Chapter 1: Airport, Community & Aviation Activity

Purpose and Scope

The information presented in this report represents the study findings for the Sheldon Regional Airport Master Plan study prepared for the City of Sheldon, the airport owner. Airport Master Plans are prepared in accordance with Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*. This project was funded in part by the FAA under grant number AIP 3-19-0081-021-2025.

This study for the Sheldon Regional Airport will serve as an updated guide identifying future development necessary to accommodate existing and future aviation demands. The airport's current and forecasted safety, capacity and compatibility needs are addressed in this study. Many projects have been completed, and new planning considerations have surfaced since the last Master Plan study was completed in 2013.

The airport sponsor, Beck Engineering, Inc (BEI) and KLJ Engineering (KLJ) developed the scope for the project in cooperation with FAA Airports District Office and Iowa Department of Transportation Aviation Bureau officials to identify the specific needs and objectives of the airport owner. The scope includes work tasks with the purpose of documenting existing conditions, forecasting future aviation activity levels, identifying future facility requirements, formulating, and evaluating development alternatives, preparing implementation plans and engaging the public and other government agencies. Recommendations will be made for improvements that are triggered by safety requirements or demand thresholds. The project received notice to proceed in June 2025 from the airport sponsor. The baseline project data is from inventory efforts completed in 2025. Data from year 2025 was used to establish a baseline of existing airport information.

Planning Objectives

Planning considerations for an airport master plan are features, elements or events that should be evaluated because they have the potential to affect the airport facility over the long term.

Previous Planning Studies

Since the completion of the previous Airport Master Plan (AMP) and Airport Layout Plan (ALP) in 2013, several projects have been completed. The purpose of this master plan study is to evaluate the development goals of the airport. Based on the background and planning considerations, the planning objectives for this study identify the methods used to meet the airport development goals outlined by the airport owner. The key project objectives are identified as follows:

- Update to current FAA Design Standards
- Evaluate Runway Length and Design Standards
- Evaluate the need for a crosswind runway

FAA Aeronautical Survey

The FAA has implemented Aeronautical Survey requirements per FAA AC 150/5300-18B: *General Guidance and Specifications for Submission of Aeronautical Data to NGS: Field Data Collection and Geographic Information System (GIS) Standards*. FAA airport survey requirements require obstruction data to be collected using assembled aerial imagery for the airport. This data is used in aeronautical publications and to develop instrument approach procedures.

An aeronautical survey was completed with this planning effort as required by FAA. Imagery was acquired in September 2025. When safety-critical data is needed regarding runway end data, taxiways, navaids, or to enhance an instrument approach, then a new aeronautical survey is required.

Master Planning Process

Guidelines for completing a Master Plan are set forth in FAA AC 150/5070-6B. Each master plan study scope and level of effort is customized to fit each individual airport's needs and address critical issues.

The required and recommended contents of Airport Master Plans are detailed by the above advisory circular and FAA standard operating procedures. Effective airport master plans are based on the analysis of significant amounts of data, and many airport master plans typically present not only the planning conclusions, but all data and accompanying analysis in considerable detail.

This Master Plan study presents data in a sequential manner following the typical FAA planning process. Appendices are included to provide more detailed information on a subject. In addition, internet hyperlinks are included to reference documents that are current as of the time of this report.
The Airport Master Planning process involves several coordinated steps. The master plan study for SHL consists of the following elements:

- **Pre-Planning** – Airport development concerns are identified and planning objectives prepared to address these issues. An overall vision for the study is formulated that will guide the process.
- **Facility & Environmental Inventory** – Overview of airport setting and environment; infrastructure and assets which includes airside, landside, and

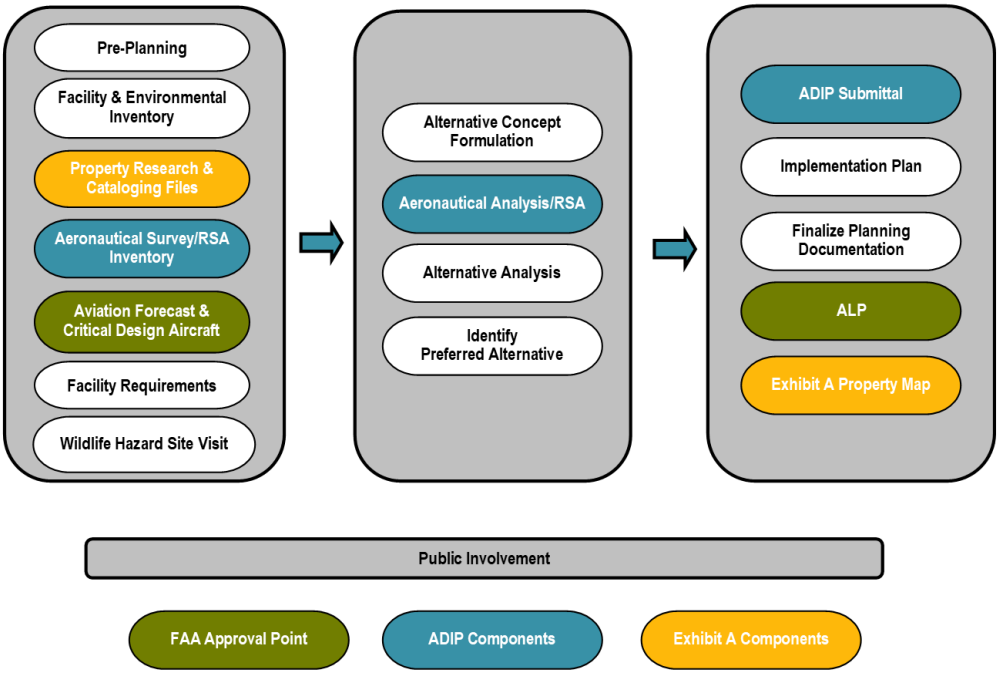
Alternatives Analysis

The alternatives evaluation process is the most collaborative portion of the master plan study. The alternatives are reviewed and refined through meetings with federal/state agency representatives and the study's advisory group. Evaluation criteria is used to compare the alternatives. The alternative evaluation criteria for this study includes the following:
Operational Performance - How does each alternative allow the airport, and specifically the runway/taxiway system, to operate as a functional system, meet design standards, and meet the needs of the community.
Best Planning Tenets – What are the strengths and weaknesses of the alternatives as it relates to 1) flexibility to meet demand and react to unforeseen changes; 2) highest and best on- and off-airport land use; 3) feasibility to implement politically and within practical phases; and 4) ability to satisfy airport user needs

support facilities; airspace, navigational aids, and airport access utilizing data from an FAA Aeronautical Survey. Provide an overview of anticipated environmental impacts as part of the development of alternatives.

- **Forecast of Aviation Demand** – Using established forecasting methods, estimate current and project future airport activity for general aviation, air cargo, and passenger enplanements.
- **Demand Analysis and Facility Requirements** – Compare the existing capacity with the future demand and identify the facility requirements to satisfy the aviation safety, capacity, and compatibility needs.
- **Alternatives Development and Evaluation** – Identify and evaluate options considering both on-airport and off-airport impacts consistent with the study goals and objectives. A preferred alternative is selected.
- **Implementation Plan** – Provide a comprehensive plan for implementation of the preferred alternative including project triggers, sequencing, and cost estimates.
- **Airport Layout Plan (ALP)** – Document the existing and planned airport facilities through a set of drawings approved by the airport sponsor, state, and FAA.
- **Stakeholder and Public Involvement** – Prepare and execute a plan to engage important airport stakeholder and the public throughout the study to gather their input and address their concerns.
- **Wildlife Hazard Site Visit** – Conduct a series of surveys of wildlife activity over a three-day period for wildlife that may have a negative impact on aircraft operations at the airport.

