Section 5 – Development Alternatives

INTRODUCTION

The purpose of this Section is to identify and evaluate reasonable development alternatives for Wiscasset Municipal Airport that not only meet the demand levels outlined in Section 4 but also are constructible, minimize environmental impacts, and are financially feasible. The underlying objective is to meet the identified needs for both capacity and safety requirements for the entire airfield operation and infrastructure. This Section reviews airport land available for future development and evaluates realistic airport layouts that incorporate the recommended facilities identified in Section 4.

ASSUMPTIONS

It is important to address several key assumptions and project needs that were developed in earlier parts of this study before any alternatives can be analyzed. These assumptions are part of the foundation upon which the alternatives are developed.

- The airport will remain a general aviation airport during the entire 20 year planning period.
- The existing types of aircraft using the airport are not expected to change significantly throughout the planning period and the existing mix of operations is forecasted to remain primarily single engine aircraft. However, a slight increase in turboprop and new sports aircraft/very light jets is anticipated as identified in Section 3, Forecasts of Aviation Demand.
- Available runway length meets the needs of a majority of the current fleet and existing critical aircraft; however, a runway extension may be necessary to meet the minimum runway length requirements for aircraft in the future.
- The ARC of B-II will remain the same throughout the 20 year planning period.

DEVELOPMENT ALTERNATIVES ANALYSIS

This subsection identifies alternatives for locating the recommended facility improvements throughout the long term. Improvements identified throughout the 20-year planning period in Section 4 of this AMPU include the following:

- Extend runway by 603 feet for a total of 4,000 feet
- Expand aircraft parking apron by 33,993 square feet
- Identify space for 28 additional hangars
- Expand automobile parking to accommodate 18 additional spaces
- Expand terminal building by 400 square feet

ALTERNATIVES ANALYSIS – LANDSIDE

This section analyzes landside alternatives, primarily options for adding additional apron areas, hangar development, and space for a large hangar/museum complex for the Texas Flying Legends. The following sections discus four alternatives for accommodating proposed landside development at the airport throughout the 20-year planning period.

Common Landside Development Alternatives

There are several options common to the four alternatives. These are discussed first followed by an assessment of each of the four specific alternatives

- **Relocate ASOS** – The ASOS is in a location that does not permit consistent and accurate wind measurement. It is located within the clearing zone recommended by FAA guidelines.[13] This zone extends around the wind sensor 500 feet for objects not greater than 15 feet above the sensor and 1,000 feet for objects 10 feet above the sensor. In both cases, there are multiple obstructions in the form of trees and buildings that violate these parameters. In addition, the location of the ASOS severely limits the development of additional hangars in the apron area adjacent to the system. The Wiscasset ASOS unit is owned and operated by the National Weather Service, and any decisions to move it would have to be addressed through that agency, and may have to be funded 100% through airport funds.

  Proposed development identified on the landside alternatives will only be considered if the airport, FAA, and the National Weather Service confirm that the ASOS is not providing consistent and accurate wind measurement. The ASOS does not need to be relocated in order to accommodate future landside development.

- **Construct Conventional Hangar (Building 18) –** This includes constructing a 35x45 foot conventional hangar (Building 18) to the south of existing Buildings C5-7. This conventional hangar can accommodate two small aircraft. Design and construction of Building 18 is estimated to cost $40,000. –**West Landside Development –** Landside development to the west includes two 50x50 foot conventional hangars (Buildings 14 and 15) and two 50x160 foot T-hangars (Buildings 16 and 17). Buildings 14 and 15 can each accommodate up to two small aircraft and Buildings 16 and 17 can each accommodate up to eight small aircraft. This includes approximately 65,400 square feet of pavement to be used for aircraft taxiing to the hangars. This development is estimated to cost $380,000.

[13] FAA Order 6560.20B, Siting Criteria for Automated Weather Observing Systems (AWOS).

