




**To:** General Purposes Committee **Date:** February 9, 2009  
**From:** Joe Erceg, MCIP **File:**  
 General Manager, Planning and Development  
**Re:** **City of Richmond Comments: Proposed 2009 – 2013 YVR Noise Management Plan**

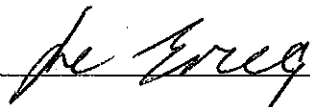
**Staff Recommendation**

That, as per the report from the General Manager of Planning and Development, entitled City of Richmond Comments: Proposed 2009 – 2013 YVR Noise Management Plan, dated February 9, 2009:

1. The City's comments on the proposed YVR 2009 – 2013 Noise Management Plan (**Attachment 2**) be endorsed and;
2. The endorsed comments be sent to YVR, the YVR Noise Management Committee, the YVR Environmental Advisory Committee, the City's Airport Noise Citizens Advisory Task Force, the City's Advisory Committee on the Environment (ACE), the Mayors of Surrey, Delta and White Rock, the Metro Vancouver Board, Richmond Provincial MLAs and Federal MPs, and the Union of British Columbia Municipalities.

  
 Joe Erceg, MCIP  
 General Manager  
 Planning and Development

Att. 4

FOR ORIGINATING DEPARTMENT USE ONLY			
<b>ROUTED TO:</b>	<b>CONCURRENCE</b>	<b>CONCURRENCE OF GENERAL MANAGER</b>	
Transportation .....	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		
<b>REVIEWED BY TAG</b>	YES <input checked="" type="checkbox"/> <i>JK</i> NO <input type="checkbox"/>	<b>REVIEWED BY CAO</b>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>

## Staff Report

### Origin

Every 5 years, Vancouver International Airport (YVR) must update its Noise Management Plan (NMP). On January 5, 2009, YVR requested that the City provide comments on a draft of their 5-year Noise Management Plan (NMP) by the end of January 2009 (**Attachment 4**). Staff requested that YVR extend the deadline to the end February 2009 to enable Council to comment. YVR kept the January 2009 deadline but will consider Council's comments when they are received. Staff provided comments by the January 2009 deadline (**Attachment 1**).

### Background

As a requirement of their land lease agreement with the Government of Canada, YVR is responsible for noise management for up to 10 nautical miles from the airport. As part of these responsibilities, the YVR Board is to have an approved five-year NMP signed by the Federal Minister of Transport to guide it in its noise management practices.

The NMP is a five-year action plan created through consultation with YVR Aeronautical Noise Management Committee (ANMC) members and analyses of public web survey feedback regarding the proposed Plan and of aircraft noise related complaints which YVR receives. The City has City staff and citizen representation on the YVR ANMC.

Staff are recommending that Council endorse the comments in **Attachment 2**. These comments are enhancements to staff's January 29, 2009 comments to YVR.

#### *Richmond Airport Noise Citizens Advisory Task Force*

The City has established the Richmond Airport Noise Citizens Advisory Task Force to identify, in public meetings, aeronautical noise and flight path issues that are of concern to the community and to submit a set of recommendations to Council for the purpose of forwarding them to YVR for consideration. On January 29, 2009, the Task Force held its first Public Hearing that was attended by about 35 Richmond residents. On February 7, 2009, another 30 people attended the second public meeting. The main concerns expressed included complaints regarding: noise from engine run-ups, night-time noise, noise from smaller aircraft and float planes that fly low and directly over residential areas of Richmond; insufficient answers to their complaints by YVR; and health concerns related to aircraft noise.

The proposed recommendations in this report address some of these concerns. When the Task Force presents its recommendations to Council in June 2009, it is anticipated that more detailed recommendations will be made.

### Analysis

While the City of Richmond makes appointments to the YVR Board and two YVR advisory committees, there continues to be concern within the community regarding aircraft noise. One concern, which is shared by senior City staff, is that it is difficult to directly approach YVR regarding noise issues and discuss their resolution. As a result, the City established the Richmond Airport Noise Citizens Advisory Task Force.

### Recommendation Highlights

The City regards reducing and better managing aircraft noise to be a very important goal and considers that the proposed YVR 2009 – 2013 Noise Management Plan is a beginning to assist in achieving it, and a step in the right direction. However, it is felt that more can be done as outlined below:


1. In the proposed 2009 – 2013 Noise Management Plan, many activities are process oriented. As processes are to achieve a result, a result that Richmond would like is reduced aircraft noise. The YVR NMP should establish long term aircraft noise reduction targets, particularly in light of the anticipated increase in aircraft activity over time.
2. That YVR should be a leader by identifying and implementing world-wide best practices in reducing and managing aircraft noise (e.g., researching, publically discussing options and tailoring best practices to address City and regional needs).
3. That YVR support the preparation of a regional airport strategy, to provide long term federal, provincial, regional, municipal and YVR certainty in airport investment, roles (e.g., passenger, and cargo planes), growth, aircraft noise reduction and management, land use, infrastructure, servicing and support activities. The Metro Vancouver Board supports this idea.
4. That YVR hold more public meetings to discuss aircraft noise and other matters.
5. That YVR support the recent efforts made by the City of Surrey and the Union of British Columbia Municipalities (UBCM) on Bill 111 (**Attachment 3**). This Bill encourages the Federal Government to: (1) revisit its Nav Canada legislative framework to ensure that proper consultation takes place with affected communities and residents, and (2) ensure that environmental impact studies take place, prior to airspace changes. This matter was brought to light by a letter from Surrey Mayor Dianne Watts to City of Richmond Mayor Malcolm Brodie and Council requesting City support this initiative.

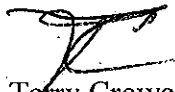
### Financial Impact

None.

### Conclusion

As part of the land lease agreement with the Government of Canada, YVR must update their Noise Management Plan every five years. As part of this update, City staff have already provided comments and recommend the attached enhanced comments for approval.

  
David Johnson,  
Planner 2 (4193)

  
Terry Crowe, Manager,  
Policy Planning (4139)

DJ:cas



## City of Richmond

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January 29, 2009  
 File:

Planning and Development Department  
 Fax: 604-276-4052

Anne Murray  
 Vice President, Community and Environmental Affairs  
 Vancouver International Airport Authority  
 P.O. Box 23750  
 Airport Postal Outlet  
 Richmond, BC V7B 1Y7

Dear Ms. Murray:

**Re: City of Richmond Staff Comments: Proposed YVR 2009 – 2013 Noise Management Plan**

The purpose of this letter is to identify Richmond staff's comments (**Attachment 1**) regarding the proposed 2009 – 2013 Noise Management Plan (NMP) (both the January 5, 2009 version and the recently received January 26, 2009 version). Please note that these are Richmond staff's comments and Council's comments will follow at the end of February 2009. City staff prefer that YVR set the deadline for Council comments in late February 2009, as requested. We acknowledge that YVR has stated that it will consider Council's comments. In June 2009, it is anticipated that the City of Richmond Council will forward to you approved Richmond Airport Noise Citizens Advisory Task Force recommendations for your consideration.

As expressed to you before, Richmond emphasizes and requests:

- Reduced aircraft noise (e.g., seaplane, night, daytime, runway, flight path, engine run-up), and
- That YVR hold actual public meetings to discuss aircraft noise, as open houses have not been sufficient.

Staff note that in the proposed 2009 – 2013 Noise Management Plan, many proposed activities are process oriented. As processes are to achieve a result, a result which Richmond would like is reduced aircraft noise. As well, please ensure that the NMP establishes long term aircraft noise reduction targets, particularly in light of anticipated increase aircraft activity over time.

City staff also ask that YVR continue to be a leader by identifying and implementing world-wide best practices in reducing and managing aircraft noise (e.g., researching, publicly discussing options and applying world-wide best practices to reduce aircraft noise).

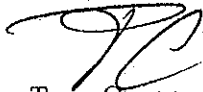
There is a recognition by Richmond and supported by Metro Vancouver that a regional airport strategy is needed to provide long term federal, provincial, regional, municipal and YVR certainty in airport investment, roles (e.g., passenger, and cargo planes), growth, aircraft noise reduction and management, land use, infrastructure, servicing and support activities. Please add this initiative to the 2009 YVR work schedule.

  
**RICHMOND**  
*Island City, by Nature*

On a related matter, we ask that YVR support efforts by the Union of British Columbia Municipalities (see Bill 111 - attached) to encourage the Federal Government to revise its NAV CANADA legislation to require greater public and municipal consultation on air traffic changes as well as to ensure that environmental impact studies take place prior to any airspace changes. We encourage YVR to welcome this bill and give support to this initiative. This resolution shows that several municipalities throughout the province have concerns over noise generated by aircraft and how their movements are managed. This issue also fits well with 2.1 of your proposed initiatives - "*Support and work with NAV CANADA during the implementation of Area Navigation (RNAV) and Required Navigation Performance (RNP) procedures in an effort to minimize over-flights of populated areas wherever possible.*" The benefits of having a more open consultation and studies procedure will result in better flight paths and possible reductions in complaint calls to YVR.

Thank you for considering these comments. For clarification, please contact me at 604-276-4139.

Yours truly,



Terry Crowe  
Manager, Policy Planning

TTC:cas  
Att. 3

pc: Mayor and Councillors  
Joe Erceg, MCIP, General Manager, Planning and Development  
Victor Wei, Director, Transportation  
Mayor Dianne Watts, City of Surrey  
Mayor Lois Jackson, Corporation of Delta  
Mayor Catherine Ferguson, City of White Rock  
Peter Dhillon, Richmond Representative to YVR  
Richmond YVR Airport Noise Management Committee Representatives  
Richmond YVR Environmental Advisory Committee Representatives  
Richmond Airport Noise Citizens Advisory Task Force

**Richmond's Staff Comments Regarding YVR's Implementations  
Of The City's 2003 Suggestions**

Purpose: To comment on the status of the City's 2003 YVR Aeronautical Noise Management Plan.

City's 2003 Comments to YVR	YVR Initiative in their 2004 - 2008 Noise Management Plan	City Staff's Comments Regarding YVR's Progress
1. Community implications of proposed operating procedures for simultaneous, parallel runway departures	Capacity and Delay Reduction (part of 2004 - 05 work plan)	Not completed according to 2004 and 2005 Noise Management Reports
2. Adequacy of current noise attenuation standards in building construction	Compatible Land Use Planning (ongoing process)	<input type="checkbox"/> YVR and the City continue to improve noise attenuation in buildings on lands that are under the City's jurisdiction. <input type="checkbox"/> For buildings under YVR's jurisdiction, YVR is encouraged to improve standards.
3. Community impacts on the future "engine run-up" area*	Engine Run-Ups (part of 2004 and 2006 work plan)	Ongoing monitoring along with changes in run-up operations as required.
4. Compatible Land Use Planning Guidelines*	Compatible Land Use Planning (ongoing process)	Ongoing. City prepared a 2004 OCP ANSD policy in consultation with YVR.
5. Update to 1998 Social Survey Community Response to Noise Exposure*	Social Survey (part of 2006 work plan)	Not completed according to the 2006 Noise Management Report
6. Need for community consultation regarding the airport's night operations	Night-time Operations (part of 2004-05 work plan)	Some consultation done, more meetings are requested.
7. Need for local Richmond Health Services representation on the VAAA Noise Management Committee	YVR Aeronautics Noise Management Committee (Part of 2004-05 work plan)	A new Terms of Reference was delivered to the YVR Noise Management Committee in 2006 without the inclusion of representation from Richmond Health Services
8. Need for examination of financial implications of proposed initiatives	Not Included	Ongoing monitoring

**Request**

The City requests that YVR clarify the progress made in achieving the City's 2003 suggestions and where not done, please add them into the 2009-2013 YVR ANM Plan.

