



AIRPORT MASTER PLAN UPDATE

PRINCE GEORGE AIRPORT Prince George, BC

Project No. 131 23570
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EXECUTIVE SUMMARY

This Airport Master Plan Update is intended to be a blueprint for future development of the Prince George Airport (YXS), which is managed and operated by the Prince George Airport Authority (PGAA). This plan is a description of the most appropriate development options regarding land use, facilities, and services required to ensure YXS meets its strategic objectives and accommodates expected levels of traffic over the next 20 years. It builds upon the previous Airport Master Plan prepared in 2007 and is guided by the progressive efforts of the PGAA since taking over the operation of the facility in 2003. The Airport Master Plan Update also serves to address the requirements of the Transport Canada Rent Agreement which requires periodic reviews and updates to the Airport Master Plan at approximately five (5) year intervals.

The Airport Master Plan involves a planning process that looks approximately 20 years into the future and is intended to capture the period 2013 to 2030. It has to provide forward thinking and progressive initiatives, and be sensitive to current fiscal, environmental and community needs.

The following summarizes the key recommendations made in this study:

Airfield Recommendations:

1. It is recommended that any existing airfield certification deviations be investigated and corrected to ensure full compliance with Transport Canada certification standards. Some minor deviations remain from Transport Canada and are identified in the Airport Operations Manual.
2. It is recommended that glycol management plans be reviewed regularly to ensure they comply with the latest best practices and regulations.
3. It is recommended that Runway 01-19 be closed as a runway over the planning period. The runway would remain in place and operate as a taxiway until the full parallel taxiway system is developed for Runway 15-33.
4. It is recommended the Runway 15-33 be protected for Code 4E, precision, CAT II operations within the planning period.
5. It is recommended that Runway 06-24 be protected as a 1,714m, Code 3C, instrument, non-precision standards to permit either land based electronic aid approaches or GPS approaches to be developed to non-precision minima.
6. It is recommended that NAV Canada be requested to review the requirements for approach aids and the need to augment the non-precision approaches for Runway 06-24 and Runway 33 as technologies change over the planning period.
7. It is recommended that protection for a future parallel Code E taxiway system be provided for Runway 15-33. The taxiway system would be phased and include the north segment initially followed by the south and then the high-speed exits as demand dictates. The high speed exits on Runway 15-33 would be triggered by the need to increase capacity, which is not projected within the planning period.
8. It is recommended that protection for a parallel Code D taxiway system be provided for Runway 06-24. This taxiway system would be phased also as demands trigger the need. The southern parallel taxiway would be Code D from Runway 15-33 to the mid-point of Runway 06-24. From this point it would be constructed to Code C requirements. On the north side of Runway 06-24, the taxiway should be planned to Code E offsets.

9. It is recommended that Boeing Road be considered for closure in the future due to its proximity off the threshold of Runway 15 and its future impact on navigational aids in this area.
10. It is recommended that an additional RVR be considered for Runway 15-33.

Air Terminal Building (ATB):

1. It is recommended the sterile holdroom be expanded to accommodate peak hour demand and provide for improved passenger amenities such as a food and beverage concession and flexible seating arrangements.
2. It is recommended the baggage handling system be improved to accommodate the conveyance of oversized baggage.

Air Cargo:

1. It is recommended the PGAA give consideration to the future development of a cross dock air cargo/courier facility to be located in proximity to Apron V.
2. It is recommended that the PGAA begin investigating the requirements both administratively and physically to establish a Foreign Trade Zone (FTZ) within the Airport cargo development area.

Landside Transportation:

1. It is recommended PGAA monitor the service levels provided by the existing parking facilities, and expand into the gravel overflow parking area when necessary.
2. It is recommended PGAA rehabilitate and reorganize the existing staff parking lot which services the maintenance building, fire hall and the main terminal building. This parking lot can be upgraded relatively inexpensively, with plug-ins for Airport staff.
3. It is recommended PGAA work with the City of Prince George and the Ministry of Transportation to upgrade the Airport access to both Highway 97 and Highway 16.
4. It is recommended the shoulders on the airport's entrance road be widened to enhance safety.
5. It is recommended pedestrian ramps and/or a lift device be provided from the parking lot to the terminal curb to assist those with disabilities and/or heavy baggage.

Airport Operations and Support:

1. It is recommended that provisions be made to reserve an area north of the intersection of Runway 06-24 and Runway 15-33 for a dedicated Airport Operations Centre. While the current Airport maintenance and support services can be handled by the existing facilities, there are constraints to expansion.
2. It is recommended that required Airport infrastructure improvements be undertaken. These are summarized as follows:
 - Construct a new 400mm diameter trunk watermain directly from the Airport to the new Blackburn water storage reservoir. (Connect at Gunn Road.)
 - Eliminate the onsite water storage reservoir and water booster station.

- Replace and upsize approximately 1,400 lineal metres of old, undersized cast iron watermain which presently is included within the onsite Airport water distribution system.
3. It is recommended the sanitary sewage lift station be upgraded and replace existing pumps, motors, valves and interior piping.
 4. It is recommended PGAA consider the planned upgrading and replacement of sections of the gravity sewer mains which are at minimal grades or which have reached the limits of their life cycle.

Commercial Development:

1. It is recommended that the commercial development area taxiways be capable of supporting up to Code D aircraft on the primary taxilane and Code C as a minimum on the taxilane fingers. In areas not required for aviation uses, develop landside commercial areas to accommodate a wide range of non-aviation related activities.

Site Servicing

1. The water system and sanitary sewer system are generally old and are approaching the limits of their life cycle. It is recommended that these systems be reviewed and consideration should be given to the planned replacement or rehabilitation of the existing infrastructure.

Environment:

1. It is recommended that the PGAA conduct an air quality study to establish a reasonable baseline condition in advance of the projected air traffic growth at the Airport.
2. It is recommended that PGAA continue to develop sustainable environmental solutions to landscaping and air quality in conjunction with the University of Northern British Columbia (UNBC).
3. It is recommended PGAA continue monitoring environmental conditions and implement necessary initiatives to mitigate or correct potential deficiencies.

Community-Interface:

1. It is recommended that the PGAA update the Airport Zoning Regulations (AZR) to reflect the recent Runway 15-33 extension. Furthermore, the regulations need to be enhanced with new restrictive clauses to protect against electronic interference and bird attractions, all of which are related to the safety of operations of the Airport.
2. It is recommended the PGAA develop best practices in conjunction with the operator of the Shelley Transfer Station which is located about 5.6 km northeast of the Airport. It will be important to minimize the potential risks of bird related incidents since the land fill is located within the recommended 8 km buffer area
3. It is recommended that appropriate planning measures be put in place now to protect the future of the Airport. To this end, it is recommended that new Noise Exposure forecasts be prepared.
4. It is recommended that any municipal planning documents should not be used to regulate matters of federal authority including heights and electronic zoning for example. It is recommended that

municipal planning document make it clear that these issues fall under federal authority but should be considered in planning decision.

5. It is recommended that the City and Regional District adopt Transport Canada's recommendation that no residential development be considered above the 30 NEF.
6. The regulatory authority of the new government associated with the proposed treaty lands (which are currently under negotiation) on the east side of the Airport, needs to be clearly defined. These lands are currently partially impacted by the existing AZRs. However, the regulatory impact of future changes to the AZRs and future changes in the general operating conditions of the Airport need to be considered in context of the future governance structure of these lands.

Airport Land Use Plan:

1. The proposed Airport Land Use Plan should be adopted based on Figure 6-1 and is summarized in the following table:

Land Use	Proposed Land Use Plan Area (ha)
Aviation - Restricted	138.0
Aviation - Protected	242.7
Terminal Area	2.3
Commercial Airside	100.9
Commercial Groundside	154.5
Commercial Cargo	27.3
Operations Support	14.7
No Development	81.9
Public Access and Parking	23.9
Total	786.3

Figure 6-1 Proposed Airport Land Use Plan

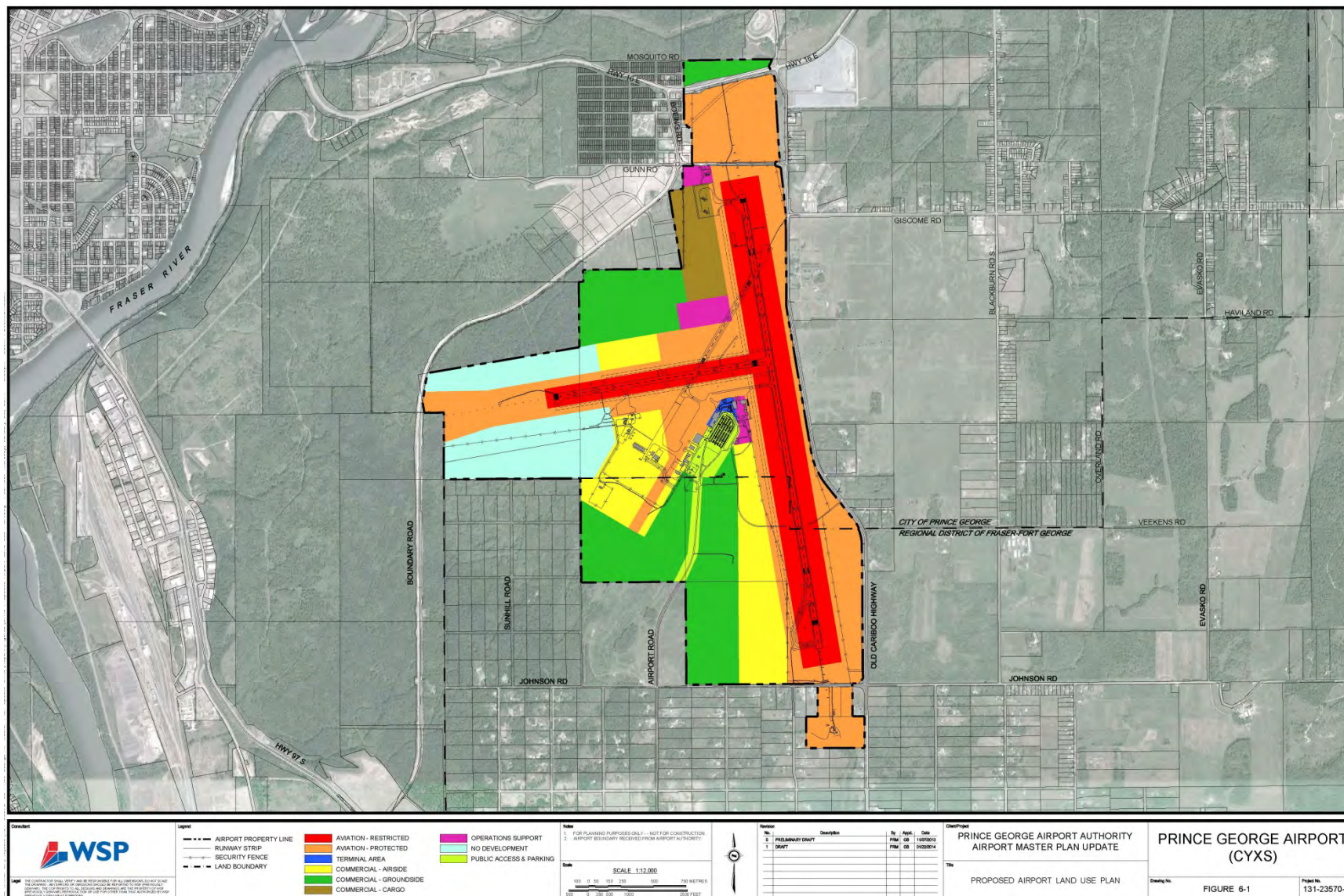


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1. INTRODUCTION

1.1 GENERAL

This Airport Master Plan Update is intended to be a blueprint for future development of the Prince George Airport (YXS), which is managed and operated by the Prince George Airport Authority (PGAA). This plan is a description of the most appropriate development options regarding land use, facilities, and services required to ensure YXS meets its strategic objectives and accommodates expected levels of traffic over the next 20 years. It builds upon the previous 2007 Airport Master Plan and is guided by the progressive efforts of the PGAA since taking over the operation of the facility in 2003. The Airport Master Plan Update also serves to address the requirements of the Transport Canada Rent Agreement which requires periodic reviews and updates to the Airport Master Plan at approximately five (5) to ten (10) year intervals.

The Airport Master Plan involves a planning process that looks approximately 20 years into the future and it is intended to capture the period 2013 to 2030. It has to provide forward thinking and progressive initiatives, and be sensitive to current fiscal, environmental and community needs.

The Airport Master Plan is not intended to define a specific order of development or specify exact timeframes for implementation. Various options have been developed as a means to understand the flexibility of development opportunities. What the Airport Master Plan is not:

- Prescribed schedule of development;
- Engineering and technical Study;
- Commitment of funding.

1.2 GOALS AND OBJECTIVES

The Prince George Airport Master Plan addresses broad future airport infrastructure needs and provides guidelines for development in the medium to long (20-year) term. These guidelines are based on the following objectives:

- Provide a rational and comprehensive framework to guide future development at the Airport;
- Identify facility requirements for airport components and corresponding needs for land;
- 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;
- Encourage compatible land uses in adjacent lands and municipalities; and
- Prepare an updated Long-term Airport Development Concept Plan and Land Use Plan.

The Prince George Airport Master Plan is not a Project Definition document. Some of the projects recommended in this document require further analysis and business case development. Where appropriate, Feasibility Studies, Impact Assessments, and Project Definition documents may be required at later stages to assist the decision-making process and project implementation.

1.3 PRINCE GEORGE AIRPORT AUTHORITY

The Prince George Airport Authority Inc. was incorporated on July 27, 2000 and commenced negotiations on March 26, 2001 with Transport Canada. On March 31st, 2003, the Prince George Airport Authority (PGAA) officially assumed operation and control of the Prince George Airport. This devolution of responsibility began with the announcement of the National Airports Policy in June 1996. The PGAA received its Letters Patent on July 27, 2000, and an Agreement to Transfer was negotiated and finally signed on January 30, 2003.¹

In accordance with Bylaw No 1, a bylaw relating generally to the transaction of the business and affairs of the Prince George Airport Authority, and based on the principles of accountability and transparency desired by the federal government and endorsed by the Board of Directors, the Board is composed of twelve members who are nominated by:

- | | |
|---|-------------------|
| • Federal Government | 2 Representatives |
| • Provincial Government | 1 Representative |
| • City of Prince George | 3 Representatives |
| • Regional District of Fraser-Fort George | 2 Representatives |
| • Prince George Chamber of Commerce | 1 Representatives |
| • Prince George Airport Authority | 3 Representatives |

The board members represent consumer interests, the business community and organized labour. It includes Directors having legal, engineering, accounting and industry experience.

The PGAA mission statement is as follows:

Prince George Airport Authority provides leadership as a regional economic driver and a gateway for passengers and cargo by providing exceptional customer services and facilities.

The PGAA has established the following goals and objectives and continues to review them through annual strategic planning sessions:

- The Prince George Airport Authority is dedicated to provide our customers with a user-friendly first-class facility by improving the customer experience through the development of great customer service;
- The Authority will operate in a safe, secure and environmentally responsible manner, by maintaining and exceeding required safety programs. The Authority will maintain all security requirements, develop and apply an effective and proactive environmental management program;
- The Authority will operate as a financially viable entity, maximizing all sources of revenue, providing cost effective service, minimizing expenditures without compromising safety, security or customer service;
- The Authority will ensure public accountability through the establishment of public accountability mechanisms, and implementing a commitment to excellence through strategic planning;
- The Authority will pursue marketing initiatives and economic growth, by developing a strategic marketing plan which includes the promotion of new National and International

¹ Prince George Airport Business Plan, 2003

markets, retaining and strengthening existing air services, and developing Airport land while supporting community objective;

- The Authority will cultivate and promote the Airport's role and image within the community with the establishment of focus information campaigns, tradeshow, promotion of school programs, and by continuing to develop the expertise on northern transportation issues, as well as strengthening media relationships;
- The Authority will support its staff by establishing organizational values and obtain employee commitment, creating a career development plan and implement individualized training plans;
- The Authority is committed to maintain a workplace where respect and fairness is demonstrated openly. A workplace free of harassment, fun for everyone, while still providing professional and first-class services. The Authority will involve all staff in strategic planning and decision-making; and,
- The Authority has formed a partnership stakeholder relationship with the community, Airport tenants and users to develop a Protocol Agreement with the city of Prince George, and the Regional District, that illustrates the philosophy of co-operation and good communication. The Agreement addresses a common vision, to maintain and grow existing relationships with Initiatives Prince George, The Northern Corridor Development Corporation, Northern BC Tourism Association, Chamber of Commerce, and other organizations to work towards improving the economic climate of Northern British Columbia. The Prince George Airport Authority ensures good communication and co-operation is maintained with airline partners by continuing the Airline Operations Committee and the Airline Consultation Committee. The Prince George Airport Authority encourages open communication with community members through the Community Consultation Committee.

1.4 KEY PLANNING PRINCIPLES

Reflecting the Strategic Plan goals and objectives, the Airport Master Plan becomes a guide for future physical development of Airport lands and facilities. The planning of YXS should allow future generations the scope to make choices that best reflect the rapidly changing world. The Master Plan preserves flexibility for Airport development options well beyond the planning horizon of twenty years. In addition, the following key planning principles have been applied in the development of the Master Plan:

Consistency with Community Objectives – By integrating Airport planning issues and community objectives, the Master Plan ensures that YXS development is consistent with community economic growth strategies and that the Airport provides high levels of customer service for the community and other customers.

Balanced Plans – Balance between the key functions of the major Airport components to achieve efficient operations and optimise future development.

Land Use Hierarchy – Careful stewardship of Airport lands is essential so that short-term uses do not compromise future strategic options. The Master Planning process generates a priority of land use reflecting PGAA strategic and business objectives.

Adaptability – A simplified and adaptable land use classification system will be adopted to provide the PGAA flexibility in using land resources in order to adapt to new, unexpected challenges and take advantage of new opportunities.

1.5 PLANNING METHODOLOGY

The 2013 Prince George Airport Master Plan Update has been prepared on the basis of a defined planning period and a systematic planning methodology. General planning principles and a hierarchy of land uses, consistent with typical planning methodologies used at Airports across Canada, were adopted for the preparation of this plan.