- **Expand Automobile Parking** – The airport has a slight shortage of automobile parking spaces during normal conditions, a problem that is critical during the peak summer months. It is recommended that the area between the main aircraft apron and Chewonki Neck Road should include additional space for automobile parking. The area is slightly different in each alternative and is discussed in more detail in the subsequent sections.
- **Relocate Septic System** – The existing septic system (between Building 1 and the public road) should be removed and reconstructed to allow for expansion of automobile parking.
- **Land Acquisition** – Three properties have been identified to be acquired if the opportunity becomes available including Tax Map U20, Lots 2 and 3 and Tax Map U21, Lot 9A. Acquisition of these properties is estimated to cost $800,000; however, the business property may be eligible for an additional $80,000 due to state regulations for relocating a business. This $80,000 is not eligible for FAA AIP funding and would need to be paid primarily by the airport. Business moving costs and reestablishment expenses should be evaluated prior to moving forward with acquiring the business located on Tax Map U21, Lot 9A in order to determine if the business owner would be entitled to business relocation expenses per state regulations that are not eligible for FAA AIP funding. This property acquisition is recommended in all landside development alternatives.

Landside Development Alternative 1

In addition to the alternatives discussed in the previous section, the following alternatives were examined. Figure 5-1 identifies the development proposed in Alternative 1 including the common features applicable to all alternatives.

NOTE: All landside and airside Alternative plans developed as part of this master plan update are contained in Appendix 4.

A 16,100 square foot building is proposed to be used for the terminal building, FBO, and Texas Flying Legends' Museum. This building is identified on Figure 5-1 as Building 19. It is anticipated that approximately 12,100 square feet will be used for the museum, 2,400 square feet for the FBO, and 1,600 square feet for the terminal building. Design and construction of Building 19 is estimated to cost $2,500,000.

An approximate 10,430 square foot automobile parking area extension has been added adjacent to the proposed Building 19. This area can accommodate 27 vehicles. Design and construction of the automobile parking area extension is estimated to cost $60,000.

The fuel system is shown to be relocated to the west of the terminal building. Removal of the existing fuel farm and construction of a new fuel farm is estimated to cost $350,000.

Landside Development Alternative 2

Figure 5-2 identifies the development proposed in Alternative 2 including the common features applicable to all alternatives.

A proposed 12,250 square foot building is proposed to be used for the Texas Flying Legends' Museum identified as Building 19 located to the west of the proposed maintenance building. Design and construction for Building 19 is estimated to cost $2,000,000.

An approximate 8,260 square foot automobile parking area extension has been added adjacent to the terminal building. This area can accommodate 21 vehicles. The estimated cost for expanding the automobile parking areas is $50,000.

Landside Development Alternative 3

Figure 5-3 identifies the development proposed in Alternative 3 including the common features applicable to all alternatives.

The Texas Flying Legends' Museum is shown to the east of existing hangars and is identified as Building 19. This alternative can only accommodate a 9,600 SF building due to the building restriction line (BRL) and existing infrastructure. This may not be adequate as it is anticipated that the museum requires a 12,000 SF building. Existing conventional hangars shown as Buildings 3 and 4 are proposed to be removed when the museum is constructed. Design and construction for this project is estimated to cost $1,500,000.

The fuel system is identified to be relocated to the west of the proposed maintenance building. Removal of the existing fuel farm and construction of a new fuel farm is estimated to cost $350,000.

An approximate 7,300 square foot automobile parking area extension has been added adjacent to the terminal building. This area can accommodate 19 vehicles. This project is estimated to cost $50,000.

Landside Development Alternative 4

Figure 5-4 identifies the development proposed in Alternative 4 including the common features applicable to all alternatives. Figure 5-4 identifies six 35 x 45 foot conventional hangars to the east

of the terminal building that are identified as Buildings 19-24. These conventional hangars can accommodate two small aircraft each. Design and construction costs for Buildings 19-24 are estimated to cost $200,000.

An approximate 14,400 square foot building is shown to the west of existing hangars and is identified as Building 26. This building is proposed to be used for the FBO and Texas Flying Legends' Museum. Approximately 12,000 square feet is proposed for the museum and 2,400 square feet for the FBO. Design and construction for Building 26 is estimated to cost $2,200,000. An approximate 14,500 square foot automobile parking lot is identified adjacent to this building and can accommodate approximately 35 vehicles.

An approximate 10,430 square foot automobile parking area extension has been added adjacent to the terminal building. This area can accommodate 27 vehicles. Design and construction of the automobile parking area extension is estimated to cost $60,000.

