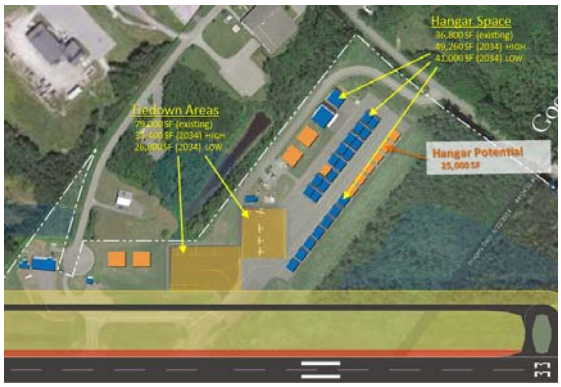
- **Preliminary Decision Matrix**

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

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit

Landside: Identify New Development Areas

- **Relevant Notes**
  - Existing development footprint is adequate to meet long-term demands of the AMPU.

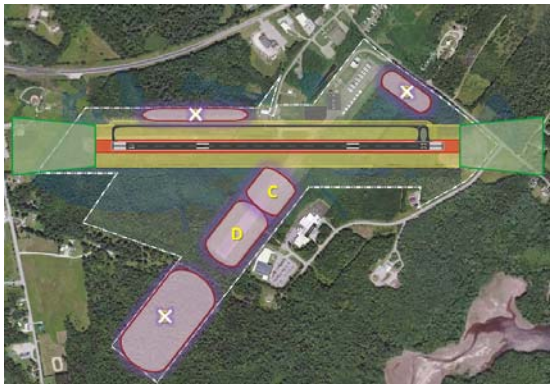


  - Preserve very long-term (20+ years) aviation-related development potential of critical areas.
  - Potentially make other airport areas available for non-aviation-related development in order to create/diversify revenue streams

Landside: Identify New Development Areas

Evaluation Process

- **Identified Alternatives**
  - A. No Action
  - B. Reserve Areas for Future Airport Related Development
  - C. Designate Areas for Future Non-Airport Related Development
  - D. Other?



- **Preliminary Decision Matrix**

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

Landside: Install Fuel Farm

Evaluation Process

- **Relevant Notes**
  - Basic need of tenants and visitors to BST
  - Primary revenue source of airports.
  - Proposed installation of a self-contained, above-ground, double-walled 5,000-gallon 100LL fuel tank with a self-service dispenser and card reader.
- **Identified Alternatives**
  A. No Action
  B. Conduct a phased installation of fuel tanks
  C. Other?
- **Preliminary Decision Matrix**

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	2	2	3	2	**9**
B	4	4	3	4	**15**

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit

Landside: Other Various Improvements

- **Other Potential Projects**
  - Adjust the design and/or usage of the new BST apron (i.e., remarking tiedowns, consider hangar development on apron, etc.).
  - Update existing terminal/administration building (i.e., ADA compliance).
  - Establish enhanced airport security measures (i.e., updating the airport security plan, expanding security fencing, installing security cameras, etc.).
  - Improve auto parking (i.e., establishing a remote/secure lot for longer-term parking).
  - Construct a deicing pad or establishing protocols with local tenants to provide heated hangar access for transient aircraft for the purposes of deicing.
- **Identified Alternatives**
  A. No Action
  B. Action
  C. Other?

Airport Administration: Airport Land Use Compatibility Plan

Evaluation Process

- **Relevant Notes**
  - 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.
  - A plan would help ensure the long-term viability of BST by preventing development in specific areas that is inherently incompatible with airport operations (i.e., towers, residential development, schools, hospitals, etc.). A plan would help ensure that those who 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.
- **Identified Alternatives**
  A. No Action
  B. Establish an Airport Land Use Compatibility Plan
  C. Other?
- **Preliminary Decision Matrix**

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

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit

Airport Administration: Other Various Improvements

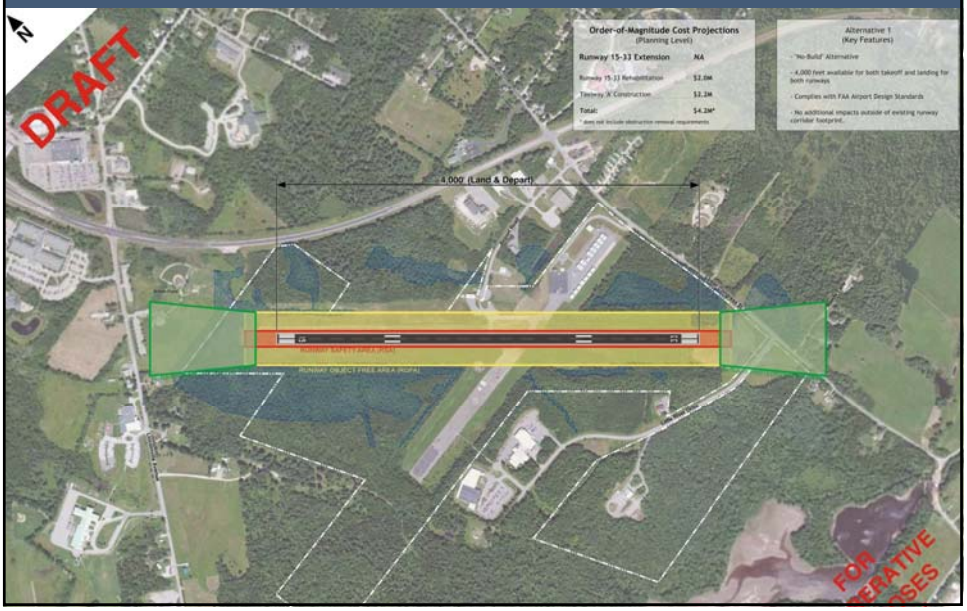
- **Other Potential Projects**
  - Airport Rules & Regulations & Minimum Standards
  - Airport Security Plan
  - Airport Emergency Response Plan
  - Airport Wildlife Hazard Assessment & Action Plan (FY2025)
  - Vegetation Management Plan
  - Rates/Charges Assessments
  - Lease Review / Adjustment / Alignment
  - Stormwater Pollution Prevention Plan (SWPPP)
  - Spill Prevention, Control and Countermeasure Plan (SPCC)
- **Identified Alternatives**
  A. No Action
  B. Action
  C. Other?

Airside: Runway 15-33 (extension)

- **Relevant Comments**
  - Runway extension not justified for application of federal funding – development potential likely only through Public/Private Partnership
  - Interest expressed by local business concerns to develop BST to accommodate up to midsized business aircraft (e.g., Challenger 300, Citation V, Lear 60, etc.)
  - AMPU Phase 1 - Runway Corridor Analysis designed to establish range of potential extension alternatives (if warranted by demand) and to provide a recommendation for a preferred length if a runway extension were to be ultimately pursued.
  - AMPU Phase 1 undertook a top-down (unconstrained) / bottom-up (constrained) analysis in an effort to balance operational demands with local physical limitations
  - Through coordination with key stakeholders (FAA / MaineDOT / City of Belfast / BST users), a "preferred" runway length was established at 4,710' (aka 4,700')
  - Ultimately, Alternative 3A was identified as the preferred alternative. Primary features: extend pavement Southeast (170') & Northwest (240'); pave safety areas for departures; all construction remains On-Airport.

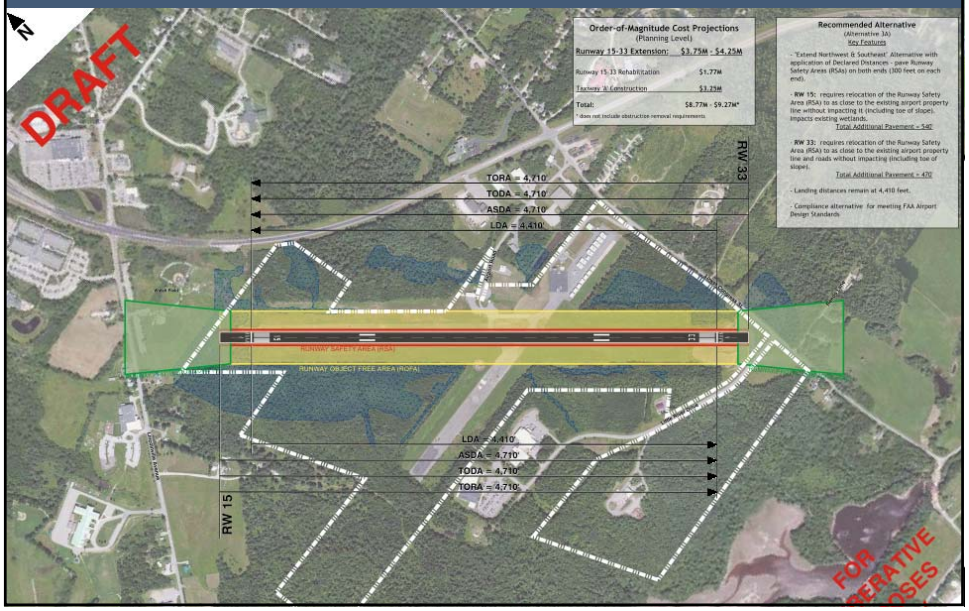
Airside: Runway 15-33 (extension)

Alternative 1 – Existing Conditions



Airside: Runway 15-33 (extension)

Alternative 3A - Extend Southeast (170') & Northwest (240') - Remain On-Airport



Airside: Runway 15-33 (extension)

Evaluation Process

- **Identified Alternatives**
  Seven Alternatives Identified
- **Preliminary Decision Matrix**

Alternatives	Impact / Benefit Factors: Safety / Operations	Economic	Environmental	Implementation	Avg. Total
a) No Action					
Alternative 1	3	3	3	3	3.0
b) Extend Runway					
Alternative 4	5	2	1	2	2.5
Alternative 5	5	1	1	1	2.0
Alternative 6	5	1	1	1	2.0
c) RW Relocation					
	NA	*NA*	*NA*	*NA*	*NA*
d) RW Realignment					
	NA	*NA*	*NA*	*NA*	*NA*
e) RW Shift					
	NA	*NA*	*NA*	*NA*	*NA*
f) Reduce Length					
Alternative 2	3	2	3	5	3.3
Alternative 3A	4	5	3	5	4.3
Alternative 3	4	4	3	4	3.8
g) Combination					
	NA	*NA*	*NA*	*NA*	*NA*

Source: Airport Solutions Group.
Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit
NA = Deemed not acceptable for other reasons

Airside: Runway 15-33 (extension)

Evaluation Process

- **Preliminary Benefit-Cost Matrix**

	Alternative 1	Alternative 2	Alternative 1A	Alternative 3	Alternative 2A	Alternative 4[1]	Alternative 3A	Alternative 5[1]	Alternative 6[1]
Takeoff distance (ft)	4,000	4,170	4,300	4,410	4,470	4,700	4,710	5,000	5,178
Landing distance (ft)	4,000	4,170	4,000	4,410	4,170	4,700	4,410	5,000	5,178
Estimated Range (CL300) (nm)[2]	1,900	2,150	2,275	2,420	2,450	2,710	2,720	2,950	3,100
Meets Athena health Goals	No	No	No	No	No	Yes	Yes	Yes	Yes
Est. Extension Cost (low)	$0	$1,180,000	$1,230,000	$3,030,000	$1,800,000	$3,980,000	$3,750,000	$4,520,000	$4,980,000
Est. Extension Cost (high)	$0	$1,680,000	$1,730,000	$3,530,000	$2,300,000	$4,480,000	$4,250,000	$5,020,000	$5,480,000
Avg. Cost per Linear RW Foot	*NA*	$8,412	$4,933	$8,000	$4,362	$6,013	$5,634	$4,770	$4,440
Avg. Cost per NM (range)	*NA*	$5,720	$3,947	$6,308	$3,727	$5,222	$4,878	$4,543	$4,358

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

[2] *Based on manufacturers data (no winds aloft, does not consider operator restrictions.*

Does not include costs associated with airspace clearance and obstruction removal.

Airside: Runway 15-33 (extension)

Evaluation Process

- **Key Considerations**
  - Proposed extension would fulfill operational demands/requirements for multiple area businesses. It would provide "value-added" benefits to others, and multiplier economic impacts throughout the area economy.
  - Inclusion of a runway extension on the Airport Layout Plan does not mean that it will be built – it simply means that if it were to be constructed, that it meets the federal and state airport design requirements. It specifically states on the ALP that inclusion of a project on the sheet does not guarantee funding.
  - Immediate impacts include:
    - RPZs being shifted 170' SE & 240' NW;
    - lowest airspace surfaces being lowered 5' to the SE & 7' to the NW;
    - highest airspace surfaces being lowered 8.5' to the SE & 12' to the NW;
    - Aircraft will land 170' closer to the property line to the SE & 240' closer to the property line to the NW.
    - Aircraft can start their departure roll 470' closer to the property line to the SE & 540' closer to the property line to the NW.
  - Environmental considerations must be addressed in a formal FAA Environmental Assessment (EA) – a federal action requiring participation public participation; as well as state permitting actions.


Belfast Municipal Airport
Airport Master Plan
Phase II
Next Steps
Upcoming Tasks
1. Belfast City Council Workshop
• This would be a joint workshop with the City Council and the Airport Advisory Committee
2. PAC to provide City Council with recommendations / dissentions
3. ASG to publish DRAFT AMPU Chapters
• Alternatives Analysis
• Airport Plans
• Implementation Plan
4. PAC Meeting #4
• TBD
Innovative Airport Development Specialists
ASG


Belfast Municipal Airport
Airport Master Plan
Phase II
Questions & Comments
Thank You!
Primary Project Team Contact:
James Miklas
Airport Solutions Group
Cell: 617.320.0701
jmiklas@airportsolutionsgroup.com
Innovative Airport Development Specialists
ASG

Belfast Municipal Airport
Airport Master Plan Update - Phase 2

MEETING NOTES

project:	**BST AIRPORT MASTER PLAN UPDATE (AMPU) – PHASE II**
meeting date:	WEDNESDAY, JANUARY 7, 2016 – 9:30 AM (EST)
meeting no:	4
location:	CITY OF BELFAST COUNCIL CHAMBERS, BELFAST, ME
subject:	PROJECT ADVISORY COMMITTEE (PAC) MEETING

ATTENDEES:

name	affiliation
Joshua Dickson *	BUSINESS REPRESENTATIVE
Robert Dietz *	AIRPORT NEIGHBOR
Donna Loomans *	AIRPORT NEIGHBOR
Michael McCarthy *	AIRPORT NEIGHBOR (ATTENDED VIA CONFERENCE CALL)
Mary Mortier *	CITY OF BELFAST (COUNCILOR)
Duke D. Tomlin *	AIRPORT TENANT
James Truxes *	AIRPORT ADVISORY COMMITTEE
Joseph Slocum *	CITY OF BELFAST (CITY MANAGER)
Thomas Kittredge *	CITY OF BELFAST (BST MANAGER)
Sadie Lloyd *	CITY OF BELFAST (ASST. CITY PLANNER)
Tim LeSiege	MAINE DOT AVIATION
Luke Garrison	FEDERAL AVIATION ADMINISTRATION (FAA) (ATTENDED VIA CONFERENCE CALL)
Robert Mallard	AIRPORT SOLUTIONS GROUP (ASG)
Rich Lasdin	AIRPORT SOLUTIONS GROUP (ASG)
James Miklas	JVIATION

* Voting PAC Member

ATTACHMENTS:

The following are attached to this document:

1. A copy of the presentation;
2. Meeting sign-in sheet; and
3. A copy of voting summary.

MEETING PURPOSE / AGENDA:

This was the fourth meeting of the Project Advisory Committee (PAC) for the Belfast Municipal Airport (BST) Airport Master Plan Update (AMPU) – Phase II. The primary purpose of this meeting was for the PAC membership to individually "vote" for preferred alternatives for the various projects introduced and discussed in PAC Meeting 3. It should be noted that this "vote" was non-binding, and was simply utilized as a mechanism by which to establish PAC opinions regarding the proposed projects and, if possible, come to consensus on recommendations. The PAC's final recommendations will ultimately be presented for consideration to the Belfast City Council, which will make the final determination on what projects will be advanced in the future. As detailed in the agenda (see attached presentation for meeting agenda), the meeting focused on the following questions and elements:

1. Introductions / Overview

2. Where are we in the Master Plan Process?
3. Review of Airport Master Plan Goals
4. Project Options (Development Alternatives) & Issues
5. Next Steps / Questions & Comments

PROJECT INTRODUCTIONS:

Thomas Kittredge (BST Manager) welcomed the PAC membership in attendance, and then turned the meeting over to Jim Miklas (Project Manager) who initiated introductions and started the presentation. Mr. Miklas reminded the PAC of the following points discussed in all previous PAC Meetings:

- The role of the PAC and its members is to serve as project advisors to ensure the BST Master Plan Update addresses the key issues facing the Airport today and into the future.
- 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 & future aviation demand, while considering environmental and community factors.
- BST is an important transportation and economic asset for the City of Belfast that must be maintained (and developed, as appropriate) for the long-term benefit of the City and the surrounding area.

