

District of Vanderhoof

Airport Marketing Study

Understanding Vanderhoof's competitive advantage

March 11, 2011

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District of Vanderhoof

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1 EXECUTIVE SUMMARY

Objective

The objective of the Vanderhoof airport marketing study was to identify the general aviation demand drivers and trends, to position the District of Vanderhoof to effectively compete for opportunities to expand and diversify the local economy through an increase in aviation related activity. In response to market opportunities the District of Vanderhoof may consider the development of an airport site plan that would address factors critical for commercial success. The District wishes to address all potential requests for airport development in a fair and equitable manner in terms of development approach, location, lot size, infrastructure requirements and service levels. The District is also mindful of the need to balance the potential public and economic benefits with the costs and risks associated with airport development. Therefore, this marketing study provides the District with recommendations, including how to best to market the opportunities.

Assessment of Market Opportunities

The assessment of the market opportunities phase of the project was completed in two parts; initially through an analysis of economic, demographic, and aviation data to identify important characteristics and trends, including aircraft ownership, type of aircraft, potential traffic and associated opportunities for airport business development; and secondly the study team completed a series of stakeholder interviews. The research findings are summarized in the following paragraphs.

Regional Economy General Aviation Demand Driver

Several factors were found to be demand drivers for general aviation airport facilities in the Vanderhoof region. These include:

1. The characteristics of the aircraft and nature of operations at the airports in Central and Northern BC;
2. The airport's role as a basis for flight training at the College of New Caladonia's new aviation program; and
3. The pace of economic recovery and the potential growth rate in Central and Northern B.C., particularly as it relates to the forestry, natural resource exploration and mining sectors.

Stakeholder Interview Results

Twenty-five stakeholder interviews were conducted. The purpose of the interviews, with the direct general aviation participants, was to identify general industry trends and the factors effecting airport use and location decisions with respect to general aviation firms. For the indirect participants, discussions focused on understanding their involvement in the general aviation sector and the business and commercial practices associated with airport development.

The results of the direct stakeholder interviews suggest that the most important factors influencing the location choice for a general aviation business include:

1. Presence of existing infrastructure suitable for their needs;
2. Airport fees, property prices, lease terms and conditions;
3. Availability of fee simple land to build facilities that are owned rather than leased; and
4. Flexibility in operations.

The result of the indirect general aviation stakeholder consultations revealed that general aviation firms and their financial institutions had a range of experiences dealing with airport authorities. The general aviation industry has adapted to the commercial practices of conducting business on leased airport land but acknowledged that there can still be financing challenges associated individual companies. While not specifically directed towards Vanderhoof airport the indirect aviation stakeholders commented that many airport managers take a very bureaucratic view of zoning restrictions. Often airport managers exhibit a low willingness to accommodate alternate/improved uses (for example - a small manufacturing facility at the airport) of a building. Limitations that restrict the use of a building limit the marketability of airport property.

Market Segments Most Relevant to Vanderhoof

Based on the trends contained in the descriptive statistics and the stakeholder interviews a Strengths, Weaknesses, Opportunities, Threats (SWOT) analysis of the market opportunities for general aviation at Vanderhoof airport was conducted.

The results indicated that the following opportunities represented the most promising market segment for Vanderhoof airport:

1. Aviation Supported Businesses;
2. Charter Operations;
3. Repair, Maintenance & Overhaul;
4. Flight Training;
5. Natural Resource Base/Staging Area; and
6. Commercial Property for Other Industries.

It is important to note that the general aviation sector is still recovering from the recent recession. The research indicated that the total number of itinerant aircraft movements at Prince George airport had slowly declined (dropping by 11%) during the period 2005 to 2009. However, both jet aircraft and helicopter movements had recovered to 2005 levels by 2009: after peaking a couple of years earlier. What is most striking is the fact that Prince George airport's turboprop traffic fell by 22% and piston aircraft movements by 13%. The present aircraft mix at Vanderhoof airport is predominantly piston aircraft and a decline in this type of traffic should act as a cautionary note about the market's short-term appetite, or need for greatly expanded infrastructure.

Airport Land Development Options

The 2010 *Vanderhoof Airport Land Use and Development Plan* acknowledges that the airport does not currently have the necessary infrastructure (access, roads, utilities, and services) in place to respond immediately to a prospective tenant's needs. The result of the stakeholder interviews conducted for this study validated the importance of infrastructure and services. Aviation stakeholders advised that the provision of new infrastructure alone would be insufficient to attract new business to the community. Vanderhoof is competing with existing regional airport infrastructure where existing capacity can be used more intensely, expanded more quickly, and perhaps at a cheaper cost than providing new services to the Vanderhoof airport. Two main areas were identified regarding ways to address airport development risks under the present market conditions. They involve consideration of the following factors:

1. Type of commercial activity permitted on airport property;
2. How the property is made available for development.

The results of the market research clearly indicate that a broader range of commercial activities permitted on the airport would improve the marketability of any potential venture. The commercial uses to consider are both 'aviation related' and 'aviation compatible' businesses. The market research results also indicated a clear understanding of the benefits of fee simple property ownership compared to ownership of a leasehold interest amongst general aviation businesses.

Recommendations

To address the issues, this study makes recommendations in the following areas:

1. Short-term actions include (a) increased focus on customer retention and market awareness, (b) airport land development, (c) airport public facility use considerations; and
2. Long-term actions targeted towards preserving the options for future development.

Short-term Action

(a) Increased Focus on Customer Retention and Market Awareness

- Through the creation of a stand alone web site for the airport pursue a co-branding strategy to create awareness and market the airport. Suitable organizations would include existing airport tenants and the College of New Caledonia. The web site content should contain current information and contact details for issues related to the economic development, operation and maintenance of the airport.
- Partner with appropriate regional organizations and airports to create a critical mass of general aviation interests to influence decisions by NAV CANADA and other regulatory bodies.
- Monitor public information available on the airport to ensure that information on airport services and accessibility is accurate and up to date. For example, the Canadian Owners and Pilots Association should be contacted to provide updated information on the status of the runway/airfield regarding maintenance standards ('Maintained Year Round') and other aeronautical issues of interest to their members and the flying public.
- Commence with biannual meetings with airport tenants and stakeholders, District economic development and public works staff to coordinate activities, plan for any changes in services levels, or address operation issues. Address any outstanding issues with existing airport tenants to generate positive word of mouth advertising.

- Review the rent levels for existing airport tenants and if the current rates are found to be below other comparable general aviation airports for similar type firms adopt a phased approach to any rent increases to facilitate an orderly adjustment to higher rate levels.

(b) Airport Land Development

- Create a single land use category called 'aviation related' for the present activities covered by airside commercial and airport commercial and the institutional land use designations.
- Consider allowing 'aviation compatible' commercial land uses in the zones currently designated as airside commercial and airport commercial. For example, storage facilities or light manufacturing.
- Discuss with the Agricultural Land Commission their perspective on creating a more robust airport development model for Vanderhoof.
- Obtain the market insights from a knowledgeable commercial/industrial real estate agent familiar with Central and North British Columbia land development to help shape a decision regarding whether to allow 'aviation compatible' land uses on the airport property.
- Consider lower cost alternatives to a formal subdivision of airport property with prospective customers before making a final determination to pursue an alternative development approach. The alternatives could include the granting of a long-term lease, adopting a phased approach to servicing the site with upgraded civil infrastructure.
- Consider applying the 'Revitalization Area' concept to the airport lands. Under this approach there is an exemption of a portion of taxes based on improvements. The level of property tax rate is not different but the amount the owner pays is reduced for a period of time.
- Adopt an infill strategy that would reduce the cost of providing upgraded civil infrastructure services such as water/sewer/utilities/roads.
- Undertake a basic site plan that would define the parcels available for use, road access, and future utility corridors. A site plan for the property would help leverage the best use of existing assets, reduce the need for one-off decision making that can accompany individual lease renewal decisions and preserve the long term development potential of the site.
- Prior to undertaking a basic site plan for airport development have existing and potential clients confirm the amount and type of civil infrastructure required to support business operations during periods of robust growth and during declines in the general aviation sector.

- Have existing and potential clients provide written communications to the District that outlines the anticipated level of direct and indirect benefits that could be anticipated from their business activity if serviced land was made available for their use at the airport.
- Perform a costs benefit comparison to ensure that the level of any potential investment in upgraded civic services and infrastructure is sufficient to justify the long term operating costs and is at a level that is affordable and creates value for the potential airports customers. Avoid implementing a ‘build it and they will come’ approach to airport property development.
- Avoid the use of overly restrictive covenants in legal agreements that would limit the uses of the property. To the fullest extent possible promote a can-do business approach that would encourage business investment. Flexibility and a can-do business approach helps small and medium sized aviation sizes firm take advantage of unexpected opportunities, or changes in market conditions.
- Consider amending the *District of Vanderhoof Subdivision and Development Servicing ByLaw No. 659, 1992* so that the ‘service levels prescribed in Schedule A’ and other requirements of the bylaw can be adapted to the specific needs of airport development. The current municipal bylaw is generally applicable to residential and other forms of commercial development but perhaps not as responsive to the requirements of the different types of general aviation tenants that may have varying degrees of need for civil infrastructure and municipal services.

(c) Airport Public Facility Use Considerations

- Consider the needs of the general aviation community for public use facilities (for example, a common pilot’s lounge, public washroom with showers, lunchroom, and Internet access and public terminal kiosk for flight operations) when granting permission for a new airport tenant, or renewing an agreement with an existing tenant.
- The requirements for airport public facility use needs should be considered when identifying prime commercial land located close to the apron and runway so that these facilities are strategically considered in perpetuity as part of any and all land agreements with the District.

Long-term Action

- Preserve the long-term option for a potential natural resource base/staging area.
- Preserve the long-term option for a potential residential airpark development.

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2 INTRODUCTION

2.1 Purpose of the Project

The Vanderhoof Airport serves the district's general, social and business aviation needs. These include recreation, charter flights, corporate flights and periodic medevac airlifts. The main airport tenant is Guardian Aerospace, a company offering pilot training, as well as aircraft charter and the overhaul of Twin Otter airplanes. As a 'registered aerodrome' the airport is not served by a scheduled air service. The airfield is comprised of three runways: Runway 07-25 is paved and 5,018 feet in length; Runway 02-20 is made of turf/gravel and is 5,200 feet; and Runway 15-33 is also made of turf/gravel and is 3,200 feet in length. In terms of airport infrastructure, recent improvements to the airport include a runway overlay and edge lighting; Omni-directional Approach Light on Runway 07; Precision Approach Path Indicator lighting at both end of Runway 07-25; and lighted windsocks; GPS, Automated Weather Observation Systems, and Aircraft Tracking Systems.

The College of New Caledonia in partnership with the District of Vanderhoof and other community stakeholders undertook a feasibility study related to the delivery of a Commercial Pilot Training Program in Vanderhoof. This study resulted in the creation of an Aviation Diploma Program to be launched in 2011. Through this partnership it was determined that the local airport could be an ideal location for more aviation related business, however, those stakeholders consulted expressed interest in purchasing rather than leasing land as it has been difficult if not impossible to secure financing without land ownership. With this information, the District then commissioned an Airport Development Plan as a first step in approaching the Agricultural Land Commission (ALC) for permission to exclude a portion of the airport land from the Agricultural Land Reserve. This plan along with an application to the ALC, resulted in approval of exemption of 25 hectares subject to a covenant between the District of Vanderhoof and the Commission restricting the use of the excluded lands to aviation related uses. The District would like to be responsive to all potential requests in terms of location, services, and lot size and this airport marketing study is expected to gauge the potential for attracting new business to the area.

The March 2010 *Vanderhoof Airport Land Use and Development Plan* recommended that small size general aviation businesses should be targeted for increasing the level of aviation activity and airport development. This recommendation was based on the fact that the current level of airport service, as well as the registered aerodrome status somewhat limits the potential uses and users of the airport.

The District of Vanderhoof is considering the development of a site plan that would be responsive to all potential requests in terms of location, services and lot sizes. Building on this previous work the District of Vanderhoof initiated work on this airport marketing study. Specifically the study team was asked to complete the following tasks:

- a. Review reports and studies related to airport development in Vanderhoof.
- b. Interview existing and interested new aviation related businesses to identify possible support and complementary aviation related businesses that may be interested in Vanderhoof airport.
- c. Interview existing aviation related businesses in other communities to determine their interest in relocating to Vanderhoof.
- d. Follow up on any leads to determine the specific land and service needs of potential new business operators.
- e. Review the list of aviation related Commercial Opportunities identified in the Land Use and Development Plan report and then make contact with potential businesses either directly, if possible, or through their associations, websites, journals etc. to determine potential interest in aviation park.
- f. Provide the District of Vanderhoof with a summary of research undertaken and recommendations on the amount of land that could potentially be sold to aviation related businesses over the next five years as well as expectations around service infrastructure.
- g. Provide the District of Vanderhoof with recommendations on how best to market this opportunity over the next five years including but not limited to: real estate firms with expertise in aviation parks, advertising in specific trade journals, websites and/or professional associations.

2.2 Approach and Methodology

In recognition of the fact that scheduled air service was not likely to be a major consideration in terms of development potential, this analysis focuses on general aviation opportunities. The study team completed the analytical phase of this study in two parts; initially an analysis of economic, demographic and aviation data to identify important characteristics and trends associated with airport activity in similar communities, including aircraft ownership, type of aircraft, potential traffic and associated opportunities for airport business development; and secondly, the study team completed a series of interviews with key stakeholders.

