REGINA INTERNATIONAL AIRPORT AREA

LAND USE PLANNING COLLABORATION

West Regina Long-Range Planning Framework

June 3rd, 2024

MXD DEVELOPMENT STRATEGISTS · Stantec · InterVISTAS a company of Royal HaskoningDHV · KGS GROUP

Preface

MXD Development Strategists Ltd. ('MXD'), in collaboration with subconsultants Stantec, KGS and InterVISTAS, was commissioned by the Regina Airport Authority ('RAA') and the City of Regina ('the City') in June 2023 to conduct a Land Use Planning Collaboration Study and prepare a Long-Range Planning Framework for West Regina.

Regina International Airport (YQR) plays a significant role in facilitating economic development and connectivity, linking Regina and Saskatchewan with the rest of Canada, the USA and internationally for the **movements of goods and people**. The primary objective of the overall assignment is to **create a Long-Range Planning Framework for West Regina, encompassing the land around YQR.**

The goal of the project is to create a Long-Range Planning Framework that:

- Respects the Statement of Provincial Interest;
- Informs future Roads and Infrastructure Investments;
- Establishes a Land Use Framework that is compatible with YQR and facilitates employment and economic development; and
- Provides guiding policies for future Municipal Plans and to guide Development Proposals.

This document presents the West Regina Long-Range Planning Framework based on the findings of the study as well as providing an overview of the initial, comprehensive analysis of existing conditions from an aviation, land-use, economic, transportation and infrastructure perspective.

MXD Development Strategists, Ltd. and associated sub-consultants do not warrant that any estimates contained within the study will be achieved, but that they have been prepared conscientiously on the basis of information obtained during the course of this market analysis. Any tenant references made in this report are for illustrative purposes only. Reference material used for this report, including previous city plans, was derived from the project team, as well as from the public and private sectors and government publications. This information was supplemented by our experience in the planning and development of real estate projects throughout North America and internationally.

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MXD Development Strategists Ltd. ('MXD'), in collaboration with sub-consultants Stantec, KGS and InterVISTAS, were commissioned by the Regina Airport Authority ('RAA') and the City of Regina ('the City') in June 2023 to conduct a Land Use Planning Collaboration Study and prepare a long-range planning framework for growth and development around Regina International Airport (YQR).

As Regina's **major economic development asset** and **Canada's 16th busiest airport**, Regina International Airport (YQR) plays a significant role in facilitating economic development and connectivity, linking Regina and Saskatchewan with the rest of Canada, the USA and internationally for the movements of people and products.

Accordingly, this assignment is **driven by the Provincial Government**, to ensure YQR and its operations will not be compromised by future development that may cause future restrictions on Airport operations or contribute to its potential relocation, respecting the Statement of Provincial Interest, as below:

> *"To assist in meeting the province's transportation interests, **planning documents and decisions shall**, insofar as practical:*
>
> 2. *Ensure that **development is compatible** with **existing and planned transportation infrastructure**, including rail lines, rail yards, **airports**, barge docks, ferry landings and provincial highways;...*
> 4. *Ensure that **current and future runway expansion plans, aviation and navigation needs** of the Saskatoon and Regina International Airports are **not compromised by development in proximity** to these Airports;..."*
>
> *Government of Saskatchewan, Statement of Provincial Interest Regulations, Clause 6.14.2 and 6.14.4*

The primary objective of the overall assignment is to create a **Long-Range Planning Framework for West Regina**, encompassing the land around YQR, to both **preserve current and future operations** and **unlock development opportunities**. The goals of the project are to create a Long-Range Planning Framework that:

- Respects the Statement of Provincial Interest to protect current and future operations at YQR.
- Establishes a Land Use Framework that is compatible with YQR's operations and facilitates employment and economic development.
- Informs future Roads and Infrastructure Investments to unlock development around YQR.
- Provides guiding policies for future Municipal Plans and to guide Development Proposals.

Executive Summary

Airports, when combined with regional multi-modal connectivity, enabling and compatible land-uses, upgraded infrastructure and transportation frameworks are significant generators of economic activity. The Recommended West Regina Planning Framework brings together the City of Regina's development visions alongside YQR's operational requirements, and important stakeholder and community perspectives to establish a roadmap for planning and development decisions around the Airport for the next 50-years or more.

Land Use Planning & Management Around Airports in Canada

Land Use Planning around Airports in Canada is managed through a collaborative framework of various international, national, federal and local entities including the International Civil Aviation Organization (ICAO), Transport Canada, Airport Operators, NAV Canada, local Municipalities and other levels of Government, such as the Provincial Government in this project.

In particular, the ICAO has developed a Balanced Approach to Aircraft Noise Management to provide guidance to Airport Authorities, Municipalities and Aircraft Operators on managing the impact of aircraft noise on communities near airports. This approach consists of four elements including the reduction of Noise at Source, Land Use Planning & Management, Operating Restrictions and Noise Abatement Operational Procedures.

Within the ICAO's Balanced Approach, land-use planning is particularly important to proactively provide for compatible land use around airports and prevent operational restrictions or land acquisition by the Airport as a final resort, as seen at Vancouver, Toronto and Montreal.

Best Practice Examples of Innovative Airport Growth Districts such as Edmonton International Airport Aerotropolis Viability Study, CenterPort & WALC at Winnipeg International Airport and Hamilton International Airport Area Employment Growth District all recognized and defined compatible land-uses in relation to the protection of the airport, as well as galvanized inter-jurisdictional funding for major enabling road and infrastructure improvements to unlock economic growth in the region. These case studies have informed the evolution of the Recommended West Regina Planning Framework to prevent impacts as shown in **Figure E.1** below.

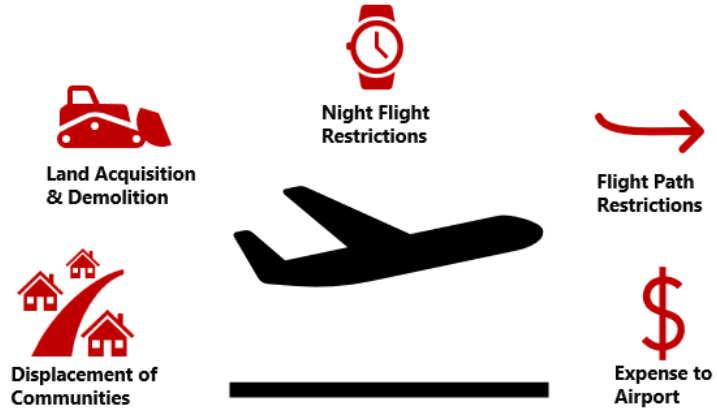


Figure E.1 Impacts of Inadequate Land Use Planning on Airport Operations & Surrounding Communities

Executive Summary

YQR & West Regina Economic Context

YQR plays a significant role in facilitating economic development and connectivity linking Regina and Saskatchewan with the rest of Canada, the USA and internationally for the movement of people and products as detailed below:

- **YQR contributes over $800 million in total economic impact and $354 million in direct economic impact.**
- YQR functions as a **vital 'spoke' within a 'spoke and hub' air transportation system**, where it serves as a **regional connector, linking Regina to larger central airports or 'hubs' such as Vancouver, Calgary, Edmonton, and Toronto.**
- YQR further benefits from proximity to the growing companies that are located at the **Global Transportation Hub (GTH) and direct access and exposure to major transportation routes**, **affording strong air-to-ground connectivity**.
- **Advanced Manufacturing, Distribution, Aerospace, and Agri-business** are well suited for YQR and the West Regina area and should be **targeted for growth.**
- YQR's 24-hour operations, especially during night hours, is essential for accommodating connecting flights that align with the schedules of these larger hub airports, as illustrated in **Figure E.2**, to allow for **seamless integration into international markets**, fostering trade, investment and mobility for Regina and the wider Saskatchewan region.
- **Clean Energy Technology Investments are growing in Regina and Saskatchewan,** presenting opportunities for renewable energy or Sustainable Aviation Fuels that would be **particularly well-suited to the YQR vicinity.**

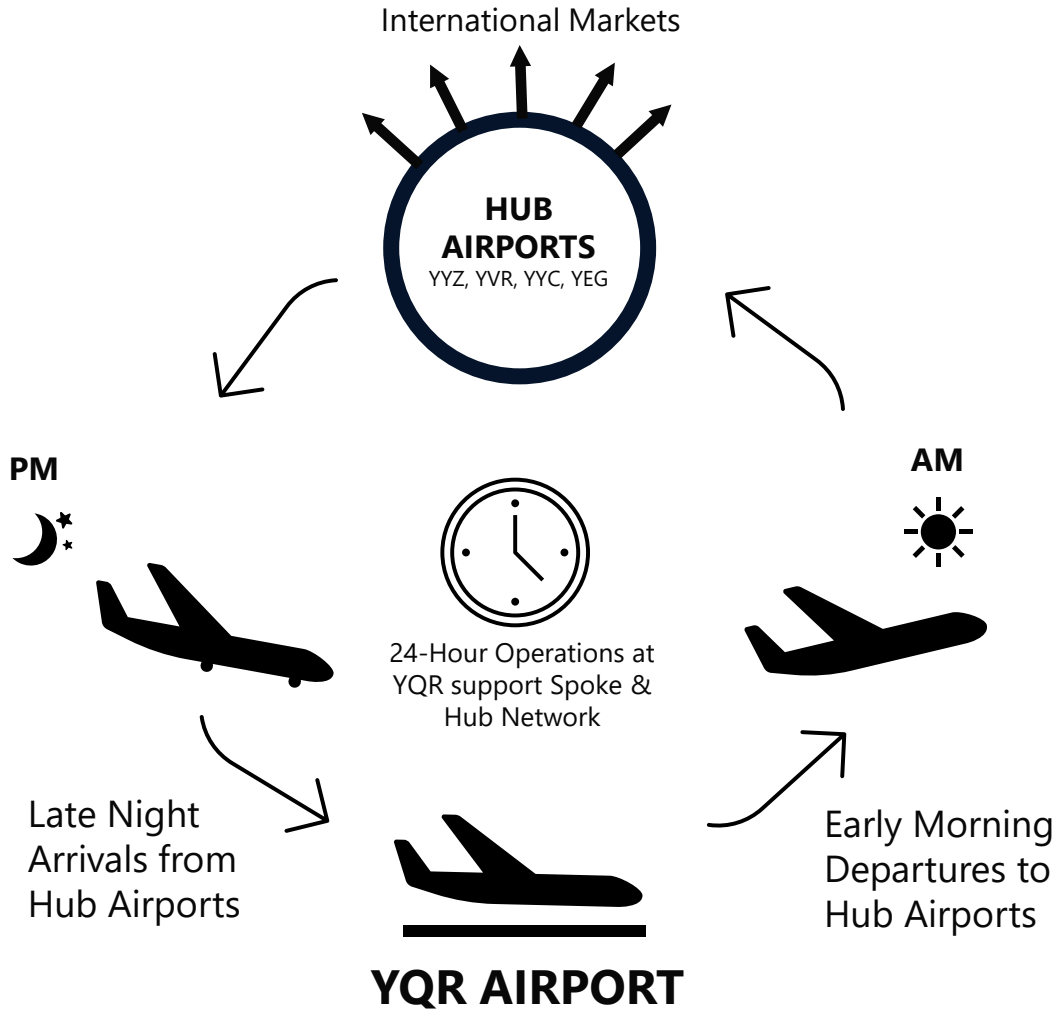


Figure E.2 24 Hour Operations at YQR Airport as a 'Spoke' within a 'Spoke & Hub' System

Executive Summary

Project Advisory Committee & Stakeholder Engagement

Detailed engagement was undertaken to gain critical local insights and inform the Recommended West Regina Framework. The engagement process was undertaken in two parts – via a Project Advisory Committee (PAC) of major public and private sector agencies; and one-on-one stakeholder meetings with key representatives of the local community and adjacent landowners. Engagement with First Nations groups was also undertaken and offered to Treaty 4 Nations.

PAC Members expressed general support for the recommendations in the final meeting, noting the following:

The recommendations provide a **long-term pathway to support development** around the Airport into the future and create an **economic corridor** with the GTH.

The **airport is the single biggest asset to accelerate economic development in the City** and this framework progresses **industrial development and connectivity** between the Airport and other areas.

Support for **expansion of the airport to cater to larger aircrafts and expanded flights schedules.**

Opportunity for expansion of Pilot Training initiatives in collaboration with Sask. Polytechnic as well as providing other types of training courses in targeted economic sectors.

Stakeholders and landowners expressed the following key points:

- Agreement from all stakeholders that an **overarching vision is required to shape the future of West Regina**. There is currently a **lack of cohesive direction** in terms of mobility, land-use and infrastructure for this area and this constrains future development.
- YQR is **unique in its proximity to the City and urban area** – this should be drawn upon as an opportunity as well as an **important consideration** for future development.
- **Concern** from one stakeholder about **inconsistencies in the planning process** between both the City and RAA that has restricted development in the past, particularly residential, in the surrounding area.
- **Concern** that the AOIZ-1 Economic Development area **restricts a large amount of land from residential development** and is not based on officially recognized tools such as NEF contours or market demand analysis for industrial development.
- Several other planning and transportation initiatives occurring concurrently at the City, particularly the **Sask Drive Extension Value Planning Study** – this LUPC Project should interrelate.
- Several comments about the **location of a rail crossing** at Pinkie Road or Courtney Road for a rail crossing
- The Airport is a **major economic driver** and important for future growth opportunities in Regina.
- **GTH is another major economic driver** and has brought in several important tenants and investment into Regina.

Recommended West Regina Long-Range Planning Framework

Accordingly, the West Regina Long-Range Planning Framework provides a clear, **comprehensive framework that both protects the Airport's operations as well as supports economic development opportunities within growing and established sectors are unlocked by sustained air-to-ground-connectivity.**

The Recommended West Regina Long-Range Planning Framework is built of the following four elements:

1. **Preferred 50-Year Ultimate Airfield Concept** – Developed iteratively throughout the project with the Consultant Team and RAA and illustrates recommended runway extensions and development areas on the Airport's property to accommodate future Airport capacity and growth.
2. **Recommended Land Use Policy Framework** – Based on Best Practices and multi-tiered considerations, the Land Use & Policy Framework delivers a comprehensive tool at the local level that translates technical Airspace Systems and Noise Contours into land-use policies.
3. **Recommended Enabling Transportation & Mobility Network** – In order to unlock economic development and growth in West Regina, the Enabling Road Network has been developed to drive air and ground connectivity between the Airport, the GTH and Downtown as well as provide for commuter traffic.
4. **Conceptual Infrastructure Servicing Strategy** – The Infrastructure Servicing Strategy illustrates the potential future infrastructure to facilitate the recommended development areas.

Recommended Ultimate Airfield Concept

The Preferred Ultimate Airfield Concept, shown in **Figure E.3**, balances YQR's ability to expand with anticipated market conditions.

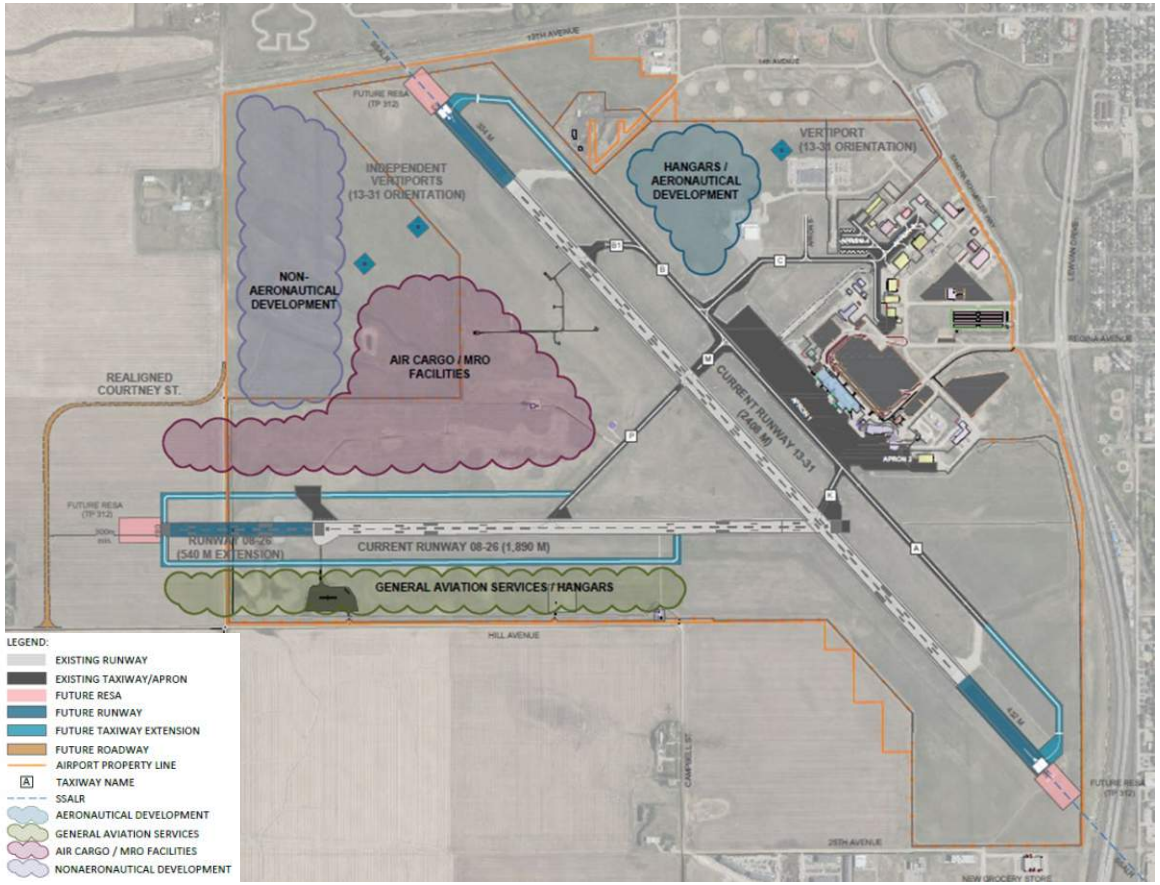


Figure E.3 Preferred 50-Year Ultimate Airfield Concept
Prepared by: Inter*VISTAS* Consulting Inc., 2024

Executive Summary

Recommended Land Use Policy Framework

The Recommended Land Use Policy Framework has been developed based on the following key considerations and rationale:

- **Land Use around YQR is currently primarily managed through NEF contours**, with residential development restricted above the NEF30, as per Transport Canada Federal Guidelines (TP1247).
- Analysis of Noise Complaints received by RAA over the last decade highlights that approximately **79% of noise complaints originate from areas outside of the NEF25.**
- International and local research has found that there can be **significant deviation in modeled NEF contours and recommends that they are supplemented with Single Event Noise Exposure Levels** to ensure worst case scenarios are considered in Airport Vicinity Planning.
- **YQR's role as a regional connector 'spoke' in a 'spoke and hub' system, requiring nighttime operations** to provide seamless connections to central hub Airports and continued **access to international markets** for Regina and the Saskatchewan Region.
- YQR presents **development opportunities** for growing and established sectors within the Regina Economy such as **Agri-business, Renewable Energy, Advanced Manufacturing, Distribution, E-commerce, Aerospace and Aviation.**
- Economic Development Regina and the City of Regina have expressed interest in **supporting the expansion of Pilot Training Capacity** at YQR to **foster growth initiatives within the Aerospace and Aviation sectors** such as connections to the Moose Jaw NATO Training Base and other regional airports.

Accordingly, the **Recommended Land Use Policy Framework translates various noise metrics, applied to the Ultimate Airfield Concept, into an integrated tool at the local level** to manage land-uses around the Airport more appropriately than existing regulations.

The Recommended Policy Framework illustrates four layers of Airport Operating Influence Zones (AOIZ) that provide for a **hierarchy of urban growth management policies depending on proximity to the Airport**, underlying land uses, and anticipated noise and other impacts from Airport operations.

The four layers include:

1. Airport Operating Influence Zone 1 – strictest controls to prevent incompatible land-uses and support economic development.

AOIZ-1 - Economic Development

AOIZ-1 - Existing Urban

2. Airport Operating Influence Zone 2 – flexibility for low-density residential development with noise attenuation measures.

3. Airport Operating Influence Zone 3 – protection of pilot training circuits and general aviation operations.

4. Airport Operating Influence Zone 4 – height restrictions to ensure safe aircraft operations.

The Recommended Land Use Policy Framework is illustrated in **Figure E.4** and **Table E.1** on the following pages.

Executive Summary

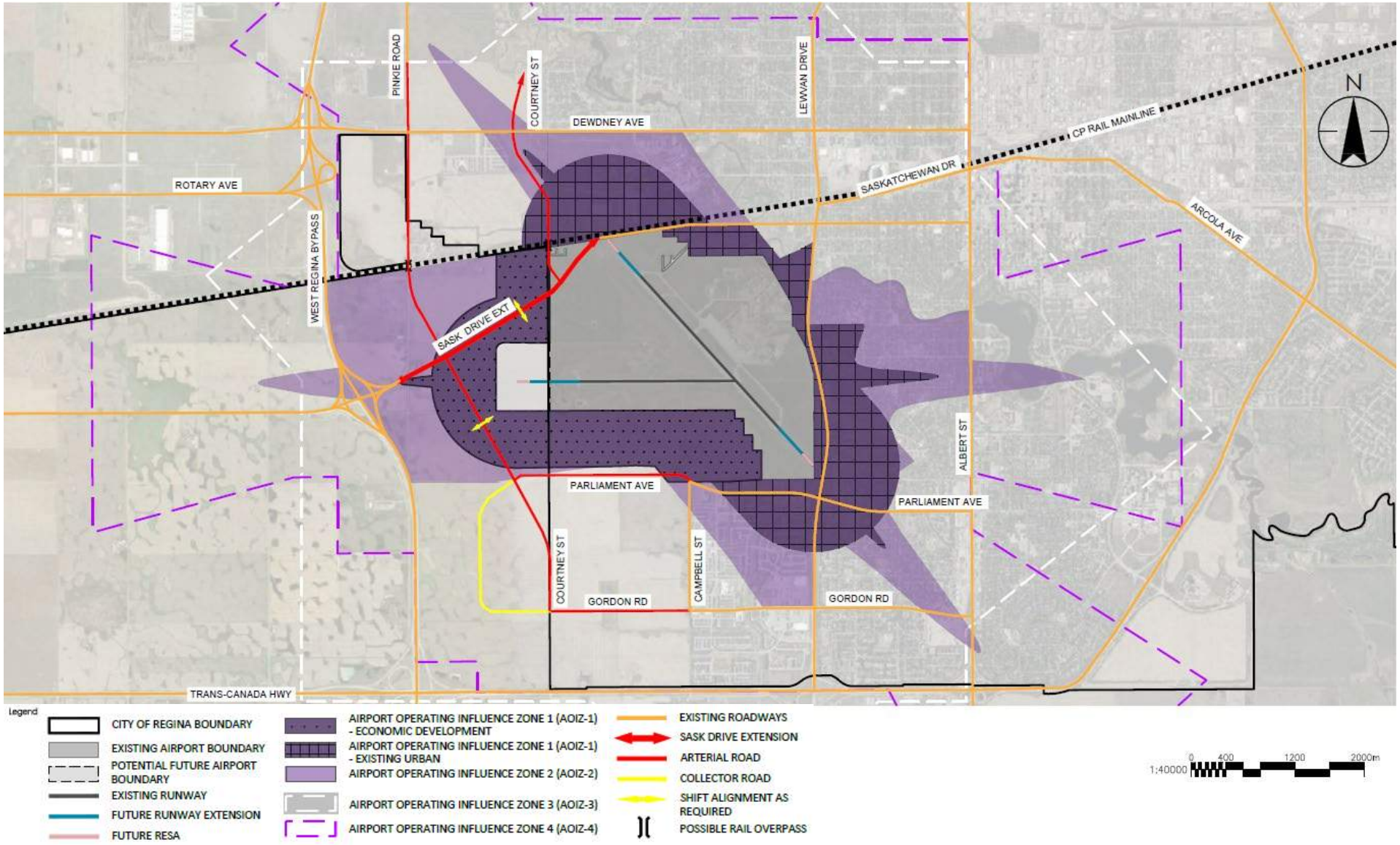


Figure E.4 Recommended Land Use Policy Framework

Executive Summary

Table E.1 Recommended Land Use Policy Framework Summary Table

Policy Area	Intent	Recommended Policies
AOIZ-1 Economic Development	• Provides for an economic and employment base around the Airport that enhances YQR's role as a major economic driver for the Region. • This area presents opportunities to support city- and region-wide economic growth, job creation and optimize real estate.	• **No new** noise sensitive development is permitted. • Allow a mix of land uses such as industrial and commercial to provide an economic base around the airport that enhances the airport's role as a key economic generator for the region. • Employment Activities provided for: Light Industrial, Logistics, Storage, R&D and Flex as Market Demand allows. • Temporary Permitted Uses including Renewable Energy, SAF production & Micro-Utility Plants, Truck Storage, etc.
AOIZ-1 Existing Urban	• Provides for policy direction of existing residential and urban areas.	• **No new** noise sensitive development is permitted (redevelopment of existing residential sites to the same density is permitted). • Rezoning of residential or allowing for higher intensity residential land use is not permitted, unless previously approved in policy. If necessary, it is recommended the City place a density control within this Overlay Zone. • Aviation Noise Study to assess whether application of Noise Attenuation Building Standards is required (at cost of developer). (See AOIZ-2 Recommended Policies below for notes on Implementation of Building Standards). • In the event of a conflict between the requirements of this Overlay Zone and the underlying zone or zoning change impacting intensification, such as those recommended or recently approved in the Housing Accelerator Fund Bill, the AOIZ 1 – Existing Urban requirements should apply. • Employment generating uses are permitted.
AOIZ-2	• Provides for more flexibility in land-uses around the airport, whilst managing noise and nuisance effects for Noise Sensitive Development.	• Low density residential permitted. • High density residential permitted with an Aviation Noise Study. • Aviation Noise Study to assess whether application of Noise Attenuation Building Standards is required (at cost of developer). • To implement this, the City/RAA will need to develop updated Noise Attenuation Building Standards, alongside the evolving Building Energy Code. In this process, the need for individual Aviation Noise Studies may be negated due to improved Building Standards, at which point can be removed from the policy. • Employment generating uses are permitted including commercial, industrial and other employment activities.
AOIZ-3	• Illustrates the area impacted by the variety of aircrafts and flight patterns used for Pilot Training at YQR, based on the Ultimate Airfield Configuration.	• To be determined based on further studies and discussions between the City and RAA.
AOIZ-4	• Provides a regulatory tool at the local level to ensure TC and NAVCanada Airspace Height Requirements and Land-Use Restrictions are followed and met by property owners when land is developed.	• Regina Airport Zoning Regulations in place. • Noise Sensitive Development is Permitted. • No structures or buildings constructed to exceed Obstacle Limitation Surfaces or underlying zone. Height limitations must be respected. • Non-residential activities that may cause potential conflicts with aircraft operations are restricted including light, smoke, hazard, fumes or other hazards.

Executive Summary

Recommended Transportation & Mobility Strategy

The Recommended Transportation & Mobility Strategy builds on years of planning and analysis by the City of Regina and partners to create an enabling transportation network that supports airport growth, unlocks development around YQR afforded by the Recommended Land Use Policy, in the transportation of both goods and people and is considerate of municipal goals for land surrounding the airport.