Mr. Miklas then reviewed the individual master plan goals established by the PAC at the early phase of the master planning effort. He noted that based on a suggestion during the previous PAC meeting that the following goal was added: "The AMPU must include an opportunity for general public review and input prior to presentation to the City Council."

He then reminded the attendees that PAC Meeting 3 encompassed a detailed review of all potential projects that could ultimately be included in the final airport development plan of the Airport Master Plan, but that no decisions were made at that meeting. Since that time, the City published a listing of all the projects in anticipation of PAC Meeting 4 to serve as a basis for determining recommendations.

Mr. Miklas then stated that the primary purpose of PAC Meeting 4 was to establish "official" PAC recommendations for consideration by the City Council with respect to each of the potential master plan projects. Ideally, a PAC consensus would be established and presented to the Council; however, where there are differing opinions on a specific project, dissenting opinions will be entered into the record for future Council consideration.

POINTS OF DISCUSSION:

Mr. Miklas gave a presentation (see attached) to facilitate group discussion. He specifically reviewed each individual project presented in PAC Meeting 3 and reflected in the City of Belfast supplemental document. The following sections list the individual projects reviewed, any relevant discussions that were undertaken, the ultimate "vote" of the ten (10) PAC members in attendance, and any additional comments. (Note that detailed reviews of the individual projects have not been provided here, but have been previously included in PAC Meeting 3 notes and attachments.)

AIRSIDE: RUNWAY 15-33 (EXISTING)

1.1 Airspace Clearance

- Project related notes/discussion:
  - This project is currently moving forward due to the FAA requirement to act on existing obstructions to federal airspace surfaces.
  - Previous BST master plans have indicated the need to clear airspace surfaces
- Project vote options:
  - No Action (0 votes)
  - ***Clear vegetative obstructions based on existing runway (10 votes)***
  - Modify Airport operations to consider other less restrictive surfaces (0 votes)
  - Physically change the runway end locations (0 votes)
  - Other? (0 votes)
- Additional comments:
  - 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 vs commercial) and that appropriate justification for the decision making process be well documented).
  - Safety must be viewed as paramount in determining the clearance priorities.

1.2 Easement Acquisition

- Project related notes/discussion:
  - Based on aerial mapping data, there are emerging obstructions on the Runway 33 approach end.
  - The proposed easements are based on the existing runway length.
  - This project is currently moving forward due to the FAA requirement to act on obstructions to federal airspace surfaces.
- Project vote options:
  - No Action (0 votes)
  - ***Obtain avigation easements to maintain clear FAA approach surfaces for the existing runway (10 votes)***
  - Other? (0 votes)
- Additional comments:
  - This project is needed to maintain safety on and around the Airport.

1.3 NAVAIDs (VGSI/PAPIs)

- Project related notes/discussion:
  - Safety enhancement for pilots operating at the Airport.
  - Lights are not visible to those on the ground.
- Project vote options:
  - No Action (0 votes)
  - ***Install PAPIs on both ends (10 votes)***

- Other? (0 votes)
- Additional comments:
  - These would benefit neighbors by providing a better flight path for aircraft – avoiding "low and slow" approaches that can create unnecessary noise.
  - These would likely be installed as part of some other project at the Airport.

1.4 NAVAIDs (Windsocks)

- Project related notes/discussion:
  - Safety enhancement for pilots operating at the Airport.
- Project vote options:
  - No Action (0 votes)
  - ***Install wind socks on both ends (10 votes)***
  - Other? (0 votes)
- Additional comments:
  - Wind sock should be sited appropriately.

1.5 NAVAIDs (Non-Directional Beacon / NDB)

- Project related notes/discussion:
  - Equipment is out-of-service, antiquated, expensive to maintain, and generally not used by the pilot community.
- Project vote options:
  - No Action (0 votes)
  - ***Do not maintain NDB (i.e., decommission the equipment and approach) (10 votes)***
  - Other? (0 votes)
- Additional comments:
  - The new GPS-based approaches are better and adequate replace the need for the NDB.

AIRSIDE: TAXIWAY A

2.1 RW to TW Centerline Separation

- Project related notes/discussion:
  - Current separation of existing taxiway is not in compliance with FAA airport design standards.
  - Relocation would only occur in association with a larger taxiway or apron project – it is not anticipated to be a standalone project.
- Project vote options:
  - No Action / Request Modification of Standards (MOS) (0 votes)
  - ***Relocate Taxiway A Centerline 40 feet (10 votes)***
  - Relocate Runway 15-33 Centerline 40 feet (0 votes)
  - Other? (0 votes)
- Additional comments:
  - This should not be a standalone project.

2.2 Extend TW A to Full-Length Parallel

- Project related notes/discussion:
  - This is a high-priority project for the FAA since it is safety-related.
  - This will help expedite aircraft on and off the runways as quickly and safely as possible.
  - There is currently an environmental assessment being undertaken for this potential project to assess potential site issues. This effort includes limited design and site investigations. That project thus far has discovered wetlands, a vernal pool, and ledge, which has already had an impact on the runway design.
- Project vote options:
  - No Action (0 votes)
  - ***Construct Full-Length Parallel Taxiway A in two phases (10 votes)***
  - Other? (0 votes)
- Additional comments:
  - None

LANDSIDE: FACILITIES & ISSUES

3.1 Segregation of Operations

- Project related notes/discussion:
  - At busier airports, mixing unlike operations can occasionally cause conflicts. This would establish particular "zones" for specific operations.
  - Downside to this proposal is that it could inhibit development if the designated "zone" for a given operation has more potential development costs (i.e., pavement, utilities, etc.) than other "zones".
  - Typically, airports develop "organically" (i.e., based on the needs of developers).
  - The City is currently testing mixing operations through its leasing agreements with maintenance operators to ensure that such "mixing" will not create unreasonable issues on the Airport.
  - It was noted that all ground operations are at the discretion of and the responsibility of the operating pilots.
- Project vote options:
  - Segregate On-Airport Operations (0 votes)
  - Do Not Segregate On-Airport Operations (0 votes)
  - ***Other / Continue to Evaluate (10 votes)***
- Additional comments:
  - It was determined by the PAC that this issue be "tabled" pending the results of the City's recent effort to allow mixing of on-Airport operations through its leasing agreements.

3.2 Identify New Development Ares

- Project related notes/discussion:

- Areas not identified on an airport for specific uses are assumed to be "reserved for future aviation-related development."
- There was discussion as to if there should be specific areas identified as being "reserved for future non-aviation-related development" (i.e., the south end of the old runway, abutting the business park). There was further discussion on how to establish "highest and best use" of non-aviation-related lands on the Airport due to its limited availability.
- For Airport property to be "released" for non-aviation-related development, there is a specific process that would have to be undertaken by the Airport with the FAA.

- Project vote options:
  - ***No Action / All Airport Properties Remain Reserved for Airport-Related Development (7 votes)***
  - Designate Areas for Future Non-Airport Related Development (3 votes)
  - Other (0 votes)
- Additional comments:
  - The Airport should strive to generate more development and revenue through its properties (aviation-related and non-aviation-related).

3.3 Install Fuel Farm

- Project related notes/discussion:
  - The Airport does not currently have any fuel available for use or sale to tenants and/or operators.
  - Fuel sales (particularly Jet-A) are typically a significant contributor to an airport's revenue stream.
  - Assumed that this would likely be a phased installation (Avgas installation and then Jet-A). However, there are other options for doing both at the same time.
- Project vote options:
  - No Action (0 votes)
  - ***Conduct a phased installation of fuel tanks (10 votes)***
  - Other (0 votes)
- Additional comments:
  - If Jet-A is offered, there should be a truck available. 100LL can be self-serve.
  - Sizing of the tanks and fuel offered should be determined based on market trends, cost and need.

3.4 Adjust the design and/or usage of the new BST apron (i.e., remarking tiedowns, consider hangar development on apron, etc.).

- Project related notes/discussion:
  - This would make the apron potentially more efficient for future use.
- Project vote options:
  - No Action (0 votes)
  - ***Action – Adjust design and/or usage (10 votes)***

- Other (0 votes)
- Additional comments:
  - None

3.5 Maintain/Update existing terminal/administration building (i.e., ADA compliance).

- Project related notes/discussion:
  - Building should be "maintained" to meet current standards – no enhancement is really required.
- Project vote options:
  - No Action (0 votes)
  - ***Action – Maintain/update to meet existing standards (10 votes)***
  - Other (0 votes)
- Additional comments:
  - None

3.6 Establish enhanced airport security measures (i.e., updating the airport security plan, expanding security fencing, installing security cameras, etc.).

- Project related notes/discussion:
  - New TSA security recommendations for GA airports are soon to be released.
  - Airport currently limited security (some fencing and cameras), but no official security plan.
- Project vote options:
  - No Action (0 votes)
  - ***Action – Define and establish enhanced airport security measures (10 votes)***
  - Other (0 votes)
- Additional comments:
  - Encompasses a variety of potential measures that will be further defined in the future.
  - Consider any cameras being web-accessible.
  - Consider key-pad entry for gates.

3.7 Improve auto parking (i.e., establishing a remote/secure lot for longer-term parking).

- Project related notes/discussion:
  - Airport currently experiences parking demand peaks associated with Pilatus operations. Those peaks can create parking shortages. This occurs mostly in the summer months.
  - There may be additional need associated with based aircraft as well.
- Project vote options:
  - No Action (0 votes)
  - ***Action – Improve auto parking (10 votes)***
  - Other (0 votes)
- Additional comments:
  - Should consider existing based aircraft owners parking procedures.

3.8 Construct a deicing pad or establishing protocols with local tenants to provide heated hangar access for transient aircraft for the purposes of deicing.

- Project related notes/discussion:
  - Airport currently has no anti-icing or deicing capabilities.
  - Airport may not need to "construct" new facilities, but may simply need to establish protocols/guidance for permitting these activities.
  - Airport is unmanned, so deicing would have to be accomplished through other means in the short term (i.e., existing heated hangar, existing maintenance operator, etc.).
  - There needs to be additional research and/or documented demand related to these potential services.
- Project vote options:
  - No Action (0 votes)
  - Action (0 votes)
  - ***Other / Further evaluate the issue (10 votes)***
- Additional comments:
  - The Airport needs greater definition of the operator needs, and options available. This may be more appropriately defined in the Airport Rules & Regulations and/or Minimum Standards documents.

AIRPORT ADMINISTRTION

4.1 Airport Land Use Compatibility Plan.

- Project related notes/discussion:
  - This action was discussed extensively at PAC Meeting 3.
  - It is the intent of the City to move forward on this project.
- Project vote options:
  - No Action (0 votes)
  - ***Action – Establish airport land use compatibility plan (10 votes)***
  - Other (0 votes)
- Additional comments:
  - Should consider integrating current protocols for Unmanned Aircraft Systems (UAS) operations.

4.2 through 4.10 Other Airport Best Management Practices

- Project related notes/discussion:
  - Nine (9) airport best management practice (BMP) items were identified as recommended for the Airport to either update or enact in the future.
  - It is the intent of the City to move forward on these items.
- Project vote options:
  - No Action (0 votes)
  - ***Action - Enact Best Management Practices (10 votes)***
  - Other (0 votes)

- Additional comments:
  - None.

RUNWAY 15-33 EXTENSION

- Project related notes/discussion:
  - This action has been discussed extensively at PAC Meetings 1, 2, and 3.
  - There was another review of the "Relevant Comments", constraints, and alternatives developed (see attached presentation).
  - There is not current justification for federal funding to support a runway extension – any extension would require a private-public partnership at a minimum. This alternative is "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.
  - There were discussions related to endorsing an alternative with a runway length longer than that reflected in Alternative 3A (i.e., show 5,000-foot runway 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 and 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 sponsor, the state and the FAA, it must be included on the Airport Layout Plan (ALP). If it is not included on the ALP, it cannot be considered - a new ALP Update or Master Plan effort would have to be undertaken to put the extension on the ALP to allow for that consideration.
  - 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 or not to continue to consider the possibility. The following

potential language was offered, "Should the city council consider a runway extension at Belfast Municipal Airport, the preferred alternative is Alternative 3A."
    - There was a suggestion that the runway extension should be thoroughly discussed in the Master Plan, but that it not be included on the ALP.
- Project vote options:
    - No Action (existing condition) – Alternative A (0 votes)
    - ***Action - Alternative 3A (8 votes)***
    - Other Action – Continue to study the potential within a Master Plan context, but do not include it on the ALP (1 votes)
    - Abstain (1 vote)
- Additional comments:
    - Additional comments will continue to be received from the PAC and added to the record until January 18, 2016.
    - NOTE: the following is the only comment received after PAC Meeting 4 – *". . . clarify the language for Option H . . . It should be: 'No action; continue to evaluate all impacts of proposed option 3A'".*

Next Steps

- Public Meeting to review Draft Recommendations
- PAC Meeting # 5 to establish Final Recommendations (added to the original schedule)
- Formal Presentation to the City Council
- PAC to provide City Council with recommendations / dissentions
- Public Hearing and City Council vote on Final Recommendations (vote could also take place at a time separate from the public hearing)
- Complete AMPU Technical Report
- Complete / Submit ALP

The meeting adjourned at approximately 12:36 PM EST.

These meeting notes have been respectfully compiled by James Miklas (ASG).

