

2025-2029 YVR NOISE MANAGEMENT PLAN





At YVR, we are committed to being a leader in sustainability and a responsible neighbour. Managing the impacts of airport operations, including noise, is integral to our sustainability framework, which integrates the economic, environmental, social and governance of our business. This framework provides a responsible approach for our business objectives and our commitment to the local community.

Managing noise from aircraft operations is a priority for the Vancouver Airport Authority (Airport Authority) and we have developed a comprehensive Aeronautical Noise Management Program to reduce the impact of noise on the surrounding community. A critical component of the program is the Noise Management Plan, which serves to guide the program by identifying key areas of focus and initiatives over the next five years which were identified and developed through consultation with the YVR Aeronautical Noise Management Committee and the community.

The Airport Authority is committed to advancing efforts on noise management and will continue our work with the YVR Aeronautical Noise Management Committee, our aviation partners, Musqueam, and the community to complete the initiatives outlined in the Plan.

VANCOUVER INTERNATIONAL AIRPORT

Vancouver International Airport (YVR) is located on the West Coast of the Province of British Columbia, on the traditional, ancestral and unceded territory of the Musqueam people.

YVR exists to serve the community and the economy that supports it. It is the second busiest airport in Canada. YVR is a major entry point to North America from Asia and is a hub for connections to rural and remote communities, as well as domestic, transborder (U.S.), and international air travel. It provides a platform that enables the community to thrive by connecting people and places, cargo and markets from B.C. to the world, supporting and enabling the flow of ideas, experiences, knowledge, goods and investment. YVR is also a major creator of jobs in the region and directly contributes to the provincial gross domestic product. The operations at the airport facilitate activity in other economic sectors, which further contribute to the provincial economy.

VANCOUVER AIRPORT AUTHORITY

The Airport Authority is a non-share capital private corporation that manages and operates YVR in service to the community and economy that supports it. The Airport Authority assumed management of YVR from Transport Canada in 1992 under the provisions of a long-term ground lease with the Government of Canada and reinvests profits into airport development and service improvements.

The Airport Authority's purpose is to manage and operate YVR in the best interests of the region, expand the contribution that the airport makes to local economic development, and ensure the airport can respond to the demands of the community and aviation industry in a safe, efficient, and environmentally responsible manner.



