City of Biddeford

Airport Commission

September 23, 2021 6:30 PM Council Chambers & Via Zoom:

https://biddeford.zoom.us/j/97911237413?pwd=ZTN4d25yTmxidndMYkh1WHNJSmFCQT09

Passcode: 391820

Or One tap mobile :

US: +13126266799,,97911237413# or +16465588656,,97911237413#

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Dial(for higher quality, dial a number based on your current location):

US: +1 312 626 6799 or +1 646 558 8656 or +1 301 715 8592 or +1 346 248 7799 or +1 669 900 9128 or +1 253 215 8782

Webinar ID: 979 1123 7413

International numbers available: https://biddeford.zoom.us/u/abJPM1zotv

1. **Roll Call**
2. **Pledge of Allegiance**

Approval of Minutes:

August 26, 2021 Airport Commission Meeting Minutes
8-26-2021 Airport Commission Minutes.docx

3. **Old Business**
   - 3.1. Update from Gale Associates
     September Gale Associates Update.pdf
   - 3.2. Review and Recommendations for Airport Master Plan - Chapter 6 - Development and Evaluation of Alternatives
     Airport Master Plan-Chapter 6.pdf
4. **New Business**
5. **Airport Managers Report**
6. **Adjourn**

Airport Commission Meeting
August 26, 2021

Committee Chair, Rick Laverriere called the meeting to order at 6:34 p.m.

Roll Call: Rick Laverriere, Gerald Bernier, Carmen Morris, Frederick Oliver, Tom Bryand

Roland Pelletier and Dean Tourigny were excused.

Also present: Airport Manager Peter Donaher; Jackie Marks and Matt Caron from Gale Associates

The Commission recited the Pledge of Allegiance.

Acceptance of Minutes: **June 14, 2021**
Motion by Fred Oliver, seconded by Jerry Bernier to accept the minutes as printed.
Vote: Unanimous.

Presentation: **Gale Associates Project Updates:**
Gale Associates Representatives, Jackie Marks and Matt Caron gave the update.

Runway Project (Outstanding Items):
The FAA has approved a change order for the additional work to fix the NAVAID groundwater issue that is causing manholes to fill with water. Gale Associates is working with the Contractor, Sargent, to get this additional work completed, as well as re-seed the bare turf areas on the airport. This work is expected to be completed during the last week of August. All additional costs to complete this project are expected to be covered by the funds from the original Grant.

Once the NAVAID work is completed, a final inspection with the Airport and FAA/MaineDOT will be scheduled.

Discussions continue with the Contractor and the City to finalize the scope of work for the remaining restoration of non-airport properties where tree clearing had taken place.

Motion by Fred Oliver, seconded by Tom Bryand to approve the change order for the additional work to fix the NAVAID drainage issues.
Vote: Unanimous.
NOTE: This is change order amounts to $31,400 in additional costs; and has no financial impact on the City.

Airport Master Plan Update:
Gale Associates has completed Chapters 1 through 5 of the Master Plan, and has submitted the Chapters to the Airport Commission for review. These Chapters can be found on the City's website for public review and comment – https://www.biddefordmaine.org/2255/Airport-Master-Plan

The remaining Chapters to be completed and submitted for review are:

- Chapter 6 – Development and Evaluation of Alternatives

- Chapter 7 – Schedule of Improvements
- Chapter 8 – Airport Recycling, Reuse and Waste Reduction

Gale has provided a draft of Chapter 6, Development and Evaluation of Alternatives to the Commission and to the FAA and MaineDOT and has received comments from all entities.

Gale Associates Representatives Jackie Marks and Matt Caron presented Chapter 6, Development and Evaluation of Alternatives via a PowerPoint presentation. The Alternatives that were discussed include:

- Runway:
  - ✓ No action – leave as is
  - ✓ Construct Runway 24 end extension and RSA to achieve 3,200 feet
  - ✓ Construct paved runway safety areas to achieve 3,241 feet of takeoff distance on both runway ends

- Taxiway:
  - ✓ No action – leave as is
  - ✓ Construct partial parallel taxiway on Runway 24 end
  - ✓ Construct taxiway turnaround area on Runway 24 end

- Hangar Buildings:
  - ✓ No action – leave as is
  - ✓ Construct box hangars and T-hangars north of existing hangar complex
  - ✓ Construct box hangars southeast of Runway 06-24
  - ✓ Construct T-hangars southwest of west apron
  - ✓ Construct box hangars north of existing hangar complex
  - ✓ Construct T-hangars southwest of west apron

- AWOS – (Automated Weather Observation System):
  - ✓ No action – leave as is
  - ✓ Construct AWOS east of Runway 06-24
  - ✓ Install Weather Monitoring Cameras

- Fuel Farm:
  - ✓ No action – leave as is
  - ✓ Construct fuel facility in terminal area
  - ✓ Construct fuel facility southwest of west apron

- Fence:
  - ✓ No action – leave as is
  - ✓ Construct fencing behind the Granite Street neighborhood
  - ✓ Construct full perimeter fencing around airport property

- SRE Building (Snow Removal Equipment):
  - ✓ No action – leave as is

- ✓ Construct SRE Building in existing hangar complex area
- ✓ Construct SRE Building adjacent to west apron
- ✓ Construct SRE Building adjacent to existing hangar complex

- Apron:
  - ✓ No action – leave as is
  - ✓ Construct in existing hangar complex – Row 2
  - ✓ Construct behind EAA Hangar
  - ✓ Construct in existing hangar complex – Row 4

Gale Associates would like the Commission to vote on which Alternative(s) they want to be part of the ALP (Airport Layout Plan) at the next Airport Commission meeting.

Airport Manager Report:
Airport Manager Peter Donaher had the following items:

- ❖ On August 7th, the EAA sponsored a Coffee & Donuts event for all pilots
- ❖ Owner of CHI Aerospace Fuels, LLC, Chris Hosford, has had an electrician take a look at what hangar work would need to be done in order to meet the codes for fire safety.
- ❖ The skydiving business operating out of the Airport has seen an uptick in business, despite the uncooperative weather we've had this summer.
- ❖ The hangar roof has been completed, with the work being done by Troy Tanguay Construction.
- ❖ The re-seeding of turf areas at the Airport is underway; but has had issues due to delays in grass seed delivery.
- ❖ The Airport has been awarded another ARPA Grant (COVID-related) for $32,000. Funds are to be used for costs related to operations, personnel, cleaning, sanitization, janitorial services, combating the spread of pathogens at the airport, and debt service payments. Any airport development must be directly related to combating the spread of pathogens at the airport.
- ❖ Per a recent City mandate, face coverings are now required on Airport property.

Motion by Tom Bryand, seconded by Fred Oliver to adjourn.
Vote: Unanimous.
Time: 7:34 p.m.

B19
Biddeford Municipal Airport

GALE

MONTHLY PROJECT UPDATE

Biddeford Municipal Airport

Biddeford, Maine

September 23, 2021

Gale Associates, Inc. (Gale) is currently administering the following projects on behalf of the Biddeford Airport Commission:

1. Final Design and Construction Phase Services for Runway 6-24, AIP No. 3-23-0009-015-2020

Project Description: This project includes the preparation of final construction phase design plans and specifications (Bid Documents) for the Runway 06-24 Reconstruction and associated Drainage, Compliant Runway Safety Area, and Vegetation Obstruction Removal in the Runway 24 End. This project will include grant funding for Project 1 above, as well as all Gale and FAA Reimbursable Contracts, and the Construction Contract with the low bidder.

Project Funding

FAA Share (100%)	$5,783,470.00
MaineDOT Share (0%)	$0.00
City of Biddeford Share (0%)	$0.00
TOTAL PROJECT	**$5,783,470.00**

Project Status:

- The Contractor has returned to the site to perform additional restoration work on the properties located on Brenton Street. This work is scheduled to be completed by the end of September.
- The FAA's electrical structures located by the Airport's new PAPIs are scheduled to be repaired sometime during the week of September 13th. Upon completion of this work, the FAA will schedule their flight inspection to commission these NAVAIDs.
- Gale will be scheduling the final inspection on this project immediately following completion of the remaining work.
- Upon completion of the final inspection, the Contractor will have forty-five (45) days to complete any remaining punchlist work.
- Gale will assist the Airport in filing the required grant closeout paperwork. This will include a closeout report, and final reimbursement request for all project costs outstanding.

Recommended Discussions and/or Action Items:

- Please sign and forward the final Reimbursement Request upon receipt.

2. Airport Master Plan Update (AMPU), AIP No. 3-23-0009-14-2020

Project Description: The Airport's Master Plan was last completed in 2005. This AMPU will review the adequacy of the Airport's landside and airside facilities with respect to compliance with Federal Aviation Administration (FAA) design standards and ability to address the needs of the Airport through the planning period (FY-2020-2039). Included in this project is an update to the Airport's ALP to include current conditions and recommended improvements as outlined in FAA Order 5100.38D. A schedule of improvements will be generated to organize the implementation of various improvements in the short- (0-5 years), medium- (6-10 years), and long-term (11-20 years) periods to assist the sponsor in defining the Airport's Capital Improvement Plan. This project will also include a wildlife hazard site visit.

Project Funding:

FAA Share (90%)	$173,855.00
MaineDOT Share (0%)	$0.00
City of Biddeford Share (0%)	$0.00
TOTAL PROJECT	$173,855.00

Project Status:

- The CARES Act includes funding to cover Airport projects at 100% for FY 2020. This means that the Airport Master Plan will not require a local or state share.
- To date, the Commission has reviewed and approved the following chapters:
  - Draft Chapter 1 – Introduction
  - Draft Chapter 2 – Inventory of Existing Facilities
  - Draft Chapter 3 – Existing Environmental Conditions and Sensitive Areas
  - Draft Chapter 4 – Forecasts of Aviation Demand and Capacity
  - Draft Chapter 5 – Facility Requirements
  - Chapter 6 – Development and Evaluation of Alternatives
- Remaining chapters are as follows:
  - Chapter 7 – Schedule of Improvements
  - Chapter 8 – Airport Recycling, Reuse, and Waste Reduction
- Chapter 6 was presented to the Commission for consideration at the August 26th Commission Meeting. Gale will request a formal vote from the Commission to select preferred alternatives to subsequently be recommended in Chapter 6 and included in the Ultimate Airport Layout Plan.
- NewEarth Ecological provided a Final WHSV Report, which has been forwarded to FAA and MaineDOT for review and comment. No agency comments were received on the WHSV Report.
- Next steps in the Master Plan process will be to develop the schedule of improvements and present the final chapters and Airport Layout Plan to the Commission and public.

Recommended Discussions and/or Action Items:

- Commission vote on preferred alternatives.
- Discuss schedule of improvements/priorities.

Other Items:

- None at this time.

CHAPTER 6 – DEVELOPMENT AND EVALUATION OF ALTERNATIVES

Chapter 5 identified various facility requirements necessary to meet the Airport's needs through the planning period. This chapter explores alternative ways to implement facility requirements identified in Chapter 5 while considering the operational, environmental, security, and financial impacts presented in previous chapters.

6.1 METHODOLOGY

This chapter presents alternative development scenarios for airside, landside, and support facilities for consideration. Included in each alternative is a no-build scenario to identify the operational, environmental, security, and financial impacts of leaving the Airport in its current configuration and as a baseline upon which to compare relevant alternatives. These improvements include an extension to Runway 06-24, parallel taxiway construction, hangar construction, AWOS construction, fuel farm relocation and construction, perimeter fencing construction, SRE building construction, and apron reconfiguration. Recommended alternatives selected by the Airport Commission for each facility evaluation are then identified and incorporated as part of the Ultimate Airport Layout Plan.