## 2009 – 2013 YVR Noise Management Plan Initiatives

Purpose: To summarize Richmond staff's comments on the proposed 2009 – 2013 YVR Noise Management Plan (the January 26, 2009 version).

## Comments in BOLD are City of Richmond staff comments

TABLE 3 2009-2013 YVR Noise Management Plan Initiatives			
No.	Initiative	Proposed Task	
1	Night-time Operations	1.1	Review current guidelines for granting approval for operations for jet aircraft between the hours of mid-night and 0700 local. <input type="checkbox"/> <b>YVR to advise community of all public comments.</b> <input type="checkbox"/> <b>Objective is to restrict midnight to 7 am approvals.</b>
		1.2	Prepare a study assessing the impacts of extending the current prior approval requirement for jet operations between the hours of mid-night to 0700 local to all aircraft. <input type="checkbox"/> <b>Agree.</b>
		1.3	Explore the feasibility of developing a night-time Standard Instrument Departure (SID) procedure for aircraft on westerly routes departing runway 08. <input type="checkbox"/> <b>Highly recommend YVR develop night-time SID procedure(s);</b> <input type="checkbox"/> <b>Need for Community consultation regarding the airport's night operations.</b>
2	Arrivals and Departures	2.1	Support and work with NAV CANADA during the implementation of Area Navigation (RNAV) and Required Navigation Performance (RNP) procedures in an effort to minimize over-flights of populated areas wherever possible. <input type="checkbox"/> <b>Agree.</b> <input type="checkbox"/> <b>Support UBCM resolution of Bill 111.</b>
		2.2	Support Transport Canada in their project to replace the current Vertical Noise Abatement Procedures with Noise Abatement Departure Procedures. <input type="checkbox"/> <b>Agree.</b>
		2.3	Explore the use of de-rated thrust ( <i>the amount of thrust needed for an aircraft to take off when it is below capacity</i> ) take-off procedures. <input type="checkbox"/> <b>Agree.</b> <input type="checkbox"/> <b>Clarify the community implications of proposed operating procedures for simultaneous, parallel runway departures.</b>
3	North Runway Departures	3.1	Develop scope of work and undertake an airside capacity study to assess various demand management strategies to conserve YVR's airside capacity. <input type="checkbox"/> <b>Agree.</b>
		3.2	Collect information and statistics on aircraft ground operations, including actual taxi times and delay. This information would feed into models and simulations needed for demand management studies. <input type="checkbox"/> <b>Use to reduce noise too.</b>
		3.3	Work to establish an ongoing mechanism for coordinating Lower Mainland airport activities and encouraging dialogue at both the operational and senior management/governance levels. <input type="checkbox"/> <b>Agree (eg. to regional airport strategy)</b>
4	Run-ups	4.1	Assess engineering noise control measures for propeller engine run-ups and build a dedicated run-up facility of propeller aircraft if feasible. <input type="checkbox"/> <b>Encourage that it be built.</b>
		4.2	Explore the use of multi-lateration technology (receivers to pinpoint the location of a noise source) and CCTV (closed-circuit television) cameras to monitor compliance with the Engine Run-up Directive. <input type="checkbox"/> <b>Agree.</b>
		4.3	Review other possible control mechanisms for enforcement of Engine Run-up Directives. <input type="checkbox"/> <b>Agree.</b>
		4.4	Assess further restrictions on run-up activities - hours / duration. <input type="checkbox"/> <b>Agree.</b> <input type="checkbox"/> <b>Clarify the community impacts of the future "engine run-up" area.</b>
5	ILS Flight Inspections	5.1	Develop education and awareness web material explaining the ILS system and required flight inspections. (local flights that circle the airport to monitor the operation of the Instrument Landing System) <input type="checkbox"/> <b>Agree.</b>
		5.2	Enhance community web-based notification of upcoming ILS flight inspections. <input type="checkbox"/> <b>Agree.</b>

TABLE 3			
2009-2013 YVR Noise Management Plan Initiatives			
No.	Initiative	Proposed Task	
6	Float Plane Over-flights	6.1	Develop education and awareness web material explaining over-flight routes and encourage Transport Canada to address these non-YVR operations. <input type="checkbox"/> <b>Agree.</b>
7	YVR Float Operations	7.1	Enhance education and awareness of community issues through regular meetings with the float plane operators. <input type="checkbox"/> <b>Agree and follow-up.</b>
		7.2	Create "preferred" arrival and departure routes for the Fraser River, monitor use, and report to operators. <input type="checkbox"/> <b>Agree.</b> <input type="checkbox"/> <b>Consult with City in doing so.</b>
		7.3	Review and assess voluntary restrictions on float plane operations, e.g. 2 vs. 3-bladed propeller, time of day, etc. <input type="checkbox"/> <b>Agree but explore restriction requirements.</b>
8	Education and Awareness - Industry	8.1	Develop a training module on noise management for flight schools. <input type="checkbox"/> <b>Agree, please clarify the purpose.</b>
9	Land Use Planning	9.1	Develop material for the web that provides clear concise information for areas affected by aircraft noise. Link this to the municipality websites. <input type="checkbox"/> <b>Agree.</b>
		9.2	Support and encourage municipalities to prohibit new residential development in high noise areas. Encourage municipalities to implement covenants, notification, and insulation standards should they permit developments in high noise areas. <input type="checkbox"/> <b>YVR – please review NEF model and assumptions.</b> <input type="checkbox"/> <b>Richmond follows its 2004 OCP Aircraft Noise Sensitive Development Policy and policies.</b> <input type="checkbox"/> <b>Agree on covenants and displays.</b>
		9.3	Continue with reviews of municipal development plans and discourage non-compatible land uses in high noise areas. <input type="checkbox"/> <b>Understood.</b>
10	Noise Abatement Procedures	10.1	Undertake annual review of published procedures with the aim of continual improvement. <input type="checkbox"/> <b>Agree, with community input.</b>
11	Noise Monitoring Terminal Network	11.1	Undertake a regular review of the Noise Monitoring Terminal network to determine if additional terminals are required. <input type="checkbox"/> <b>Agree.</b>
12	Portable Noise Monitoring Terminal	12.1	Perform routine monitoring using the portable Noise Monitoring Terminal and report publicly on the monitoring results. <input type="checkbox"/> <b>Agree.</b>
13	ANOMS	13.1	Explore the use of WebTrak (Community Web Replay software by Lochar to provide live flight tracking that can be monitored on the www) and other web-based tools to enhance information exchange with the community. <input type="checkbox"/> <b>Agree.</b>
14	Communication	14.1	Review the Terms of Reference for the YVR Aeronautical Noise Management Committee. <input type="checkbox"/> <b>Agree but clarify when this is to take place.</b> <input type="checkbox"/> <b>Please consult with Richmond.</b> <input type="checkbox"/> <b>Need local Richmond Health Services representation on the VIAA Noise Management Committee.</b>
		14.2	Increase use of the web to provide information and updates on noise management activities. <input type="checkbox"/> <b>Agree.</b>
		14.3	Prepare and publish regular web-based noise monitoring reports. <input type="checkbox"/> <b>Agree.</b>
		14.4	Develop and trial a community liaison program. <input type="checkbox"/> <b>Clarify purpose.</b> <input type="checkbox"/> <b>Please consult with Richmond.</b> <input type="checkbox"/> <b>Please hold public meetings.</b>
		14.5	Develop an email notification system that advises the community of particular operations at the airport – e.g. maintenance, north runway departures to reduce delay, ILS flight checks, etc. <input type="checkbox"/> <b>Agree.</b> <input type="checkbox"/> <b>Notify early.</b>
		14.6	<input type="checkbox"/> <b>Publish violations found periodically.</b>



TABLE 3 2009-2013 YVR Noise Management Plan Initiatives			
No.	Initiative	Proposed Task	
15	Aircraft Technology	15.1	Provide input through national (Aircraft Noise & Emissions Committee) and international (Airports Council International) groups to promote increased noise certification standards and lobby for phase out of older noisier Chapter III aircraft. <input type="checkbox"/> <b>Agree.</b>
16	Roles and Responsibilities	16.1	Clarify roles and responsibilities between Airport Authority, Transport Canada, and NAV CANADA regarding noise management activities. <input type="checkbox"/> <b>Agree.</b> <input type="checkbox"/> <b>Please advise City of results.</b>

### Additional Richmond Requests

Please add the following activities to the Plan:

1. **Reduce Aircraft Noise:** Staff note that in the proposed 2009 – 2013 Noise Management Plan, many proposed activities are process oriented. As processes are to achieve a result, a result which Richmond would like is reduced aircraft noise (e.g., seaplane, night, daytime, runway, flight path, engine run-up),
2. **Hold Public meetings:** Hold actual public meetings to discuss aircraft noise, as open houses have not been sufficient.
3. **Establish long term aircraft noise reduction targets:** Please ensure that the Plan establishes long term aircraft noise reduction targets, particularly in light of anticipated increase aircraft activity over time.
4. **Best Practises in Aircraft Noise Reduction:** Continue to identify and implement worldwide best practices in reducing and managing aircraft noise (e.g., researching, publically discussing options and applying world-wide best practices to reduce and manage aircraft noise).
5. **Prepare A Regional Airport Strategy:** There is a recognition by Richmond and supported by Metro Vancouver that a regional airport strategy is needed to provide, for example long term federal, provincial, regional, municipal and YVR certainty in airport investment, roles (e.g., passenger, and cargo planes), growth, aircraft noise reduction and management, land use, infrastructure, servicing and support services. Please add this initiative to the 2009 YVR work schedule.
6. **Survey:** Update to 1998 Social Survey Community Response to Noise Exposure in consultation with the City.
7. **Support efforts by the Union of British Columbia Municipalities** (through resolution of Bill 111 - attached) to encourage the Federal Government to revise its NAV CANADA legislation to require greater public and municipal consultation on air traffic changes as well as to ensure that environmental impact studies take place prior to any airspace changes.

Full text of UBCM (Union of BC Municipalities) 2008 resolution

**B111 NAV CANADA CONSULTATION Surrey**

**WHEREAS** the Aeronautical Study's changes implemented by Nav Canada on May 7, 2007 have negatively impacted many residents in the Lower Mainland;  
**AND WHEREAS** the impacted communities and residents were not consulted during the Aeronautical Study;  
**AND WHEREAS** Nav Canada's governance model does not require consultation with communities or affected municipalities where air traffic changes take place;  
**AND WHEREAS** there is not currently a requirement for an environmental impact study to take place when considering airspace changes;  
**AND WHEREAS** the Minister of Transportation will only exert authority on issues concerning air safety:

**THEREFORE BE IT RESOLVED** that the Union of BC Municipalities (UBCM) call upon the federal government to revisit the legislative framework of Nav Canada to ensure that proper consultation takes place with affected communities and residents;  
**AND BE IT FURTHER RESOLVED** that the UBCM call upon the federal government to ensure that environmental impact studies take place prior to any airspace changes.

