ALBERNI-CLAYOQUOT
REGIONAL DISTRICT

Long Beach Airport

Asset Management Plan

Version 1

DATE OF ADOPTION: MARCH 11, 2020

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1 EXECUTIVE SUMMARY

1.1 Purpose of the Plan

The Long Beach Airport (LBA) Asset Management Plan (AMP) is part of the ACRD Asset Management Program to facilitate informed decision-making and effective allocation of resources for infrastructure. The purpose of an AMP is to deliver sustainable, cost effective services to ACRD communities in a socially, economically and environmentally responsible manner, while providing the Level of Service (LOS) agreed upon by the Board, Transport Canada and Island Health.

1.2 Asset Description

The LBA assets include:

- Aprons
- Taxiways
- Runways
- Terminal building and out-buildings
- Fencing
- Various technical and runway equipment
- Specialized heavy equipment
- Water system, wastewater systems and culverts
- Parking lot & Airport Road
- Golf course

1.3 Levels of Service

The present funding levels are insufficient to continue to provide the existing services at current levels of service in the medium-term. The main service consequences will be inability to accommodate leasehold tenants, a decline in water quality or loss of service and failing infrastructure used in daily applications.

As with much of Canada's airport infrastructure, the LBA was obtained from Transport Canada after World War II to be used for public transportation.

1.4 Future Demand

The main demands for new services are created by:

- Population growth
- Tourism
- Changes in demographics
- Climate change
- Board of Directors and user level of service expectations
- Transport Canada regulations
- Island Health regulations for water
- Potential historical WWII preservation

These will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices include non-asset solutions, insuring against risks and mitigating failures.

1.5 Lifecycle Management Plan

Asset Management assists in conscious and calculated decisions for all assets covered in Plans from acquisition, operation, maintenance, disposal and renewal or upgrade. During the course of an assets life, the replacement value is known along with an estimated date of replacement based on age and condition including estimated disposal cost. Annual contributions required are calculated for each component in each service so we can measure the funding gap between current and future levels of service in order to align funding and service expectations. The AM Program achieves responsible and reliable lifecycle management practices.

The Asset Management Coordinator has created the LBA AMP with the assistance of consulting firm reports, airport staff and management. Asset Management systems will continue to be maintained once this position expires by ACRD staff. Estimated service life (ESL) and replacement cost of the infrastructure were determined using internal policies and industry standards. Management staff provided risk assessments and goals.

1.6 Financial Summary

The LBA has a total current replacement value of $47.9 million in 2020 dollars. With an estimated inflation rate of 1.5%, estimated future replacement costs are $54.7 million for current infrastructure at the end of the components estimated service life. The 2016 Census data shows the West Coast population has grown by approximately 1.32% each year since 2011. Tourism has also increased each year; it's estimated that Tofino hosted 600,000 visitors in 2018 with 5.4% choosing to fly directly to Tofino (Tourism Tofino); between 2005 and 2015, revenue from room stays increased by 21.1% (Destination BC). It is assumed that requests for air travel will continue to increase along with tourism.

In 2019, the Tofino, Ucluelet and Long Beach areas had a total assessed value of $1.867 billion and the summarized financial plan for LBA was as follows:

2019 Long Beach Airport Financial Plan	Amount
Operating Expenses	$526,712
Contribution to Reserves from Operating	$250,000
Conditional Grants	$5,662,045
Total Long Beach Airport 2019 Expenditures	**$6,438,757**

In 2019, the anticipated revenues for the LBA service were approximately $200,000, the surplus used from prior years was approximately $164,000 and the resulting tax requisition was $375,916. The 2019 tax requisition resulted in a converted residential tax rate of $0.153.

Staff continue to look for other sources of revenue for LBA such as user fees and lease revenues; however, for the purposes of this plan only tax requisition was considered as a future revenue source. Any future additional revenues collected will offset the recommended contribution rates included in this AMP.

Due to the current age and condition of the assets, the infrastructure gap for 2020 is $30.7 million. In addition to this immediate funding gap, annual contributions of $1.03 million is required to fully fund LBA's capital. In reality, renewal of system components will occur in cycles based on asset life, completion of major improvements and according to their condition and use. Many of the assets were created during World War II for the Royal Canadian Air Force and have well exceeded their expected useful lives. Included in the future estimates is the cost of resurfacing runways, aprons and taxiways originally installed 76 years ago as well as removing or decommissioning some of these assets that do not directly serve the airport.

A significant capital renewal project occurred in 2019 for the resurfacing of Apron III and associated taxiways with an investment of $5.4 million funded through the Airports Capital Assistance Program (ACAP). Also in 2019, funding was secured through the BC Airports Assistance Program (BCAAP) of $67,405 for an infrastructure project to promote passenger safety for travel between the terminal and runways.

It is suggested that the removal, decommissioning or restoration of WWII assets be prioritised from a safety perspective with removal cost estimates for critical infrastructure totalling approximately $306,000 for the bunkers, Letchford home, communications and generator buildings; restoration could be considered but the costs are expected to be substantially higher. Parks Canada currently leases two large WWII buildings for storage and a workshop; extensive exterior renovations are required on both buildings. Due to the hazardous materials used in the finishing of the buildings in the 1940s, professional services will need to be commissioned to safely dispose of any removed material. Complete building removal costs are estimated at approximately $160,000 per building if renovation and rejuvenation is

not pursued. Both buildings currently need new roofs, siding, windows and gutters in addition to the dry rot removal required in the storage building.

Parks Canada Storage Building

Due to historical significance, if the removal of the buildings was not favoured, buildings should be remediated to showcase their significance to Canadian heritage. There are options available to apply to have the site deemed a Heritage Place with Parks Canada which could offer funding opportunities. While the airport isn't currently a tourist destination for historical reasons, there has been expressed interest in maintaining or restoring the remaining war-era structures.

1.7 Asset Management Practices

Assets are managed using a combination of Microsoft Office, Vadim, AutoCAD and TRACR II AIM. Registries and AMPs will be reviewed and updated on an annual basis prior to the release of the following version.