Please forward any comments/corrections to Richard Lasdin at rlasdin@airportsolutionsgroup.com


BSTI
BELFAST
Municipal Airport
ASG
Innovative Airport Development Specialists
Project Advisory Committee Meeting #4
January 7, 2016


Belfast Municipal Airport
Airport Master Plan
Phase II
Agenda
1. Introductions / Overview
2. Where are we in the Master Plan Process?
3. Review of Airport Master Plan Goals
4. Project Options (Development Alternatives) & Issues
5. Next Steps / Questions & Comments
Meeting Goals:
- Establish PAC recommendations for all proposed project options
- Rank PAC-generated airport master plan goals
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Municipal Airport
Innovative Airport Development Specialists
ASG


Belfast Municipal Airport
Airport Master Plan
Phase II
Introductions / Review
a. James Miklas (ASG) – Project Manager
b. PAC Members - Serve as project advisors to ensure the BST Master Plan Update addresses the key issues facing the Airport today and into the future.
c. Master Planning Process Review
- A comprehensive study that describes the short-, medium-, and long-term development plans to meet future aviation demand.
- Provides the framework to guide (and protect for potential) future airport development that will cost-effectively satisfy current & future aviation demand, while considering environmental and community factors.
d. Purpose of PAC Meetings - SHARE IDEAS
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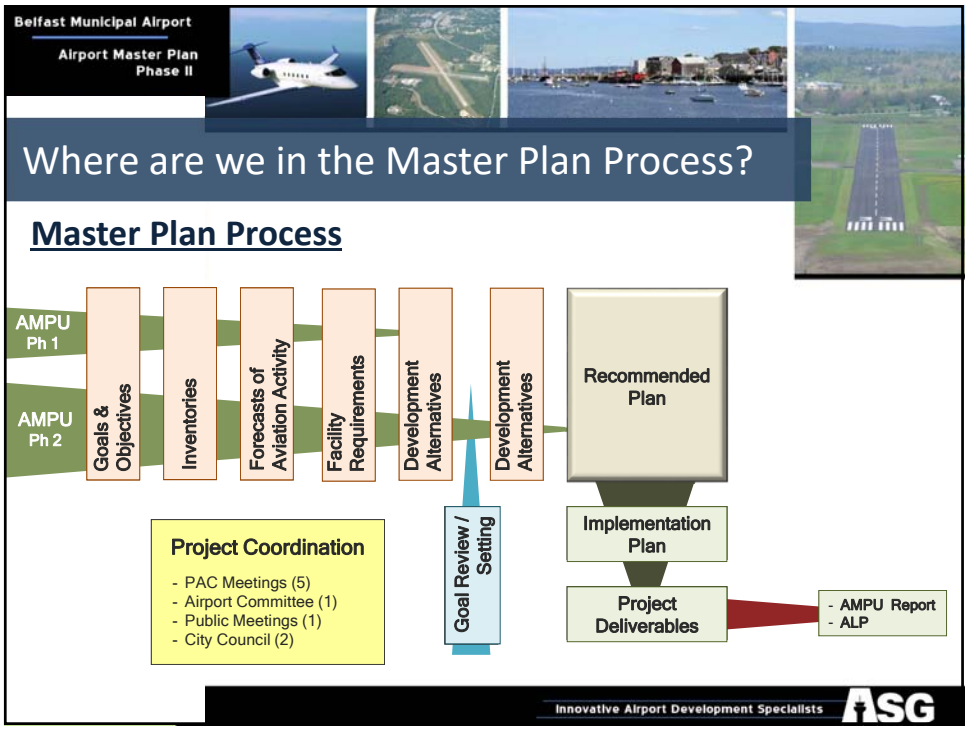
Belfast Municipal Airport
Airport Master Plan
Phase II
Where are we in the Master Plan Process?
Master Plan Process
AMPU Ph 1
AMPU Ph 2
Goals & Objectives
Inventories
Forecasts of Aviation Activity
Facility Requirements
Development Alternatives
Development Alternatives
Recommended Plan
Implementation Plan
Project Deliverables
- AMPU Report
- ALP
Goal Review / Setting
Project Coordination
- PAC Meetings (5)
- Airport Committee (1)
- Public Meetings (1)
- City Council (2)
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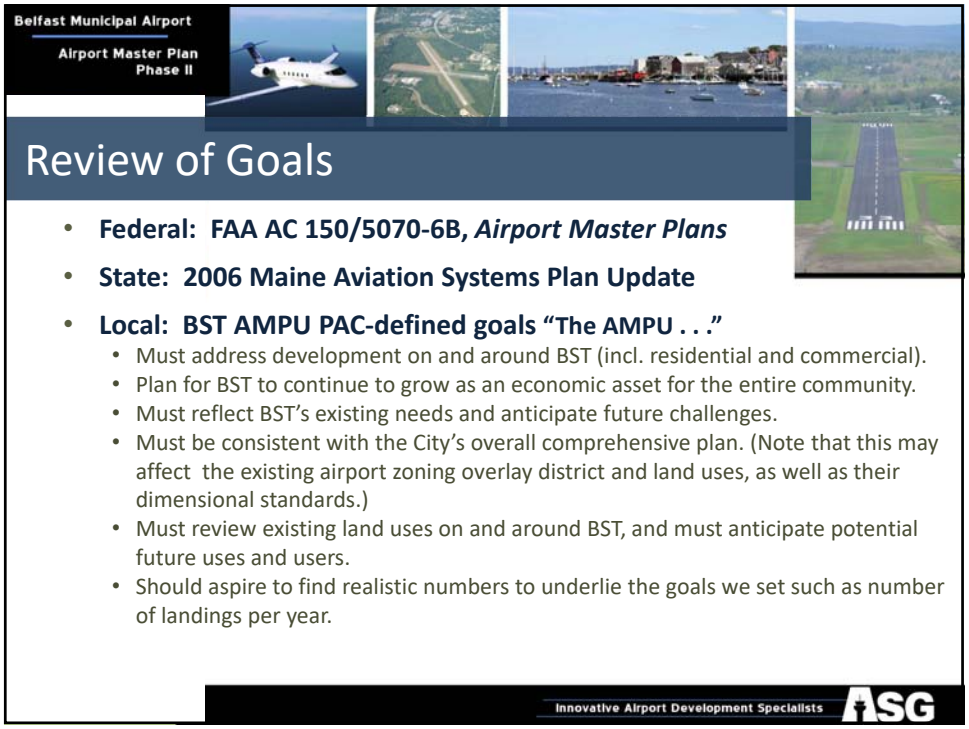
Belfast Municipal Airport
Airport Master Plan
Phase II
Review of Goals
Federal: FAA AC 150/5070-6B, Airport Master Plans
State: 2006 Maine Aviation Systems Plan Update
Local: BST AMPU PAC-defined goals "The AMPU . . ."
Must address development on and around BST (incl. residential and commercial).
Plan for BST to continue to grow as an economic asset for the entire community.
Must reflect BST's existing needs and anticipate future challenges.
Must be consistent with the City's overall comprehensive plan. (Note that this may affect the existing airport zoning overlay district and land uses, as well as their dimensional standards.)
Must review existing land uses on and around BST, and must anticipate potential future uses and users.
Should aspire to find realistic numbers to underlie the goals we set such as number of landings per year.
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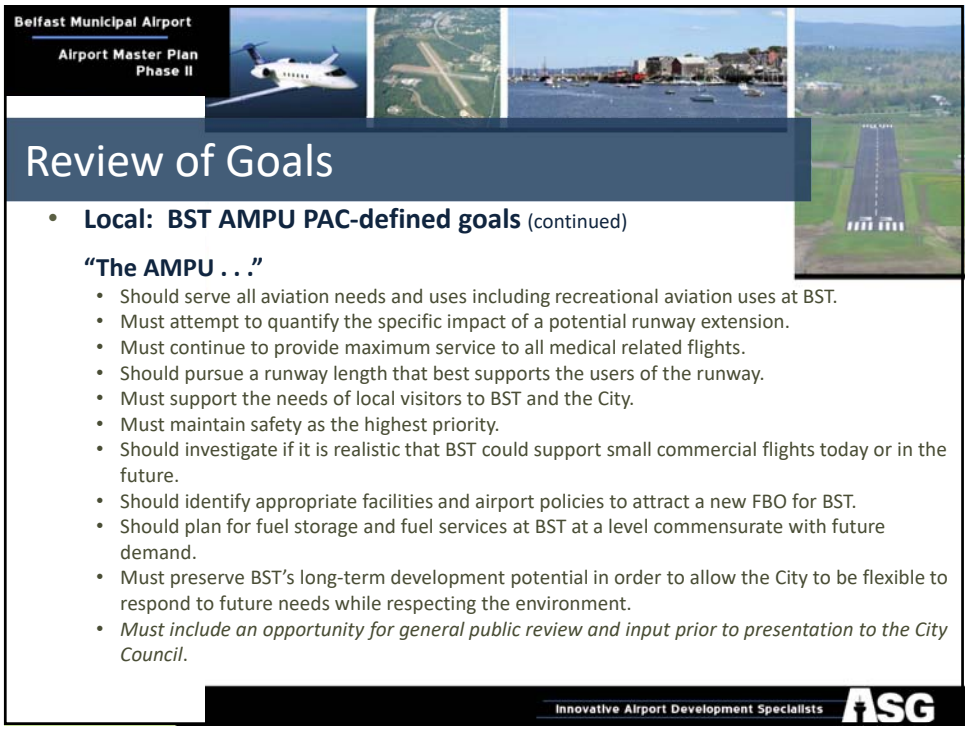
Belfast Municipal Airport
Airport Master Plan
Phase II
Review of Goals
Local: BST AMPU PAC-defined goals (continued)
"The AMPU . . ."
Should serve all aviation needs and uses including recreational aviation uses at BST.
Must attempt to quantify the specific impact of a potential runway extension.
Must continue to provide maximum service to all medical related flights.
Should pursue a runway length that best supports the users of the runway.
Must support the needs of local visitors to BST and the City.
Must maintain safety as the highest priority.
Should investigate if it is realistic that BST could support small commercial flights today or in the future.
Should identify appropriate facilities and airport policies to attract a new FBO for BST.
Should plan for fuel storage and fuel services at BST at a level commensurate with future demand.
Must preserve BST's long-term development potential in order to allow the City to be flexible to respond to future needs while respecting the environment.
Must include an opportunity for general public review and input prior to presentation to the City Council.
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Belfast Municipal Airport
Airport Master Plan
Phase II

Development Alternatives

- **Evaluation Process**
  - Review Each Potential Project
  - Identify Alternatives
  - Present Preliminary Decision Matrix
  - Questions / Comments
  - Document Results
- **Preliminary Decision Matrix**

Unofficial – this is simply a tool to help in decision-making

- *Safety / Operational* - ability of a project to accommodate future demand safely and efficiently
- *Economic* - cost-effectiveness, cost-benefit and economic ramifications of a project
- *Environmental* - broad evaluation of environmental factors associated with a project
- *Community / Implementation* - factors that can impact the ability to implement certain projects, including community and political acceptance.

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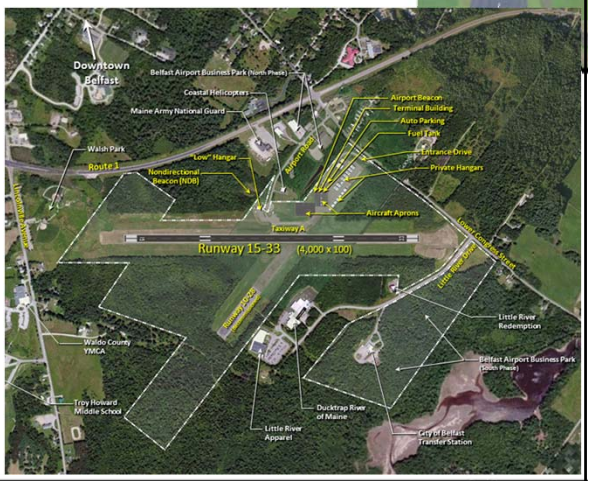
Belfast Municipal Airport
Airport Master Plan
Phase II

Development Alternatives

- **Airside Facilities**
  - Runway 15-33 (existing)
    1. Airspace
    2. Easements
    3. NAVAIDS
  - Taxiway A
    1. CL Separation
    2. Full-length
  - ***Runway 15-33 (extended)***
- **Landside Facilities**
  - Operational Areas
  - Development Areas
  - Fuel Farm
  - Other Improvements
- **Other Issues**



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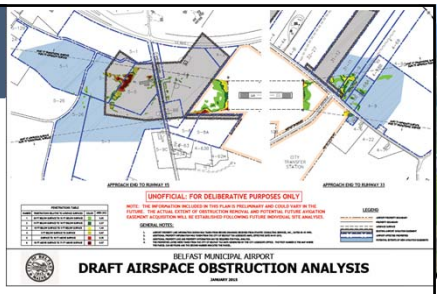
Airside: Runway 15-33 (existing)
*1.1 Airspace Clearance**



Evaluation Process

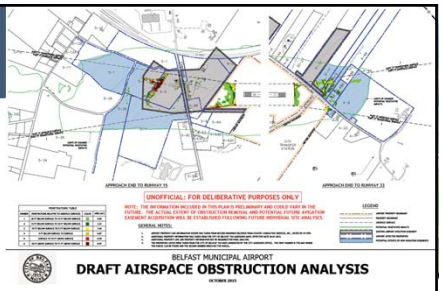
- **Identified Alternatives**
  - A. No Action
  - B. Clear vegetative obstructions based on existing runway
  - C. Modify airport operations to consider other less restrictive surfaces
  - D. Physically change the runway end locations
  - E. Other?
- **Preliminary Decision Matrix**

Alt	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	3	3	**10**
D	1	1	3	3	**9**

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit
[1] Alternative A is deemed to be unacceptable.

**** Project in process*** *(FAA EA FONSI issued)*

Airside: Runway 15-33 (existing)
*1.2 Easement Acquisition**



Evaluation Process

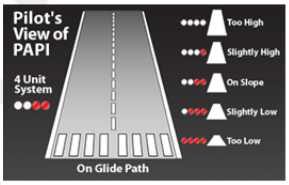
- **Identified Alternatives**
  - A. No Action
  - B. Obtain avigation easements to maintain clear FAA approach surfaces for the existing runway
  - C. Other?
- **Preliminary Decision Matrix**

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

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit

**** Project in process***

Airside: Runway 15-33 (existing)
1.3 NAVAIDs (VGSI/PAPIs)



Evaluation Process

- **Relevant Notes**

  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.

- **Identified Alternatives**

  A. No Action
  B. Install PAPIs on both ends
  C. Other?

- **Preliminary Decision Matrix**

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

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit

Airside: Runway 15-33 (existing)
1.4 NAVAIDs (Wind Socks)

Evaluation Process

- **Relevant Notes**

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

- **Identified Alternatives**

  A. No Action
  B. Install Wind Socks on both ends
  C. Other?

- **Preliminary Decision Matrix**

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

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit

Airside: Runway 15-33 (existing)
1.5 NAVAIDs (Non-Directional Beacon / NDB)

Evaluation Process

- **Relevant Notes**

  An NDB is a radio transmitter that was utilized by the aviation industry as a navigational aid starting in the 1940s. An ADF provides pilots with a reference to the NDB locations. NDB technology is now obsolete, difficult and expensive to maintain, and newer technologies (i.e., GPS) have replaced its function with more effective navigational equipment.

- **Identified Alternatives**
  A. Maintain NDB
  B. Do Not Maintain NDB
  C. Other?

- **Preliminary Decision Matrix**

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

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit

Airside: Taxiway A
2.1 RW to TW Centerline Separatio

Evaluation Process

- **Identified Alternatives**
  A. No Action / Request Modification of Standards (MOS)
  B. Relocate Taxiway A Centerline 40 feet
  C. Relocate Runway 15-33 Centerline 40 feet
  D. Other?

- **Preliminary Decision Matrix**

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

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit
[1] Alternative would likely not be acceptable to FAA.
[2] Alternative would likely be cost-prohibitive.

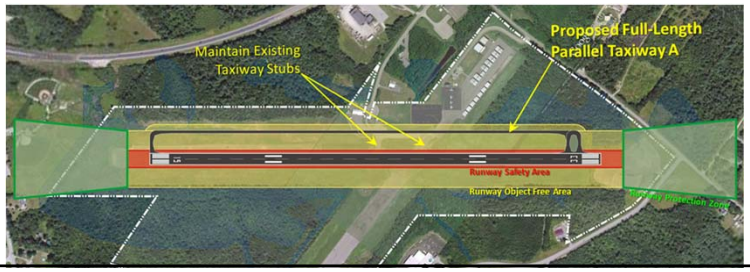
Airside: Taxiway A
2.2 Extend TW A to Full-Length Parallel

Evaluation Process

- **Identified Alternatives**
  - A. No Action
  - B. Construct Full-Length Parallel Taxiway A (two phases)
  - C. Other?
- **Preliminary Decision Matrix**

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

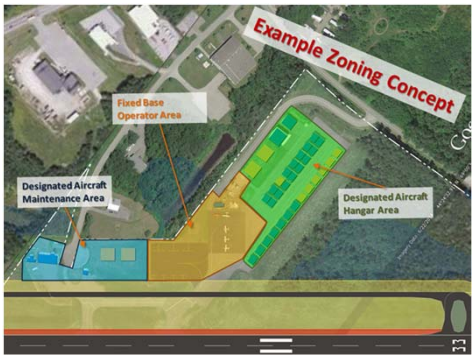
Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit



Landside: Facilities & Issues
3.1 Segregation of Operations

Evaluation Process

- **Identified Alternatives**
  - A. Segregate On-Airport Operations
  - B. Do Not Segregate On-Airport Operations
  - C. Other?



- **Preliminary Decision Matrix**

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

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit

Landside: Facilities & Issues
3.2 Identify New Development Areas

Evaluation Process

- **Identified Alternatives**
  - A. No Action
  - B. Reserve Areas for Future Airport Related Development
  - C. Designate Areas for Future Non-Airport Related Development
  - D. Other?

