EDMONTON INTERNATIONAL AIRPORT (YEG)

MASTER PLAN 2048

Public Report

OUR COMMITMENT TO RECONCILIATION

Edmonton International Airport (YEG) is proud to acknowledge and celebrate the ancestral and traditional Territory of Treaty Six and the Métis homeland. Treaty Six is the gathering place and travelling route of the Cree, Saulteaux, Blackfoot, Métis, Dene and Nakota Sioux. We thoughtfully acknowledge the many First Nations, Métis, and Inuit whose footsteps have marked these lands for centuries, and whose voices are so important in paving a path forward together in reconciliation.

To do this in a way that aligns to our values, supports the National Centre for Truth and Reconciliation's Calls for Actions, and strengthens our community, Edmonton Airports has committed to being an active partner and contributor in economic reconciliation.

This means that we commit to listening to and learning from our Indigenous community, creating meaningful partnerships and opportunities based on shared values and objectives, and working together toward meaningful economic prosperity that will ensure the success of future generations. Reconciliation hinges on acknowledging the truth of Indigenous Peoples' experiences in Canada and taking meaningful actions to fully include them in the opportunities many people take for granted.

Our dedication to Reconciliation and diversity, equity and inclusion (DEI) is seen through our ongoing commitment to embedding Indigenous partnerships and considerations into all aspects of our business. This results in new connections, business development, community support and many other opportunities. We recognize we must actively engage with Indigenous peoples, nations and organizations in our region to build trust and truly create an airport that reflects our community and province.

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INTRODUCTION

EDMONTON REGIONAL AIRPORTS AUTHORITY

In **1990**, the **Edmonton Regional Airports Authority (Edmonton Airports)** was established in accordance with the Alberta Regional Airports Authority Act. Edmonton Airports is a private, not-for-profit, non-share corporation and its primary purpose is to serve the Edmonton Region. In 1992, under the provisions of the Transport Canada Ground Lease, Edmonton Airports took over management of the land and assets of Edmonton International Airport (YEG) on behalf of the Federal Government. Additionally, Edmonton Airports took over the facilitation of on-site tenants and stakeholders at YEG. Edmonton Airports also owns and operates Villeneuve Airports (ZVL) for general aviation and flight training (fixed and rotary wing).

CORPORATE GUIDING PRINCIPLES

Noble Cause - Uniting people for a world of new possibilities

Vision - More flights to more places

Mission - Driving our region's economic prosperity through aviation and commercial development

ESG Principle - All our actions will drive our mission to responsibly generate economic prosperity for our region through authentic environmental, social, and governance leadership

Core Values - Safety and security first, Invested in our talent, Own the outcome, Doing the right things right, Dedicated to sustainability

EDMONTON INTERNATIONAL AIRPORT

Edmonton International Airport (YEG) is situated on approximately 2,800 hectares (7,000 acres) of federal land within Leduc County (host municipality), in central Alberta. The airport site is bordered by Leduc County on the west and east, and the City of Leduc lies to the immediate south and east, along Highway 2 and 65 Avenue respectively. The City of Edmonton is located to the immediate north of YEG along Highway 19.

In 1955, the Department of Transport (Government of Canada) acquired 7,000 acres of land and began construction of the first international airport in the Department's Western Region jurisdiction.

On November 15, 1960, YEG opened for passenger service when the construction of aircraft maneuvering areas was complete and the current Hangar 2 provided a temporary terminal for passengers. In 1963, the main Airport Terminal Building was completed and opened for the public. Since that time, YEG has served the Edmonton Metropolitan Region as the primary airport facility.

VILLENEUVE AIRPORT

Villeneuve Airport (ZVL) is a strategic aviation asset for the Edmonton Metropolitan Region, and functions as a reliever airport for YEG. Villeneuve Airport was built by Transport Canada in 1976 as a satellite airport for flight training and recreational aircraft activity in the region. Edmonton Airports has owned and operated Villeneuve Airport since purchasing it from Transport Canada in 2000. ZVL is located approximately 18 kilometres (11 miles) northwest of the City of Edmonton. With two runways, instrument landing systems and a NAV CANADA tower, it serves as the region's premier general aviation airport and flight training facility.

INTRODUCTION TO THE MASTER PLAN

Edmonton Airports produces a long-term Master Plan for Edmonton International Airport (YEG) every 10 years. This document is submitted to Transport Canada in fulfillment of the Transport Canada Ground Lease. The intent of the YEG Master Plan 2048 is to provide an update to the previous Master Plan (EIA Master Plan 2010-2035). It is not a regulatory document, but rather a blueprint with built-in flexibility.

The YEG Master Plan 2048 ensures that future infrastructure and operational improvements are undertaken based on passenger forecasts and regional developments, with due regard for safety, operational efficiency, financial viability, innovation and sustainability. It will identify priorities and align aspirations with the interests of stakeholders such as the community, government agencies and operators. The YEG Master Plan 2048 considers the development of the facility in a manner that is consistent with Edmonton Airports' vision and other guiding principles.

To ensure the YEG Master Plan 2048 reflected the needs of the region, Edmonton Airports prepared a consultation process that was respectful, thoughtful and focused. The process of engagement and consultation was central to developing the YEG Master Plan 2048. Consultation took place through online and in-person meetings and through an online survey. Edmonton Airports also managed a public YEG Master Plan web page to continually update all stakeholders on project progress.

YEG MASTER PLAN 2048 GUIDING PRINCIPLES

Together with partners, YEG is developing a sustainability and innovation hub where its community can connect with friends, family and businesses. To support the actualisation of these developments, Edmonton Airports has adopted the following Master Planning Principles:

- Sustainable Airport Growth - Ensuring that future airport infrastructure improvements and expansions are carried out in a responsible and diligent manner. This includes the commitment to Net-Zero by 2040, and the consideration of climate change impacts on infrastructure.
- Innovative Airport Infrastructure - Ensuring that future airport infrastructure is efficient and adaptable to changes in airline, passenger and tenant trends and demands.
- Resilient Airport Business - Ensuring that future airport infrastructure accommodates potential growth and development of diverse businesses that result in overall airport resilience to external changes.
- Collaborative Airport Communities - Ensuring that the future airport infrastructure vision benefits and supports on-site and regional partners' economic and community growth plans.

CONTEXT

INTRODUCTION

YEG serves the vibrant **Edmonton Metropolitan Region (EMR)** and drives prosperity through commercial and aviation development.

YEG is strategically located for air service in **Western Canada**. The airport is used for scheduled airline flights and is a gateway to northern communities. YEG also plays an important role in air charter and air cargo operations in Canada. YEG currently has over **50 non-stop destinations** and serves **eight freighter airlines.**

ALBERTA

Over the first five years of the YEG Master Plan 2048, Alberta's competitive taxes and abundance of natural resources are expected to continue to drive investment in the province. The Government of Alberta (GoA) also expects that strong population growth, increased consumer spending and residential construction will support Alberta's Gross Domestic Product (GDP) growth.

A Diverse Economy

The labour force in Alberta is around 2.4 million people with over 850,000 employed in Edmonton. According to a 2022 assessment by Statistics Canada, the economy in Alberta is diverse. The two largest employment industries are health care and social assistance, and wholesale and retail trade, with 13% and 15% of the labour force respectively.

Diversity in the Province

Over decades, Alberta has benefited from interprovincial and international migration into the province. People have brought languages, cultures, skills, families and friendships into the Alberta community. Migration also grows and strengthens the local economy. At the end of 2022, Alberta experienced the highest net interprovincial migration of any province or territory. The Government of Alberta identified that in Q4 2022, there were 29,680 net migrants to Alberta from international origins and 11,534 net migrants from other Canadian provinces. Additionally, in 2022 the Government of Alberta released provincial population estimates. The province is expected to become more diverse and continue to attract migrants due to the healthy economic climate.

THE EDMONTON METROPOLITAN REGION

Edmonton Metropolitan Region (EMR) includes 35 census subdivisions. In addition to the City of Edmonton, there are four cities, one specialized municipality, three municipal districts, ten towns, four villages, eight summer villages and four Indigenous communities. The Edmonton Metropolitan Region is the largest Census Metropolitan Area (CMA) in Canada by area, at 9,427 square-kilometres (3,640 square-miles) and the fifth largest CMA by population.

YEG is positioned within the south-central area of the EMR and is located within Leduc County. Leduc County is a rural, northern prairie community, which serves as the host municipality for the airport. The County is a dynamic municipality providing the opportunity for diverse lifestyles, including acreage living, industry and a variety of agricultural operations.

Edmonton Metropolitan Region Forecasts

The City of Edmonton is the capital city of the province of Alberta. As presented by the Alberta Regional Dashboard in 2021, the City of Edmonton had a population of 1,010,899 and an EMR population of 1,418,118. The EMR is an important hub for manufacturing, conventional oil and gas, and drives investment in Canada's oil sands. The EMR is also a Canadian hub for the green energy industry. In particular, the EMR is a hydrogen leader in Canada and is poised to become an important supplier of hydrogen to international markets.

The EMR has continued to grow, recovering from COVID-19. In 2021, the region had 33,501 businesses and $16 billion in major construction projects. Additionally, there were 11,400 new residential construction projects as the region experienced new migration. Edmonton Airports is committed to providing an airport facility that can accommodate the efficient movement of people and goods now and for future populations.

Diversity

The City of Edmonton represents approximately 70% of the population of the EMR's 35 census subdivisions. Based on a 2016 assessment, the City of Edmonton has a 36.4% visible minority and 5.4% Indigenous population. In the community people speak more than 125 languages. The City of Edmonton anticipates that by 2050, 50% of the population will be immigrants. The diversity of the community adds to the vibrancy of the region and brings innovation and prosperity.

YEG strives to be an Airport for Everyone, and Edmonton Airports' goal is for YEG to represent the interests of the community now and in the future.

By 2044, the EMR is expected to grow by more than one million people and 470,000 jobs.

EDMONTON AIRPORTS GROWTH

Historical Demand

Annually, millions of passengers and thousands of tonnes of air cargo pass through the YEG facility, as it is a multi-modal regional hub for economic growth. Passenger demand for aviation is closely tied to regional population growth and Gross Domestic Product (GDP) of the local economy. Since 2010, YEG experienced significant growth as the EMR developed.

YEG's South Cargo Development expanded between 2010-2022, and the ability to handle large cargo freighters allowed Edmonton Airports to collaborate with a large Asian cargo carrier in 2016. YEG also developed new cold storage and warehousing facilities and in 2018, it became the first airport in Canada to receive certification from International Air Transport Association, Center of Excellence for Independent Validators in Pharmaceutical Logistics (IATA CEIV Pharma).

COVID-19 Impacts

The COVID-19 pandemic shut international borders, changed business and leisure travel markets and placed the aviation industry into an unprecedented period of uncertainty. Unlike the effect of previous shocks, the period of uncertainty and contraction surrounding COVID-19 lasted longer and was much more pronounced. By the end of 2022, leisure travel returned close to 2019 numbers, though business travel did not recover. During COVID-19, YEG experienced:

- A passenger volume drop of 70% year-over-year from 2019 to 2020, and aircraft movements declined by 48%.
- A decline in general aviation movements of roughly 20% from 2019 to 2020.
- Stability in cargo, as air freight, a lifeline for medical equipment and other supplies, remained relatively steady.

Growth Drivers

Aviation demand is influenced by local, national and international growth drivers. Statistical analysis for the pre-COVID-19 period, from 2014 to 2019, indicate that passenger traffic was influenced by population and GDP indicators. National and local GDP show greater correlation than provincial GDP. Due to the importance of the United States of America (U.S.) as a trading partner. U.S. GDP was evaluated and also showed a strong correlation with passenger numbers.

Economic Impact Study

Edmonton Airports is an economic engine for the community, as the airport grows the community grows. Aligned with the corporate Mission and Master Planning principles, Edmonton Airports strives to develop YEG to foster regional prosperity. Economic impact is measured through direct, indirect and induced impact. In 2018, YEG contributed to $3.2 billion in economic output and supported 26,000 jobs. YEG also supports over 100 events, organizations and charities in the EMR and surrounding areas.

AIRFIELD DEVELOPMENT

INTRODUCTION

The most important piece of the airport's infrastructure is the airfield, and more specifically the aircraft movement areas, made-up of **runways**, **taxiways** and **aprons**. The airfield also includes many ancillary pieces of infrastructure that are critical to the successful operation of the aircraft movement areas, including navigation systems, aviation support facilities (fuel, de-icing, snow removal) and the airside service road network.

Existing Airfield Facilities

The existing airfield includes two runways (Runway 12-30 and Runway 02-20) in a "V" configuration with supporting full length parallel taxiways.

Since the EIA Master Plan 2010-2035, major enhancements to the airfield have included: runway and taxiway rehabilitation, airfield electrical upgrades, Runway 20 approach lighting upgrade, Runway End Safety Area (RESA) construction, Apron VII extension and Apron VIII construction.

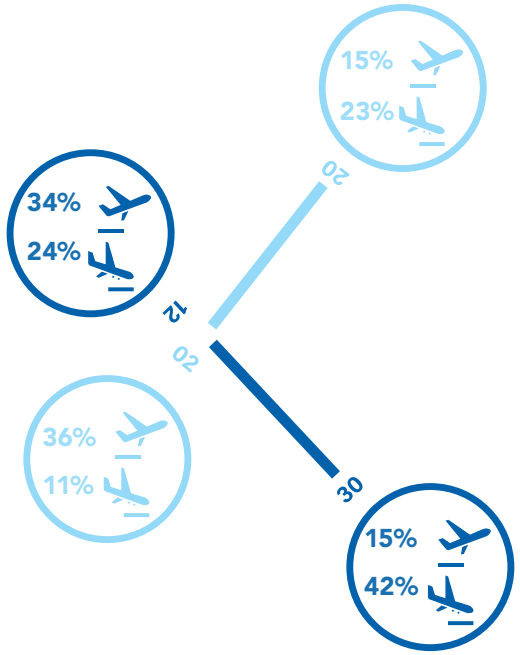


FIGURE 1 - YEG RUNWAY USAGE BASED ON 2019 NAV CANADA DATA

Airspace and runway environments at YEG are controlled by NAV CANADA. Runway usage is primarily determined by weather conditions, specifically wind direction, and airspace/airfield efficiency. The runway usage from 2019 highlights the primary directions for runway operations at YEG (Figure 1).

