CHAPTER 4: IMPLEMENTATION & COMPATIBILITY

Introduction

The implementation and compatibility plan provides guidance on how to carry out the preferred development recommendations identified in **Chapter 2: Runways and Taxiways** and **Chapter 3: Terminal Area and Support Facilities**. Based on the preferred development plan, the improvement projects needed at the Mercer County Regional Airport (HZE) over the planning period can be formulated. This chapter includes the following sections:

- Project Sequence
- Financial
- Environmental Review
- Compatibility

Background

Each project is sequenced to balance demand, schedule, other projects, environmental/agency approval, funding, and financial constraints. The project plan may change over time to react to changing conditions but is flexible so that the airport can react to change and re-prioritize projects based on actual demand.

A more detailed facility implementation and financial feasibility plan is identified for the near-term (i.e. 1-10 years), because needs are more realistically anticipated based on available funding and actual demand. There is more uncertainty in project funding, demand, and local project importance in the long-term. When reaching that point, airport planning documents should be updated.

Implementing a Project

The airport must go through an established process to receive the federal funds to complete an airport development project. FAA requires long lead times to complete all project steps and incorporate projects into federal funding plans. Additional coordination is required to prepare National Environmental Policy Act (NEPA) environmental documentation. Common steps in the project implementation process for a complex project include (steps may be shorter or longer based on complexity):

Professional Services: Select a qualified consultant for the project planning, environmental reviews, survey, engineering design, and construction administration for the project. The FAA recommends a distinct selection process for both planning and engineering services.

Five (5) Years Prior to Construction: Identify the project on the Airport Layout Plan, complete necessary airport planning studies and collect supporting documentation to demonstrate the project is justified for AIP funding, and is compatible with the Airport Layout Plan.

Four (4) Years Prior to Construction: Update the Capital Improvement Plan (CIP) to identify the project scope, eligibility, justification, and funding. Close coordination with FAA is required.

Three (3) Years Prior to Construction: Initiate any aeronautical surveys, navigational aid agreements (reimbursable agreements) or special FAA coordination for flight procedures which may be necessary prior to construction. Solidify project funding plan and final justification with FAA.

Two (2) Years Prior to Construction: Complete required NEPA environmental documentation and analysis for the proposed action. Prepare 30 percent project design, refine cost estimates, and prepare benefit/cost analysis as necessary. Acquire land for project and initiate airspace studies.

One (1) Year Prior to Construction: Obtain environmental clearance and permits for the proposed action. Prepare funding pre-application, detailed project plans and specifications including design report, airspace studies, Safety Management Systems (SMS) and construction safety/phasing plan. Finalize project schedule.

Year of Construction: Complete final design. Solicit bid proposals from companies engaged in the project construction. Prepare grant application and accept Federal grant. Issue notice to proceed and monitor construction. Maintain FAA grant compliance and payments.

After Construction: Submit final report and close out the AIP grant.

For complex projects requiring federal discretionary funding such as runway extensions, these steps may take up to five years prior to the issuance of an AIP grant for construction. Less complex projects using entitlements such as pavement rehabilitation will require less lead times, typically no less than three years prior to grant issuance.

All planning-level project costs developed are in 2024 dollars. Final project costs are subject to change based on actual construction and project formulation needs.

Many of the projects identified are demand-driven based on the Planning Activity Levels (PALs) established in the approved aviation forecasts. The timing of implementation is estimated from the FAA-

approved activity forecasts. Any change from the forecasted airport activity may affect the timing of capacity-driven improvements.

Based on the PALs and other regular pavement and safety needs, some airport development capacity projects may not able to be sequenced to meet PALs within a realistic funding plan. These projects are initiated within a few years of their PAL demand trigger to account for anticipated available funding.

Project Sequence

Significant individual projects are described in this section along with information about the project purpose, scope, and triggering events. The recommended project phasing at HZE is based on anticipated needs and available funding. This information provides guidance to the airport sponsor and funding agencies on future implementation steps.

Near-Term Projects (0-10 Years)

Near-term projects cover the planning period for the next ten years through 2034, generally corresponding to the forecast Planning Activity Levels (PAL) 1 and 2. Projects in this phase address the highest priority needs justified for funding. Significant near-term projects are further described in **Table 4-1 Near-Term Projects.**

Table 4-1 - Near-Term Projects

Project	Scope	Estimated Cost	Trigger	Justification
Turf Crosswind Runway 3-21	Design and construction of a 2,500' x 100' turf crosswind runway	$900,000	The current alignment of Runway 15-33 only meets the 95% wind coverage for the critical design aircraft of B-II.	To meet the 95% wind coverage for all weather conditions and IMC.
FBO/SASO Expansion	Design and construction a 2,000 SF lean-to north of current apron hangar	$600,000	Airport sponsor has expressed interest to get an on field FBO and/or SASO operator.	Construct the lean-to addition on the hangar for adequate operating space for a business and airport users to operate.
Relocation of the Fueling Facility	Update the fuel tanks to a 10,000-gallon JET-A tank and a 6,000-gallon AVGAS tank and move the facility west of the terminal building	$1.2 m	Current fuel storage tanks cannot hold a full delivery and were constructed in 2008.	Replace the outdated tanks and upgrade the gallon amount. The fuel facility will also be relocated to a spot easily accessible for deliveries.

Source: KLJ Analysis

Capital Improvement Plan (CIP)

The CIP is a key element in the implementation plan. The CIP identifies the project title, year, estimated costs, and anticipated funding for airport improvements. Larger projects are often divided into smaller elements that reflect how projects are approved, designed, and constructed. Each project is requested through the CIP project programming and grant application process. The CIP is updated and submitted to the FAA annually to program Federal and State grant funding. The proposed HZE CIP identifies over $6 million in airport improvements over the next 10 years see **Table 4-2 Capital Improvement Plan**. For years 2025 and 2026, CIP projects will be granted a 95% FAA funding rate while state and local funding rate will be 2.5%. For the following years a 90% FAA funding rate will be used with a 5% funding rate for state and local funds. These percentages were determined based on the 2024 FAA Reauthorization Bill. More details about the bill can be found in following text.

