Airport Development Plan Summary

Bringing 2020 Into Focus

December 2000

Community Character...Global Reach.
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Winnipeg Airports Authority Inc.

Winnipeg Airports Authority Inc. (WAA) is the community-based, not-for-profit corporation that operates Winnipeg International Airport under a long-term lease with Transport Canada. WAA has been responsible for the management, operation and maintenance of the airport since assuming control on January 1, 1997. As a not-for-profit corporation, WAA reinvests all operating profits into airport development.

**Our Mission:** to provide excellent, commercially viable services and facilities in partnership with the community.

**Our Vision:** to be recognized as safe, innovative and progressive; financially strong; a leader in pursuit of globally emerging opportunities; and a source of pride to all. Building on the strengths of our invaluable community and employee resources, WAA is dedicated to quality and customer service.

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**Strategic Directions**

- Deliver state-of-the-art facilities which showcase universal design principles
- Develop YWG as 24 hour intermodal transportation gateway and hub
- Enhance customer service and value
- Utilize the airport to promote tourism and overall economic development
- Involve community resources to the maximum

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**Winnipeg International Airport Profile**

Winnipeg International Airport (YWG) offers a broad range of air passenger and cargo services with a total of 25 airlines. The airport serves a catchment area of over 2 million people in Manitoba, Northwestern Ontario, Saskatchewan and Nunavut. YWG welcomes approximately 3 million passengers each year.

The city’s geographical position has allowed YWG to develop as a major distribution point and northern link to the Mid-Continent Trade Corridor. YWG has direct flights to three major US hub airports: Minneapolis-St. Paul, Chicago and Denver.

![Map of North America showing air time from major cities to Winnipeg](image)

Couriers and cargo airlines have made YWG Canada’s busiest airport for integrated cargo activity, and have invested in overnight sorting facilities. The area around YWG hosts aerospace and aircraft overhaul centres.

YWG’s three fixed-base operators provide services to corporate aircraft, and the airport is the operational base for the Canadian Air Force 17 Wing.

YWG provides over 7,000 direct and indirect airport jobs and over $220 million in employment income. With approximately $300 million generated annually in economic benefits for Manitoba, about 1% of Manitoba’s total economic activity can be attributed to activity at YWG.

YWG occupies over 1,300 ha of land on flat terrain drained by two tributaries of the Assiniboine River – Omand’s Creek and Truro Creek.
The Airport Development Plan

The Airport Development Plan provides a strategic framework for future airport development. Its preparation has involved extensive consultation with numerous stakeholders, including governments, industry, the public and related community interests.

The Airport Development Plan describes optimal development options regarding land use, facilities, and services required to ensure WAA meets its Strategic Directions and accommodates projected traffic levels to 2020.

The objectives of the Airport Development Plan are to:
- Provide a rational and comprehensive framework to guide future development at the airport;
- Identify facility requirements for airport components and corresponding needs for land;
- Recommend appropriate options and staging to match demand;
- Ensure that future development does not conflict with the safe operation of the airport;
- Reserve sufficient lands to allow for future expansion or redevelopment of operational facilities;
- Designate airport sites for specific development functions;
- Seek compatible land uses with YWG neighbours – the City of Winnipeg and Rural Municipality of Rosser; and
- Prepare an Airport Development Concept Plan and a Land Use Plan.

Winnipeg International Airport
The Airport Development Plan, which builds upon the 1984 Airport Master Plan and its 1993 Update, is sensitive to fiscal, environmental and community needs. It also incorporates the results of:

- Master Plan 2020 Phase 1 (December 1999)
- Winnipeg and Manitoba Economic Outlook (Autumn 2000)
- Air Terminal Renewal Strategy
- Business Park Development Strategy
- Development of 2005 NEF Contours
- Glycol Control Options Study
- Regional Air Carrier Marketing Study
- Parking Lot and Road Analysis.