Figure 1 – 1 Airport Master Planning Process



Study Documentation & Approvals

The Master Plan Update was divided into chapters of information to document airport planning data, analysis, findings, and recommendation of the study. The following sections included in the narrative report:

- Chapter 1 – Airport, Community & Aviation Activity
- Chapter 2 – Runways & Taxiways
- Chapter 3 – Terminal Area & Support Facilities
- Chapter 4 – Implementation & Compatibility

- Appendix A – Glossary of Terms
- Appendix B – General Aviation Airports 101
- Appendix C – Meetings and Public Involvement
- Appendix D – Runway Length Analysis
- Appendix E – Obstacle Action Plan
- Appendix F – Recycling and Solid Waste Plan
- Appendix G – Wildlife Hazard Site Visit

Each chapter was prepared separately and distributed to the airport owner for review and comment. After the airport owner's review, each draft chapter findings were made available to key airport stakeholders including the State and FAA for input prior to a final review and approval by the airport owner. Each approved final draft chapter was then published on the airport's website for public viewing.

The Master Plan Update was adopted by the City of Sheldon on [FUTURE DATE]. The ALP was submitted to the State and FAA for review and approval on [FUTURE DATE].

Public Involvement

Public involvement is a key component to the successful development of an Airport Master Plan study. The purpose is to encourage information sharing and feedback from airport stakeholders including the airport owner, airport users/tenants, local government officials, resource agencies, elected and appointed officials and the public. Public involvement provides valuable input to assist the airport owner in decision making and develop consensus on study conclusion.

A Planning Advisory committee (PAC) was established to provide recommendations to the airport owner. Members represented the following stakeholders:

- Airport Commission
- City of Sheldon
- Midwest Flying Service
- Sanford Hospital
- Northwest Community College
- Sheldon Chamber & Development Corporation
- O'Brien County
- KT Tools

See **Appendix C: Meetings and Public Involvement** for other information including copies of public involvement meeting agendas, attendees, presentations, and summaries.

Airport & Community Overview

General

The Sheldon Regional Airport (SHL) is a general aviation airport serving the City of Sheldon and the surrounding area including O'Brien and Sioux County in northwest Iowa. The airport is part of the FAA's National Plan of Integrated Airports System (NPIAS) and is classified as a Non-Primary Local General Aviation (GA) airport. See **Appendix B: General Aviation Airports 101** for additional details about airport classifications.

Sheldon Regional Airport has one lighted, 75-foot by 4,199-foot long concrete runway. Airport facilities consist of a variety of hangars, nine concrete tiedown spots, self-service fueling and a terminal building. Vehicle parking is provided at the terminal building. Midwest Flying Service provides full-service fueling, aircraft charters, flight training and aircraft maintenance services.

Location and Area Setting

Sheldon is located in northwest Iowa in both O'Brien and Sioux Counties. Sheldon is the largest city within O'Brien County. The airport serves the City of Sheldon and surrounding area.

Airport Ownership & Management

The airport is owned by the City of Sheldon. There is an Airport Commission which consists of five members appointed by the City Commission. The Airport Commission serves as the governing body.

Airport History

The airport has been in its current location serving the surrounding area since 1958 according to FAA records. A complete list of major airport development projects that received funding from FAA and the State can be found in **Table 1-1 Past Airport Grants.**

Table 1-1 Past Airport Grants

Year	Projects	Federal Grant
1982	Acquire Land for Development	001-1982
	Airport Drainage Improvements	001-1982
	Acquire Land for Approaches	001-1982
1983	Extend Runway	002-1983
1985	Airport Drainage Improvements	003-1985
	Extend Runway	003-1985
	Airport Access Road Improvements	003-1985
	Expand Apron	003-1985
	Apron Lighting	003-1985
1990	Rehabilitate Runway	004-1990
2003	Airport Drainage Improvements	005-2003
	Rehabilitate Apron	005-2003
2006	Construct Terminal Building	006-2006/007-2007
2009	Construct Building	009-2009
2010	Update Airport Master Plan Study	010-2010
2012	Install Runway Vertical/Visual Guidance System	011-2012
2013	Rehabilitate Taxiway	012-2013

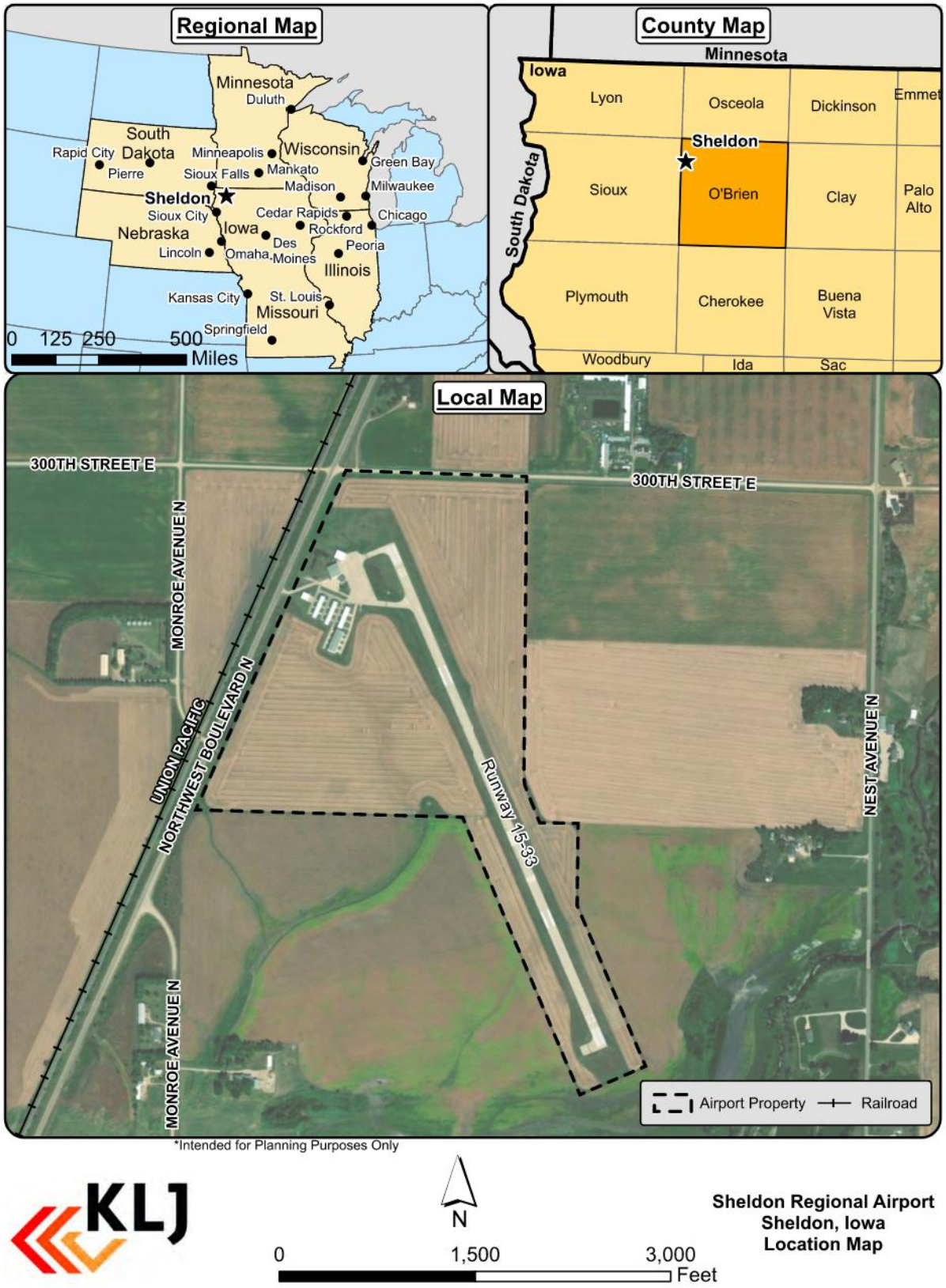
2014	Rehabilitate Runway Lighting	013-2014
2017	Acquire SRE	014-2017
2018	Construct SRE Building	015-2018

Source: FAA Grant Records

Land Area

The airport was developed in November of 1957 and expanded over the years in conjunction with airport development projects. The Airport currently owns [Future Ex A] acres of land in fee simple, and [Future Ex A] acres in easement. The airport's Exhibit A Property Map will be updated as a part of this study to the FAA's SOP 3.00 requirements.

Figure 1-2 Airport Location Map



Airport Role

SHL is a general aviation (GA) airport, meaning it accommodates aeronautical activity other than scheduled commercial air service. GA airports provide vital services for the public including emergency response, community access and personal and business aviation. Additionally, GA airports serve a key role in the facilitation of pilot training.