Table 4-2 – Capital Improvement Plan

Year	Project	Scope	Estimated Cost	FAA Funds	State Funds	Local Funds
Short Term Projects (2025 – 2034)						
2025	Pavement Rehabilitation	Crack Seal, Seal Coat, New Pavement Markings	$553,000	$525,350	$13,825	$13,825
2026	Design Fuel Facility	Design 12,000-gallon JET-A & AVGAS above ground tanks with 24-hour card reader in new location	$100,000	$95,000	$2,500	$2,500
2027	Design Crosswind Runway	Design for 2,500'x100' turf runway	$130,000	$-	$117,000	$13,000
2027	Construct Fuel Facility	Construct 12,000-gallon JET-A & AVGAS above ground tanks with 24-hour card reader in new location	$1,000,000	$900,000	$50,000	$50,000
2027	Remove Current Fuel Facility	Remove the two current 5,000-gallon underground tanks	$100,000	$90,000	$5,000	$5,000
2028	Construct Crosswind Runway	Construct 2,500'x100' turf runway	$800,000	$-	$720,000	$80,000
2029	Design an FBO/SASO hangar Lean-to	Design a 2,000 SF lean-to addition	$100,000	$90,000	$5,000	$5,000
2030	Construct the FBO/SASO Lean-To	Construct the 2,000 SF lean-to addition to the apron hangar	$500,000	$450,000	$25,000	$25,000
2031	Design Taxilane West & North of Apron	Design taxilane west (275'x25') & taxilane north (255'x25')	$100,000	$90,000	$5,000	$5,000
2031	Design NW T-Hangar	Design for 5-Unit T-Hangar	$100,000	$90,000	$5,000	$5,000
2032	Construct Taxilane East & North of Apron	Construct taxilane east (275'x25') & taxilane north (255'x25')	$700,000	$630,000	$35,000	$35,000
2033	Expand Parking to FBO/SASO Lean-To	Extend parking area north (575 SY)	$500,000	$450,000	$25,000	$25,000
2034	Construct NW T-Hangar	Construct 5-Unit T-Hangar	$1,500,000	$1,350,000	$75,000	$75,000
2034	Design Parallel Taxiway with MITL	Design a 5,000'x35' parallel taxiway, connectors, and lighting and remove current taxiway to runway connector	$150,000	$135,000	$7,500	$7,500
Sub-Total			$6,300,000	$4,900,300	$1,100,800	$300,800

Long Term Projects (2035 – 2044)						
2035	Construct Parallel Taxiway with MITL	Construct a 5,000'x35' parallel taxiway, connectors, and MITL and remove current taxiway to runway	$1,200,000	$1,080,000	$60,000	$60,000
2036	Design Taxilane Continuing East & North	Design taxilane east (130'x25') and taxilane north (255'x25')	$100,000	$90,000	$5,000	$5,000
2036	Design NE T-Hangar	Design 10-unit T-hangar	$100,000	$90,000	$5,000	$5,000
2037	Construct Taxilane Continuing East & North	Continue constructing taxilane east (130'x25') & taxilane north (255'x25')	$700,000	$630,000	$35,000	$35,000
2037	Construct NE T-Hangar	Construct 10-unit T-Hangar	$2,500,000	$2,250,000	$125,000	$125,000
2038	Storage Hangars (4)	50'x50' hangar, privately built	$3,000,000	$2,700,000	$150,000	$150,000
2038	Apron Hangar	Construct 60'x70' box hangar	$1,000,000	$900,000	$50,000	$50,000
2038	Design North Apron Expansion	Design expansion of the north part of the apron & taxiway connector	$100,000	$90,000	$5,000	$5,000
2039	Construct North Apron Expansion	Expand apron and taxiway connector, 4,540 SY with 10 tiedowns	$700,000	$630,000	$35,000	$35,000
2039	Design South Taxilanes	Design taxilanes continuing south (130'x25')	$100,000	$90,000	$5,000	$5,000
2040	Construct South Taxilanes	Construct southeast & southwest taxilanes (130'x25')	$700,000	$630,000	$35,000	$35,000
2040	Design South T-Hangar	Design 4-unit T-Hangar	$100,000	$90,000	$5,000	$5,000
2041	Construct South T-Hangar	Construct 4-unit T-Hangar	$1,000,000	$900,000	$50,000	$50,000
2041	Storage Hangars (3)	50'x50' hangar, privately built	$2,250,000	$2,025,000	$112,500	$112,500
2042	Design South Apron Expansion	Design expansion of the south part of the apron & taxiway connector	$100,000	$90,000	$5,000	$5,000
2043	Construct South Apron Expansion	Expand apron and taxiway connector, 3,910 SY with 10 tiedowns & remove current connector taxiway	$1,000,000	$900,000	$50,000	$50,000
2044	Large Apron Hangars	Construct 2 80'x80' hangars	$2,400,000	$2,160,000	$120,000	$120,000
2044	Expand Parking to Large Hangars	Expand parking area south (920 SY)	$500,000	$450,000	$25,000	$25,000
2045	Implement a ¾ Mile Visibility	Aeronautical survey for obstruction analysis & runway lighting	$500,000	$450,000	$25,000	$25,000
Sub-Total			$ 18,100,000	$16,200,000	$900,500	$900,500
TOTAL			$24,400,000	$21,100,400	$2,000,300	$1,200,300

Source: KLJ Analysis; Total values rounded to nearest 100.

Financial

The implementation plan considers the airport's ability to fund the projects identified in this planning study. Projects in the short-term and mid-term are discussed in more detail for realistic project sequencing based on identified needs, airport priorities and available funding. Financial feasibility is a major consideration in developing the implementation plan and Capital Improvement Plan (CIP).

Airport funding for projects is derived from many sources. Funding sources can be categorized into three main categories:

- Federal funding
- State funding
- Local or Private funding

Detailed information about these funding programs can be found in **Appendix B – General Aviation Airports 101 (Airport Funding)**. A realistic project implementation plan must consider financial resources. The financing strategy for the Mercer County Regional Airport provides sufficient federal, state, and local funding for future airport improvements. Projected funding sources are based on existing legislation.