6.2 ENVIRONMENTAL

Permitting costs associated with each development scenario described will vary drastically depending on the type of project(s) pursued, size of impact, location, and resources affected. Therefore, permitting costs need to be addressed on an individual project basis as the Airport develops. This includes coordination with federal, state, and local agencies responsible for oversight of natural and cultural resources (U.S. Fish and Wildlife Service, Maine Department of Environmental Protection, Maine Department of Inland Fisheries and Wildlife, U.S. Army Corps of Engineers, and Maine Historic Preservation Commission, etc.) to better understand each project's requirements, and in some cases achieve a reduction in permitting requirements, particularly for projects that are safety related.

Any alternative improvement that has an impact on natural (wetlands, rare species, etc.) or cultural resources (archaeological, historic, architecture, etc.) will likely require an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA). Typically, following the completion and approval of an AMPU and ALP, an EA is completed for most, if not all, improvements shown on the ALP.

6.3 RUNWAY EXTENSION ALTERNATIVES

Runway 06-24 is currently 3,001 feet long by 75 feet wide. According to AC 150-5325-4B, *Runway Length Requirements for Airport Design*, the recommended runway length at B19 for airplanes with fewer than 10 passenger seats is 3,100 feet, and AC 150/5300-13A, *Airport Design*, the required minimum runway length for non-precision instrument approach procedures with vertical guidance is 3,200 feet. This section provides a no-action alternative to explore the impact of leaving the Airport in its current condition, as well as one alternative exploring how the airport can achieve a runway length of 3,200 feet.

6.3.1 NO ACTION RUNWAY EXTENSION IMPACTS

This section explores the impacts of maintaining Runway 06-24 at its current runway length of 3,001 feet. The purpose of this section is to identify deficiencies and benefits associated with maintaining the Airport in its existing condition to provide a baseline alternative upon which to compare subsequent alternatives. For a graphic representation of this project, refer to Figure 2-1, Existing Conditions.

Operational impacts:

- The Airport's takeoff distance available (TODA) and landing distance available (LDA) remain limited to 3,001 feet.
- The Airport continues to lack the runway length recommended in FAA AC 150/5300-13A for non-precision approaches.
- The Airport continues to lack the runway length recommended in FAA AC 150/5300-13A to support Instrument Flight Rule (IFR) operations for vertically guided approaches. According to AC 150-5300/13A, Chapter 2, Section 205.b.(3), runways with vertically guided approaches "must be at least 3,200 feet in length."
- The Airport may be limited to non-precision approach procedures with lateral guidance only due to its limited runway length.
- The Airport's runway length remains 99 feet shorter than prescribed for small airplanes with fewer than 10 passenger seats, per AC 150/5325-4B.

Environmental Impacts:

- Because no construction will take place as part of this scenario, no environmental resources will be impacted, and therefore no permitting efforts will be required.

Other impacts or considerations:

- No construction will take place as part of this scenario, and therefore, no financial resources will be required.

6.3.2 ALTERNATIVE 1 – CONSTRUCT RUNWAY 06 END EXTENSION AND RSA TO ACHIEVE 3,200 FEET

This section explores the impacts of constructing an additional 199 feet of runway length on the Runway 06 end, with compliant Runway Safety Area, to achieve a total runway length of 3,200 feet. For a graphic representation of this project, refer to Figure 6-1.1.

Operational impacts:

- The Airport's takeoff distance available (TODA) increases from 3,001 feet to 3,200 feet for each runway end.
- Will require shifting the existing Runway 06 end Safety Area by 139 feet to achieve required RSA of 240 feet beyond runway end.
- The Airport's landing distance available (LDA) increases from 3,001 feet on the Runway 24 end to 3,200 feet.
- The Airport's landing distance available (LDA) increases from 3,001 feet on the 06 end to 3,200 feet, though tree clearing within the Runway 06 approach may be required and would need to be confirmed via an obstruction analysis, which is outside the scope of this Master Plan.
- It is recommended that an obstruction analysis be conducted to determine if there are any impediments (i.e., trees) that would be required to be removed or if any additional easements are necessary.
- The Airport will comply with runway length recommendations contained in AC 150/5300-13A and AC 150/5325-4B.
- The Airport may meet the runway length requirements for an upgraded approach procedure with vertical guidance (e.g., LPV).

Environmental Impacts:

- Approximately 18,200 square feet of wetland impacts.
- Approximately 14,900 square feet of additional impervious surface.
- MaineDEP Site Location of Development Permit likely necessary.
- Permitting needs (Environmental Assessment, Maine Natural Resource Protection Act Permit, U.S. Army Corps of Engineers Permit).

Other impacts or Considerations:

- Estimated cost: $515,000

Table 6-1: Runway Alternatives Comparison

Alternative	*No Action Alternative*	*Alternative 1* *Runway 06 Extension*
Operational Impacts	• 06 TODA 3,001 feet • 24 TODA 3,001 feet • 06 LDA 3,001 feet • 24 LDA 3,001 feet • Does not meet runway length recommendations of AC 150/5300-13A for non-precision or vertically guided approaches • Does not meet runway length recommendations for design aircraft per AC 150/5325-4B	• 06 TODA 3,200 feet • 24 TODA 3,200 feet • 06 LDA 3,200 feet (tree clearing likely necessary) • 24 LDA 3,200 feet • Meets recommendations of AC 150/5300-13A or AC 150/5325-4B • RSA shift required (139 feet)
Environmental Impacts	• No environmental impacts • No permits	• Approx. 18,200 SF of wetland impacts • Approx. 14,900 SF of impervious surface • Permitting: SLOD, EA, NRPA, USACE
Other Impacts	• None	• Obstruction survey to determine additional easements and tree clearing
Cost	$0.00	$515,000[1]

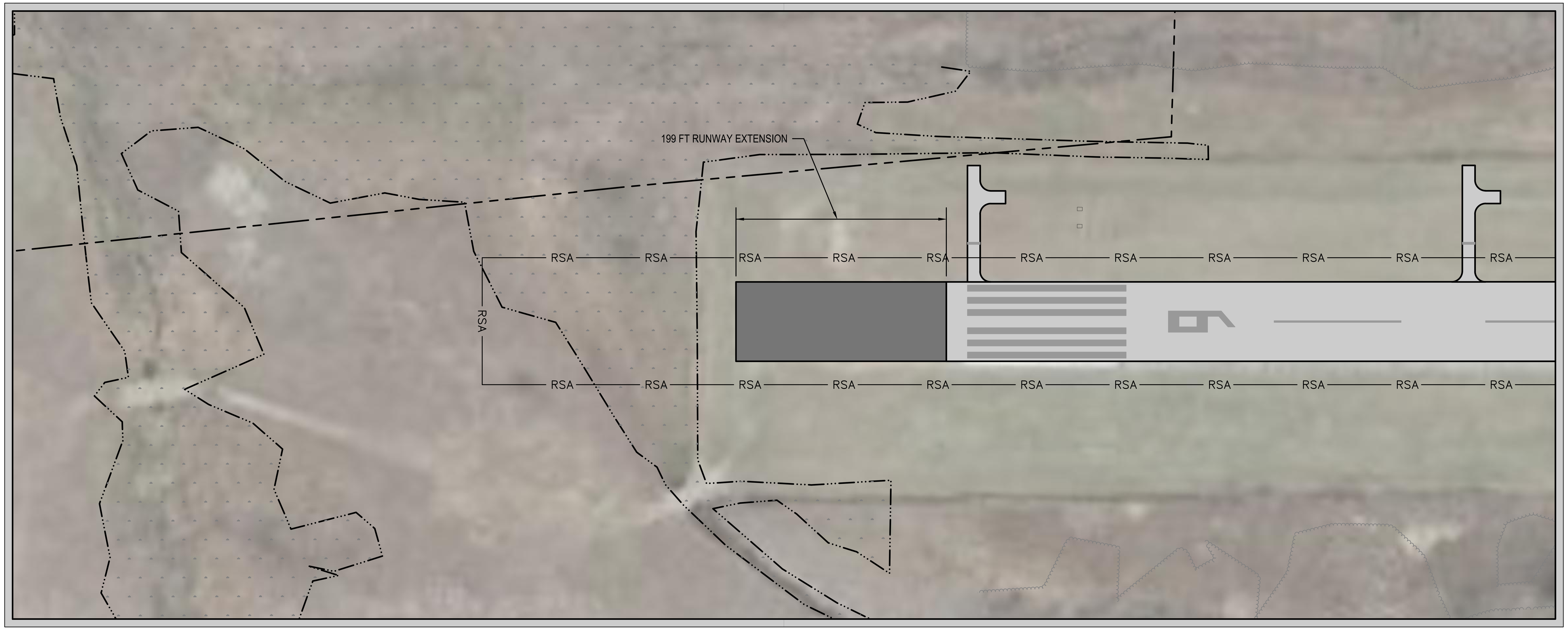
Recommended Alternative: To be updated following selection of alternatives by Airport Commission.

[1] Construction of extension only. Does not include costs to obtain additional easements or conduct tree clearing in the Runway 06 approach.

1 2 3 4 5 6

E D C B A

NORTH



RUNWAY - ALTERNATIVE 1

SCALE: 1" = 60'

LEGEND

ITEM	(E) EXISTING	(F) FUTURE
AIRPORT PROPERTY LINE		
BUILDINGS/HANGARS		
RUNWAY SAFETY AREA (RSA)	RSA	
PAVEMENT		
WETLANDS[1]		
NWI WETLANDS[2]		
TREELINE		
8' CHAIN LINK FENCE		

NOTES:

1) WETLANDS DELINEATED IN 2015, AND RECONFIRMED IN 2019.

2) WETLANDS LISTED IN THE U.S. FISH AND WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY. NWI WETLANDS ARE NOT DELINEATED.

3) THIS ALTERNATIVE INVOLVES EXTENDING THE RUNWAY 6 END TO 3,200 FT AND MOVING THE RSA ACCORDINGLY.

GALE

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PROJECT
AIRPORT MASTER PLAN UPDATE
AIP NO. 3-23-0009-14-2020

OWNER
BIDDEFORD MUNICIPAL AIRPORT
BIDDEFORD, MAINE

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	777092
CADD FILE	ALT-RUNWAY EXT
DESIGNED BY	APL
DRAWN BY	APL
CHECKED BY	MPC
DATE	AUGUST 2021
DRAWING SCALE	1" = 60'

GRAPHIC SCALE

0 30 60 120

SHEET TITLE

RUNWAY EXTENSION ALTERNATIVES

DRAWING NO.

FIG 6-1.1

OF

6.4 TAXIWAY ALTERNATIVES

The Airport Commission would like to make considerations for a partial parallel taxiway to enhance safety, especially during low visibility, by providing landing aircraft with a safe place to exit the runway, removing direct apron-to-runway access, improving access from the hangar complex to the Runway 24 end, and reducing traffic across the Main Apron. AC 150/5300-13A, *Airport Design*, recommends a parallel taxiway for all approach procedures and requires a parallel taxiway for approaches with visibility minimums below one mile. This section presents a no-action alternative to explore the impacts of leaving the Airport in its current condition, as well as an alternative that explores constructing a partial parallel taxiway at midfield.

6.4.1 NO ACTION TAXIWAY IMPACTS

This section explores the impacts of failing to construct a partial parallel taxiway area at the Airport. The purpose of this section is to identify deficiencies and benefits associated with leaving the Airport in its existing condition to provide a baseline alternative upon which to compare subsequent alternatives. For a graphic representation of this project, refer to Figure 2-1, Existing Conditions.