Facilities and the land area situated within the Airport boundary are the primary focus of this Master Plan. Development issues are considered in relation to the characteristics and constraints that are specific to the Airport site. Where warranted, consideration is also given to environmental conditions and adjacent land uses that may affect Airport operations and future development areas.

The assessments and development requirements identified in this document comply with Transport Canada planning standards and guidelines contained in *Aerodrome Standards and Recommended Practices and Land Use in the Vicinity of Airports*, and other applicable international standards including Transport Canada Publication *TP312 Standards and Recommended Practices, 4th Edition*.

2. AIRPORT OVERVIEW

2.1 GENERAL

Prince George Airport is designated one of 26 National Airport System (NAS) Airports under the National Airports Policy. NAS Airports link Canada coast to coast as well as internationally, and are considered essential to Canada's domestic prosperity and international competitiveness.

Regionally, the Airport provides residents of Prince George and surrounding areas with scheduled and charter services for passengers and cargo. Scheduled passenger flights are available to Vancouver and Calgary, allowing connection to transcontinental and international routes. In addition, flights are available to a number of communities in northern British Columbia.

Services and support are provided for general aviation activities, which include other commercial operations (commercial flight training, sightseeing, aerial surveys and aerial inspection services, etc.), government aircraft services, and corporate/private aircraft operations. YXS also serves the needs of aircraft maintenance, hangar storage and fixed base operators.

The general role of the Prince George Airport has not changed throughout the years; however, the activity levels have changed. For example, while passenger activity has progressively increased, local aircraft movements have shown a decline over the past twenty years. Furthermore, the Airport continues to market itself for air cargo opportunities, which will impact operations and types of services provided in the future.

2.2 AIRPORT HISTORY

The airport history has been very well documented by Prince George Airport Authority and is summarized below.

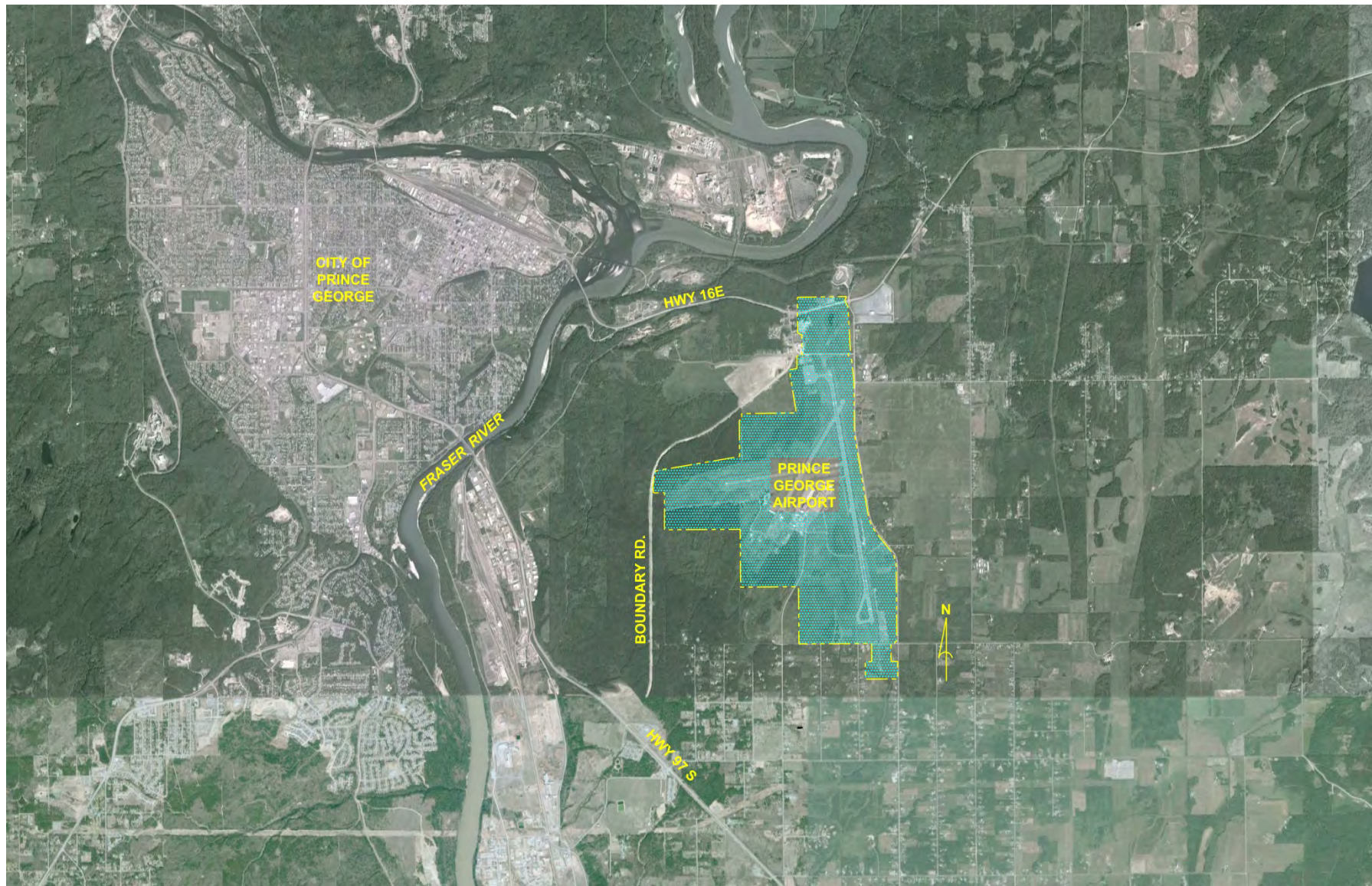
The current location of the Airport was selected in 1940, and in 1941 the main runway (14-32) was completed. Pan American Airways operated schedule flights along the Seattle to Fairbanks route by way of Prince George, Juneau and Whitehorse. Construction of the Airport, comprising of three 5,000 foot runways forming the traditional triangle, was completed on August 9, 1945 and the old city Airport was closed. By 1964, the continuous growth of business motivated the airport to resurface and extend runway 14-32 to 6,400 ft. Further expansion to the airport continued in 1973, when the \$2.7 million air terminal complex and control tower were officially opened on October 20. The terminal building covered 20,340 square feet.

On January 27, 2003 Transport Minister David Collenette announced the signing of an agreement to transfer control of the Prince George Airport from the Government of Canada to the Airport Authority. Transfer of the operations to a locally run Airport Authority occurred on March 31, 2003. From 2003-2005 the Airport underwent a variety of expansion, including phases 1 and 2 of the terminal complex. In 2007 phase 3 of the terminal expansion began and the \$33 million runway extension began. On February 20, 2009 the runway extension officially opened, giving the airport the third longest runway in Western Canada and allowing the airport to receive its first B747 landing.

2.3 AIRPORT SETTING

The Prince George Airport is located approximately 5 km southeast of the central business district of the City of Prince George. The Airport is sited on a gently rolling plain originating from a former glacial lake bed. The total Airport land area is approximately 860 hectares. Figure 2-1 illustrates the location of the Airport in context to the City of Prince George.

Figure 2-1 Airport Setting



The Prince George Airport is located on land owned by Transport Canada and includes about 135 hectares of Provincial Reserve Lands. The Airport lands are severed on the north side by Boeing Road, which is an existing open road right-of-way.

2.4 GEOPHYSICAL CONDITIONS AND CLIMATE

The soil is predominately clay with varying depths of muskeg along the north and west boundaries, and southeast of the building area extending southeast to the south boundary. The muskeg along the north and west boundaries are the deepest with recorded depths exceeding 3 metres. The clay, when exposed, has a higher than optimum moisture content causing difficulty in obtaining compaction to meet minimum requirements for paved surface construction; however, the bearing strength under optimum conditions is very high, providing good support for building foundations and paved surfaces.

Due to the tightly packed nature of the very fine particles, the clay is virtually impervious, causing the water table to be on the surface. This condition creates some swampy conditions in low areas, mostly in the northwest section of the Airport. This condition creates the necessity for provision of good drainage around buildings and paved surfaces.

Frost penetration may reach depths in excess of 2 metres, requiring a good depth of granular frost protection under paved surfaces and exterior insulation of foundations for heated buildings.

Trees are located on Airport property in the area northwest of Runway 01-19, the area north of Runway 06-24, and the area south of the threshold of Runway 06, an area west of Airport Drive along the south Airport boundary and a small area west of the threshold of Runway 33.

Both the topography of the site and the soil conditions are constraint factors in locating development areas on the Airport.

The Prince George Airport is situated at latitude of 53° 53'N and a longitude of 122° 41'W. The Prince George area is located in the Cordilleran Climatic Region and it has a continental type climate with cold winters and hot summers. Winters are relatively wet and springs are relatively dry. Mean monthly temperatures range from a relatively warm 13°C to 16°C to -9°C in January. Wide temperature variations are common. For Airport planning purposes, the aerodrome reference temperature is 22.1° C².

2.5 MAJOR AIRPORT COMPONENTS

The Prince George Airport site is irregular in shape. The airfield configuration dominates the Airport layout while the southern quadrant of the site is the main airport development area. Figure 2-2 illustrates the Airport Existing Conditions. The major Airport components are:

Airfield – includes the runway and taxiway system, apron and aeronautical protection areas, as well as most of the Airport's navigational aids.

Air Terminal Complex – includes the Air Terminal Building (ATB) and the adjacent aircraft apron to serve air carrier operations.

Ground Access and Parking – includes the main Airport and terminal access, road circulation within the Airport and various parking facilities for passengers and employees.

Air Cargo Facilities – includes cargo facilities for carriers and couriers.

² TP312, 3rd Edition, Amendment No. 6. Aerodrome Reference Temperature is defined as the monthly mean of the maximum daily temperature for the hottest month of the year (the hottest month being that which has the highest monthly mean temperatures)

Commercial Services and Facilities – include aviation-related and support services/facilities such as general and corporate aviation, fuel storage, and various aircraft hangers. Also included are specialized and other commercial facilities such as car rental depots and the RCMP dog training areas.

Airport Operations and Support Facilities – include Airport administration and maintenance, emergency response service as well as utilities and services.

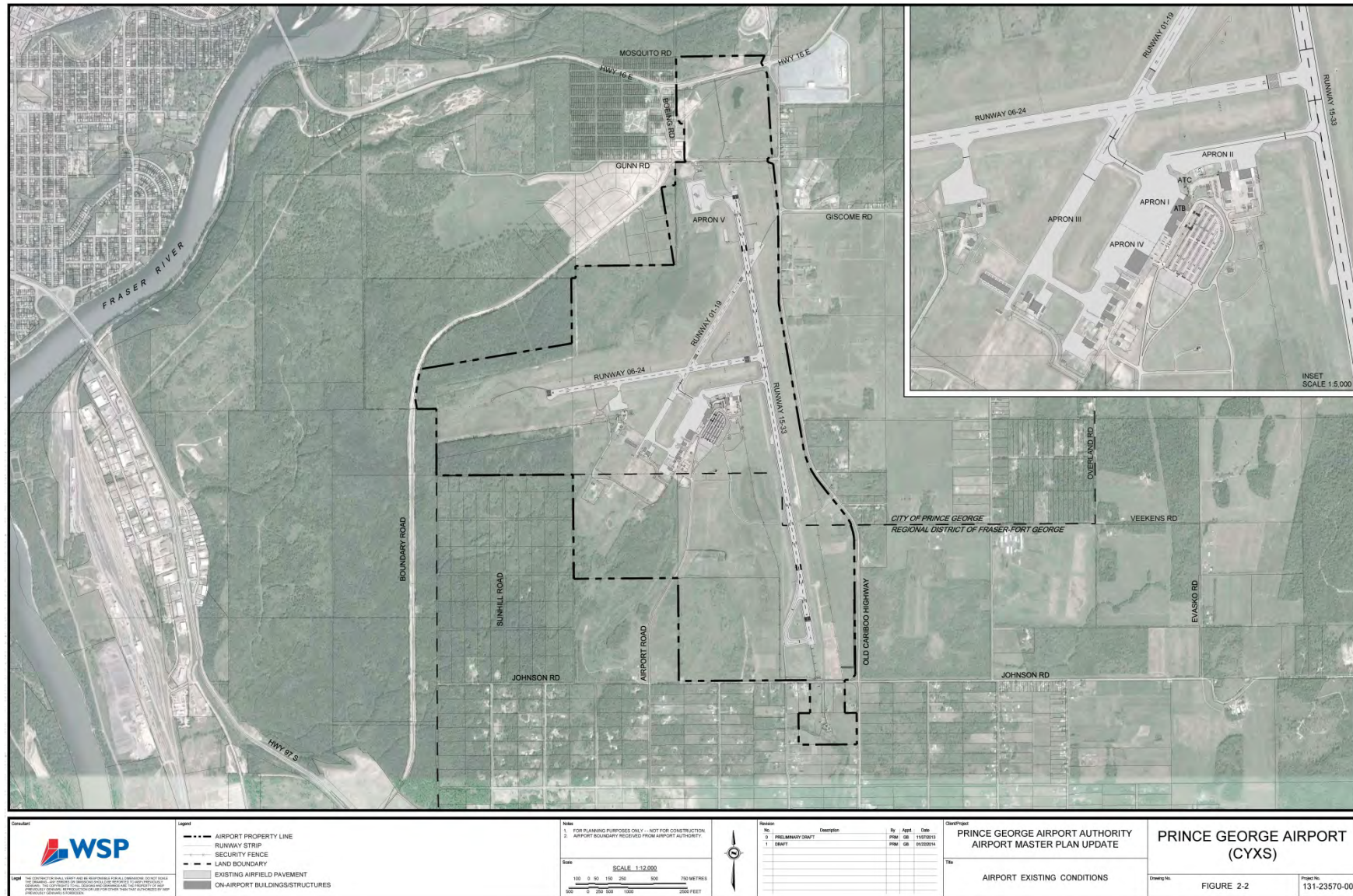
The primary airside facilities at the Prince George Airport consist of three runways, two short connecting taxiways and several aprons. The runways at the Airport are designated 15-33, 06-24 and 01-19. At 11,450 ft. (3,490m), Runway 15-33 is the Airport's main runway. Runway 06-24 is a secondary runway used primarily when crosswinds on the main runway exceed acceptable values. Runway 01-19 is typically used by small itinerant aircraft for daytime VFR operations only, though its primary role is as a taxiway to access the main runway (15-33).

Runway 15-33 is served by an ILS which is comprised of localizer and glide path antennas located within the Airport boundary. Other ground based electronic navigational aids (NAVAIDS) are located outside the Airport and include a VOR/DME, located east of the Airport, and two (2) NDB's, one located north of the Airport and the other located south of the Airport.

The PGAA does not own nor operate these facilities. NAV CANADA is responsible for the safe operation of this equipment. NAV CANADA is responsible for Canada's civil air navigation system (ANS). In addition, NAV CANADA also operates radio transmitters and receivers located to the northwest of the Airport.

The Airport is served by an Air Traffic Control Tower operated from 1400Z to 0700Z by NAV CANADA. The Airport operates in Class D airspace from 1400Z – 0700 Z. Other time being Class E where mandatory frequency MF (through Williams Lake) RCO.

Figure 2-2 Airport Existing Conditions



2.6 AIRPORT OBSTACLE LIMITATION SURFACES

Obstacle Limitation Surfaces are established around an Airport to ensure a satisfactory level of safety. These surfaces normally extend well beyond the boundary of the Airport and therefore require protection by the enactment of Zoning Regulations or Legal Instruments which will prohibit the erection of structures which would violate any of the defined plane surfaces. These surfaces are shown in the adjacent diagram and are described below:

Outer Surface

An outer surface shall be established where required for the protection of aircraft conducting a circling procedure or manoeuvring in the vicinity of an aerodrome.

Takeoff/Approach Areas and Surfaces

They are established for each runway direction intended to be used for the takeoff and landing of aircraft.

Transitional Surface

Transitional surface is a complex surface along the sides of the runway strip and part of the approach surface that slopes up to the outer surface. Its purpose is to ensure the safety of aircraft at low altitudes displaced from the runway centre line in the approach or missed approach phase.

Buildings, structures or natural growth protruding the Obstacle Limitation Surfaces are prohibited. The maximum height of any structure is governed by its proximity to the runways, taxiways and any electronic or navigational-aid equipment.

All Airport development falling within the affected zones are also subject to these restrictions and guidelines to remain in compliance with the Airport's operating certificate.

Airport Operations Manual (AOM) identifies existing non-compliances related to the operational Airport zoning as shown in the following table. All of these non-compliances have been inherited as part of the transfer of the Airport from Transport Canada and are addressed through approved deviation notices within the AOM. These notices are issued by Transport Canada aerodrome safety to permit the non-compliances and not affect the certification of the Airport.

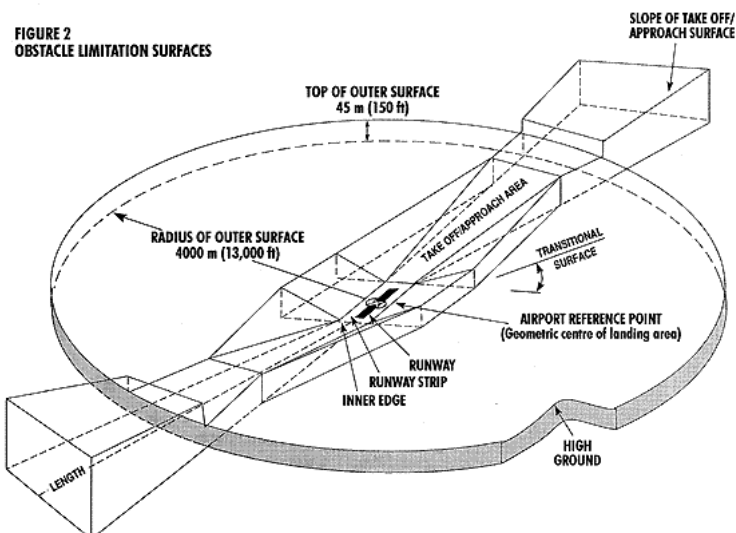


Table 2-1 Airport Zoning Deviations

Existing Deviation	Deviation Approval
1. Rising ground penetrates approach surface of Runway 06.	AAND5151-P151 (AANDDA) (07 March 1988)
2. Trees penetrate the transition surfaces outside the flare lines of the approaches to Runways 06 and 15.	AAND5151-P151 (AANDDA) (07 March 1988)
3. Over height vehicle activity may be present on Boeing Rd., 800 ft. north of threshold 15, and 350 ft. west of extended runway centreline.	Approved under TP312 3 rd Edition – Part 2, Section 1.2 Note

It is recommended that any existing deviations be corrected as required under the approved deviation.