The Airport Development Plan is a planning document only. While it represents the current vision of WAA for future airport development, changes in economic conditions, forecast demand, regulatory or policy decisions or other factors may influence the scope, design and phasing of airport facilities and services contemplated in the Plan. Future projects will be subject to operational and commercial demand, and will need to satisfy prevailing economic and environmental criteria.

Terminal and Cargo Complex

Public Consultation

Consultation was an integral part of the planning process. Workshops, presentations and consultation involved numerous stakeholders from governments, industry, the public, and related community interests. An Airport Development Studies Task Force, comprising government and industry stakeholders, guided Plan development. WAA’s standing committees, the Community Consultative Committee and the Airport Advisory Committee on Environment, provided regular input. Upon completion of the Master Plan 2020 Phase 1, seven sessions were held in community centres in neighbourhoods near the airport. A public consultation session on November 6, 2000 focused on the Draft Airport Development Plan.
Planning Themes

WAA’s Strategic Plan for development of the prairie gateway and hub provides themes to frame the planning approach:

- **Provide a State-of-the-Art Terminal Building** – The terminal welcomes the world to Winnipeg and Manitoba. The overall terminal concept for a state-of-the-art facility would respond flexibly to the needs of airlines and airport users, integrate community image, incorporate universal design principles and adopt proven technologies.

- **Enhance Focus on Regional Air Services** – YWG's geographic location creates a natural gateway to the Prairies, Northern Manitoba, Northwestern Ontario, and Nunavut. The current terminal does not meet regional airline needs. Improved facilities for regional operations could attract regional airlines into the terminal, yielding air service synergies for YWG’s catchment area, increased operational efficiencies for airlines, and higher levels of service for passengers.

- **Develop the U.S. Services Sector** – YWG is currently one of seven Canadian airports with U.S. Preclearance, permitting departing passengers to arrive in the U.S. as domestic passengers. This offers time advantages and ease-of-travel for passengers, particularly for those making onward connections at U.S. airports.

- **Promote the 24-hour Intermodal Cargo Gateway** – YWG’s relatively uncongested air space, unrestricted 24-hour operations, and land availability provide potential to grow multi-modal cargo activity and develop Winnipeg as a major trans-shipment centre, with links to domestic, U.S. and international routes, such as the Mid-Continent Trade Corridor.

- **Optimize Commercial Land Revenues** – YWG's large land base is a valuable asset. Development planning should look for opportunities to simultaneously optimize land-derived revenues and create synergies with core airport functions, to build on the Airport Business Parks branding, and to collaborate with the community.

- **Promote Environmental Stewardship** – As an integral part of the community, WAA encourages environmental stewardship and development that is sustainable for current and future generations. This includes development choices that enhance the quality of the environment while avoiding or mitigating negative impacts.
The Airport and the Community

YWG is in a central and accessible location. This is convenient for travel, but it also means that airport operations have some impact on the commercial, industrial and residential areas in close proximity. The airport’s interface with neighbours and surrounding jurisdictions is a critical part of successful airport development and operation. There are a number of methods for the public to provide input to WAA regarding airport programs, strategies and procedures.

The Community Consultative Committee allows representatives from the community to exchange information on airport planning and plans, operations and municipal concerns.

The Airport Advisory Committee on the Environment addresses environmental issues and guides WAA’s comprehensive Noise Management Program. These issues are presented in greater detail in the section titled The Airport and the Environment.

WAA is a member of the Airport Vicinity Development Advisory Committee (with transportation, economic development and government representatives) which advises Winnipeg City Council’s Executive Policy Committee on airport area development.

The City of Winnipeg, Rural Municipality of Rosser and Province of Manitoba actively support YWG growth, and involve WAA in community planning.

WAA’s Airport Development Plan places special emphasis on compatibility with existing plans within the City of Winnipeg by integrating with the City’s primary long-term community planning document, Plan Winnipeg. Through Plan Winnipeg, the City of Winnipeg recognizes the airport’s regional economic significance through several Policy Statements encouraging partnerships with WAA to generate strategic economic development.

