Nakusp Airport
Village of Nakusp

Airport Master Plan

Final Report | January 15, 2024

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1 INTRODUCTION

1.1 Project Overview

Nakusp Airport (the "Airport") is owned and operated by the Village of Nakusp (the "Village"). The Village's 2021 Official Community Plan (OCP) establishes the following guidance:

> *Section 4.8 – Infrastructure: The Nakusp airport is an important asset to the Village and should be considered and managed as infrastructure.*
>
> *Policy 4.8.16: The Village airport (CAQ5) has been identified as a potential catalyst of growth for Nakusp. As such, the Village should develop an Airport Master Plan to determine feasibility of growth opportunities.*
>
> *Planning Project 7.3.17 – Explore economic opportunities provided by the Nakusp Airport: The goal of this task is to investigate the feasibility of airport-oriented development, including but not limited to: potential airport expansion to accommodate airport-oriented residential, light industrial, recreation, and educational uses; limitations and/or restrictions, including provision of services to the airport lands; the potential creation of an Airport DPA to be adopted and amended to the OCP; amendments to the Land Use Bylaw. This may be determined through the development of an Airport Master Plan or Airport Expansion Feasibility Study.*

Consistent with the directions provided through the OCP, the Village retained HM Aero Aviation Consulting ("HM Aero") in July 2023 to prepare the Nakusp Airport Master Plan (the "Master Plan"). Financial support for the preparation of the Master Plan was provided by the Province of British Columbia through the British Columbia Air Access Program (BCAAP).

The analysis and recommendations of the Master Plan are structured across three planning horizons:

1. **Short-Term Planning Horizon:** 2024 to 2028;
2. **Medium-Term Planning Horizon:** 2029 to 2033; and
3. **Long-Term Planning Horizon:** 2034 to 2043.

The planning approach taken focuses on defined actions in the short and medium-term planning horizons while preserving flexibility to meet potential opportunities and requirements in the long-term planning horizon. Recommendations in the long-term planning horizon are fewer in number with the understanding that a review and update of the Master Plan may be required to respond to evolving circumstances and meet the needs of that period.

1.2 Stakeholder and Community Engagement

1.2.1 Stakeholder Engagement

Input from stakeholders was collected and analyzed as part of the planning process. Consultations were convened in-person, by phone, videoconference, and email with the following stakeholders:

- Alpine Helicopters;
- British Columbia Emergency Health Services;
- Carson Air;
- CMH Heli-Skiing & Summer Adventures;
- Environment and Climate Change Canada;
- High Terrain Helicopters;
- Nakusp & Area Development Board; and
- Residents (3).

1.2.2 Community Engagement

HM Aero hosted an online community engagement survey that was advertised by the Village. The survey was available for a two-week period (October 3 to October 20, 2023). A total of 48 responses were received. As shown in Table 1.1, most respondents (38%) were from Nakusp, with the next largest category being the 31% of respondents residing in the Okanagan (e.g., Kelowna, Vernon). 19% of respondents were from Central Kootenay Area K and 8% were from Central Kootenay Area H. 4% of respondents were from elsewhere in British Columbia.

As shown in Table 1.2, the survey process resulted in a nearly even distribution of individuals responding as residents without a defined connection to the Airport (44% of all responses) and pilots, aircraft operators, or routine users of the Airport (46%). The largest groups represented were residents of Nakusp (31% of all responses), pilots or aircraft operators from the Okanagan (31%), and residents from Area K (10%).

Table 1.1 - Community Survey Respondent Places of Residence

Place of Residence	Respondents	Proportion
Village of Nakusp	18	38%
Okanagan	15	31%
Area K - Arrow Lakes	9	19%
Area H - Slocan Valley	4	8%
Other	2	4%
Total	**48**	**100%**

Table 1.2 - Community Survey Respondent Profiles

Place of Residence	Pilot, Aircraft Operator, or Routine Airport User	Resident or Household Representative	Business Representative	Total
Area H - Slocan Valley	6%	2%	0%	**8%**
Area K - Arrow Lakes	4%	10%	4%	**19%**
Village of Nakusp	2%	31%	4%	**38%**
Okanagan	31%	0%	0%	**31%**
Other	2%	0%	2%	**4%**
Total	**46%**	**44%**	**10%**	**100%**

2 AIRPORT PROFILE

2.1 Airport Overview

The Airport's governance body is the Village Council, comprised of five elected officials. Village Council provides direction to Village Staff on Airport priorities, approves its annual operating and capital budget, and enters into leases and other agreements. The administration and operation of the Airport is overseen by the Director of Public Works, reporting to the Chief Administrative Officer. No full-time Village Staff are assigned to the Airport and limited maintenance is completed on an annual basis. Winter maintenance is performed by the Public Works Department as the lowest priority route after all other streets and facilities have been cleared.

The Airport opened in September 1972 and was upgraded to its current infrastructure in 1973 through a contribution agreement established between the Village and Government of Canada, with the latter party providing $144,000 (approximately $947,000 in 2023 dollars). A restrictive covenant in favour of the Government of Canada continues to apply to the Airport lands, including a clause requiring the site to be maintained as a permanent public airport, and that the lands shall not be sold or converted for any other purpose without first receiving consent from the federal government.

The facility is classified as a public use registered aerodrome. Due to the lack of lighting and Instrument Flight Procedures, the Airport is a day-use only facility for operations in Visual Meteorological Conditions. The Airport's site plan is shown in Figure 2.1, with the facility comprised of the following primary assets:

- Runway 12-30;
- Taxiway A;
- Apron I;
- A Wind Direction Indicator; and
- Two rotary-wing facilities operated by CMH and High Terrain Helicopters.

Limited support services are available to aircraft operators. Jet A-1 ("jet fuel") facilities are maintained by CMH and High Terrain Helicopters on their respective leaseholds, and CMH makes its refuelling facilities available to itinerant rotary-wing aircraft during wildfire suppression operations. 100 Low Lead ("avgas") refuelling, weather observation services, or terminal facilities are not available.

Apron I and private hangars

REGIONAL DISTRICT OF CENTRAL KOOTENAY (RDCK)

VILLAGE OF NAKUSP

AGN II NON-INSTRUMENT RUNWAY STRIP - 3,380' X 262' (1,030 m X 80 m)

WIND DIRECTION INDICATOR

RUNWAY 12-30 - 2,983' X 75' (910 m X 23 m)

12

30

TAXIWAY A
(AGN II)

AGN II NON-INSTRUMENT RUNWAY STRIP - 3,380' X 262' (1,030 m X 80 m)

VILLAGE OF NAKUSP

REGIONAL DISTRICT OF CENTRAL KOOTENAY (RDCK)

RDCK

VILLAGE OF NAKUSP

HIGH TERRAIN
HELICOPTERS

CMH
HELI-SKIING

HOT SPRINGS ROAD

PRIVATE HANGARS
(5)

APRON I

ECCC WEATHER
OBSERVATION SITE

VILLAGE OF NAKUSP
PUBLIC WORKS

AIRPORT PROPERTY BOUNDARY

AIRPORT ROAD

UPPER
ARROW
LAKE

BC HIGHWAY 23

LEGEND

AIRPORT PROPERTY BOUNDARY

VILLAGE OF NAKUSP BOUNDARY

CROWN LAND

NAKUSP AIRPORT - VILLAGE OF NAKUSP
AIRPORT MASTER PLAN

FIGURE 2.1 - AIRPORT SITE PLAN

JANUARY 2024

0 100 200
Meters

*FOR PLANNING PURPOSES ONLY

2.2 Airport Users

2.2.1 British Columbia Emergency Health Services

The Arrow Lakes Hospital in Nakusp serves approximately 5,000 people living in the communities of Nakusp, New Denver and Silverton as well as the surrounding regions and is the primary medical care facility in the area. British Columbia Emergency Health Services (BCEHS) transfers patients from Nakusp to facilities in other communities such as Kelowna and Vancouver when required based on their care needs, hospital capacity, and other factors through three primary modes: ground ambulance; rotary-wing air ambulance from Arrow Lakes Hospital; and fixed-wing or rotary-wing air ambulance from the Airport. Consultations with local stakeholders noted that patient transfers by road can be challenging due to the limited number of ground ambulances and medical personnel available in the community.

The fixed-wing and rotary-wing air ambulance programs are delivered by contracted air carriers. As of 2023, the next 10-year contracts for rotary-wing and fixed-wing services will be fulfilled by Ascent Helicopters and Carson Air, respectively. The Beechcraft King Air 360 will be introduced as the new fixed-wing platform, replacing the historical use of the Beechcraft King Air 300, King Air 350, and 1900.

