Mountain View
COUNTY

DRAFT
OLDS-DIDSBURY AIRPORT AREA STRUCTURE PLAN

BYLAW NO. XX/24

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1.0 INTRODUCTION

This Area Structure Plan provides background information and the implementation policies for the Olds-Didsbury Airport for the growth and development of the facility and for the opportunities it will create for the community.

1.1 BACKGROUND

The airport is located in Mountain View County, Alberta, between the towns of Olds and Didsbury, just west of Highway 2A (see Figure 1). The surrounding land use is predominantly mixed agriculture with the Mountain View County administration building located immediately to the northeast.

The land west of the airport has been identified for future business park with an airside component. The vision for the business park is for a high end, campus style development with both aviation and non-aviation related uses to serve as an economic development opportunity in the county.

The airport was originally constructed in 1982 by the Alberta Government. In 1996, ownership was transferred jointly to the Town of Olds and the Town of Didsbury. Ownership was then transferred to Mountain View County as of January 1, 2005 with an agreement with all current tenants and hangar owners to subdivide and sell the individual lots to the current tenants at a set price and all other lands to be sold at market value.

The Olds-Didsbury Airport (as it will continue to be known) has very few restrictions in terms of either air space or land. As such, there is land for future runway extension. The airport lands and the quarter section to the west are owned by the County. The half section to the north of the airport is under private ownership. Past economic development studies (Stantec and Preiksaitis) have identified this entire section of land for future development. The airport provides a focus for early phases of this development.

1.2 LAND OWNERSHIP

When the County took over ownership of the airport in 2005, there was a commitment to existing hangar owners to subdivide and sell the airport lots to them, while keeping the airport infrastructure under County ownership. Since this time, 49 individual lots have been created as part of Phase I of the airport's development. At the time of this ASP Review, 34 hangar lots have been developed and only 7 vacant lots remain available for purchase. A review of title ownership indicates that approximately 41% of lots are owned privately, approximately 41% are owned by businesses and 4% are owned by associations. .

1.3 MUNICIPAL GOVERNMENT ACT

The Olds-Didsbury Airport Area Structure Plan has been prepared in accordance with the Municipal Government Act (MGA) (Revised Statutes of Alberta 2000, Chapter M-26). The Act enables municipalities to adopt ASPs to provide a framework for future subdivision and development of an area. Section 633 of the Act relates specifically to ASPs.

(1) For the purpose of providing a framework for subsequent subdivision and development of an area of land, a council may, by bylaw, adopt an area structure plan.

(2) An Area Structure Plan

a. must describe:

i. the sequence of development proposed for an area,

ii. the land uses proposed for the area, either generally or with respect to specific parts of the area,

iii. the density of population proposed for the area either generally or with respect to specific parts of the area, and

iv. the general location of major transportation routes and public utilities, and

b. May contain any other matters, including matters relating to reserves, as council considers necessary.

The requirements of the Municipal Government Act have been followed in the preparation of the Olds-Didsbury Airport ASP.

1.4 PROCESS

Mountain View County saw the need for a long-range plan, in order to encourage orderly development of the airport site. This ASP identifies the lands for future development, airport expansion, and operation and regulations to control future development both on the airport and in the adjoining business park.

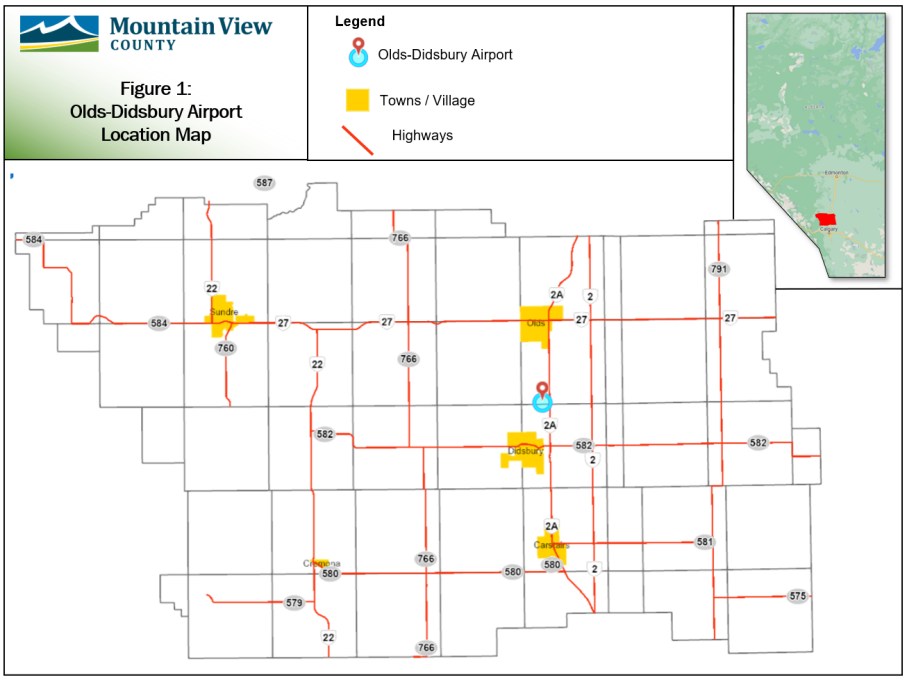
It was determined that an ASP was the appropriate format for this long range plan as it is a statutory planning document and ensures a public process for adoption and amendment. This also places the document in the public for all future landowners to view and understand the guidelines and direction for growth and development within the County. The following summarizes the public consultation process.

1.4.1 Airport Steering Committee

The Aviation Advisory Committee was established to provide guidance to the County on the management, maintenance and development of the Olds-Didsbury Airport. This committee consisted of a diverse representation of members that included the Reeve, one Council member and six members at large. Members of the Aviation Advisory Committee were requested to also become Steering Committee members for the 2022-2023 ASP Review, as their understanding of the airport and expertise in aviation would be an asset in determining the future use and conceptual plan for the airport.

1.4.2 Community Consultation

An Open House was held on January 16, 2024 at Mountain View County's Administrative Building to present the draft version of the Amended ASP.



1.5 ROLE OF THE AIRPORT

With both the Sundre and Olds-Didsbury Airports under ownership and control of Mountain View County, it is important to clearly establish the role for each airport. In 2002, the Sundre Airport Development Plan was completed. This document determined that the role of the Sundre Airport was as the premier recreational airport in west central Alberta, providing opportunities for residential lots with connection to adjacent residential facilities and affordable recreational use (no landing fees).

Studies completed at the Olds-Didsbury Airport acknowledge that this site is well suited for business and economic development, building a supportive business infrastructure around the airport. Located along the Highway 2A corridor, halfway between the growing towns of Olds and Didsbury, there are many opportunities for complimentary development. Therefore, the role of the Olds-Didsbury Airport is as a high-end air supported business park to serve south central Alberta. While scheduled passenger flights are not envisioned at the airport, a wide variety of opportunities exist for airport related businesses.

1.6 OBJECTIVES

Mountain View County commissioned the services of Explorer Solutions to complete the Olds-Didsbury Airport Development Plan (ODADP), dated May 14th, 2020, to provide "a long-term vision in order to guide the future development of the airport and its lands" (Explorer Solutions, 2020, p.3). The objectives for the Olds-Didsbury ASP have been adapted from the objectives listed in the ODADP and are listed below:

1. Establish a long-term vision for the future development of the airport that will support future economic growth, while also complimenting the surrounding community.

2. Establish policies to protect the lands surrounding the airport to allow for future airport expansion.
3. Provide guidance for the efficient use of airport lands and to support future development that maintains and improves present standards of safety and appearance of the facility.

1.7 GOALS

Based on the discussion of the Aviation Advisory Committee, the goals for the Olds-Didsbury Airport are:

1. Develop Olds-Didsbury Airport to be an important community airport for recreational and business travel.
2. Encourage high-end businesses with the opportunity for both aviation related and non-aviation related development.
3. Develop land use policies that will protect the future growth of the airport.
4. Encourage sustainable development utilizing conservation principles.

1.8 GUIDING PRINCIPLES

An ASP directs future decision making for the future development of the airport and encourages efficient use of the lands. In order to accomplish the goals, objectives and the vision for the Olds-Didsbury Airport, the following guiding principles are provided:

1. **Safety** – the primary guiding principle is the safe operation of the airport. .
2. **Viability** – determine the best strategies for managing the future expansion of the airport that will ensure the future viability.
3. **Public Service** – the airport is not a private airport and is open and available to all pilots and aircraft. The airport will continue to be a registered aerodrome under Transport Canada regulations until such time as Transport Canada requires certification.
4. **Community Benefit** – the airport and associated business park development will benefit the community through taxes paid, services rendered and availability for public use and enjoyment.
5. **Sound Management** –develop policies that will guide land use and development surrounding the airport to mitigate issues related to noise generated from aircraft.

2.0 REGULATORY AND LEGISLATIVE PARAMETERS

2.1 MUNICIPAL

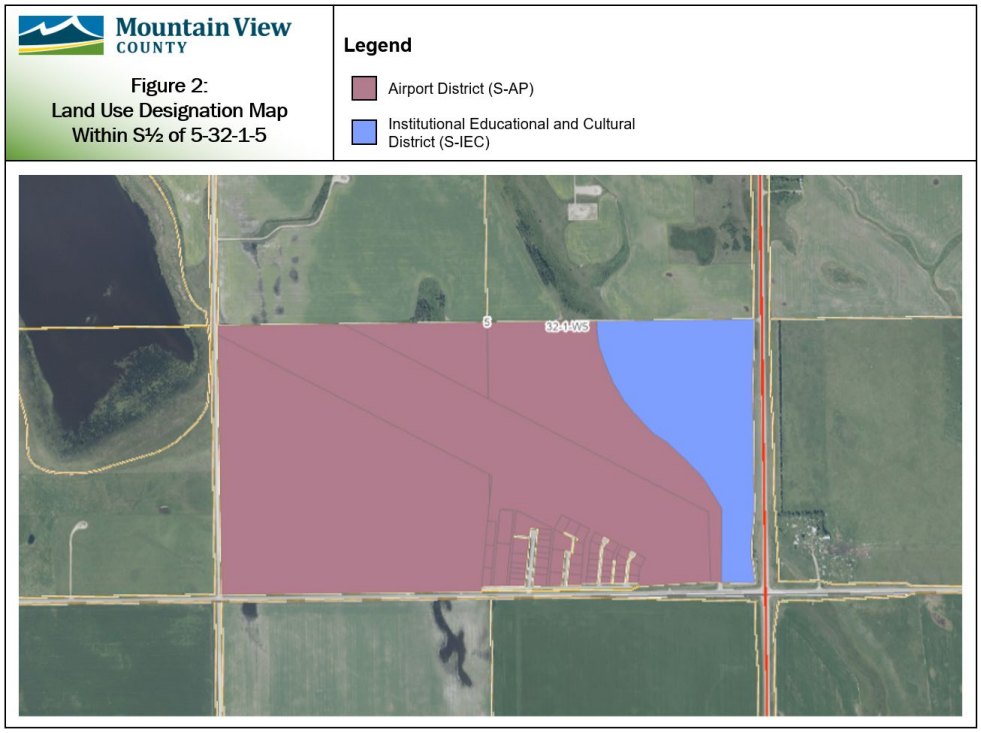
The County regulates land use and development through their Municipal Development Plan, ASPs, and the Land Use Bylaw (LUB).

2.1.1 Municipal Development Plan (MDP)

The MDP is the long-range planning document for the municipality. It deals with all aspects of growth and development. The MDP remains general in order to provide strategic direction to the entire municipality. Mountain View County's current MDP was adopted by Council on December 9th 2020, that identifies the Section 5-32-1-5 as an Economic Node.