These interviews were designed to develop a better understanding of the factors that drive aviation related decision making with regards to airport choice – particularly for general aviation traffic. In addition, the interviews explored stakeholders' views regarding possible future trends in their markets.

The results of the analytical and interview data form the basis of the recommendations arising from this study.

2.3 Assumptions & Limiting Factors

There are many physical, legal, public and market constraints that govern the Vanderhoof Airport Land Use and Development Plan and impact the Airport marketing strategy recommendations. As the development of airport lands proceeds, the impact of these constraints should shape and influence the effectiveness of the marketing tactics. Changes in development tactics should be expected over the longer term.

Commercial development and land use at the airport is impacted by federal, provincial and local government legislation, regulations and bylaws, but not limited to:

- a. Federal: *Aeronautics Act, Canadian Environmental Assessment Act, NAV CANADA.*
- b. Provincial: *Agricultural Land Commission, Environmental Management Act, Land Title Act, Local Government Act, and Strata Property Act.*
- c. Local: *District of Vanderhoof Official Community Plan and Vanderhoof Airport Land Use and Development Plan.*

This report does not contain a financial analysis describing the impact of the marketing strategy on the cost of Airport operations, or customer service levels. Rather, the intent of the marketing strategy is directional in nature. It puts forward specific measures that could be taken should policy makers decide to pursue various tactics for increasing general aviation activity and further airport development. An assessment of the benefits of implementing any of the marketing measures will need to be balanced with the willingness and ability of airport customers to share in costs that may be associated with land development, or airport improvements. It is also important to note that as customer fees and the intensity of land development increase the level of customer expectation regarding service levels may also change. Thus, the District of Vanderhoof will need to be mindful of such changes before initiating any marketing efforts.

The report needs to be considered in its entirety; information in individual sections should be considered in the context of the scope of work and the purpose of this study. The information contained in the various sections may or may not be suitable for reproduction as stand document.

If, for any reason, should major changes occur, the findings and recommendations contained in the study team's analysis should be reviewed.

3 PROJECT CONTEXT

3.1 Regional Economic Summary

Vanderhoof is located 100 km west of Prince George on the Yellowhead Highway. The population in 2010 was estimated at 4,049, down 2.9% from 4172 in 2006. The community falls within boundary of the Nechako Development Region. British Columbia government statistics group the North Coast and Nechako Development Regions together in terms of projected annual growth in employment. During the period 2009 to 2014 the BC Government is projecting that total regional employment in all industries will grow by 1.2%. However, the tables below show that among the goods-producing sector the employment growth prospects are highest in the oil & gas, mining and mining services industries. Employment growth among the service sector is anticipated to experience a more uniform growth rate. Anticipated growth rates in forestry and exploration and mining are important because these sectors drive the demand for a significant portion of the commercial general aviation business within the region.

Figure A. Projected Annual Growth Goods Producing Industries

North Coast & Nechako Development Region Projected Annual Growth in Employment Demand			
Goods Producing Industries	Estimated Employment		Avg Annual % Chg Over 5 Years 2009 to 2014
	2009	2014	
Agriculture	200	250	4.9
Forestry	1690	1470	-2.6
Fishing, Hunting, & Trapping	150	150	0.2
Oil & Gas	60	120	19.6
Mining (non Oil & Gas)	230	540	26.9
Services to Mining	370	1130	40.3
Utilities	160	180	1.8
Construction	2900	3670	5.3
Mfg--Food & Beverages	710	760	1.2
Mfg--Wood Products	2870	2410	-3.2
Mfg--Paper Products	780	110	-17.2
Mfg--Printing	50	50	-1.1
Mfg--Rubber, Plas. Chem	60	80	4
Mfg--Mineral Products	1470	1650	2.5
Mfg--Metal Fab & Machinery	100	120	3.4

Mfg--Comp, Electronic, Elect	10	10	2.9
Mfg--Transportation Eq.	30	40	4.4
Mfg--Other	120	140	2.6
Total Goods Producing	11960	12860	1.5

Figure B. Projected Annual Growth Service Producing Industries

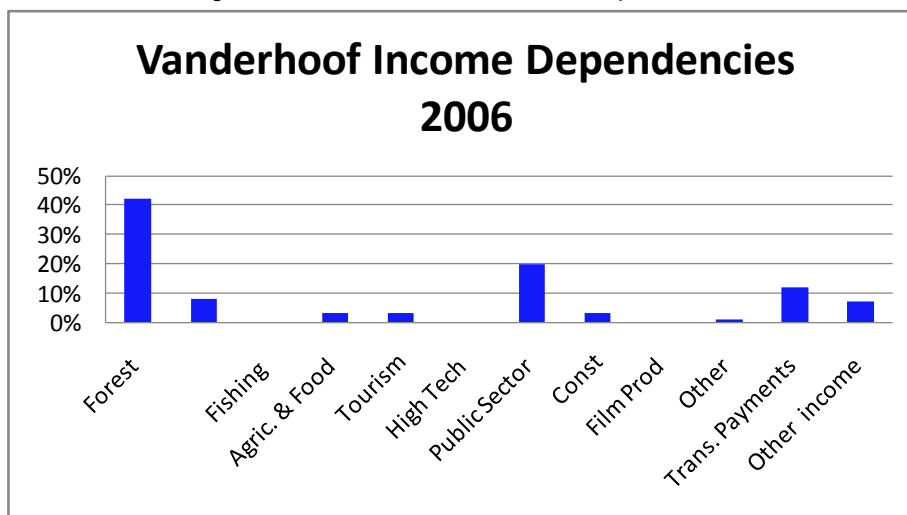
North Coast & Nechako Development Region			
Projected Annual Growth in Employment Demand			
Service Producing Industries	Estimated Employment		Avg Annual % Chg Over 5 Years 2009 to 2014
	2009	2014	
Trade— Wholesale	900	1060	3.5
Trade— Retail	5570	5470	-0.4
Transportation	2700	2900	1.5
Finance, Insurance, R.E.	1260	1590	5.2
Prof--Bus Services	930	1070	2.9
Prof--Computer Systems	130	150	2.6
Prof--Other Services	440	500	2.7
Management/Admin/Other Supp	1010	1280	5.4
Education	2830	2820	-0.1
Health & Social Assist.	4820	5120	1.3
Information, Culture, Recreation	1430	1620	2.6
Accommodation & Food Services	3000	3240	1.6
Services--other	1800	1720	-0.9
Government	2090	2020	-0.7
Total Service Producing	28,930	30,560	1.1
All Industries	40,890	43,420	1.2
Prepared by BC Stats			

Given the importance of the forest and resource development sector to the economy the study team explored in greater depth these two sectors to ascertain trends that could impact the demand for general aviation in Vanderhoof.

3.1.1 Forest Sector

The forest industry is an important source of employment and income for residents of the Prince George Timber Supply Area. Based on BC Stats estimates of community economic dependencies from 2006 census data, Vanderhoof is among the most dependent of BC Communities on the forest industry. It is also the least diversified. The forest sector accounted for 42% of residents' after tax income in 2006.

Figure C. Vanderhoof Income Dependencies



Between 2007 and 2009 economic and market conditions forced some mills in the region to undergo temporary shutdowns and implement shift reductions to reduce production in the face of weak demand. Within the Prince George Timber Supply Area there were 19 lumber mills, 3 pulp mills, 3 pellet manufacturers, 2 log home manufactures and 1 utility mill in 2010.¹ Details on the major forest products mills in close proximity to the Vanderhoof area are shown below.

Figure D. Vanderhoof Area Forest Manufacturing

Vanderhoof Area Forest Mills				
Company	Product	Mill	Annual Capacity*	Closest Airport
Canadian Forest Products Ltd.	Lumber	Plateau	276 mmbf	Vanderhoof
BC Custom Timber Products Ltd.	Lumber	Vanderhoof	7 mmbf	Vanderhoof
L & M Lumber Ltd.	Lumber	Vanderhoof	240 mmbf	Vanderhoof
Premium Pellet Ltd.	Pellets	Vanderhoof	130,000 tonnes	Vanderhoof
Canadian Forest Products Ltd.	Lumber	Isle Pierre	188 mmbf	Prince George
West Fraser Mills Ltd.	Lumber	LeJac	213 mmbf	Fraser Lake
Apollo Forest Products Ltd.	Lumber	Fort St James	134 mmbf	Fort St James
Conifex	Lumber	Fort St James	276 mmbf	Fort St James
Stuart Lake Lumber Co. Ltd.	Lumber	Fort St James	132 mmbf	Fort St James

*Source: Major Primary Timber Processing Facilities In British Columbia 2008 BC Ministry of Forests and Range

The immediate short-term to mid-term prospects for general aviation forest related opportunities in Vanderhoof remain uncertain as the forest sector responds to reductions in fiber supply and more robust market conditions.

¹ British Columbia, Ministry of Forests, Mines and Lands, 'Prince George Timber Supply Area: Rationale for Allowable Annual Cut (ACC) Determination'. January 11, 2011. <http://www.for.gov.bc.ca/hts/>

The Prince George Timber Supply Area (Prince George, Vanderhoof and Fort. St. James) allowable annual cut has recently been reduced now that the pine beetle infestation had essentially run its course. On January 11, 2011 the Ministry of Forest, Minerals and Lands Chief Forester's Office noted that while there would be a reduction in the annual allowable cut to 12.5 million cubic meters this supply of timber was still more than the actual timber harvest levels in recent years. The local forest industry "will need to continue to focus harvesting on the dead pine for as long as economically possible in order to maximize the mid-term timber supply". The Chief Forester also noted that analysis showed "a significant amount of timber that is considered uneconomic for harvesting under current market conditions. However, if market conditions continue to improve, this same timber could be economically viable and would help ease the mid-term supply challenge."² Yet, it is important to note that in terms of aviation activity in the forestry areas north of Vanderhoof a number of stakeholders mentioned that the road network in the area reduced the demand for aircraft travel to support forestry activity and improved economic conditions may not lead to an increase in aviation demand.

Quesnel and Williams Lake areas are also significant areas of fiber supply and forestry related activity in the Interior. However, the Chief Forester's January 2011 determination that there will be a 24% reduction in the Quesnel Timber Supply Area³ (compared to a 16% reduction in the Prince George Timber Supply Area) suggests that this may represent an area of less growth potential for general aviation forestry activity. General aviation airports and established operations in those communities might be better placed to serve forestry interests than new business ventures at Vanderhoof airport. For example, Front Line Aviation, a firm involved in helicopter charter, maintenance and leasing activities, considered Vanderhoof airport in their most recent site selection process but elected to locate in Williams Lake. The concentration of activity in Williams Lake, and a shift in forestry sector to increased use of helicopters compared to fixed wing aircraft, may have influenced the decision.

While the level of general aviation activity required for forestry related activity on a regional basis is difficult to estimate it is nevertheless tied to the economic health of the industry. It is encouraging to note that the industry in the Interior is emerging from the recession.

² British Columbia, Ministry of Forests, Mines and Lands, 'Prince George Timber Supply Area: Rationale for Allowable Annual Cut (ACC) Determination'. January 11, 2011. <http://www.for.gov.bc.ca/hts/>

³ British Columbia, Ministry of Forests, Mines and Lands, 'Quesnel Timber Supply Area: Rationale for Allowable Annual Cut (ACC) Determination'. January 11, 2011. <http://www.for.gov.bc.ca/hts/>

The January 2011 *Forest Industry Snapshot: Monthly Economic Statistics* from the Ministry of Forest, Mines and Lands indicated that the B.C. Crown Land Billed Volume for the Interior increased by 23% in 2010 and the volume of lumber from the Interior increased by 18% from the previous year's level. This increase in forest sector activity will in turn help to stabilize the level of activity for some of the general aviation firms that operate in the region.

In regards to general aviation opportunities that may arise from the forestry sector it is important to note that Vanderhoof airport does play a role in regional fire fighting efforts and is used as a staging area from time to time depending on the intensity and geographic proximity of the fire protection effort required. In the summer of 2010, 3 to 4 medium-to-heavy lift helicopters were parked on the apron at Vanderhoof airport. The Ministry of Natural Resource Operations Local Fire Officer advised the study team that they prefer to use helicopters rather than fixed wing aircraft. In terms of airside infrastructure use at Vanderhoof airport the Province hires a security guard and rents a fuel bowser to store at the airport when the helicopters are positioned there for fire fighting purposes. Ministry staff also noted that there should be a plan at air tanker operations in Victoria to move operations from Prince George and other airports in the event of an emergency. Thus, Vanderhoof airport serves as an important back-up facility that in turn helps contribute to regional resiliency.

3.1.2 Exploration & Mining

British Columbia government statistics indicate that in 2010, \$322 million was spent on mineral exploration. This represented the third highest total in the province's history. The industry also invested more than \$1 billion last year in expanding existing operations and developing new mines in BC.

Mr. Gerald Harper, President of Gamah International Ltd. (a firm that specializes in collecting mining industry financial statistics) noted the "Canadian mining industry is looking pretty good for coming out of a recession. Exploration got hit worse than mining and mining worse than other industries". In the same *ResourceWorld Magazine* (December 2010/January 2011)⁴ article Mr. Tony Andrew, Executive Director of Prospectors and Developers Association of Canada observed the Canadian mining industry is in a state of transition and recovery and has yet to fully recover.