Primary departure runways:

— 02 (36%), 12 (34%)

Primary arrival runways:

— 30 (42%), 12 (24%), 20 (23%)

AIRFIELD DEVELOPMENT

Airfield Capacity

The existing runway system provides sufficient capacity for the planning horizon of the Master Plan 2048. A parallel runway continues to be identified beyond the planning horizon as it is an important and impactful piece of infrastructure. Analysis of demand versus capacity and consultation with relevant stakeholders identified that the third runway would be needed when annual aircraft movements reach approximately 230,000 or the peak hourly runway movement capacity of 72 to 78 movements. Demand projections suggest that by 2048, YEG will handle approximately 204,000 annual aircraft movement, and 55 peak hourly runway movements (Figure 2).

The airfield system of runways, taxiways and aprons can influence the runway capacity of an airport. Currently, YEG has single parallel taxiways (Taxiway A and B) to support the two-runway system. This layout lends itself to using one runway for departures and one runway for arrivals which limits hourly runway capacity to 56 to 60 movements. The addition of dual parallel taxiways can enable arrival and departure movements on both runways, which provides the higher potential hourly capacity of 72 to 78 movements.

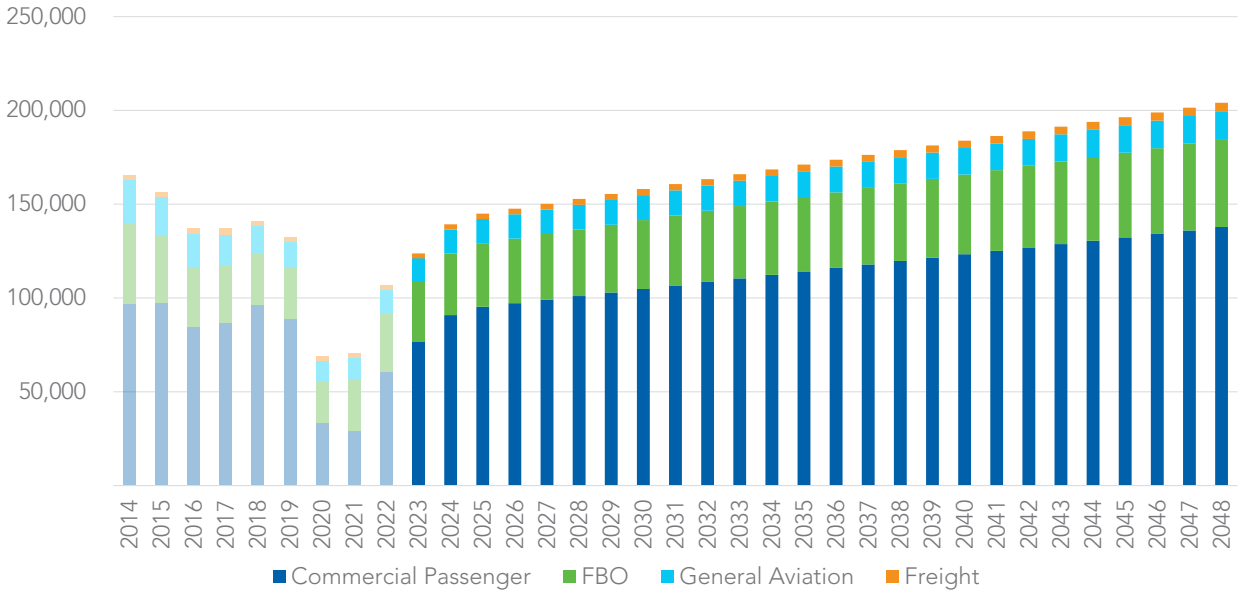
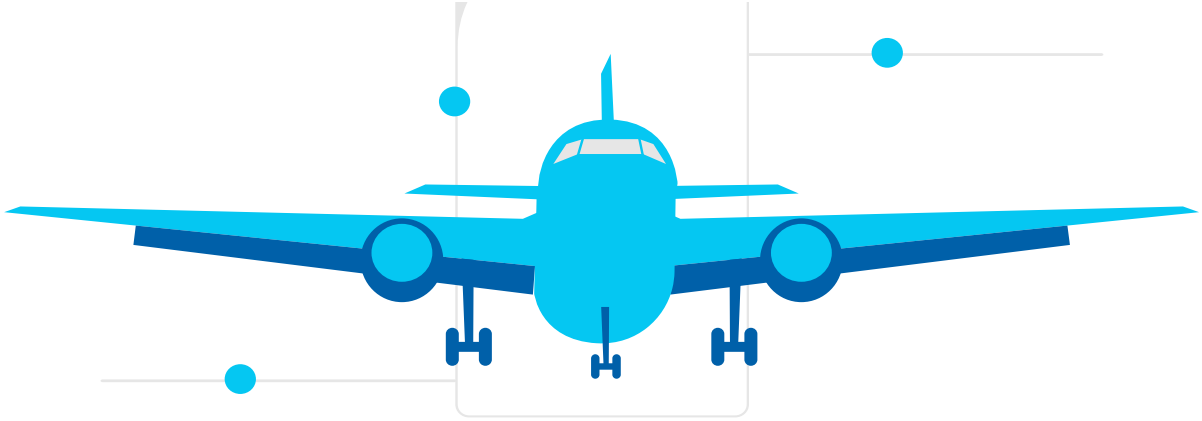


FIGURE 2 - YEG ANNUAL AIRCRAFT MOVEMENTS 2014-2048

Airfield Development

To increase the potential runway capacity, dual parallel taxiways for both runways are proposed. Within the planning horizon of the Master Plan 2048, YEG expects to build inner parallel taxiways to enable aircraft sizes as large as Boeing 777-300 or Airbus A350-900 to move unimpeded parallel to each runway in both directions. Aircraft sizes as large as Boeing 747-8 or Airbus A380-800 will be required to use certain taxiways to access aprons, similar to the YEG existing operation.

It is proposed that steps towards the preferred dual parallel taxiways be made in the short-term. A partial build of the inner taxiway is proposed parallel to Taxiway B to address demand requirements while heading towards the longer-term vision of a full dual parallel taxiway system. Additional runway entry and exit points have been proposed on the airfield to improve the runway capacity before the development of a parallel runway. Extension of the existing Runway 12-30 will be considered by 2048 to ensure YEG can provide maximum range to all aircraft sizes (Figure 3).



Apron Capacity

Apron I, the main commercial apron at YEG, provides 40 gate positions for aircraft with direct access to the terminal building. Demand forecasting determined that 32-39 gate positions would be required within the planning horizon of the YEG Master Plan 2048, depending on the level of gate utilization achieved. De-icing aprons have been sized to suit existing demand requirements. Future aircraft movement demand requirements could increase up to 20-30% by 2048, resulting in an increased requirement of up to two de-icing positions (Figure 3).

Apron Development

Although there is sufficient existing capacity, optimization of aircraft parking on Apron I would bring the benefit of improved terminal area utilization and the flexibility to grow incrementally if the demand profile changes in the future. The proposed Apron I north development and expansion will occur over the planning horizon and will feature the relocation of Gate 49 aircraft ground loading operations to the north terminal area to improve terminal operation and move high-frequency operations away from De-ice Facility 1 (DF1).

De-icing development is likely to focus on expansion in the area between DF2 and DF3. This location provides more area for pad expansion and for aircraft queuing without impact on terminal gate operations. DF1 will be retained to provide operational flexibility.

DEVELOPMENT BEYOND 2048

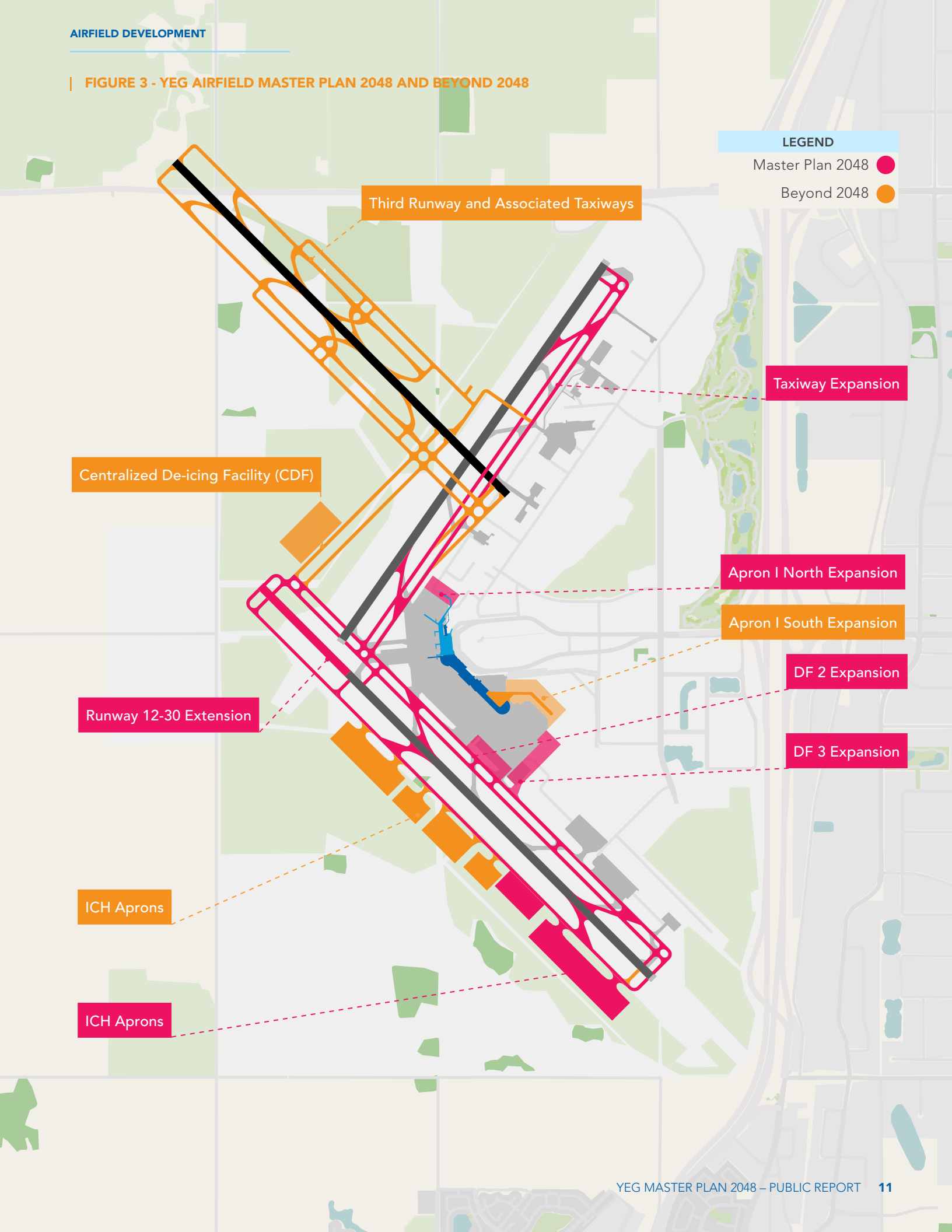
Longer term planning is necessary to protect for future airport operations that go beyond the planning horizon of the YEG Master Plan 2048 (Figure 3). The following major airfield elements are proposed to support continued airport growth:

- Development of a third runway, parallel to the existing Runway 12-30. The need for a new parallel runway will be driven by demand requirements.
- Development of a Central De-icing Facility (CDF) to complement the third runway development.
- Development of additional aprons associated with the south terminal expansion and the International Cargo Hub (ICH) development south of Runway 12-30.

Increased temperature extremes due to climate change are expected to continue to impact airport operations beyond 2048. The City of Edmonton has forecast increased heatwaves for the EMR in the YEG Master Plan 2048 horizon. High temperatures can affect aircraft take-off performance, requiring weight reduction or contributing to flight delays. The Runway 12-30 extension and the third runway could help counter the impacts of heatwaves, by offering more runway distance to compensate for reduced lift.

The recently updated 2022 Edmonton International Airport Vicinity Protection Area (AVPA) and associated noise exposure forecast (NEF) contours protect for the proposed parallel runway and runway extension to Runway 12-30 (Figure 3) .

FIGURE 3 - YEG AIRFIELD MASTER PLAN 2048 AND BEYOND 2048



TERMINAL DEVELOPMENT

INTRODUCTION

The YEG airport terminal building, or terminal, is often the first and last impression an air traveller has of the **Edmonton Metropolitan Region**. Edmonton Airports is committed to creating an airport for everyone that reflects the interests and needs of the region.

The terminal at YEG is built to be efficient, aesthetically pleasing, accessible and environmentally conscious. The current facility includes various expansions that responded to the growing needs of the region. The **YEG Master Plan 2048** considers the future annual passenger forecast and peak-hour demands on the facility. Key areas are identified for optimization or transformation.

HISTORY

The YEG air terminal building has grown in increments since the original building was opened in 1963. The most recent terminal expansion, Expansion 2012, was the focus of the preceding EIA Master Plan 2010-2035.

In the decade since, YEG pursued smaller terminal development projects as Expansion 2012 continues to provide adequate capacity for most terminal operations into the short to medium-term. The largest of these projects is the floor infill and expansion of Central Hall Pre-Board Screening, which was opened in 2019.

The pursuit of smaller projects has led to an accumulation of studies that explore terminal redevelopment due to growing demand and the lifecycle refurbishment of older segments of the terminal building.

The existing studies have been validated and adjusted to react to the global pandemic's impact on passenger demand forecasts (Figure 4). They have also been synchronized into a project schedule so that the airport can continue to operate with minimal interruptions.