2.7 EXISTING AIRPORT FEDERAL ZONING REGULATIONS

Registered Airport Zoning Regulations (AZR) typically represents an extension of the Height and Electronic Zoning surfaces outside an Airport's boundaries. The Prince George Airport Zoning Regulations are on record in the Prince George Land Registry Office in Prince George, British Columbia. The existing AZR mapping is dated at Ottawa, February 7, 1967, as recorded by the Department of Transport in Ottawa. The Consolidated Regulations of Canada, 1978, established the Prince George Airport Zoning Regulations (AZR). The AZR provide legal protection to prohibit structures on lands outside Airport boundaries from penetrating the Obstacle Limitation Surface (OLS).

The existing Airport Zoning Regulation does not consider protection for electronic navigational aids or the protection against land uses that may attract birds. Furthermore, the dimensions used for the existing AZR are imperial and based on out-dated standards. Provisions were made in this AZR to protect for an extension of the main Runway 15-33 only to 8,000 ft. and do not protect for its current length of 11,450 ft. Runways 06-24 and 01-19 are only protected to non-instrument standards which limit their usability under instrument meteorological conditions. While the existing AZR provides some degree of protection, it is dated, limited in scope, and does not accurately reflect the existing and future conditions of the Airport. It is recommended that the AZR for the Airport be updated to reflect the current layout and operating environment.

2.8 EXISTING AIRPORT-COMMUNITY INTERFACE

The PGAA uses a number of mechanisms to interface with the communities it serves and in which it operates, which includes the participation in the following committees:

Community Consultation Committee (CCC)

The purpose of the Community Consultative Committee is to provide liaison between the community and the Authority's Board of Directors through Authority Management, in Airport matters and general Airport policies that affect the community.

The Noise Committee

The purpose of the committee, which is contained within the Environment Committee, is to look at noise issues with a view to minimizing impact on the community, to review success and failure of the program, and to recommend changes that are appropriate. The committees provide a forum for dialogue and improve understanding between Airport users, training operators, and the parties affected by noise related operations at the Airport.

In the past, Transport Canada developed Airport Master and Land Use Plans in consideration of the City of Prince George and Regional District of Fraser-Fort George Official Community Plans (OCP) which outlines the municipalities' development objectives. A Prince George Airport Advisory Committee in conjunction with municipal officials was established to facilitate the exchange of viewpoints related to the Airport. The Committee was generally made up of representatives from municipal and institutional interests, business and tourism associations, the real estate and aviation industries, and Transport Canada Airport management. Recommendations made by the Committee were then considered in the final preparation of the Land Use Plan approved by Transport Canada.

It should also be noted that by virtue of the Authority's Board make-up, the community at large is represented given the diversity of representation.

2.9 CITY OF PRINCE GEORGE

The Airport Authority and the City of Prince George have signed an accord to establish mutually agreeable arrangements to delineate principles and define a mechanism to achieve specific operating agreements where necessary. In addition, the accord also provides a firm footing for ongoing consultations to assure both the City and the PGAA of appropriate certainty in their relationship. These types of agreements are common as the Airport operates under federal jurisdiction making any municipal and provincial authority not applicable. By executing such an agreement enables both parties to develop terms that are contractually obligating.

The City of Prince George Official Community Plan (OCP), Bylaw No. 8383, 2011, provides a guide for land development within the City and contains a number of references to the Airport.

The policies identified in relation to the Airport are:

Airport

- Policy 5.1.17 – *Develop and maintain adequate transportation links to support passenger and freight movement.*
- Policy 5.1.18 – *Encourage compatible land uses on lands adjacent to the airport within the Airport Logistics Park.*
- Policy 5.1.19 – *Support the development vision of the Airport Master Plan by coordinating land use services.*

Community Facility

- Policy 8.3.80 – *The City supports continued development and expansion of the Airport within the designated Airport area, but should discourage non Airport-related uses there.*

Airport Development

- Policy 8.5.16 – *Airport expansion and aircraft and airport associated facilities are to be confirmed primarily to the airport area identified as "Other" within Schedule B-8: Community Facilities. Non-airport related uses are discouraged in this area.*
- Policy 8.5.17 – *Supporting light industrial uses can be situated within the Airport Light Industrial Plan area immediately west of the airport/*
- Policy 8.5.18 – *Planning in and around the airport area should occur in partnership with the City and the Prince George Airport Authority as identified within the Accord and the Airport Master Plan.*

- Policy 8.5.19 – *The City recognizes the importance of the Aeronautics Act and should endeavor to advise land use applicants of the Airport Master Plan recommendations. This includes considerations to no new residential development and other sensitive land uses in area near the airport above 30 Noise Exposure Forecast (NEF) as set out on the 2023 NEF maps (and as revised from time to time) within the Airport Master Plan's Figure 12-3.*

Other Transportation Modes

- Policy 8.7.46 – *The City should continue to support improvements to both air passenger and freight service, including terminal improvements and the provision of complementary air support services at the Prince George Airport.*

In the City of Prince George Zoning By-law 7850, updated July 11, 2013, the Airport lands, designated a Site Specific Zone, are assigned under Section 15.1. As stated in the zoning By-Law, *The purpose of this zone is to provide for the orderly operation of an airport.*

2.10 REGIONAL DISTRICT OF FRASER-FORT GEORGE – PINEVIEW

The Pineview Official Community Plan (OCP) Schedule A to Bylaw No. 2302, also recognizes the Prince George Airport under Section 4.15 as follows:

4.15 Prince George Airport and Area

The Prince George Airport is an important facility providing a regional transportation hub for northern British Columbia. The Airport and the adjacent lands, an antennae site located at the intersection of Old Cariboo Highway and Johnson Road, under the jurisdiction of the Crown are designated Public Development/Institutional (PD/I) and Light Industrial (L/IND). As well, the 9 ha parcel located on the Old Cariboo Highway just north of the Old Cariboo Highway/Highway 97 South intersection is the site of the non-directional beacon and is designated PD/I. These locations are so designated to identify them as an integral part of the Prince George Airport.

The Airport has a further conceptual designation of Light Industrial (L/IND) to allow such uses to be carried out on Airport lands that are complementary to the Prince George Airport and surrounding private lands.

With respect to lands surrounding the Prince George Airport, the Regional Board:

- supports a Light Industrial (L/IND) designation on lands adjacent to both the east and west sides of the access to the Airport. This would allow some industrial uses complementary to the Airport as noted in Section 5.4.*

Industrial/manufacturing processes that generate smoke, dust or steam in sufficient volume such as to restrict visibility at the Airport are not supported.

- encourages the use of residential light sources that limit light being emitted above the horizontal, thereby limiting the amount of upward lighting to the night sky.*
- supports the Prince George Airport Zoning Regulations per the Aeronautics Act as it pertains to lands adjacent to or in the vicinity of the Airport regarding the need to refer Building Permit applications to the Prince George Airport for their consideration.*
- supports future expansion of the Prince George Airport.*

The Pineview OCP Bylaw No. 2302 was officially adopted in March 2007 and is designed to guide development in the Pineview area for the next 5 to 10 years. The OCP also replaces the Tabor-Lake-Stone Creek Community Plan Bylaw No. 844, 1986.

2.11 2008 INDUSTRIAL LAND PROFILE

The primary objectives for the 2008 Prince George Area Industrial Land Profile, as stated in the report, are as follows:

- *To build upon the concepts, principles and sites identified in the 2002 Prince George Area Industrial Study.*
- *To identify additional sites that are suitable to accommodate industrial uses within the Prince George area.*
- *To build an industrial land inventory system within the City of Prince George and surrounding Electoral Areas that is kept up to date and readily accessible.*
- *To focus on accommodating industry that will take advantage of the area's transportation structure and other natural assets.*
- *To prioritize recommended industrial development sites to help focus resources on their preparation for accepting sustainable development.*
- *To develop an acceptable level of "pre-clearance" of identified appropriate sites to shorten the time period for development approvals, without overriding due process in project review by applicable agencies and the public.*
- *To develop a marketing strategy for identified sites applicable to all participating agencies.*

2.12 2008 AIRPORT LIGHT INDUSTRIAL PLAN

The purpose of this report is to "*provide clear and comprehensive land use and infrastructure planning for the future light industrial lands for the City of Prince George in order to provide certainty for residents, land owners, and developers regarding how the area can be developed*". The plan permanently protects 324 hectares of land for environment, geotechnical, and habitat considerations.

3. ACTIVITY FORECAST

3.1 SOCIO-ECONOMIC BACKGROUND

Prince George is Northern British Columbia's largest city, and is the commercial and financial centre for B.C.'s resource-rich heartland. The city is located at the junction of the Nechako and Fraser Rivers, 91 kilometres from the geographical centre of British Columbia. Incorporated in 1915, Prince George has a total land area of 315,990 square km, and is the major supply and service centre for northern BC's population of over 332,000 people. By highway, the city is 800 km north of Vancouver, and 740 km west of Edmonton.

Scheduled services are provided by three airlines, as follows (winter 2013/14 schedule):

- Air Canada Express: five daily Q400 flights to Vancouver
- WestJet: four daily flights (B737-700 and Q400) to Vancouver, as well as a weekly winter service to Puerto Vallarta.
- Central Mountain Air: daily flights with turboprop equipment to Calgary, Fort St. John, Kamloops, Kelowna, Smithers and Terrace.

There is also a substantial level of charter activity, largely in support of the mining industry, flown by carriers such as Northern Cariboo Air and Northern Thunderbird Air.

The Prince George economy has developed from one that was primarily based on natural resources, particularly forestry, to one providing a wide range of goods and services to northern BC. 78% of the persons employed in the city now work in the services sector.

Prince George is the location of the main campus of the University of Northern British Columbia, which also has satellite campuses in Terrace, Fort St. John and Quesnel. UNBC has an enrollment of approximately 4,200 students and a staff of over 800. The College of New Caledonia which is also headquartered in Prince George, operates an additional five satellite campuses, and has an enrollment of approximately 3,700 students and a staff of roughly 700.

The University Hospital of Northern British Columbia (UHNBC) is the largest acute care facility within the Northern Health region, and a hub for specialized health services in the province's northern interior. UHNBC is a clinical academic campus for undergraduate physician training through the Northern Medical Program, run by the University of British Columbia and University of Northern British Columbia. UHNBC hosts residents in UBC's Family Practice Residency Program. The hospital is also a key clinical education site for nursing and many health sciences students at UNBC and the College of New Caledonia and other provincial academic institutions such as BCIT. The hospital employs approximately 1,300 persons.

Table 3-1 shows a number of socio-economic indicators, comparing Prince George with regional, provincial and national averages.

Table 3-1 Socio-Economic Factors

INDICATOR	Prince George CA	Fraser/ Fort George	Cariboo	British Columbia	Canada
Population (000)	85.4	94.7	158.1	4,650	34,932
Per cent of population over 65	8.2%	na	na	15.7%	14.8%
Population/household	2.46	2.45	2.42	2.46	2.50
Income/capita (\$000)	32.5	30.8	31.1	32.9	34.4
Income/household (\$000)	80.1	79.6	75.2	80.9	85.8
Disposable inc./household (\$000)	62.4	na	na	62.5	65.2
Discretionary inc./household (\$000)	22.2	na	na	22.7	23.4
Retail sales/capita (\$000)	21.2	20.8	19.8	13.4	13.8
Retail sales/household (\$000)	52.3	50.9	47.8	33.0	34.3

Source: FPmarkets Canadian Demographics 2012

Basic demographic indicators for Prince George are roughly in-line with provincial and national totals with two glaring exceptions:

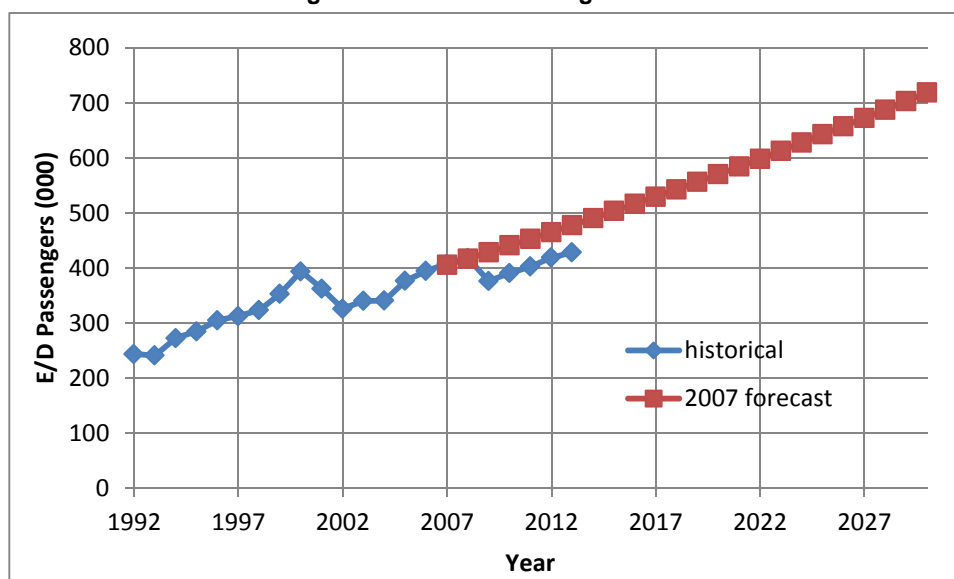
- The age distribution of the population is much lower than that for either BC in general, or Canada. This implies that a larger percentage of the overall population is of working age.
- The level of retail sales per capita and per household are well-above provincial and national totals, reflecting Prince George's position as the commercial centre of a much wider region.

Unfortunately, the region's population in general is not keeping pace with provincial averages. The latest BC Stats projections through 2036 suggest a regional population growth rate of only 0.2% per year, compared to 1.2% per year for the Mainland/Southwest region, and 0.7% for Vancouver Island/Coast.

3.2 ANNUAL PASSENGER TRAFFIC

Historical traffic since 1992, as well as the forecasts from the 2007 Master Plan report, has been shown in Figure 3-1, below, based on data supplied by Prince George. These totals differ somewhat from Statistics Canada publications, due in part to the difference between counts of "revenue passengers" and "total passengers".

Figure 3-1 Annual Passenger Traffic



Growth rates have been consistently positive, with the exceptions of sharp downturns following the events of 9/11 and the 2008-10 recession. In both cases, traffic took approximately 4-5 years to rebound to historical levels. It is interesting to note that the actual growth rate from 2009 to 2013 averaged 3.3%, compared to a forecast rate from the 2007 Master Plan of 2.7% for the same period. The 2007 forecast steady-state growth rate appears to be reasonable for the long term, once the effects of (and recovery from) the recession have been accounted for. However, schedule patterns changed substantially during 2013, and both Air Canada and WestJet increased capacity on the Vancouver route (23% by Air Canada, and 5% by WestJet), while CMA inaugurated direct Calgary flights. The effects of a capacity increase of this magnitude will be to decrease fares, leading to a corresponding increase in traffic. All else being equal, one should expect 2014 to experience growth in excess of long term averages. For the first quarter of 2013, passenger traffic declined by 0.5% from the corresponding period in 2012. For the second quarter, however, traffic increased by 2.8%, while in the third quarter, the increase was 4.7%. The latest national Transport Canada forecasting model is currently predicting national average annual growth rates for domestic traffic in the 2.4% range through 2025.

However, there are three major projects which, if approved, may substantially increase traffic levels through Prince George, at least during the construction phases.

- The Blackwater gold and silver project, located about 110 kilometres south of Vanderhoof, is planned to be operational for seventeen years from when it opens. In addition to the mine itself, the project will require the construction of a 133 kilometre electric transmission line, and substantial upgrading to the road from Vanderhoof. While the closest airport with scheduled service would be Prince George, Vanderhoof itself has an airport with a five thousand foot paved strip, which might be utilized for charter worker transportation. Assuming that all relevant approvals will be forthcoming, construction could start as early as 2015, and operations by 2017.
- There are three pipeline projects awaiting approval, which, if authorized, will pass close to Prince George.
 - The Northern Gateway pipeline is designed to carry crude oil from Alberta to a deep-water port at Kitimat. The pipeline is expected to pass through Bear Lake, about 70 kilometres north of Prince George, along Highway 97.

- The Coastal GasLink pipeline is intended to carry natural gas from northeast BC to the port of Kitimat. The pipeline will run from west of Dawson Creek in a southwest direction to just north of Vanderhoof, where it will roughly parallel the Northern gateway alignment to Kitimat. The environmental assessment is expected to take place in 2014.
- The Prince Rupert Gas Transmission Project, if approved, will be planned to deliver natural gas from a point near Hudson's Hope to the proposed LNG facility on Lelu Island. The pipeline will follow a route somewhat to the north of the Coastal GasLink pipeline. The environmental assessment is also expected to take place in 2014, and the pipeline could be operational in the 2018/2019 time frame.
- Lorraine Copper has a property with major potential copper and gold reserves approximately 280 km. northwest of Prince George. The site is served by logging roads and is close to the BC Rail line.

While any of the pipeline projects will provide employment during the construction phase, there will not be a major effect on the Prince George economy once the construction has been completed. The Blackwater project (and, to a lesser extent, the Lorraine project) also will provide a substantial economic impetus during the construction phase, but a lesser one once operations begin.

In effect, it is believed that the 2007 forecast was reasonably accurate. For baseline conditions, it has been assumed that traffic growth in 2014 will total about 5%, responding to increased airline capacity, and additional activity related to the prospective megaprojects. Beginning in 2015, in the absence of megaprojects, traffic growth rates have been forecast to decline somewhat, to reach the 2007 master plan long-term rate of 2.7% by 2030.

