



To: Planning Committee
From: Victor Wei
Director, Transportation
Terry Crowe
Manager, Policy Planning
Date: June 1, 2017
File: 01-0153-01/2017 – Vol 01
Re: **Richmond Response: The Vancouver International Airport Authority (YVR)
2037 Master Plan Highlights Document**

Staff Recommendations

1. That the Vancouver International Airport Authority (YVR) be advised that the City of Richmond supports YVR's 2037 Master Plan Highlights document outlining YVR's plans to grow to an estimated 35 million passengers by 2037 and that YVR:
 - a. Maximize the capacity of all existing runways, justify the need for any future runway and work with the City to protect the City's interests prior to pursuing any new runway;
 - b. Maintain existing transportation capacity on Sea Island for non-airport users, including the preservation of the existing lanes on the Arthur Laing Bridge, Moray Channel Swing Bridge, the Airport Connector Bridge, and Russ Baker Way for both airport and non-airport traffic;
 - c. Explore alternatives to the proposed extension of Templeton Road which may include widening existing corridors, a more effective use of Cessna Drive and encouraging alternate modes of travel;
 - d. Continue to minimize and mitigate noise, light and other impacts on Richmond residents that may result from airport-related activities; and
 - e. Provide a copy of the final comprehensive YVR 2037 Master Plan document to the City of Richmond for comment, before it is submitted to the Minister of Transport for approval.
2. That the City and the Vancouver International Airport Authority (YVR) continue to work together to coordinate land use, transportation, transit, servicing, amenity and environmental planning;
3. That the Vancouver International Airport Authority (YVR), in conjunction with other regional airports and stakeholders (e.g., NAV CANADA), be encouraged to prepare a Regional Airport Strategy; and

- 4. That a copy of this report be forwarded to the Vancouver International Airport Authority (YVR).

Terry Crowe
for Terry Crowe, MCIP
Manager, Policy Planning
(604-276-4139)
Att. 5

Victor Wei
Victor Wei, P.Eng.
Director, Transportation
(604-276-4131)

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Engineering Transportation Parks Services Policy Planning Economic Development Development Applications	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<i>Terry Crowe</i>
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: <i>TC</i>	APPROVED BY CAO (ACTING) <i>Victor Wei</i>

Staff Report

Origin

This report reviews YVR's proposed 2037 Master Plan Highlights document, analyzes its impacts on the City and provides recommendations that both support the airport's ongoing success and protect the quality of life for Richmond residents.

This report supports Council's 2014-2018 Term Goal #3 A Well-Planned Community:

Adhere to effective planning and growth management practices to maintain and enhance the livability, sustainability and desirability of our City and its neighbourhoods, and to ensure the results match the intentions of our policies and bylaws.

This report supports Council's 2014-2018 Term Goal #5 Partnerships and Collaboration:

Continue development and utilization of collaborative approaches and partnerships with intergovernmental and other agencies to help meet the needs of the Richmond community.

5.1. Advancement of City priorities through strong intergovernmental relationships.

Findings of Fact

2027 20-Year Master Plan

YVR's Master Plan is updated every 10 years. YVR's current Master Plan: *YVR: Your Airport 2027 20-Year Master Plan* was approved by the Minister of Transport in 2008. A key element of that plan was the identification of options for a future third runway:

- A new South Parallel Runway south of the existing South Runway - now called "the Close-In south Parallel Runway"; and
- A new Foreshore Runway extending westward from the Sea Island dyke into the ocean.

Attachment 1 provides a copy of the City's comments on the current 20-Year Master Plan in a Report to Council dated September 6, 2006. The key issues at that time were:

1. The need to further analyse the impacts of a third runway;
2. The importance of not taking existing Sea Island transportation capacity away from other non-airport users;
3. The need for a Regional Airport Strategy; and
4. Ongoing collaboration between the Vancouver International Airport Authority and the City on land use, servicing and other issues.

These issues continue to be relevant today.

YVR 2037 Master Plan Process

In 2015, YVR commenced the preparation of a new Master Plan. The four phases of the planning process are outlined below.

– *Phase 1 - Our World in 2057 (completed September 2015):*

Phase I focused on answering the following questions: What is your vision for the future 40 years from now? What do you think is needed to achieve this vision? What is the ideal airport of the future? How does YVR help meet/serve your vision of the future?

While the Master Plan initially had a 40 year (to 2057), based on feedback, YVR refocused the Master Plan, to look out over a 20 year period (to 2037) for all remaining Phases of the process and gave it a new name: YVR 2037 Master Plan.

– *Phase 2 - Building a World Class Sustainable Airport (completed November 2016)*

The purpose of Phase 2 of the YVR Master plan was to develop options that would respond to airport growth. Six key focus areas were addressed: 1) Terminals; 2) Airside/Airspace; 3) Ground Access; 4) Environment; 5) Community Amenities and 6) Land Use.

As part of Phase 2, YVR provided a high level overview of the Master Plan to City staff. As well, City staff attended several YVR meetings and provided detailed comments on each of the six focus areas. These comments, dated November 30, 2016, are provided in Attachment 2. Ensuring that airport-related growth would not negatively impact Richmond residents and businesses was a main objective of staff's review.

Public consultation in Phase 2 included stakeholder meetings, an open house, community road show events and feedback forms. YVR prepared a Phase 2 Consultation Summary Report, which is available at the following link: <http://www.yvr2037.ca/yvr-2037-backgroundunder/documents/5171/download>. This report includes the City staff's comments from November 30, 2016. High level feedback from all sources includes the following:

- comments about the growth of YVR traffic and how it may increase noise levels in the future;
- support for a future Foreshore Runway, but concerns about its environmental impact;
- general public support for a new North-South taxiway (NST) which would connect the runway ends more efficiently to the terminal; and
- recommendations for enhanced Canada Line service and an expanded cycling network around Sea Island.

At the City's request, YVR provided specific Phase 2 feedback from Richmond residents (Attachment 3). Of the 33 specific Richmond respondents (out of a total of 162), the majority supported the following elements, or commented that they were important:

- greater support for a future Foreshore Runway (14 respondents), than a future South Runway (7 respondents), now called "the Close-In south Parallel Runway";
- minimizing noise impacts to neighbouring communities;

- a priority lane on Russ Baker Way for airport bound traffic to bypass Vancouver-Richmond traffic; and
- extending Templeton Street between Grant McConachie Way and Russ Baker Way (approximately 25 out of 32 respondents indicated that they either “strongly supported”, “supported” or “moderately supported” the extension).

The top three priority amenities for Richmond respondents were: 1) natural areas; 2), a plane spotting platform; and 3) walking trails.

- *Phase 3 - YVR 2037 Master Plan Highlights (completed March 2017)*
In this phase, YVR prepared a draft Master Plan Highlights document (Attachment 4). While not the actual Master Plan, the document identifies a preferred future state for each key plan element. For example, a centralized terminal expansion was proposed as the best way to accommodate an incremental expansion from 22 to 35 million passengers (between 2016 and 2037).

The YVR 2037 Master Plan Highlights document anticipates the need for a possible additional third runway during the timeframe of the 2037 Master Plan. It identifies two possible runway options (i.e., the Foreshore and Close-In South Parallel Runways) and wishes to protect both options, until YVR makes a decision nearer to 2037. YVR notes that they will conduct extensive planning, consultation, environmental permitting and regulatory requirements in selecting and implementing a new runway. Currently, City staff are exploring with YVR staff how to protect the City’s interests and City staff will update Council separately;

- *Phase 4 - Approval of YVR Master Plan: (2017/2018)*
This phase will primarily focus on having the federal Minister of Transport approve the Master Plan. When approved by the Minister, YVR will provide a copy of the Master Plan to Richmond and the public. This phase will also focus on YVR determining key milestones for future consultation during Master Plan implementation.

Further YVR Planning

YVR staff have indicated that they will work closely with City staff and other stakeholders to implement the Master Plan. Recently, YVR staff confirmed that they will start work on a more detailed sub-area plan for the eastern portion of Sea Island later in 2017. This will be the first sub-area plan undertaken by YVR and will include the lands east of Templeton Station, and lands between BCIT and the Dinsmore Bridge. YVR advises that their sub-area plans only require YVR Board approval (not the Minister).

YVR’s Planning Document Hierarchy

Attachment 5 shows YVR’s Planning Document Hierarchy which assists YVR in managing its affairs and addressing the City’s responses.

Analysis

General

The goal of the YVR 2037 Master Plan is to ensure YVR can service its forecasted growth to 35 million passengers. YVR passenger growth correlates directly with the City's growth plans, as set out in the 2041 Official Community Plan (OCP). YVR estimates that reaching 35 million passengers will generate 5,000 to 7,000 additional jobs and \$2.7 billion in additional Gross Domestic Product (GDP). The City's employment projections indicate that 45,000 jobs will be added by 2041, with most of this growth occurring in the City Centre, North Richmond and at YVR. Therefore, passenger growth at YVR will enable the City to achieve its own future employment and job growth objectives.

The draft YVR 2037 Master Plan has been reviewed by City departments including Policy Planning, Transportation, Parks, Engineering and Economic Development. Throughout the planning process to date, YVR staff have been diligent in communicating with and addressing the questions and concerns of Richmond staff. City staff generally support the directions contained in the draft 2037 Master Plan Highlights document. Each of the key Plan elements is summarized below, along with City staff's proposed responses.

YVR's Proposed 2037 Master Plan Highlights and other Considerations

1. *Terminals*

- YVR's recommendation: A centralized terminal expansion to accommodate 35 million passengers by 2037;
- City staff's response: Support, as the recommended airside terminal central expansion does not negatively affect the City.

2. *Airside & Airspace*

a. *Future Runways*

- YVR's recommendation: Preserve both possible third runway options (the Foreshore and Close-In South Parallel Runways);
 - o YVR has indicated its intent to maximize the capacity of all existing runways before pursuing an additional runway; and
 - o Undertaking extensive planning, consultation, environmental permitting and regulatory requirements, to determine the need for and implications of selecting and implementing a third new runway.
- City staff's response:
 - o In response to the Council referral in 2006, City and YVR staff have been exploring the impacts of the third runway on the City and how best to protect the City's interests when the future runway is needed. Staff have consistently advised YVR that the following conditions should be met for any support from the City:
 - maximizing the capacity of all existing runways;
 - justifying the need for a third runway before it is pursued; and

- ensuring that the City's interests and City Centre Area Plan (CCAP) policies are not negatively impacted.
 - YVR staff have also advised that they were planning to preserve both options of the potential third runway. YVR and City staff discussions have so far been focused on the Close-In South Parallel Runway which would have significant impacts on building heights in portions of the City Centre (i.e. Lansdowne Village). To this end, YVR staff have initiated discussions with City staff regarding changes to the airport zoning regulations in order to preserve this runway option. The outcome of these discussions will be reported out separately at a closed General Purposes Committee meeting in June, 2017.
- b. Proposed North-South Taxiway (NST)
 - YVR's recommendation: Construct the NST (across Grant McConachie Way), as a direct link between runway ends and the terminal which YVR expects will enhance efficiency and help reduce GHG emissions;
 - City staff's response: Support.
- c. Expand Use of the North Runway for Departures
 - YVR's recommendation: In the near term, explore expanding the use of the North Runway, to delay the need for an additional runway;
 - City staff's response: Support, as this will allow existing runway capacity to be used and is expected to have no perceptible increase in noise;
 - Note that a separate Council report titled "Richmond Response: YVR Proposed Phase 2 North Runway End Safety Areas (RESA) Options", dated May 8, 2017 (REDMS 5387271) which was presented to Planning Committee on May 16, 2017, indicates staff support for Option 2 for the north RESA, for similar reasons.

3. *Ground Access*

- a. Sea Island Way and Bridge Capacity
 - YVR's recommendation: Explore options for a high priority vehicle lane on Russ Baker Way;
 - YVR has indicated a commitment to good planning principles to ensure that Sea Island roads and bridges are designed, planned and built for the good of all users;
 - City staff's response: That YVR commit to maintaining existing transportation capacity on Sea Island for non-airport users. This approach includes not designating existing lanes on the Arthur Laing Bridge (Federal), Moray Channel Swing Bridge (Provincial), the Airport Connector Bridge (Provincial), or on Russ Baker Way (Federal) for the exclusive use of airport-traffic.
- b. Templeton Road Extension
 - YVR's recommendation: Extend Templeton Road between Grant McConachie Way and Russ Baker Way;
 - City staff's response: That YVR:

- Explore alternatives which may include widening existing corridors, more effective use of Cessna Drive and encouraging alternate modes of travel; and
 - Undertake additional consultation with Burkeville residents and the City, before any extension to Templeton Roast is undertaken.
- c. Bridge Replacement
- YVR’s recommendation: Implement upgrades or replacements to the Dinsmore and Moray Channel Bridges;
 - City staff’s response: Support.
- d. Alternate Modes of Travel
- YVR’s recommendations: Work with TransLink and others to improve transit options and prepare for ridesharing;
 - City staff’s response: Support, subject to YVR continuing to coordinate transportation and transit plans and initiatives with the City.

4. *Environment*

- a. GHG Reductions
- YVR’s recommendation: Cut emissions by 33% over 2012 levels by 2020;
 - Note that YVR’s GHG reduction targets are contained in a separate Environmental Management Plan (EMP), which is updated every five years. The EMP describes additional opportunities including the use of alternative energy sources, the capture and reuse of rainwater, and minimizing waste,
 - City staff’s response: Support (for comparison, the City’s OCP GHG reduction targets are to reduce GHG emissions by 33% from 2007 levels by 2020 and 80% by 2050).
- b. Invasive Species Management
- YVR Recommendation: YVR has indicated that the Master Plan will reference support of native species and drought resistant plants, and they will continue to meet with the City’s environment team;
 - Note that YVR has prepared a draft Invasive Species Management Plan which will be discussed with City staff at a future meeting.
 - City staff’s response: Support.

5. *Community Amenities*

- a. Proposed Middle Arm: (1) Pedestrian & Cycling Bridge and (2) 360 Animation Study
- YVR’s recommendation:
 - While not specifically referenced in the 2037 Master Plan Highlights document, YVR has indicated that they support a future Middle Arm pedestrian/cycling bridge over the Middle Arm and will discuss it, as part of sub-area planning (see item 6b, below);
 - YVR supports the opportunity for a joint Middle Arm 360 Animation Study with the City.
 - City staff’s response: Support. The purpose of the joint study is to improve public access and enjoyment on both sides of and around the Middle Arm. Both

the bridge and the study are expected to be initiated as part of YVR's first sub-area plan for the eastern part of Sea Island.

6. Land Use

- a. Proposed YVR 2037 Master Plan Highlights Land Use Designations - General
 - YVR's recommendation: The designations in the proposed YVR 2037 Master Plan Highlights document are based on the current 2027 Land Use Plan and modified to incorporate potential YVR uses and development beyond the 20-year planning horizon (e.g., protecting two possible future third runway options, protecting land within the airfield for a possible satellite terminal when capacity exceeds 35 million passengers);
 - City staff's response: Support and, to make the Master Plan more readable and user friendly, encourage YVR to include multiple map layers, a complete map legend and references to YVR's sub-area plans.

- b. YVR Land use Designations - Sea Island, Dinsmore Area
 - The 2027 Master Plan designation for this area is:
 - o Groundside Commercial (e.g., includes designated commercial land uses without airside system access such as flight kitchens, car rental service facilities, fuel storage facilities, and other non-airport related, but airport-compatible commercial development activities); and
 - o Ground Access and Parking.
 - The proposed 2037 Master Plan Highlights designation is:
 - o Groundside which includes Aviation Related (e.g., uses that are directly related to ongoing airport operations), Aviation Dependent (e.g., uses that benefit from close access to aviation services) and Aviation Compatible Uses (e.g., uses that support the ongoing development of YVR as a sustainable gateway and connecting hub); and
 - o Ground Access and Parking.
 - City staff response: Support, as YVR's proposed 2037 Master Plan Highlights designations better encourage acceptable airport related uses (e.g., airport education facilities) which do not generate non airport related vehicle traffic.

- c. Future YVR Sub-Area Plans
 - YVR's recommendation: YVR staff have indicated that they will begin working closely with City staff and other stakeholders to implement the Master Plan later in 2017 to address land use issues in more detail through its various sub-area plans:
 - o Recently, YVR confirmed that they will start work on a more detailed sub-area plan for the eastern portion of Sea Island later in 2017 which will be the first sub-area plan undertaken by YVR and will include the lands: (1) east of Templeton Station, and (2) between BCIT and the Dinsmore Bridge.
 - City staff's response: Support, subject to the City and stakeholder involvement in YVR's sub-area plans, and YVR's identification of appropriate land uses (e.g., aviation dependent and compatible uses).

- d. Design Guidelines

- YVR’s recommendation: While not specifically referenced in the 2037 Master Plan Highlights document, YVR has indicated that their internal permitting process already includes design standards and they will improve their urban design guidelines and universal accessibility requirements over time;
- City staff’s response: Support, as this will build on YVR’s unique design framework and capitalize on its gateway role.

7. *Regional Airport Strategy*

- YVR’s recommendation: Although not referenced in the 2037 Master Plan, YVR has indicated that, as there is sufficient airspace capacity, they support a collaborative mechanism to address potential airspace conflicts in a technical forum with NAV CANADA and affected airports.
- City staff’s response: That YVR, in conjunction with other regional airports and stakeholders (e.g., NAV CANADA), be encouraged to prepare a Regional Airport Strategy. (Note that in 2006, the Minister of Transport Canada concluded that the preparation of a Regional Airport Strategy would best reside with the Vancouver International Airport Authority and other regional airport operators.)

Status: YVR’s 2037 Airport Noise Exposure Frequency (NEF) Study

- YVR’s recommendation: YVR has advised that YVR’s latest 2037 Airport Noise Exposure Frequency (NEF) Study does not change its existing 2015 NEF contours or their noise impacts which the City uses to manage its 2041 Official Community Plan (OCP) Aircraft Noise Sensitive Development (ANSD) uses (e.g., residential, provincially approved K - 12 school and day care facilities, and hospitals);
- City staff’s response: Support, as the City can continue using existing OCP ANSD policies which have been accepted by the community and developers.

Financial Impact

None.

Conclusion

YVR is in the process of preparing a new twenty year 2037 Master Plan to replace the current one which was adopted in 2008. The four phase planning process commenced in 2015, with Phase 3, “YVR 2037 Master Plan Highlights” recently completed. City staff have participated throughout the process and YVR staff have been responsive to the City’s comments and concerns. Overall, City staff supports the YVR 2037 Master Plan Highlights document subject to YVR: ensuring that the City’s interests continue to be adequately protected, providing a copy of the actual YVR 2037 Master Plan to the City of Richmond for comment before it is submitted to the Minister of Transport for approval and preparing a Regional Airport Strategy in conjunction with other regional airports and stakeholders (e.g., NAV CANADA).



Tina Atva
Senior Planning Coordinator
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TA:cas

Att. 1: Report to Council dated September 6, 2006, "City Comments – Vancouver International Airport Draft 20-Year Master Plan" (REDMS 2017182 & 1990009)

Att. 2: Richmond City Staff's November 30, 2016 Comments Regarding YVR's Proposed 2037 Master Plan, including YVR's responses dated January 26, 2017 (REDMS 5318736)

Att. 3: YVR 2037 Master Plan Phase 2- Building A World Class Sustainable Airport Consultation Summary Report of Richmond Residents' Feedback September to November 2016 (REDMS 5325724)

Att. 4: YVR 2037 Master Plan Highlights (REDMS 5347867)

Att. 5: YVR's Planning Document Hierarchy



City of Richmond

Report to Council

To:	Richmond City Council	Date:	September 6 th , 2006
From:	Mayor Malcolm D. Brodie Chair, General Purposes Committee	File:	05-1400-20-02/2006- Vol 01
Re:	CITY COMMENTS – VANCOUVER INTERNATIONAL AIRPORT DRAFT 20-YEAR MASTER PLAN		

The General Purposes Committee, at its meeting held on Tuesday, September 5th, 2006, considered the attached report, and recommends as follows:

Committee Recommendation

That, (as per the report dated August 31st, 2006, from the Manager, Policy Planning, and entitled "City Comments - Vancouver International Airport Draft 20-Year Master Plan"):

- (1) The comments in Attachment 1 (to the report dated August 31st, 2006, from the Manager, Policy Planning), except for Section 5.4 regarding the runway, be approved and forwarded to the Vancouver International Airport Authority (VIAA);*
- (2) The matter of the third runway be referred to staff for further analysis, including the need for a further runway, and the impacts of all the runway options including the south runway and the foreshore runway, and that the VIAA be advised accordingly."*
- (3) The City advise the VIAA that it does not support taking existing transportation capacity away from non-airport users, such as designating part of the existing lanes on the Arthur Laing Bridge, Moray Channel Swing Bridge or the Airport Connector Bridge, for exclusive use by airport-traffic, and additional VIAA and City collaboration is required;*
- (4) The City request that Transport Canada, with the Vancouver International Airport Authority and the other regional airports, prepare a Regional Airport Strategy; and*
- (5) The City and Vancouver International Airport Authority continue to work together to better integrate Sea Island, Middle Arm and City Centre land use, transportation, transit, servicing, flood protection management, infrastructure, amenity and environmental planning.*
- (6) The City request that the Vancouver International Airport Authority and the Department of Transport rename the Vancouver International Airport to be the "Vancouver/Richmond International Airport", to be reflective of a shifting regional emphasis and Richmond's premier role in the development of the Asia Pacific Gateway trade, commerce and relationships.*

Mayor Malcolm D. Brodie, Chair
General Purposes Committee

Attach.