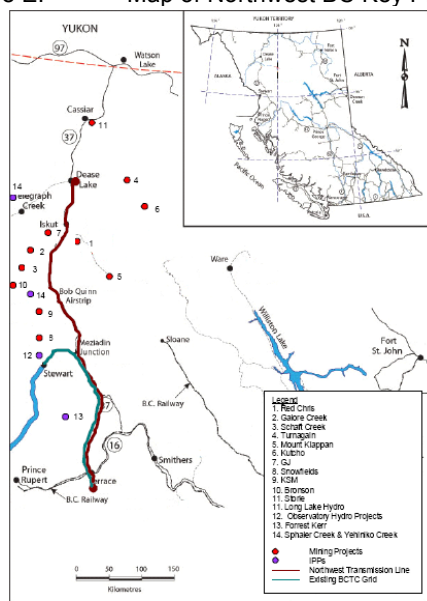
⁴ Caufield, P. 2010. 'Mining & Exploration Outlook 2011' in *ResourceWorld Magazine*. Vol. 9, Issue 1 pp. 28-34.

Different segments are recovering at different rates. Exploration companies have lagged behind majors, but activity is slowly coming back. In addition to general economic conditions, the ability of Vanderhoof airport to participate in general aviation activity in support of exploration and mining activity in the province is partly related to geographic proximity of Vanderhoof to the location of exploration or mining activity and its transportation linkages to major population, or service centers.

The location of present operating mines and the intensity of present mineral exploration activity was reviewed to determine general aviation opportunities for Vanderhoof airport. The location of the mineral resource and the extent of the existing road network are critical in shaping both the short-term and future opportunities. Since location with good road access reduce the demand for aviation related support services. A review of the BC government *2010 Operating Mine and Selected Exploration Projects* indicates that some of the most significant activity is occurring in the Northwest sector of the province in the north of Smithers and parallel with the Alaska/BC border and Highway 37. For example, Copper Fox Metals is located south of Telegraphic Creek. The Schaft Creek Project was extensively explored and drilled by several mining companies since its discovery in the late 1950's culminating with the completion of a pre-feasibility study by Teck-Cominco Corporation (now Teck Resources Limited) in the early 1980s. In 2002 Copper Fox Metals Inc. secured the rights to acquire a 100% working interest in the project pursuant to an Option Agreement with Teck Resources Limited (Teck). Copper Fox has since earned a 100% working interest in the project and has incurred expenditures of approximately \$43 million. Other proposed mining projects in the area include the Kitsault Mine Project, GJ Kinaskan Lake Copper-Gold Project, Snowfield Gold Project, Mount Klappan Coal Mine, Harmony Gold Mine and the Red Chris Porphyry Copper/Gold Project among others.⁵

⁵ Ministry of Finance. 'Major Projects Inventory'. September 2010.

Figure E. Map of Northwest BC Key Projects



For Vanderhoof airport the direct prospects arising from the capital expenditure arising from the mining, exploration, clean energy production and the other resources profiled by activity in Northwestern British Columbia are perhaps relatively fewer compared to Smithers and Terrace because these communities are closer to the active resource plays. Rather, there may be some general aviation supply chain opportunities that can be accommodated in Vanderhoof combined with the marshalling of the labour force to serve this expansion that can be included in the Vanderhoof sphere of interest. Some trades people and supply chain specialists are choosing to purchase their own aircraft transportation to serve these more remote resource markets or communities. For example, Sundby Electric operates from Vanderhoof airport with a fixed wing aircraft and hangar facility.

There is also some exploration and mining activity occurring around the Vanderhoof area. Terrane Metals Corp.'s (a subsidiary of Thompson Creek Metals Company) Mount Milligan Copper/Gold Mine project near Fort St. James is an example of an active project that has received the necessary environmental approvals. Project is anticipated to be complete in 2013. At a location southwest of Vanderhoof, Thompson Creek Metals Company produces molybdenum its 75%-owned Endako Mine in northern British Columbia. TTM Resources, Richfield Ventures, Silver Quest Resources, Kootenay Gold and Troymet are also involved in various stages of mineral production south of the Vanderhoof area. However, stakeholder interviews did not identify these projects as immediate general aviation market opportunities.

In the short-term, the level of demand for general aviation activity required for the exploration and mining sector appears to be located in areas in closer geographical proximity to the areas of relatively more intense activity. Nevertheless, Vanderhoof's geographic location could serve as a back up or alternative location for some airport related, or for some supply chain related activity that use aircraft to deliver their service. The longer-term potential for the use of the airport for a natural resource base staging area, or as a service location may also be possible. However, market conditions and the uncertain nature of exploration and mining activity make it difficult to estimate with any accuracy.

3.2 Comparison of Vanderhoof to Other Airports

3.2.1 Profile of Vanderhoof Airport

The Vanderhoof airport is located on a plateau 2.4 km north of the community above the Nechako River Valley. The airport is owned and operated by the District of Vanderhoof. The airport is a 'registered aerodrome', which means fewer federal regulations, standards, and responsibilities apply to the owner/operator than those applied to 'certified airports'. Recent improvements to the Vanderhoof airport include a runway overlay and edge lighting; Omni-directional Approach Lighting on Runway 07; Precision Approach Path Indicator Lighting at both ends of Runway 07-25; and lighted windsocks. Additional improvements include the recently commissioned Automated Weather Observation Station and the GPS approach development, with NAV CANADA approval anticipated in the late spring or summer of 2011.

3.2.2 Aircraft Fleet- Number & Type of Aircraft

According to Transport Canada's *Civil Aviation Register Database*⁶, the current aircraft fleet based at Vanderhoof totals 30 aircraft including 28 fixed wing aircraft and 2 gyroplanes. The fixed wing portion of the fleet aircraft consists exclusively of light piston-engine aircraft, and with the exception of one Cessna 310B all are single engine. Of these aircraft, 24 are registered to addresses in Vanderhoof, 3 to Prince George, 2 to other local communities (Fort St, James and Fraser Lake), and 1 to Kelowna. The dominance of locally owned aircraft is typical among Northern BC airports; the table below shows the percentage of local ownership (i.e. base location and owner city are the same) for these airports.

⁶ Transport Canada Civil Aviation Register Database <http://www.wapps2.tc.gc.ca/Saf-Sec-Sur/2/ccarcs/aspscripts/en/menu.asp>

Figure F. Northern BC Aircraft Ownership

Airport	Local Ownership	Total Aircraft	% Local
Burns Lake	29	33	88%
Chetwynd	1	10	10%
Dawson Creek	37	55	67%
Fort St James	13	19	68%
Fraser Lake	10	12	83%
Houston	12	13	92%
Hudson's Hope	3	5	60%
Kitimat	4	5	80%
MacKenzie	6	11	55%
Prince George	109	140	78%
Quesnel	48	58	83%
Smithers	34	43	79%
Terrace	40	42	95%
Valemount	15	15	100%
Vanderhoof	24	30	80%
Grand Total	385	491	78%

3.2.3 Airport Tenants

At the time of this study, Vanderhoof has six main customers at the airport. Three of the tenancies cover activities that are consistent with the Airport Land Use and Development Plan land use designation ‘airside commercial’. Two of the remaining property agreements cover activities that are also compatible with their respective airport land use designations. However, one tenant is occupying property designated as ‘airport commercial’ and the purpose of that lease does not strictly fit the land use designation. This is perhaps not surprising given the fact that the *Airport Land Use and Development Plan* was prepared in 2010 and the tenancy agreements came into effect before that time. While all airport customers are leaseholders, the majority of the tenant property agreements are short term in nature. There is only one long-term lease on airport property that is registered in the BC Land Title system. The table below summarizes the key features of the existing property agreements.

Figure G. Vanderhoof Airport Tenant Profile

Lease Clauses	Tenant #1	Tenant #2	Tenant #3	Tenant #4	Tenant #5	Tenant #6
Agreement Type	Lease	Lease Multiple Parties	Lease	Lease	Lease	Registered Lease
Area	8,000 square meters	1,800 square meters	1,400 square meters	1,000 square meters	Referenced by way of aerial photo	X hectares
Assignment	Yes, landlord’s permission required	Yes, landlord’s permission required		Yes, landlord’s permission required	Yes, landlord’s permission required	
Common Areas	License for tenant access & parking	License for tenant access & parking		License for tenant access & parking	No clause	

Lease Clauses	Tenant #1	Tenant #2	Tenant #3	Tenant #4	Tenant #5	Tenant #6
Mortgage	Yes, landlord's permission required	Yes, landlord's permission required		Yes, landlord's permission required	No clause	Yes, landlord's permission required
Other	Landlord's options for fuel levy				Renewal clause	Renewal Clause for tenant Landlord option to purchase
Purpose	Airport commercial services	Airport purposes		Agreed purposes	Agricultural crop	Public golf course
Sublet	Referenced in assignment clause	Referenced in assignment clause		Referenced in assignment clause	Referenced in assignment clause	No reference
Rent	\$X per 100 square meters Adjusted for inflation	\$X per 100 square meters Adjusted for inflation		\$X per 100 square meters Adjusted for Inflation	Specific to nature of agreement	Specific to nature of agreement Adjusted every 3 years
Taxes/Utilities	Tenant pays	Tenant pays		Tenant pays	Tenant pays	Tenant pays
Term/Expiry	3 years Aug. 31, 2011	5 years Dec. 31, 2014	3 years March 31, 2011	3 years Dec. 31, 2010	8 years Dec. 31, 2010	15 years Dec. 30, 2017

Note: to preserve the confidential nature of the specific agreements this table makes reference to general features of the agreement and approximate estimates of property size and other agreement details.

3.2.4 Airport Infrastructure Adequacy & Configuration

Development in some areas to date has not made the best use of the available lands. The landing strips, taxiways, apron and aircraft tie downs are areas of strength. However, the location of buildings/hangars, roads, access and utilities reflect the historical use of the property and perhaps one-off decision-making in terms of meeting tenant's immediate requests. As a result, the aging infrastructure is somewhat scattered around the north side of the airport.

3.2.5 Analysis Relative to Other Regional Airports

For purposes of comparison, data on airports in Northern BC has been assembled from multiple sources. Data on airport characteristics is based primarily on the Canadian Owners and Pilots Association (COPA) *Places to Fly in BC*⁷. Data on civil aircraft population is taken from the *Civil Aviation Register Database*. Comparative statistics for Northern BC airports are highlighted below.

⁷ http://archive.copanational.org/PlacesToFly/index.php?pr_id=3

Figure H. Northern BC Airport Characteristics

Northern BC Airport Characteristics*						
Community	Registered Aircraft	Runway Length (feet)	Scheduled Service	Certified - Registered	Night Flying	Maintained Year Round
Burns Lake	33	5000	No	Registered	Yes	Yes
Chetwynd	10	4484	No	Registered	Yes	Yes
Dawson Creek	55	5000	CMA	Certified	Yes	No
Fort St. James	19	4000	No	Certified	Yes	Yes
Fraser Lake	12	3900	No	Registered	No	No
Houston	13	3900	No			
Hudson's Hope	5	5200	No	Certified	No	No
Kitimat	5	3000	No	Registered	No	No
Mackenzie	11	5000	No	Certified	Yes	Yes
Prince George	140	11450	AC, WJ, CMA	Certified	Yes	Yes
Quesnel	58	5500	CMA	Certified	Yes	Yes
Smithers	43	7544	AC, CMA, Hawkair	Certified	Yes	Yes
Terrace	42	5373	AC, CMA, Hawkair	Certified	Yes	Yes
Valemount	15	3950	No	Registered	No	No
Vanderhoof	30	5018	No	Registered	Yes	No

*Source: **Places to Fly in BC** Canadian Owners and Pilots Association

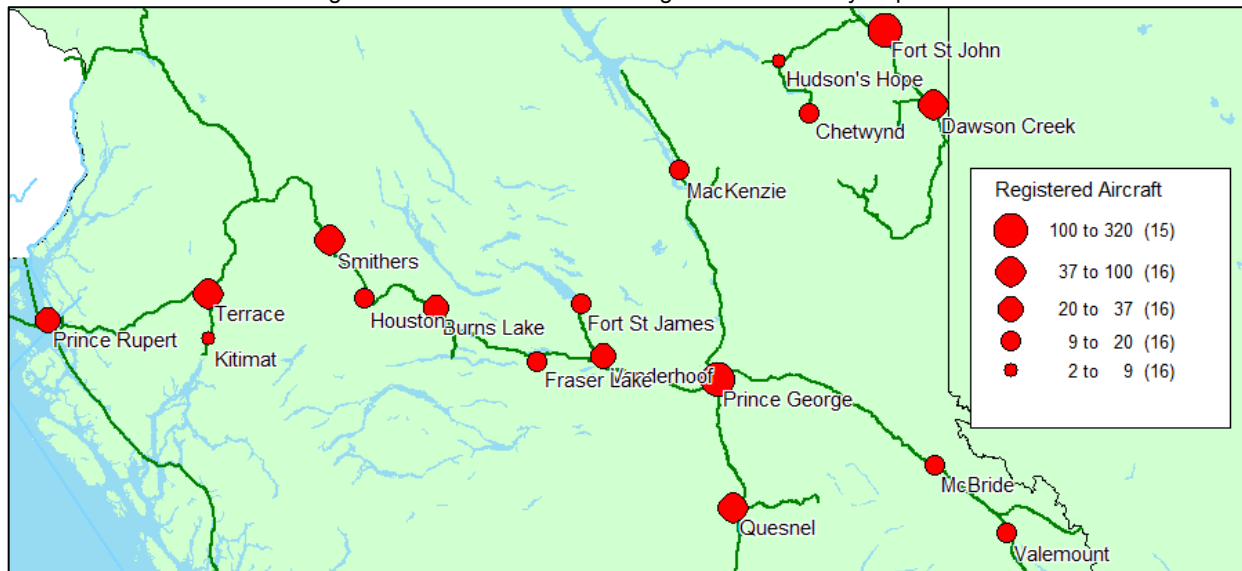
Only 4 of the sites profiled here have scheduled air service: Prince George, Smithers, Quesnel and Dawson Creek. A comparison of community aircraft populations and demographics is shown below.