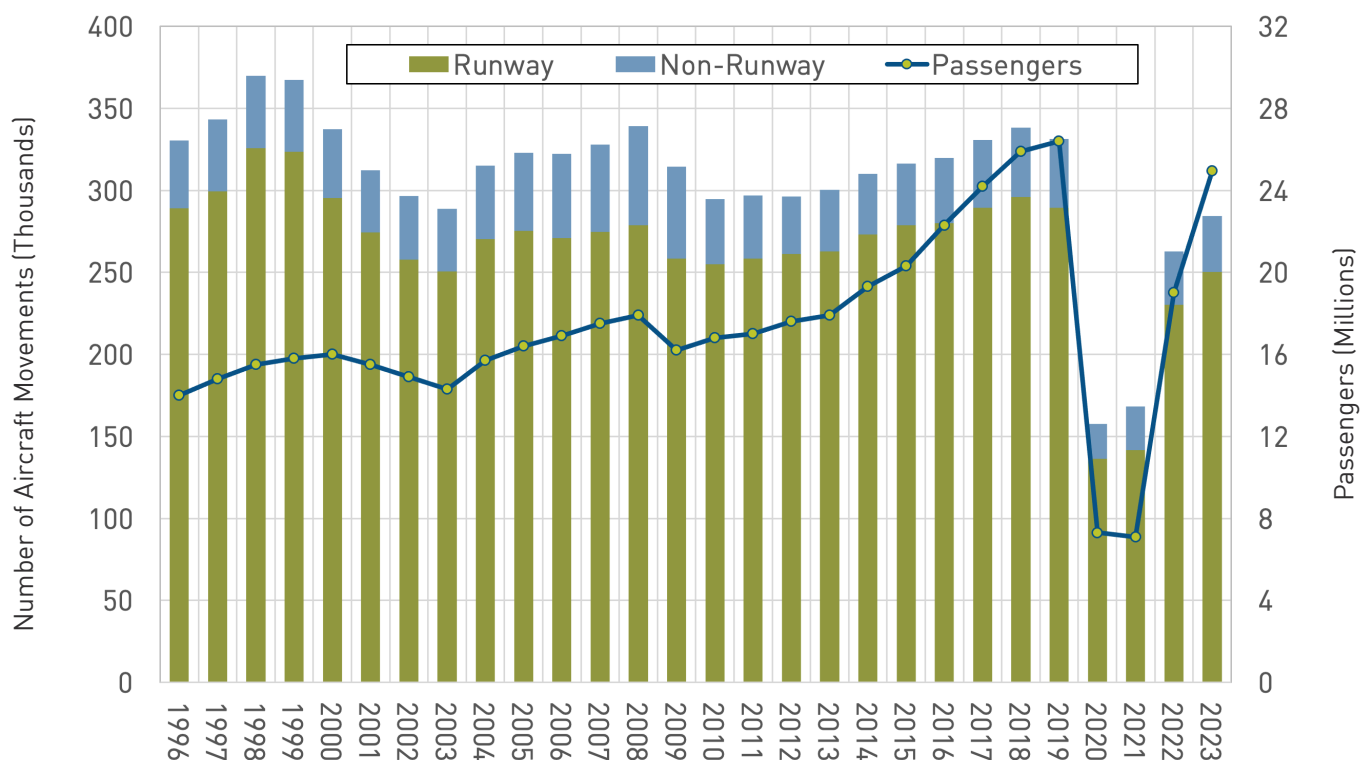
FUTURE GROWTH AND DEVELOPMENT AT YVR

Like all airports worldwide, the travel restrictions imposed in early 2020 in response to the COVID-19 pandemic had a significant impact on aircraft and passenger movements at YVR. **FIGURE 1** illustrates the historical trend of annual runway and non-runway (floatplane and helicopters) aircraft movements and passengers at YVR for the period of 1996-2023. Since relaxation of travel restrictions began in 2022, both aircraft movements and passenger levels have steadily increased but have yet to reach pre-pandemic levels – total aircraft movements in 2023 were 14% lower compared to 2019.

Studies provided by Airports Council International (ACI) – World and the International Air Transport Association (IATA) predict world passenger traffic in 2024 to exceed 2019 levels for the first time since the COVID-19 pandemic.

While some predictions anticipate world passenger traffic levels to increase by 3.8% per year on average over the next 20 years, ongoing macroeconomic factors, such as high global inflation, slowdown and deep changes in the global economy, pessimistic business confidence levels, climate concerns, and geopolitical conflicts pose significant risks and uncertainties to future traffic projections.

FIGURE 1: Annual Aircraft Movements & Passenger Statistics, 1996-2023



INTERNATIONAL

International Civil Aviation Organization

The International Civil Aviation Organization (ICAO) is an agency of the United Nations and was created to promote the safe and standardized development of international civil aviation. ICAO sets standards and regulations necessary for aviation safety, security, efficiency and regularity, and environmental protection. ICAO's current environmental activities, including the discussion and creation of noise and emissions standards for aircraft, are mainly undertaken through the Committee on Aviation Environmental Protection (CAEP).

In 2001, the ICAO assembly adopted the overarching Balanced Approach to Aircraft Noise Management policy to limit or reduce the number of people affected by significant aircraft noise. This policy serves as a global foundation to address aircraft noise and guide the development of aviation noise regulations.

The policy aims to identify and implement the most cost-effective means to address noise problems identified around airports. These include noise reduction at source, land-use planning and management, noise abatement operational procedures and operating restrictions. Canada, as a member state of ICAO, recognizes and supports the ICAO Balanced Approach methodology to aircraft noise management.¹

The Airport Authority aims to achieve the objectives of the Balanced Approach through:

- Developing noise abatement policies and procedures in consultation with stakeholders.
- Identifying specific noise abatement procedures for take-off and landings, preferred runway use, and aircraft type.
- Responding to stakeholder questions and concerns, and providing information to educate residents about airport and aircraft operations.
- Maintaining the multi-stakeholder YVR Aeronautical Noise Management Committee.
- Applying noise monitoring and flight tracking technologies.
- Supporting and encouraging municipalities to undertake compatible land-use planning in high noise areas.
- Participating in national and international working groups to discuss and support efforts to develop new standards and technologies for noise mitigation.