The City also supports the 24-hour status of airport operations through the Airport Vicinity Development Plan, which creates the Airport Vicinity Protection Area (AVPA). The AVPA regulates land use and building standards in neighbourhoods affected by airport noise.

City and WAA transportation plans are coordinated. Both are concerned with improving connections, design and signage along a designated route between the airport and downtown. In addition, Plan Winnipeg states that “The City shall provide an integrated transportation network that supports its commitment to sustainability, compact urban form, and the reduction of greenhouse gas emissions by … improving the truck route between the airport and the Downtown, the Perimeter, and intermodal access points”.

Winnipeg Airports Authority Inc.
Airport Development Plan Summary
YWG’s runway system and surrounding airspace are protected by Federal Aeronautical Zoning Regulations, which prohibit the erection of any structure that may compromise unobstructed safe aircraft operations. This includes regulated proximity to electronic devices and height restrictions.

Plan Recommendations:
• Work with the City of Winnipeg to update and re-validate the Airport Vicinity Development Plan when occasioned by changes in aircraft noise certification limits or long-term parallel runway development, in accordance with then-current Transport Canada airport vicinity land use guidelines.
• Modify Airport Registered Zoning when Runway 07-25 is decommissioned, or when development is foreseen in the northern area of Business Park West.

Community Connection

Aviation Statistics, Forecasts and Projections

Airport planning relies on forecasts of passenger, aircraft and air cargo volumes. Forecasts of annual and hourly activity help to assess operational performance, establish future facility requirements, and identify relative timing for implementation of capital projects. All airport components depend on forecasts, from the runways and the terminal building to parking and ground transportation.

The level of activity at airports, and air transportation in general, is closely related to the well being of the global, national and regional economy. Airline restructuring and aviation regulatory changes also affect the industry. As these factors change, so do forecasts of aviation activity.
Passenger Activity Forecasts consider historical activity trends, major socio-economic factors, projected regional growth, industry consolidation and new services that may develop.

The 1990s, for example, saw the entry of low-cost carriers to the Winnipeg market and the restructuring of the industry through the consolidation of Air Canada and Canadian Airlines. Both of these factors changed the structure of Canadian domestic passenger activity at YWG.

Passenger forecasts to 2020 indicate:
- YWG’s 2.9 million passengers (1999) will grow about 2.5% per year to 4.9 million in 2020
- The majority of passengers (80%) will travel within Canada
- U.S. (3.5% growth) and International (5.2%) passenger markets will grow faster than the Canadian domestic market (2.2%).

Planning Peak Hour Passengers (PPHP) are based on the peak hour of an average day of the peak month, but not the absolute peak day. This level falls between average hourly activity and the absolute peak during a year. Peak hour activity growth is expected to be slower than overall growth due to an anticipated spreading of peak traffic:
- PPHP activity is expected to increase about 62% from 1,050 currently to 1,700 by 2020.
Aircraft Movement Forecasts guide planning of facility requirements for the mix of aircraft operations at YWG. Aircraft movement forecasts to 2020 indicate:

- YWG’s 157,000 take-offs and landings in 2000 will grow at a rate of approximately 1.8% per year to 227,000 in 2020
- Commercial flights will continue to account for the majority of aircraft movements (76%)
- The outlook for local movements assumes St. Andrews Airport will remain the airport of choice for training and recreational flying.

Planning Peak Hour Aircraft Movements (PPHM) helps to assess the peak in demand for airfield facilities. PPHM is calculated as the average demand of the ten busiest hours for each of the three busiest months. PPHM under Instrument Flight Rules (IFR) has the greatest impact on airfield capacity.