- **Preliminary Decision Matrix**

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

Landside: Facilities & Issues
3.3 Install Fuel Farm

Evaluation Process

- **Relevant Notes**
  - Basic need of tenants and visitors to BST
  - Primary revenue source of airports.
  - Proposed installation of a self-contained, above-ground, double-walled 5,000-gallon 100LL fuel tank with a self-service dispenser and card reader. (Future potential for Jet-A)

- **Identified Alternatives**
  - A. No Action
  - B. Conduct a phased installation of fuel tanks
  - C. Other?

- **Preliminary Decision Matrix**

Alt	Safety / Operational Factors	Economic Factors	Environmental Factors	Community / Implementation Factors	Totals
A	2	2	3	2	**9**
B	4	4	3	4	**15**

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit

Landside: Facilities & Issues

- **Other Various Improvements**
  - **3.4** Adjust the design and/or usage of the new BST apron (i.e., remarking tiedowns, consider hangar development on apron, etc.).
  - **3.5** Update existing terminal/administration building (i.e., ADA compliance).
  - **3.6** Establish enhanced airport security measures (i.e., updating the airport security plan, expanding security fencing, installing security cameras, etc.).
  - **3.7** Improve auto parking (i.e., establishing a remote/secure lot for longer-term parking).
  - **3.8** Construct a deicing pad or establishing protocols with local tenants to provide heated hangar access for transient aircraft for the purposes of deicing.
- **Identified Alternatives**
  - A. No Action
  - B. Action
  - C. Other?

Airport Administration

4.1 Airport Land Use Compatibility Plan

Evaluation Process

- **Relevant Notes**
  - A plan would help ensure the long-term viability of BST by preventing development in specific areas that is inherently incompatible with airport operations (i.e., towers, residential development, schools, hospitals, etc.). A plan would help ensure that those who 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.
- **Identified Alternatives**
  - A. No Action
  - B. Establish an Airport Land Use Compatibility Plan
  - C. Other?
- **Preliminary Decision Matrix**

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

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit

Airport Administration

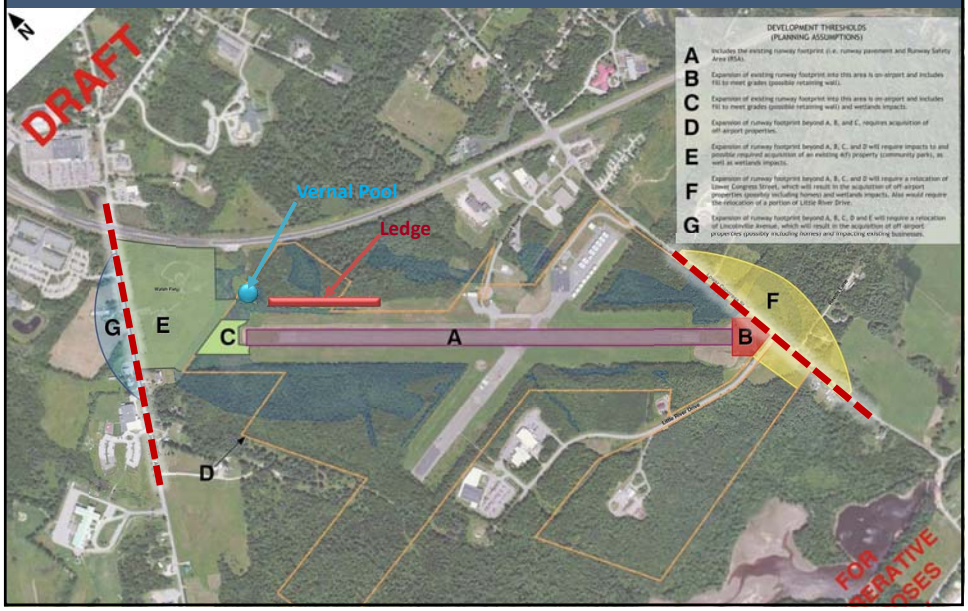
- **Other Various Improvements**
  - **4.2** Airport Rules & Regulations, and Minimum Standards
  - **4.3** Airport Security Plan
  - **4.4** Airport Emergency Response Plan
  - **4.5** Airport Wildlife Hazard Assessment, and Action Plan (FY2025)
  - **4.6** Vegetation Management Plan
  - **4.7** Rates/Charges Assessment
  - **4.8** Airport Ground Lease Review
  - **4.9** Stormwater Pollution Prevention Plan (SWPPP)
  - **4.10** Spill Prevention, Control and Countermeasure Plan (SPCC)
- **Identified Alternatives**
  - A. No Action
  - B. Action
  - C. Other?

Airside: Runway 15-33 (extension)

- **Relevant Comments**
  - FAA recommended runway length 4,990' – AMPU goal to protect for potential.
  - Runway extension not justified for application of federal funding due to insufficient operations – development potential likely only through Public / Private Partnership
  - Interest expressed by local business concerns to develop BST to accommodate up to midsized business aircraft (e.g., Challenger 300, Citation V, Lear 60, etc.) – Requested 5,000-foot runway
  - AMPU Phase 1 - Runway Corridor Analysis designed to establish range of potential extension alternatives (if warranted by demand) and to provide a recommendation for a preferred length if a runway extension were to be ultimately pursued.
  - AMPU Phase 1 undertook a top-down (unconstrained) / bottom-up (constrained) analysis in an effort to balance operational demands with local physical limitations
  - Through coordination with key stakeholders (FAA / MaineDOT / City of Belfast / BST users), a "preferred" runway length was established at 4,710' (aka 4,700')
  - Ultimately, Alternative 3A was identified as the preferred alternative. Primary features: extend pavement Southeast (170') & Northwest (240'); pave safety areas for departures; all construction remains On-Airport.

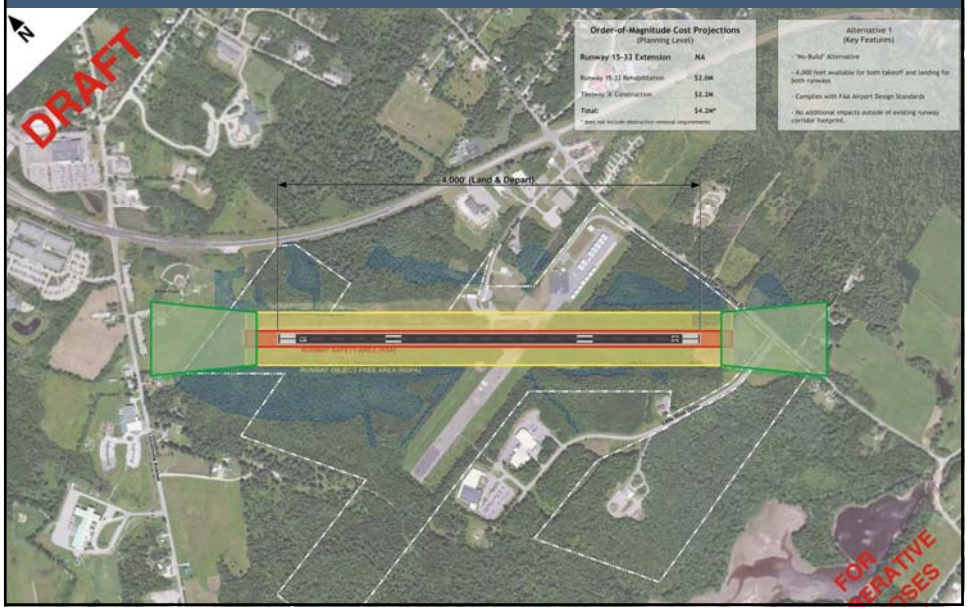
Runway 15-33 Development Alternatives

Key Site Development Impact Thresholds / Constraints



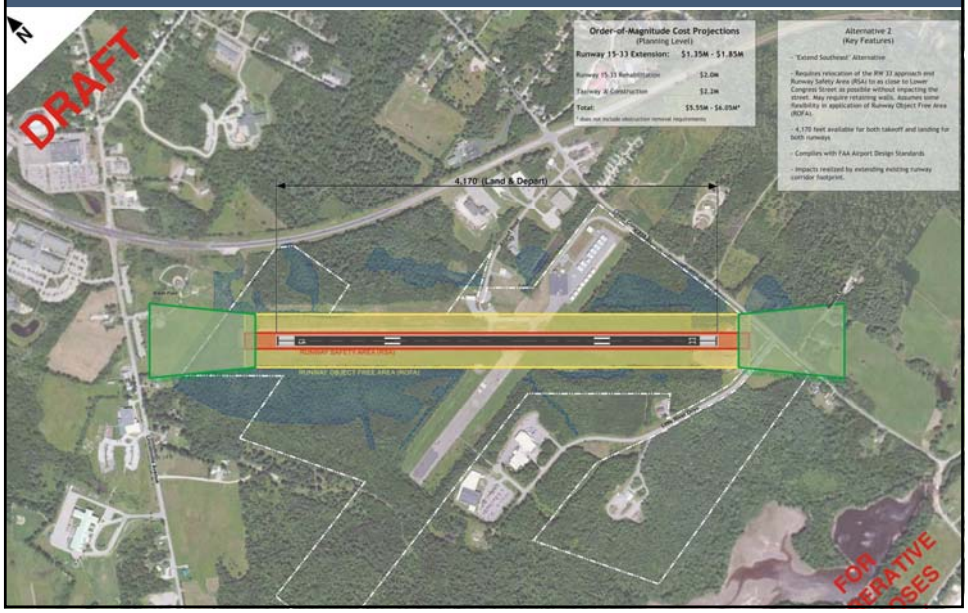
Airside: Runway 15-33 (extension)

Alternative 1 – Existing Conditions



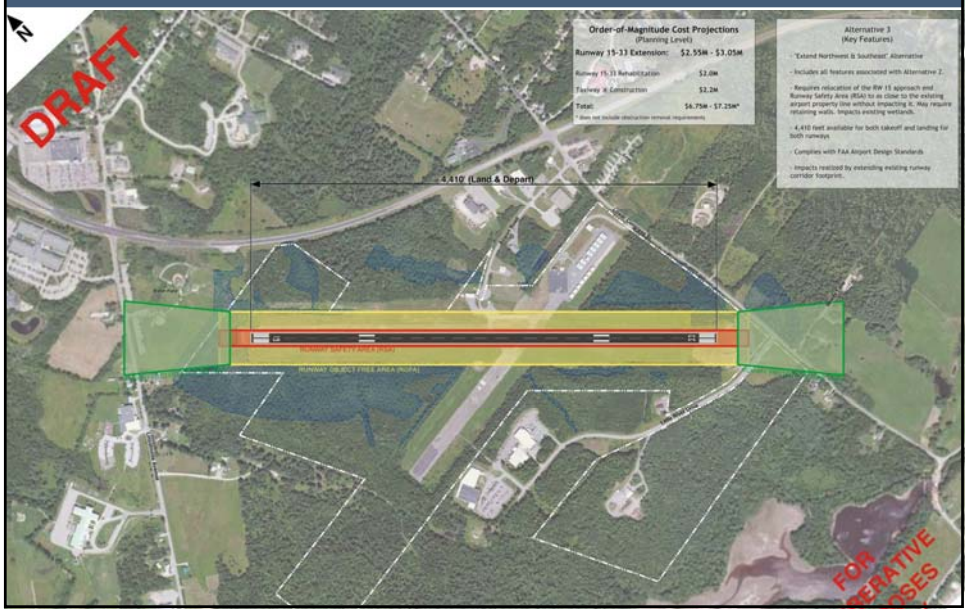
Airside: Runway 15-33 (extension)

Alternative 2 – Extend Southeast (Total 170') – Remain On-Airport



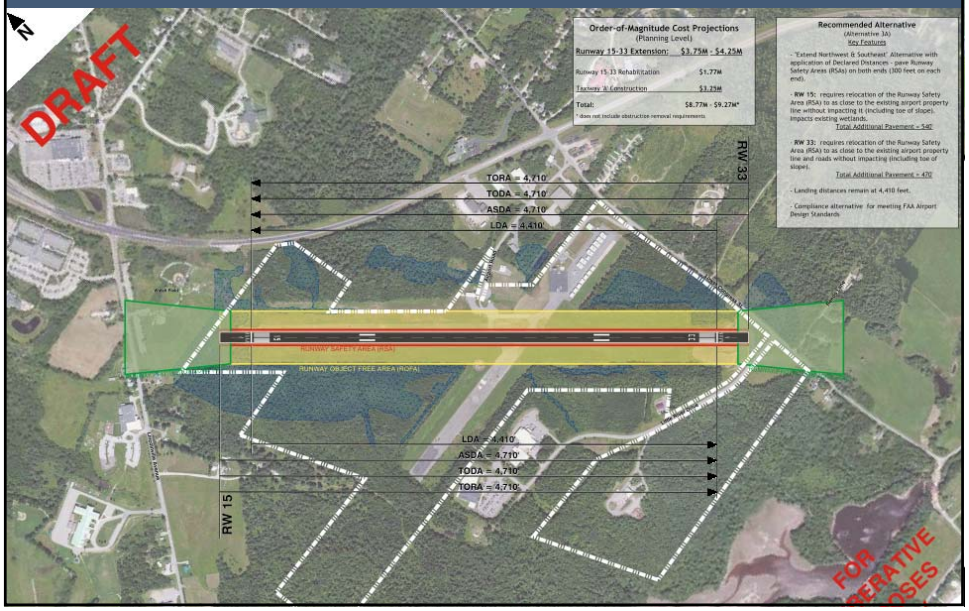
Airside: Runway 15-33 (extension)

Alternative 3 – Extend Southeast (170') & Northwest (240') – Remain On-Airport



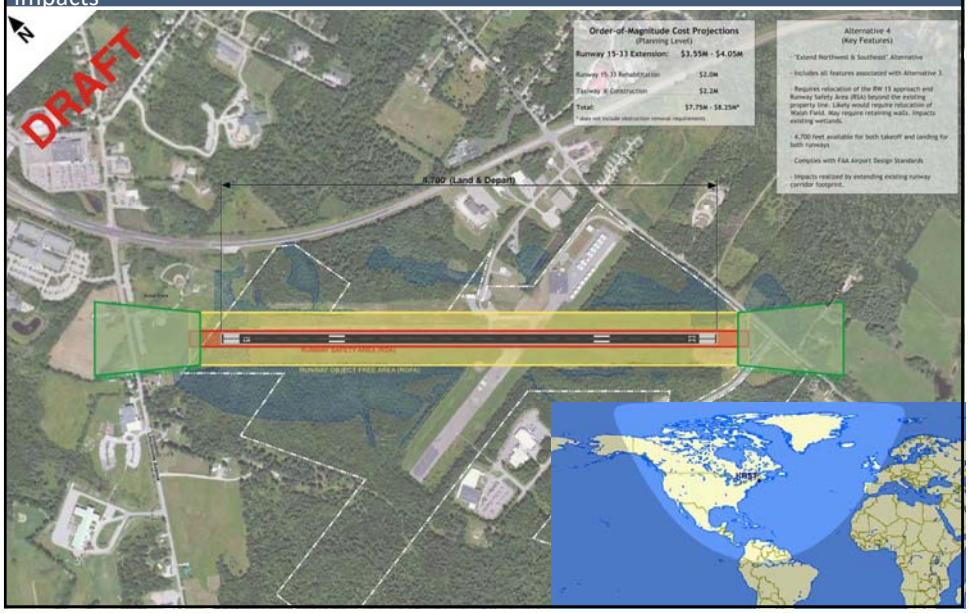
Airside: Runway 15-33 (extension)