The Strategy includes recommendations for the following key corridors, providing for both commuter and truck traffic:

- **Saskatchewan Drive Extension:** Directly linking the Airport and GTH via Hill Avenue interchange on the West Regina Bypass.
- **Pinkie Rd/Courtney Street (south):** Defines the AOIZ-1 Economic Development on the west side of the airport and allows for development while respecting take-off surfaces and noise contours related to air traffic.
- **Parliament Avenue** and **Gordon Road:** Serving as the two main east-west arterials in south Regina and further defining the southern boundary of the AOIZ-1 Economic Development. Connects new residential areas to downtown via the Pinkie Rd/Courtney Street link to the Saskatchewan Drive Extension.

The Recommended Transportation & Mobility Strategy is intended as a conceptual strategy to provide direction on the location and connection points of major corridors to facilitate development. It is recommended that the strategy is evolved further through detailed design studies such as the Sask Drive Extension Value Planning Project being conducted concurrently.

Conceptual Infrastructure Servicing Strategy

The Conceptual Infrastructure Servicing Strategy includes the following main concepts:

- Utilization of existing City of Regina water and wastewater infrastructure for maximum and efficient use of infrastructure.
- Expansion of City of Regina water distribution network from existing developed lands north, east, and south of the airport into undeveloped lands east of the West Regina Bypass.
- Installation of a new wastewater trunk conveying flows north to the force mains that convey flows from the McCarthy Boulevard pump station to the wastewater treatment plant to service lands east of the West Regina Bypass.
- Utilizing existing drainage patterns and conveying flows from new developed lands westward through a combination of underground pipes, culverts, overland ditches and channels, and on-site storage.
- To ease the burden on the existing City of Regina infrastructure, there are several alternative servicing or recycling initiatives that could be employed at YQR such as renewable energy generation, geo-thermal cooling, stormwater management, recycling runway water, on-site wastewater storage or glycol recovery from the deicing processes.

Executive Summary

Implementation Action Plan

It is intended that the **Recommended Land Use Policy Framework would replace existing policies and regulations** related to the Airport within the City of Regina and RM of Sherwood Official Community Plans and Zoning Bylaws, providing a consolidated decision-making tool for all development within the Airport's vicinity and, where appropriate, removing the need for consultation with RAA for individual development projects.

For successful implementation, several strategic action items are identified relating to Policy & Land Use, Transportation and Infrastructure components of the Framework. This includes **evolving, confirming and adopting** the recommendations into City of Regina existing policies, based on future discussions between the City and RAA, and **undertaking additional, detailed infrastructure and transportation studies to confirm the recommendations**.

Introduction

As Regina's major economic development asset and Canada's 16th busiest Airport, **Regina International Airport (YQR) plays a significant role in driving economic development and connectivity**, linking Regina and Saskatchewan with the rest of Canada, the USA and internationally for the movements of goods and people.

This assignment is driven by the **Province of Saskatchewan's Statement of Provincial Interest Regulations** to ensure current and future operations at YQR are protected as below:

"To assist in meeting the province's transportation interests, planning documents and decisions shall, insofar as practical:...

2. Ensure that development is compatible with existing and planned transportation infrastructure, including rail lines, rail yards, airports, barge docks, ferry landings and provincial highways;...

4. Ensure that current and future runway expansion plans, aviation and navigation needs of the Saskatoon and Regina International Airports are not compromised by development in proximity to these Airports;..."

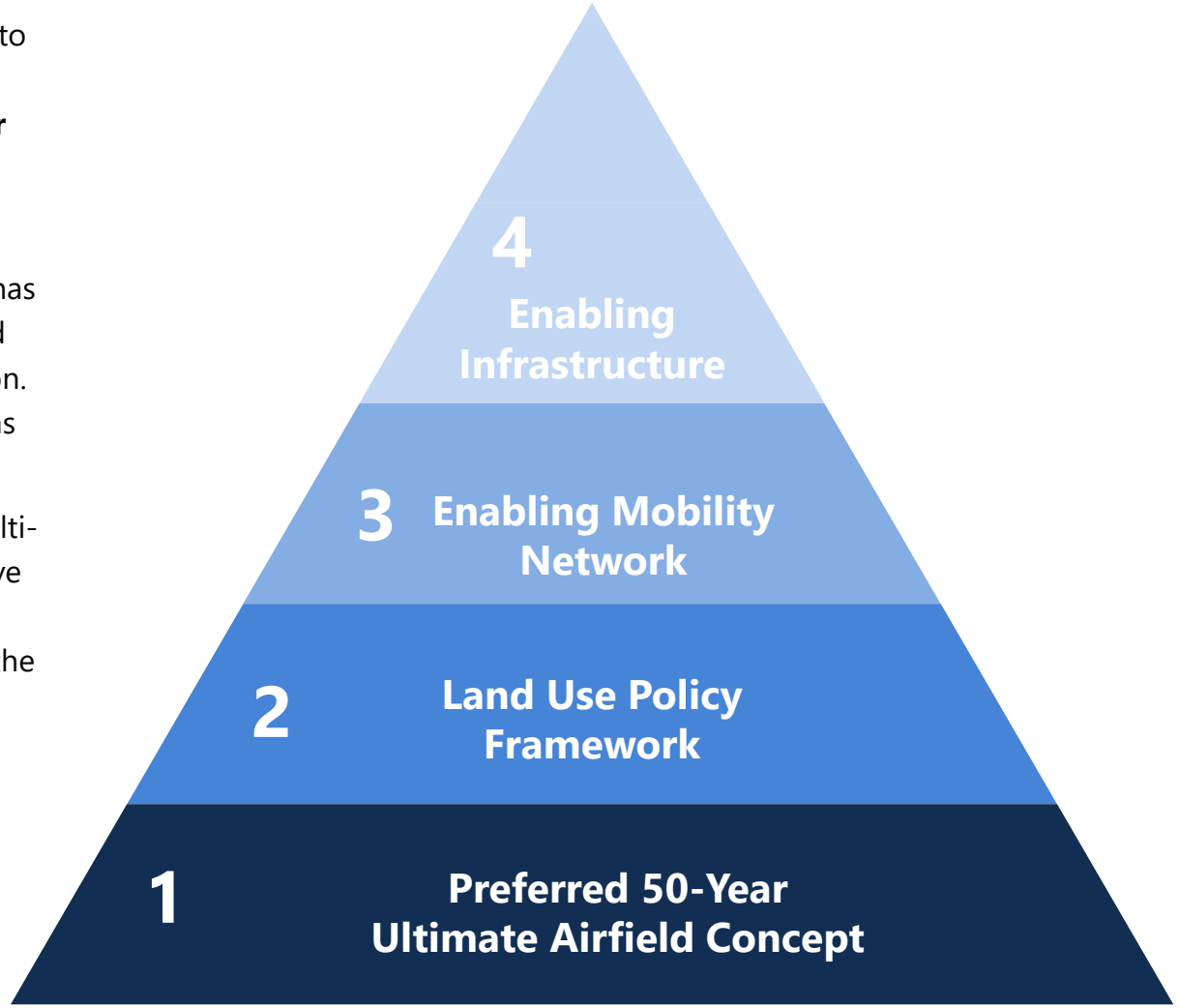
Introduction

West Regina Long-Range Planning Framework

Driven by the Provincial Government, the primary objective of the assignment is to create a **Long-Range Planning Framework** for West Regina, to **preserve and protect YQR's current and future operations** and **unlock the area's potential for economic growth**.

The Recommended Framework is built up of the following four elements:

1. **Preferred 50-Year Ultimate Airfield Concept** – The Ultimate Airfield Concept has been developed iteratively throughout the project with the Consultant Team and RAA and forms the base of the Long-Range Planning Framework to be built upon. The Concept illustrates recommended runway extensions and development areas on the Airport's property to accommodate future Airport capacity and growth.
2. **Recommended Land Use Policy Framework** – Based on Best Practices and multi-tiered considerations, the Land Use & Policy Framework delivers a comprehensive tool at the local level that translates technical Airspace Systems and Noise Contours into land-use policies. This provides for compatible land-uses around the Airport and advancing regional economic development initiatives.
3. **Recommended Enabling Transportation & Mobility Network** – In order to unlock economic development and growth in West Regina, the Enabling Road Network has been developed to drive air and ground connectivity between the Airport, the GTH and Downtown as well as provide for commuter traffic.
4. **Conceptual Infrastructure Servicing Strategy** – The Infrastructure Servicing Strategy illustrates the potential future infrastructure to facilitate the recommended development areas.



Introduction

Study Area

The Study Area for this project examines the western side of Regina, including parcels in the central and west areas of the RM of Sherwood's jurisdiction. The Study Area, as illustrated in **Figure 1.1** on the following page, is split into the Primary Area, Secondary Area and Areas of Influence – East and West. This establishes a structured approach for the study where each zone is studied with varying levels of detail and specificity according to the project's objectives.

- **Primary Area:** This represents the spatial focal point of the study. The key goals for the Primary Area include ensuring complementary land uses in the area immediately adjacent to the Airport's boundaries to safeguard YQR's future operations and necessary transportation upgrades around the airport.
- **Secondary Area:** Encompassing major connectivity assets or future projects such as the West Regina Bypass, potential Railway overpass and future Saskatchewan Drive extension as well as significant landholdings including Zagime First Nation, Forster Harvard and Dream Development.
- **Areas of Influence:** These areas form a key piece of the study, in terms of how they impact and influence the Primary and Secondary Areas from a Land-Use and Infrastructure perspective.
    - **East:** As an existing urban area, the study focuses on providing a checklist of considerations for development in this area, as they relate to airport operations based on both the Province's interests and Transport Canada's requirements.
    - **West:** The primary focus in this area is the GTH and understanding the enabling transport and infrastructure investments that are required to integrate this area with the rest of Regina and RM of Sherwood, as well as economic development considerations in creating an 'Airport Connected District'.

Introduction

Figure 1.1 Study Area

1

Background

1.1

Background: Noise Management around Airports

Aircraft Noise Management in Canada

To effectively manage noise exposure on communities surrounding airports in Canada, a collaborative framework of multiple stakeholders and organisations has been established over time, as shown in **Figure 1.2.** This collaborative, multi-tiered approach ensures that noise management is addressed through various means and by different parties, each with specific roles and responsibilities. The approach is guided by both international and national standards and involves various local and federal entities to create a balanced and effective noise management system.

Figure 1.2 Collaborative Framework for Aircraft Noise Management in Canada

- **International Civil Aviation Organization (ICAO)**

  An agency of the United Nations, ICAO promotes the safe and standardized development of international civil aviation. It advocates a 'Balanced Approach' to Aircraft Noise Management, focusing on the most cost-effective means to address noise exposure at and around airports.

- **Transport Canada**

  As the regulator of aviation in Canada, Transport Canada develops transportation policies and legislation to ensure a high level of safety and security and support a successful, stable aviation sector in Canada. Transport Canada establishes noise and emissions standards and provides guidance for land use planning through documents such as the TP1247 which advises on noise levels compatible with residential areas, using the Noise Exposure Forecast (NEF) System.

Background

Aircraft Noise Management in Canada

- **Airport Operators**

  Local Airport Authorities are responsible for ensuring safe operations and supporting the demand for air services. They manage airport growth and, in many cases, including Regina, are tasked with noise management, including responding to community concerns, monitoring noise levels, and developing Noise Abatement Procedures for their airport.

- **NAV Canada**

  This organization provides air traffic management and information services in Canadian airspace, ensuring the safe coordination and efficient movement of aircraft.

- **Airlines and other operators of Aircraft**

  In this project's case, Regina Airport Authority conducts operations at Regina International Airport in compliance with Transport Canada regulations and published Noise Abatement Procedures, playing a crucial role in mitigating noise.

- **Municipalities and other levels of Government**

  These entities (the City of Regina for this project) ensure that development around airports is compatible with airport operations through land use planning controls. While Transport Canada provides guidelines for land use near airports, local cities are responsible for planning, which may choose to adhere to these guideline or create their own, applicable policies.

ICAO Balanced Approach to Aircraft Noise Management

The International Civil Aviation Organization (ICAO) has developed a **Balanced Approach to Aircraft Noise Management** to provide guidance to Airport Authorities, Municipalities and Aircraft Operators on managing the impact of aircraft noise on communities near airports. This approach consists of four key elements, as shown in **Figure 1.3**, and is based on decades of International Best Practice on managing noise around Airport.

- **Reduction of Noise at Source** involves the evolution of quieter aircrafts and improving operational procedures to reduce noise of aircrafts and associated operations.
- **Land-Use Planning and Management** plays a crucial role in this balanced approach. It involves planning measures to ensure that the activities around airports are compatible with aviation operations and aims to minimize the number of people affected by aircraft noise. This **proactive measure** helps maintain the benefits achieved through the latest generation of modern, quieter aircraft and improved operational procedures, ensuring sustainable and harmonious development around airports.
- **Operating Restrictions** involves limiting certain types of operations or aircraft or implementing operating hours or other conditions to reduce aircraft movements and operations.
- **Noise Abatement Operational Procedures** include specific flight paths and operational techniques that minimize noise during takeoff, landing, and other phases of flights.

Figure 1.3 Balanced Approach to Aircraft Noise Management (ICAO)

Background

Operational Restrictions and Reactive Measures

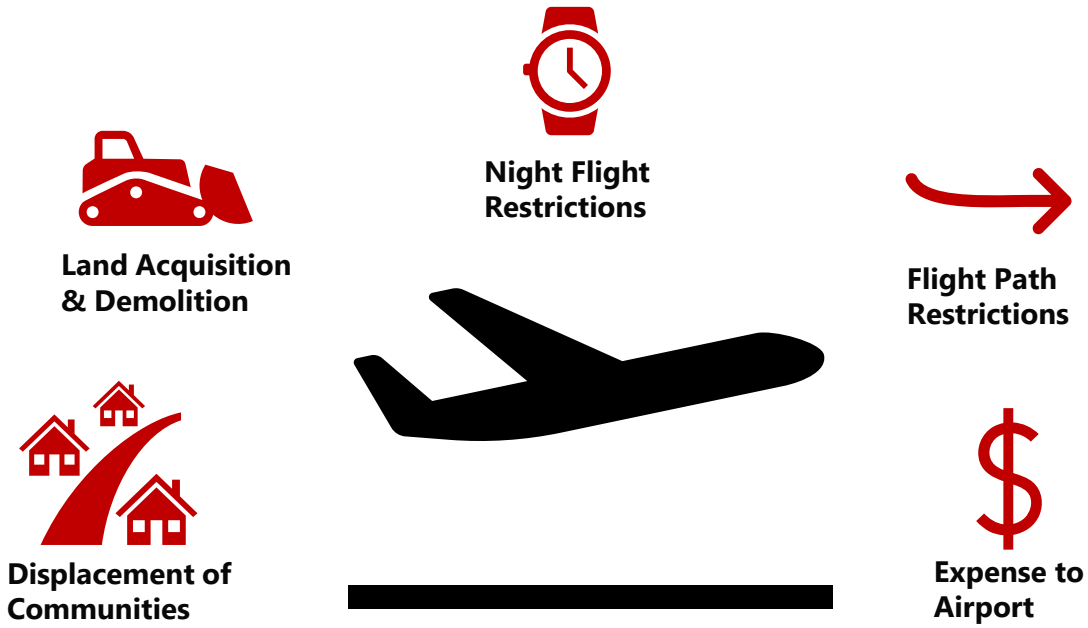
Proper land use planning is essential to proactively prevent issues related to noise management around airports. Several airports across the US and Canada have been faced with **operational restrictions or facing the cost of land acquisition and displacement of existing residential communities** around the airport as a last-resort, to **reactively address safety concerns and noise mitigation**. These actions can be **disruptive and costly for both the communities involved and the airport operators.** A summary of some of the major restrictions that have been required across Canadian and US Airports such as Toronto Pearson International, Vancouver International Airport, and Hamilton International Airport as detailed below:

Vancouver International Airport

- Restriction on certain aircraft during mid-night to 6am.
- Preferential Runways at night to direct flight paths over non-residential areas.
- Closure of north runway between 10am to 7am.

Toronto-Pearson International Airport

- Night Flight Restriction Program
- Engine Run-Up Restrictions
- Preferential Runway at night
- Flight Path Restrictions or alterations



Impacts of Inadequate Land-Use Planning on Airport Operations & Surrounding Communities

Background

Innovative Airport Growth District Best Practises

The following examples highlight Canadian Best Practices in Innovative Airport Growth Districts that have both **recognized and defined compatible land-uses in relation to the protection of the airport**, as well as **galvanizing inter-jurisdictional funding for major enabling road and infrastructure improvements to unlock economic growth.** These successful Airport Growth Districts have been used to inform the evolution of the Recommended Framework for West Regina to ensure YQR continues to support the regional economy, as well as maintaining compatibility with surrounding communities.

Edmonton International Airport Aerotropolis Viability Study

- Galvanized inter-jurisdictional collaboration to seek Provincial and Federal funding for the new 65th Avenue Interchange that enables economic development on south side of YEG Airport.
- Compelled property owners to develop Employment uses adjacent to YEG, rather than residential.
- Established the Land Use Policy Framework to guide Area Structure Plans and development proposals.

CentrePort & WALC at Winnipeg International Airport

- Canada's largest tri-modal inland port, across 20,000 acres.
- YWG Airport collaboratively planned its West Area in conjunction with the Western Airport Lands Corporation property owners and CentrePort Canada.
- Province invested in construction of CentrePort Canada Way to provide fast access to development areas.
- Stimulated the acceleration of trunk sewer and water infrastructure.

Hamilton International Airport Area Employment Growth District

- Collaboration of Province and City of Hamilton (who controls the YHM Airport) to support economic development and employment growth while limiting Residential development around YHM Airport.
- Airport Compatible Development Study Area provides approximate 1 km "Area of Influence" to inform land-use planning decisions.
- Province has invested in Highway 6 improvements as a "Goods Route".

1.2

Background: Regina Context

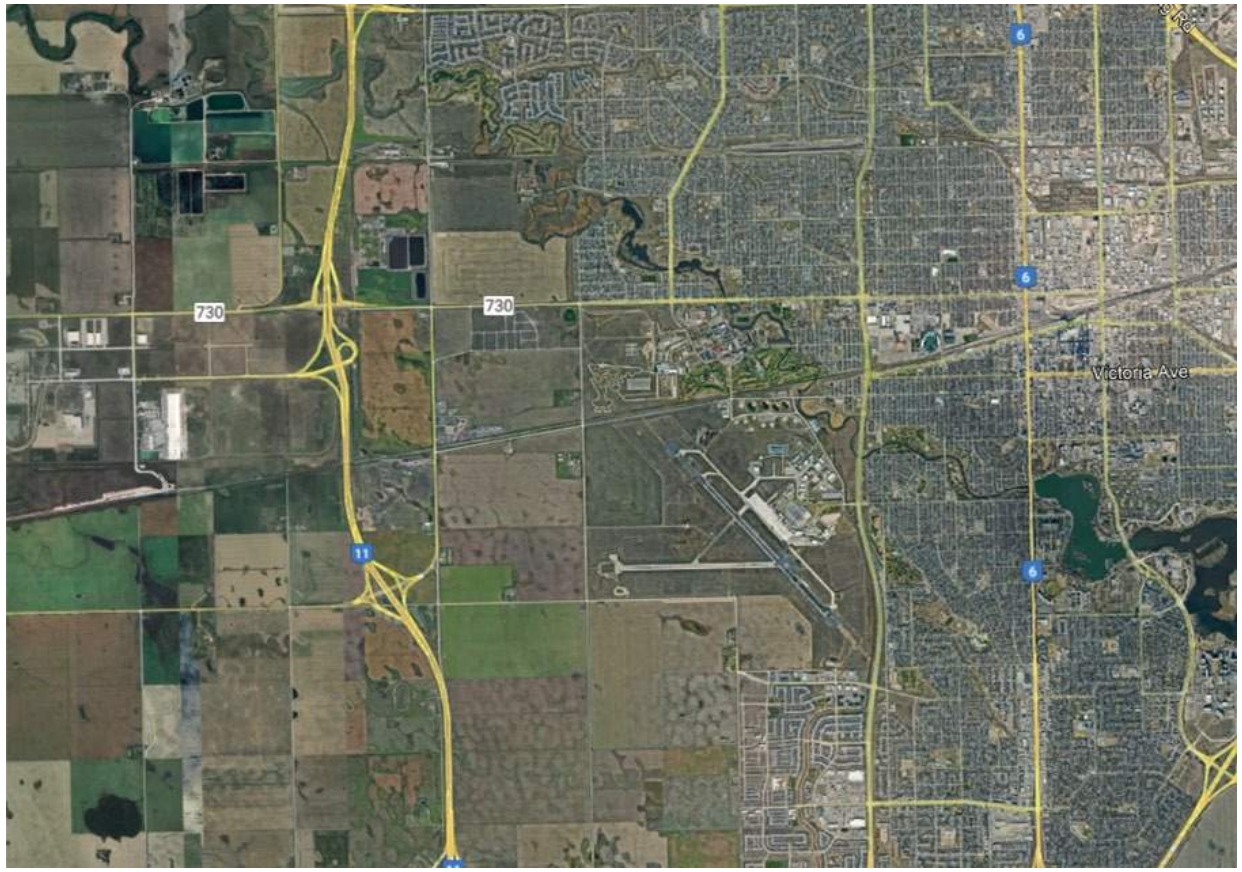
West Regina Context

For the purposes of this study, West Regina is considered as the land areas west of Lewvan Drive and South of Dewdney Road. This area of Regina is under the jurisdiction of both the City of Regina and the RM of Sherwood, as shown in **Figure 1.4** on the following page showing the municipal boundaries and Joint Planning Area.

West Regina is anchored by Regina International Airport (YQR) in the inner-south-west, and the Global Transportation Hub further west, beyond the West Regina Bypass. Residential uses are currently contained to the east, south and to the north of the Airport however concept plans have been prepared for potential residential development to the south of the Airport. The remaining land to the West is predominantly productive farmland or rural lifestyle properties.

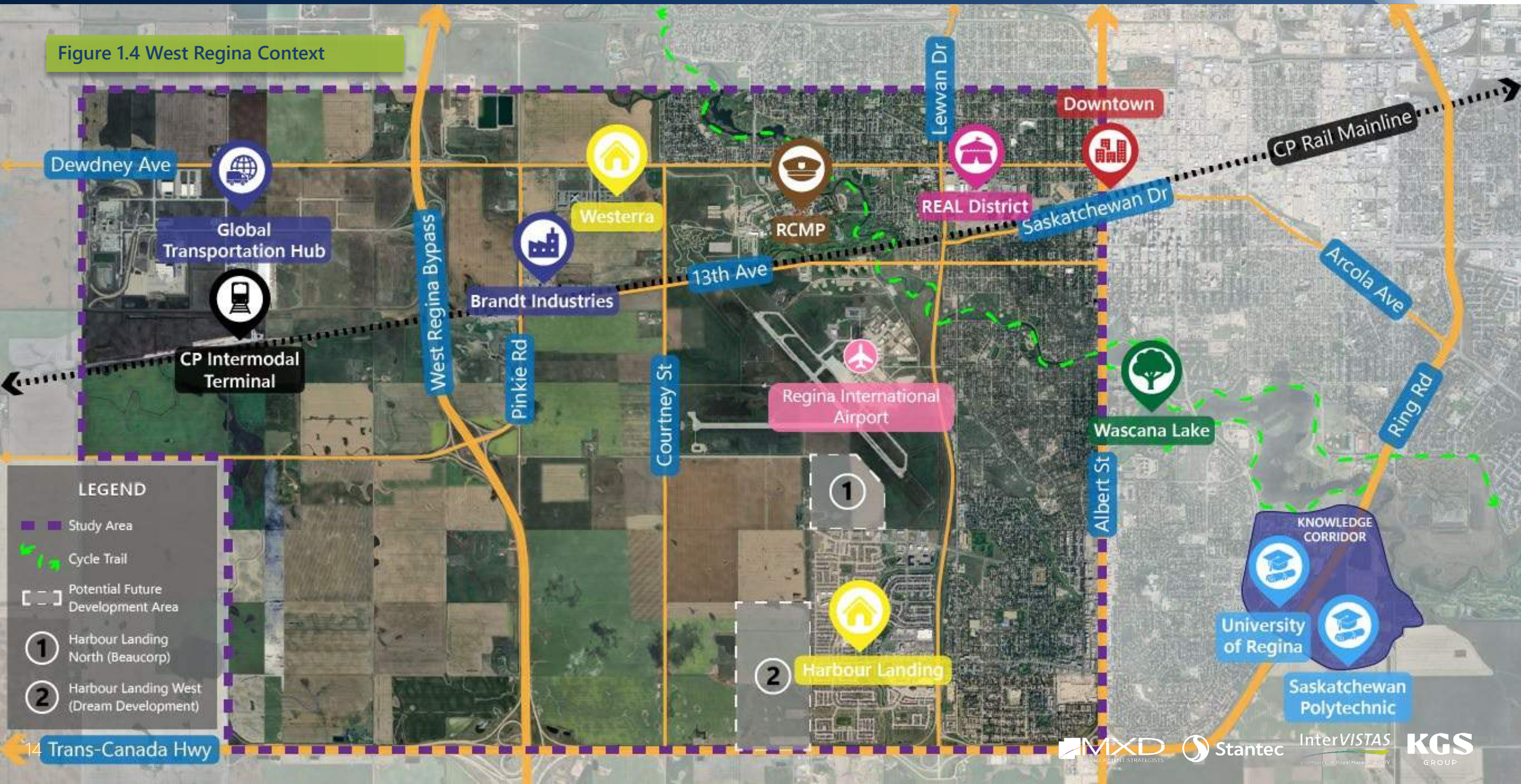
Other notable anchor uses and developments in West Regina include:

- Global Transportation Hub
- Brandt Industries
- REAL District
- RCMP Depot
- Harbour Landings Development
- Westerra



Background

Figure 1.4 West Regina Context



Background

West Regina Economic Context

Regina's economy relies heavily on the transportation network of highways, railways and **Regina International Airport for moving products and people across the City and Province as well as Canada as a whole**. Important factors of the West Regina economy include:

YQR plays **significant role in facilitating economic development and connectivity linking Regina and Saskatchewan** with the rest of Canada, the USA and internationally for the movement of people and products**,** as one of the Top Ten Centres of Employment in Regina and **contributing over $800 million in total economic impact and $354 million in direct economic impact.**

The regional economy has averaged a **healthy 2.4% annual growth historically** and long-term prospects for the region are supportive of new development in the West.

Clean Energy Technology Investments are growing in Regina and Saskatchewan, presenting opportunities for renewable energy or Sustainable Aviation Fuels that would be particularly well-suited to the YQR vicinity.

Advanced Manufacturing, Distribution as well as Aerospace, Agri-tech and Agri-business are well suited for YQR and the West Regina area and should be targeted given the degree of '**intersectionality**' as up and downstream business facilitate inventive partnerships across the Greater Regina Area.

YQR and the City have an opportunity to **partner with educational institutions within these target sectors** as well as Aero-Related Services such as Pilot Training.