VARIANCE

Please note that staff recommended the following for Parts 1 and 2, and that Committee added Part 6:

- (1) The comments in Attachment 1 (to the report dated August 31st, 2006, from the Manager, Policy Planning), be approved and forwarded to the Vancouver International Airport Authority (VIAA);
- (2) The City recommends that a future third runway be located in the foreshore west of Sea Island, with appropriate mitigation;

Staff Report

Origin

On May 11, 2006, the Vancouver International Airport Authority (VIAA) officially released the Authority's draft 20-year Master Plan called *YVR: Your Airport 2027 (Attachment 2)*. The deadline for public comments is August 31, 2006 (VIAA has agreed to extend the deadline to receive the City's comments).

Findings Of Fact

During the past two years, the Vancouver International Airport Authority has undertaken an extensive review of its projected operations for the next 40 years (e.g., Forum '44). Based on a medium-term growth strategy, they have prepared a flexible draft 20-year Master Plan to achieve this growth scenario, without precluding the potential for further growth related improvements over a 40-year period.

The Airport Authority conducted extensive consultations on this draft plan this summer with its key stakeholders, the GVRD, municipalities, business partners and the general public. Feedback on the recommendations will be used in refining the 20-year Master Plan. The Airport Authority must submit the proposed 2027 Airport Land Use Plan to the federal Minister of Transport for approval in 2007.

The draft plan key recommendations for the 2007-2027 planning period include:

1. Maintaining YVR's position as the region's premier airport;
2. Maximizing existing runway efficiency;
3. Expanding the passenger terminal facilities;
4. Providing convenient and efficient ground access to the airport; and
5. Securing options for future runway expansion.

The City recognizes the airport's very significant strategic and economic importance to the City, the Greater Vancouver Regional District, the Province and Canada. The City of Richmond and the Vancouver International Airport Authority have cooperated extensively over the years in establishing mutually agreeable arrangements on matters of common interest. Liaison has included regular meetings and presentations by the Airport Authority to City Council and staff, and the inclusion of City nominated representatives to the Airport Authority Board of Directors, as well as to the Airport Noise Management Committee and the Environmental Advisory Committee. On July 11, 2006, the VIAA held a public meeting regarding airport plans and noise management, the findings of which will be presented to the General Purposes Committee on a date to be determined in the Fall 2006.

Analysis

General

The draft 20-year Master Plan, *YVR: Your Airport 2027*, has been referred to and reviewed by City departments, including Finance, Policy Planning, Transportation, Parks, Engineering, Police, and Fire.

On the whole, the Airport Authority is to be commended for the innovative dialogues it has held with stakeholders to look 40 years into the future, and in taking a good step by developing a 20-year Master Plan based on these visioning sessions. The City supports the VIAA Gateway

concept, which sees the airport as a vital link for business and travel between the Asia-Pacific region and the Americas.

The City's comments on the Draft 2027 Plan are presented in **Attachment 1**, and include:

- Support for the sustainability framework; promoting economic growth, environmental stewardship and a quality work environment; and transparent and accountable governance to achieve these goals;
- Support for the conservative and incremental approach to new development;
- Support to continue to explore airport demand management options, including consultation with regional airports, to allow for certainty of infrastructure investment and increased growth while minimizing the need for future runway expansion;
- Support for passenger terminal expansions that realize the potential of the Canada Line for ground transportation;
- Support for further discussions on the proposed ground transportation road network in coordination with the City; and
- Support for improved Airport and City integrated land use, servicing, trail, open space, infrastructure, flood protection management and environmental planning between Sea Island and the City Centre.

Proposed Third Runway in Foreshore (Attachment 1, Item 5.4)

In the eventuality that future airport demand requires the planning and construction of a third runway, the City recommends that it be located in the foreshore west of Sea Island. This location will minimize the negative impacts on the City (e.g., aircraft noise and building height limitations), subject to significant environmental review and mitigation measures and further investigation of airport demand management strategies. As the City extensively reviewed the aircraft noise implications in 2004, and given that a new south runway would generate greater negative impacts than a foreshore runway, the latter is recommended. Mitigation, as appropriate, is recommended.

Taking Away Existing Non-Airport Transportation Capability (Attachment 1, Item 7.4)

Regarding ground transportation improvements required to meet the future needs of the airport, the proposed YVR Master Plan recommends:

- Working with partner agencies and governments to ensure priority for airport traffic as non-airport demands for bridge capacity intensify;
- Implementing a dedicated airport access lane northbound on Russ Baker Way; and
- Protecting the Middle Arm Bridge access (Sea Island Connector/Moray Channel Bridge) from encroachment by non-airport traffic, working with government partners to replace the Moray Channel Swing Bridge and improving access to Highway 99.

While staff recognize that road capacity may need to be expanded to meet the future ground traffic movements in and out of Sea Island, the transportation improvement strategy must take into consideration the impacts on existing non-airport users of the roadway system. Given that the majority of the road users of the bridge system in the area are non-airport related, any measures effecting the reduction of capacity for these users would cause severe traffic delays and

congestion, and therefore have significant community impacts. The continued cooperation between VIAA and the City in developing mutually acceptable solutions is essential to ensure that the two parties will continue to benefit from growth in both areas. This is consistent with the spirit of the 1992 agreement between Transport Canada and the City for connecting the No. 2 Road Bridge to the Russ Baker Way/Arthur Laing Bridge corridor.

Staff therefore recommend that the City continue to work with the VIAA to jointly develop the ground transportation strategies that would not negatively impact on the existing road capacity for non-airport users in the area.

Regional Airport Strategy (Attachment 1, Item 13.1)

The demand for the further expansion of facilities at Vancouver International Airport needs to be reviewed in context with the roles and options for the expansion of the other regional airports. The City supports the Airport Authority recommendation to establish an ongoing mechanism for coordinating Lower Mainland Airports at the operational and governance levels.

Staff recommend that Transport Canada be requested to initiate a Regional Airport Strategy among Transport Canada, VIAA and the other regional airports (Abbotsford, Boundary Bay, Chilliwack, Pitt Meadows, Langley). This work is essential to provide land use and infrastructure investment certainty by defining, in a mutually agreeable manner, the long term role of each airport (e.g., their respective international/domestic/ sea plane/small aircraft/jet and passenger/cargo roles and volume splits).

This Regional Airport Strategy will ensure certainty among regional airports, the GVRD, Translink and municipalities who invest in airport growth, infrastructure, roads and services.

Sea Island, Middle Arm and Lulu Island Planning (Items 7.0 and 12.1)

The City is currently updating the City Centre Area Plan. As the VIAA is preparing to update its own Land Use Plan, there is an excellent opportunity for both parties to better coordinate their efforts in order to achieve an integrated plan for the Middle Arm and the shoreline areas. An integrated plan will promote complementary and effective land uses and high quality amenities, including improved pedestrian and bicycle connections, parks, trails, and environmental quality, particularly along both sides of the Middle Arm.

The City and VIAA will continue to work together in areas of the public interest, including:

- Transportation and transit planning;
- Safety and security measures;
- Fire and rescue service delivery and response capabilities;
- Co-ordination of flood protection; and
- Aircraft noise mitigation.

City-VIAA Staff Consultation to Date

City and VIAA staff have discussed this report, and:

- Agree on most matters, including the YVR Gateway Strategy.
- Disagree on the following matters:
 - Proposed South Parallel Runway; and

- Exclusive Airport use of Arthur Laing Bridge or the Airport Connector.

Financial Impact

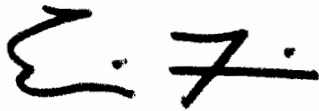
None.

Conclusion

Staff recommend that the City provide the Vancouver International Airport Authority with comments on the Draft 20-Year Master Plan entitled *YVR: Your Airport 2027*, as per **Attachment 1**.

In particular, staff recommend that:

- The City support the proposed foreshore runway option;
- Transport Canada work with the VIAA and regional airports and federal agencies to establish a Regional Airport Strategy; and
- The City and VIAA continue to work together to coordinate land use and transportation planning efforts for the Middle Arm and adjacent areas.



Eric Fiss
Policy Planner (4193)

EF:cas

Attachment 1: Summary of City Comments Regarding the Draft 20-Year Master Plan
Attachment 2: YVR: Your Airport 2027, Draft 20-Year Master Plan for Consultation

City Comments

YVR: Your Airport 2027 Draft 20-Year Master Plan for Consultation

	ISSUE	CITY COMMENTS
1.0	OVERVIEW	
1.1	<p>The Airport Authority's key recommendations for the 2007-2027 planning period, as contained in the report <i>YVR: Your Airport 2027</i>, include:</p> <ol style="list-style-type: none"> 1. Maintaining YVR's position as the region's premier airport; 2. Maximizing existing runway and taxiway efficiency; 3. Expanding the passenger terminal facilities; 4. Providing convenient and efficient ground access to the airport; 5. Securing options for future runway expansion. 	<ul style="list-style-type: none"> • The Airport Authority is commended for their thorough process and communications program, and in particular for their engagement of youth as a key stakeholder. • Support for key recommendations, as follows: <ol style="list-style-type: none"> 1. Support 2. Support 3. Support, as required to meet terminal capacity demands 4. Support 5. Support, provided that impacts on City livability and the environment are minimized
2.0	YVR GATEWAY STRATEGY	
2.1	To be a "premier global gateway of choice, capitalizing on YVR's unique geographic location..."	<p>Support</p> <ul style="list-style-type: none"> • The intent is consistent with Richmond's objective for economic development, the City Centre, and creation of a "premier urban riverfront community" and "Olympic Gateway".
2.0	SUSTAINABILITY FRAMEWORK	
2.2	<p>Economic - Promote economic growth and minimize negative impacts on communities and the environment.</p>	<p>Support</p> <ul style="list-style-type: none"> • The focus of the 2005 Report, "Vancouver International Airport Economic Impact," is on steady growth in job creation (26,700 jobs in the Lower Mainland, \$3.4 billion in economic output, and \$22 million in municipal government taxes).
2.3	<p>Environment - References the "VIAA Environmental Policy" & "Environmental Management Plan"</p>	<p>Support</p> <ul style="list-style-type: none"> • VIAA has provided leadership in corporate environmental programs, including energy reduction, recycling, and fuel efficiency (e.g., support for hydrogen highway).
2.4	<p>Social - Committed to a quality work environment, accessibility, and transparent/timely communication with customers and affected communities</p>	<p>Support, subject to additional efforts</p> <ul style="list-style-type: none"> • Plan is focused on airport operations and Sea Island. The City and VIAA will work together to review opportunities to better coordinate planning with surrounding communities (e.g., improved community consultation, recreation opportunities, transportation, transit, housing, employment).
2.5	<p>Governance -</p> <ul style="list-style-type: none"> • Accepting of accountability for social, economic, and environmental issues, while meeting the business objectives of the Airport Authority and the communities it serves 	<p>Support, subject to additional efforts</p> <ul style="list-style-type: none"> • Continued coordination and cooperation on business interests should continue (e.g., Canada Line, land use planning, ground transportation). The benefits of selected Options need to be clearly stated.

City Comments

YVR: Your Airport 2027 Draft 20-Year Master Plan for Consultation

	ISSUE	CITY COMMENTS
3.0	CONSULTATION PROCESS	
3.1	Consultation Principles: <ul style="list-style-type: none"> • Transparency, broad and inclusive • Flexible and responsive • Excellent communications • Five-stage process 	Support <ul style="list-style-type: none"> • The Airport is to be commended for their consultation principles and communications efforts which included numerous public information displays and meetings with stakeholders.
4.0	REQUIREMENTS/ RECOMMENDATIONS	
4.1	A conservative and incremental development approach is recommended to reflect the uncertainty in forecasting future passenger and cargo volumes.	Support <ul style="list-style-type: none"> • Consideration should be given to updating: <ul style="list-style-type: none"> - The airport demand forecasts regularly (e.g., yearly) to maintain flexibility with economic influences, and - The Master Plan every five years.
5.0	AIRSIDE SYSTEM	
5.1	Runway Movements Capacity: <ul style="list-style-type: none"> • 2005 actual: 275,000 • 2005 capacity: 400,000 • 2005 capacity with simultaneous departures and arrivals: 450,000 • 2027 forecast: 484,000 new runway needed • 2044 forecast: 600,000 new runway needed Runway End Safety Area (RESA) <ul style="list-style-type: none"> • Proposed new safety requirements will require increases in runway lengths for emergency landings • Extend the north runway eastward by 600 m and the south runway by 150-300 m to accommodate proposed Runway End Safe Area (RESA) requirements 	Support: <ul style="list-style-type: none"> • The City supports growth at YVR, and will work together with the Airport Authority to explore and implement options for airport demand management (as described in the Technical Report 5.0), including: <ul style="list-style-type: none"> - Scheduling alternatives to reduce the number of movements at peak times; - Cooperation with neighbouring airports to reduce traffic at YVR during peak periods (e.g., shifting some routes to Abbotsford); and - Implementing demand management measures of the fleet mix for increased airport efficiency.
5.2	Taxiway Improvements – Addition of a North-South Taxiway	Support, with comments <ul style="list-style-type: none"> • Close consultation with Burkeville community is required to ensure that any concerns about noise impacts are adequately heard and addressed.
5.3	Maximizing Runway Capacity <ul style="list-style-type: none"> • Full use of north and south runways • Simultaneous Parallel Independent Departures (SPIDS) (e.g., use of the north runway for departures during peak periods, in addition to the typical south runway departures. • Simultaneous Parallel Independent Runway Operations (SPIRO) with a 50/50 split of usage by both runways for both departures and arrivals. • Manage scheduling hours (e.g., shift some peak period flights to 	Support, with comments <ul style="list-style-type: none"> • Support for Simultaneous Parallel Independent Departures (SPIDS), that is use of both the North and South Runways, concurrently, for departures during periods of peak demand. YVR is a 24/7 airport and the North Runway may be used for departures under its current approved operating procedures. • Increased operations with independent usage of both runways (SPIRO) for departures and arrivals will raise concerns and steps will have to be taken to address them. • Eastward runway extension of North runway is acceptable if no change to the Airport

City Comments

YVR: Your Airport 2027 Draft 20-Year Master Plan for Consultation

	ISSUE	CITY COMMENTS
	non-peak periods) <ul style="list-style-type: none"> Extend the north runway eastward to accommodate flights departing Runway 26R to Asia, (to avoid environmental impacts on lands to the west of the runway) 	Zoning Regulations (height restrictions) would be required, and changes to the NEF noise exposure contours would be minimal (marginal increased noise).
5.4	Adding Runway Capacity Proposes 2 new runway options: <ul style="list-style-type: none"> Foreshore Runway – for arrivals and departures South Parallel Runway – 24-hr runway designed for arrivals, co-managed with departures on the existing South Runway. 	Support – Foreshore Runway <ul style="list-style-type: none"> Preference for the Foreshore Runway is supported, with significant environmental mitigation and further investigation. The potential public benefits, include: <ul style="list-style-type: none"> Enhancement of habitat; Improvements to Iona Sewage Treatment Facility; Increased potential for night flights over water, and therefore reduced use of north and south runways, with reduced noise impacts on the City, and improved cost benefits to VIAA; Conservation on Sea Island Increased economic and employment benefits. Non-Support – South Parallel Runway <ul style="list-style-type: none"> South Parallel Runway is unacceptable due to: <ul style="list-style-type: none"> Significant impacts on livability for existing residents; Significant impacts on the future city Centre livability and building heights; and Land required that could otherwise be used for other airport related uses, services and businesses.
6.0	PASSENGER TERMINALS	
6.1	The plan makes 5 recommendations: <ol style="list-style-type: none"> North East terminal expansion South East reserve area for terminal expansion (or for 2010 Winter Olympic requirements) Select facilities at Canada Line Station #1 Maintain South Terminal and reserve area for possible South Parallel Runway Maintain floatplane terminal and consider relocation in the event of South Parallel Runway 	Support <ul style="list-style-type: none"> Consider opportunities for transit links between the South Terminal, floatplane terminal, other Sea Island locations, and downtown Richmond with ground shuttles, to: <ul style="list-style-type: none"> Minimize unnecessary ground traffic (e.g., passengers and employees moving around Sea Island; and arriving/departing via the Canada Line) Support viable business growth – and complementary uses on and off Sea Island.
7.0	GROUND ACCESS and PARKING	
7.1	The Airport Authority recommends the following measures to improve ground access and transportation:	Conditional Support <ul style="list-style-type: none"> The Airport Authority is commended for revising the ground transportation recommendations in the Draft Plan from the earlier version used for public consultation, as the current Plan calls for a more collaborative approach in finding solutions. Continued consultation is recommended.

City Comments

YVR: Your Airport 2027 Draft 20-Year Master Plan for Consultation

	ISSUE	CITY COMMENTS
7.2	<ul style="list-style-type: none"> Transportation demand management to maximize Canada Line use; 	<p>Conditional Support</p> <ul style="list-style-type: none"> Include a section in the Plan to provide an overview on how the ground transportation plan fits into the overall transportation planning context – in particular, the goals and objectives of the GVRD's LRSP, GVTA's 10-Year Outlook, City of Vancouver's OCP, and Richmond's OCP, City Centre Area Plan and Transportation Plan. In order to minimize the demand of airport-related vehicular traffic on bridge crossings in and out of Sea Island, remote check-in facilities should be aggressively pursued at various Canada Line stations so that vehicular drop-off/pick-up activities can be accommodated as alternatives outside of Sea Island.
7.3	<ul style="list-style-type: none"> Not pursuing an extension of Templeton Road south to the Dinsmore Bridge 	<p>Support</p> <ul style="list-style-type: none"> Addresses and responds to concerns of the Burkeville community. Consensus achieved through extensive consultative process.
7.4	<ul style="list-style-type: none"> Protecting the Middle Arm Bridge access from encroachment by non-airport traffic Ensure priority for airport traffic on bridges to Sea Island Implementing a dedicated north bound airport access lane on Russ Baker Way 	<p>Conditional Support</p> <ul style="list-style-type: none"> These principles should only be applied to newly added capacity funded solely by the airport that is non-existing today. <p>Not Supported</p> <ul style="list-style-type: none"> Taking away existing transportation capacity from non-airport users, such as designating part of the existing lanes on the Arthur Laing Bridge, Moray Channel Swing Bridge or Airport Connector Bridge, for exclusive use by airport-traffic, is not supported by Richmond, as Richmond is growing. Recommend additional VIAA and City collaboration.
7.5	<ul style="list-style-type: none"> Replace the Moray Channel Swing Bridge 	<p>Support</p>
7.6	<ul style="list-style-type: none"> Improving access to Highway 99 	<p>Support</p>
7.7	<ul style="list-style-type: none"> Offering public parking options and accommodating car rentals 	<p>Support</p>
7.8	<ul style="list-style-type: none"> Adding capacity and improvements to the Sea Island road network 	<p>Conditional Support</p> <ul style="list-style-type: none"> The City and VIAA are to continue working together to gauge the actual demand of vehicular traffic in the airport area on a regular basis so that the appropriate infrastructure improvements can be planned in a timely and accurate manner and that any added road capacities would not be over-built.

City Comments

YVR: Your Airport 2027 Draft 20-Year Master Plan for Consultation

	ISSUE	CITY COMMENTS
7.9	<ul style="list-style-type: none"> Reviewing commercial ground transportation to reduce unnecessary trips 	Support
7.10	<ul style="list-style-type: none"> Requiring non-airport related commercial development to assess traffic impacts 	Support <ul style="list-style-type: none"> Traffic generated by non-airport related commercial development on Sea Island should be managed the same way as other non-airport related commercial development outside of Sea Island, and not be regarded as airport-priority traffic.
8.0	CARGO	
8.1	<p>The Airport Authority recommends:</p> <ul style="list-style-type: none"> Increasing the efficiency of existing facilities; Providing a significant area (70 ha) within the Land Use Plan for cargo needs; Developing a Cargo Village in the Northlands; and Relocation of the YVR Works Yard (currently to the West of Burkeville) to better utilize this core site. 	Support <ul style="list-style-type: none"> Additional informational is required regarding the amount and nature of cargo-related uses to better understand: <ul style="list-style-type: none"> Transportation implications; and Potential business impacts and benefits.
9.0	AIRPORT SUPPORT SERVICES	
9.1	Air Traffic Control <ul style="list-style-type: none"> The detailed design of future NAV Canada air traffic control facilities must consider control tower sight lines and radar. 	Support <ul style="list-style-type: none"> Continued consultation between the Airport Authority and the City is required to address air traffic safety requirements.
10.0	COMMERCIAL OPERATIONS	
10.1	Airside Commercial <ul style="list-style-type: none"> Set aside sufficient land to meet the needs of airside commercial operations with direct access to the airside system (e.g., air cargo, maintenance). 	Support
10.2	Groundside Commercial <ul style="list-style-type: none"> Include lands for both airport-related commercial uses and non-airport related uses, as surplus land is available (e.g., lands located near the Arthur Laing and Dinsmore Bridges, plus along Russ Baker Way to the terminal) 	Support <ul style="list-style-type: none"> Additional information and a business case is required to support the development of non-airport related commercial uses, and in particular: <ul style="list-style-type: none"> Allow uses that are complementary to the downtown in use, form and character; and to proposed City Centre Richmond development – especially in the case of office uses; Traffic management to ensure that the new uses will not adversely impact Sea Island road network; and Encourage uses that will use the Canada Line.