Operational impacts:

- Existing stub taxiway continues to provide direct access from the Main Apron to Runway 06-24, posing a runway incursion safety risk.
- Access gate remains in direct line with stub taxiway to Runway 06-24, which could lead to an vehicle inadvertently entering the runway environment.
- Does not provide an efficient route from the hangar complex to Runway 06-24, requiring all hangar tenants to cross the Main Apron in order to reach their hangars.
- Without a parallel taxiway, the Airport may be limited to visibility minimums greater than one mile.

Environmental Impacts:

- Because no construction will take place as part of this scenario, no environmental resources will be impacted, and therefore no permitting efforts will be required.

Other impacts or considerations:

- No construction will take place as part of this scenario, and therefore, no financial resources will be required.

6.4.2 ALTERNATIVE 1 – CONSTRUCT PARTIAL PARALLEL TAXIWAY AT MIDFIELD

This section explores the impacts of constructing a partial parallel taxiway running from the west side of the West Apron to the east side of the existing hangar complex. This alternative will eliminate the existing non-compliant stub taxiway from Runway 06-24 to the Main Apron. For a graphic representation of this project, refer to Figure 6-2.1.

Operational impacts:

- Direct runway-to-apron access is eliminated.
- Access gate is no longer in direct line with Runway 06-24 stub taxiway.
- Enhances safety by requiring two, 90-degree turns to access Runway 06-24.
- Provides an efficient route from the hangar complex to Runway 06-24, diverting hangar tenants away from the Main Apron in order to reach their hangars.
- Opens up the potential for the Airport to pursue an approach with visibility minimums lower than one mile in the future.

Environmental Impacts:

- No anticipated wetland impacts as a result of this alternative.
- Approximately 26,200[2] square feet of additional impervious surface.
- MaineDEP Site Location of Development Permit likely necessary.
- Permitting needs (Environmental Assessment, Maine Natural Resource Protection Act Permit, U.S. Army Corps of Engineers Permit).

Other impacts or considerations:

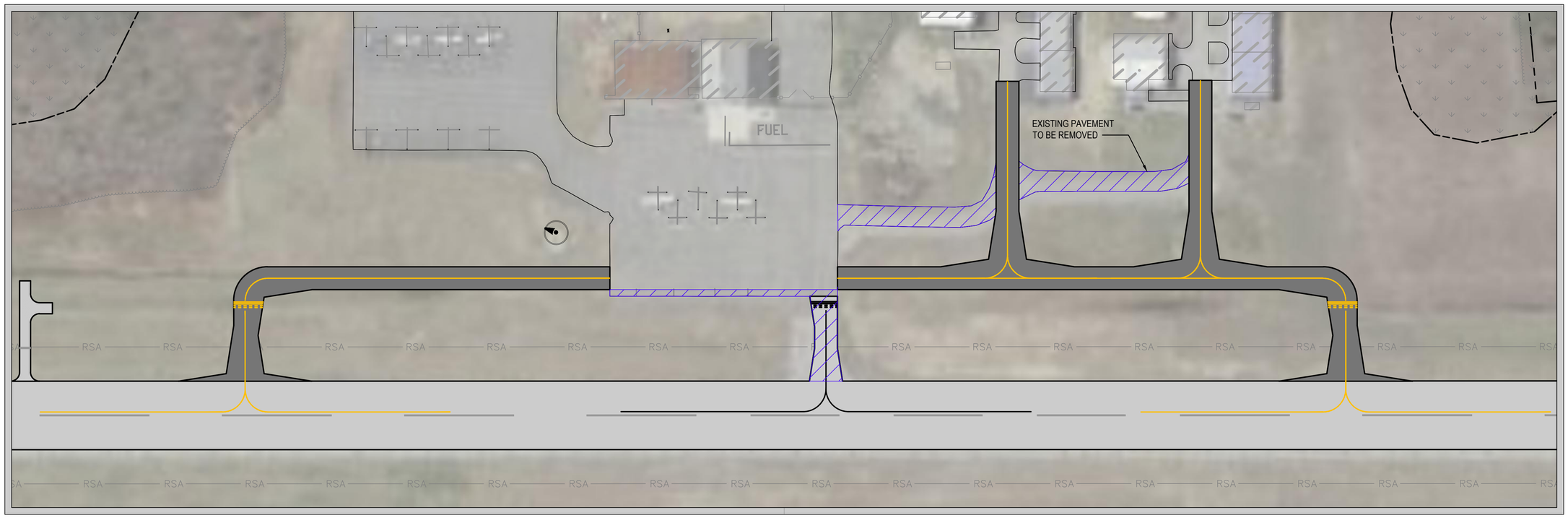
- Requires relocation of existing windcone.
- Estimated cost: $1.9M - $2.1M

[2] Includes newly constructed pavement, minus pavement to be removed.

Table 6-2: Taxiway Alternatives Comparison

Alternative	*No Action Alternative*	*Alternative 1* *Partial Parallel Taxiway*
Operational Impacts	• Direct apron-to-runway access • Access gate in direct line with Runway 06-24 • Hangar tenants continue to cross main apron to access hangars • Does not meet taxiway recommendations for a reduction in visibility minimums	• Direct apron-to-runway access eliminated • Access gate no longer in direct line with Runway 06-24 • Hangar tenants no longer required to cross Main Apron to access hangars • Meets taxiway recommendations for a potential reduction to visibility minimums
Environmental Impacts	• No environmental impacts • No permits	• No anticipated wetland impacts • Approx. 26,200 SF of impervious surface • Permitting: SLOD, EA, NRPA, USACE
Other Impacts	• None	• Relocation of windcone required
Cost	$0.00	$1.9M - $2.1M

Recommended Alternative: To be updated following selection of alternatives by Airport Commission.



TAXIWAY - ALTERNATIVE 1

SCALE: 1" = 60'

LEGEND		
ITEM	(E) EXISTING	(F) FUTURE
AIRPORT PROPERTY LINE		
BUILDINGS/HANGARS		
PAVEMENT		
WETLANDS[1]		
NWI WETLANDS[2]		
TREELINE		
8' CHAIN LINK FENCE		

NOTES:

1) WETLANDS DELINEATED IN 2015, AND RECONFIRMED IN 2019.

2) WETLANDS LISTED IN THE U.S. FISH AND WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY. NWI WETLANDS ARE NOT DELINEATED.

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PROJECT
AIRPORT MASTER PLAN UPDATE
AIP NO. 3-23-0009-14-2020

OWNER
BIDDEFORD MUNICIPAL AIRPORT
BIDDEFORD, MAINE

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	777092
CADD FILE	ALT-TAXIWAY
DESIGNED BY	APL
DRAWN BY	APL
CHECKED BY	MPC
DATE	AUGUST 2021
DRAWING SCALE	1" = 60'

GRAPHIC SCALE
0 30 60 120

SHEET TITLE
TAXIWAY ALTERNATIVES

DRAWING NO.
FIG 6-2.1

OF

6.5 HANGAR BUILDING ALTERNATIVES

The Airport's hangar buildings are currently at capacity, with a list of 12 individuals waiting to hangar their aircraft at Biddeford as additional units become available. Additionally, there are two business owners – one flight school owner and one helicopter sightseeing company owner – wishing to expand their business to Biddeford. This section presents a no-action alternative to explore the impact of leaving the Airport in its current condition, as well as two alternatives for the construction of additional hangar units.

6.5.1 NO ACTION HANGAR IMPACTS

This section explores the impacts of failing to construct additional hangar facilities to address capacity needs. The purpose of this section is to identify deficiencies and benefits associated with leaving the Airport in its existing condition to provide a baseline alternative upon which to compare subsequent alternatives. For a graphic representation of this project, refer to Figure 2-1, Existing Conditions.

Operational impacts:

- The Airport continues to lack the adequate infrastructure to fulfill existing demand for hangar units.
- The Airport continues to lack adequate space to accommodate additional airfield businesses.

Environmental Impacts:

- Because no construction will take place as part of this scenario, no environmental resources will be impacted, and therefore no permitting efforts will be required.

Other impacts or considerations:

- No construction will take place as part of this scenario, and therefore, no financial resources will be required.
- Revenue remains limited to that generated from existing hangar units.

6.5.2 ALTERNATIVE 1 – CONSTRUCT HANGARS ADJACENT TO EXISTING HANGAR COMPLEX

This project is for the construction of 5 box hangar units and 13 T-hangar units in the area of the existing hangar complex, including taxilane reconfiguration. For a graphic representation of this project, refer to Figure 6-3.1.

Operational Impacts:

- This alternative constructs 18 additional hangar units.

Environmental Impacts:

- Approximately 19,900 square feet of wetland impacts.
- Approximately 14,500[3] square feet of additional impervious surface.
- No vegetation clearing required to prepare the project area.
- MaineDEP Site Location of Development Permit likely necessary.
- Permitting needs (Environmental Assessment, Maine Natural Resource Protection Act Permit, U.S. Army Corps of Engineers Permit).

Other impacts or Considerations:

- Requires geotechnical investigation of project area to confirm suitable soils.
- Construction of hangar buildings provides additional revenue for the Airport.
- Construction of hangar buildings increases the number of based aircraft at the Airport, resulting in potential increases in fuel sales and community economic contributions.
- It is assumed that hangar buildings will be constructed by private developers and that the Airport will incur no costs associated with building construction.

[3] Includes newly constructed pavement, minus pavement to be removed.

6.5.3 ALTERNATIVE 2 – RESERVE WEST APRON FOR FUTURE T-HANGAR OR TIE-DOWN DEVELOPMENT

This project is for the reservation of the West Apron for future T-Hangar or tie-down development. For a graphic representation of this project, refer to Figure 6-3.1.

Operational Impacts:

- This alternative allows the airport to construct additional hangar units or reconfigured tie-down spaces as demand warrants.
- This alternative has the potential to require the removal of existing tie-down spaces if hangar units are constructed in the area.

Environmental Impacts:

- No anticipated wetland impacts as a result of this alternative.
- No additional impervious surface as a result of this alternative.
- No vegetation clearing required for this alternative.
- Permitting needs (Environmental Assessment, Maine Natural Resource Protection Act Permit, U.S. Army Corps of Engineers Permit).

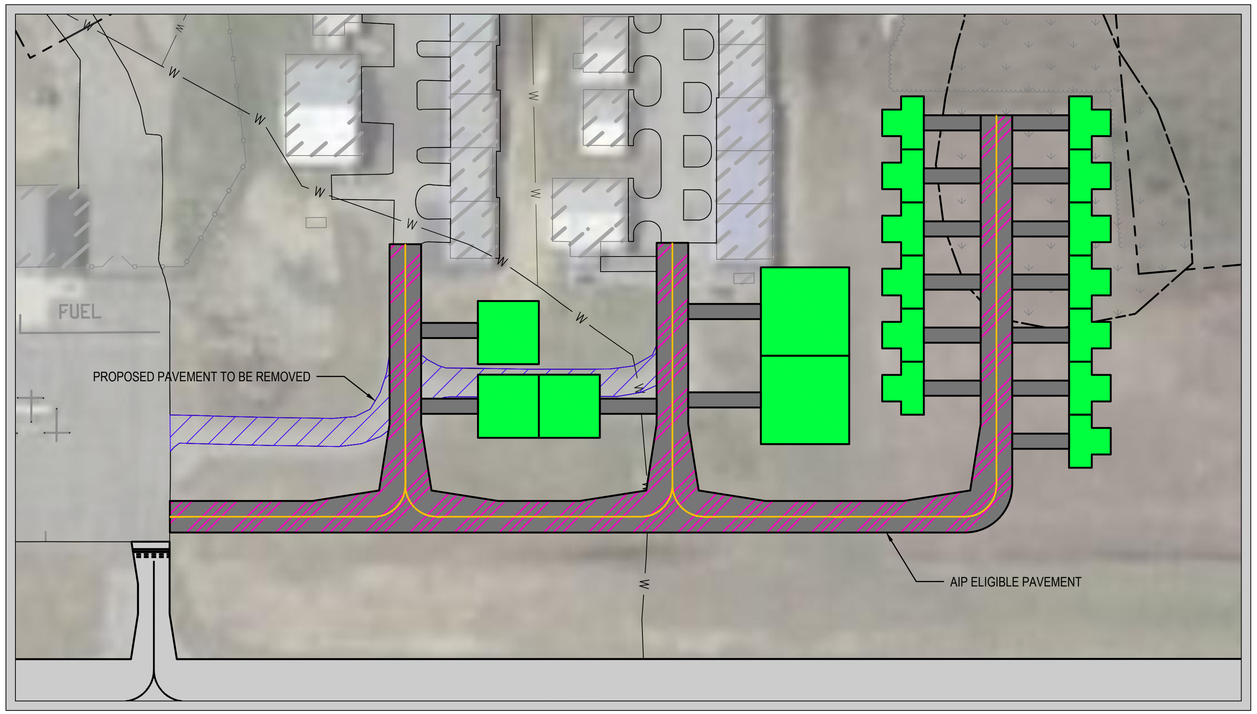
Other impacts or Considerations:

- Construction of hangar units provides additional revenue for the Airport.
- It is assumed that hangar buildings will be constructed by private developers and that the Airport will incur no costs associated with building construction.