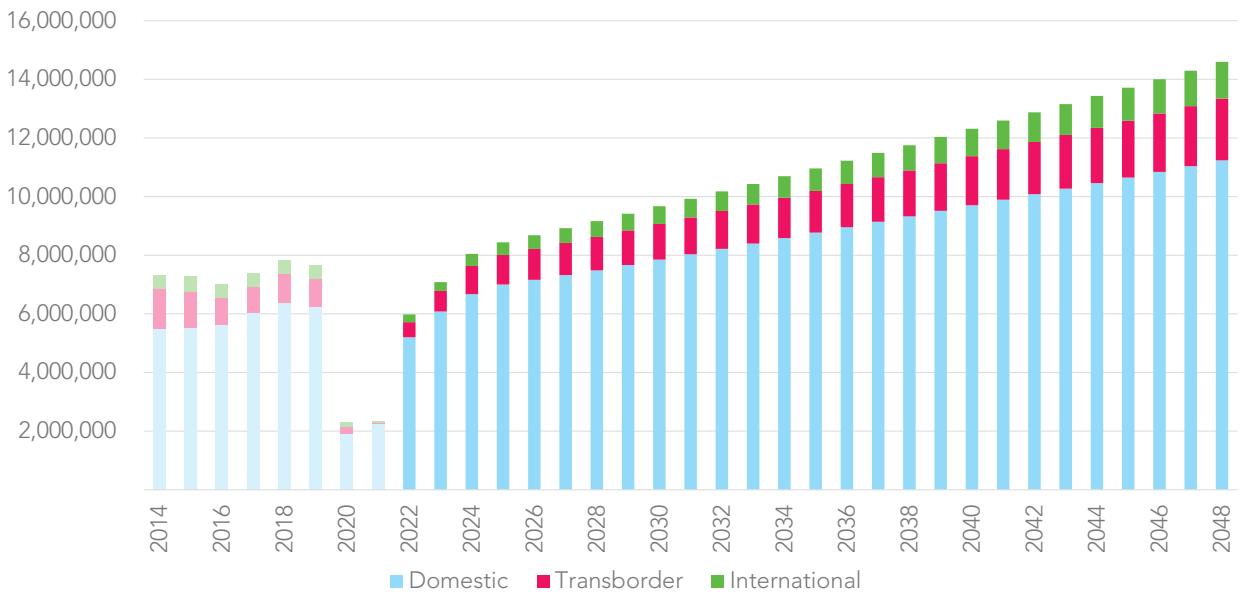


FIGURE 4 - YEG ANNUAL TERMINAL PASSENGERS 2014-2048

GOALS

Future terminal development will be focused on optimization of existing spaces and minimizing the requirements for additional building area outside the existing terminal footprint.

STRATEGY

The development of the terminal will be consistent with the Master Planning Guiding Principles. Several priorities were defined for the terminal development.

- Optimization before expansion of terminal infrastructure to reduce long-term costs.
- Flexibility and accessibility of infrastructure to accommodate all passengers and airlines planning to operate at YEG.
- Technology to enable greater flexibility and efficiency.
- Innovation to improve experiences for passengers and the airport working community.

TERMINAL DEVELOPMENT

Demand forecasts of passengers and aircraft movements were used to assess the requirements for terminal facilities. The majority of processors in the terminal need to be able to process the busy-hour passenger demand. The output of design day flight schedules provide the hourly demand expectations. Each terminal area was assessed based on projected demand through the lens of the development strategy. By 2048, Edmonton Airports aims to operate a terminal that is prepared to process 14.6 million passengers per year (Figure 4). With North Terminal redevelopment work planned over the course of the YEG Master Plan 2048 time-frame, Edmonton Airports will add additional gating capacity in the north and south terminal to allow for additional terminal flexibility and prepare for growth beyond 2048.

Check-in

Development of check-in will remain within existing available areas. Projected demand growth will be accommodated through greater use of common-use equipment and the introduction of new check-in technology such as self-serve kiosks and bag drop units.

The North Terminal check-in area is part of the original terminal building and will undergo a transformation that plans to provide necessary building upgrades, improve passenger experience and increase capacity. This will be achieved through new check-in technology and a realignment of baggage take-away belts to provide adequate circulation space for passengers to move through comfortably and reduce queuing times (Figure 5).

The South Terminal check-in area will be optimized within the existing footprint through modest layout improvements and the introduction of new check-in technology. Sequencing of the South Terminal optimization will be determined by demand needs as Edmonton Airports embarks on the North Terminal transformation (Figure 5).

Terminal Gates and Holdrooms

Analysis determined that the existing number of gates is sufficient for future demand out to 2048. Other drivers such as holdroom congestion will lead to the modification of terminal gates and holdrooms.

Gate 49 is currently used frequently for ground loaded regional flights. This gate experiences congestion in the holdroom and surrounding circulation spaces during peak periods.

Relocation of Gate 49 operations to the north will improve congestion issues and will provide an opportunity to improve passenger amenities in the central retail node immediately after domestic/international Pre-board Screening (PBS) (Figure 5). This reduced congestion will improve the passenger journey, and will improve the accessibility of the terminal for people with mobility constraints or people who are deaf or hard of hearing. As the terminal is transformed, Edmonton Airports will also make plans for more accessible seating and improved elevator access for the South Terminal.

Pre-Board Screening

Projected capacity requirements will be achieved through incremental growth of the existing PBS areas. The domestic and international PBS area was expanded in 2019 to integrate Canadian Air Transport Security Authority (CATSA) Plus technologies. In the next 25 years this PBS area will be expanded. The Transborder PBS area in the south of the terminal will be transformed within the existing footprint to CATSA Plus lanes. CATSA Plus provides a greater potential throughput of passengers through advanced screening technologies offered currently at the domestic and international PBS area. Edmonton Airports continues to work with terminal and government stakeholders to identify potential efficiencies such as using Transborder PBS for domestic and international security clearance.

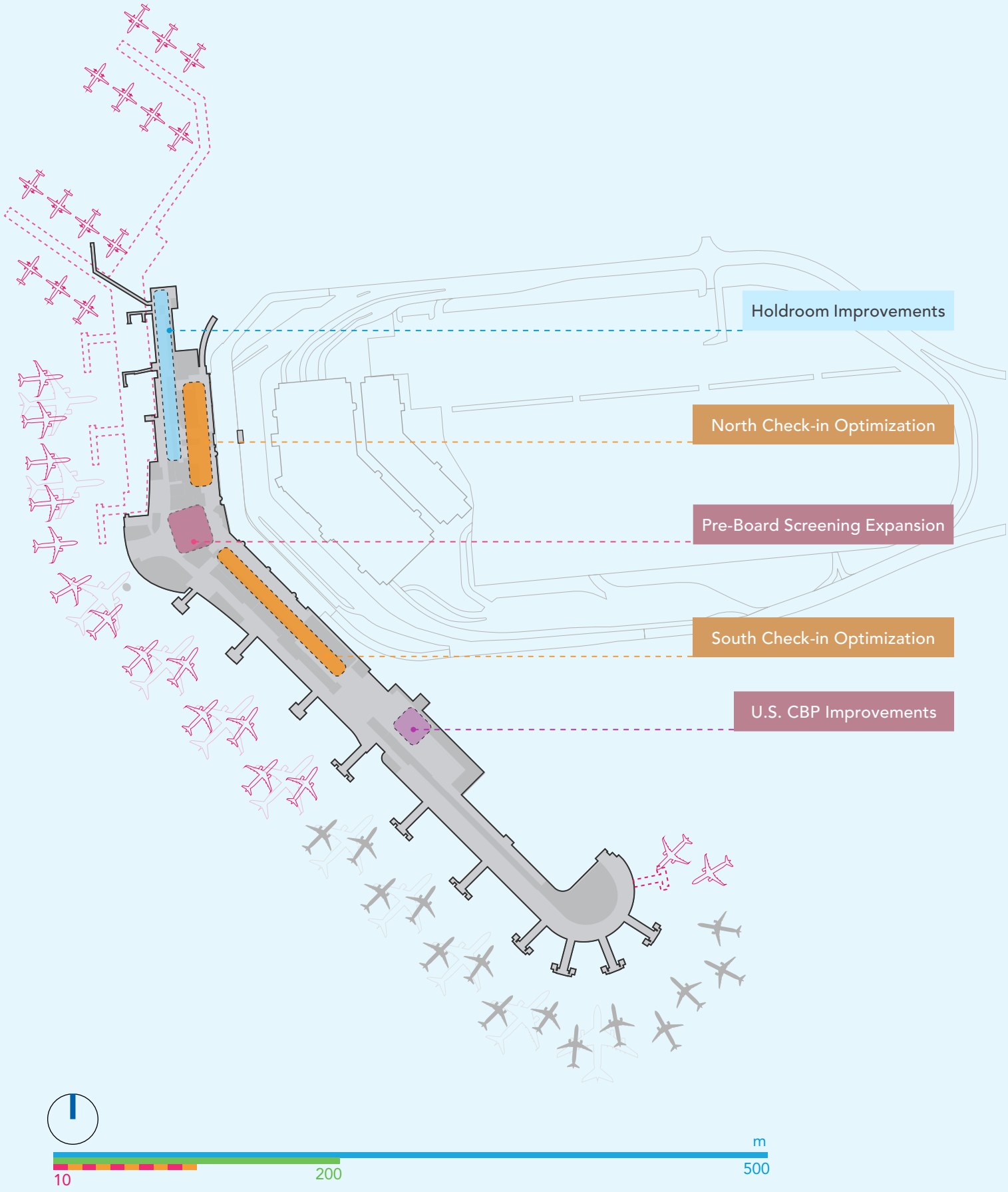
United States Preclearance

The existing footprint of U.S. Preclearance is expected to be sufficient for future demand. New technologies could potentially change the area requirements. These process changes are determined by U.S. Customs and Border Protection (U.S. CBP) and Edmonton Airports continues to manage the development (Figure 5).

Concessions Developments

The YEG terminal offers a combination of local and international shops and restaurants throughout the terminal. Edmonton Airports plans to continue developing retail and food and beverage offerings for passengers' shopping and dining pleasure. Further, Edmonton Airports aims to increase creative amenities that offer a unique sense of place for employees and travellers. Concessions are distributed throughout the terminal to strategically align with the different interests of different passenger journeys.

| FIGURE 5 - YEG MASTER PLAN 2048 DEPARTURES LEVEL EFFICIENCY IMPROVEMENTS



Outbound Baggage

Expansion of bag make-up is required and identified for both domestic/international and transborder outbound baggage areas. Expansion of the domestic/international bag make-up belts will require expansion of the terminal footprint to achieve the growth requirements while remaining connected to the existing outbound baggage system (Figure 6). Transborder bag make-up expansion can be achieved within the existing footprint of the terminal along with the relocation of some existing back-of-house functions. Upgrades to these baggage make-up areas will also require the assessment of electric charging infrastructure for electric ground support equipment (GSE) such as baggage tugs. This transition to electric GSE supports both employee health and the environment. These changes will be co-ordinated together with airlines and baggage handlers.

Canada Border Services Agency (CBSA)

The existing footprint of the CBSA area is expected to be sufficient for future demand. New technologies could potentially change the area requirements. These process changes are determined by CBSA.

Edmonton Airports currently has an International To Domestic (ITD) process which allows passengers arriving from selected countries to transfer to a domestic flight without having to collect their baggage before clearing customs. Instead, the baggage is connected directly onto the domestic connection unless CBSA wishes to inspect the bag.

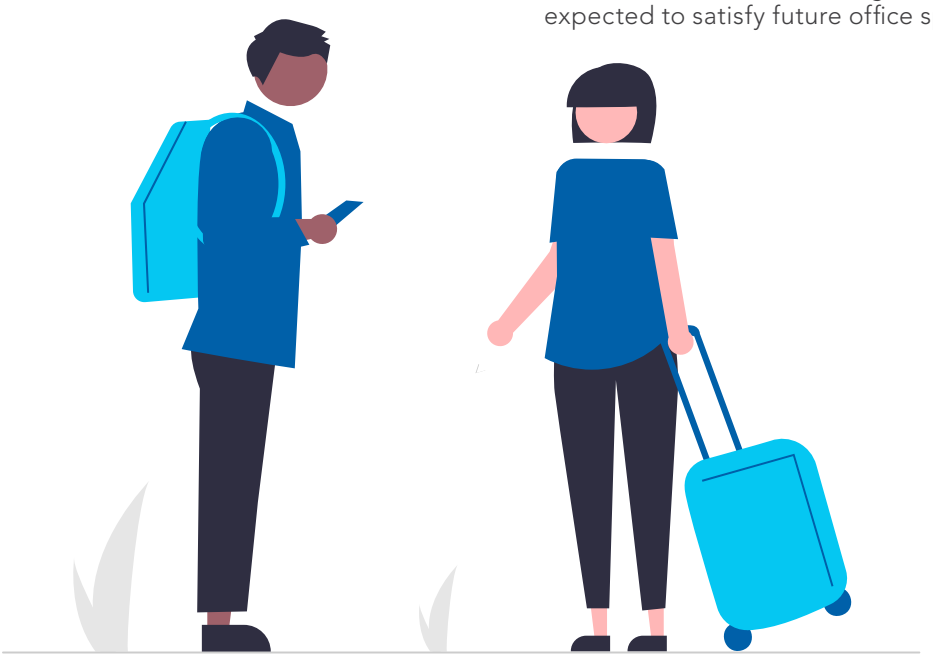
Edmonton Airports will expand the ITD process to include flights from additional countries considered by CBSA to be 'non-secure', such as Mexico and Cuba, by adding a Secure Baggage Induction Area (SBIA). An SBIA is a CBSA controlled area that is attached to an airports International inbound baggage system and provides CBSA with an area that is separate from the main baggage induction area, self-controlled by CBSA for the induction and release of bags.