It is almost impossible to provide a quantitative forecast of traffic related to the Blackwater development and/or pipeline construction, pending more detailed operational plans. While traffic will clearly increase, the extent to which Vanderhoof airport will be utilized, as opposed to Prince George, is not yet clear. Although Vanderhoof itself, with a current population of only about 4,500 residents, cannot compete with Prince George in terms of socio-economic amenities, its airport appears capable of handling aircraft in the 50 seat category, and it is physically much closer to the potential construction sites. The construction companies may choose to fly workers directly to Vanderhoof rather than rely on scheduled services via Prince George.

Rather than attempt an actual forecast, projections have been made on the basis of an "upper bound", which has arbitrarily (and very roughly) assumed to include an additional 50,000 annual passengers in the 2016-17 peak period, with a ramping up beginning in 2015, and a ramping back down beginning in 2018, to reach a long-term growth rate of about 3.3%.

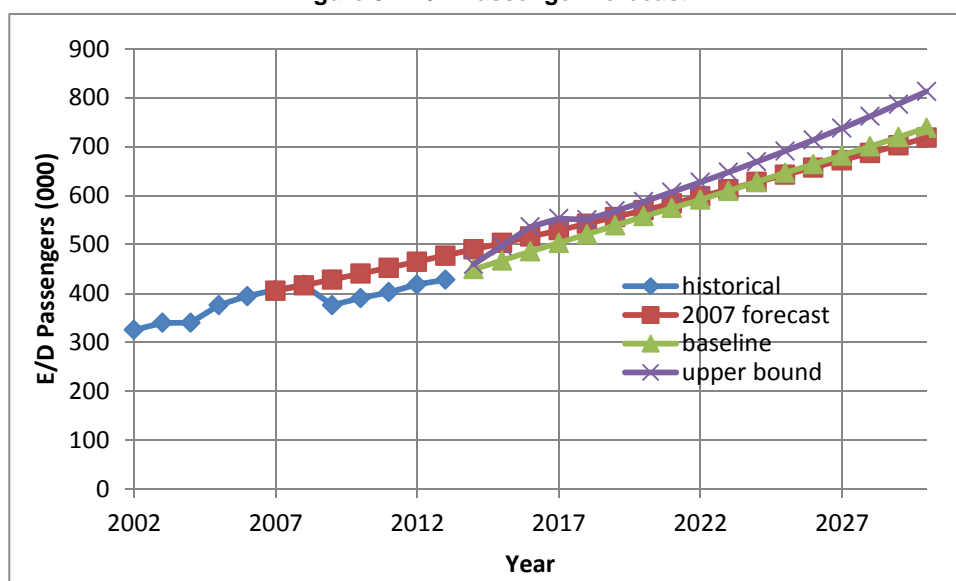
The overall passenger forecasts have been shown in Table 3-2, and in Figure 3-2, below. Effectively, there is very little difference between these, and the original work completed in 2007.

Table 3-2 E/D Passenger Forecast

YEAR	E/D PASSENGERS (000)	
	Baseline	Upper Bound
2013	426	426
2015	467	497
2020	558	587
2025	647	691
2030	739	813

Source: Consultant's analysis

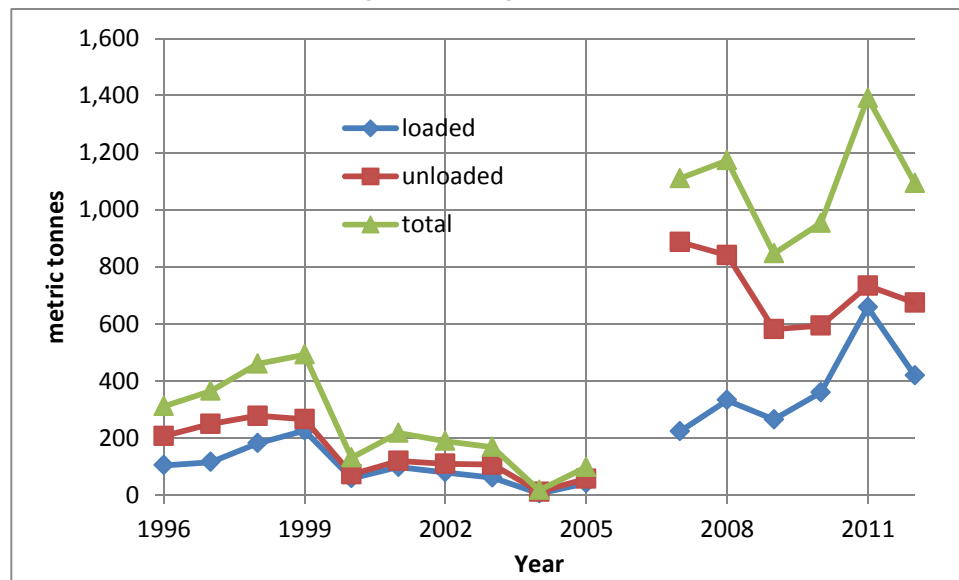
Figure 3-2 E/D Passenger Forecast



3.3 CARGO TRAFFIC

Cargo statistics are collected by Statistics Canada for major scheduled and charter carriers only, and may not represent a complete survey of all activity. Nevertheless, historical cargo information has been shown in Figure 3-3. The last few years have seen a marked increase in cargo traffic. While the ratio of inbound to outbound cargo has varied substantially on a year-to-year basis, the recent (2007/2008) disparity has been reduced by 2012. All cargo noted above has been domestic.

Figure 3-3 Cargo Statistics

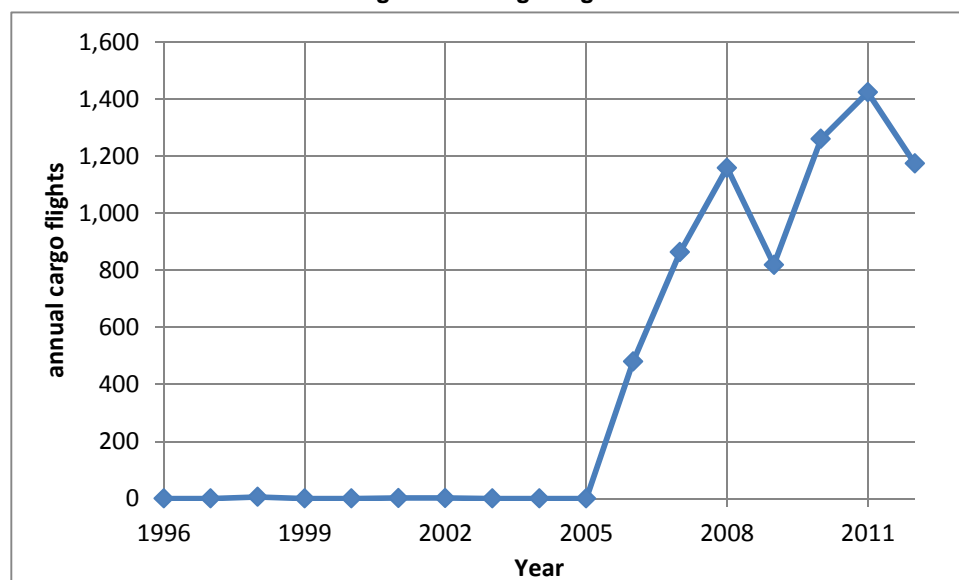


Source: Statistics Canada 512-203. 2006 data unavailable

The current overall level of activity averages about 1 – 3 tonnes per direction per weekday, which is not a substantial amount. Note that a typical Beech 1900 can carry up to five tonnes, depending on model variant and stage length.

The number of all-cargo flights included in the survey universe has increased substantially, from effectively zero through 2005, to well over one thousand for the past few years, as noted in Figure 3-4. These are almost all courier consignments and small packages carried on small twin engined aircraft.

Figure 3-4 Cargo Flights



Source: Statistics Canada 512-203.

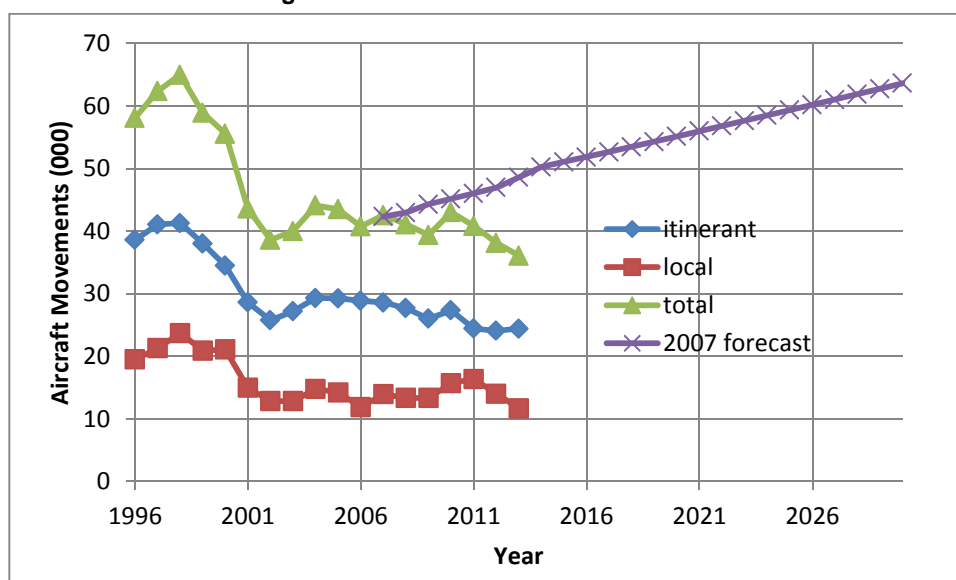
Prince George Airport has been actively pursuing its potential use as an alternative technical stop to points such as Anchorage, for cargo aircraft between Asia and North America. As westbound flights in particular are not always full (the airport estimates that average load factors are below 50%), the airport believes that there is local cargo potential for fill-up loads of “clean” food (fresh fish from Prince Rupert, beef, etc.) to warrant a profitable transit stop for an airline topping up its cargo hold. If successful, this initiative estimates that one weekly transit stop would have the potential of loading 20-30 tonnes of outbound cargo.

Because of the lack of more detailed information, no specific cargo forecast has been developed. However, movements of all-cargo aircraft have been included in the aircraft movements forecast, in Section 3.4.

3.4 AIRCRAFT MOVEMENTS

As noted in Figure 3-5, general aviation activity at Prince George never recovered following the 2001 drop off. Both itinerant and local traffic have declined slightly over the past decade. Annual rates of decline since 2001 have averaged 1.6% for itinerant movements, 0.6% for local movements, and 1.2% for the total. The recovery which was projected during the 2007 master plan has yet to happen.

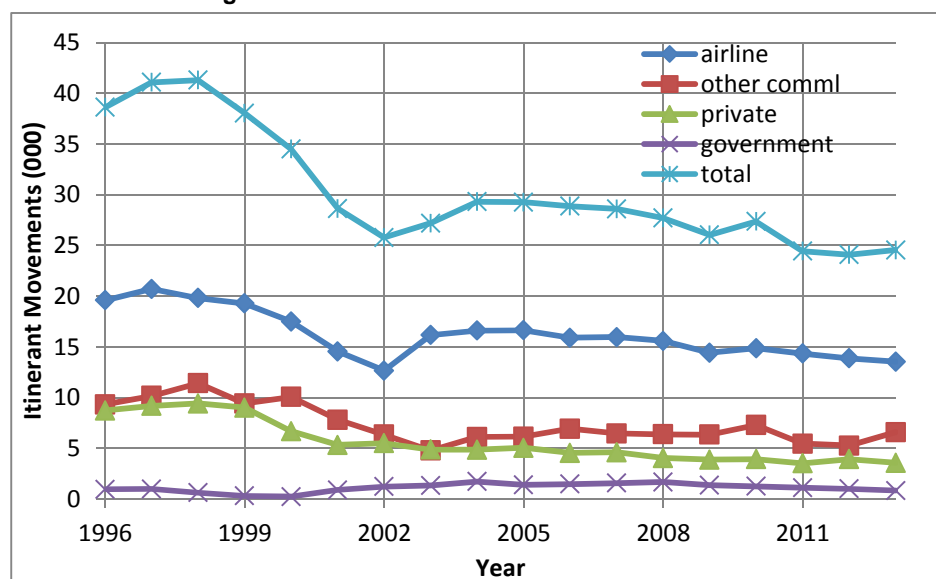
Figure 3-5 Historical Aircraft Movements



Sources: Statistics Canada 51-209 and 51-210; Transport Canada TP 577

The overall pattern has also remained consistent among all itinerant movement classifications, as noted in Figure 3-6, with no category experiencing any substantial growth over the past decade.

Figure 3-6 Historical Itinerant Aircraft Movements



Sources: Statistics Canada 51-209 and 51-210; Transport Canada TP 577

Airline activity experienced a major capacity increase in 2013, in terms of both aircraft size and number of movements. As passenger traffic is not expected to grow significantly in the future, and some additional capacity will be accounted for by larger aircraft sizes, rather than an increased number of movements, the growth rate has been set at about 2% per year.

For the future, the baseline general aviation forecast has been projected at a nominal rate of 1% per year for itinerant movements, under the assumption that sooner or later, economic growth will have to affect general aviation activity. Local movements have been held constant, based on discussions with local flight school operators.

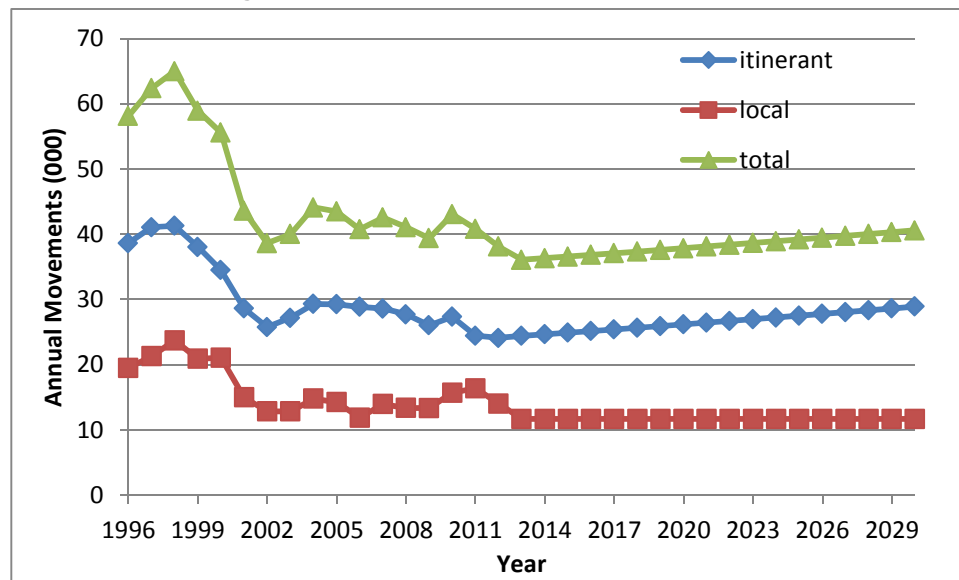
The projected movement totals have been shown graphically in tabular form in Table 3-3 and have been graphed in Figure 3-7.

Table 3-3 Baseline Aircraft Movement Forecasts

YEAR	ANNUAL MOVEMENTS (000)		
	Itinerant	Local	Total
2013e	24.4	11.7	36.1
2015	24.9	11.7	36.6
2020	26.2	11.7	37.8
2025	27.5	11.7	39.2
2030	28.9	11.7	40.6

Source: Consultant's analysis

Figure 3-7 Baseline Forecast Aircraft Movements

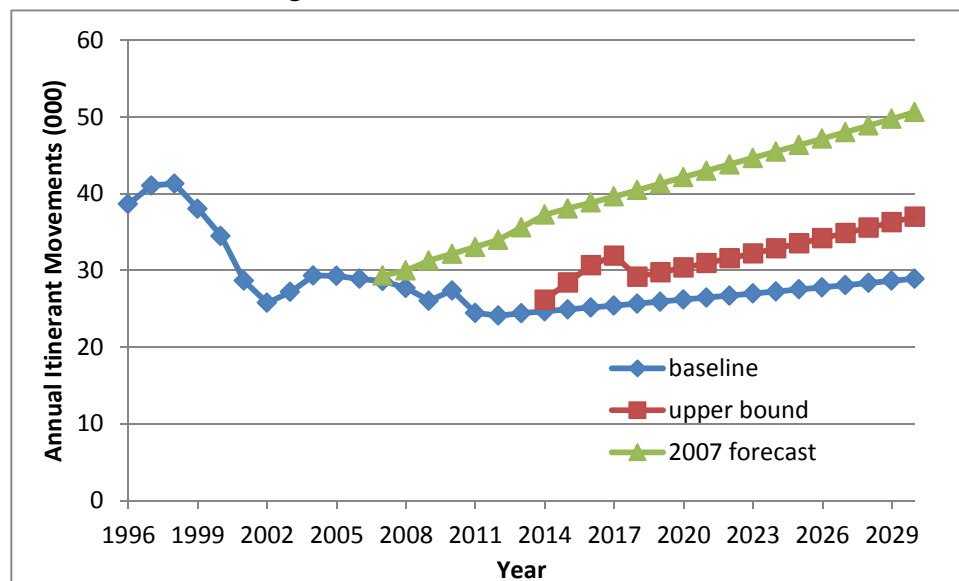


Source: Consultant's analysis

As with the passenger projections, alternative GA forecasts have been made on the basis of an "upper bound", which has arbitrarily (and very roughly) assumed to include an additional 5,000 annual itinerant movements in the 2016-17 peak period, with a ramping up beginning in 2015, and a ramping back down beginning in 2018, to eventually reach a long-term growth rate of about 2%. In addition, another 1500 annual movements has been added to represent large cargo aircraft operating at a rate of about 2 flights (4 movements) per day. Note that even with this addition, overall activity throughout the forecast period is still below that experienced in 1998.

A comparison of the baseline and "upper bound" forecasts, as well as the 2007 forecast for comparative purposes, has been shown in Figure 8.