Airports Council International

Airports Council International (ACI) is a non-profit global trade organization of the world's airports. There are currently 814 members in ACI operating 2,110 airports in 169 countries and territories. ACI represents the collective interests of airports around the world to promote excellence in the aviation industry.

¹Further information on the ICAO Balanced Approach methodology and associated ICAO documents can be found on <https://www.icao.int/environmental-protection/pages/noise.aspx>.

ACI operates in five regions (ACI-North America, ACI-Europe, ACI-Latin America and the Caribbean, ACI Asia-Pacific and Middle East, and ACI-Africa) and has observer status with ICAO. The ACI World Environment Standing Committee takes an active role in ICAO discussions around aircraft noise and emissions standards and reduction measures. Airport Authority staff have been appointed by ACI to participate in the ICAO CAEP Working Groups.

The Airport Authority also participates in ACI-North America discussions through the Canadian Airports Council, which is the Canadian division of ACI-North America (see below), to share information and align common goals for the advancement of aviation in Canada and abroad.

NATIONAL

Transport Canada

Aviation is federally regulated, and Transport Canada is the federal department responsible for all aspects of civil aviation. Transport Canada's mission is to serve the public interest through the promotion of a safe, secure, efficient and environmentally-responsible transportation system in Canada.

The responsibilities of Transport Canada with regard to noise includes reviewing, approving, and publishing of new proposed noise control measures at airports; conducting enforcement of suspected violations of the published Noise Abatement Procedures; and, managing noise issues outside the 10 nautical mile area around airports. Transport Canada also adopts noise and emissions standards prescribed by ICAO.

Canadian Airports Council

The Canadian Airports Council (CAC) is a division of ACI-North America and is the collective voice for airports in Canada. The CAC was formed in 1992, as the devolution of airports to local airport authorities was beginning and became the national association representing airports on a wide range of significant issues and concerns. The CAC has 54 members that represent more than 100 airports across Canada.

The Airport Authority is a member of the CAC and regularly attends CAC Environment Committee and Noise Working Group meetings where noise issues with national implications are discussed.

LOCAL

Vancouver Airport Authority

Under the provisions of the ground lease with the Government of Canada, the Airport Authority is responsible for noise management activities for operations related to YVR, including monitoring noise levels and responding to noise complaints for aircraft arriving and departing YVR up to 10 nautical miles from the airport.

Municipalities

In British Columbia, responsibility for land-use planning has been delegated to local municipalities. As such, municipalities play a role in managing the community's noise exposure through exercising compatible land use planning policies and ensuring residential development or other sensitive land uses in high noise areas are kept to a minimum or avoided altogether.

While Transport Canada has federal guidelines to assist in land use planning decisions with the goal of reducing the impact on residential and other noise sensitive land uses, municipalities have a choice on whether to follow those guidelines.

Land use planning plays a critical role in any successful noise management strategy as gains achieved through quieter aircraft technology or airport noise control measures can be negated if incompatible, noise sensitive developments are permitted near an airport. In addition, given the close proximity of some residential developments to the airport, it is often not possible to change or modify flight procedures to minimize noise over these areas due to aviation safety standards.

Residents

Aircraft noise exposure is often cited as a concern by community members and can be the primary reason for opposing airport development and improvements to air traffic management. Residents living near airports and flight paths have a responsibility to understand the challenges of aircraft operations and what measures can (and can not) be realized to minimize aircraft noise effects on people.