2.1.2 Land Use Bylaw (LUB)

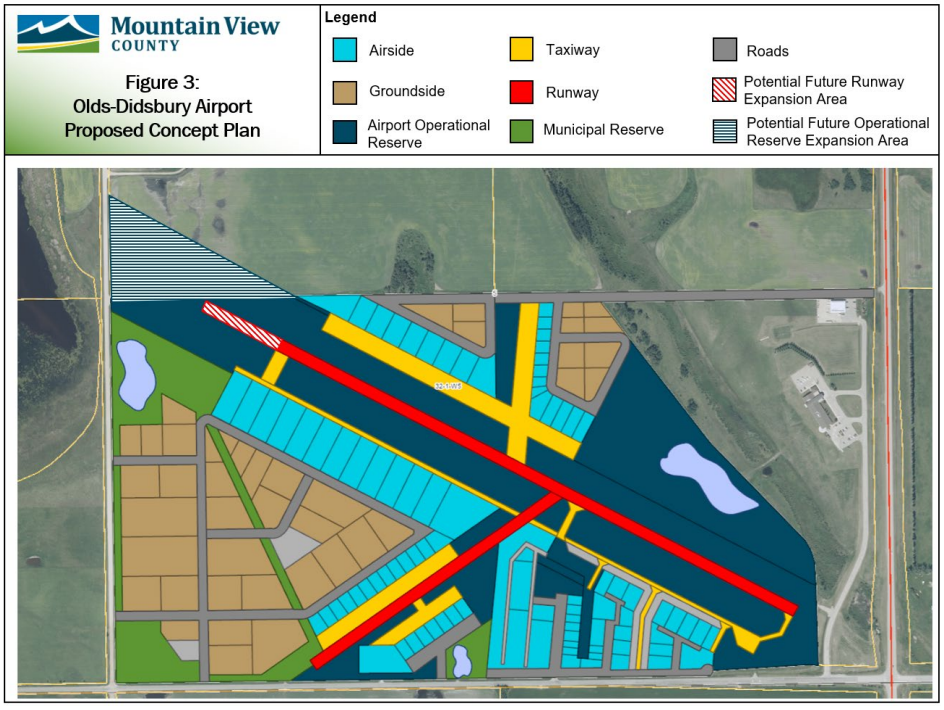
The Olds-Didsbury Airport is located within the south half of Section 5-32-1-5. The airport's current footprint, as well as lands for the airport's future phases, have been designated Airport District (S-AP) and is shown in Figure 2 below. A full description of exempt, permitted and discretionary uses for airports lands are listed in the Land Use Bylaw (LUB), as amended from time to time. The LUB also includes Height Limitations and Noise Exposure Projection mapping, which were developed to help inform when proposed development within or surrounding the airport could compromise the operational safety or future airport expansion.



Airport District (S-AP) includes three types of land uses on the property.

- **Airport Operational Reserve** – applied to the lands used for airport infrastructure, such as runway, taxiway and aprons, as well as the lands on airport property with highly restricted development potential due to take off / approach areas and transition areas. This land can be developed for any use required for the successful operation of the airport, including terminal building and fueling facility. This land can also be used for extensive agricultural purposes until such time as it is required for airport use. This area also applies to land for future runway extensions. There is a small portion of land that extends into the northwest quarter of the section that may be required for acquisition by the County at some time in the future to allow for runway extension.
- **Airside Development** – applied to all land where development needs direct access to apron, taxiway or runway. These uses are specifically aviation related and primarily in the form of aircraft hangars for private or commercial uses.
- **Groundside Development** – applied to lands that do not need direct airside access. In the case of the Olds-Didsbury Airport, this designation has been applied to the business park. Even though direct airside access is not available, uses with aviation clientele and considered to be aviation related, can still locate here (commercial retail services, indoor eating establishments, industrial storage and warehousing, etc.). In addition, the regulations controlling groundside development will not allow any use that negatively impacts the airport through smoke, steam, bird attraction or electronic interference.

The description of the permitted and discretionary uses, along with development standards, setbacks, height restrictions and restricted development for the Airport District zoned lands are included in Appendix A



2.2 PROVINCIAL

Alberta Transportation originally built the airport in 1982 with little or no community consultation. While some neighbouring residents are concerned with the airport, the general community sees opportunities for growth, employment, and general economic benefit.

Provincial legislation does not regulate the operation of airports; however, provincial legislation does delegate the authority for a municipality to regulate land use through Part 17 of the Municipal Government Act. This allows a municipality to address land use conflicts and to restrict heights and types of structures. Provincial regulation does affect many of the issues surrounding the airport, such as the environment (particularly water quality and quantity and wildlife), provincial highways and access and impacts on adjacent public lands.

2.3 FEDERAL

While a municipality is regulated by the Province through the Municipal Government Act, an airport is regulated by the Federal Government through Transport Canada (TP312) and the Aeronautics Act. The following outlines the federal jurisdictions.

2.3.1 Transport Canada

Transport Canada and the Aeronautical Act regulate air space and the safe operation of airports. Certified Airport shall comply with TP321 -Aerodrome Standards and Recommended Practices; however non-registered and registered aerodromes are not required to comply with TP312.

This airport was certified until 1998, at which time the Towns of Olds and Didsbury allowed the certification to lapse to a registered status.

2.3.2 NAV Canada

In 1996, navigational and traffic control activities were privatized from the Federal Government and are now provided by a private organization. Any new navigational aids, lighting requirements, and development on airport land will be circulated to NAV CANADA to ensure that they do not interfere with the safe operation of the airport.

3.0 THE SITE

The Old-Didsbury Airport is located on the south half section of 05-32-01 W5M, west of Highway 2A between the Town of Olds and the Town of Didsbury. There are two runways and a taxiway, as well as aircraft hangars and airport buildings (see Figure 3). The aircraft hangars and airport buildings are located just north of Bergen Road. The site for the proposed development is generally agricultural on the north and west sides of the existing runways. Mountain View County's municipal office building is located just west of Highway 2A, to the north of the airport.

3.1 NATURAL FEATURES

It is important to know of the surrounding natural features of the Olds-Didsbury Airport. Airport lands are generally selected due to the flat topography and lack of special features. The topography surrounding the airport in the study area is low-lying land. The sections around the airport are generally flat agricultural land. There are two significant bodies of water located near the airport. The first is Deadrick Creek, which enters the airport site from the northeast and continues through to the southeast. The second body of water is Johnson Lake, located on the west side of Range Road 15, and is therefore, outside the northwest border of the airport. The existing natural features do not create any hazards to the Olds-Didsbury Airport.

3.2 ADJACENT LAND USES

The adjacent land uses are controlled through the Mountain View County MDP and LUB. Proposed changes in land use designations are applicant driven. Generally, the county does not take the initiative to determine the specific use of land. However, since the airport lands and business park are owned by the county, they can take the initiative to develop the airport and business park. The airport is primary surrounded by farmland, with Highway 2A to the east and Bergen Road, a gravelled municipal road, to the south. The closest towns to the airport site are the towns of Olds to the north (approximately 8 km), and Didsbury to the south (approximately 5 km). The two towns are connected by Highway 2A. Future extension of the main Olds-Didsbury Airport runway will not create a negative impact on the adjacent land uses.

The access road constructed to the County Administrative Building connects to Bergen Road. While being located at the end of the runway, the elevation of the road is sufficiently lower than the runway and therefore does not pose an obstruction to the safe operation of the runway.

3.3 REGIONAL ECONOMY

Throughout Mountain View County, there is a wide diversity of economic sectors, with the most significant sectors being agriculture, oil and gas, forestry, aggregate extraction, tourism, business and community services. Agriculture is the foremost important industry in the County, having over 544,000 acres of cropland (Government of Alberta, 2021). The most common agricultural ventures are grain and cattle; however, there are other regional economic sectors that are very significant.

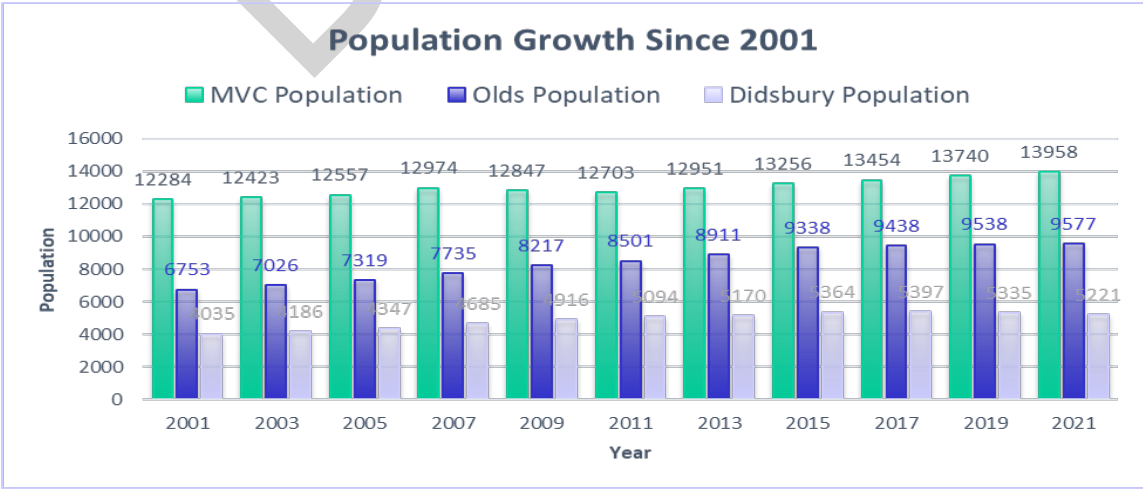
4.0 FORECASTS

All projections are based on historical events and our knowledge of the future. In the case of the airport projections, there is no hard data on which to base projections. It is difficult to calculate growth in aircraft movements because, as an unmanned airport, there is no count of aircraft movements. Therefore, we have used population growth and comparable community airport traffic and calculated a conservative picture of steady and continued growth that will stand the test of time regardless of ups and downs in the regional economy.

4.1 POPULATION

The results of the 2001 Canadian Census demonstrated that the Central Alberta region is among the fastest growing populations in Canada. The Mountain View County is located in the heart of Central Alberta region. Mountain View County's rural population totalled 13,877 residents in 2022, an increase of 3.14% over the previous five years (Government of Alberta, 2023). The combined the urban population of 22,643 in 2022 (combining the communities of Olds, Didsbury, Sundre, Cremona and Carstairs)(Government of Alberta, n.d.) adds to the market and demand. The municipality's population has increased 9.1% from 2012 to 2022 (Government of Alberta, 2023). In an era of rural depopulation, this is significant growth based on the opportunities available and the potential for subdivision and development.

The towns of Olds and Didsbury also have demonstrated an increase in population. The Town of Olds currently has the population of 9,567 (2022) and has shown an increase of 7.4% (from 2012 to 2022). The Town of Didsbury currently has the population of 5,092 (2022) and has shown a decrease of 1.7% (2012 to 2022); however, the previous 10 years showed an increase of 25.7%. This steady growth will allow the municipalities to keep up with the infrastructure demands and allow the commercial and industrial growth to lead the development of the communities and provide a tax base for the County and the towns to support the residential and institutional uses.



4.2 AIRCRAFT

Past studies have indicated that aircraft and passenger traffic is generally related to the regional population growth. Population size is an indicator of potential passengers. The potential for growth in this region is particularly possible due to the extremely "hot" economy, the oil and gas development in the region and the desire to move small aircraft off the Calgary International Airport site.

The type of aircraft utilizing the Olds-Didsbury Airport is related to general aviation and comprises private recreational traffic, flight training, and corporate charters. There are no regularly scheduled passenger flights coming into the Olds-Didsbury Airport.

4.3 BUSINESSES

Two of Mountain View County's key economic sectors, being agriculture and oil and gas, have experienced significant economic slowdowns related to various world economic events and political factors (Explorer Solutions, 2020 p. 18). Although these challenges may persist into the future, there are several opportunities for airports in western Canada. "According to the Canadian Civil Aircraft Register, Alberta and the Prairies are the provinces with the most registered aircraft in Canada" (Explorer Solutions, p. 33). General Aviation uses are expected to continue increasing and will put pressures on heavily utilized airports (Explorer Solutions, p. 34). Given the regional economy of Mountain View County, it is reasonable to expect strong business growth into the future. The location of the airport, between the Town of Olds and the Town of Didsbury, adjacent to Highway 2A and close to Highway 2, is also advantageous for business.