With direct proximity between the Airport and the Global Transportation Hub (**GTH), there is an opportunity** to make **West Regina into an important economic development corridor**, **from the GTH to the Airport and to Downtown.** Improved connectivity of these important assets will support **on-going economic benefits in the future.**

Background

Regina International Airport Context

Regina International Airport (YQR), Saskatchewan's second busiest Airport and Canada's 16th busiest, is a strategic hub for the City of Regina and one of the Saskatchewan Region's strongest economic engines. The Airport is a crucial piece of infrastructure to support economic development and growth in the City, in the movement of both goods and people. The following highlights key components of YQR's operations, facilities and economic impact in Regina:

- **YQR's Current Extent of Airport Land Holdings is 1,600 acres** (2024).
- The Airport has **two intersecting runways**: Runway 13-31 (Primary Runway, Northwest-Southeast), Runway 08-26 (Secondary Runway, East-West) as shown in **Figure 1.4** on the following page.
- YQR has **one primary passenger terminal**, located on the east side of the Airport. Aviation-related commercial facilities are located to the north and south of the Main Terminal building, including aircraft hangars, maintenance services and cargo processing.
- Commercial Passenger Service of **more than 1,000,000 passengers per year**.
- In 2023, YQR announced new connection to Minneapolis St in response to widespread community feedback. This is the **first time in 8 years YQR has a direct connection to a major US hub**, facilitating growth of Regina and YQR.
- **Medi-Vac** and **STARS Air Ambulance Services** provide **daily Healthcare Support Services.**
- **Multiple daily cargo operations** with connections both east and west.
- **Airport Access** is provided from the east via Regina Avenue and Lewvan Drive, connecting to the Airport Loop which provides curbside access to the main passenger terminal.
- YQR has **several general aviation (GA)** tenants including Fixed Based Operators (FBOs) and the Regina Flying Club that provides **flight training, fueling, hangar storage, Royal Canadian Air Cadet Training Programs, Civil Air Search and Rescue Exercises** and other public GA uses.
- Airport Support Facilities include the Air Traffic Control Tower, Flight Service Station, Firehall and Fire Training Areas, including a **Fire Training Area south of Runway 08, near to the southern boundary of the Airport.**

Background

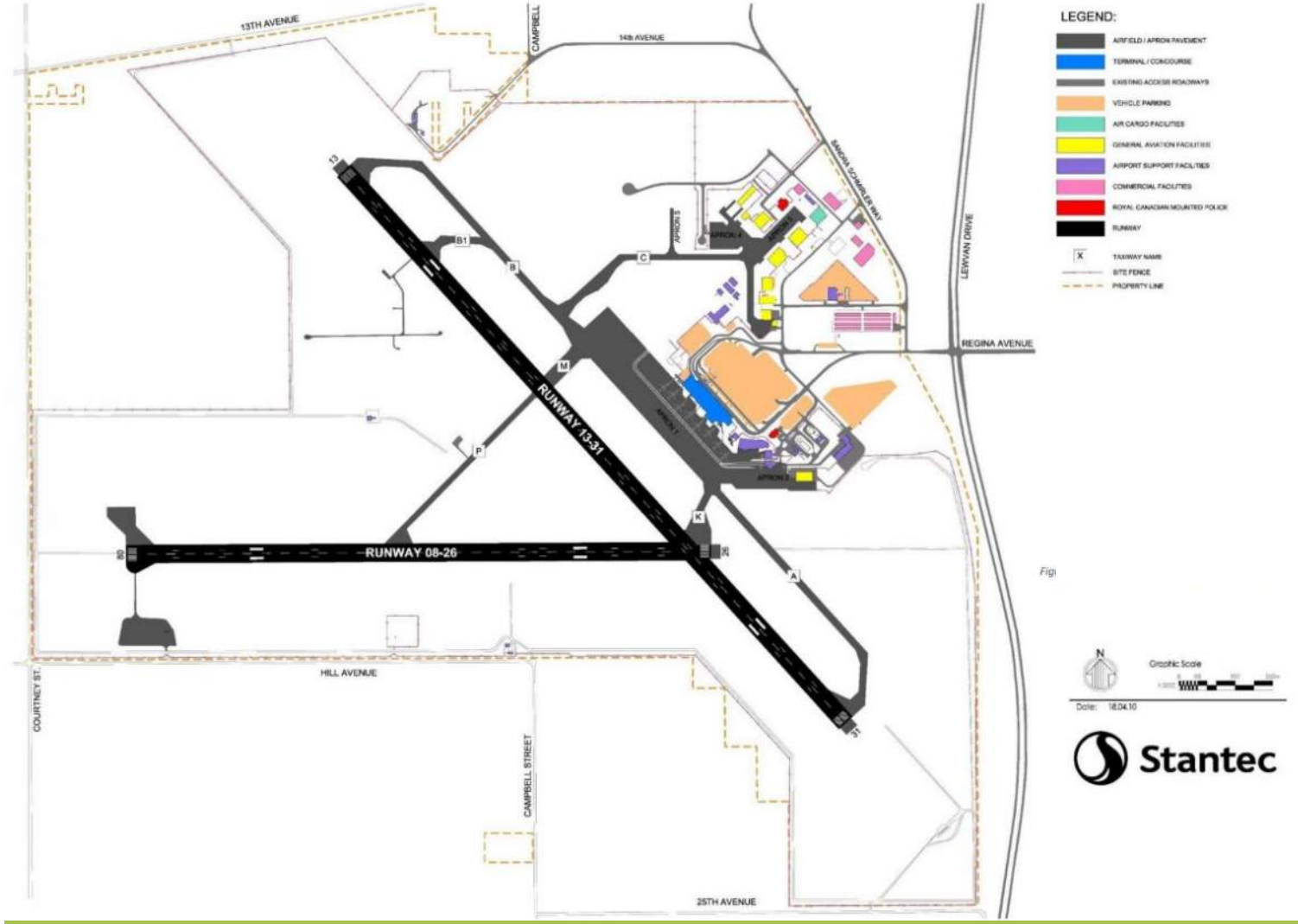


Figure 1.5 Regina International Airport Master Plan 2037, Existing Facilities

Regina International Airport Operations

Regina International Airport (YQR) functions as a **vital 'spoke' within a 'spoke and hub' air transportation system**, where it serves as a **regional connector, linking Regina to larger central airports or 'hubs' such as Vancouver, Calgary, Edmonton, and Toronto.** This connection allows passengers and cargo from Regina to reach a much broader selection of destinations.

This system enables efficient transfer of cargo and passengers from regional locations to major national and international destinations, ensuring Regina has access to broader markets and opportunities. YQR supports a variety of flights to these hub airports, facilitating business travel, tourism, and freight operations. **As illustrated in Figure 1.6, early morning departures from YQR to hub airports and late evening arrivals at YQR from hubs are common, reinforcing the importance of unrestricted operating hours.**

The airport's ability to maintain these operations, especially during night hours, is essential for accommodating connecting flights that align with the schedules of larger hub airports and support the region's economic activities. **Maintaining connectivity is crucial for economic growth and regional development, as it allows for seamless integration into the global transportation network**. It fosters trade, investment, and mobility for both the local Regina and regional Saskatchewan communities.

Proper land-use planning around YQR is therefore critical to sustain this vital role, ensuring minimal noise impact on surrounding communities while maintaining the essential flexibility needed for airport operations.

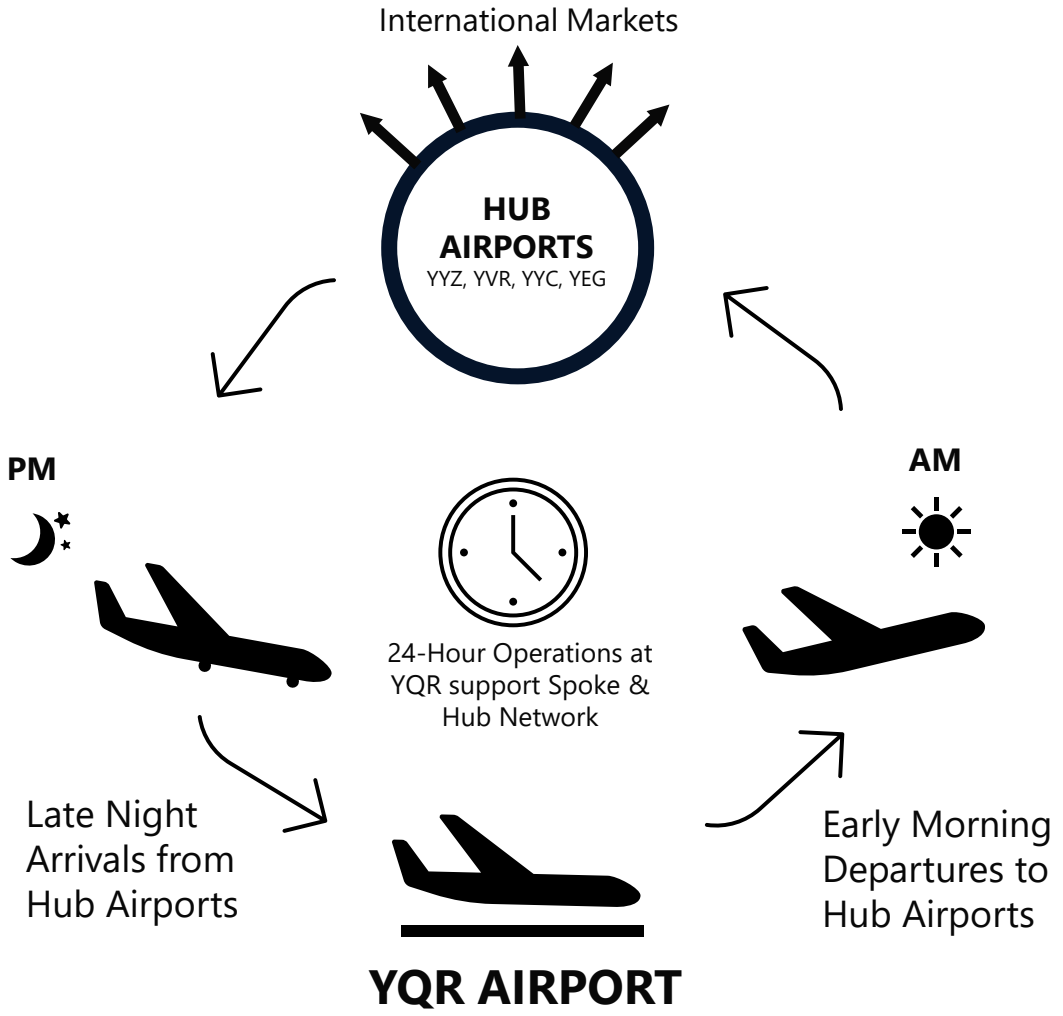


Figure 1.6 24 Hour Operations at YQR Airport as part of a 'Spoke & Hub' System

Regina International Airport Connectivity

YQR is one of the Saskatchewan region's strongest economic engines and is strategically located between Downtown Regina, the Global Transportation Hub (GTH) and the West Regina Bypass. **YQR benefits from the following key accessibility & connectivity strengths:**

Direct access and exposure to major transportation routes, including the Trans-Canada Highway, Regina Bypass, and CP Rail that connects YQR to major employment nodes and the surrounding region.

Established role as a **'spoke' within a 'spoke and hub' system**, supporting central hub Airports such as Vancouver, Calgary & Toronto to **increase connectivity to a broader selection of destinations and global markets,** highlighted in **Figure 1.7.**

Proximity to Companies Located at the **Global Transportation Hub (GTH)**, Western Canada's Inland Port.

At the centre of Saskatchewan's strong **Agribusiness Sector** including the Protein Super Cluster, Advanced Machinery Fabrication, and world-class short line equipment manufacturers.

Close to Downtown Regina and its **Growing Population** commercial development at YQR.

Figure 1.7 YQR Direct Routes Map (RAA Annual Report, 2023)

Regina International Airport Target Economic Sectors

Based on YQR's context, operations, connectivity and the Regina Economic and Market Overview conducted by the project team as part of this study, as well as input from the Project Advisory Committee, several key sectors should be targeted at and around YQR to unlock economic development.

A copy of the Economic & Market Overview is attached as **Appendix A.**

These niche sectors are highlighted in **Figure 1.8** and leverage the air to ground connectivity afforded by the Airport and the Recommended Enabling Mobility Network as detailed in Section 3.3 of this report.

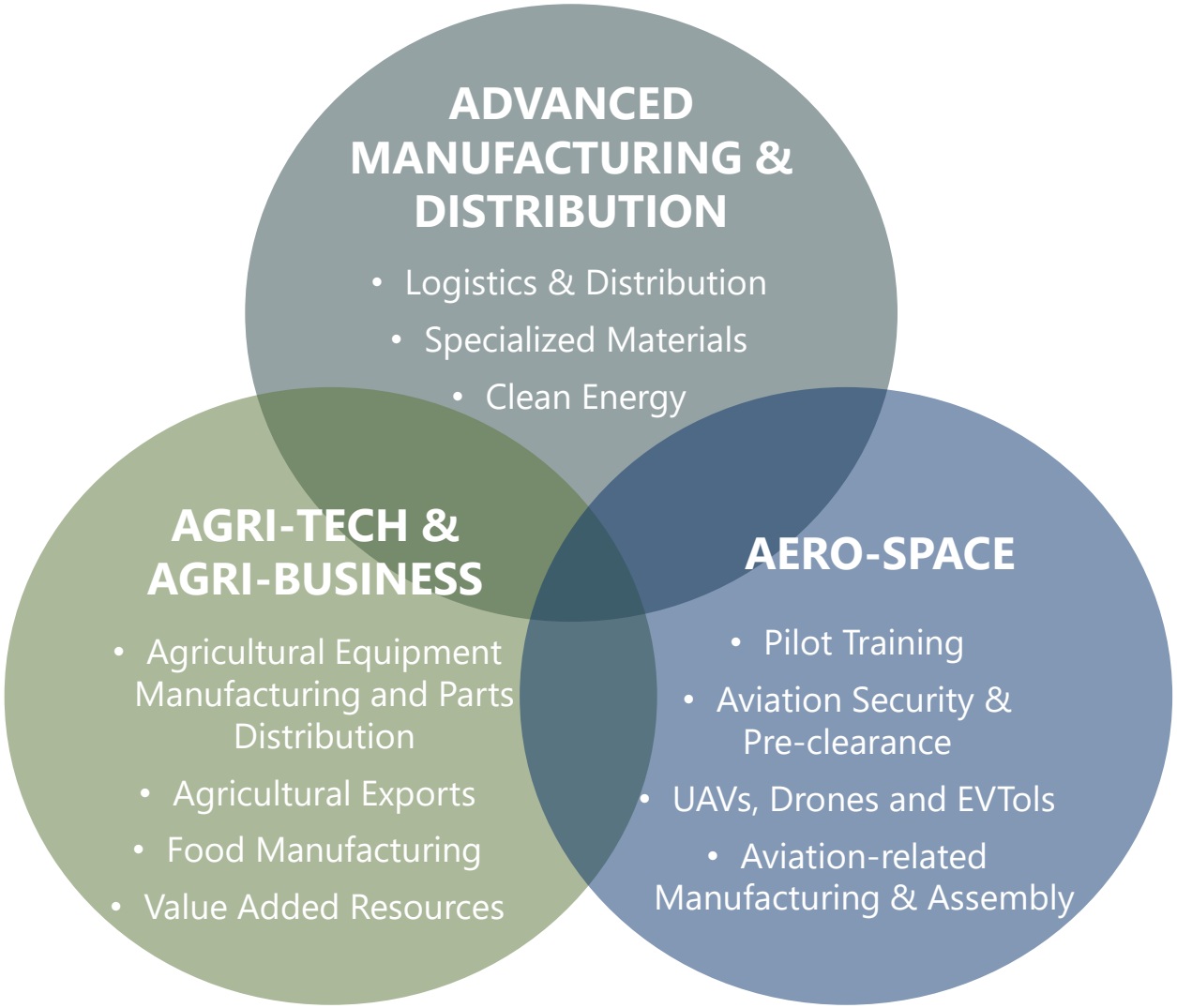


Figure 1.8 Target Economic Sectors in West Regina

Background

History of Land Use Planning & Urban Growth around YQR

YQR has experienced a **notable reduction in reserved land-holdings and runway systems**, from the original reserve of 2,770 acres in 1947 to the current extent of Airport Land Holdings at around 1,600 acres in 2024.

This contraction has resulted from **City growth patterns as well as a response to advances in aircraft technology**, fluctuating demand and shifting travel patterns. It has also led to progressive reductions of the Airport's runway systems, transitioning from original plans of a four-runway, two parallel runway system to the current layout of two intersecting runways.

The **reduction in Airport land and runway restructuring has taken place against a backdrop of increasing urban development in Regina, encroaching progressively to the West and the Airport vicinity**. Residential and commercial developments were originally managed via intentional zoning that restricted development to the north, west and south of the Airport. As the City experienced population growth and expanded, **urban development began to appear near the airport boundaries in the north, northwest, and increasingly to the south, particularly in the early 2000's with the development of Harbour Landing and Westerra.**

These burgeoning residential areas around YQR have created **compounding pressures on airport operations** with increases in noise complaints in recent years related to noise and nuisance from the airport.

These pressures reflect the **importance of achieving a balance between recognizing the national and provincial significance of YQR as a regional economic engine** and providing for its protection and preservation to operate safely and efficiently, **while fostering the growth of Regina**. This balance will only become more important as Regina grows further and relies on the Airport for movement of goods and people.

The following page illustrates the evolution of Airport Expansion Plans and associated Urban Development Plans, reflecting the contraction of Airport Operations and encroachment of Urban Growth into the Airport Vicinity.

This illustrates the need for this study to explore and define a Land Use Planning Framework for West Regina that both protects the Airport's operations as well as growth in Regina and community safety, well-being and enjoyment of property.

> ***"While these benefits should not be overstated, more attention should be given to proper land-use planning as a tool with the main objective being to minimize the population affected by aircraft noise. Land-use planning benefits may take time to be fully realized and should be implemented as soon as noise problems are foreseen."***
>
> Airport Planning Manual Part 2 – Land Use & Environmental Management, ICAO Environmental Report

Background

History of Land Use Planning & Urban Growth around YQR

The following timeline provides a summary of YQR's plans for growth and development, since the airport was established in 1947. As detailed on the previous page, these plans highlight the contraction of the airport's properties and development plans, alongside increasing urban encroachment into the airport's vicinity.

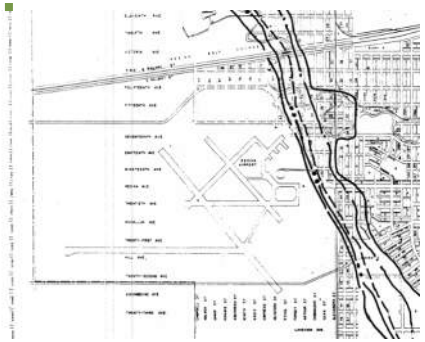
1947

2,770 acres reserved for development of the Airport.

1955

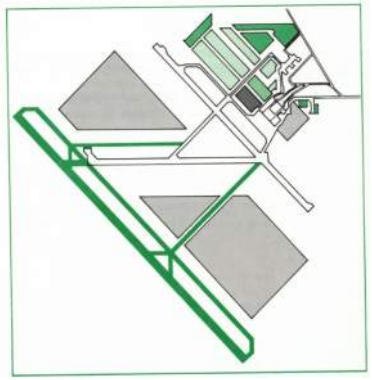
Regina Airport Zoning Regulations establish the protection of the YQR Aerodrome and provides for compatible development in large portions of Regina.

1958



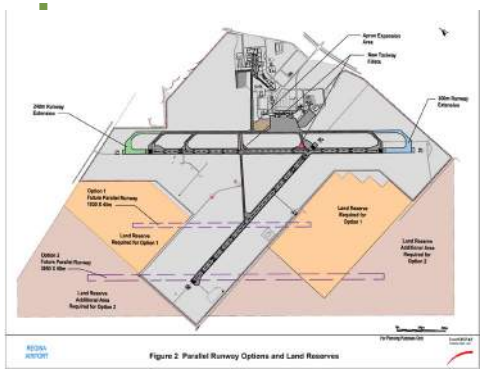
Four Runways provided for in City of Regina Growth Plans including two Parallel Runway Systems.

1977



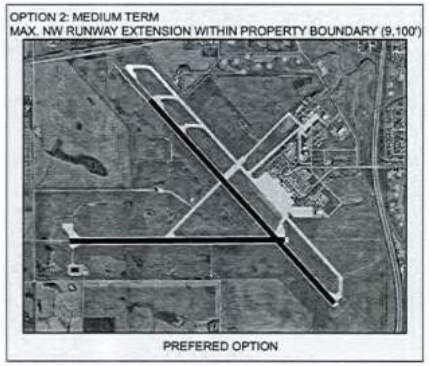
Expansionary plans contract to providing for a parallel runway and recommended to be adopted.

2002



Runway Expansion options are evaluated, and Long-Length Parallel Runway is preferred as it assumes greatest airport capacity.

2005



Regina Airport Study explores Airport Expansion and Noise Abatement Options.

Recommends NW Runway Extension without parallel runway.

Recommends five-year technical reviews and ten years comprehensive policy review of all airport/land use planning policy documents.

Existing Land Use Planning & Management Around YQR

As shown in **Figure 1.9** and detailed on the following page, **land use planning around YQR is currently managed by several documents at varying levels of government.**

Statement of Provincial Interest

Driving this study, the Saskatchewan Government's Statement of Provincial Interest recognises YQR as a major piece of transportation infrastructure for the Province and provides the following guidance for planning documents & decisions:

"To assist in meeting the province's transportation interests, planning documents and decisions shall, insofar as practical:...

2. Ensure that development is compatible with existing and planned transportation infrastructure, including rail lines, rail yards, airports, barge docks, ferry landings and provincial highways;...

4. Ensure that current and future runway expansion plans, aviation and navigation needs of the Saskatoon and Regina International Airports are not compromised by development in proximity to these Airports;..."

Figure 1.9 Existing Land Use Planning Hierarchy around YQR

Existing Land Use Planning & Management Around YQR

Regina Airport Federal Zoning Regulations

The Regina Airport Federal Zoning Regulations restrict the height of development, vegetation and waste disposal in a geographically defined area around YQR, based on flight path approaches. These are updated incrementally as the Airport grows and expands.

City of Regina

Design Regina – Official Community Plan

Design Regina sets out the municipalities long-term strategic direction and how it will manage future growth and development. With regards to YQR, the OCP includes the following:

- Identifies the Airport as a 'Special Policy Area' where development should be controlled in relation to height, location and noise attenuation.
- Specifically, residential development is controlled in the vicinity of YQR based on the Noise Exposure Forecast Contours. Residential development is prohibitied within the 30NEF, and noise attenuation standards are applied in areas between the 25 and 30NEF.
- Consultation with the Regina Airport Authority is required for any development in proximity to YQR.

Details on Approved Neighbourhood Plans are included at **Appendix A**.

- In relation to Economic Development Goals, the OCP acknowledges YQR's role and aims to maximise potential linkages between it and other economic assets such as Innovation Place, Global Transportation Hub and the University of Regina.

Bylaw No. 2019-19 The Regina Zoning Bylaw, 2019

The Zoning Bylaw implements the policies within Design Regina and Federal Zoning Regulations with the following overlay areas:

- Airport/Aeronautical Protection Area – follows the same extent of the Regina Airport Federal Zoning Regulations
- Noise Exposure Forecast Overlay Area – designates the NEF contours and prohibits residential development in the 30 and 40NEF areas.

Bylaw No. 2023-59 The Building Bylaw, 2023

The Building Bylaw further implements the noise attenuation policies within Design Regina, applying to areas within the 25NEF contour or higher and requires that:

- Any applications for construction within these contour areas are supported by a noise attenuation report sealed by an engineer or architect to identify the anticipated aircraft noise exposure levels, describes the construction methods employed in the design of the building to attenuate noise and identifies resulting indoor acoustic levels achieved by these attenuation methods.

Noise Complaint Data

The analysis of noise complaint data at YQR over the past decade provides a comprehensive view of the community's concerns regarding noise levels, particularly in relation to the NEF (Noise Exposure Forecast) contours.

The data, illustrated in **Figure 1.10** highlights a significant finding: **approximately 79% of noise complaints originate from areas outside the NEF25 areas.** This insight is crucial as it underscores that the majority of the **noise disturbances reported by residents do not fall within the traditionally expected 'noise exposed areas'** delineated by NEF25 contours **and the associated land-use policies around YQR that restrict residential development using the NEF30 contours.**

The complaints are categorized into three groups:

- Complaints from areas within the NEF25 contours
- Complaints from areas outside the NEF25 contours
- Complaints that are assumed to be outside the NEF25 based on the information provided, though lacking precise civic addresses.

The third category consists of complaints where the exact locations are not specified, but based on the details given in the complaints, the locations are inferred. This classification helps in understanding not just the spread but also the specificity of the data collected, indicating areas where noise mitigation strategies might be effectively targeted.

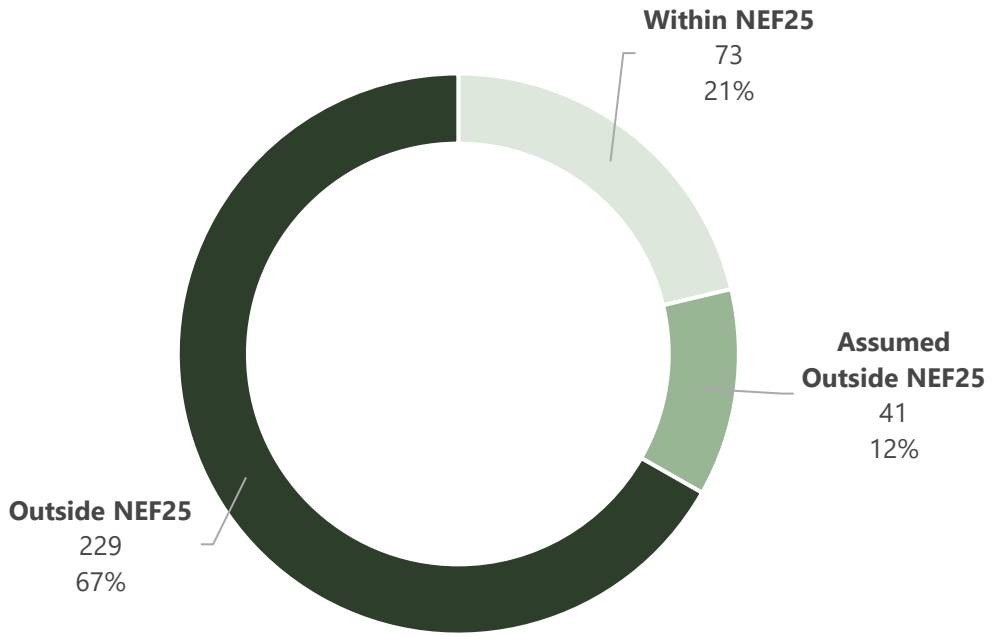


Figure 1.10 Noise Complaint Data received by RAA, 2012 to 2023 (RAA)

02

Project Advisory Committee & Stakeholder Engagement

Project Advisory Committee & Stakeholder Engagement

Introduction

The engagement process was undertaken in two parts -via a Project Advisory Committee (PAC) of major public and private sector agencies; and one-on-one stakeholder meetings with key representatives from the community and local landowners. A First Nations engagement process was also undertaken and offered to Treaty 4 Nations.

The key roles and expectations of this engagement process were:

- Sharing of resources, information and knowledge.
- Exploring economic and growth opportunities for the study area.
- Advise on regulatory considerations and frameworks.
- Bring expertise of local development initiatives and major. transportation/mobility projects.
- Provide feedback on the Project Team's recommendations.

Project Advisory Committee & Stakeholder Engagement

Project Advisory Committee

The PAC was established as part of the project's 'Collaborative Planning Approach" and three committee meetings were scheduled at key points in the project as shown below.

Project Advisory Committee Members

- Regina Airport Authority.
- Saskatchewan Ministry of Highways.
- Saskatchewan Ministry of Trade and Export Development.
- City of Regina Planning & Engineering.
- RM of Sherwood Planning & Engineering.
- City of Regina Economic Development.
- Economic Development Regina.