The Airport supports a limited number of BCEHS air ambulance flights, handling one to two transfer flights per year since 2021 (Table 2.1). Across the approximately two and a half year data period, a total of four fixed-wing and one rotary-wing transfer missions occurred at the Airport. During the same period, 10 fixed-wing transfer requests were declined for reasons noted below and 17 rotary-wing missions used the Hospital's heliport. Therefore, operations from the Airport only comprise between 14% and 28% of all air transfer missions from the community across the data period.

Numerous limitations impact the ability of fixed-wing air ambulance service providers to accept transfer missions from Nakusp, including:

- The limited runway length and its longitudinal slope. The Takeoff Distance Available is frequently insufficient when the surface is contaminated (e.g., by rain or snow), when high temperatures impact aircraft performance, or based on the aircraft weight;
- The unavailability of Instrument Flight Procedures, limiting operations to periods of favourable weather;
- The lack of snow clearing and ice control in the winter; and
- The absence of lighting for operations during hours of darkness.

Table 2.1 - BCEHS Patient Transfer Data

Transfers		2021	2022	2023 (Jan. to Aug.)
Nakusp Airport				
Fixed-Wing Transfers	Accepted	2	1	1
	Declined	4	2	4
Rotary-Wing Transfers		0	1	0
Total Transfers		**2**	**2**	**1**
Nakusp Arrow Lakes Hospital				
Total Transfers		**6**	**5**	**6**
Nakusp (Airport and Hospital)				
Total Transfers		**8**	**7**	**7**

2.2.2 British Columbia Wildfire Service

The Airport is located within the boundaries of the British Columbia Wildfire Service's (BCWS's) Southeast Fire Centre – Arrow Fire Zone. The Airport is used by rotary-wing operators contracted by BCWS for wildfire detection and observation, crew and equipment transportation, and fire suppression. The BCWS maintains a seasonal fire base near the Airport to the east that is staffed as needed with crews from the Shoreacres Fire Base. The nearest fixed-wing wildfire suppression base is located 80 km northwest at Revelstoke Airport.

Data on the number of wildfire suppression flights that have historically occurred at the Airport was not available for review. Consultations with stakeholders indicate that over 20 helicopters have been temporarily based on-site in years with high intensity suppression operations, such as the response to the 6,700-ha Ingersol Fire in August 2003. This includes operations by locally-based High Terrain Helicopters and aircraft operated by itinerant users from the airfield and from CMH's facilities.

The Airport and its rotary-wing tenants are identified in the *Area H North and Villages of Silverton and New Denver Community Wildfire Protection Plan* and *Area K and Village of Nakusp Community Wildfire Protection Plan*.

2.2.3 CMH Heli-Skiing & Summer Adventures

CMH leases land at the Airport to the southeast of the Runway 30 threshold for a hangar, two helicopter parking positions, and jet fuel infrastructure. CMH bases its Kootenay heliskiing operations from Nakusp and is a major component of the local tourism industry, including its ownership of the Lodge at Arrow Lakes. Based on information provided by CMH, the company's local operations support 115 full and part-time employees with an annual payroll of $1.6M. The heliskiing season typically runs for 12 weeks per year.

Rotary-wing services are provided by Kelowna-based Alpine Helicopters on behalf of CMH. In a typical season, three helicopters are based at the Airport. During the summer, CMH also makes its jet fuel facilities available to support wildfire suppression helicopters operating in the area.

CMH facilities at the Airport

2.2.4 High Terrain Helicopters

High Terrain Helicopters was founded in 1992 and provides air taxi and aerial work services from its bases in Nelson and Nakusp using a fleet of Bell 205, Bell 206, and Aerospatiale AS350 aircraft. High Terrain Helicopters leases land at the Airport from the Village to the northeast of the Runway 30 threshold that is occupied by a hangar, a rotary-wing parking position, and jet fuel infrastructure.

High Terrain Helicopters bases one helicopter in Nakusp year-round with additional aircraft assigned, as required. From their Nakusp base, High Terrain typically serves the forestry, mining, and wildfire sectors in the summer. In the winter, the company provides heliskiing services, access to backcountry lodges, supports avalanche control, and communication infrastructure maintenance.

High Terrain Helicopters Aerospatiale AS350

2.2.5 Intercommunity Access

As a public use facility, the Airport is available for access for aviation users with a predefined purpose to travel to Nakusp and for whom the facility is suitable for their intended operation. The number, origins, and destinations of aircraft movements at the Airport are not recorded. Consultations with stakeholders indicate that the majority of intercommunity travel is by single-engine general aviation aircraft with two to four seats visiting the area for business and pleasure.

The Airport is also reportedly used on an occasional basis by Canadian and American visitors travelling to Nakusp during the heliskiing season operating single and twin-engine turboprop charter and private aircraft, such as the Pilatus PC-12 and Piaggio Avanti.

2.2.6 General Aviation Tenants

Five private hangars have been built along the western and southern edges of Apron I on lands leased from the Village, typically occupied by owners of single-engine general aviation aircraft. The based general aviation users fly their aircraft for a variety of recreational and business purposes.

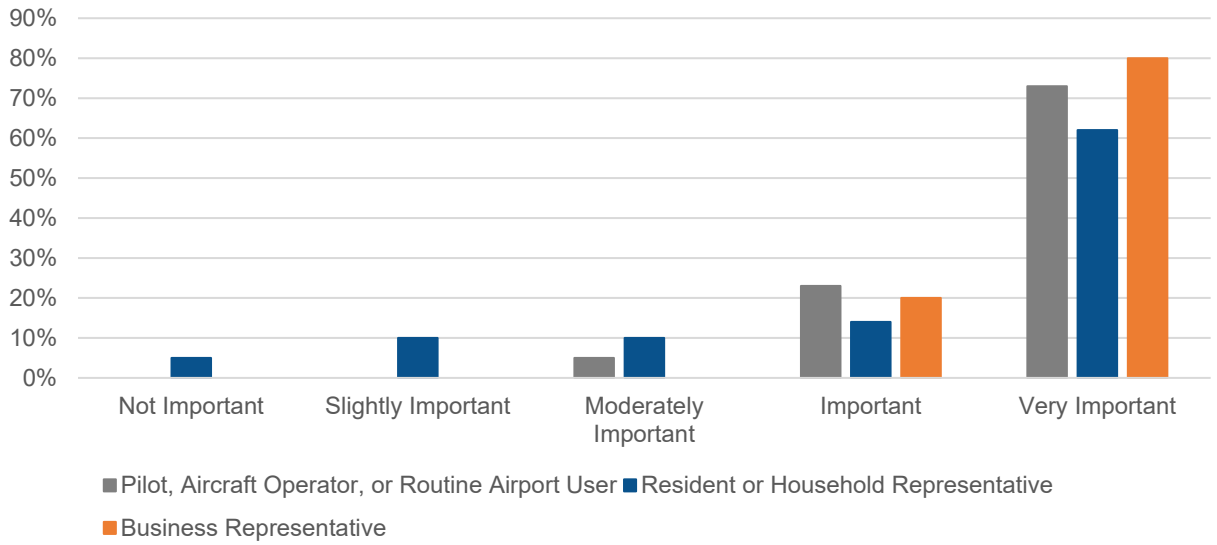
2.2.7 Environment and Climate Change Canada

Environment and Climate Change Canada (ECCC) maintains an automated weather monitoring station immediately north of Apron I on land leased from the Village. The leased premises is subject to a 10-year agreement from 2022 to 2032 with two optional five-year renewal terms. The current weather monitoring station was installed in October 2023 following the decommissioning of an obsolete facility west of the Runway 12 threshold.

2.3 Community Perspectives and Priorities

The overall valuation assigned to the Airport by each of the survey respondent groups is shown in Figure 2.2. Overall, individuals had generally favourable impressions of the Airport, with 88% of respondents identifying the facility as being “important” or “very important”. Support was highest amongst business representatives (100% identifying the Airport as being “important” or “very important”) and pilots and aircraft operators (95%). Resident views were more distributed, with 76% seeing the Airport as being “important” or “very important”, 10% identifying it as being “moderately important”, and 15% stating that the facility is “slightly important” or “not important.” These results may be subject to respondent bias, with individuals having a vested interest in or knowledge of the Airport being more likely to complete the survey – however, the extent of this effect cannot be determined.

Figure 2.2 - Survey Respondent Airport Valuations



Survey respondents were also asked about the importance of projects or investments to improve the ability of the Airport to serve its various roles, as summarized in Table 2.2. Nearly all respondents (96% to 98%) identified investments in the Airport’s capabilities to support wildfire suppression, air ambulance, and search and rescue operations as being “important” or “very important.” This prioritization was shared by non-aviation stakeholders (i.e., residents and businesses) as well as self-identified aviation users.

Investments to support recreational flying were identified as being “important” or “very important” by 83% of respondents; in this category, support diverges by respondent type, with 95% of aviation respondents assigning this prioritization versus 73% of resident and business respondents. Similarly, aviation stakeholders were more likely to assign valuations of higher importance to investments in helicopter aerial work and heliskiing versus resident and business respondents.