The airside lots created for hangars have been slowly developed, with the airport only experiencing moderate growth since 2005. In 2020, Runway 10/28 was extended to 4,000 feet, allowing for a wider range of aircraft that can use the airport. There may be a number of opportunities for the airport to support future business activities in the area, that include:

- Hangar Leases
- Smart Ag technologies, in connection with Olds College;
- Flight School
- Tourism

5.0 LAND USE PLAN

The proposed land uses for the airport contain both aviation and non-aviation uses. The County is responsible for development both on and off the airport property. Key considerations are to ensure development is compatible with the airport and that development, buildings, or structures do not interfere with airport operations and provide opportunities. This means that setbacks, height restrictions and airport operational reserve lands must be implemented. Figure 2 illustrates the zoning on the lands and Figure 3 illustrates the proposed airport lot layout.

5.1 AIRPORT CONCEPT PLAN

Airport Operational Reserve Lands are those lands and structures directly associated with the operation of the airport. While some of these uses or infrastructure do not currently exist, the Airport Operational Reserve protects the land for the future development or expansion of the facilities. These lands must be identified to ensure that other development does not encroach and restrict future development and may be used as extensive agriculture in the interim. Appropriate airside reserve uses include runways, taxiways, aprons, associated airfield infrastructure (lighting, signage, navigational aids, etc.), terminal building, parking, maintenance structures, meteorological installations, glycol catchment area, required in future for the ongoing operation and maintenance of the airport. This land use would also be appropriate for runway expansion areas.

5.2 AIRSIDE DEVELOPMENT

Airside development lands are those lands designated for tenants that will require direct access onto airfield aprons, taxiways, and runways. Occupants of these lands must conform to airside safety and security measures to ensure their activities do not jeopardize or threaten the security of the airport. The businesses requiring these lands are generally aircraft related and are one of the more important sources of revenue for the airport. It is critical that this land be protected for aviation uses and not compromised by those uses that do not require direct airside access. It is also important to provide separation of rotary and fixed wing aircraft. Appropriate airside aviation uses include regularly scheduled and charter airlines, cargo operators, fixed base operators, hangar development, aircraft storage, air ambulance, aircraft service and maintenance, flight training schools, couriers and aircraft fuel operators. All development should meet minimum standards for architectural controls, landscaping and on-site development to ensure the Olds-Didsbury Airport is an attractive facility that will continue to attract businesses and development to support the airport and the overall economy.

5.3 GROUNDSIDE DEVELOPMENT

Groundside development may be either aviation or non-aviation development that do not require direct access to runways, taxiways, or aprons. Groundside commercial and industrial development uses considered appropriate for these lands are light manufacturing; warehousing, distribution uses, agricultural processing operations, and forestry related uses. Transport Canada identifies aviation related uses as any use that may provide a service to

the aviation industry. This could include restaurants, retail, any form of service for the aircraft, passengers, pilot or users of the aircraft and office uses.

Appropriate groundside aviation uses include businesses servicing the air industry (travel agents; aircraft upholstery, radio repair, etc.), offices for aviation related uses, gas stations, indoor food and beverage, museums, car rental facilities, commercial retail services (concession, souvenirs, gift shops, etc.), distribution centres, and warehouses.

The County shall dedicate municipal reserve land for the airport, uses such as stormwater management, utility access easement and providing a setback from a sour gas line that cuts through the southwest corner of the site. Such lands may be dedicated as municipal reserve or identified as public utility lots. The goal for the business park is to be a high tech, campus style development that incorporates open space, environmentally sound and sustainable development practices and a variety of businesses providing a wide range of employment opportunities for the residents of the region. Figure 3 illustrates the concept plan for the entire study area.

5.4 GROUND TRANSPORTATION

The airport is accessed from Bergen Road, a county road that may require additional upgrades as development occurs.

5.5 SURROUNDING LAND USE (ADJACENT LANDS)

The lands adjacent to the airport are designated for agriculture and are currently utilized for farming. The lands in the quarter section to the north have been identified for future economic development. Until such time as the lands are needed for airport expansion, they will remain in agricultural, public, or quasi-public uses.

There is a portion of the northwest quarter section that will be required for future runway extension that will be acquired by Mountain View County at some time in the future when the runway will be expanded.

6.0 UTILITIES

6.1 WATER

Currently, there are three drilled wells that supply water to the existing hangars at the airport, providing a potable water source for the tenants. There is a regional waterline that runs through the site, however, providing the necessary infrastructure to connect to this water line and service airport lot users is not feasible. The three current wells will provide water to the existing hangars and new development on the airport and in the business park will either drill wells or have water trucked in.

General aviation uses are considered to be low water users. It would also be the direction of the county to only allow low water users in the business park. High water users are considered to be car wash, restaurants, laundry facilities, and hotels. Low water users are aircraft hangars, warehousing, storage uses, and some manufacturing.

Currently, there is no fire protection at the airport, however, fire protection services are provided through agreements with our neighbouring municipalities.

6.2 PRIVATE SEWAGE TREATMENT SYSTEMS (PSTS)

Lot owners may install suitable sewage treatment systems on their individual lots, when in compliance with the necessary Alberta Safety Codes and shall require a Development Permit. Airport users may access water and wastewater services in the Terminal Building

6.3 STORMWATER

The purpose of a stormwater management plan is to ensure adequate drainage of the site. The objectives of stormwater management are to provide an acceptable level of flood protection for the development and prevent adverse changes to downstream watercourses that may result from increased stormwater flow from land development. In the case of the Olds-Didsbury Airport, there were two other objectives:

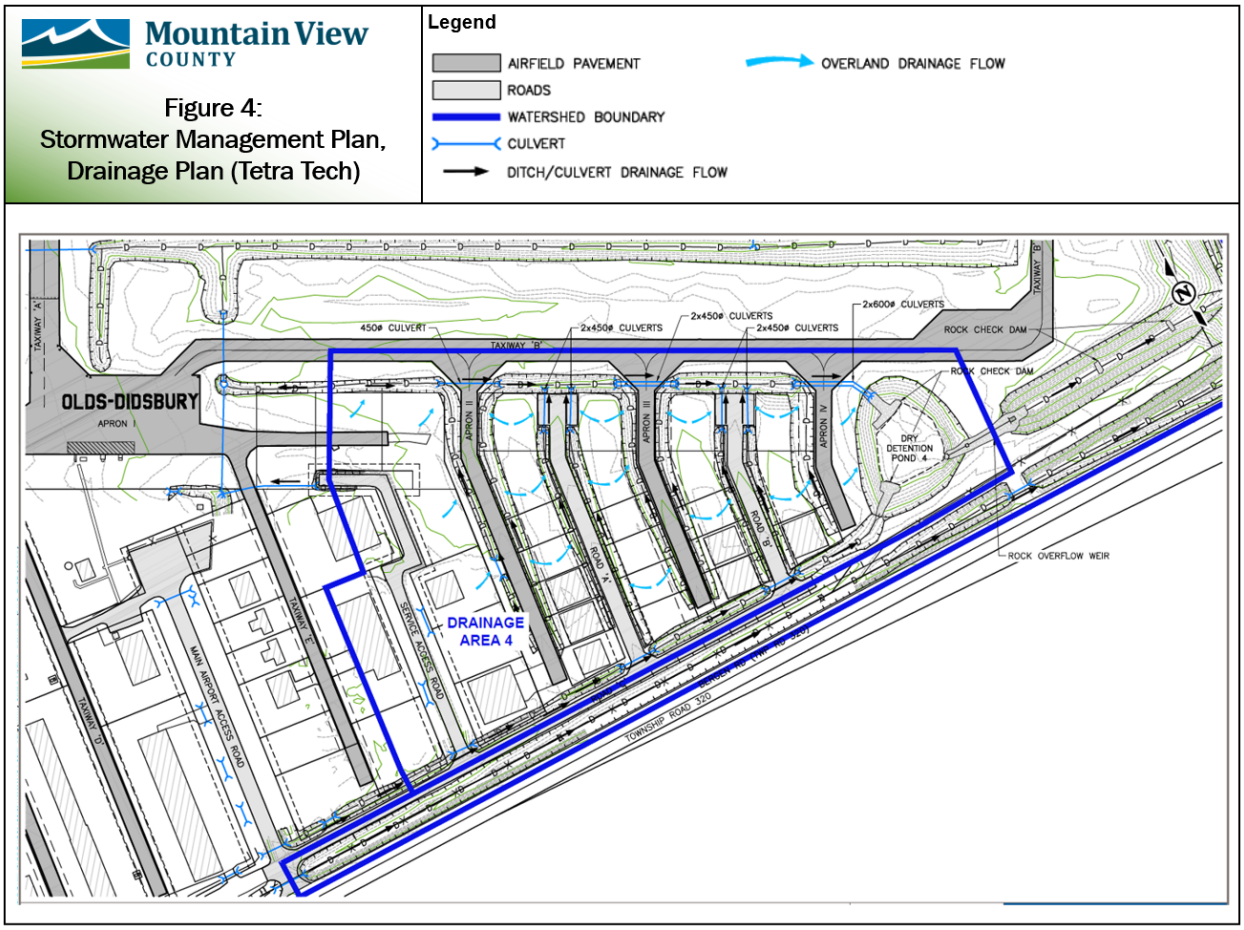
- to protect the quality of water of Deadrick Creek; and
- to minimize the amount of standing water that could attract birds in close proximity to the airport and runways.

In August 2005, EBA completed the Conceptual Stormwater Management Plan; S1/2 Section 5-32-1 W5M. This document identified three areas for storm water collection, one of which has already been developed.

An updated Conceptual Stormwater Management Plan, dated October 4, 2016, was completed based on the more recent development within the airport to ensure adequate drainage (Tetra Tech EBA, 2016). Figure 4 illustrates the current stormwater management design for the developed area of the Olds-Didsbury Airport.

Mountain View COUNTY

Figure 4:
Stormwater Management Plan,
Drainage Plan (Tetra Tech)



6.4 SHALLOW UTILITIES

The airport is currently serviced with power and telephone. Natural gas and internet services will be installed at such time as the service is available and the cost will be borne by the future landowners.

7.0 ENVIRONMENT

7.1 NOISE

The level of noise generated by aircraft is known to have negative health impacts on both humans and animals. Exposure to excess noise can increase stress levels in humans and can lead to other health problems if experienced over long periods of time (Government of Canada, 2019, Airplanes). Aircraft noise can also have impacts on nearby livestock, affecting "feed intake, growth, or production rates" (Dairy Global, 2017).

The level of aircraft noise can be displayed as contour lines on map, showing noise levels at specific distances to a runway. "The shape and extent of these contours depend upon the types of aircraft involved, the flight paths which the aircraft follow, their proximity to the ground and the number of operations performed by each aircraft type" (Transport Canada, 1990, p. 2)

Noise exposure levels for the Olds-Didsbury Airport are reflected in Appendix C. The Noise Exposure Projection (NEP) Contours map was developed by HM Aero Aviation Consulting in support of the updated ASP. "Noise contours are representative of a near to worst-case 24-hour period and are based on the number of aircraft operations for a Peak Planning Day (PPD)" (HM Aero, 2023, p. 1).

7.2 CHEMICAL STORAGE

Presently, there is a chemical storage building located on the south part of the site. This site may be relocated to the regional landfill site. Future chemical storage on the airport will be monitored and regulated. All future development permits will require environmental protection measures such as enviro tanks and berming around the tanks to capture any spills and contain them on site.

7.3 BIRD AND WILDLIFE CONTROL

Wildlife surrounding airports and aerodromes can pose safety risks to aircraft by passing through air-traffic corridors and entering departure, approach and landing areas. There are a several factors that have been identified that can impact wildlife hazards for aircraft, that include growing bird populations, increased use of aircraft, surrounding land uses and expanding development pressures (Transport Canada, n.d., p. 3).