City Comments

YVR: Your Airport 2027 Draft 20-Year Master Plan for Consultation

	ISSUE	CITY COMMENTS
11.0	UTILITIES	
11.1	<p>Aviation Fuel Supply and Storage</p> <ul style="list-style-type: none"> The Airport Authority will continue to work with regulatory agencies and the City of Richmond to select a sustainable fuel-supply option that meets the needs of the airport and the surrounding communities. 	<p>Support</p> <ul style="list-style-type: none"> Further consultation is required to understand the possible impacts on: <ul style="list-style-type: none"> Lulu Island development/livability/safety Sea Island recreation/wildlife/environment Environmental issues affecting the river
12.0	RECREATIONAL AREAS	
12.1	<p>Riverside Walk/Bike Path and Playing Fields</p> <ul style="list-style-type: none"> The Airport Authority will continue to work with the City of Richmond to provide outdoor recreational opportunities to enhance the public's enjoyment of Sea Island. 	<p>Support</p> <ul style="list-style-type: none"> Complements the City Centre, recreational river uses, the Oval, and development of Moray Channel as a "premier urban riverfront"; The City and VIAA are to continue working together to jointly prepare a detailed multi-year Parks and Recreation Plan for Sea Island with an Implementation Strategy, including the Riverside Walk/Bike Path, and to ensure that locations are available for existing and future picnic areas and playing fields.
13.0	REGIONAL AIRPORT SYSTEM	
13.1	<ul style="list-style-type: none"> The Airport Authority recommends establishing an ongoing mechanism for coordinating Lower mainland Airports at the operational and governance levels. 	<p>Support</p> <ul style="list-style-type: none"> Request that Transport Canada prepare a Regional Airport Strategy with VIAA and the other regional airports (Abbotsford, Boundary Bay, Chilliwack, Pitt Meadows, Langley) to provide land use and infrastructure investment certainty by determining the long term role of each airport (e.g., their respective international/domestic, sea plane/small aircraft/jet, and passenger/cargo volume splits). This will ensure certainty over the long term in planning and investing in airport growth, infrastructure, roads and services.
14.0	PROPOSED 2027 AIRPORT LAND USE PLAN AND GATEWAY DEVELOPMENT PROJECTS	
14.1	<ul style="list-style-type: none"> The Airport must submit the 2027 Airport Land Use Plan to the federal Minister of Transport for approval. The proposed changes to the 2015 Land Use Plan are necessitated by the gateway recommendations outlined by the Airport Authority. 	<p>Conditional Support</p> <ul style="list-style-type: none"> The City supports the Foreshore Runway option and does not support the proposed South Parallel Runway option; Additional detail is required for the plan's land use designations to provide adequate guidance and clarity for the airport, their customers, and their neighbours. Additional planning coordination with the City of Richmond is encouraged, particularly in coordinating with current planning initiatives (e.g., City Centre Update). The Land Use Plan needs to be updated regularly (e.g., every five years) to ensure that it continues to correspond to trends and projections for airport demand.



YVR: Your Airport 2027
Draft 20-Year Master Plan for Consultation

VANCOUVER INTERNATIONAL AIRPORT AUTHORITY
www.yvt.ca



DRAFT – MAY 2006

VANCOUVER INTERNATIONAL AIRPORT AUTHORITY

Vancouver International Airport Authority is a community-based not-for-profit organization that manages and operates Vancouver International Airport (YVR)

YVR MISSION

To serve our community by building outstanding airports.

YVR VISION

YVR: A Premier Global Gateway

The Airport Authority: Local Champion, Global Operator.

CORPORATE PRIORITIES

PEOPLE To maintain a strong, flexible and capable team of professionals, and provide a safe and secure environment not just for our employees, but for all who work at or visit the airport

01

PASSENGERS To provide exceptional customer service to passengers and airport visitors.

02

PARTNERS To work closely with the communities we serve, business partners and government agencies, and to take an active role in community and industry initiatives

03

PROFITABILITY To generate aeronautical and non-aeronautical revenues to operate and develop YVR and help ensure it remains an economic generator, to diversify non-aeronautical revenue bases and be a low-cost airport to attract new air services and retain existing ones to meet the needs of British Columbia

04

PLANT To build and operate outstanding facilities to ensure YVR can meet growing passenger demands, as well as connect British Columbians with the world

05

STRATEGIC PLANNING

To guide airport operations and development, the Airport Authority uses a five-tiered planning process. The Strategic Plan establishes the mission, vision and values for YVR, while the Master Plan (this document) looks forward 20 years to ensure the best use of YVR's fundamental resource – land. The Capital Plan and Financial Plan allocate funding over a 10-year span and identify what infrastructure will be built and when. The Detailed Strategic Plan looks five years out and provides the planning context for the Airport Authority's annual Business Plan, which outlines airport initiatives and objectives for a one-year period.

Recognizing the "certainty of uncertainty," the Airport Authority reviews plans regularly, monitors external events closely, favors conservative timing for capital expenditures, builds infrastructure incrementally whenever possible, and incorporates flexibility, transparency and open, honest stakeholder communications into its planning activities.

WELCOME TO YVR

Vancouver International Airport (YVR) is B.C.'s airport. It enables us, as British Columbians, to welcome the world, pursue our business goals and embrace family and friends. YVR is a premier gateway to the Pacific, a leading employer of many and, we hope, a source of pride for all.

During the past two years, Vancouver International Airport Authority has spoken with hundreds of British Columbians to understand your future aspirations for your communities and your country and to identify how YVR can best support your vision. What you told us formed the basis for this draft plan, which outlines our recommendations for achieving the future you've articulated for yourselves and for YVR.

This document is a gateway to the rigorous economic, social, environmental and governance considerations and analysis involved in ensuring YVR can meet the needs and aspirations of the communities it serves. It outlines many views – sometimes conflicting – about how best to plan for a future that is by definition uncertain.

The Airport Authority's mission is to serve all communities. This draft 20-Year Master Plan is meant to generate discussion around our recommendations and to find out: whether you think we're on the right path. To enable you to immerse yourself as deeply as you'd like in the master planning process, further information is provided on our website: www.yvr.ca.

We hope you will agree with our vision of how YVR can best meet your future needs and aspirations, but if we have not asked the right questions, or if we have arrived at answers that do not make sense to you, we hope you will tell us.

We encourage you to read this document and visit our website. You can provide your thoughts, comments, questions or concerns online or by emailing, writing, faxing or calling us at:



www.yvr.ca > **Your Airport 2027: 20-Year Master Plan**

master_plan@yvr.ca

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To enable the Airport Authority to meet the consultation goals outlined in chapter 3 of this document, please provide your comments by **August 31, 2006**.

YVR: YOUR AIRPORT 2027: 20-YEAR MASTER PLAN

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1. Your Airport 2027: An Overview

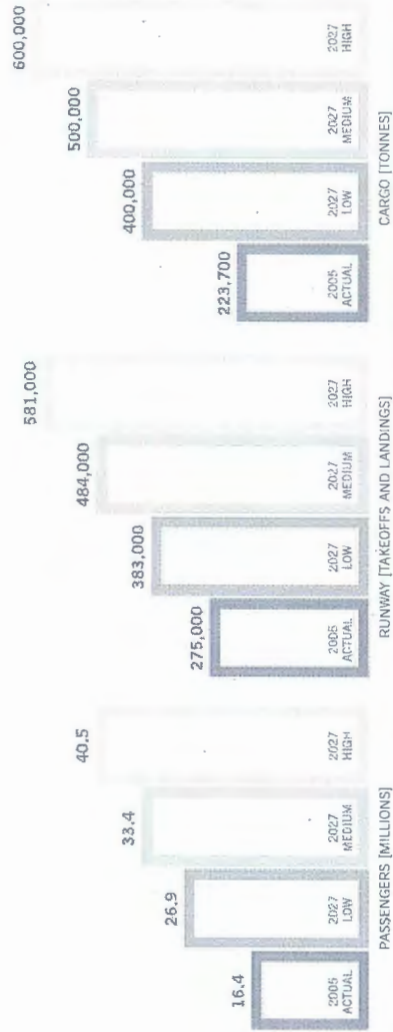
Vancouver International Airport (YVR) is Canada's second-busiest airport and the second-largest international passenger gateway on the West Coast of North America. In 2005, YVR served a record 16.4 million passengers, handled 275,000 aircraft takeoffs and landings on its runways and saw 223,700 tonnes of air cargo loaded on and off aircraft. YVR is a key economic contributor, creating 2.3% of total employment in Greater Vancouver and contributing \$6.8 billion to B.C.'s economy.

Forecasts from governments, companies and agencies suggest that the global, national and local demand for air travel will grow between 2007 and 2027. To ensure it can meet future passenger and cargo needs, the Airport Authority has considered a range of possible air travel scenarios out to 2027 and developed low-, medium- and high-growth scenarios. A low-growth scenario could result from slower than anticipated economic growth, external health or security concerns or increasing fuel costs while a high-growth future could occur if the demand for air travel to and from emerging Asian markets grows more rapidly than expected.

Under a medium-growth scenario for the 20-year planning horizon, passenger, aircraft and cargo demands on YVR will increase to an estimated 33.4 million passengers, 484,000 aircraft arrivals and departures, and 500,000 tonnes of cargo annually. As with all projections, there are risks and uncertainties associated with these forecasts and they will require frequent review, discussion and adjustment.

As the closest major West Coast airport to Asia, YVR enjoys a significant competitive advantage. The Airport Authority's vision is to be a premier global gateway of choice, connecting the Asia-Pacific Region and the Americas. As a gateway of choice, YVR offers, and can continue to offer, better service in terms of destinations, frequency and airlines than the local market could otherwise support. This provides, and will continue to provide, additional opportunities for local business to participate in the global economy, for tourists to visit B.C. and for British Columbians to travel overseas.

To accommodate future passenger needs, meet the aspirations of the communities it serves and achieve its gateway strategy, the Airport Authority must have an effective and flexible 20-year plan.



2027 Forecasts—Low, Medium, High Growth Scenarios
VANCOUVER INTERNATIONAL AIRPORT AUTHORITY

YOUR AIRPORT 2027: 20-YEAR MASTER PLAN

YVR's 20-Year Master Plan outlines how the Airport Authority will meet the needs of its stakeholders and the communities it serves over the medium-term (20-year period) while supporting YVR's longer-term viability and achieving key strategic objectives.

While the Airport Authority's lease with Transport Canada requires that the Master Plan be updated every 10 years, the plan can be updated more frequently if necessary to respond to unforeseen changes, challenges or opportunities.

Though the Master Plan covers a 20-year period, the Airport Authority must ensure that this medium-term strategy does not rule out or preclude options over the longer term (a 40-year horizon). In preparing this draft 20-Year Master Plan, the Airport Authority first consulted with business partners, stakeholders and young members of the community to understand their long-term visions and aspirations for British Columbia and the region.

These consultations took place in three forums "Flying 40 Years into B.C.'s Future" namely: Forum '44, Generation YVR and B.C. Communities. Input received through these forums indicated that air travel would continue to be vital over the long-term, that YVR will remain a key economic generator for B.C. and that the airport will continue to play a central role as a Pacific gateway to North America. These views contributed to a long-term development study that concluded YVR should continue to be the region's principal, full-service airport and that the airport should remain located on Sea Island.

With a clear long-term vision, the Airport Authority then looked at YVR's medium-term future using a variety of forecasting tools to project airport demand through to 2027. This work identified what steps will be needed over the next 20 years to support the longer-term vision. The Airport Authority conducted extensive consultations with business partners, municipal, provincial and federal governments. First Nations, technical experts, passengers, and local communities.

Having gathered information on the needs and aspirations of the communities it serves for the planning period, the Airport Authority identified a number of options to meet

those requirements, sought stakeholder feedback on the various options and measured each option against key sustainability criteria. Based on this analysis, the Airport Authority has created a list of recommendations for development at YVR to respond to British Columbia's growth to 2027.

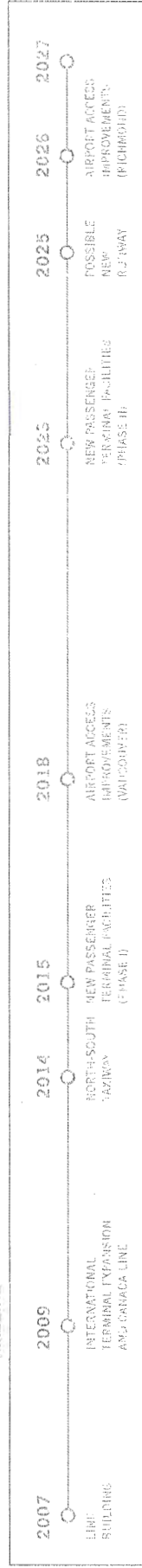
At a high level, the Airport Authority's recommendations for the 2007-2027 planning horizon include:

1. YVR continues to be the region's principal, full-service airport located on Sea Island;
2. Maximizing efficiency of the existing runway and taxiway system by extending the parallel runways and by building a North-South Taxiway;
3. Building new passenger terminal facilities and customs hall;
4. Ensuring convenient access to the airport by maximizing use of the Canada Line, implementing demand management initiatives, reclaiming bridge capacity for airport users and making smart land-use decisions;
5. Protecting options for a future runway, if and when required to meet future demand.

Timing for these recommendations will depend on demand. Using the medium-growth forecasts, development of new infrastructure is estimated to be required at various intervals during the next 20 years, as shown in the timeline below.

This draft 20-Year Master Plan identifies key changes and upgrades that will be required to meet YVR's needs to 2027 and provides the Airport Authority's recommendations for meeting these needs. It outlines the influences and forecasts that will shape the airport's medium-term future, and summarizes the master planning consultation process and stakeholder feedback received. This document includes a timeline and description of recommended gateway development projects as well as a draft of the proposed 2027 Airport Land Use Plan that must be submitted to the federal Minister of Transport for approval as part of the master planning process.

GATEWAY DEVELOPMENT TIMELINE



2. Your Airport 2027: Key Influences

YVR's future is shaped by a diverse range of factors including international, national, provincial and regional forecasts, aviation industry projections and the aspirations and expectations of stakeholders. The 20-Year Master Plan must align with the Airport Authority's mission, vision and corporate priorities and support its gateway strategy and sustainability objectives. This chapter outlines some of the many factors that have influenced and guided the development of this draft plan.

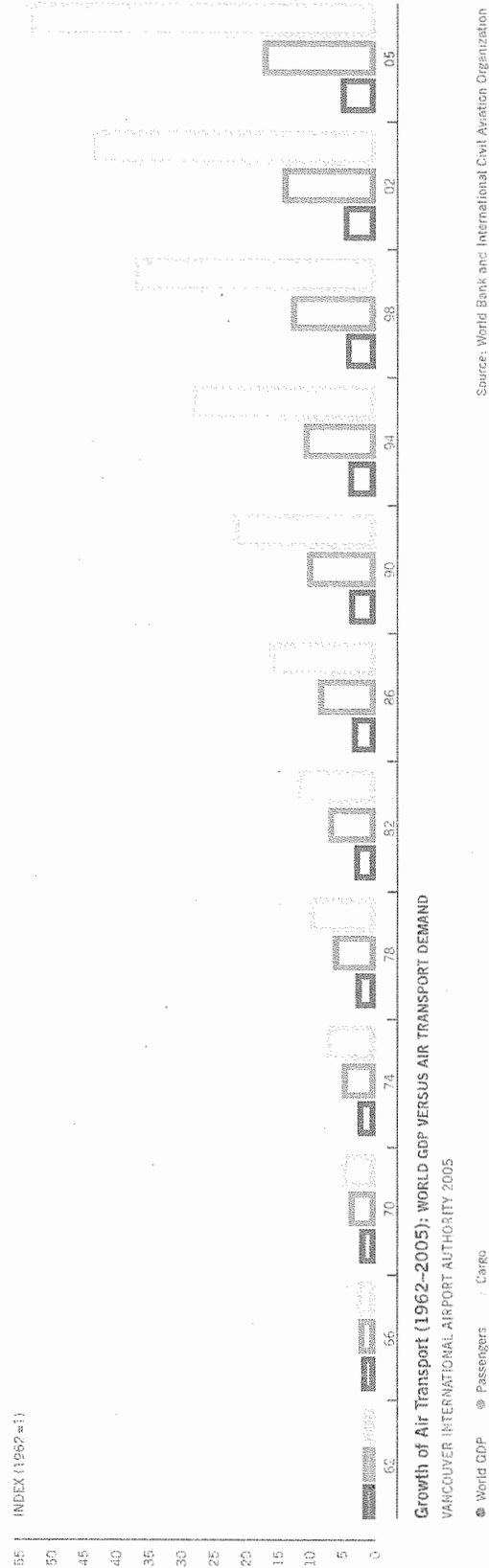
OUTLOOK 2027

In 2027, it is anticipated that eight billion people will inhabit the earth, that China will be the world's largest economy and that average temperatures will have risen due to projected increases in greenhouse gas concentrations.

In Canada, it is estimated that one in five Canadians will be over 65 years of age and the main source of population growth will have been immigration. Rates of growth in the aboriginal population are expected to be above average.

British Columbia will have a distinct culture embracing and reflecting a love of the land, cultural diversity, the province's geographic advantages and a resolution of relationships with First Nations people.

The Lower Mainland is expected to be home to 3.2 million people of diverse cultures, with proportionally more homes and jobs in the outer suburban areas.



Source: World Bank and International Civil Aviation Organization

AVIATION OUTLOOK 2027

While the world's gross domestic product (GDP) is expected to grow 2.9% annually between now and 2025, annual passenger growth will likely average 5.2% and annual cargo volumes, 6.2%. Increased worldwide travel will be stimulated by economic growth, lower fares, additional world trade and service improvements. Driven by declining costs and improved logistics systems, air cargo has grown at roughly three times the rate of the world economy (as seen in the graph on page 6) and cargo transport is expected to increase at an average of 6.2% annually over the next 20 years.

To accommodate this growth, the world airliner fleet will grow to approximately 35,000 passenger and cargo jets by 2023, according to Boeing's 2005 Current Market Outlook.

In 2004, the Airport Authority commissioned a study by InterVISTAS Consulting Inc. to identify long-term aviation industry trends. Trends identified for the 20- to 40-year planning horizon include:

- The demand for passenger and cargo air transport will grow faster than the population or the economy. Passenger air travel will become more affordable, enabling more people to travel by air. However, the demand for air transport may be negatively impacted by fuel costs and the impact of global climate change.
- Major new markets for air travel will emerge. China is expected to become one of the largest generators of tourists, growing from 12 million outbound tourists in 2001 to 100 million by 2020. Other emerging outbound tourism markets include India and Latin America.
- A growing demand for air transport will put pressure on local and regional transportation systems. Airports will need to be integrated into regional transportation systems that utilize high-capacity mass transit to move people.
- As a result of government and industry initiatives, the noise impacts of aircraft have been reduced. Using new technologies, the aviation industry will continue to work towards minimizing noise impacts.
- Smart technologies will help to reduce costs, improve customer service and expedite the movement of passengers through borders, security and health screening processes.

- While it is difficult to predict just how the airline industry will be structured 20 years from now, it is clear that fundamental change is underway. Airports must be flexible enough to accommodate a changing airline marketplace, which may include consolidation and increased services from low-cost carriers.

- Future passenger and cargo needs will be addressed with a range of aircraft types, ranging from the 555-seat Airbus A380 to the smaller, long-range Boeing 787 Dreamliner, from regional jets with between 50 and 100 seats to 4-6 seat Microjets.
- More and more, airports are exploring creative solutions for managing growth, including expanding their boundaries or using lands outside current boundaries (such as off-site check-ins and other processes, or secondary airports).



www.yvr.ca > YVR: Your Airport 2027: 20-Year Master Plan > Long-Term Planning > 12 Long-Term Trends in Aviation

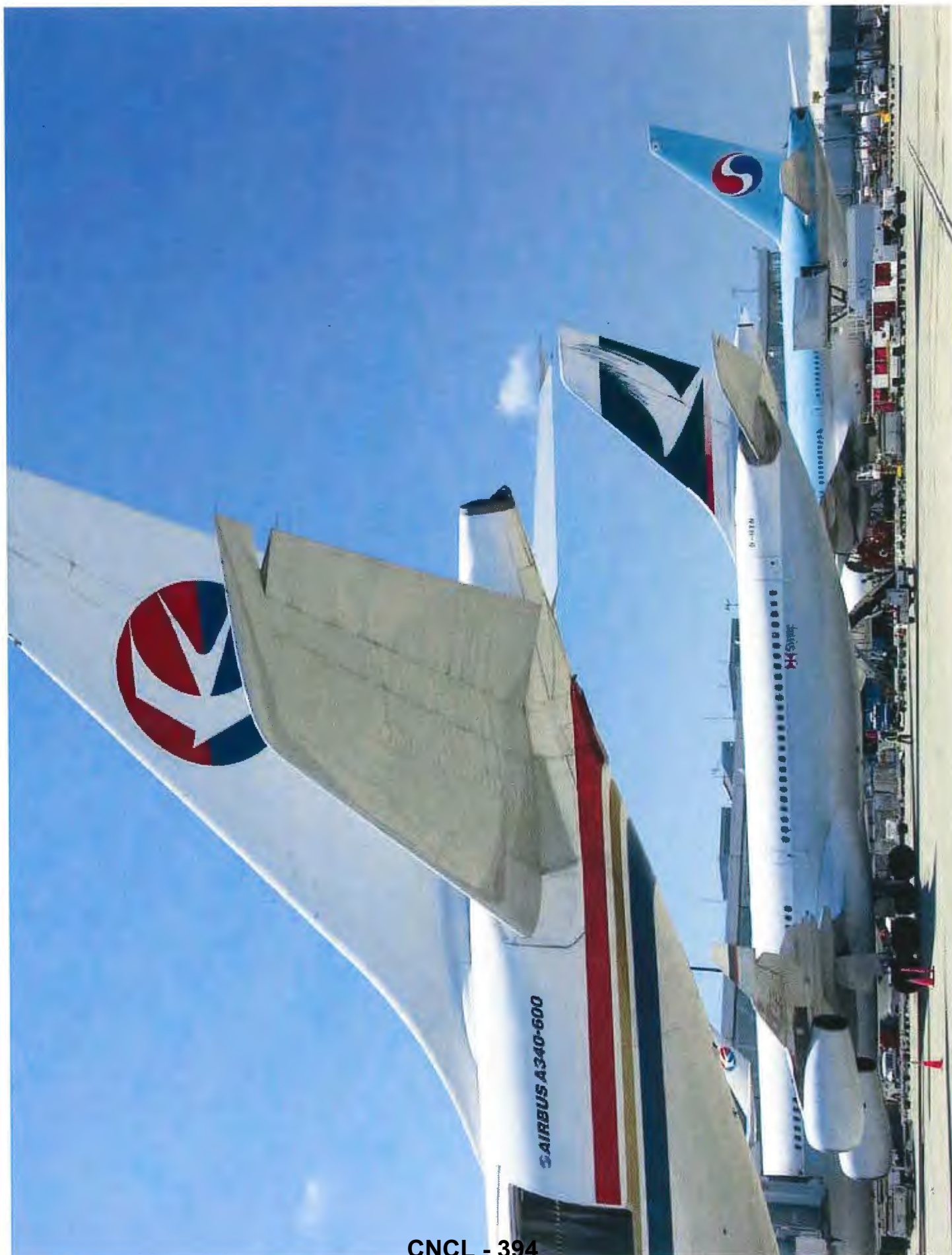
YVR GATEWAY STRATEGY AND ECONOMIC IMPACT

The Airport Authority's vision is to be a premier global gateway of choice, capitalizing on YVR's unique geographic location as the closest West Coast airport to Asia, and connecting the Asia-Pacific region and the Americas.