PAC Meeting Schedule

August 2023	October 2023	March 2023
Meeting #1 Online *Introduction & Envisioning*	Meeting #2 In-Person *Review & Feedback*	Meeting #3 In-Person *Final Presentation*

Key Themes from PAC Meetings

PAC Members expressed general support for the recommendations in the Final Meeting. Comments included:

The recommendations provide a long-term pathway to support development around the Airport into the future and create an economic corridor with the GTH.

The airport is the **single biggest asset to accelerate economic development in the City and this framework progresses industrial development and connectivity between the Airport and other areas.**

Support for expansion of the airport to cater to larger aircrafts and expanded flights schedules.

Opportunity for expansion of Pilot Training initiatives in collaboration with Sask. Polytechnic as well as providing other types of training courses in targeted economic sectors.

Project Advisory Committee & Stakeholder Engagement

Stakeholder Engagement

A total of eight, online stakeholder interviews were undertaken throughout August and September 2023 with key members from the community, as listed below. We received generally positive support for the project from all stakeholders, and a strong sentiment that this overarching vision for West Regina is required to help shape future planning and development.

- Forster Harvard Development Corporation.
- Dream Development.
- Beaucorp/Harbour Landings North.
- Union Lands.
- Global Transportation Hub Authority.
- Cushman & Wakefield.
- REAL District.
- RCMP F Division & Depot.
- Knowledge Corridor (University of Regina, Innovation Place & Saskatchewan Polytechnic).
- Economic Development Regina & City of Regina Economic Development.

Follow-up meetings with the five key landowners adjacent to the Airport's property were held in mid-April, 2024.

A Summary Memo outlining the discussions of these follow-up meetings will be submitted to the City and RAA separately.

Key Themes from Stakeholder Interviews

- Agreement from all stakeholders that an overarching vision is required to shape the future of West Regina. There is currently a **lack of cohesive direction in terms of mobility, land-use and infrastructure** for this area and this constrains future development.
- YQR is **unique in its proximity** to the City and urban area – this should be drawn upon as an opportunity as well as an important consideration for future development.
- Concern from one stakeholder about **inconsistencies in the planning process** between both the City and RAA that has restricted development in the past, particularly residential, in the surrounding area.
- Concern that the **AOIZ-1 Economic Development area restricts a large amount of land from residential development** and is **not based on officially recognized tools** such as **NEF contours** or **market demand analysis** for industrial development.
- Several other **planning and transportation initiatives occurring concurrently** at the City, particularly the Functional Transportation Study – this LUPC Project should interrelate.
- Several comments about the location of a **rail crossing at Pinkie Road or Courtney Road for a rail crossing**
- The Airport is a **major economic driver** and important for future growth opportunities in Regina.
- **GTH is another major economic driver** and has brought in several important tenants and investment into Regina.

3

Recommended West Regina Framework

Introduction

Recommended West Regina Framework

Reflecting on the findings of the study including existing conditions, background information, Project Advisory Committee Meetings and Stakeholder Interviews, the Recommended Strategy focuses on four key areas of recommendations:

- Recommended Ultimate Airfield Concept
- Recommended Land Use Policy Framework
- Recommended Enabling Transportation & Mobility Network
- Conceptual Infrastructure Servicing Strategy

3.1

Recommended Ultimate Airfield Layout

Recommended Ultimate Airfield Layout

Introduction

Validation of Previous Studies

Prior to defining the Ultimate Airfield Concepts, the planning team reviewed previous studies to determine their relevancy. In 2018, Inter*VISTAS* forecasted aviation activity over the next five decades, foreseeing a total of 4.2 million passengers and 43,500 aircraft movements by 2067. These projections remain relevant today. Despite the substantial growth anticipated, it's determined that an additional parallel runway won't be necessary within the 50-year timeframe to meet capacity demands.

The airport master plan and subsequent study efforts regarding runway lengths provide valuable guidance for future development. Proactive measures are advised, including the preservation of land for potential extensions to Runway 13-31 and Runway 08-26. This strategic approach ensures readiness to capitalize on opportunities arising to serve new markets and potential new tenants, aligning infrastructure expansion with evolving demands in the aviation industry.

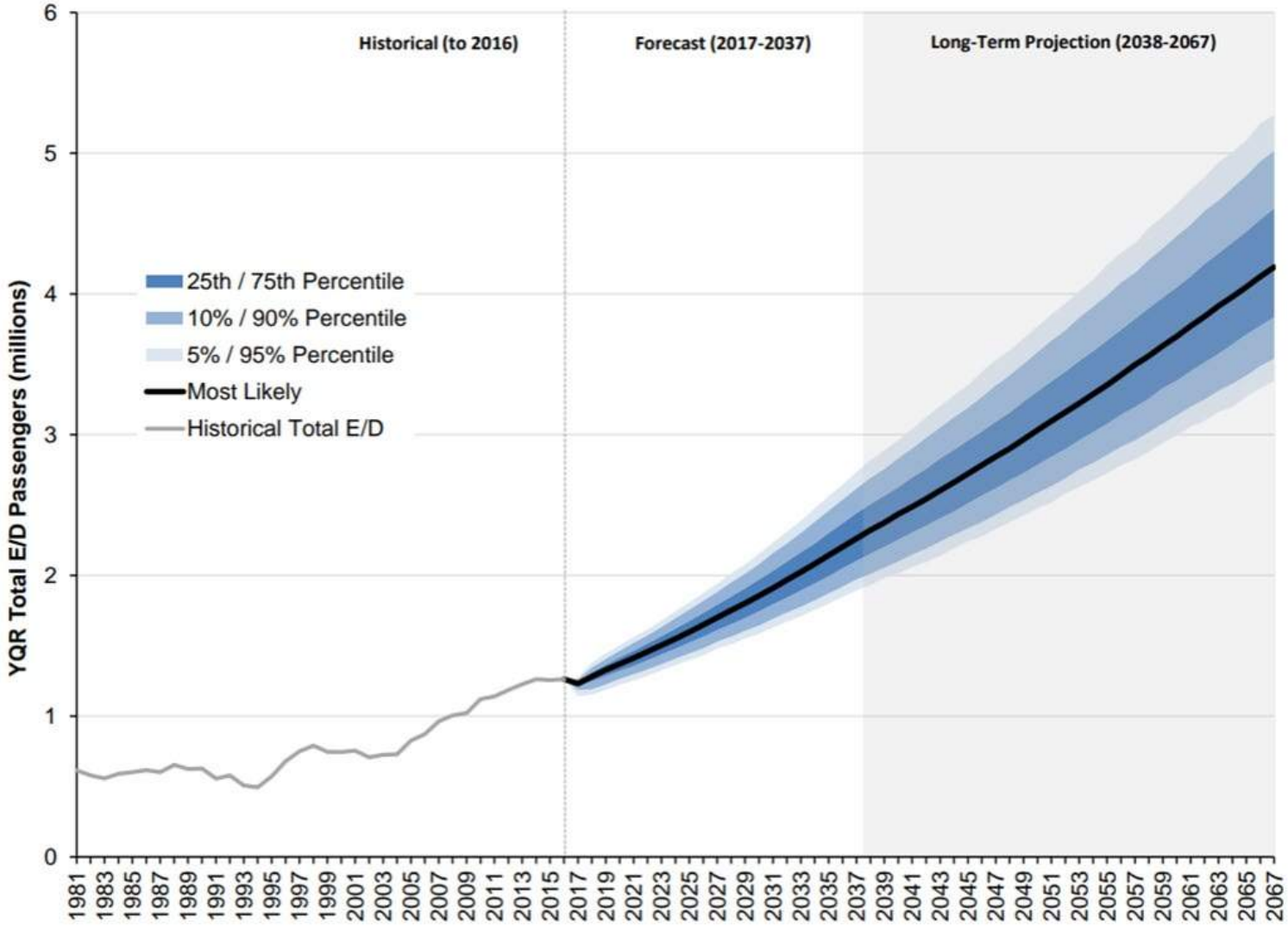


Figure 3.1 YQR Long-Term 'Projections,' Total Enplaned and Deplaned (E/D) Passengers (millions)

Recommended Ultimate Airfield Layout

Introduction

Defining Ultimate Airfield Concepts

Determining objectives for preparing an ultimate airfield concept provides a clear roadmap and framework. By establishing specific goals and targets, stakeholders can align their efforts and resources towards a common vision, ensuring coherence and efficiency in the planning process. The objectives established for this planning study were fostered through collaboration among key stakeholders.

The planning objectives used to prepare the ultimate airfield concepts includes the following:

- Identify new runways, extensions, and vertiports
- Classify on-airport land uses
- Provide flexibility, redundancy, and ability to accommodate new users, tenants, and businesses

Planning parameters and assumptions serve as the basis for preparing and assessing the performance of each development concept. The purpose of establishing parameters and assumptions is to provide a systematic and objective way to compare different concepts, enabling decision-makers to make informed decisions.

The planning parameters used to prepare the ultimate airfield concepts includes the following:

- A parallel runway designed to the same design specifications as Runway 13-31.
- Runway 08-26 upgraded to the same design specifications as Runway 13-31.
- Displaced thresholds to accommodate additional takeoff distance.
- Land acquisition is feasible.
- Courtney Street realignment is feasible.
- Vertiports can operate only under Visual Metrological Conditions.
- Runway 08 upgraded to a precision approach procedure.

Recommended Ultimate Airfield Layout

Introduction

Initial Airfield Concepts

A series of ultimate airfield concepts were prepared to promote and enhance the runway system to provide additional capacity, flexibility and redundancy to meet current and future market conditions, as shown in **Figure 3.2**.

Initial ultimate airfield concepts looked at a range of possibilities from siting a parallel runway to Runway 13-31, extending each one of the airport's existing runways and accommodating future technologies such as vertiports to support electric vertical take-off and landing (eVTOL) aircraft.

These concepts underwent thorough review by key stakeholders to assess their advantages and potential challenges. Feedback from stakeholders was carefully considered to refine the concepts. Ultimately, a hybrid approach was crafted, incorporating input from stakeholders and closely aligning with the overarching objectives of the study.

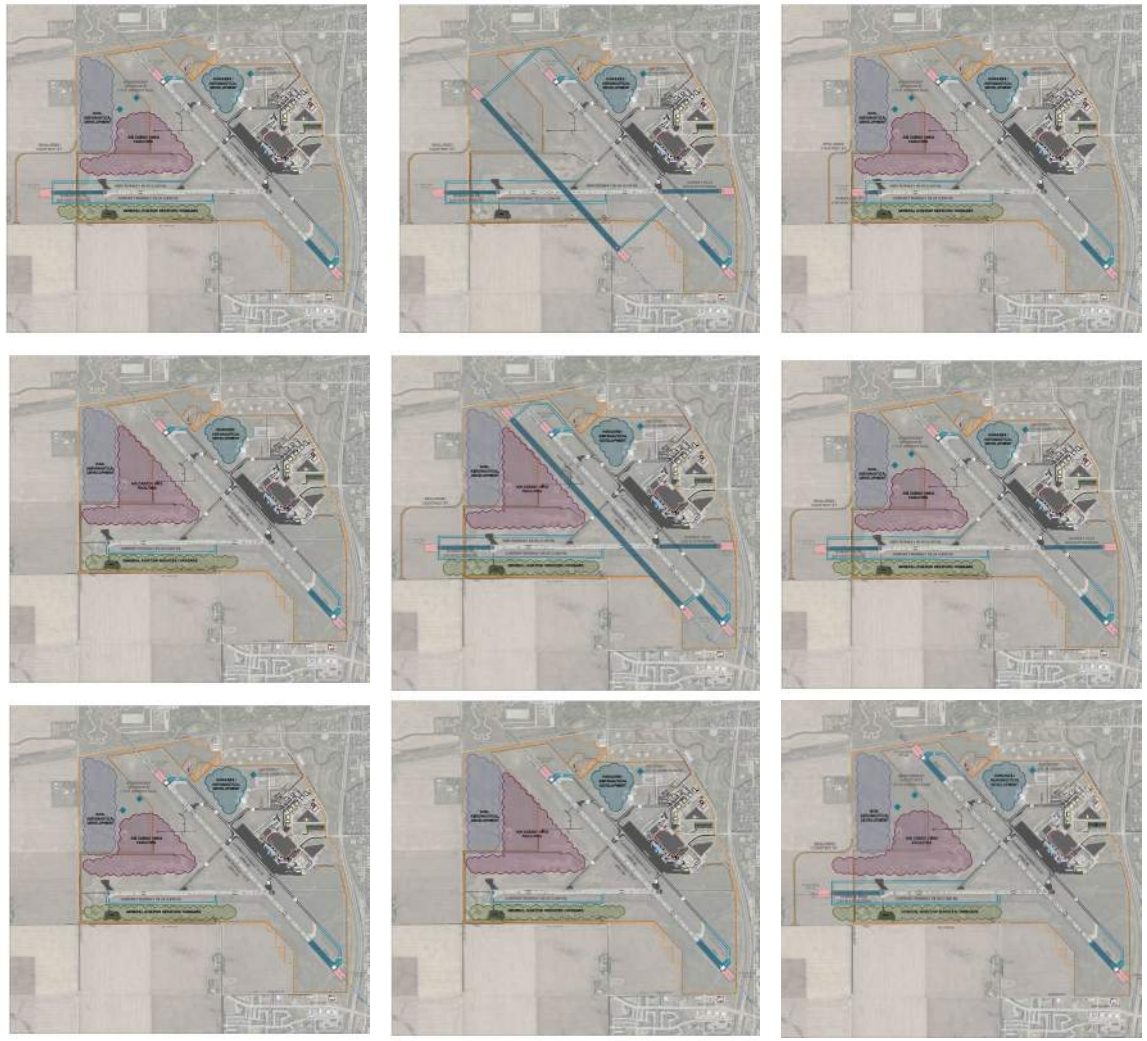


Figure 3.2 Initial Airfield Concept Development

Recommended Ultimate Airfield Layout

Preferred 50-Year Ultimate Airfield Concept

The Preferred Ultimate Airfield Concept, shown in Figure 3.3, balances the airport's ability to expand with anticipated market conditions.

The proposed enhancements in comparison to the existing airfield layout include the following.

- Runway 08-26 extended to the west 540 meters.
- Portion of Courtney Street realigned to accommodate extension.
- Two cargo carrying vertiports in the northwest quadrant.
- One passenger carrying vertiport in the northeast quadrant.
- Runway 13-31 with extension to the north for a displaced threshold to accommodate additional takeoff distance. Runway 13-31 with extension to the south as per previous City of Regina OCP amendments, recognizing this extension in the future.

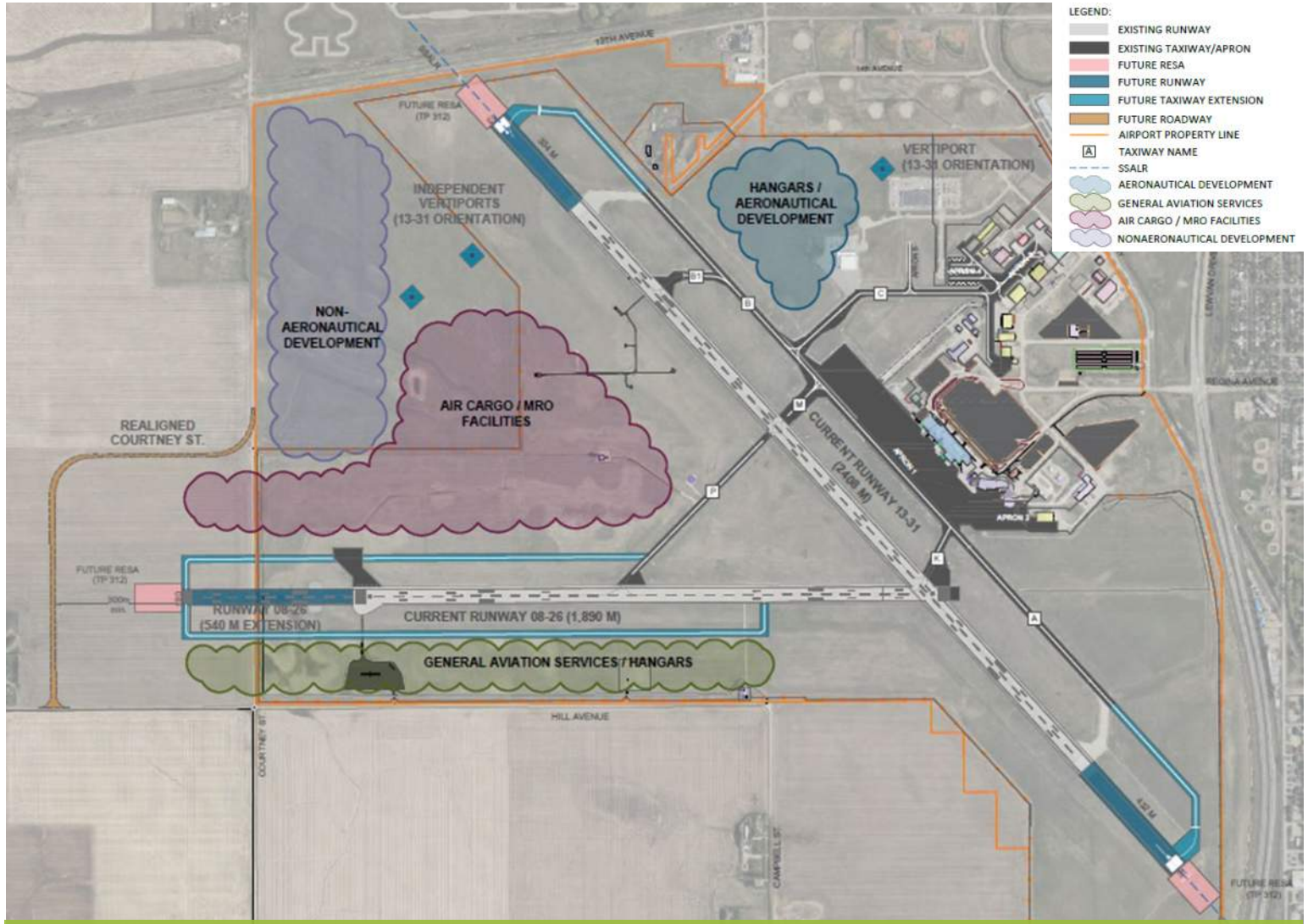


Figure 3.3 Preferred 50-Year Ultimate Airfield Concept
Prepared by: Inter *VISTAS* Consulting Inc., 2024

Recommended Ultimate Airfield Layout

Airport Operations Impact Metrics

Airspace System

The design of the Ultimate Airfield Concept aligns to the standards outlined in Transport Canada's TP 312, 5th edition, ensuring compliance with stringent safety and operational regulations. The TP 312 document provides guidance on the airspace surfaces that are used to restrict object heights, mitigate potential hazards and safeguarding the airspace around the airport.

The airspace analysis assumed the integration of a precision approach system for Runway 08, enhancing navigational capabilities for aircraft operating in varying weather conditions. Additionally, an upgraded approach system would be installed for Runway 26 to bolster the airfield's capabilities and resilience.

It is important to note the methodology used in this study aligns with the existing guidance documents to protect the airspace around YQR.

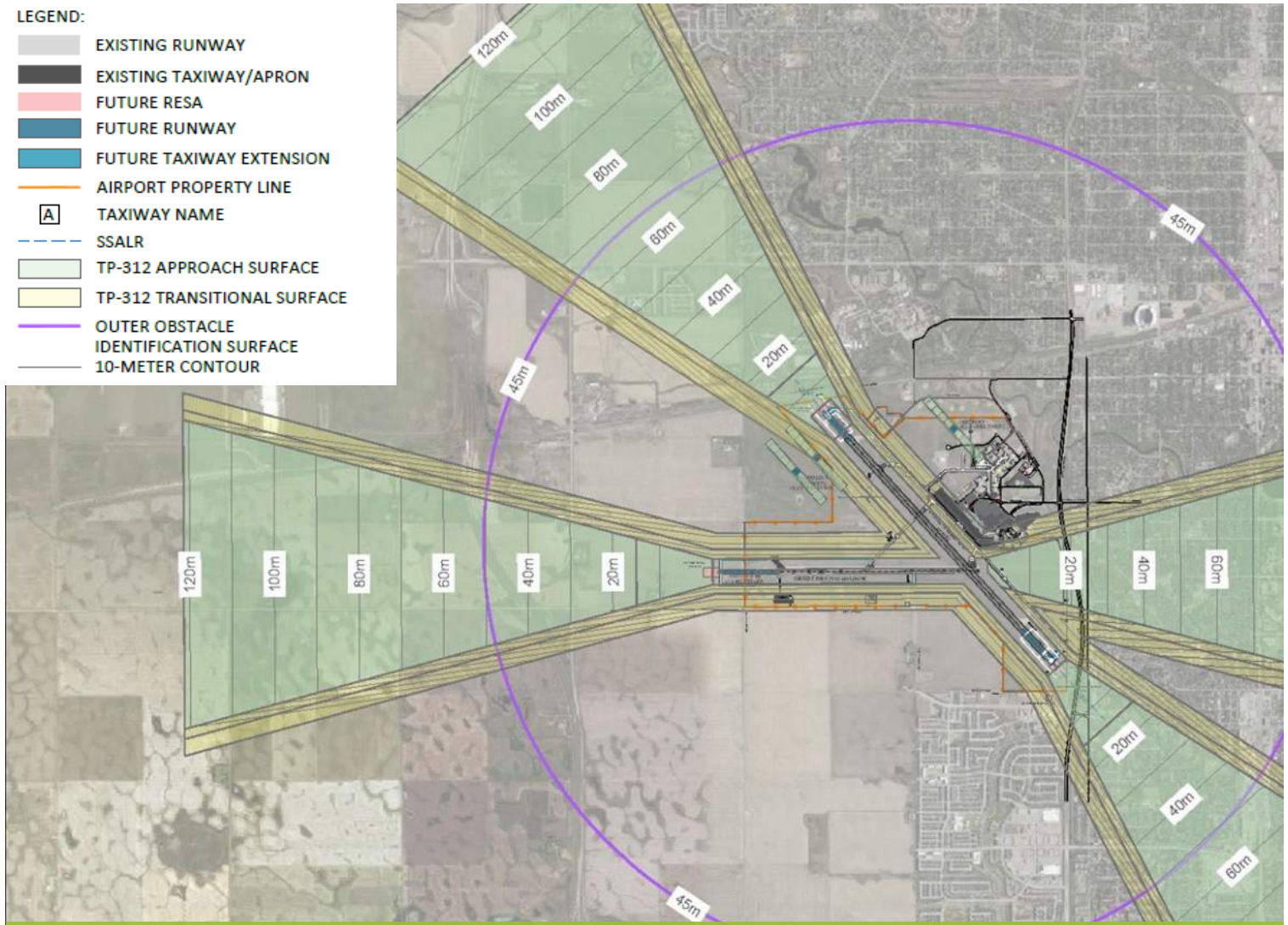


Figure 3.4 Airspace System
Prepared by: Inter *VISTAS* Consulting Inc., 2024

Recommended Ultimate Airfield Layout

Airport Operations Impact Metrics

NEF Contours & Training Circuits

Previous noise studies were validated and determined to be an accurate repreparation for assessing the future potential impacts on noise to surrounding communities. To identify future noise impact, it was assumed that the operations between the airport's two runways would be evenly distributed in the future. It is recommended that beyond this study, new NEF contours based on the future runway extents are modeled to include the forecasted fleet mix across each runway and technology changes.

Training circuits that are currently published were modified to reflect the ultimate airfield concept. These training circuits accommodate small general aviation aircraft across various operational flows. It's important to note that military and commercial aircraft are not factored into the training circuit, highlighting the need for tailored strategies to address the unique requirements and complexities associated with these aircraft categories.

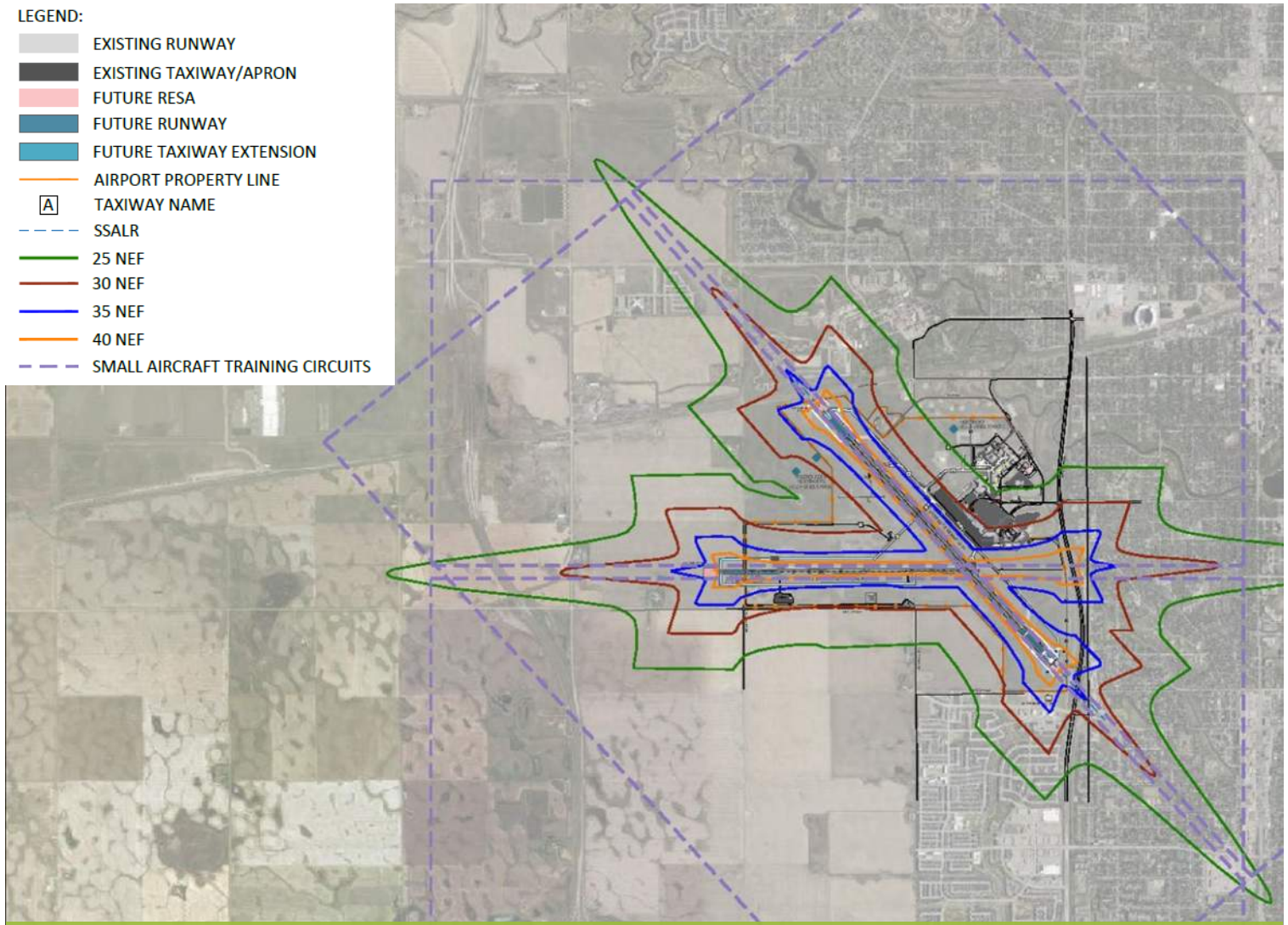


Figure 3.5 NEF Contours & Training Circuits
Prepared by: Inter *VISTAS* Consulting Inc., 2024

Recommended Ultimate Airfield Layout

Airport Operations Impact Metrics

Single Event Noise Contour

To complement the NEF noise contours and Training Circuits, a single noise event contour was prepared, drawing from the distinct noise profile of a Boeing 737-800 aircraft. This contour is a composite profile encompassing various flight phases, including departures, arrivals, missed approach maneuvers, and traffic pattern activity.