Inbound Baggage

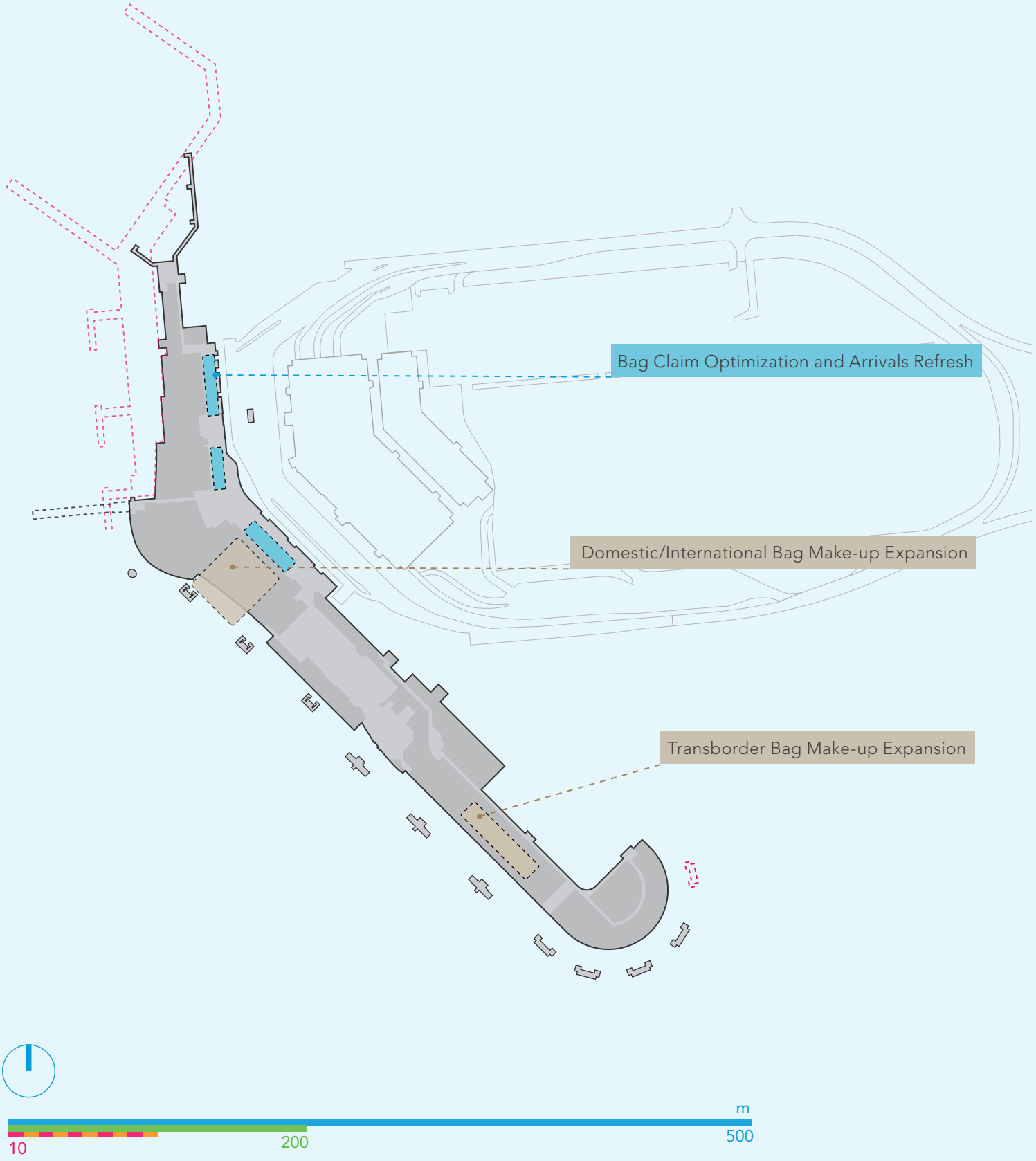
The inbound baggage system has sufficient capacity to meet the future demand. Optimization of baggage claim belt lengths to suit modern aircraft fleets would be beneficial in achieving greater utilization of all belts. The proposed YEG Arrivals Refresh would present an opportunity to optimize baggage claim (Figure 6). This project is anticipated to progress throughout the planning horizon.

Airport Offices

The Expansion 2012 Combined Office Tower capacity is expected to be sufficient for NAV CANADA and Edmonton Airports needs in the YEG Master Plan 2048 timeline. Edmonton Airports plans to focus on the renovation of the original administration tower and other opportunities, to support airport and tenant office needs. Increased terminal efficiencies and modern work environments, including remote work, are expected to satisfy future office space demands.



| FIGURE 6 - YEG MASTER PLAN 2048 ARRIVALS LEVEL EFFICIENCY IMPROVEMENTS



TERMINAL EXPANSIONS

YEG Master Plan 2048

Within the YEG Master Plan 2048 timeline, YEG envisions a transformed northern terminal with minimal new building extension. The expansion to the north would include two additional piers, new bridged/contact gates. This would incorporate the relocation of Gate 49 operations (Figure 7). The North Terminal expansion would require the relocation of the existing North Fuel Farm.

The North Terminal expansion would also require a relocation of the north Non-Passenger Screening of Vehicles (NPS-V) facility and a review of the road network to direct traffic through the NPS-V.

The North Terminal holdrooms will be progressively transformed, mostly within existing available areas, to provide necessary building upgrades and improve passenger experience. During the North Terminal upgrade, the washroom facilities will also be assessed. They will be reviewed for accessibility to improve ease of use for all people.

South Terminal Expansion

Within the YEG Master Plan 2048, Edmonton Airports plans to develop a temporary South Terminal expansion. This would consist of two additional gates, a holdroom swing gate and associated apron development. These gates would also offer a connection into the international arrivals corridor. By expanding this area, the YEG terminal would gain a flexible addition to the facility that accommodates both transborder and international passenger growth.

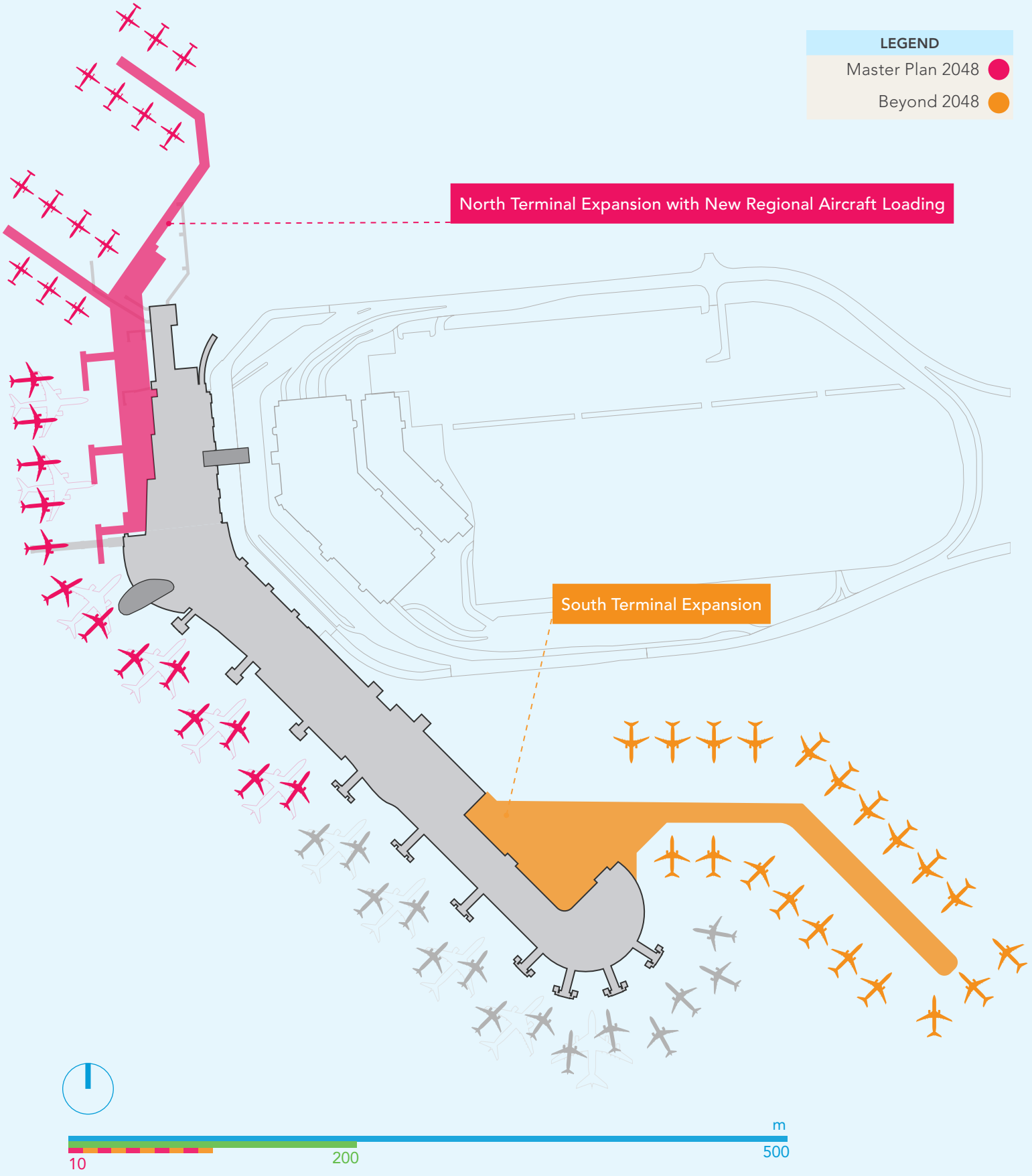
Beyond the YEG Master Plan 2048

The EIA Master Plan 2010-2035, as well as subsequent terminal studies in 2016, identified a build out of the South Terminal, beyond the YEG Master Plan 2048 timelines. This is expected to support over 16 million passengers annually (Figure 7).

YEG continues to protect the land required for terminal expansion beyond 25 years. This will ensure infrastructure decisions in the YEG Master Plan 2048 do not obstruct the terminal growth.

As passenger numbers grow, YEG will assess the need for continued terminal expansion to accommodate for growth in domestic, international and transborder passengers. The needs of hydrogen and electric aircraft may also impact the terminal infrastructure upgrades including charging, fuelling and boarding bridges.

FIGURE 7 - YEG TERMINAL DEVELOPMENT MASTER PLAN 2048 AND BEYOND 2048



AIR CARGO AND LOGISTICS

INTRODUCTION

YEG's Air Cargo and Logistics developments support multi-modal cargo activity in the region. YEG is a hub for the **Edmonton Metropolitan Region (EMR)** and for Canada. YEG offers a revenue-generating and low-cost freighter gateway for cargo flights. Edmonton offers an inland port with uncongested access by rail from Prince Rupert and Vancouver, and onward by air or truck to many points in Canada and the US.

YEG supports the industry through a **24/7 365** days per year operations with no curfews or operating restrictions. On-site cargo facilities and associated infrastructure can handle any size of operations including oversized, heavy weight and industrial cargo. Over the last 10 years, YEG has achieved the most on-airport development of any airport in Canada, and outpaced its peers in air cargo investments.

YEG EXPERTISE

YEG has expertise supporting:

- Perishables
- Express e-commerce handling
- Pharmaceuticals
- Multi-modal distribution and transfers
- Cold chain and multi-temperature solutions
- Energy equipment

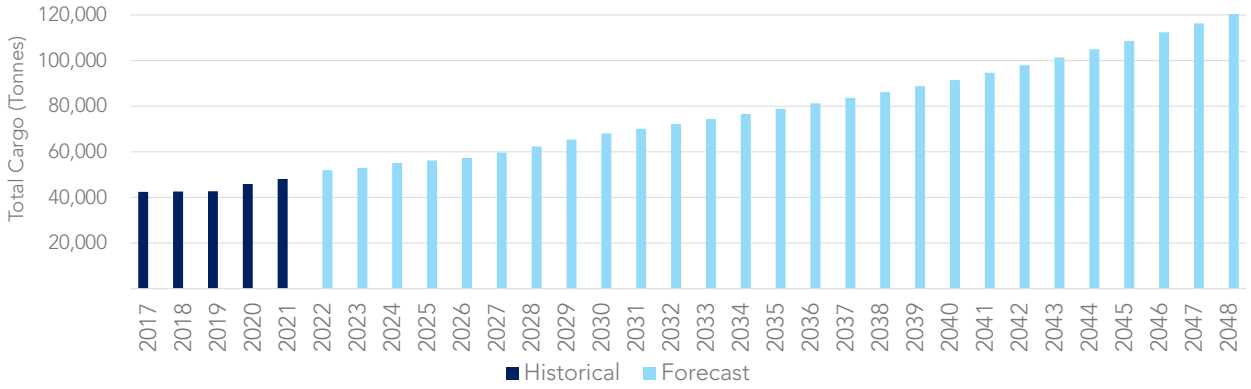


FIGURE 8 - YEG TOTAL CARGO TONNAGE BETWEEN 2017-2048

HISTORICAL GROWTH BENEFITING THE COMMUNITY

Since the release of the EIA Master Plan 2010-2035, Edmonton Airports developed the South Cargo Development, with taxiway access. The YEG South Cargo Development is a convenient and interconnected cargo cluster that includes cargo stakeholders who moved from the north end of the property to the south end, into larger and newer facilities.

The South Cargo Development also grew through the addition of:

- Fresh Cargo Centre with 465 square-metre (5,000 square-feet) of refrigerated warehouse space
- Fuel Farm storage and distribution facility
- Trucking and ground transportation facilities

As infrastructure modernized and grew, cargo tonnage also increased (Figure 8). In 2021, YEG became Canada's first airport to begin regularly scheduled drone delivery operations. By the end of 2022, YEG had serviced more than 300 commercial drone delivery flights.

Currently, YEG has cargo operations on Apron I to serve belly cargo from the passenger carrier network. Edmonton Airports also manages dedicated cargo aprons in the South Cargo Development (Figure 9).

FUTURE EXPANSION

Edmonton Airports committed to the growth of cargo-handling through the investment of new cargo focused facilities. Aligned with the initiation of the YEG Master Plan 2048, two major expansions were announced, supported by federal funding:

- Expansion of South Cargo Development
- Creation of the International Cargo Hub (ICH)

The realization of these catalytic infrastructure investments will prepare YEG to handle forecast cargo growth beyond the YEG Master Plan 2048 timeline (Figure 9).