*ENDORSED BY the Lower Mainland Local Government Association & Union of BC Municipalities*

**City Of Richmond Comments  
Regarding the Proposed 2009 – 2013 YVR Noise Management Plan**

**1. Purpose**

To provide the City of Richmond's comments regarding the proposed 2009 – 2013 YVR Noise Management Plan (the January 26, 2009 version).

**2. General Comments**

(1.) Richmond welcomes the preparation of a 2009 – 2013 YVR Noise Management Plan (the January 26, 2009 version) and the opportunity for input.

(2.) Reduce Aircraft Noise:

It is noted that in the proposed 2009 – 2013 Noise Management Plan, many proposed activities are process oriented. As processes are to achieve a result, a result which Richmond requests reduced aircraft noise (e.g., seaplane, night, daytime, runway, flight path, engine run-up) and better management of it.

This desired result has become increasingly important to Richmond residents and is one reason why Richmond City Council has established its Richmond Airport Noise Citizens Advisory Task Force - to listen to public comments regarding aircraft noise and make recommendations to Council for forwarding to YVR (e.g., in June 2009).

YVR can improve being a civic partner with the surrounding communities and better share its desire in making aircraft noise reduction a continual priority, by including a corporate statement in the 2009 - 2013 Noise Management Plan to this effect, as it will ensure that it is a key part of the YVR's annual noise management planning and activities.

(3.) Hold Public meetings:

Council requests that YVR hold public meetings to discuss aircraft noise, as open houses have not been sufficient. The Richmond public want be heard regarding aircraft noise matters and YVR's plans and operations. They want face-to-face opportunities to lean, meet and provide informed comments on their airport and many aspects of its operations including aircraft noise reduction and management. It is proven that open houses and surveys do not sufficiently achieve this desired communication. Meeting are so important that the City's Task Force's main job is to (1) meet with and (2) listen to the public regarding aircraft noise issues.

(4.) Establish Long Term Aircraft Noise Reduction Targets:

YVR is requested to please ensure that the Plan establishes long term aircraft noise reduction targets, (e.g., per year) particularly in light of anticipated increases aircraft activity over time, as YVR expands its operations and activities. Everyone is aware that YVR wishes to increase flights and its activities and thus are concerned regarding how aircraft noise will be reduced in light the increases. YVR's goal of increasing flights should not be taken to mean that it is acceptable to also increase aircraft noise, as it is suggested that much can be done to reduce aircraft noise.

(5.) Best Practises in Aircraft Noise Reduction:

YVR is requested to continue to identify and implement worldwide best practices in reducing and managing aircraft noise. These should be well researched and, importantly, publically discussed along with the options and the best, and most appropriate ones, applied to reduce and manage aircraft noise.

(6.) Prepare A Regional Airport Strategy:

Planning is the management of the change and interests. Richmond requests and Metro Vancouver supports the preparation of a regional airport strategy. Such a strategy can best assist all parties in managing regional airport and aircraft noise challenges and change by co-ordinating the many regional interests. A strategy could, for example, provide long term federal, provincial, regional, municipal and YVR certainty in airport investment, roles (e.g., passenger, and cargo

planes), growth, aircraft noise reduction and management, land use, infrastructure, servicing and support services. Please add this initiative to the 2009 YVR work schedule.

(7.) Survey:

YVR is requested to update the 1998 Social Survey Community Response to Noise Exposure, as it will assist in better understanding residents' experience of aircraft noise (e.g., in buildings). Please consult with Richmond when doing the study.

(8.) UBCM Bill 111

YVR is request to support the Union of British Columbia Municipalities (UBCM) Bill 111 (attached) to encourage the Federal Government to revise its NAV CANADA legislation to require greater public and municipal consultation on air traffic changes as well as to ensure that environmental impact studies take place prior to any airspace changes. This has become a regional issue of importance and is consistent with the proposed Plan.

### 3. Comments Regarding the Proposed Plan Initiatives

Richmond's comments are in **BOLD**.

TABLE 3		
2009-2013 YVR Noise Management Plan Initiatives		
No.	Initiative	Proposed Task
1	Night-time Operations	1.1 Review current guidelines for granting approval for operations for jet aircraft between the hours of mid-night and 0700 local. <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Night time flights and noise have become an important issue in Richmond.</b></li> <li><input type="checkbox"/> <b>The objective is to restrict midnight to 7 am approvals.</b></li> <li><input type="checkbox"/> <b>The process, rules and enforcement need to achieve this objective and reduce night noise.</b></li> <li><input type="checkbox"/> <b>YVR is requested to meet with the public to discuss, clarify and improve how night flights and noise can be reduced and better managed.</b></li> <li><input type="checkbox"/> <b>Improved criteria for when and when not night flights occur are needed, as well as better enforcement of the rules and penalties for violators.</b></li> <li><input type="checkbox"/> <b>YVR is requested to review the current guidelines in consultation with the public and municipalities.</b></li> </ul>
		1.2 Prepare a study assessing the impacts of extending the current prior approval requirement for jet operations between the hours of mid-night to 0700 local to <u>all</u> aircraft. <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>As stated, since reducing night noise has become very important, the study as a first step, to extend prior approvals to all planes, is welcomed.</b></li> <li><input type="checkbox"/> <b>Many complaints come from noise generated by smaller aircraft.</b></li> <li><input type="checkbox"/> <b>Having all planes receive prior approval is expected to reduce noise.</b></li> </ul>
		1.3 Explore the feasibility of developing a night-time Standard Instrument Departure (SID) procedure for aircraft on westerly routes departing runway 08 (the west). <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>As reducing night noise is very important, studying, as a first step, how to improve procedures, is welcomed.</b></li> <li><input type="checkbox"/> <b>Please develop night-time SID procedure(s) as feasible.</b></li> <li><input type="checkbox"/> <b>Please consult with the community regarding the airport's night operations.</b></li> </ul>
2	Arrivals and Departures	2.1 Support and work with NAV CANADA during the implementation of Area Navigation (RNAV) and Required Navigation Performance (RNP) procedures in an effort to minimize over-flights of populated areas wherever possible. <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Minimizing over-flights of populated areas is supported by Richmond as it is main issue. Smaller aircraft still fly low over residential areas when talking off and descending.</b></li> <li><input type="checkbox"/> <b>Richmond supports improved NAV CANADA activities to reduce aircraft noise.</b></li> <li><input type="checkbox"/> <b>Better enforcement of take off and approach flight paths should be implemented.</b></li> <li><input type="checkbox"/> <b>YVR is requested to support the UBC M Bill 111 as it directly encourages NAV CANADA to assist in reducing and managing aircraft noise.</b></li> </ul>

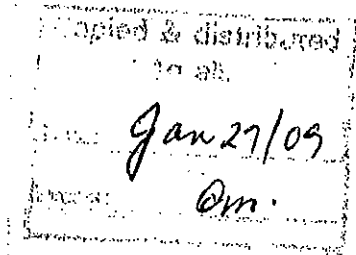
TABLE 3		
2009-2013 YVR Noise Management Plan Initiatives		
No.	Initiative	Proposed Task
		2.2 Support Transport Canada in their project to replace the current Vertical Noise Abatement Procedures with Noise Abatement Departure Procedures. <input type="checkbox"/> All Transport Canada efforts to improve noise abatement procedures are welcomed. <input type="checkbox"/> Once installed, please share the results with the community to that ensure such action results in noise reduction.
		2.3 Explore the use of de-rated thrust (the amount of thrust needed for an aircraft to take off when it is below capacity) take-off procedures. <input type="checkbox"/> As reducing noise is important, this initiative is welcomed, as it is assumed that less needed thrust will result in less noise.
3	North Runway Departures	3.1 Develop scope of work and undertake an airside capacity study to assess various demand management strategies to conserve YVR's airside capacity. <input type="checkbox"/> Richmond supports this initiative and requests that part of the work address the noise implications and how noise will be reduced.
		3.2 Collect information and statistics on aircraft ground operations, including actual taxi times and delay. This information would feed into models and simulations needed for demand management studies. <input type="checkbox"/> Quality information is welcomed. Please use it to reduce aircraft noise. <input type="checkbox"/> Such information and statistics should be made available to the community.
		3.3 Work to establish an ongoing mechanism for coordinating Lower Mainland airport activities and encouraging dialogue at both the operational and senior management/governance levels. <input type="checkbox"/> To best manage and co-ordinate regional airport and aircraft issues, Richmond continues to support the preparation of a regional airport strategy. Such a strategy should provide certainty for all in airport investment, roles (e.g., passenger, and cargo planes), growth, aircraft noise reduction and management, land use, infrastructure, servicing and support services. <input type="checkbox"/> A regional airport strategy should look at maximizing efficiencies by encouraging regional airports to share in receiving and maintaining smaller aircraft.
4	Run-ups	4.1 Assess engineering noise control measures for propeller engine run-ups and build a dedicated run-up facility of propeller aircraft if feasible. <input type="checkbox"/> Reducing engine run-up noise is very important to Richmond and the public. This was again recently verified at the City's Task Force public meeting in January 2009. <input type="checkbox"/> If feasible, please build the facility, as soon as possible. <input type="checkbox"/> Also, please determine how well the existing run-up area at the west end of Sea Island is being used and how could it be improved. <input type="checkbox"/> A sound-proof structure located near maintenance hangers for engine run-ups may be used more constructively. <input type="checkbox"/> Should a sound-proof structure be built, encourage engine run-ups not be conducted in the open air.
		4.2 Explore the use of multi-lateration technology (receivers to pinpoint the location of a noise source) and CCTV (closed-circuit television) cameras to monitor compliance with the Engine Run-up Directive. <input type="checkbox"/> Agree; however, such technology should only be used if the intent is to better enforce run-ups with and without approval.
		4.3 Review other possible control mechanisms for enforcement of Engine Run-up Directives. <input type="checkbox"/> As reduced run-up noise is a main issue, considering other enforcement mechanisms is encouraged.
		4.4 Assess further restrictions on run-up activities - hours / duration. <input type="checkbox"/> As reducing run-up noise is a main issue, please establish restrictions as voluntary actions are not sufficiently reducing noise. <input type="checkbox"/> Operators need rules, backed up with enforcement and penalties for violations. <input type="checkbox"/> Please clarify the community impacts of the future "engine run-up" area. <input type="checkbox"/> Information on violators should be posted for on the YVR web site