An approximate 10,600 square foot aircraft parking apron is proposed to be used for small transient aircraft and an approximate 109,980 square foot apron to be used for large transient aircraft. This aircraft parking apron is located adjacent to the proposed museum and FBO building. This proposed aircraft parking apron can accommodate 11 small aircraft and three large aircraft. Design and construction of the aircraft parking lot and automobile parking lot is estimated to cost $700,000.

The fuel system is identified to be located adjacent to this proposed apron area. Removal of the existing fuel farm and construction of a new fuel farm is estimated to cost $350,000. A restaurant is identified near the proposed apron, automobile parking, and Building 26. Approximately 2,240 square feet of pavement will be needed for automobile parking, which can accommodate four vehicles. This project is estimated to cost $500,000.

A 60 x 80 foot conventional hangar is shown to the west of the proposed apron and is identified as Building 25. This hangar can accommodate up to two aircraft. Construction of this hangar also will include approximately 9,920 square feet of pavement for aircraft to taxi to the hangar and approximately 2,420 square feet of pavement for an automobile parking lot, which can accommodate five vehicles. Design and construction costs for Building 25 and associated pavement are estimated to cost $100,000.

Summary Landside Development Alternative

Table 5.1 identifies a summary of the landside development alternatives.

Table 5.1 – Landside Development Summary of Costs

Alternative	Project	Estimated Cost
1	Relocate ASOS	Unknown
	Construct Hangars	$420,000
	Expand Auto Parking	$60,000
	Relocate/Reconstruct Septic System	$50,000
	Acquire Land	$800,000
	Construct fuel farm	$350,000
	Construct Museum/FBO/Terminal Building	$2,500,000
2	Relocate ASOS	Unknown
	Construct Hangars	$420,000
	Expand Auto Parking	$50,000
	Relocate/Reconstruct Septic System	$50,000
	Acquire Land	$800,000
	Construct Museum/FBO/Terminal Building	$2,000,000
3	Relocate ASOS	Unknown
	Construct Hangars	$420,000
	Expand Auto Parking	$50,000
	Relocate/Reconstruct Septic System	$50,000
	Construct fuel farm	$350,000
	Construct Museum/FBO/Terminal Building	$1,500,000
4	Relocate ASOS	Unknown
	Construct Hangars	$720,000
	Expand Auto Parking	$60,000
	Relocate/Reconstruct Septic System	$50,000
	Construct Hangars	$700,000
	Construct Aircraft Parking Apron	$700,000
	Construct new fuel farm	$350,000
	Construct Restaurant	$500,000
	Construct Museum/FBO	$2,200,000

Landside Development Alternative 1 does not maximize space on existing airport property for hangar development, which was determined to be one of the primary facilities required throughout the 20-year planning based on the forecasts and facility requirements. Landside Development Alternative 2 does not provide space for the fuel system to be relocated as there is not enough space available for the required buildings without being an obstruction to the FAR Part 77 transitional surface. Landside Development Alternative 3 does not have adequate space for a 12,000 square foot building for the Texas Flying Legends' Museum due to building height restrictions. The building on this alternative is only 9,600 square feet.

Preferred Alternative – Landside

Landside Development Alternative 5 was selected by the Planning Advisory Committee and approved by the town's Board of Selectman as the preferred alternative. This concept allows for the maximum use of available space for hangar development with space for up to 36 aircraft. The other alternatives only provide space for up to 22 aircraft. This alternative also identifies a separate area for the Texas Flying Legends and an aircraft parking apron for both small and large itinerant aircraft. This area are also provides adequate automobile parking for the Texas Flying Legends' Museum and a restaurant. Land acquisition will be needed in order to accommodate this recommended development; however, some of the development can be accomplished prior to purchasing the additional parcels.

Alternatives Analysis – Airside

This section analyzes airside alternatives, including options for extending the runway 603 feet for a total length of 4,000 feet. The following sections discuss four alternatives for accommodating proposed airside development at the airport throughout the 20-year planning period.

Airside Development Alternative 1 – Runway 7 Extension

Figures 5-6 and 5-7 identify a 603 foot extension to Runway 7.