Figure 3-8 Forecast Aircraft Movements



Source: Consultant's analysis

3.5 NOMINAL SCHEDULES AND PLANNING PEAK HOUR (PPH)

A forecast of airline schedules in some future year is considered 'nominal' in the sense that it represents a combination of assumptions, all of which are subject to uncertainty. A nominal schedule can be thought of as a pattern of arrivals and departures with a less than one hundred per cent probability of actually occurring as forecast. As with any other forecast, a nominal schedule will always represent only one of various possible outcomes.

A nominal schedule is also a projected pattern of arrivals and departures prepared under the assumption that facilities will be available to accommodate unconstrained demands on the system. Since a nominal schedule is only a starting point, it does not imply that facilities will actually be put in place to handle all unconstrained demand, regardless of cost. In fact, in many cases where facilities are limited, it is likely that the actual schedule will vary sharply from the nominal schedule due to such techniques as slot controls, differential pricing, gate limitations, or simply other unforeseen factors.

Given the above caveats, three sets of nominal schedules have been produced, for the baseline year of 2013, and for the master plan forecast years of 2020 and 2030. The aircraft types listed should be considered generic, in that upgrades will be expected to occur as older aircraft are replaced by more modern counterparts.

There were a number of substantial changes in 2013 to what were historically consistent schedule patterns:

- Air Canada Jazz replaced their Dash8-300 services with larger Q400 turboprops, and at the same time reduced their weekday frequencies from six roundtrips to Vancouver to five. The net capacity increase was 23%.
- WestJet currently operates three daily B737 jet services, but effective later this year will increase their weekday frequency to four by replacing one of the jets by two Q400s, for a net capacity increase of 5%.
- CMA inaugurated non-stop flights to Calgary with a Dash8-300, a route last flown by Air Canada Jazz in 2008. The flight continues on to Terrace.
- Northern Thunderbird Air inaugurated a twice-weekly flight to Dease Lake. However, as passengers for these flights do not use the terminal building, they have not been included in the nominal schedules.

Overall traffic patterns are remarkably flat across the year, although there is a small increase in traffic during March and April. The only really seasonal flight is the direct winter service to Puerto Vallarta. However, from an airport planning view, WestJet simply replaces (with minor schedule adjustments) a Vancouver flight on Saturday with one to Mexico. There is no major change to gating requirements. However, the peak hour for international inspection services is clearly whenever the Mexican flight arrives.

As airline service patterns are expected to be relatively flat throughout the year once the above-noted changes have been accounted for, scheduled weekday services for November, 2013 have been used as the baseline for this report. Checks against future schedules for both winter and spring, 2014, have indicated no significant changes. For this base year, Air Canada Express operates 5 scheduled Q400 round trips to Vancouver, WestJet operates four round trips to Vancouver, two with Q400s and two with B737-700s, and Central Mountain Air operates eight daily flights, two with Dash 8s and six with Beech 1900s, to a variety of points. However, CMA operate two schedule "meets" in Prince George, north and westbound in the morning and east and southbound in the afternoon, where passengers can interconnect among three different services. This requires three gating positions.

If the schedule is adhered to, there will be five aircraft at gate positions simultaneously in the late afternoon (a 737, a Q400, a DHC8 and two Beech 1900s. As well, three aircraft (two Q400s and a Beech 1900) would ordinarily require overnight positions. The scheduled peak hour is between 4:40 and 5:40 PM, when there are five scheduled departures and five scheduled arrivals.

Daily passenger flow information is not available for Prince George. Given that national load factors are currently in the low eighties, in the absence of other data it has been assumed that the use of 90% as a planning day load factor is reasonable.

The baseline schedule for a November, 2013 planning day has been shown in tabular form in Table 3-4, below. During the peak hour, 266 passengers in each direction are expected to flow through the terminal.

Table 3-4 Baseline Nominal Schedule 2013

AIR LINE	FLIGHT #	A/C TYPE	SEATS	PAX	FROM	ARR TIME	DEP TIME	TO	PAX	FLIGHT #
AC		DH4	74				600	YVR	67	8202
WS		DH4	78				650	YVR	70	3290
9M		BEH	18				810	YLV	16	720
9M	715	DH3	50	45	YYC	830	850	YXT	45	715
9M	721	BEH	18	16	YKA	825	905	YYE	16	743
9M	725	BEH	18	16	YLV	830	920	YYD	16	701
AC	8201	DH4	74	67	YVR	904	945	YVR	67	8204
WS	307	73W	136	122	YVR	938	1015	YVR	122	172
AC	8205	DH4	74	67	YVR	1304	1345	YVR	67	8208
9M	746	BEH	18	16	YYE	1425	1445	YXJ	16	741
9M	716	DH3	50	45	YXT	1655	1715	YYC	45	716
WS	681	73W	136	122	YVR	1643	1720	YVR	122	186
9M	704	BEH	18	16	YYD	1645	1725	YLV	16	728
AC	8207	DH4	74	67	YVR	1654	1730	YVR	67	8210
9M	744	BEH	18	16	YXJ	1650	1735	YKA	16	722
WS	3293	DH4	78	70	YVR	1850	1920	YVR	70	3294
AC	8209	DH4	74	67	YVR	2009	2045	YVR	67	8212
9M	729	BEH	18	16	YLV	2005				
WS	3287	DH4	78	70	YVR	2155				
AC	8211	DH4	74	67	YVR	2354				
			1006	905					905	

Source: Consultant's analysis

The critical aircraft scheduled at present is the 136 seat WestJet B737-700, and it is considered unlikely that aircraft larger than 200 seats will be operated during the forecast period on a regular basis. It is considered unlikely that any new major airports will be added over the forecast period, although Calgary service might eventually be inaugurated by either Air Canada or WestJet.

For future years, the ratio of the planning peak day to annual traffic has been moderated from 1/237 currently, in equal increments to reach 1/275 in 2030. The 1/275 ratio still represents a peaking factor which is 33% above the daily average. Table 3-5 provides a forecast of the planning day totals for the

baseline scenario in future years. Note that in preparing an actual nominal schedule, the daily totals may vary slightly because of the requirement to use fixed aircraft sizes.

Table 3-5 Planning Day Passengers

YEAR	ANNUAL PAX	PEAK RATIO	ARR PAX	DEP PAX
2013	426	1/237	905	905
2020	558	1/253	1,103	1,103
2025	647	1/264	1,225	1,225
2030	739	1/275	1,344	1,344

Source: Consultant's analysis

The future year nominal schedules have been shown in Tables 3-6 and 3-7. The specific aircraft types noted in these tables are intended to indicate size requirements, and will probably be replaced by more modern equipment in the equivalent size category.

Peak hour passengers in the primary direction are expected to increase from 266 in 2013 to 317 in 2020 and 371 in 2030. The peak hour is also expected to shift from the late afternoon to the morning, although the differences in passenger numbers are quite small.

Scheduled gating requirements during the peak hour are as follows:

- 2013: 5 (1 B737-700, 1 Q400, 1 Dash8 and 2 Beech 1900s)
- 2020: 5 (1 B737-700, 2 Q400s, 1 Dash8 and 1 Beech 1900)
- 2030: 5 (1 B737-800, 1 A320, 1 Q400, 1 Dash8 and 1 Beech 1900)

The reason that no increase in the number of peak hour gates has been forecast, is that the peaking factor is already quite high, and additional frequencies are expected to operate at off-peak times. However, it should be noted that if aircraft experience operational delays during the shoulder periods, the gate requirement could rise as high as 7 or 8.

Table 3-6 2020 Nominal Schedule

AIR LINE	FLIGHT #	A/C TYPE	SEATS	PAX	FROM	ARR TIME	DEP TIME	TO	PAX	FLIGHT #
AC		DH4	74				600	YVR	67	8202
WS		DH4	78				650	YVR	70	3290
9M		BEH	18				810	YLV	16	720
9M	721	BEH	18	16	YKA	825	905	YYE	16	743
9M	725	DH3	50	45	YLV	830	920	YYD	45	701
9M	new 20	BEH	18	16	south	845	930	north	16	new 20
AC	new 20	DH4	74	67	YYC	900	935	YYC	67	new 20
AC	8201	DH4	74	67	YVR	904	945	YVR	67	8204
WS	307	73W	136	122	YVR	938	1015	YVR	122	172
WS	new 20	DH4	78	70	YVR	1300	1330	YVR	70	new 20
AC	8205	DH4	74	67	YVR	1304	1345	YVR	67	8208
9M	746	BEH	18	16	YYE	1425	1445	YXJ	16	741
WS	681	73W	136	122	YVR	1643	1720	YVR	122	186
9M	704	DH3	50	45	YYD	1645	1725	YLV	45	728
AC	8207	DH4	74	67	YVR	1654	1730	YVR	67	8210
9M	744	BEH	18	16	YXJ	1650	1735	YKA	16	722
9M	new 20	BEH	18	16	north	1700	1745	south	16	new 20
WS	new 20	DH4	78	70	YYC	1800	1830	YYC	70	new 20
WS	3293	DH4	78	70	YVR	1850	1920	YVR	70	3294
AC	8209	DH4	74	67	YVR	2009	2045	YVR	67	8212
9M	729	BEH	18	16	YLV	2005				
WS	3287	DH4	78	70	YVR	2155				
AC	8211	DH4	74	67	YVR	2354				
			#	1112					1112	
Totals may not add exactly due to rounding.										

Source: Consultant's analysis

Table 3-7 2030 Nominal Schedule

AIR LINE	FLIGHT #	A/C TYPE	SEATS	PAX	FROM	ARR TIME	DEP TIME	TO	PAX	FLIGHT #
AC		DH4	74				600	YVR	67	8202
WS		DH4	78				650	YVR	70	3290
9M	New 25	BEH	18	16	local	750	810	YLW	16	720
9M	721	BEH	18	16	YKA	825	905	YYE	16	743
9M	725	DH3	50	45	YLW	830	920	YYD	45	701
9M	new 20	BEH	18	16	south	845	930	north	16	new 20
AC	new 20	DH4	74	67	YYC	900	935	YYC	67	new 20
AC	8201	320	146	131	YVR	904	945	YVR	131	8204
WS	307	738	174	157	YVR	938	1015	YVR	157	172
WS	new 20	DH4	78	70	YVR	1300	1330	YVR	70	new 20
AC	8205	DH4	74	67	YVR	1304	1345	YVR	67	8208
9M	746	BEH	18	16	YYE	1425	1445	YXJ	16	741
WS	681	73W	136	122	YVR	1643	1720	YVR	122	186
9M	704	DH3	50	45	YYD	1645	1725	YLW	45	728
AC	8207	320	146	131	YVR	1654	1730	YVR	131	8210
9M	744	BEH	18	16	YXJ	1650	1735	YKA	16	722
9M	new 20	BEH	18	16	north	1700	1745	south	16	new 20
WS	new 20	DH4	78	70	YYC	1800	1830	YYC	70	new 20
WS	3293	73W	136	122	YVR	1850	1920	YVR	122	3294
9M	729	BEH	18	16	YLW	2005	2025	local	16	New 25
AC	8209	DH4	74	67	YVR	2009	2045	YVR	67	8212
WS	3287	DH4	78	70	YVR	2155				
AC	8211	DH4	74	67	YVR	2354				
			#	1343					1343	
Totals may not add exactly due to rounding.										

Source: Consultant's analysis

4. EXISTING INFRASTRUCTURE

The existing Airport layout and location of Airport development is provided in Figure 2-2

4.1 AIRSIDE

The airside system is the Airport's most fundamental operating system. This includes all manoeuvring surfaces, together with the facilities and services required to support aircraft operations, including runways, taxiways, aprons and navigation and approach aids.

The capabilities, capacity and usability of the airside system under a wide range of conditions must be consistent with the operating requirements of the air carrier markets the Airport serves or seeks to serve. However, airside infrastructure is expensive to build and maintain, and excess, unused capacity can represent a cost burden on operations. The following planning data was used in the Airport planning process:

General Aerodrome Characteristics:

Table 4-1 General Aerodrome Characteristics

Aerodrome Feature	Feature Details
Aerodrome Reference Point	Co-ordinates: N53°53'10.9" W122°40'11.7" Elevation: 2230 ft. (679.7 m) ASL
Geometric Centre	Co-ordinates: N53°53'22.2" W122°40'44.2"
Aerodrome Elevation	Location: Threshold 06 Co-ordinates: N53°53'8.7" W122°41'34.7" Elevation: 2267 ft. (690.8 m) ASL
Outer Surface	Height above reference elevation: 150 ft. (45.7 m) AGL Elevation: 2380 ft. (725.5 m) ASL Horizontal limits: 13,123 ft. (4000 m)
Aerodrome Magnetic Variation	21°E (Annual rate of change 15' W, as published in CAP)
Aerodrome Reference Temperature	15.5°C (as published by Environment Canada, Climate Normals 1971-2000)
Aerodrome Reference Code	The Prince George Airport is designed to the standards required to accommodate Code 4C operations. The primary Runway 15-33 is currently 3,490m (11,450 ft.) long and 45m (150 ft.) wide meeting Code C requirements.
Design Aircraft	The Boeing B747-400 (Code "E") is the existing design aircraft for the Prince George Airport

Critical Aircraft - Based on the design standards of the Airport, and the current/forecasted traffic, the critical design aircraft is currently the Boeing B747-400 (Code E):

Table 4-2 Critical Aircraft Characteristics

Planning Parameter	Boeing 737-700	Boeing 767-300 ER	Boeing 747-400
MTOW	154,500 lbs. 70,080 kg	412,000 lbs. 186,880 kg	875,000 lbs 396,893 kg
Tire Pressure	205psi	200psi	200psi
Wing Span	112'7" 34.32m	156'1" 47.57m	213'0" 64.94m
Gear Spacing	18'9" 5.72m	35'11" 10.95m	36'1" 11.0m
Code Letter	C	D	E
PLR/ALR	11	11	12
Tail Height MAX (at OEW)	41'7" 12.67m	52'7" 16.03m	64'0" 19.51
Turning Radius (MAX - NOSE GEAR)	42'11" 13.1m	122'12" 37.49m	91'0" 29.2m
Taxiway Width	15m	23m	23m

4.1.1 Runways

The Prince George Airport currently has three runways. Runway 15-33, at 11,450 feet (3,490m) in length, acts as the main runway, currently servicing aircraft up to the Boeing 747. When prevailing winds are an issue, Runway 06-24, at 5,628 feet (1,715m), can be utilized. This runway can handle up to Boeing 737 but is mostly used for small itinerant aircraft. Runway 06-24 received third priority maintenance during winter conditions. Runway 01-19 is used mainly as a taxiway but handles the odd small itinerant aircraft and glider operations. The following Table 4-3 provides additional details related to existing features and conditions of the runways.

The existing runway layout should meet the needs of the airport well beyond the horizon of the master plan. However, the current pavement of Runway 06-24 is in poor condition. In the short-term there is a requirement to resurface the Runway and install new edge lighting. Runway 01-19 received new edge lighting in 2011, upgrading to LED with new cables and pulpots. If mandated by Transport Canada, Runway End Safety Areas will be required at the thresholds of Runway 06-24 and 15-33.

Table 4-3 Runway Characteristics³

RUNWAY		15	33	06	24	01	19
PHYSICAL CHARACTERISTICS							
Reference Code		4E Precision	4E Non-Precision	3C Non Instrument	3C Non Instrument	2C Non Instrument	2C Non Instrument
Lowest Landing Minima (feet AGL)		200 ft.	445 ft.	512 ft.	614 ft.	614 ft.	614 ft.
Lowest Landing Visibility		½ mi RVR 26	1 mi	1 ½ mi	2 mi	2 mi	2 mi
Lowest Authorized Take Off Minima		½ mi	½ mi	½ mi	Special Procedure SID	Not Authorized	Not Authorized
True/Magnetic Bearing		171° / 152°	351° / 332°	081° / 062°	261° / 242°	031° / 012°	211° / 192°
Runway Dimensions (ft.)		11,450 ft. x 150 ft.		5,628 ft. x 150 ft.		3,769 ft. x 75 ft.	
Runway Slope		-0.30%	+0.30%	-0.87%	+0.87%	-0.13%	+0.13%
Runway Surface Type		Asphalt		Asphalt		Asphalt	
Runway Strength		PLR 12	PLR 12	PLR 10	PLR 10	PLR 10	PLR 10
PCN/ACN		102/F/D/X/U	102/F/D/X/U	67/F/D	67/F/D	67/F/D	67/F/D
Touchdown Zone Elevation (ft. ASL)		2231 ft.	2196 ft.	2266 ft.	2216 ft.	2234 ft.	2229 ft.
Threshold	Coordinates	N53°53'58.2" W122°40'14.8"	N53°52'06.9" W122°39'43.6"	N53°53'08.7" W122°41'34.8"	N53°53'17.3" W122°40'02.0"	N53°53'08.8" W122°40'40.9"	N53°53'40.7" W122°40'08.7"
	Elevation (ft. ASL)	2231 ft.	2195 ft.	2267 ft.	2219 ft.	2234 ft.	2229 ft.
Runway Strip Dimensions		11,844 ft. x 984 ft.		6,021 x 295 ft.		4,162 ft. x 197 ft.	
Stopway Dimensions		N/A		N/A		N/A	
Clearway Dimensions		935 ft. x 250 ft.	800 ft. x 250 ft.	800 ft. x 150 ft.	984 ft. x 150 ft.	635 ft. x 98 ft.	-
Displaced Threshold Length		0 ft.	500 ft.	0 ft.	407 ft.	984 ft.	373 ft.
Declared Distances	TORA	11,450 ft.	11,450 ft.	5,628 ft.	5,628 ft.	3,769 ft.	3,769 ft.
	TODA	12,385 ft.	12,250 ft.	6,427 ft.	6,612 ft.	4,404 ft.	3,769 ft.
	ASDA	11,450 ft.	11,450 ft.	5,628 ft.	5,628 ft.	3,769 ft.	3,769 ft.
	LDA	11,450 ft.	10,950 ft.	5,628 ft.	5,221 ft.	2,785 ft.	3,396 ft.