TABLE 3		
2009-2013 YVR Noise Management Plan Initiatives		
No.	Initiative	Proposed Task
5	ILS Flight Inspections	5.1 Develop education and awareness web material explaining the ILS system and required flight inspections. (local flights that circle the airport to monitor the operation of the Instrument Landing System) <input type="checkbox"/> <b>This action is supported as prevention is always preferred.</b> <input type="checkbox"/> <b>Please clarify to whom the education is being targeted.</b>
		5.2 Enhance community web-based notification of upcoming ILS flight inspections. <input type="checkbox"/> <b>This is supported, as YVR may receive fewer complaints if the public better understands the source of the noise and why it is occurring.</b>
6	Float Plane Over-flights	6.1 Develop education and awareness web material explaining over-flight routes and encourage Transport Canada to address these non-YVR operations. <input type="checkbox"/> <b>Reduced float plane noise is a main issue for Richmond residents.</b> <input type="checkbox"/> <b>This action is supported and Transport Canada should be asked to establish better rules and enforcement.</b>
7	YVR Float Operations	7.1 Enhance education and awareness of community issues through regular meetings with the float plane operators. <input type="checkbox"/> <b>As reduced float plane noise is a main issue for Richmond residents, meetings should include the public for example, the citizen representatives to the YVR ANMC.</b>
		7.2 Create "preferred" arrival and departure routes for the Fraser River, monitor use, and report to operators. <input type="checkbox"/> <b>As reducing float plane noise is a main issue for Richmond residents, please establish required routes which are enforceable, with penalties.</b> <input type="checkbox"/> <b>Please consult with the City and community when doing so.</b>
		7.3 Review and assess voluntary restrictions on float plane operations, e.g. 2 vs. 3-bladed propeller, time of day, etc. <input type="checkbox"/> <b>Disagree, as voluntary actions don't work.</b> <input type="checkbox"/> <b>Please establish requirements which are enforceable.</b> <input type="checkbox"/> <b>Also, please reduce unnecessary float plane idling.</b>
8	Education and Awareness - Industry	8.1 Develop a training module on noise management for flight schools. <input type="checkbox"/> <b>Supported: please clarify the purpose.</b> <input type="checkbox"/> <b>Please consult with the public when preparing the modules to incorporate their comments and suggestions to make them more useful.</b>
9	Land Use Planning	9.1 Develop material for the web that provides clear concise information for areas affected by aircraft noise. Link this to the municipality websites. <input type="checkbox"/> <b>Supported; please do in consultation with the City and community.</b>
		9.2 Support and encourage municipalities to prohibit new residential development in high noise areas. Encourage municipalities to implement covenants, notification, and insulation standards should they permit developments in high noise areas. <input type="checkbox"/> <b>YVR is requested to review the existing NEF model and assumptions, as it may be outdated and better alternatives may exist.</b> <input type="checkbox"/> <b>For its part, Richmond follows its 2004 OCP Aircraft Noise Sensitive Development Policy and policies, and has improved covenants and displays.</b>
		9.3 Continue with reviews of municipal development plans and discourage non-compatible land uses in high noise areas. <input type="checkbox"/> <b>Richmond continues to refer proposed airport related OCP amendments to YVR for comment.</b>
10	Noise Abatement Procedures	10.1 Undertake annual review of published procedures with the aim of continual improvement. <input type="checkbox"/> <b>Supported, as researching best practises better enables noise to be reduced.</b> <input type="checkbox"/> <b>Please share the findings with the community.</b>
11	Noise Monitoring Terminal Network	11.1 Undertake a regular review of the Noise Monitoring Terminal network to determine if additional terminals are required. <input type="checkbox"/> <b>Supported, as sufficient equipment will better enable noise to be determined and hence reduced.</b> <input type="checkbox"/> <b>Please share the results with the public.</b>
12	Portable Noise Monitoring Terminal	12.1 Perform routine monitoring using the portable Noise Monitoring Terminal and report publicly on the monitoring results. <input type="checkbox"/> <b>Supported, as sufficient monitoring better enables noise to be determined and hence reduced. The method of sharing this information with the public should</b>

TABLE 3		
2009-2013 YVR Noise Management Plan Initiatives		
No.	Initiative	Proposed Task
		<b>include public meetings.</b>
13	ANOMS	13.1 Explore the use of WebTrak (Community Web Replay software by Lochard to provide live flight tracking that can be monitored on the www) and other web-based tools to enhance information exchange with the community. <input type="checkbox"/> <b>Richmond supports this and encourages it be implemented, as it creates more awareness of airport activities.</b> <input type="checkbox"/> <b>Please hold demonstrations of it at public meetings.</b>
14	Communication	14.1 Review the Terms of Reference for the YVR Aeronautical Noise Management Committee. <input type="checkbox"/> <b>Richmond supports this review</b> <input type="checkbox"/> <b>When doing it please consult with Richmond.</b> <input type="checkbox"/> <b>Please add a Richmond Health Services representative to the VIAA Noise Management Committee.</b>
		14.2 Increase use of the web to provide information and updates on noise management activities. <input type="checkbox"/> <b>Agree. Please follow up postings with open public meetings.</b>
		14.3 Prepare and publish regular web-based noise monitoring reports. <input type="checkbox"/> <b>Agree. Please follow up postings with open public meetings.</b>
		14.4 Develop and trial a community liaison program. <input type="checkbox"/> <b>Strongly agree, but please clarify its purpose.</b> <input type="checkbox"/> <b>Richmond will be pleased to assist YVR in this work.</b> <input type="checkbox"/> <b>One of its purpose should be to hold open public meetings.</b> <input type="checkbox"/> <b>Please consult with Richmond on this work.</b>
		14.5 Develop an email notification system that advises the community of particular operations at the airport – e.g. maintenance, north runway departures to reduce delay, ILS flight checks, etc. <input type="checkbox"/> <b>Agree. Please add this information in a quarterly YVR news flyer to be distributed to nearby communities for those who may not have e-mail access.</b> <input type="checkbox"/> <b>Please notify the community early and often.</b>
		Additional City Comment 14.6 <input type="checkbox"/> <b>Publish violations periodically.</b>
15	Aircraft Technology	15.1 Provide input through national (Aircraft Noise & Emissions Committee) and international (Airports Council International) groups to promote increased noise certification standards and lobby for phase out of older noisier Chapter III aircraft. <input type="checkbox"/> <b>Richmond supports the phasing out of these planes, as it will directly reduce aircraft noise.</b>
16	Roles and Responsibilities	16.1 Clarify roles and responsibilities between Airport Authority, Transport Canada, and NAV CANADA regarding noise management activities. <input type="checkbox"/> <b>This is a good initiative as there is confusion regarding who does what.</b> <input type="checkbox"/> <b>As well improved communications and decision-making often result once the roles are clarified.</b> <input type="checkbox"/> <b>Please advise the City and community of the results.</b>

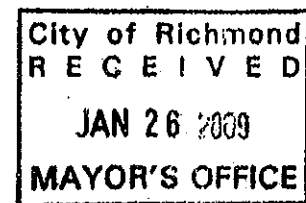
Prepared by City Of Richmond Staff

OFFICE OF THE MAYOR



January 21, 2009

Mayor Malcolm Brodie  
 City of Richmond  
 Mayor's Office  
 6911 No. 3 Road  
 Richmond, BC V6Y 2C1



Dear Mayor Brodie,

I wanted to update you on the activities of the City of Surrey in relation to aircraft noise mitigation efforts and to solicit your support for concerted multi-city co-operation on this issue.

First, I would like to draw your attention to the endorsement of the UBCM Resolution B111 (full text below) in which the UBCM has asked the federal government to revise its Nav Canada legislation giving local governments and communities affected by flight path changes an opportunity to be consulted.

Second, I applaud the creation of the Richmond Airport Noise Citizens Advisory task force. As a result of the strong negative reaction from Surrey's residents to the new air routes imposed since May 2007, I created the Surrey Airspace Task Force (formerly the Nav Canada Working Group) to identify possible solutions. The city hired a consultant to investigate our options but we have not been able to persuade Nav Canada to implement any of the consultant's recommendations. The Task Force, composed of residents, city councillors and staff are continuing to meet to find other ways to bring about change with Nav Canada and the Vancouver Airport Authority.

I urge you to join forces with Surrey to wage a multi-city effort to investigate ways to improve the quality of life for those affected by aircraft noise. We all recognize that the airport is an important component of strong economic growth in the region. However, this has to be weighed against the effects it has on our local citizens. Other jurisdictions, notably Seattle (SeaTac), take a much more proactive approach to involving local concerns regarding health, social and environmental impacts.

I look forward to having the opportunity to discuss this issue with you. While lobbying efforts continue with some of the federal MPs from the Lower Mainland, I believe that we can move



towards finding solutions that are satisfactory to all of us together with the strong group of concerned residents of Surrey, Delta, Richmond and White Rock,

I will be in contact with you to discuss your thoughts and further action regarding a concerted multi-city co-operation.

Sincerely yours,



Dianne L. Watts  
Mayor

cc. Russ Hiebert, MP  
Nina Grewal, MP  
Dona Cadman, MP  
Mayor Catherine Ferguson, City of White Rock  
Mayor Lois Jackson, Corp. of Delta

Full text of UBCM (Union of BC Municipalities) 2008 resolution

**B111 NAV CANADA CONSULTATION Surrey**

**WHEREAS** the Aeronautical Study's changes implemented by Nav Canada on May 7, 2007 have negatively impacted many residents in the Lower Mainland;

**AND WHEREAS** the impacted communities and residents were not consulted during the Aeronautical Study;

**AND WHEREAS** Nav Canada's governance model does not require consultation with communities or affected municipalities where air traffic changes take place;

**AND WHEREAS** there is not currently a requirement for an environmental impact study to take place when considering airspace changes;

**AND WHEREAS** the Minister of Transportation will only exert authority on issues concerning air safety;

**THEREFORE BE IT RESOLVED** that the Union of BC Municipalities (UBCM) call upon the federal government to revisit the legislative framework of Nav Canada to ensure that proper consultation takes place with affected communities and residents;

**AND BE IT FURTHER RESOLVED** that the UBCM call upon the federal government to ensure that environmental impact studies take place prior to any airspace changes.

*ENDORSED BY the Lower Mainland Local Government Association & Union of BC Municipalities*

# **2009-2013 Noise Management Plan for Vancouver International Airport**

- DRAFT -



Prepared by Vancouver Airport Authority  
2009



### Executive Summary

The 2009-2013 Noise Management Plan for Vancouver International Airport ("YVR") details the core elements of the YVR Aeronautical Noise Management Program and initiatives that will shape and guide noise management efforts over the next five years.

A total of 16 initiatives are identified for the 2009-2013 YVR Noise Management Plan. Initiatives were identified in consultation with the YVR Aeronautical Noise Management Committee, from information gathered through a community web survey, and through an extensive analysis of noise complaints received by the Airport Authority.

The 16 initiatives included in the 2009-2013 YVR Noise Management Plan include (in no particular order):

1. Night-time operations
2. Arrivals and departures
3. Demand Management
4. Run-ups
5. Instrument Landing System flight Inspections
6. Float plane over-flights
7. YVR float plane operations
8. Education and awareness – Industry
9. Land use planning
10. Noise abatement procedures
11. Noise monitoring terminal network
12. Portable noise monitoring terminal
13. Airport Noise & Operations Monitoring System
14. Communication
15. Aircraft technology
16. Roles and responsibilities

Details of the initiatives and tasks to be undertaken will require further work and consultation with affected stakeholders.

As some issues worked on during previous Plans remain a concern to surrounding communities, further work on these issues is carried into this Plan (see Appendix A for a summary of work completed in the 2004-2008 Noise Management Plan). In addition, the flexibility of the YVR Aeronautical Noise Management Program allows for initiatives to be added addressing new community issues and/or new opportunities that may emerge during the course of this five year Plan.