An obstruction analysis was completed for the TERPS 20:1 surface. The TERPS visual area approach surface has an inner width of 400 feet, outer width of 3,160 feet, a length of 10,000 feet, and a 20:1 slope. Vegetative obstructions for Alternative 1 include the following: 1.77 acres on-airport property and 1.39 acres off-airport property for Runway 7 and 0.79 acres on-airport property and 0.29 acres off-airport property for Runway 25. Approximately 0.22 acres of obstructions located on-airport property for Runway 25 are within wetlands. It is important to note that there are existing obstructions to the FAR Part 77, TERPS, and threshold siting surface that will need to be removed regardless of whether the airport moves forward with an extension to the runway.

Chewonki Neck Road will need to be relocated in order to accommodate the 603 foot extension to Runway 7. This alternative will impact the adjacent Chewonki Campground as the runway extension and relocated road will extend off airport property into land owned by the Chewonki Campground. This portion of the Chewonki Campground would need to be acquired in fee simple interest in order to extend Runway 7.

Taxiway 'A' has been extended to the new proposed threshold and the PAPI has been relocated.

Alternative 1 results in approximately 15,000 square-feet of direct fill impacts to freshwater wetlands located to the west of the existing Runway 7 threshold. The majority of fill impacts result from the construction of the runway and taxiway extensions and will occur to wet meadow and scrub-shrub wetlands located on the east side of Chewonki Neck Road. A small pocket of scrub-

shrub wetlands will be impacted by constructing the relocation of Chewonki Neck Road. Proposed wetland impacts will be limited to airport property. National Wetlands Inventory (NWI) maps, Lincoln County soil maps and other resources were utilized to assess the presence of wetlands within proposed off-airport work locations. Field assessments will be required, however, prior to construction to verify the absence of wetlands within newly acquired airport property construction locations.

Based on preliminary calculations of impacts to freshwater wetlands, a Natural Resources Protection Act (NRPA) Tier 2 Freshwater Alteration permit will be required to address 24,583 square-feet of wetland alterations resulting from the proposed Runway 7 and Taxiway 'A' extensions and Chewonki Neck Road relocation (approximately 15,000 square-feet) and Runway 25 obstruction removal (approximately 9,583 square-feet). The NRPA wetlands application is submitted to the Maine Department of Environmental Protection (MDEP) and the U.S. Army Corps of Engineers (ACOE) for review and determination. Additionally, compensatory mitigation will likely be required by MDEP and the ACOE for direct fill impacts as well as wetland alterations resulting from tree removal activities conducted in wetlands. Finally, an amendment to the airport's existing Site Location of Development (SLOD) permit will be required from MDEP to address the construction of new impervious surfaces (pavement) at the airport.

The FAA requires the preparation of an Environmental Assessment (EA) prepared in accordance with FAA Order 5050.4B National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions to assess potential impacts associated with the implementation of Airside Development Alternative 1. The EA must evaluate a range of development alternatives that best meet the needs of the airport while minimizing environmental impacts to the greatest extent practicable. Although wetland impacts associated with this development alternative are below those impact thresholds typically requiring the need for an EA, runway extension projects are often viewed with contention by the airport's surrounding community. Consequently, the FAA may require the preparation of an EA to provide stakeholders the opportunity to review and provide comment on the project.

Design and construction for this runway extension is estimated to cost $2,500,000.

Airside Development Alternative 2 – Runway 25 Extension

Figures 5-8 and 5-9 identify a 603 foot extension to Runway 25.

An obstruction analysis for the TERPS 20:1 surface also was completed for this alternative using the same dimensions as used in Airside Development Alternative 1. This obstruction analysis is shown on Figure 5.8. Vegetative obstructions for Alternative 2 include the following: 2.04 acres on-airport property and 1.58 acres off-airport property for Runway 7 and 2.44 acres on-airport property and

1.57 acres off-airport property for Runway 25. Approximately 0.35 acres of obstructions located on-airport property to Runway 25 and approximately 0.33 acres to Runway 7 are within wetlands.

State Route 144 will need to be relocated in order to accommodate the 603 foot extension to Runway 25. This alternative will impact property not currently owned by the airport and will need to be acquired in fee simple interest in order to extend the runway and relocate the road.