EXPANSION OF SOUTH CARGO DEVELOPMENT

South Cargo Development is a success story for the EMR. A pivotal component of the long-term expansion plan was accelerated by a $18 million grant from the Government of Canada under the National Trade Corridors Fund. This grant supports a $36 million expansion of cargo operations that will include:

- Construction of a new 47,000 square-metres (50,5904 square-feet) cargo apron (Apron VIII)
- Installation of a new hydrant fuelling system that will tie into south fuel farm tanks
- Expansion of Fresh Cargo Centre cold-storage area

The expansion of Apron VIII and other developments will remove bottlenecks and increase efficiency and safety for future cargo developments. The South Cargo Development provides convenient highway connectivity through Airport Road, and will also be connected through 65 Avenue Interchange. The cargo developments in this area will provide convenient access to de-icing and taxiways on the airside. The continued growth of facilities will enable development of new freighter routes to the U.S., Asia and Europe.

CREATION OF INTERNATIONAL CARGO HUB (ICH)

International Cargo Hub (ICH) represents Edmonton Airports' visionary growth for the southwest lands. The Government of Canada is committed to strengthening Canada's trade corridors. In 2022, the government announced up to $100 million in funding to increase cargo and logistics handling operations at YEG, as part of a $300 million cargo expansion.

ICH will be developed on the west side of Runway 12-30 and will be bounded by the airport's southern boundary, 65 Avenue. This area provides an opportunity for aeronautical and non-aeronautical freight handling logistics development.

The project plans to develop approximately 809 hectares (2,000 acres) of land into a new global cargo handling operation. YEG will expand its multi-modal distribution throughout Canada, the U.S. and Mexico. YEG's increased cargo capacity ensures supply chains keep moving, the economy is strengthened and Canadians receive the goods they need, on time.

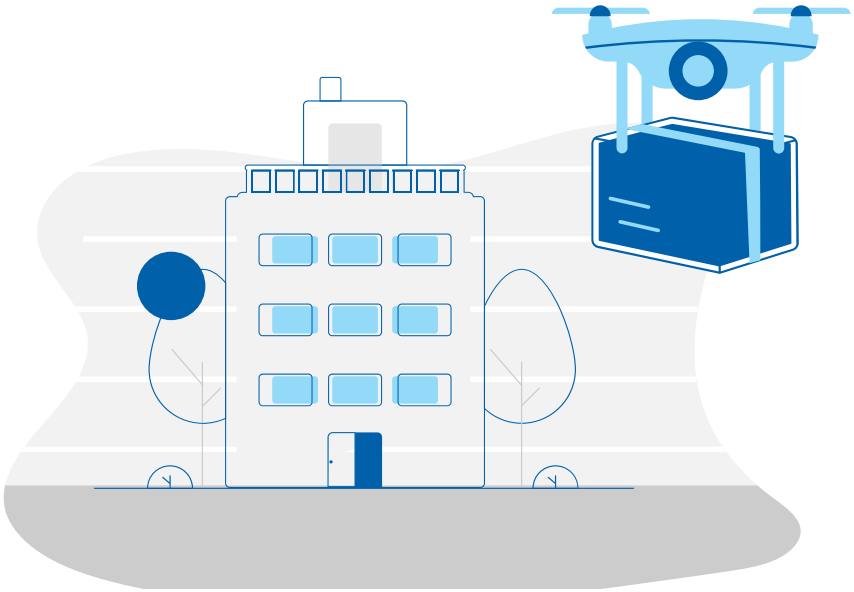
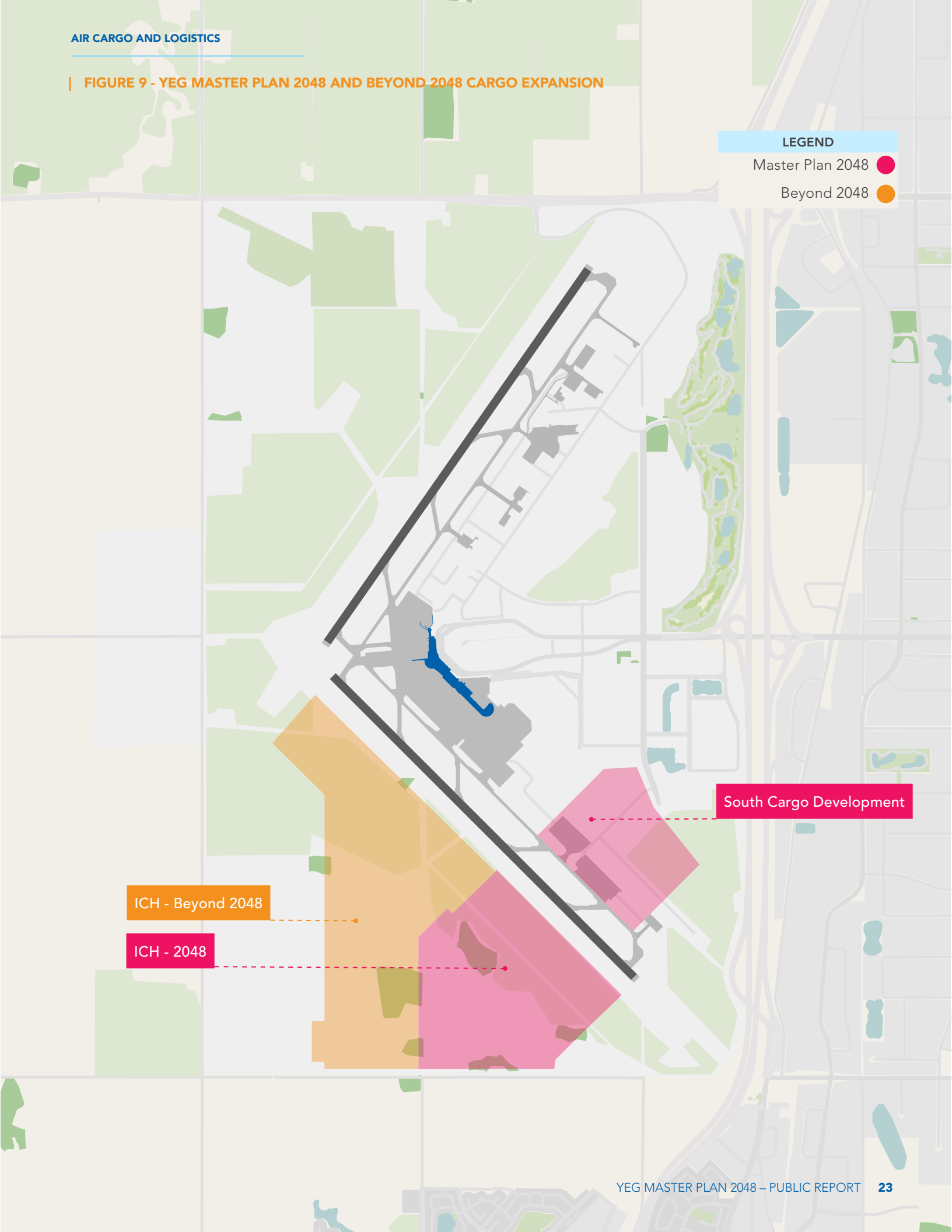


FIGURE 9 - YEG MASTER PLAN 2048 AND BEYOND 2048 CARGO EXPANSION



GENERAL AVIATION AND AVIATION SUPPORT SERVICES

INTRODUCTION

General Aviation (GA) refers to both scheduled and non-scheduled flights, arriving or departing the airport, which do not use the main terminal building. At YEG, GA is located at the northeast of the terminal, off the east side of **Runway 02-20**.

At YEG, GA includes a diverse mix of activities categorized between Fixed Base Operators (FBO) and other GA.

- **FBOs** include small aircraft charter flights, non-scheduled services to remote camps connected to the resource sector.
- Other **GA** includes corporate flights, air ambulances and pipeline inspection flights. Civil and military government activities occurring away from the terminal are excluded from this definition.

GENERAL AVIATION

General Aviation History

After the closure of Edmonton City Centre Airport (ECCA) in 2012, most commercial and GA air traffic at ECCA moved to YEG and Villeneuve Airport (ZVL). GA at YEG experienced growth in passenger and aircraft movements between 2010-2014 as the oil and gas sector grew and oil prices peaked in 2014. Between 2014-2021, GA at YEG decreased as oil prices fell and COVID-19 impacted every industry (Figure 10). Pilot training for helicopters and fixed-wing aircraft has primarily stayed on the Villeneuve Airport property.

General Aviation in 2048

In the timeline of the YEG Master Plan 2048, Edmonton Airports has identified land to the east of Runway 02-20 to accommodate growth in GA (Figure 11).

Edmonton Airports plans to continue to grow helicopter and fixed-wing pilot training from ZVL, to support the needs of the Canadian aviation industry. More information on the development of Villeneuve Airport can be found in the Villeneuve Airport Strategic Plan.

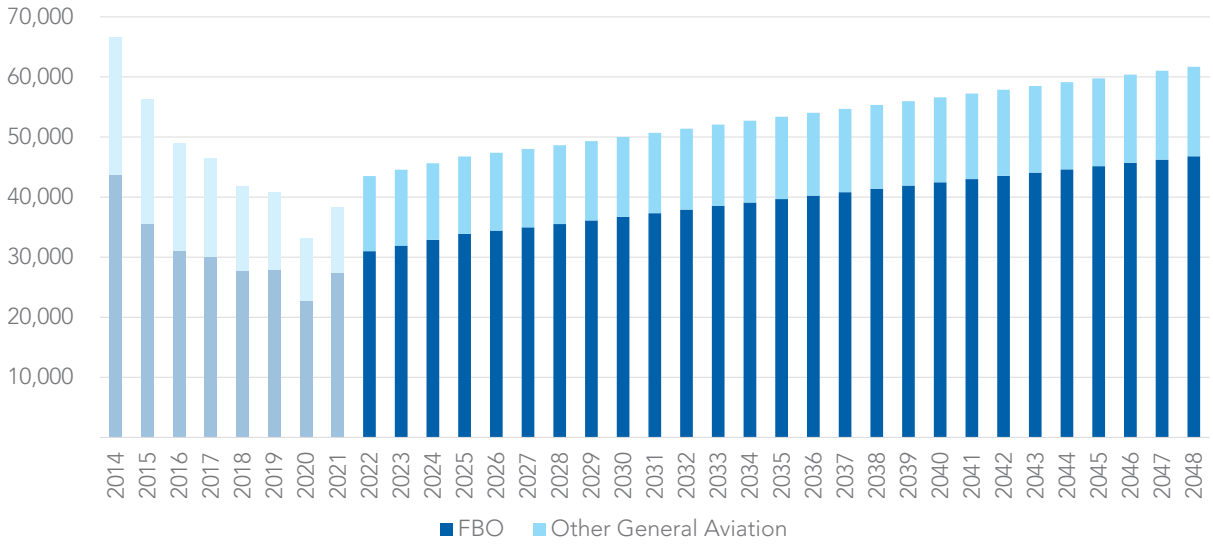


FIGURE 10 - FBO AND OTHER GENERAL AVIATION ANNUAL AIRCRAFT MOVEMENTS AT YEG BETWEEN 2014-2048

General Aviation Beyond 2048

Beyond 2048, YEG has also protected land west of Runway 02-20 for long-term growth related to GA and Aviation Support Services. As identified in the EIA Master Plan 2010-2030, this land has been designated for Airside Development. Edmonton Airports will collaborate with stakeholders to understand expansion requirements. Edmonton Airports also aims to support new businesses to design and develop facilities that reflect their needs and align with the Airport City Sustainability Campus ecosystem.

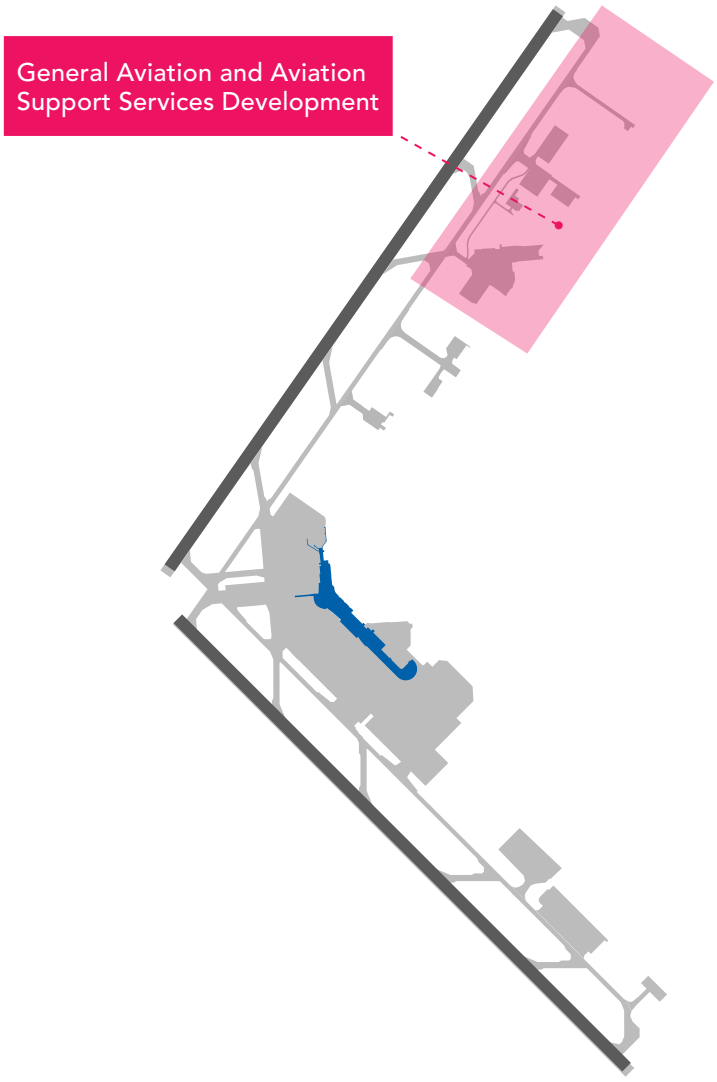


FIGURE 11 - MASTER PLAN 2048 GENERAL AVIATION AND AVIATION SUPPORT SERVICES EXPANSION AREA

AVIATION SUPPORT SERVICES

Aviation support facilities include:

- Snow storage
- Airport Operations Facility (AOF)
- Emergency and response services
- Fuelling
- Training
- Waste
- Catering
- NAV CANADA

While Edmonton Airports used relevant analysis from the EIA Master Plan 2010-2035, Edmonton Airports closely monitors the needs of the YEG facility and the evolving requirements of stakeholders. Edmonton Airports aims to respond to needs as they emerge, and will protect land beyond the YEG Master Plan 2048 horizon to ensure safe, secure and efficient operations. The recommendations of this Master Plan align with the identified boundaries of the Land Use Plan.