The Olds-Didsbury Airport is not fenced and is surrounded by farmland. While there have been incidents of wildlife and bird interactions with aircraft, it has been a minimal issue. As traffic at the airport increases, the County will consider fencing the entire airport site to reduce wildlife intrusions and increase security for the airport.

8.0 POLICIES AND IMPLEMENTATION

8.1 ADMINISTRATIVE POLICIES AERODROME PROTECTION ZONE OVERLAY

8.1.1 General Provisions

a) The Aerodrome Protection Zone Overlay, as shown in Figure 6, identifies lands surrounding the airport that require additional policies to protect the airport. The purpose of the Overlay is to ensure policies guide future development in the vicinity of the Olds-Didsbury Airport to remain compatible with safe airport operations and not to restrict or limit the ability of the airport to grow in the future.

b) The Aerodrome Protection Zone Overlay, as shown in Figure 6 is the same as the Aerodrome Protection Zone Overlay in the Land Use Bylaw and consists of:

   i. Height Limitation based on the Take-Off/Approach Surface and the Transitional Surface of the Obstacle Surface Limitation (OSL);

   ii. Noise Exposure Projection (NEP) Contours based on the Noise Exposure Forecast (NEF); and

   iii. Outer Surface of the Obstacle Surface Limitation (OSL) where aircraft conduct circling procedures or maneuvering in the vicinity of the aerodrome.

c) Use and development of the lands identified as Aerodrome Protection Zone Overlay, shall be based on the current designations under the County's Land Use Bylaw that are in place as of the date the ASP is adopted.

8.1.2 Land Use Policies

a) The Aerodrome Protection Zone Overlay that falls within the ASP boundary as shown in Figure 6 area shall accommodate up to a maximum of two (2) titled lots per quarter section, including fragmented parcels.

b) Changes in land use designation for lands identified as Aerodrome Protection Zone Overlay that falls within the ASP boundary, as shown in Figure 6 may be considered to facilitate first parcel out subdivisions in the form of a fragmented parcel, a farmstead separation, country residential or an agricultural parcel in accordance with the Agricultural Land Use Policies of the County's Municipal Development Plan.

   i. A Country Residential parcel shall not be supported for redesignation and subdivision if any part of the proposed parcel is located within the Height Limitation or within Noise Exposure Projection (NEP) Contours of the Aerodrome Protection Zone Overlay to reduce potential noise exposure and land use conflicts.

c) Changes in land use designation for lands identified as Aerodrome Protection Zone Overlay that falls outside of the ASP boundary shall be considered in accordance with the applicable statutory plan.

d) Changes in land use designation to allow for non-agricultural uses except as provided in 8.1.2 b) above for lands identified as Aerodrome Protection Zone Overlay that falls within the ASP boundary shall not be supported unless a concurrent ASP amendment demonstrates that the non-agricultural use is compatible with the Airport and shall consider:

   i. The potential for discharge of toxic or noxious emissions;

   ii. Processes that could generate smoke, dust or steam in sufficient volumes to potentially impact visibility in the vicinity of the airport;

   iii. The potential for radiation or other interferences from electronic equipment;

   iv. The potential for fire or any explosive hazards;

   v. Proposed uses and accumulation of any materials or waste that could increase hazards related to wildlife interactions;

   vi. Proposed uses that require extensive lighting;

   vii. The height of any proposed structures;

   viii. Noise Exposure Forecast mapping that may require a Noise Impact Assessment and other necessary engineering studies in support of the proposal development;

   ix. Uses that involve water retention areas, other than dugouts used for agricultural purposes;

   x. Other provisions of this plan.

e) Agricultural land uses that do not have negative impacts on the safe operation of the airport shall be encouraged to continue within the Aerodrome Protection Zone Overlay.

f) Within the Aerodrome Protection Zone Overlay, as shown in Figure 6, applications for redesignation and/or subdivision may be referred to Transport Canada and NAV Canada for comment.

8.1.1 Development Policies

a) No new Confined Feeding Operations (CFO) shall be supported within the Aerodrome Protection Overlay Zone Overlay, as shown in Figure 6 to protect the Airport from hazardous dust, emissions and wildlife attractants.

b) In addition to the provisions of the Land Use Bylaw, Figure 3 represents the long-range concept plan for the Olds-Didsbury Airport.

c) The land use plan is conceptual and until a legal survey is completed, lot lines and layout may be altered without changing the form or intent of the land use concept.

d) All development approved within this area must be in conformance with the policies and direction in this plan.

e) The applicant for a communication tower or communication structure within the Aerodrome Protection Zone Overlay, as shown in Figure 6, shall provide copies of any reports and/or applications submitted to federal and provincial regulatory bodies.

f) Development permit applications for new communication towers within the Aerodrome Protection Zone Overlay, shall not be supported if the use interferes with the safe operation of the airport.

g) Alternative/Renewable Energy, Commercial shall not be supported within the Aerodrome Protection Zone Overlay as shown in Figure 6, to protect the airport from hazardous glare and impact on aviation equipment and instruments.

l) Undeveloped portions of the airport and airport operational reserve can continue to be leased for hay operations until required for redesignation, subdivision and development.

8.2 AIRPORT SUBDIVISION AND DEVELOPMENT

8.2.1 Lot Layout Policies

a) The lot layout illustrated in Figure 3 provides a conceptual layout for future phases. Lot sizes and design may be modified as part of a subdivision application without the need to amend this plan.

b) Prior to the subdivision of Phase II, an assessment of airside lot demand may be completed, allowing the opportunity for taxiway extension south into the park for servicing additional airside lots. At the time of subdivision of Phase II, if the demand is for groundside development, Figure 3 will guide the lot layout.

c) The lot layout incorporates public utility lots (water reservoir and storm ponds), open space (Municipal Reserve for trails and parks), public buildings and buffering (a green strip on the outside edges of the airport).

d) Lands in the western portion of the airport, adjacent to the cross strip, have been identified for small individual recreational hangars, while the lands east of this area have been identified primarily for larger hangars and businesses, generally requiring larger lots and fully paved surfaces. Future subdivision applications will determine the lot layout.

8.2.2 Open Spaces and Pathways Policies

a) Municipal Reserve shall be considered in the form of land for three main components including:

   i) a green strip parallel to external roads a minimum of 6 metres wide with a maximum berm height of 1.5 metres to be designed in an undulating form with grouped planting of trees in low areas and the option for a pathway,

   ii) options for linked pathways with landscaping, benches and picnic tables connecting areas within the business park,

iii) a series of trails, utilizing setbacks from pipeline easements, the buffer and linkages from other areas of the business park, or

iv) Cash-in-lieu

8.2.3 Design Criteria Policies

a) The airport should be developed in a rational, neat and efficient manner to allow for the continued development of a sustainable economic development opportunity.

b) While LEED certification is not a requirement, all development is encouraged to incorporate elements of LEED into their development.

c) Applications for development of individual lots shall comply with the provisions of the Land Use Bylaw and the Business and Industrial Design Guidelines.

8.2.4 Airport Administration

a) As the land develops around the airport, Transport Canada may require the airport to certify. No development will be permitted that may jeopardize the future certification of the airport.

b) Undeveloped portions of the study area and airport operational reserve can continue to be leased for hay operations until required for subdivision and development.

8.2.5 Phasing of Development Policies

a) Figure 3 represents the long-range concept plan for the Olds-Didsbury Airport.

b) Figure 3 is conceptual and lot lines and layout may be altered without amending this plan.

c) Mountain View County will explore opportunities to subdivide future phases of the airport within this plan.

d) All development approved within this area must be in conformance with the policies and direction in this plan.

e) Figure 5 outlines the general phasing plan for the airport, including three phases of development.

f) The development phases will not be tied to years, but rather to the actual development need.

g) Lots will be put on the market to meet demand.

h) Phase I includes both airside and groundside development west of the existing airport in the SW 5-32-1 W5.

i) Phase I will also include:

i) development of a storm pond that may also serve as a fire fighting water source;

ii) a combination of airside and groundside lots;

iii) two accesses off Bergen Road, one for the lots adjacent to the turf strip and to the business park;

iv) construction will include internal roads and taxiway extension;

v) relocate the container dump site; and,

j) Phase II includes the development of the balance of the business park in the southwest quarter section

k) Phase II will also include:

i) determination of demand for airside or groundside lots;

ii) survey and subdivide groundside and airside lots;

iii) internal road construction, including two accesses off Range Road 15;

l) Phase III incudes the development of the balance of the business park in the southwest quarter section, as well as the lands on the north side of the runway, at which time access will need to be established from the County Administration Building access road or Highway 2A, to the satisfaction of Alberta Transportation.

8.3 PLAN REVIEW AND AMENDMENT

8.3.1 Review Policies

a) The County will maintain dialogue with Transport Canada.

b) The County will liaise with Alberta Infrastructure and Transportation for future grant programs to upgrade and maintain the Olds-Didsbury Airport to a high standard.

c) As a statutory document, this plan should be reviewed every ten years to ensure that the vision is still relevant and to identify any changes in the environment that may require adjustments to the policies, or as directed by Council.

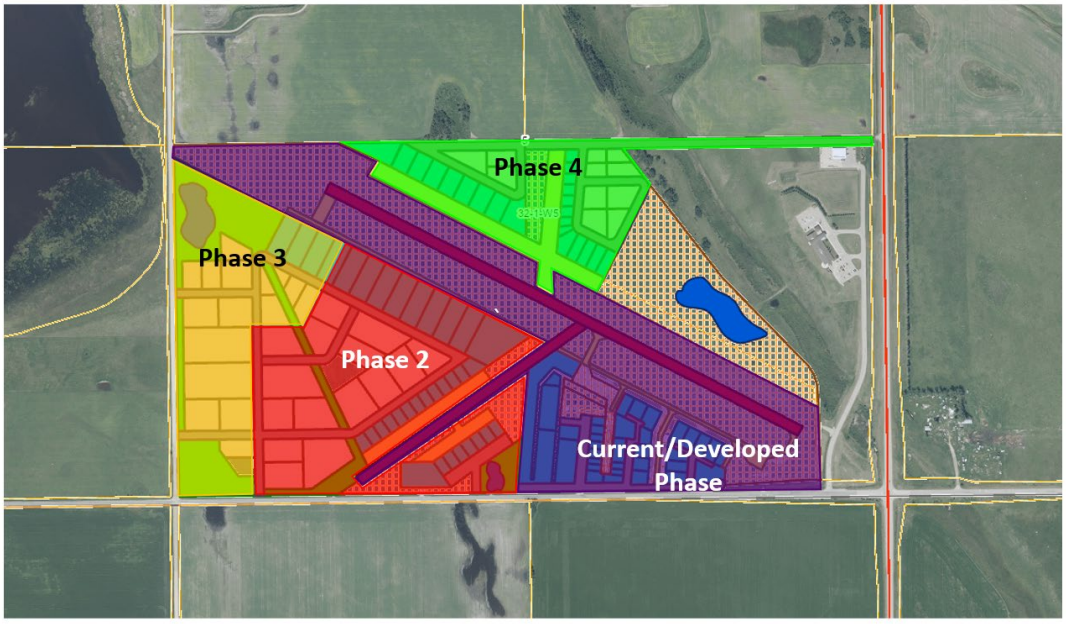
d) Council may direct Administration; or a person or persons having an interest in the land within the plan area may propose an amendment to the ASP in accordance with the Municipal Government Act and County policies.