Alternative 2 results in approximately 110,200 square-feet of direct fill impacts to freshwater wetlands located to the northeast of the existing Runway 25 threshold. Fill impacts will result from the construction of the Taxiway 'A' extension and the State Route 144 relocation. Impacts are proposed within wet meadow and scrub-shrub wetlands located on both the east and west sides of Route 144. Proposed wetland impacts will be limited to airport property. NWI maps, Lincoln County soil maps and other resources were utilized to assess the presence of wetlands within proposed off-airport work locations (i.e. off-airport obstruction removal efforts required to clear the Runway 25 approach). Field assessments will be required, however, prior to construction to verify the presence or absence of wetlands within off-airport obstruction removal locations.

Based on preliminary calculations of impacts to freshwater wetlands, a NRPA Tier 3 Freshwater Alteration permit will be required to address 139,821 square-feet of wetland alterations resulting from the proposed Runway 25 and Taxiway 'A' extensions and Route 144 relocation (approximately 110,200 square-feet), Runway 25 approach obstruction removal (approximately 15,246 square-feet), and Runway 7 approach obstruction removal (approximately 14,375 square-feet). The NRPA wetlands application is submitted to MDEP for review and determination. Additionally, a Section 404 Individual Wetlands Permit will be required from the ACOE due to the size of the project (projects proposing an acre or more of wetland fill typically require an ACOE Individual Permit). Compensatory mitigation will be required by MDEP and the ACOE for direct fill impacts as well as wetland alterations resulting from tree removal activities conducted in wetlands. An amendment to the airport's existing SLOD permit will be required from MDEP to address the construction of new pavement at the airport.

Also, based on the need for an Individual Permit from the ACOE, an EA prepared in accordance with FAA Order 5050.4B *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions* will be required to assess wetland and other potential environmental impacts associated with the project. The EA will be prepared prior to conducting environmental permitting efforts and will assess potential impacts to natural resources including items such as, wetlands, wildlife, historic and culturally significant resources, and impacts to abutters resulting from noise. The draft EA will be distributed to environmental regulatory agencies for review and comment and will be made available for public review and comment as well. A final draft that includes public and agency comment will be submitted to FAA for determination. The FAA will either issue a FONSI, indicating the project can move forward with the permitting phase or the FAA will request the preparation of an EIS as discussed in Alternative 1.

Design and construction for this runway extension is estimated to cost $2,750,000.

Airside Development Alternative 3 – Declared Distances

Figures 5-10 and 5-11 identify a 68 foot extension to Runway 25 and a 535 foot extension to Runway 7 for a total of 603 feet.

This will accommodate a 300 foot runway safety area before crossing State Route 144; however, Chewonki Neck Road will need to be relocated in order to accommodate the 535 foot extension to Runway 7.

This alternative includes a 1,240 foot displacement to Runway 7 in order to clear vegetative and manmade obstructions. Declared distances have been evaluated in an effort to maximize runway length available.

An alternate means of enhancing safety allows airport owners to declare what portions of an operational runway are available to satisfy aircraft accelerate-stop and landing distance requirements. The use of declared distances for airport design shall be limited to cases of existing constrained airports where it is impracticable to provide the RSA, the runway object free area, or the runway protection zone in accordance with the design standards. Application of declared distances can partially mitigate the lack of full safety areas by officially informing pilots how much runway is available during takeoffs and landings. The runway available takes into account the lack of a full RSA by reducing the runway length less any safety area deficiency.

In applying declared distances, it is helpful to understand the relationship between airplane certification, aircraft operating rules, airport data, and airport design. Information from Advisory Circular 150/5300-13A is included in the next paragraph for clarification.

Airplane certification provides performance distances known as takeoff decision speed (referred to as V_1), lift-off speed (V_{LOF}), takeoff safety speed (V_2), and stalling speed or the minimum steady flight speed in the landing configuration (V_{SO}). These speeds are established by the manufacturer and confirmed during certification testing for varying climatological conditions, operating weights, etc., and are used to determine takeoff run, takeoff distance, accelerate-stop distances, and landing distance based on unique airport conditions.

Declared distances represent the maximum distances available and suitable for meeting takeoff, rejected takeoff, and landing distances performance requirements for turbine powered aircraft. The declared distances are TORA and TODA, which apply to takeoff; Accelerate Stop Distance Available (ASDA), which applies to a rejected takeoff; and Landing Distance Available (LDA), which applies to landing. A clearway may be included as part of the TODA, and a stopway may be included as part of the ASDA. By treating these distances independently, declared distances is a design methodology

that results in declaring and reporting the TORA, TODA ASDA and LDA for each operational direction.