Response to aircraft noise exposure is highly subjective, with some individuals responding with annoyance or irritation and others having little to no response to the same level of exposure. Prospective residents of areas exposed to airborne and ground-based aircraft noise should make an informed decision by understanding their tolerance to aircraft noise, and act accordingly. Flight paths and procedures are designed to international and national standards to ensure a high level of safety, and in many cases cannot be changed to avoid overflying residential areas without compromising the safety of the aviation system. Solutions often offered by residents such as having all aircraft only operate over the water; moving flight paths to fly over the mountains; or having aircraft fly higher are oversimplified solutions to very technical, safety-driven and complex issues. The Airport Authority provides information and resources on its website at yvr.ca/noise to help residents understand how noise from airport operations is managed and to provide up-to-date information on runway operations that may affect noise in specific communities.

PARTNERS

NAV CANADA

NAV CANADA is a privately run, not-for-profit corporation that owns and operates Canada's civil air navigation system and has responsibility for the safe coordination and efficient movement of aircraft. NAV CANADA is also assigned the responsibility and authority by the federal government for planning and managing airspace, including the development of



flight paths and airways. The design of flight paths and instrument procedures must comply with criteria and standards prescribed by Transport Canada.

Airlines & Aircraft/Engine Manufacturers

The aviation industry, including airlines and manufactures, are aware of community noise issues, and put tremendous effort to reducing these impacts. Over the years, airlines worldwide have invested significantly to upgrade and modernize their aircraft fleets to reduce both noise and emissions. Modern aircraft operating today are approximately 30 dB quieter than older aircraft, many of which have been phased out of service.

YVR AERONAUTICAL NOISE MANAGEMENT PROGRAM

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To mitigate impacts from aircraft noise, the Airport Authority has a comprehensive noise management program to reduce the impact of noise on the surrounding community. The core components of the YVR Aeronautical Noise Management Program were implemented in the early 1990's, and the program has evolved and expanded over the years to meet the growing challenges of residential development around the airport, community expectations about aircraft noise, changes in technology, and knowledge-sharing about safe and efficient aircraft operations.







PROGRAM VISION & GOAL

The vision of the YVR Aeronautical Noise Management Program is to support the business objectives of YVR by protecting 24-hour airport access, and the goal is to minimize the level of disturbance to those living in the vicinity of the airport while recognizing the need for 24-hour airport operations. From a sustainability perspective, the inherent challenge is to balance the competing demands of community expectations of enjoyable urban living with the airport services that support the needs of residents and the economy of British Columbia.

MAIN PROGRAM ELEMENTS

The vision and goal of the YVR Aeronautical Noise Management Program are achieved through the following core program elements:

 <p>STAKEHOLDER ENGAGEMENT</p>	<ul style="list-style-type: none"> • Consulting with the YVR Aeronautical Noise Management Committee on all aspects of noise management activities and soliciting input on implementing initiatives in the Noise Management Plan. • Partnering and working with stakeholders. • Participating in and supporting international efforts to develop new standards and technologies for noise mitigation.
 <p>FLIGHT TRACKING & NOISE MONITORING</p>	<ul style="list-style-type: none"> • Monitoring and assessing aircraft noise levels in the community.
 <p>PROCEDURES & DIRECTIVES</p>	<ul style="list-style-type: none"> • Maintaining relevant operating procedures (Noise Abatement Procedures, Airside Directives & Procedures) to minimize noise from aircraft operations.
 <p>EDUCATION & AWARENESS</p>	<ul style="list-style-type: none"> • Responding and providing information to address community questions and concerns about aircraft noise.

The Airport Authority's approach to identifying viable solutions to noise management is collaborative in nature, and proposed changes or new procedures will not be supported without first objectively assessing safety and all associated impacts and consulting with stakeholders. Only those changes that have broad benefit and consensus among all stakeholders will be explored.

YVR AERONAUTICAL NOISE MANAGEMENT COMMITTEE

The YVR Aeronautical Noise Management Committee (ANMC) was formed in the early 1990s from various technical working groups concerned with noise management at the airport. The committee is chaired by the Airport Authority, and current membership includes: Musqueam; City staff and citizen representatives from the cities of Richmond, Vancouver, Delta, and Surrey; airlines and aircraft operators; industry associations; NAV CANADA; and Transport Canada.