- PPHM demand will increase from 43 movements in 1999 to 60 by 2020, while IFR PPHM will increase from 34 movements to 50 over the planning period.
Air Cargo Forecasts currently lack supporting air cargo data. Available air cargo statistics are incomplete and inconsistent, resulting in order of magnitude estimates only.

Based on airline data supplied to WAA, the estimated total traffic in 1996 was about 101,500 tonnes.
- YWG is projected to handle 164,000 tonnes per year by 2020
- In line with industry trends, express cargo activity is expected to increase faster than general air cargo.

Annual Air Cargo Forecasts

[Graph showing annual air cargo forecasts with different data sources and projections.]
Airport Components

Key findings and recommendations for each airport component were generated in the context of Strategic Objectives and short (5-year), medium (10-year) and long term (20-year) demand forecasts. The key airport components are:

- Airfield
- Passenger Terminal
- Air Cargo
- Ground Access and Parking
- Commercial Business Parks

Airport Layout, 2000
**Airfield**

The airfield incorporates the airport components necessary to support aircraft operations, including the pavement (runways, aprons, and taxiways), navigation and approach aids, and reserve land for future airfield expansion. These components are necessary for aircraft to land, take-off and access airport buildings. Airfield capacity is estimated in consideration of weather conditions, type of traffic using the airport, peak period demands and potential for expansion to meet future demand.

**Guiding Principles:**
- Ensure safety and security
- Provide for commercial operations 24 hours a day in 97% of all weather conditions
- Improve environmental conditions and minimize environmental impacts of operations
- Match capacity to demand
- Preserve land to build new capacity when justified by demand
- Optimize airfield operating efficiency and costs

**Type of Aircraft Using YWG (1999)**

Jet: 40%
Turboprop: 32%
Piston: 26%
Helicopter: 2%

Heavy (Boeing 767): 1%
Medium (Airbus 320): 59%
Light (Cessna 402): 40%
Runway use is determined primarily by wind direction and WAA’s Noise Management Program. Runways 18 and 36 are used most frequently.

**Runway Usage**

![Runway Usage Diagram]

*Airport usability* is a measure of the availability of runways during Instrument Meteorological Conditions. Two key factors affect usability:

- The alignment of runways with respect to prevailing wind conditions; and
- The average amount of time that the ceiling and/or visibility values are below those required for aircraft operations.

The usability factor for YWG, expressed as a percentage of annual time the airport is available under specified conditions, is 99.4%. This is considered an appropriately high value for an international airport.

Key Findings:

- There is sufficient airside capacity overall, but by the end of the planning period forecast demand will exceed 90% of total capacity, which may result in congestion and delays.
- There is opportunity to overcome operating inefficiencies, reduce fuel burn and emissions, and to increase capacity over the medium term.
Plan Recommendations:

- Improve taxiway configuration to increase system capacity by 5-7%.
- Develop a new apron to complement terminal development.
- Expand the terminal apron for additional overnight aircraft parking and for deicing to better facilitate glycol recovery and disposal.
- Convert Runway 07-25 for taxiway use in the medium term.
- Provide precision approach capabilities on Runway 18 when cost-effective to provide via existing or new technology.
- Reserve land for long-term parallel runway.

Capacity Improvement Program
Passenger Terminal

The passenger terminal component includes the Air Terminal Building (ATB) and associated apron, ground transportation, car parking, office and hotel facilities.

When it was constructed in 1963, the ATB originally served just over half a million passengers. A mid-1980s expansion added 40% more terminal space. Today, the ATB accommodates nearly six times the original passenger activity.

Aircraft gate projections show that YWG’s 9 gates will need to increase to 12 gates by 2005, 14 gates by 2012, and to 15 gates by 2020. If regional airline services are fully integrated into the ATB, there is a projected need for an additional 16 aircraft ground-boarding positions, up from the 8 in place. These totals include 4 exclusive gates for U.S. and international air service based on forecast traffic and WAA’s strategic objectives for development of these services.