Snow Storage

Winter operations at YEG are between September and May. The City of Edmonton reported 191 centimetre (75 inches) of snow during the 2018/2019 winter season. Snow removal and snow storage is an important component of facility management. YEG has established airside snow storage sites, which flow into the stormwater ponds. The groundside location is adjusted based on construction activity on the YEG property. Groundside tenants store their snow on their own leased property.

As the facility continues to develop, YEG commits to collaborating with stakeholders to identify additional groundside snow storage locations.

Airside Operations Facility (AOF)

YEG operates an Airside Operations Facility in the north end of the airport property. The AOF is used for indoor equipment storage and maintenance. This existing 5,000 square-metres (53,820 square-feet) facility was completed in 2016, replacing the older 3,400 square-metre (36,597 square-feet) facility.

The AOF facility is located on a 38,000 square-metre (409,000 square-feet) site, which has room for the expansion needs of the YEG Master Plan 2048. By 2048, YEG also plans to create unimpeded airside access and reroute 36 Street East for improved passenger traffic.

The integration of electric and hydrogen-fuelled equipment and autonomous equipment are expected within the YEG Master Plan 2048. These new technologies will require new safety and storage procedures. Edmonton Airports will study new technologies as they become available to understand their applicability to the YEG facility. YEG is protecting space east of the AOF for additional equipment storage and building expansion.

Emergency Services

The principle objective of a rescue and firefighting service is to save lives in the event of an aircraft incident or accident. YEG's current fire hall meets both Transport Canada and the International Civil Aviation Organization (ICAO) response time standards. The facility standards are tested two times annually.

Within the next few years, Leduc County will establish a fire hall at YEG. It will be located on the YEG jetSet parking facility and will support County emergency responses in the vicinity of YEG. This will allow the currently active fire hall to focus specifically on the YEG site.

Beyond the Master Plan, YEG has identified the need for an additional fire hall when the third runway is constructed.

Mobile Aircraft Fire Trainer

The fully self-contained system provides training in the control and extinguishing of aviation fuel spill fires and aircraft incident fire emergencies, in and around an aircraft. Going forward, YEG's emergency response services team will continue to use the training system to refine their expertise. The permanent facilities include provision for multiple training activities and for environmental mitigation measures.

Bomb Inspection Facility (BIF)

YEG has a BIF to support the response to explosives on the airport property. Importantly, the access route to the BIF avoids crossing runways and fulfills the minimum distance requirements from the air terminal building.

Fuelling

Currently, YEG has a North Fuel Farm close to the north terminal. This fuel farm is dedicated to commercial fuelling on Apron I. It holds five million litres (1.3 million gallons) of JetA1 fuel and is filled by trucks that transport fuel from the EMR based jet fuel production facility.

The South Fuel Farm is dedicated to cargo fuelling and consists of two, two-million litre (528,344 gallon) tanks.

In the next 25 years, Edmonton Airports plans to move the North Fuel Farm to the south end of the property by the South Cargo Development. This would consolidate fuel storage around the South Fuel Farm. The plan is for the south end of the property to be able to offer hydrant fuelling to both terminal and cargo aircraft. This aims to increase efficiency and provide cost savings to airlines.

Aviation fuel is currently supplied to the YEG site by tanker trucks. An existing multi-product pipeline is situated adjacent to the South Fuel Farm which will allow YEG to connect to the pipeline when fuel volume demand has increased beyond the practical limits for trucking.

As the use of SAF and hydrogen increase in aircraft, YEG will analyze the further expansion of the South Fuel Farm to store these new fuel types.

- SAF, once blended and certified, is able to use the same infrastructure as conventional fuel.
- Hydrogen requires pressurized and cryogenic tanks for storage due to its low boiling point of -253°C.

Edmonton Airports continues to assess these emerging aircraft fuel types and plans to prepare storage and safety requirements as needed.

Training

There are two commercial flight simulators which supports pilot training for helicopters and aircraft. These flight simulators are components of the Alberta Aerospace and Technology Centre (AATC). Canada requires thousands of new pilots in the short-term and long-term. Edmonton Airports supports Canadian aviation by providing these innovative training facilities.

Edmonton Airports plans for commercial pilot training to continue to use YEG's on-site flight simulators. General Aviation based pilot training will continue to grow at Villeneuve Airport in the long-term.

Waste Management

Waste management is categorized into airline waste, airport terminal waste and groundside waste.

Groundside Waste

At YEG, tenants manage their own waste through private contracts. In 2019, YEG conducted a waste analysis of tenants on the airport property. Through this study YEG was able to understand the potential for waste recycling and co-ordination on-site.

International Waste

Most airlines manage their own waste. International airline waste is co-ordinated by YEG. Canadian regulations dictate that waste from international flights can not be opened, sorted or recycled. The waste is brought by carts from the aircraft directly to a designated compactor. Waste from the compactor must be removed through a Canadian Food Inspection Agency (CFIA) approved route and buried in a hazardous waste landfill.

Airport Terminal Waste

Edmonton Airports co-ordinates waste management in the terminal. The waste is mostly from food services and concessionaires in the terminal, passenger waste and from office staff. Recycling efforts continue to develop in collaboration with airport terminal partners. Improving recycling rates also can contribute to Edmonton Airports' Net-Zero vision.

As passengers increase, it is likely that the terminal waste will also increase. Edmonton Airports will continue to work with airline and terminal partners to understand waste flows, and new opportunities to consolidate management and increase recycling rates.

Catering

Airline partners co-ordinate their own catering services in the South Cargo Development on the YEG Site. Gate Gourmet and Sky Cafe are the main airline catering providers.

YEG plans to work with airline partners, including the emerging Ultra Low-Cost Carriers (ULCC) market to understand their long-term catering requirements. The South Cargo Development has availability for the expansion of catering facilities if needed.

NAV CANADA - Area Control Centre (ACC)

NAV CANADA has an Area Control Centre (ACC) at the YEG Airport City Sustainability Campus. The land is protected for use and management by NAV CANADA. This site is used for the co-ordination of safe and efficient flows of air traffic within the flight information region (FIR).

NAV CANADA is a central partner in Canadian aviation. YEG continues to collaborate with NAV CANADA to support their strategic growth and modernization plans.

UTILITIES

INTRODUCTION

Utility management is central to the success of the **YEG Master Plan 2048**.

Edmonton Airports studied the forecast site demand for utilities and identified the location of current and proposed utility infrastructure.

The areas assessed include:

- Power
- Natural Gas
- Water
- Sanitary and storm sewer
- Telecommunications

Edmonton Airports will continue to collaborate with stakeholders to ensure that utility studies are completed as needed and new infrastructure is initiated proactively.

UTILITY FORECASTS

For each utility, Edmonton Airports forecast low, medium and high-demand for the YEG Master Plan 2048. Infrastructure plans for the high demand forecast were selected.

The passenger and aircraft movement forecasts are minor inputs into these calculations.

YEG utilities have primarily been assessed based on:

- Land development
- The identified road network for a Transportation and Utility Corridor.
- Capacity forecasts and redundancy expectations.

Land development has the largest impact on utility requirements. Since 2010, YEG has added 125 hectares of new development with over $1.5 billion in private investment.

In the YEG Master Plan 2048 timeline, it is expected that hundreds of additional hectares will be in development. Plans include the integration of hydrogen production, fuelling and use throughout the property.

POWER

Edmonton Airports has made significant investments together with FortisAlberta to add capacity and redundancy to the YEG power system since the EIA Master Plan 2010-2035.

Power is supplied to YEG by eight primary lines owned by FortisAlberta. In 2019, the peak power load was 20 MW, the 2048 power load is forecast to be between 30-50 MW.

The new ICH is likely to have the largest impact on power demand. Edmonton Airports also considered the additional pressures of electric vehicles and aircraft in their forecasts (Figure 9).

Outreach to FortisAlberta has suggested there is capacity available for the future needs of the EMR, including YEG's forecast.

Edmonton Airports has plans for the development of Airport City Solar on the southwest lands that is expected to produce green electricity on the YEG property. This will be one of the largest on-airport solar farms in the world. The electricity from the solar farm could be used to power a hydrogen production facility. Green electricity and hydrogen may support YEG and on-site partners to fulfill growing power demands and support achieving Net-Zero Carbon by 2040.

NATURAL GAS

In addition to new powerlines, Edmonton Airports also installed a CoGeneration plant in 2021 to serve the air terminal. The CoGeneration plant runs on natural gas and produces both power and heating, with a lower emissions factor than the provincial grid. The forecast prepared identified the YEG site could require a total natural gas peak of 27,288 cubic-metres (35,691 cubic-yards) per hour. It is forecast that no new natural gas connections are needed at YEG in the YEG Master Plan 2048 timeline.

POTABLE WATER

YEG's water management system is unique in Canada. Edmonton Airports owns and operates the water and sewer systems at YEG, and contracts day-to-day operations of these systems to Leduc County.

The source of potable water for YEG is the North Saskatchewan River. This water is processed through an EPCOR water treatment plant in the City of Edmonton. The water travels south via the Capital Regional Southwest Water Services Commission (CRSWSC) or regional water line.

Once the water reaches the YEG site, Edmonton Airports is responsible for storage, distribution and quality that fulfills potable water and fire protection standards.

YEG has two water reservoir/pumphouse facilities (Reservoir R1 and Reservoir R2) .

Since the EIA Master Plan 2010-2035, YEG site water use has increased by 85%. Reservoir 2 was put into service in 2019 to support this increased demand.

For the 2048 Master Plan, it was identified that reservoir expansion or a third reservoir would be needed at YEG when annual usage exceeds 915,000 cubic-metres/year (1,196,775 cubic-yards/year).

Based on the high-growth scenario with the development of the International Cargo Hub (ICH), more water storage may be required as early as 2034. Following the low-growth scenario, no additional water storage would be required in the YEG Master Plan 2048 timeline.

SANITARY SEWER

The sanitary sewage from YEG is managed by a system of gravity mains and four lift stations. The sanitary sewage from the airport site is transported under Highway 2 with force mains. These mains connect to the regional sewer line operated by the Alberta Capital Region Wastewater Commission (ACRWC).

Sewage volumes are typically aligned with water-use projections. The expected average daily flow by 2048 would be approximately 4,200 cubic-metres/day (5,493 cubic-yards/day), in the high growth scenario. This does not include excess water that flows into sanitary sewer pipes from groundwater and stormwater.

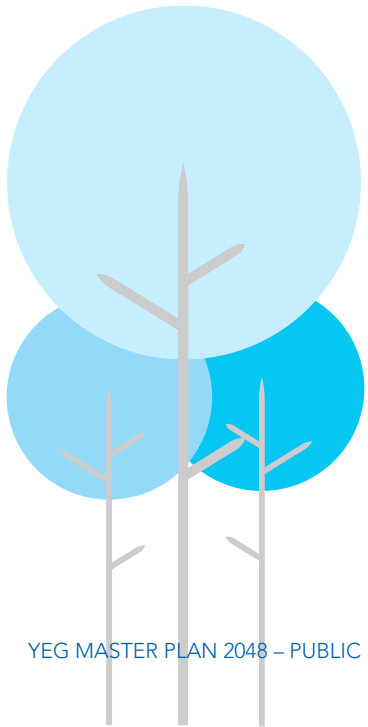
For the YEG Master Plan 2048, Edmonton Airports has identified that the ICH would require a system of new gravity sewer mains and a new lift station, identified as Lift Station #5.

TELECOMMUNICATIONS

Telecommunication services at YEG are required by all on-site airport partners. Since the EIA 2010-2035 Master Plan, the YEG property developed significantly. As tenants grew, Edmonton Airports expanded the telecommunication network through fibre and wireless networks.

Edmonton Airports also expanded its role in the deployment, operational and service provisioning aspects of telecom infrastructure to support internal airport operations and meet the requirements of commercial tenants throughout the YEG site.

Edmonton Airports identified capable broadband infrastructure as a valuable asset. For the YEG Master Plan 2048, Edmonton Airports envisions efficiently and cost-effectively providing the utility-grade, scalable infrastructure that will enable state-of-the-art service provisioning, monitoring and support to all clients at YEG. Edmonton Airports is preparing site assessments based on commercial development plans and will support infrastructure to ensure tenants have access to world-class telecom services.



GROUNDSIDE DEVELOPMENT

INTRODUCTION

Edmonton Airports is committed to creating an innovative, sustainable and accessible **Airport City Sustainability Campus**. Edmonton Airports plans for access onto the property and an interconnected road network for smooth traffic flow, and obstruction-free connectivity for maintenance and emergency vehicles. New commercial development and passenger forecasts lead to regular engineering assessments of traffic flow and road capacity. Overall, Edmonton Airports protects and prioritizes a smooth and efficient route for inbound traffic to the terminal building.

Surrounding municipalities recognize YEG as a **unique employment hub** in the **Edmonton Metropolitan Region (EMR)**. Edmonton Airports aims to develop the YEG Airport City Sustainability Campus to support regional economic prosperity. Collaboration with partners has led to the development of road designs that include bike paths, walking paths and gathering areas. The **YEG Master Plan 2048** also considers the needs for different road developments and parking to prepare for passenger, employee and customer growth.