This single noise event offers insights into the complex interplay of factors shaping the noise exposure around the airport, and is the preferred metric for the evaluation of sleep disturbance, making it critical to the evaluation of noise abatement measures directed towards night time operations (AirBiz, 2021).

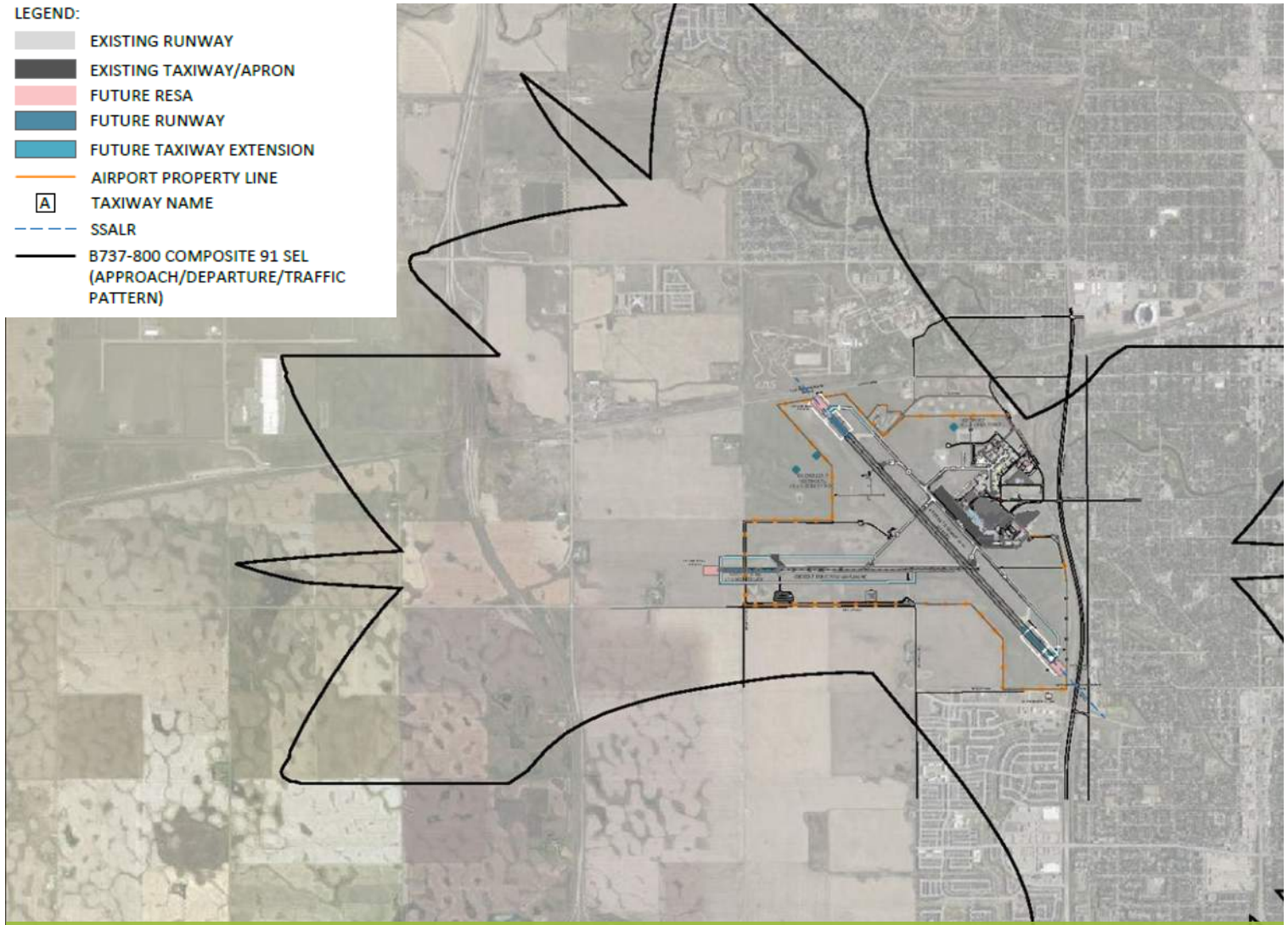


Figure 3.6 Single Event Noise Contour
Prepared by: Inter *VISTAS* Consulting Inc., 2024

3.2

Recommended Land Use Policy Framework

Recommended Land Use Policy Framework

Introduction

The Recommended Land Use Policy Framework translates the Single Event Noise Contours, Noise Exposure Forecast Contours, Training Circuit Impacts and Obstacle Limitation Surfaces detailed in Section 3.1 into an integrated, comprehensive tool at the local level to manage land uses around the airport, based on Best Practise Research and consolidation of Federal, Provincial and Municipal guidelines.

The Recommended Policy Framework illustrates four layers of Airport Operating Influence Zones (AOIZ) that provide for a hierarchy of urban growth management policies depending on proximity to the Airport, underlying land uses, and anticipated noise and other impacts from Airport operations.

The four layers include:

1. Airport Operating Influence Zone 1
    - AOIZ.1 - Economic Development
    - AOIZ.1 - Existing Urban
2. Airport Operating Influence Zone 2
3. Airport Operating Influence Zone 3
4. Airport Operating Influence Zone 4

It is intended that this Land Use Policy Framework would replace existing policies and regulations related to the Airport within the City of Regina and RM of Sherwood Official Community Plans and Zoning Bylaws, providing a consolidated decision-making tool for all development within the Airport's vicinity and, where appropriate, removing the need for consultation with RAA for individual development projects.

The following section outlines the key considerations and rationale for the Recommended Land Use Policy Framework followed by the Definition, Intent and Recommended Policies for each Policy Area and an analysis of proposed compared to existing policies.

A complete set of all drawings and figures of the Recommended Land Use Policy Framework is included at **Appendix B.**

Recommended Land Use Policy Framework

Rationale & Considerations

Development around Regina International Airport is currently managed primarily using the Noise Exposure Forecast (NEF) contours, as per Transport Canada's guidance. The Noise Exposure Forecast System predict noise complaints, based on Effective Perceived Noise Level (TP1247), rather than measuring actual noise exposure. As detailed in Section 2.2, there have been increases in Noise Complaints around YQR, particularly from areas where recent residential development has been allowed under the current regulations, using NEF contours.

International and local research has found that there can be significant deviation in modelled NEF contours and measured noise exposure conditions. Previous studies completed for YQR, and **international research recommends that NEF Contours are supplemented with Single Event Noise Exposure Levels to ensure worst case scenarios are considered in Airport Vicinity Planning**. (NEF Validation Study (National Research Council, 2005); Academic Research (Wu, 2020)).

Further detailed in Section 2.2, **YQR plays a vital role as a 'spoke' airport in a 'spoke and hub' system, where it serves as a regional connector, linking Regina to larger central hub airports.** Maintaining connectivity to these hub airports through nighttime operations is essential for accommodating connecting flights that align with the schedules of these larger hub airports. Without this ability, travellers using YQR would need to overnight more frequently when making connections, materially affecting business travellers and negatively affecting business attraction to Regina.

Accordingly, this study has recognized that a new Land Use Policy Framework is required to manage compatible development around YQR and foster the Airport's role as a major economic generator for the City and Region.

Recommended Land Use Policy Framework

Rationale & Considerations

The Recommended Land Use Policy Framework has been developed based on research of Canadian regulations, Best Practises and studies on land use in the vicinity of Airports, as well as YQR's unique operational characteristics and profile. The background rationale and considerations in support of these recommendations include:

- Transport Canada Federal Guidelines – TP1247 – Land Use In The Vicinity of Aerodromes.
- Statement of Provincial Interest directing City and RAA to protect current and future airport operations, while promoting economic growth in the surrounding community.
- Existing Regina Airport Zoning Regulations.
- City of Regina Official Community Plan and Zoning Bylaw.
- RM of Sherwood Official Community Plan Schedules and Bylaw No. 16-16.
- Preferred Ultimate Airfield Configuration at YQR to cater for Projected Passenger Growth, Projected Aircraft Usage, Commercial and General Aviation (Section 3.1 of this Report)
- YQR Airport Master Plan 2017 - 2037
- Providing for Flexibility & Redundancy in weather events, unforeseen circumstances or irregular aircraft patterns.
- YQR Noise Impacts and Land Use Guidelines – Best Practise Review and Recommended Metrics Final Report, AirBiz, 2021.
- NEF Validation Study (National Research Council, 2005) and Academic Research (Wu, 2020) – Found that there can be significant deviation in modelled NEF contours and measured noise exposure conditions. NEF Contours should be supplemented with SEL to ensure worst case scenarios are considered in Airport Vicinity Planning.
- YQR's role as a regional connector 'spoke' in a 'spoke and hub' system, requiring nighttime operations to provide seamless connections to central hub Airports, Page 19.
- Increasing Noise Complaints under current land-use planning regulations as detailed in Section 2.2, Page 26.
- Variable Noise & 'Nuisance' effects from irregular Airport Operations at YQR such as General Aviation Operations, Training, Fire Training etc.
- Single Event Noise Levels – Boeing 737-800 Composite 91 Sound Exposure Level (SEL) – Modeled in 2024 for the Preferred Ultimate Airfield Concept, Page 40.
- Noise Exposure Forecast (NEF) Contours 2018, adjusted for the Future Runway Expansions – Remodeled in 2024 for the Preferred Ultimate Airfield Concept, Page 39.
- Obstacle Limitation Surfaces (OLS) – Remodeled in 2024 for the Preferred Ultimate Airfield Concept, Page 38.
- Best Practices - Distance Setback of new residential development from runway systems at Canadian Airports of a similar scale.
- International and Canadian Best Practise of Airport Vicinity Land Use Planning (Ottawa, Edmonton, Calgary, Hamilton, Winnipeg, Vancouver), Page 12.
- Long Term Phasing of Market Absorption of Employment Uses, Appendix A: Task 1 – Existing Conditions & Economic Market Analysis Report.

Recommended Land Use Policy Framework

Based on Best Practise and the Rationale and Considerations detailed on the previous pages, the Recommended Land Use Policy Framework is applied across four 'Airport Operating Influence Zones (AOIZ), as illustrated in **Figure 3.7**, that provide for a hierarchy of urban growth management policies that become less restrictive, farther from the Airport boundaries.

Figure 3.8 on the following page illustrates the AOIZs spatially, followed by a summary of the Recommended Policies associated with each zone.

Based on Best Practise, the boundaries of each AOIZ are a composite profile of various noise metrics, distance setbacks and alignment to roadways, property parcels or geographical elements such as major watercourses. Table 3.1 below highlights how the composite boundary of each Airport Operating Influence Zone has been derived.

Table 3.1 – AOIZ Composite Profile Boundary

AOIZ	Defining Factors	
1	• NEF30 and above • SEL 91 • 1000m setback from runway	Aligned to Property Parcels, Major Roadways, Major Watercourses
2	• NEF 25 and above • SEL 91 • Training Circuits	
3	• Training Circuits	
4	• OLS • Existing AVPA	

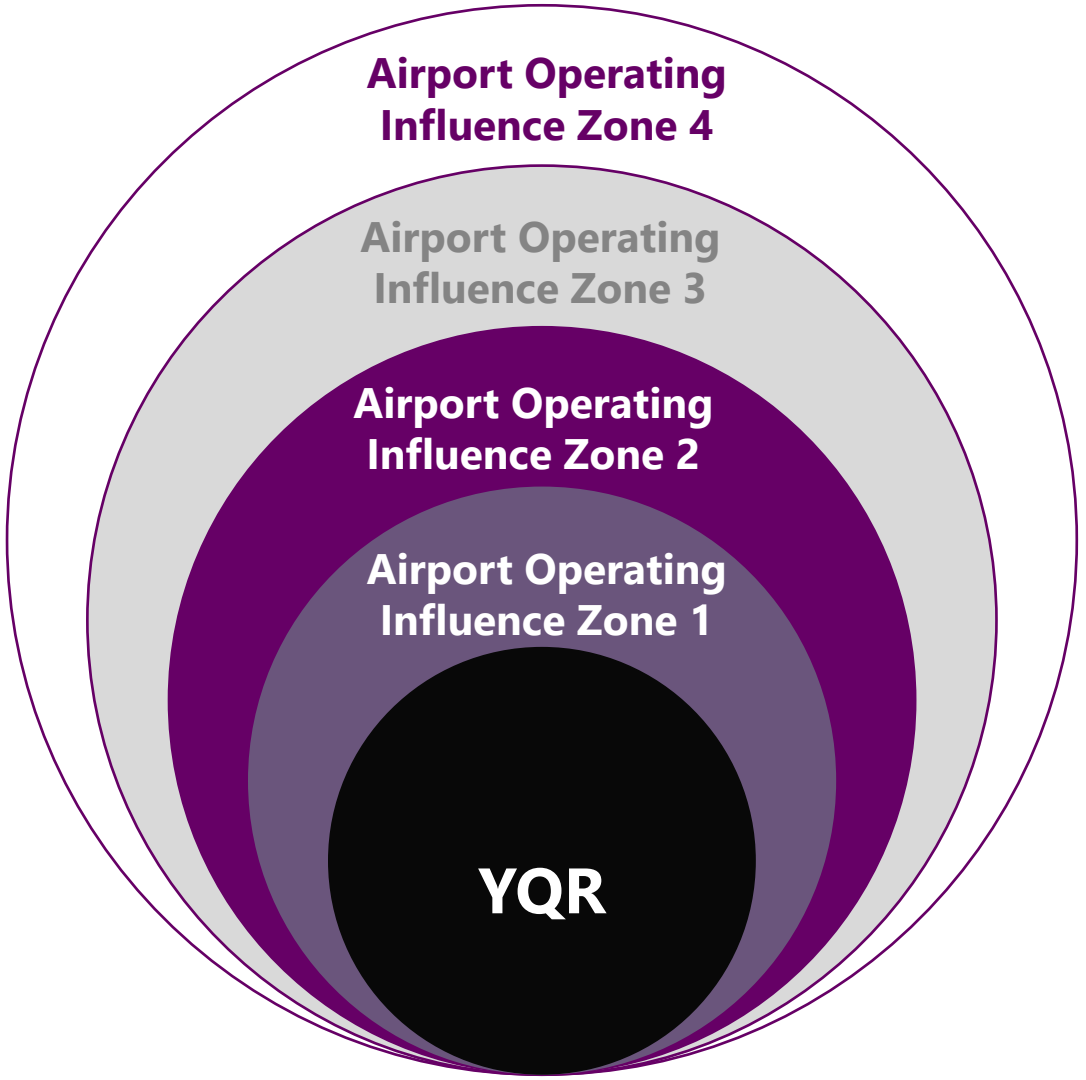


Figure 3.7 Airport Operating Influence Zone Hierarchy

Recommended Land Use Policy Framework

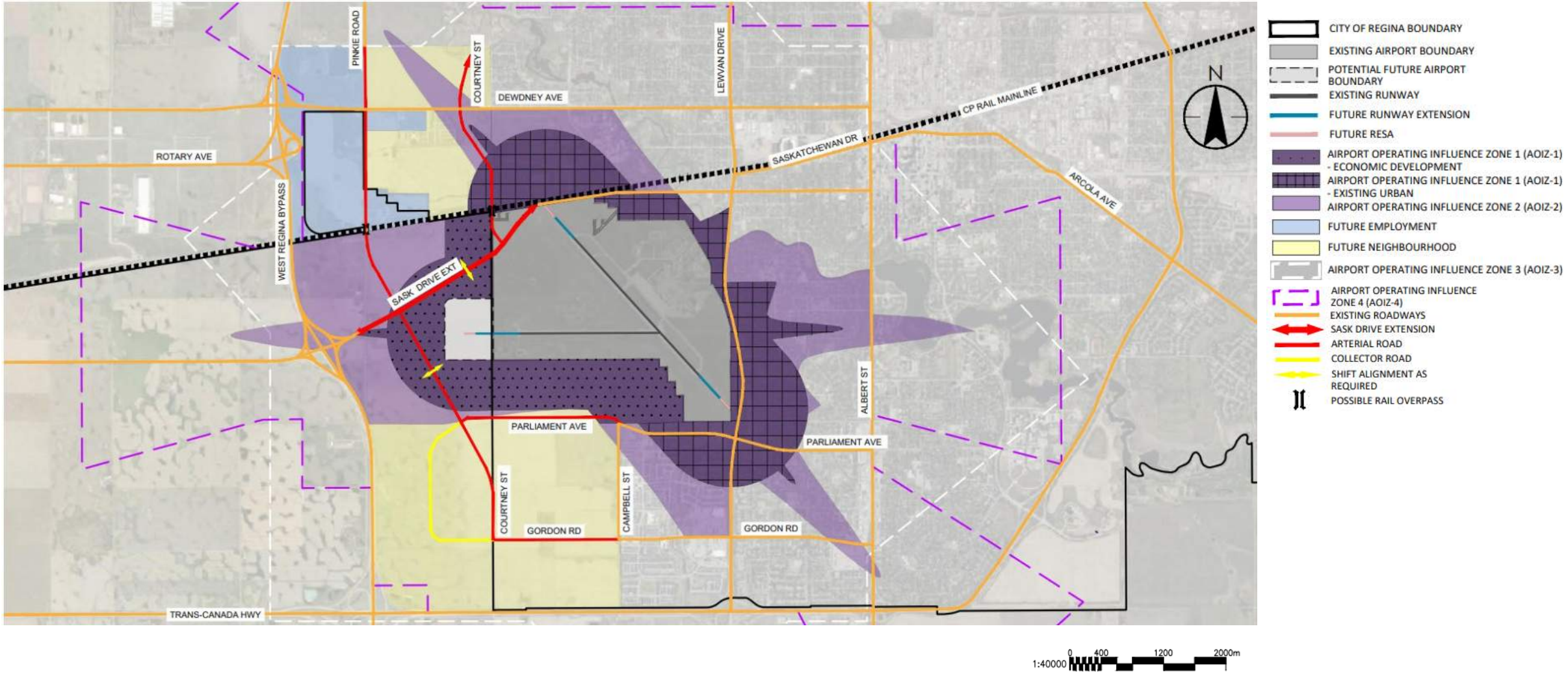


Figure 3.8 Recommended Land Use Policy Framework

Recommended Land Use Policy Framework

Recommended Land Use Policy Framework Summary

Airport Operating Influence Zone 4 (AOIZ-4)

The intent of this area is to ensure that no structures, buildings or vegetation exceed the height limitations associated with the Obstacle Limitation Surfaces of the future runway extent at Regina International Airport, as well as controls for non-residential development that may cause potential conflicts with aircraft flight paths, as directed by Regina Airport Zoning Regulations.

Airport Operating Influence Zone 3 (AOIZ-3)

This Zone illustrates the Area of Impact associated with small aircraft training circuits including various types of general aviation aircraft. The intent of this zone is to protect for growth of the Pilot Training Capacity at Regina International Airport.

Airport Operating Influence Zone 2 (AOIZ-2)

Within this area, there is discrepancy in the amount of noise and 'nuisance' generated by Airport Operations. The zone is based on a composite of SEL contour and NEF Contours to ensure that worst case scenario noise events are captured and reflected in the policy.

Airport Operating Influence Zone 1 (AOIZ-1)

The intent of this zone is to ensure that current and future aviation operations and navigational needs of Regina International Airport are not compromised by development of incompatible land-uses in proximity to the Airport and protecting community well-being and enjoyment of property in proximity to the Airport.

Regina International Airport

Recommended Land Use Policy Framework

Table 3.2 Recommended Land Use Policy Framework Summary Table

Policy Area	Intent	Recommended Policies
AOIZ-1 Economic Development	• Provides for an economic and employment base around the Airport that enhances YQR's role as a major economic driver for the Region. • This area presents opportunities to support city- and region-wide economic growth, job creation and optimize real estate.	• **No new** noise sensitive development is permitted. • Allow a mix of land uses such as industrial and commercial to provide an economic base around the airport that enhances the airport's role as a key economic generator for the region. • Employment Activities provided for: Light Industrial, Logistics, Storage, R&D and Flex as Market Demand allows. • Temporary Permitted Uses including Renewable Energy, SAF production & Micro-Utility Plants, Truck Storage, etc.
AOIZ-1 Existing Urban	• Provides for policy direction of existing residential and urban areas.	• **No new** noise sensitive development is permitted (redevelopment of existing residential sites to the same density is permitted). • Rezoning of residential or allowing for higher intensity residential land use is not permitted, unless previously approved in policy. If necessary, it is recommended the City place a density control within this Overlay Zone. • Aviation Noise Study to assess whether application of Noise Attenuation Building Standards is required (at cost of developer). (See AOIZ-2 Recommended Policies below for notes on Implementation of Building Standards). • In the event of a conflict between the requirements of this Overlay Zone and the underlying zone or zoning change impacting intensification, such as those recommended or recently approved in the Housing Accelerator Fund Bill, the AOIZ 1 – Existing Urban requirements should apply. • Employment generating uses are permitted.
AOIZ-2	• Provides for more flexibility in land-uses around the airport, whilst managing noise and nuisance effects for Noise Sensitive Development.	• Low density residential permitted. • High density residential permitted with an Aviation Noise Study. • Aviation Noise Study to assess whether application of Noise Attenuation Building Standards is required (at cost of developer). • To implement this, the City/RAA will need to develop updated Noise Attenuation Building Standards, alongside the evolving Building Energy Code. In this process, the need for individual Aviation Noise Studies may be negated due to improved Building Standards, at which point can be removed from the policy. • Employment generating uses are permitted including commercial, industrial and other employment activities.
AOIZ-3	• Illustrates the area impacted by the variety of aircrafts and flight patterns used for Pilot Training at YQR, based on the Ultimate Airfield Configuration.	• To be determined based on further studies and discussions between the City and RAA.
AOIZ-4	• Provides a regulatory tool at the local level to ensure TC and NAVCanada Airspace Height Requirements and Land-Use Restrictions are followed and met by property owners when land is developed.	• Regina Airport Zoning Regulations in place. • Noise Sensitive Development is Permitted. • No structures or buildings constructed to exceed Obstacle Limitation Surfaces or underlying zone. Height limitations must be respected. • Non-residential activities that may cause potential conflicts with aircraft operations are restricted including light, smoke, hazard, fumes or other hazards.

Airport Operating Influence Zone 1 (AOIZ-1)

Intent

The intent of this zone is to ensure that **current and future aviation operations** and navigational needs of Regina International Airport are **not compromised by development of incompatible land-uses** in proximity to the Airport, while protecting community well-being and enjoyment of property in proximity to the Airport. The AOIZ-1 is closest to the Airport Boundary and therefore the area of **greatest impact of noise and 'nuisance' from Airport Operations.**

As detailed in previous sections of this report, noise and 'nuisance' from Airport Operations often exceed the limits of the modelled NEF contours and accordingly, the AOIZ-1 is based on noise metrics and distance setbacks to **provide a 'buffer' of compatible uses around the Airport Boundary** protecting both airport and community needs. Based on Best Practice the intent of AOIZ-1 is to **protect the necessary operations at YQR to support its role as a major driver of economic growth in Saskatchewan.**

No new noise sensitive development is provided for in these areas and infill and redevelopment of existing urban areas is restricted. The AOIZ 1 is separated into two areas to reflect the underlying development of the land, future development opportunities and associated policy recommendations:

- AOIZ-1 Economic Development.
- AOIZ-1 Existing Urban.

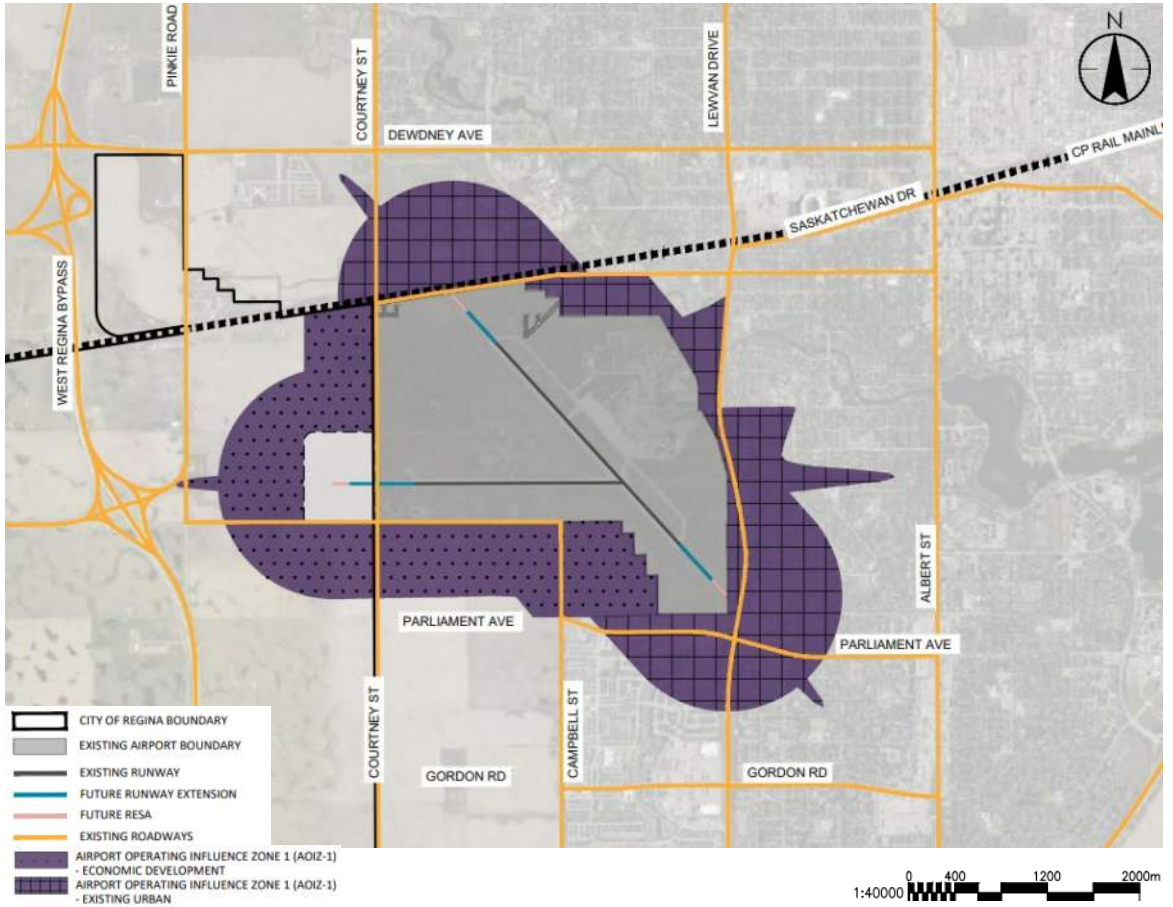


Figure 3.9 Airport Operating Influence Zone 1

Recommended Land Use Policy Framework

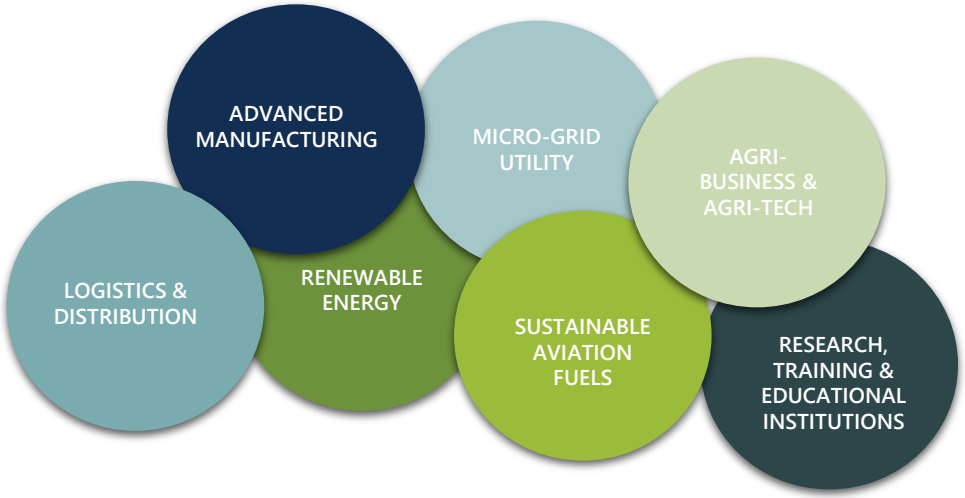
Airport Operating Influence Zone 1 (AOIZ-1)

AOIZ-1 Economic Development

The AOIZ-1 Economic Development area provides for an economic and employment base around the Airport that enhances YQR's role as a **major economic driver for the Region**. This area presents **opportunities to support city- and region-wide economic growth**, job creation and optimize real estate.