Federal Funding

Federal Airport Improvement Program (AIP) funding provides financing for most of the improvements proposed at HZE. While maximizing the projected entitlement funding available to Mercer County ($150,000/year), these entitlements will only finance a portion of the proposed improvements through the 20-year period. Entitlements will be used to fund AIP-eligible projects, particularly critical maintenance, safety, and capacity enhancements. Discretionary funding unfortunately is not anticipated due to low priority ratings. A summary of Federal funding needs is outlined in **Table 4-3**.

Table 4-3 – Total Funding

Phase	Cost	FAA Entitlement	FAA Discretionary	State	Local
Near-Term (2025-2034)	$6,333,000	$1,440,300	$0	$1,090,825	$346,825
Long-Term (2035+)	$18,050,000	$1,650,000	$0	$902,500	$902,500
TOTAL	**$24,383,000**	**$3,090,300**	**$0**	**$1,993,325**	**$1,249,325**

Source: KLJ Analysis

COVID-19 Relief

During the Coronavirus Disease 2019 Pandemic (COVID-19), the United States government signed three laws for economic assistance to eligible U.S. airports through 2020 and 2021. These funds were to be used to prevent, prepare for, and respond to COVID-19.

The first law, the Coronavirus Aid, Relief, and Economic Security (CARES) Act was signed on March 27, 2020, for $2.3 trillion dedicated towards combatting the effects of COVID-19. Of this, $10 billion were to keep airports in operation to serve the industry, traveling public and to support the economy, along with keeping airports credited ratings stable, and to keep airport and aviation workers employed. These funds could be used for any purpose for which airport revenues may be lawfully used.

Then on December 27, 2020, the Coronavirus Response and Relief Supplemental Appropriation Act (CRRSAA) was the second law signed including $900 billion in supplemental appropriation for COVID-19 relief. The FAA established the Airport Coronavirus Response Grant Program (ACRGP) which included $2 billion of the act.

Finally, the American Rescue Plan Act of 2021 was signed into law on March 11, 2021, which included $1.9 trillion to address the ongoing health crisis and spur a strong economic recovery. The FAA established the Airport Rescue Grants which is how $8 billion of those funds.

Mercer County Regional Airport was granted $20,000 under the CARES Act as a general aviation airport. $13,000 was granted from the ACRGP as a non-primary allocation for a basic general aviation airport. Then, $32,000 was granted from the Airport Rescue Grants as a non-primary allocation. In total $65,000 has been awarded to combat the effects of COVID-19.

Bipartisan Infrastructure Law

On November 6, 2021, the Bipartisan Infrastructure Law (Infrastructure Investment and Jobs Act) was passed. This included $ 1 trillion for improvements to highways, bridges, roads, passenger and freight rail, airports, water and wastewater treatment, internet access and modernizing the electric grid. The FAA awarded the $25 billion received from the law to 3,075 airports and divided it into three grant groups:

1. $5 billion for airport terminals to replace aging terminals, increase energy efficiency and accessibility.
2. $5 billion for air traffic facilities to update and upgrade equipment to improve safety, security and environmental standards and replace necessary facilities.
3. $15 billion for airport infrastructure for projects as defined under the existing Airport Improvement Grant and Passenger Facility Charge criteria including runways, taxiways, safety and sustainability projects, terminal, airport-transit, and roadway.

In the past three years 2.89 billion has been made available to U.S. Airports and nearly $9 billion in Airport Infrastructure Grants (AIG). For HZE the following amounts were allocated; 2022 - $159,000, 2023 - $145,000, 2024 - $144,000.

2024 FAA Reauthorization Bill

On October 1, 2024, House Resolution 3935 went into effect for Fiscal Years 2025 through 2028. This increases AIP funds from $3.35 billion to $4.0 billion effective fiscal year 2025. This also temporarily provides an increase of funding allocations for fiscal years 2025 and 2026 to 95% for all non-hub primary and non-hub non-primary airports such as HZE. For fiscal years 2027 and 2028 federal shares reverts back to the standard 90%.

State Funding

The North Dakota Aeronautics Commission disburses funding annually to public airports across the state for airport improvement projects. These grant funds are derived primarily through aviation fuel taxes, aircraft excise taxes, and aircraft registrations. Airport sponsors may apply for state grant funding at fifty percent (50%) of the non-federal share of project costs. If a higher state funding level is needed for the project, the airport sponsor indicates the level that is required and provide justification within the grant application. Federal Aviation Administration (Airport Improvement Program) projects will be given priority in determining state funding. For the projects contained in the Airport CIP, the funding level is projected 95% Federal / 2.5% State / 2.5% Airport Sponsor for 2025 and 2026 then 90% Federal / 5% State / 5% Airport Sponsor starting in 2027.

Similar to the FAA, the North Dakota Aeronautics Commission has a priority rating system for airport projects. The current policy is maintained on the commission's website at aero.nd.gov. In general, the policy provides ratings for different types of projects within certain broad categories of work. The state priority rating is not intended to mirror the FAA system but instead is complimentary to the FAA priorities and emphasizes funding to projects that are needed, but not necessarily a national priority. See **Figure 4-1** for details on the state's priority rating.

Figure 4-1 North Dakota Aeronautics Commission Project Priority Rating

NORTH DAKOTA AERONAUTICS COMMISSION

POLICY #: GR-3
POLICY: Priority Rating of Airport Projects
PURPOSE: To establish a priority number for airport projects to assist the Commission in awarding state grants.