The Plan will be used to meet the challenge of balancing the competing demands for 24-hour airport services with those for enjoyable urban living by minimizing noise disturbances associated with airport and aircraft operations.



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## 1.0 Introduction

While managing noise impacts on the community is important to the Airport Authority, this is done with the recognition of YVR's contribution to connecting British Columbia to the World, and supporting the economy through jobs and taxes. The 2009-2013 YVR Noise Management Plan will assist the Airport Authority to meet its objective of minimizing the level of disturbance to those living in communities in the vicinity of the YVR, while recognizing the legitimate need for continued airport operations.

The first half of this document provides an introduction to the Airport and the Airport Authority, and provides information on the YVR Aeronautical Noise Management Program. The second half of this document includes a description of the initiatives to be undertaken over the next five years to address community concerns through sustainable solutions.

### 1.1 Vancouver International Airport

Vancouver International Airport (YVR) is located on the southwest coast of the Province of British Columbia, and is Canada's second busiest airport. YVR is a major entry point to North America from Asia and is a major hub for domestic, transborder (U.S.), and international air travel.

YVR's primary role is to respond to and facilitate the demands of the aviation industry, in a safe, efficient, and environmentally sensitive manner. YVR is an important economic engine for B.C., generating \$1.7-billion in direct Gross Domestic Product (GDP) value added. The total GDP (including indirect and induced) related to the airport is \$3.1-billion, and total output is \$6.8-billion<sup>1</sup>.

YVR occupies approximately 1,340 hectares of federal property on Sea Island within the City of Richmond. The Vancouver downtown core is approximately 12 kilometres from YVR, and the airport is in close proximity to major urban residential developments. This proximity adds to the challenge of operating 24-hours a day to support the economic engine of British Columbia while minimizing disturbance from aircraft operations on its neighbours.

### 1.2 Vancouver Airport Authority

The Vancouver Airport Authority (Airport Authority) assumed management of YVR from Transport Canada in 1992 and operates the airport under the provisions of a long-term ground lease with the Government of Canada. The Airport Authority is a not-for-profit corporation established under Part II of the Canada Corporations Act, and has no shareholders. All profits, known as excess of revenues over expenditures, are reinvested in airport development and service improvements.

The Airport Authority's purpose is to manage and operate YVR on behalf of, and in the best interests of, the region and to expand the contribution which YVR makes to local economic development.

The Airport Authority is governed by a Board of Directors, members of which are appointed by nominating entities, namely: The Association of Professional Engineers and Geoscientists of British Columbia; City of Richmond; City of Vancouver; Government of Canada; Metro Vancouver (formerly the Greater Vancouver Regional District); The Institute of Chartered Accountants of British Columbia; The Law Society of British Columbia; The Vancouver Board of Trade. The Board also includes the Airport Authority's President and CEO, and additional members appointed by the Board from the community-at-large.

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<sup>1</sup> Vancouver Airport Authority 2007 Annual Report



The Board oversees the business conduct of the Airport Authority and the activities of management. The Board's fundamental mandate is to ensure that the Airport Authority fulfills its objectives on an ongoing basis and operates in a safe, efficient and reliable manner.

Under the ground lease with the Government of Canada, the Airport Authority is responsible for noise management, including noise complaint and noise monitoring, for aircraft arriving and departing YVR up to 10 nautical miles from the airport. The Airport Authority is required to have a noise management plan that is approved by the Minister of Transport. Aircraft operating outside this 10 nautical mile radius and those travelling to and from airports other than YVR are the responsibility of others.

### **1.3 Key Stakeholders - Transport Canada / NAV CANADA / Local Municipalities**

While the Airport Authority has been delegated the responsibility for managing noise around YVR, there are other key stakeholders that have roles in ensuring a successful noise management strategy.

#### Transport Canada

Transport Canada is the federal department that regulates aviation in Canada. The role of Transport Canada is to develop up-to-date, relevant transportation policies and legislation and to maintain a high level of safety and security.

The responsibilities of Transport Canada include: reviewing, approving, and publishing of new noise control measures at airports; and, conducting enforcement of suspected violations of the published Noise Abatement Procedures. Transport Canada is responsible for managing noise issues outside the 10 nautical mile radius from YVR as well as for enroute operations.

#### NAV CANADA

NAV CANADA was incorporated in May 1995 as a non-share capital corporation and became responsible for Canada's Civil Air Navigation System ("ANS") in November 1996 under the Civil Air Navigation Services Commercialization Act.

NAV CANADA provides air traffic control, airspace design and aeronautical information services throughout Canada. NAV CANADA's primary mission is safe, efficient and effective delivery of air navigation services.

Major facilities operated by NAV CANADA in the Lower Mainland include the control towers at many of the airports (including those at YVR, Boundary Bay, Pitt Meadows, and Vancouver Coal Harbour), and the Area Control Centre located in Surrey.

In addition, NAV CANADA operates and maintains navigation and approach aids and equipment, and is responsible for regular engineering flight checks for all runway landing systems to ensure equipment is operating in compliance with strict standards prescribed by Transport Canada.

#### Local Municipalities

In the Province of British Columbia, the responsibility for land use planning has been delegated to local municipalities. Federal guidelines have been developed to assist in land use planning in the vicinity of airports and associated flight paths. It is the responsibility of the municipality to adhere to these guidelines to effectively reduce the impact on residential and other noise sensitive areas.

Any gains achieved through quieter aircraft technology and airport noise control measures are negated if incompatible, noise sensitive developments are permitted near an airport.



## 2.0 Rules & Regulations Related to Noise Management

### 2.1 Canadian Aviation Regulations (CARs)

The *Aeronautics Act* allows the Minister of Transport to regulate aviation in Canada, and the regulations governing aeronautics in Canada are found in the *Canadian Aviation Regulations* (CARs). The CARs can be viewed in full on Transport Canada's website at [www.tc.gc.ca](http://www.tc.gc.ca) and cover the broad range of areas that Transport Canada Civil Aviation is mandated to regulate, including standards for aircraft noise and air emissions, minimum aircraft altitudes, noise abatement and noise control procedures, and aircraft maintenance requirements.

Figure 1 provides a brief summary of the regulations and relevant guidelines governing aeronautical noise at airports in Canada.





## FIGURE 1

## Aeronautical Noise at Airports in Canada – Regulations and Guidelines

*Descriptions are summaries only. The CARs (Canadian Aviation Regulation) section numbers are identified where applicable.*

**Noise Abatement Procedures (NAP)**

Primarily intended for jet aircraft, the NAP specifies departure/arrival procedures, preferential runway determination, altitude restrictions, and night restrictions. Procedures in the NAP are enforceable by Transport Canada. [CAR 602.105]

**Vertical Noise Abatement Procedure (VNAP)**

For jet take-offs, the 'A' or 'B' procedures specify reduced engine power for noise mitigation at prescribed altitudes, consistent with flight safety requirements. The 'A' procedure results in lower noise close to the airfield (slower climb speed), while the 'B' procedure results in lower noise farther from the airfield (faster climb speed). [CAR 602.105]

**Minimum Aircraft Altitudes**

This regulation prescribes 1,000 feet as the minimum altitude that an aircraft may fly over a built-up area (500 feet over water), unless the aircraft is conducting a take-off, approach or landing (other exemptions may also apply). [CAR 602.14-602.16]

**Airworthiness Standards (Chapter 516) - Aircraft Noise**

This standard prescribes the noise certification requirement for civil aircraft in Canada, at the time of manufacture. This standard has adopted the noise classification of ICAO Annex 16, and identifies civil subsonic jet aircraft as either Chapter 2 (old technology, noisier), Chapter 3 (new technology, quieter), or Chapter 4 (newest technology). [CAR 511.01]

**TP1247E – Land Use in the Vicinity of Airports**

Transport Canada document that provides guidance on compatible land uses around airports based on the Noise Exposure Forecast (NEF) contours. Transport Canada discourages residential developments in areas exposed to NEF 30 or greater. In British Columbia, the responsibility rests with the municipalities to incorporate these guidelines into their planning practices.

**Canada Flight Supplement & Water Aerodrome Supplement**

Used as a reference for planning and safe operating procedures at Canadian aerodromes. These supplements detail aerodrome/runway facilities, navigation aids, and hours of operation. There are specific procedures for each aerodrome in Canada.

**Noise Mitigation Procedures: Aircraft Engine Run-ups**

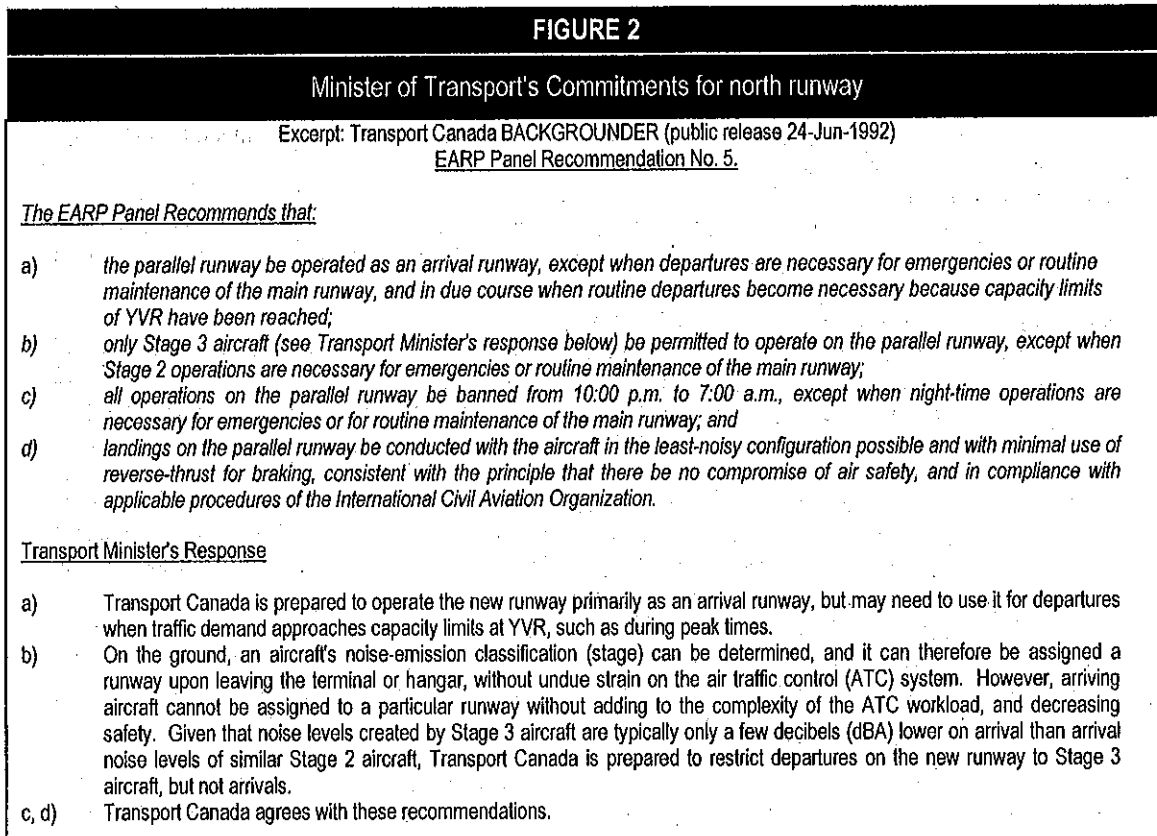
Distributed as an YVR Airport Operations Directive, the procedures are applicable to all operators conducting maintenance engine run-ups for fixed and rotary wing aircraft. The procedures designate run-up locations, required aircraft headings, and permissible power settings based on the time of day.