³ Prince George Airport Operations Manual

RUNWAY	15	33	06	24	01	19
LIGHTING						
Runway Edge Lights	High Intensity	High Intensity	Med. Intensity	Med. Intensity	Blue Med. Intensity for Night Taxi Operations only.	Blue Med. Intensity for Night Taxi Operations only.-
Approach Lights	SSALR	SSALR	Low Intensity AD Non-standard 2,800 ft.	Low Intensity AD Non-standard 2,600 ft.	-	-
Visual Approach Slope Indicator	PAPI P3	PAPI P2	PAPI P2	PAPI P2	-	-
Runway Identification Lights (RIL)	-	-	Yes	Yes	-	-
Centre Line Lights	15m spacing	15m spacing	-	-	-	-
Touchdown Zone Lights	-	-	-	-	-	-
Notes: 1. Information derived from Airport Operations Manual, Canada Flight Supplement and Canada Air Pilot.						

4.1.2 Taxiways

Prince George is equipped with five (5) taxiways and Runway 01-19 which acts as taxiway during day-time and night-time hours. Runway 01-19 is lighted with blue taxiway edge lights only to permit night-time taxi operations. The CFS indicates a 12,500 lb. landing / Takeoff restriction but does not specifically restrict weights for taxiing. This should be confirmed or clarified in the CFS. Additional details regarding the taxiways are contained in Table 4-4.

Taxiways Charlie and Delta are in poor condition and should be resurfaced in the short-term along. Taxiway edge lights for Charlie and Delta were upgraded in 2011 to be LED lighting, with new cables and pulpit.

It should be noted that the weight restriction on Runway 01-19 is not related to pavement structure limitations. The weight restriction is related to NAV CANADA operating directives to restrict landing and takeoff activity to "light" category aircraft.

Table 4-4 Taxiway Characteristics⁴

TAXIWAY	A	C	D	E	F
PHYSICAL CHARACTERISTICS					
Reference Code	E	D	D	E	E
Pavement Width	75 ft.	75 ft.	75 ft.	75 ft.	75 ft.
Surface Type	Asphalt	Asphalt	Asphalt	Asphalt	Asphalt
Strip Width (either side of centerline)	156 ft.	133 ft.	133 ft.	156 ft.	156 ft.
Graded Area Width (either side of centerline)	144 ft.	110 ft.	110 ft.	144 ft.	144 ft.
Strength	PLR 12	PLR 10	PLR 10	PLR 12	PLR 12
PCN/ACN	102/F/D/X/U	67/F/D	67/F/D	102/F/D/X/U	102/F/D/X/U
LIGHTING					
Edge Lighting	Blue -Med. Intensity	Blue -Med. Intensity	Blue -Med. Intensity	Blue -Med. Intensity	Blue -Med. Intensity
Taxiway/Runway Intersection	Double Blue	-	Double Blue	Double Blue	Double Blue
Taxiway/Apron Intersection	Double Yellow	Double Yellow	Double Yellow	-	-
Stop Bar	-	-	-	-	-
Runway Guard Lights	Yes	-	Yes	Yes	Yes

⁴ Prince George Airport Operations Manual

4.1.3 Aprons

Prince George is equipped with five (5) Aprons. Table 4-5 provides data on the Aprons.

Table 4-5 Apron Characteristics⁵

Apron	Apron I	Apron II	Apron III	Apron IV	Apron V	Helicopter Operations
Dimensions	390 ft. x 660 ft.	65 ft. x 932 ft.	164 ft. x 174 ft.	540 ft. x 213 ft.	817 ft. x 476 ft.	South end of Apron IV
Strength/Weight Restrictions	PLR 10	PLR 10	PLR 10	PLR 10	PLR 12	Same as Apron IV
PCN/ACN	67/F/D-48/R/B	67/F/D	67/F/D	67/F/D	102/F/D/X/U	
Apron Edge lights	Blue	Blue	-	Yes	Yes	Same as Apron IV
Flood Lights	Yes	-	-	-	Yes	-
Surface Type	Asphalt / Concrete	Asphalt	Asphalt	Asphalt	Asphalt/ Concrete	Same as Apron IV

The aprons at Prince George are subject to an Apron Management Plan which was developed in 2002 and updated periodically to ensure the smooth and efficient apron operations. This plan provides information on scheduling, safety, security, operations and other pertinent areas. In addition, a Glycol Operational Management Plan (GOMP) also governs procedures on the apron for anti/de-icing fluid application. It is recommended that these plans be reviewed regularly to ensure they comply with the latest best practices and regulations.

Apron I was constructed in five (5) stages from 1964 to 1986, with the last stage being constructed of concrete on the eastern edge of Apron I. In 2003, as part of the transfer agreement between Transport Canada and the Prince George Airport Authority, Transport Canada undertook a rehabilitation of Apron I. At this time, the concrete portion was expanded by 6.0m (width). Apron IV was part of Apron 1 and has since been identified separately for operational requirements.

Apron II was originally constructed in 1943 with asphalt overlays of 90mm, 60mm, and 50mm occurring in 1953, 1966, and 1988 respectively. Apron II is considered to be in fair condition. The defects of Apron II are as follows: Transverse and Longitudinal cracking of high severity, major extent; and Random and secondary cracking with related settlement.

Apron III was originally constructed in 1941 and expanded in 1943. Asphalt overlays of 80mm, 90mm, and 50mm were constructed in 1944, 1958, and 1986 respectively. Apron III is considered to be in fair condition, with defects as follows: Transverse and Longitudinal cracking of medium severity, major extent; and random and secondary cracking with areas of joint settlement to a maximum of 10mm.

Apron V was constructed in 2008/2009 to accommodate large (Code E) dedicated cargo aircraft.

⁵ Prince George Airport Operations Manual

4.1.4 Navigational and Visual Approach Aids

Instrument approach procedures permit aircraft to make an approach to the Airport using electronic guidance. An approach that only provides azimuth information to assist aircraft in maintaining a track to the Airport is classified as a 'non-precision approach'. If glide path information is also available for altitude reference it is termed a 'precision approach'.

Transport Canada's document TP308-Criteria for the Development of Instrument Procedures, defines the criteria whereas an approach is considered non-instrument, instrument/non-precision, or instrument/precision. Generally speaking, differences in landing minima affect how an approach plate is categorized.

To facilitate these approaches, electronic or satellite based instrumentation is required to provide the necessary directional guidance to the aircraft instruments. At Prince George, Navigation guidance for arriving and departing aircraft at the Airport is provided by two Non Directional Beacons (NDB) (offsite), Very High Frequency (VHF) Omni-directional Range (VOR)/DME (off-site) and an Instrument Landing System (ILS) (on-site). All navigation aids are owned, operated, and maintained by NAV CANADA. The Airport is also served by GPS (Global Positioning System) approaches for Runways 06, 33 and 15. Table 4-6 summarizes the navigational aids serving Prince George.

Runway 15 has the lowest minima at Prince George. This means, this runway can provide guidance to aircraft to bring them as low as possible and with the least amount of available visibility. Runway 15 is currently certified to CAT I precision approach standards providing decent guidance to within 201 ft. of the ground and ½ statute mile of visibility. To achieve this, it is equipped with a Glide Path (GP), Localizer (LOC) and a high intensity approach lighting system (SSALR). The Rwy 15 Localizer was changed in 2008, and the Glidepath was changed in 2010. The SSALR was updated in 1985. The runway is equipped with an RVR. However given the frequent occurrence of ground fog, a second RVR should be considered.

Runway 33 is instrument, non-precision and includes GPS (RNAV) and NDB approaches. SSALR equipment was installed in 2008.

Runway 06-24 is non-instrument and is equipped with an obsolete low intensity approach system. To be replaced with ODALS sometime in the future.

Table 4-4 below summarizes the current procedures published in the Canada Air Pilot (CAP) December 2013.

Table 4-6 Navigational Aids (NAVAIDS)

Type	Frequency	Coordinates	Location	Elevation	Applications
YXS VOR/DME	112.3 kHz, DME Ch 70	N53°53'39.4 W122°27'19.9"	8 nm east of Airport	4051 ft. (1234.7 m) ASL	En route navigation and instrument approach
Glide Path Runway 15	109.5 kHz	N53°53'46.4" W122°40'18.3"	Adjacent to Threshold Rwy 15	2232 ft. (680.3 m) ASL	Instrument approach
Localizer Runway 15 (Bearing 148°)	109.5 kHz	N53°52'29" W122°39'44"	Off Rwy 15 End	2191 ft. (667.8 m) ASL	Instrument approach
XS (Prince George) NDB	272.0 kHz	N53°49'41.7" W122°39'14.5"	3.1 nm south of Airport	2160 ft. (658.3 m) ASL	En route navigation and instrument approach
ZXS (Northwood) NDB	260.0 kHz	N53°58'03.4" W122°41'23.6"	4.1 nm north of Airport	1951 ft (594.6 m) ASL	En route navigation and instrument approach
RAMP Radar	N/A	N53°36'47.9" W122°57'15.5"	Southeast of Airport	3667 ft. (1117.7 m) ASL	En route Navigation

Table 4-7 Instrument Approaches

Procedure Name	Type	Facilities	Runway Served	Lowest Minimum FT. (AGL)	Lowest Visibility (SM)
RNAV (GNSS) RWY 06	Non-instrument	GNSS	06	514	1 ½
RNAV (GNSS) RWY 33	Non-Instrument	GNSS	33	444	1
NDB RWY 33 (GNSS)	Non-precision	XS (Prince George) NDB and GNSS	33	545	1 ¾
RNAV (GNSS) RWY 15	Non-Instrument	GNSS	15	488	1
ILS RWY 15 (GNSS)	Precision	Localizer and Glidepath Runway 15, ZXS (Northwood) NDB and YXS VOR/DME	15	200	½ RVR 26
LOC RWY 15 (GNSS)	Non-precision	Localizer Runway 15, ZXS (Northwood) NDB and YXS VOR/DME	15	308	1 RVR 50
NDB RWY 15 (GNSS)	Non-precision	ZXS (Northwood) NDB	15	648	1 ½
NDB A	VFR Circling	Localizer Runway 15, ZXS (Northwood) NDB and YXS VOR/DME	All	614	2
Note: 1. GNSS indicates satellite based navigation overlays are available.					

4.1.5 Air Traffic Services Facilities

NAV Canada provides air traffic control, air traffic advisory, air navigation and communication services. The tower is located adjacent to the Air Terminal Building and provides Airport control services for 17 hours daily. Refer to Figure 2-2 for the location of Air Traffic Control tower at Prince George.

4.2 LANDSIDE

The Prince George Airport is located in the south-east quadrant of the City, and is located within reasonable proximity to both Highway 16 (Prince Rupert to Edmonton) and Highway 97 (Prince George to Vancouver). Despite the close, convenient location of both provincial highways, vehicular access to the Airport is presently considered to be inadequate. At the present time, the route from Highway 16 to the Airport is tenuous, and requires a significant detour around the Airport, utilizing the Old Cariboo Highway. Access from Highway 97 is slightly better, utilizing a series of roads located within the Fraser-Fort George Regional District, which are maintained by the Ministry of Transportation. At the present time, passenger traffic, cargo traffic and employee traffic all utilize the single, southerly Airport access that connects to the intersection of Johnson Road and Torpy Road. The southern access route consists of a two lane road with gravel shoulders and ditch drainage.

Although the roadway should accommodate forecasted demand, the gravel shoulders on either side of the roadway are very narrow with a steep embankment in some areas. It is recommended that the gravel shoulders be widened to provide an improved degree of safety.

In 2006, the Prince George Airport Authority completed a major expansion of the existing parking facilities. This major expansion included a realignment of the existing arrival and departure roads. The existing arrival and departure roads have now been realigned to accommodate an expanded parking area which is conveniently located between these roads, and which provides easy access to the main terminal building. In addition to the realignment of the arrival road and departure road, improved access was provided to the fire hall maintenance building. Further, a new recirculation road was constructed so that vehicles utilizing the main parking lot and the car rental parking lot could utilize these facilities without traversing past the main passenger entrance to the terminal building.

In conjunction with the upgrading of the arrival and departure roads, all new roads and parking areas were provided with enhanced street lighting to provide safe, efficient access routes for passengers and vehicles. Illuminated Airport signage has also been provided on the new Airport arrival road.

As previously noted, in 2006, the Prince George Airport Authority spent approximately \$3.3 million upgrading the traffic circulation and parking facilities associated with the Airport. In 2005, a new car rental parking lot, consisting of 90 parking stalls was constructed. At this time, the car rental parking facilities were relocated from the main parking lot. Prior to the major upgrade of the main parking lot in 2006, a total of 452 parking stalls (including 90 car rental parking stalls) were available at the Prince George Airport. Following the major upgrade of parking facilities, a total of 795 paved parking stalls are now available consisting of the following:

- Main Parking Lot - 650 parking stalls
- Short-Term Parking (Metered) - 60 parking stalls
- Car Rental Parking Area - 90 parking stalls
- Overflow Parking Area (Graveled) - 400 parking stalls

It is anticipated that the parking lot expansion will satisfy Airport needs for the time horizon of the master plan. However, it should be noted that the main parking lot located between the arrival road and the departure road can accommodate a further 400 parking stalls when the demand is warranted. Once the

main parking lot has been fully expanded to approximately 1,050 parking stalls, the next option for the Prince George Airport Authority is to construct a multiple level parkade, located in the main parking lot, as close as possible to the main terminal building. In summary, it is estimated that the current parking facilities will satisfy increased passenger traffic demand for the next ten years. It is further estimated that the main parking lot can be expanded to approximately 1,000 parking stalls to accommodate future passenger traffic growth to the end of the 2033 forecast period.

A concern of the existing parking lot is that it is at a lower elevation than the terminal curb road. It is recommended that the PGAA consider the provision of a pedestrian ramp or lift device to accommodate people with disabilities.

4.3 AIR TERMINAL BUILDING

The existing Air Terminal Building (ATB) is approximately 6,940 m² in area and is comprised of a ground level plus basement. All public and passenger processing functions are located on the 4,498 m² ground level while airport administration and building support functions are located in the basement. The current ATB was constructed and renovated in phases over a period time. The most recent expansion, undertaken in 2007 includes an international arrivals facility and expanded baggage claim area. The international arrivals area has the capacity to accommodate approximately 120 passengers.

At present, the planning peak hour passenger demand is approximately 266 for both arrivals and departures. Based on the nominal flight schedules prepared as part of the activity forecast, it is anticipated that the planning peak hour demand will increase to approximately 371.

Currently the critical design aircraft is the 136 seat Boeing 737-700. During the forecast period it is unlikely that passenger aircraft larger than 200 seats will be operated on a regular basis.

The Air Terminal Building, with some minor modification/expansion will likely be capable of accommodating foreseeable peak hour demands. These modifications would include a potential expansion of the sterile holdroom that would include expanded passenger amenities such as improved food and beverage concessions and flexible seating configurations that include work stations and lounge seating. There is also a need to improve the oversized baggage screening process. At present, airline staff must manually transport oversize bags from check-in to the baggage makeup area.

4.4 AIRPORT SUPPORT FACILITIES

Aircraft Rescue Fire Fighting (ARFF)

The Prince George Airport is required to provide on-site aircraft rescue and fire-fighting (ARFF) services, consistent with Canadian Aviation Regulations. ARFF vehicles are accommodated in a dedicated area of the existing Combined Services Building. This space includes three apparatus bays, which is sufficient to support the long-term needs of the Airport. The current location provides ready access to all existing and proposed runway surfaces and meets the required three-minute response time.

The Airport rescue and fire-fighting service is currently provided at a Category 5 level. This category of service is sufficient to meet response requirements for aircraft up to the size of a regional jet such as the CRJ-200 and B737 and the mix and volumes based on actual site conditions. However, given the recent introduction of the Bombardier Q400 aircraft at YXS, the Airport Rescue Fire-Fighting services will need to be increased to Category 6 by the spring of 2014.

Airport Maintenance Garage

Snow clearing and airport maintenance equipment is maintained and stored in the Combined Services Building, located in close proximity to the airfield runways and taxiways off Apron II. In addition to the

main Combined Services Building, a number of smaller structures are located in proximity to the CSB that are used for the storage of equipment and bulk materials such as runway deicer and sand. The current facilities are deemed appropriate to meet current and future requirements but have limited capacity for expansion.

To accommodate potential expansion of airport support functions in the long-term, it is recommended that lands be reserved for this purpose, should they be required.

Aircraft Deicing

On-stand aircraft deicing is undertaken by the air carriers on Apron I. However, there is no means to capture and contain deicing runoff at this location. Therefore, ongoing downstream monitoring is provided to ensure compliance with applicable federal environmental guidelines. Apron V has the capability to capture and contain de-icing runoff.

Aircraft Fuelling

All aircraft fuelling is undertaken by fuel truck. There is a fuel farm located adjacent to Apron V, and two (2) Fixed Base Operators (FBO) provide fuelling services from Apron II and IV, including Esso and Shell. The capacity of the fuel farm was recently expanded and should meet the foreseeable demands of the airport, unless there is a significant development of the Airport as a technical stop for cargo aircraft, in which case the fuel storage capabilities at the airport would have to be expanded further. Esso currently has storage for 180,000 L of Jet Fuel, and PGAA/Jetmark has 600,000 L of storage.

4.5 COMMERCIAL DEVELOPMENT

Existing commercial development at Prince George Airport generally occurs in areas, situated to the southwest of the passenger terminal complex. Major tenants with facilities in this area include Northern Thunderbird Airlines, RCMP, Pacific Western Helicopter, Budget Car Rentals, Hertz Car Rental and National Car Rentals, as well as a number of private hangars for corporate and recreational aircraft.

Hill Aircraft Service Ltd., located on Apron II near the Combined Services Building provides FBO services as well as aircraft maintenance and storage.

BC Forests has a large tanker base that is accessed off of Runway 06-24.

It is not anticipated that there will be significant demand for aviation-related commercial development in the short to medium term. Potential demand has been identified for a multi-tenant cross dock facility that could be used by both cargo operators and couriers. Such a facility should be located in close proximity to Apron V, which has been designated for air cargo activities.

Lands not required for aviation-related commercial uses should be developed for commercial activities such as hotels and offices, and warehousing and industrial activities that do not impact airport operations or safety. These activities could include light manufacturing, food processing, vehicle storage, sales and repair facilities.