Key Findings:
- In 2000, the terminal did not provide sufficient space for passenger services in many areas.
- Deficiencies exist in the U.S. departures area, domestic check-in queuing, domestic baggage claim, and passenger departure lounges.
- The ATB will be entirely inadequate by 2012.
- A 60-70% expansion of the current terminal is forecast to be required by 2020.
- Architectural and engineering audits revealed the existing ATB has significant architectural, structural, electrical and mechanical defects which affect the level of service capacity, safety and amenity to the point where it is uneconomical to repair or refurbish.

Plan Recommendations:
- Construct a new 2-level terminal, including an elevated roadway, to gradually replace the existing ATB.
- Integrate the guiding principles and specific planning objectives into every stage of terminal design and development.
- Integrate stakeholder input to further refine project requirements and staging opportunities.
- Protect air terminal building reserve lands.

Guiding Principles:
- Provide adequate facilities to meet forecast demand
- Maximize economic benefits
- Optimize efficiency and flexibility of operations
- Employ Universal Design principles
- Achieve environmentally friendly operation
- Reflect community image and cultural richness
Terminal Renewal

The preferred terminal renewal concept evolved from a combination of elements contained in 5 options. The preferred concept would provide:

- A true 2-level terminal, including a new elevated roadway with direct weather protected access from an expanded car park;
- Construction staged in increments, or built in one continuous stage, meeting the 12-year design program area with 14 bridge positions and 14 ground positions;
- Capacity for up to 17 jet gates, meeting passenger demand beyond 2020;
- Dual taxiway or equivalent aircraft maneuvering facility;
- Re-use of existing ATB access and utility infrastructure;
- Location centered between the existing Runway 13-31 and the future parallel runway;
- Service levels meeting industry and community standards;
- Reflection of community images, motifs and cultural richness in the design theme; and
- Ability to incorporate a single-level ‘regional service area’ to accommodate airlines not currently operating in the ATB.

Preferred Terminal Renewal Concept

Conceptual Terminal Expansion Stages:
- Stage 1: new domestic facility, interim expansion of U.S inspection and departures areas, new apron space, total of 12 bridges
- Stage 2: expansion of new domestic facility, new U.S. & international facilities, new apron space, demolition of existing ATB, total of 14 bridges
- Stage 3A: completion of domestic facility, replacement of temporary bridges for 14 permanent bridges
- Stage 3B: expansion of domestic terminal capacity, new integrated regional terminal, total of 17 bridges
Air Cargo

YWG serves as a hub for courier activities and is home to a diverse cargo community. Activities are geographically clustered by type of operation, with general freight and courier/integrator facilities in two proximate, yet separate, areas.

General freight is handled in dedicated cargo terminals located southeast of the Airport Terminal Building. International Aviation Terminals operates two multi-tenant facilities, serving airlines, freight forwarders and customs brokers. Air Canada Cargo also operates a facility in this area serving Air Canada and First Air.

Regional carriers provide air cargo services to northern and remote communities from their own passenger facilities and aprons. Perimeter Airlines operates a cargo facility south of their passenger terminal on Ferry Road.

Three major express courier carriers operate Winnipeg hubs. Purolator Courier, YWG’s largest cargo land user, operates an airside handling facility and dedicated apron near Apron V, and a large sorting facility on Sargent Avenue. Federal Express also operates a sorting and handling facility and dedicated apron in the same area. United Parcel Service leases apron space and facility space and has an off-airport sorting facility.

Key Findings:

- Sufficient land exists in the current cargo development area to meet demand to the end of the planning period.
- Cargo throughput productivity per square metre at YWG is low in comparison to international cargo gateway airports.