The purpose of the ANMC is to provide a forum where interested stakeholders can discuss aeronautical noise management issues associated with YVR aircraft operations. The ANMC is consultative in nature and does not have executive authority. The ANMC discusses, analyzes, and provides advice on, or makes recommendations about, aeronautical noise management to the Airport Authority, which is responsible for all operational decisions related to aeronautical noise.

NOISE MANAGEMENT PLAN

The Noise Management Plan is an integral part of advancing efforts of the YVR Aeronautical Noise Management Program. The Plan documents the existing program and identifies areas of focus and supporting initiatives over a five-year period. The Airport Authority creates a new Plan every five years to ensure work remains relevant and that issues identified by the community are addressed where possible.

Work updates are provided to the ANMC on a regular basis, and Committee input is sought at critical decision points. A summary of work progress and results are provided to the community in annual noise management reports, available on YVR's website.



This section summarizes the process and work efforts to create the areas of focus and corresponding initiatives in the 2025-2029 Noise Management Plan. The process followed three distinct stages, as illustrated in FIGURE 2.

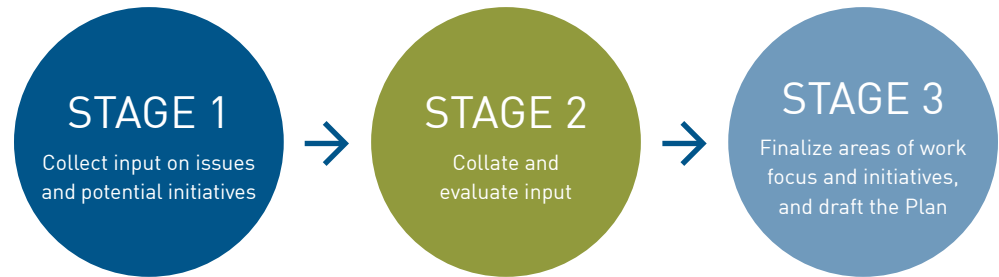


FIGURE 2: Process for Identifying Initiatives for the Noise Management Plan

STAGE 1 – Collect input on issues and potential initiatives

Work in this stage included:

- Administering a questionnaire to ANMC members to solicit input on potential initiatives.
- Meeting with regional airports and water aerodromes to seek input on common noise issues.
- Hosting meetings with ANMC City staff and citizen representatives to discuss issues specific to their community to help identify ideas for proposed initiatives and actions.
- Hosting an online community questionnaire between April – July 2024 to gather input from residents on potential initiatives as well as to collect information on how we can better communicate, share information, and educate residents on noise management activities.
- Hosting a listening session with Musqueam to identify issues of concern and share information with community members.
- Analyzing historical noise concerns to identify trends and issues.

STAGE 2 – Collate and evaluate input

Work in this stage included assessing the input received against the following evaluation criteria:

- Impact on aviation safety.
- Impact on airport or aircraft operations.
- Effects on carbon emissions or air quality.
- Economic cost to industry.
- Noise impact on other communities (i.e. noise relocation).
- Impact on current and future airport capacity.
- Alignment with YVR's mandate to provide 24-hour air service for the region.

STAGE 3 – Finalize areas of work focus and initiatives, and draft the Plan

Work in this stage included finalizing the areas of work focus and initiatives, drafting the Plan and supporting documents.

INITIATIVES

Based on the evaluation of input received, the following **Initiative Table** summarizes the 12 areas of focus and supporting initiatives. While each area of focus has its own individual objective, the overarching objective for the Airport Authority is to build a strong understanding of noise management issues by working collaboratively with stakeholders, providing up-to-date and easy to understand information on noise management activities and airport operations to the community, and strengthening core aspects of the YVR Aeronautical Noise Management Program.

Some initiatives are intended to be high level as specific outcomes and deliverables will result from close work and consultations with affected stakeholders. In addition, direction of several initiatives may need supporting studies to better inform decisions on how best to proceed.