Table 2.2 - Survey Respondent Prioritization of Projects and Investments

Airport Role	Not Important	Slightly Important	Moderately Important	Important	Very Important
All Survey Respondents					
Wildfire Suppression	0%	2%	2%	19%	77%
Air Ambulance Patient Transfers	0%	0%	2%	25%	73%
Search and Rescue	0%	0%	2%	25%	73%
Recreational Flying	2%	8%	6%	27%	56%
Helicopter Aerial Work	0%	6%	13%	32%	49%
Heliskiing	0%	9%	23%	30%	38%
Resident and Business Respondents					
Wildfire Suppression	0%	0%	4%	15%	81%
Air Ambulance Patient Transfers	0%	0%	4%	19%	77%
Search and Rescue	0%	0%	4%	23%	73%
Recreational Flying	4%	15%	8%	27%	46%
Helicopter Aerial Work	0%	12%	15%	31%	42%
Heliskiing	0%	12%	35%	35%	19%
Aviation Respondents					
Wildfire Suppression	0%	5%	0%	23%	73%
Air Ambulance Patient Transfers	0%	0%	0%	32%	68%
Search and Rescue	0%	0%	0%	27%	73%
Recreational Flying	0%	0%	5%	27%	68%
Helicopter Aerial Work	0%	0%	10%	33%	57%
Heliskiing	0%	5%	10%	24%	62%

2.4 Financial Performance

The Airport collects operating revenues from two sources: land lease payments from the five private and two commercial tenants, and external recoveries from the Village's maintenance of the ECCC weather station grounds. Operating revenues between 2018 and 2022 averaged approximately $12,300 annually, ranging between a low of $9,200 in 2021 and a high of $14,100 in 2022 (Table 2.3). Land lease payments comprise 74% of all operating revenues, with external revenues accounting for 26%. Operating revenues have shown a modest positive trend across the five-year period reviewed. Additionally, the Village benefited from a one-time payment of $13,000 in 2021 from the provincial government in COVID-19 relief funding for the Airport; this payment is not included in Table 2.3.

Table 2.3 - Airport Revenues (2018-2022)

Revenue Category	2018	2019	2020	2021	2022
Land Lease Agreements	$9,403	$9,831	$10,117	$5,824	$10,718
External Recoveries	$3,000	$3,000	$3,000	$3,400	$3,400
Operating Revenues	**$12,403**	**$12,831**	**$13,117**	**$9,224**	**$14,118**

The Airport's operating expenses have ranged between $3,700 and $10,900 annually between 2018 and 2022, averaging $7,300 per year in this period. As shown in Table 2.4, the Airport's insurance and the costs associated with its maintenance by Village Staff are the two largest expense categories in a typical year.

Table 2.4 - Airport Expenses (2018-2022)

Expense Category	2018	2019	2020	2021	2022
Labour and Benefits	$1,379	$2,493	$2,078	$4,226	$1,694
Equipment and Materials	$1,454	$140	$2,355	$697	$0
Contracted Services	$5,759	$0	$0	$3,432	$0
Hydro	$197	$200	$193	$168	$162
Insurance	$1,799	$863	$2,086	$2,257	$2,358
Permits and Fees	$275	$0	$0	$0	$0
Total Expenses	**$10,864**	**$3,696**	**$6,712**	**$10,779**	**$4,214**

Taking revenues and expenses together, the Airport has generated a modest operating surplus in four of the five years reviewed, with 2021 being the only year with a recorded operating deficit of $1,600 (Table 2.5). Operating surpluses have ranged between $1,500 and $9,900 annually and have averaged $5,100 across the five-year data period. As a capital reserve account has not been established for the Airport, surpluses return to the Village's general financial reserves.

Table 2.5 - Airport Financial Position (2018-2022)

	2018	2019	2020	2021	2022
Total Revenues	$12,403	$12,831	$13,117	$9,224	$14,118
Total Expenses	$10,864	$3,696	$6,712	$10,779	$4,214
Financial Position	**$1,539**	**$9,135**	**$6,404**	**-$1,555**	**$9,904**

3 EXTERNAL CONTEXT ASSESSMENT

3.1 Catchment Area Population

The catchment area of the Airport primarily encompasses three census subdivisions: Nakusp; Central Kootenay Area H; and Central Kootenay Area K. The Airport's service area may extend further into the southernmost portion of Area B of the Columbia Shuswap Regional District and the easternmost portion of Area E of the Regional District of North Okanagan; however, demand is these areas is influenced by their proximity to Revelstoke Airport and Vernon Regional Airport. Nakusp Airport is the sole registered aerodrome serving the three catchment area subdivisions.

Based on Statistics Canada census data from 1996 to 2021, the catchment area's population has increased from a low of approximately 7,600 residents in 2006 and 2011 to 7,900 residents in 2016 and 8,400 residents in 2021 (Table 3.1). This most recent period of growth has been driven by population increases in Area K and Area H, as Nakusp exhibited a small decrease in population between 2016 and 2021.

Table 3.1 - Catchment Area Population

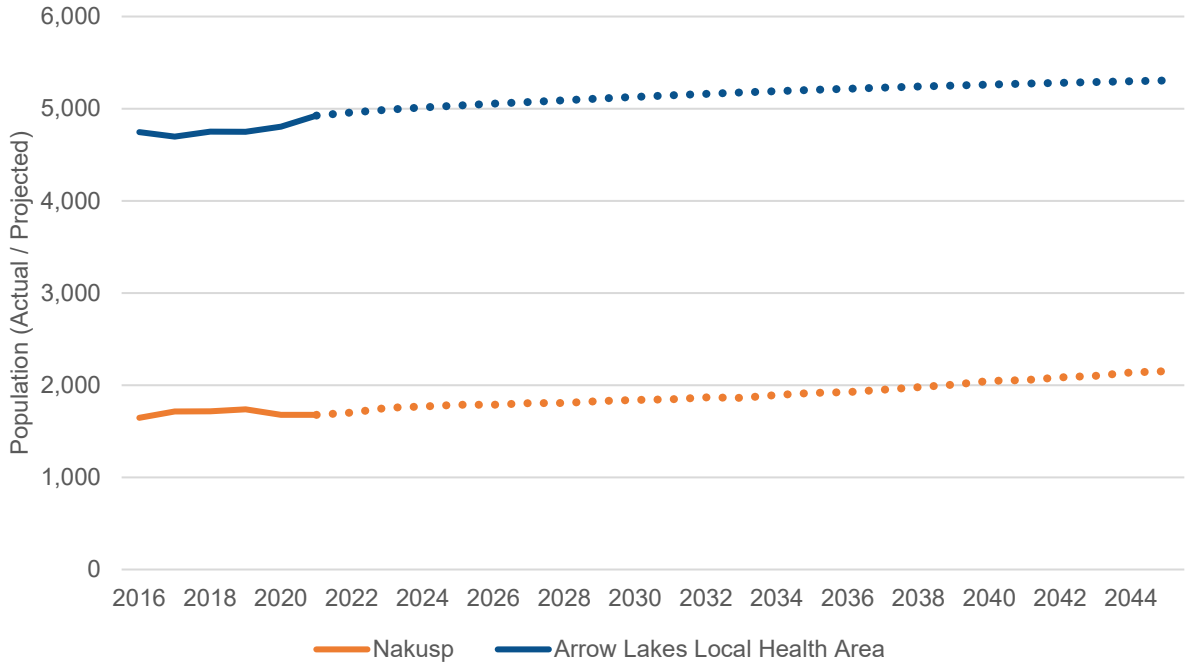
Census Year	Nakusp	Area K	Area H	Catchment Area	Change
2021	1,589	1,784	5,045	**8,418**	6.0%
2016	1,605	1,681	4,655	**7,941**	4.3%
2011	1,569	1,759	4,289	**7,617**	-0.3%
2006	1,524	1,800	4,319	**7,643**	-6.3%
2001	1,698	1,979	4,482	**8,159**	-0.4%
1996	1,736	1,997	4,460	**8,193**	

Population projections completed by the Province of British Columbia provide an insight into the outlook of the catchment area. Population projections have been retrieved for the Village and the Arrow Lakes Local Health Area, as shown in Figure 3.1. Nakusp is projected to grow from a baseline of approximately 1,700 residents in 2021 to approximately 2,200 residents in 2045, while the Local Health Area is projected to grow by approximately 400 residents to a population of 5,300 in 2045. The projections for Nakusp assume the community will grow by 28% over the next two decades, while 7% growth is assumed for the Local Health Area.

The local population is also aging, as described in the OCP. Between the 2006 and 2016 census periods, growth was only seen in senior (65+) cohorts, and nearly 27% of the population was aged 65+ in the 2016 census. The aging population influences both the size of the local workforce and the healthcare needs of the community.