Table 6-3: Hangar Alternatives Comparison

Alternative	*No Action Alternative*	*Alternative 1 Adjacent to Existing Hangar Complex*	*Alternative 2 Reservation of West Apron*
Operational Impacts	• Does not meet hangar demand • Does not accommodate additional businesses	• 18 additional hangar units	• Allows the airport to construct hangar units or tie-down spaces • Removal of tie-downs required if hangars are constructed
Environmental Impacts	• No environmental impacts • No permits	• Approx. 19,900 SF of wetland impacts • No tree clearing • Approx. 14,500 SF of impervious surface • Permitting: SLOD, EA, NRPA, USACE	• No anticipated wetland impacts • No tree clearing • No additional impervious surface • Permitting: SLOD, EA, NRPA, USACE
Other Impacts	• No additional revenue from hangar leases	• Geotechnical investigation • Additional rental revenue • Potential increased fuel sales • Community economic contributions	• Additional rental revenue • Potential increased fuel sales

Recommended Alternative: To be updated following selection of alternatives by Airport Commission.



HANGAR - ALTERNATIVE 1

SCALE: 1" = 60'

HANGAR - ALTERNATIVE 2

SCALE: 1" = 40'

LEGEND

ITEM	(E) EXISTING	(F) FUTURE
AIRPORT PROPERTY LINE		
BUILDINGS/HANGARS		
PAVEMENT		
DELINEATED WETLAND[1]		
NWI WETLANDS[2]		
TREELINE		
8' CHAIN LINK FENCE		
WATER LINE	W	

NOTES:

1) WETLANDS DELINEATED IN 2015, AND RECONFIRMED IN 2019.

2) WETLANDS LISTED IN THE U.S. FISH AND WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY. NWI WETLANDS ARE NOT DELINEATED.

3) ALTERNATIVE 1 LARGE HANGAR SIZES BASED ON CONCEPTUAL DRAWINGS SENT TO THE AIRPORT BY AN INTERESTED BUILDER. (70' x 70')

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PROJECT
AIRPORT MASTER PLAN UPDATE
AIP NO. 3-23-0009-14-2020

OWNER
BIDDEFORD MUNICIPAL AIRPORT
BIDDEFORD, MAINE

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	777092
CADD FILE	ALT-HANGAR
DESIGNED BY	APL
DRAWN BY	APL
CHECKED BY	MPC
DATE	AUGUST 2021
DRAWING SCALE	AS SHOWN

GRAPHIC SCALE

SHEET TITLE

HANGAR ALTERNATIVES

DRAWING NO.

FIG 6-3.1

OF

6.6 AUTOMATED WEATHER OBSERVING SYSTEMS (AWOS) ALTERNATIVES

The Airport currently does not have an Automated Weather Observing System (AWOS) on site and instead relies on weather data from Portland and/or Sanford. This section provides a no-action alternative to explore the impact of leaving the Airport in its current condition, as well as two alternatives, one showing the impacts of constructing an AWOS on airport property and the other exploring the installation of a weather camera system.

6.6.1 NO ACTION AWOS IMPACTS

This section explores the impacts of failing to construct an Automated Weather Observing System (AWOS) to provide local weather information to pilots flying into Biddeford. The purpose of this section is to identify deficiencies and benefits associated with leaving the Airport in its existing condition to provide a baseline alternative upon which to compare subsequent alternatives. For a graphic representation of this project, refer to Figure 2-1, Existing Conditions.

Operational impacts:

- The Airport continues to utilize weather data from nearby Airports.
- Pilots run the risk of arriving at Biddeford during low visibility due to inaccurate weather reporting, requiring them to turn around and land at a different facility.

Environmental Impacts:

- Because no construction will take place as part of this scenario, no environmental resources will be impacted, and therefore no permitting efforts will be required.

Other impacts or considerations:

- No construction will take place as part of this scenario, and therefore, no financial resources will be required.

6.6.2 ALTERNATIVE 1 – CONSTRUCT AWOS AJDACENT TO WEST APRON

This section explores the impacts of constructing an AWOS in the vacant area adjacent to the West Apron. For a graphic representation of this project, refer to Figure 6-4.1. According to FAA Order 6560.20C, Siting Criteria for Automated Weather Observing Systems, preferred siting of the cloud height, visibility and wind sensors for airports with only visual and/or non-precision runways is as follows:

- Adjacent to the primary runway 1,000 to 3,000 feet down runway from the threshold.
- Minimum distance perpendicular from the runway centerline must be 500 feet but must not exceed 1,000 feet (assumes flat terrain with adjustments by 7 feet for every foot of elevation difference).
- Alternate locations may be accepted if the preferred siting proves to be unnecessarily restrictive.

Additional preferred siting for wind sensors, as provided in Order 6560.20C, is as follows:

- Sensor must be mounted at 30 to 33 feet above the average ground height within a radius of 500 feet.
- Within the immediate 500-foot radius, all obstructions (vegetation, buildings, etc.) must be at least 15 feet lower than the height of the sensor.
- Within the 500- to 1,000-foot radius, all obstructions (vegetation, buildings, etc.) must be at least 10 feet lower than the height of the sensor.
- If difficult to achieve, a less desirable location may have to be selected; however, the sensor must demonstrate that accurate and reliable information is being provided. If the wind information is not accurate and reliable then resolution, including relocating or turning off the sensors, may be required.

AIP Project Requirements for AWOS III or Better:

- Notification to and concurrence from Service Center Non-Federal Program Implementation Manager (PIM) required.
- Discrete frequency may be required (i.e., may not be allowed to transmit over existing UNICOM frequency).
- A benefit-cost analysis per FAA Form 5100-138 is required for non-primary airports that are not classified as National or Regional.

Table 6-4 below provides a comparison of the certified data provided by AWOS II vs. AWOS III systems:

Table 6-4: Comparison of AWOS II vs. AWOS III Weather Data

System	*AWOS II*	*AWOS III*
Weather Data	• Wind Speed • Wind direction • Wind gust • Variable wind direction • Temperature • Dew point • Altimeter setting • Density altitude • Visibility • Variable visibility	• Wind Speed • Wind direction • Wind gust • Variable wind direction • Temperature • Dew point • Altimeter setting • Density altitude • Visibility • Variable visibility • **Precipitation accumulation** • **Cloud height** • **Sky condition**

Source: FAA List of Certified Non-Federal AWOS Systems and Manufacturers as of August 26, 2020

Operational impacts:

- The Airport is able to provide accurate weather data, including local wind speed, wind direction, wind gusts, variable wind direction, temperature, dew point, altimeter setting, and density altitude to pilots flying into Biddeford.
- An AWOS has the potential to provide the Airport with a decrease in its IFR minimum ceiling requirement.

Environmental Impacts:

- Substantial tree clearing may be necessary to comply with sensor siting recommendations. Approximately 10.7 AC of trees are located on airport property within the 500-foot radius and the 500-1,000-foot radius.[4]
- Temporary wetland impacts due to tree clearing may be necessary. Approximately 2.9 AC of vegetation referenced above is located within wetlands on Airport property.
- Approximately 100 square feet of additional impervious surface.
- MaineDEP Site Location of Development Permit likely necessary.

[4] If this alternative is selected, coordination with FAA to determine the extent of vegetation clearing will be necessary.

- Permitting needs (Environmental Assessment, Maine Natural Resource Protection Act Permit, U.S. Army Corps of Engineers Permit).

Other impacts or considerations:

- Estimated cost: $600,000
- AIP funding limited to non-primary entitlements.
- Benefit-cost analysis required for AWOS III or better.
- Due to land restrictions, an AWOS must be sited in a location considered be less desirable than what is recommended by siting requirements. This is allowed; however, it must be demonstrated that the sensors are capturing accurate and reliable data. If this cannot be demonstrated, resolution (including relocating or turning off the sensors) may be required.

6.6.3 ALTERNATIVE 2 – INSTALL WEATHER MONITORING CAMERAS

This section explores the impacts of installing weather monitoring cameras at the Airport in place of an AWOS system.

Operational impacts:

- The Airport is able to provide pilots with nearly real-time photos of weather conditions on the airfield for comparison against ideal weather condition photos, allowing pilots to make determinations about current visibility.
- Does not provide local wind speed, wind direction, wind gusts, variable wind direction, temperature, dew point, altimeter setting, or density altitude.

Environmental Impacts:

- No anticipated wetland impacts as a result of this alternative.
- No additional impervious surface.
- No permits required.

Other impacts or considerations:

- Estimated cost: Approximately $20,000[5]
- Installation can take as little as a few weeks, if the Airport has already prepared a place (e.g., pole) to install the cameras.
- Not AIP eligible; however, will not tie-up nonprimary entitlement funding.