Guiding Principles:

- Build upon the airport’s current land use pattern
- Provide economies of scale through best use of existing land areas and infrastructure
- Maximize the use of existing cargo infrastructure
- Interface related commercial land uses with those in adjacent neighbourhoods
- Minimize the impact of truck traffic on adjacent neighbourhoods
Plan Recommendations:
• Concentrate future general cargo and express courier development in Airport Business Park East.
• Redevelop Western Canada Aviation Museum infrastructure over the course of the planning period.
• Accommodate large-scale and heavy-lift operations, including distribution and logistics operations, in Airport Business Park West.
• Address short-term lack of cargo apron space in development planning for Airport Business Park East.
• Consider cargo apron space in terminal renewal planning and longer-term cargo apron redevelopment.
• Incorporate aircraft de-icing requirements and associated environmental considerations in the planning of apron redevelopment or expansion.

Air Cargo Apron Expansion Concepts
Ground Access and Parking

YWG’s role as a major gateway for passenger and goods movement depends upon an efficient ground transportation system. Three main user groups exist: passengers, employees, and commercial vehicles.

Located 7 km from downtown Winnipeg, access to YWG is provided via many routes, including Wellington Avenue, Portage Avenue (via Route 90), Sargent Avenue, and Notre Dame Avenue. None of these routes provides a direct link between downtown and the airport.

YWG has over 2,000 parking spaces in the Air Terminal Building area to serve public, hotel, airport tenant and staff needs. Nearly 60% of YWG’s parking spaces are dedicated for public parking.

Winnipeg Transit (Route 15, to and from downtown) and Greyhound Bus (to and from Brandon, MB) serve the Terminal.

Residential Distribution of Airport Employees

Guiding Principles:
- Provide adequate circulation and parking infrastructure
- Create efficient linkages between the airport and municipal and regional roads
- Maximize complementary community & airport actions
- Encourage accessibility & promote emission reductions, transit & rideshare programs
- Continue relationships with municipal planning processes
- Promote neighbourhood-compatible transportation developments
- Promote high standards of streetscape design
**Parking Stall Inventory (2000)**

- **Public Parking (Covered)**: 98 Stalls (5%)
- **Public Parking (Uncovered)**: 1,080 Stalls (53%)
- **Tenant & Staff**: 568 Stalls (28%)
- **Hotel**: 30 Stalls (1%)
- **Other**: 257 Stalls (13%)

Total: 2,033 Stalls

**Distribution of Commercial Vehicle Trips via Ground Access Routes**

- Winnipeg: 67%
- Rest of Canada: 14%
- Rest of Manitoba: 2%
- Rest of North America: 17%

**Distribution of Passenger Vehicle Modes**

- **Curb Users**: 47%
- Parking Users: 36%
- Other Modes: 53%
- Other/Not Stated: 7%

- **Curb Drop-off (Private Vehicle)**: 25%
- Limo: 4%
- Hotel Shuttle: 4%
- Taxi: 16%
- Curb Users (Private Vehicle): 25%
- 2%
- 4%
- 16%

- **Rental Car**: 8%
- **Other**: 53%

**Other**

- **Public Parking (Covered)**
- **Public Parking (Uncovered)**
- **Tenant & Staff**
- **Hotel**
- **Other**
Key Findings:
- Nearly half of airport passenger trips are destined for downtown Winnipeg, St. James and Fort Garry.
- There is an immediate shortage of 240 parking stalls.
- Forecast stall requirements indicate between 1,650 and 2,200 more stalls will be required to meet planning period demand.

Plan Recommendations:
- Maximize the use of Wellington for Terminal inbound/outbound traffic.
- Maintain rights-of-way to upgrade or construct a Saskatchewan - Ferry Link, Ferry Road South of Sargent, Airport Expressway, Silver Avenue Corridor and Moray Street.
- Continue to work with municipal and provincial authorities for improved truck routes to downtown Winnipeg and improved streetscaping on routes between downtown Winnipeg and YWG.
- Construct parking facilities in advance of demand for 700-900 additional stalls toward 2005, if financially viable.
- Phase parking facility construction with Terminal renewal to provide a high level of service to customers, particularly for those areas within 250 metres of the Terminal Building.
- Employ pricing strategies to manage demand and encourage transit use.
- Encourage Winnipeg Transit to serve the 3 million commuter trips airport employees make each year.