1.8 Monitoring and Improvement Program

At the end of this AMP there will be an Improvement Plan intended to improve Asset Management practices within LBA and the Asset Management Program as a whole. Generally included in Improvement Plans are suggested changes or additions to documented inspections and condition assessments, monitoring of asset-specific operational and maintenance procedures and assigning present risks a numerical rating in order to measure mitigation success.

2 INTRODUCTION

2.1 Background

This AMP encompasses all LBA assets, including maintenance equipment. The purpose of the plan is to facilitate the strategic management of the airport infrastructure and the services provided by it, giving guidance on new and existing infrastructure to maximize use of financial resources long term, reduce risk and provide a prioritized view for service continuity and improvements over a 20-year planning period.

The ACRD AM Program follows the advice of the Asset Management BC Framework (AMBC); Plans are designed to be living documents that change with the organization to reflect progress made while continuously striving for sustainable service delivery. Consideration of community priorities and an understanding of trade-offs between resources and desired services is the foundation of sound AM practices. The AMBC Roadmap guides organizations through basic, intermediate and advanced Asset Management Practices. It is the goal of the ACRD to achieve a basic to intermediate level of understanding.

This AMP should be read in the context of the ACRD's Asset Management Policy and Strategy. The LBA AMP is a living document and will develop with AM practices and with the influence of the following corporate documents:

- Annual strategic priorities and Land Use Plans
- Short term and long term financial plans
- Policies and bylaws
- Grant applications and funding

Asset Management Plans are designed for several reasons; first, to guide Management and the Board in planning and decision-making; second, to aid in the creation of short-term and long-term financial plans as well as operational plans; and last, to spark community engagement for the service.

As the ACRD moves through the AM implementation process, knowledge and understanding of the AM program increases and it is expected that this plan evolve further, solidifying assumptions made and filling in any present information gaps where further research or information is required.

2.2 Asset Inventory

The LBA consists of many components including:

- 3 Runways
- 8 Taxiways
- 3 Aprons
- Several out-buildings
- 3 septic fields
- 8 culverts
- Lighting and technical systems
- Terminal building
- Fencing
- Specialized heavy machinery
- Water system
- Parking lot & Airport Road

Current replacement costs were estimated by the Property Maintenance Coordinator, Asset Management Coordinator and Airport Superintendent using unit costs from industry standards, previous works performed and in-house Marshall & Swift Valuation Service. Unit costs include all installation and estimated remediation activities. Remaining useful life estimates were based on installation dates and expected service life provided by the Airport staff based on knowledge and experience.

There are currently approximately 3,355 meters of fencing surrounding and within the LBA property in varying conditions, including Animal Control fencing, aged Transport Canada fencing and newer chain-link fencing installed by the ACRD. According to the Airport Superintendent, there is much more fencing required to meet Transport Canada standards. Approximately 10,000 meters of fencing will need to be added to become compliant with Transport Canada regulations at a current estimated cost of $275,000. This cost is not included in the current fencing inventory but is accounted for in the annual contribution requirements.

Originally built with concrete, the runway, apron and taxiway surfaces have proven to last in the West Coast climate but resurfacing with concrete is not financially feasible. The LBA uses asphalt for complete resurfacing on top of the concrete base and will only use concrete for individual panel replacement as a renewal project.

Current leaseholders are required to remove buildings upon cessation of the lease; however, situations may arise that prevent removal. The ACRD acquired the Letchford home after the leaseholder passed away and the estate failed to remove the building. As there are currently many buildings not owned by the LBA that are situated on LBA land, it is possible in the future that those buildings will fall under the ownership of the airport and will become part of any subsequent AM Plans. The leaseholder buildings that could potentially be acquired are of varying conditions and age and remediation or removal costs will be calculated at the time of acquisition and included in the long-term financial plan and recommended contribution levels.

Letchford Home

2.3 Levels of Service

Level of Service (LOS) can be defined as the service quality for a given activity or a commitment to carry out a given action in response to an event or asset condition. LOS is broken into two categories:

Customer LOS: measure how the customer receives the service and measure of value we provide.

Technical LOS: technical measures of performance relating to the allocation of resources to service activities to best achieve the desired outcomes and demonstrate effective performance including:

- Operations – ongoing activities, day-to-day operations
- Maintenance – activities enabling an asset to provide service for its planned life
- Renewal – activities that return the service capability to near original capacity
- Upgrade – activities that provide a higher level of service

The current and expected Levels of Service detailed in Tables 2.1 and 2.2 shows the expected levels of service based on resource levels in the current financial plan. Organizational measures are measures of fact related to the service delivery outcome.

Table 2.1 - Customer Level of Service Objectives

Values	Expectation	Measure	Current Performance	Desired Performance
Quality	Safe and accessible airport facilities including water and wastewater	Number of customer complaints relating to safety and efficiency Water quality samples meet or exceed Island Health and Canadian Guidelines for drinking water quality	Numerous complaints about Airport Road quality All water samples meet VIHA requirements	No complaints related to safety at facilities No complaints related to water quality or wastewater systems
Function	Airport facilities meet users' needs without interruption of services	Usage of facility including capacity and related infrastructure interruptions or failures	Complaints received during power outages resulting in a loss of water, lighting and phone services	Facilities manage capacity through scheduling to accommodate air traffic needs; or, expansion to facilities and related infrastructure if required Backup power source for outages
Capacity and Use	Adequate parking and terminal space at all times	Number of service complaints related to capacity or restriction of flights relating to capacity	Overflow parking lot has temporarily relieved congestion but traffic flow realignment is required to optimize the current space and traffic patterns	Aircraft and vehicle parking is adequate and functional for all users of the airport All parking congestion is eliminated