Consultations with the Nakusp & Area Development Board indicate that while the most recent census has shown a decrease in the population of Nakusp, the community's population may actually be closer to 1,800 residents, driven by migration to the area. Positive indicators of population growth identified in Nakusp include increased school enrollment numbers and building permits issued for new construction. From a population growth perspective, Nakusp and the surrounding area may benefit from the increasing cost of living in numerous parts of British Columbia and its comparative affordability, as well as the quality of life in the region. However, the affordability of the community has increasingly been challenged by rising home prices.

Figure 3.1 - Province of British Columbia Population Projections



3.2 Economic Base and Prospects

The economy of Nakusp has historically been anchored by the forestry sector which, despite decreasing in its scale of operations, continues to support the area. The Village's 2021-2024 Strategic Plan establishes goals and objectives pertaining to the encouragement of diversified economic growth. This includes private investment in green and clean energy infrastructure, downtown revitalization, value-added agriculture and forestry, and initiatives for regional tourism. Additional goals are established for supporting the development of industrial land, including the investigation of developing Village-owned lands for industrial use. The Nakusp & Area Development Board is a non-profit society that works to actively promote, pursue, and support economic resiliency initiatives.

From a tourism perspective, Nakusp benefits from several amenities including its waterfront, revitalized downtown, Nakusp Hot Springs, and numerous outdoor activities such as downhill, heli-, and cross-country skiing; mountain and road biking; fishing and hunting; hiking, horseback riding and ATVing; canoeing, kayaking, and boating. Intra-provincial tourism reportedly increased during the COVID-19 pandemic on account of international and interprovincial travel restrictions, and the community is investing in further establishing itself as a destination for visitors.

3.3 Transportation Access

A key contextual influence is the distance and travel times associated with reaching the catchment area by road:

- Castlegar can be reached in 1h45m via Highway 6;
- Revelstoke can be reached in 1h45m via Highway 23, including a ferry crossing; and
- Vernon and Kelowna can be reached in 2h45m and 3h30m, respectively, via Highway 6. These trips necessitate a ferry crossing at Needles.

The trip times noted above can increase based on road conditions, inclement weather, natural hazards, and ferry timings, and access can be impassable during significant disruptions. These prolonged travel times are of particular importance for patients being transferred to higher level of care facilities (e.g., Kelowna, Vancouver) as identified in Section 2.2.1, with travel by air ambulance reducing time enroute. The susceptibility of highways serving the area to be disrupted by weather conditions and other interruptions also increases the Airport's importance from an emergency management perspective by providing an alternative route of access.

3.4 Village of Nakusp Financial Resources

The Village, like municipalities of all scales across British Columbia and Canada, contends with financial pressures in its provision of services. These challenges include the municipality's aging capital assets (e.g., roads, water and sewer services, parks and recreation facilities, etc.), increases in operating expenditures, inflation, and a limited taxbase and ratepayer difficulties with sustaining higher taxes. The Village's budget for 2023 included a 13.2% increase to meet the needs for the year, primarily due to inflationary pressures in the provision of municipal services. Given the numerous operating and capital responsibilities of the Village, investments in the Airport will compete with other municipal priorities for limited funding.

The practical financial pressures facing the municipality are reflected in the Village's 2021-2024 Strategic Plan, which calls for planning for, investing in, and maintaining safe, resilient, and sustainable infrastructure in a way that provides the highest value to the taxpayers in the community.

Upper Arrow Lake from the Nakusp waterfront

4 GROWTH OPPORTUNITIES AND AIRPORT ROLE

4.1 Growth Opportunities

The Village has identified the Airport as a potential catalyst for economic growth and has provided direction through the OCP that the feasibility of aviation development be investigated. Section 4 describes the economic growth opportunities identified as potentially being feasible based on regional market demand, centring on four opportunities:

1. Private hangar development;
2. Increased tourism access into the community;
3. Air Force mountain operations training; and
4. Non-aviation industrial growth.

Consideration has been given to other opportunities not advanced for further discussion based on their anticipated low likelihood of attainment. Opportunities not advanced for further assessment include scheduled passenger air services, a local Flight Training Unit, fixed-wing BCWS airtanker base, and aviation commercial users other than those described below.

Although the opportunities identified herein are viewed as having the highest likelihood of attainment for the Airport and are the basis for future capital and operational investment recommendations, it is advised that expressions of other forms of private sector development interest with economic and / or revenue generation potential be welcomed for the Airport if they become present, assuming they are compatible with its long-term viability.

4.1.1 Private Hangar Development

Hangar land lease revenues are the primary source of the Airport's operating revenues, with the five private hangars generating approximately 20% of total revenues in this category. Despite private hangars generating lower land lease revenues compared to commercial tenants, this category is viewed as having the highest likelihood of growth in the short-term planning horizon. Consultations with Village Staff indicate that two to three expressions of interest in developing hangars at the Airport are received on an annual basis.

Demand for hangar development is expected to primarily be from private general aviation aircraft owners in the catchment area. Although the direct economic benefits to the community of private aircraft hangars are limited, new land leases would contribute to the Airport's operating revenues and increase the facility's overall utilization. The Airport Development and Land Use Plan identifies lots for new general aviation hangars and the preparatory steps that would be required to support their absorption (i.e., tree and land clearing, taxiway preparation).

4.1.2 Tourism Access

As identified in Section 3.2, the tourism sector in Nakusp is increasing in both its reputation and local importance and attracts both domestic and international visitors to the community. The Airport currently supports a limited number of visitors arriving by general aviation and chartered aircraft with the intent of staying in the community and accessing attractions such as the Nakusp Hot Springs and CMH's heliskiing offerings.

A recurring theme identified through consultations and survey results from pilots and aviation stakeholders is the potential for increased visitor access to the community by air. Through marketing, partnerships with local tourism service providers, and improved ground transportation, stakeholders repeatedly identified that the Airport could represent a gateway that would stimulate visitor access into Nakusp. While the number of individuals arriving by air is expected to remain a small proportion of total visitors to the region, enhancing the Airport's role in this capacity would broaden its economic benefits to businesses in Nakusp and the surrounding region.

4.1.3 Military Mountain Operations Training

The Airport has historically been used by the Royal Canadian Air Force (RCAF) for mountain operations training by Edmonton-based 408 Tactical Helicopter Squadron. Mountain training has not occurred in the community in several years, and the reactivation of the Airport as a base for such operations is viewed as an opportunity for further exploration with the RCAF. Supporting mountain operations training could broaden the Airport's social benefits and may result in temporary economic benefits through spending for local accommodation and other service providers by RCAF personnel.

4.1.4 Non-Aviation Industrial Growth

The Nakusp OCP outlines opportunities for industrial and value-added forestry growth in the community and notes that industrial lands are currently in short supply. The Airport is located to the northwest of the Nakusp West Industry Lands and several industrial and forestry related uses are located in its vicinity. The vacant forested lands to the west of Airport Road may represent an appropriate location for new non-aviation industrial, forestry, and public works uses with limited servicing requirements, such as laydown and storage yards.

4.2 Airport Role Statement

Based on the existing users of the Airport identified in Section 2.2, the priorities identified by the community in Section 2.3, and the highest likelihood opportunities for growth profiled in Section 4.1, the Airport Role Statement outlines the prioritized focus of the Master Plan and guides future decision-making regarding investments in the facility:

1. **Healthcare and Emergency Management:** First and foremost, the Airport contributes to resident health and regional safety through the support of air ambulance, wildfire suppression, search and rescue, and disaster response operations. The Airport's emergency preparedness capabilities are the highest priority.
2. **Economic Asset:** Local and itinerant users of the Airport contribute to the regional economy, including CMH, High Terrain Helicopters, and visitors arriving by air. Opportunities for increased tourism access, mountain operations training, and non-aviation industrial growth should be pursued to broaden the Airport's economic impacts and increase its operating revenues.
3. **Aviation Community:** The Airport is available for use by local and itinerant general aviation pilots using the facility for recreational purposes. General aviation growth is welcomed through new hangar development and additional based aircraft.

5 AIRPORT DEVELOPMENT PLAN

The Airport Development Plan includes a systematic evaluation of the facility's infrastructure and services and provides recommendations to ensure their continued usability and / or improvements to better meet the needs of the Airport's primary users. In an ideal scenario, the Village would have the financial resources and capacity to advance projects that address all areas for improvement. Consideration is given to both the financial pressures faced by the municipality (Section 2.4) and available sources of external funding (Section 6.1) in establishing the approach recommended for capital and operational projects.