The YVR ANMC will continue to play an integral role in working to complete the proposed initiatives, and regular progress updates will be provided to this group. The ANMC will also be consulted at key decision points during projects to gather input before decisions are made, and work will be summarized in annual noise management reports.




Initiative Table

1  EDUCATION & AWARENESS	WORK FOCUS AWARENESS – COMMUNITY	OBJECTIVE Inform the community about aircraft and airport operations and noise management measures and initiatives.
INITIATIVE / ACTION		
1.1 Identify and implement new online web tools to enhance information sharing to better inform the community about aeronautical noise and aircraft operations.		
1.2 Report the results of noise monitoring, aircraft operations, complaints statistics, and progress on noise management initiatives in the annual noise report.		
1.3 Track the trend of the use of quieter aircraft designs at YVR and provide updates in the annual noise report.		
1.4 Track and provide information on emerging trends in aircraft and navigation technologies.		
1.5 Review noise management information on the YVR website to ensure information is up-to-date, relevant, and easily understandable. Where possible, look to convert materials to a more accessible format.		
1.6 Provide community with updated information on anticipated air traffic forecasts through the development of the next YVR Master Plan.		
1.7 Seek opportunities to enhance social media outreach to improve communication regarding noise management activities at YVR. Management Program.		
2  STAKEHOLDER ENGAGEMENT	WORK FOCUS AWARENESS - INDUSTRY	OBJECTIVE Engage with aviation stakeholders on noise management activities at YVR.
INITIATIVE / ACTION		
2.1 Participate in discussions with other major airports in Canada to share and exchange information on emerging trends and noise management strategies, and to coordinate responses and positions on national issues.		
2.2 Participate in discussions with aviation stakeholders on emerging technologies (e.g., RPAS, UAM, etc.) to provide input on community engagement plans.		
2.3 Participate in discussions around regional airport strategies to identify and discuss common noise issues.		
2.4 Acknowledge airline partners that demonstrate good noise management practices by presenting the YVR Fly Quiet Awards annually.		
2.5 Review the YVR Fly Quiet Program and other airports' Fly Quiet Programs to identify potential elements to help improve and strengthen the YVR Aeronautical Noise Management Program.		
2.6 Explore opportunities to engage further with local aircraft operators and the aviation community to align noise management initiatives and practices.		

Initiative Table

3  PROCEDURES & DIRECTIVES	WORK FOCUS NIGHT OPERATIONS	OBJECTIVE Monitor and report on the number of night operations and trends.
INITIATIVE / ACTION		
3.1 Perform an annual review of the Airport Authority's guidelines for approving operations at night to ensure the guidelines remain relevant.		
3.2 Report on the number of night operations by aircraft noise certification in annual noise report.		
3.3 Monitor compliance with published Noise Abatement Procedures and report suspected non-compliance to Transport Canada.		
3.4 Assess and communicate the benefits and economic contribution of 24-hour operations.		
3.5 Explore the feasibility of developing night-time Standard Instrument Departure procedures (SIDs) to minimize noise at night.		
4  STAKEHOLDER ENGAGEMENT	WORK FOCUS YVR AERONAUTICAL NOISE MANAGEMENT COMMITTEE (ANMC)	OBJECTIVE Ensure the YVR ANMC remains relevant and functional.
INITIATIVE / ACTION		
4.1 Review the YVR ANMC Terms of Reference, membership, expectations, scope, and objectives.		
4.2 Host at least three meetings in a year and consult members on emerging issues.		
4.3 Develop customized reports for City Staff and Citizen Representatives to support their role on the Committee.		
5  FLIGHT TRACKING & NOISE MONITORING	WORK FOCUS NOISE MONITORING	OBJECTIVE Ensure functional and reliable collection of noise data. Deploy the portable noise monitoring terminal to capture objective data on noise exposure as needed.
INITIATIVE / ACTION		
5.1 Review and assess the current network of noise monitoring terminals (NMTs) and determine new locations in the City of Surrey and other areas of Metro Vancouver where NMTs could be located to capture noise data and help communicate impacts of current and future operations.		
5.2 Identify potential locations for temporary noise monitoring, deploy the portable NMT, and report publicly on the results.		