Table 2.2 - Technical Levels of Service

Service	Service Objective	Objective Measure	Current Performance	Desired Outcome
Operations **2019 Budget:** $181,000	Airport Road and airside surfaces are kept clear and accessible Access to clean, safe water	Regular runway, apron and taxiway inspections, obstacles removed Monitor water system, quality and testing required by VIHA	Daily inspections performed as part of Transport Canada regulations (limited winter maintenance) Water quality and potability samples meet VIHA standards	No interruptions to service due to unclear surfaces Water quality and potability samples meet VIHA standards
Maintenance **2019 Budget:** $24,000	Airport equipment and facilities are maintained to meet Transport Canada regulations Water and wastewater access are without interruption	No interruption of services due to maintenance Regular water maintenance procedures occur as needed (flushing, repairs, assessments)	Rehabilitation of Apron III and associated taxiways causing interruptions Maintenance equipment designed to keep surfaces usable in winter conditions Flushing every 2 weeks, inspections every 2 days	Assets are inspected and maintained in a timely manner to not cause interruptions to service Water and wastewater repairs continue to be proactive and repairs and maintenance occur as required
Renewal **2019 Budget:** $5,604,640 (including grant funds)	Critical infrastructure is replaced when quality falls below accepted levels	Useful life of airport infrastructure increases over time as renewals are performed. Renewal needs identified by staff	Budgetary constraints do not allow for necessary repairs or replacement outside of grant funded opportunities	Repairs, replacements or renewals are adequately budgeted and occur as needed to avoid failures
Upgrade/ New **2019 Budget:** $410,140 (including grant funds)	Assets are upgraded to accommodate increased capacity and use as air transportation grows	Number of requests for additional flights in and out of airport, number of parking spaces available at busy periods, requests for airport to accommodate larger aircraft	Requests for direct flights to Victoria with larger aircraft Requests for upgraded approach technology Terminal can be over capacity at peak times Requests for transit, accommodations Wastewater infrastructure is old and insufficient Water distribution system not adequate for fire flows	As flight traffic increases, expansions are considered and executed as needed to accommodate passengers and aircrafts to avoid terminal capacity issues Wastewater systems are replaced with upgraded larger systems Water system is upgraded for fire flows

For the purposes of this report, customer's level of service expectations are set upon the annual adoption of the financial plan and strategic priorities as it is a reflection of the values, policies, and priorities of the Board of Directors with input from committees and public engagement sessions, if desired. This will assist the ACRD's Board of Directors and stakeholders in matching the level of service required, service risks and consequences with the community's ability and willingness to pay for the service.

Transport Canada also provides regulations for airports and aerodromes to which LBA must conform. Airports must have a safety management system in place and comply with airport safety standards and security requirements. More specifically, Part III of the Canadian Aviation Regulations outlines the following topics relevant to runways: thresholds and end coordinates, elevations, pavements, slopes, taxiways, obstacles, wind indicators, markings, lighting, signs and maintenance.

It is important to monitor the service levels provided regularly as these will change as regulations and expectations change. The current performance is influenced by work efficiencies, technology Transport Canada and Island Health regulations that will change over time. Review and establishment of the agreed performance that achieves the best balance between service, risk and cost is essential.

2.4 Emergency Preparedness

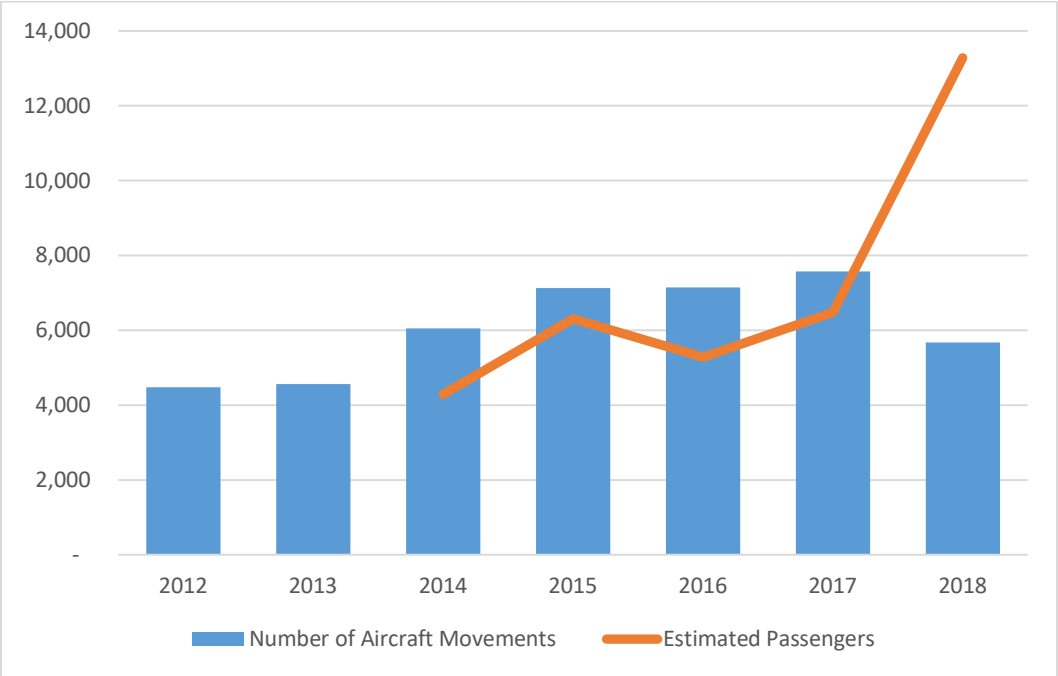
The LBA maintains an updated Emergency Response Plan. Within this plan there is guidance designed for before, during and after any emergencies involving aircraft, structures and other events affecting the operation of the airport. The ACRD will review and update the Emergency Response Manual annually with a full scale exercise conducted every four years relating to a major aircraft incident and at minimum the assembly and deployment of emergency service organizations.

2.5 Traffic and Revenues

Airport traffic has increased with the rise in tourism in the area. Destination British Columbia states that between 2005 and 2015, revenue from room rentals in the area has increased by 21.1%, indicating the increase in tourists coming to the West Coast. During peak travel, the terminal building can be over capacity depending on flight times. It will be required in the near future to evaluate the current configuration of the terminal building and consider constructing a second storey into the current overhead space available.