Figure I. Northern BC Population Per Registered Aircraft

Airport	Registered Aircraft	Share of Total	Population 2010	Population per Aircraft
Burns Lake	33	7%	2,142	65
Chetwynd	10	2%	2,714	271
Dawson Creek	55	11%	11,860	216
Fort St. James	19	4%	1,295	68
Fraser Lake	12	2%	1,161	97
Houston	13	3%	3,008	231
Hudson's Hope	5	1%	1,056	211
Kitimat	5	1%	9,178	1836
Mackenzie	11	2%	3,706	337
Prince George	140	29%	75,568	540
Quesnel	58	12%	9,746	168
Smithers	43	9%	5,408	126
Terrace	42	9%	11,931	284
Valemount	15	3%	1,062	71
Vanderhoof	30	6%	4,049	135
Total	491	100%	143,884	293

A map depicting the number of registered aircraft based in the area is shown on the following page.

Figure J. Northern BC Registered Aircraft by Airport



Analysis of this data highlights typical characteristics of the general aviation industry in Northern British Columbia. The first characteristic is the dominance of light single engine piston aircraft in the fleet. These small aircraft represent the demand for aviation infrastructure and support services from within the region. The table below provides details on the physical dimensions of the existing fleet of 30 aircraft registered in Vanderhoof.

Figure K. Aircraft Size Vanderhoof Airport

Wingspan (Feet)		Length (Feet)		Height (Feet)	
Mean	34.0	Mean	25.1	Mean	7.9
Minimum	26.0	Minimum	17.9	Minimum	5.9
Maximum	37.5	Maximum	30.5	Maximum	10.5

The second characteristic is that while the number of registered aircraft ownership does increase, as the size of the population grows larger, the level of aircraft ownership is not completely dependent on the size of the community. In Northern BC there is approximately 1 registered aircraft for every 300 people. In Vanderhoof there are 135 people for every registered aircraft. Vanderhoof accounts for approximately 2.8% of the regional population but a 6% market share of the registered aircraft.

4 ASSESSMENT OF MARKET OPPORTUNITIES

The 2010 Vanderhoof Airport Land Use and Development Plan observed that Vanderhoof must differentiate itself from other nearby airports in order to avoid unnecessary and costly investment for aviation business and infrastructure. It was recommended that smaller sized general aviation businesses be targeted. In assessing the market opportunities the most basic assumption is that the economy is the overriding key determinant of general aviation activity and traffic level. When the economy is strong the general health of the target business markets improves and level of interest in recreational aviation opportunities may rise.

Since the primary market for Vanderhoof Airport is general aviation, recreational and commercial, key factors that are expected to impact the use of the airport are the level of airplane ownership and usage in the general and business population, the cost to the airport customer or tenant for the services they require as well as convenience and level of service. The general aviation use of a specific airport is also influenced by factors such as accessibility to customers or market; the cost of services; cost of operation; as well as the availability of fuel and ground support maintenance.

The *Airport Land Use and Development Plan* clearly recognizes that infrastructure improvement would need to be demand driven. Yet, at the present time Vanderhoof Airport does not have the necessary infrastructure (access roads, utilities, and services) in place to respond to prospective customer's immediate needs and capture the market opportunities. Thus, the study team considered issues that would impact the nature and timing of airport property development since these issues would impact the effectiveness of any marketing recommendations put forward for consideration by the District of Vanderhoof.

4.1 General Aviation Industry Overview

No single data statistical source accurately captures the size of the general aviation market in Northern British Columbia. Analysts must often use existing provincial data sets to draw insights into the nature of regional transportation markets. The data used in this airport marketing study is no exception. Transport Canada reports that civil aviation personnel licenses and permits in British Columbia declined by 1.2% between 2008 and 2009.

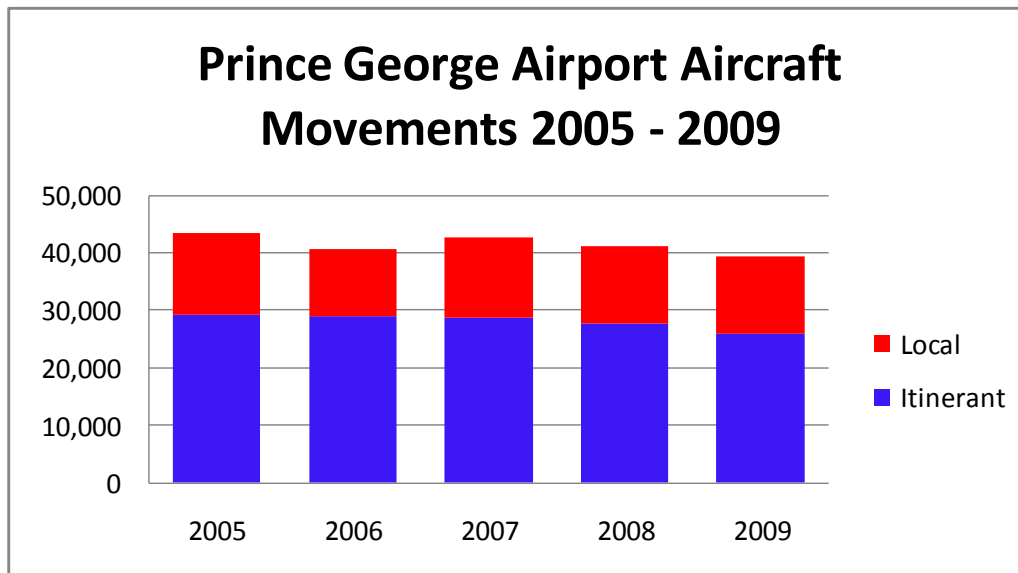
The rate of decline was slightly higher than the national average of 1%. In 2009, 12,322 BC residents had a current civil aviation personnel license. Presently there are 4,934 aircraft registered in British Columbia. This information indicates the BC civil aviation marketplace is characterized by a ratio of 2.5 civil aviation license holders per every registered aircraft. If this ratio were applied to the number of registered aircraft in northern BC (491) it would indicate the regional market size would consist of 1,226 civil aviation license holders. If the size of the general aviation market in northern BC were estimated using population (rather than registered aircraft statistics) it would indicate that the market size would be about 500 civil aviation personnel license holders. The range in the market size estimate may be attributable to a number of factors. Firstly, the number of personnel license holders in northern BC could also be significantly smaller when the economy is weak and not yet in full recovery as younger male pilots exit the industry, or leave the region for more robust job prospects. The second factor is that when aviation markets are weak some aircraft may be laid-up and remain inactive and when an economic recovery occurs pilots outside of the region may need to be recruited to meet demand. Given both the cyclical and seasonal nature of the resource industries there may be some demand for aircraft maintenance or overall work when the aircraft are idle.

There may also be a latent demand for covered aircraft storage in period of lower activity. However, general aviation customers in highly seasonal and cyclical markets may be very price sensitive to site costs. Nevertheless, the statistics and discussion illustrate that from a marketing perspective the potential customer base for Vanderhoof airport represents a niche rather than a mass-market opportunity.

Statistics Canada's publication *Aircraft Movement Statistics: NAV CANADA Towers and Flight Service Station (December 2010)* provides insight into the general state of the aviation industry. Aircraft take-offs and landings at the 93 Canadian airports with NAV CANADA air traffic control towers and flight service decreased 3.1% from the period 2009 to 2010. There were a total of 346,380 aircraft movements at the NAV CANADA towers and Flight Service Stations. Itinerant movements accounted for 76% of this air traffic and local movements 24%. Of specific interest to general aviation in the Vanderhoof area are the type and the trend in the number of aircraft movements occurring at Prince George.

The chart below indicates that total aircraft movements have declined since 2005 from a total of 43,492 to a low of 39,372 in 2009. This represents a 9.5% decline in annual aircraft movements as the regional economy was impacted by development in the forestry sector and the recent economic recession. Itinerant movements declined by 11.0% while local movements (typically associated with flight-training activity) declined by 6.3%. It is uncertain how a new flight-training program in Vanderhoof would impact Prince George's level of local movements.

Figure L. Aircraft Movements Prince George Airport



The table on the following pages below highlights the trend in the number and type of itinerant aircraft movements in Prince George during the period 2005 through 2009. The total number of movements slowly declined over the five-year period dropping by 11%. However, both jet aircraft and helicopter movements had recovered to 2005 levels by 2009 after peaking a couple of years earlier. What is most striking is the fact that turboprop traffic fell by 22% and piston aircraft movements by 13%.

Prince George Airport Authority representatives indicated to the study team that they have no strategy in place to influence general aviation traffic levels one way or the other. For example, the Authority has no marketing strategy aiming at increasing general aviation activity, and no planned fee increases or other measure that might drive it away. Airport representatives observed that general aviation activity is sensitive to fuel prices and the price of renting or chartering aircraft.

The private aircraft fleet at Prince George (as is common among all airports in the region) is only around 25% of the population in place in the early 1980's. The private aircraft market segment is not growing; the only segment that does appear to be growing is the ultralight category. Ultralight aircraft can often use rudimentary landing strips and be stored in a garage, thus reducing the demand for airport related infrastructure. Prince George Airport currently has one T-hangar that stores 12 light aircraft, and approximately 12 aircraft stored outside.

Aviation stakeholders advised the study team that a shift in commercial general aviation had been occurring in the region over the last number of years with helicopters rather than fixed wing aircraft being used to service the forest and exploration industries. These stakeholders also advised that while both private and commercial aircraft activity has been flat there was a typical cycle related to resource development activity: when activity picks up, demand for charter services increases and new firms will enter the business, typically with piston engine aircraft due to their relatively low cost and safety. As business grows and they get larger clients, they will upgrade to turbine engine aircraft. In downturns, the turbine engine aircraft are parked and the firms use their piston engine aircraft due to lower costs.

A firm with an interest in helicopter aviation noted to the study team that business has been slow over the last 2 years due to the recession. There have also been changes over the past five years in the nature of helicopter services demanded. In the past charter services typically had customers connecting at the helicopter base; now it is more common for the helicopters to be contracted and operate from the customers' sites for extended periods. Conversations with people in the resource industry seem to suggest that the winding up of regional helicopter bases is occurring due to costs of maintenance and overhead. At the same time, there has been an increase in the number of privately owned smaller helicopters like the Robinson Helicopter Company. The sales and service centre for Robinson Helicopters in British Columbia is located in Campbell River and there are 8 service centers located in the Province. The closest service centers to Vanderhoof are Fort St. James and a second site at Prince George airport. The sales and service centre for this aircraft type is not located at Campbell River airport, rather on privately owned land adjacent to an estuary where flight lines for the helicopters are accessible and do not conflict with residential land uses.

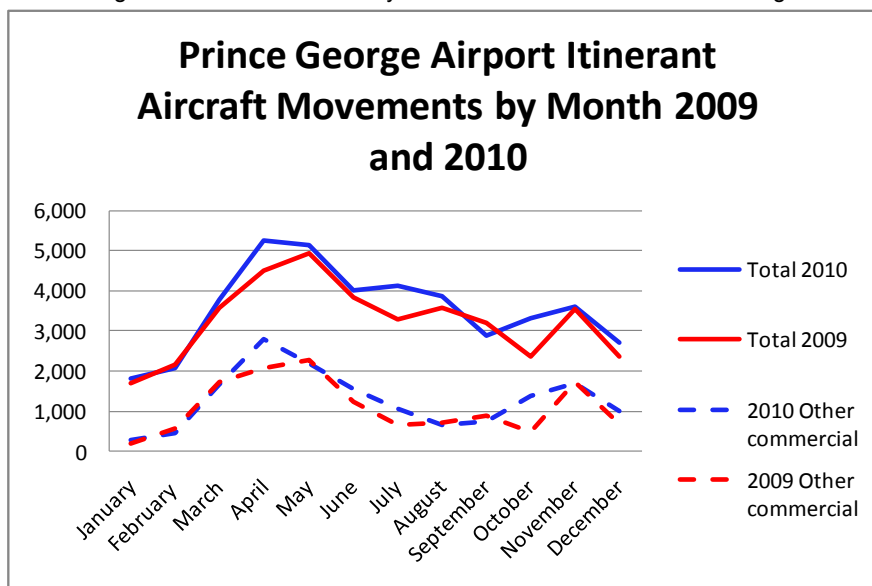
While the Prince George aircraft movement data cannot be used to verify these industry observations the comments offered by regional aviation participants does seem to suggest that some form of cyclical shift in aircraft traffic has occurred in close geographic proximity to Vanderhoof airport.