Adopted: May 1st, 1984
Reviewed and Approved: June 1st, 2023
Next Review Date: 2026

Priority Rating of Airport Projects

High ← → Low

Categories	50	40	30	20	10
OBSTRUCTIONS, NAVIGATION, AND LIGHTING	Approach Obstruction Removal Marking/Lighting Obstructions Displaced Threshold Improvements Airfield Light Replacement/Repair Runway Cones	Airport Beacons Airside Security Improvements Windsock/Segmented Circle Painting of Airside Markings	Wildlife/Security Fencing Weather Reporting System - AWOS Navigation Aids - PAPI/VASI/REILS New Lighting/Marker Installation Instrument Approach Development Airfield Safety Signage		
PRESERVATION AND DEVELOPMENT OF EXISTING SYSTEM	Pavement Rehabilitation Drainage & Culvert Installation/Repair Earthwork & Grading Improvements Pavement Maintenance Turf Runway Maintenance	Pavement Reconstruction New Pavement Construction	Public Access Roads Terminals - Air Service SRE Building Crosswind Runway Development	Runway Grooving Public Auto Parking Terminals - General Aviation Fuel Facilities* Landside Airport Signage	Equipment Storage Buildings Community Hangars*
PLANNING	All Projects Receiving Federal Aid	Project Engineering/Design	Master Plan Studies Airport Layout Plan Studies	Air Service/ Air Cargo, and Other Special Plans	
LAND EASEMENTS AND ACQUISITION	Zoning Implementation Land Acq. for Obstruction Removal	Land Acq. for RPZ Land Acq. for New Airport	Land Acq. for Operational Capacity	Land Acq. for Future Expansion	
ENVIRONMENTAL		Environmental Assessments Environmental Impact Statements	Wetlands Delineation/Mitigation SWPPP, SPCC, SWM, Other Special Studies, ect.		
AIRFIELD EQUIPMENT	ARFF Equipment		Mower Unit Snow Removal Equipment Turf Rollers	Aircraft Tug Equipment Operations Vehicles	

NOTE: The higher the number, the higher the Priority
(Add second digit below to each ten digit above for project priority rating)

7. Approaches 5. Taxiways 3. Access 1. Other (service roads, fencing, etc.)
6. Runways 4. Aprons 2. Equipment/storage

Any minor work associated with an improvement item receives the same ranking as the major item. Examples are: Work for a runway extension ranks a "46", lighting the apron ranks a "54", reconstruct taxiway ranks a "55", Runway overlay ranks a "46, tree removal on an approach ranks a "57", etc.
NOTE: The above priority system is used for projects needing attention during the current fiscal year. Any project that is considered being needed in a future year will be given a priority rating of 10. Projects already completed will use the above rating; however, only projects completed within the last 3 years of the date of the grant meeting will be considered without special justification.

SPECIAL NOTES:
* Sponsor's that apply for a state grant for a community hangar or a fuel facility need to attach a business plan to the grant application for the project to be considered.

1. Aeronautics Commission staff will help establish the priority rating for projects not listed.
2. Ineligible projects include: aerial spray pads, airport liability insurance premiums, interest payments, private aprons, and privately owned hangars.

Source: North Dakota Aeronautics Commission

The highest priority projects for HZE are as follows:

1. Implement at ¾ Mile Visibility – 57
2. Pavement Rehabilitation – 56
3. South Apron Expansion – 54
4. North Apron Expansion – 54
5. New Turf Crosswind Runway – 52
6. Taxilane West & North of Apron – 45
7. Parallel Taxiway – 45
8. South Taxilanes – 45
9. Taxilane Continuing West & North – 45

Local Funding

A local match will be needed for the AIP funded projects. This requirement will be as much as 10% of the project cost but could vary depending on project eligibility and the structure of the State and Federal funding programs. The Mercer County Regional Airport has a slate of projects planned and should assure

that it has adequate funding sources for operating expenses as well as project funding. See **Appendix B – General Aviation Airports 101 (Airport Funding)** for further details on airport funding options.

Environmental Review

Introduction

FAA AC 150/5070-6B, *Airport Master Plans* identifies a planning-level environmental review as one of the elements of effective planning. The purpose behind this element of the airport master planning process is to help the airport sponsor thoroughly evaluate environmental impacts of airport development alternatives, and to provide information for subsequent environmental processing. Key environmental considerations for future development at HZE were based on the existing conditions described in **Chapter 1: Airport, Community & Aviation Activity.**

This environmental review section is not intended to fulfill the requirement of environmental review required by National Environmental Policy Act (NEPA) or provide a definitive class of action determination for the proposed improvements. The purpose of this environmental review is to provide community, airport sponsor, and regulatory awareness of the importance of minimizing the environmental impacts to this airport improvement area and to provide a general indication of the likely need for further investigation. Appropriate environmental documentation in accordance with FAA Order 5050.4B, *NEPA Instructions for Airport Actions* and FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures* is required to be completed prior to commencing with project actions.

NEPA Environmental Review Process

Every Federal action requires an environmental review per NEPA. Actions shall be thoroughly evaluated and coordinated with resource agencies during the environmental review phase. Impacts should be avoided whenever possible, minimized, or mitigated as a final option. Federal actions fall into one of three types of class of actions:

- **Categorical Exclusion (CATEX):** This environmental documentation is used for actions that do not normally require an Environmental Assessment (EA) or Environmental Impact Statement (EIS), because they do not individually or cumulatively have a significant effect on the human and/or natural environment. Documentation required includes either simple documentation or the completion of a checklist with supporting documentation certifying that the action will not exceed any environmental impact thresholds.
- **Environmental Assessment (EA):** Typical actions that require an EA are those that are not categorically excluded or actions that may result in extraordinary circumstances such as impacts to wetlands, historical properties, or floodplains. EA documentation required here includes a condensed or comprehensive environmental analysis of the proposed action and alternatives, and the anticipated impacts from the proposed action. Agency review and coordination of the proposed action and impacts is required. The decision document proceeded after this analysis if no significant impacts are determined is a Finding of No Significant Impact (FONSI) issued by FAA, which is typically valid for three years.
- **Environmental Impact Statement (EIS):** Actions that require an EIS include those that will have a significant impact to the quality of the human and/or natural environment. An EIS may also be triggered if an EA concludes that the project will have a significant impact. This document provides in-depth impact and cumulative analyses of all proposed alternatives. The document published once a decision has been made on the alternative (typically the alternative that

achieves the actions goals but has the least impacts) to move forward with is a Record of Decision (ROD). The EIS is valid for a period of three years.

Environmental Categories

Descriptions of potential impacts associated with the proposed Master Plan improvements are discussed by the impact categories identified in FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*. Additional consultation regarding the improvement area would be warranted in the future during the environmental review phase of the project action.