Table 1-2 shows a list of public use GA airports in the surrounding 30 nautical miles as well as the two nearest commercial service airports which offer services that may be utilized by the community.

Table 1-2 – Surrounding Public Airports

ID	Airport Name	City, State	Location From Airport (NM)	Instrument Approach	ARC	Longest Runway
SHL	**Sheldon Regional**	**Sheldon, IA**	**-**	**300' 1 mi**	**B-II**	**4,199'**
ISB	Sibley Municipal	Sibley, IA	10.2	600' 1 mi	A-I Small	3,000
SXK	Sioux County Regional	Maurice, IA	19.6	200' ½ mi	C-II	5,500'
RRQ	Rock Rapids Municipal	Rock Rapids, IA	21.1	600' 1 mi	B-I Small	3,097'
SPW	Spencer Municipal	Spencer, IA	27.8	200' ½ mi	C-II	6,001'
OTG	Worthington Municipal	Worthington, MN	29.0	200' ½ mi	C-II	5,500'
LVY	Quentin Aanenson Field	Luverne, MN	29.7	200' 1 mi	B-II	4,200'
4LRJ	Le Mars Municipal	Le Mars, IA	30.3	300' 1 mi	B-I	5,056'
4D8	Fuller Airport	Milford, IA	30.5	700' 1 mi	B-I	2,873'
FSD	Joe Foss Field	Sioux Falls, SD	45.6	200' ½ mi	D-IV	9,000'
SUX	Sioux Gateway	Sioux City, IA	54.2	200' ½ mi	D-III	9,002'

Source: SkyVector, Airnav, 2020 Iowa Aviation System Plan

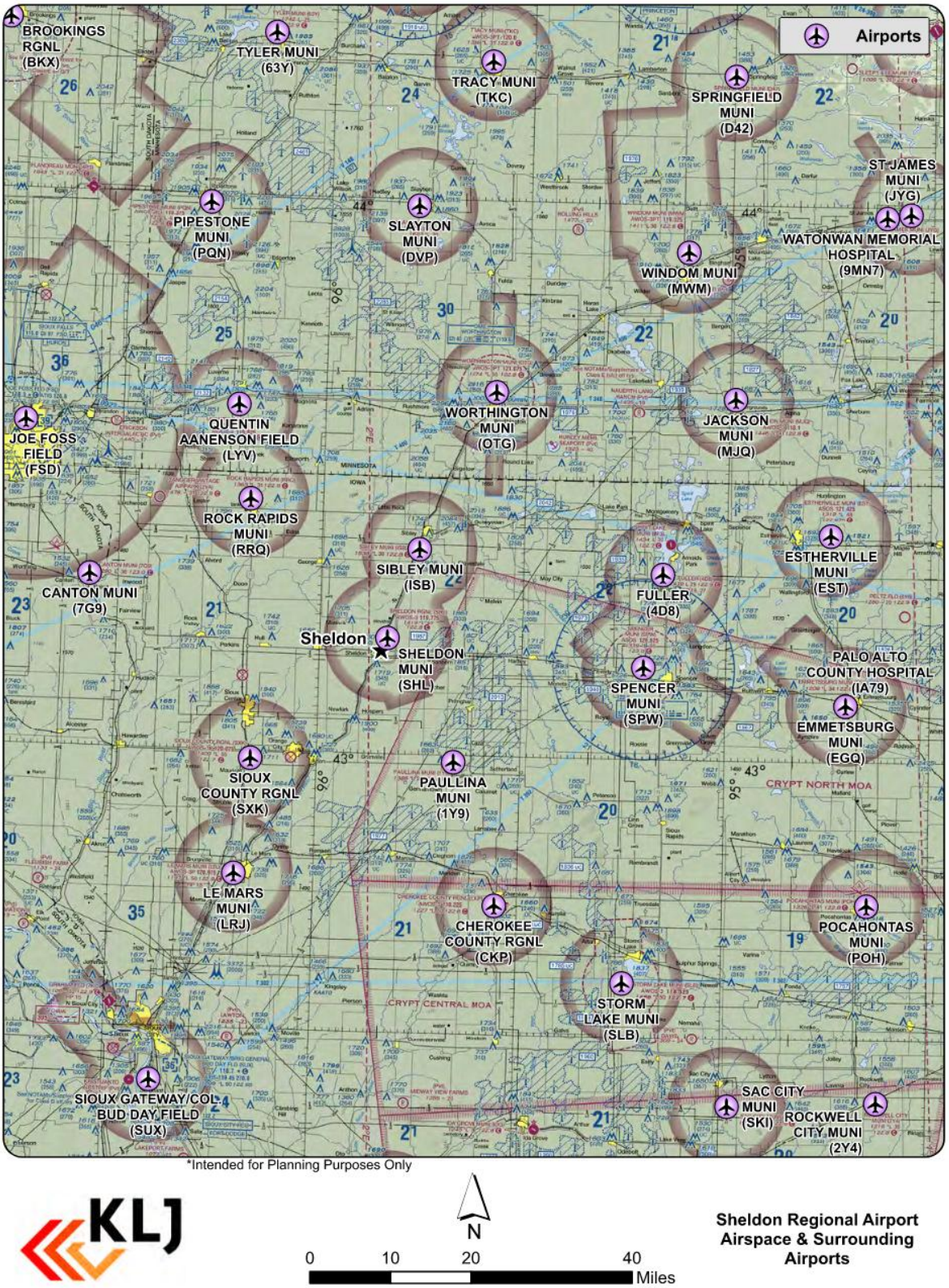
The airport is part of the National Plan of Integrated Airport Systems (NPIAS) as classified by the Federal Aviation Administration (FAA). NPIAS airports are vital to the national air transportation system. According to FAA standards, the airport is classified as a Local General Aviation Airport. The 2020 Iowa Aviation System Plan classified Sheldon as a General Service Airport. **Table 1-3** summarizes the airport's role and design. See **Appendix B: General Aviation Airports -101** for more details on FAA design classifications and State classifications.

Table 1-3 – Airport Role

Airport ID	City, State	State Classification	FAA Classification	Based Aircraft
SHL	**Sheldon, IA**	**General Service**	**Local**	**23**
SXK	Maurice, IA	Enhanced Service	Local	67
SPW	Spencer, IA	Enhanced Service	Regional	24
OTG	Worthington, MN	Key GA	Local	18
LYV	Luverne, MN	Intermediate Large	Local	26
LRJ	Le Mars, IA	General Service	Local	22
FSD	Sioux Falls, SD	Commercial Service	Primary Small Hub	93
SUX	Sioux City, IA	Commercial Service	Primary Non-Hub	57

Source: 2020 Iowa Aviation System Plan, 2022 MnSASP, 2020 SDSASP, basedaircraft.com

Figure 1-3 – Surrounding Airports



Airport Design

The FAA's Runway Design Code (RDC) identifies a design category based on aircraft wingspan, tail height and approach speed for aircraft types for each runway and its associated taxiway (if applicable). For Runway 15-33, the RDC was designed to be A/B-II. This means the runway for Sheldon is designed for aircraft approach speeds up to 121 knots and wingspans of up to 79 feet and tail heights of up to 30 feet.

Climate

The Sheldon Airport is located in a hot-summer humid continental climate zone. This climate zone is characterized by having distinct seasons with warm to hot humid summers and cold snowy winters. Sheldon reports an average annual temperature of 44.9°F from 1991-2020 with an annual precipitation of 31.09 inches and 40.8 inches of snow**.** The table below provides the normal conditions that are experienced throughout the year at Sheldon.