Recommended Ground Access Improvements
WAA has designated four business parks for commercial land development – Airport Business Parks East, South, West and North. Development of these parks contributes revenues that assist WAA in providing excellent services.

Airport Business Park East is home to cargo and courier operations, regional carriers, the Western Canada Aviation Museum, and aerospace facilities. Closer to the Terminal, the Sheraton Four Points Hotel and YWG’s Corporate Office Tower offer passenger and air carrier support.

Airport Business Park South is YWG’s Business Aviation area, along Apron II, accessed via Air Force Way. The airport’s fixed-base operators, executive airlines and corporate hangars are in this area, along with the NAV CANADA Flight Service Station.

Airport Business Park West is the largest area, currently accommodating Air Canada’s maintenance and overhaul base, the Kleysen air cargo facility, regional carrier Skyward Aviation and an RCMP facility. Airport and community plans have designated this area for future intermodal and industrial development. WAA is a partner in the Winnipeg Airport Lands Corporation, a planning and marketing company preparing lands west of the airport for development.

Airport Business Park North is designated for a future intermodal centre. The area is currently used for agricultural purposes.

Key Findings:
• The Airport Business Parks offer attractive areas for transportation-related and general commercial development, offering excellent transportation linkages, high quality serviced land, and a large inventory of serviceable land.

Plan Recommendations:
• Target complementary development in the Airport Business Parks:
  • Airport Business Park East: courier, general cargo handling, aerospace industry, light industrial/warehousing, business facilities, and hotel, office and retail along Wellington Avenue.
  • Airport Business Park South: Business Aviation.
  • Airport Business Park West: Export Distribution Centre, intermodal cargo, e-commerce distribution, aircraft heavy maintenance and light industrial warehousing dependent upon air cargo services.
• Airport Business Park North: for future intermodal cargo.
• Prepare comprehensive Area Development Plans for each of the four designated Airport Business Parks, in relation to projected demand.
The Airport and the Environment

The airport site incorporates built-up areas (including the Terminal, paved surfaces and commercially developed land), fields and wooded areas, and two creeks that receive most of the airport’s surface water drainage.

As an integral part of the community, WAA is committed to the sustainable management of the environment and to avoiding or mitigating the impacts airport operations may have on neighbouring communities. As part of this commitment, WAA has adopted an Environmental Policy to meet the needs of the present, without compromising the ability of future generations to meet their own needs.

WAA encourages environmental stewardship and sustainable development.

There are a number of issues relevant to environmentally-sustainable development:

• Impacted Sites: Thirty individual sites have been identified that were contaminated to some extent by pre-transfer land use activities.

• Water Quality: Findings since regular sampling was initiated in 1997 indicate that potential water quality contaminants, such as metals and hydrocarbons, are not impacting either Truro Creek or Omand’s Creek. WAA has taken measures to contain chemicals from de-icing fluids, and has determined that glycols are not having a long-term impact on ground water quality.

• Air Emissions: Aircraft, heavy equipment, fleet and passenger vehicles and on-site power-production activities can impact ambient air quality and contribute greenhouse gases to the atmosphere.

• Wildlife: Grassed areas, wooded areas, agricultural fields and water bodies at YWG can attract wildlife, which can pose a risk of aircraft strikes.

• Wooded Areas: Airport woodlands are considered sensitive environmental areas because they are part of a larger avian habitat to the west of the airport, and at the Living Prairie Museum. Development planning will incorporate sufficient woodland strips to continue the habitat role.
Creeks: Both Omand’s and Truro Creeks are designated as environmentally sensitive areas and are subject to specific development guidelines. WAA will work to provide public access to the airport portion of Omand’s Creek.