5.1 Infrastructure and Service Conditions and Requirements

5.1.1 Runway 12-30

Operational Characteristics

Runway 12-30 is a 2,983 ft. x 75 ft. asphalt paved surface that was constructed in 1973. The runway's Pavement Load Rating is not reported; however, based on historical operations the pavement structure is understood to be suitable for regional charter and air ambulance aircraft such as the Beechcraft King Air. In addition, the width of Runway 12-30 is suitable for the Outer Main Gear Wheel Span of the Beechcraft King Air, as well as the Airport's current and future anticipated primary users.

The length of Runway 12-30 is generally suitable for the single-engine aircraft operated by the Airport's general aviation tenants. However, the runway's length and longitudinal slope are limiting factors on air ambulance operations by air carriers contracted by BCEHS using the Beechcraft King Air. Based on consultations with Carson Air, the Takeoff Distance Available is typically suitable in uncontaminated conditions up to 15°C. The runway length is insufficient when aircraft takeoff performance is degraded in contaminated conditions (e.g., with the presence of snow or ice), at higher takeoff weights, and in higher temperatures with increased density altitudes. Consultations with Carson Air indicate that increasing the Takeoff Distance Available to 3,400 ft. would decrease the performance penalties routinely incurred and permit operations up to 25°C.

As noted in Section 2.2.1, 10 fixed-wing air ambulance patient transfers from Nakusp have been declined between January 2020 and August 2023, with these missions shifted to transportation by ground ambulance or rotary-wing aircraft. Preliminary analysis indicates that 200 ft. extensions to both runway ends for a total length of 3,400 ft. may be feasible, pending detailed analysis of surrounding obstacles and topographic conditions through the engineering design process. Depending on the heights on obstacles in the area, including Hot Springs Road and its protected vertical corridor, displaced thresholds may need to be implemented. The extension of Runway 12-30 is recommended in the short-term planning horizon pending funding availability.

Pavement Condition

Runway 12-30 was constructed in 1973 and was visually assessed by HM Aero in August 2023 to be in poor condition. At five decades in service, the asset is showing signs of discrete cracking, significant vegetation growth, surface material loss, and oxidation. Evidence of crack sealing in recent years was present; however, consultations with Village staff indicate that a past crack sealing project was completed with materials of inadequate specifications for airside use.

Runway 12-30 requires rehabilitation in the short-term planning horizon. The most appropriate rehabilitation strategy (e.g., pavement overlay, milling and repaving, full depth reconstruction) cannot be selected solely based on the visual inspection due to the age of the pavement, its significant oxidization, and the unknown condition of the subbase. A detailed geotechnical investigation will be required to determine the condition of the granular base and subbase materials and identify the most appropriate rehabilitation strategy.

Runway pavement distresses

5.1.2 Taxiway A and Apron I

Operational Characteristics

Taxiway A is used by fixed-wing aircraft transiting between Apron I and Runway 12-30. Taxiway A is suitable for the Airport's current and anticipated future primary fixed-wing users and the need for its widening has not been identified.

Apron I is used for fixed-wing and rotary-wing aircraft parking, passenger loading and unloading, servicing, and aircraft taxiing to the private hangars along its western and southern edges. Apron I is routinely used by CMH during winter heliskiing operations for guest transfers, which sees two rotary-wing aircraft operate on the facility. The primary limitations of Apron I are as follows:

- Tie-down positions have not been established. Tie-down anchors enable lighter general aviation aircraft to be safely secured in windy conditions when parked; and
- During wildfire suppression operations, Apron I is used by numerous rotary-wing aircraft and access to private hangars can be limited.

In the short-term planning horizon, it is recommended that two rotary-wing parking positions be established on the eastern side of Apron I to ensure that CMH and wildfire suppression operations are protected and are directed further away from the general aviation hangars. Concurrent with these improvements, it is recommended that three paved tie-down positions be established at the northwest edge of Apron I to relocate smaller single-engine fixed-wing aircraft away from rotary-wing operations.

Pavement Condition

Taxiway A and the northern 2,600 m^2 portion of Apron I were constructed in 1973, with Apron I expanded by approximately 1,600 m^2 to the south at an unknown date based on inference from aerial imagery. Both assets were observed to be in poor condition with distresses including unsealed discrete cracking, vegetation growth, and the oxidation of the pavement surface. Concurrent with the geotechnical investigation recommended for Runway 12-30, the pavement structures of Apron I Taxiway A should be assessed to identify the most appropriate rehabilitation strategy.

Southern portion of Apron I

5.1.3 Rotary-Wing Parking Facilities

CMH and High Terrain Helicopters have prepared rotary-wing parking positions on their individual leaseholds. As described in Section 5.1.2, Apron I is used during the winter heliskiing season by CMH for guest transfers, and the apron is also used for aircraft parking during wildfire suppression operations. In historical cases whereby the Airport has supported numerous (20+) rotary-wing wildfire suppression aircraft, helicopters have parked throughout the airfield including on the runway and grass infields.

Routine demand for heliskiing and wildfire rotary-wing parking is expected to be met through the designation of two parking positions on the eastern side of Apron I in the short-term planning horizon, as recommended in Section 5.1.2. Peak demand for rotary-wing parking is associated with years with extensive wildfire suppression operations and cannot be predicted in terms of the frequency of these events or the number of aircraft that will be based at the Airport. Stakeholders have identified that the unplanned nature of rotary-wing parking during these surges of activity represents an operational challenge. The preparation of a designated grassed parking area for peak wildfire suppression rotary-wing parking is recommended in the medium-term planning horizon. This project will optimize the Airport's capacity to handle rotary-wing wildfire suppression operations by itinerant operators and improve its level of service to the BCWS.

In the interim, peak demand for rotary-wing parking during major wildfire suppression operations can be accommodated through the temporary closure of airfield facilities (e.g., the runway and infield) to fixed-wing operations and the use of these areas for parking. The need for temporary closures to accommodate surge rotary-wing parking should be coordinated between air operators, the BCWS, and Village staff and communicated to affected fixed-wing operators through direct outreach and Notices to Airmen.

5.1.4 Instrument Flight Procedures

Instrument Flight Procedures are unavailable for aircraft arriving and departing the Airport. The lack of Instrument Flight Procedures is primarily a limitation on air ambulance operations by BCEHS, as patient transfer missions may need to be initiated in a full range of weather conditions. This limitation was confirmed through consultations with BCEHS and Carson Air.

It is recommended that a third-party design organization be retained in the short-term planning horizon to investigate the feasibility of implementing GPS-based RNAV Instrument Flight Procedures. Due to the mountainous terrain surrounding the Airport, it is anticipated that non-precision Minimum Descent Altitudes of 250 ft. AGL may not be achieved and that minimums may be 1,000 ft. AGL or higher. However, these “cloud breaker” procedures should enable air ambulance operators to descend through moderate ceilings and continue their flight into Nakusp, improving overall availability.

Through the Instrument Flight Procedure design process, the need may be identified for a weather observation station with a certified altimeter setting source to be installed to mitigate the penalties to the Minimum Descent Altitude incurred with using Revelstoke Airport as a Remote Altimeter Setting Source. This is discussed further in Section 5.1.7.

5.1.5 Obstacle Environment

The runway strip is a protected area measuring 40 m from each side of the centreline and 60 m before each threshold that is to be kept clear of fixed objects to limit damage in the event of an aircraft exiting the paved surface. Extensive areas of vegetation, including bushes and trees, were observed within the runway strip posing a hazard to aircraft operations. It is recommended that a comprehensive vegetation clearing project be undertaken within the runway strip during the short-term planning horizon.

Numerous trees were also observed to likely be penetrating the three-dimensional Obstacle Limitation Surfaces surrounding Runway 12-30. These obstacles pose a hazard to aircraft arriving and departing the Airport. The surveying and clearing of infringing trees is recommended in the short-term planning horizon.

Vegetation growth encroaching on the runway strip

5.1.6 Visual Navigation Aids

Visual navigation aids are limited to a single Wind Direction Indicator located east of the runway midpoint and two non-standard signs located at the runway holding position. To limit the risk of aircraft or vehicles entering Runway 12-30 without first verifying that the runway and approach paths are clear, it is recommended that two retroreflective Mandatory Instruction signs be installed in the short-term planning horizon. These signs provide a visual cue to pilots and maintenance workers not to proceed until they have ascertained that the runway is clear.

5.1.7 Aviation Weather Reporting

Aviation weather reporting services are not provided at the Airport, with aircraft operators reliant on local forecasts and reporting available at Revelstoke Airport to the north. Weather reporting facilities assist pilots with making safe flight planning decisions, and the unavailability of such services was noted as a deficiency by general aviation, commercial, and air ambulance stakeholders. The availability of an altimeter setting source is also important to limit Minimum Descent Altitude penalties associated with using a remote source for Instrument Flight Procedures.