Table 1-4 – Average Weather

Month	Precipitation (in.)	Average Low Temperature (°F)	Average High Temperature (°F)
January	0.88	5.2	24.6
February	1.00	9.1	29.5
March	1.91	21.3	42.5
April	3.22	32.4	57.0
May	4.03	46.2	69.0
June	4.67	57.2	79.2
July	3.61	60.4	82.7
August	3.26	57.5	80.3
September	3.39	47.9	74.0
October	2.43	34.6	60.5
November	1.52	21.6	43.9
December	1.17	11.0	29.6

Source: National Weather Service Climate 1991-2020 – Sheldon, IA

Environmental Inventory

Introduction

This section provides an overview of environmental conditions and issues at the airport and the immediate vicinity. This environmental review section is not intended to fulfill the requirement of an environmental review required by National Environmental Policy Act (NEPA) or provide a definitive class of action determination for the proposed improvements. The purpose of considering environmental factors in airport master planning is to help thoroughly evaluate airport development alternatives and to provide information that will help expedite subsequent environmental processing. Appropriate environmental documentation in accordance with FAA Order 1050.1, *FAA National Environmental Policy Implementing Procedures* and US DOT Order 5610.1, *Procedures for Considering Environmental Impacts* required to be completed prior to commencing with project actions.

Key environmental resources are described for the existing airport area. **Figure 1-4: Environmental Overview Map** provides a graphical depiction of the existing environmental conditions described in this section.

Relevant Environmental Features

Biological Resources

Biological resources include the vegetation, wildlife, and habitat features present on and around airport property. Sheldon Municipal Airport is located within the Northwestern Iowa Loess Prairies and Des Moines Lobe region, as identified by U.S. Geological Survey ecoregion classifications. This area is characterized by gently rolling to nearly level terrain, fertile soils, and a landscape dominated by agricultural land uses, including row crop production, pasture, farmsteads, drainageways, and maintained grassed areas. Land surrounding the Airport consists primarily of cultivated cropland, pastureland, grassed areas, drainage ditches, and scattered shelter belts and farmsteads. Native prairie vegetation has largely been converted to agricultural production, although remnant prairie species may occur in undisturbed grassland areas.

The following is not intended to be a complete inventory of species in the area, but rather a representative list of wildlife that may occur on or near the airport. Mammals that may be present in the surrounding area include white-tailed deer, coyote, red fox, raccoon, striped skunk, opossum, cottontail rabbit, fox squirrel, and other small mammals typical of cropland, grassed areas, and drainage corridors. Bird species that may occur in the vicinity include Canada geese, ducks, hawks, owls, pheasants, wild turkey, crows, blackbirds, and other migratory and resident birds associated with open fields, wetlands, drainageways, and rural agricultural environments.

According to the U.S. Fish and Wildlife Services website, federally listed endangered, threatened, proposed or candidate species in O'Brien County include the Monarch Butterfly and Suckley's Cuckoo Bumble Bee. There are no Federal designated critical habits near the Airport. In accordance with Section 7 of the Endangered Species Act, if the FAA determines that an action *may affect* a threatened or endangered species, the FAA must initiate consultation with USFWS to review the effects of the action and may be required to prepare a biological assessment. Additionally, according to IPaC, there are likely Bald Eagles present in the area surrounding the Airport. There are no documented nesting sites, however the Airport is in a poorly surveyed area within IPaC. Prior to project implementation, further analysis is required to identify the potential for fish, wildlife and plant impacts because of any proposed projects.

Sources: U.S. Geological Survey (USGS) Ecoregion Classifications; U.S. Environmental Protection Agency (EPA) Level III and IV Ecoregions; Iowa Department of Natural Resources (IDNR) Iowa Wildlife Action Plan; USDA Natural Resources Conservation Service (NRCS) Web Soil Survey; U.S. Fish and Wildlife Services (USFWS) Information for Planning and Consultation (IPaC); and aerial imagery review.

Department of Transportation Section 4(F) and Section 6 (F)

Section 4(f) is applicable to projects which require the use of publicly-owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance.

There are no known publicly owned lands from parks, recreation areas, or refuge areas within the immediate vicinity of the Airport. The Sheldon Golf and Country Club is located approximately 0.5

miles east of the Airport and it is privately operated. Hill Park, a public park and campground is located approximately 1.5 miles southwest of the Airport. Further review of the potential to impact Section 4(f) resources specifically regarding potential cultural sites or historic properties would be required at the environmental documentation phase of any projects that would require ground disturbance.

Section 6(f) from the Land & Water Conservation Fund Act provides that the Secretary shall not approve any program or project which requires the use of state and local parks, lakes, trails, beaches, and conservation lands, unless: (1) if the request complies with Section 4(f), (2) information is provided that is needed to make findings required under Section 6(f), and (3) coordination is carried out with the NPS and the state agency responsible for the Section 6(f) property. A review of Land Water Conservation Fund grants for O'Brien County indicates that twelve grants have been issues for properties within the county. These properties are not located near the Airport. Proposed improvements are not anticipated to impact existing Section 6(f) properties; therefore, no further analysis is required.

Sources: U.S. Fish and Wildlife Services (USFWS) Information for Planning and Consultation (IPaC); U.S. Environmental Protection Agency (EPA) NEPAssist; Iowa Department of Natural Resources (IDNR) Wildlife Management Area Listing by County; Trust for Public Lands, The Land and Water Conservation Fund; and aerial imagery review.

Hazardous Materials

There are no reported spills or hazardous material releases at or near SHL. This conclusion is based on a review of Iowa Department of Natural Resources and U.S. Environmental Protection Agency databases, including records related to underground storage tanks, Superfund sites, and sites regulated under the Resource Conservation and Recovery Act. Before acquiring new land in fee title, the FAA recommends that the airport sponsor complete an Environmental Due Diligence Audit (EDDA). An EDDA provides a more detailed evaluation than a NEPA-level review to identify the potential presence of environmental contamination.

Sources: U.S. Environmental Protection Agency (EPA) NEPAssist; Iowa Department of Natural Resources (IDNR) Contaminated Sites; and aerial imagery review.

Solid Waste

The airport does not generate significant quantities of solid waste, such as garbage, refuse, or sludge, relative to the surrounding community. The FAA requires preparation of a Solid Waste Management Plan as part of this Airport Master Plan study. The Solid Waste study is included in **Appendix E: Recycling & Solid Waste Plan.**

Figure 1-4- Environmental Overview Map



Historical, Architectural, Archaeological, and Cultural Resources

A preliminary file search was completed for the Iowa Historic Property Inventory Database. Sheldon Regional Airport has been recorded but was not listed. There are no historic structures listed on the National Register of Historic Places (NRHP) within a one-mile radius of Sheldon Regional Airport. There is potential for undiscovered cultural resources to exist on and around the Airport. Additional research, including an updated field survey, may be necessary to adequately assess the area's potential to contain historic properties.

Before a project involving land disturbance is implemented, an inventory to identify the potential for cultural resources would need to be conducted for the project area. Coordination with the SHPO is necessary for projects involving land disturbance. Additionally, any project affecting buildings that have the potential to be listed in the National Register of Historic Places would require coordination with the SHPO.

Structures that are more than 50 years old may be eligible for inclusion in the NRHP. Because the airport opened in 1956, it is likely that some airport structures are more than 50 years old.

Projects that involve ground-surface disturbance in areas not previously disturbed by construction of the Airport will also need to be surveyed by a qualified archaeologist, and a determination of effect on historic properties would need to be obtained from the SHPO. Resolution of any adverse effects would need to be coordinated with the SHPO. Further review regarding potential cultural sites or historic properties may be required during the environmental documentation phase.

Sources: U.S. Environmental Protection Agency (EPA) NEPAssist; Iowa Economic Development (IED) Iowa Historic Property Inventory Database; and airnav.com/airport/KSHL.

Farmland

Impacts to farmlands considered to be prime, unique or statewide or locally important need to be considered under NEPA. The Farmland Protection Policy Act (FPPA) of 1981 provides protection to prime and unique farmlands. The Act defines prime farmland as land that has the best combination of physical and chemical characteristics 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. Statewide farmland is of statewide importance for the production of food, feed, fiber, forage, and oil seed crops, and is determined by state agencies.

Locally important farmland is where the production of food, feed, fiber, forage, and oilseed crops, are not identified as having national or statewide importance but identified by local agencies as important.

Land currently owned by the Airport is not subject to FPPA. A review of the USDA Natural Resources Conservation Service (NRCS) web soil survey identified land located around the Airport is listed as Prime Farmland with some areas listed as Farmland of statewide importance. Further consultation with NRCS would be required during a project 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.