Alternative 3A - Extend Southeast (170') & Northwest (240') - Remain On-Airport



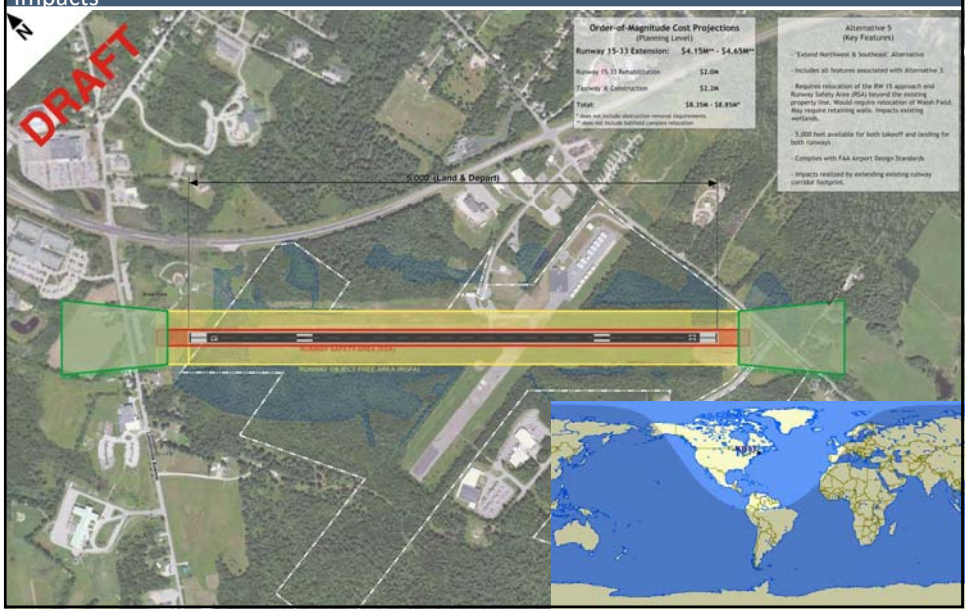
Airside: Runway 15-33 (extension)

Alternative 4 – On-Airport Development & Extend Northwest (290') – Off-Airport Impacts



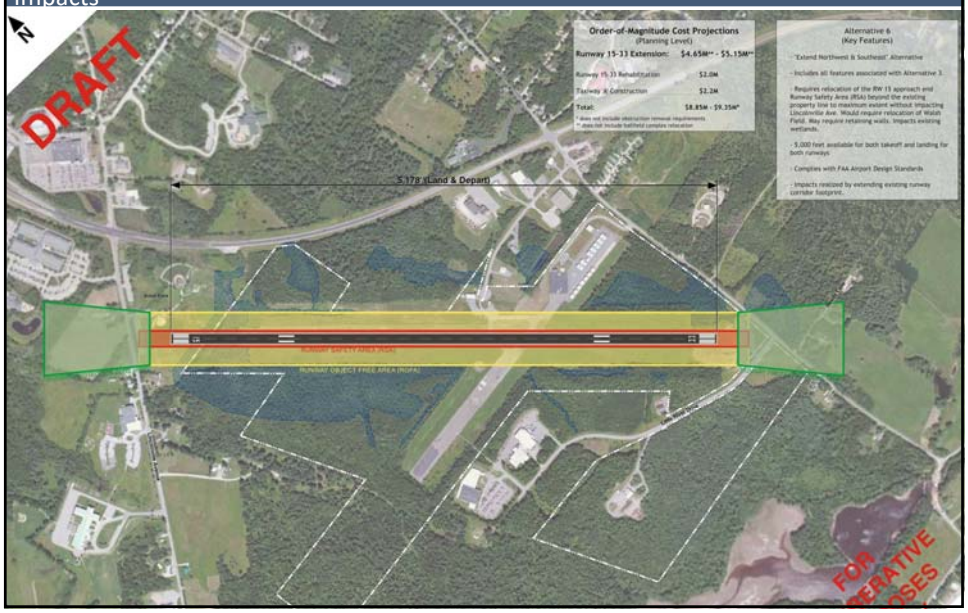
Airside: Runway 15-33 (extension)

Alternative 5 – On-Airport Development & Extend Northwest (590') – Off-Airport Impacts



Airside: Runway 15-33 (extension)

Alternative 6 – On-Airport Development & Extend Northwest (768') – Off-Airport Impacts



Airside: Runway 15-33 (extension)

Evaluation Process

- **Identified Alternatives**
  Seven Alternatives Identified
- **Preliminary Decision Matrix**

Alternatives	Impact / Benefit Factors: Safety / Operations	Economic	Environmental	Implementation	Avg. Total
a) No Action					
Alternative 1	3	3	3	3	3.0
b) Extend Runway					
Alternative 4	5	2	1	2	2.5
Alternative 5	5	1	1	1	2.0
Alternative 6	5	1	1	1	2.0
c) RW Relocation					
	NA	*NA*	*NA*	*NA*	*NA*
d) RW Realignment					
	NA	*NA*	*NA*	*NA*	*NA*
e) RW Shift					
	NA	*NA*	*NA*	*NA*	*NA*
f) Reduce Length					
Alternative 2	3	2	3	5	3.3
Alternative 3A	4	5	3	5	4.3
Alternative 3	4	4	3	4	3.8
g) Combination					
	NA	*NA*	*NA*	*NA*	*NA*

Notes: 1 = Negative impact/least benefit; 3= No impact/neutral benefit; 5 = Positive impact/most benefit

Airside: Runway 15-33 (extension)

Evaluation Process

- **Preliminary Benefit-Cost Matrix**

	Alternative 1	Alternative 2	Alternative 1A	Alternative 3	Alternative 2A	Alternative 4[1]	Alternative 3A	Alternative 5[1]	Alternative 6[1]
Takeoff distance (ft)	4,000	4,170	4,300	4,410	4,470	4,700	4,710	5,000	5,178
Landing distance (ft)	4,000	4,170	4,000	4,410	4,170	4,700	4,410	5,000	5,178
Estimated Range (CL300) (nm)[2]	1,900	2,150	2,275	2,420	2,450	2,710	2,720	2,950	3,100
Meets Athenahealth Goals	No	No	No	No	No	Yes	Yes	Yes	Yes
Est. Extension Cost (low)	$0	$1,180,000	$1,230,000	$3,030,000	$1,800,000	$3,980,000	$3,750,000	$4,520,000	$4,980,000
Est. Extension Cost (high)	$0	$1,680,000	$1,730,000	$3,530,000	$2,300,000	$4,480,000	$4,250,000	$5,020,000	$5,480,000
Avg. Cost per Linear RW Foot	*NA*	$8,412	$4,993	$8,000	$4,362	$6,043	$5,634	$4,770	$4,440
Avg. Cost per NM (range)	*NA*	$5,720	$3,947	$6,308	$3,727	$5,222	$4,878	$4,543	$4,358

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

[2] *Based on manufacturers data (no winds aloft, does not consider operator restrictions.*

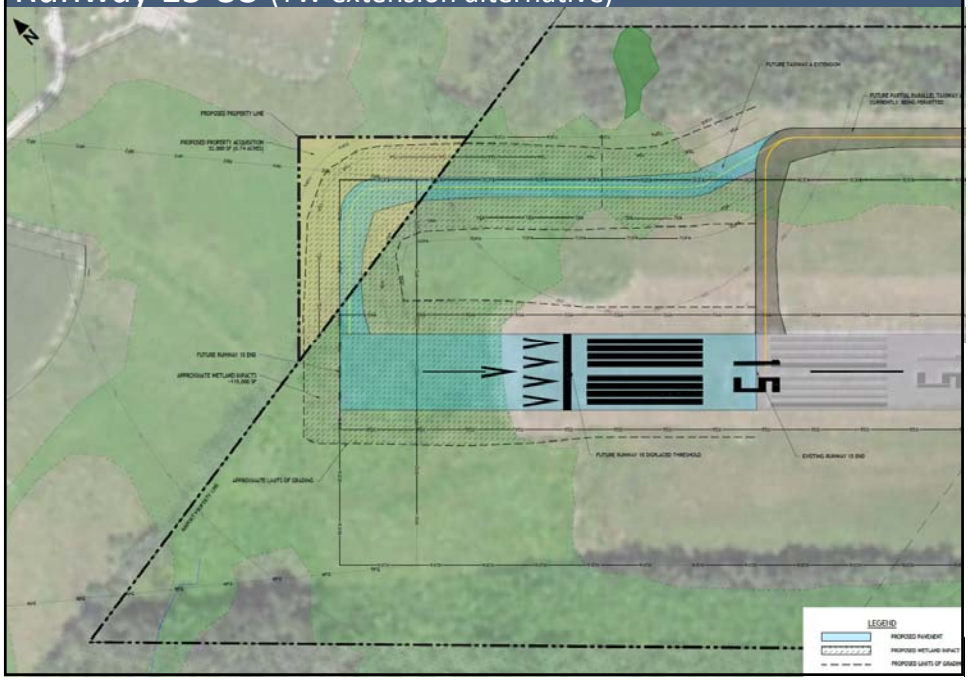
Does not include costs associated with airspace clearance and obstruction removal.

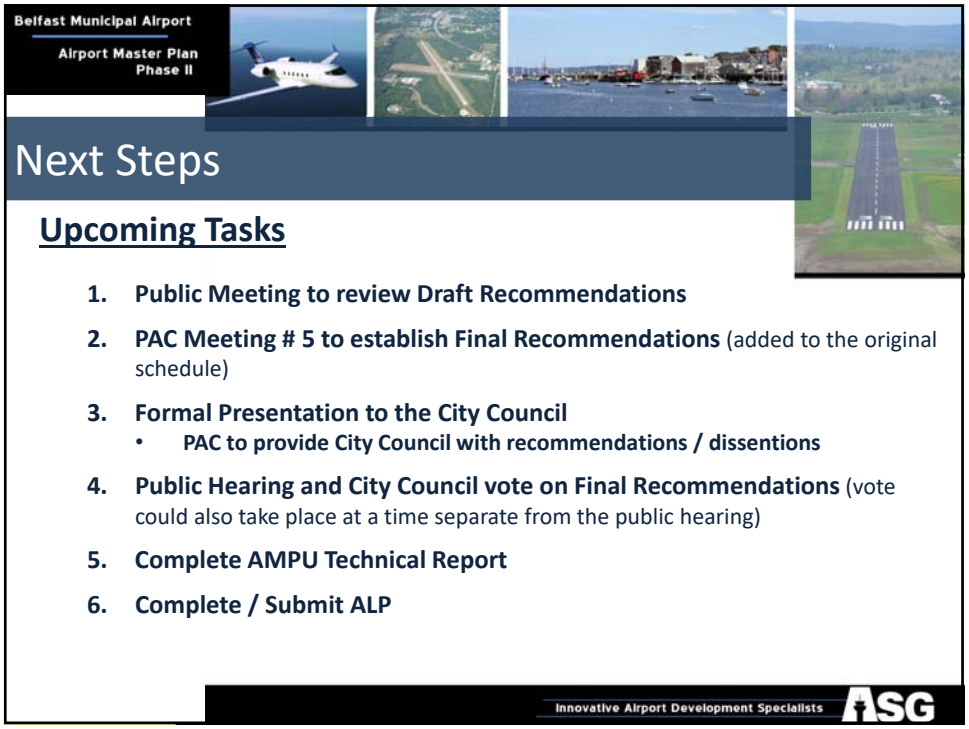
Airside: Runway 15-33 (extension)

Evaluation Process

- **Key Considerations**
  - Proposed extension would fulfill operational demands/requirements for multiple area businesses. It would provide "value-added" benefits to others, and multiplier economic impacts throughout the area economy.
  - Inclusion of a runway extension on the Airport Layout Plan does not mean that it will be built – it simply means that if it were to be constructed, that it meets the federal and state airport design requirements. It specifically states on the ALP that inclusion of a project on the sheet does not guarantee funding.
  - Immediate impacts include:
    - RPZs being shifted 170' SE & 240' NW;
    - lowest airspace surfaces being lowered 5' to the SE & 7' to the NW;
    - highest airspace surfaces being lowered 8.5' to the SE & 12' to the NW;
    - Aircraft will land 170' closer to the property line to the SE & 240' closer to the property line to the NW.
    - Aircraft can start their departure roll 470' closer to the property line to the SE & 540' closer to the property line to the NW.
  - Environmental considerations must be addressed in a formal FAA Environmental Assessment (EA) – a federal action requiring public participation; as well as state permitting actions.

Runway 15-33 (TW extension alternative)




Belfast Municipal Airport
Airport Master Plan
Phase II
Next Steps
Upcoming Tasks
1. Public Meeting to review Draft Recommendations
2. PAC Meeting # 5 to establish Final Recommendations (added to the original schedule)
3. Formal Presentation to the City Council
• PAC to provide City Council with recommendations / dissentions
4. Public Hearing and City Council vote on Final Recommendations (vote could also take place at a time separate from the public hearing)
5. Complete AMPU Technical Report
6. Complete / Submit ALP
Innovative Airport Development Specialists
ASG


Belfast Municipal Airport
Airport Master Plan
Phase II
Questions & Comments
Thank You!
Innovative Airport Development Specialists
ASG

Meeting: BST AMPU - *PAC Meeting 4* Location: Belfast City Hall Date: January 7, 2016 9:30 AM

SIGN IN SHEET

	NAME	REPRESENTING	PHONE	EMAIL
1	Bob Mallard	ASG	781-491-0083	rmallard@airportsolutionsgroup.com
2	JAY FOSTER	PILOT	207-763-4044	JMF@TIDEWATER.NET
3	MARY P.L. MORTIER	CITY COUNCILOR	323-1748	marym@92-94main.com
4	JOE SLOCUM	CITY	338-3370 ext 10	c.hydeatwater@cityofbelfast.org
5	TIM LESIEGE	MAINE DOT	207-624-3249	TIM.LESIEGE@MAINE.GOV
6	ROB DIETZ	ABUTTER	2073382666	DIETZNME@GMAIL.COM
7	Sadie Lloyd	Assistant City Planner	338-1417 x25	slloyd@cityofbelfast.org
8	Donna Loomans	neighbors	207-505-5586	
9	Jack Dickson	LifeFlight	207 294 7911	jdickson@EMHS.ORG
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Belfast Municipal Airport
Airport Master Plan Update
PAC Recommendation
January 7, 2016

Item	Description	Recommendation	Votes For	Other Votes	Comments
1.1	Airspace Clearance	Clear vegetative obstructions	10	0	- Make tree clearing equitable to residential & commercial
1.2	Easement Acquisition	Obtain avigation easements	10	0	-Safety concern
1.3	Navigational Aids - VGSI/PAPI System	Install PAPIs on both runway ends	10	0	-Safety improvements, noise reductions
1.4	Navigational Aids - Windsocks	Install windsocks on both runway ends	10	0	- Place in appropriate location, based upon trees etc.
1.5	Navigational Aids - Non-directional Beacon	Do not maintain NDB	10	0	- GPS replaces need
1.6	Runway Extension	Alt. 3A (Alt. 3 + declared distances = 4,170')	8	1 (Cont. study), 1 (abstain)	- No action; continue to evaluate all impacts of proposed option 3A
2.1	Runway to Taxiway Centerline Separation (From 200 to 240 feet)	Relocate taxiway A centerline 40 feet	10	0	- Will be grandfathered until middle portion on TW is reconstructed
2.2	Extend Taxiway A to full-length taxiway (4,000 feet)	Construct full-length taxiway	10	0	- Safety related project
3.1	Segregation of Operations	Other (Continue to evaluate)	10		- "Tabled" pending future analysis.
3.2	Identify New Development Areas	No action	7	3 (reserve areas for future non-aviation development)	- Airport should strive to generate more development and revenue through its properties (aviation-related and non-aviation-related).
3.3	Install Fuel Farm	Conduct phased installation of tanks	10	0	- Review necessities & trends
3.4	Other Various Improvements - Adjust Design/Usage of New Apron	Adjust design and/or usage	10	0	
3.5	Other Various Improvements - Update Existing Terminal/Administration Building	Maintain/update to meet current codes	10	0	
3.6	Other Various Improvements - Enhanced Security Measures	Establish enhanced security measures	10	0	- Safety issue, web accessable cameras, card access (key pad)
3.7	Other Various Improvements - Improve Automobile Parkir	Improve auto parking	10	0	- Consider existing tenant parking.
3.8	Other Various Improvements - Deicing Pad, Heated Hangars	Other (Further evaluation)	10	0	- Should be defined in Airport Rules/Regulations & Min Stds.
4.1	Airport Land Use Compatibility Plan	Establish airport land use compatibility plan	10	0	Investigate drone operations (UAS)
4.2	Other Various Improvements - Airport Best Management Practices	Various BMPs	10	0	

Other Various BMPs: Airport security plan, airport emergency response plan, airport wildlife hazard assessment and action plan, airport vegetation management plan, rates, charges, and assessments, airport ground lease review, airport stormwater pollution and prevention plan (SWPPP), airport spill prevention control and countermeasure plan (SPCC)

Belfast Municipal Airport
Airport Master Plan - Phase 2

MEETING NOTES

project:	**BELFAST MUNICIPAL AIRPORT (BST) AIRPORT MASTER PLAN – PHASE II**
meeting date:	TUESDAY, MARCH 22, 2016 – 6:30 PM (EST)
location:	HUTCHINSON CENTER, BELFAST, ME
subject:	COMMUNITY MEETING

ATTENDEES:

Meeting was open to the public. Attendees were invited to include their personal information on a sign-in sheet.