A Searidge weather information system and webcam was installed at the Airport in 2012 through the financial support of the Arrow Lakes Hospital Foundation and the Arrow Lakes Hospital Ladies Auxiliary, with additional support from CMH and the Village. The weather system was decommissioned due to internet access challenges that limited uploaded speeds. As described in Section 5.1.13, planned upgrades to internet services at the Public Works Yard by Columbia Wireless represent an opportunity to reactivate the existing weather system and restore this capability in the short-term planning horizon, pending its suitable condition for continued use.

5.1.8 Pilot Facilities

Shelter facilities are not available for pilots and passengers. The availability of a sheltered facility is an advantage particularly for itinerant users of the Airport and is an asset for attracting additional aviation tourism and to provide temporary operations accommodation for wildfire and air ambulance crews. Lands are reserved west of Apron I for the development of a modest (e.g., 800 ft^2) prefabricated terminal building in the medium-term planning horizon. Consideration may be given to the inclusion of an accompanying prefabricated washroom facility.

5.1.9 Aircraft Fuelling

Jet fuel facilities are maintained by CMH and High Terrain Helicopters to support their operations, and CMH makes its refuelling facilities available to itinerant rotary-wing aircraft during wildfire suppression operations. Outreach is recommended with CMH to ensure the continued provision of jet fuel dispensing services during wildfire operations given the strategic importance of this capability at the Airport. The provision of jet fuel facilities by the Village is not recommended within the short or medium-term planning horizons based on the capital costs of installation, ongoing operating obligations that may exceed the capacity of the Public Works Department, and availability of jet fuelling at Revelstoke Airport to the north. The need for Village-operated jet fuelling services may be revisited in the medium or long-term planning horizons pending the identification of significant demand that cannot be met by CMH; however, the priority is for the provision of fuel services by private operators.

Avgas is unavailable at the Airport, necessitating that general aviation operators either refuel at nearby airports such as Vernon and Revelstoke or store small quantities of fuel on their leaseholds. The unavailability of avgas was noted as a limitation by general aviation stakeholders. However, the numerous prioritized high cost capital projects recommended in the short-term planning horizon will challenge the financial capacity of the Village and are expected to limit the potential for avgas facilities to be developed by the municipality. Opportunities for the provision of avgas fuelling services may be explored with the Nakusp Flying Club in the short-term planning horizon and may be revisited in the medium-term planning period.

5.1.10 Airport Maintenance

As identified in Section 2.1, maintenance is completed by the Village's Public Works Department as resources permit. Challenges noted by stakeholders and observed by HM Aero include limited mowing and brush clearing, the degradation of the pavement surfaces without ongoing sealing and repairs, and limited snow clearing. To guide the effective and safe maintenance of the Airport by the Village, it is recommended that an Airport Maintenance Manual be prepared in the short-term planning horizon.

Winter maintenance is completed by the Public Works Department as the lowest priority route after all other streets and facilities have been cleared. Effective snow clearing and ice control is also essential to ensuring reliable access by BCEHS. It is recommended that the Airport be integrated in the Village's Snow Clearing Plan with a priority rating assigned (i.e., Priority 1, 2, or 3). It is also recommended that procedures and potentially fees be established for snow clearing on a call-out basis (e.g., to facilitate a BCEHS air ambulance arrival).

5.1.11 Access Controls

Limited controls are in place to prevent access to the airside area. Perimeter fencing has not been installed and a single vehicle gate is located on Airport Road near the private hangar area. Concerns were identified regarding unauthorized access to the airfield, tenant facilities, and parked aircraft and the potential for theft and tampering.

Given the Airport's extensive property boundary and the cost of security fencing, securing the entirety of the property line is not considered to be feasible. The Village has applied for funding in 2024 to construct a fence along the boundary of the property near High Terrain Helicopters. To assist in deterring access to the airfield in the short-term planning horizon, it is recommended that fencing be installed along approximately 1,150 m of the Airport's property line from the Apron I area to Hot Springs Road and High Terrain Helicopters. Restricted area signage at regular intervals along the Airport Road and Hot Springs Road frontages is recommended as an interim step in dissuading airside access.

Due to the proximity of Hot Springs Road to aircraft arrival and departure paths, it is recommended that warning signage be installed along Hot Springs Road warning pedestrians and vehicles of low flying aircraft pursuant to Canadian Aviation Regulation 301.05.

5.1.12 Groundside Access

Groundside vehicle access is provided to the ECCC site, Apron I, and private hangars via Airport Road, a gravel municipal roadway. Access to CMH and High Terrain Helicopters is provided from Hot Springs Road. Airport Road was observed to be in fair condition with ongoing grading and maintenance required typical of other gravel roadways. The Airport Development and Land Use Plan reserves lands for a potential gravel parking lot near Apron I, depending on the demonstration of user requirements over time.

Ground transportation for itinerant pilots is limited to travelling by active options (e.g., walking, cycling) and by taxi. It is recommended that the Village liaises with the local taxi provider and publishes this information online to ensure this option is available for itinerant users. The opportunity may exist to collaborate with the upstart Nakusp Flying Club to provide bicycles or a crew car for loan to visiting pilots.

5.1.13 Servicing

BC Hydro provides single-phase power to the ECCC weather site and general aviation hangar area through an overhead service running from the Village's Public Works Yard. Electrical services are also provided to High Terrain Helicopters and CMH. Future tenant requirements for electrical services can be coordinated with BC Hydro.

Sanitary sewer services are not available at the Airport, with the nearest sanitary line terminating approximately 450 m to the southwest near the intersection of Hot Springs Road and Highway 23. Tenants are responsible for arranging private septic services according to their requirements. Private septic services were not identified as a deficiency by the Airport's commercial tenants, and the level and type of development anticipated within the horizons of the Master Plan is unlikely to warrant the extension of sanitary services to the Airport.

Limited potable water services are provided to CMH, High Terrain Helicopters, and the adjacent Village Public Works Yard through a low capacity connection that runs along Hot Springs Road. The closest water mainline terminates approximately 450 m to the southwest with the previously mentioned sanitary line. The limited water servicing capacity was identified as a deficiency through consultations with existing commercial tenants and may be a hinderance on fire response efforts at the Airport. Given the significant costs associated with extending municipal potable water services to the Airport, it is recommended that a detailed feasibility study be completed in the medium-term planning horizon to guide future asset management decision-making.

Limited quality internet services were identified as a limitation by commercial tenants of the Airport. Through an agreement entered into between the Village and Columbia Wireless in November 2023, an Air Optic wireless internet antenna is planned to be installed in the nearby Public Works Yard in late 2023 or early 2024. Columbia Wireless's over-the-air internet services will allow for the rapid deployment of internet services equivalent or nearly equivalent to physical fibre optic services, and tenants may enter into service agreements directly with Columbia Wireless.

5.2 Development Constraints Analysis

The following constraints have been identified based on a preliminary assessment and inform the Airport Development and Land Use Plan:

- **Obstacle Limitation Surfaces:** Approach and Transitional Obstacle Limitation Surfaces are three-dimensional areas delineated to protect the airspace surrounding Runway 12-30. Based on the runway's current and anticipated future users, Aircraft Group Number II – Non-Instrument Obstacle Limitation Surfaces have been prepared, as shown in Figure 5.1. Fixed and mobile objects and vegetation are to remain clear of the Obstacle Limitation Surfaces. Although the Airport, as a registered aerodrome, is not required per the Canadian Aviation Regulations to provide Obstacle Limitation Surfaces, doing so is advised in the interest of aviation safety. If Instrument Flight Procedures are implemented as recommended in Section 5.1.4, the protection of Obstacle Limitation Surfaces will be a requirement pursuant to Advisory Circular No. 301-001.
- **Hot Springs Road Corridor:** Hot Springs Road is located approximately 290 m from the Runway 30 threshold under the extended centreline. The roadway corridor is located at a higher elevation than the Runway 30 threshold, with an estimated 7 m to 8 m increase in elevation based on desktop resources. TP312 – Aerodrome Standards and Recommended Practices (5th Edition) identifies that a 4.6 m area above the roadway crown is to be protected for Obstacle Limitation Surfaces at certified airports. Pending the completion of surveying, Hot Springs Road may constitute an obstacle that limits the extension of Runway 12-30 or requires the displacement of the Runway 30 threshold based on the previously described Obstacle Limitation Surfaces.

- **Site Topography:** The topography of the Airport property varies and generally decreases in elevation from the northeast to the southwest. Topographical changes are a major limitation on the amount of developable area available, particularly for uses requiring taxiway and apron access that are less permissive of longitudinal slope changes. As noted above, the increase in elevation from the Runway 30 threshold to Hot Springs Road limits the extension area in this direction. The area approximately 150 m northwest of the Runway 12 threshold decreases in elevation, limiting the expandability of the runway in this direction.
- **ECCC Weather Station:** To limit obstructions that would affect the accuracy of weather observations at ECCC's facility, the Village's agreement establishes that any physical structure within the 100 m x 100 m area centred on the weather station requires the permission of ECCC. This imposes a constraint on new development north of Apron I.
- **Federal Encumbrance on Title:** The encumbrance on title in favour of the federal government stipulates that the Airport property shall not be sold or converted for any purpose other than operating a public airport without the prior consent of the Minister of Transport. This would include non-aviation industrial development.