5. ENVIRONMENT

5.1 ENVIRONMENTAL PRACTICES

Responsible environmental practice employs planning tools and operational procedures to minimize potential negative environmental impacts that might otherwise arise from aircraft operations, land use activities or the development process.

Responsible environmental practice at Prince George Airport should include the development of an Environmental Management System (EMS). The purpose of an Environmental Management System is to establish environmental objectives for the Airport and define sustainable environmental practices required to achieve these objectives.

The EMS includes the following:

The Environmental Management Plan

The Environmental Management Plan (EMP), completed by EBA in 2007 and most recently updated in 2011, provides guidance to the Airport in the development of environmental strategies and provides a framework in which to assess the performance of environmental measures. Aspects of the EMP include:

- Outline the operations and activities of the Prince George Airport and describe how they may affect the environment.
- Identify legal obligations and best practices.
- Provide direction to related documentation.
- Identify Airport's environmental objectives and targets.
- Designate responsibilities for achieving objectives.
- Identify a timeframe for completing objectives.
- Ensure environmental regulatory compliance.

Environmental Assessments

The Environmental Review Process considers the biological, physical, and social impacts of all projects, and involves the preparation of an Environmental Review Report by airport personnel before a project is authorized to proceed. The Canadian Environmental Assessment Act (CEAA) is used as the guide for environmental assessments on airports.

Environmental Audits

These are objective evaluations of the environmental state of the facility. Prince George Airport personnel should conduct annual tenant audits to determine the effectiveness of tenant environmental systems and to ensure compliance with environmental legislation. An external firm should perform audits of the entire airport site and airport facilities to evaluate the environmental management system, the environmental quality of the site, and the fulfilment of legal requirements.

Environmental Emergency Response Plans

Environmental Emergency Response Plans specify procedures and measures to follow in case of accidental release of hazardous substances on the site. The plans should outline the responsibilities of Prince George Airport personnel and the various organizations that may be involved in emergency response and documents response procedures and guidelines for different spillage events.

5.2 ENVIRONMENTAL IMPACT

It is not anticipated that future development proposed under the Airport Master Plan will have any significant impact on the natural environment. Much of the Airport site has been previously disturbed and it is not likely there are areas of sensitive habitat located within the airport boundaries. Much of the undeveloped portion of the airport property is comprised of grasses, wooded areas, and agricultural land although these areas would not likely be impacted by future airport development, they do pose a concern because they support bird habitat which in turn increases the potential for bird strikes. The airport's existing Wildlife Management Plan identifies both passive and active measures to mitigate these concerns.

5.3 AIRPORT ZONING

To ensure the safe operation of aircraft in the vicinity of an airport Obstacle Limitation Surface (OLS) zoning is established to delineate airspace which must be kept free of obstacles. These surfaces include:

- Outer Surface – for the protection of aircraft conducting circling procedure or manoeuvring in the vicinity of the aerodrome
- Takeoff/Approach Surfaces – established for each runway direction for the protection of aircraft landing or taking off
- Transitional Surfaces – established along the side of the runway strip to ensure the safety of aircraft at low altitudes in the event they are displaced from the runway centreline.

The OLS zoning extends beyond the physical boundaries of the airport, therefore a legal instrument is required that can enforce the prohibition of structures, trees, and other obstacles that might penetrate the zoning surfaces. At Prince George Airport, this legal instrument is the Federal Airport Zoning Regulation (AZR). As previously stated, the current AZR does not protect for the recent extension of Runway

5.4 NOISE

Transport Canada recommends that no new noise sensitive land uses such as be permitted above 30 NEF/NEP for existing airports. Noise sensitive land uses include residential, schools, day care centres, nursing homes and hospitals.

The Noise Exposure Forecast (NEF) is a single number rating of the overall aircraft noise environment. It combines the noise levels of individual aircraft and the number of aircraft to give a single number rating of the average negative impact of the aircraft noise. The term negative impact takes into consideration both the noise level and the perceived annoyance of the aircraft movement. The NEF is the official noise metric used in Canada, and Transport Canada will support them to the level of accuracy of the input data.

NEF contours are generated by taking the aircraft traffic forecast (number of aircraft movements, time of day and aircraft fleet mix) for the time period in question. Using the traffic forecast, a typical planning day is determined which is used as the number of movements upon which the NEF contours are based. In accordance with Transport Canada recommendations, the 95th percentile method was used to determine the typical planning for the Prince George Airport NEF contour update.

The generated contours are therefore representative of the noise environment in the vicinity of the airport during a typical busy day. The NEF metric does not take into consideration individual noise events, but the entire planning day events.

The NEF also takes into consideration the additional annoyance of night flights, weighting nighttime operations with a 12dB penalty over that of a similar equivalent daytime operation. This means that a single nighttime operation is equal to 16.7 times a single daytime operation. A nighttime operation is

defined as any movement between the hours of 2200h and 0700h.

Typically, there are four (4) NEF contours generated to depict the noise environment in the vicinity of an airport. These four (4) contours range from 25 NEF to 40 NEF in increments of 5 NEF, where the 25 NEF is the lower value, and the 40 NEF is the higher value. In highly noise sensitive environments, contours as low as 20 NEF can be generated, however they are not commonly used in Canada.

Transport Canada does not support or advocate incompatible land use (especially residential housing) in areas affected by aircraft noise. The following summarizes community response prediction to aircraft noise in the vicinity of airports:

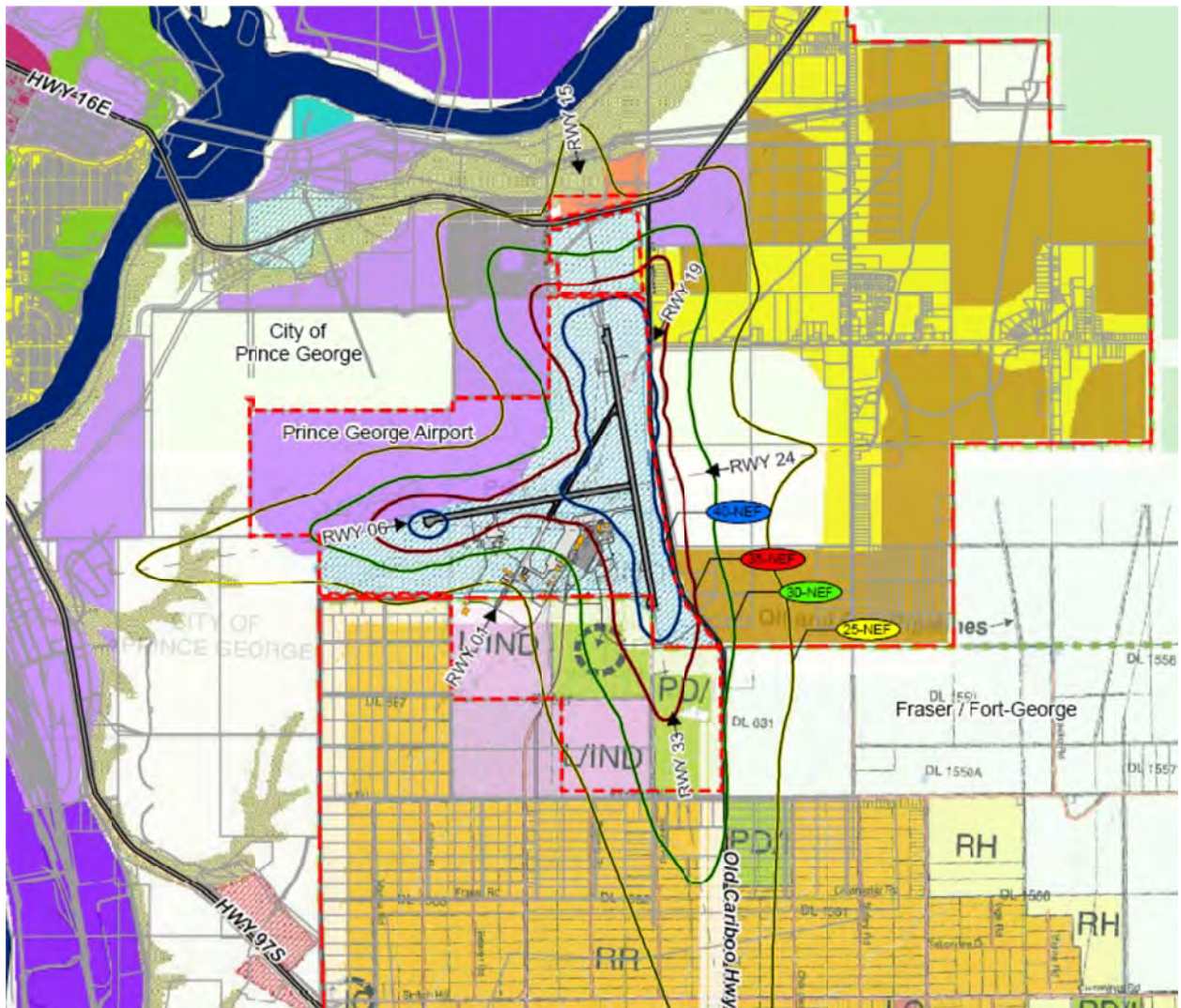
Table 5-1 Community Response Predictions to Aircraft Noise

Response Area	Response Prediction*
1 (over 40 NEF)	Repeated and vigorous individual complaints are likely. Concerted group and legal action might be expected.
2 (35-40 NEF)	Individual complaints may be vigorous. Possible group action and appeals to authorities.
3 (30-35 NEF)	Sporadic to repeated individual complaints. Group action is possible.
4 (below 30 NEF)	Sporadic complaints may occur. Noise may interfere occasionally with certain activities of the resident.
*It should be noted that the above community response predictions are generalizations based upon experience resulting from the evolutionary development of various noise exposure units used by other countries. For specific locations, the above response areas may vary somewhat in accordance with existing ambient or background noise levels and prevailing social, economic and political conditions.	

Source: Transport Canada Website

Figure 5-1 illustrates the NEF contours that were prepared as part of the 2007 Airport Master Plan. Updated NEF contours were not prepared as part of this Airport Master Plan Update. The NEF contours prepared as part of the 2007 Airport Master Plan took into consideration the expansion of Runway 15-33 and assumed that aircraft movements in 2030 would exceed 60,000 annual movements. The activity forecast associated with this Master Plan Update has reduced aircraft movement expectations, such that an optimistic forecast for 2030 is approximately 40,000 annual movements. Therefore, the NEF contours prepared as part of the 2007 Airport Master Plan should accommodate the noise impacts associated with forecasted aircraft movements identified with the this Airport Master Plan Update.

Figure 5-1 NEF Contours



Source: 2007 Prince George Airport Master Plan

6. AIRPORT LAND USE PLAN

One of the main objectives of the Airport Master Plan Update is to provide guidance for future land development. The purpose of this section is to integrate the requirements and synthesise the recommendations derived from the analysis undertaken in the previous sections. The integration process resolves competing or conflicting requirements, and attempts to achieve an efficient and logical Airport development scheme. The result is the 2033 Airport Land Use Plan.

6.1 GUIDING PRINCIPLES

The Airport Land Use Plan places existing Airport infrastructure and land reserves in the context of the current operating and market environment at Prince George Airport, and establishes an approach to meet forecast requirements for the next 20 years. The planning principles used as a basis for land use designations reflect the Strategic Objectives and development targets of PGAA, as presented throughout this report. Specifically, the key principles for land use planning aim to:

1. Protect existing operations areas and provide for airfield expansion requirements that may occur over the long-term and beyond the planning horizon;
2. Designate sufficient land to permit expansion of passenger facilities and related services;
3. Facilitate commercial development strategies through flexible commercial land use designations; and
4. Undertake development in a manner that will protect or enhance environmental conditions on the Airport and for the community at large.

6.2 2033 PRINCE GEORGE AIRPORT LAND USE PLAN

The 2033 Airport Land Use Plan is shown in Figure 6-1. The proposed land use area has changed slightly from the 2007 Airport Master Plan. Future airport land uses are dedicated to the support and safety of aviation-related activities conducted at the Airport. The extent, shape, and location of each type of land use varies and may change over time in response to aviation activity, airport design standards, safety-related geometric setbacks, protection of environmentally sensitive habitats, and operational requirements.

The airfield land use reserve has been increased to accommodate the proposed enhancements to the runway and taxiway systems. The reserve also incorporates protection areas for associated airfield navigational aids and future requirements for RESAs. The plan furthermore addresses the closure of Runway 01-19 in the future plans.

In light of the Air Terminal Building's long-term expansion requirements, the Air Terminal Reserve has been expanded to the north. The new reserve will provide sufficient area to accommodate Air Terminal development and apron expansion beyond the planning period. The demarcation line between the Airfield, Air Terminal Building and Operations & Support areas will depend on facility design.

Sufficient space has also been reserved for ground access and parking land uses to ensure expansion capability, without limiting design flexibility in further planning stages.

Commercial development areas are preserved and re-defined to reflect the commercial land use designations described previously. These areas provide flexible approach to reflect an unforeseen future opportunity that may present itself in the region. Such development will maintain compatible with airport operations. The southern commercial area has been re-developed to better align with the runways and make more efficient use of the existing BC Forests apron for expansion into an FBO and future GA/Flying Club apron.

No land acquisition is identified as part of this Airport Master Plan Update.

Tables 6-1 and 6-2 provide a description of the various land use plan elements and areas associated with Figure 6-1.

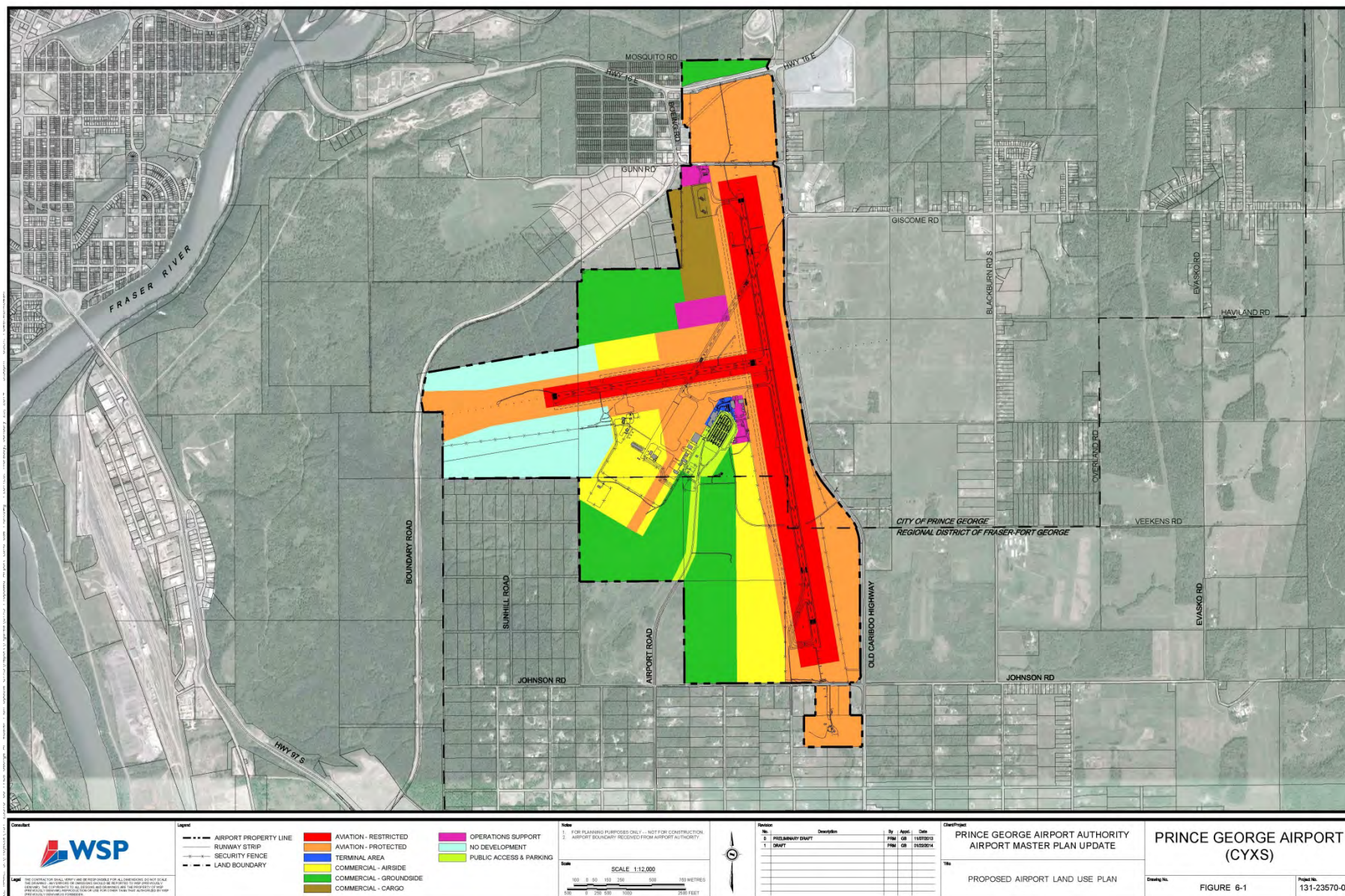
Table 6-1 Proposed Land Use Plan Areas and Designations (Figure 6-1)

Land Use	Proposed Land Use Plan Area (ha)
Aviation - Restricted	138.0
Aviation - Protected	242.7
Terminal Area	2.3
Commercial Airside	100.9
Commercial Groundside	154.5
Commercial Cargo	27.3
Operations Support	14.7
No Development	81.9
Public Access and Parking	23.9
Total	786.3

Table 6-2 Summary of Land Use Descriptions and Colours (Figure 6-1)

Land Use Planning Colour (Refer to Figure 6-1)	Land Use Description
	Aviation – Restricted occupies the largest area of land at the Airport, and includes the runway and taxiway systems including all fixed and rotary wing manoeuvring areas, aprons, approach paths, and navigational aids.
	Aviation – Protected secondary areas associated with Aviation Restricted including clearways, RESA, approach lighting, height approach-takeoff protection areas. Land parcels within the property boundaries that are not yet assigned to any of the above land use designations are held in reserve for contingency requirements, and provide an effective buffer zone for the continuance of safe Airport operations. Airport reserve land may be leased for agricultural or similar short-term interim uses. This area also includes electronic zoning and OLS up to 10m AGL.
	Terminal Area includes the passenger terminal and the associated infrastructure. The terminal reserve includes the land on which the Air Terminal Building (ATB) is situated as well as protects additional land to allow for future expansion.
	Commercial – Airside Airside commercial land allows for uses involving equipment servicing, goods or equipment storage, light manufacture and assembly, etc. which require access to the runway system. These would include aviation-related uses like hangars, aircraft maintenance facilities, fixed base operations, airline offices, etc.
	Commercial - Groundside Commercial land allows for uses that are customer service/value added oriented, that involve the sale of goods and services, or that provide administration functions. This might include retail stores, hotels/convention centres, distribution/storage centres, restaurants, vehicle service/repair stations, vehicle rentals, office buildings, light industrial warehouses, food processing, etc. Commercial land will not generally have airside access. Lands not required for airport-related functions could be developed for commercial and light industrial uses that do not impact airport operations or safety.
	Commercial Cargo is defined as those uses related to the Air cargo land allows for aviation cargo and freight facilities which require access to the runway system.
	Operations Support Operations services are areas protected for facilities which support aviation operations at the Airport. These may include a control tower, flight service station, weather office, maintenance garage, fire hall, security office, utility buildings, Airport administration, service roads, etc.
	No Development Areas of the Airport that have no designated use for the planning period and may be considered surplus.
	Public Access and Parking Public access and parking areas comprising the ground transportation system include access roads, public, employee and car rental parking, and the terminal road system and processing curb.