MEETING VIDEO:

A video of the meeting can be viewed at the following link:

http://belfastme.swagit.com/play/03232016-1164/#2

Please note that since a video of the meeting is available to the public for viewing, these meeting notes reference specific points of discussion by identifying locations in the online video to facilitate viewing of the actual meeting dialog.

ATTACHMENTS:

The following are attached to this document:

1. A copy of the presentation;
2. Meeting sign-in sheet; and
3. A copy of the issues / comments recorded by Joe Slocum (Belfast City Manager) during the meeting.

MEETING PURPOSE / AGENDA:

The primary purpose of this meeting was to share the preliminary results of the Belfast Municipal Airport (BST) Master Plan process and gather community input to determine the best path forward. The meeting was broken down into the following sections:

1. Consultant Presentation
2. Public Questions & Comments for the Record
3. Closing

MEETING INTRODUCTIONS:

Video Reference Time (0:00)

Thomas Kittredge (Belfast Municipal Airport Manager / City of Belfast Economic Development Director) welcomed those in attendance, provided a brief summary of the meeting purpose, and then turned the meeting over to Jim Miklas (Project Manager) who started the presentation.

FORMAL PRESENTATION:

Video Reference Time (03:40)
Mr. Miklas began the formal presentation portion of the meeting. During the initial slides, he reviewed the following:

- The purpose and functions of an Airport Master Plan
- The 17 specific goals established for Belfast Municipal Airport Master Plan by the Project Advisory Committee ***(06:14)***
- Belfast Municipal Airport's existing facilities ***(8:59)***
- The current status of the Airport Master Plan ***(12:57)***

Mr. Miklas then began a review of the individual potential projects ***(14:32)*** that had been identified for discussion and debate within the Airport Master Plan process. These were broken down into general categories of Airside Facilities, Landside Facilities, and Other Issues. He noted that the proposed runway extension project was left since it was anticipated that most questions and discussion would be centered on it.

Airside Facilities *(Note that all projects under this header are based on the existing runway.)*

- Runway 15-33: Airspace Clearance ***(15:42)***
- Runway 15-33: Easement Acquisition ***(18:47)***
- Runway 15-33: Navigational Aids (Precision Approach Path Indicators) ***(21:01)***
- Runway 15-33: Navigational Aids (Windsocks) ***(22:43)***
- Runway 15-33: Navigational Aids (Non-Directional Beacon) ***(23:18)***
- Taxiway A: Relocation of Taxiway ***(24:09)***
- Taxiway A: Extend Taxiway for Existing Runway ***(25:26)***

Landside Facilities *(Note that all projects under this header are based on the existing runway.)*

- Separation of On-Airport Based Operations ***(27:24)***
- Designate On-Airport Development Areas ***(29:27)***
- Aircraft Fuel Farm ***(30:23)***
- Existing Aircraft Apron ***(32:07)***
- Terminal / Administration Building ***(32:57)***
- Airport Security ***(33:37)***
- Auto Parking ***(34:35)***
- Aircraft Deicing ***(35:28)***

Other Issues *(Note that all projects under this header are based on the existing runway.)*

- Airport Land Use Compatibility Plan ***(36:36)***
- Airport Best Management Practices ***(38:25)***

Runway 15-33 Extension

- Runway Facts / Facility Requirements / Planning Considerations ***(39:15)***
- Master Planning Requirements for Runway Length ***(43:08)***
- Relevant Facts & Comments ***(44:45)***
- Alternative 1 – Existing Conditions ***(47:47)***
- Alternative 3A – Preferred Alternative ***(49:40)***
- Additional Runway Extension Considerations ***(51:52)***
- PAC Evaluation Process of Alternatives ***(54:58)***

Mr. Kittredge then reviewed the next steps in the airport master planning process coordination ***(56:45)***, which included the following:

- PAC Meeting # 5 to establish Final Recommendations (added to the original schedule)
- Formal Presentation to the City Council
- PAC to provide City Council with recommendations / dissentions
- Public Hearing and City Council vote on Final Recommendations (vote could also take place at a time separate from the public hearing)
- Complete Master Plan Technical Report
- Complete / Submit Airport Layout Plan

POINTS OF DISCUSSION:

Following is a general listing of questions, points of discussions and their location within the meeting video. Note that comments recorded by Joe Slocum during the meeting have also been attached to this document.

- Please define "vegetative obstruction." ***(57:55)***
- Do the airspace surfaces have to be cleared of all obstructions (both vegetative and man-made)? In other words, are we removing tree obstructions, but leaving telephone pole obstructions? ***(59:11)***
- Are there alternative ways for removing vegetative obstructions? It was requested that the City look to low impact methods to clearing the vegetation. ***(62:35)***
- The current obstructions removal proposal is based on the existing runway end. If the runway were to be extended, those impacts could increase with the relocated runway ends. Those impacts would be investigated as part of a Federal Environmental Assessment (EA) process ***(63:55)***.
- Does a business have to pay to fly into or out of the airport? And is there a fee for parking cars on the airport? ***(66:40)***
- There was a request for clarification on how airport operational totals were calculated and their subsequent impact on the master planning process ***(67:35)***
- There was an expression of concern related potential aviation impacts on climate change and at what point will the community have input into the planning process ***(71:00)***
- There was an expression of concern from a neighbor on the Runway 33 approach end regarding obstruction removal impacts on their property as well as aircraft operations ***(72:56)***
- There was a question about a specific parcel on the Runway 33 approach end where an easement has been requested over a hay field. ***(76:20)***
- There was a request to discuss the potential costs for the proposed projects. ***(79:28)***
- Has the City done an analysis on the potential economic benefit of a longer runway? ***(85:25)***
- There was a request for clarification on clearance rights within easements, as well as the easement acquisition process and impacts. ***(87:30)***
- There was a request for clarification on the process by which local businesses had requested a longer runway. ***(91:14)***

- There was a request to clarify the proposed easement language. ***(92:49)***
- There was a statement that any negative impacts on the public recreational facilities on the approach end to Runway 15 would detract from the City's quality of life. ***(94:37)***
- What is the cost-benefit for extending the runway? ***(95:40)***
- There was a question as to the need for businesses to utilize larger aircraft. ***(98:17)***
- Why have there not been any noise analyses completed for the Airport to date? ***(100:20)***
- There were additional questions and discussions related to aircraft noise impact and how they are measured by the FAA. There were also additional comments made and discussion related to vegetation removal and easement acquisition impacts. ***(102:20)***
- There was a question as to how the City assesses the value of various land uses (i.e., farmland vs. businesses). Also, beyond just dollars, how the City assesses the intrinsic value of farmland. ***(117:50)***
- It was noted that the potential runway extension is being driven by the needs of local businesses, and it was questioned as to why aircraft cannot simply utilize Rockland. ***(120:45)***
- It was observed that Route 1 realizes 27,000 car operations every day and that this airport has 13-15 aircraft operations. ***(126:40)***
- There were questions clarifying the impetus behind this Master Plan effort. ***(128:50)***
- Are Master Plan recommendations put into a prioritization or a timeline? ***(131:48)***
- There was a question if there was a conflict between Mr. Kittredge being both the Economic Development Director and the Airport Manager. ***(133:45)***
- There was a question on the Project Advisory Committee (PAC) membership. ***(134:30)***
- There was a request to clarify how runway lengths were determined and if the proposed lengths would actually accommodate the aircraft. ***(135:37)***
- There was a question regarding if the proposed parallel taxiway project would impact the avigation easements or airspace surfaces. ***(140:48)***
- There was a discussion related to reconciling that the PAC has recommended that the proposed runway extension be included in the Master Plan, but that its inclusion only means that it is a "potential" project, and that its viability has yet to be determined. ***(141:34)***
- There were a series of clarifying questions as to how the existing easement acquisition project relates to the proposed runway extension, as well as how additional easements would be required associated with the extension. ***(146:23)***
- If the extension is a remote possibility, why cannot it be put off until the next master plan? ***(148:57)***
- There were clarifying questions related to the easement acquisition project including if the easements currently being pursued include all required easements, if there was a preference shown towards particular land uses (i.e., commercial vs. residential), and if there should not be a project shown in the Master Plan to acquire all required easements and not just those immediately needed. ***(150:50)***

- There was a comment related to how the presence of the airport helped attract MBNA to the City of Belfast in the 1990s, and how that spurred area economic development. ***(160:20)***

Mr. Kittredge closed the meeting when there were no more questions.

The meeting adjourned at approximately 8:46 PM EDT.

These meeting notes have been respectfully compiled by James Miklas (ASG).

Please forward any comments/corrections to Chris Willenborg at cwillenborg@airportsolutionsgroup.com

Meeting: BST Community Meeting Location: University of Maine Hutchinson Center Date: March 22, 2016

SIGN IN SHEET

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9	Jim Grant	Belfast	207-322-0170	Jimkarmagrant@gmail.com
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Meeting: BST Community Meeting Location: University of Maine Hutchinson Center Date: March 22, 2016

SIGN IN SHEET

	NAME	REPRESENTING	PHONE	EMAIL
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Belfast airport master plan public presentation and comment March 22, 2016

This is my best attempt to identify public comments received after a public presentation of the recommendations for a new Airport Master Plan from the Airport Master Planning Committee.

I focused more on the comment rather than the response but there were some places where I had enough to write down the responses as well.

1. What is a vegetative easement?
2. Telephone poles and telephone wires. Did the airspace survey identify any poles or wires that were also obstructions to the protected airspace? Answer was no.
3. There are alternative ways to clearing trees. There was a request that the city take a low-impact approach particularly as it related to Rising Up Farms so as to minimize their impact.
4. Is the obstruction analysis based upon the current existing runway? Answer was yes.
5. If one day the City does decide to extend the runway when would the survey of protected airspace be done to match the need to protect more airspace associated with that extension? Answer: during an environmental assessment which would have to take place as a preliminary step to such a project. If the City pursued an extension then the City would have to do an environmental review and part of that review would include a new survey of airspace that we would need to protect.
6. Do businesses have to pay to fly in and out of the airport? Answer was no. People do also do not pay to park cars and trucks at the airport either.
7. The existing plan indicates that the current use of estimated operations are 10,000 a year. That would mean 27 operations (takeoff or a landing) per day. One of the abutting neighbors observed that is probably more like half of that is actually happening and was concerned that the plan was based upon poor numbers. The answer from the consultants indicated that the numbers may indeed be lower. The 10,000 operations (each takeoff counts as one and each landing counts as one) is really a minor piece as it relates to the whole plan. It's only when it gets over hundred thousand that the FAA will questions whether it impacts the runway analysis. This is a low-end impact airport.
8. Aviation is bad for the climate let's keep our airport small not encourage corporate jets.
9. A neighbor on the 33 side of the runway sees a huge part of their property blocked out on the chart but notes that they do not have any real idea what it is the city might want to cut. They're concerned about their property value. Answer: (JJS) We should try to give more specificity about where the offending obstructions or future potential obstructions are in advance of the easement acquisition process. We want to empower people to manage their own tree growth.
10. Large planes come near my living room all the time.
11. Why put a hayfield in an easement? Answer the easement area is based upon calculating the highest potential tree (Eastern White Pine which can grow in excess of 100 feet tall) and then looking at the ground to define the potential parameter of a potential obstruction. If it stays field it will never be cut. The FAA wants the City to acquire easements at one time, not in pieces for each property owner.
12. What are our projections of cost? We have easement acquisitions in progress, laundry list of other projects, what are the costs and funding sources? At the 15 and we saw different sets of options with different costs how does cost tie in. As cost is significant. Answer: there are different sources of funding. First we have an airport capital reserve which City taxes contribute

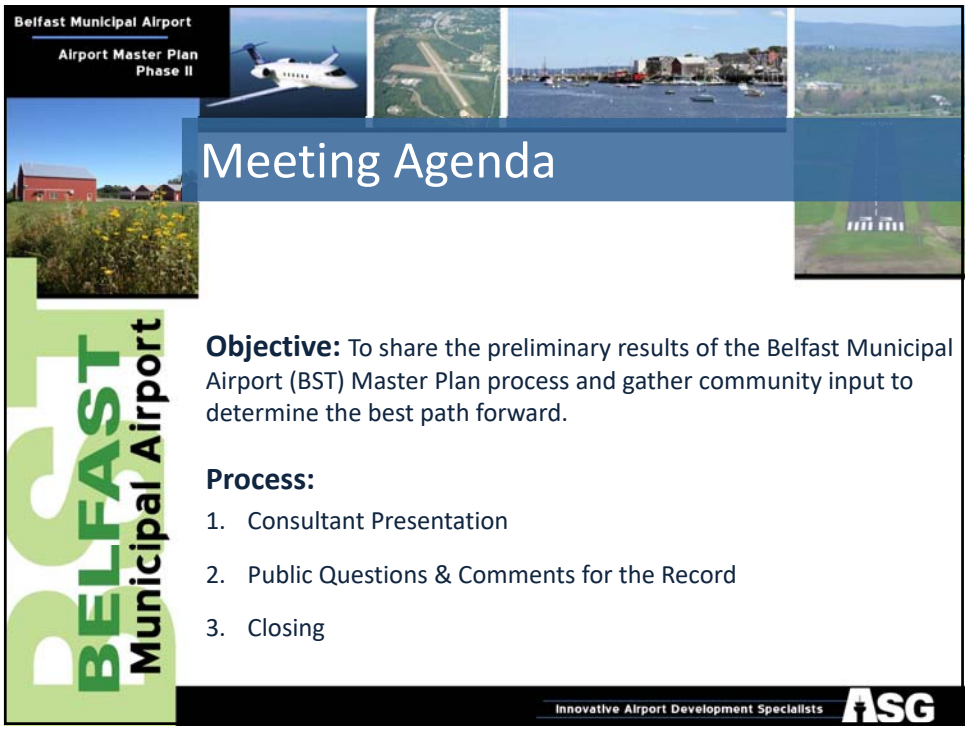
to on an annual basis and are used to make up our 5% share of any capital project. Secondly the FAA provides the City with a credit of $150,000 a year that we can accumulate over a four-year period to apply to a project as the FAA's 90% contribution to a particular project. There are also discretionary funding opportunities which we can compete with the rest of New England to secure. A lot of this is laid out in the five-year Capital Improvement Plan (CIP) and not in the Airport Master Plan. For example we have carried the parallel taxiway in the master plan and in the capital plan for many years. The FAA is looking seriously at making a discretionary grant of up to $3 million to the City to pay for that runway extension in 2017. So it's really project by project and establishing priorities of projects which can change year to year.

13. We have heard that there are letters of intent from two local businesses supporting a runway extension. Has the City done any analysis of our own? Answer was no.
14. With respect to easements to cutting is there a less expensive way? Answer: The City must have potential project as part of its approved plan for that project to ever be considered eligible for funding and that funding would help to pay for an environmental review if it some future point in time the City decided to go forward with that particular project.
15. We had an easement within 15 feet of the part 77 airspace.
16. The surveyor indicated he would come back and walk the property with this; will they do that?
17. This whole area includes the much-loved Walsh field and the dog park, and I oppose any extension of the airport that will detract from a quality of life in that area.
18. Why would we extend the runway for two businesses?
19. Because the possibility of extension is in the recommended plan it doesn't mean it will be ever constructed. It would require a very broad review at the time when money was actually available. Presently the FAA has indicated that they are not interested in financing such a project and the City is not planning on spending the $10-$14 million it would take to pursue an extension.
20. If current planes land can carry 10 people and in a propose runway extension would allow planes that would carry 12 people why would we build an extension it for such minimal growth in passengers? Answer: It's not about the number of passengers, it would be about accommodating the type of aircraft that is increasingly more common.
21. Why is there no noise analysis for all these projects? Answer: the FAA doesn't require it for this type of airport; that analysis is usually related to bigger airports to have large commercial operations.
22. As far as noise I live 660 feet from the airport and the decibel levels are not supposed to exceed 65. When you cut the trees down which are used often soften the noise that will make it louder perhaps his lot is 75 dB.
23. Won't an extended runway lead to heavier, larger planes with more horsepower that will generate more noise?
24. Easements are being offered that are related to a reduction in the reduced assessment on a property. Owners are losing their life savings because they cannot sell their homes. If you let the jets in it'll make it worse.
25. Can you put in place a compensation package that automatically pays future value to the property owner if decibel levels exceed a certain amount?