Aircraft movements decreased in 2018, contrary to the above statement, due to a change over in airlines stationed in the terminal building and one of the main airlines trading in smaller aircrafts in favour of larger high-capacity aircrafts. The number of passengers was derived using the passenger fees each year. In year 2018, there was a doubling of aircraft passengers compared to 2017. Passenger travel for 2019 is expected to continue to increase with the recent changes but the final figure is not yet known. Overflow parking was installed to accommodate the increase in traffic as well as taxiway expansions for aircraft parking. While the vehicle parking lot is a suitable temporary solution, a traffic flow realignment will be required prior to the implementation of public transit along the West Coast. Table 2.3 shows the decrease in aircraft movements along with the large spike of passengers using the airport.

Table 2.3 – Aircraft Movements and Passengers



2.6 Required Improvements

The Airport Superintendent and airport staff perform daily checks of the runways, aprons and taxiways per Transport Canada regulations. When a surface is deteriorating beyond acceptable levels, the staff will apply for funding to have the surface remediated. In 2019, Apron III and associated taxiways were resurfaced through ACAP funding and passenger safety improvements were completed with BCAAP funding.

Current Parks Canada Storage Building – Previously WWII Structure

2019

1950s

While airport surfaces are maintained to adequate levels through available funding programs, much of the other non-airside infrastructure is failing and in need of repair or removal. The aged assets have

been in use for over 75 years and are the cause of current and future site-wide contamination via sewage, lead paint, asbestos and unfavourable water treatment methods.

3 CURRENT STATE OF LBA INFRASTRUCTURE

3.1 Inventory

Table 3.1 - Assets covered by this Plan

Asset Category	Quantity	2020 Replacement Value
Runways	3	22,164,000
Aprons	4	6,612,700
Taxiways	8	10,231,600
Buildings	12	2,934,200
Fencing	3,355 m	92,600
Lighting	1	1,464,000
Maintenance Equipment	3	766,900
Water Meters	9	4,800
Water Pipes	4,035 m	907,300
Water Treatment Equipment	1	173,000
Water Reservoir	1	849,100
Access Road & Parking Lots	3	1,257,100
Fire Hydrants	8	61,000
Septic Systems	4	142,100
TOTAL		**$47,660,400**

Costs include labour, engineering, financial, and administration cost estimates.

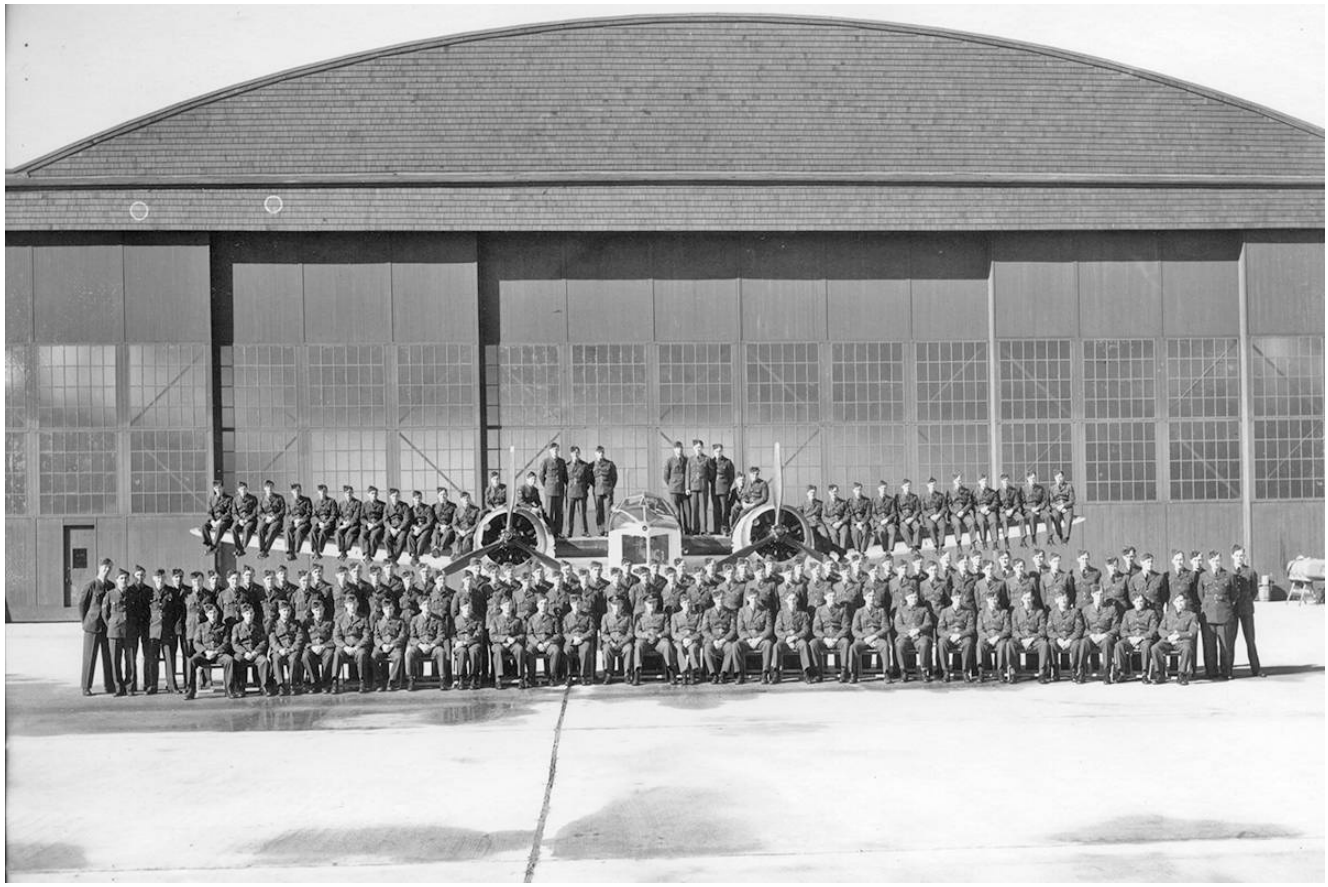
3.2 Airport History

Prior to the airport being constructed, the LBA lands were used by the Tla-o-qui-aht First Nations people for daily activities including hunting local birds and deer, harvesting berries and gathering flora for medicine, basket making and other traditional activities. The southeastern corner of the airport lands were traditionally a canoe portage between Wickaninnish Beach and Grice Bay. To this day, the LBA offers cranberry picking opportunities on the land during early Fall every year.