Sources: U.S. Department of Agriculture (USDA) Web Soil Survey; and aerial imagery review.

Land Use

Compatible land uses are those that typically are 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. In general, SHL is surrounded by cultivated cropland, open space, drainageways, and scattered farmstead-type development. Overall, the airport vicinity does not contain high-density residential development, and the nearby homes (approximately nine) are dispersed within the surrounding agricultural landscape. The Floyd River is located approximately 800 feet off the Runway 33 end, and it is bordered by riparian vegetation that is likely to attract wildlife. Additionally, there are three ponds located approximately 1,500 to the southeast of the Runway 33 end.

Other land use considerations including surrounding physical land uses, airport zoning regulations and FAA airport design land use compatibility standards have been previously identified in this Chapter.

Sources: U.S. Department of Agriculture (USDA) Web Soil Survey; and aerial imagery review.

Water Resources

Wetlands

Wetlands are defined in Executive Order 11990, Protection of Wetlands, as those areas that are inundated by surface or groundwater with a frequency to support, and under normal circumstances does or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Three parameters that define a wetland as outlined in the US Army Corps of Engineers Wetland Delineation Manual are hydric soils, hydrophytic vegetation, and hydrology.

There are wetlands in the National Wetland Inventory (NWI) located on the Airport property. These include Riverine ditches, some of them have been farmed through and some are permanently vegetated. They drain the airfield towards the Floyd River to the southeast and run parallel to Runway 15-33. Prior to project implementation, wetlands would require a field delineation to clearly identify their boundaries. As noted earlier the Floyd River is bordered by riverine habitat including wetland areas. Coordination with USACE would need to be completed at the environmental documentation phase. 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. Please refer to **Figure 1-4**.

Sources: U.S. Fish and Wildlife Services (USFWS) National Wetland Inventory; and aerial imagery review.

Surface and Ground Waters

The Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977, provides the authority to establish water quality standards, control discharges into surface and subsurface waters, develop waste treatment management plans and practices, issue permits for discharges (Section 402) and for dredged or fill material (Section 404).

Airport activities can affect water quality. This is 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.

Drainage at SHL generally flows through a network of natural and modified ditches into the Floyd River, located south of the Airport. The Airport is located above the Dakota aquifer, which is not designated as a sole source aquifer.

Sources: U.S. Environmental Protection Agency (EPA) NEPAssist; US Geological Survey (USGS); and aerial imagery review.

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. Most of SHL is not located within a 100-year floodplain; however, the floodplain along the Floyd River encroaches onto airport property up to and including the approximately the southern 50 feet of Runway 15-33.

Floodplain coordination should be completed during project-level environmental review for any proposed improvements that would occur within or near the mapped Floyd River floodplain. This should include an evaluation of whether the project would involve fill, grading, drainage changes, or development within the floodplain, and determine whether local floodplain development permits, floodplain impact analysis, or mitigation measures are required. Coordination with the local floodplain administrator, Iowa DNR, and the FAA would be necessary before implementation.

Sources: U.S. Environmental Protection Agency (EPA) NEPAssist; US Department of Homeland Security (USDHS) Federal Emergency Management Agency (FEMA) Floodplain Maps; and aerial imagery review.

Environmental Features - Not Relevant

Air Quality Classification

The FAA Orders 1050.1 and US DOT 5610.1 outline procedures for determining when airport-related projects require an air quality analysis, and if so, what level of analysis may be necessary. The Airport is located within an area of attainment for all National Ambient Air Quality Standards (NAAQS); due to the small size of the airport and limited number of operations that would occur at the airport detailed analysis is very unlikely to be required.

Sources: U.S. Environmental Protection Agency (EPA) NEPAssist

Coastal Resources

Coastal Resources include Coastal Barriers and Coastal Zone Management. Coastal Barriers include islands that protect the mainland from storm or hurricane-driven winds or waves by providing a buffer to the shoreline. Coastal Barriers protect fish, wildlife, human life, and property along coasts and shorelines. Facilities are not recommended to be built within the Coastal Barrier Resource System (CBRS). Coastal Zone Management includes development provisions actions to protect major shorelines and associated recreational, historical, cultural, and aesthetic values. The area is not located near a coastal zone as defined in the Coastal Zone Management Act of 1972. No further analysis is required.

Source: U.S. National Oceanic and Atmospheric Administration (NOAA) Office of Coastal Management

Natural Resources and Energy

Impacts on energy supplies and natural resources are related to changes of stationary facilities, such as airfield lighting or terminal building heating and expansion, as well as any increase of fuel consumption by aircraft or ground vehicles. Proposed improvements at SHL would require additional energy but is not anticipated to cause significant impacts to energy supplies or natural resources. No further analysis is required.

Noise and Noise Compatible Land Use

Noise emitted from aircraft can significantly affect the well-being of people living or working near an airport. The FAA requires noise studies for certain projects. If a project involves Airplane Design Groups I and II and has forecasted operations of less than 90,000 annual propeller operations or 700 annual adjusted jet operations such as the case at SHL then no further noise analysis is required.

Source: U.S. National Oceanic and Atmospheric Administration (NOAA) Office of Coastal Management

Visual Impacts

Minor development projects at Sheldon Regional Airport are not expected to significantly impact the visual aesthetics of the area. The landscape and surrounding views, along with viewers' responses to scenic resources or man-made features, are unlikely to be noticeably affected. From the perspective of those viewing the airport from outside, any potential visual contrast or compatibility issues with nearby landforms and land uses are expected to be minimal.

Water Resources

Wild and Scenic Rivers

No designated Wild and Scenic Rivers are located near SHL. No direct or indirect impacts to wild scenic rivers would occur due improvement. No further analysis is required.

Source: U.S. National Park Service(NPS) Nationwide Rivers Inventory

Aviation Activity

The Aviation Activity Forecasts section of the Airport Master Plan analyzes current and future airport activity at the Sheldon Regional Airport. Forecasting provides an airport with a general idea of the magnitude of growth, as well as fluctuations in activity anticipated over the forecast period. They assist the Airport in determining existing and planned future facility needs based on airport activity level estimates and projections. Forecasts attempt to develop a realistic estimate of future changes.

Prior to 2024, the FAA required forecasting of annual airport operations and based aircraft as well as the critical design aircraft. This was a key approval point for the FAA where they would approve the forecast operations, based aircraft, critical design aircraft and airport layout plan.

Recently this has changed for airports like SHL where only the critical design aircraft and airport layout plan require FAA approval. On August 12, 2024, the FAA provided guidance regarding the requirement for forecasts developed for airport master plans. According to the guidance, for GA airports with less than 90,000 annual operations and not expected to exceed 90,000 operations in the foreseeable future, a detailed forecast is not warranted. SHL will remain below the 90,000 annual operations level. **As such, the Sponsor will not be seeking FAA forecast approval. The Critical design Aircraft will be the only element in this chapter approved by the FAA.** The remaining forecasting for this Airport Master Plan will be focused on practical elements that are still needed and listed as follows:

- Critical Design Aircraft (requires FAA approval);
- Based Aircraft (to determine the amount and type of hangar space needed);
- Annual Airport Operations (for pavement designs in the future); and,
- Peak Aircraft Operations (for apron and hangar space for itinerant aircraft) will be developed in Chapter 3.

The forecasting will use simple socioeconomic/demographic projections, quantifiable airport activity, and industry metrics used to determine activity. The forecasts developed for the airport will be important to adequately plan, size, and sequence development of future facilities to meet future projected growth.

It is important to point out that forecasts in this context are to demonstrate how much activity could likely occur at an airport through the planning period. In most cases, development at airports is based on actual demand rather than forecasts.

Forecast Rationale

Forecasting the demand for airport use is a critical step in airport development. It allows an airport to examine its ability to satisfy the needs of the aircraft and people it serves, and to determine the approximate timing of necessary improvements by projecting airport user activity levels. FAA provides general guidance in evaluating factors that affect aviation activity. FAA AC 150-5070-6B states:

> *"Planners preparing forecasts of demand or updating existing forecasts should consider socioeconomic data, demographics, disposable income, geographic attributes, and external factors such as fuel costs and local attitudes towards aviation."*

For the purpose of this forecast, the following defining factors have been used to develop the forecast:

1. Based on availability of data when the project began (March 2026), the last full year of data from 2025 has been used to establish the baseline year of 2026;
2. The forecast period is 20 years encompassing years through 2046; and,
3. The core airport service area is considered the City of Sheldon and O'Brien County.