Mountain View COUNTY

Figure 5:
Olds-Didsbury Airport
Proposed Phasing Plan

Legend

Phase 1
Phase 2
Phase 3
Phase 4

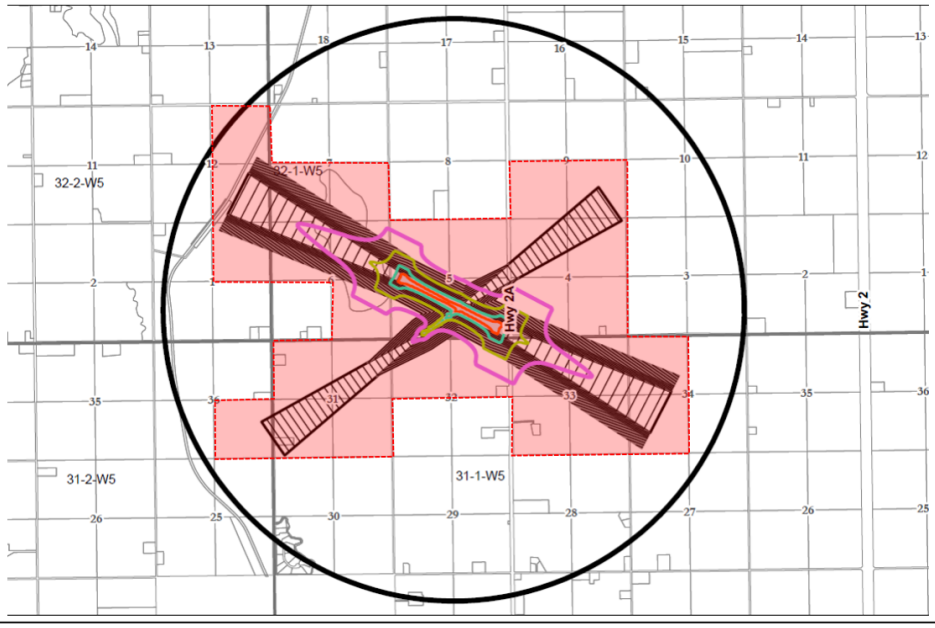


Mountain View COUNTY

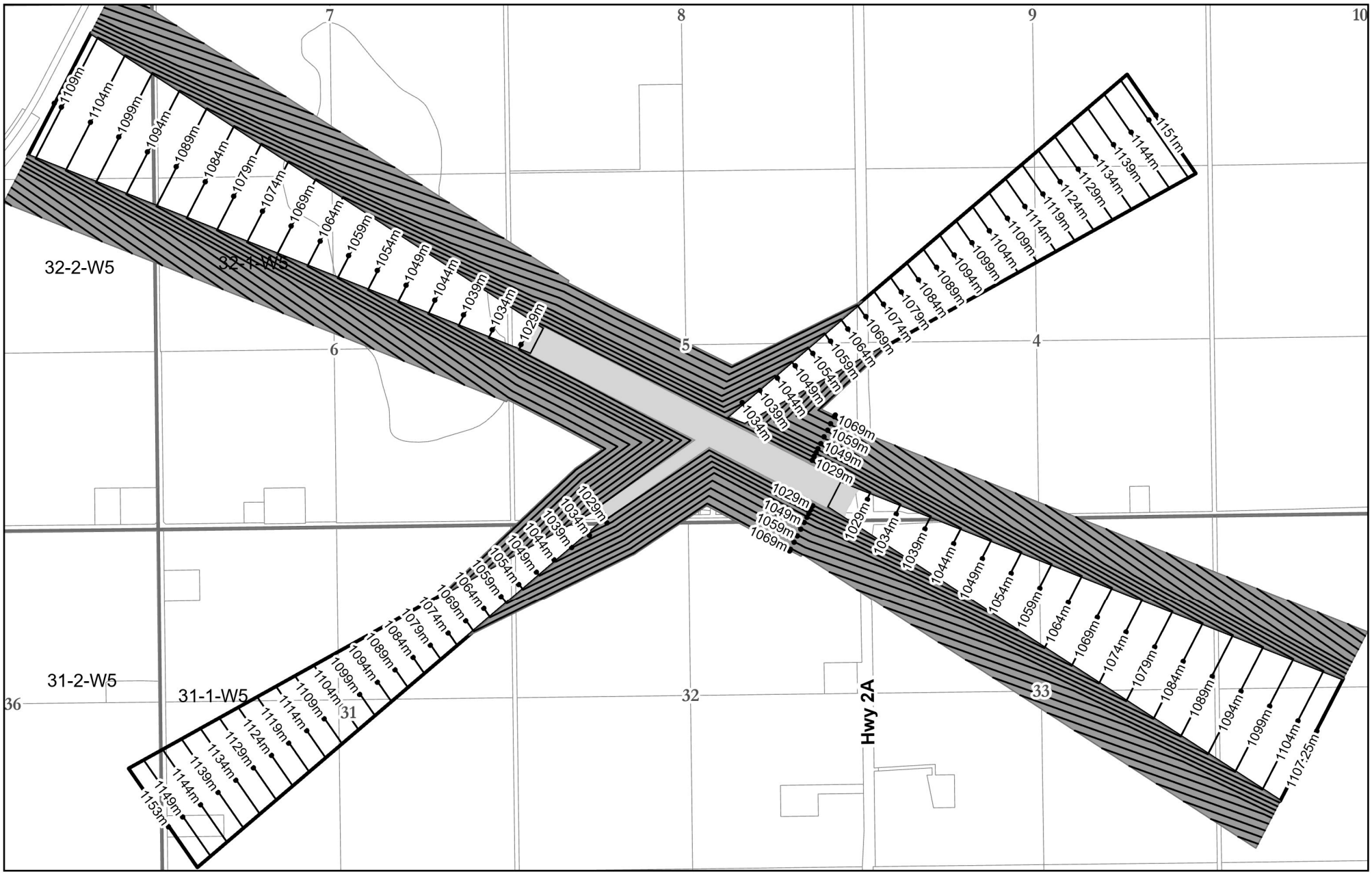
Figure 6:
Aerodrome Protection Zone Overlay

Legend

ASP Boundaries
Outer Surface
Height Limitations
Noise Exposure Projection (NEP)



APPENDIX A HEIGHT LIMITATIONS MAP



Mountain View COUNTY

Olds Didsbury Airport Height Limitation

Legend

— Height Limitation Contour

N

0.5 0.25 0 0.5 Km

Scale: 1:24,000

Map Created on: 2023-11-06

Mountain View County

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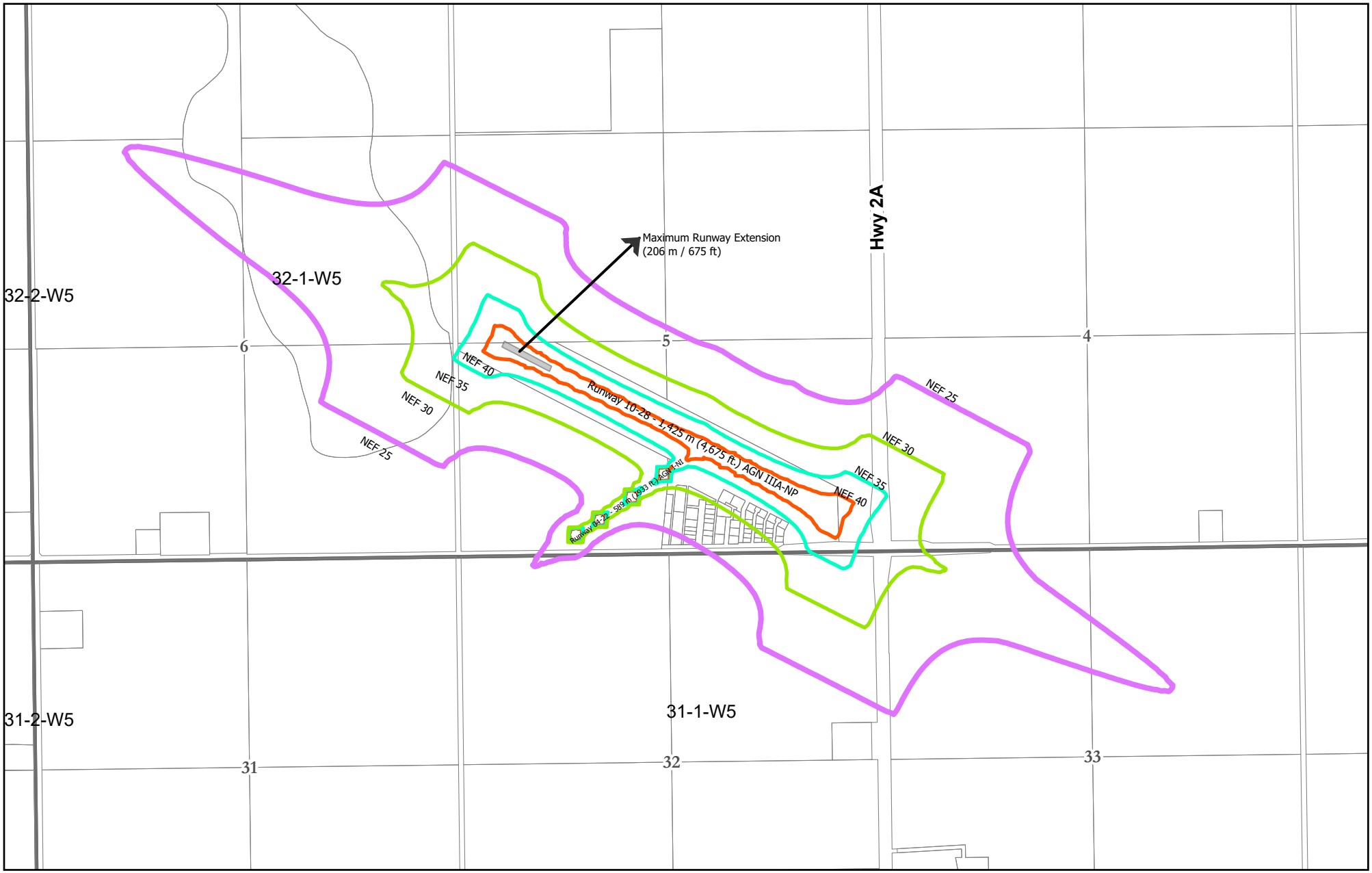
APPENDIX B NOISE EXPOSURE PROJECTION (NEP) CONTOURS MAP



Olds Didsbury Airport Noise Exposure Projection (NEP) Contours Map

Mountain View COUNTY

Legend

- NEF 25
- NEF 30
- NEF 35
- NEF 40

N

0.5 0.25 0 0.5 Km

Scale: 1:20,000

Map Created on: 2023-11-09 Mountain View County

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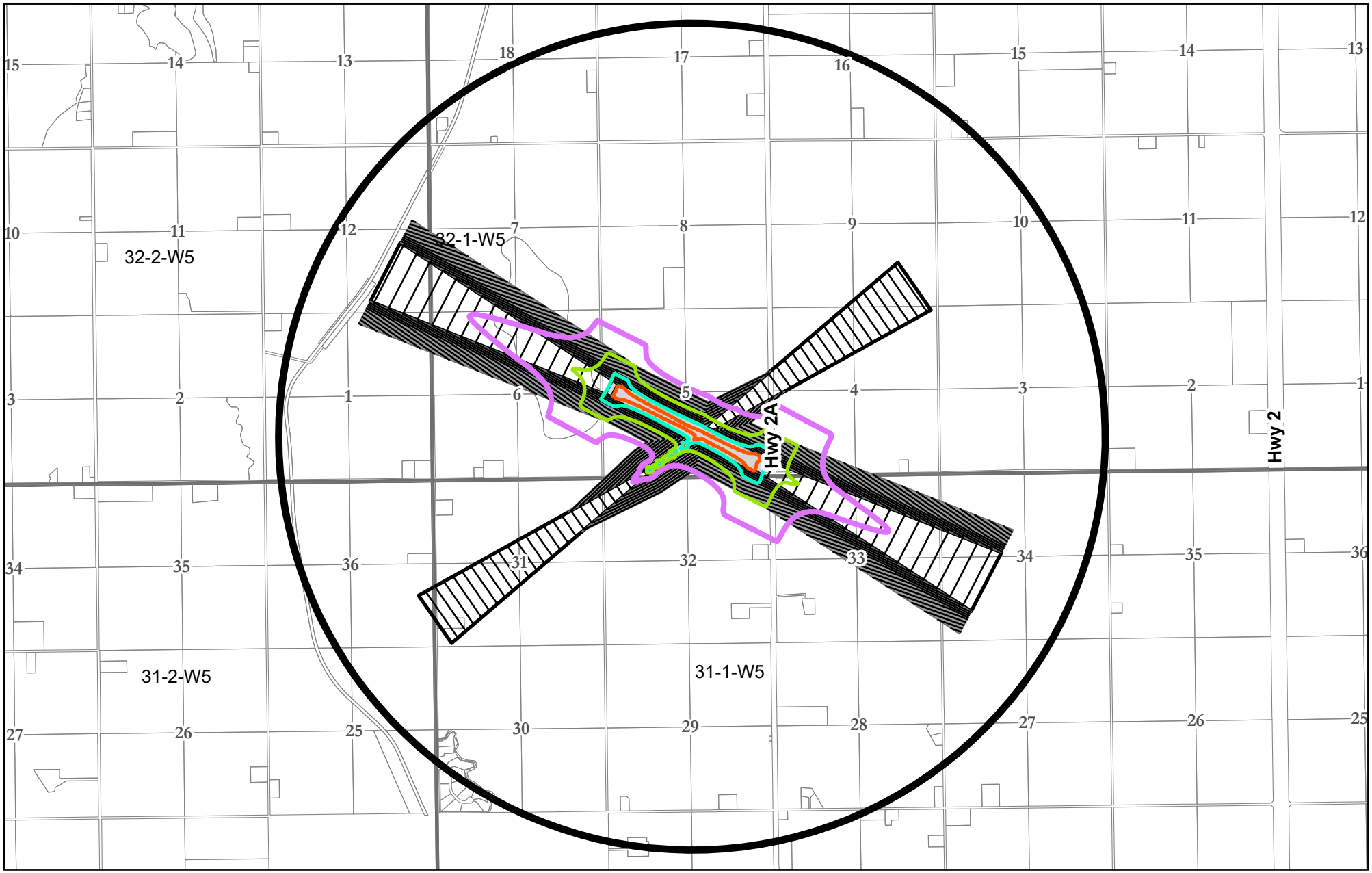
APPENDIX C OUTER SURFACE, HEIGHT LIMITATIONS AND NOISE EXPOSURE PROJECTION (NEP) CONTOURS MAP