Terms associated with declared distances include the following.

- **Takeoff run** - The distance to accelerate from brake release to lift-off, plus safety factors.
- **Takeoff distance** - The distance to accelerate from brake release past lift-off to start of takeoff climb, plus safety factors.
- **Accelerate-stop distance** - The distance to accelerate from brake release to V_1 and then decelerate to a stop, plus safety factors.
- **Landing distance** - The distance from the threshold to complete the approach, touchdown, and decelerate to a stop, plus safety factors.

Aircraft operating rules provide a minimum acceptable level of safety by controlling the airplane maximum operating weights by limiting the airplane's performance distances as follows:

- **Takeoff run** shall not exceed the length of runway.
- **Takeoff distance** shall not exceed the length of runway plus clearway.
- **Accelerate-stop distance** shall not exceed the length of runway plus stopway.
- **Landing distance** shall not exceed the length of runway.

Airport data provides the runway length and/or the following declared distance information for calculating maximum operating weights and/or operating capability.

- **Takeoff run available (TORA)** - The length of runway declared available and suitable for satisfying takeoff run requirements.
- **Takeoff distance available (TODA)** - The TORA plus the length of any remaining runway or clearway beyond the far end of the TORA available for satisfying takeoff distance requirements. The usable TODA length is controlled by obstacles present in the departure area by aircraft performance. As such, the usable TODA length is determined by the aircraft operator before each takeoff and requires knowledge of the location of each controlling obstacle in the departure area. Extending the usable TODA lengths requires the removal of existing objects limiting the usable TODA lengths.
- **Accelerate-stop distance available (ASDA)** - The length of runway plus stopway declared available and suitable for satisfying accelerate-stop distance requirements.
- **Landing distance available (LDA**) - The length of runway declared available and suitable for satisfying landing distance requirements."

Declared distances are identified on Figures 5-10 and 5-11.

Application of declared distances does not improve safety other than to provide some operators with data they are currently not provided (i.e., available runway length because of substandard safety areas). This alternative will have major impacts to operations at the airport. Declared distances for the Runway 7-25 will shorten the usable length by 1,240 feet for aircraft landing on Runway 7 and taking off from Runway 25. This may restrict some aircraft from being able to use the airport in the future.

The location of the displaced threshold was determined based on the point where the displaced threshold siting surface is clear of vegetative and manmade obstructions off airport property. Vegetative obstructions to the TERPS visual area approach surface for Alternative 3 before displacing the threshold include the following: 2.23 acres on-airport property and 1.60 acres off-airport property for Runway 7 and 1.15 acres on-airport property and 0.29 acres off-airport property for Runway 25. Approximately 0.20 acres of obstructions located on-airport property to Runway 25 are within wetlands. Vegetative obstructions to the displaced threshold siting surface with a 1,240 foot displaced threshold include 0.18 acres of obstruction located on-airport property and 0.08 acres of obstructions located off-airport property.

Taxiway 'A' has been extended to the proposed runway ends. The PAPI on both runway ends will need to be relocated as part of this alternative.

Airside Development Alternative 3 results in approximately 16,000 square-feet of direct fill impacts to freshwater wetlands located beyond both existing runway ends. The wetland fill impacts resulting from the construction of the 535' extensions to Runway 7 and Taxiway 'A' and the relocation of Chewonki Neck Road (approximately 15,000 square-feet) are essentially the same as the wetland fill impacts discussed in Airside Development Alternative 1. Alternative 3, however, includes an additional 1,000 square-feet of impacts to scrub-shrub wetlands resulting from the extension of Taxiway 'A' necessary to correspond with the 68' Runway 25 extension. Proposed wetland impacts will be limited to airport property. As with the previous airside development alternatives, field assessments will be required prior to permitting proposed developments to verify the presence or absence of wetlands currently located off airport property.

Similar to the scenario discussed in Airside Development Alternative 1, an EA prepared to assess potential environmental impacts resulting from this airside development alternative will likely be required by FAA.