Dating back to 1913, the airport lands had been held by the Province of BC in fee simple. In 1941, the land was expropriated from fee simple landholdings and construction began on the Royal Canadian Air Force Tofino Station during WWII after threat of enemy attack. The airport was built by Coast Construction Co. from Vancouver and it appears it was a functioning military airport until the 1950s. It became a public aerodrome in 1958 with Highway 4 opening the following year. Because of the initial use of the airport, many of the runways are made of concrete while the majority of other public airports construct their runways using asphalt. Originally constructed with more than 120 buildings, many

structures still remain from WWII including residences, workshop/storage buildings, a weather station, an ammunition blast wall, bunkers and several abandoned buildings of varying magnitude. In 1988, Don McGinnis Co. was contracted to demolish many of the buildings on site. Most of the remaining buildings are nearing or past their useful lives and need to be either remediated or removed.

RCAF Station Tofino



The airport was transferred to Transport Canada in 1945 after the war and transferred again to the ACRD in 2000 after Transport Canada opened negotiations to transfer the then-named Tofino Airport. While under ownership of Transport Canada, the Tla-o-qui-aht people had hoped to gain control of traditional airport lands before the transfer to the ACRD due to a number of deciding factors. Per a letter addressed to the ACRD in 2016, the Tla-o-qui-aht First Nation would like to be more intimately involved in any plans for development or other uses of the land. The ACRD has committed to meet and discuss this matter with Tla-o-qui-aht First Nation in order to find a path forward.

Tla-o-qui-aht First Nation Fishing circa 1940

There is an interest among tourists and local residents to explore the historical World War II significance of the Long Beach area. The Canso bomber that crashed in 1945 after leaving the airport is still a popular hiking destination that is reached by travelling an unofficial trail through Parks Canada land and venturing through an old WWII radio communications building. The Long Beach area was the site of the first alleged enemy strike during WWII with the shelling of the Estevan Point lighthouse by a Japanese submarine, highlighting the West Coast's importance in World War II history.

3.3 Site Contamination

It has been widely documented that underground at the airport, various war items are buried. As noted in the 1996 Beatty Franz Environmental Baseline Study Tofino Airport, drums of metal shavings and oil, vehicles, ammunition containing lead and sheen on standing water were noted. Previous sewage and other spill contamination on site has been identified and remediated by Transport Canada. Several sites have been marked as previous landfill sites used by both the army and local residents as recently as the 1960s. One public landfill location has been covered and since has had tree coverage; it was noted, however, that part of a vehicle was protruding from the earth. Without fully excavating the airport site, it's difficult to know how far-spread the contamination reaches and how this compromises the integrity of the earth above.

Several sites have soil contamination due to improper storage and disposal of chemicals and other hazardous materials. Transport Canada noted many of these instances of contamination and agreed to

remediate as necessary but it's entirely possible that further contamination, not noted in the Environmental Baseline Study from 1997 by Franz Environmental Inc., is on site and was not evident during the study. Dark soil contamination due to organic dump sites at Taxiway Foxtrot was discovered in recent years and required remediation with costs covered by Transport Canada. It has been mentioned that during the decommissioning of the airport, disposal of military equipment and supplies occurred in the quickest way possible in order to demobilize and move on to the next stages and locations post-war. Transport Canada will pay for the remediation of hydrocarbons but will not fund the remediation of organic deposit, such as ravines that were filled with stumps and other clear-cutting debris.

Organics Contamination at Taxiway Foxtrot

Wastewater and drainage infrastructure that was originally installed during WWII continues to be in use in leased hangar spaces and the Parks Canada buildings. Currently, drainage runoff and wastewater is diverted into old military tanks and later drained into nearby watercourses.

The airport water system uses brine to remove manganese and iron to treat the well water before it's distributed. During the treatment process, the used brine is disposed into a nearby fish-bearing stream before it is diverted towards Grice Bay. It is recommended that the ACRD find a safer and more ecologically-friendly method for water treatment and decommission the current brine method. If LBA

were to connect to an outside water system, only a distribution system would be required with possible rechlorination depending on saturation levels.

Brine Pollution leaving the LBA Pump House

As a part of the transfer agreement between Transport Canada and the ACRD, Transport Canada is obliged to address historical contaminated site issues that existed prior to the transfer in 2000. As previously noted, most of the historical WWII buildings contain toxins such as asbestos and lead. Lead paint was banned in Canada in 1960 and asbestos in 1979; this matter requires further investigation and discussion with the parties involved.

The Public Sector Accounting Board (PSAB) recently issued Asset Retirement Obligations, section PS 3280, and Liability for Contaminated Sites, section PS 3260. These sections state that if a public sector entity controls or has a legal obligation to retire an asset then there must be accountability for funding that activity. Best estimates for retirement costs must be included in financial statements and, as such, they must be included in the Asset Management Program. Due to the uncertainty of many of the buildings futures, whether they are to be restored for historical purposes, renovated to keep in use, removed, or left as-is due to funding constraints, disposal costs for aged infrastructure is included in cost estimates for the purpose of this AMP.

In regards to asbestos, the ACRD is obligated specifically under PSAB to financially account for the cost of disposal of asbestos. Even if disposal were postponed, the ACRD is not relieved of this obligation. As previously noted, Transport Canada has assumed responsibility for much of the on-site contamination that took place before the transfer of land to the ACRD. While is it uncertain whether costs will be covered by Transport Canada for future land remediation, there is currently contamination that needs to be remediated and that cost will need to be assumed by either Transport Canada or the ACRD.