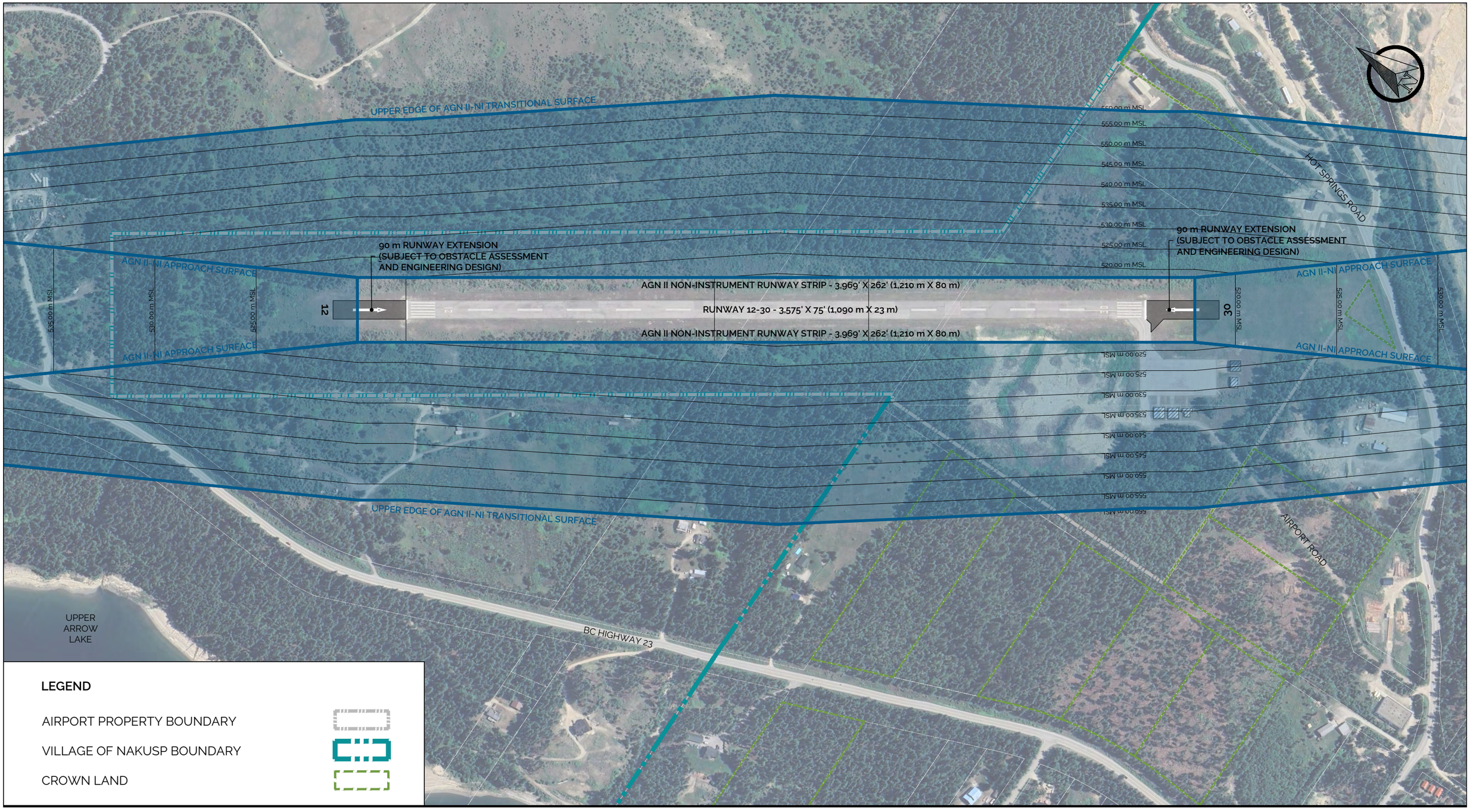
5.3 Airport Development and Land Use Plan

The Airport Development and Land Use Plan is shown in Figure 5.2 and depicts the locations for new aviation and non-aviation leasehold lots, as well as capital projects that will modify or expand Airport facilities. As shown in Table 5.1, the leasehold lots proposed will introduce 19,600 m^2 of aviation developable area and 22,500 m^2 of non-aviation developable area. The Airport Development and Land Use Plan does not identify capital projects pertaining to the rehabilitation of existing assets or the boundaries of tree clearing and obstacle removals, as such efforts will be dependent on future surveying. Modifications to the Airport Development and Land Use Plan may be required pending the findings of the geotechnical investigation, topographic survey, and engineering design processes.

Lands are reserved for an Aircraft Group Number I secondary taxiway connection to the extended Runway 30 threshold pending the potential identification of airfield capacity challenges. However, this project is not expected to be warranted until the long-term planning horizon or later. The area north of the ECCC weather station is reserved for potential development pending the full absorption of the nine lots identified for rotary-wing and fixed-wing users.

Table 5.1 - Airport Development and Land Use Plan Summary

Development Lot Type	Dimensions (Typical)	Quantity	Total Developable Area
Aviation – Rotary-Wing	90 m x 90 m	2	16,200 m^2
Aviation – Fixed-Wing	20 m x 25 m	7	3,400 m^2
Non-Aviation	150 m x 150 m (irregular)	1	22,500 m^2
	Total	**10**	**42,100 m^2**



LEGEND

AIRPORT PROPERTY BOUNDARY

VILLAGE OF NAKUSP BOUNDARY

CROWN LAND

NAKUSP AIRPORT - VILLAGE OF NAKUSP
AIRPORT MASTER PLAN

FIGURE 5.1 - OBSTACLE LIMITATION SURFACES

JANUARY 2024

0 100 200 Meters

*FOR PLANNING PURPOSES ONLY

REGIONAL DISTRICT OF CENTRAL KOOTENAY (RDCK)

VILLAGE OF NAKUSP

90 m RUNWAY EXTENSION
(SUBJECT TO OBSTACLE ASSESSMENT
AND ENGINEERING DESIGN)

WIND DIRECTION INDICATOR

AGN II NON-INSTRUMENT RUNWAY STRIP - 3,969' X 262' (1,210 m X 80 m)

RUNWAY 12-30 - 3,575' X 75' (1,090 m X 23 m)

12

30

AGN II NON-INSTRUMENT RUNWAY STRIP - 3,969' X 262' (1,210 m X 80 m)

VILLAGE OF NAKUSP

REGIONAL DISTRICT OF CENTRAL KOOTENAY (RDCK)

BC HIGHWAY 23

HIGH TERRAIN
HELICOPTERS

PREFERRED LOCATION
BCWS ROTARY-WING
PARKING AREA
90 m X 90 m (TYP.)

90 m RUNWAY EXTENSION
(SUBJECT TO OBSTACLE ASSESSMENT
AND ENGINEERING DESIGN)

CMH
HELI-SKIING

HOT SPRINGS ROAD

INSET A

ECCC

APRON I

240 m X 88 m
2.11 ha

RDCK

VILLAGE OF NAKUSP

150 m X 150 m
2.25 ha

AIRPORT PROPERTY BOUNDARY

AIRPORT ROAD

VILLAGE OF NAKUSP
PUBLIC WORKS

LEGEND

- AIRPORT PERIMETER FENCE
- AGRICULTURAL LAND RESERVE BOUNDARY FENCE
- AVIATION DEVELOPMENT LOT
- NON-AVIATION DEVELOPMENT LOT
- DEVELOPMENT RESERVE
- AIRPORT PROPERTY BOUNDARY
- VILLAGE OF NAKUSP BOUNDARY
- CROWN LAND

INSET A

TAXIWAY
RESERVE
(AGN I)

TAXIWAY A
(AGN II)

ECCC DEVELOPMENT
APPROVAL REQUIRED

ROTARY WING
PARKING POSITIONS

20 m X 25 m
(TYP.)

GERNERAL
AVIATION
TIE-DOWN
AREA

APRON I

20 m X 20 m

7.5 m PRIVATE TAXIWAY
(20 m STRIP WIDTH)

PARKING
LOT
RESERVE

TERMINAL
BUILDING

AIRPORT ROAD

BC HIGHWAY 23

NAKUSP AIRPORT - VILLAGE OF NAKUSP
AIRPORT MASTER PLAN

FIGURE 5.2 - AIRPORT DEVELOPMENT AND LAND USE PLAN

JANUARY 2024

0 100 200
Meters

*FOR PLANNING PURPOSES ONLY

6 IMPLEMENTATION STRATEGY

6.1 Funding Opportunities

External sources of financial support are available to reduce the capital costs borne by the Village through the implementation of the Master Plan recommendations. Profiled herein are the primary grant funding opportunities available as of January 2024. Ongoing monitoring will be required to identify new sources of external funding that the Village may apply for.