Figure M. Itinerant Aircraft Movements Prince George Airport

Itinerant movements by type of power plant — Prince George						
	Total	Jet	Turboprop	Piston	Helicopters	Gliders
2005	29,254	4,855	14,583	5,507	4,240	69
2006	28,873	6,874	11,947	4,689	5,314	49
2007	28,597	6,919	12,043	4,401	5,171	63
2008	27,704	5,512	12,732	4,245	5,155	60
2009	26,029	5,555	11,384	4,782	4,242	66
% Change 2005 - 2009	-11.0%	14.4%	-21.9%	-13.2%	0.0%	-4.3%

Activity is highly seasonal. Itinerant aircraft movements by month at the Prince George airport are depicted below. In both 2009 and 2010, movements bottomed out in January and peaked in the spring (April-May). Most of this variation is attributable to “Other Commercial” traffic that includes flights performed by Commercial aircraft operators not included in the Air carrier categories: flying schools, agricultural sprayers, water-bombers, aerial photography and survey, etc.

Figure N. Seasonality of Aircraft Movements Prince George



Helicopter stakeholders observed that up to 80% of their charter activity would be related to resource activity, including forestry, mining and firefighting.

One helicopter firm commented that their business is highly seasonal; they do heli-skiing charters in the winter to keep their staff and aircraft busy. Representatives of the Prince George Airport Authority commented to the study team that the peaking of Other Commercial traffic in the spring is related to helicopter servicing and flight training; aircraft are flown in for checks prior to being deployed for the summer, and pilot flight checks are conducted. Resource activities also peak in the spring and fall as magnetometers are used to identify mineral prospects for further exploration as the snow melts, or prior to freeze up when marshy areas are accessible.

4.2 Stakeholder Interviews

Wave Point Consulting Ltd. conducted 25 stakeholder interviews that were primarily qualitative and exploratory in nature. The purpose of the interviews with the direct general aviation participants was to identify general industry trends and the factors effecting airport use and location decisions with respect to general aviation. For the indirect participants, discussions focused on understanding their involvement in the general aviation sector and the business and commercial practices associated with airport development. All interview participants received a letter of introduction from the Client prior to being contacted by the Wave Point Consulting team.

Interviews were a combination of telephone and 'face to face' interviews. A list of all interview participants is included at the beginning of this report along with a sample questionnaire contained in the Appendix. Interview participants were advised that all information from the interviews would be kept confidential and only aggregated and summary information would be provided to the client. The questions in the interviews covered the following general topics:

- *Direct Participants:* For Air Charter, Aircraft Maintenance, Aircraft Owners, Corporate Aviation, Institutional/Flight Training & Private Pilots
 - What involvement does your firm have today in the general aviation market in BC?
 - What are your expectations for the future of the general aviation sector in British Columbia? What trends or factors may change current airport usage pattern in central BC?
 - What airport related infrastructure & services do you presently use?
 - Factors influencing choice of airport.
- *Indirect Participants:* Aviation Related Firms, Emergency Response/Fire Fighting, Industry Association, Financial Institutions and the Real Estate sector.
 - What involvement does your firm have today in the general aviation market in BC?

- What are your expectations for the future of the general aviation sector in British Columbia? What trends or factors may change current airport usage pattern in central BC?
- What airport related infrastructure & services do you presently use?
- Describe the typical commercial issues associated with financing the construction of a hangar on leased land, or land that was owned in fee simple?
- What impact would a restrictive land use designation have on any future financing decision?

4.3 Stakeholder Findings

4.3.1 Direct Participants in General Aviation Industry

The following section will briefly summarize the results of the stakeholder consultations for direct participants in the general aviation industry. The team gathered insights from 5 air charterers, 4 aircraft maintenance providers, 2 aircraft owners/operators, 4 private pilots and 3 Institutional/Flight Training organizations. While a number of avionic sales/service firms and corporate aviation customers were approached, representatives from the respective companies respectfully declined to participate in the stakeholder consultations.

The following factors were mentioned as drivers of general aviation (GA) demand in Northern British Columbia or the most probable general aviation market opportunities for Vanderhoof:

- Aviation related businesses associated with GA market categories such as helicopter maintenance.
- Charter aircraft operators who are owners, or have aircraft registered in Vanderhoof.
- Flight Training through the College of New Caledonia. Some stakeholders commented that the flight-training program at the Community College is an excellent means of boosting the local aircraft population. The airport would benefit from the presence of a maintenance facility run by an energetic young AME, and the availability of fuel at competitive prices can boost private aircraft traffic. Local promotion of the flight training opportunities is important. Having these elements in place will inevitably increase activity at the airport (“business will come”).
- Natural resource base/staging area. Vanderhoof could be an alternative; stakeholders indicated that parking corporate jets such as a Learjet is problematic in Fort St. James. The longer runway and instrument approach at Vanderhoof would make it better for Dash 8 operations.
- Some companies may be concerned over their ability to use the strip at Fort St. James for these aircraft when they are fully loaded. Vanderhoof airport could perhaps provide opportunities to provide services on a smaller scale to subcontractors on northern mine sites. Some stakeholders suggested that if there was a fenced parcel of land to create a secure area with airside access, then a staging area could be of interested for the storage of fire fighting, or other equipment.
- Recreational flying.

It is also instructive to note that a number of stakeholders suggested that Vanderhoof airport consider allowing airport property to be used by other commercial activities or industries to help share the cost of infrastructure development.

The following items were mentioned as being Vanderhoof’s primary challenges in attracting additional general aviation traffic:

- Attracting fixed wing maintenance businesses to locate in Vanderhoof is likely to be difficult – these businesses need to be closer to a larger cluster of aviation activity.
- To be successful, charter operations need to be based either at regional service centers or at “the end of the road”. One stakeholder characterized Fort St. James, Vanderhoof and Mackenzie as “bedroom communities” of Prince George, not far enough away to generate significant commercial air traffic.
- The airport-related aviation sector has been in decline for years due to expansion of the road network in the North and increased use of helicopters.

While there were many similarities between the companies some of the key opportunities and challenges were common across the commodity groups, there are also significant differences in terms of how certain market factors shape the opportunities available to the airport in each of these markets. The following section deals with the issues that were common across the groups of direct general aviation participants. In determining their choice of airport location, the interview participants most frequently mentioned the factors in the table below as being important in influencing their choice of business location.

Figure O. Factors Determining Choice of Airport Location – Direct Participants

Factor	Number of mentions
Presence of existing infrastructure suitable for needs	8
Airport fees, property prices, lease terms & conditions	8
Availability of fee simple land to build facilities that you own	6
Flexibility in operations	6
Total cost	4
Frequency of scheduled air service	2
Loss Prevention/Security	3
Proximity to market	2
Customer service requirements	1
Routes & destinations served	1
Size of Market	1

Infrastructure: For direct general aviation industry participants it is perhaps not surprising that the most frequently mentioned factor was the presence of existing infrastructure suitable for their business needs. Each company had their own specific requirements for water, electricity and sewage but these three services seemed to be essential for general aviation firms. For the fixed wing aircraft charter operators this was often amongst the first item discussed during the interview.

This is partly due to the fact that fixed wing aircraft have less operating flexibility than their rotary cousins in the helicopter, or maintenance segment of the market place.

Airport Lease Price & Terms: Given the fact that most airport operators lease their property for development purposes it is also not surprising that the topic of airport fees, property prices, lease terms and conditions would be amongst the most frequently mentioned factors in determining the choice of business location. However, the interview results indicate a strong preference amongst industry participants to hold ownership of their property in fee-simple, rather than acquiring ownership through a lease. The interview feedback suggest that charter helicopter services and some aviation maintenance repair activities do not place as much importance as fixed wing aircraft operators on being located on airport property since they have more flexibility in terms of location decisions for their business. Stakeholders noted that low costs are essential for helicopter operations since companies may be competing against firms with minimal base costs. For one helicopter firm their Vanderhoof and Prince George bases were located off-airport. At the firm's Fort St. James and Mackenzie airport bases there are no airport surcharges at these sites. The company did not indicate why they selected an off-airport site in Vanderhoof when the airport has not surcharges. Nevertheless fixed wing general aviations firms while expressing some preference for owning their own property seem to place more emphasis on lease terms and conditions and flexibility in operations as important airport location. Stakeholders mentioned high property taxes at some general aviation airports as a concern.

Stakeholders commented that a short-term lease discourages investment and that long-term (50 year) lease term would be preferable to a short-term arrangement. For each business the length of lease would need to match their organization's amortization period. Stakeholders observed that following airport devolution the banks were reluctant to lend for developments on airport land, and this was a serious obstacle to growth at BC airports. However, they noted that longer lease terms and some changes to lease terms were sufficient for banks to lend again.

Operating Flexibility: The importance of operating flexibility was cited by the stakeholders as being an important consideration in determining the location of their general aviation business. Most of the companies in the stakeholder interviews would be considered small to medium size enterprises.

Given the market characteristics of northern aviation these firms do not have a sufficient scale of business activity to rely on a narrow range of business activities. Rather, the aviation firms tended to increase the scope of their activities as shifts occurred in the marketplace.

Several entrepreneurs associated with a general aviation business shared information on how their business has evolved. For example one firm started their business as a regional flight-training center and then progressed into charter services and maintenance services as a specialized provider of aircraft engines and parts. Other firms cited a number of formal and informal partnership arrangements that arose in response to rapidly changing market conditions. On an informal basis this could result in sharing available hangar space or fuel sources; or create the need to sublet or assign their lease on airport property to other business interests. The study team noted that with the one exception (recreational aircraft hangar storage) the present business activities at Vanderhoof airport did not strictly fit the land use categories in the 2010 Vanderhoof Airport Land Use and Development Plan. Direct participants in the general aviation sector commented that due to the cyclical nature of the business they would like to keep the number and types of restrictive covenants in a lease, or OCP/Airport land use designations to the minimum since a lack of flexibility could be as serious impediment to the growth and resiliency of their businesses.

Stakeholders advised that airport operators who are less flexible in their lease terms and the purposes that the leased hangar space can be used for can impact the ability of a business to obtain financing and thus restrict their access to growth capital. An airport operator needs to be open to working with their customers especially when business circumstances change and the business may be doing activities that were not originally envisioned in their lease.

The factors that were mentioned less frequently as being of general importance to the direct general aviation participant stakeholder were frequency of scheduled air service, loss prevention/security, proximity to market, customer service requirements and size of market. The importance of these items in determining the choice of airport location tended to be very firm specific and reflect the needs of the markets the individual companies were serving.

4.3.2 Indirect Participants in General Aviation Industry

The following section will briefly summarize the results of the stakeholder consultations for indirect participants in the general aviation industry. The team gathered insights from 3 aviation related firms, 1 emergency response/fire fighting organization, 1 air cadet squadron and 3 financial institutions to gather their perspective. While a number of other industry associations or aviation related real estate firms were approached, the team was unable to complete interviews due to unavailability of representatives from the respective companies or their reluctance to participate. The indirect aviation related firms and organizations mentioned the same drivers of general aviation demand in Northern British Columbia as the direct participants. Perhaps due to their lack of direct participation in the general aviation business there was less discussion generated with the interview team regarding Vanderhoof's primary challenges in attracting additional general aviation traffic. However, the factors described below were discussed in detail regarding commercial lending practices at airports. It should be noted that the study team selected these stakeholders based on favourable comments received from direct general aviation industry participants and the generalizations recorded here for the purposes of this study should be used with caution since each financing decisions is based on the specific market conditions and borrower risk profile.

(a) Typical commercial practice for handling a financing request from a private sector client who wished to build a hangar on leased land, or land that was owned in fee simple.

The typical practice was for the financial institution to require a mortgage of lease where the lease would be longer than their financing term. Each of the companies that responded to the study teams request for information had financed several aviation-building projects on leased land in the past but observed that leased land was a less attractive market.

(b) Typical loan to value ratios required for the construction of an aviation related building.

Loan to value ratios really depends on the cash flow of the company. Some financial institutions could be described as generally focusing more on the cash flow and internal strength of the business versus lending based on the asset value approach. If a borrower could support the payment at 80% of the financing request then at least one of the financial firms would look at funding in that range. If a borrower's cash flow could only support 50% payment than the same rule would apply. Firms that focused on asset backed lending suggested a maximum loan value ratio of 60%.

(c) How the impact of a loan or mortgage on leased land could impact any subsequent decision by an entrepreneur to refinance their business.

In the past the airports have been generous in rewriting the leases at time of construction and/or sale to allow the maximum time frame to be used for a development.

If there was a lease with an original term of 25 year lease but only 10 years remaining at the time of refinancing the financial firm would only grant the borrower a maximum term of 8 years for the repayment of the loan.

(d) The impact that a restrictive land use designation may have on any lending decision.

The designation would impact the ability to sell the building. Thus the value of the building would be less than a standard commercial building with commercial status. The value would usually be approx. 50%-65% of cost versus 75% of cost for an unrestricted location. The financial institution would look at how hard would it be to sell that property should the company need to take this step. It was noted by the stakeholders that any restrictive land use designation has a dampening affect on their firm's willingness to provide funds. However, a hangar on leased land at an airport is probably only readily useable for that purpose and so alternate uses may not be feasible in any event.