Mountain View COUNTY

Olds-Didsbury Airport Outer Surface, Height Limitations and Noise Exposure Projection (NEP) Contours Map

Legend

- NEF 25
- NEF 30
- NEF 35
- NEF 40
- 4000m Buffer
- Height Limitation Contour

N

0.50.25 0 0.5 1 Km

Scale: 1:50,000

Map Created on: 2023-11-09

Mountain View County

Document Path: \\mvcwfs1\gis\ProjectMXD\PlanningandDevelopment\PRO\PLDE_AirportRelatedMaps.aprx

APPENDIX D NOISE EXPOSURE PROJECTION CONTOURS REPORT FROM HM AERO

Olds-Didsbury Airport

Noise Exposure Projection Contours

October 25, 2023

Olds-Didsbury Airport

Noise Exposure Projection Contours

Mountain View County
1408 - Township Road 320, P.O. Bag 100
Didsbury, AB T0M 0W0

October 25, 2023

HM Aero Inc.
532 Montreal Road, Suite 209
Ottawa, ON K1K 4R4

Table of Contents

1 INTRODUCTION

1.1 Background and Purpose

In support of an Aera Structure Plan, Mountain View County (the “County”) has commissioned the preparation of Noise Exposure Projection (NEP) contours for Olds-Didsbury Airport (the “Airport”). Noise Exposure Forecast (NEF) contours previously prepared by Transport Canada are considered out of date and no longer relevant.

1.2 Scope of Work

The preparation of NEP contours for the Airport has followed the structured process established by Transport Canada and the National Research Council using the industry recognized NEFcalc software system. Noise contours are representative of a near to worst-case 24-hour period and are based on the number of aircraft operations for a Peak Planning Day (PPD).

The NEF contour development process includes seven primary steps:

1. Defining runway configurations, lengths, orientations, and locations;
2. Defining the arrival and departure paths for the runways (10, 28, 04, and 22), using appropriate air traffic procedures;
3. Assigning percent utilizations to each runway based on consultation with the contracted airport operator. As the County does not record aircraft activity at the Airport, the project team leveraged the experience of the operator to identify key model inputs;
4. Identifying a 95 percentile busies day through consultation with the contracted airport operator. This consultation identified, in addition to runway utilization, total aircraft movements (including circuits), aircraft fleet mix, and day/night split. For each aircraft movement in the busy day, an aircraft type, destination distance, time of day, and runway used are assigned;
5. Entering input data and running the model in NEFcalc;
6. Exporting the calculated contours in the appropriate scale and geographic orientation; and
7. Overlaying the contours on geo-referenced mapping.

The steps followed by the project team are consistent with the methodology documented within NEFcalc Version 2.0.6.1 and with the guidance presented in Transport Canada’s NEF Microcomputer System Users Manual – TP6907E (June 1990). NEP contours are reliant on appropriate inputs and assumptions to maximize the degree to which they capture the subjective annoyance associated with aircraft operations. Key elements of our strategy include:

- Protection for the extension of Runway 10-28 to a maximum length of 4,675 ft. that assumes Range Road 15 west of the Airport is a fixed constraint and represents a transportation corridor necessitating a 4.6 metre clearance above the crown of road;
- Applying an annual growth rate of 1.7% uniformly across aircraft movements by runway utilization, flight path, stage length, aircraft type, and time of day. The annual growth rate was informed by Alberta's historical population growth and was applied to the 10-year planning period; and
- The runway length and alignment, aircraft fleet mix, activity distribution, and other inputs are assumed to stay constant over the planning horizon with the expectation that the type and role of the Airport will not change significantly from current conditions.

All inputs, assumptions, and sources have been documented for all elements of the NEP preparation process and four contours were generated (NEF 25, 30, 35, and 40) which meets the guidance prescribed by Transport Canada in TP1247 – Land Use in the Vicinity of Aerodromes (9th Edition). Digital mapping has been prepared showing the geographic extents of the NEF contours over the lands in the vicinity of the Airport, including affected properties.

2 NOISE EXPOSURE FORECAST SYSTEM

Annoyance from aircraft noise includes factors beyond the one-time impacts of an overflying aircraft. For example, the number of flights that occur per day, the concentration and distribution of flights, the time of day that overflights occur, and the Effective Perceived Noise Levels of aircraft in use all contribute to annoyance. In Canada, the NEF System has been used since 1971 to predict the overall subjective annoyance and community reaction levels caused by aircraft operations.

The NEF System generates noise contours, which are lines of constant levels of perceived annoyance caused by airport noise sources. Research and analysis by the National Research Council has resulted in a numeric rating for predicted annoyance levels and the recommended types of development that should be permitted within the affected areas.

2.1 Noise Exposure Contours

Noise contours are developed using a structured process through the NEFcalc software system and use an embedded database of aircraft types and their associated Effective Perceived Noise Levels, as a function of the phase of flight and the distance from the flight path.

Within the NEF System, Transport Canada describes three types of contours that are differentiated according to the planning horizon of the supporting data inputs:

1. **Noise Exposure Forecast Contours:** Aircraft types and mix as well as traffic volume used in calculating NEF contours are normally forecast for a period of 5 to 10 years into the future. The existing runway geometry is used, as well as any planned changes to the airfield within the 5 to 10-year horizon;
2. **Noise Exposure Projection Contours:** Based on a projection of aircraft movements more than 10 years into the future, including aircraft types and runway configurations that may materialize within this period; and
3. **Noise Planning Contours:** Produced to investigate planning alternatives, such as the impacts of a new runway, hypothetical airport traffic scenarios, changing aircraft fleet types, etc.

Despite their unique naming, NEF, NEP, and Noise Planning Contours are generated using the same software and methodology. The project team has prepared 10-year NEP contours to protect for the ultimate runway configuration at the Airport.

2.2 Community Response to Noise

TP1247 – Land Use in the Vicinity of Aerodromes (9th Edition) provides a generalized prediction of community responses to airport noise as a function of their location within various NEF contours, as shown in Table 2.1. For reference, Table 2.2 includes Transport Canada's guidance on the acceptability of relevant land uses across the four NEF contours.

Table 2.1 - TP1247 Community Response Prediction

Response Area	Response Prediction *
1 (over 40 NEF)	Repeated and vigorous individual complaints are likely. Concerted group and legal action might be expected.
2 (35-40 NEF)	Individual complaints may be vigorous. Possible group action and appeals to authorities.
3 (30-35 NEF)	Sporadic to repeated individual complaints. Group action is possible.
4 (below 30 NEF)	Sporadic complaints may occur. Noise may interfere occasionally with certain activities of the resident.

* It should be noted that the above community response predictions are generalizations based upon experience resulting from the evolutionary development of various noise exposure units used by other countries. For specific locations, the above response areas may vary somewhat in accordance with existing ambient or background noise levels and prevailing social, economic, and political conditions.

Table 2.2 - TP1247 Land Use Acceptability

Land Use	NEF > 40	NEF 40-35	NEF 35-30	NEF < 30
Residential Uses	NO	NO	NO[2]	YES[1]
Playgrounds	TBD[3]	TBD[3]	YES	YES
Park and Picnic Areas	NO	TBD[3]	YES	YES
Industrial Uses[4]	YES[5]	YES[5]	YES	YES
Crop Farming	YES	YES	YES	YES

[1] Annoyance caused by aircraft noise may begin as low as NEF 25. It is recommended that developers be made aware of this fact and that they inform all prospective tenants or purchasers of residential units. In addition, it is suggested that development should not proceed until the responsible authority is satisfied that acoustic insulation features, if required, have been considered in the building design.

[2] New residential construction or development should not be undertaken. If the responsible authority chooses to proceed contrary to Transport Canada's recommendation, residential construction, or development between NEF 30 and 35 should not be permitted to proceed until the responsible authority is satisfied that: (1) appropriate acoustic insulation features have been considered in the building and (2) a noise impact assessment study has been completed and shows that this construction or development is not incompatible with aircraft noise. Notwithstanding point 2, the developer should still be required to inform all prospective tenants or purchasers of residential units that speech interference and annoyance caused by aircraft noise are, on average, established and growing at NEF 30 and are very significant by NEF 35.

[3] It is recommended that serious consideration be given to an analysis of peak noise levels and the effects of these levels on the specific land use under consideration.

[4] Applies to all industrial uses identified in TP1247, excluding laboratories.

[5] Many of these uses would be acceptable in all NEF zones. However, consideration should be given to internally generated noise levels, and acceptable noise levels in the working area.