[5] Estimate from FAA Weather Camera Office meeting July 15, 2021

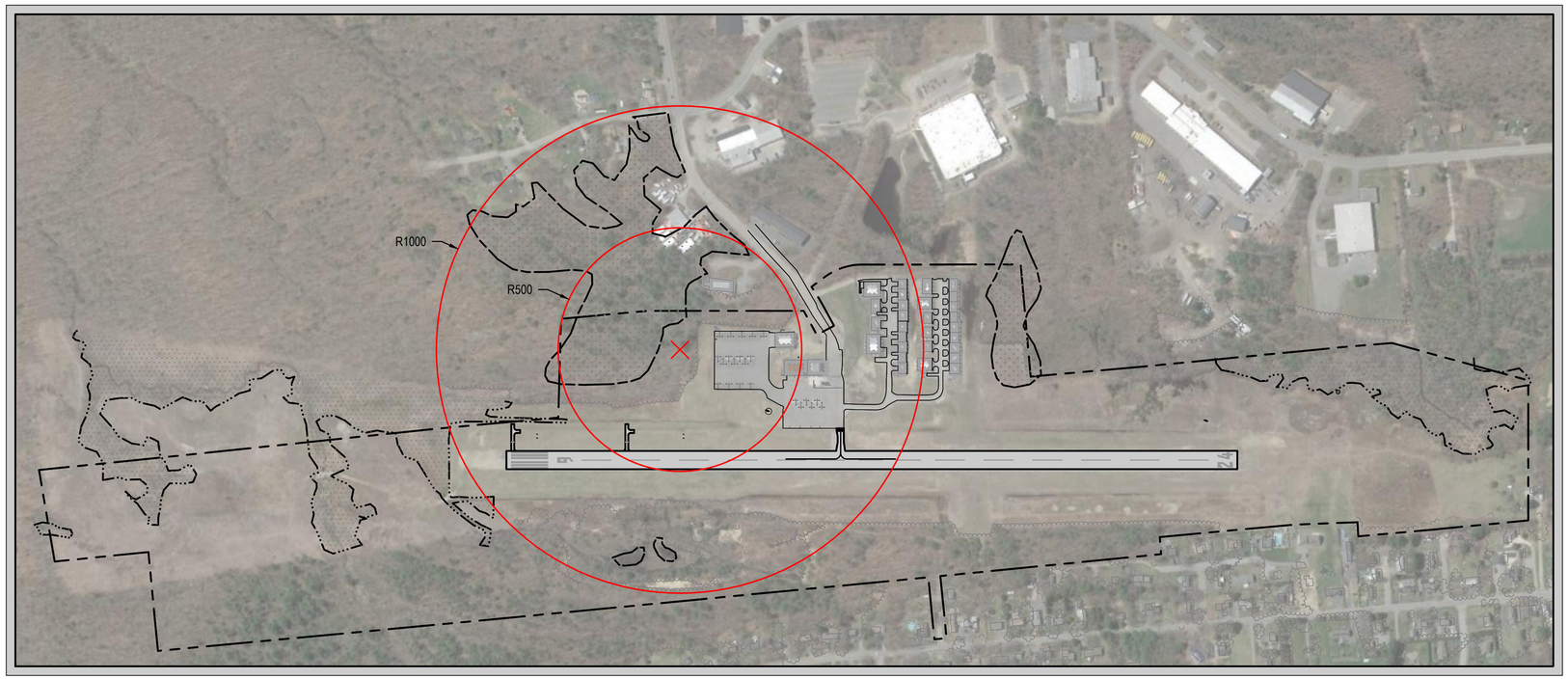
Table 6-5: AWOS Alternatives Comparison

Alternative	*No Action Alternative*	*Alternative 1* *Construct AWOS*	*Alternative 2* *Install Weather Cameras*
Operational Impacts	• Continued use of weather data from other airports • Risk of turnarounds due to inaccurate weather data	• Accurate local weather data available to pilots • Potential reduction in IFR ceiling minimum	• Real-time photos of weather conditions • Local weather details (e.g., wind speed, wind direction, visibility, etc.) not provided • Does not allow for reduction in ceiling minimums

Environmental Impacts	• No environmental impacts
	• No permits
		• Coordination with FAA to determine extent of vegetation clearing required:
		  ○ 10.7 AC vegetation within critical areas on Airport property
		  ○ 2.9 AC of vegetation located in wetlands
		• Approx. 100 SF of impervious surface
		• Permitting: SLOD, EA, NRPA, USACE
			• No anticipated wetland impacts
			• No tree clearing required
			• No impervious surface
			• No permits required

Other Impacts	• None	• AIP funding limited to non-primary entitlements • Benefit-cost analysis required for AWOS III or better • Siting according to FAA Order 6560.20C not possible • Must demonstrate accurate and reliable data or relocation/turning off the sensor may be required	• Not AIP eligible • Will not tie up NPE • Lead time for installation as little as a few weeks
Cost	$0.00	$600,000	$20,000

Recommended Alternative: To be updated following selection of alternatives by Airport Commission.



AWOS - ALTERNATIVE 1

SCALE: 1" = 300'

NORTH

LEGEND

ITEM	(E) EXISTING	(F) FUTURE
AIRPORT PROPERTY LINE		
BUILDINGS/HANGARS		
PAVEMENT		
DELINEATED WETLANDS[1]		
NWI WETLANDS[2]		
PROPOSED AWOS LOCATION		×

NOTES:

1) WETLANDS DELINEATED IN 2015, AND RECONFIRMED IN 2019.

2) WETLANDS LISTED IN THE U.S. FISH AND WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY. NWI WETLANDS ARE NOT DELINEATED.

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AIP NO. 3-23-0009-14-2020

OWNER
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BIDDEFORD, MAINE

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	777092
CADD FILE	ALT-AWOS
DESIGNED BY	APL
DRAWN BY	APL
CHECKED BY	MPC
DATE	AUGUST 2021
DRAWING SCALE	1" = 300'

GRAPHIC SCALE
0 150 300 600

SHEET TITLE
AWOS ALTERNATIVES

DRAWING NO.
FIG 6-4.1

OF

6.7 FUEL FARM ALTERNATIVES

The Airport's existing 100-LL fuel facility consists of an underground storage tank (UST), which is currently located beneath the Main Apron and is set to expire in January of 2028. At the time of expiration, the tank must be taken out of service and removed in accordance with Maine State Laws for Underground Oil Storage Facilities. This section provides a no-action alternative to explore the impacts of leaving the Airport in its current condition by removing the UST upon expiration without replacing the system. This section also explores the impacts of two alternatives – the first alternative is to re-install a UST in the same location under the Main Apron, and the second is to construct an aboveground 100-LL facility in the terminal area.

6.7.1 NO ACTION FUEL FARM IMPACTS

This section explores the impacts of failing to install a fuel system in advance of the 2028 UST expiration. This alternative assumes that the Airport will remove the expired tank per MaineDEP guidelines. For a graphic representation of this project, refer to Figure 2-1, Existing Conditions.

Operational Impacts and Considerations:

- The Airport's existing 100-LL fuel facility consists of an underground storage tank located under the Main Apron. This tank must be taken out of service and removed upon expiration of the warranty, which will occur in January of 2028.
- Reconstruction of the Main Apron is currently on the Airport's Capital Improvement Program (CIP) for fiscal year 2026.
- If the Airport does not plan to remove the existing tank in advance of Main Apron reconstruction, it will be necessary to remove newly constructed pavement in order to comply with MaineDEP UST removal requirements.

Environmental Impacts:

- The Airport will comply with the requirements of MaineDEP to remove the UST upon expiration.
- No additional impervious surface.

Other impacts or considerations:

- Failing to replace the existing tank or construct a new fuel facility in advance of the UST expiration will result in the Airport losing the ability to provide fuel, including a loss in revenue from fuel sales.
- The Airport will lose the ability to provide its customers with a critical service.
- Removal of a UST is not AIP-eligible.
- Estimated cost: $18,000[6]

[6] Cost for tank removal only. This alternative assumes UST removal will take place in conjunction with Main Apron reconstruction and additional costs for reconstructing pavements will be avoided.

6.7.2 ALTERNATIVE 1 – REPLACE EXISTING FUEL TANK

This section explores the impacts of re-installing a new 10,000-gallon UST for 100-LL fuel in the same location as the existing UST. The purpose of this section is to identify deficiencies and benefits associated with leaving the Airport in its existing condition. For a graphic representation of this project, refer to Figure 2-1, Existing Conditions.

Operational Impacts and Considerations:

- If the Airport does not plan to remove the existing tank in advance of Main Apron reconstruction, it will be necessary to remove newly constructed pavement in order to comply with MaineDEP UST removal requirements.
- Under current regulations, if the Airport elects to re-install the UST in its existing location, it will face the same issue of needing to remove Main Apron pavements to accommodate future tank removal each time the tank reaches warranty expiration.
- This alternative assumes replacement of the fuel tank only and that the Airport will repurpose its current dispensing equipment.

Environmental Impacts:

- The Airport must comply with MaineDEP regulations, including installing the tank in such a location that it will not impede its future removal.
- A certified tank installer will be required to complete the removal and re-installation of the Airport's UST.
- The Airport must comply with National Fire Protection Codes.
- No additional impervious surface.

Other impacts or considerations:

- The Airport will lose revenue from fuel sales during tank replacement, and pilots will be unable to fuel.
- Installation of a replacement UST is not AIP-eligible.
- Estimated Cost: $350,000 - $400,000

6.7.3 ALTERNATIVE 2 – CONSTRUCT ABOVEGROUND FUEL FACILITY IN TERMINAL AREA

This section explores the impacts of constructing a fuel facility consisting of one (1) 10,000-gallon aboveground fuel tank for 100-LL, concrete fuel pad, access taxilanes, fueling apron, and associated dispensing and electrical components in the vacant area between the Main Apron and the existing hangar complex. For a graphic representation of this project, refer to Figure 6-5.1.

Operational Impacts and Considerations:

- Relocating the fuel facility to a location other than beneath the Main Apron in advance of the Main Apron construction eliminates the need to remove apron pavement each time the tank expires in the future.
- Concrete pad should be constructed in a location that will allow for the addition of a Jet-A fuel tank as demand warrants.
- This alternative requires reconfiguration of existing hangar taxilanes.
- Project can be designed such that fuel tanks are located outside of the fence, thereby avoiding the need for fuel trucks to enter aircraft movement areas.

Environmental Impacts:

- Approximately 2,800 square feet of ledge removal will be required. An investigation of the ledge area in this location must be conducted in advance of the project to determine the extent of ledge removal.
- No anticipated wetland impacts as a result of this alternative.
- No tree clearing required for this alternative.
- Approximately 11,000 square feet of additional impervious surface.
- MaineDEP Site Location of Development Permit likely necessary.
- Permitting needs (Environmental Assessment, Maine Natural Resource Protection Act Permit, U.S. Army Corps of Engineers Permit).

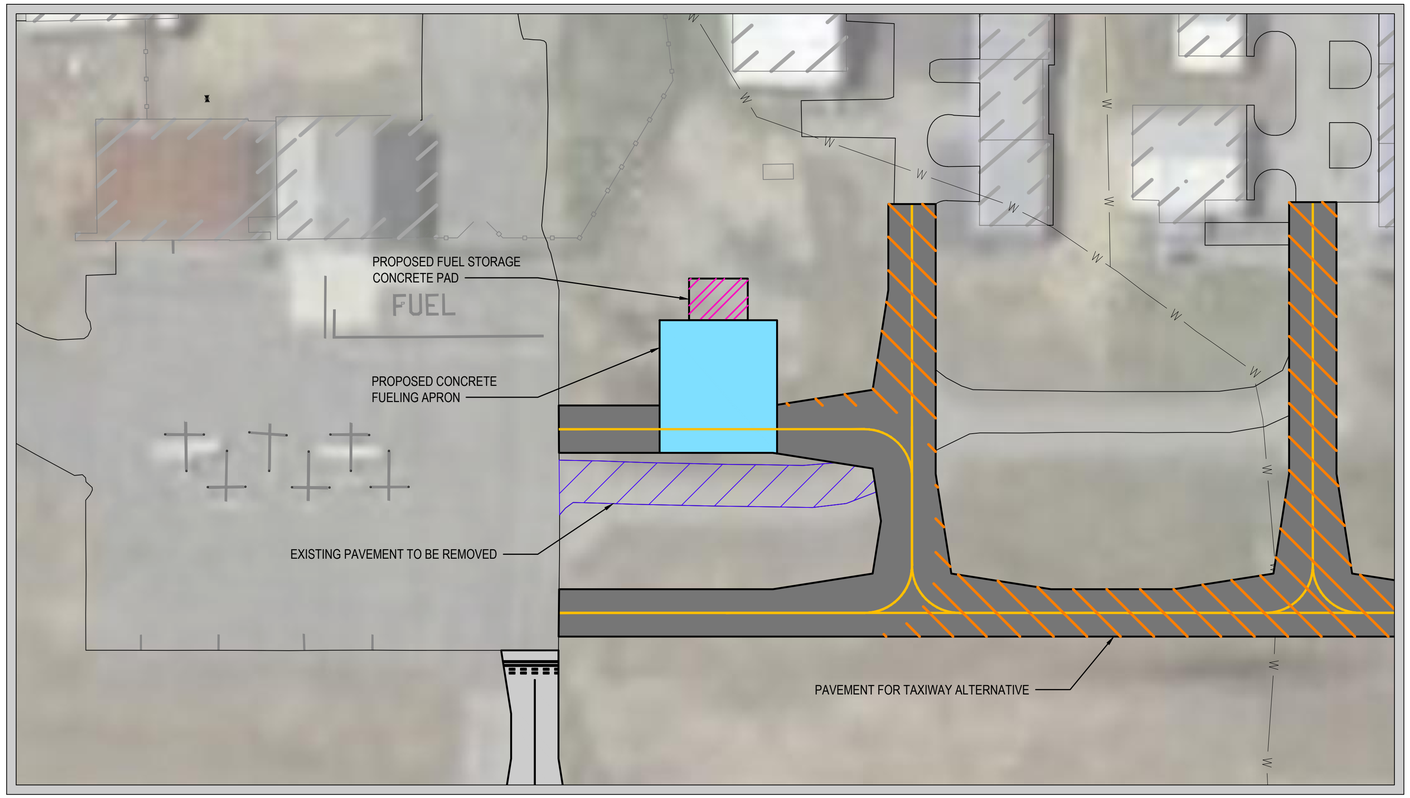
Other impacts or considerations:

- Constructing a new fuel facility in advance of the UST expiration will prevent losses in revenue that would otherwise occur during 100-LL tank removal and re-installation.
- Airport users will not experience a lapse in service that would otherwise occur during tank removal and re-installation.
- Construction of a 100-LL fuel facility is not AIP-eligible.
- Estimated cost: $825,000

Table 6-6: Fuel Farm Alternatives Comparison

Alternative	*No Action Alternative*	*Alternative 1* *Replace Existing Tank*	*Alternative 2* *Terminal Area Fuel*
Operational Impacts	• Existing UST expires January 2028 • Removal of new apron pavement required if UST not removed prior to 2026	• Existing UST expires January 2028 • Removal of new apron pavement required if UST not removed prior to 2026 • Installation of new UST presents continued issue of apron pavement removal upon expiration	• Relocates fuel in advance of UST expiration • No removal of new apron pavement required • Sized and sited to accommodate future Jet-A • Can be designed with tank outside the fence – no fuel trucks in movement areas
Environmental Impacts	• Airport complies with MaineDEP requirements for tank removal • No additional impervious surface	• UST installation per MaineDEP regulations • UST located as not to impede future removal • UST requires certified tank installer • Must comply with NFP Codes • No additional impervious surface	• No anticipated wetland impacts • No tree clearing required • Approx. 2,800 SF of ledge removal required • Approx. 11,000 SF of impervious surface • Permitting: SLOD, EA, NRPA, USACE
Other Impacts	• Airport no longer has fuel • Removal of UST is not AIP Eligible • Removal to be completed in conjunction with Main Apron reconstruction to minimize costs	• Loss of revenue during UST replacement • Pilots not able to fuel during UST replacement • UST installation is not AIP eligible	• Prevents loss of revenue during UST replacement • Pilots able to fuel during UST replacement • 100-LL installation is not AIP eligible • Investigation required to determine extent of ledge removal
Cost	$18,000	$350,000 to $400,000	$825,000

Recommended Alternative: To be updated following selection of alternatives by Airport Commission.



FUEL STORAGE - ALTERNATIVE 2

SCALE: 1" = 40'

LEGEND

ITEM	(E) EXISTING	(F) FUTURE
AIRPORT PROPERTY LINE		
BUILDINGS/HANGARS		
FUEL STORAGE PAD		
CONCRETE FUELING APRON		
PAVEMENT		
WETLANDS[1]		
NWI WETLANDS[2]		
TREELINE		
8' CHAIN LINK FENCE		
WATER LINE	W	

NOTES:

1) WETLANDS DELINEATED IN 2015, AND RECONFIRMED IN 2019.

2) WETLANDS LISTED IN THE U.S. FISH AND WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY. NWI WETLANDS ARE NOT DELINEATED.

NORTH

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PROJECT
AIRPORT MASTER PLAN UPDATE
AIP NO. 3-23-0009-14-2020

OWNER
BIDDEFORD MUNICIPAL AIRPORT
BIDDEFORD, MAINE

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	777092
CADD FILE	ALT-FUEL
DESIGNED BY	APL
DRAWN BY	APL
CHECKED BY	MPC
DATE	AUGUST 2021
DRAWING SCALE	1" = 40'

GRAPHIC SCALE
0 20 40 80

SHEET TITLE
FUEL STORAGE ALTERNATIVES

DRAWING NO.
FIG 6-5.1

OF

6.8 PERIMETER FENCE ALTERNATIVES

The Airport has a history of wildlife incursions and trespassing incidents on the airfield, which present significant safety and security concerns, and therefore perimeter fencing at the Airport is recommended. The following sections present two construction alternatives and a no-action alternative to install fencing along the perimeter of the airfield.

6.8.1 NO ACTION FENCE IMPACTS

This section explores the impacts of failing to construct perimeter fencing to address incursion issues, as highlighted in Chapter 5, Facility Requirements. The purpose of this section is to identify deficiencies and benefits associated with leaving the Airport in its existing condition to provide a baseline alternative upon which to compare subsequent alternatives. For a graphic representation of this project, refer to Figure 2-1, Existing Conditions.

Operational impacts:

- The Airport does not enhance security or reduce the risk of wildlife strikes due to wildlife on the ground.

Environmental Impacts:

- Because no construction will take place as part of this scenario, no environmental resources will be impacted, and therefore no permitting efforts will be required.

Other impacts or considerations:

- No construction will take place as part of this scenario, and therefore, no financial resources will be required.
- The Airport does not address trespassing issues which represents a security threat.
- Does not increase maintenance responsibility or costs to keep fence line clear.

6.8.2 ALTERNATIVE 1 – CONSTRUCT FENCING BEHIND THE GRANITE STREET NEIGHBORHOOD

This project is for the construction of approximately 4,900 LF of perimeter fencing along the Airport's property line that abuts the Granite Street neighborhood, east of Airport property. For a graphic representation of this project, refer to Figure 6-6.1.

Operational impacts:

- The Airport enhances security and increases airfield safety by deterring trespassing from the adjacent neighborhood.

Environmental Impacts:

- No anticipated wetland impacts as a result of this alternative.
- No additional impervious surface will be added as a result of this project.
- Permitting needs (Environmental Assessment, Maine Natural Resource Protection Act Permit, U.S. Army Corps of Engineers Permit).

Other impacts or considerations:

- The Airport should consider the maintenance efforts and costs associated with keeping fence line clear, especially in wooded areas.
- Estimated cost: $ 350,000

6.8.3 ALTERNATIVE 2 –CONSTRUCT FULL PERIMETER FENCING AROUND AIRPORT PROPERTY

This project is for the construction of approximately 15,250 LF of perimeter fencing around the airfield. For a graphic representation of this project, refer to Figure 6-6.1.

Operational impacts:

- The Airport enhances security and increases airfield safety by reducing the risk of trespassing, runway incursions, and wildlife strikes due to wildlife on the ground.

Environmental Impacts:

- Approximately 14,500 square feet of wetland impacts.
- No additional impervious surface will be added as a result of this project.
- Permitting needs (Environmental Assessment, Maine Natural Resource Protection Act Permit, U.S. Army Corps of Engineers Permit).

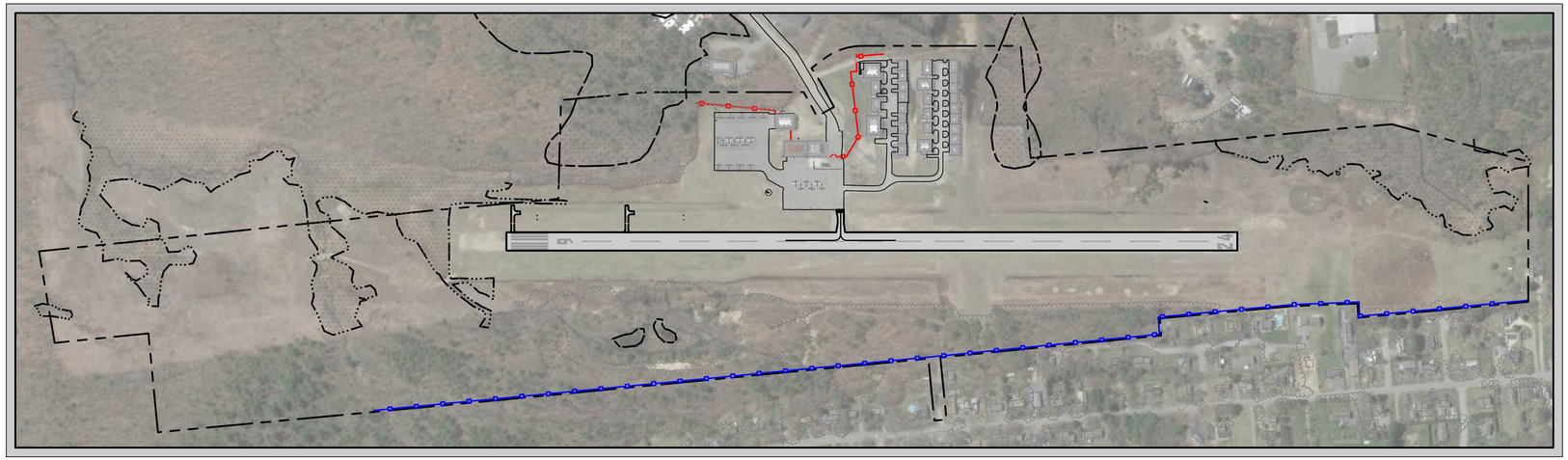
Other impacts or considerations:

- The Airport should consider the maintenance efforts and costs associated with keeping fence line clear, especially in wooded areas.
- Coordination with the City of Biddeford regarding fencing on City-owned property required.
- Estimated cost: $850,000

Table 6-7: Fence Alternatives Comparison

Alternative	*No Action Alternative*	*Alternative 1* *Granite Street Fencing*	*Alternative 2* *Full Perimeter Fencing*
Operational Impacts	• Risk of trespassing, runway incursions and wildlife strikes not reduced	• Safety and security enhanced by minimizing trespassing • Airfield not fully enclosed, so no reduction in risk of wildlife incursions	• Safety and security enhanced by minimizing trespassing • Risk of wildlife strikes on the ground reduced due to airfield being fully enclosed
Environmental Impacts	• No environmental impacts • No permits	• No wetland impacts • No additional impervious surface • Permitting: EA, NRPA, USACE	• Approximately 14,500 SF of wetland impacts • No additional impervious surface • Permitting: EA, NRPA, USACE
Other Impacts	• No additional maintenance efforts or costs associated with keeping fence line clear	• Maintenance efforts and costs to keep fence line clear significantly increased	• Maintenance efforts to keep fence line clear significantly increased • Coordination with City for fencing on City-owned land
Cost	$0.00	$350,000	$850,000

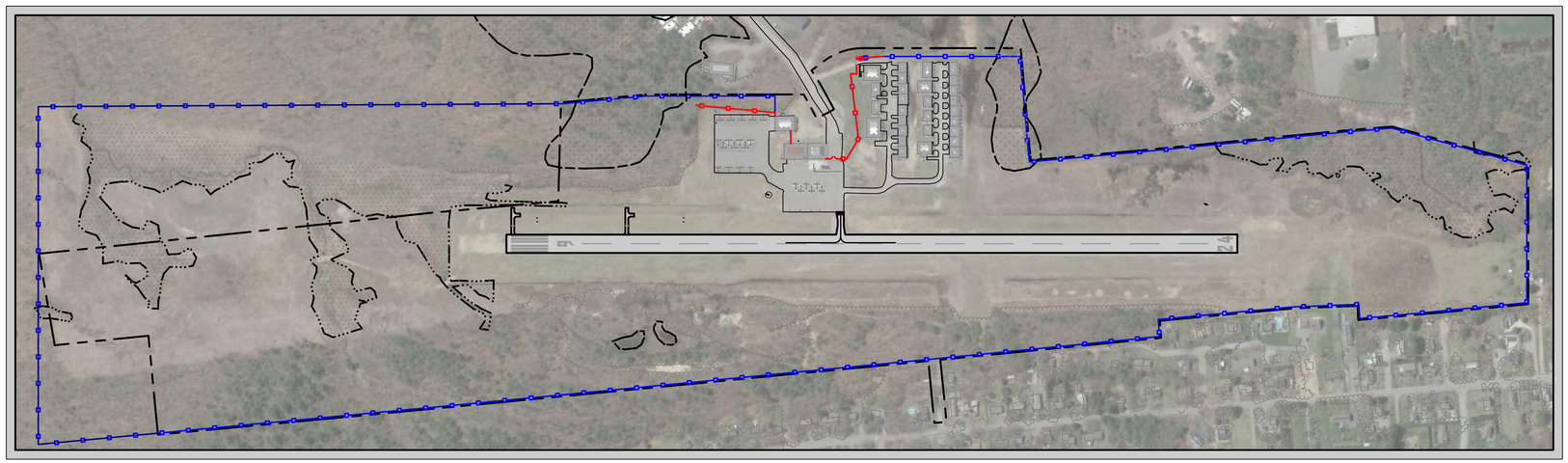
Recommended Alternative: To be updated following selection of alternatives by Airport Commission.