Initiative Table

6  PROCEDURES & DIRECTIVES	WORK FOCUS RUN-UPS	OBJECTIVE Further manage noise from engine run-ups.
INITIATIVE / ACTION		
<p>6.1 Undertake an annual review of the Engine Run-up Directives and Procedures to ensure locations and procedures reflect current run-up activities at YVR and they continue to provide the best possible noise reduction.</p> <p>6.2 Report run-up statistics and trends in the annual noise report.</p> <p>6.3 Provide new operators at YVR with information on engine run-up procedures and directives.</p> <p>6.4 Maintain a functioning Ground Run-up Enclosure (GRE) on the south side of the airport to mitigate noise from run-up operations.</p>		
7  EDUCATION & AWARENESS	WORK FOCUS FLIGHT PATH CHANGES	OBJECTIVE Support and collaborate with NAV CANADA to ensure communities are well informed about flight path changes associated with Vancouver Airspace Modernization Project (VAMP).
INITIATIVE / ACTION		
<p>7.1 Support NAV CANADA with their ongoing community and stakeholder engagement on proposed flight path changes.</p> <p>7.2 Ensure YVR website has up-to-date information about Vancouver Airspace Modernization Project (VAMP).</p> <p>7.3 Create a FAQ document to address community questions and concerns about the flight path changes.</p> <p>7.4 Conduct temporary monitoring pre and post implementation as required to quantify noise impacts.</p> <p>7.5 Identify a permanent noise monitoring terminal site to measure aircraft noise contribution of new flight paths.</p>		
8  PROCEDURES & DIRECTIVES	WORK FOCUS NOISE ABATEMENT PROCEDURES (NAP)	OBJECTIVE Ensure procedures to manage noise remain relevant and current.
INITIATIVE / ACTION		
<p>8.1 Perform an annual review of the published NAP for YVR with the aim of ensuring clarity and continual improvement.</p>		

Initiative Table

9  PROCEDURES & DIRECTIVES	WORK FOCUS RUNWAY USE	OBJECTIVE Ensure plans for runway use at YVR meet operating conditions.
INITIATIVE / ACTION		
9.1 Create community advisories for any changes to regular runway operations.		
9.2 Provide support for creation of communication plans for airfield maintenance and construction projects that have community impacts associated with changes to regular runway use and ensure public notifications are provided within two weeks in advance of the work whenever possible.		
10  STAKEHOLDER ENGAGEMENT	WORK FOCUS YVR FLOAT PLANE OPERATIONS	OBJECTIVE Further manage noise associated with YVR float plane operations
INITIATIVE / ACTION		
10.1 Continue ongoing dialogue and work with YVR float plane operators to assess ways to further manage noise.		
10.2 Review the current best practices to ensure the procedures are up-to-date and remain relevant.		
11  STAKEHOLDER ENGAGEMENT	WORK FOCUS LAND USE PLANNING	OBJECTIVE Promote compatible land use planning in the vicinity of the airport.
INITIATIVE / ACTION		
11.1 Work with the industry to provide input on any potential changes to Transport Canada's national land use policies.		
11.2 Work with neighbouring communities to promote the adoption of compatible land use and design standards that reflect airport operations and plans.		
11.3 Provide comments and input into community plans, rezoning, and development applications where and when applicable.		

Initiative Table

<div>12</div> <div>  <div>STAKEHOLDER ENGAGEMENT</div> </div>	<div>WORK FOCUS</div> <div>PARTNERSHIP WITH MUSQUEAM</div>	<div>OBJECTIVE</div> <div>Engage with Musqueam on aeronautical noise management activities to support continued partnership between YVR and Musqueam.</div>
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INITIATIVE / ACTION

- 12.1 Host annual community meetings with Musqueam.
- 12.2 Support Musqueam membership on the YVR Aeronautical Noise Management Committee.
- 12.3 Provide relevant updates and content for community newsletter.
- 12.4 Provide regular updates to the Musqueam Title & Rights Department.

YVR NOISE MANAGEMENT

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