Financial institution's commercial experience with airport authorities is mixed. Many airport managers take a very bureaucratic view of zoning restrictions. Often airport managers exhibit a low willingness to accommodate alternate/improved uses of a building (for example - a small manufacturing facility at the airport). Providing financing for leased land is a challenge. Property becomes hard to value. Leased land and restrictive covenants are factors considered in their Bank's assessment of risk. These type of issues cut down on the options that a Bank would have to resolve a financing issue because it reduces the number of interested parties in the property.

4.4 Market Assessment Summary

Based on the trends contained in the descriptive statistics contained in the previous sections and the results of the stakeholder consultations, the table below contains the Strengths, Weaknesses, Opportunities, Threats (SWOT) analysis of the market opportunities for general aviation at Vanderhoof airport. The summary information is presented in alphabetical order.

Strengths

- Airport exists as a development opportunity for general aviation and airport compatible businesses because property is largely unobstructed.
- Airport identified as an Omenica Regional Priority by the Beetle Action Coalition of Community Leaders.
- Positive attitude recognized outside of the community.
- Positive microclimate in Vanderhoof allows for more favourable flight training conditions, emergency access and living conditions than other regional airport locations.
- There are a number of aircraft owners and operators residing in the community that have an interest in seeing the airport succeed.
- Very favourable and accessible flight approaches due to the better than usual engineering design of the runways.

Weaknesses

- Absence of aviation interests working with the municipal economic development officer or Council.
- Absence of a broad based retention and expansion process for the Municipality makes priorities unclear regarding potential commercial development on airport lands.
- Absence of the market conditions for a Micro Business based Aviation Cluster.
- Internet has changed the Repair, Maintenance and Overhaul (RMO) business; these firms now have more flexibility in terms of business location.
- Lack of an owner and pilot ready room with shower, washroom, kit lockers and lounge with web access for weather.
- Relatively short-term lease terms and low rent levels discourage reinvestment in airport properties.
- Suitable civil infrastructure (water/sewer/electricity) may be required for some commercial businesses.
- Vanderhoof not profiled in Regional Business Coalitions such as Northern Interior Mining Group.

Opportunities

- A formal process to engage Prince George Airport and others in advocating for regional general aviation interests. For example, dealing with regulatory bodies such as NAVCAN, the importance of Vanderhoof airport for medevac service, as a back-up base for forest fire fighting and other interests.
- An informal or formal Community to Community engagement strategy with the College of New Caledonia's Aviation Business Diploma program and the following First Nations is an opportunity to be pursued; Saik'uz First Nation; Nak'azdli First Nation; Nadleh Whut'en First Nation; Stelat'en First Nation; Takla Lake Band; Tl'azt'en First Nation; Yekooche First Nation; and the Carrier-Sekani Tribal Council (CSTC), so the strength of leadership is leveraged for the training and engagement of youth into the Aviation Industry Cluster, bringing other resources to the table that would not otherwise be present.
- Several resident and nonresident business people identified an interest in securing fee simple land to bring external maintenance contracts within their business operation which is a form of export replacement resulting in business retention and expansion.

- There are opportunities associated with the forestry and natural resource sectors as these sectors rebound from the economic slowdown.
- There could be a link to Resource Management, Helicopters and Training, enough to substantiate a competency area within a Micro Business Aviation Cluster or further development of the College of New Caledonia's aviation programs.
- Shortages of commercial land with good road access could increase the property value of vacant airside reserve, groundside and property adjacent to the main access road running parallel to the paved runway if airport complementary business activities were steered toward the airport.

Threats

- Lack of visibility in regional business coalitions such as:
 - Association for Mineral Exploration British Columbia
 - Association of Professional Engineers and Geoscientists
 - Central Interior Logging Association <http://cila.ca/>
 - Energy Services BC
 - Geoscience BC
 - Kamloops Exploration Group <http://www.keg.bc.ca/>
 - Mining Association of BC
 - Northern BC Construction Association <http://www.nbcca.bc.ca/>
 - Regional District of Bulkley Nechako <http://www.mining.rdbn.bc.ca/>
 - Smithers Exploration Group <http://www.smithersexplorationgroup.com/>
- Lack of secure areas may decrease potential interest in airport use due to perceived cost of securing operating areas airside.
- Split management of airport and riverfront air operations may result in under achievement of goals.
- There has been a shift from medium to small business sizes in the region, now moving down to micro businesses comprised of owner- operators, which makes financing difficult.
- Vanderhoof's close proximity to a well-established network of logging roads reduces the need for air access to the productive forest regions.

General Aviation - Market Categories Most Relevant to Vanderhoof

General aviation (GA) is one of the two categories of civil aviation. It refers to all flights other than military and scheduled airline and regular cargo flights. Both private and commercial public and private sector uses are located airside, which is a fenced off secure area, and groundside, which are operations located outside the fence. The following market opportunities represent the most likely markets based on the current state of the general aviation market in northern British Columbia.

- *Aviation Supported Businesses:* Vanderhoof airport currently has two airport customers whose primary business activity could be considered as being an "other activity " yet use aircraft in their business activity. Many local governments have had to be very restrictive due to regulations imposed by senior governments and may not fully recognize or appreciate the general aviation market trend where supply chains participants and other firms such as electrical companies may prefer to set up commercial operation at an airport because aircraft are used in the provision or delivery of their services.

Denying these firms access to airport lands for business expansion results in higher costs since these types of firms are not able to achieve the most effective use of their assets.

- *Charter Operations*: This form of business is not restricted to one per airport. Charter operations will differ in scope from fixed wing to rotary wing aircraft and anything in between. During the course of our study the business interests of one company was brought to the attention of the team for the potential use of Vanderhoof airport.
- *Repair, Maintenance and Overhaul (RMO)* part of this community is considered the foundation of any air operations. If an airport can recruit and sustain an RMO facility, they have managed to keep the highest paying jobs associated with general aviation. This economic activity can locate at any airport and is not limited to an airport site. Generally, all other functions such as charter services, grooming, after market fittings, storage, flight training and the subsequent recreational flying are tethered to the micro and small businesses that offer these services. Vanderhoof airport has one existing tenant that participates in some aspects of the RMO market.
- *Flight Training*: This type of business activity generally does not exist in isolation from the provision of some other combination of general aviation service. Discussion with a representative of the College of New Caledonia's Aviation program indicated that it was their intention to not operate a stand alone program at the airport but work with others in industry to meet their overall program needs. The new 20-month program is to commence in 2011.
- *Natural Resource Base/ Staging Area*: An outside storage area with road access and adjacent to an operating building with airside access would be typical of the requirements for the resource industry. The ability to lock down and secure property would be considered an asset at any airport. Vanderhoof airport is presently used for fire protection helicopter services on an as required basis.
- *Recreational Flying*: Is perhaps the least predictable and lowest revenue generating prospect for most airports. The recreational aviation community goes where it is welcome and generally where fees are most affordable. The positive reputation of any and all Airports lies with the resident and itinerant owners and operators of aircraft. They spread the reputation of the airport and are worth investing in, in terms of fly-in events, and special opportunities to connect their community with local and regional visitor assets. Vanderhoof airport presently has a small number of recreational flying enthusiasts.
- *Commercial Property for Other Industries*: There are a number of land uses considered in conventional Official Community Plan designations and zoning documents. If possible, treating a facility like the Vanderhoof Airport AU4 under "Specified Area" legislation might be an advantage. A mix of operations collocating at this site would make sense, given the current economic climate and future prospects for the community.

4.5 Assessing Vanderhoof Airport Land Development Options

To determine the most effective option for encouraging the development of aviation related activities it is important to consider potential demand and the anticipated level of land use intensity.

Together these factors influence the amount of space that would need to be set aside for commercial development and the type of civil infrastructure required to support the business activity. This airport marketing study recognizes the existing regulatory framework. For example, NAV CANADA's mandate is to ensure the safe and efficient movement of aircraft flying within Canadian airspace.

Their 'land use program' contributes to the Air Navigation System's (ANS) integrity by ensuring that land use projects do not interfere with NAV CANADA services or Communication/Navigation/Surveillance facilities. NAV CANADA's processes neither constitute nor replace any approvals or permits required by Transport Canada (zoning, lighting and marking), Industry Canada (spectrum analysis), other Federal Government departments, Provincial or Municipal land use authorities or any other agency from which approval may be required. This study assumes that regulatory bodies such as NAV CANADA and Transport Canada's *Aviation Land Use in the Vicinity of Airports* documents are the starting points for the discussion of land use intensity. Rather, our purpose is to describe typical general aviation related land use intensities that characterize airports in the BC marketplace. This information will assist in making informed decisions about the possible benefits and costs associated with any needed civil infrastructure improvements that would need to be addressed in the airport marketing recommendations.

As part of the stakeholder interview process firms were asked to share information of the type of airport services and infrastructure they use. The study team also reviewed the current market practice of those involved in the aviation business sector. Existing commercial practices represent industry norms and form the basis of the stakeholder expectation regarding the relative appeal of development choices. To answer questions about current market practice, information was gathered from twenty general aviation oriented airports in British Columbia. Data sources included airport web sites, Official Community Plans, Airport Development and Land Use Plans, BC Assessment Authority data, real estate listings and the existing resources of the Wave Point Consulting team members. The selection of airports reviewed was evenly distributed between those located in Southwestern BC/Vancouver Island (30%) and the Interior/Southern region (30%) of BC. Slightly greater emphasis was placed on reviewing those airports located in the Central/Northern (40%) region of the province. The research results are discussed in the next three sections.

4.5.1 Aviation Land Use Intensity & Zoning

The size of the potential customer base, the physical attributes of the aircraft themselves influence the type and quantity of civil infrastructure and services required. This airport market study primarily focused on the typical needs of existing general aviation aircraft. There was no feedback from the stakeholders suggesting that airside improvements to the runway other than official acknowledgement of the location of the ski-strip parallel to the paved runway on the north side of the property was required. Rather the stakeholder discussions focused on the present demand for the introduction of two possible new hangars. The details of each new hangar possibility remain confidential but general information was provided to the study team.

The configuration of the airside landing strip, taxiway, apron, road configuration, location of utilities, parking requirements and emergency vehicle access all influence the actual amount of property space required to support airside property development adjacent to a runway. The information below will serve to illustrate the density of land use that could be expected with the construction of new hangars, or the repair and improvement to existing facilities. It is important to note that the information pertains to the size of buildings and any development on airport property would need to consider vehicle road access, parking and other factors.

Commercial General Aviation

Information obtained from the interviews reveals the following information about the size of the commercial buildings and activity conducted from the sites.

- Company 'A' operated three separate aviation related business lines operated from the same 18,000 square foot facility located at an interior airport. The company indicated that it was not at all important that their business was located at an airport.
- Company 'B' operated from a 5,850 square foot hangar facility located at a northern BC airport. The hangar building also served as their office.
- Company 'C' shared a 15,000 square foot hangar with another firm at a northern BC airport.
- Company 'D' has a hangar of approximately 15,000 square feet plus another 2,000-3,000 square feet of office space at a northern BC airport. The firm also has property for their operations that are not located at an airport in other communities.
- Company 'E' operated from an 8,500 square foot of office and parts space, along with a 7,500 Square foot hangar space at an interior airport.
- Company 'F' operated from a geothermal heated 15,000 square foot custom steel building located airside at a northern Vancouver Island airport.

While the above list does not constitute an exhaustive search it does suggest that each general aviation commercial business requires between 5,000 square feet and 15,000 square feet for a hangar and office.

Discussion with one aviation firm indicated that between ½ and 1 acre of property would be suitable for a hangar of 5,000 square feet. This would provide sufficient access to the rear of the building for vehicles, parking and other activities.

Institutional Flight Training General Aviation

The College of New Caledonia indicated to the study team that they would require approximately 3,000 square feet of space required for their flight-training program when it reached its full capacity. The College would need facilities serviced by electricity, sewer and water. An approximate break down of the flight training space requirements is summarized below:

- 16' by 30' for a classroom (1,00 sq. ft total),
- 600 square feet for simulators,
- 200 square feet for washrooms,
- 600 square feet for institutional space,
- Sufficient parking.

The College indicated that some but not all of their training activities could be located at Vanderhoof airport. For example, a flight simulator and some classroom training space as well as space for flight operation activities would be best located at the airport.

It is important to note that the physical space requirements for flight-training purposes may not justify a standalone building at the Vanderhoof airport based on the costs of construction and intensity of building use during the early start-up phase of the program. Rather it may be more cost effective to accommodate the College's needs and activities and co-locate the flight-training program with another commercial activity in a shared building. The probable demand for aviation related training service space might not initially be large. Thus, the District of Vanderhoof's Airport Land Use and Development Plan area designation for 'airside commercial' and 'airport commercial' may act to hinder a co-location initiative since the permitted activities under each designation are more restrictive than may be necessary for the intensity of land use that could be reasonably expected in the short to mid-term. Without an increase in short term general aviation activity, it remains unclear whether the full potential of long-term demand will be fully realized.

Recreational General Aviation

Recreational plane owners are likely to require less hangar space for the storage of their aircraft. Based on the physical profile of the Vanderhoof registered aircraft it is estimated that between 1,300 square feet to 1,500 square feet of space per aircraft would be required for each aircraft. However, the graphic below highlights the fact the configuration of the hangar facility will have a significant impact on the amount of space required.