NORTH

FENCE - ALTERNATIVE 1

SCALE: 1" = 300'



FENCE - ALTERNATIVE 2

SCALE: 1" = 300'

LEGEND

ITEM	(E) EXISTING	(F) FUTURE
AIRPORT PROPERTY LINE		
BUILDINGS/HANGARS		
PAVEMENT		
DELINEATED WETLANDS[1]		
NWI WETLANDS[2]		
8' CHAIN LINK FENCE		

NOTES:

1) WETLANDS DELINEATED IN 2015, AND RECONFIRMED IN 2019.

2) WETLANDS LISTED IN THE U.S. FISH AND WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY. NWI WETLANDS ARE NOT DELINEATED.

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PROJECT
AIRPORT MASTER PLAN UPDATE
AIP NO. 3-23-0009-14-2020

OWNER
BIDDEFORD MUNCIPAL AIRPORT
BIDDEFORD, MAINE

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	777092
CADD FILE	ALT-FENCE
DESIGNED BY	APL
DRAWN BY	APL
CHECKED BY	MPC
DATE	AUGUST 2021
DRAWING SCALE	1" = 300'

GRAPHIC SCALE
0 150 300 600

SHEET TITLE
FENCE ALTERNATIVES

DRAWING NO.
FIG 6-6.1

OF

6.9 SRE BUILDING ALTERNATIVES

The Airport does not currently have a snow removal equipment (SRE) building and instead stores its SRE in the hangar building adjacent to the West Apron. This section provides a no-action alternative to explore the impacts of failing to construct an SRE storage building, as well as three alternatives showing potential locations for and impacts of constructing an SRE building.

6.9.1 NO ACTION SRE BUILDING IMPACTS

This section explores the impacts of failing to construct a snow removal equipment building to store the Airport's FAA-funded equipment. The purpose of this section is to identify deficiencies and benefits associated with leaving the Airport in its existing condition to provide a baseline alternative upon which to compare subsequent alternatives. For a graphic representation of this project, refer to Figure 2-1, Existing Conditions.

Operational impacts:

- The Airport continues to lack the adequate infrastructure to house SRE, requiring valuable hangar space to be used for equipment storage.

Environmental Impacts:

- Because no construction will take place as part of this scenario, no environmental resources will be impacted, and therefore no permitting efforts will be required.

Other impacts or considerations:

- No construction will take place as part of this scenario, and therefore, no financial resources will be required.

6.9.2 ALTERNATIVE 1 – CONSTRUCT SRE BUILDING IN EXISTING HANGAR COMPLEX ROW 2

This section explores the impacts of constructing a 1,600 square-foot snow removal equipment building and access driveway in the existing hangar complex, in the second row of hangars. For a graphic representation of this project, refer to Figure 6-7.1.

Operational Impacts:

- Provides adequate protection for FAA-funded equipment.
- Opens up hangar space currently being used for equipment storage.
- Occupies land that could be used for future hangar development.

Environmental Impacts:

- No anticipated wetland impacts as a result of this alternative.
- Approximately 1,900 square feet of additional impervious surface.
- MaineDEP Site Location of Development Permit likely necessary.
- Permitting needs (Environmental Assessment, Maine Natural Resource Protection Act Permit, U.S. Army Corps of Engineers Permit).

Other impacts or Considerations:

- Estimated cost: $1,100,000

6.9.3 ALTERNATIVE 2 – CONSTRUCT SRE BUILDING BEHIND EAA HANGAR

This section explores the impacts of constructing a 1,600 square-foot snow removal equipment building behind the EAA hangar. For a graphic representation of this project, refer to Figure 6-7.1.

Operational Impacts:

- Provides adequate protection for FAA-funded equipment.
- Opens up hangar space currently being used for equipment storage.
- Avoids occupying land that could be used for future hangar development.

Environmental Impacts:

- No anticipated wetland impacts as a result of this alternative.
- Approximately 2,600 square feet of additional impervious surface.
- MaineDEP Site Location of Development Permit likely necessary.
- Permitting needs (Environmental Assessment, Maine Natural Resource Protection Act Permit, U.S. Army Corps of Engineers Permit).

Other impacts or Considerations:

- Estimated cost: $1,100,000
- The size of the long-term parking area will be reduced as a result of this alternative.

6.9.4 ALTERNATIVE 3 – CONSTRUCT SRE BUILDING IN HANGAR COMPLEX ROW 4

This section explores the impacts of constructing a 1,600 square-foot snow removal equipment building and access driveway in the existing hangar complex, in the fourth row of hangars. For a graphic representation of this project, refer to Figure 6-7.1.

Operational Impacts:

- Provides adequate protection for FAA-funded equipment.
- Opens up hangar space currently being used for equipment storage.
- Occupies land that could be used for future hangar development.

Environmental Impacts:

- No anticipated wetland impacts as a result of this alternative.
- Approximately 1,900 square feet of additional impervious surface.
- MaineDEP Site Location of Development Permit likely necessary.
- Permitting needs (Environmental Assessment, Maine Natural Resource Protection Act Permit, U.S. Army Corps of Engineers Permit).

Other impacts or Considerations:

- Estimated cost: $1,100,000

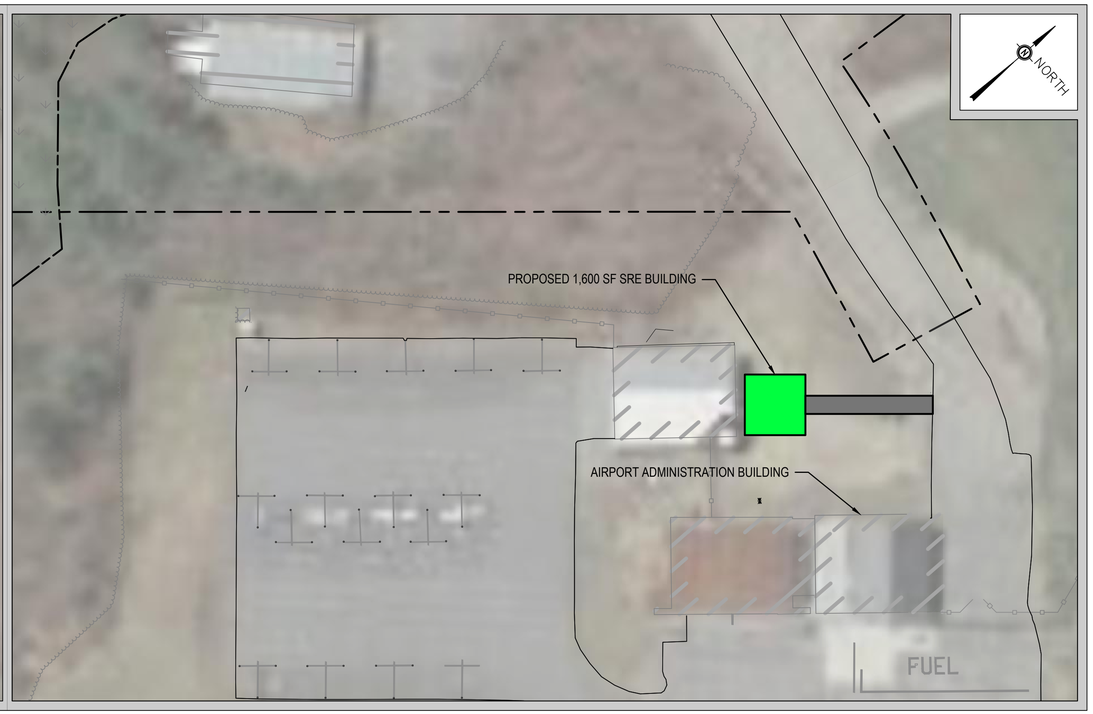
Table 6-8: SRE Building Alternatives Comparison

Alternative	*No Action Alternative*	*Alternative 1* *In Hangar Row 2*	*Alternative 2* *Behind EAA Hangar*	*Alternative 3* *In Hangar Row 4*
Operational Impacts	• Continued use of hangar space to house SRE • Loss of hangar lease revenue	• Protection for FAA-funded equipment • Opens up hangar space for aircraft • Occupies potential hangar areas	• Protection for FAA-funded equipment • Opens up hangar space for aircraft • Does not occupy potential hangar areas	• Protection for FAA-funded equipment • Opens up hangar space for aircraft • Occupies potential hangar areas
Environmental Impacts	• No environmental impacts • No permits	• No wetland impacts • Approx. 1,900 SF of impervious surface • Permitting: SLOD, EA, NRPA, USACE	• No wetland impacts • Approx. 2,600SF of impervious surface • Permitting: SLOD, EA, NRPA, USACE	• No wetland impacts • Approx. 1,900 SF of impervious surface • Permitting: SLOD, EA, NRPA, USACE
Other Impacts	• None	• None	• Reduces the size of the long-term parking lot	• None
Cost	$0.00	$1,100,000	$1,100,000	$1,100,000

Recommended Alternative: To be updated following selection of alternatives by Airport Commission.