26. Do you value an acre of farmland is much as you value it an acre of waterfront? Answer: waterfront will likely carry a higher assessed value. However the City of Belfast values farm business is much as it values any business.
27. Is the city keeping in mind the long-term value of farming and the impact it has is a business in the local community? This is a corporate-driven proposal for an airport that has minimal use to the general public. This is not driven by public need.
28. 30 minutes away there's a 5,000 foot airport runway in Rockland.
29. Is it that essential that we accommodate these two businesses?
30. Route one has 27,000 cars a day, versus 13 to 15 landings on the runway.
31. If we do a master plan every 7 to 10 years why don't we just take out the possibility of a runway extension and reconsider it 10 years from now. Answer: because the plan is supposed to contemplate the next 20 years and we want to preserve any possibility for the City that may or may not be of benefit to them to be determined as time and circumstances suggest.
32. Who initiates the idea of updating a master airport master plan? Answer it can be the FAA or the City. athenahealth first raised the issue of a possible runway extension. This conversation eventually involved the FAA and they indicated if that the City were to consider it, it should be reflected in an updated master plan.
33. Will there be timelines for all of these projects? Answer: generally this is covered in the capital improvement program that is part of the master plan update, but the airport's current capital improvement plan is also a flexible and dynamic document that can be adjusted year-to-year.
34. Who is on the Airport Master Plan Update Project Advisory Committee?
35. To accommodate the next larger size planes the FAA is recommending something on the order of 4,990 feet. How does this work if your best estimate of a runway extension would provide you with 4,700 feet? Answer: it has a lot to do with other aspects of the aircraft: insurance requirements, loads, mission, etc.
36. Will the proposed parallel taxiway projects have any impact on air restrictions? Answer: no. If the FAA only wants the City to obtain easements once, wouldn't they consider the easements that the City would need to acquire for a runway extension at the same time? Answer: the FAA would consider a runway extension project in the future as a unique circumstance and consequently would authorize at that time the acquisition of additional easements, if it was something the municipality wanted to pursue.
37. On the existing easements are one hundred percent of the areas of concern identified and have been selected for cutting? Answer: no, the project scope is limited by cost. This is in part why the 15 end is being done first.
38. It appears that off of the runway 15 end there are some commercial properties, whereas all of the properties located off of the runway 33 end are residential properties. Is it fair that the City is looking to acquire easements only from the runway 33 end properties at this time, and not acquiring additional easements off of the runway 15 end? Answer: the City identified that the areas of obstructions that had to be removed soonest were located within easements that the City already had. The City, as it revised its budget for the easement acquisition project, realized that it could not expect to get both the easements off of the runway 33 end as well as the additional easements off the runway 15 end, and it was decided that the priority for new easement acquisition would be off of the runway 33 end. We would have to put together a timetable for those who are not asked to cut their properties now to cut them later.

39. The rationale of the FAA to have the City acquire easements once has to do the conditions of the runway. If a runway extension actually occurs, the FAA would acknowledge that additional easements would need to be acquired, as the conditions of the runway have significantly changed, if that is what the City wanted to do.
40. You should follow the resource trail. Who's getting the benefits of this?
41. There was an airport growth zone created in 1990; slow housing development near the airport; we have to look at all the benefits that the airport has to offer, as well as the impacts to the local area.


BST
BELFAST
Municipal Airport
ASG
Innovative Airport Development Specialists
Community Meeting
March 22, 2016


Belfast Municipal Airport
Airport Master Plan
Phase II
Meeting Agenda
BST
BELFAST
Municipal Airport
Objective: To share the preliminary results of the Belfast Municipal Airport (BST) Master Plan process and gather community input to determine the best path forward.
Process:
1. Consultant Presentation
2. Public Questions & Comments for the Record
3. Closing
Innovative Airport Development Specialists
ASG

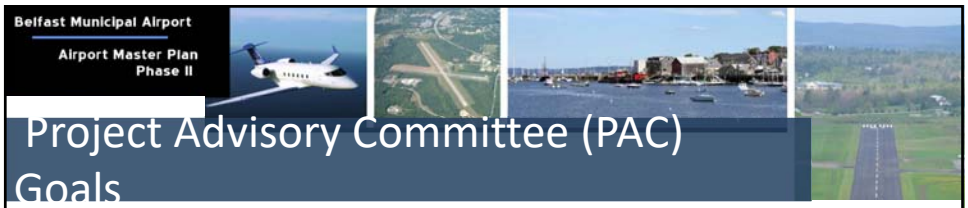
Airport Master Plan Purpose & Functions

Purpose:

A comprehensive study that describes the short-, medium-, and long-term development plans to meet future aviation demand.

Primary Functions:

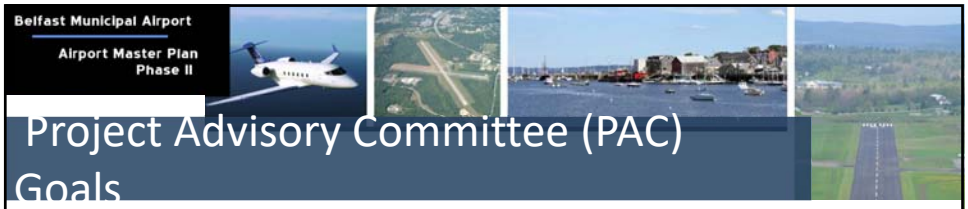
- Sponsor's strategy for the development (20 years) of the airport as required by the FAA for future project funding. It should be updated every 7-10 years. *(BST Master Plan last updated 1999)*
- Provide the framework to guide future airport development that will cost-effectively satisfy current and future aviation demand, while considering potential environmental and community factors.
- ***Inclusion of projects in a Master Plan is not a commitment – It protects for the future potential***



Project Advisory Committee (PAC) Goals

"The Master Plan . . ."

- Must address development on and around BST (incl. residential and commercial).
- Must plan for BST to continue to grow as an economic asset for the entire community.
- Must reflect BST's existing needs and anticipate future challenges.
- Must be consistent with the City's overall comprehensive plan. (Note that this may affect the existing airport zoning overlay district and land uses, as well as their dimensional standards.)
- Must review existing land uses on and around BST, and must anticipate potential future uses and users.
- Should aspire to find realistic numbers to underlie the goals we set such as number of landings per year.
- Should serve all aviation needs and uses including recreational aviation uses at BST.
- Must attempt to quantify the specific impact of a potential runway extension.
- Must continue to provide maximum service to all medical related flights.



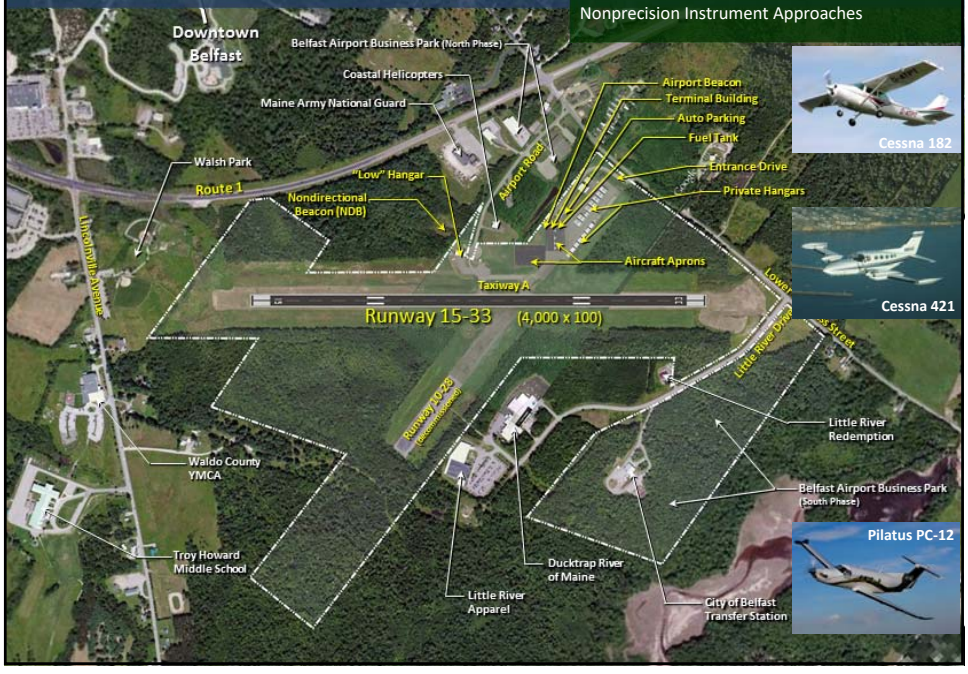
Project Advisory Committee (PAC) Goals

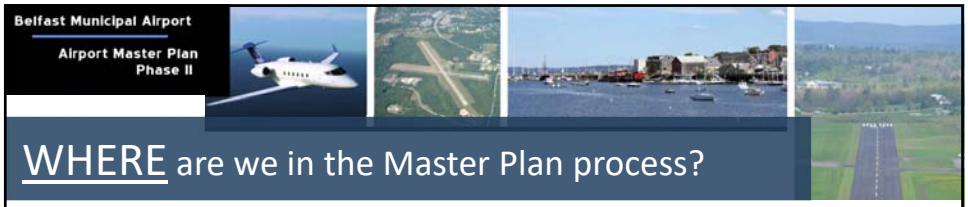
"The Master Plan . . ."

- Should pursue a runway length that best supports the users of the runway.
- Must support the needs of local visitors to BST and the City.
- Must maintain safety as the highest priority.
- Should investigate if it is realistic that BST could support small commercial flights today or in the future.
- Should identify appropriate facilities and airport policies to attract a new FBO for BST.
- Should plan for fuel storage and fuel services at BST at a level commensurate with future demand.
- Must preserve BST's long-term development potential in order to allow the City to be flexible to respond to future needs while respecting the environment.
- Must include an opportunity for general public review and input prior to presentation to the City Council.

BST Inventory

Annual Operations = 10,000 (FAA TAF)
Based Aircraft = 17 (FAA TAF)
Nonprecision Instrument Approaches





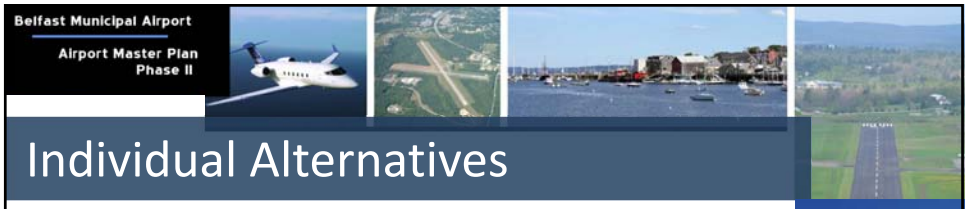
WHERE are we in the Master Plan process?

Master Plan Process

1. Inventory
2. Projections / Requirements
3. Alternatives Phase
4. Final Project Report / Plans

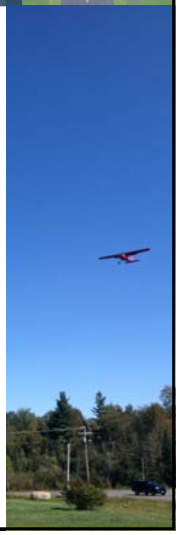
Alternatives Phase

a) Identify Potential Alternatives
b) Assess Individual Alternatives
c) PAC Reviews / Offers Recommendations
d) Final Recommended Plan



Individual Alternatives

- **Airside Facilities**
  - Runway 15-33 (existing)
    1. Airspace
    2. Easements
    3. Navigational Aids
  - Taxiway A
    1. Centerline Separation
    2. Full-length
- **Landside Facilities**
  - Operational Areas
  - Development Areas
  - Fuel Farm
  - Other Improvements
- **Other Issues**
- **Runway 15-33 Extension**



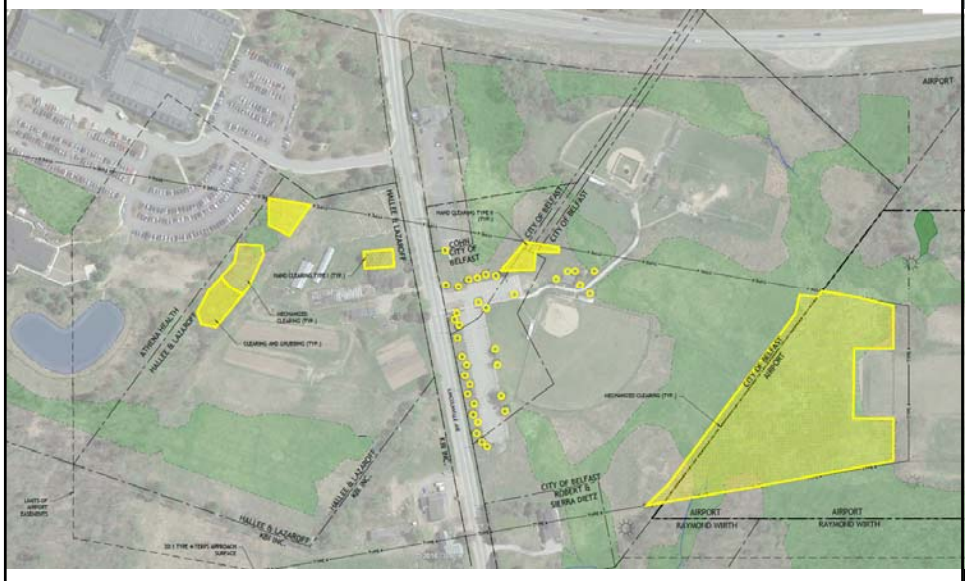
Airside: Runway 15-33 (existing)
Airspace Clearance

Evaluation Process

- **Identified Alternatives**
  A. No Action
  B. Clear vegetative obstructions based on existing runway
  C. Modify airport operations to consider other less restrictive surfaces
  D. Physically change the runway end locations
  E. Other

- **PAC Recommendation**
  - ***Clear vegetative obstructions based on existing runway***

Airside: Runway 15-33 (existing)
Airspace Clearance



Airside: Runway 15-33 (existing)
Easement Acquisition

Evaluation Process

- **Identified Alternatives**
  A. No Action
  B. Obtain avigation easements to maintain clear FAA approach surfaces for the existing runway
  C. Other?

- **PAC Recommendation**
  - ***Obtain avigation easements to maintain clear FAA approach surfaces for the existing runway***

Airside: Runway 15-33 (existing)

Airside: Runway 15-33 (existing)
Navigational Aids (Precision Approach Path Indicators)

Evaluation Process

- **Identified Alternatives**
  A. No Action
  B. Install Precision Approach Path Indicators

- **PAC Recommendations**
  - ***Install Precision Approach Path Indicators on both runway ends***

Airside: Runway 15-33 (existing)
Navigational Aids (Windsocks)

Evaluation Process

- **Identified Alternatives**
  A. No Action
  B. Install Windsocks

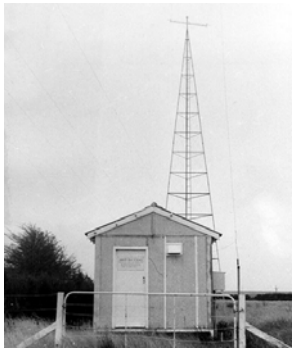
- **PAC Recommendations**
  - ***Install Windsocks on both runway ends***

Airside: Runway 15-33 (existing)
Navigational Aids (Non-Directional Beacon)

Evaluation Process

- **Identified Alternatives**
  A. No Action
  B. Decommission Non-Directional Beacon

- **PAC Recommendations**
  - ***Decommission Non-Directional Beacon***

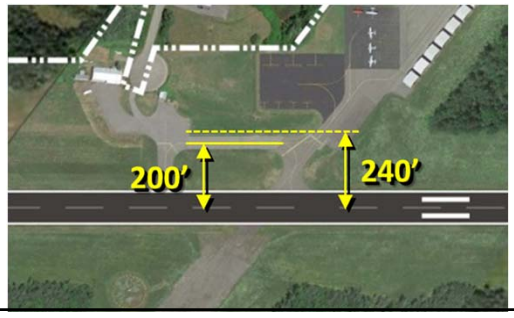


Airside: Taxiway A
Relocation of Taxiway

Evaluation Process

- **Identified Alternatives**
  A. No Action / Request Modification of Standards
  B. Relocate Taxiway A Centerline 40 feet
  C. Relocate Runway 15-33 Centerline 40 feet
  D. Other

- **PAC Recommendation**
  - ***Relocate Taxiway A Centerline to meet FAA Standards***.