## 2.2 North Runway (08L/26R) and Minister's Commitments

The north runway (08L/26R) was opened in November 1996. The project to construct this runway was reviewed extensively as part of the federal Environmental Assessment and Review Process (EARP). The assessment included the preparation of an Environmental Impact Statement and provided for the project to be the subject of public hearings by the EARP Panel.

In 1992, the Minister of Transport made several commitments regarding the use of the north runway in response to the EARP Panel recommendations. These operating commitments are summarized in Figure 2.





### 3.0 YVR Aeronautical Noise Management Program

#### 3.1 Program Objectives

The goal of the YVR Aeronautical Noise Management Program 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 enjoyable urban living and the airport services that support the economy of British Columbia.

The Program is based on the fundamental principle that proposed changes for noise control must be objectively analyzed and evaluated in consultation with affected stakeholders.

Program goals are achieved through a variety of means, including:

- Developing policies and procedures in consultation with the YVR Aeronautical Noise Management Committee (which includes community and industry representatives)
- Examining noise abatement procedures governing take-offs and landings, runway use, hours of operations, aircraft type
- Identifying community issues and implementing initiatives outlined in the Noise Management Plan
- Responding to public questions and concerns
- Participating in and supporting international efforts to develop new standards and technologies for noise mitigation

The Program constantly evolves in order to respond to changing industry dynamics, new technologies, and feedback received from the community. The approach to solutions is collaborative in nature, and the Airport Authority will not support a change or a new procedure without first objectively assessing impacts and consulting with stakeholders.

#### 3.2 YVR Aeronautical Noise Management Committee

The YVR Aeronautical Noise Management Committee ("Noise Management Committee") was formed in the early 1990s from various technical working groups concerned with noise management at the airport. The Committee's membership was expanded to include community representatives and now provides the forum for the discussion and consideration of all aeronautical noise management issues at YVR. The Committee is chaired by the Airport Authority's Vice President of Community and Environmental Affairs. The stakeholder groups represented are listed in Figure 3.

**FIGURE 3**

**YVR Aeronautical Noise Management Committee Membership (as of 2008)**

The Committee is chaired by the Airport Authority's Vice-President of Community & Environmental Affairs and membership includes:

- Airlines and Aircraft Operators
- Air Navigation Services (NAV CANADA)
- Citizens
  - City of Richmond; City of Vancouver; Corporation of Delta
- Community of First Nations
- Industry Associations
- Governments
  - Federal; Municipal (City of Richmond, City of Vancouver, City of Surrey)
- Vancouver Airport Authority

Purpose

The purpose of the Committee is to provide a balanced forum where parties with an interest in noise management issues can discuss aeronautical noise management at YVR.

Scope

The scope of the Committee shall be limited to aeronautical noise generated from operations associated with YVR. The scope of the Committee is to discuss, analyze, and provide advice on or make recommendations about noise management through the airport executives, who are accountable for the operational and business decisions on any matters pertaining to aeronautical noise associated with YVR.

The role of the Committee is to:

- Act as a focal point on aeronautical noise management issues
- Provide an interface between the Airport Authority and its stakeholders
- Enhance awareness and understanding of aeronautical noise management issues
- Discuss, analyze, and provide advice on noise management issues
- Provide a forum for stakeholders to provide input on matters related to changes of airport noise control regulations

The Committee is advisory in nature, providing recommendations regarding noise management activities at YVR.

**3.3 Noise Abatement Procedures**

The Noise Abatement Procedures for YVR are published in the Canada Air Pilot - British Columbia edition. The procedures can be referred to as the "noise rules" for the airport which rely on the co-operation of pilots, air traffic controllers and favourable operating conditions such as weather, runway conditions, and air traffic patterns. The effectiveness of procedures depends on the location of noise sensitive areas in relation to the runways being used for arrivals and departures.



The Noise Abatement Procedures for YVR has sections covering the following main items:

1. Departure and arrival procedures
2. Reverse thrust
3. Night restrictions
4. Preferential runway use
5. Engine run-up restrictions
6. Altitude restrictions

Operating in compliance with the Noise Abatement Procedures is the responsibility of aircraft operators. Suspected incidents of non-compliance can be subject to investigation by Transport Canada Civil Aviation Enforcement.

The Airport Authority regularly conducts audits for compliance, and if an operator is suspected of operating in non-compliance, the incident will be reported to Transport Canada for their review and assessment. If warranted, Transport Canada will conduct an investigation and may assess fines of up to \$5,000 for individuals and \$25,000 for corporations.

In addition, anyone suspecting an aircraft of operating in an unsafe manner or contrary to published procedures or regulations can forward the details of the incident to Transport Canada at:

TRANSPORT CANADA  
620 - 800 Burrard Street  
Vancouver, BC V6Z 2J8

### 3.3.1 Amending or Introducing a Noise Control Measure at an Airport

Transport Canada established a protocol<sup>2</sup> to ensure that proposed new or amended noise control measures at an aerodrome have been subject to an impact assessment and that all affected stakeholders have been consulted. Details of the analysis and consultation must accompany the proposed noise control measure when submitted to Transport Canada for review and approval.

Analysis must include:

- A description of the problem
- Proposed solution (including exceptions)
- Alternatives (such as alternative procedures or land uses in the community)
- Costs (such as revenue impact, direct and indirect costs to the community, airport operator and airport users)
- Noise impacts of the proposed solution
- Effects on aircraft emissions
- Effect on current and future airport capacity
- Implications of not proceeding with the proposal
- Implementation issues (e.g. aircraft technology; availability of replacement aircraft; ground facilities)
- Impact on the Aviation System
- Safety implications
- Air traffic management
- Fleet impact

Consultations must include the following stakeholders:

- Airport management/operator

<sup>2</sup> As outlined in the Transport Canada Advisory Circular (AC) – Implementation of New or Amended Noise Abatement Procedures 3002-002.



- Noise management committee (where applicable)
- Community representatives
- NAV CANADA
- Air Transport Association of Canada (ATAC)
- Canadian Business Aviation Association (CBAA)
- Canadian Owners and Pilots Association (COPA)
- All scheduled operators who operate at the airport
- Transport Canada
- All fixed base operators on the airport

If the proposal is supported by all stakeholders, Transport Canada will likely approve the proposal and publish the procedure. If the proposal does not have consensus, the dissenting views must be documented and included with the other information sent to Transport Canada. In these cases, the proposal is reviewed by the Civil Aviation Regulatory Committee, who will either approve or deny the proposal.

### **3.4 Aircraft Noise Monitoring & Flight Tracking System**

Noise monitoring and assessment is a major component of the YVR Aeronautical Noise Management Program. To monitor noise levels and aircraft operations in the vicinity of the airport, the Airport Authority has an Aircraft Noise Monitoring & Flight Tracking System.

The current Aircraft Noise Monitoring & Flight Tracking System, GEMS by Lochard of Australia, was installed in 1995 and replaced the old Brüel & Kjaer noise monitoring system operating at the airport since 1987. Unlike the Brüel & Kjaer system, the GEMS System receives radar flight track information through a dedicated feed from NAV CANADA.

Data from the system allows the Airport Authority to assess noise levels around the airport and in surrounding communities, identify trends, support proposed changes to Noise Abatement Procedures, and check for compliance with published procedures.

#### **3.4.1 System Upgrade Project**

In 2008, the Airport Authority began a project to upgrade the GEMS System to the ANOMS System, also by Lochard. The project includes upgrades of all software and system hardware, including all the noise monitoring terminals in the community. In addition to the hardware upgrades at the existing 16 noise monitoring terminal sites, 4 new noise monitoring terminals will be added to the network.

The 4 new sites were identified through a site assessment study completed in 2005 and subsequent work with the local municipalities.

Advanced features of the ANOMS System include:

- Integrated weather and pilot advisory information
- Integrated voice recording of pilot and air traffic control communications
- Better compatibility and data exchange capabilities with MS Office software
- Web tool support - such as WebTrak, a web interface that will allow the community to view dynamic 'real-time' and historical flight tracks, noise levels, and register concerns on-line
- Portable noise monitoring capabilities

Results of noise monitoring are summarized and reported in the annual noise reports made available on the Airport Authority's website.



### 3.5 Public Response and Communication

Providing information on aircraft noise and airport operations to the community and other groups is an important component of the YVR Aeronautical Noise Management Program.

While the Airport Authority is responsible for responding to noise complaints regarding YVR operations within 10 nautical miles of the airport, the management of complaints currently extends beyond this boundary.

The following are the main methods by which the Airport Authority receives noise complaints:

- Email – [noise@yvr.ca](mailto:noise@yvr.ca)
- The 24-hour YVR Noise Information Line (telephone 604-207-7097)
- Letters or faxes (604-276-6699)

Complaints are also relayed from other parties such as members of the YVR Aeronautical Noise Management Committee, NAV CANADA, municipal officials, government departments or airport officials.

The Airport Authority treats all complaints seriously and information provided by the complainant is kept confidential.

#### 3.5.1 Complaint Handling - Investigation

An investigation is conducted if a complainant cites a specific incident and provides sufficient information. During an investigation, the radar flight track of the aircraft will be reviewed for compliance with the published Noise Abatement Procedures and applicable regulations. Further information may be gathered through discussions with air traffic control or the aircraft operator.

If the complaint deals with a specific incident, the complainant is provided an explanation. The majority of complaints, however, are either of a general nature, for example - "the airport noise level is increasing", or about fully complaint operations for which only general information can be provided.

In incidents where the Airport Authority suspects an operator of not properly following procedures, the incident is reported to Transport Canada for further investigation and possible enforcement action. During the course of Transport Canada's investigation, the Airport Authority will assist and provide information requested by inspectors.

In addition, the Airport Authority will forward complaints associated with aircraft not operating to or from YVR to Transport Canada.

#### 3.5.2 Complaint Data Analysis and Reporting

Information provided by the complainant is entered into a database, which is used to further analyze complaints in order to identify recurring events and general trends. Information requested from the complainant includes: name; address; contact information – telephone and email; and details of the incident. With this information, complaints to be analyzed by date/time, activity, complaint location, aircraft type, time of event and time of call.

A report summarizing complaints received during the quarter is presented to the YVR Aeronautical Noise Management Committee during the quarterly meetings. These reports provide a brief summary of complaint statistics, significant incidents, and noise management activities undertaken. Committee members may recommend measures to address particular issues, where applicable.