As a part of disposal and decommissioning of infrastructure, it is likely the LBA historical assets will result in a substantial liability for site remediation, typically due to demolition, land restoration and contamination. The most important factor for consideration at this point is minimization of financial, environmental, and social costs. Due to the complexity and historical nature of the airport, careful consideration will need to take place for each piece of infrastructure as it is removed or restored.

Contamination liabilities that are the responsibility of the ACRD include: wastewater and drainage contamination from military septic systems currently in use in a leasehold hangar, Parks Canada building, and the caretaker house and the brine pollution from the water treatment facility.

3.4 Replacement Costs and Dates

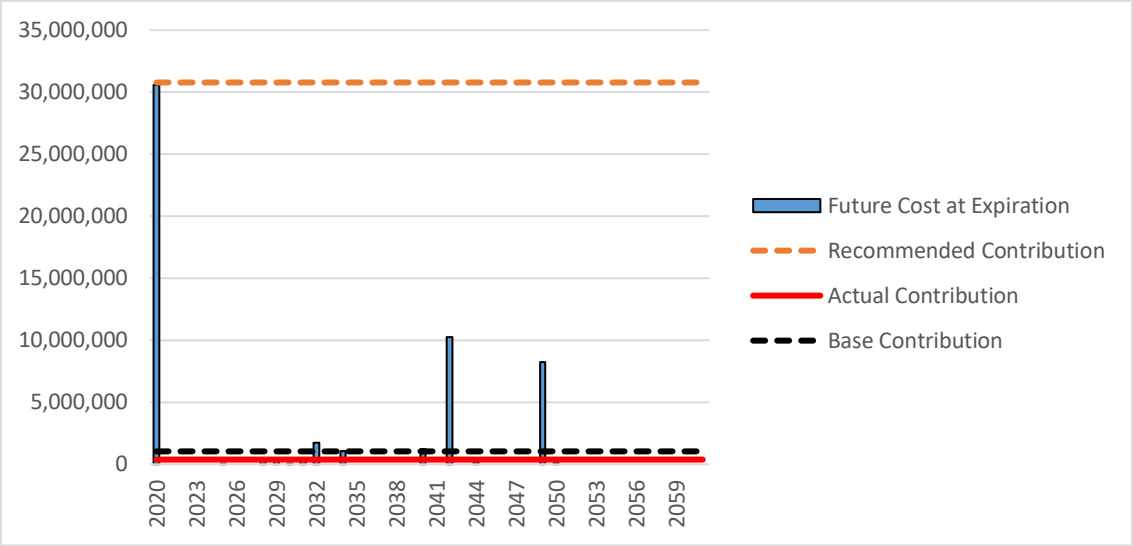
Asset management changes the financial focus from historical cost and annual amortization included in the ACRD's financial statements to estimated replacement value, estimated service life, and annual capital investment required.

Renewals required in 2020 make up over $30.7 million in replacements or disposals, stressing the need for a capital renewal plan now to meet future financial gaps. Collecting a residential tax rate of $12.590 will bring reserve balances to an adequate level and fund the works needed, however, this amount is an extreme leap from the current $0.153 collected and not financially feasible. Collecting $12.398 as a residential tax rate will fund needed works over the next 20 years only but is still not affordable. The reserve balance for LBA was fully exhausted in 2019, leaving no extra funds for future use. If there were no upgrades required and reserve balances were adequate, a residential tax rate of only $0.424 would need to be collected to maintain minimum funding; the present funding gap is due to the age and condition of the assets acquired and the low requisition amount collected each year. These numbers may not be realistic given the funding availability for airports. The ACRD has successfully applied for and received over $11 million in grant funding in recent years for critical airport infrastructure. It should be noted that while this is a substantial amount of funding, the use of these funds is restricted to critical assets and can not be used for the restoration or removal of historical buildings on airport lands; as well, there is no guarantee that these funding programs will be available in the future or that grant applications will be successful.

Almost three quarters of the LBA assets are currently due for replacement, removal or repair. Table 3.2 summarizes suggested infrastructure replacement dates and estimated costs by year until 2060. This includes replacement of surfaces such as runways, aprons and taxiways. For the purposes of this Plan, required contributions including and excluding surfaces are both detailed. In addition, decommissioning

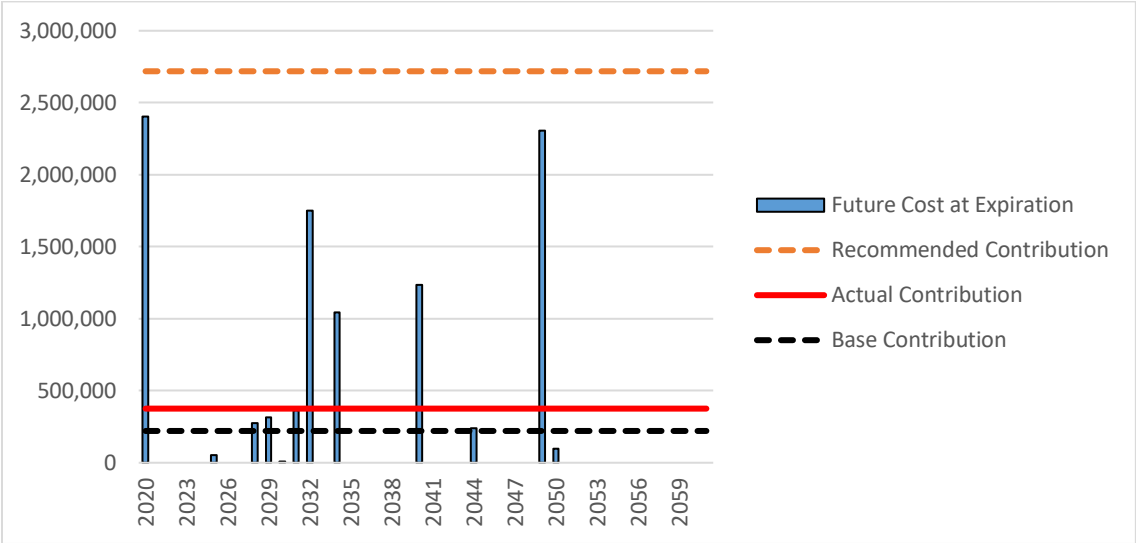
costs are included rather than remediation or renovation costs due to PSAB Asset Retirement Obligations.