Impact categories that will remain potentially unaffected by the proposed airport improvements identified in this study include:

- **Air Quality** – The improvements identified are not anticipated to effect air quality.
- **Climate** - The improvements identified are not anticipated to affect the climate.
- **Coastal Resources –** The airport is not located in a coastal environment.
- **Natural Resources and Energy Supply** – The proposed airport improvements would not affect any natural resources and energy supply.
- **Visual Impacts** – Visual impacts to adjacent properties from proposed airport activities are not expected.
- **Wild and Scenic Rivers** – There are no wild and scenic river designations near the Airport.

The categories identified below have the potential to be affected by the airport improvements identified in this study.

BIOTIC RESOURCES

As identified in **Chapter 1: Airport, Community & Aviation Activity**, six threatened, endangered, and candidate species and no critical habitat have been identified for HZE Airport. Due to the potential for some of these threatened or endangered species to be located on or near the Airport, biological resources will be reviewed for each proposed activity. An example of an activity that biological resources could be affected by is the proposed construction of new crosswind runway. It's anticipated that impacts to biological resources will not be significant.

FARMLANDS

The Farmland Protection Policy Ace (FPPA) defines prime farmland as land that has the best combination of physical and chemical characteristic for producing food, feed, forage, fiber and oilseed crops, and is also available for these uses. Unique farmland is farmland that is used for production of specific high value food, feed, and fiber crops. A search of the USDA Natural Resources Conservation Service (NRCS) web soil survey shows that land surrounding the airport is classified as not prime farmland with small pockets of statewide importance off the Runway 33 End. Further consultation with NRCS would be required during a project's environmental review stage to calculate the Farmland Conversion Impact Rating if land outside the existing airport property would be acquired and converted to airport property.

FLOODPLAINS

Floodplains constitute lands situated along rivers and their tributaries that are subject to periodic flooding on the average interval of 100 years or less. HZE is not located within a 100-year floodplain; therefore, no further analysis is required.

HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

There are proposed activities that would require hazardous materials, solid waste, and pollution prevention to be addressed, such as the construction of the fuel facility. All construction activities would be required to meet stormwater pollution prevention plan requirement, spill prevention best practices, and the state's fire codes. Although there are no known contaminated sites within one mile of the airport, prior to acquisition of new land to be owned in fee title by an airport sponsor, FAA recommends that an Environmental Due Diligence Audit (EDDA) be performed. An EDDA includes a more detailed review of an area, relative to NEPA-level review, for the possible presence of environmental contamination.

HISTORIC AND CULTURAL FEATURES

Before a project that involves land disturbance is implemented, an analysis to identify the potential for cultural resources would need to be conducted for the project area. Coordination with the State Historical Preservation Offices (SHPO) and tribal members is necessary for projects involving land disturbance. A Level III Cultural Resources Inventory with Tribal Review was performed Fall 2019.

Any buildings affected that have potential to be listed in the National Register of Historic Places (NRHP) would require coordination with SHPO. Projects involving ground surface disturbance would require a determination of affect to historic property to be obtained from the SHPO. Structures more than 50 years old are eligible for inclusion on the NRHP and further review is required to determine if these structures have significant historical, cultural, or architectural characteristics.

LAND USE

Mercer County Regional Airport is surrounded by open spaces and lightly populated rural residential development. Compatible land use is typically not influenced by normal airport operations. The compatibility of existing land uses in the vicinity of an airport is usually associated with the extent of noise impacts occurring from airport property and safety concerns. Incompatible land uses are typically items such as fuel storage facilities, areas of public assembly, tree rows, high density residential areas, and areas that have the potential to attract hazardous wildlife. See **Chapter 1: Airport, Community & Aviation Activity** on wildlife hazards.

NOISE

Effects from noise during construction and use of the airport is another resource that may need to be addressed as needed depending on the proposed action. FAA does not require a noise analysis at airports whose forecasted operations do not exceed 90,000 annual propeller operations or 700 annual jet operations. These operations normally result in a cumulative noise exposure to be less than a 65 decibel Day-Night Level (DNL) identified as a critical threshold by FAA to take actions to mitigate sound exposure. Current airport operations at HZE are below this threshold.

DEPARTMENT OF TRANSPORTATION-SECTION 4(F) & SECTION 6(F) PROPERTIES

Section 4(f) applies only to those portions of a multiple-use public property that is designated by statute or identified in an official management plan as being primarily for public park, recreation. Or wildlife and waterfowl refuge purposes and are determined to be significant for such use. There are no known publicly owned lands from parks, recreation areas, or refuge areas within the immediate vicinity of the Airport. Further review of the potential to impact Section 4(f) resources would be required at the environmental documentation phase of any projects that would require ground disturbance.

47 grants have been issued for properties within the county though these properties are not located near the airport. No further analysis of Section 6(f) is required. See **Chapter 1: Airport, Community & Aviation Activity** for more details.

SOCIOECONOMIC IMPACTS, ENVIRONMENTAL JUSTICE & CHILDREN'S ENVIRONMENTAL HEALTH & SAFETY RISKS

Social impacts from a project depend on how that project affects the character, habits, and economic conditions of the people living within the affected area of the project. The effect on business, employment, transportation, utilities, etc., are factors that affect the social climate of a community. Any action that would either adversely or beneficially affect the factors stated above would be considered as having some type of social impact on the residents of a particular community. Off-airport actions including acquisition of land use and airspace avigation easements and potential future obstruction mitigation. Further analysis is required.

WATER RESPORCES – SURFACE AND GROUND WATERS

Airport activities can affect water quality mainly due to stormwater runoff from paved areas. Providing treatment for stormwater runoff from runway, taxiway and apron areas using best management practices and grassed swale areas would minimize potential impacts to water quality. At HZN Airport, drainage typically flows directly from paved surfaces across grass covered scopes and into an unnamed tributary of the Knife River, located along the airport's western boundary. This tributary joins the Knife River about a quarter mile north of the airport, which then flows into the Missouri River, situated approximately 10 miles eastward.

A General Permit for Storm Water Discharges Associated with Construction Activities may be required from the ND Department of Environmental Quality (NDDEQ) for the proposed improvements if the area of disturbance exceeds one acre. Permit requirements would need to be reviewed during the environmental documentation phase. Further coordination with the NDDEQ may be needed for airport development projects.