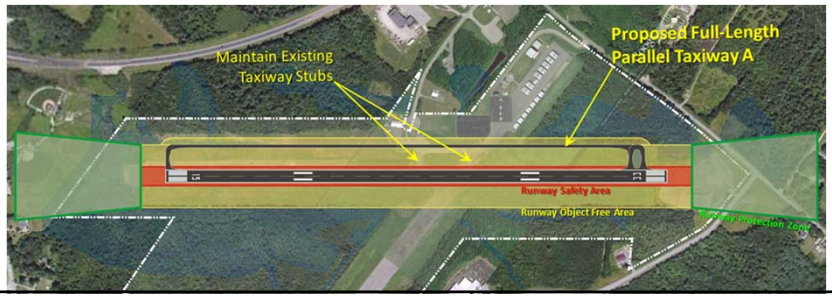


Airside: Taxiway A
Extend Taxiway for Existing Runway

Evaluation Process

- **Identified Alternatives**
  A. No Action
  B. Construct Full-Length Parallel Taxiway A *(two phases due to funding limitations)*
  C. Other
- **PAC Recommendation**
  - ***Construct Full-Length Parallel Taxiway A in two phases***

Note: These actions have been endorsed by FAA for safety-related reasons and was a recommendation of both the 1999 BST Airport Master Plan and the 2008 BST Airport Layout Plan Update.

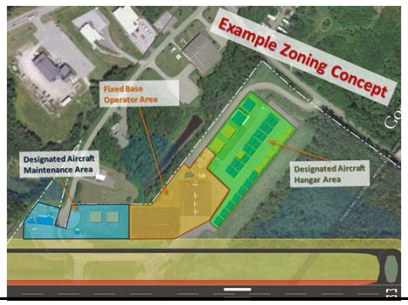


Landside: Facilities & Issues
Separation of On-Airport Based Operations

Evaluation Process

- **Identified Alternatives**
  A. Separate On-Airport Operations *(Commercial vs. Recreational vs. Other Types)*
  B. Do Not Separate On-Airport Operations *(Commercial vs. Recreational vs. Other Types)*
  C. Other
- **PAC Recommendation**
  - ***Other / Continue to Evaluate***

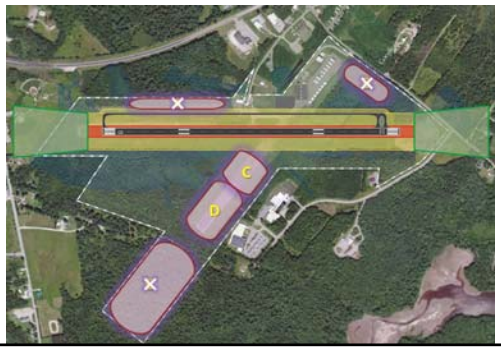
Note: It was determined by the PAC that this issue be "tabled" pending the results of the City's recent effort to allow mixing of on-Airport operations through its leasing agreements.



Landside: Facilities & Issues
Designate On-Airport Development Areas

Evaluation Process

- **Identified Alternatives**
  A. No Action
  B. Dedicated Aviation-Related Areas
  C. Dedicated Non-Aviation-Related Areas
  D. Other
- **PAC Recommendation**
  - ***No Action / All Airport Properties Remain Reserved for Airport-Related Development***



Landside: Facilities & Issues
Aircraft Fuel Farm

Evaluation Process

- **Identified Alternatives**
  A. No Action
  B. Conduct a phased installation of fuel tanks
  C. Other
- **PAC Recommendation**
  - ***Conduct a phased installation of fuel tanks***

Note: Initial AvGas tank; Jet-A tank installation only based on demand

Landside: Other Improvements
Existing Aircraft Apron

Evaluation Process

- **Identified Alternatives**
  A. No Action
  B. Redesign Aircraft Apron - Adjust the design and/or usage of the existing aircraft apron *(i.e., remarking tiedowns, consider hangar development on apron, etc.).*
  C. Other

- **PAC Recommendation**
  - ***Redesign Aircraft Apron***

Landside: Other Improvements
Terminal / Administration Building

Evaluation Process

- **Identified Alternatives**
  A. No Action
  B. Maintain/update existing terminal/administration building *(i.e., ADA compliance)*
  C. Other

- **PAC Recommendation**
  - ***Maintain/update existing terminal/administration building***

Landside: Other Improvements
Airport Security

Evaluation Process

- **Identified Alternatives**
  A. No Action
  B. Define and establish enhanced airport security measures *(i.e., updating the airport security plan, expanding security fencing, installing security cameras, etc.).*
  C. Other

- **PAC Recommendation**
  - ***Define and Establish enhanced airport security measures***

Landside: Other Improvements
Auto Parking

Evaluation Process

- **Identified Alternatives**
  A. No Action
  B. Improve auto parking *(i.e., establish a remote/secure lot for longer-term parking).*
  C. Other

- **PAC Recommendation**
  - ***Improve Auto Parking***

Landside: Other Improvements
Aircraft Deicing

Evaluation Process

- **Identified Alternatives**
  A. No Action
  B. Construct a deicing pad or establishing protocols with local tenants to provide heated hangar access for transient aircraft for the purposes of deicing.
  C. Other

- **PAC Recommendation**
  - ***Other – Further Evaluate the Issue***

Other Issues: Airport Administration
Airport Land Use Compatibility Plan

Evaluation Process

- **Relevant Notes**
  - A plan would help ensure the long-term viability of BST by preventing development in specific areas that is inherently incompatible with airport operations (i.e., towers, residential development, schools, hospitals, etc.). A plan would help ensure that those who 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.

- **Identified Alternatives**
  A. No Action
  B. Establish an Airport Land Use Compatibility Plan
  C. Other?

- **PAC Recommendation**
  - ***Establish Airport Land Use Compatibility Plan***

Other Issues: Airport Administration
Airport Best Management Practices

- **Other Various Improvements**
  1. Airport Rules & Regulations, and Minimum Standards
  2. Airport Security Plan
  3. Airport Emergency Response Plan
  4. Airport Wildlife Hazard Assessment, and Action Plan (FY2025)
  5. Vegetation Management Plan
  6. Rates/Charges Assessment
  7. Airport Ground Lease Review
  8. Stormwater Pollution Prevention Plan (SWPPP)
  9. Spill Prevention, Control and Countermeasure Plan (SPCC)

- **Identified Alternatives**
  A. No Action
  B. Action

- **PAC Recommendation**
  - ***Enact All Airport Best Management Practices***

Runway 15-33 Extension

- **Runway Facts**
  - Runway 15-33 only Runway
  - Non-precision Approaches
  - Dimensions: 4,000 ft x 100 ft
  - Surface: Asphalt
  - Airspace Obstructions

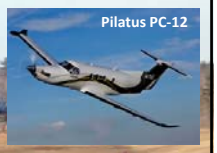
- **Facility Requirements**
  - Design Aircraft = Pilatus PC-12 / King Air C90
  - FAA Rec. Length = 3,650 ft - 4,050 ft
  - FAA Rec. Width = 75 ft

- **Planning Considerations**
  - FAA Grant Assurances
  - City / Airport Liability Exposure
  - Potential Impact on Avigation Easements
  - Potential Additional Obstructions Removal
  - Long-term Potential Requirements

Runway 15-33 Extension

FAA AC 150/5325-4B specifically advises the following:

> *b. Future Airport Expansion Considerations. …it is recommended that the airport designer assess and verify the airport's ultimate development plan for realistic changes that, if overlooked, could result in future operational limitations to customers. The airport designer should at least assess and verify the impacts of:*
>
> > *(1) Expansions to accommodate airplanes of more than 12,500 pounds. Failure to consider this change during an initial development phase may lead to the additional expense of reconstructing or relocating facilities in the future.*


Pilatus PC-12


Cessna Citation V


Cessna 172


King Air C90

Runway 15-33 Extension

- **Relevant Comments**
  - FAA recommended length for aircraft >12,500 lbs = 4,990' **Master Plan goal to protect for potential**.
  - Runway extension **not justified** for application of federal funding due to insufficient operations – *development potential likely only through Public / Private Partnership*
  - Local business interests to accommodate up to mid-sized business aircraft – standard **5,000-foot runway** for departures.
  - **Master Plan established range of potential extension alternatives** (if warranted by demand) and to provide a recommendation for a preferred length if a runway extension were to be ultimately pursued.
  - **Master Plan conducted unconstrained / constrained alternatives analysis** in an effort to balance operational demands with local physical limitations
  - Through coordination with key stakeholders (FAA / Maine Department of Transportation / City of Belfast / BST users), a **preferred runway length** was established at 4,710' (aka 4,700')
  - **PAC recommended Alternative 3A** as the preferred alternative for inclusion on the Airport Layout Plan (ALP).

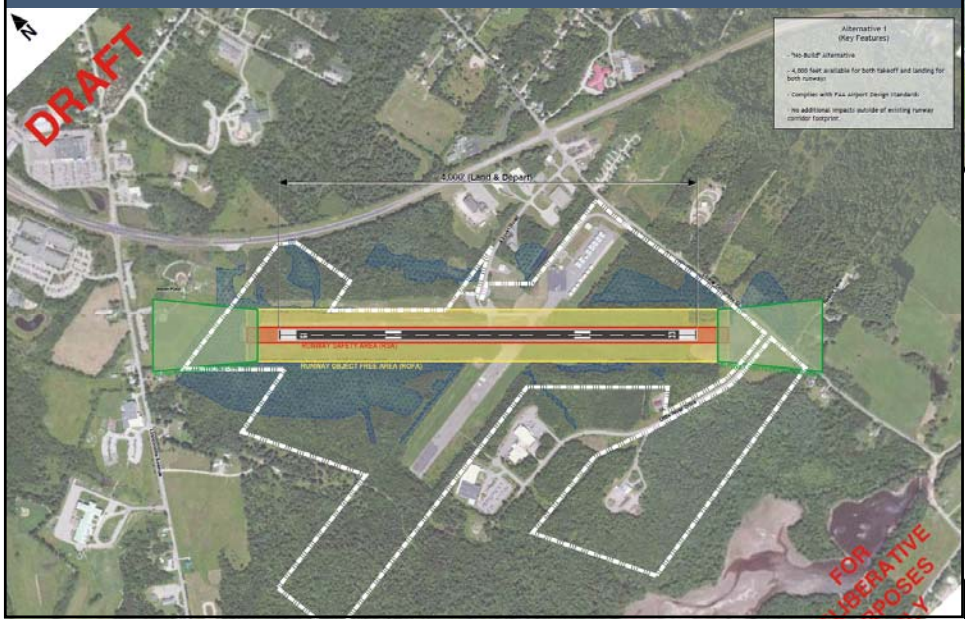

Cessna Citation V


Challenger 300


Lear 45XR

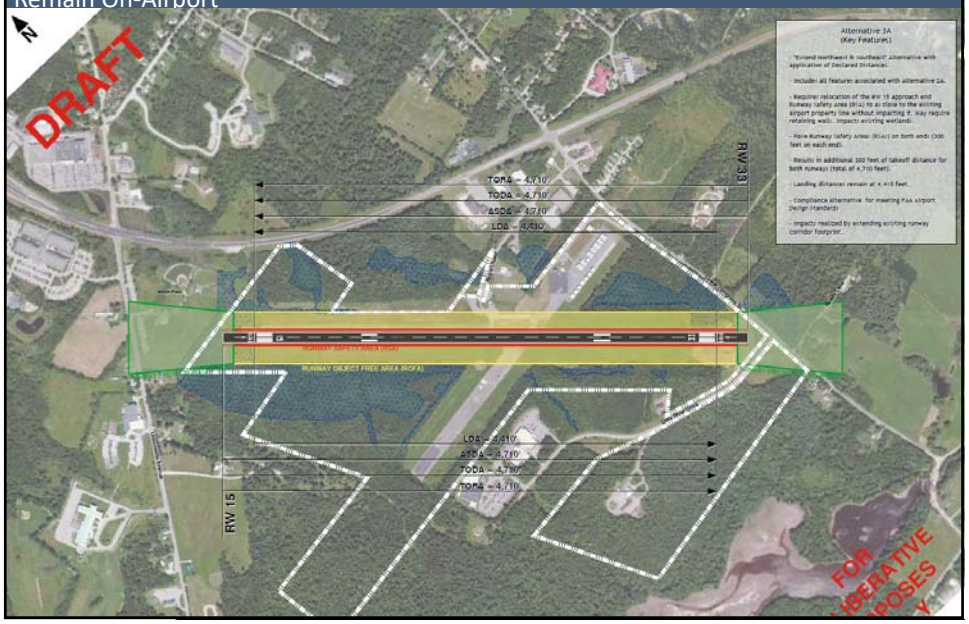
Runway 15-33 Extension

Alternative 1 – Existing Conditions



Runway 15-33 Extension

Alternative 3A – Extend Pavement Southeast *(470’ /170’)* & Northwest *(540’/240’)* - Remain On-Airport



Runway 15-33 Extension

- **Key Considerations related to Alternative 3A**
  - *Inclusion of a runway extension on the Airport Layout Plan does not mean that it will be built – it simply allows for the potential*. Airport Layout Plans have a note that specifically states that inclusion of a project on the sheet does not guarantee funding of any projects.
  - Proposed extension would fulfill operational demands/requirements for multiple area businesses. It would provide "value-added" benefits to others, and multiplier economic impacts throughout the area economy.
  - Immediate impacts include:
    - Runway Protection Zones being shifted 170' Southeast & 240' Northwest
    - Lowest airspace surfaces being lowered 5' to the Southeast & 7' to the Northwest
    - Aircraft would land 170' closer to the Southeast property line & 240' closer to the Northwest property line.
    - Aircraft could start their departure roll 470' closer to the Southeast property line & 540' closer to the Northwest property line.
  - Before any construction could occur, all environmental considerations would first have to be addressed in a formal FAA Environmental Assessment – a federal action requiring public participation with respect to 18 individual investigative categories; as well as formal State of Maine permitting actions.

Runway 15-33 Extension

Evaluation Process

- **Identified Alternatives**
  A. No Action (Alternative 1)
  B. Various Options (Alternatives 2-7)
  C. Other
- **PAC Recommendation & Comments**
  - ***Alternative 3A was recommended for inclusion on the Airport Layout Plan***
    - *A dissenting opinion requested "No action; but continue to evaluate all impacts of proposed option 3A".)*
  - For the project to proceed, it would require a private/public partnership.
  - For a future runway extension even to be considered by the sponsor, the state and the FAA, it must be included on the Airport Layout Plan. If it is not included on the Airport Layout Plan, it cannot be considered - a new Master Plan effort would have to be undertaken to put the extension on the Airport Layout Plan to allow for that consideration.
  - 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. 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


Belfast Municipal Airport
Airport Master Plan
Phase II
Next Steps
Upcoming Tasks
1. PAC Meeting # 5 to establish Final Recommendations (added to the original schedule)
2. Formal Presentation to the City Council
• PAC to provide City Council with recommendations / dissentions
3. Public Hearing and City Council vote on Final Recommendations (vote could also take place at a time separate from the public hearing)
4. Complete Master Plan Technical Report
5. Complete / Submit Airport Layout Plan
Innovative Airport Development Specialists
ASG


Belfast Municipal Airport
Airport Master Plan
Phase II
Public Questions & Comments
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Belfast Municipal Airport

Airport Master Plan
Phase II

Thank You!

Innovative Airport Development Specialists ASG