Being the international gateway of choice creates significant economic benefits along with opportunities for local business to participate in the global economy, tourists to visit B.C. and British Columbians to travel overseas. International flights create significantly more employment than domestic or transborder (U.S.) flights. According to the 2005 Economic Impact Study of the Vancouver International Airport distributed in March 2006, a twice-daily domestic flight generates 82 hours of employment per flight, or 38 person years annually. By comparison, a twice-daily international flight creates 795 hours of employment per flight. Over a year, this equals 369 person years of employment.



www.yvr.ca > Who We Are > YVR Economic Impact Study




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A SUSTAINABILITY FRAMEWORK

Effective long-term planning is crucial to a successful future and the Airport Authority views good planning and sustainability as one and the same. Contributing to a sustainable and prosperous future while caring about the well-being of its surroundings, its people and its communities is fundamental to the Airport Authority's operating philosophy and central to its planning processes.

THE FOUR PILLARS OF SUSTAINABILITY

The Airport Authority's view is that there are four pillars to sustainability: economic, environmental, social and governance.

	<p>ECONOMIC: YVR is a major employment centre and economic generator. The Airport Authority's challenge is to sustain and promote economic growth while minimizing YVR's impact on its communities and the environment.</p>
	<p>ENVIRONMENT: The Airport Authority is committed to managing the airport in an environmentally sound manner and balancing potential environmental impacts with the need for safe and efficient air travel. To eliminate, reduce, mitigate or manage environmental impacts wherever possible, the Airport Authority has developed an Environmental Policy and implemented an Environmental Management Plan.</p>
	<p>SOCIAL: British Columbians frequently travel by air because of the unique geography of our province and our immigrant heritage. Affordable and accessible air travel allows people to stay connected and pursue personal interests. As an employer, the Airport Authority is committed to providing a quality work environment and the tools and resources to support a flexible, strong and capable team. Its commitment to accessibility recognizes the importance of meaningful access regardless of age or ability. The Airport Authority is also committed to engaging stakeholders, providing transparency in open, honest and timely communications to customers, business partners, the communities it serves and its employees.</p>
	<p>GOVERNANCE: The Airport Authority has added governance to its sustainability framework to recognize the importance of local accountability for economic, environmental and social issues, while meeting the business objectives of the Airport Authority and the communities it serves.</p>

< YVR's location as the closest major North American airport to Asia positions the airport as the ideal gateway connecting the Asia-Pacific Region and the Americas. In the coming years, the Airport Authority expects to add more Asian destinations and carriers as we continue to develop the YVR gateway.

EVALUATION CRITERIA

GOVERNANCE	ECONOMIC															
	STRATEGIC		OPERATIONS					FINANCE			RISK					
MISSION / VISION / VALUES / OBJECTIVES	OPPORTUNITIES	PRECLUSIONS	CAPACITY	OPERATIONAL EFFICIENCY	REUNDANCY	CUSTOMERS AND PARTNERS - PASSENGERS	CUSTOMER AND PARTNERS - BUSINESS PARTNERS	CUSTOMER AND PARTNERS - GOVERNMENT	CARGO	SECURITY / HEALTH	CAPITAL COST	REVENUE	DELIVERY TIME	TECHNOLOGY	FLEXIBILITY	FINANCIABILITY

OPTIONS

<p>RAIL</p> <p>RAILSIDE</p> <p>A1 FORESHORE RUNWAY (RWY)</p> <p>A2 SOUTH PARALLEL RWY (Short)</p> <p>A3 SOUTH PARALLEL RWY (Long)</p> <p>A4 NORTH PARALLEL RWY</p> <p>A5 EXTEND NTH RWY WEST</p> <p>A6 EXTEND NTH RWY EAST</p> <p>A7 NORTH-SOUTH TAXIWAY</p> <p>A8 DEMAND MANAGEMENT</p>																
<p>TERMINALS</p> <p>T1 TRANSBORDER SOUTH EAST</p> <p>INTERNATIONAL WEST SATELLITE</p> <p>TRANSBORDER WEST SATELLITE</p> <p>TRANSBORDER NORTH EAST</p> <p>INTERNATIONAL NORTH EAST</p> <p>INTERNATIONAL "W"</p> <p>TRANSBORDER "Y"</p> <p>TRANSBORDER "Y"</p> <p>18 DOMESTIC "Y"</p> <p>19 TERMINALS "A" AND "B"</p>																
<p>GROUND ACCESS & PARKING</p> <p>G1 PARKING ON ISLAND</p> <p>G2 PARKING OFF ISLAND</p> <p>G3 DEDICATED ACCESS</p> <p>G4 INCREMENTAL IMPROVEMENTS</p> <p>G5 ONE-WAY COUPLET</p> <p>G6 TEMPLETON-ARBUTUS CONNECTOR</p> <p>G7 TEMPLETON-ALDERBRIDGE CONNECTOR</p> <p>G8 TWIN-ARTHUR LAING BRIDGE</p> <p>G9 GRADE SEPARATED ACCESS TO HIGHWAY 99</p> <p>G10 DEMAND MANAGEMENT</p>																
<p>CARGO</p> <p>LIMITIES</p> <p>TELECOM / IT</p>																

3. Your Airport 2027: Consultation Process

In developing this draft 20-Year Master Plan, the Airport Authority undertook its broadest-ever consultation program to promote open discussions about the multiple futures available to YVR. A diverse range of stakeholders was engaged, including Airport Authority staff, community-based interest groups, community associations, the Lower Mainland business community, Sea Island business partners, First Nations, managers from regional airports, the next generation of users, transportation authorities, municipal, regional, provincial and federal governments and the general public throughout B.C.'s Lower Mainland.

To reach the widest possible range of stakeholders, the Airport Authority utilized a variety of tools including presentations and meetings to gather information, technical expertise and forecasts, workshops, working groups, large forum events, a media kit, multi-media presentations, a 20-Year Master Plan section on the website, visual displays in shopping malls, public buildings and at the airport, open house events and printed materials.

CONSULTATION PRINCIPLES

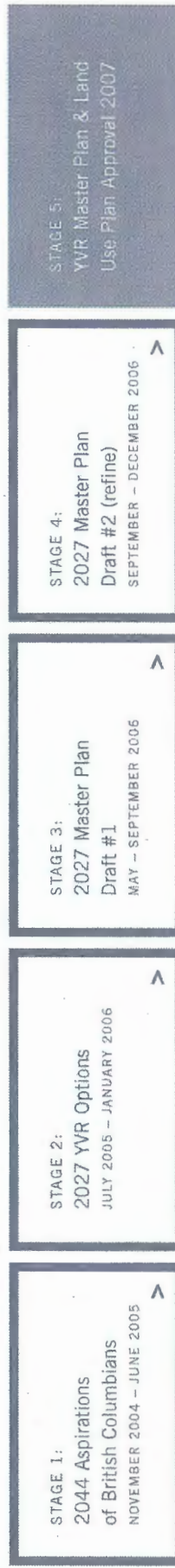
To promote stakeholder involvement and support, the Airport Authority was guided by a set of consultation principles, including:

- A commitment to transparency, involving open, honest and timely communications;
- A broad and inclusive consultation process;
- Remaining flexible and responsive, and regularly reviewing the consultation process to ensure it was meeting project objectives and that any concerns were addressed;
- Creating overall awareness and excitement within B.C. about YVR's future.

FIVE STAGES OF MASTER PLANNING

The 20-Year Master Plan is being developed in five stages. Stakeholder input gathered at each stage is being fed into the planning process to inform subsequent stages.

FIVE STAGES OF CONSULTATION FOR 20-YEAR MASTER PLAN



**STAGE ONE: ASPIRATIONS OF BRITISH COLUMBIANS:
LOOKING AHEAD 40 YEARS (NOVEMBER 2004 – JUNE 2005)**

To ensure that recommendations in the 20-Year Master Plan did not preclude the vision and activities of YVR for future generations, the Airport Authority needed to understand the longer-term (40-year) aspirations and expectations of YVR's stakeholders.

Stage one of the 20-Year Master Plan process started off in 2004 by looking at potential futures for YVR and B.C. through to 2044. The Airport Authority held extensive meetings with municipal governments, business leaders, and industry experts to gain insight into the strategic planning and forecasting being undertaken by the aviation industry. YVR's business partners and B.C. communities. Stage one activities included:

- Forum '44 – Flying 40 Years into B.C.'s Future: A two-day event in November 2004 designed to launch the master planning consultation process, promote discussions and dialogue with a diverse range of stakeholders and key business leaders, gather information about how the community envisions its future and the role of YVR, and understand the trends, pressures and themes that will influence YVR's future. As part of Forum '44, a community session was held with local Sea Island businesses.
- Generation YVR and B.C. Communities 2045: Following the success of Forum '44, two subsequent forum events were held. Generation YVR – 30 and Under Flying 40 Years into B.C.'s Future, engaged younger British Columbians who will be the leaders of the future. A second forum, B.C. Communities 2045 – Flying 40 Years into B.C.'s Future, brought together community leaders and airport management from across B.C.

During stage one, the Airport Authority identified future airport facility requirements and potential expansion needs over a 40-year planning horizon. Studies were conducted to explore whether the existing lands leased by the Airport Authority provided sufficient space for the necessary systems and infrastructure.

Based on an examination of potential markets and growth patterns, the Airport Authority developed a scenario that suggested annual passenger traffic could be in the range of 45 million, and there could be as many as 600,000 aircraft takeoffs and landings each year by 2044.

STAGE ONE OUTCOMES:

- Based on the studies and consultation conducted, the Airport Authority determined that:
- Stakeholders viewed YVR as a vital and growing part of their communities. YVR is B.C.'s airport and will need ongoing upgrades to support projected increases in passenger traffic, aircraft takeoffs and landings and air cargo.
 - Sustainability was of vital concern to local and global stakeholders. The Airport Authority identified sustainability as a key goal of the master planning process and developed a sustainability matrix as a tool to measure options and inform decision-making.
 - Sea Island could accommodate projected airport activity in 2044, and there was sufficient area for additional terminals and runways.
 - All development strategies should incorporate demand management initiatives.
 - Ground access to Sea Island would be an ongoing issue best addressed by rapid transit; vigorous demand management and initiatives to preserve bridge capacity for airport-related traffic.



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STAGE TWO: YVR 2027 OPTIONS (JULY 2005 – JANUARY 2006)

Based on preliminary stakeholder input and the range of internal and external considerations outlined in chapter 2 of this document, the Airport Authority developed low-, medium- and high-growth forecasts for passenger, aircraft and air cargo traffic through to 2027. To meet this forecast demand, runway, terminal, ground transportation and other infrastructure needs were identified and options formed to meet those needs while supporting the long-term development possibilities noted in stage one. Details about these options can be found in chapters 5 through 13 of this document.

In fall 2005, a second comprehensive round of consultations was held to seek stakeholder input on these options. The Airport Authority continued its conversations with industry partners, government agencies and other interested parties and held a series of public information sessions, open houses and community meetings as well as providing information and feedback opportunities on YVR's website.

A display of potential options toured Lower Mainland shopping malls, public buildings and the Union of B.C. Municipalities conference to gather public input, and a brief questionnaire was made available to the public to elicit their feedback. Approximately 20,000 people viewed the displays and 680 people provided completed questionnaires and written feedback.

The Airport Authority then analyzed each development option using the sustainability matrix to determine how well each option performed against the criteria. Stakeholder input was incorporated into the matrix evaluation, where it played an integral role in informing Airport Authority decisions and recommendations.

STAGE TWO ACHIEVEMENTS:

- The Airport Authority developed a range of options that met YVR's medium-term needs, without precluding the longer-term vision;
- The Airport Authority consulted with thousands of stakeholders to obtain their input on the various options being considered;
- Each option being considered was evaluated to identify how well it performed in relation to key economic, environmental, social and governance criteria.

STAGE THREE: DRAFT 20-YEAR MASTER PLAN (MAY – SEPTEMBER 2006)

Based on the feedback and information received during stages one and two and the results of the sustainability matrix evaluation, the Airport Authority prepared a Master Plan Technical Report, which outlines the infrastructure and development necessary to meet YVR's needs to 2027, documents the process used to analyze and evaluate each option and presents the Airport Authority's recommended options. The Technical Report is available on YVR's website and sections are referenced throughout this document. See the website for more detailed information.

Based on the Technical Report, this draft 20-Year Master Plan was prepared to facilitate further stakeholder consultation and seek stakeholders' review and comments on the Airport Authority's recommendations. Once feedback has been received from stakeholder groups, this draft will be refined to create a second draft.

STAGE FOUR: REFINE DRAFT 20-YEAR MASTER PLAN (SEPTEMBER – DECEMBER 2006)

Stage four of the master planning consultation process is designed to seek final comments on the second draft of the 20-Year Master Plan. The necessity for, and extent of, stage four consultation activities will be determined by stakeholder feedback received during stage three. If required, stage four will take place during late fall 2006.

STAGE FIVE: COMMUNICATION OF THE APPROVED AIRPORT LAND USE PLAN (2007)

The final draft of YVR: Your Airport 2027: 20-Year Master Plan, including the proposed 2027 Airport Land Use Plan, will be submitted to the federal Minister of Transport for approval in early 2007. Once the Minister has approved the 2027 Airport Land Use Plan, stage five of this consultation program will involve communicating the highlights of the final 20-Year Master Plan to British Columbians.



www.yvr.ca > YVR: Your Airport 2027: 20-Year Master Plan > Technical Report, Chapter 2

< Forum '44 brought leaders in business, community and government together for some thought-provoking conversation about the future of YVR in the context of the local and global environment in 2044, and examined the airport's role in supporting a sustainable future for the Lower Mainland, B.C. and Canada.

4. Your Airport 2027: Requirements and Recommendations

Increased numbers of passengers and cargo volumes at YVR will mean greater demand for airside capacity, terminals, cargo facilities and ground transportation access to Sea Island. Airport support services and utilities will also need to be upgraded to accommodate projected volumes through the planning horizon.

The following chapters outline key changes or upgrades that will be needed to meet requirements to 2027 based on demand scenarios and forecasts. Chapters include information about the forecasts and planning approach used, stakeholder feedback

received and the Airport Authority's recommendations as to how to proceed. A range of cost estimates for terminal and runway options is also included. It should be noted that these are order of magnitude cost estimates only.

Given the uncertainty inherent in forecasting and planning, the Airport Authority takes a conservative approach to development by building incrementally whenever possible, and only as demand for additional facilities is realized



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5. Airside System

YVR's existing airside system includes two parallel runways (the North and South runways), a Crosswind Runway and a network of connecting taxiways that enable aircraft to move between the runways, passenger terminals and other airport facilities.

In 2005, 275,000 aircraft used the runways at YVR, either arriving or departing. Current annual runway capacity at YVR is approximately 400,000 aircraft takeoffs and landings. Capacity could be increased to more than 450,000 takeoffs and landings by using each of the parallel runways simultaneously for arrivals and departures. This would require improvements to the taxiway system.

Projections indicate that by 2027, the airport will need to accommodate 484,000 takeoffs and landings annually. To accommodate this increase an additional runway will be required.

PLANNING APPROACH

The 20-Year Master Plan airside system analysis was preceded by long-term development studies that suggested approximately 600,000 runway movements would take place by 2044, and that a new runway would be required to accommodate the projected activity. The long-term study identified a number of options for meeting the forecasted long-term demand.

To identify airside needs to 2027, the Airport Authority created a projected fleet mix, using six broad categories of aircraft, to estimate the required number of

takeoffs and landings by passenger aircraft. This estimate was applied to runway capacity estimates developed using International Air Transport Association standards and benchmarks from selected airports. Both NAV CANADA and the Massachusetts Institute of Technology were consulted on projected gains in capacity that may result from future technologies.

The Airport Authority used the sustainability matrix to evaluate each runway option identified during the long-term development studies. Runway options were also evaluated for compatibility with the various passenger terminal options identified in chapter 6 of this document.

REQUIRED AIRSIDE IMPROVEMENTS FOR 2027

Above and beyond the airside projects specified in YVR's current 10-Year Capital Plan, improvements will be necessary to enhance the flow of traffic on taxiways and increase runway and taxiway capacity to 2027.

TAXIWAY IMPROVEMENTS

In order to derive maximum capacity from the runways, it is essential to have adequate taxiway capacity. The construction of a North-South Taxiway (NST) connecting the east ends of the parallel runways would add capacity while significantly reducing taxi distance, saving time, fuel and minimizing emissions.

RUNWAY CAPACITY

To defer the need for additional runways as long as possible, it is essential to maximize capacity of the existing runways.

MAXIMIZING EXISTING RUNWAY CAPACITY

Unlike the South Runway, which is used for both arrivals and departures, YVR's North Runway has been used primarily as an arrivals runway, other than when demand approaches capacity, such as during peak traffic periods. By using the North Runway for both departures and arrivals, YVR could increase runway capacity by 15%, double its departure capacity and better manage demand on both runways.

To enable both the North and South runways to be used efficiently for arrivals and departures, YVR's taxiway system must have sufficient capacity and flow paths to allow aircraft to move efficiently to and from the runways without congestion.

To realize the full capacity potential of YVR's existing runway system, the following options were identified and considered:

1. Build a North-South Taxiway to allow for simultaneous takeoffs and landings on both the North and South Runways.
2. Extend the North Runway by 600 m (2,000 ft) to enable long-range aircraft departures. This would improve efficiency, better balance departure demand between the parallel runways and reduce taxi distances.
3. Implement peak-hour demand management measures (such as pricing mechanisms, quotas, air traffic flow control) to shift arrivals and departures to off-peak periods and other airports.
4. In anticipation of future Transport Canada requirements for extended Runway End Safety Areas (RESA), extend the North and South runways accordingly. Anticipated extension range will be 150-300 m (500-1,000 ft).

ADDING RUNWAY CAPACITY

Depending on the success of demand management programs and the rate of passenger growth, capacity enhancement initiatives will provide relief to 2023-4 at best. At that time, a new runway may be needed to create additional capacity.

As part of its long-term development studies, the Airport Authority explored a range of new runway options, each providing sufficient capacity for YVR to accommodate up to

600,000 takeoffs and landings each year. After each option was assessed using the sustainability matrix, four possible runway options were retained.

1. The Foreshore Runway: This new 4,270 m (14,000 ft) runway, extending westward from the Sea Island dike onto the foreshore of the ocean, would be used for arrivals and departures and would add capacity of approximately 210,000 takeoffs and landings to YVR's annual capacity at an estimated cost of \$1.2 billion. The Foreshore Runway would provide the required length for current and future aircraft. While it would impose a significant footprint into the foreshore with subsequent aquatic habitat impacts, it would also minimize aircraft noise impacts on the community.
2. The North Parallel Runway: A new, 2,740 m (9,000 ft) runway, parallel to and north of the existing North Runway, that would add capacity of approximately 148,000 additional takeoffs and landings at an estimated cost of \$310 million. This runway would be an arrivals only runway, with the existing runways serving departures. It would intrude into the Sea Island Conservation Area and Musqueam Lands, move noise closer to Vancouver residential areas and occupy lands previously designated for commercial development. The North Parallel Runway option would require changes to aircraft approach path zoning.
3. The South Parallel (Long) Runway: A new, 2,740 m (9,000 ft) runway, parallel to and south of the existing South Runway, that would add capacity of approximately 158,000 takeoffs and landings each year at an estimated cost of \$300 million. The South Parallel (Long) Runway would operate as an arrivals only runway, with the existing runway serving departures. It would intrude on, and create potential environmental impacts for, the Fraser River Middle Arm riparian area and increase noise exposure for Richmond residential areas. The runway would occupy land that is currently used for commercial activities and occupied by tenants at Airport South.
4. The South Parallel (Short) Runway: This modification of the South Parallel (Long) Runway option would be a new, 2,130 m (7,000 ft) parallel runway south of the existing South Runway. It would add capacity of approximately 158,000 annual takeoffs and landings at a cost of \$235 million. Although it would not penetrate the dike or intrude on the Fraser River Middle Arm riparian area, this runway would operate as an arrivals only runway but could not accommodate all types of aircraft.



www.yvr.ca > YVR: Your Airport 2027: 20-Year Master Plan > Technical Report, Chapter 5



STAKEHOLDER INPUT AND FEEDBACK

When asked for comments on the runway options, the public favored the Foreshore and South runways over the North Parallel Runway option. As expected, there was both positive and negative response to all options, although feedback on the Foreshore Runway option indicated greater support from respondents than the other options. Issues raised during consultation included cost, impact on the environment and existing facilities. There was, however, recognition that airside capacity should be added to prevent congestion and delays.