Table 3.2 - Projected Timing for Capital Renewal



It is assumed that grant funding will continue to be available and used to replace runways, aprons and taxiways. If those assets are omitted from funding requirements, a residential tax rate of $1.139 will be required to bring reserve balances to an adequate level and to fund needed projects. If there were no works required and reserve balance were adequate, a residential tax rate of $0.090 would be needed to maintain minimum funding levels; unfortunately, the LBA is not in a position to achieve this level of financial security in the current state. Table 3.3 summarizes suggested infrastructure replacement dates and estimated costs for all assets excluding runways, aprons and taxiways.

Table 3.3 – Projected timing for Capital Renewal without Surfaces



The current tax requisition is not adequate to fund the much needed improvements at the airport and the longer an inadequate tax requisition is collected, the more the funding gap will continue to grow. Reserve balances have been fully exhausted this year and can not be replenished through grant funding. Annual contribution requirements will fluctuate each year depending on projects completed, assets nearing expiry or total requisition. For example, if there were to be no increase in requisition and no projects completed in 2020, the funding gap would grow by another $518,000 by 2021.

Due to the remote nature of the West Coast, mobilization and demobilization costs are generally higher than other communities. Repairs are performed in an opportunistic and strategic method in order to reduce these costs. Repairs are due to be performed on crosswind runway 16-34 during the Apron II repairs but because this is not a primary runway, ACAP funding isn't available. The panel replacement will true the runway surface and improve drainage.

Runway repairs are typically done by panels if complete resurfacing isn't planned. Runway panels, originally constructed by the Department of National Defence, are generally 25 by 100 feet. Panel replacements include removal, compaction, pinning, laying new Portland concrete and sealant.

3.5 Condition Assessments

Regular assessments are done on all surfaces on a daily basis as a part of Transport Canada regulations. Condition assessments are not performed on other components at the airport such as buildings, water or wastewater infrastructure. In all other ACRD systems, a numerical overall condition assessment rating is given to assets based on their estimated service life remaining and current physical condition. Regular condition assessments on all non-surface assets are part of the improvement works outlined in this Plan. Based on estimated service life and condition assessment, 68% of the LBA assets assessed are in poor or very poor physical condition. According to the Airport Superintendent, the airfield surfaces are currently in moderate condition and repairs are performed as required in the most opportunistic manner.

Table 3.4 - Current Replacement Cost by Condition

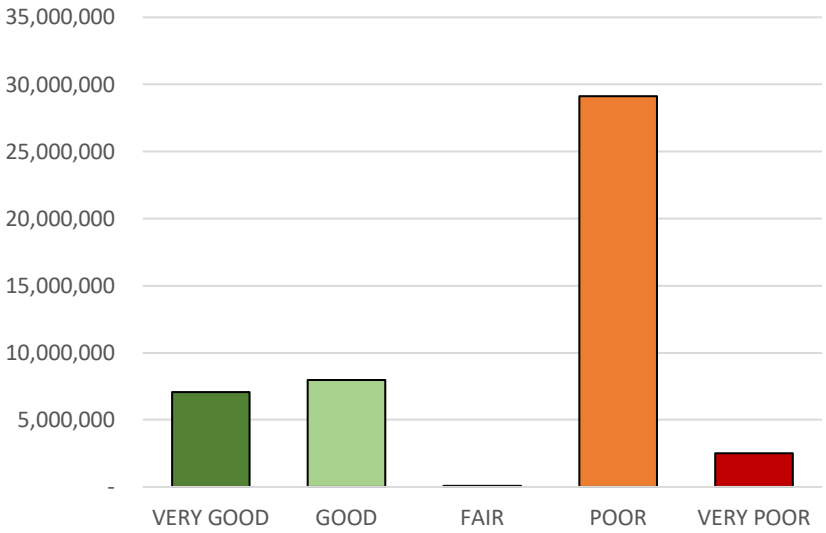
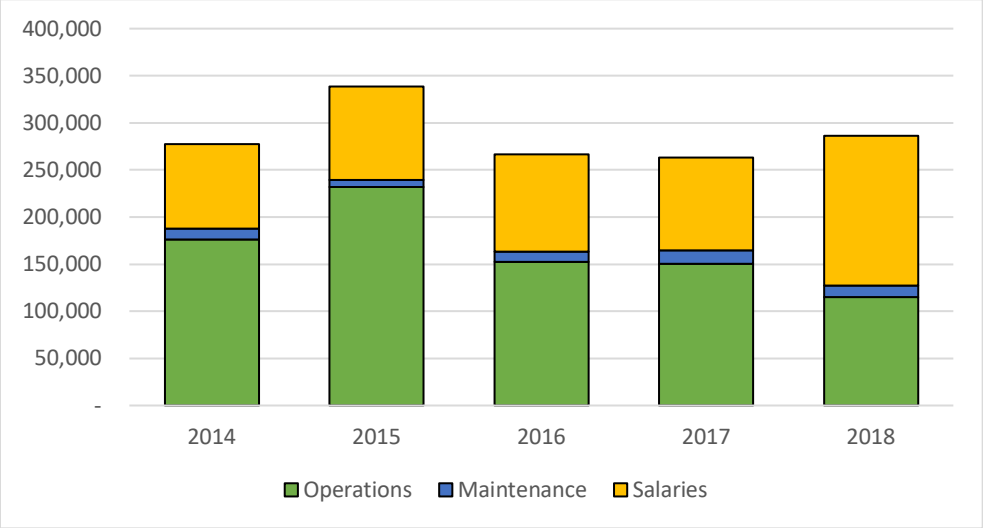


Table 3.4 shows the current cost to replace assets based on the percentage of estimated useful service life remaining and physical condition assessment.