Regina is at the centre of Saskatchewan's strong Agri-business Sector, including the Protein Super Cluster, Advanced Machinery Fabrication and world-class short line equipment manufacturers. In addition, Advanced Manufacturing and Distribution are growing sectors in Regina that these lands can leverage due to their proximity to the Airport. **Economic Development Regina have expressed an interest for fostering Pilot Training initiatives and Sustainable Aviation Fuels as part of Industry Specific Growth initiatives to diversity Regina's economy**.

The City of Regina's Energy & Emissions Reduction Action Plan highlights Regina's commitment to becoming a 100% renewable city by 2050, outlining actions needed to achieve this goal. This area around **YQR presents a strong opportunity to provide for implementation of these actions in the generation of renewable energy**.



The AOIZ-1 Economic Development area presents a unique opportunity to leverage and foster more growth in these sectors that are unlocked through the Air and Ground Connectivity afforded by YQR's location and the Recommended Enabling Transportation Network creating an economic corridor between the Airport and the GTH.

These economic sectors should be targeted for growth within the AOIZ-1 Economic Development through given the degree of 'intersectionality' as up and downstream businesses can facilitate **inventive partnerships** across the Greater Regina Area.

Recommended Land Use Policy Framework

Airport Operating Influence Zone 1 (AOIZ-1)

AOIZ-1 Economic Development

Specific uses including logistics, light industrial and flex-typologies should be provided for in the policies to **unlock the niche economic sectors and create an economic base around the Airport.** Regina has a strong base of established and emerging economic sectors including agriculture with the recent Cargill's development at the GTH, canola and mining.

Regina's industrial real estate market currently presents opportunities for this type of growth, with very low vacancy rates and rapidly growing demand for warehousing in face of the e-commerce, distribution and logistics boom in 2020. **The AOIZ-1 Economic Development area presents natural advantages for this type of development, given its proximity and connectivity to the Airport.** Challenges facing the market include high construction costs and limited industrial land availability presenting an opportunity for the City and RAA to collaborate to bring to market. The Real Estate Market Overview conducted for this study provides further detail and is included at **Appendix A.**

To assist in accelerating development within the AOIZ-1 Economic Development, the City and RAA could explore future opportunities for dedicated **Community Improvement Districts** and **associated tax incentives** that would incentivize specific types of development. This has been successfully applied in several Airport Growth Districts across Canada.

In the interim, there are opportunities for Innovative Temporary Uses that **embrace the fast-growing Decarbonization, Aviation and Technology sectors** such as renewable energy, micro-utility plants and SAF production, supporting regional and City-wide sustainability initiatives, detailed on the previous page.

Based on our on-going engagement, there are opportunities for **potential partnerships with Renewable Energy Producers** to facilitate this type of development, as well as the University of Regina and Saskatchewan Polytechnic.

Recommended Land Use Policy Framework

Airport Operating Influence Zone 1 (AOIZ-1)

AOIZ-1 Economic Development

The AOIZ-1 Economic Development provides for a strong base of employment activities around the Airport to foster economic development initiatives, as well as provide for compatible uses around YQR.

The AOIZ-1 Economic Development boundary is based on the NEF30 Contour, SEL 91, 1000m setback from runways and designates greenfield land that is currently utilized for farming activities.

Recommended Policies:

- No new noise sensitive development permitted.
- Allow a mix of employment generating land uses such as industrial and commercial to provide an economic base around the airport that enhances the airport's role as a key economic generator for the region. Employment Activities provided for: Light Industrial, Logistics, Storage, R&D and Flex as Market Demand allows.
- Temporary Permitted Uses including Renewable Energy, SAF production & Micro-Utility Plants, Truck Storage, etc.

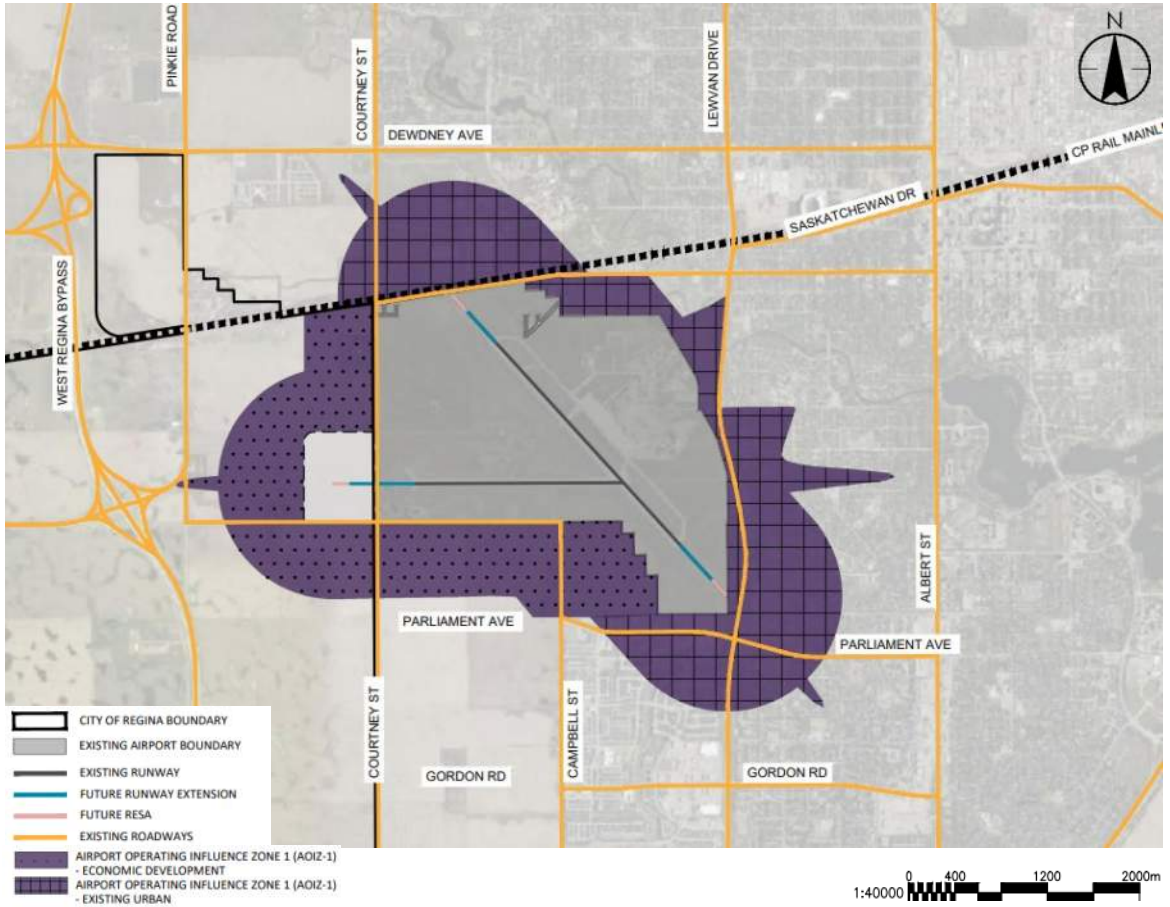


Figure 3.10 AOIZ-1 Economic Development

Airport Operating Influence Zone 1 (AOIZ-1)

AOIZ-1 Existing Urban

The AOIZ-1 Existing Urban provides compatible land-uses around the Airport while allowing for appropriate community regeneration.

The AOIZ-1 Existing Urban boundary is based on the NEF30 Contour, SEL 91, 1000m setback from runways and designates land that is currently developed.

Recommended Policies

- No new noise sensitive development is permitted.
- Redevelopment of existing residential sites to the same density is permitted.
- Rezoning of residential or allowing for higher intensity residential land use is not permitted, unless previously approved in policy. If necessary, it is recommended the City place a density control within this Overlay Zone.
- Aviation Noise Study to assess whether application of Noise Attenuation Building Standards is required (at cost of developer).
- In the event of a conflict between the requirements of this Overlay Zone and the underlying zone or zoning change impacting intensification, such as those recommended or recently approved in the Housing Accelerator Fund Bill, the AOIZ 1 – Existing Urban requirements should apply.

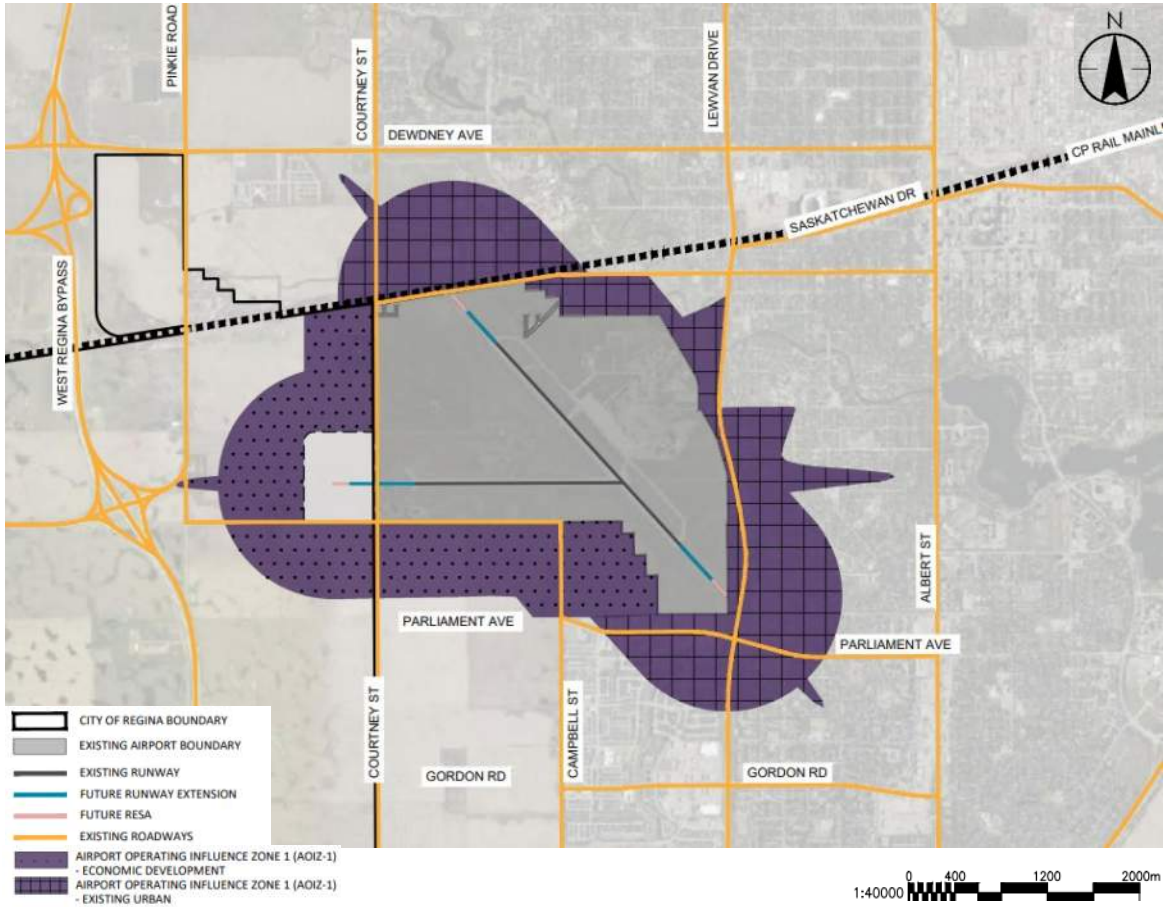


Figure 3.11 AOIZ-1 Existing Urban

Airport Operating Influence Zone 2 (AOIZ-2)

AOIZ-2

Intent & Rationale

Within this area, there is discrepancy in the amount of noise and 'nuisance' generated by Airport Operations. Accordingly, the AOIZ-2 is based on a combination of the Single Event Noise Sound Exposure Level (SEL) contour and 25 NEF Contour to ensure that worst case scenario noise events are captured and reflected in the policy.

The AOIZ-2 provides for more flexibility in development, as land is further away from direct Airport impacts.

Recommended Policies:

- Low density residential permitted.
- High density residential permitted with an Aviation Noise Study.
- Aviation Noise Study to assess whether application of Noise Attenuation Building Standards is required (at cost of developer).
- To implement this, the City/RAA will need to develop updated Noise Attenuation Building Standards, alongside the evolving Building Energy Code. In this process, the need for individual Aviation Noise Studies may be negated due to improved Building Standards, at which point can be removed from the policy.
- Employment generating uses are permitted including commercial, industrial and other employment activities.

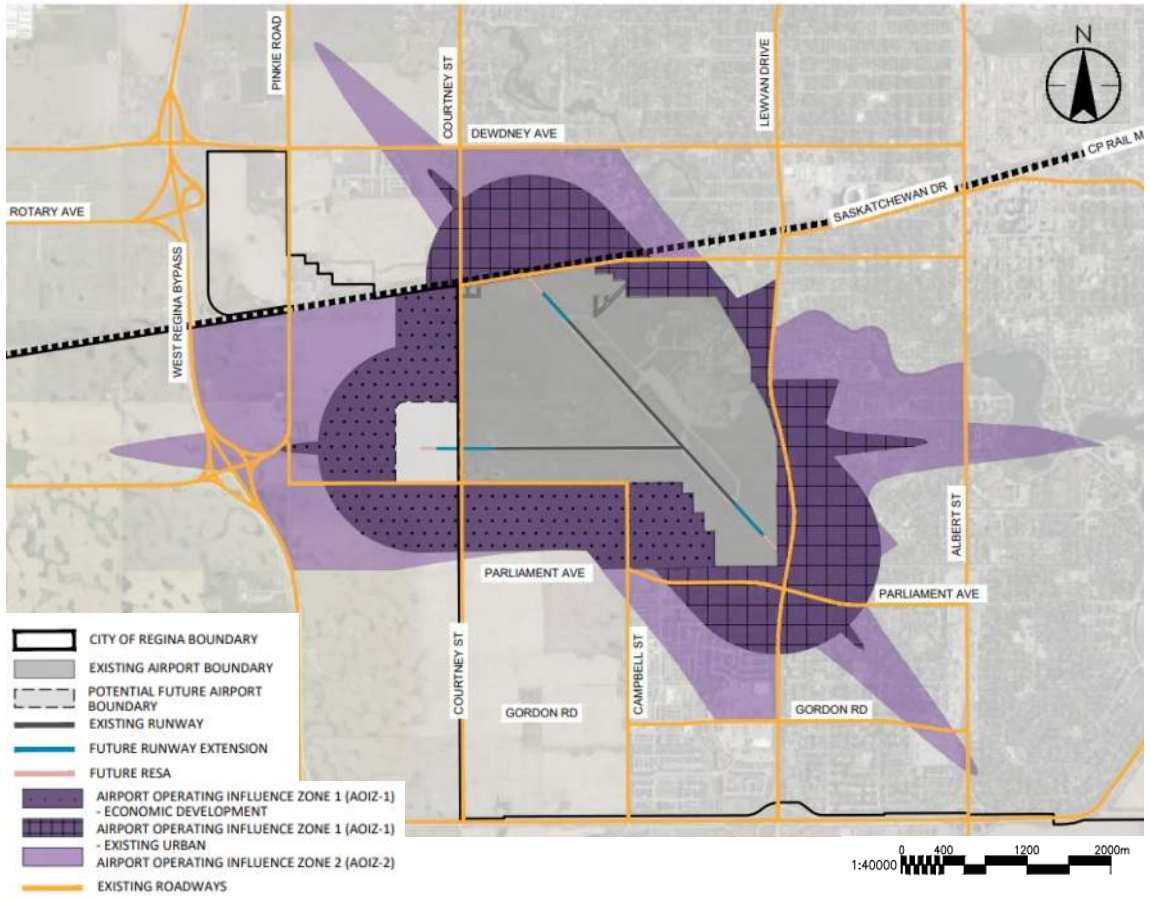


Figure 3.12 Airport Operating Influence Zone 2

Airport Operating Influence Zone 3 (AOIZ-3)

AOIZ-3

Intent & Rationale

The City of Regina Economic Development has expressed an interest in supporting YQR to **expand its Pilot Training capacity to foster growth initiatives within the Aerospace and Aviation Sector**. This would provide for connections to the Moose Jaw NATO Training Base and other airports in Saskatchewan. The proposed runway extensions are anticipated to enable this initiative and attract more aircraft and training initiatives to Regina.

Alongside this growth, the highest number of noise complaints are coming from Flight Training Circuits. Accordingly, the intent of the AOIZ-3 is to illustrate the area impacted by the variety of aircrafts and flight patterns used for Pilot Training at YQR, based on the Ultimate Airfield Configuration for future decision making.

Figure 3.14 on the following page illustrates general flight training circuits, based on data received from NAV Canada in February 2023. While the AOIZ-3 represents a broad area, the flight data illustrates the area of direct impact and provides direction for potential subdivision of this policy area in the future, as detailed on the following pages.

Recommended Policies

- To be determined based on further studies by the City and RAA.

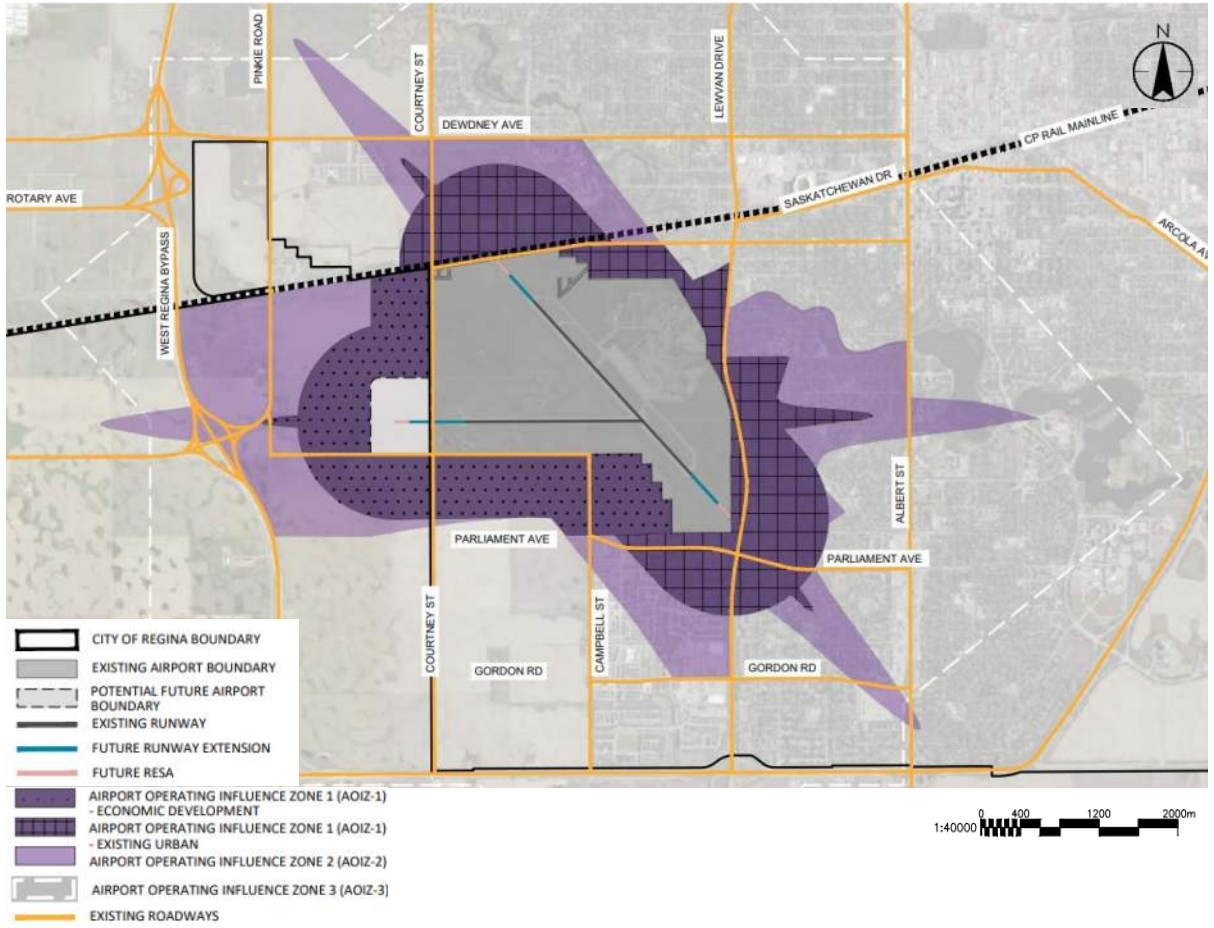


Figure 3.13 Airport Operating Influence Zone 3

Recommended Land Use Policy Framework

Airport Operating Influence Zone 3 (AOIZ-3)

AOIZ-3

Figure 3.14 illustrates the actual flight data from Training Circuit flights conducted in February 2021, as provided by NAVCAN. The blue dashed line illustrate real-life circuits conducted on both Runway 08-26 and 13-31.

The training circuit data provides further information on the AOIZ-3 area, illustrating the greatest area of impact from actual flight paths, and potential for subdivision of this policy area or to be combined into the AOIZ-2 policy area.

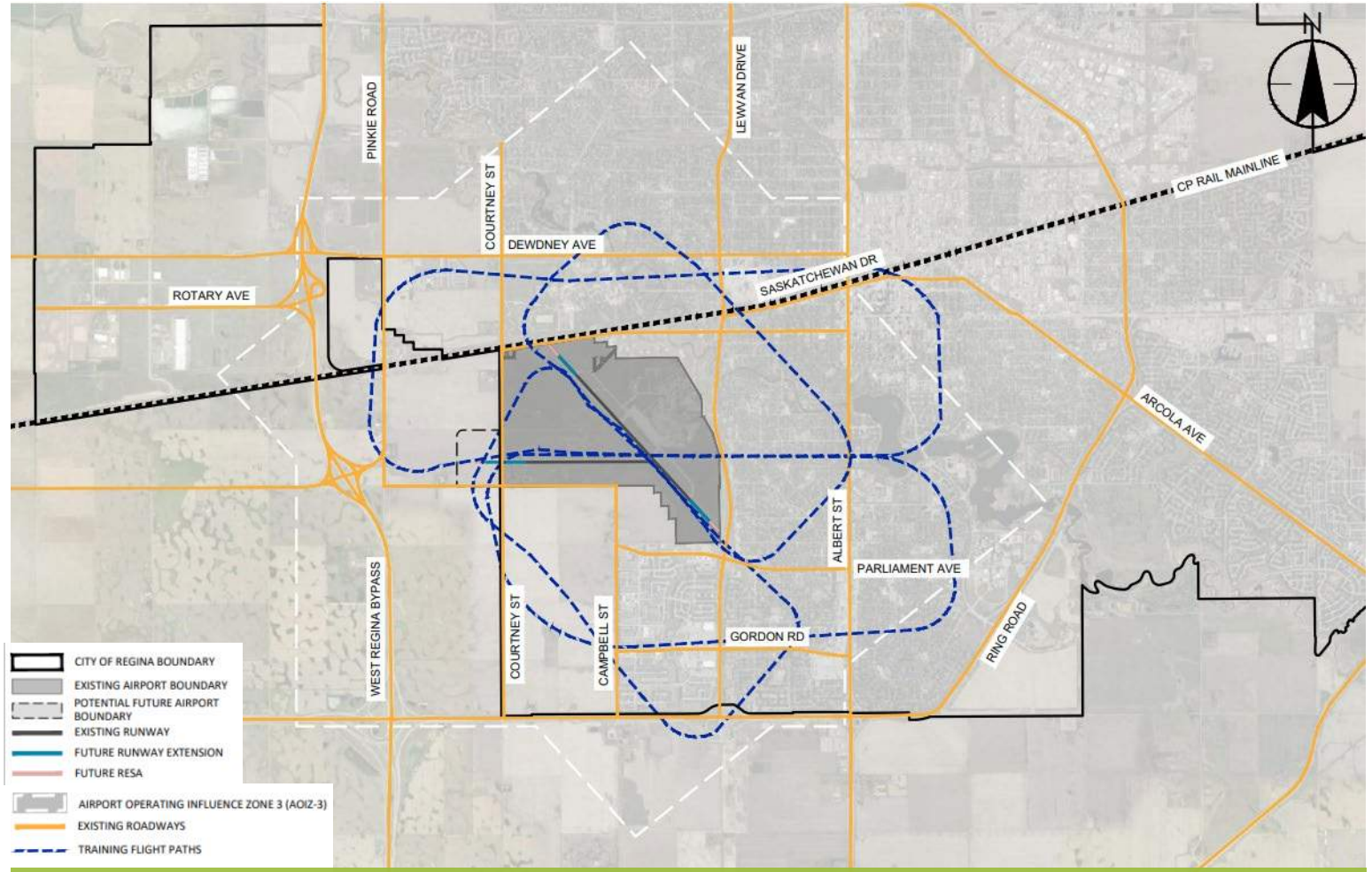


Figure 3.14 AOIZ-3 and General Training Circuits

Recommended Land Use Policy Framework

Airport Operating Influence Zone 3 (AOIZ-3)

AOIZ-3

Implementation Alternative

The City of Regina may decide to split AOIZ-3 into two or more zones. Shown in **Figure 3.15** is an example of an established overlay zone for Tooele Valley Airport. In this example the AOIZ-3 was divided into two zones, Zone C (shown in green) and Zone D (shown in purple). The difference between the two zones was in Zone D certain types of residential uses were conditionally permitted where in Zone C they were not permitted. Definitions for Zone C and D are as follows.

Zone C - designed to protect pilots and underlying landowners during aircraft operations in the VFR traffic pattern. Zone C protects aircraft from the potential establishment of obstacles that impact navigable airspace. This zone is defined based on the expected performance of small flight training aircraft when performing procedures for flying a standard traffic pattern during touch and go training operations. This zone is most likely to experience moderate aircraft noise created by aircraft operating in the traffic pattern.

Zone D - designed to protect pilots and underlying landowners during aircraft operations in the VFR traffic pattern. Zone D protects aircraft from potential establishment of obstacles that could impact navigable airspace. Exterior boundaries (farthest from the primary runway) for Zone D align with general traffic pattern protection criteria for small general aviation aircraft.