AERONAUTICAL NOISE EVALUATION

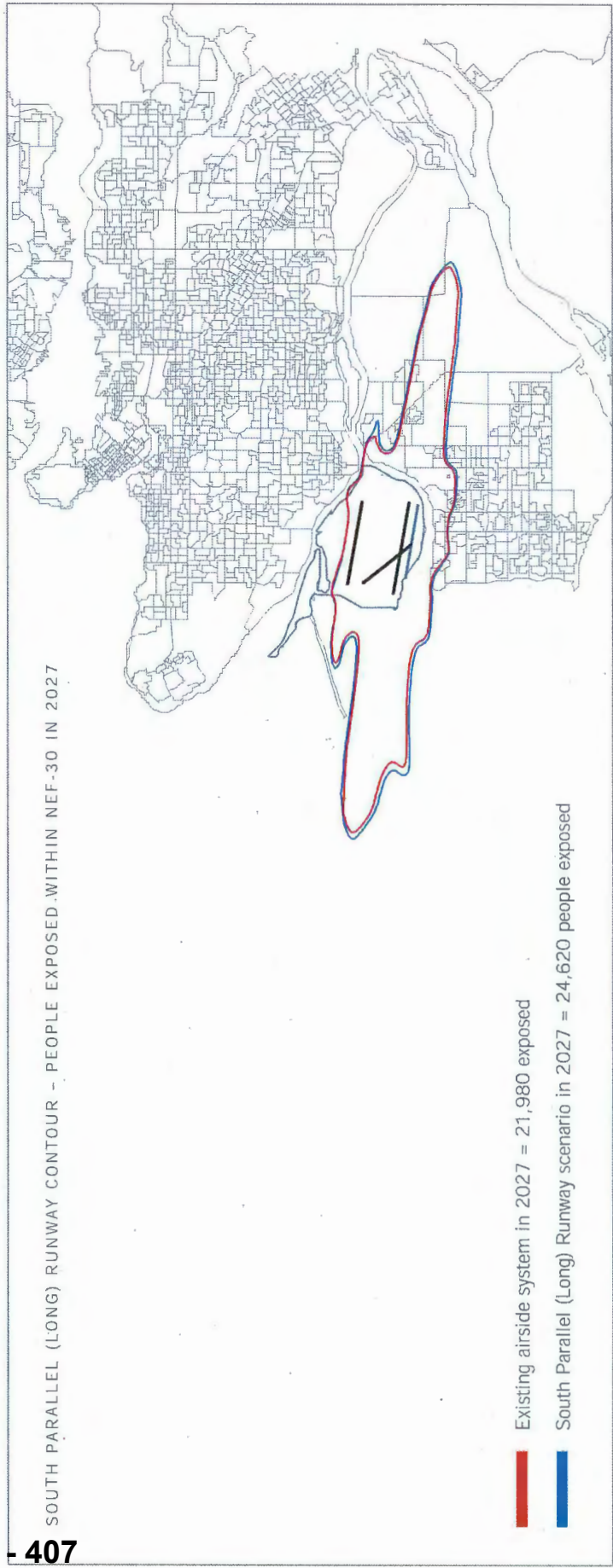
To compare noise impacts of the various runway options, the Airport Authority conducted an aeronautical noise management analysis. In Canada, the official metric for the assessment of aircraft noise is the noise exposure forecast (NEF). NEF contours are created using software developed by Transport Canada.

NEF contours are modeled by time-averaging the annual aircraft operations, with consideration given to the fleet mix, stage length, aircraft range, runway utilization, flight path and time of day.

Since Transport Canada guidelines prescribe that no new residential developments should occur in areas exposed to greater than 30-NEF, this 30-NEF benchmark was used in comparing master plan options. Forecasted populations of people living within the 30-NEF area for the years 2017 and 2027 were used to compare the NEF contours of the various runway options.

A base case forecast for 2027 population within the area of the existing runway system was used to measure the change in distribution of noise for each of the new runway options. The results of the new runway assessments indicate that only the Foreshore Runway decreased the number of people living inside the 30-NEF zone, achieving a 7.6% reduction. The North and South Parallel Runway options resulted in increases of those inside the 30-NEF zone ranging up to 12%.

Examples of NEF contours for the Foreshore and South Parallel (Long) runways are shown on page 21.





EVALUATION AND RECOMMENDATIONS

Based on sustainability matrix evaluation results, the Airport Authority recommends:

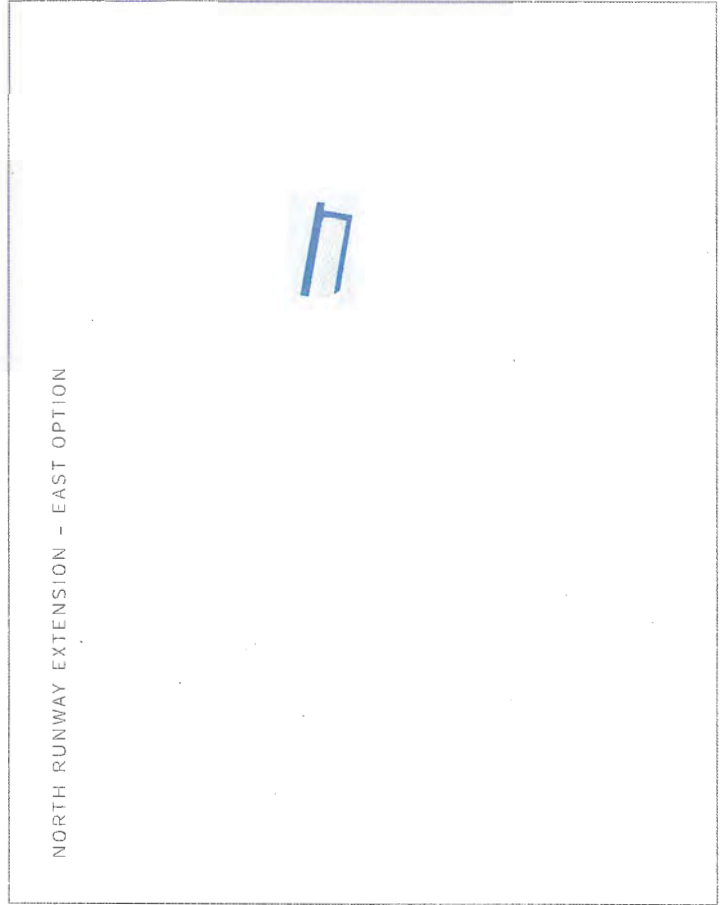
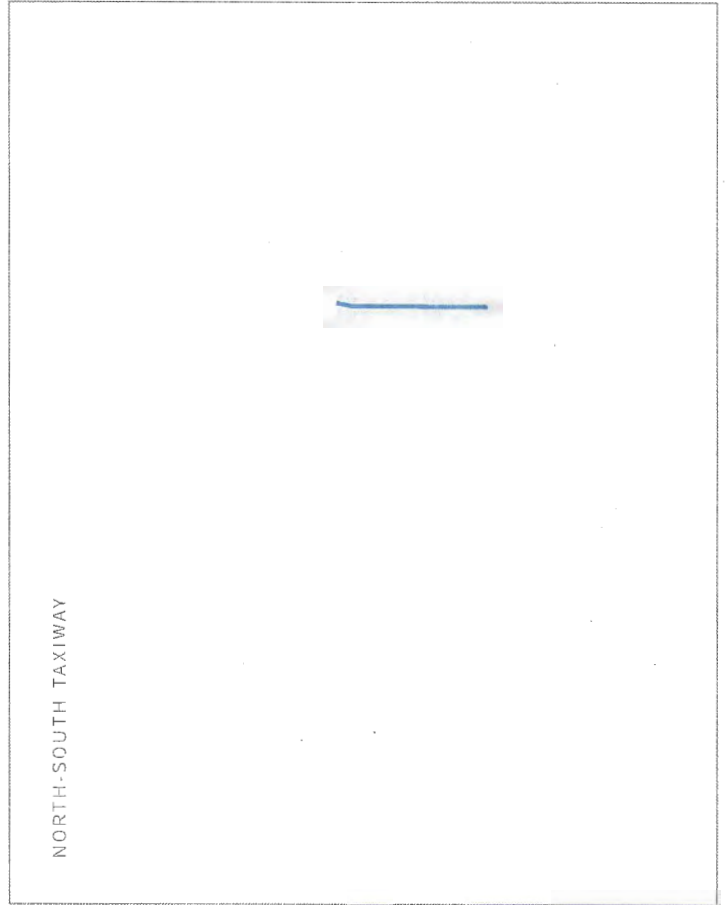
1. Implementing demand management measures to conserve YVR's airside capacity.
2. Proceeding with the North-South Taxiway (NST) to augment the existing taxiway system and improve system efficiency. The NST should be completed prior to the opening of phase 1 of a new passenger terminal in 2015 or sooner.
3. Proceed with extending the North Runway to the east, in combination with implementing the anticipated Runway End Safety Area (RESA) requirements on the North and South runways. The Airport Authority recommends extending the North Runway to the east, because a western extension would generate greater environmental impact.
4. When taxiway improvements are complete and both parallel runways are being used for arrivals and departures, the Crosswind Runway will contribute no additional capacity and should be closed.

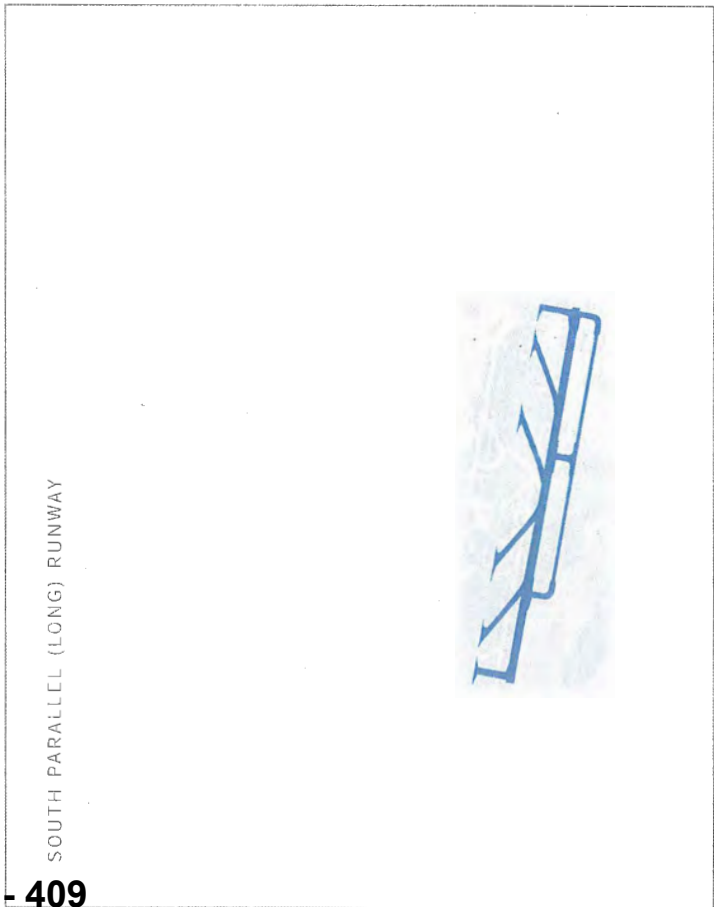
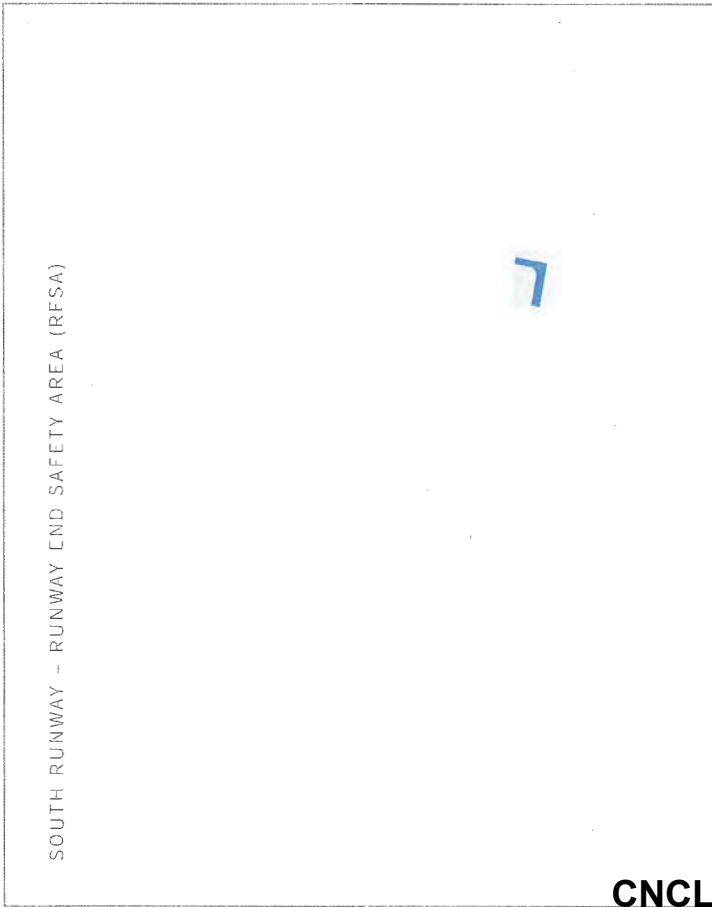
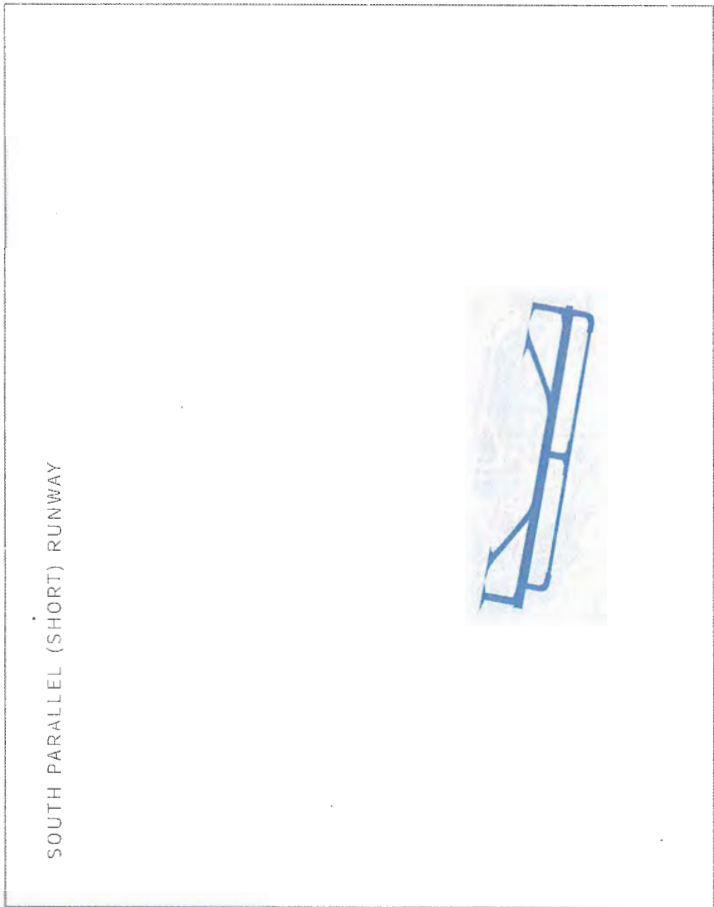
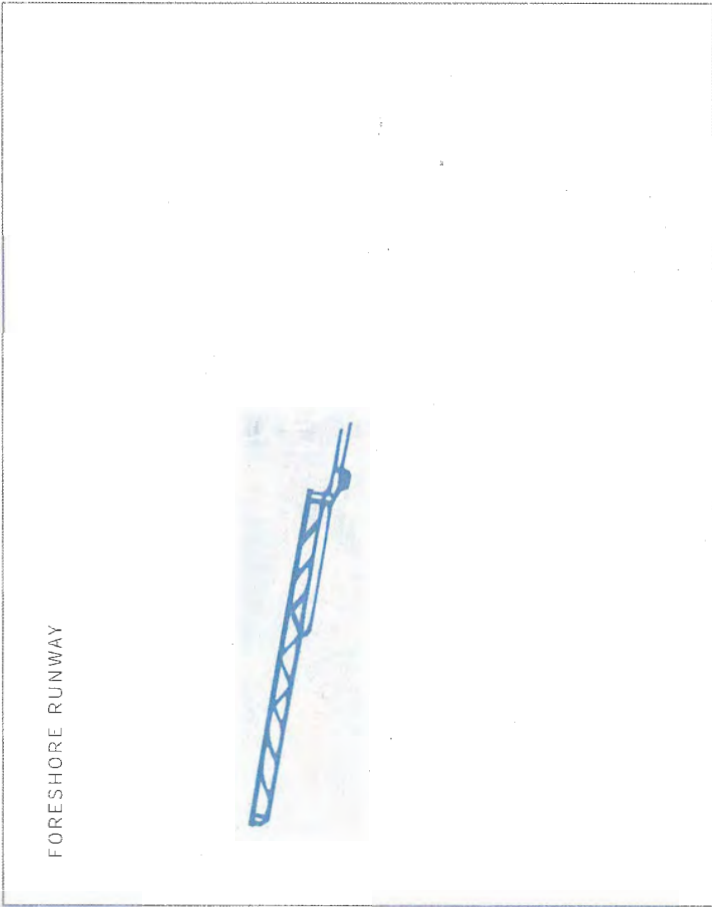
5. Protecting for the Foreshore, South Parallel (Long) and South Parallel (Short) runway options by allocating these areas to airside operations use in the proposed 2027 Airport Land Use Plan, creating leasing policies that reserve the areas for future airside operations and implementing the necessary aeronautical zoning regulation applications required to protect the South Parallel and Foreshore Runway options.

Land reserved for the airside system is indicated in blue on the proposed 2027 Airport Land Use Plan on page 50.



www.yvr.ca > [YVR: Your Airport 2027: 20-Year Master Plan](#) > [Map](#) > [Airside Reserve](#)





6. Passenger Terminals

Terminals are central to passengers' experiences at YVR and key to the success of the Airport Authority and its business and government partners. YVR's terminals are highly regarded by passengers and the community for their amenity, efficiency and distinctive sense of place. A record 16.4 million passengers passed through YVR in 2005 and medium-growth projections indicate that YVR will need to accommodate approximately 33.4 million passengers by 2027.

Passenger terminal planning is influenced by numerous factors including border and security policies, air carrier business plans and operations, technology and retail opportunities, all of which are subject to change. After the September 11, 2001 terrorist attacks, for example, more rigorous border checks reduced the passenger processing rate by almost one-third, impacting the space required for that function. In the domestic and transborder (U.S.) sectors, the check-in process has largely shifted from counters to automated kiosks, and the average size of aircraft flying between YVR and Asia fell by 22% since 2001, impacting aircraft gate utilization. Some developments, such as the advent of off-site kiosk check-ins, tend to reduce the footprint of passenger terminals while others, such as baggage screening and new border regulations, necessitate larger passenger terminal spaces.

There are currently three main passenger terminals at YVR: the International Terminal Building (ITB), the Domestic Terminal Building (DTB) and the South Terminal Building (STB), which serves intra-B.C. airline traffic on the airport's south side. There is also a common-use floatplane dock at Airport South.

As of 2004, the ITB and DTB offered 51 bridged gates and 16 ramp loading positions for smaller aircraft with a further eight ramp loading positions

at the South Terminal Building. Medium-growth forecasts indicate that a total of 73 bridged gates will be required by 2017 and 87 gates by 2027 together with an estimated 32 ramp loading positions, distributed between the ITB, DTB and STB. While adjustments to airport operations may be able to squeeze additional capacity out of YVR's infrastructure for a time, passenger traffic will likely exceed terminal capacity sometime between 2013 and 2015. Additional terminal facilities, beyond those already planned for, will be required.

PLANNING APPROACH

The 20-Year Master Plan passenger terminal planning process was designed to exceed safety and customer service requirements, meet the operational efficiency needs of facility users, provide maximum flexibility for expansion and change, protect adequate land to meet terminal expansion needs, and utilize sustainable building design and operation practices. It balanced terminal and airside system development to achieve maximum efficiency and capacity of the combined systems.