3.6 Current Operations and Maintenance Costs

A key function of Asset Management is to track maintenance costs separate from operations costs to identify areas that are requiring more repairs as an indication of failing infrastructure. Considering the origin and current state of assets at LBA, it is safe to assume that maintenance costs trends are not necessarily reflective of infrastructure quality. Table 3.5 shows the trend in combined final operations and maintenance costs since 2014 for all assets at LBA.

Table 3.5 – Operations and Maintenance Cost Trends



Average operation and maintenance costs total $286,000 per year, including labour and benefits. Historically, operations costs were for operations contract costs only. Going forward, operations and maintenance costs will be tracked separately in our accounting software as a part of the improvement plan in order to identify spikes in maintenance costs, indicating a failure of infrastructure. Operations costs are associated with day-to-day expenses aimed at achieving levels of service goals while maintenance costs are associated with repairs and keeping equipment in good running order.

3.7 Risk Management Plan

Risk management is a key objective set out in our Asset Management Policy. With acceptable LOS in mind, we have adopted a risk management framework to assess and rank criticality of the ACRD's infrastructure assets. One of the outcomes of implementing risk management is the ability to prioritize required capital expenditures based on criticality for the LBA.

The goal in adopting a framework is to have a consistent and accurate understanding of the state of the LBA's infrastructure and associated risks. The framework includes a standardized grading system that is easily repeatable, enables comparison of the status of infrastructure condition over time and across municipalities for comparison.

A risk matrix has been prepared and will be used for risk ratings throughout the ACRD Asset Management Program. This matrix will also be used in conjunction with regular condition assessments to properly evaluate new and existing risks.

The risk assessment process identifies credible risks, the likelihood of the risk event occurring and the consequences should the event occur. It also develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks. Critical risks are those assessed with "Very High" (requiring immediate corrective action) and "High" (requiring corrective action) risk ratings identified in the assessment process.

According to the General Manager of Environmental Services and Airport Superintendent, the following are credible elevated risks at this time:

1. Major natural disaster (earthquake, tsunami, etc.) causing major damage to critical infrastructure
2. Aircraft incident within airfield involving multiple people and/or pieces of equipment
3. Water or wastewater supply/quality incident relating to aging infrastructure
4. Health and safety issue related to the continued use of WWII structures

WWII Army Bunker still in use

4 ASSET MANAGEMENT IMPROVEMENT PLAN

4.1 Infrastructure Replacement Priority Ranking

Table 4.1 lists the components within the LBA in order of their required estimated replacement. This information can be used to aid in creating a Long-Term Asset Management Financial Plan (LTFP) for this class of assets.

When budgeting for future projects, it is recommended that a 30% general contingency and a 30% allowance for construction, engineering, financial, legal and admin costs be added to total project costs.

It is important to note the volatile prices of construction materials including mobilization and demobilization costs on the West Coast; many factors can change the costs of materials required for projects and while the actual costs may differ, only the most current and available costs are used.

Table 4.1 – Infrastructure Replacement Priority Ranking

Component	Current Cost Estimate	Risk
Replace aged piping for improved fire flows	770,000	High
Removal of WWII buildings	700,000	High
Replacement Cost – High Risk	**$ 1,470,000**	
Emergency vehicle access improvements	80,000	Moderate
Replace aging water pumps and meters	41,300	Moderate
Install required additional fencing	275,000	Moderate
Connect tenants to current septic system	16,000	Moderate
Backup power source for services	100,000	Moderate
Replacement Cost – Moderate Risk	**$ 512,300**	
Replace WWII culverts in airfield	9,400	Low
Replace WWII culverts on Airport Road	200,000	Low
Replacement Cost – Low Risk	**$ 209,400**	
Total Current Replacement	**$ 2,191,700**	

It should be noted that projects listed above pertain only to assets owned by LBA that pose a risk to the current operations. This does not include projects that need to be completed in the service that do not affect capital assets.

4.2 Improvement Plan

The tasks identified in the Table 4.2 are required to achieve the LBA asset management objectives, manage risks, and close the gap between current and targeted levels to achieve within the AMBC road Map. These tasks are the responsibility of the General Manager of Environmental Services and Airport Superintendent with assistance from airport and operations staff. Tasks are listed in priority sequence

and will be completed as time and resources allow. Safety is paramount with airport operations and achieving clear flight paths, adequate fire flows and emergency vehicle access is being treated as urgent.

Table 4.2 – Improvement Plan

Task#	Task	Responsibility	Timeline
1	Runway 16 OLS clearing within Parks Canada	Airport Superintendent	Spring 2020
2	Improve approach lighting for runway 11-29 Omin Directional Approach Light System (ODALS)	Airport Superintendent	Spring 2020
3	Begin documenting condition assessments on non-airport water and sewer infrastructure with a numerical condition rating	Airport Maintenance Staff	Spring 2020
4	Regional asset identification system for specific assets to record expenses at the asset level, when appropriate	Airport Staff, Finance Department	Spring 2020
5	Financial budgets for asset renewal and replacement align with Transport Canada regulations	Airport Superintendent, Finance Department	Fall 2020
6	Annually review Risk Framework for changes	Airport Superintendent, Asset Management Coordinator	December 2020
7	Complete update of LBA's Land Use Plan	Planning Staff	December 2020
8	Aging infrastructure is identified and slated for replacement or renewal	Airport Staff	Ongoing
9	Update and monitor asset specific operations and maintenance costs	Asset Management Coordinator	Ongoing
10	Update inventory for additions, disposals and changes in useful life	Airport Staff, Asset Management Coordinator	Ongoing
11	Identification for funding for capital projects	Airport Superintendent, Asset Management Coordinator where applicable	Ongoing

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