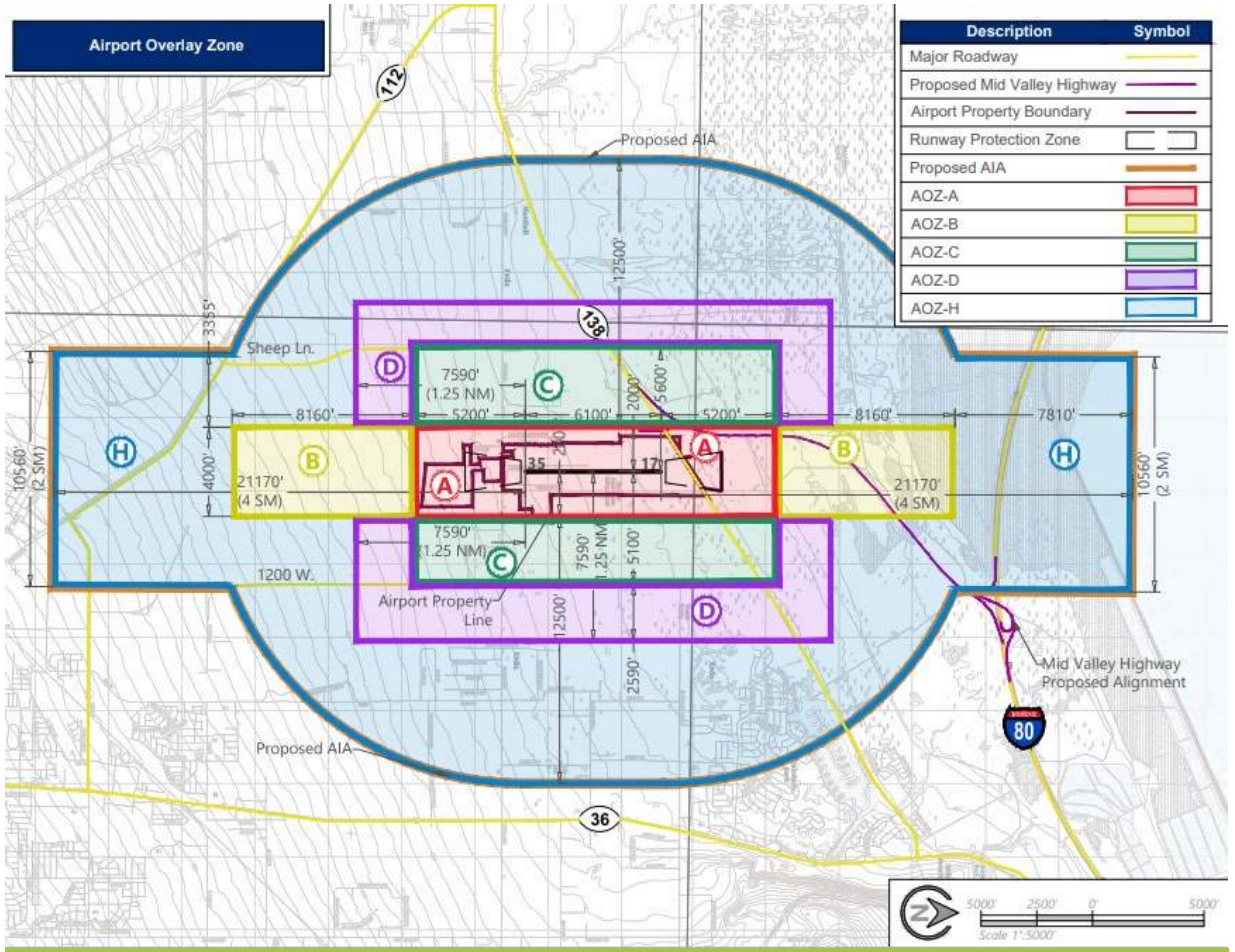


Figure 3.15 Example - Tooele Valley Airport Overlay Zone

Airport Operating Influence Zone 4

AOIZ-4

Intent & Rationale

The intent of the AOIZ-4 is to ensure that no structures, buildings or vegetation exceed the height limitations associated with the Obstacle Limitation Surfaces of the future runway extent at Regina International Airport, as well as controls for non-residential development that may cause potential conflicts with aircraft flight paths, as directed by Regina Airport Zoning Regulations.

The AOIZ-4 would replace the Aeronautical Protection Area that is currently in place in the City of Regina and RM of Sherwood OCPs and Zoning Bylaws. The AOIZ-4 provides a regulatory tool at the local level to ensure TC and NAVCanada Airspace Height Requirements and Land-Use Restrictions are followed and met by property owners when land is developed.

Recommended Policies

- Regina Airport Zoning Regulations in place.
- Noise Sensitive Development is Permitted.
- No structures or buildings constructed to exceed Obstacle Limitation Surfaces or underlying zone. Height limitations must be respected.
- Non-residential activities that may cause potential conflicts with aircraft operations are restricted including light, smoke, hazard, fumes or other hazards.

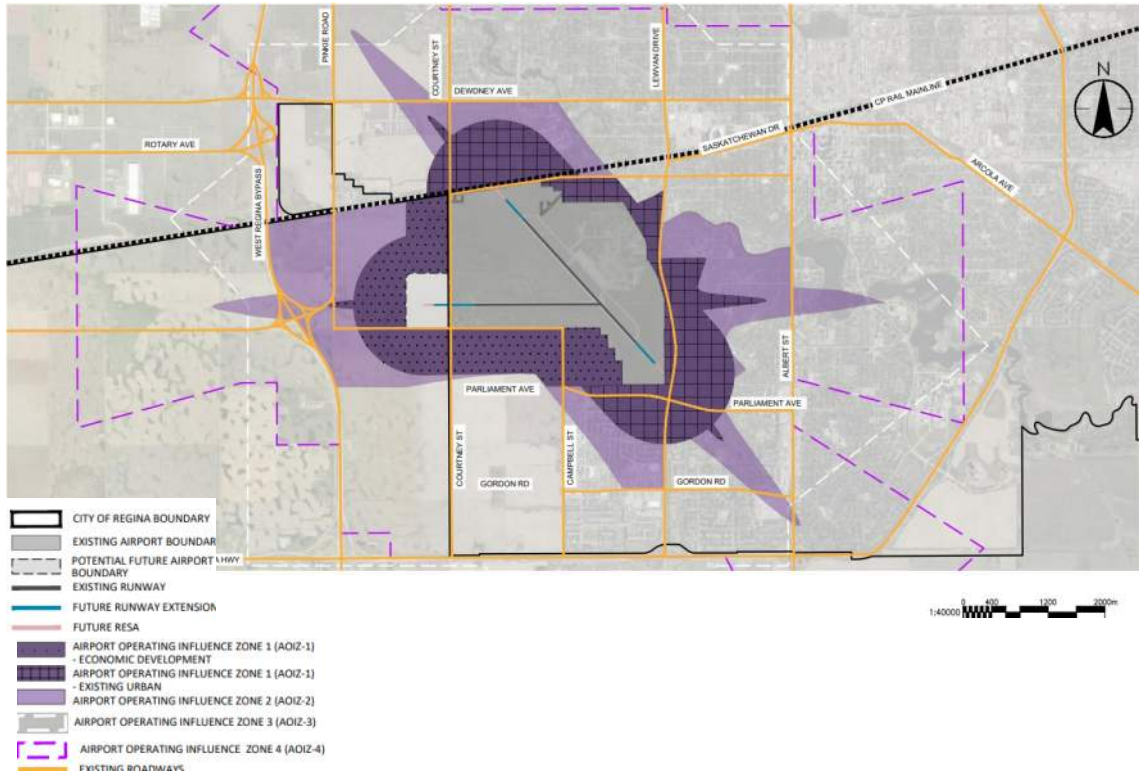


Figure 3.16 Airport Operating Influence Zone 4

Recommended Land Use Policy Framework

Policy Analysis

Table 3.3 below provides an overview of the existing policies and regulations related to Regina International Airport, in comparison to the proposed Land Use Policies.

Table 3.3 Comparison of Existing and Recommended Policies

		Existing Land Use Policy		Recommended Land Use Policy
Land Use		**City of Regina**	**RM of Sherwood**	
Residential	**New**	• Prohibited in areas above 30 NEF. • Noise Attenuation required between 25 and 30 NEF. • RAA must be consulted for any development in proximity (not defined). • No specific policies relating to Infill/Redevelopment of Residential around the Airport.	• Prohibited in areas above 30 NEF. • Noise Attenuation required between 25 and 30 NEF. • Airport Bird-Hazard Risk Analysis, Obstruction Marking and Lighting Analysis may be required. • RM will work in collaboration with RAA when reviewing any development proposals within section 16-17-20-W2. • No specific policies relating to Infill/Redevelopment of Residential around the Airport.	• Prohibited in AOIZ 1– Economic Development. • Noise Attenuation for new residential development required in AOIZ 2, based on results of Aviation Noise Impact Study. • New Noise Attenuation Standards to be developed in collaboration with City/RAA.
	Infill/ Redevelopment			• Infill/Redevelopment that increases residential densities beyond existing zoning is restricted in AOIZ 1 – Existing Urban.
Non-Residential		• No policies relating to non-residential development in the Airport's vicinity to support niche economic sectors. • Regina Airport Zoning Regulations restrict land-uses that may cause conflict with aircraft (emitting fumes, smoke, etc.).	• No policies relating to non-residential development in the Airport's vicinity to support niche economic sectors. • Regina Airport Zoning Regulations restrict land-uses that may cause conflict with aircraft (emitting fumes, smoke, etc.).	• AOIZ 1 - Economic Development provides for niche economic sectors to support compatible growth and development around the Airport. • AOIZ 4 reflects Regina Airport Zoning Regulations and restricts land-uses that may cause conflict with aircrafts (emitting fumes, smoke, etc.).
Height Restrictions for Structures, Buildings, Vegetation		• Aeronautical Protection Area provides for Height Overlay Zone based on Obstacle Limitation Surfaces and Regina Airport Zoning Regulations	• Aeronautical Protection Area provides for Height Overlay Zone based on Obstacle Limitation Surfaces and Regina Airport Zoning Regulations	• AOIZ 4 provides for height controls based on Obstacle Limitation Surfaces of Future Runway Extensions (and future Regina Airport Zoning Regulations).
Noise Sensitive Development		Guidance for Noise Sensitive Development in the Vicinity of Aerodromes is provided for in TP1247. It is recommended to follow this guidance in new policies and Noise Sensitive Development should include all forms of residential, health care, medical, educational facilities (both public and private), and community uses, among others stated in the TP1247 document.		

3.3

Recommended Enabling Transportation & Mobility Strategy

Recommended Transportation Network

Importance of the Road Network

An appropriate road network west of the airport has been considered over many years through documents such as the Official Community Plan and the City of Regina Transportation Master Plan.

The Official Community Plan, shown in **Figure 3.17** identifies the Saskatchewan Drive extension desire line from north of the airport to the Hill Avenue interchange. The 2017 City of Regina Transportation Master Plan, shown in **Figure 3.18**. identifies key access points to the area west of the airport. Both documents stop short of defining the road network within the Joint Transportation Study Area.

The east-west and north-south arterial roadway pattern in the City is affected by the presence of the Regina International Airport, which breaks up the rhythmic spacing of roads. This spacing is further defined by the presence of the CP Rail Mainline, which dictates the history of crossing locations along its length. All of this means that specific roads will need to carry higher traffic volumes to compensate.

This study provides a Long-Term Enabling Road Network Plan supportive of airport growth, movement of goods and people and considerate of municipal goals for lands surrounding the airport.

Figure 3.17 Design Regina Official Community Plan

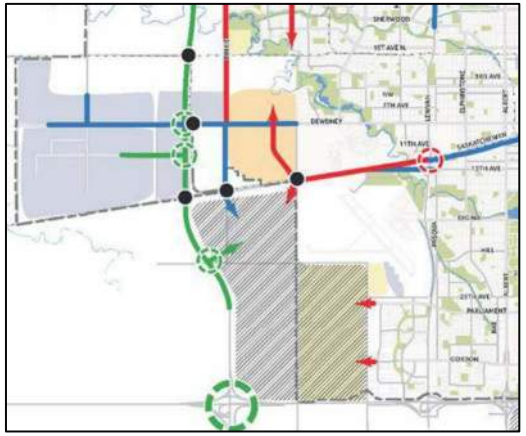


Figure 3.18 City of Regina Transportation Master Plan

Recommended Transportation Network

Road Network Understanding

The future road network will need to respect existing connection points, as shown in **Figure 3.19**, that help define anticipated travel patterns in the area. The following roadway considerations are important to the layout:

- **Saskatchewan Drive west extension** – Anticipated to carry commuters from north & south Regina into downtown daily and run immediately north of the airport property.
- A parallel Value Planning study is being conducted by the City to address specifics around the alignment of Saskatchewan Drive options, including the Courtney Street Rail Overpass.
- **Pinkie Road and Courtney Street** – North-South roadways that currently cross CP Rail Mainline at-grade. One or both roadways are proposed to be grade-separated over the rail.
- **West Regina Bypass** – this provincial facility provides an interchange at Hill Avenue for access to the area west of the airport. It also provides a logical boundary to long term development areas and influences the layout of roads.

The future road network needs to be a collaboration between three governing roadway authorities, namely the Province of Saskatchewan, RM of Sherwood and City of Regina, all of which have a vested interest in the road network in the area surrounding the Regina International Airport and encouraged to work collaboratively to solve this network and unlock this area for future growth.

Figure 3.19 Existing Road Network

Recommended Transportation Network

Road Network Options

A series of road network options were developed that built upon one another to create a Preferred Long-Term Airport-Supportive Network.

The road network plan needed to consider:

- Keeping standard spacing of key arterials while capturing traffic generated from surrounding lands.
- Addressing synergies between the GTH and RAA operations with roadways that are direct and purposeful.
- Reflecting complimentary airport-compatible land immediately around the airport and facilitating access between these uses.
- Accommodating truck movements with limited bottlenecks.

The presence of various mobility networks (road, rail, air) should work together and promote economic viability for area businesses and the airport.

The road network for this area should support development through good design by facilitating area access, roadway capacity, network efficiency and safety of road users.

Figure 3.20 Development of Preferred Long-Term Road Network Option

Recommended Transportation Network

Preferred Long-Term Road Network

Saskatchewan Drive Extension

A key aspect of the road network plan is that the Saskatchewan Drive extension serves as a direct link between the Airport and the GTH via the Hill Avenue interchange on the West Regina Bypass.

The yellow double-headed arrow illustrates that the roadway can shift accordingly as more detail is known. The alignment provides adequate distance for a long-term Courtney Street flyover of the CP Rail Mainline while bringing traffic down to grade before intersecting Saskatchewan Drive. It is acknowledged that this study is intended to meet long term goals and desire lines.

Pinkie Rd/Courtney Street (south) Roadway Connection

The alignment of the Pinkie Rd/Courtney Street (south) link helps define the AOIZ-1 Economic Development on the west side of the airport and resolves spacing of key intersections near the bypass to improve safety. The connection also allows for economic development at the end of the east-west runway while respecting take-off surfaces for airplanes and noise contours related to airplane traffic.

The Pinkie Rd/Courtney Street (south) link parallels the alignment of the West Regina Bypass and squares up parcels in between the two roadways. There is one kilometer intersection spacing on Saskatchewan Drive between the West Regina Bypass and the first intersection with the Pinkie Rd/Courtney Street (south) link.

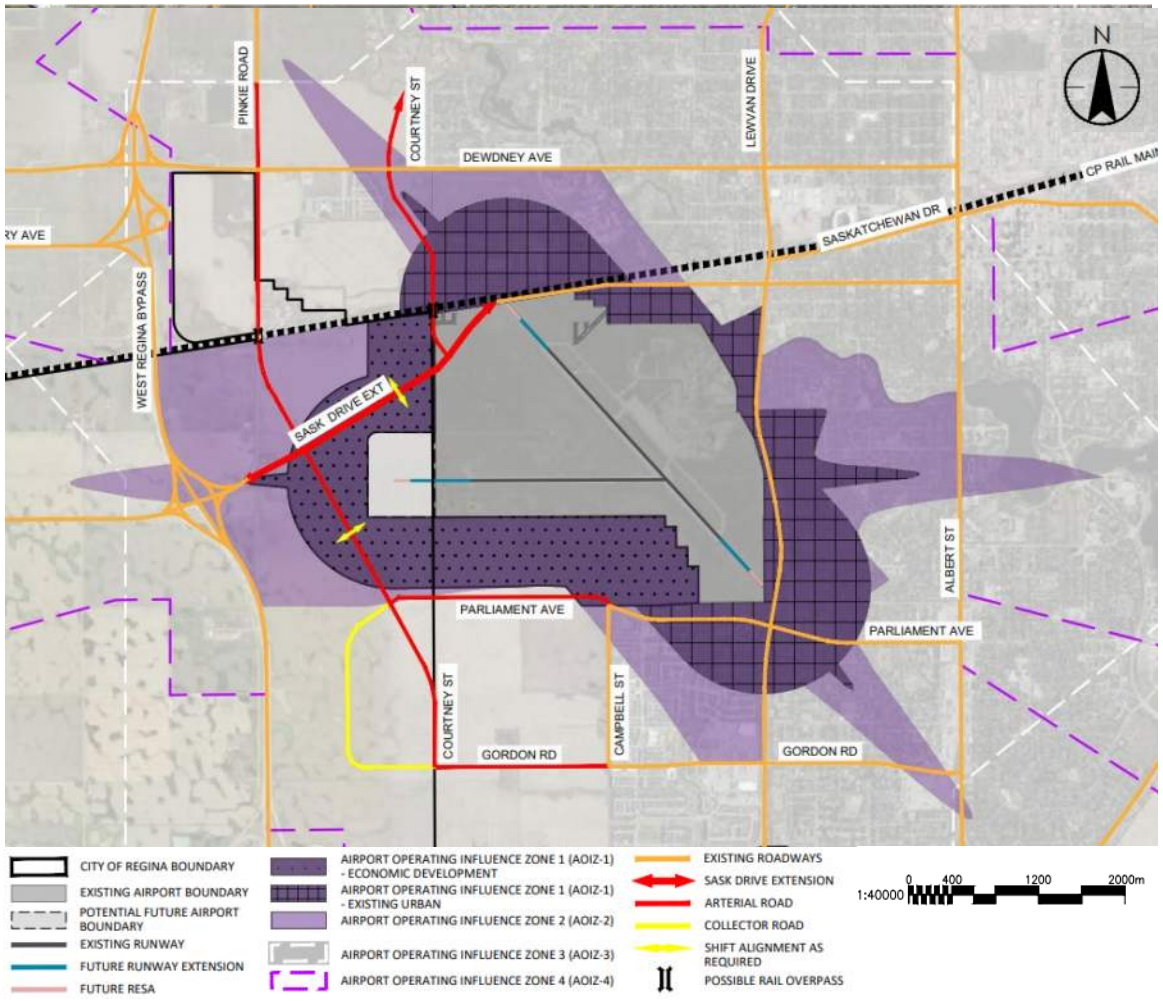


Figure 3.21 Long-Term Airport-Supportive Road Network

Recommended Transportation Network

Preferred Long-Term Road Network

Parliament Avenue and **Gordon Road**

Parliament Avenue is perfectly situated to serve the AOIZ-1 Economic Development to the north and future residential to the south. The roadway has development on both sides for good traffic access and function. Both Parliament Avenue and Gordon Road would serve as the two main east-west arterials in south Regina.

As Harbour Landing residential grows west, a new travel route is made available for accessing downtown where commuters can use the Pinkie Rd/Courtney Street link to Saskatchewan Drive extension. Likewise, south end residents will have exceptional access to the West Regina Bypass.

Commercial Traffic

Commercial truck traffic in the area will have multiple options for access to between the GTH and development around YQR. Trucks can use either Courtney Street or Pinkie Road to Dewdney Avenue. Alternatively, traffic may choose to use the Saskatchewan Drive extension and the Regina Bypass depending on their final destination and desired speed of travel. Likewise, truck traffic south of the airport is anticipated to use Parliament Avenue and will have good access to both Highway 1 east and west, as well as Highway 11 via the West Regina Bypass.

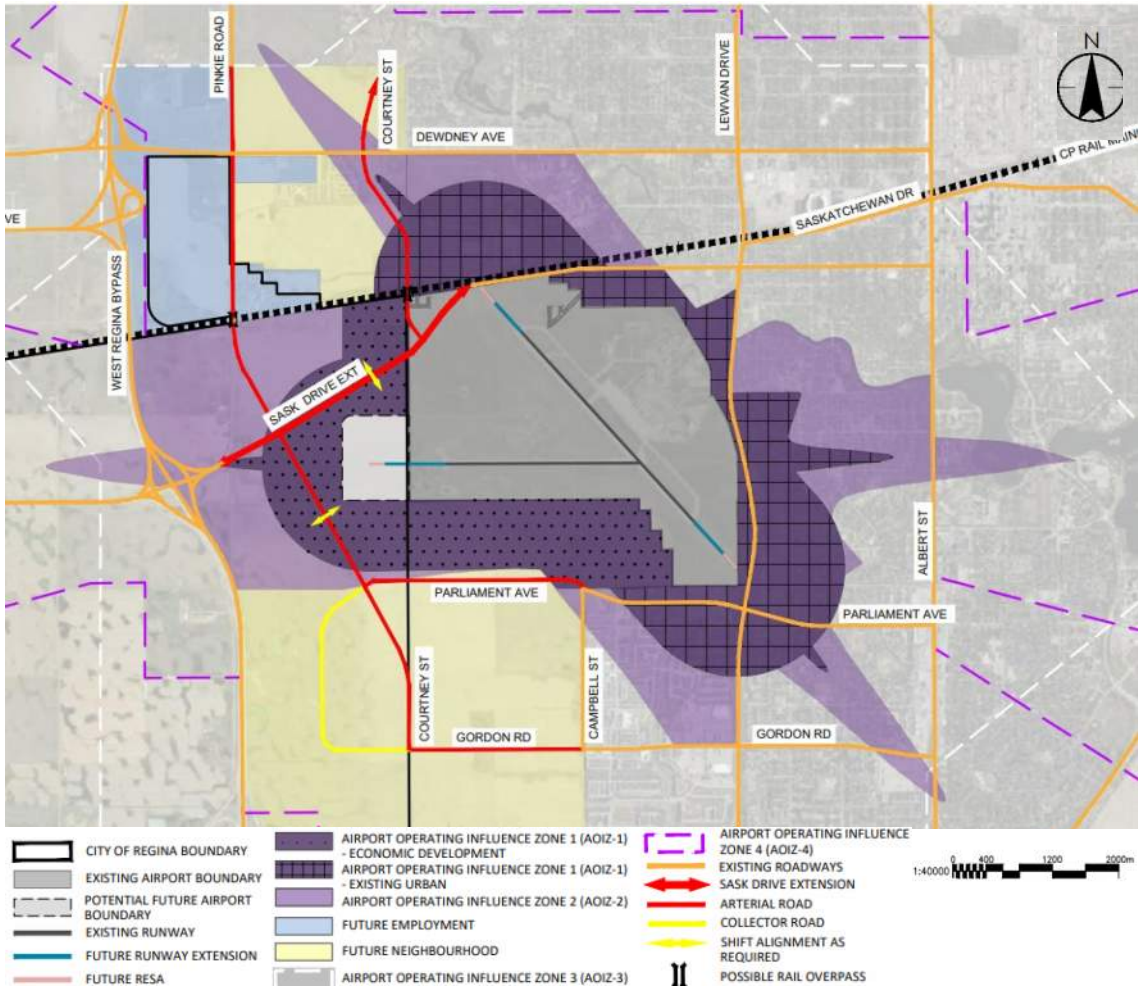


Figure 3.22 Preferred Road Network in Relation to Development

Recommended Transportation Network

Saskatchewan Drive Extension

A key consideration for the road network is the land available to develop the Saskatchewan Drive west extension immediately north of the airport.

The Saskatchewan Drive west extension would run along the existing 13th Avenue alignment. It has an estimated 22 m right-of-way (ROW) and is south of the CP Rail Mainline ROW, as shown in **Figure 3.23.**

Saskatchewan Drive extension is anticipated to be designed as a **divided 4-lane arterial road cross-section**. The City of Regina's standard for this type of facility, shown in **Figure 3.24**, is a 33.0m ROW, as illustrated. It would have a 70 km/h design speed and 60 km/h posted speed. This ROW may require additional width for utilities within in the corridor.

The Airport owns the land immediately to the south. There is a security fence constructed approximately 39m into their property.

This area requires further study in relation to the airplane take off surfaces, considering the following:

- Proposed Airport Runway 13-31 extension limit to the north.
- Required airport property to accommodate the Saskatchewan Drive extension. There may be potential need for depressing the roadway through this area.
- Height of all obstructions related to the rail line, Saskatchewan Drive extension design and street lighting.

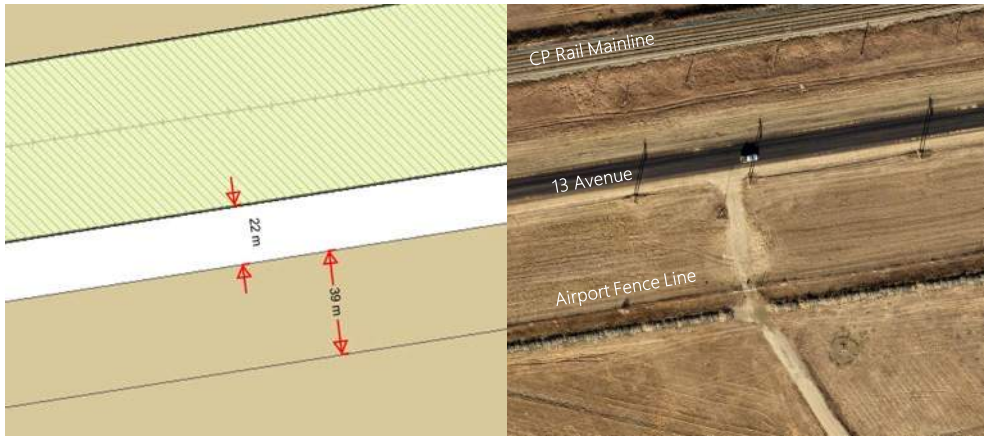


Figure 3.23 Saskatchewan Dr Corridor North of YQR

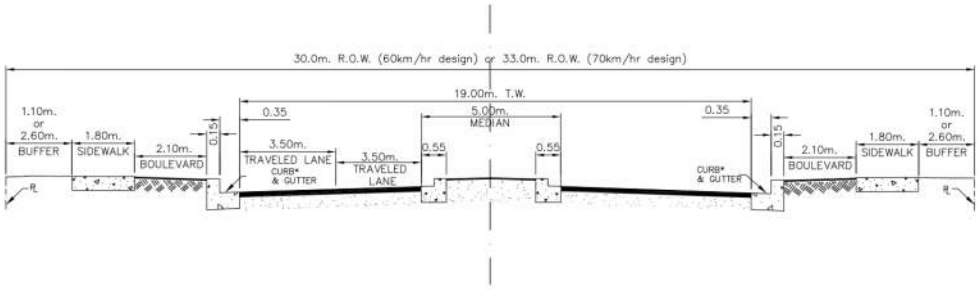


Figure 3.24 Urban Arterial Roadway Cross Section (Typical) (City of Regina)

Recommended Transportation Network

Traffic Forecast

The City's 2040 EMME model, shown in **Figure 3.25** represents population of 300,000 people in Regina. It forecasts Saskatchewan Drive extension to carry over 1,900 vehicles per hour peak direction out of the downtown during the afternoon.