At year-end, a comprehensive annual noise management report is produced, and made available to the public on the Airport Authority's web site. Information contained in this report includes:



- Summary of work on initiatives contained in the YVR Noise Management Plan
- Statistics on aircraft operations
- Analysis of noise complaint trends and noise monitoring data
- Results of studies recommended by the YVR Aeronautical Noise Management Committee or directed by the Airport Authority

#### 4.0 Five Year Action Plan

##### 4.1 Identifying Current Community Issues

To identify current community issues during the early phases of preparing the 2009-2013 YVR Noise Management Plan, the Airport Authority reviewed and analyzed noise complaint records, consulted with the YVR Aeronautical Noise Management Committee, and canvassed the community via a web survey.

###### *Analysis of Noise Complaint Records*

An analysis of over 2,500 complaints received in 2007-2008 was undertaken to identify and categorize the main issue(s) of concern. In addition, comments received at various open houses and community meetings were also analyzed.

###### *Web Survey*

An online survey was conducted during the fall of 2008. The survey was accessible directly off the airport's website homepage. Advisory notices were placed in the local papers informing the community of the survey. The survey contained open ended questions to solicit thoughts and inputs on whatever issues the participant in the survey might have. Approximately 340 individuals completed the survey during the two month period it was posted.

The issues identified from all these sources of input were then broadly grouped into categories correlating the responses to the geographic area. Table 1 illustrates the grouping of issues by community.





TABLE 1					
Current Community Issues Identified during Plan Preparation					
Issue	Richmond	Vancouver	Delta	Surrey	Burnaby / Others
Night-time operations	■	■	■ (1)	■	
Run-ups	■	■			
Take-offs/departures	■	■			
Use of north runway for departures and at night*	■	■			
Low flying aircraft	■	■	■	■	■
Flight routes	■	■	■	■	■
YVR float operations	■				
Non-YVR aircraft Operations	■ (2)	■ (2)	■	■	■
ILS flight inspections	■	■			
Older Chapter III aircraft				■	
2007/2008 Lower Mainland airspace changes			■	■	

\* Use of the north runway at night occurs during emergencies or periods of maintenance

- Notes: (1) Majority of complaints are related to aircraft on westerly routes that depart eastbound due to winds.  
 (2) Majority of complaints related to float planes operating from Vancouver Coal Harbour.



#### 4.2 2009-2013 Initiative List

A list of initiatives has been generated to address the issues identified. This list was augmented with input received through members of the YVR Aeronautical Noise Management Committee, the community via the web survey, a review of work on initiatives in the 2004-2008 Noise Management Plan (see Appendix A for a summary of work completed), and a comprehensive review by Wyle Aviation Services on noise management practices at other airports. The Wyle report attempted to identify effective noise management practices used at other airports for consideration at YVR.

##### *Analysis of Noise Management Best Practices*

Wyle Aviation Services was selected to conduct this review due to their extensive experience in performing aviation noise studies for the U.S. Federal Aviation Administration (FAA), the National Aeronautics and Space Administration (NASA), and the U.S. Department of Defense, domestic and international airports (including several in Canada), local governments, and private entities.

As part of their work, Wyle examined management activities in the following topic areas:

- Alternative noise metrics to supplement the Noise Exposure Forecast
- Area Navigation (RNAV)/Required Navigation Performance (RNP)
- Communication
- Continuous descent arrivals (CDA)
- De-rated thrust departure procedures
- Flight tracking system
- Float plane noise abatement
- Ground run-up enclosure/hush house
- APU usage
- Nighttime restrictions/curfew
- Noise complaint management system
- Noise disclosure in real estate transactions
- Noise program web portal
- Noise stakeholder advisory committee/roundtable
- Non-acoustic mitigation measures
- Operator compliance with Noise Abatement Procedures
- Preferential runway use
- Restrictions on ground run-up operations
- Stakeholder outreach and education
- Thrust reverse – reduction and monitoring

The Wyle report identified best practices in these areas. This information will be used to enhance existing noise management practices at YVR and form the basis of future work on the initiatives contained in this Plan.



*Initiative List*

Based on all information collected from the YVR Aeronautical Noise Management Committee, the web survey, and the review by Wyle the following 16 initiatives identified for the 2009-2013 YVR Noise Management Plan and the year in which work is anticipated to commence are presented in Table 2.

TABLE 2					
Initiatives for the 2009-2013 YVR Noise Management Plan					
Initiative	2009	2010	2011	2012	2013
Night-time operations	✓				
Arrivals and departures		✓			
Demand Management			✓	✓	✓
Run-ups	✓	✓	✓		
ILS flight Inspections	✓				
Float plane over-flights	✓				
YVR float plane operations	✓	✓	✓		
Education and awareness – Industry			✓		
Land use planning		✓			
Noise abatement procedures	✓	✓	✓	✓	✓
Noise monitoring terminal network			✓		
Portable noise monitoring terminal	✓	✓			
Airport Noise & Operations Monitoring System	✓				
Communication	✓	✓	✓	✓	✓
Aircraft technology	✓	✓	✓	✓	✓
Roles and responsibilities	✓				



These initiatives and a description of their supporting tasks are presented in Table 3. The YVR Aeronautical Noise Management Committee will play an integral role in completing the tasks and providing input on how best to proceed:

TABLE 3			
2009-2013 YVR Noise Management Plan Initiatives			
No.	Initiative	Proposed Task	
1	Night-time Operations	1.1	Review current guidelines for granting approval for operations for jet aircraft between the hours of mid-night and 0700 local
		1.2	Prepare a study assessing the impacts of extending the current prior approval requirement for jet operations between the hours of mid-night to 0700 local to all aircraft.
		1.3	Explore the feasibility of developing a night-time Standard Instrument Departure (SID) procedure for aircraft on westerly routes departing runway 08.
2	Arrivals and Departures	2.1	Support and work with NAV CANADA during the implementation of Area Navigation (RNAV) and Required Navigation Performance (RNP) procedures in an effort to minimize over-flights of populated areas wherever possible.
		2.2	Support Transport Canada in their project to replace the current Vertical Noise Abatement Procedures with Noise Abatement Departure Procedures.
		2.3	Explore the use of de-rated thrust take-off procedures.
3	Demand Management	3.1	Develop scope of work and undertake an airside capacity study to assess various demand management strategies to conserve YVR's airside capacity.
		3.2	Collect information and statistics on aircraft ground operations, including actual taxi times and delay. This information would feed into models and simulations needed for demand management studies.
		3.3	Work to establish an ongoing mechanism for coordinating Lower Mainland airport activities and encouraging dialogue at both the operational and senior management/governance levels.

4	Run-ups	4.1	Assess engineering noise control measures for propeller engine run-ups and build a dedicated run-up facility of propeller aircraft if feasible.
		4.2	Explore the use of multi-lateration technology and CCTV cameras to monitor compliance with the Engine Run-up Directive.
		4.3	Review other possible control mechanism for enforcement of Engine Run-up Directives.



**TABLE 3**  
**2009-2013 YVR Noise Management Plan Initiatives**

No.	Initiative	Proposed Task	
		4.4	Assess further restrictions on run-up activities - hours / duration.
5	ILS Flight Inspections	5.1	Develop education and awareness web material explaining the ILS system and required flight inspections.
		5.2	Enhance community web-based notification of upcoming ILS flight inspections.
6	Float Plane Over-flights	6.1	Develop education and awareness web material explaining over-flight routes and encourage Transport Canada to address these non-YVR operations.
7	YVR Float Operations	7.1	Enhance education and awareness of community issues through regular meetings with the float plane operators.
		7.2	Create "preferred" arrival and departure routes for the Fraser River, monitor use, and report to operators.
		7.3	Review and assess voluntary restrictions on float plane operations, e.g. 2 vs. 3-bladed propeller, time of day.
8	Education and Awareness - Industry	8.1	Develop a training module on noise management for flight schools.
9	Land Use Planning	9.1	Develop material for the web that provides clear concise information for areas affected by aircraft noise. Link this to the municipal websites.
		9.2	Support and encourage municipalities to prohibit new residential development in high noise areas. Encourage municipalities to implement covenants, notification, and insulation standards should they permit developments in high noise areas .
		9.3	Continue with reviews of municipal development plans and discourage non-compatible land uses in high noise areas.
10	Noise Abatement Procedures	10.1	Undertake annual review of published procedures with the aim of continual improvement.
11	Noise Monitoring Terminal Network	11.1	Undertake a regular review of the Noise Monitoring Terminal network to determine if additional terminals are required.
12	Portable Noise Monitoring Terminal	12.1	Perform routine monitoring using the portable Noise Monitoring Terminal and report publically on the monitoring results.
13	Airport Noise & Operations Monitoring System	13.1	Explore the use of WebTrak and other web-based tools to enhance information exchange with the community.
14	Communication	14.1	Review the Terms of Reference for the YVR Aeronautical Noise Management Committee.
		14.2	Increase use of the web to provide information and updates on noise management activities.
		14.3	Prepare and publish regular web-based noise monitoring reports.
		14.4	Develop and trial a community liaison program.



TABLE 3

## 2009-2013 YVR Noise Management Plan Initiatives

No.	Initiative	Proposed Task	
		14.5	Develop an email notification system that advises the community of particular operations at the airport – e.g. maintenance, north runway departures to reduce delay, ILS flight checks, etc.
15	Aircraft Technology	15.1	Provide input through national (Aircraft Noise & Emissions Committee) and international (Airports Council International) groups to promote increased noise certification standards and lobby for phase out of older noisier Chapter III aircraft.
16	Roles and Responsibilities	16.1	Clarify roles and responsibilities between Airport Authority, Transport Canada, and NAV CANADA regarding noise management activities.

## 5.0 Contact Information

**Prepared by:**

Environment Department  
Vancouver Airport Authority  
P.O. Box 23750 Airport Postal Outlet  
Richmond, BC V7B 1Y7

YVR Noise Information Line: (604) 207-7097

E-mail: [noise@yvr.ca](mailto:noise@yvr.ca)

Web: [www.yvr.ca](http://www.yvr.ca)



## APPENDICES



## APPENDIX A

The Airport Authority, in collaboration with the YVR Aeronautical Noise Management Committee and other stakeholders, completed many of the 17 initiatives identified in the 2004-2008 YVR Noise Management Plan.

Some of the main highlights of work include:

- Completed the construction of a dedicated run-up area at the western most end of Sea Island.
- Introduced the YVR Fly Quiet Awards, awarded to airlines with the lowest average annual noise levels, to promote education and awareness among the operators. The awards are presented at the annual YVR Chief Pilot's Meeting and the names of the winners are published on the airport's website and in other media.
- Worked with NAV CANADA to trial and assess a RNAV (Area Navigation) approach procedures at night. With successful completion of the trials, the amendment was subsequently published in the Canada Air Pilot.
- Initiated the upgrade of the Aircraft Noise Monitoring and Flight Tracking System, including the addition of 4 new noise monitoring terminals to the current inventory of 16.

To address community concerns raised about float plane operations at YVR, a new initiative (#18 - YVR Float Operations) was added during the course of the 2004-2008 YVR Noise Management Plan.

A summary of work completed on all 18 initiatives can be found in the table below. More detailed summaries can be found in past annual noise reports.