Figure 6-1 Proposed Airport Land Use Plan



7. RECOMMENDATIONS

The following summarizes the key recommendations made in this study:

Airfield Recommendations:

1. It is recommended that any existing airfield certification deviations be investigated and corrected to ensure full compliance with Transport Canada certification standards. Some minor deviations remain from Transport Canada and are identified in the Airport Operations Manual.
2. It is recommended that glycol management plans be reviewed regularly to ensure they comply with the latest best practices and regulations.
3. It is recommended that Runway 01-19 be closed as a runway over the planning period. The runway would remain in place and operate as a taxiway until the full parallel taxiway system is developed for Runway 15-33.
4. It is recommended the Runway 15-33 be protected for Code 4E, precision, CAT II operations within the planning period.
5. It is recommended that Runway 06-24 be protected as a 1,714m, Code 3C, instrument, non-precision standards to permit either land based electronic aid approaches or GPS approaches to be developed to non-precision minima.
6. It is recommended that NAV Canada be requested to review the requirements for approach aids and the need to augment the non-precision approaches for Runway 06-24 and Runway 33 as technologies change over the planning period.
7. It is recommended that protection for a future parallel Code E taxiway system be provided for Runway 15-33. The taxiway system would be phased and include the north segment initially followed by the south and then the high-speed exits as demand dictates. The high speed exits on Runway 15-33 would be triggered by the need to increase capacity, which is not projected within the planning period.
8. It is recommended that protection for a parallel Code D taxiway system be provided for Runway 06-24. This taxiway system would be phased also as demands trigger the need. The southern parallel taxiway would be Code D from Runway 15-33 to the mid-point of Runway 06-24. From this point it would be constructed to Code C requirements. On the north side of Runway 06-24, the taxiway should be planned to Code E offsets.
9. It is recommended that Boeing Road be considered for closure in the future due to its proximity off the 15 End and its future impact on navigational aids in this area.
10. It is recommended that an additional RVR be considered for Runway 15-33.

Air Terminal Building (ATB):

1. It is recommended the sterile holdroom be expanded to accommodate peak hour demand and provide for improved passenger amenities such as a food and beverage concession and flexible seating arrangements.
2. It is recommended the baggage handling system be improved to accommodate the conveyance of oversized baggage.

Air Cargo:

1. It is recommended the PGAA should give consideration to the future development of a cross dock air cargo/courier facility to be located in proximity to Apron V.
2. It is recommended the PGAA begin investigating the requirements both administratively and physically to establish a Foreign Trade Zone (FTZ) within the Airport cargo development area.

Landside Transportation:

1. It is recommended the PGAA monitor the service levels provided by the existing parking facilities, and expand into the gravel overflow parking area when necessary.
2. It is recommended the PGAA rehabilitate and reorganize the existing staff parking lot which services the maintenance building, fire hall and the main terminal building. This parking lot can be upgraded relatively inexpensively, with plug-ins for Airport staff.
3. It is recommended the PGAA work with the City of Prince George and the Ministry of Transportation to upgrade the Airport access to both Highway 97 and Highway 16.
4. It is recommended the shoulders on the airport's entrance road be widened to enhance safety.
5. It is recommended pedestrian ramps and/or a lift device be installed from the parking lot to the terminal curb to assist those with disabilities and/or heavy baggage.

Airport Operations and Support:

1. It is recommended that provisions be made to reserve an area north of the intersection of Runway 06-24 and Runway 15-33 for a dedicated Airport Operations Centre. While the current Airport maintenance and support services can be handled by the existing facilities, there are constraints to expansion.
2. It is recommended that Airport infrastructure improvements be undertaken. These are summarized as follows:
 - Construct a new 400mm diameter trunk watermain directly from the Airport to the new Blackburn water storage reservoir. (Connect at Gunn Road.)
 - Eliminate the onsite water storage reservoir and water booster station.
 - Replace and upsize approximately 1,400 lineal metres of old, undersized cast iron watermain which presently is included within the onsite Airport water distribution system.
3. It is recommended the sanitary sewage lift station be upgraded including the replacement of existing pumps, motors, valves and interior piping.
4. It is recommended the PGAA consider the planned upgrading and replacement of sections of the gravity sewer mains which are at minimal grades or which have reached the limits of their life cycle.

Commercial Development:

1. It is recommended that the commercial development area taxiways be capable of supporting up to Code D aircraft on the primary taxilane and Code C as a minimum on the taxilane fingers. In areas not required for aviation uses, develop landside commercial areas to accommodate a wide range of non-aviation related activities.

Site Servicing

1. The water system and sanitary sewer system are generally old and are approaching the limits of their life cycle. It is recommended that these systems be reviewed and consideration should be given to the planned replacement or rehabilitation of the existing infrastructure.

Environment:

1. It is recommended that the PGAA conduct an air quality study to establish a reasonable baseline condition in advance of the projected air traffic growth at the Airport.
2. It is recommended that PGAA continue to develop sustainable environmental solutions to landscaping and air quality in conjunction with the University of Northern British Columbia (UNBC).
3. It is recommended the PGAA continue monitoring environmental conditions and implement necessary initiatives to mitigate or correct potential deficiencies.

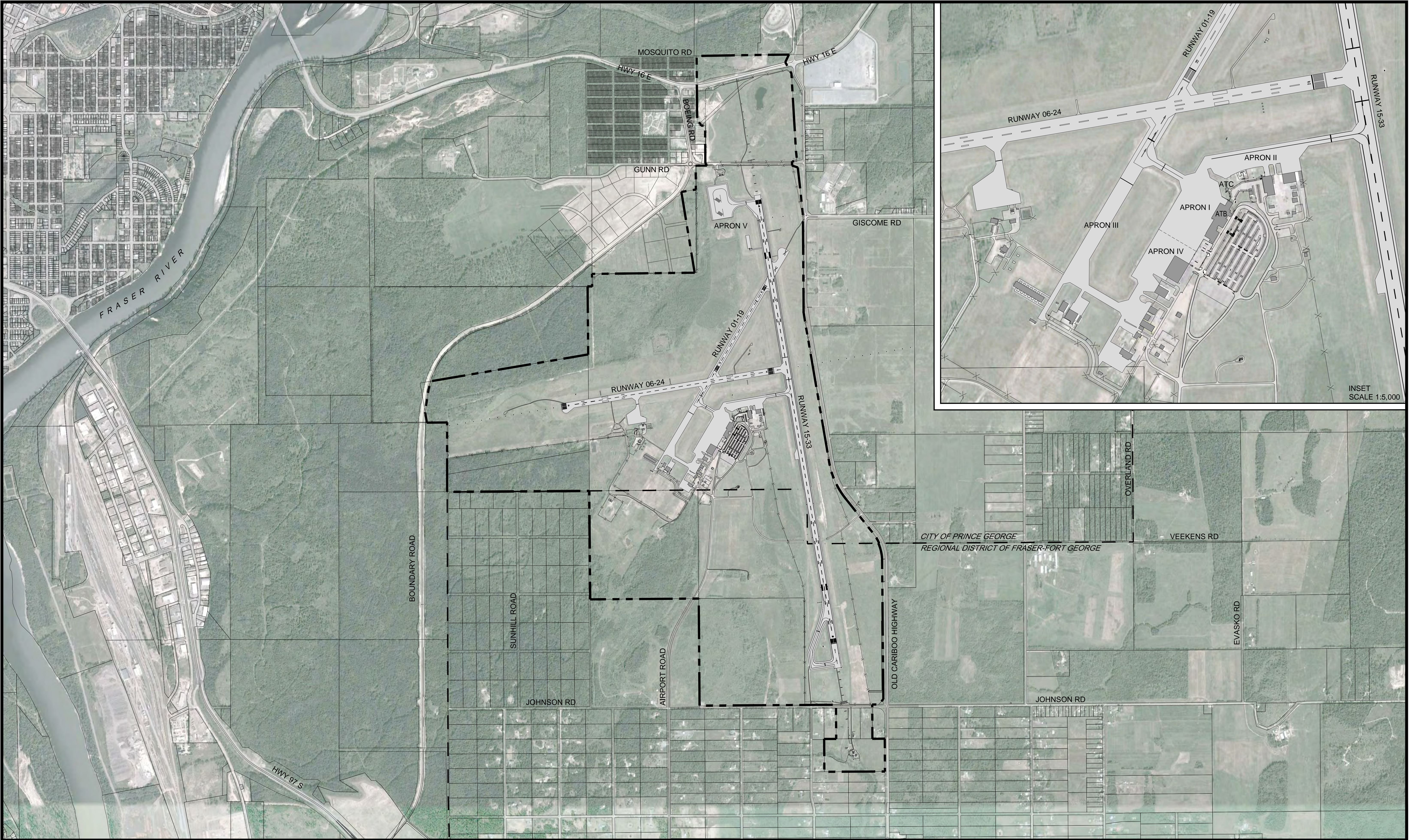
Community-Interface:

1. It is recommended that the PGAA update the Airport Zoning Regulations (AZR) to reflect the recent Runway 15-33 extension. Furthermore, the regulations need to be enhanced with new restrictive clauses to protect against electronic interference and bird attractions, all of which are related to the safety of operations of the Airport.
2. It is recommended the PGAA develop best practices in conjunction with the operator of the Shelley Transfer Station which is located about 5.6 km northeast of the Airport. It will be important to minimize the potential risks of bird related incidents since the land fill is located within the recommended 8 km buffer area
3. It is recommended that appropriate planning measures be put in place now to protect the future of the Airport. To this end, it is recommended that new Noise Exposure forecasts be prepared.
4. It is recommended that any municipal planning documents should not be used to regulate matters of federal authority including heights and electronic zoning for example. It is recommended that municipal planning document make it clear that these issues fall under federal authority but should be considered in planning decision.
5. It is recommended that the City and Regional District adopt Transport Canada's recommendation that no residential development be considered above the 30 NEF.
6. The regulatory authority of the new government associated with the proposed treaty lands (which are currently under negotiation) on the east side of the Airport, needs to be clearly defined. These lands are currently partially impacted by the existing AZRs. However, the regulatory impact of future changes to the AZRs and future changes in the general operating conditions of the Airport need to be considered in context of the future governance structure of these lands.


Appendix A

FIGURES

FILE NAME: S:\Projects\131-23570-00 Price George AP Master Plan Update CYXS\Report\Figures\CYXS Airport Ex Conditions.dwg PLOTTED: Thursday, January 23, 2014 - 3:37pm USER: Pawel.Mankowski









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	AIRPORT PROPERTY LINE
	RUNWAY STRIP
	SECURITY FENCE
	LAND BOUNDARY
	EXISTING AIRFIELD PAVEMENT
	ON-AIRPORT BUILDINGS/STRUCTURES

Notes

1. FOR PLANNING PURPOSES ONLY -- NOT FOR CONSTRUCTION.
2. AIRPORT BOUNDARY RECEIVED FROM AIRPORT AUTHORITY.

Scale

SCALE 1:12,000

100 0 50 150 250 500 750 METRES

500 0 250 500 1000 2500 FEET

Revision	Description	By	Appd.	Date
No.				
0	PRELIMINARY DRAFT	PRM	GB	11/07/2013
1	DRAFT	PRM	GB	01/22/2014

Client/Project	PRINCE GEORGE AIRPORT AUTHORITY AIRPORT MASTER PLAN UPDATE
Title	AIRPORT EXISTING CONDITIONS

PRINCE GEORGE AIRPORT
(CYXS)

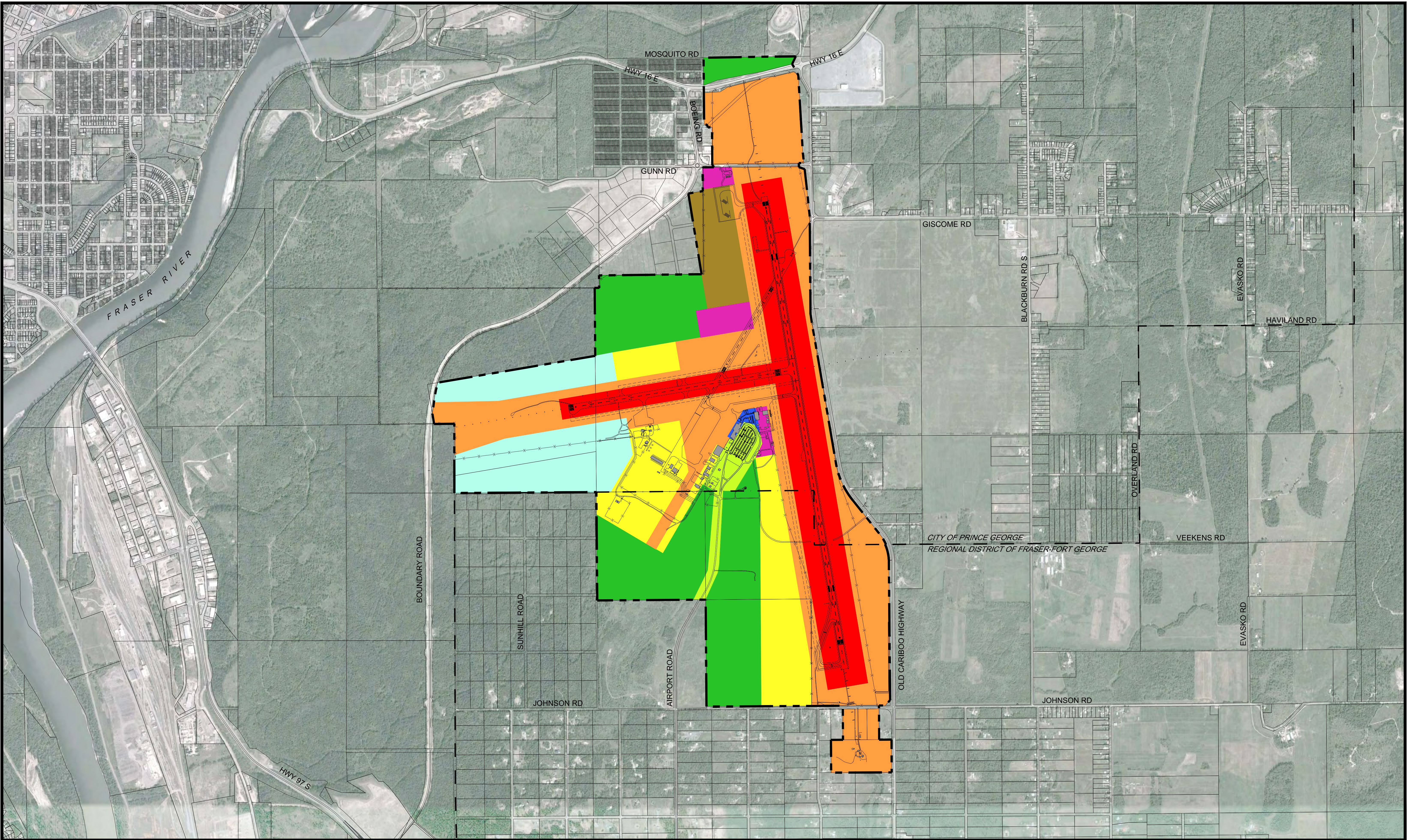
Drawing No.


FIGURE 2-2

Project No.

131-23570-00

FILE NAME: S:\Projects\131-23570-00 Price George AP Master Plan Update CYXS\Report\Figures\CYXS Proposed Airport Land Use Plan.dwg PLOTTED: Thursday, January 23, 2014 -- 3:50pm USER: Pawel.Mankowski





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Legend

--- AIRPORT PROPERTY LINE	AVIATION - RESTRICTED	OPERATIONS SUPPORT
--- RUNWAY STRIP	AVIATION - PROTECTED	NO DEVELOPMENT
--- SECURITY FENCE	TERMINAL AREA	PUBLIC ACCESS & PARKING
--- LAND BOUNDARY	COMMERCIAL - AIRSIDE	
	COMMERCIAL - GROUNDSIDE	
	COMMERCIAL - CARGO	

Notes

- FOR PLANNING PURPOSES ONLY -- NOT FOR CONSTRUCTION.
- AIRPORT BOUNDARY RECEIVED FROM AIRPORT AUTHORITY.

Scale

SCALE 1:12,000

100 0 50 150 250 500 750 METRES

500 0 250 500 1000 2500 FEET

Revision

No.	Description	By	Appd.	Date
0	PRELIMINARY DRAFT	PRM	GB	11/07/2013
1	DRAFT	PRM	GB	01/22/2014

Client/Project

PRINCE GEORGE AIRPORT AUTHORITY
AIRPORT MASTER PLAN UPDATE

Title

PROPOSED AIRPORT LAND USE PLAN

**PRINCE GEORGE AIRPORT
(CYXS)**

Drawing No.

FIGURE 6-1

Project No.
131-23570-00