3 MODEL INPUTS

The model inputs required by NEFcalc include:

1. Runway layout;
2. Flight paths;
3. Aircraft mix; and
4. Aircraft movements for the PPD.

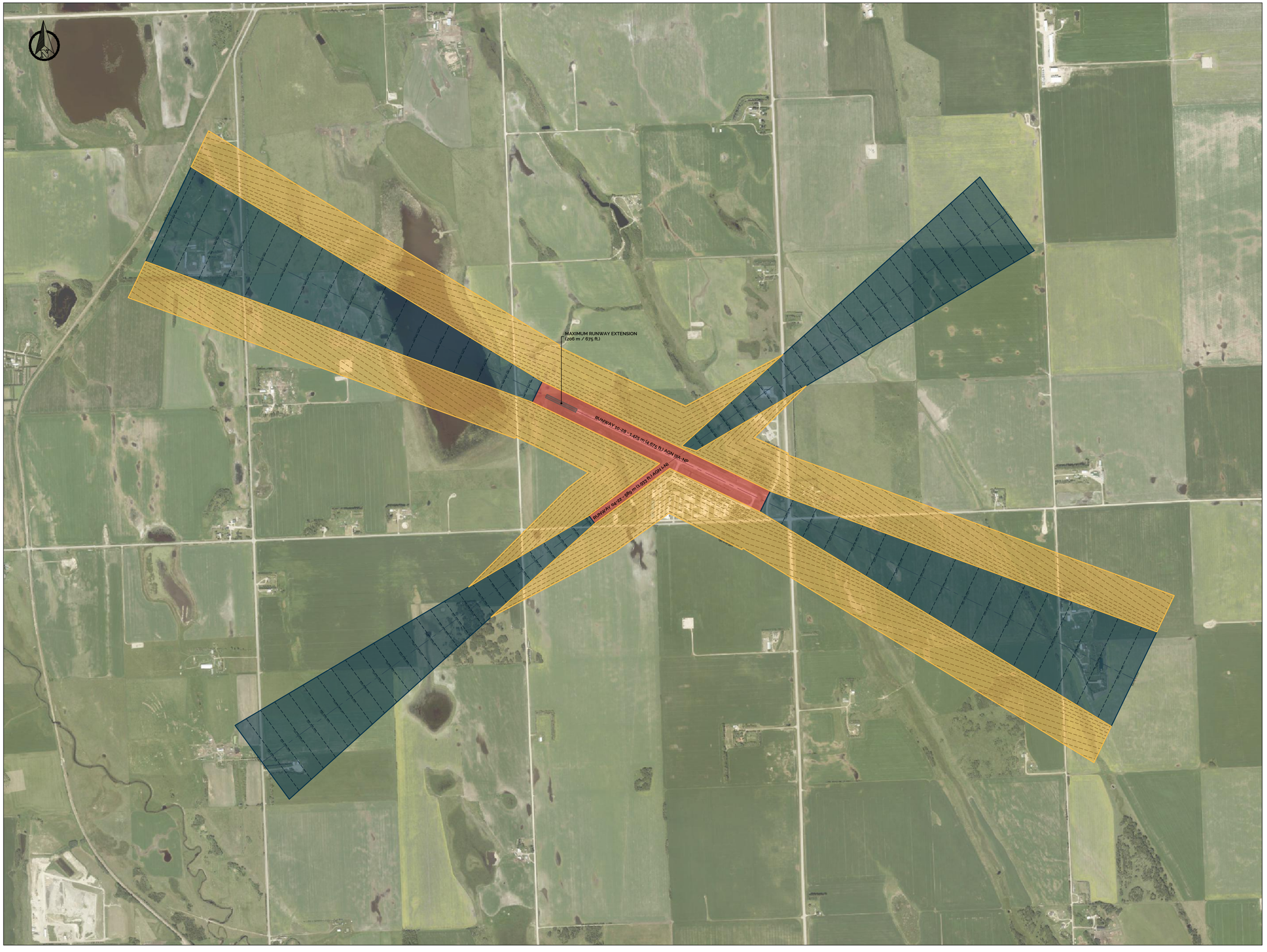
3.1 Runway Layout

Runway 10-28 is 4,000 ft. (1,219 m) long and is oriented in a northwest-southeast alignment. Consultation with the County has indicated that there may be a need to extend this runway to a maximum practical length within the planning period. Assuming Range Road 15 west of the threshold of Runway 10 is a fixed constraint and represents a 4.6-m high transportation corridor per TP312 – Aerodrome Standards and Recommended Practices (5th Edition), the application of Aircraft Group Number (AGN) IIIA – Non-Precision Obstacle Limitation Surface (OLS) standards allows a maximum runway extension of 675 ft. (206 m) to the northwest resulting in a total runway length of 4,675 ft. (1,425 m). The OLS associated with an extended runway is presented as Figure 3.1.

The analysis assumes that Runway 04-22 will remain at its current length (1,933 ft.) and alignment for the duration of the planning period. The runway threshold coordinate inputs are presented in Table 3.1 and assume the midpoint of Runway 10-28 as the origin (0,0).

Table 3.1 - Runway Threshold Coordinate Inputs

Runway Threshold	Metres (m)		Feet (ft)		Kilofeet (kft)		UTM (Zone 11)	
	X	Y	X	Y	X	Y	X	Y
10	-642.02	308.98	-2106.36	1013.70	-2.11	1.01	699144.30	5733269.54
28	642.02	-308.98	2106.36	-1013.70	2.11	-1.01	700428.33	5732651.59
4	-338.81	-427.45	-1111.56	-1402.39	-1.11	-1.40	699447.51	5732533.11
22	135.65	-78.14	445.06	-256.36	0.45	-0.26	699921.97	5732882.42



OLDS - DIDSBURY AIRPORT

Figure 3.1
Obstacle Limitation Surfaces
Extended Runway (4,675 ft.)

OCTOBER 2023

Mountain View COUNTY

Runway Strip

Approach Surface

Transitional Surface

Elevation Contour

0 0.5 1 Kilometers

*FOR PLANNING PURPOSES ONLY

3.2 Flight Paths

Flight paths represent the routes that aircraft follow while arriving and departing the Airport, or while in a circuit pattern. Local movements are comprised of traffic circuits while itinerant movements include straight-in approaches, straight-out departures, and left and right-turn departures.

3.2.1 Local Movements

The Airport's traffic circuit is normally flown at 1,000 ft. Above Aerodrome Elevation (AAE) and consists of the following legs, as described in operational order below and shown in Figure 3.2:

1. Upwind / Departure: The leg flown after take-off while the aircraft climbs away from the aerodrome;
2. Crosswind: The path flown perpendicular to the Upwind and Downwind legs. Depending on pilot technique and aircraft performance, aircraft commonly turn from Upwind to Crosswind at 500 ft. AAE;
3. Downwind: The path flown parallel to and in the opposite direction of the landing runway at 1,000 AAE. Depending on pilot technique, aircraft may begin descending towards the end of the Downwind leg;
4. Base: The path flown perpendicular to the Downwind and Final legs while descending to the runway; and
5. Final: The path flown in the direction of the landing runway, culminating in the aircraft landing.

The circuit pattern specifications input in NEFcalc are shown in Table 3.2.

Figure 3.2 - Standard Traffic Circuit (Aeronautical Information Manual, TP14371)

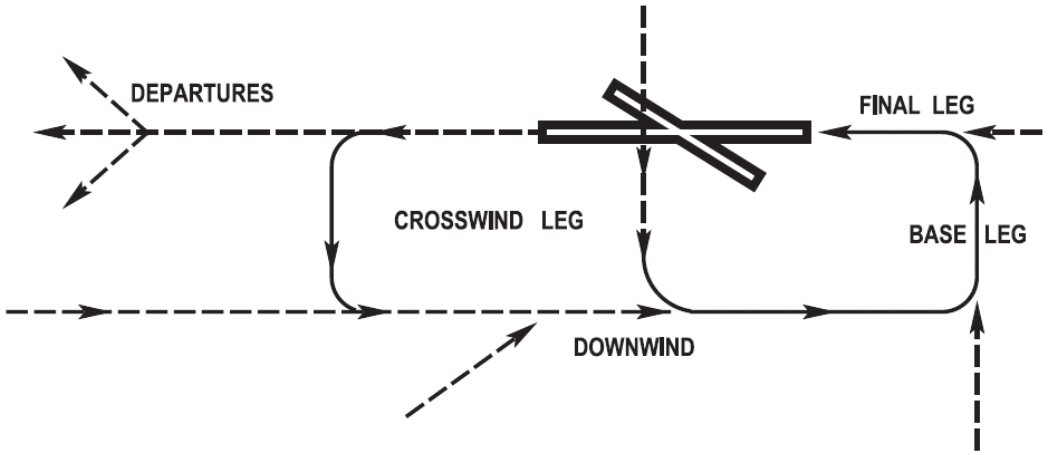


Table 3.2 - Local Movements Flight Paths

Flight Path	Description
10C	Left hand circuit pattern departing Runway 10 with first turn (rate 1) at 500 ft. AAE including a 3-degree approach slope beginning at 1,000 ft AAE
28C	Left hand circuit pattern departing Runway 28 with first turn (rate 1) at 500 ft. AAE including a 3-degree approach slope beginning at 1,000 ft AAE
04C	Left hand circuit pattern departing Runway 04 with first turn (rate 1) at 500 ft. AAE including a 3-degree approach slope beginning at 1,000 ft AAE
22C	Left hand circuit pattern departing Runway 22 with first turn (rate 1) at 500 ft. AAE including a 3-degree approach slope beginning at 1,000 ft AAE

3.2.2 Itinerant Movements

Itinerant movements are assigned to a runway's approach path or one of its three departure paths for a total of sixteen itinerant movement flight paths (four per runway). For the left or right turn departures, the height AAE of the turn was informed by the experience of the project team. Descriptions of the itinerant flight path specifications as input into NEFcalc are shown in Table 3.3.

Table 3.3 - Itinerant Movements Flight Paths

Flight Path	Description
10A	Straight-in approach of Runway 10, 3-degree slope beginning at 15,000 ft AAE
10S	Straight-out departure from Runway 10
10R	Departure from Runway 10 with right turn (rate 1) at 500 ft. AAE, 90-degree turn
10L	Departure from Runway 10 with left turn (rate 1) at 500 ft. AAE, 90-degree turn
28A	Straight-in approach of Runway 28, 3-degree slope beginning at 15,000 ft AAE
28S	Straight-out departure from Runway 28
28R	Departure from Runway 28 with right turn (rate 1) at 500 ft. AAE, 90-degree turn
28L	Departure from Runway 28 with left turn (rate 1) at 500 ft. AAE, 90-degree turn
04A	Straight-in approach of Runway 04, 3-degree slope beginning at 15,000 ft AAE
04S	Straight-out departure from Runway 04
04R	Departure from Runway 04 with right turn (rate 1) at 500 ft. AAE, 90-degree turn
04L	Departure from Runway 04 with left turn (rate 1) at 500 ft. AAE, 90-degree turn
22A	Straight-in approach of Runway 22, 3-degree slope beginning at 15,000 ft AAE
22S	Straight-out departure from Runway 22
22R	Departure from Runway 22 with right turn (rate 1) at 500 ft. AAE, 90-degree turn
22L	Departure from Runway 22 with left turn (rate 1) at 500 ft. AAE, 90-degree turn

3.3 Peak Planning Day

NEF contours are representative of a near to worst-case 24-hour period and are based on the number of aircraft operations for a PPD. To determine the value and composition of the PPD, the following steps were completed:

3.3.1 Baseline Peak Planning Day Identification

As noted previously, the County does not record aircraft movements at Olds-Didsbury Airport. To inform the busy day, the project team consulted with the contracted airport operator to determine appropriate total busy-day aircraft movements, runway utilization, flights paths, and aircraft mix. The combination of approaches, straight out departures, left and right departures, and circuits resulted in 74 movements on the base peak planning day.

3.3.2 Activity Forecast

The preparation of NEF contours requires the application of an appropriate forecast to the baseline over 10 years to produce a defensible PPD. The project team reviewed annual provincial population statistics from the Province of Alberta for the period of 2011-2020. An annual average population growth rate of 1.7% was identified.

3.3.3 Calculated Peak Planning Day

The NEP PPD was calculated by applying the 1.7% annual growth rate to the baseline of 74 movements over a 10-year period resulting in a PPD of 86 movements.

3.3.4 Peak Planning Day Composition

The project team does not anticipate significant changes in the type and role of the Airport over the next 10 years with respect to the types of activities and aircraft that will utilize the facility. The composition of the PPD therefore maintains the same proportions of movements as they relate to runway utilization, local and itinerant movements, aircraft types, typical destinations, and day/night operations.

3.4 Aircraft Mix

NEFcalc requires the selection of representative aircraft types from an integrated database. The database is not exhaustive and has not been updated since 2011. As a result, it is often necessary to select a proxy aircraft. Additionally, the NEFcalc database does not include helicopters. Review of previous NEF studies of several Canadian airports indicates that, as a result, helicopter movements are often omitted from the model.

The aircraft selected for the modelling of NEF contours at the Airport are presented in Table 3.4 and Table 3.5.

Table 3.4 – Runway 10-28 Aircraft Mix (Local and Itinerant)

Aircraft Type	Proxy	NEFCalc Database
Single Engine (Piston)	Cessna 172R Skyhawk	CNA172
Twin Engine (Piston)	Piper PA-31 Navajo	PA31
Twin Engine (Turbine)	De Havilland DHC 6 Twin Otter	DHC6

Table 3.5 – Runway 04-22 Aircraft Mix (Local and Itinerant)

Aircraft Type	Proxy	NEFCalc Database
Single Engine (Piston)	Cessna 172R Skyhawk	CNA172

4 2033 NOISE EXPOSURE PROJECTION CONTOURS

The 10-year (2033) NEF 25, 30, 35, and 40 contours for the Airport are presented in Figure 4.1. NEFcalc model report files are presented in Appendix A.