Review of Past Work – 2004-2008 YVR Noise Management Plan		
No.	Initiative	Completed Actions
1	Night-time Operations	<ul style="list-style-type: none"> <li>▪ Completed a study assessing the market and regulatory factors influencing the frequency and type of night-time operations at YVR. Factors assessed included the Canada-U.S. Open Skies Agreement, fifth freedom rights between countries, and increasing flight range of new aircraft.</li> </ul>
2	Capacity and Delay Reduction	<ul style="list-style-type: none"> <li>▪ Worked with NAV CANADA to assess various options for standard instrument departure procedures to accommodate simultaneous parallel independent departure operations.</li> <li>▪ Prepared seasonal demand forecast and compared against guidelines for use of the north runway for departures to reduce delays. These guidelines were established as a result of an extensive airside capacity study completed in 2000.</li> </ul>
3	Engine Run-ups	<ul style="list-style-type: none"> <li>▪ Completed construction of a dedicated run-up area at the western end of Sea Island.</li> <li>▪ Updated the YVR Engine Run-up Airside Directives to incorporate the new run-up area and improve clarity.</li> <li>▪ Met annually with aircraft maintenance engineers to discuss various issues, including noise abatement and run-ups.</li> <li>▪ Issued Operations Bulletins related to run-up noise to all aircraft operators</li> <li>▪ Conducted periods of night patrols to check for compliance with the YVR Engine Run-up Airside Directives.</li> <li>▪ Met with individual maintenance operators to discuss noise complaints and reassign run-up locations to mitigate noise disturbances.</li> <li>▪ Completed a study of run-up operations in 2008 to identify current maintenance trends and to help assess further noise control options, including the potential to construct a ground run-up enclosure for propeller aircraft.</li> </ul>
4	Compatible Land Use Planning	<ul style="list-style-type: none"> <li>▪ Provided input and information to the City of Richmond to assist with the development of their Aircraft Noise Sensitive Development Policy. While the Policy does restrict noise</li> </ul>





Review of Past Work – 2004-2008 YVR Noise Management Plan

No.	Initiative	Completed Actions
		<p>sensitive developments in certain parts of the City, the Airport Authority is concerned that it does permit increased residential development in some areas exposed to high levels of aircraft noise and is not consistent with the Transport Canada land use planning guidelines.</p> <ul style="list-style-type: none"> <li>Measures implemented as part of the Policy include - construction regulations, public disclosure mechanism, provisions of notice, and lawsuit-prevention measures.</li> <li>Provided comments on proposed developments in areas exposed to aircraft noise in an attempt to discourage residential and other noise sensitive developments in high noise areas.</li> </ul>
5	International Noise Standards	<ul style="list-style-type: none"> <li>The Airport Authority participated in International Civil Aviation Organization's (ICAO) Committee on Aviation Environmental Protection meetings through its membership in the Airports Council International. Noise related issues discussed at this meeting included: requirements for noise re-certification of aircraft engines; problems associated with increased population encroachment around airports; and use of alternative noise metrics and modeling.</li> </ul>
6	YVR Aeronautical Noise Management Committee	<ul style="list-style-type: none"> <li>Updated the Terms of Reference for the YVR Aeronautical Noise Management Committee to improve the Committee's function and membership, formalize its scope, mandate and governance structure. This process included soliciting input and comment on the Committee from the community via notices in local papers and on the airport's website.</li> <li>Adopted a process that allows residents to present their concerns directly to the Committee.</li> <li>Invited the City of Surrey to join the Committee.</li> </ul>
7	Social Survey	<ul style="list-style-type: none"> <li>Conducted an annual community survey that includes several questions related to aircraft noise. The survey helps the Airport Authority to understand community annoyance caused by aircraft noise as well as identify ways the community prefers to provide input and receive information.</li> </ul>

8	Air Traffic Control Procedures	<ul style="list-style-type: none"> <li>Worked with NAV CANADA to trial and assess a RNAV (Area Navigation) approach procedure between the hours of 11:00pm and 7:00am. The procedure provided aircraft with a continuous descent profile, thereby reducing fuel burn and noise. Following the successful completion of the trials, a proposal was sent to Transport Canada to amend the Noise Abatement Procedures to allow aircraft to fly the approach. The amendment was published in the Canada Air Pilot.</li> <li>As a result of the airspace changes implemented in May 2007, the Airport Authority met with numerous residents and municipal staff to explain the changes to aircraft operations over the Lower Mainland.</li> <li>Signed a new radar license agreement with NAV CANADA that allows greater use of radar flight tracks when responding to questions and concerns from the community. The previous agreement limited the use of radar flight tracks to internal use within the Airport Authority.</li> </ul>
9	Noise from Non-Aeronautical Developments	<ul style="list-style-type: none"> <li>Completed a study that assessed potential noise-mitigation options for future developments near Templeton Street.</li> </ul>
10	New Noise Metrics	<ul style="list-style-type: none"> <li>While providing input into the City of Richmond's Aircraft Noise Sensitive Development Policy, the Airport Authority augmented the Transport Canada Noise Exposure Forecast information with various noise metrics that evaluated speech interference and sleep disturbance to help identify different planning areas for the City.</li> </ul>



Review of Past Work – 2004-2008 YVR Noise Management Plan		
No.	Initiative	Completed Actions
11	New Technologies	<ul style="list-style-type: none"> <li>▪ Partnered with the University of British Columbia – Department of Mechanical Engineering to support a graduate student studying engine run-ups and outdoor sound propagation to help assist with assigning run-up locations and headings.</li> <li>▪ Conducted sound spectrum and directivity measurements on a CRJ200 jet aircraft. Data from this measurement were added to a database that includes two propeller aircraft, measured previously at YVR. Data was used to assist with assessing various sound propagation models.</li> <li>▪ Began a project to upgrade the current Aircraft Noise Monitoring and Flight Tracking System. This project started in 2008 and is expected to be completed in early 2009. The project includes upgrades of the software and all hardware in the field. An additional four noise monitoring terminals will be added to the network of sixteen terminals already located in the community.</li> </ul>
12	Airport Directive Enforcement	<ul style="list-style-type: none"> <li>▪ Updated the YVR Engine Run-up Airside Directives to incorporate the new run-up area and improve clarity.</li> <li>▪ Issued Operations Bulletins related to run-up noise to all aircraft operators</li> <li>▪ Conducted periods of night patrols to check for compliance with the YVR Engine Run-up Airside Directives, and forwarded incidents of non-compliance to Transport Canada.</li> </ul>

13	Communications & Awareness	<ul style="list-style-type: none"> <li>▪ Prepared annual noise management reports which were subsequently posted on web, mailed out to residents requesting a hardcopy and (presented?) sent to members of the YVR Aeronautical Noise Management Committee.</li> <li>▪ Held several Community Open Houses and Information Sessions</li> <li>▪ Placed community notices advising of planned activities or irregular operations such as runway closures, use of the north runway for departures during peak times, flight inspections of runway instruments, or public information sessions.</li> <li>▪ Targeted e-mail alerts and information bulletins were sent to individuals who registered to receive noise related messages through the new YVR Air Mail e-mail notification system.</li> <li>▪ Introduced the YVR Fly Quiet Awards, which has the goal of raising awareness of noise issues within the aviation community in a friendly manner. Awards are presented at the annual YVR Chief Pilot's Meeting to airlines with the lowest annual average measured noise level. Categories include: propeller and rotary wing aircraft; narrow body jets; and, wide body jets.</li> </ul>
14	Roles and Responsibilities: Vancouver Airport Authority vs. Transport Canada	<ul style="list-style-type: none"> <li>▪ Updated and signed a Memorandum of Understanding (MOU) that outlines and clarifies roles and responsibilities between the Airport Authority and Transport Canada with regards to suspected violations of published Noise Abatement Procedures.</li> </ul>
15	Noise Monitoring Terminal Assessment	<ul style="list-style-type: none"> <li>▪ Completed a study to assess possible sites for additional noise monitoring terminals. Based on the results of this study, new sites were selected for the installation of permanent noise monitoring terminal as part of the project to upgrade the current Aircraft Noise Monitoring &amp; Flight Tracking System.</li> </ul>
16	Master Plan	<ul style="list-style-type: none"> <li>▪ Conducted preliminary noise assessments for the various runway options considered for the 2007-2027 YVR Master Plan.</li> <li>▪ The 2027 YVR Master Plan (the land use plan) was approved by the Minister of Transport, and two future runway options are reserved: a South Parallel Runway or a Foreshore Runway (into the ocean). When a decision is made on which option to exercise, further noise assessments will be undertaken.</li> </ul>
17	5-Year Review	<ul style="list-style-type: none"> <li>▪ Completed</li> </ul>
18*	YVR Float Plane Operations	<ul style="list-style-type: none"> <li>▪ Met with YVR Float Plane Operators to discuss noise issues.</li> <li>▪ Created preferential arrival and departure routes from the river in consultation with the</li> </ul>



## APPENDIX B

The following is a calendar of events during the preparation of the Plan.

Date	Event
11 June 2008	<i>YVR Aeronautical Noise Management Committee Meeting</i> Requested Committee members for their assistance in reviewing the current Plan, and identify new initiatives to include in the new Plan.  Preliminary input subsequently received from the Canadian Business Aviation Association.
July-August 2008	Review and analysis of noise complaint records to identify current community issues.
September 2008	Preparation of initial initiative list to address community concerns identified through the analysis of complaint records.  Retained Wyle Aviation Services to review noise management practices at other airports. Information from this review will help guide future work on the various initiatives contained in the Noise Management Plan.
1 October 2008	<i>YVR Aeronautical Noise Management Committee Meeting</i> Community issues and initial initiative list shared with Committee members. Requested Committee members review material and identify any community issues not captured and to provide comments on the initiatives.  Input subsequently received from City of Vancouver (citizen representatives and staff), and City of Richmond staff.
November – December 2008	Web survey posted to solicit comments and input from the Community.
10 December 2008	<i>YVR Aeronautical Noise Management Committee Meeting</i> Final draft initiative list shared with Committee members. Additional initiatives and tasks added to reflect comments and input received from Committee members and via the web survey.
5 January 2009	Draft Plan distributed to YVR Aeronautical Noise Management Committee for review.
26 January 2009	Draft Plan and results of web survey posted on-line for community review and comment.
February 2009	Final document submitted to Transport Canada for ministerial approval.



## APPENDIX C:

### Summary of Comments

The following attachments are copies of the input received from members of the YVR Aeronautical Noise Management Committee. In addition to these comments, verbal comments were received at meetings of the Committee in October and December 2008.

A summary report of the community input gathered through the web survey as well as the analysis of the complaint database is provided as supporting documents to the Plan and is available on request.



## APPENDIX D

### Acronym List

ANOMS	Airport Noise & Operations Monitoring System
ANS	Air Navigation Systems
CARS	Canadian Aviation Regulations
CCTV	Closed Circuit Television
EARP	Environmental Assessment and Review Process
GDP	Gross Domestic Product
GEMS	Global Environmental Monitoring System
ILS	Instrument Landing System
NAP	Noise Abatement Procedure
NMT	Noise Monitoring Terminal
RNP	Required Navigation Performance
RNAV	Area Navigation
SID	Standard Instrument Departure
VNAP	Vertical Noise Abatement Procedure
YVR	Vancouver International Airport