THE EMR TRANSPORTATION NETWORK

The Edmonton Metropolitan Region Board (EMRB) recognizes the EMR as a transportation hub, where the roads, rails and runways form a backbone that connects Canada. YEG is an important hub in the EMR road and goods movement network. The 2021 EMRB Integrated Regional Transportation Master Plan strategies are:

- Connecting goods to market
- Getting people to jobs and services
- Optimizing the use of existing corridors and infrastructure
- Connecting modes and supporting modal shift

The regional transportation routes recognize the priority employment, and residential areas in the EMR and highlight highways and railways that connect people and industry. YEG has been designated as a higher-order transit site for the EMR. Long-term regional transit is expected to develop with higher intensity and a mix of uses on the YEG property.

The areas directly surrounding YEG in Leduc County, City of Leduc and City of Edmonton, have been identified as areas of potential employment growth. Access to YEG and the airport's multi-modal transit hub would make the land desirable for light-industrial and cargo developments. Development around YEG is also expected to spur residential and community growth.

YEG - A CRITICAL REGIONAL TRANSPORTATION HUB

Recognizing the growth vision of the region, and the importance of offering low-emissions and low-cost transportation options, Edmonton Airports is prepared for the YEG site to be a central node for regional higher order transit modes. Edmonton Airports has also protected a right-of-way for a rail transit system to connect from the City of Edmonton into the southern component of the Airport City Sustainability Campus. Further, Edmonton Airports provides an internal bus system to allow employees and customers to connect throughout the airport property.

Edmonton Airports expects that the road network will need to be able to handle:

- Cargo trucks
- Construction equipment and vehicles
- Fire safety vehicles
- Rental cars
- Employee and passenger vehicles
- Maintenance vehicles
- Airside equipment and Ground Service Equipment (GSE)

These equipment and vehicles may be hydrogen, electric and autonomous. More studies will be conducted as the technologies become available and adopted.

YEG MASTER PLAN 2048 ROAD NETWORK

In addition to preparing for transit access on the YEG property, Edmonton Airports has identified the YEG public and service road requirements for the YEG Master Plan 2048 and for Beyond 2048 (Figure 12).

YEG MASTER PLAN 2048

Within the YEG Master Plan 2048 timeline, the following road network expansions and improvements are anticipated to be developed:

Highway 19 Twinning and Realignment

Highway 19 flows along YEG's northern boundary, and separates YEG from the southern limits of the City of Edmonton. Highway 19 has been designated as a high-load corridor that connects Highway 60 and Highway 2. The twinning of Highway 19 is a priority for the Government of Alberta, and will improve safe traffic flow, and accommodate future traffic growth. The east and west sections of twinning were completed in 2019 and 2023 respectively.

The Government of Alberta continues to collaborate with stakeholders, including Edmonton Airports, to complete the middle section of this project. Importantly, the middle section of Highway 19 twinning was designed to align around, and protect land for, the future third runway.

65 Avenue Interchange (Interim)

The development of 65 Avenue Interchange has been an extensive planning and design project between the City of Leduc, Government of Alberta and Edmonton Airports. This new interchange began construction in 2023, and will serve as a major transportation corridor for residents and businesses, and improve connectivity to YEG. The completion of 65 Avenue Interchange will be a catalyst for increased developments on the YEG property, particularly in the southwest area. This interchange will create a vital connection to Highway 2 and offer a new access point for South Cargo Development, ICH and emergency services.

Airport Perimeter Road South Section

As the 65 Avenue Interchange is developed, Airport Perimeter Road will be extended south to connect into the interchange. This allows for a new access point onto the commercial component of the property for customers, passengers and employees.

Airport Perimeter Road North Section

Edmonton Airports plans for Airport Perimeter Road to be extended to the north of the property, offering improved connectivity to Highway 19. This will increase reliable access to the property.

BEYOND 2048

Beyond 2048, YEG plans to protect land for the development of the following roads:

Airport Road Express Lanes

Edmonton Airports protects for the development of express lanes for Airport Road to accommodate for long-term passenger growth. This will reduce congestion and increase the reliability of access to the terminal.

Highway 2 Interchange Improvements

As the Airport Road express lanes are developed, improvements to the Highway 2 interchange connecting to Airport Road will also be planned.

65 Avenue Interchange (Ultimate)

The ultimate build out of 65 Avenue Interchange will be completed beyond 2048. This road extension would further increase the connectivity of the City of Leduc community.

Express Transit

Edmonton Airports continues to collaborate with the City of Edmonton in the long-term planning of a high-quality, high-efficiency, high-capacity express transit service connection between City of Edmonton and YEG. Edmonton Airports is also planning for a YEG regional transit hub within the commercial development lands (Figure 12).

MASTER PLAN 2048 PARKING

A range of public parking products are available at YEG to suit passenger needs. A total of approximately 11,350 parking stalls exist to serve terminal passenger parking needs. YEG operates other parking lots on the airport property for employees working at the terminal building and for GA tenants operating north of the terminal building. The capacity of these lots amounts to approximately 2,350 parking stalls.

As passenger demand grows in the YEG Master Plan 2048 time-frame, it is expected that public parking capacity will need to increase to between 18,500 and 23,500 stalls.

This will amount to approximately 280,000 square-metres to 490,000 square-metres (3,013,895 square-feet to 5,274,316 square-feet) of additional area required for public parking. Employee parking capacity will also need to increase in the future.

Edmonton Airports will explore opportunities for integrating zero-emissions vehicle charging stations into parking facilities. Many on-site tenants provide their own parking products for employees and customers.

MASTER PLAN 2048 PARKADE

Edmonton Airports plans to rebuild and repurpose Parkade 1 as a multi-modal ground transportation hub. This would include the expansion of rental car facilities, the relocation of ground transportation providers, alternative fuels charging, and modern parking technology. The facility upgrades would improve the passenger experience, and support long-term expense management.

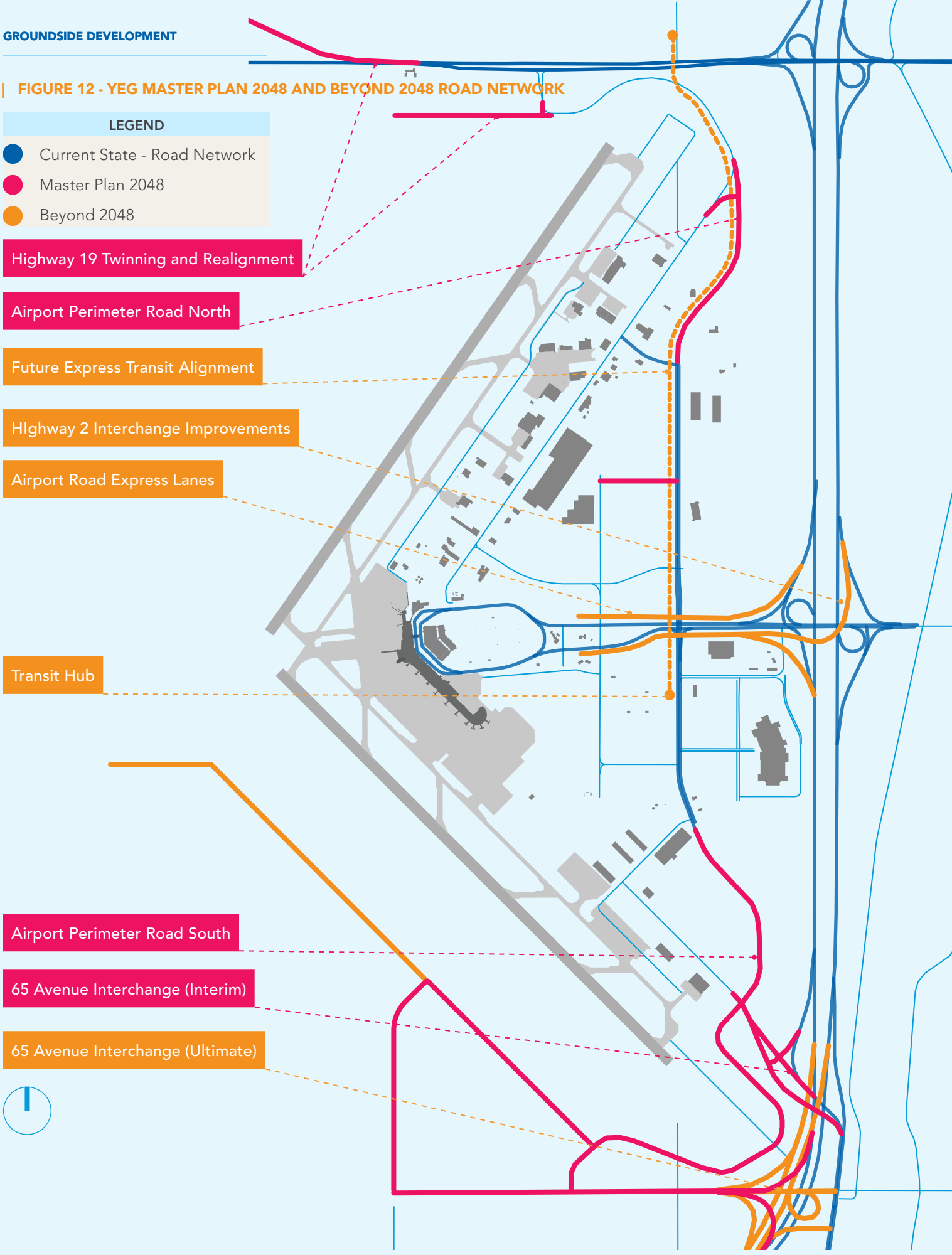
BEYOND 2048 CURBSIDE EXPANSION

The current terminal building features a two-level terminal design that allows for the segregation of departing and arriving passenger vehicles. The curb is a critical interface between the passenger terminal and the road network. At YEG the curb system consists of sidewalks with adjacent traffic lanes to permit the loading and unloading of people from private cars, taxis, limousines, hotel shuttles and buses.

The departures level has a single curb for both commercial and private passenger drop-off. The arrivals level has an inner curb reserved for commercial traffic such as taxis, limousines and buses, while the outer curb is designated for private cars, buses and hotel shuttles.

The development of the South Terminal, beyond 2048, would trigger the expansion of the departures curb. This expansion would also include a refresh, which considers innovative ways to use the space between the parkade and the terminal building. This vision for curbside expansion aims to optimize the passenger journey.

FIGURE 12 - YEG MASTER PLAN 2048 AND BEYOND 2048 ROAD NETWORK



AIRPORT ENVIRONMENT

INTRODUCTION

Aligned with the sustainability vision of Edmonton Airports and the **YEG Master Plan 2048**, environmental stewardship is an important component of day-to-day operations and long-term planning. While Edmonton Airports commits to **Net-Zero Carbon** by **2040** through the on-site green energy ecosystem, Edmonton Airports also has a long-term promise to go beyond compliance required by federal and provincial environmental regulations. Through lease agreements with tenants, Edmonton Airports encourages all partners to abide by applicable environmental acts, regulations and guidelines.

Ultimately, Edmonton Airports recognized the weather extremes and variability expected from the City of Edmonton climate change forecasts. Edmonton Airports will build flexibility into YEG systems, in response to climate change impacts, and plans to take action where required to protect the environment and aviation safety.

ENVIRONMENTAL SETTING

YEG is Canada's most northerly 24-hour major airport and also Canada's largest major airport by land area. Located along the southern edge of Edmonton's city limits, placing a majority of the EMR's population immediately north of the airport property.

The majority of the land in the Edmonton Region is cultivated. Native vegetation includes aspen-dominated forests and prairie grassland. The underlying bedrock is mainly tertiary sandstone and mudstone.

Whitemud Creek originates approximately 14 kilometres (9 miles) upstream of YEG and flows through agricultural land throughout most of its length. In its lower reaches, Whitemud Creek flows through the City of Edmonton before entering the North Saskatchewan River.

AIRPORT LAND USE

YEG hosts a number of land uses, including: aviation infrastructure, agricultural, commercial, and light-industrial. Agriculture practices at YEG allow the grassed areas surrounding the airfield to be managed for aviation safety while using the lands productively and generating economic value.

AIRPORT LAND STEWARDSHIP

Supporting commitments to Reconciliation, and understanding that Indigenous peoples are the original stewards of the land, Edmonton Airports met with the surrounding Indigenous Nations and organizations to discuss land development, traditional and contemporary land use and Indigenous considerations at YEG. These conversations provided a foundation to ensure Edmonton Airports creates space for Indigenous knowledge and inclusion in its environmental planning and understanding. These conversations and information sharing sessions are ongoing.

ENVIRONMENTAL MANAGEMENT SYSTEM

Edmonton Airports has an established Environmental Management System (EMS) to ensure that operations and activities at the airport are conducted in an environmentally responsible manner, and to ensure that YEG's environmental policies are satisfied. The basic framework of the EMS is compatible with the requirements of ISO14001:2015 and ensures YEG consistently meets environmental, regulatory, community and employee obligations. Under the Environmental Management System umbrella, Edmonton Airports tracks a robust registrar of environmental aspects that are encountered at YEG. Each aspect is assessed as a risk or an opportunity.

STORMWATER MANAGEMENT

Stormwater management is a key component and consideration in the YEG Master Plan 2048. It becomes particularly crucial in the management of rainwater in severe storm events. Climate change forecasts suggest that the EMR may experience increased extreme weather events. Edmonton Airports has prepared a long-term stormwater plan in response to developmental visions over the next 25 years and considering potential climate change hazards such as persistent rainfall, followed by extreme rainfall events, and heavy snowfall resulting in high spring melt followed by persistent rainfall.

Stormwater management has two general components that both represent high priorities for Edmonton Airports. First, from an infrastructure perspective, stormwater generally flows to the west, passing over (or under) the airfield. Ensuring that developing lands do not introduce more intensive runoff flows will ensure continuous airfield operations and preservation of YEG infrastructure. The second component of stormwater management is ensuring that water contaminated by de-icing fluids is both controlled and treated.

In the YEG Master Plan 2048 timeline, Edmonton Airports aims to upgrade the major and minor systems to reduce vulnerabilities and minimize contaminated glycol runoff.