Figure P. Aircraft Hangar Configuration

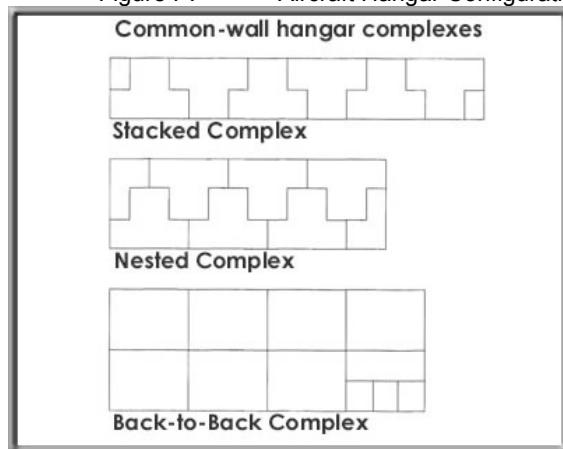


Diagram reference: http://www.nunnosteel.com/aircraft_hangars/aircraft_hangars.htm

Other Commercial Activity on Airport Lands

The District of Vanderhoof Official Community Plan (Bylaw No. 993, 2005) states that airport development will be supported within the context of 'aviation-related' industry. The scope of intensity of land use for 'aviation compatible' activities was not included in the current project. Nevertheless from an airport marketing and development perspective the issue did arise for two reasons. The first reason was that aviation related stakeholders raised the subject during the course of the interview. Many were aware of the relatively low level of civil infrastructure on the property and suggested 'aviation compatible' commercial activity might be a way of encouraging development since the infrastructure costs associated with improvements could be shared. The second reason was that the study team was mindful of the historical land use commitments made between the District of Vanderhoof and the Agricultural Land Commission. However, the October 15, 2010 (*Quebec (Attorney General) v. Canadian Owners and Pilots Association, 2010 SCC 39*) decision may impact the nature of airport land use and the corresponding types of business opportunities that may be pursued including other commercial activity.

Zoning and Land Use Regulations

The District of Vanderhoof *Official Community Plan* (OCP Bylaw No. 993, 2005) states that airport development will be supported within the context of ‘aviation-related’ industry. “Where warranted by economic development opportunities and market demand, Council will support increased airport industrial and service development and work in conjunction with Transport Canada and the Agricultural Land Commission to facilitate the development of aviation-related industry”. The general aviation markets identified in this airport marketing study are consistent with this policy direction. However, the OCP does not define what activities constitute ‘aviation-related’ industry. Rather the 2010 *Vanderhoof Airport Land Use and Development Plan* provides guidance to the type of activities. The ‘aviation-related’ activities are grouped together under the following land use categories: airside commercial, airport commercial, general aviation reserve, operational reserve, airfield reserve, institutional/residential reserve and agricultural reserve. Given the general aviation community’s need for operating flexibility consideration should be given to simplifying the land use categories. For example, the activities covered by airside commercial and airport commercial and the institutional activities could be combined into a single category. A single land use category for ‘aviation-related’ activity would allow for the co-location of various complementary business ventures creating opportunities for efficiency gains associated with capital and operating costs. A single land use category for ‘aviation related’ activity would serve to act as a development node and reduce the need for a larger footprint on the airport lands. Increased flexibility in the use of the land would demonstrate to airport customers and their financial institution that Vanderhoof airport welcomes new investment and is prepared to work with their customers now and in the future should the need arise to develop an alternative business model or restructure a specific operation in light of changing market conditions.

The study team recognizes that allowing other ‘airport compatible’ commercial activity onto the property is presently not contemplated in the OCP and may be subject to discussion and negotiation with the Agricultural Land Commission. Nevertheless, there is considerable merit in creating a single development node that would expand upon the list of possible activities that are contemplated under the ‘aviation related’ land use category. The short-term demand for new hangar space at Vanderhoof airport may be insufficient to pay for the full upfront costs of serving the site with new civil infrastructure and the introduction of compatible business activities could help share the cost.

In addition, long term aviation related economic opportunities to the community could be put at risk if financial institutions are reluctant to finance aviation related businesses because the use of the property is limited.

It is important to note that the general aviation sector in central and northern British Columbia operate in cyclical markets that are beyond the control of an individual entrepreneur. Thus, a flexible and highly adaptive business model is a key to long-term sustainable growth and economic diversification.

The most effective land use zoning regulations implicitly recognize the market characteristics of the activities they seek to regulate and attempt to balance the community and public interest. In doing so they can encourage business innovation that is consistent with Vanderhoof's OCP policy objectives where it states that the community is "committed to maintaining a positive business climate that would assist in the diversification of the local economy".

4.5.2 Airport Development Options

In considering the most appropriate airport development model for Vanderhoof in light of the market research it is important to note that there are two main issues to consider: (a) the type of commercial activity permitted on airport property and (b) how the property is made available for development.

Traditional Airport Site Development Model

(a) Type of Commercial Activity Permitted on Airport Property

The results of the study team's review indicate that in all instances the 'traditional' airport development model in British Columbia was for a public body such as an airport authority, or local municipal government to own the general aviation related airports. The business activities conducted at these airports would generally be consistent with the land use classifications contained in the Vanderhoof Airport Land Use and Development Plan as generally being for aviation related activities. However, even airports operating under a traditional model are changing in response to market conditions. Depending on the local circumstances some general aviation airports may encourage the use of their property for 'airport compatible' commercial activity by non-aviation related businesses.

This encouragement is a function of local market opportunities, physical characteristic and size of the individual airport properties and the airport owner's perspective on balancing aviation related interests with community economic development considerations.

Another consideration driving alternative uses of some parcels of airport property is that the revenue earned from the land can be used to support the ongoing operations of the airport. At the present time Vanderhoof's level of revenue from their airport tenants would not be sufficient to cover significant capital improvements. The use of the airport property by some compatible business activities would help reduce the potential tax burden on the local ratepayers. In terms of compatible land uses some airports are considering non-aeronautical uses of airport property, such as warehouses, distribution centers and light industry, as alternate sources of revenue."⁸ Other potential activities could include individual access to the airport infrastructure from outside airport property, i.e., 'through the fence' operations' from a residential airpark. Aside from the golf courses already located on the airport reserve in Vanderhoof, there are a few other examples of non-aviation related uses located airside in British Columbia. Timberwright Manufacturing in Campbell River is a specialty wood producer of custom components for Carriage Trade homes, engineered beams, structural wood features and small components for custom aircraft.⁹ Other airports may allow recreational vehicle sales and services centers to be established on airport property but not necessarily with airside access. For the most part, non-aviation uses permitted on airport property focus on outside storage of equipment and vehicles or contained storage and designed warehouses for inside climate controlled storage.

Prince George has recognized the need for innovation and is permitting non-aviation uses access to land as part of its new strategy. The Prince George Airport is marketing itself as a location to do business throughout North America. The latest venture is the development of more than 300 hectares of Airport property for commercial and industrial use, including aviation and non-aviation enterprises.¹⁰ To the extent that Vanderhoof could reduce the need for airside and groundside separation by full security, then other uses might be practical as long as access and egress to their allocated property does not present safety and security challenges created by misdirected vehicles or pedestrians.

⁸<http://www.aviationairportdevelopmentlaw.com/2009/04/articles/faa-1/airports-2/nonaeronautical-use-of-airport-land-raises-significant-new-issues/>

⁹ <http://www.timberwright.ca>

¹⁰ http://www.pgairport.ca/Airport_Info/air_service_development.php

(b) How Property is Made Available for Development

The proximity and cost of serving the airport with appropriate civil infrastructure (hydro/water/sewer/road/airside/fencing) also plays a role in determining the appropriate development approach. As a result general aviation airports in larger communities generally have the necessary civil infrastructure already in place to support existing business expansion or new development. In addition, some airports in smaller communities have made civil infrastructure improvements such that the property would be considered development ready. This is in contrast to the Vanderhoof airport where the existing civil infrastructure seems to be adequate for the existing customer activity but might not be suitable for customers seeking to make a longer term, or a larger capital commitment.

Under the traditional airport model, the usual commercial practice is for the airport owner to make their property available for development through a lease agreement. In some instances the airport owner enters into property agreement for a ground leases; in other instances the lease is for an existing structure or hangar. For airports located near the larger population centers the lease terms generally depend on the type of development and the amount of investment. In a ground lease the tenant rents the only the lands and constructs a structure on the property. In a ground lease it is not unusual for a landlord to grant a tenant a long-term-lease. The longest lease term we were able to determine was for 40 years: with 10 and 20-year lease terms perhaps more common. At most large general aviation airports, there is an active secondary market for the rental of hangars. These opportunities are often marketed on the airport's web site, or through local real estate agents.

In larger urban centers with a traditional airport model lease rates were often based on the local market value for industrial and commercial property and adjusted for inflation. Thus, lease rates and hangar rental rates are higher in Boundary Bay, Langley and Pitt Meadows. Stakeholders advised that costs in the Kamloops to Okanagan region would be approximately one third the level they would incur in the Vancouver area. In the traditional model airport owners undertake structured rent reviews on a periodic basis, perhaps every three to five years. Market data on typical airport leases in smaller (and more northerly) communities is more difficult to obtain. Nevertheless, property values and lease rates are lower. The average lease rate at Vanderhoof airport is approximately \$54 per 100 square meters for tenants on the North side of the runway.

While beneficial to individual aviation customers and market segments with an alternative to be located at an airport (i.e. helicopter base), lower land values and hangar rental rates may be insufficient to finance infrastructure upgrades or the extension of services. In comparison the Terrace/Kitimat airport is currently promoting 17 hectares of serviced land for aviation and light industrial uses with an annual land rental rate starting from \$1.50 per square meter.¹¹ The 2002 *Campbell River Regional Airport Strategic Development Plan* states, “current tenants at the airport are paying a nominal land rental fee of \$1.55 per square meter, which is a comparable land rental fee to other airports in the region”.

Alternatives to the Traditional Airport Site Development Model

(a) Type of Activity Permitted on the Property

Communities can make property available for aviation related development through the ownership of fee simple property. For example, Campbell River zoned land for commercial activity that was attractive to some aviation interests. This property is located adjacent to the airport. Airport management facilitated airside access through the introduction of the necessary security arrangements such as fencing and gates. Other communities have created business parks outside of the airport. For example, some of the land around Vancouver’s south airport is used for commercial aviation related purposes. In Ontario, the Lake Simcoe Regional Airport offers land development opportunities for both airside and landside settings. The airport has over 80 acres of designated serviced and un-serviced land for a variety of development options ranging from smaller hangar sites to large industrial/manufacturing activity. In addition to the expansive land development opportunities, the Lake Simcoe Regional Airport has further endeavored to provide its clientele with the ability to choose either land-lease developments, or equity-based developments through site-specific land sale opportunities. Thus, the airport may be considered to be operating a hybrid development model.¹²

Another example of an alternative airport development model is the Southport community located in Manitoba. Southport is a former military training base that has expanded to include an airfield, military flight training, education programs, commercial and residential properties and a recreation centre.¹³

¹¹ <http://www.yxt.ca/business-development/land-availability/>

¹² <http://www.lakesimcoeairport.com/home.html>

¹³ <http://www.southport.ca>

The study team is not suggesting that Vanderhoof considered the Southport airport development model in its entirety. Rather the information is provided to demonstrate that a contemporary integrated approach to developing a general aviation airport will require more flexibility and creativity than the traditional perspective currently adopted by the Agricultural Land Commission and other regulatory bodies.

In considering alternatives to the traditional general aviation airport site development model it is important to note that not all market participants require that their business be located at an airport. For example, some market segments such as helicopter companies own their own facilities on fee simple property located away from an actual airport. Helicopter bases would seem to be amongst the more price sensitive aviation customers. Fixed wing aircraft owners may have property alongside rivers, lakes or on rural acreages. The study team was not able to ascertain the number of such private facilities in the province. Nevertheless, it is important to note that there is some form of competition to the traditional airport land lease model.

(b) How Property is Made Available for Development

It is important to note that an airport owner could choose to attract development to their community by acting as a developer and sub-dividing some of their property holdings. In these instances they would pay the development soft costs associated with preparing a conventional, or bare-land strata plan, the legal expenses of preparing a 'prospectus' and/or 'disclosure statement' and other marketing costs. The technical requirements contained in *The District of Vanderhoof Subdivision and Development Servicing Bylaw No. 659, 192* would need to be applied to the airport property, perhaps with some modification to address other legislative standards and requirements that apply to airports. Civil infrastructure hard costs that pertain to road access, site serving and utilities would also be development expenses.

It is unlikely that the subdivision of land would be cost effective in a situation with low to moderate short-term demand, or where extensive civil infrastructure upgrades would be required. From an airport market development perspective it may be more cost effective to undertake a basic site plan that would define the parcels available for use, road access, and future utility corridors. The individual parcels would then be marketed as being available for long-term lease perhaps in a form that permits registration in the Land Title Office.

Such a strategy may hold additional appeal in instances where the timing of future demand is uncertain due to the cyclical nature of the industries served, where it would be difficult to recoup the land development costs from the initial occupants of the property, or where the potential customer's site selection criteria is sensitive to costs. However, regardless of the development strategy selected, restrictive land use zoning, or lease terms that limit the use of the property will hinder economic development activities associated with general aviation businesses that require a more flexible operational and commercial approach.