The forecasts prepared for the airport assume an unconstrained scenario where facilities are available for use to meet demand. Time periods will be in 5-year increments, including:

- Short-Term (5-year);
- Mid-Term (10-year); and,
- Long-Term (20-year) resulting in forecasts for years 2031, 2036, 2041, and 2046.

Forecasting Methods

Various methodologies are used to develop aviation forecasts. Forecasts should not be considered predictions of the future but rather an educated projection of future activity. Some of the following forecasting methods were applied for this analysis, including trend extensions, socioeconomic methodologies, and professional judgment.

Trend Extensions - A trend extension forecast identifies historical growth patterns and projects those patterns into the future. Often, a trend line can be drawn through a graph of the historical data to reveal an overall trend, which can then be extended into the immediate future to develop a forecast.

Socioeconomic Methodologies - Socioeconomic information within the airport service area can provide insight into factors that affect aviation activity at an airport. Commonly evaluated metrics include population, employment, income, gross regional product, and retail sales. Historic trends, current data and forecast estimates are also evaluated in this section to identify socioeconomic trends that may affect aviation activity forecasts at the airport. Growth rates are used as a method to compare the airport service area to other regional, statewide, and national trends.

Professional Judgement - Judgmental methods are educated estimations of future events based on the industry knowledge, experience, and intuition of the forecaster. This method permits the inclusion of a broad range of relevant information into the forecasting process and is usually used to refine the results of the other methods.

Socioeconomic Data

Socioeconomic information within the airport service area can provide insight into factors that affect aviation activity at an airport. Commonly evaluated metrics include population, employment, income, gross regional product, and retail sales. Historic trends, current data and forecast estimates are evaluated in this section to identify socioeconomic trends that may affect aviation activity forecasts at SHL. Growth rates are used as a method to compare the airport service area to other regional, statewide, and national trends. For purposes of this study analysis, O'Brien County has been determined to represent the core local airport service area.

Population

Population is a basic indicator of the number of people who may utilize the airport. The City of Sheldon is in O'Brien County. Based on data from the United States Census Bureau, the population of Sheldon is estimated to be 5,575 in 2025.

Table 1-5 – Population

Year	O'Brien County	Iowa	United States
2005	14,552	2,964,454	295,516,551
2010	14,395	3,051,415	309,237,089
2015	14,223	3,136,151	321,748,258
2020	14,149	3,191,141	331,501,080
2025	14,238	3,252,439	340,970,909
Historical CAGR	-0.109%	0.465%	0.718%
2026 (Baseline)	*14,215*	*3,263,176*	*343,219,326*
2031	*14,069*	*3,312,197*	*354,251,908*
2036	*13,865*	*3,352,080*	*364,854,115*
2041	*13,607*	*3,381,808*	*374,914,320*
2046	*13,331*	*3,408,355*	*385,084,797*
Future CAGR	-0.321%	0.218%	0.577%

Source: Woods & Poole Economics, U.S. Census Bureau. Note: CAGR = Compound Annual Growth Rate

Income

Per Capital Personal Income (PCPI) was also considered as a factor affecting aviation activity. Those who have more disposable income may have a higher propensity to utilize the time savings of aviation, or simply more disposable income for leisure. O'Brien County historically has shown growth in PCPI at a rate of 1.542% and continues to grow through the end of the planning period at a rate of 1.374%. This growth is slightly higher than the state of Iowa, and similar to the U.S growth rates.

Table 1-6 – Per Capita Personal Income (in 2017 Constant Dollars)

Year	O'Brien County	Iowa	United States
2005	$39,484	$39,464	$41,286
2010	$44,631	$42,193	$42,497
2015	$52,406	$46,706	$47,265
2020	$51,661	$50,287	$53,178
2025	*$53,620*	*$53,493*	*$56,400*
Historical CAGR	1.542%	1.532%	1.572%
2026 (Baseline)	*$54,490*	*$54,244*	*$57,334*
2031	*$58,698*	*$57,886*	*$62,109*
2036	*$62,903*	*$61,528*	*$67,074*
2041	*$67,238*	*$65,345*	*$72,253*
2046	*$71,595*	*$69,288*	*$77,546*
Future CAGR	1.374%	1.231%	1.521%

Source: Woods & Poole Economics. Note: CAGR = Compound Annual Growth Rate

Employment

Total employment is the measure of the active workforce. O'Brien County has a strong healthcare, retail and governmental based economy. The sum of these three industries make up approximately 28 percent of the workforce. Healthcare is the largest source of employment in the area, totaling 15 percent of the workforce.

Table 1-7 – Airport Service Area Employment (2025)

Industry	Employment	Earnings
Health Care and Social Assistance	1,358	$57,184,000
State and Local Government	1,075	$48,017,000
Retail	891	$23,102,000
Farming	833	$78,332,000
Manufacturing	792	$53,523,000
Wholesale Trade	625	$39,967,000
Transportation and Warehouse	524	$38,160,000
Finance & Insurance	491	$21,184,000
Other Services (Except Public Administration)	455	$15,689,000
Accommodation and Food Services	422	$6,293,000
Construction	411	$15,742,000
Real Estate and Rental	350	$7,452,000
Professional and Technical Services	317	$19,521,000
Forestry, Fishing, Related Activities	243	$7,721,000
Administrative and Waste Services	165	$6,171,000
Information	91	$3,565,000
Educational Services	83	$2,141,000
Arts, Entertainment and Recreation	76	$610,000
Federal Military	49	$1,801,000
Federal Civilian Government	42	$3,108,000
Mining	22	$147,000
Utilities	19	$2,978,000
Management of Companies	-	-
All Industries	**9,334**	**$452,408,000**

Source: Woods & Poole Economics (2017 Dollars)

Table 1-8 – Total Employment (in thousands)

Year	O'Brien County	Iowa	United States
2005	8,835	1,933,934	172,338,384
2010	8,950	1,950,433	172,901,669
2015	9,500	2,059,823	190,235,797
2020	9,086	2,009,822	190,776,766
2025	*9,334*	*2,172,861*	*218,184,052*
Historical CAGR	0.275%	0.584%	1.186%
2026 (Baseline)	*9,373*	*2,118,851*	*220,967,616*
2031	*9,534*	*2,264,216*	*234,706,794*
2036	*9,655*	*2,335,003*	*248,186,416*
2041	*9,738*	*2,404,242*	*261,485,886*

2046	*9,792*	*2,473,897*	*274,749,842*
Future CAGR	0.219%	0.614%	1.095%

Source: Woods & Poole Economics. Note: CAGR = Compound Annual Growth Rate

National Aviation Activity

At a national level, the FAA annually reviews a range of historic aviation activity and generates a 20-year forecast. The latest forecast has been issued for the period of 2026-2046 based on federal fiscal year. Relevant elements of this forecast for the airport have been summarized in the following tables and graphs.