Based on preliminary calculations of impacts to freshwater wetlands, a NRPA Tier 2 Freshwater Alteration permit will be required to address approximately 24,712 square-feet of wetland alterations resulting from the proposed extensions to Runway 7-25 and Taxiway 'A' extensions and Chewonki Neck Road relocation (approximately 16,000 square-feet) and Runway 25 approach obstruction removal (approximately 8,712 square-feet of vegetation to be removed from forested wetlands at the eastern edge of airport property). The NRPA wetlands application will be

submitted to the MDEP and the ACOE to be reviewed conjointly. Compensatory mitigation will likely be required by regulatory agencies for fill and obstruction removal activities conducted in wetlands. An amendment to the airport's existing SLOD permit will also be required from MDEP to address the construction of new impervious surface at the airport.

Design and construction for this runway extension is estimated to cost $3,000,000.

Airside Development Alternative 4 – Do Nothing Alternative

This alternative assumes no further improvements from a safety and capacity standpoint. This alternative would assume that all pavements at the airport would eventually deteriorate into an unusable condition. This is a violation of FAA grant assurances that require the airport to be maintained and operational. This alternative would result in a significant negative economic impact to the community. Therefore, this is not a preferred alternative for the airport.

Airside Development Alternative 5 – Modified Do Nothing Alternative

This alternative would maintain the runway in good condition at the existing length of 3,397 feet and allow for an improvement to the RSAs off both ends of the runway. The RSA would be improved by adding a stable base material under the topsoil for increased safety in the event of an overrun. Although this alternative would not increase the length of the runway, it will provide additional safety for the B-25 and other aircraft used by the Texas Flying Legends and other airport users.

Preferred Airside Development Alternative

Table 5.2 identifies a summary of the airside development alternatives.

Table 5-2 Airside Development Alternatives Summary

Alternative	Environmental Impacts	Estimated Cost
1	Approximately 15,000 square feet of wetland impacts for runway extension, road relocation, and taxiway extension and 9,583 square feet wetland impacts for Runway 25 obstruction removal. EA required.	$2,500,000
2	Approximately 110,200 square feet of wetland impacts for runway extension, road relocation, and taxiway extension; 15,246 square feet wetland impacts for Runway 25 obstruction removal; and 14,375 square feet wetland impacts for Runway 7 obstruction removal. EA required.	$2,750,000
3	Approximately 16,000 square feet of wetland impacts for runway extension, road relocation, and taxiway extension and 8,712 square feet wetland impacts for Runway 25 obstruction removal. EA required.	$3,000,000

There are significant impacts for all three airside alternatives associated with extending the runway by 603 feet for a total length of 4,000 feet. Alternatives 1 and 3 require relocating Chewonki Neck Road with a portion of the relocated road on land currently owned by Chewonki Campground. Alternative 2 involves relocating State Route 144 with a portion being located off airport property.

Wetland impacts result from the implementation of Airside Development Alternatives 1, 2 and 3. To summarize, each alternative proposes direct wetland fill and alteration impacts resulting from tree clearing in wetlands. All wetland impacts considered occur on airport property, though additional field work is required to substantiate potential impacts of work proposed in parcels to be acquired. Airside Development Alternative 1 proposes approximately 15,000 square-feet of fill impacts to scrub-shrub and wet meadow wetlands and includes approximately 9,583 square-feet of tree removal from forested wetlands located in the eastern region of airport property. Development Alternative 3 proposes approximately 16,000 square-feet of fill impacts to scrub-shrub and wet meadow wetlands and includes approximately 8,712 square-feet of tree removal from forested wetlands located in the eastern region of airport property. Finally, Airside Development Alternative 2 results in approximately 110,200 square-feet of direct fill impacts to freshwater wetlands and requires the removal of approximately 15,246 square feet of vegetation removal from wetlands associated with Runway 25 and 14,375 square feet of vegetation removal from wetlands associated with Runway 7.

These alternatives will require review within the context of an EA in accordance with FAA and NEPA guidelines. Additionally, federal and state environmental permits must be obtained prior to constructing any of the airside development alternatives considered in this Section and compensatory mitigation will be required to address wetland functions and values lost as a result of implementing any of the three alternatives considered.

These impacts need to be weighed against the advantages of having a 4,000 foot runway, which is needed by aircraft that currently use the airport. It has been determined that a runway extension will not be recommended due to the significant impacts associated with extending the runway in either direction.