The terminal planning process incorporated an analysis of demand and capacity. It considered the Airport Authority's strategy of providing common-use facilities (check-in counters, aircraft gates and baggage carousels) and creating infrastructure that supports an effective link between passengers and baggage and allows for incremental expansion. The process factored in the seasonality of some airport operations and the understanding that external changes will continue to affect terminal development and operations.



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TERMINAL OPTIONS FOR CONSIDERATION

The Airport Authority identified three areas into which the existing terminal complex could be expanded: to the north east of the ITB, to the south east of the DTB and to the west of the existing terminal complex in either a satellite or a Y-shaped pier. Within each of these broad physical options were a number of alternatives for how the terminal would be utilized. For example, a north east expansion could accommodate transborder or international flights, both transborder and international flights, or flights of just one carrier or airline alliance. The terminal options evaluated were:

1. TRANSBORDER NORTH EAST: Expand the terminal complex to the north east of the ITB to accommodate transborder traffic.
2. INTERNATIONAL NORTH EAST: Expand the terminal complex to the north east of the ITB to accommodate international traffic.
3. INTERNATIONAL/TRANSBORDER NORTH EAST: This option is a variation of other north east terminal options, accommodating both international and transborder traffic.
4. TRANSBORDER SOUTH EAST: Expand the terminal complex to the south east of the DTB to accommodate transborder traffic.
5. INTERNATIONAL WEST SATELLITE: Construct an in-field satellite terminal west of the existing complex for international traffic, connected to the main terminals by a people mover.
6. TRANSBORDER WEST SATELLITE: Construct an in-field satellite terminal west of the existing complex for transborder traffic, connected to the main terminals by a people mover.
7. INTERNATIONAL Y: Construct a new international pier by western expansion of the existing Pier C.
8. TRANSBORDER Y: Construct a new transborder pier by western expansion of the existing Pier C.
9. DOMESTIC Y: Construct a new domestic pier by western expansion of the existing Pier C.
10. HUB CARRIER Y: Construct a new hub through incremental development and expansion of the existing Pier C complex.
11. TERMINALS A & B: Terminals allocated by airline carrier or alliance serving the necessary sectors.
12. CHARTER/LOW-COST CARRIER TERMINAL: This option reflects an emerging trend in terminal planning where terminals are organized by product type rather than by sector.

 www.yvr.ca > VVR: Your Airport 2027: 20-Year Master Plan > Technical Report > Chapter 6

ACCESSIBILITY

The Airport Authority is a world leader in creating accessible air terminal facilities. This commitment to accessibility recognizes the importance of meaningful access, regardless of age or ability, as a fundamental aspect of good customer service. Along with a facility design policy that utilizes the highest applicable building code requirements for access for people with disabilities, the Airport Authority retains an independent access consultant to review all new construction and retail projects. These rigorous standards for providing quality access for all would be reflected in any new terminal facility.

PEOPLE MOVERS

As YVR expands, so do walking distances for passengers. Public input shows that minimizing walking distances within terminals is a priority. To continue to provide a high level of service, the Airport Authority recognizes that some form of people mover (shuttles, buses or Skytrain-type technologies) will be required to facilitate movement within the terminals and to respond to the needs of the changing demographics of travellers.

Most types of people movers can be integrated into a terminal complex, although some may be more difficult to incorporate than others. Future terminal expansion and renovation projects will consider walking distances and consider the appropriate people mover technologies to minimize them.

SOUTH AIRPORT

SOUTH TERMINAL BUILDING (STB)

As long as there is demand from passengers and air carriers serving small regional destinations in B.C., the STB will continue to operate. It is not anticipated that significant STB expansion will be required, and the terminal reserve set out in the 1995 Master Plan should be adequate to 2027. Should the Airport Authority pursue a South Parallel Runway option, the existing South Terminal Building would be impacted.

FLOATPLANE TERMINAL

In the middle arm of the Fraser River, the Airport Authority's common-use floatplane dock is operated by a third party. Harbour Air also has its own passenger terminal and dock on the river. Assuming the floatplane terminal continues to operate on a common-use basis, sufficient space will need to be set aside for adjacent vehicle parking and terminal facilities. There may be an opportunity to combine the floatplane terminal and parking facilities within the STB, especially if floatplane passengers are required to undergo pre-board screening.



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TERMINAL FACILITIES AT CANADA LINE YVR STATION 1

During stage two consultations, the possibility of locating select terminal facilities, such as passenger and baggage check-ins, at Canada Line YVR Station 1 was identified. Under this system, passengers could choose to check themselves and their baggage in before riding the Canada Line to the main terminal for pre-board screening. This would help address the significant public demand for additional curbside pick-up and drop-off space, reduce emissions by shortening vehicle trips, relieve congestion at DTB and ITB curbs and parking facilities and maximize the Airport Authority's investment in the Canada Line. The Airport Authority believes this option offers numerous benefits and will discuss it with stakeholders during stage three of the 20-Year Master Plan consultation process.

STAKEHOLDER INPUT AND FEEDBACK

During the consultation process, feedback on the various terminal options was solicited from air carriers, government agencies, passengers and the general public.

The public primarily favored the South East and North East terminal options and also supported the Western Y terminal options. The separated Western Satellite Terminal option was least favored.

Air carrier business partners were primarily interested in operational efficiency and minimizing capital costs and disruptions during construction. Carriers also indicated a preference for consolidated operations wherever possible.

The need for additional passenger pick-up and drop-off curbside space at the DTB and ITB was a recurring theme during consultation. This challenge will likely persist until YVR's terminals are expanded, although locating terminal facilities at Canada Line YVR Station 1 may offer some interim relief.

EVALUATION AND RECOMMENDATIONS

The Airport Authority evaluated the terminal options using the sustainability matrix. The West Satellite options were penalized because they were difficult to build incrementally, did not provide additional curbside space and received negative public response. While the Western Y options performed strongly during analysis, their construction complexity and lack of curbside space worked against their selection.

The Transborder South East option performed more strongly than western expansion options during evaluation, partly because of its location adjacent to the South Runway, which is used for transborder flights. This terminal option would require relocation of cargo operations on Miller Road, and Canada Line access would not be as direct or convenient as some other options.

The North East terminal options rely on the construction of the North-South Taxiway to provide an acceptable taxiing distance to the South Runway. Benefits of these options include ease of construction, short delivery times and the opportunity for incremental development. All reduce risk and financial exposure and provide adequate curbside space and good access to Canada Line. Order of magnitude costs for the North East terminal options range from \$1.24 billion and \$1.34 billion.

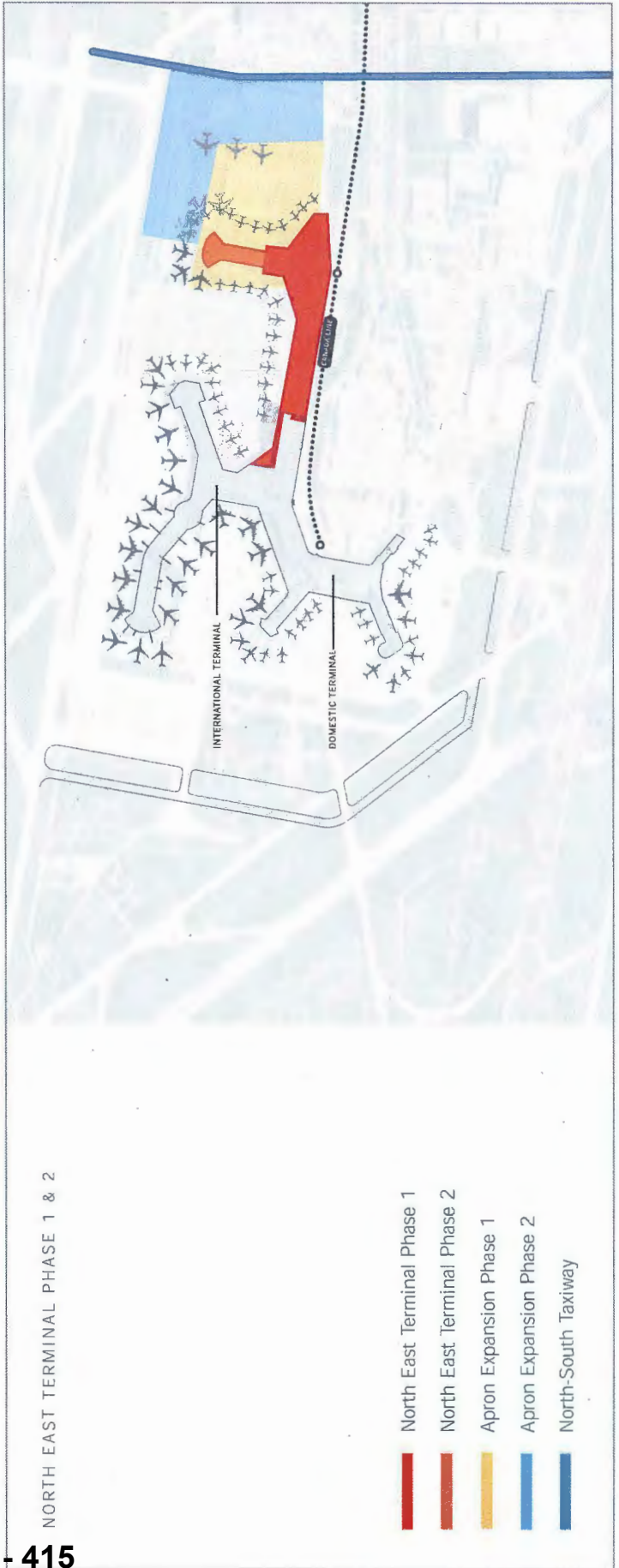
To meet YVR's forecast terminal needs, the Airport Authority recommends:

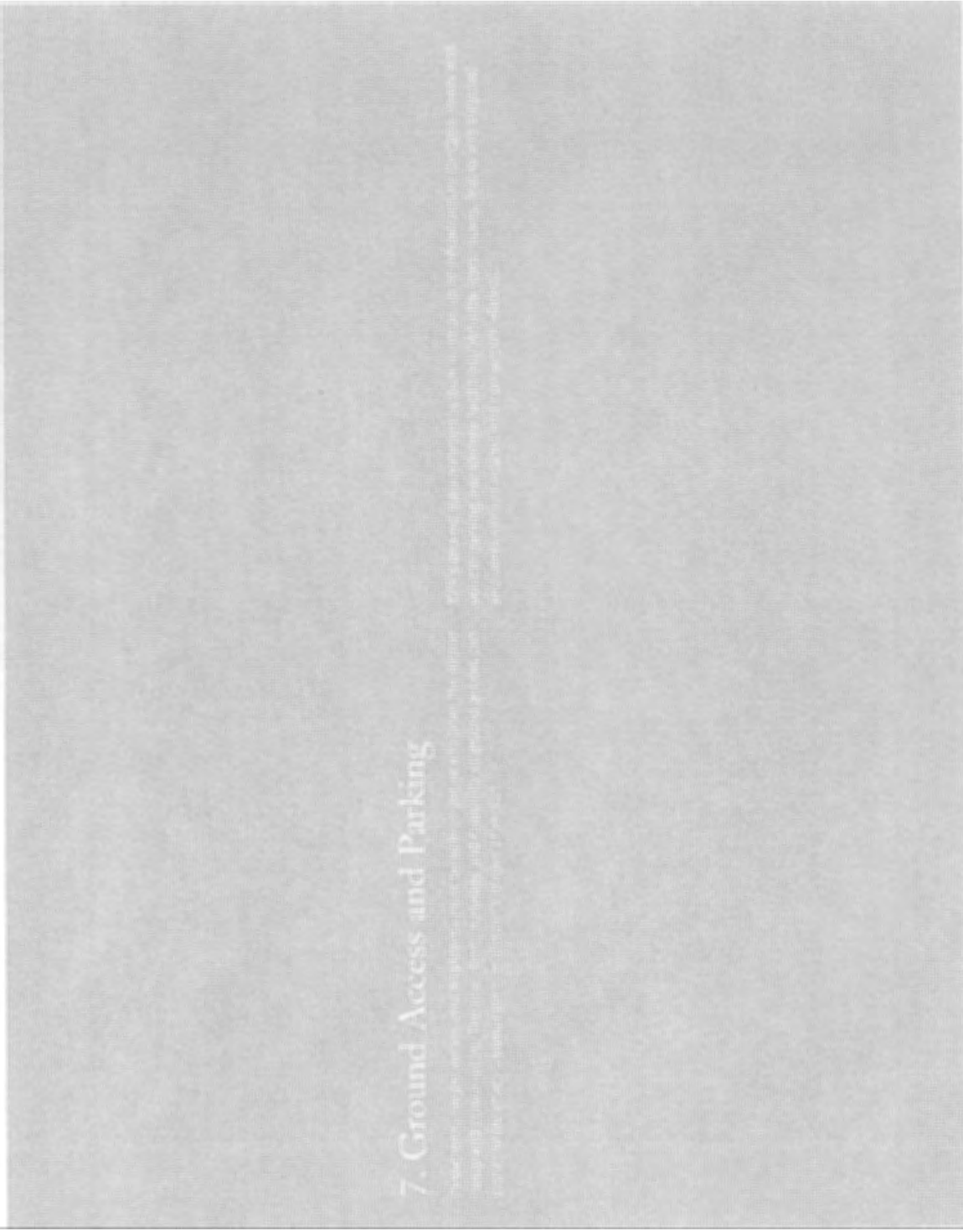
1. Selecting the North East location for the next phase of terminal expansion, maintaining the flexibility to service the international, transborder and/or airline alliance sectors.
2. Reserving land to the south east in the event that the passenger growth rate is high, or that terminal expansion to the south east is required for a discount/low-cost carrier terminal, or to accommodate special requirements associated with the 2010 Winter Olympics.
3. Considering placing select terminal facilities at Canada Line YVR Station 1 and allocating land for this purpose.

4. Maintaining the South Terminal Building (STB) as long as it is required by air carriers and passengers and protecting sufficient land to accommodate STB growth or address impacts of the proposed South Parallel Runway.
5. Protecting adequate land, including vehicle parking, for a floatplane terminal. Should implementation of the South Parallel Runway option mean a new STB is required, the Airport Authority should consider the feasibility of co-locating a floatplane terminal with a new STB.

Lands allocated or reserved for current or future terminal use are indicated in red on the proposed 2027 Airport Land Use Plan on page 50.

 www.yvr.ca > YVR: Your Airport 2027: 20-Year Master Plan > Map > Passenger Terminal Reserve





7. Ground Access and Parking

Faint, illegible text, possibly a list or description of items related to ground access and parking.

YVR GROUND TRANSPORTATION SYSTEM

Planning the future of YVR's ground transportation system is challenging, since many routes are shared by airport-related users such as passengers, employees, cargo vehicles and airport visitors as well as non-airport-related users such as commuters. For example, roughly two-thirds of the vehicles using the Arthur Laing Bridge (the main link to Vancouver) are not airport-related. Furthermore, different governments or authorities have jurisdiction over different bridges and road systems.

An estimated 20.2 million airport-related vehicle trips were made in 2005. Forecasts indicate that, even with a projected 15% of passengers and 18% of employees using the Canada Line, the number of airport-related vehicle trips will grow to 25.9 million in 2017 and 30.6 million in 2027.

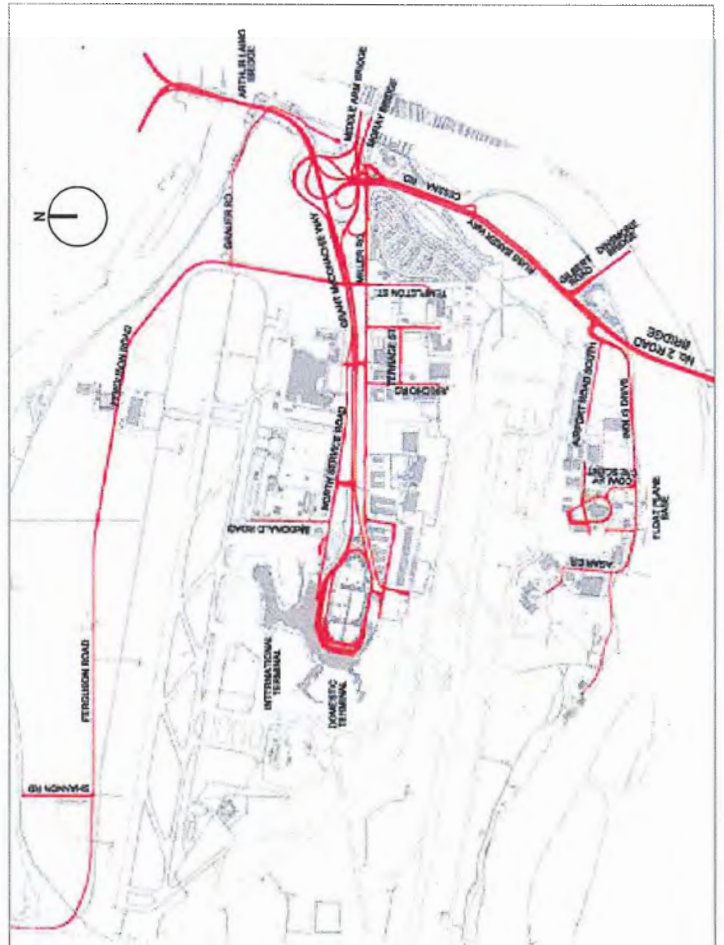
Detailed analysis shows the existing bridge infrastructure is adequate to serve airport-related demand to 2027 but this will displace non-airport-related traffic. Even with the implementation of the Canada Line, the Airport Authority will need to introduce measures to ensure easy access to the airport for passengers, businesses and employees.

PLANNING APPROACH

In developing and evaluating ground transportation solutions, the Airport Authority's objectives were to ensure a range of available access choices, to move people and goods safely and effectively, to ensure integration with the transportation plans of partner agencies and governments, to minimize environmental impacts (such as vehicle emissions) and to remain flexible to respond to changing demand over the planning horizon.

The Airport Authority's multi-agency planning approach included developing a transportation demand model for 2027 and integrating it into the regional transportation demand model, developing parking demand forecasts, conducting workshops with the cities of Vancouver and Richmond, the Greater Vancouver Transportation Authority and the Government of B.C. and consulting extensively with business partners, stakeholders and the general public.

GROUND TRANSPORTATION SYSTEM,
ACCESS TO AND FROM SEA ISLAND



OPTIONS FOR CONSIDERATION

The Airport Authority developed 10 ground access options for consultation with government agencies, stakeholders and the general public. Broadly speaking, the options fall into two groups – parking options and ground access. Ground access options are further divided into those that maximize existing capacity and those that add new capacity.

PARKING OPTIONS

1. Continue to provide parking for passengers and employees on Sea Island, with possible new long-term public and employee parking near Canada Line YVR Station 1.
2. Provide some public and employee parking off Sea Island (in Richmond and Vancouver) and bring passengers and employees to YVR using the Canada Line.

GROUND ACCESS OPTIONS ENHANCING EXISTING ROUTES

3. Dedicate a portion of existing routes and lanes to airport traffic only, or implement tolls for commuter traffic on routes such as the Arthur Laing Bridge.
4. Enhance the capacity of existing routes through improvements, such as building an overpass at the Templeton/Grant McConachie Way intersection, improving merge lanes at the south end of the Arthur Laing Bridge, or building a traffic bypass on SW Marine Drive.
5. Implement one-way systems, such as designating the Arthur Laing Bridge a southbound route and the Oak Street Bridge a northbound route exclusively.

ADDING NEW CAPACITY

6. Build a four-lane Templeton-Arbutus connector from the north end of Templeton Street on Sea Island to West Boulevard in Vancouver.
7. Create a Templeton-Alderbridge connector by extending Templeton Street south and twinning the Dinsmore Bridge to connect to Alderbridge and No. 3 Road.
8. Twin the Arthur Laing Bridge and dedicate the additional lanes exclusively to airport use.
9. Improve access between YVR and Highway 99 by replacing at-grade intersections with overpasses and replacing the existing Middle Arm Swing Bridge.

DEMAND MANAGEMENT

10. Maximize efficient use of existing routes and bridges with a combination of economic measures and traffic flow strategies. It should be noted that demand management alone will not be sufficient to satisfy traffic projections to 2027.



www.yvr.ca > YVR: Your Airport 2027: 20-Year Master Plan > Technical Report > Chapter 11

STAKEHOLDER INPUT AND FEEDBACK

Consistent with the feedback received from Airport Authority business partners, members of the public recognized that transportation on and off Sea Island posed a significant challenge in future planning. Business partners need access to a sufficient labour pool and, in the case of the cargo community, good access to Highway 99 is required. For the integrators (courier companies), timely access to downtown Vancouver and business parks is important.

The vast majority of stakeholders believe transportation demand management is a necessity. Many supported the idea of parking at facilities remote from the terminal (at a lower price) and riding the Canada Line to the airport, and some business partners pointed out that remote employee parking is common at other large airports. The City of Vancouver reiterated its policy that no new arterial road capacity into the city be added.

Most respondents supported building new roads and bridges, although they opposed some options, including the Templeton-Arbutus and Templeton-Alderbridge connectors. While dedicated airport access lanes received some support, some stakeholders had reservations.

Feedback from Lower Mainland residents and YVR passengers indicated substantial support for the Canada Line rapid transit link between the airport, downtown Vancouver and Richmond. Many also suggested encouraging alternative modes of transportation, such as adding bike lanes for airport access routes, particularly for airport employees.



EVALUATION AND RECOMMENDATIONS

In the sustainability matrix evaluation, options that utilized existing infrastructure performed better than those that added new capacity. Of the proposed new capacity options, an improved corridor between YVR and Highway 99 performed best.