Saskatchewan Drive extension daily volumes are estimated at 26,000 vehicles based on the City's traffic model. The model includes surrounding development such as Westerra development, Harbour Landing and GTH but not the Airport Operating Improvement Zone. The AOIZ-1 Economic Development Area is anticipated to generate as much as 15,000 vehicles per day.

When looking at all known anticipated development in the airport-supportive area, a traffic forecast of **40,000+ vehicles daily is projected on Saskatchewan Drive extension**.

The analysis confirms that a four-lane arterial road should be provided for Saskatchewan Drive extension.

Source: City of Regina 2040 EMME Model

Figure 3.25 2040 EMME Model Projections (PM Peak Hour)

Recommended Transportation Network

Alternative Mobility

Integrating active modes of transportation promotes sustainability, health, and well-being in a community. There are no current active transportation facilities in the defined study area to the west of the airport. It is anticipated that neighbourhood plans will be key to identifying necessary pedestrian, bicycle and transit needs. This will occur as more detail is known as land use plans become solidified.

In order for this growth area to be competitive in attracting airport-supportive business and employees, active transportation will need to be carefully planned into the network early on. This will prevent expensive and difficult retrofitting later. Experience working with other industrial development areas shows that these facilities are often forgotten during the initial planning phase but there is a quick realization that users expect a broad set of transportation alternatives based on their personal needs and goals for mobility and health.

The development area sits jointly within the RM and the City. There are existing pathways in Harbour Landing and with the extensive Regina multi-use pathway system that connects throughout the city.

As this area develops, integration will be needed with the City's pathway network, sidewalk system and transit network. Planning for a range of employees in the workforce in this area means providing adequate transit, cycling and walking facilities and planning for mode choice. This potentially means extending bus routes so workers can get to their workplace and planning for adequate sidewalk/pathway facilities to prevent walking roadside, particularly as development is staged over time.

3.4

Conceptual Infrastructure Servicing Strategy

Conceptual Infrastructure Servicing Strategy

Introduction

The Conceptual Infrastructure Servicing Strategy includes the following main concepts:

- Utilization of existing City of Regina water and wastewater infrastructure for maximum and efficient use of infrastructure.
- Expansion of City of Regina water distribution network from existing developed lands north, east, and south of the airport into undeveloped lands east of the West Regina Bypass.
- Installation of a new wastewater trunk conveying flows north to the force mains that convey flows from the McCarthy Boulevard pump station to the wastewater treatment plant to service lands east of the West Regina Bypass.
- Utilizing existing drainage patterns and conveying flows from new developed lands westward through a combination of underground pipes, culverts, overland ditches and channels, and on-site storage.

A complete set of all drawings and figures of the Conceptual Infrastructure Servicing Strategy is included at **Appendix B.**

Conceptual Water Servicing

Expansion of City of Regina Water Distribution System

- Existing City of Regina water distribution system exists within developed portions of the city to the north, east, and south of the airport.
- Extension of the distribution system to the west could occur to service the remaining undeveloped lands east of the West Regina Bypass.
- Potential connection points at:
  - Gordon Road – 600 mm PVC
  - Parliament Avenue – 600 mm PVC
  - Dewdney Avenue – 600 mm PVC
  - 13th Avenue – 750 mm PVC
- Routing in **Figure 3.26** is shown for illustrative purposes and follows the current preferred long term road network. Servicing concept would need to be confirmed through detailed analysis during the City of Regina's neighbourhood and concept planning processes.
- Timing and staging of development is flexible and could start at any of the potential connection points, however, this will be subject to confirmation of the servicing concept through detailed analysis to confirm system capacity.

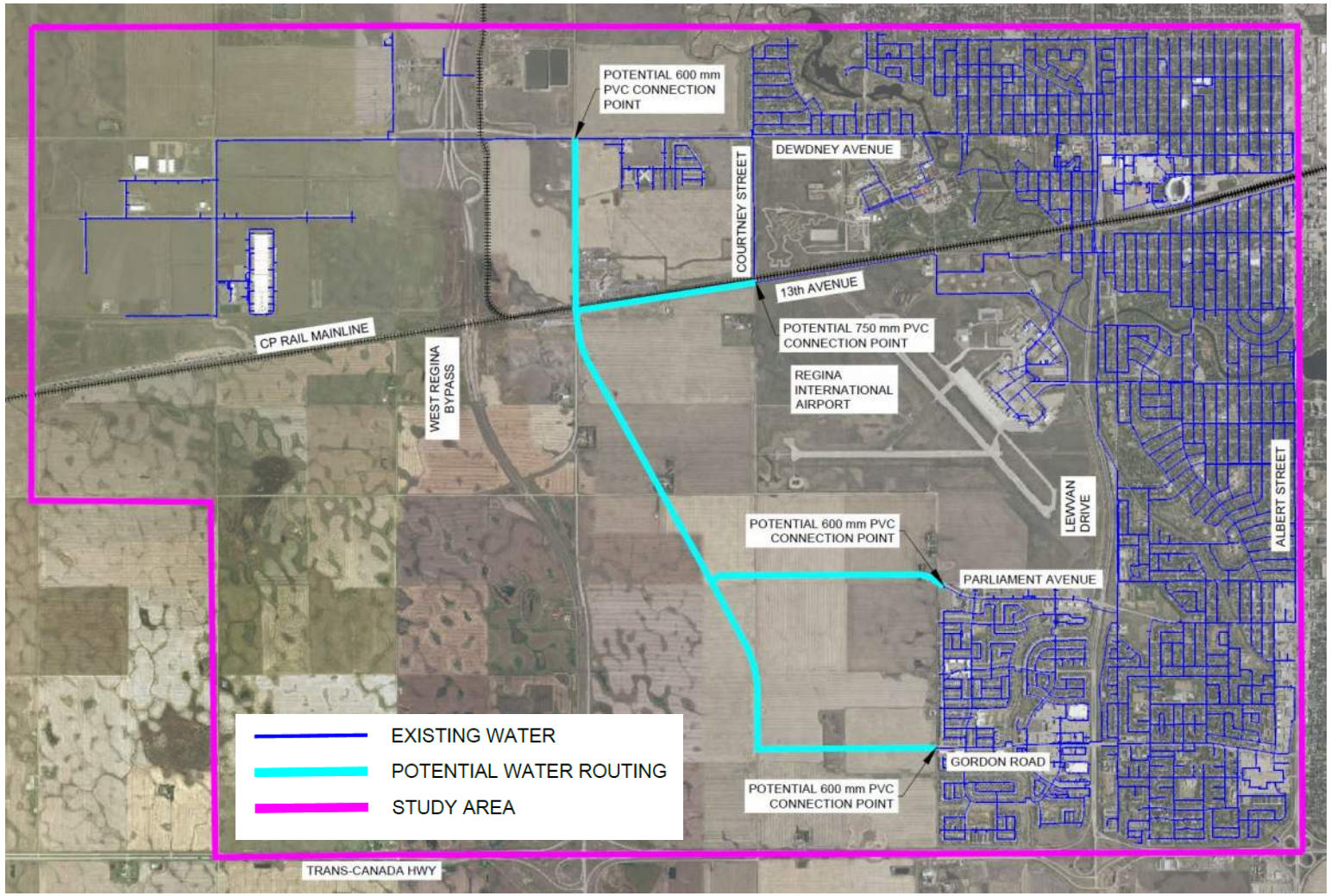


Figure 3.26 Potential Water Servicing

Conceptual Wastewater Servicing

Expansion of City of Regina Wastewater Collection System

- Existing City of Regina wastewater collection system exists within developed portions of the city to the north, east, and south of the airport.
- Capacity within the existing collection system is a limiting factor for expansion of the system. To accommodate development of the remaining undeveloped lands east of the West Regina Bypass and avoid overloading the existing system, a new wastewater trunk could be installed and connect to the force mains that convey flows from the McCarthy Boulevard Pump Station to the wastewater treatment plant.
- Routing in **Figure 3.27** is shown for illustrative purposes and follows the current preferred long term road network. Exact location to be determined.
- A combination of gravity mains and force mains may be required along with one or more pump stations or lift stations along the route.

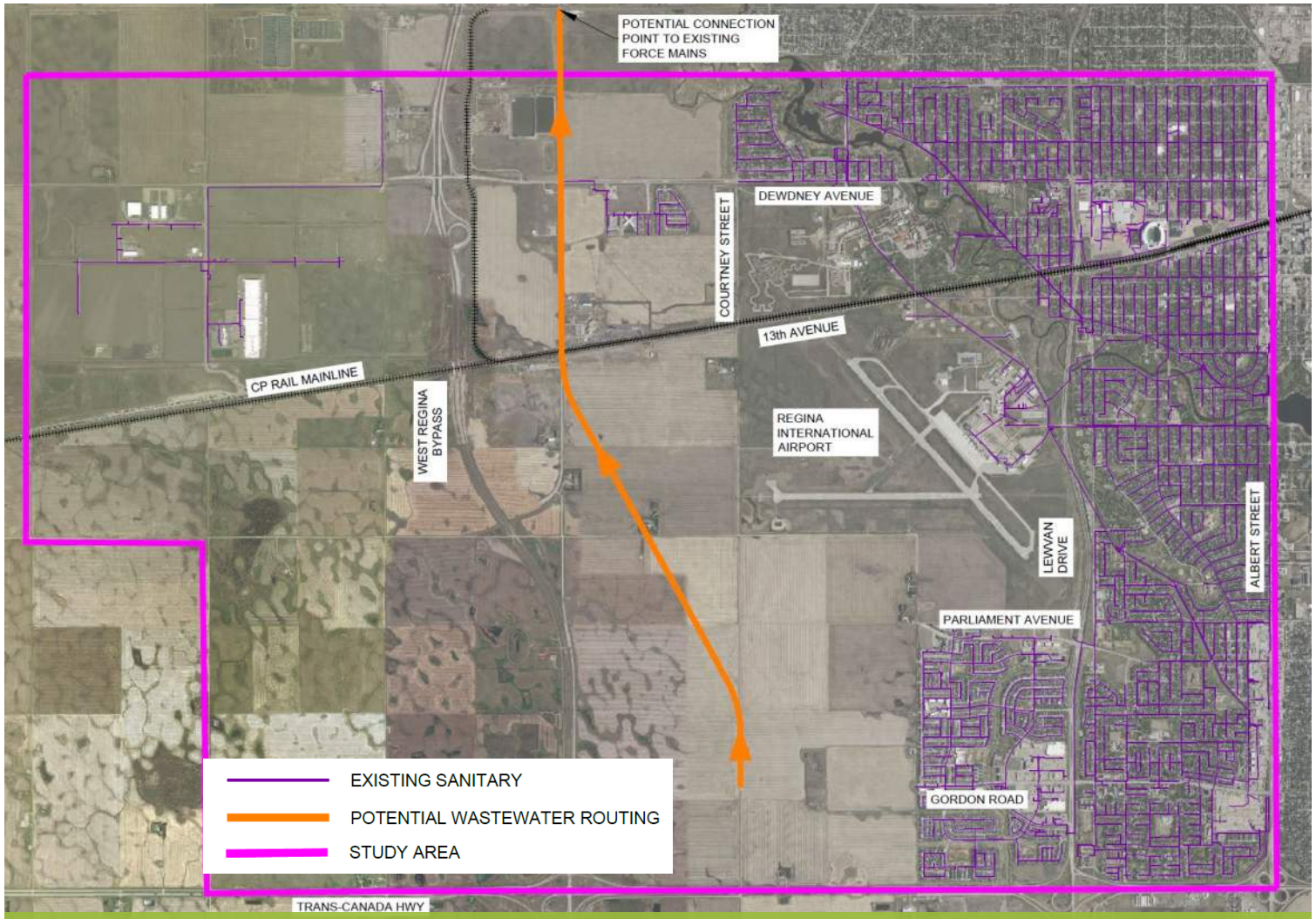


Figure 3.27 – Potential Wastewater Servicing

Conceptual Wastewater Servicing

Expansion of City of Regina Wastewater Collection System

- Expansion of the Westerra pump station from a local pump station to a regional pump station may be a viable option, however, would be subject to further analysis to confirm.
- The servicing concept would need to be confirmed through detailed analysis during the City of Regina's neighbourhood and concept planning processes.
- Due to the proposed trunk conveying flows from south to north, timing and staging of development should occur from north to south, however, this will be subject to confirmation of the servicing concept through detailed analysis to confirm system capacity.
- If capacity does exist within the existing collection system for new development immediately adjacent to currently developed lands, it should be utilized as best as possible for maximum and efficient use of infrastructure.

Conceptual Stormwater Servicing

Overland Drainage to the West

- Existing natural topography in the undeveloped lands west and south of the airport generally drains from east to west.
- Undeveloped lands west and south of the airport currently rely mainly on overland drainage and culverts.
- Development of these lands would continue to utilize the natural drainage direction to the west.
- New development would utilize a combination of underground pipes, culverts, overland ditches and channels, and on-site storage.
- Stormwater management facilities would be used to manage stormwater by collecting and storing stormwater temporarily and discharging downstream at pre-development rates to attenuate the flows and minimize any adverse impacts on downstream landowners as per City of Regina Design Standards.
- Permanent wet bottom stormwater management facilities would not be recommended anywhere they would negatively affect airport operations.

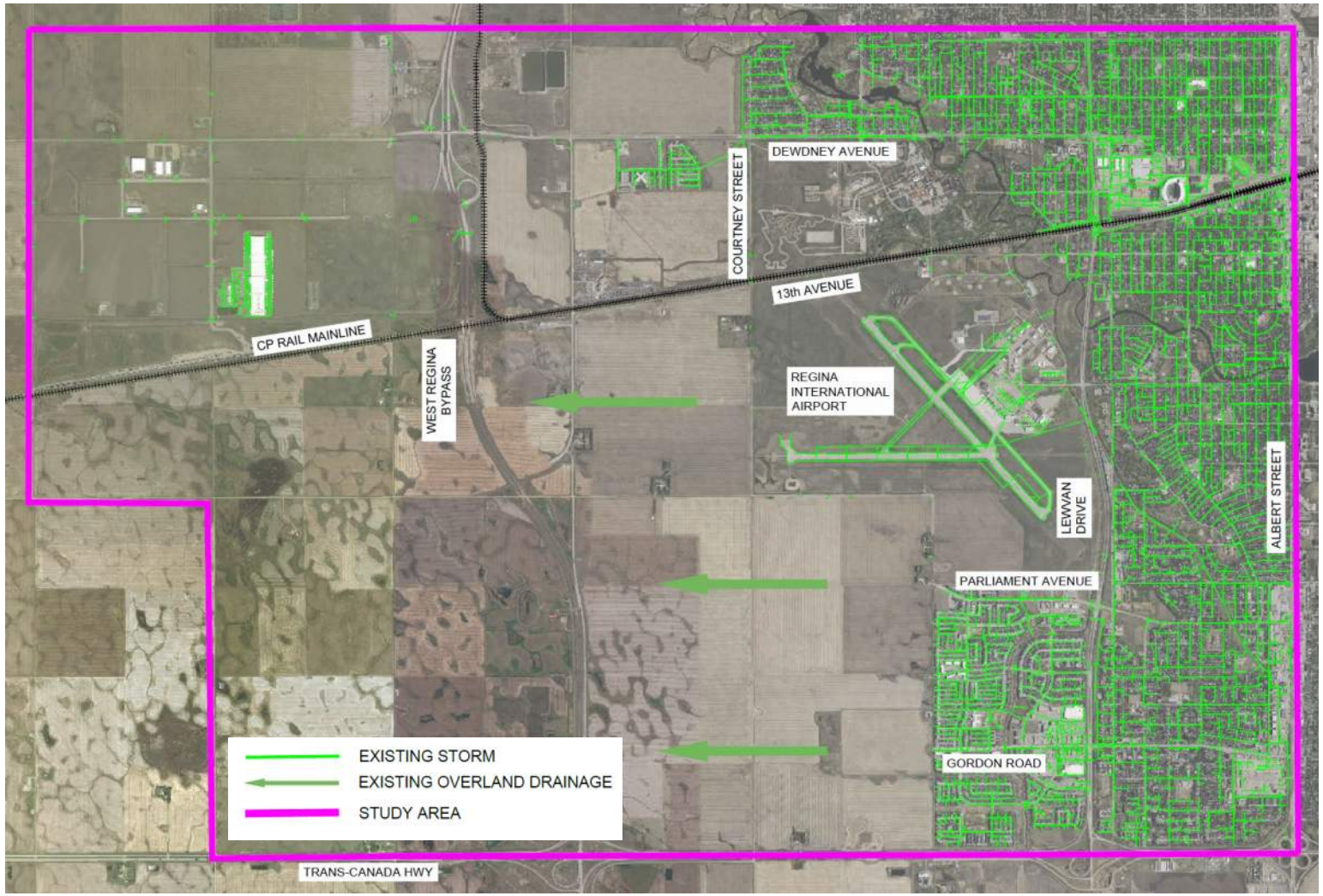


Figure 3.28 – Potential Stormwater Servicing

Alternative Infrastructure Opportunities

Alternative Interim Wastewater Servicing

To ease the burden on the existing City of Regina wastewater collection system and facilitate immediate development, the following wastewater servicing alternatives could be employed until the establishment of permanent infrastructure.

- **On-Site Storage**: Local storage infrastructure could be employed to store collected wastewater and periodically pump and haul it by truck to the City of Regina Hauled Wastewater Site. This facility is specifically equipped to handle wastewater transported by authorized commercial haulers.
- **Inline Pipe Wastewater Storage**: Inline pipe wastewater storage is a method used to manage wet-weather flows and can be a viable option when downstream capacity is an issue. These large-diameter pipes or tunnels are designed to convey and store excess stormwater during periods of heavy rainfall, reducing the risk of sewer overflows. While inline storage can be an effective solution for managing wet-weather flows, it's important to consider the potential maintenance issues that can arise, such as solids deposition and sewer odours.

Although there are opportunities to accelerate the development process, any alternative methods for wastewater servicing must adhere to the City of Regina Design Standards, in addition to complying with the relevant federal and provincial standards and regulations.

Sustainable Infrastructure Opportunities

Water Recycling Initiatives at North American Airports

Water recycling near Canadian airports is gaining traction as part of a broader initiative to enhance sustainability and conserve resources. Some opportunities and strategies that have been implemented at similar Airports include:

- **Recycling Runway Water**: Airports are recycling water used to clean runways. For example, Phoenix Sky Harbor International Airport uses heated water for pressure blasting runways and then filters and reuses the water[1].
- **Water-Efficient Fixtures**: Many airports, like Los Angeles International Airport, have upgraded to low-flow bathroom fixtures, significantly reducing potable water use[1].
- **Geothermal Cooling**: Nashville's BNA International Airport uses a geothermal cooling system that saves 30 million gallons per year of potable water[1].
- **Stormwater Management**: Toronto Pearson has a comprehensive Stormwater Management System with facilities and retention ponds to control the quantity and quality of stormwater leaving the airport[2].
- **Glycol Recovery**: During winter, glycol is needed to deice planes. Airports like Toronto Pearson have systems in place to recover glycol from the deicing process[2].
- **Water-Efficient Landscaping**: Airports are adopting xeriscaping, which involves landscaping with drought-resistant plants to conserve water. San Diego airport, for instance, uses a hybrid Bermuda grass that requires less water than regular lawns[1].

These initiatives not only help in water conservation but also contribute to the airports' overall environmental sustainability goals. For more detailed information on specific programs, you might want to reach out to individual airports or consult with environmental sustainability experts in the aviation industry.

(1) Airport Water Use, Reuse, and Conservation | Fluence. https://www.fluencecorp.com/airport-water-use-reuse-and-conservation/.

(2) Resource and Waste Management Initiatives | Pearson Airport. https://www.torontopearson.com/en/community/environment/waste-management.

Renewable Energy Opportunities

Renewable energy opportunities near Canadian Airports are expanding, with several initiatives underway

- **Hydrogen Refueling Stations**: Toronto Pearson Airport has announced Ontario's first public hydrogen refueling station for light- and heavy-duty vehicles. This is part of the airport's commitment to clean and efficient energy solutions[1].
- **Airports as Energy Hubs**: The World Economic Forum, in partnership with Airports Council International (ACI) World, launched the Airports of Tomorrow initiative. This initiative aims to transform airports into energy hubs that place renewable energy production at the center of their operations to decarbonize airport-related activities[2].
- **Hydrogen for Airside Vehicles**: Edmonton International Airport is working with Hydra Energy to retrofit some of its fleet of airside vehicles to run on both hydrogen and diesel, aiming for zero emissions[3].
- **Renewable Energy Integration**: Airports are exploring 'off-the-shelf' renewable energy technologies such as forklifts, cars, buses, and stationary power to service adjacent transport industries[4].
- **Government Support for Green Policies**: The Canadian government is supporting airports' carbon reduction plans with funding programs like the Airport Critical Infrastructure Fund (ACIP), aimed at larger airports to invest in critical infrastructure related to safety, security, or connectivity[5].

These efforts reflect a broader trend towards sustainability and the adoption of green technologies in the aviation sector, particularly in areas surrounding airports where such initiatives can have a significant impact.

(1) Press release - July 6, 2023 | Pearson Airport. https://www.torontopearson.com/en/corporate/media/press-releases/2023-07-06.
(2) Airports of Tomorrow: from passenger hubs to energy hubs. https://www.weforum.org/agenda/2023/03/airports-from-passenger-hubs-to-energy-hubs/.
(3) Canada's airports are turning to tech to make flying more sustainable. https://www.marsdd.com/news/canadas-airports-are-turning-to-tech-to-make-flying-more-sustainable/.
(4) Renewable Energy and Hydrogen in Commercial Aviation. https://www.energy.gov/sites/prod/files/2020/12/f81/hfto-h2-airports-workshop-2020-newsum.pdf.
(5) Canada's airports are on the runway to a greener future. https://www.internationalairportreview.com/article/166643/canadas-airports-greener/.

4

Implementation Action Plan

Implementation Action Plan

Strategic Next Steps

The following pages highlight the recommended strategic action items for successful implementation of the Recommended Framework. Action items are organized by component.

Policy & Land Use Next Steps

- Evolve and confirm the boundaries of the AOIZ areas at a 'parcel-by-parcel' scale and explore potential subdivision of AOIZ areas to balance Airport operation requirements and community growth needs, similarly to the Toole Valley Airport example highlighted in Section 3.2.
- Continued discussion between RAA & the City regarding the AOIZ policies and Housing Affordability Fund Zoning Bylaw amendments, given the Province of Saskatchewan's Statement of Provincial Interest and importance of protecting current and future airport operations.
- To assist with confirmation of the AOIZ policy areas, implement a noise monitoring program, using fixed and portable noise measurement devices to measure actual noise exposure at key points within each AOIZ area.
- Implement an on-going monitoring program to assess actual noise exposure as well as increases in residential development and population trends and sharing of noise complaint data across the AOIZ areas.
- Confirm which AOIZ areas, if any, to require RAA consultation on discretionary or rezoning development applications.
- The confirmed AOIZ areas be adopted within the City and RM of Sherwood's OCP and Zoning Bylaws to manage land-use and development around YQR, recognizing the following:
  - Airport Operating Influence Zone 1 as the limit within which no new residential development be permitted (beyond existing residential density and underlying zoning).
  - Airport Operating Influence Zone 2 as the area that acoustical provisions be required for residential development.
  - Airport Operating Influence Zone 3 as the area of impact in relation to Pilot Training Circuits. Policies to be confirmed.
  - Airport Operating Influence Zone 4 to dictate building heights as per the Obstacle Limitation Surfaces and Regina Airport Zoning Regulations.
- RAA to engage a firm to prepare updated noise contours based on anticipated fleet mix over the next 50-years.
- Once updated noise contours are developed, RAA and the City engage Aviation Noise Specialist to provide further detail on requirements for noise attenuation within the AOIZ-2 and implications of new Building Energy Codes.

Implementation Action Plan

Strategic Next Steps

- In collaboration with an Aviation Noise Specialist, develop updated Noise Attenuation Building Standards, alongside new Building Energy Code standards and evolving National Building Standards by Transport Canada, to be adopted within the Building Code Bylaw. This may negate the need for Aviation Noise Impact Studies for residential development within the AOIZ-1 and AOIZ-2.
- RAA, the City and the RM of Sherwood establish a Neighbourhood Land-Use Plan for the area within AOIZ-1 – Economic Development to specifically support and unlock development of employment-generating activities that leverage the Air and Ground connectivity of YQR and the Recommended Enabling Transportation Network.
- RAA & the City to explore future opportunities for establishing a Community Improvement District and associated Tax Incentives within AOIZ-1 – Economic Development to incentivize and accelerate development around the Airport.
- RAA to initiate further discussions with SaskPower and First Nations Power Authority to evolve future partnerships for the development of clean energy in the AOIZ-1 Economic Development.
- RAA to initiate further discussions with the City and Universities on establishing Pilot Training and other educational/academic partnerships to create a hub of innovative workforce development and skills training.
- RAA and the City explore options for implementation of the height limits associated with Obstacle Limitation Surfaces and Regina Airport Zoning Regulations for development within the AOIZ-4. This could include the development of a GIS Platform to require an Airspace Review if development is of a height that exceeds the notification surface, to remove continual consultation with RAA for every development proposal.

  Potential future policies associated with the AOIZ-4 may include:

  > *"A notification surface has been established to help identify projects that may interfere with airport operations. The notification surface starts from the nearest point of the nearest runway at YQR towards the proposed development at a slope of 100:1 for a horizontal distance of 6,100 meters. If the proposed development is within the notification surface and penetrates the slope of the surface, then an airspace review must be performed to determine if the development would be impactful to air navigation. Permitting for the development is conditional upon the completion and findings of the airspace review."*
- Watson & Associated Economists Ltd., recently published a Population, Housing and Employment Forecast and Urban Land Needs Study for Regina. The results of this study can be incorporated into future planning work and updates to the YQR LUPC Framework, as necessary.

Implementation Action Plan

Strategic Next Steps

Infrastructure Next Steps

- Results from any City of Regina and RM of Sherwood planning or infrastructure studies are incorporated into future servicing for the study area.
- Results from the ongoing City of Regina Water and Wastewater Serviceability Study are incorporated into future servicing for the study area.
- Results from any East Cottonwood Creek Watershed Association (ECCWA) planning or infrastructure studies are incorporated into future servicing for the study area.
- Follow the City of Regina's Neighborhood and Concept Planning processes to confirm and verify the servicing concept for the study area.

Transportation Next Steps

- Interjurisdictional coordination between the City and RM of Sherwood to advocate/lobby for funding of the Saskatchewan Drive Extension/West Regina Connector with the position that the extension will create further economic opportunity between the GTH, the Airport, and Downtown.
- A study should be undertaken of aircraft take-off / landing surfaces at the end of Runway 13-31, including topographical survey, to establish viability of Saskatchewan Drive through this area and determine the amount of land required for the road right of way.
- A detailed Functional Design should establish the location, cross-section, staging and cost details for Saskatchewan Drive extension. The same study should also identify a preferred alignment for the Pinkie Drive / Courtney Street connection and establish how it would be staged over time.
- Following confirmation of the road network via the aforementioned studies, incorporate the Road Network within the City and RM of Sherwood's land use planning processes.


MXD
DEVELOPMENT STRATEGISTS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KGS
GROUP


InterVISTAS
a company of Royal HaskoningDHV