WATER RESOURCES - WETLANDS

There are wetlands in the National Wetland Inventory (NWI) located on the Airport property. In addition to maintaining water quality in rivers and recharging groundwater among other positive benefits, wetlands may have the potential to attract wildlife that can be hazardous to aircraft using the Airport.

All wetlands would require delineation to clearly identify their boundaries. Projects with wetland impacts greater than one half acre of wetlands requires a U.S. Army Corps of Engineers (USACE) general permit. A wetland delineation and coordination with applicable resource agencies would be necessary

prior to project implementation to further analyze the impacts the proposed improvements would have on wetlands. Further analysis is required for future projects.

NEPA Documentation

Based on the preliminary environmental evaluation completed in this section and the anticipated 10-year projects in the implementation plan, **Table 4-8** has been prepared to document the potential anticipated environmental documentation necessary to proceed with the proposed actions. The ultimate decision on what documentation may be required for each proposed action will be determined by the FAA. All environmental reviews must be completed prior to initiating project design beyond 25 percent.

Table 4-4 – Environmental Documentation

Proposed Action(s)	Anticipated Environmental Documentation
Turf Crosswind Runway	Likely to be a CATEX but possibly an Environmental Assessment
FBO/SASO Expansion	CATEX
Relocation of the Fueling Facility	CATEX
Taxilane north and west of apron	CATEX
Partial parallel taxiway	CATEX

Source: KLJ Analysis

Environmental Impact Summary

The Environmental Review Summary identified in **Table 4-9** summarizes the potential environmental impacts identified in the prior sections of this Chapter. This table is intended to give a general indication of the likely need for further environmental analysis. Additional environmental investigation is necessary to determine possible impacts associated with the improvement area.

At the appropriate time, the FAA would decide whether, and to what extent, any additional investigation would be performed. Based on findings of this environmental review, it is estimated that further environmental analysis is required for the proposed improvements.

Table 4-5 – Environmental Review Summary

NEPA Impact Category	Further Analysis Required
Air Quality	No
Biological Resources	Yes
Climate	No
Coastal Resources	No
Department of Transportation Act Section 4(f)	No
Farmlands	No
Floodplains	No
Hazardous Materials, Pollution Prevention, and Solid Waste	No
Historical and Cultural Resources	Yes
Land Use	No
Natural Resources and Energy Supply	No
Noise	No
Socioeconomic Impacts and Environmental Justice	No
Surface and Ground Water	No
Visual Impacts	No
Wetlands	Yes
Wild and Scenic Rivers	No

Source: KLJ Analysis, FAA Order 1050.1F, Environmental Impacts: Policies and Procedures

Compatibility

Overview

Airports are community assets providing significant benefits. They facilitate the movement of people, goods, and services, promote tourism and trade, stimulate business development, and support a variety of jobs.

The objective of land use planning is to guide on-airport and off-airport land use development to be compatible with airport operations. The airport directly controls on-airport compatible land uses to primarily serve aeronautical activities. The airport does not directly control off-airport land uses. Surrounding land uses compatible with airports typically include those uses that can co-exist with a nearby airport without either constraining the safe and efficient operation of the airport or exposing people working or living nearby to unacceptable levels of noise or safety hazards. Compatible land use

also considers minimizing potential hazards to aircraft and the flying public. The impact of airport planning decisions extending well beyond the airport property line must be considered.

Land use planning around airports is important to airports and communities for several reasons:

- **Safety** - Compatibility is needed to maintain safety of the general and flying public. Risk should be reduced to an acceptable level. The airport must also maintain operational utility within identified safety and risk criteria.
- **Airport Utility** - Land uses around airport should provide the airport so that there are not undue restrictions placed on the airport's existing or planned future arrival and departure procedures. Opportunities for future development identified in the Airport Master Plan and shown on the Federally (FAA) approved Airport Layout Plan should be considered.
- **Human Environment** - Balancing the human environment with airport operations is important to maintain an acceptable level of airport impacts (i.e. noise and visual exposure) with the surrounding community.
- **Economic Development** – Operational restrictions placed on the airport because of land use compatibilities have the potential to have a trickle-down effect on the community. This reduces the community's ability to accommodate the aviation needs of the public and local businesses, thus limiting economic development opportunities.

Incompatible land uses are one of the largest issues facing airports today, often resulting in conflicts between airports and their communities. They also may result in airport operational and grant project funding implications in certain situations. Building consistency between the recommendations in this study with airport land use compatibility standards and area-wide planning is vital for maintaining compatible land use.

The objective of this section is to assist the Mercer County Regional Airport in identifying land use standards compatible with the development plan and provide recommendations so that the airport can continue to meet safety and compatibility criteria. This chapter should become the framework to future land use planning efforts between Airport and Mercer County.

Roles and Responsibilities

AIRPORT SPONSOR

As the airport sponsor, the County of Mercer, applies and receives federal grants. These federal grants require the city to develop and maintain the airport compatible with FAA rules and regulations through FAA Grant Assurances (obligations). There are currently 39 grant assurances which an airport sponsor assumes as a contractual obligation with the Federal Government when the sponsor accepts federal funds for airport development. FAA has published Order 5190.6B *Airport Compliance Manual* to assist FAA personnel and airport sponsors to maintain compliance with grant and land obligations. These grant assurances describe how the sponsor must operate the airport and serve the needs of the flying public. Grant assurances 20 and 21 pertain to compatible land use around airports.

> **20. Hazard Removal and Mitigation.** It will take appropriate action to assure that such terminal airspace as is required to protect instrument and visual operations to the airport (including established minimum flight altitudes) will be adequately cleared and protected by removing, lowering, relocating, marking, or lighting or otherwise mitigating existing airport hazards and by preventing the establishment or creation of future airport hazards.
>
> **21. Compatible Land Use.** It will take appropriate action, to the extent reasonable, including the adoption of zoning laws, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft. In addition, if the project is for noise compatibility program implementation, it will not cause or permit any change in land use, within its jurisdiction, that will reduce its compatibility, with respect to the airport, of the noise compatibility program measures upon which Federal funds have been expended.