Table 1-9 – Active General Aviation Aircraft

Year	Single Piston	Multi Piston	Turbo Prop	Turbo Jet	Rotor	Exprmt	Light Sport
2010	139,519	15,900	9,369	11,484	10,102	6,514	24,784
2015	127,887	13,254	9,712	13,440	10,506	7,220	27,922
2020	124,059	11,947	10,317	15,316	9,746	6,816	26,367
2025	126,915	11,545	11,985	17,385	10,710	7,705	28,825
CAGR	-0.63%	-2.11%	1.66%	2.80%	0.39%	1.01%	-4.66%
2026	126,535	11,480	12,040	17,970	10,825	7,810	29,635
2031	125,180	11,205	12,420	21,100	11,595	8,480	31,200
2036	124,500	11,035	12,880	24,585	12,560	9,330	32,265
2041	124,540	10,965	13,555	28,250	13,605	10,275	33,255
2046	125,385	11,035	14,355	32,090	14,665	11,235	34,295
CAGR	-0.05%	-0.20%	0.88%	2.94%	1.53%	0.73%	2.85%

Source: FAA Forecast 2026-2046 Table 28. Note: CAGR = Compound Annual Growth Rate

Table 1-10 – General Aviation Hours Flown (Thousands)

Year	Single Piston	Multi Piston	Turbo Prop	Turbo Jet	Rotor	Exprmt	Light Sport
2010	12,161	1,818	2,325	3,375	3,405	1,226	311
2015	11,217	1,608	2,538	3,837	3,411	1,295	191
2020	11,603	1,336	2,344	3,336	3,454	1,176	202
2025	14,518	1,529	3,039	5,441	2,949	1,372	434
CAGR	1.19%	-1.15%	1.80%	3.24%	-0.97%	0.75%	2.25%
2026	14,171	1,519	3,136	5,653	2,994	1,426	432
2031	12,955	1,504	3,399	6,675	3,054	1,581	457
2036	12,880	1,511	3,562	7,754	3,118	1,659	510
2041	13,050	1,532	3,761	8,970	3,181	1,736	571
2046	13,411	1,573	3,978	10,390	3,250	1,813	643
CAGR	-0.28%	0.17%	1.20%	3.09%	1.93%	1.21%	2.01%

Source: FAA Forecast 2026-2046 Table 29

Table 1-11 – Gallons of Fuel for General Aviation (Millions)

Year	Single Piston	Multi Piston	Turbo Prop	Turbo Jet	Rotor Piston	Rotor Turbine	Exprmt	Light Sport
2010	133	54	187	1,123	11	125	22	1
2015	128	40	191	1,063	10	128	15	1
2020	146	35	201	1,036	8	105	14	1
2025	163	44	242	1,582	10	119	29	2
CAGR	1.3%	-1.4%	1.7%	2.3%	-0.7%	-0.3%	2.1%	2.1%
2026	159	43	249	1,629	10	122	30	2
2031	144	42	264	1,871	10	136	32	2
2036	143	42	266	1,922	10	139	33	2
2041	143	42	267	1,968	10	142	33	2
2046	143	42	269	2,020	10	144	32	2
CAGR	-0.45%	-0.05%	0.78%	2.56%	0.71%	1.64%	-0.25%	1.81%

Source: FAA Forecasts 2026-2046 Table 31

Aircraft Operations

While not seeking FAA approval for this planning study, establishing an annual operations forecast allows the airport to plan for various facilities such as runways, taxiways and aircraft parking areas.

An operation is an aircraft landing or takeoff. Aircraft operations are split into two categories; local and itinerant. Local operations are performed by aircraft that remain in the local traffic pattern and stay within a 20−mile radius. These operations typically include practice landings, touch-and-go operations, practice approaches and maneuvering within the local area. Local operations are usually performed by recreational and flight training aircraft. Itinerant operations are performed by a landing aircraft arriving from outside the airport area (20 miles) or a departing aircraft that leaves the airport area. Itinerant operations are conducted in all types of aircraft.

At non-towered airports such as Sheldon, compiling verified aircraft operations can be difficult. Any aircraft operating with an instrument flight plan can be verified through the FAA Traffic Flow Management System (TFMS). It is important to point out that in examining the detailed TFMS data there are many times when, for example, a specific N-number aircraft will depart to a destination from SHL and then just a short time later will depart again for a destination. The aircraft clearly arrived back to SHL between the two departures but was not recorded in FAA's TFMS. To partially correct for this, the operations by aircraft type are rounded up to an even number. 3 becomes 4; 11 becomes 12; 31 becomes 32; and so forth. While an exact examination of operations is not conducted, this methodology is used to more accurately create a realistic baseline of TFMS operations. See **Table 1-17 – Historical Aircraft Design Characteristics by Year (TFMS)**.

Since TFMS only includes instrument flight plans, it is common for smaller aircraft to operate visual only and thus not be included. To measure this activity, airport manager observations and other available means will help provide additional information on aircraft operations.

Baseline

The baseline number of operations was determined by using the 884 verified TFMS operations which are all itinerant. This includes the based jet operator, as well as occasional air ambulance aircraft. It was reported that several military helicopters fly through several times a year which is

estimated to be 18 operations annually. Due to Sheldon's proximity to flight schools in the area, it can be assumed they receive occasional flight training traffic. It is estimated there are approximately 200 annual operations of flight training aircraft and will be classified as local when they are conducting flight training activities. There are 18 non-jet based aircraft at Sheldon. It was estimated that these aircraft fly approximately 3 times per month which then totals 1,296 operations. Of these operations, approximately 500 will be classified as local to account for owners remaining in the traffic pattern as is common with pilot certificate currency. The sum of these operations total 2,398, however this will be rounded to 2,400 operations. **Table 1-12** shows the various types of operations. Approximately 1,700 of these annual operations are classified as itinerant while the remaining 700 operations are local.

Table 1-12 –Aircraft Operations by Type

Category	2026
TFMS	884
Based Aircraft	1,296
Military	18
Flight Training	200
Total	**2,398**

Source: KLJ Analysis, TFMSC

Forecast

Operations at Sheldon are expected to grow over the 20-year planning period. The FBO based at SHL operates a charter and medical transport business which includes three jets and one turboprop and expects to continue to grow with near-term plans to acquire additional jets. The total of their operations are captured in the TFMS data which have grown at a rate of 2.97 percent annually since 2019. This rate will be used to forecast the operations of the based operator through the planning period. Flight training and based aircraft activity will be forecasted to grow at a rate of 1.37 percent. This is based on the Per Capita Personal Income (PCPI) for O'Brien County which indicates more disposable income for flight training, recreational flying and aircraft ownership.

It is expected that by 2046, there will be 3,600 annual operations at Sheldon for an approximate annual growth rate of 2.05 percent. The ratio of local and itinerant operations, as discussed in the baseline year operations section is expected to continue through the 20-year period. The table below shows the expected growth by type of operation.

Table 1-13 Forecasted Annual Operations

Category	2026	2031	2036	2041	2046	CAGR
Local	700	780	860	950	1050	**2.05%**
Itinerant	1,700	1,890	2,090	2,300	2,550	**2.05%**
Total	**2,400**	**2,670**	**2,950**	**3,250**	**3,600**	**2.05%**

Source: KLJ Analysis. Note: Numbers are rounded

Based Aircraft

A based aircraft is an operational and airworthy aircraft claiming an airport as its home for most of the year. Knowing the number and types of based aircraft helps the airport assess the existing and future aircraft storage needs. The National Based Aircraft Inventory Program (NBAIP) allows airports to report these aircraft. If multiple airports claim an aircraft as based, that aircraft will not be validated until either airport releases their claim.

Existing

According to the National Based Aircraft Inventory report which was last confirmed in September of 2025, there are validated 21 aircraft based at the airport. The make up of these aircraft are provided in **Table 1-14** and show how the 21 based aircraft will serve as the baseline for this planning study.

Table 1-14 Based Aircraft Fleet Mix

Aircraft Type	Based Aircraft	Percent of Total
Piston (Single)	12	57%
Piston (Multi)	1	5%
Turboprop	5	24%
Jet	3	14%
Helicopter	0	0%
Ultralight/Other	0	0%
Total Based Aircraft	21	100%

Source: NBAIP Report 9/2025

Future

Based aircraft will be forecasted through the planning period which will provide a basis to plan and preserve space for additional hangar storage at SHL. The FBO that owns and operates three jets at SHL has near-term plans to acquire an additional jet (C650) and expects to add additional jets in the coming years including another C650 or possibly a CL60, however there is currently no hangar space for additional larger jets to be stored at the airport. In the past, the airport did have a wait list for hangar space, however the list is now empty as previous tenants have moved out of hangars. It should be noted that airport users stated the existing T-Hangars do not have sufficient depth to accommodate larger aircraft.

Piston engine and turboprop aircraft are forecasted to grow at the same rate as PCPI for O'Brien County. More disposable income leads to a higher propensity to purchase aircraft and lease hangar space. An additional two jets are expected to be added to the based operator's fleet within the next five years. **Table 1-15** shows an unconstrained scenario of based aircraft growth at SHL if runway length and airfield facilities were sufficient to accommodate these larger jet aircraft. This would result in the addition of 11 based aircraft by 2046.