OLDS - DIDSBURY AIRPORT

Figure 4.1
NEP Contours (2033)
Extended Runway (4,675 ft.)

OCTOBER 2023

Mountain View COUNTY

NEF 25
NEF 30
NEF 35
NEF 40

0 300 600
Metres

*FOR PLANNING PURPOSES ONLY

Appendix A - Model Input Files

Nef-Calc

Flightpaths

FLIGHTPATH 10S

Runway 10

Type Strait Departure

Notes

FLIGHTPATH 28S

Runway 28

Type Strait Departure

Notes

FLIGHTPATH 04S

Runway 04

Type Strait Departure

Notes

Nef-Calc

Flightpaths

FLIGHTPATH 22S

Runway 22

Type Strait Departure

Notes

FLIGHTPATH 10R

Runway 10

Type One Turn Departure

1st Turn Direction	Right		
Angle of Turn	90.00	degs.	
Criteria for Turn Start	Height	0.50	kFt
Turn Criteria	Rate	1.00	3 degs/Sec

Notes

FLIGHTPATH 10L

Runway 10

Type One Turn Departure

1st Turn Direction	Right		
Angle of Turn	90.00	degs.	
Criteria for Turn Start	Height	0.50	kFt
Turn Criteria	Rate	1.00	3 degs/Sec

Notes

Nef-Calc

Flightpaths

FLIGHTPATH 28R

Runway 28

Type One Turn Departure

1st Turn Direction	Right		
Angle of Turn	90.00	degs.	
Criteria for Turn Start	Height	0.50	kFt
Turn Criteria	Rate	1.00	3 degs/Sec

Notes

FLIGHTPATH 28L

Runway 28

Type One Turn Departure

1st Turn Direction	Right		
Angle of Turn	90.00	degs.	
Criteria for Turn Start	Height	0.50	kFt
Turn Criteria	Rate	1.00	3 degs/Sec

Notes

FLIGHTPATH 04R

Runway 04

Type One Turn Departure

1st Turn Direction	Right		
Angle of Turn	90.00	degs.	
Criteria for Turn Start	Height	0.50	kFt
Turn Criteria	Rate	1.00	3 degs/Sec

Notes

Nef-Calc

Flightpaths

FLIGHTPATH 04L

Runway 04

Type One Turn Departure

1st Turn Direction	Right		
Angle of Turn	90.00	degs.	
Criteria for Turn Start	Height	0.50	kFt
Turn Criteria	Rate	1.00	3 degs/Sec

Notes

FLIGHTPATH 22R

Runway 22

Type One Turn Departure

1st Turn Direction	Right		
Angle of Turn	90.00	degs.	
Criteria for Turn Start	Height	0.50	kFt
Turn Criteria	Rate	1.00	3 degs/Sec

Notes

FLIGHTPATH 22L

Runway 22

Type One Turn Departure

1st Turn Direction	Right		
Angle of Turn	90.00	degs.	
Criteria for Turn Start	Height	0.50	kFt
Turn Criteria	Rate	1.00	3 degs/Sec

Notes

Nef-Calc

Flightpaths

FLIGHTPATH 10C

Runway 10

Type Circuit

Glide Slope 1 (GS1)	3.00	degs.	
Altitude that GS1 starts	1.00	kFt	
Glide Slope 2 (GS2)	3.00	degs.	
Altitude where GS2 starts	1.00	kFt	

Notes

FLIGHTPATH 10A

Runway 10

Type Approach

Glide Slope 1 (GS1)	3.00	degs.	
Altitude that GS1 starts	15.00	kFt	
Glide Slope 2 (GS2)	3.00	degs.	
Altitude where GS2 starts	1.00	kFt	

Notes

FLIGHTPATH 28C

Runway 28

Type Circuit

Glide Slope 1 (GS1)	3.00	degs.	
Altitude that GS1 starts	1.00	kFt	
Glide Slope 2 (GS2)	3.00	degs.	
Altitude where GS2 starts	1.00	kFt	

Notes

Nef-Calc

Flightpaths

FLIGHTPATH 04C

Runway 04

Type Circuit

Glide Slope 1 (GS1)	Right		
Altitude that GS1 starts	-1.00	degs.	
Glide Slope 2 (GS2)	Height	1.00	kFt
Altitude where GS2 starts	Rate 0.50	1.00	3 degs/Sec

Notes

FLIGHTPATH 22C

Runway 22

Type Circuit

Glide Slope 1 (GS1)	Right		
Altitude that GS1 starts	-1.00	degs.	
Glide Slope 2 (GS2)	Height	1.00	kFt
Altitude where GS2 starts	Rate 0.50	1.00	3 degs/Sec

Notes

FLIGHTPATH 28A

Runway 28

Type Approach

Glide Slope 1 (GS1)	3.00	degs.
Altitude that GS1 starts	15.00	kFt
Glide Slope 2 (GS2)	3.00	degs.
Altitude where GS2 starts	1.00	kFt

Notes

Nef-Calc

Flightpaths

FLIGHTPATH 04A

Runway 04

Type Approach

Glide Slope 1 (GS1) 3.00 degs.
Altitude that GS1 starts 15.00 kFt
Glide Slope 2 (GS2) 3.00 degs.
Altitude where GS2 starts 1.00 kFt

Notes

FLIGHTPATH 22A

Runway 22

Type Approach

Glide Slope 1 (GS1) 3.00 degs.
Altitude that GS1 starts 15.00 kFt
Glide Slope 2 (GS2) 3.00 degs.
Altitude where GS2 starts 1.00 kFt

Notes

Nef-Calc
Runways

Runway 10

Start X	-2.11 kFt	**End X**	2.11 kFt
Start Y	1.01 kFt	**End Y**	-1.01 kFt

Notes

Runway 28

Start X	2.11 kFt	**End X**	-2.11 kFt
Start Y	-1.01 kFt	**End Y**	1.01 kFt

Notes

Runway 04

Start X	-1.11 kFt	**End X**	0.45 kFt
Start Y	-1.40 kFt	**End Y**	-0.26 kFt

Notes

Runway 22

Start X	0.45 kFt	**End X**	-1.11 kFt
Start Y	-0.26 kFt	**End Y**	-1.40 kFt

Notes

Nef-Calc

Airport Movements

FLIGHTPATH	Aircraft Code	DayTime Events	NightTime Events
04A			
04A	CNA172	0.16	0.04
04A	CNA172	0.07	0.02
04A		**0.23**	**0.06**
04C			
04C	CNA172	0.93	0.23
04C		**0.93**	**0.23**
04L			
04L	CNA172	0.04	0.01
04L	CNA172	0.02	0.00
04L		**0.06**	**0.01**
04R			
04R	CNA172	0.04	0.01
04R	CNA172	0.02	0.00
04R		**0.06**	**0.01**
04S			
04S	CNA172	0.08	0.02
04S	CNA172	0.04	0.01
04S		**0.12**	**0.03**
10A			
10A	CNA172	3.91	0.98
10A	PA31	1.40	0.35
10A	DHC6	0.28	0.07
10A		**5.59**	**1.40**
10C			
10C	CNA172	9.91	2.48
10C	PA31	4.25	1.06
10C		**14.15**	**3.54**
10L			
10L	CNA172	0.98	0.24
10L	PA31	0.35	0.09
10L	DHC6	0.07	0.02
10L		**1.40**	**0.35**

Nef-Calc

Airport Movements

FLIGHTPATH	Aircraft Code	DayTime Events	NightTime Events
10R			
10R	CNA172	0.98	0.24
10R	PA31	0.35	0.09
10R	DHC6	0.07	0.02
10R		**1.40**	**0.35**
10S			
10S	CNA172	1.96	0.49
10S	PA31	0.70	0.18
10S	DHC6	0.14	0.04
10S	DHC6	0.21	0.05
10S		**3.00**	**0.75**
22A			
22A	CNA172	0.49	0.12
22A	CNA172	0.21	0.05
22A		**0.70**	**0.17**
22C			
22C	CNA172	2.79	0.70
22C		**2.79**	**0.70**
22L			
22L	CNA172	0.12	0.03
22L	PA31	0.05	0.01
22L		**0.17**	**0.04**
22R			
22R	CNA172	1.47	0.37
22R	CNA172	0.12	0.03
22R	CNA172	0.05	0.01
22R		**1.64**	**0.41**
22S			
22S	CNA172	0.24	0.06
22S	CNA172	0.11	0.03
22S		**0.35**	**0.09**
28A			
28A	CNA172	5.87	1.47
28A	PA31	2.10	0.52
28A	DHC6	0.42	0.11

Nef-Calc

Airport Movements

FLIGHTPATH	Aircraft Code	DayTime Events	NightTime Events
28A		**8.38**	**2.10**
28C			
28C	CNA172	14.86	3.72
28C	PA31	6.37	1.59
28C		**21.23**	**5.31**
28L			
28L	CNA172	1.47	0.37
28L	PA31	0.52	0.13
28L	DHC6	0.11	0.03
28L		**2.10**	**0.52**
28R			
28R	PA31	0.52	0.13
28R	DHC6	0.11	0.03
28R		**0.63**	**0.16**
28S			
28S	CNA172	2.93	0.73
28S	PA31	1.05	0.26
28S		**3.98**	**1.00**
Grand Total:		**68.90**	**17.22**

2023-10-

ACODE	FLIGHTPATH	Range	DayTimeEvent	NightTimeEvents
CNA172				
CNA172	10A	0	3.91	0.98
CNA172	10C	1	9.91	2.48
CNA172	10S	1	1.96	0.49
CNA172	10R	1	0.98	0.24
CNA172	10L	1	0.98	0.24
CNA172	28A	0	5.87	1.47
CNA172	28C	1	14.86	3.72
CNA172	28S	1	2.93	0.73
CNA172	22R	1	1.47	0.37
CNA172	28L	1	1.47	0.37
CNA172	04A	0	0.16	0.04
CNA172	04A	0	0.07	0.02
CNA172	04S	1	0.08	0.02
CNA172	04S	1	0.04	0.01
CNA172	04R	1	0.04	0.01
CNA172	04R	1	0.02	0.00
CNA172	04L	1	0.04	0.01
CNA172	04L	1	0.02	0.00
CNA172	04C	1	0.93	0.23
CNA172	22A	0	0.49	0.12
CNA172	22A	0	0.21	0.05
CNA172	22S	1	0.24	0.06
CNA172	22S	1	0.11	0.03
CNA172	22R	1	0.12	0.03
CNA172	22R	1	0.05	0.01
CNA172	22L	1	0.12	0.03
CNA172	22C	1	2.79	0.70
CNA172			**49.85**	**12.46**
DHC6				
DHC6	10A	0	0.28	0.07
DHC6	10S	1	0.14	0.04
DHC6	10R	1	0.07	0.02
DHC6	10L	1	0.07	0.02
DHC6	28A	0	0.42	0.11
DHC6	10S	1	0.21	0.05
DHC6	28R	1	0.11	0.03
DHC6	28L	1	0.11	0.03
DHC6			**1.40**	**0.35**
PA31				
PA31	10A	0	1.40	0.35
PA31	10C	1	4.25	1.06
PA31	10S	1	0.70	0.18
PA31	10R	1	0.35	0.09
PA31	10L	1	0.35	0.09
PA31	28A	0	2.10	0.52
PA31	28C	1	6.37	1.59
PA31	28S	1	1.05	0.26
PA31	28R	1	0.52	0.13
PA31	28L	1	0.52	0.13
PA31	22L	1	0.05	0.01
PA31			**17.65**	**4.41**

ACODE	FLIGHTPATH	Range	DayTimeEvent	NightTimeEvents
Grand Total:			**68.90**	**17.22**

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