FAA grant assurances require airports take appropriate action to protect airspace and restrict land uses in the immediate vicinity to those compatible with airport operations. Compatible land use control for the Mercer County Regional Airport is the responsibility of the airport sponsor.

FEDERAL AVIATION ADMINISTRATION

The FAA can provide guidance and funding to promote compatible land development around airports; however, it has no regulatory authority for controlling land uses. State and local governments are responsible for land use planning, zoning, and regulations. The FAA develops grant assurances to protect federal investments in airports but are the responsibility of the airport sponsor to maintain.

The FAA monitors all obligated airports to ensure they comply with the requirements of the grant assurances through its Compliance Program. If the sponsor fails to take the necessary corrective action, the FAA can legally impose penalties on the sponsor, including the loss of federal funding.

As defined by law, the FAA's authority to enforce most regulations and grant assurances is limited to within the airport boundaries. The FAA's only authority on compatible land use planning is through the grant assurances airport sponsors must adhere to in order to obtain federal funding for airport improvements. In most cases, the most practical and cost-effective method for a sponsor to affect compatible land use outside of the airport's property is through zoning or easements rather than through land acquisition.

STATE OF NORTH DAKOTA

The process and procedures for adopting zoning in North Dakota is spelled out in Chapter 2-04 of the North Dakota Century Code. Excerpts from procedures detailed in the chapter are provided below.

2-04-03. Power to adopt airport zoning regulations.

1. In order to prevent the creation or establishment of airport hazards, every political subdivision having an airport hazard area within its territorial limits may adopt, administer, and enforce, under the police power and in the manner and upon the conditions hereinafter prescribed, airport zoning regulations for such airport hazard area, which regulations may divide such area into zones, and, within such zones, specify the land uses permitted and regulate and restrict the height to which structures and trees may be erected or allowed to grow.
2. Where an airport is owned or controlled by a political subdivision and any airport hazard area appertaining to such airport is located outside the territorial limits of said political subdivision, the political subdivision owning or controlling the airport and the political subdivision within which the airport hazard area is located may, by ordinance or resolution duly adopted, create a joint airport zoning board, which board has the same power to adopt, administer, and enforce airport zoning regulations applicable to the airport hazard area in question as that vested by subsection 1 in the political subdivision within which such area is located. Each such joint board shall have as members two representatives appointed by each political subdivision participating in its creation and in addition a chairman elected by a majority of the members so appointed.
3. If in the judgment of a political subdivision owning or controlling an airport, the political subdivision within which is located an airport hazard area appertaining to that airport, has failed to adopt or enforce reasonably adequate airport zoning regulations for such area under subsection 1 and if that political subdivision has refused to join in creating a joint airport zoning board as authorized in subsection 2, the political subdivision owning or controlling the airport may itself adopt, administer, and enforce airport zoning regulations for the airport hazard area in question. In the event of conflict between such regulations and any airport zoning regulations adopted by the political subdivision within which the airport hazard area is located, the regulations of the political subdivision owning or controlling the airport govern and prevail.

2-04-05. Procedure for adoption of zoning regulations.

1. No airport zoning regulations shall be adopted, amended, or changed under this chapter except by action of the legislative body of the political subdivision in question, or the joint board provided for in subsection 2 of section 2-04-03 after a public hearing in relation thereto, at which parties in interest and citizens shall have an opportunity to be heard. At least fifteen days' notice of the hearing shall be published in an official newspaper, or a newspaper of general circulation, in the political subdivision or subdivisions in which is located the airport hazard area to be zoned.
2. Prior to the initial zoning of any airport hazard area under this chapter, the political subdivision or joint airport zoning board which is to adopt the regulations shall appoint a commission, to be known as the airport zoning commission, to recommend the boundaries of the various zones to be established and the regulations to be adopted therefor. The commission shall make a preliminary report and hold public hearings thereon before submitting its final report, and the legislative body of the political subdivision or the joint airport zoning board shall not hold its public hearings or take other action until it has received the final report of such commission. If a city planning commission or zoning commission already exists, it may be appointed as the airport zoning commission.

SURROUNDING JURISDICTIONS

Local jurisdictions are responsible for developing and enforcing land use planning, zoning, and regulations. Development proposals are reviewed and approved at this local level through an established process. The local authority enforces multi-jurisdictional airport zoning regulations for proposed development. For the Mercer County Regional Airport, surrounding jurisdictions affected by the airport includes the Town of Hazen and Mercer County.

Land Use Compatibility Elements

Four key elements should be considered to achieve land use compatibility at any airport.

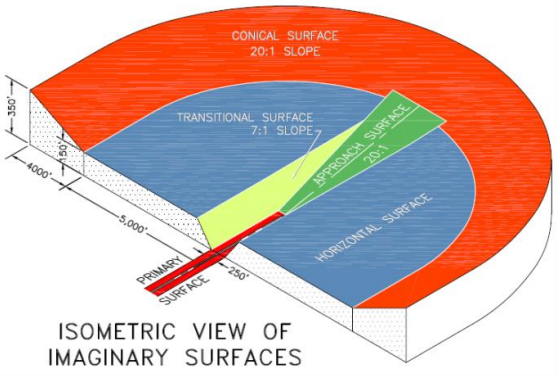
- Airspace
- Safety
- Noise
- Compliance

A general description of each element is provided based on criteria developed by the FAA and the State of North Dakota, if applicable.

AIRSPACE

Guidelines & Evaluation

Airspace compatibility includes avoiding vertical development that reduces the level of safety, increases risks of aircraft accidents, or measurably reduces the operational utility of airports. 14 CFR Part 77, *Objects Affecting Navigable Airspace* defines obstructions to air navigation. Other airspace requirements are defined in FAA Advisory Circulars and Orders. All Part 77 obstructions are a hazard to air navigation unless an aeronautical study concludes otherwise.



ISOMETRIC VIEW OF IMAGINARY SURFACES

It is important to acknowledge that the FAA's role is limited to evaluating the aeronautical effects of proposed structures; the FAA has no legal authority to stop the construction of any proposed structure. However, FAA grant assurance obligations require sponsors to take reasonable action to prevent and remove hazards to air navigation. North Dakota state law requiring airport zoning and other regulations be consistent with the Airport Layout Plan.