Table 1-15 Based Aircraft Forecast (Unconstrained)

Aircraft Type	2026	2031	2036	2041	2046	
Piston (Single)	12	13	14	15	16	1.37%
Piston (Multi)	1	1	1	1	1	1.37%
Turboprop	5	5	6	6	7	1.37%
Jet	3	5	6	7	8	5.03%
Helicopter	0	0	0	0	0	0.00%
Ultralight/Other	0	0	0	0	0	0.00%
Total	21	24	27	29	32	2.07%

Source: KLJ Analysis

In a constrained scenario, where larger jet aircraft such as the CL60 are limited in their ability to operate or be stored at SHL, based aircraft could increase by seven additional aircraft by 2046, for a total of 28. This would result in a growth rate of approximately 1.38 percent annually. This will be the methodology that is used for the Future Based Aircraft forecast although the Mater Plan will look to accommodate aircraft in size and numbers beyond either of these scenarios.

Table 1-16 Based Aircraft Forecast (Constrained)

Aircraft Type	2026	2031	2036	2041	2046	
Piston (Single)	12	13	14	15	16	1.37%
Piston (Multi)	1	1	1	1	1	1.37%
Turboprop	5	5	6	6	7	1.37%
Jet	3	4	4	4	4	1.45%
Helicopter	0	0	0	0	0	0.00%
Ultralight/Other	0	0	0	0	0	0.00&
Total	21	23	25	26	28	1.38%

Source: NBAIP, KLJ Analysis

Critical Design Aircraft

The critical design aircraft is identified as the most demanding aircraft or family of aircraft to regularly use the airport. According to FAA AC 150/5000-17, *Critical Aircraft and Regular Use Determination* a critical design aircraft type or family must operate at least 500 annual operations at the airport to be considered 'regular use' and approved by the FAA. Critical Design Aircraft determines the standards that will be applied to the airport and justification for FAA funding. As SHL receives less than 90,000 operations annually and is not expected to exceed 90,000 annual operations through the end of the planning period, **the airport will only seek FAA approval for the existing and future critical aircraft and will not seek approval for the remainder of the forecast.**

Existing

Typically, larger and heavier aircraft operate exclusively under an IFR flight plan. These IFR operations are captured under TFMSC data and are helpful in determining the Critical Design Aircraft. Data from 2025, the last full year of data, was evaluated along with stakeholder outreach to establish the existing critical design aircraft at Sheldon. The operator based at the airport owns three jets, a C550 (AAC-B, ADG-II, TDG-2A) and two C650's (AAC-C, ADG-II, TDG-1B). In 2025, there

were 396 operations of AAC-C aircraft and 288 operations of AAC-B aircraft. Since AAC-C aircraft operations do not meet the regular use threshold of 500 or more annual operations, the operations from the next most demanding AAC-B were incorporated to exceed the regular use threshold. There were 622 operations of ADG-II aircraft which exceeds the regular use threshold. As such, the existing critical design aircraft at SHL will be **AAC-B, ADG-II, TDG-1B, Large (greater than 12,500 pounds.**

Table 1-17 shows historical TFMSC operations by aircraft design characteristics indicating an increase in AAC-C aircraft which is in line with the fleet plans of an operator based at Sheldon. **Table 1-18** shows the operations by aircraft design characteristics for the baseline year.

Table 1-17 – Historical Aircraft Design Characteristics by Year (TFMS)

Category	2019	2020	2021	2022	2023	2024	2025
Airplane Approach Category (AAC)							
A	138	124	166	284	248	298	202
B	602	396	538	464	272	180	288
C	2	30	184	258	258	368	396
Airplane Design Group (ADG)							
I	478	256	348	464	302	308	264
II	264	294	540	542	476	538	622
Taxiway Design Group (TDG)							
1-A	262	154	196	318	272	296	220
1-B	4	34	184	266	266	368	396
2-A	476	362	508	422	240	182	270
Total Ops	742	550	888	1006	778	846	884

Source: FAA TFMS (January 2019- 2025). Note: Numbers rounded to nearest even value.

Table 1-18 Existing Annual Operations by Critical Design Aircraft Characteristics

AAC		ADG		TDG		MTOW	
A	202	I	264	1-A	220	≤12,500 lbs	282
B	288	II	622	1-B	396		
C	396	III	0	2-A	270	>12,500 lbs	602

Source: TFMSC, NOTE: Shading indicates operations exceeding regular use threshold

Future

Based on the fleet plans of primary users of the airport, including near term plans to acquire additional C650 aircraft and the possibility of acquiring larger aircraft similar to the CL60 in the future, the critical design aircraft will be **AAC-C, ADG-II, TDG-1B, Large (greater than 12,500 pounds).** Due to these potential acquisitions and historical growth of AAC C aircraft at the airport, it is expected SHL will continue to see an increase in C-II aircraft operations through the planning period at a rate of 2.97 percent which represents the historical growth in TFMS operations from 2019-2025. TFMS data from the most recent 12 months of available data, May 2025 through April 2026, also supports this transition with 420 operations of AAC-C aircraft and 255 operations of AAC-B aircraft. Operations of C-II aircraft at this growth rate could reach the regular use threshold around 2036. **Table 1-19** shows the growth of C-II, TDG 1B aircraft through the planning period.

Table 1-19 Future Critical Design Aircraft Growth

Design Characteristics	2026	2031	2036	2041	2046	CAGR
AAC-C	396	458	530	614	710	*2.97%*
ADG-II	622	720	834	966	1,118	*2.97%*
TDG-1B	396	458	530	614	710	*2.97%*

Source: 2025 TFMSC, KLJ Analysis

Figure 1-5 – Existing and Future Critical Design Aircraft Family

ARC B-II		ARC B-II	
B200		C550	
ARC C-II		**ARC C-II**	
CL60		C650	

Photography Source: Airliners.net and FlightAware

Forecast Summary

Table 1-20 – Aviation Activity Forecast Summary

	Activity Levels					
Forecast Levels	**2026**	**2031**	**2036**	**2041**	**2046**	**CAGR**
Operations						
Itinerant	700	780	860	950	1050	2.05%
Local	1,700	1,890	2,090	2,300	2,550	2.05%
TOTAL OPERATIONS	**2,400**	**2,670**	**2,950**	**3,250**	**3,600**	**2.05%**
Based Aircraft						
Single Engine	12	13	14	15	16	1.37%
Multi Engine	1	1	1	1	1	1.37%
Turboprop	5	5	6	6	7	1.37%
Turbojet	3	4	4	4	4	1.45%
Helicopter	0	0	0	0	0	0.00%
Other	0	0	0	0	0	0.00&
TOTAL BASED AIRCRAFT	**21**	**23**	**25**	**26**	**28**	**1.38%**

Source: KLJ & Consultant Analysis. Note: Some figures are rounded

Critical Design Aircraft Approval

The FAA approved the Existing and Future Critical Design Aircraft prepared in this chapter on July 30th, 2026, for use in this master planning effort. See **Figure 1-6** for the Critical Design Aircraft Approval Letter.

Figure 1-6 – Critical Design Aircraft Approval Letter

U.S. Department
of Transportation

Federal Aviation Administration

Central Region
Iowa, Kansas
Missouri, Nebraska

1100 Main St. Suite 800
Kansas City, Missouri 64105
(816) 329-2600

July 30, 2026

Mr. Todd Uhl
Director of Public Works
City of Sheldon
416 9th Street
Sheldon, IA 51201

Dear Mr. Uhl:

Forecast/Critical Design Aircraft Approval
Sheldon Municipal (SHL), Sheldon, IA
AIP No. 3-19-0081-021-2025

The documentation submitted to be used as the Aviation Demand Forecast is Approved.

The proposed existing Critical Design Aircraft, **B-II Aircraft Family**, is **Approved**. The proposed ultimate Critical Design Aircraft, **C-II Aircraft Family**, is **Approved**.

You may proceed with developing the remainder of the report and the Airport Layout Plan drawings. If you have any questions regarding this project, please call me at (816) 329-2622 or via email at junior.e.lindsay@faa.gov.

Sincerely,

Junior E. Lindsay, C.M.
Iowa State Planner