Environmentally sensitive planning employs planning tools to minimize potential negative environmental impacts that might otherwise arise from land use, development or construction activities. These tools include:

- Environmental Impact Assessment and Development Review
- Compatible Community Land Use Planning
- Surface Water Quality Protection

While the airport provides considerable economic benefit to the region, aircraft activities also lead to concerns about noise in surrounding neighborhoods. Updated Noise Contours were modelled to measure WAA noise management initiatives. The 2005 noise contours reflect forecast growth in aircraft activity and demonstrate little change in noise impacts over the next five years, as a result of improved aircraft technologies.

WAA’s *Noise Management Program*, promotes:

- Modification of aircraft operations regulations
- Monitoring flight tracks for regulatory compliance
- Providing a 24-hour hotline (987-9403) for the public to report concerns
- Noise compatible community land use planning

Additionally, WAA adopts ‘Quiet Mode’ operations between 11:00 p.m. and 7:00 a.m. During these hours, most arrivals and departures occur to and from the north, primarily over farmland and industrial parks.

### Distribution of Aircraft Noise Impacts – North and South of Airport (1999)

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<th>Departures</th>
<th>Arrivals</th>
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<tr>
<td><strong>Day</strong></td>
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</tr>
<tr>
<td>North</td>
<td>64%</td>
<td>47%</td>
</tr>
<tr>
<td>South</td>
<td>36%</td>
<td>53%</td>
</tr>
<tr>
<td><strong>Night</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North</td>
<td>79%</td>
<td>73%</td>
</tr>
<tr>
<td>South</td>
<td>21%</td>
<td>27%</td>
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Plan Recommendations:
- Continue monitoring airport and aircraft activities for compliance with the *Noise Management Program* and pursue improvements to the program.
- Design land use changes, development and road improvements to minimize noise impacts on adjacent neighbourhoods.
- Plan development in the vicinity of the creeks to protect stream banks and water quality.
- Integrate drainage improvements into development plans to ensure adequate drainage capacity and avoid negative upstream and downstream impacts on Truro and Omand’s Creeks.
- Incorporate water quality protection initiatives in the design of apron space where de-icing will occur.
- Address air emissions considerations in the development planning process to meet or exceed applicable national and provincial air quality and emissions objectives.
- Design landscape and building features to positively modify the microclimate.
- Incorporate strategies to improve energy efficiencies and reduce greenhouse gas emissions in the design of new facilities or renovation of existing buildings.

**1999 and 2005 Noise Exposure Forecast Contours**
Airport Land Use Plan

The 2020 Land Use Plan is displayed as a centerfold of this booklet.

The Land Use Plan brings together all planning components to:
• protect existing operations areas;
• provide for airfield expansion requirements;
• designate sufficient land to permit expansion of passenger facilities and related services;
• accommodate growth in YWG’s role as a cargo hub and intermodal gateway;
• facilitate commercial development strategies through flexible commercial land use designations; and
• protect or enhance existing environmental conditions on the airport property and for the community at large.

Next Steps

The Airport Development Plan is a major step in the process of developing Winnipeg International Airport to serve the community. Major proposed projects will be examined in more detail, through project definition and environmental evaluation, before investment decisions are made.

The Airport Development Plan will be updated regularly, at least every ten years, ensuring the Plan is a living document reflecting vision and recommendations shaped by those with an interest in Winnipeg International Airport.

Over the next 20 years, Winnipeg International Airport will face change due to increased demands for, and opportunities driven by, air transport. Looking into the future, by 2020 YWG will serve 5 million passengers and 230,000 aircraft operations annually. Passengers will experience state-of-the-art facilities offering optimum customer service and value. The airport will continue to bolster local economic development in tourism, in manufacturing and in distribution services. As a 24-hour gateway and hub, the airport will serve as a model of excellence for transportation facilities around the world.