The Airport Authority recommends:

- Pursuing a comprehensive demand management program which maximizes Canada Line rapid transit use, considers toll or dedicated access lanes and relocates some airport parking off of Sea Island;
- Working with partner agencies and governments to ensure priority for airport traffic as non-airport demands for bridge capacity intensify;
- Implementing a dedicated airport access lane northbound on Russ Baker Way;
- Not pursuing an extension of Templeton Street south to the Dinsmore Bridge;
- Protecting the Middle Arm Bridge access (Sea Island Connector/Moray Channel Bridge) from encroachment by non-airport traffic, working with government partners to replace the Moray Channel Swing Bridge and improving access to Highway 99;

- Offering an array of public parking products and accommodating the requirements of the car rental industry on Sea Island;
 - Adding capacity to and improving Sea Island road system intersections;
 - Reviewing commercial ground transportation policies to reduce unnecessary shuttling over bridges;
 - Ensuring that the business case for any non-airport-related commercial development on Sea Island considers the impact of incremental vehicle traffic on bridge capacity.
- The above recommendations are contingent on the Canada Line's actual impact on the demand for ground access to YVR, which will be closely monitored.
- Lands allocated to YVR's ground transportation system are indicated in grey on the 2027 Airport Land Use Plan on page 50.



www.yvr.ca > **VVR: Your Airport 2027: 20-Year Master Plan** > **Map** > **Ground Access and Parking**



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8. Cargo

Although YVR is primarily a passenger facility, cargo is a major business at the airport. Most air cargo facilities at YVR are located in an area known as Cargo Village on Miller Road. Other cargo facilities are located in the Jericho Road subdivision and Airport North.

Cargo processed at YVR is carried in the belly of passenger aircraft (belly cargo), by all-cargo aircraft (freighters), or by companies such as UPS, FedEx and Purolator, known as integrators because their operations include integrated "door-to-door" shipping services.

In 2005, 223,700 tonnes of cargo were loaded and unloaded from aircraft at YVR. By 2027, the annual projected volume of cargo passing through YVR is 500,000 tonnes. The volume of cargo coming from international markets is forecast to increase significantly over the planning period, as is the percentage of cargo carried by freighters.

Due to the intermodal nature of cargo, significant volumes of cargo processed at YVR facilities arrive and depart by truck, and are therefore not factored into air cargo statistics. This cargo does affect the planning process, and it has been considered on the proposed 2027 Airport Land Use Plan (under Airside Commercial) and in chapter 7 of the Master Plan Technical Report.

A considerable amount of YVR land is devoted to processing relatively small volumes of cargo. Over the planning period, the Airport Authority will work with its business partners to increase the productivity of cargo facilities.

In planning the future of cargo processing at YVR, consideration must be given to potential mandatory pre-board screening of belly cargo and the possibility that inbound cargo will need to undergo security and health inspections. Furthermore, the implementation of the North-South Taxiway and any future South East terminal expansion will affect future cargo operations at YVR.

PLANNING APPROACH

In evaluating YVR's future cargo needs, the Airport Authority considered the projected land, facility and circulation demands of YVR's cargo operations, identified alternative locations to accommodate projected growth of air cargo facilities and worked to reserve the necessary lands for cargo facility expansion and operations growth.



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CARGO OPTIONS

To accommodate projected cargo operations over the 20-year planning horizon, the Airport Authority will need to reserve land for a belly cargo campus with good airside road access to the international passenger aircraft ramp, and an integrator campus with good access to airside as well as the regional highway system. Saving valuable minutes in the delivery of packages is especially important in Vancouver because of the long distances from, and time-zone differences with, the main sorting hubs of the integrators. It will likely be necessary to relocate the existing Cargo Village to make room for terminal expansions and/or related ground access and parking facilities.

Three areas are available for the proposed cargo campuses: the Northlands, the West Infield and the Jericho/Templeton area south of Miller Road. The Northlands offer good highway and airfield access, especially if the North-South Taxiway is built. The eastern end of the Northlands area is within acceptable, industry-standard distance of the international passenger ramp.

Should the Crosswind Runway be decommissioned as part of airside improvements, a substantial parcel of suitable land in the West Infield could be developed, subject to the feasibility of a road access tunnel under the approach to the North Runway. Airside vehicle access to the passenger terminal and airfield access for aircraft would be very good, so the West Infield could be well-suited for a belly cargo campus.

Developing the Jericho/Templeton area would mean relocating the Airport Authority departments that operate out of the Templeton Building and consolidating the land immediately to the north. Highway and airside access is good from this location making this area well-suited to accommodate integrator growth.

The Canadian Air Transport Security Authority (CATSA) is currently developing policies and procedures related to the screening of outbound air cargo. While the integrators will be able to meet the requirements individually, smaller cargo handling companies and freight forwarders may find it too expensive to do so and the Airport Authority may need to examine the feasibility of a centrally located, common-use cargo screening facility.

STAKEHOLDER INPUT AND FEEDBACK

Extensive consultations were undertaken with the principal integrators, freight forwarders and brokers, facility developers, air carriers and government agencies such as Transport Canada, CATSA, and the Canada Border Services Agency (CBSA).

Given the rapidly changing nature of the cargo industry, stakeholders stressed the need for flexibility. Business partners processing belly cargo need facilities located reasonably close to the passenger terminal, preferably no more than 2.5 kilometres away. Integrators require self-contained facilities but also have business partners in Cargo Village.

During public consultation, concerns were raised about the compatibility of cargo facility development adjacent to residential neighborhoods.

EVALUATION AND RECOMMENDATIONS

To meet YVR's projected cargo needs, the Airport Authority recommends:

1. In consultation with cargo business partners, increasing the production efficiency of existing cargo buildings.
2. Approximately 70 hectares of cargo processing lands will be required in 2027, assuming an increase in the efficiency of cargo buildings. Depending on the availability of suitable land, and in consultation with the industry, greater efficiency rates may need to be realized.
3. Reserving approximately 15 hectares of airport Northlands for a new Cargo Village, to be created if existing facilities are displaced by terminal expansion. The new facility should be located within a distance of the passenger aircraft ramp acceptable to the industry. Freighter parking positions would need to be developed adjacent to the new Cargo Village, which should also provide for the development of a centrally located, common-use outbound cargo screening facility.
4. Incremental integrator land requirements, estimated at 55 hectares, should be accommodated in the Jericho Road subdivision (including the site of the existing Templeton Maintenance Building) and in Airport North subject to further discussion with integrator business partners.

Lands allocated for cargo operations at YVR are included in the Airside Commercial allocation, indicated in yellow on the proposed 2027 Airport Land Use Plan on page 50.



www.yvr.ca > YVR: Your Airport 2027: 20-Year Master Plan > Map > Airside Commercial

9. Airport Support Services

A variety of airport services support safe and efficient aircraft operations at YVR, and the 20-Year Master Plan must allocate sufficient lands to allow for the expansion of these services to meet projected growth in passengers, aircraft, and cargo demands.

AIRPORT OPERATIONS CENTRE

Equipped with communications and visual monitoring equipment, YVR's Operations Centre is the nerve centre that coordinates all airport operations. Operations Centre staff constantly monitor the spectrum of airport operations including passenger terminals and baggage systems, airfield status, roads and bridges and assistance calls. The Operations Centre is equipped with a dedicated facility to oversee the response to emergency situations at the airport.

AIR TRAFFIC CONTROL

A number of the recommendations in this draft document may impact NAV CANADA's air traffic control system and air navigation aid requirements. The detailed design of future facilities must consider control tower sight lines and radar as well as the potential for interference with navigation aids.

AIRCRAFT DE-ICING

As aircraft operations at YVR increase, the airport's de-icing capacity will need to be expanded. The required capabilities for de-icing and the environmentally sound

containment, recovery and recycling or disposal of de-icing fluids will be designed into the taxiway system and apron layout at appropriate locations.

WILDLIFE CONTROL

Wildlife can pose a significant threat to safe aircraft operations, and YVR's wildlife control systems capabilities will be configured to address wildlife hazards associated with increased aircraft traffic and airside development.

AIRCRAFT RESCUE & FIRE FIGHTING (ARFF)

YVR maintains aircraft rescue and firefighting (ARFF) services to the standards required by Transport Canada for aircraft in all categories, including those for the Airbus A380. Relocation of the Firehall may be required to accommodate new facilities. This will be undertaken without compromise to operational capability.

AIRPORT MAINTENANCE

YVR's Templeton Road maintenance facility is reaching the end of its useful life and will need to be replaced over the 20-year horizon. Further study will be undertaken to identify a suitable location for the various Templeton facility functions.



www.yvr.ca > YVR: Your Airport 2027: 20-Year Master Plan > Technical Report, Chapter 8

10. Commercial Operations

Commercial operations at YVR fall under two categories: airside (commercial operators with direct access to airside system) and groundside (commercial operations without direct access to the airside system). This chapter provides the Airport Authority's recommendations for accommodating commercial operations to 2027.

AIRSIDE COMMERCIAL

Over the last twenty years, the Airport Authority has leased an average of 1.6 hectares of airside commercial land per year, including facilities for cargo processing. Excluding cargo, average leased land has been 0.5 hectares per year. YVR has sufficient airside land to accommodate the likely demand from non-air cargo airside commercial uses such as aircraft maintenance and Fixed Base Operators over the planning period.

 www.yvr.ca > YVR: Your Airport 2027: 20-Year Master Plan > Map > Airside Commercial



GROUND-SIDE COMMERCIAL

Groundside commercial land can be sub-divided into airport-related uses and non-airport related uses. The average amount of groundside commercial land leased over the last 20 years has been 0.7 hectares per year, the vast majority of which has been for aviation-related purposes.

FLIGHT KITCHENS

Two companies – Gato Operations and GLS Catering Services – provide flight kitchen services at YVR. Combined, their facilities occupy 57.1 hectares in Airport Centre on Miller Road. Given the airline industry there toward limiting complimentary food services, the number of airline meals required has decreased. Even with forecasted growth in longer-haul flights, there is sufficient unused capacity in the current flight kitchen facilities to meet demand over the planning horizon.

NON-AVIATION-RELATED COMMERCIAL

Historically, very little airport land has been used for non-aviation-related development. However, local commercial real estate trends suggest that demand for suburban office and industrial space will remain strong, and the Canada Line rapid transit enhances the accessibility of Sea Island, which may open up new commercial development possibilities.

As part of the master planning process, the Airport Authority examined regional commercial and industrial real estate trends, assessed the potential implications of the Canada Line, non-aviation-related commercial practices at other airports, and, at a high level, reviewed the financial implications of development. Subject to meeting the needs of aviation-related uses, it is recommended that the Airport Authority pursue value-added, non-aviation-related commercial developments that are compatible with airport operations, consistent with regional and municipal plans and that do not generate a significant amount of additional non-airport-related traffic. Lands allocated as Airside Commercial are indicated in yellow and lands allocated as Groundside Commercial are indicated in brown in the proposed 2027 Airport Land Use Plan on page 50.



www.yvr.ca > YVR: Your Airport 2027: 20-Year Master Plan > Map > Groundside Commercial



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11. Utilities

While not top-of-mind for most travellers, utilities such as electricity, heating, water, sanitation, telephones and information technology, dykes, storm water drainage and fuel services are vital to the safe, effective operation of YVR.

The master planning process sought to ensure continuity of service by estimating future demand for the various utilities, evaluating system capacities and identifying alternatives as necessary. A demand capacity analysis was prepared for each utility by Airport Authority staff, consultants and suppliers in a series of workshops that identified demand, deficiencies and proposed solutions. Detailed plans for these services have been developed to ensure that all systems have the required capacity to meet forecast demands.

RESOURCE EFFICIENCY PROGRAM

The resource efficiency program seeks to reduce overall energy consumption at the airport. Although the terminal buildings expanded in area by 44% between 1997 and 2003, total energy consumption increased by only 6% over the same period. The Airport Authority's Energy Reduction Team is a cross-departmental committee whose mandate is to identify and implement energy-reduction initiatives through energy-efficient work activities, purchasing choices and the design of future facilities.

UTILITY SYSTEM CORRIDORS

Major utility corridors have been established on the 2027 Airport Land Use Plan to ensure that right-of-ways are protected for future expansion. Areas allocated for utility corridors are indicated in orange on the proposed 2027 Airport Land Use Plan on page 50.

AVIATION FUEL SUPPLY AND STORAGE OPTIONS

Fuel for aircraft at YVR is provided by Vancouver Airport Fuel Facilities Corporation (VAFFC), a consortium of airline companies. By 2010, daily maximum aviation fuel consumption is forecast to exceed the daily capacity of the airport's fuel delivery system and Sea Island's existing fuel storage capacity will not be able to ensure the recommended four-day operational reserve.

The Airport Authority concurs with VAFFC's proposal that YVR's daily fuel supply capacity be doubled by 2017 and tripled by 2027, and that VAFFC's controlled storage capacity be increased to accommodate the corresponding four-day operational reserves.

VAFFC has been considering the options for increasing the supply of fuel to the airport. A list of possible options was developed for review and three options have been retained for further consideration. They are:

- Increasing pipeline capacity by replacing or twinning the existing pipeline;
- Delivering aviation fuel directly to Sea Island by ocean tanker or barge;
- Identifying a location on the main arm of the Fraser River for delivery by tanker or barge to a new on-site VAFFC tank facility with connecting VAFFC pipeline system to YVR.

The Airport Authority will continue to work with VAFFC to select a sustainable fuel-supply option that meets the needs of the airport and surrounding communities.



www.yvr.ca > YVR: Your Airport 2027: 20-Year Master Plan > Map > Utility Corridor



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12. Recreational Areas

While Sea Island is home to YVR, it is also an area of recreational interest for local community residents; airport employees, airplane spotters, picnickers and wildlife enthusiasts. The Airport Authority will continue to work with the City of Richmond and local communities to ensure that, whenever possible, amenities such as bicycle paths, playing fields and public washrooms are provided to enhance the public's enjoyment of Sea Island.

Lands allocated for recreational areas are indicated in green on the proposed 2027 Airport Land Use Plan on page 50.



www.yvr.ca > YVR: Your Airport 2027: 20-Year Master Plan > Map > Recreational Area



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13. Regional Airport System

In addition to YVR, five other airports operate in B.C.'s Lower Mainland: Abbotsford International Airport, Boundary Bay Airport, Chilliwack Municipal Airport, Langley Regional Airport and Pitt Meadows Regional Airport. Each airport is operated by an independent body with a specific mandate and charter to cater to community needs.

While no formal structure unites the Lower Mainland airports into a defined airport system, it is widely recognized that growing populations and increasing aviation demands require a regional approach to airport planning. This view was frequently expressed at the Airport Authority's long-term planning forums and at various consultation events.

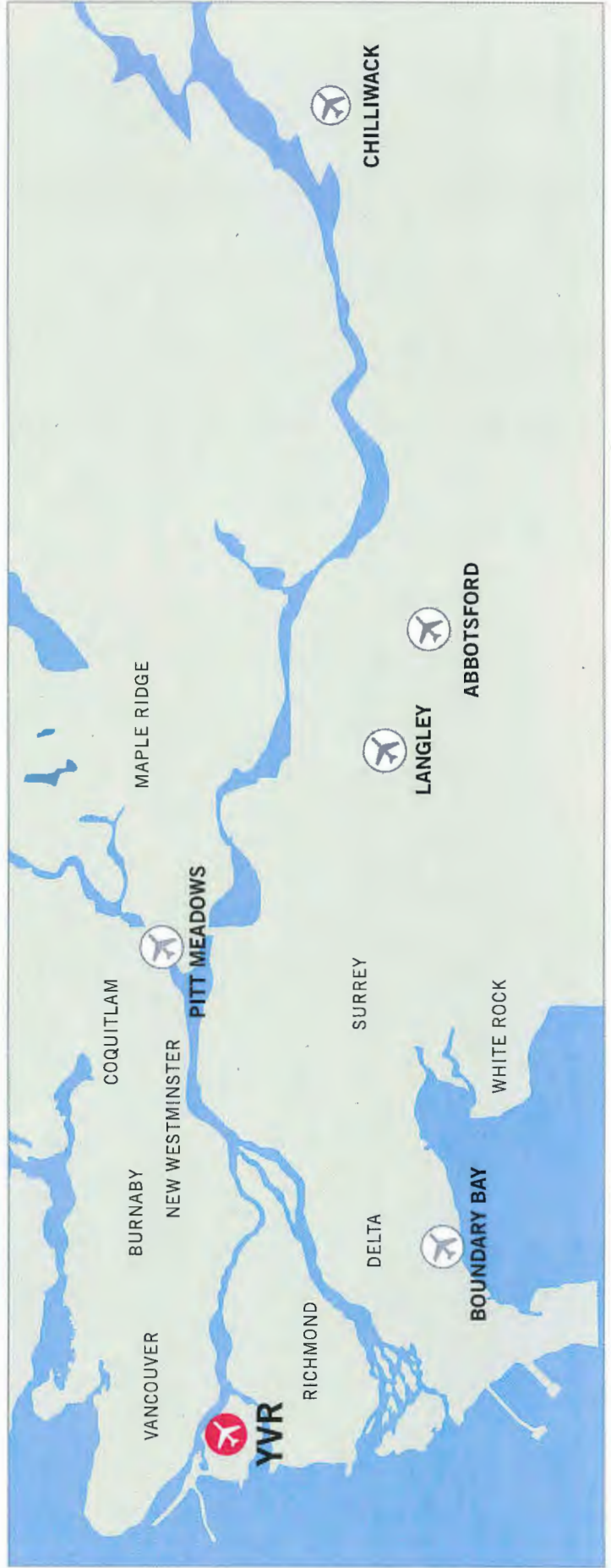
The Airport Authority has consulted with other airport operators in the Lower Mainland to work on consistency of plans for the future of the region.

To create the most effective and efficient airport system, the Airport Authority recommends establishing an ongoing mechanism for coordinating Lower Mainland airport activities and encouraging dialogue at both the operational and senior management/governance levels. The Airport Authority, perhaps in conjunction with the provincial government and Transport Canada, is prepared to play a key role in this initiative.



www.yvr.ca > YVR: Your Airport 2027: 20-Year Master Plan > Technical Report, Chapter 13

AIRPORTS IN B.C.'S LOWER MAINLAND



14. Proposed 2027 Airport Land Use Plan and Gateway Development Projects

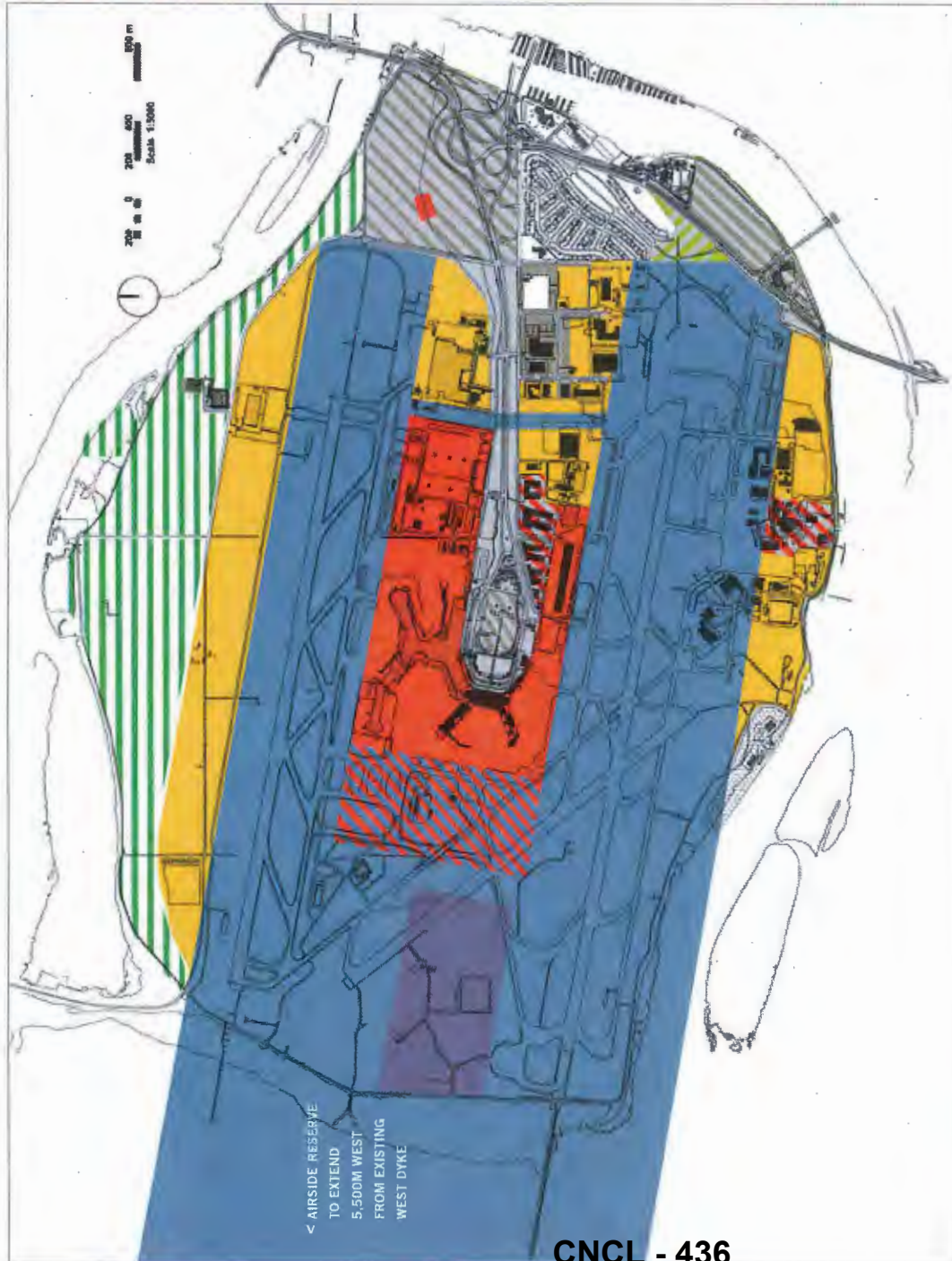
2027 AIRPORT LAND USE PLAN

The Airport Authority must submit an Airport Land Use Plan to the federal Minister of Transport for approval. The 2027 Airport Land Use Plan protects existing operations areas and allocates sufficient land for the potential upgrades or expansions that may be required during the 20-year planning horizon.