NOISE MANAGEMENT

Edmonton Airports' noise management responsibilities are outlined in its Ground Lease with Transport Canada. Any initiatives undertaken are governed by the Aeronautics Act and the Canadian Aviation Regulations. Edmonton Airports understands the need to balance regional expectations with continued growth for aviation travel while maintaining a safe, convenient and efficient 24-hour international airport. Edmonton Airports is involved in many noise management initiatives to proactively manage the impact of aircraft noise and respond to the EMR community concerns.

Noise concerns received from the public will be acknowledged and internally investigated as received. Details of noise concerns are correlated with a flight tracking system and responses are provided to complainants.

The Noise Advisory Committee functions as a forum for information exchange between the airport and local communities, and as an education vehicle on airport operations and aircraft noise.

WILDLIFE MANAGEMENT PLAN

Edmonton Airports follows regulations around wildlife management that promote the safety of airfield operations and protects endangered species. The Airport Wildlife Management Plan (AWMP) is updated every two years and is distributed to stakeholders for feedback.

The AWMP objectives are to:

- Identify and review existing sources of wildlife information for the area.
- Identify wildlife hazards on and near the airport.
- Identify seasonal patterns related to hazards.
- Undertake a risk assessment and prioritize wildlife management efforts.

Edmonton Airports commits to continuing work with stakeholder partners and regulatory bodies to update its AWMP to respond to the future needs of the YEG facility.

Edmonton Airports has approached wildlife management through the integration of innovative new technologies. In 2017, YEG was the first airport in the world to integrate an unmanned aerial vehicle called 'robird' into daily operations. This drone shaped like a falcon was used to keep wildlife from flight paths at the airport in an efficient and environmentally conscious manner.

UNMANNED AERIAL VEHICLE - ROBIRD

LAND USE PLAN

INTRODUCTION

Edmonton International Airport is the largest airport in Canada by land area with approximately **2,800 hectares** (7000 acres) available for the airport and other associated developments. In 2022, YEG had **422 hectares** (1043 acres) of developed tenant land. Together with the collaborative investment of private and government partnerships, the **YEG Master Plan 2048** vision would lead to the development of hundreds of additional acres.

Land use in the vicinity of the airport includes commercial, industrial and residential development. Commercial and industrial land uses surrounding the airport should be compatible with airport operations. The **YEG Master Plan 2048** identifies infrastructure developments and the proposed Land Use Plan.

YEG COMMERCIAL DEVELOPMENT

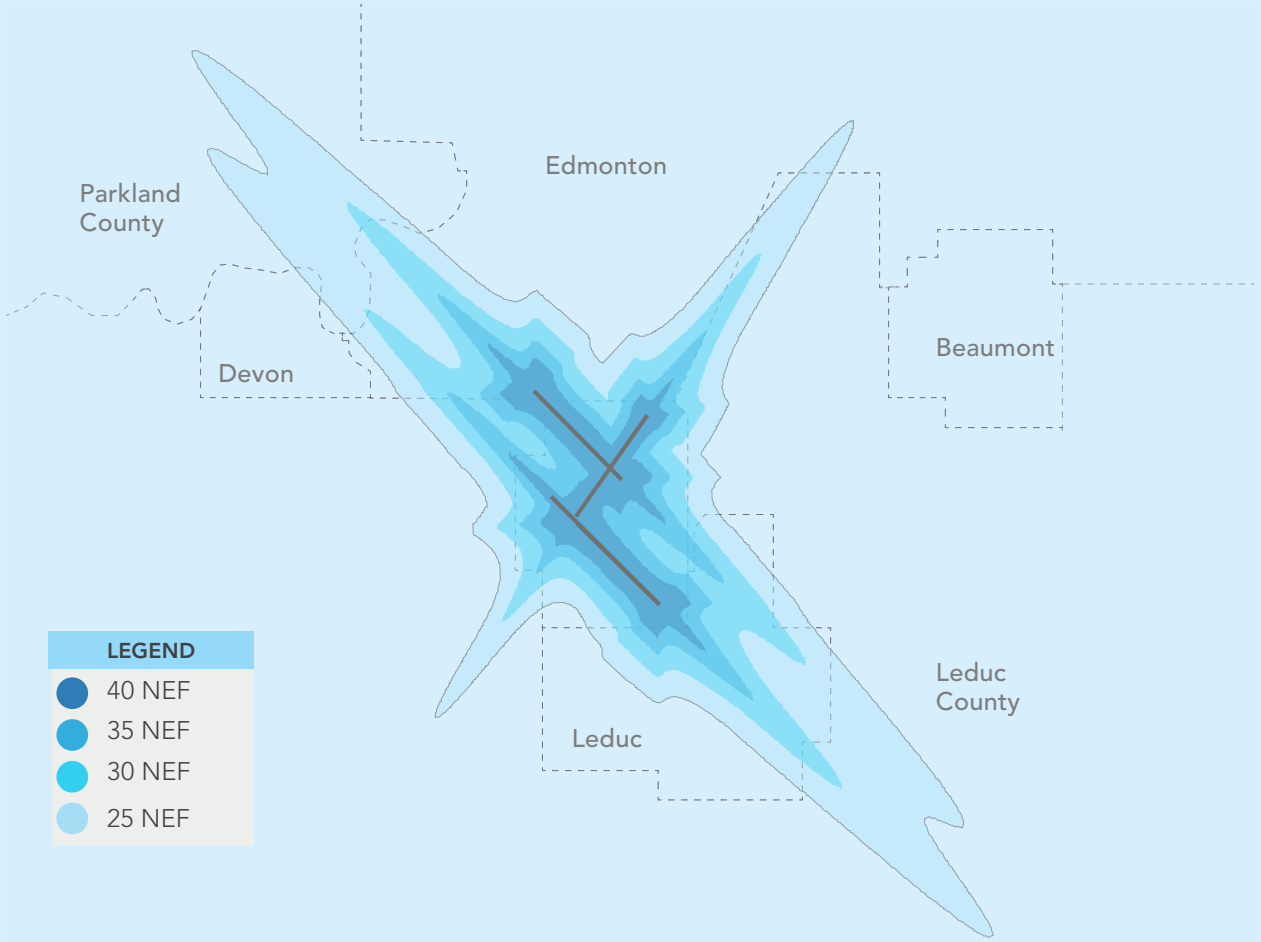
YEG is more than an airport, it is an economic hub that accelerates sustainable development and innovation. YEG has created a community of businesses on-site that strive to make the Edmonton Metropolitan Region and Alberta a vibrant place to live, work and play. As Canada's largest airport by land area, YEG creates a unique environment for business development opportunities. In addition to on-demand, 24/7/365 access to worldwide markets, this unique and strategic location offers companies the benefit of a Foreign Trade Zone with faster, more efficient and more economical shipping.

The industries that develop and collaborate at Airport City Sustainability Campus include: aviation, sustainability and sustainable energy, industry and logistics, retail, office, hospitality and recreation and entertainment.

AIRPORT VICINITY PROTECTION AREA

Development in the vicinity of the airport is subject to the requirements of Alberta Regulation 55/2006 Edmonton International Airport Vicinity Protection Area (AVPA) Regulation. This regulation defines appropriate development uses within areas based on potential noise impacts. The impact of aircraft noise on surrounding land are captured through an instrument called Noise Exposure Forecasts (NEF). These contours are prepared using a computer model developed and used by Transport Canada. Edmonton Airports worked collaboratively with neighbouring communities to update these contours (Figure 13). The new NEF contours were approved in 2022 and consider airport growth and operations beyond 2048 (including future Runway 12-30 extension and future third runway). The AVPA regulation creates a buffer zone around the airport facility that minimizes the impacts of aircraft noise on its neighbors. YEG has defined an Airport Vicinity Protection Area based on the 30 NEF line of the composite contour. Transport Canada's regulation requires that no residential development be permitted inside the 30 NEF contour line. The objective of the AVPA is to provide a static and predictable long-term protection for the benefit of airport operations and community development.

| FIGURE 13 - YEG NOISE EXPOSURE FORECASTS 2022



AIRPORT ZONING REGULATIONS

The airport and the surrounding communities are subject to airport zoning that are included in federal regulation C.R.C., c. 81 Edmonton International Airport Zoning Regulations. The Federal Government is responsible for enacting federal Airport Zoning Regulations that establish height restrictions and buffer zones both on and off airport property. These regulations provide protection and clearance for aircraft flight paths, navigational and telecommunication equipment and air traffic control visibility. Transport Canada, in cooperation with Edmonton Airports, developed Airport Zoning Regulations for lands in the vicinity of the airport based on the three-runway layout under consideration. These regulations allow Edmonton Airports to work with the Province of Alberta and the surrounding county, city and township governments to ensure protection of the airport zoning surfaces for the planned three runway operations.

LAND USE IN THE VICINITY OF AN AIRPORT

In addition to these regulations, guidelines for land use in the vicinity of airports are published by Transport Canada (TP 1247E). These guidelines are only enforceable through co-operative planning between airport authorities and surrounding communities. The Transport Canada document TP 1234E "Land-Use in the Vicinity of Airport" discusses land use planning guidelines for land surrounding airports to taking into account the impact of aircraft noise. These guidelines provide a basis for ensuring compatibility between airport operations and the surrounding area land use.

YEG MASTER PLAN 2048

Through the consideration of land use regulations, Edmonton Airports identified the major infrastructure projects for the YEG Master Plan 2048. These projects aim to improve long-term operational efficiency, support the passenger experience, drive regional prosperity and protect sustainable aviation for future generations.

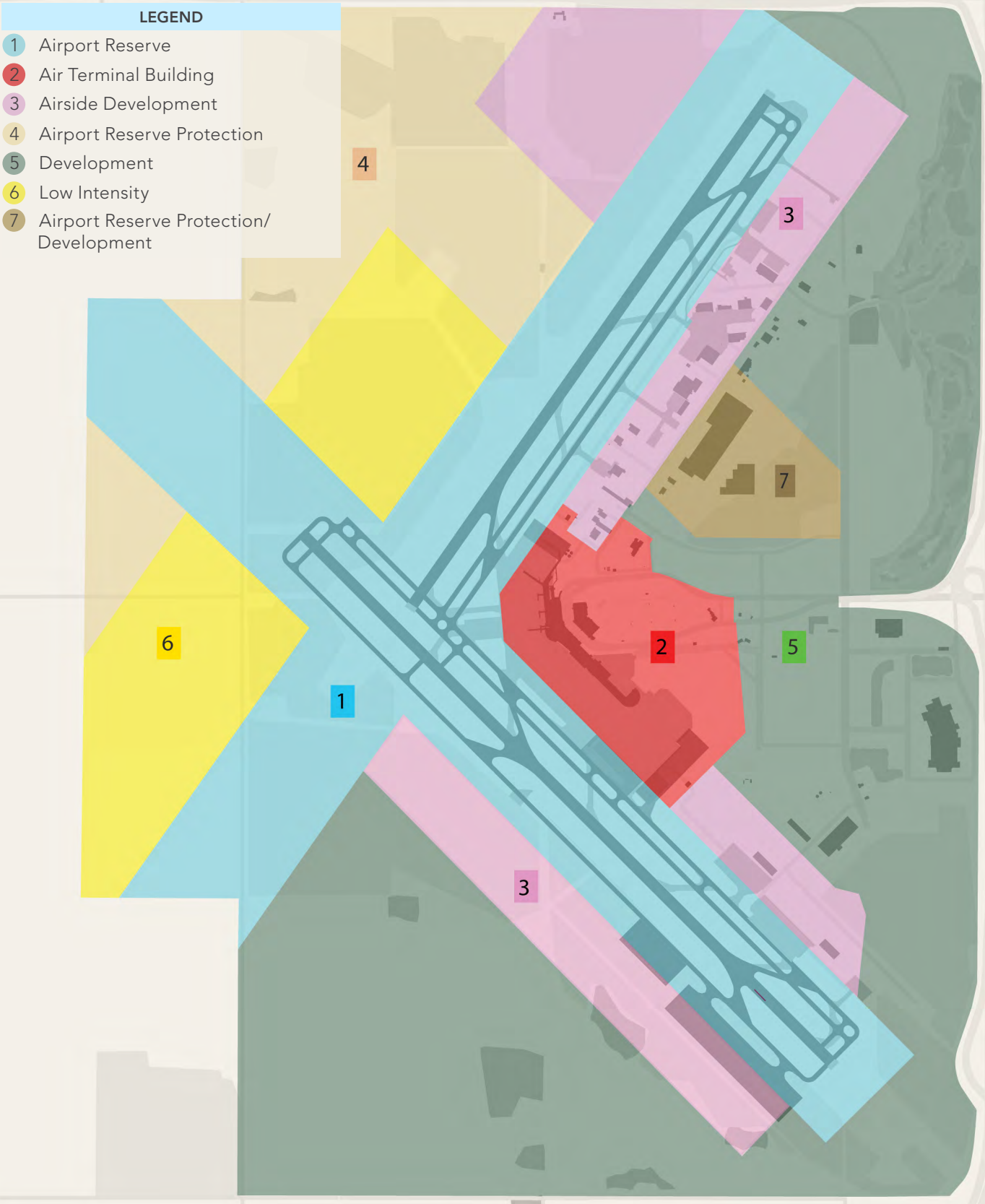
The potential developments are:

- North and South Terminal expansion
- Parallel taxiways for both runways
- A parallel taxiway to the southwest of Runway 12-30
- Expansion of de-icing areas DF2 and DF3
- Airside Operations Facility (AOF) expansion
- Expansion of South Cargo Development
- Development of the International Cargo Hub
- Development of the Airport City Solar Farm
- Expansion of commercial real estate
- Expansion of General Aviation facilities
- 65 Avenue Interchange (interim)
- Expansion of Airport Perimeter Road
- Parking expansion
- County fire hall
- Fuel farm expansion
- Parkade repurposing
- Curbside rehabilitation

LAND USE PLAN

The YEG Land Use Plan is a guide for land-use control (Figure 14). The descriptions are the general nature of potential uses and are not exhaustive. All the YEG Master Plan 2048 developments consider approved land use areas.

| FIGURE 14 - YEG MASTER PLAN 2048 LAND USE PLANNING



YEG EDMONTON INTERNATIONAL AIRPORT