Recommendations

Recommendations to maintain airspace compatibility at HZE include:

- Consider provisions in building codes to require FAA Form 7460-1 *Notice of Proposed Construction or Alterations* to be submitted and reviewed by the Airport as part of the local building permit approval process.
- Schedule an aeronautical study to implement plans for the obstructions identified in the Airport Layout Plan.

SAFETY

FAA design standards and regulations prescribe several zones and imaginary surfaces intended to protect aircraft and their occupants while landing or taking off. However, the safety element primarily associated with compatible land use is focused on minimizing risks to persons and property on the ground.

FAA Runway Protection Zones



To reduce the public safety risk associated with aircraft operations, communities typically use FAA airport design standards and safety compatibility guidelines developed by state aeronautical agencies to formulate safety policies. The safety element primarily associated with compatible land use is focused on minimizing risks to the flying public, as well as persons and property on the ground. FAA has defined minimum land use standards in the form of a Runway Protection Zone (RPZ) in FAA AC 150/5300-13A *Airport Design*. See **Chapter 2: Runways & Taxiways** for definitions. Existing RPZs are either owned in fee or by avigation easement. There are no incompatible land uses inside the existing RPZs at HZE. For future RPZs it is recommended that the City acquire necessary property interest to insure no incompatible land uses.

Wildlife Hazards



FAA is also focused on minimizing safety risks associated with wildlife near an airport. Hazardous wildlife use natural or artificial habitats on or near an airport for food, water, or cover. Wildlife near airport operations may result in an aircraft-wildlife strike. The FAA recommends that airport sponsors implement the standards and practices contained in FAA AC 150/5200-33*, Hazardous Wildlife Attractants On or Near Airports* to mitigate wildlife risks. The airport has an existing deer-proof perimeter fence and it is recommended to maintain that fence and extend it to encompass any new airfield improvements.

Recommendations

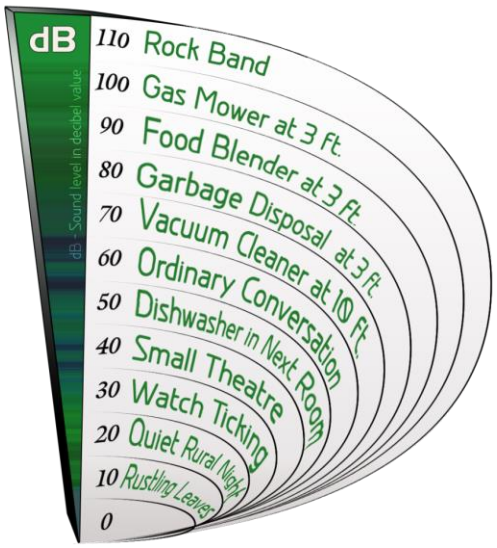
Recommendations to maintain safety compatibility at HZE include:

- Regularly monitor the sewage disposal ponds the City of Hazen has 1.25 miles northwest of the airport and the Knife River less than a mile north of the airport for prevention of attracting wildlife.
- If wildlife activity becomes a noticeable concern, it is recommended a wildlife biologist be consulted for a site assessment.

NOISE

The noise element is focused on minimizing the number of people exposed to high frequency and event levels of aircraft noise. Noise emitted from aircraft can affect the well-being of persons living or working near an airport. While there are several effects of aircraft noise upon people, the most common is annoyance. Annoyance can be defined as the overall adverse reaction of people to noise. Other effects of aircraft noise include sleep disturbance and speech interference. Noise affects everyone differently.

Noise analysis for airports is conducted using FAA's Aviation Environmental Design Tool (AEDT). FAA has determined that a cumulative noise exposure of individuals to noise resulting from aviation activities must be established in terms of Yearly Day Night Average Sound Level (DNL).



COMMON SOUNDS AND THEIR ASSOCIATED DECIBEL LEVELS

No noise analysis is needed for Airplane Design Group I or II airplanes if operations do not exceed 90,000 annual propeller-driven or 700 annual jet aircraft. The FAA has established significant noise impact thresholds for DNL 60 or 65 dB over a noise sensitive area (e.g. residences, schools, hospitals, parks, recreation areas) for airport projects.

No significant noise impacts are anticipated at HZE because the operations do no exceed FAA thresholds, and there are no close-in sensitive properties near the existing, future, or ultimate primary runway ends. If proposed annual jet aircraft operations exceed 700 operations annually in Design Group II aircraft, then noise impacts should be evaluated in future environmental review documents.

COMPLIANCE

As noted before, airports that do not abide by grant assurances are subject to withholding of FAA grant funding. Common airport compliance issues include non-aeronautical use of airport property, land releases, and through-the-fence operations.

Non-Aeronautical Use of Airport Property

Airport property is to be used for aeronautical purposes. For an airport to develop land for non-aeronautical use, the FAA must first approve of the change in airport property use from aeronautical to non-aeronautical. All airport property is identified in the Exhibit "A"/Airport Property Map.

Land Releases

When requested, the FAA will consider a release, modification, reform, or amendment of any airport agreement to the extent that such action has the potential to protect, advance, or benefit the public interest in civil aviation. Such action may involve only relief from specific limitations or covenants of an agreement, or it may involve a complete and total release that authorizes subsequent disposal of federally obligated airport property. Common types of release requests include concurrent use, request

for change in use or the sale/disposal of airport property. No land has been released from federal obligations or sold at HZE.

Through-the-fence Operations

Agreements that permit access to the airfield by aircraft based on land adjacent to, but not a part of, the airport property are commonly referred to as a "through-the-fence'' operation (even though a perimeter fence may not be visible). "Through-the-fence" arrangements can encumber the airport property and reduce an airport's ability to meet its federal obligations. There are no documented through-the-fence operations at HZE.

Action Plan & Recommendations

Recommendations to address airport compliance at HZE include:

- Identify encumbrances and non-aeronautical land uses in the Airport Layout Plan and Exhibit "A"/Airport Property Map to ensure sufficient control by the airport.
- Continue to control development that occurs on airport and consult with FAA as needed to verify compliance with FAA rules and regulations.