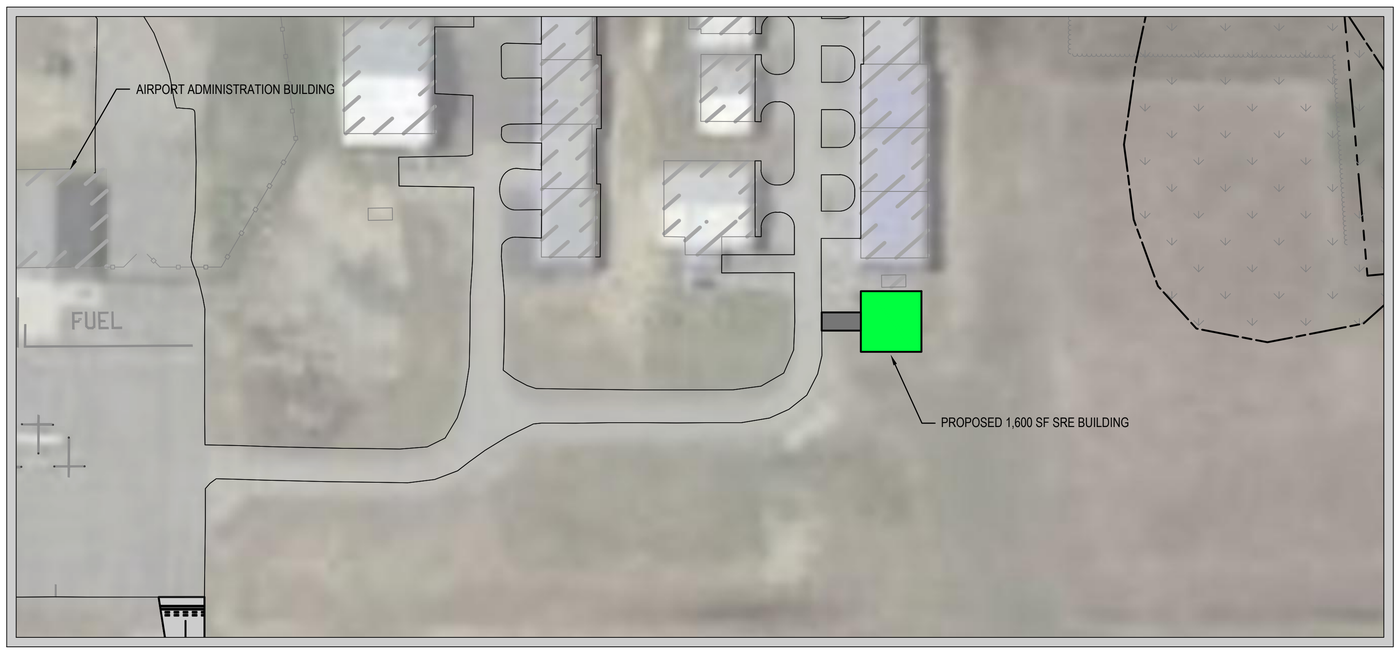
SRE BUILDING - ALTERNATIVE 1

SCALE: 1" = 100'



SRE BUILDING - ALTERNATIVE 2

SCALE: 1" = 100'



SRE BUILDING - ALTERNATIVE 3

SCALE: 1" = 100'

LEGEND

ITEM	(E) EXISTING	(F) FUTURE
AIRPORT PROPERTY LINE		
BUILDINGS/HANGARS		
PAVEMENT		
DELINEATED WETLAND[1]		
NWI WETLANDS[2]		
TREELINE		
8' CHAIN LINK FENCE		

NOTES:

1) WETLANDS DELINEATED IN 2015, AND RECONFIRMED IN 2019.

2) WETLANDS LISTED IN THE U.S. FISH AND WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY. NWI WETLANDS ARE NOT DELINEATED.

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Engineers and Planners

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PROJECT
AIRPORT MASTER PLAN UPDATE
AIP NO. 3-23-0009-14-2020

OWNER
BIDDEFORD MUNICIPAL AIRPORT
BIDDEFORD, MAINE

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	777092
CADD FILE	ALT-SRE BUILDING
DESIGNED BY	APL
DRAWN BY	APL
CHECKED BY	MPC
DATE	AUGUST 2021
DRAWING SCALE	1" = 100'

GRAPHIC SCALE
0 50 100 200

SHEET TITLE

SRE BUILDING ALTERNATIVES

DRAWING NO.
FIG 6-7.1

OF

6.10 APRON RECONFIGURATION ALTERNATIVES

The Airport currently has two apron areas – the Main Apron (terminal apron), which can accommodate ten aircraft, and the West Apron, which can accommodate 16 aircraft. The configuration of this area, particularly the Main Apron, is limiting the airport's ability to construct needed terminal area facilities. Additionally, it does not meet FAA design standards for tie-down spacing and taxiway separation. This section provides a no-action alternative to explore the impacts of failing to address the apron area, as well as one alternative to reconfigure the aprons to open up the terminal area for future facilities and comply with FAA design standards while maximizing the number of available apron spaces.

6.10.1 NO ACTION APRON ALTERNATIVE

This section explores the impacts of failing to reconfigure the Airport's apron area. The purpose of this section is to identify deficiencies and benefits associated with leaving the Airport in its existing condition to provide a baseline alternative upon which to compare subsequent alternatives. For a graphic representation of this project, refer to Figure 2-1, Existing Conditions.

Operational impacts:

- Available tie-down spaces as a result of no action: 26
- Existing apron does not meet FAA taxiway separation or tie-down spacing standards.

Environmental Impacts:

- Because no construction will take place as part of this scenario, no environmental resources will be impacted, and therefore no permitting efforts will be required.

Other impacts or considerations:

- The terminal area is not opened up for other potential uses such as fuel.
- Tie-down spaces are not configured to accommodate hangar development on the West Apron.
- No construction will take place as part of this scenario, and therefore, no financial resources will be required.

6.10.2 ALTERNATIVE 1 – EXPAND WEST APRON AND REDUCE TERMINAL APRON

This section explores the impacts of reconfiguring the apron area to open up additional space in the terminal area to accommodate future facilities and comply with current FAA design standards for tie-down spacing and taxilane separation. For a graphic representation of this project, refer to Figure 6-8.1.

Operational Impacts:

- Available tie-down spaces as a result of Alternative 1: 22
- Complies with FAA design standards for tie-down spacing and taxiway separation.
- This alternative requires relocation of a windcone.

Environmental Impacts:

- No anticipated wetland impacts as a result of this alternative.
- Approximately 39,200 SF square feet of additional impervious surface.
- MaineDEP Site Location of Development Permit likely necessary.
- Permitting needs (Environmental Assessment, Maine Natural Resource Protection Act Permit, U.S. Army Corps of Engineers Permit).

Other impacts or Considerations:

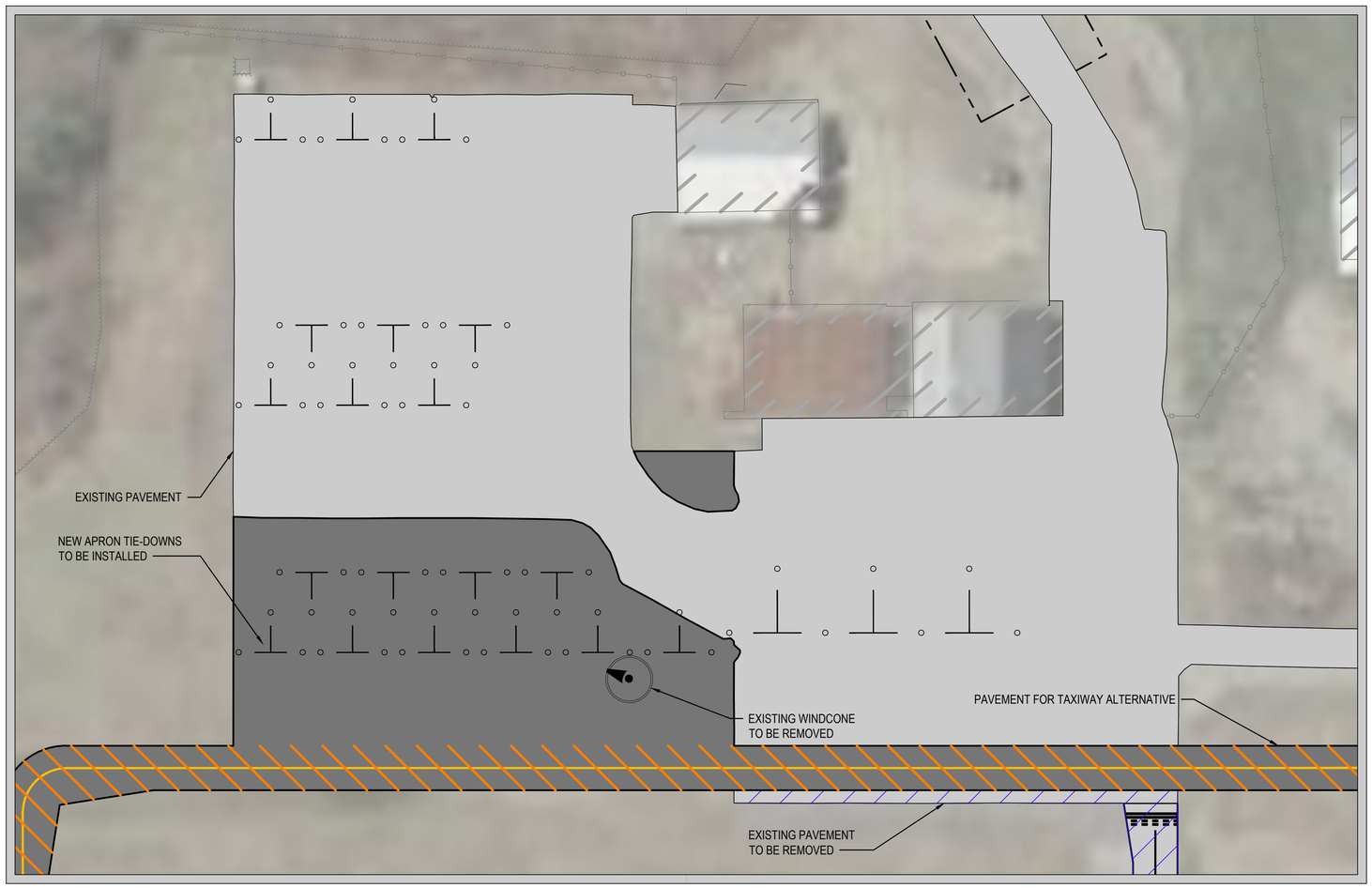
- Opens up space in the terminal area for construction of additional facilities such as fuel.
- Reconfigures tie-down spaces to accommodate potential hangar development on the West Apron.
- Uses a target of opportunity to reconfigure the terminal area, as aprons are already planned for reconstruction in fiscal years 2023 and 2026.
- Estimated cost: $1,500,000[7]

[7] Includes reconstruction of all apron pavements, plus expansion.

Table 6-9: Apron Alternatives Comparison

Alternative	*No Action Alternative*	*Alternative 1* *Apron Reconfiguration*
Operational Impacts	• Available tie-downs: 26 • Does not comply with FAA tie-down and taxiway separation standards	• Available tie-downs: 22 • Complies with FAA tie-down and taxiway separation standards • Relocation of windcone required
Environmental Impacts	• No environmental impacts • No permits	• No wetland impacts • Approx. 39,200 SF of impervious surface • Permitting: SLOD, EA, NRPA, USACE
Other Impacts	• Terminal area remains limited • Does not accommodate hangar development on the West Apron	• Opens up terminal area for additional development • Accommodates hangar development on the West Apron • Target of opportunity for apron reconfiguration during planned reconstruction
Cost	$0.00	$1,500,000

Recommended Alternative: To be updated following selection of alternatives by Airport Commission.



APRON - ALTERNATIVE 1

SCALE: 1" = 40'

LEGEND

ITEM	(E) EXISTING	(F) FUTURE
AIRPORT PROPERTY LINE		
BUILDINGS/HANGARS		
PAVEMENT		
WETLANDS[1]		
NWI WETLANDS[2]		
TREELINE		
8' CHAIN LINK FENCE		

NOTES:

1) WETLANDS DELINEATED IN 2015, AND RECONFIRMED IN 2019.

2) WETLANDS LISTED IN THE U.S. FISH AND WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY. NWI WETLANDS ARE NOT DELINEATED.

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PROJECT
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AIP NO. 3-23-0009-14-2020

OWNER
BIDDEFORD MUNICIPAL AIRPORT
BIDDEFORD, MAINE

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	777092
CADD FILE	ALT-APRON
DESIGNED BY	APL
DRAWN BY	APL
CHECKED BY	MPC
DATE	AUGUST 2021
DRAWING SCALE	1" = 40'

GRAPHIC SCALE
0 20 40 80

SHEET TITLE
APRON ALTERNATIVES

DRAWING NO.
FIG 6-8.1

OF