6.1.1 British Columbia Air Access Program

BCAAP is administered by the Province of British Columbia's Ministry of Transportation and Infrastructure, with the goal of supporting communities and enhancing the long-term potential of the aviation sector. Up to $2M will be provided per applicant annually, with base provincial funding allocations determined according to the type of project as follows:

- 75% for airside projects (e.g., runways, taxiways) and core aviation infrastructure;
- 60% for transitional projects (e.g., terminal buildings, fencing, and gates);
- 50% for groundside projects (e.g., vehicle parking areas, access roads); and
- 75% for climate / environmental projects (e.g., greenhouse gas audits).

Applicants that meet certain eligibility criteria may be allocated up to an additional 15% of provincial funding (up to 90% provincial funding), with considerations including whether the facility:

- Serves an Indigenous, isolated, rural, or remote community;
- Has limited revenue streams available;
- Has a greenhouse gas reduction plan and / or active transportation policies and infrastructure in place;
- Requires the project for medevac, wildfire suppression, or emergency response purposes;
- Requires the project in response to an extraordinary event, such as a natural disaster;
- Requires the project to correct a non-compliance with federal aviation regulations; and
- Requires the project for climate change mitigation or adaptation.

Most projects recommended for the Airport through the Master Plan align with the objectives of BCAAP and would be eligible for financial support. Funding intakes open annually in November with successful applications typically announced in the following spring.

6.1.2 Rural Economic Diversification and Infrastructure Program

The Rural Economic Diversification and Infrastructure Program (REDIP) is administered by the Province of British Columbia's Ministry of Jobs, Economic Development and Innovation and supports economic development projects that promote economic capacity building, economic diversification, resilience, clean economy opportunities, and infrastructure development. The 2024-25 program intake will run from July to October 2024 with successful projects to be announced in the spring of 2025. Funding is available through the following categories:

- **Economic Diversification – Development:** Up to $100,000 will be funded per project with 80% of eligible costs covered;
- **Economic Diversification – Implementation:** A maximum of $1,000,000 will be funded per project with 80% of eligible costs covered; and
- **Forest Impact Transition:** Supports economic recovery and transition in communities affected by impacts in the forest sector, with a maximum of $500,000 in funding per project with 100% of eligible costs covered.

REDIP funding has been leveraged for several airport projects, including the expansion of the Anahim Lake Airport terminal building ($531,000 through the Economic Diversification – Implementation stream), development lot grading at Merritt Airport ($500,000 through the Forest Impact Transition stream), and the preparation of industrial lands at Powell River Airport ($50,000 through the Forest Impact Transition stream). Funding through REDIP could be used to offset the costs of developing new aviation and non-aviation development lots as recommended in 2025.

6.1.3 Regional District Support

Outreach is recommended with the Regional District of Central Kootenay to identify potential mechanisms for direct capital support on projects of significance to Nakusp, Area H, and Area K. The Regional District has previously provided support to airports in its boundaries, including financial contributions and letters of support to West Kootenay Regional Airport and annual operating grants to the Creston Valley Airport Society.

6.1.4 Private Sector Support

Support for select projects that have a clearly defined private sector benefit may be requested from major users of the Airport, such as CMH. In-kind support may also be provided through local volunteers with an interest in the Airport and the upstart Nakusp Flying Club.

6.2 Recommended Capital Plan

The Recommended Capital Plan, presented in Table 6.1, provides a year-by-year implementation framework for the initiatives identified through the Master Plan and accompanying Rough Order of Magnitude cost estimates. Cost estimates are adjusted for inflation (assumed at 2.5% per year) in their implementation year and include a 20% contingency estimate. All estimates are preliminary and are subject to change based on actual costs in the implementation year. Updated estimates should be prepared by the Village as part of the consideration of future capital budgets. The Recommended Capital Plan does not identify operating expenses associated with the provision of the Airport, including recurring projects such as crack sealing, pavement repairs, and line repainting.

Table 6.1 - Recommended Capital Plan

Year	Project	Rationale	Cost Estimate [1]	External Funding [3]
2024	Runway Mandatory Instruction Signs	Aviation Safety	$4,000	-
	Apron I Rotary-Wing Parking Positions	Improved Facilities for Commercial and Emergency Operators	$4,000	-
	Apron I General Aviation Parking Positions	Improved Facilities for General Aviation Operators	$12,000	-
	Agricultural Land Reserve Boundary Fence	Airport Safety and Security	$95,000	BCAAP: 60%
		Total	**$115,000**	
2025	Airport Maintenance Manual Preparation	Effective Airport Management Aviation Safety	$10,000	-
	Restricted Area and Low Flying Aircraft Signage	Aviation Safety	$9,000	BCAAP: 60%
	Weather Information System Reactivation	Aviation Safety Improved Facilities for Commercial and Emergency Operators	$13,000	BCAAP: 75%
	Instrument Flight Procedures Design	Aviation Safety Improved Air Ambulance Access	$26,000	BCAAP: 75%
	Runway Strip Obstacle Clearing	Aviation Safety	$85,000	BCAAP: 75%
	Aviation Development Areas Preparation	Economic Development	$483,000	REDIP: 80% - 100%
		Total	**$626,000**	
2026	Airfield Rehabilitation Topographic Survey, Geotechnical Investigation, and Engineering Design	Aviation Safety Lifecycle Asset Management	$116,000	-
		Total	**$116,000**	
2027	Runway 12-30 Rehabilitation [2]	Aviation Safety Lifecycle Asset Management	$1,909,000 - $4,909,000	BCAAP: 75%
	Runway 12-30 Extension	Aviation Safety Improved Air Ambulance Access	$1,167,000	BCAAP: 75%
	Obstacle Limitation Surfaces Tree Removal [4]	Aviation Safety	$65,000	BCAAP: 75%
		Total	**$3,141,000 - $6,141,000**	
2028	Taxiway A Rehabilitation [2]	Aviation Safety Lifecycle Asset Management	$93,000 - $239,000	BCAAP: 75%
	Apron I Rehabilitation [2]	Aviation Safety Lifecycle Asset Management	$399,000 - $1,026,000	BCAAP: 75%
		Total	**$492,000 - $1,265,000**	

Year	Project	Rationale	Cost Estimate [1]	External Funding [3]
2029	Wildfire Rotary-Wing Parking Area Preparation	Improved Facilities for Emergency Operators	$57,000	BCAAP: 75%
		Total	**$57,000**	
2030	Airport Perimeter Boundary Fence	Aviation Safety	$237,000	BCAAP: 60%
		Total	**$237,000**	
2031	Terminal Building Development	Improved Facilities for Aircraft Operators	$471,000	BCAAP: 60%
		Total	**$471,000**	
2032	Water Service Improvements Feasibility Study	Economic Development	$74,000	-
		Total	**$74,000**	
2033	Master Plan Update	Effective Airport Management	$45,000	BCAAP: 100%
		Total	**$45,000**	

Note 1: All cost estimates are provided at the Rough Order of Magnitude level of detail, are adjusted for inflation (estimated at 2.5% per year), and include a 20% contingency.

Note 2: Cost estimates associated with the rehabilitation of Runway 12-30, Taxiway A, and Apron I are presented as ranges based on the future determination of the most appropriate rehabilitation strategy (e.g., overlay, mill and pave, reconstruction). The lower cost estimate for each project is for a pavement overlay, and the upper cost estimate is for reconstruction.

Note 3: BCAAP funding levels are the base proportions identified through the 2024 intake guidelines. Additional contributions from the Province may be awarded, and the maximum that may be received in a single year is $2M.

Note 4: Costs associated with surveying to identify trees penetrating the Obstacle Limitation Surfaces are integrated in the project recommended for the preceding year.

6.3 Implementation

The completion of the Master Plan equips the Village with a tool to guide the future direction of the Airport, which serves as both a municipal and regional asset. It is recommended that the Master Plan be adopted by Village Council as the Airport's governing body and that its directions be implemented on an annual basis where feasible based on the municipality's financial capabilities and the availability of external funding. It is recommended that a comprehensive review and revision of the Master Plan be completed at the end of the medium-term planning horizon (2033) to update the direction provided herein and ensure the continued value of the document.

The success of the Airport will require concerted efforts by the Village and aligned stakeholders and partners, including the facility's commercial and private tenants, primary users (e.g., BCEHS, BCWS), the Regional District, the Nakusp & Area Development Board, and the provincial and federal levels of government.

Runway 12 threshold

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