5 MARKETING STRATEGY - REFINING VANDERHOOF'S CUSTOMER VALUE PROPOSITION

5.1 Marketing Objectives

As a general aviation airport the District of Vanderhoof will be participating in the business-to-business and business-to-consumer market place within the Northern BC. The customer demographics of this market indicate that ninety four percent of the civil aviation licenses (including private pilots) holders in Canada are male.¹⁴ The study team recommends that the short-term marketing objective should be to retain existing airport customers, respond to the two market prospects that were identified to the study team and introduce some aviation compatible commercial activity. The longer-term marketing objective would be to preserve the potential for a unique development opportunity targeted to primarily BC based aviation equity investors whether it is for a commercial activity, or the possibility of a residential airpark. These objectives are consistent with a market development strategy.

5.2 Short Term Actions

In the immediate term, the primary opportunity to increase airport use at Vanderhoof will be amongst the existing base of aircraft owners who are located within the region. The use of cost effective communications channels to support the development of the airport would be required to support these objectives.

¹⁴ Transport Canada, *Transportation in Canada 2009 – Table 7: Civil Aviation Personnel Licenses & Permits by Category as of December 2009.*

Increased Customer Focus and Market Awareness

While the District of Vanderhoof airport is not a start-up business venture, the present level of aviation activity is relatively low. The results of the communication channel assessment contained in Table Q on the following page reveals that two primary communication channels would be most advantageous in raising the awareness level for general aviation or commercial activity: web based/digital and personal communications techniques.

These two techniques offer a blend of low communication costs important for low revenue customers (recreational pilots) with the resources for some personal direct communications efforts by professional staff with economic development and planning responsibilities. However, the District may need to augment these two primary methods with some public relations and advertising efforts, should the District decide to launch a more intensive land development project, to generate much needed awareness amongst resource development companies and other general aviation sector participants.

Strategic alignment of the communications channels will occur when the District explicitly recognizes the trade-off that may need to occur between two fundamental choices. The need to create and build awareness and credibility is an inherent part of the District of Vanderhoof airport brand development. This requires the use of communications tools that are appropriate to the cost structure for each customer segment the District is trying to attract. For example, if the revenue per customer sales figure is relatively low (i.e. lease of hangar space by recreational pilot) then the District of Vanderhoof will need to select and implement a low average cost communications model. For example, it may not be cost effective to engage in much advertising or engage in direct personal selling efforts. Conversely, if the revenue per customer sales figure or economic development potential is relatively high (i.e. the introduction of corporate aviation hangar) then the District of Vanderhoof may need to select communications channels that are relatively more expensive to implement, such as direct staff time.

The table below provides a relative assessment of communications channels and their potential effectiveness for creating additional airport activity. The relative ranking is based on the analysis contained in this report. The specifics include the complexity of the development, the state of existing civil infrastructure and length of time related to the decision making process as potential customers evaluate their individual reward/risk considerations and compare the District of Vanderhoof's airport product offering to competing alternatives.

The words highlighted in **green** on Table Q on the following indicate the communications channels with the most favourable characteristics for markets served by the Vanderhoof airport.

Figure Q. Communications Channel Assessment

Communications Channel Assessment					
	Advertising	Public Relations	Staff Time	Economic Promotion	Web Based & Digital
Amount of Feedback	Low	Low	High	Moderate	Moderate to high
Channel Capacity	High	Moderate	Low	Moderate	High
Channel Productivity	Low	Moderate	High	Moderate	High
Cost Per Transaction	High	Moderate	High	Moderate	Low
Control over Message	Yes	No	Yes	Yes	Yes
Control over Situation	Low	Moderate to low	High	Moderate to low	Moderate to high
Customer Touch Points	Pre-purchase awareness	Pre-purchase awareness	Pre-purchase Purchase Post-purchase awareness & sales	Pre-purchase Purchase sales	Pre-purchase Purchase Post-purchase awareness & sales
Direction of Messages	One-way	One-way	Two-way	One-way	Two-way
Identification of Sponsor	Yes	Varies	Yes	Yes	Yes
Message Flexibility	Low	Low	High	Low	High
Mode of Communication	Indirect & impersonal	Moderately direct & impersonal	Direct & personal	Indirect & impersonal	Direct & personal
Speed of Feedback	Delayed	Delayed	Immediate	Varies	Immediate to delayed
Speed in Reaching Large Audience	Fast	Moderate	Slow	Varies	Fast to moderate

It is recommended that the District of Vanderhoof pursue a co-branding strategy as part of its market awareness efforts. Suitable organizations would include existing airport tenants, or the College of New Caledonia. These types of organization could be approached to support the development and maintenance of a web site with current information and contact details for issues related to the economic development, operation and maintenance of the airport.

It is also recommended that staff from the District of Vanderhoof contact the Canadian Owners and Pilots Association to provide updated information regarding the status of the runway/airfield as to whether they are “Maintained Year Round” and other aeronautical issues of interest to their members and the flying public.

Airport Land Development

The airport’s current *Land Use and Development Plan* shows an area for aviation related commercial activity. In this area it is recommended that an infill strategy be adopted that would reduce the cost of providing upgraded infrastructure such as utilities. If new development were to occur on airport lands officials should work closely with potential proponents of such hangar facilities to better understand the conditions under which such facilities may be viable and a reasonable time line for planning, marketing and civil infrastructure servicing. Potential hangar customers would likely benefit from knowing the District’s preliminary thoughts in terms of the range of land values, the potential conditions for acquiring property, whether the proposed property meets existing Official Community Plan designations for the intended use as a site of a hangar facility and other similar development costs such as municipal taxes.

It is important to note that the airport infrastructure and parcels of land size required for small aircraft hangar facilities is not large: between 1 and 5 acres. For example, one company in the stakeholder interviews commented that a 66 x 80 ft (5,280 square feet) corporate hangar on a 2.5 acres parcel of land would be adequate for their firm’s use. The company would prefer a south-facing piece of property adjacent to a taxiway or apron/ramp for access to the runway. The site would preferably be served with power, water and sewer. However, all the firm would require is a power pole and line. Power requirements would be 220v single phase.

With the recent decline in general aviation activity, it is unclear at the present time whether the recent increase in forestry, exploration or mining activity will result in infrastructure capacity constraints at existing Northern BC airports. Thus, aircraft owners, operators and real estate agents would initially look for a suitable location that was served by existing municipal infrastructure for transportation access, water, sewer and fire protection, rather than engage in a lengthy land development process, or pay the full upfront costs associated with bringing a new industrial or commercial subdivision into existence.

In terms of airport development exclusively for civil aviation uses, Vanderhoof needs to be aware that they may be competing with existing airport infrastructure and capacity that could be expanded more quickly or at a cheaper cost than improving the civic infrastructure at the Vanderhoof airport. While it may not be necessary at the present time to bring civil infrastructure services to all sections of the airport property there may be merit in considering in upgrading the infrastructure in a concentrated development node.

Airport Public Facility Uses

Regardless of the general aviation airport development model selected by the District, the fact remains that in addition to road access, vehicle parking, runways, aprons, taxiways and tie-downs it is also beneficial to have other forms of public facilities or services. Specifically, it would be advantageous to general aviation interests to co-locate certain publicly accessible facilities for private and public aircraft owners and operators within a private facility. For example, a common pilot's lounge, public washroom with showers, lunchroom, and Internet access and public terminal kiosk for flight operations makes the airport more conducive to itinerant operations.

At airports with strong demand, service providers known as 'Fixed Base Operators' (FBOs) respond to the market need for public use facilities. For example, there are roughly 5,245 FBOs in the United States and many more worldwide. Most of these FBOs are operated as franchisees or members of a chain. "In general most FBOs offer aircraft fuel, oil, and parking, along with access to toilets, internet access and telephones. Some FBOs offer other aircraft services such as hangar storage, maintenance, aircraft charter or rental, flight training, deicing, and ground services such as towing and baggage handling. "FBOs may also offer additional services not directly related to the aircraft, such as rental cars, lounges, and accommodation reservations. While most FBO operators sell fuel for general aviation aircraft, some provide facilities for receiving and handling charter flights, VIP passengers and business jets and therefore are utilized widely by charter operators."¹⁵

¹⁵ <http://www.paramountbusinessjets.com/charterterms/fbo.php>

While in the short-run there does not appear to be sufficient demand for full scale FBO center at Vanderhoof airport a scaled down concept should be considered in airport planning. Such a facility could be accommodated in any new hangar construction, or in conjunction with the flight training activities of the College of New Caledonia.

The requirements for these types of general aviation services should be considered when identifying prime commercial land located close to the apron and runway so that these facilities are strategically considered in perpetuity as part of any and all land agreements with the Municipality.

5.3 Long Term Actions

The suggestion arising from the stakeholder interview process, that the development of a residential airpark for general aviation enthusiasts at Vanderhoof airport should not be dismissed out of hand. A residential airpark (also referred to as a fly-in community) is a community specifically designed around an airport. Each resident would own their own airplane and park it in their own hangar that is integrated with the residential building or home. Residential airparks usually feature a variety of amenities, such as golf course, equestrian facilities and more. Residential airparks usually provide for private fee simple ownership of land rather than making land available for development by way of a lease. However, a successful airpark would likely require the energies of a developer with a strong local market knowledge, aviation passion and financial capacity to incur the significant market development and project soft costs required that it would take to bring this form of business model to British Columbia.

Anecdotal evidence suggests that airparks seemed to be located near major population centers, in rural areas with destination status appeal, or where the market is of sufficient size that recreational pilots will seek out aviation lifestyle communities because the cost, or intensity of land use precludes other locations. British Columbia has a number of locations where recreational pilots can purchase property of sufficient size to land an aircraft and thus a recreational airpark may be subject to intense competition from alternative recreational property choices.

6 Implementing the Airport Marketing Recommendations

Implementing any airport marketing recommendation requires a brief discussion regarding governance, or airport management.

From a marketing or development perspective governance is less about organizational charts that illustrate hierarchies of control, and more about operating practices that are cost effective and appropriate for the level of activity anticipated.

In Vanderhoof the primary airport governance level is with the Mayor and Members of Council who are ultimately responsible for the care and operation of the airport infrastructure. The Mayor and Council are focused on the core functions of local government and delegate authority to staff members to address day-to-day airport management issues. Regardless of the level of activity there is a basic need to coordinate and manage airport activities. This is being done at Vanderhoof airport in a manner that is consistent with the level of activity. An increase in airport related activities or an increase in the intensity of land development might give rise to the question of what alternative forms of management oversight may be needed. The introduction of biannual meetings with District staff and existing airport tenants and aviation stakeholders would appear to be the most cost effective ways to address issues that may arise from an increase in any airport activities.

The level of anticipated general aviation activity at Vanderhoof airport appears to be insufficient in the short-term to justify a stand-alone autonomous local airport authority, or regional development corporation. A stand-alone airport authority may be appropriate governance model for Vanderhoof airport when Council is ready to transition the responsibility for the facility when there is a stable source of operating income necessary to perform the management functions. In the interim, the marketing communication, business retention and new business recruitment activities necessary to support airport development continue to reside with the District.

The District could also choose to create a separate 'Airport Advisory Committee' should an ongoing need arise. This may be an appropriate step in the development of the airport at some point in the future if the Committee had a clear and concise understanding of their role and meetings were timed to coincide with the need to gather input in the normal course of business planning for the municipality. Care and judgment must be exercised in the creation of an 'Airport Advisory Committee' because the community of Vanderhoof may not have a sufficient number of knowledgeable volunteers available to support activities over a prolonged period of time given the cyclical nature of the general aviation business and the large geographic region covered by firms engaged in the industry.

Without the active input from a broad base of knowledgeable volunteers there is the risk that the only people who become involved in 'Airport Advisory Committee' activities are those that wish to advocate for their personal airport priorities, or attempt to use the advisory forum to by-pass, or usurp staff functions and accountabilities.

7 Appendix - Stakeholder Questionnaires

Commercial, Personal Aviation, Institutional & Economic Development Organizations

Company Interviewed	
Date of Interview	
Personnel Interviewed	
Position / Role	
Interviewers	
Facility Location (s)	
Airport Servicing Facility (s)	

1. What involvement does your firm have today in the general aviation market in BC?
2. What airport related infrastructure & services do you presently use? What is the size of your facilities?
3. What are your expectations are for the future of the general aviation sector in British Columbia? What trends or factors that may change current airport usage pattern in central BC?
4. Where do you see the greatest opportunities to increase aviation related business activity at Vanderhoof, BC? What are the target markets for these services?
5. What are the competitive advantages that you believe that Vanderhoof airport should try to further develop and emphasize?

6. Choice of Airport Location. *When choosing a location for your business activity what do you think are the most important factors influencing your choice?*

Factors	Mentioned	Comments
Airport fees, property prices, lease terms & conditions		
Availability of fee simple land to build facilities that you own.		
Customer service requirements		
Frequency of scheduled air service		
Flexibility in operations		
Loss Prevention/Security		
Presence of existing infrastructure suitable for needs		
Proximity to market		
Routes & destinations served		
Size of market		
Total Cost		
Other -		

7. How important is it that your aviation related activities be conducted at an airport? Why?

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