To reflect changes to the current Airport Land Use Plan, necessitated by the gateway development recommendations outlined in this chapter, the Airport Authority has a proposed 2027 Airport Land Use Plan for consideration.

AIRSIDE RESERVE
PASSENGER TERMINAL RESERVE
INFIELD OPERATIONAL SUPPORT
AIRSIDE COMMERCIAL
GROUNDSIDE COMMERCIAL
GROUND ACCESS & PARKING
RECREATIONAL AREA
PRIVATE LANDS
TRANSPORT-CANADA RETAINED LANDS
SEA ISLAND CONSERVATION AREA (ENVIRONMENT CANADA ADMINISTERED)

Hatched areas denote two options of land reserve.
 Un-coloured areas denote private lands. Non-conforming
 interim uses may be permitted.



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PROPOSED 2027 AIRPORT LAND USE PLAN FOR YVR

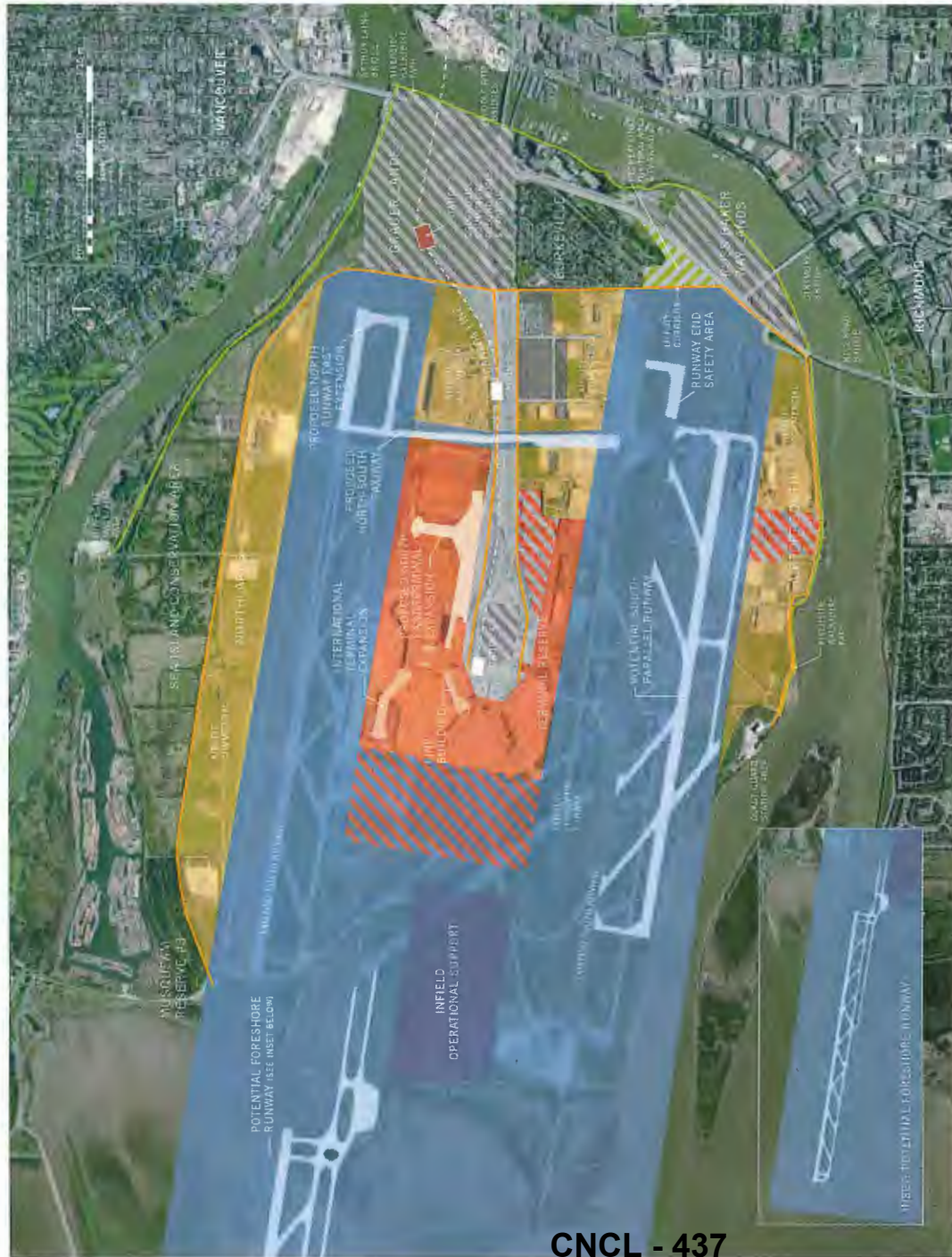
Key land use areas allocated on the plan include:

- AIRSIDE RESERVE: includes YVR's runways and the lands required for airside operations, including taxiways, airside roads and navigation aids.
- PASSENGER TERMINAL RESERVE: includes land required for terminal expansion in both the medium and long terms.
- GROUND ACCESS & PARKING: includes bridges, roads, the Canada Line, public and employee parking, commercial transportation and car rental facilities.

- AIRSIDE COMMERCIAL: includes those commercial lands that have direct access to the airside system (such as air cargo facilities, aircraft maintenance facilities, commercial and business aviation operators and commercial helicopter and floatplane services) and Airport Authority operational needs.
- GROUND SIDE COMMERCIAL: includes designated commercial land uses without airside system access (such as, flight kitchens, car rental service facilities, fuel storage facilities and other non-airport related, but airport-compatible commercial development activities).



Hatched areas denote two options of land reserve. Un-coloured areas denote private lands. Non-conforming interim uses may be permitted. Concept drawings shown are for planning purposes only.



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— INFIELD OPERATIONAL SUPPORT: refers to lands in the infield that may in future be required for various "back-of-house" functions.

— RECREATIONAL AREA: designates lands for recreational uses. The proposed 2027 Airport Land Use Plan shows the recreational area south of Burkeville is also designated for possible ground access and parking uses in the future.

— SEA ISLAND CONSERVATION AREA: This land is managed by Environment Canada, and is not addressed by this draft 20-Year Master Plan.

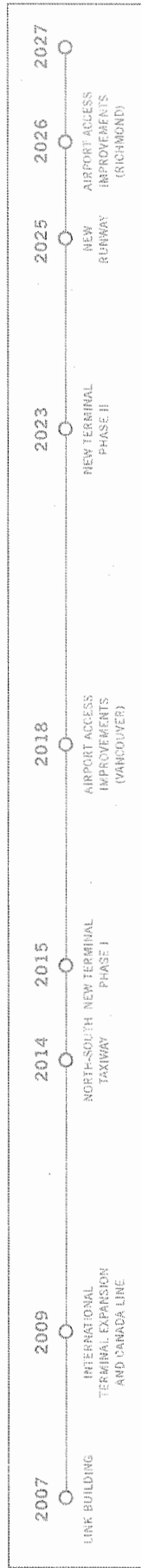
www.yvr.ca > YVR: Your Airport 2027: 20-Year Master Plan > Map

A conceptual drawing showing how key Airport Authority recommendations fit into the proposed 2027 Airport Land Use Plan is shown above. An interactive map is also available on the website.

GATEWAY DEVELOPMENT AND TIMING

As outlined in this draft plan, a number of major development projects are needed to support YVR's growth over the 20-year planning period. Brief descriptions and timing estimates of the Airport Authority's major recommendations are provided below.

ESTIMATED TIMELINE FOR GATEWAY DEVELOPMENT REQUIREMENTS



The timing for all recommendations is based on a medium-growth scenario. Actual timing will be subject to actual growth in demand.

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GATEWAY DEVELOPMENT

- 2007 LINK BUILDING AND RUNWAY END SAFETY AREA (RESA) REGULATION: Completion of the current Link Building project and expected regulation changes by Transport Canada to extend runway end safety areas to the North and South runways.
- 2009 INTERNATIONAL TERMINAL BUILDING EXPANSION: Completion of current expansion project providing an additional nine aircraft gates.
- 2009 CANADA LINE: Completion of rapid transit connection between the airport, downtown Vancouver and Richmond.
- 2010 AVIATION FUEL SUPPLY: Additional supply and storage capacity required to meet growing demand and restore operational reserve to the required four-day supply.
- 2010 SEA ISLAND ROAD SYSTEM: Reorganize the Sea Island road system to accommodate the Canada Line and proposed North-South Taxiway.
- 2010 - Ongoing ARTHUR LAING BRIDGE CONGESTION RELIEF (GROUND ACCESS, VANCOUVER): Once the Canada Line is in service, the Airport Authority's transportation demand management program will build progressively to reduce the vehicle demand on Arthur Laing Bridge and other Sea Island bridges. A dedicated "YVR Access" lane could be introduced.
- 2014 NORTH-SOUTH TAXIWAY: This taxiway is required to enhance aircraft flow on the airfield, increase efficiency and reduce costs and aircraft emissions.
- 2015 NORTH EAST TERMINAL - PHASE I: Phase I of the proposed North East Terminal will include a new customs hall, provide 11 additional aircraft gates, a Canada Line station and an additional parkade if required.
- 2015 - 2020 AIRSIDE ENHANCEMENT PROGRAM: Once the North-South Taxiway is complete and both parallel runways are used for simultaneous takeoffs and landings, airside capacity will increase by approximately 12% and allow the Crosswind Runway to be closed.
- 2023 NORTH EAST TERMINAL - PHASE II: An additional 14 gates, providing a total of 87 jet gates at YVR, is expected to be required to meet demand.
- 2025 NEW RUNWAY: Medium-growth forecasts indicate that YVR may require an additional runway around 2025. The requirement will depend upon actual passenger growth and the size of aircraft in use. Also, it is assumed that non-essential air traffic will be moved to other airports to preserve YVR capacity. The runway options will be protected by implementing aeronautical zoning in the appropriate areas following the Minister of Transport's approval of the proposed 2027 Airport Land Use Plan.
- 2026 MIDDLE ARM (MORAY BRIDGE) CROSSING (GROUND ACCESS - RICHMOND): Increasing congestion on this YVR-Highway 99 link will have serious implications for commercial traffic. Along with transportation demand management, access between YVR and Highway 99 will need to be improved.

2007-2027 - AVIATION AND NON-AVIATION RELATED LAND DEVELOPMENT

In addition to the specific requirements mentioned above, a number of land development issues need to be considered.

Grauer Lands development will be driven by the construction of Canada Line YVR Station 1 and the associated facilities and services, which could include Airport Authority offices as well as some terminal and parking facilities.

The Jericho/Templeton area, located in the vicinity of Jericho Road (Airport Centre), has been designated for airside commercial development should YVR's Templeton maintenance facility and offices be relocated. Expansion of the electrical power sub-station complex located in this area is expected to require some additional land during the planning period.

The Northlands area has been designated as airside commercial with an emphasis on cargo facilities, particularly at the eastern end to accommodate a new cargo facilities complex, once existing leases in Cargo Village expire.

Airport South lands have been designated to recognize the need to protect for the South Parallel Runway option together with an expanded terminal reserve. To assist implementation, tenant leasing policies should be introduced early in the planning period recognizing that the closure of the Crosswind Runway will open up additional lands west of the Airport South terminal reserve for commercial development.

ENVIRONMENTAL IMPACT STUDIES

Under Airport Authority policy, all major construction projects undergo an environmental review prior to approval. Some projects may require review under the Canadian Environmental Assessment Act, particularly those projects that involve work in the Fraser River or on Sturgeon Bank, where federal Fisheries Act authorizations will also be required.

As of the publishing of this document, detailed environmental impact assessment studies have not been completed for the recommended projects, as they are still in the conceptual planning stage. In several cases, multiple options have been proposed to fill a single need.

The Airport Authority recognizes the need for, and commits to, conducting detailed environmental impact assessment studies for all recommendations outlined in the draft 20-Year Master Plan. For some larger projects proposed in this document, such as the new runway, environmental studies will involve separate consultation processes that may take years to complete. The necessary studies will begin well before projects are implemented.

What do you think?

This draft 20-Year Master Plan was created to facilitate further discussion with all those who have an interest in the future of YVR. It is the draft plan for Your Airport in 2027.

WHAT DO YOU THINK?

- Has the Airport Authority considered the correct issues?
- Are there areas the Airport Authority should consider that it hasn't?
- Do the recommendations include enough flexibility to meet your expectations?
- Has your previous feedback been accurately reflected?
- Is the Airport Authority heading in the right direction?

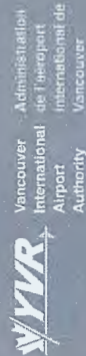
Visit the YVR website for more information and provide your comments to the Airport Authority online or by email, fax, phone or mail:



www.yvr.ca > YVR: Your Airport 2027: 20-Year Master Plan
master_plan@yvr.ca

FACSIMILE 604.276.6565 TELEPHONE 604.303.3438

To enable the Airport Authority to meet the consultation goals outlined in chapter 3 of this document, please provide your comments by **August 31, 2006**.



YVR: YOUR AIRPORT 2027: 20-YEAR MASTER PLAN

PO BOX 23750 AIRPORT POSTAL-BUTLET
RICHMOND BRITISH COLUMBIA CANADA V7B 1Y7

WWW.YVR.CA

MAY 2006

YVR responses provided in yellow highlighter, following review and clarification at meeting with City of Richmond on January 26, 2017

November 30, 2016

From: Terry Crowe, Manager Policy Planning, Richmond

To: Meg Comiskey, Manager, Policy and Research, Strategic Planning and Legal Services, YVR

Re: City of Richmond Staff Comments, YVR 2037 Master Plan

1. Purpose

The purpose of this report is to provide City of Richmond staff comments regarding YVR's upcoming 2017 - 2037 Master Plan (Master Plan) and request that it state how the following issues and concerns will be addressed.

The order of the comments reflects the structure of the YVR Master Plan's Phase 2 Discussion Guide.

2. Phase 2 Consultation Process

- As the host municipality to YVR, the success of the YVR Master Plan is important to the City and we appreciate your YVR's efforts to include Richmond in the planning process.
- As necessary, City staff will meet with YVR staff.
- Please provide Richmond specific comments on Phase 2 consultation findings when available.
 - *We will be providing a summary report but it should be noted that this report will not show a complete picture as the majority of consultation was conducted in person and therefore qualitative data was provided.*

3. Terminals

- City staff note that, based on YVR's current growth rate, the existing facilities will reach capacity by 2020.
- At this time, we have no concerns with the recommended airside terminal expansion Centre option.

4. Master Plan Forecasting Methodology and Airside and Airspace

- Methodology: We note that, for the Master Plan, YVR has switched, from traditional econometric forecasting, to risk-based forecasting methodology.

(1) An Additional Runway

- The updated YVR forecasts indicate that YVR will require additional runway capacity when 34 million annual passengers is reached.
 - *This is approximate and conceptual.*
- Page 19 of the YVR Discussion Guide states that, while the need for an additional runway before 2037 is unlikely, both runway options will be protected in the Master Plan.
- City staff request that the capacity of the existing runways be maximized before a new runway is added and the rationale for the proposed third runway be substantiated before pursuing it.

(2) A Regional Airport Strategy

- City staff understand that YVR has relocated some functions to other airports (e.g., flight training to Boundary Bay).
 - *Businesses have opted to move to other airports for their own reasons and the evolving business of YVR. YVR did not relocate them.*
- Page 19 of the Discussion Guide states, however, that relocating general aviation (e.g., corporate and private planes), to other airports, does not align with YVR's mission, vision and values, or with the aspirations of its business partners.
 - Correct, we support
- City staff request that the Master Plan state that YVR will lead (or assist, for example, having Metro Vancouver lead) the preparation of an Airport Strategy for the Metro Vancouver Region, in consultation with Richmond and other local governments and stakeholders, beginning in 2017.
 - *YVR meets regularly with regional airports and is also a member of the British Columbia Aviation Council*
- Some of the key issues which should, it is suggested, be considered as part of such a Strategy include clarifying:
 - YVR's role as the only airport the Region which accommodates all types of aircraft and routes, the impacts of its location within a growing urban region and the implications which this role may bring,
 - The future (e.g., 2037) cumulative regional and individual airport passenger / cargo splits, as they significantly affect cumulative regional and specific surrounding airport sustainability (social, economic, environmental) impacts (e.g., land use, development, public amenity, transportation, infrastructure [e.g., water, sanitary, drainage], parks, noise management and environmental matters).

- YVR will not be studying or providing this information for the other airports as they have their own master planning process. However, we will be addressing both YVR's role and addressing the regional airports role within the regional system. YVR is the hub airport and it is our business and most beneficial to maintain that hub as being within close proximity to a connecting flight is what airlines and passengers need and want. Abbotsford Airport will likely continue to support additional flights and this makes sense as that community continues to grow.

5. Ground Access

- The YVR 2037 Master Plan should complement Richmond's 2041 OCP, Chapter 8: Mobility and Access
 - (http://www.richmond.ca/_shared/assets/OCP_9000_mobility34182.pdf).
 - YVR has utilized this as a resource in our planning.
 - Staff do not support taking away existing transportation capacity for non-airport users on the Arthur Laing Bridge, Moray Channel Bridge, Airport Connector Bridge or Russ Baker Way, for the exclusive use of airport traffic.
 - YVR anticipates maintaining existing capacity for non-airport users on Sea Island roads and bridges.
- The Master Plan should address how airport growth can be accommodated, without the loss of the existing capacity and service for non-airport users.
 - YVR anticipates maintaining existing capacity for non-airport users on Sea Island roads and bridges.
- YVR activities and development should minimize traffic impacts on adjacent communities.
- The Master Plan should encourage off peak travel, as much as possible. For example, peak flight arrivals and departures is approximately between 10am and 2pm, meaning that with passengers arriving two hours prior to their flights, the peak coincides with the regional and City vehicular peak between 7 and 9 am.
 - YVR's current strategy is to be a connecting hub between Asia and the Americas and in order to grow as a hub and attract new services and carriers, YVR needs to be able to offer airlines the time of day for desired flights to land and take-off so they can connect to their global networks which takes into account different locations and time zones. Encouraging off peak travel does not fit within our current strategy.
- The Master Plan should indicate how YVR promotes and provides infrastructure, to support alternate modes of transportation (e.g., transit, carpooling, cycling and walking), as these modes will discourage the use of single occupant vehicles among employees and passengers. In particular, the Master Plan should provide details on how the following are or will be provided:
 - Pedestrian and cycling connections between Burkeville, BCIT and Templeton Station,
 - We are supportive of this and will be further discussed as part of a sub-area plan
 - End-of-trip cycling facilities (e.g. secure parking, showers and lockers), and
 - This is discussed in community amenities
 - Shared parking and electric vehicle charging stations.
 - We will continue to install electric vehicle charging stations
 - Car sharing, ride sharing and shared parking are considered in this Master Plan
- The Master Plan should include policies to encourage and maximize the use of the Canada Line in order to minimize road traffic which may include:
 - The Canada Line is free for anyone travelling to and from any of the Sea Island stations (Templeton, Sea Island and YVR Airport).
 - YVR employees are encouraged to take the Canada Line, cycle or carpool through our Green Commuter rebate program (this is separate of the Master Plan)
 - We will continue to advocate and work with regional transportation partners in support of more transit options within Sea Island and also regionally.
 - Improving bus service within Sea Island, to supplement the Canada Line,
 - Providing additional transit service, to support employees on Miller Road, and
 - Providing additional ground shuttles, to minimize passenger and employee traffic.
 - As demand supports this, it can be reviewed. The Master Plan allocates space for growth, but operation plans address plans for this
- The Master Plan should support connecting regional transit improvements to the Canada Line, to bring people in and out of Sea Island.
 - It will.

- City staff note that page 23 of the Discussion Guide raises the possibility of direct bus service between the South Surrey Park and YVR which is supported along with other routes.
-We have shared our concerns regarding regional transportation with Translink. At this point, a direct bus link between YVR and South Surrey Park and Ride would need to be funded by YVR. Further assessment and feasibility studies would need to take place if this were to continue as possibility.
- Any changes to Russ Baker Way should not adversely impact the existing and future commuting traffic to and from Richmond.
 - Previously addressed above
- City staff do not support extending Templeton Road, until a clear and valid rationale is provided.
 - If it is provided, the project benefits should be demonstrated to Burkeville and Sea Island residents.
 - More studies would be conducted and additional consultation would occur as this is explored further
 - The separated pathway should be provided on the east side of Templeton Station and Burkeville, not the west side, as stated in the YVR Discussion Guide.
- The list of potential projects (page 23 of the Discussion Guide) should include a future Pedestrian / Bicycle Bridge across the Middle Arm of Fraser River, at the west end of Cambie Road, as per the City Centre Area Plan (CCAP); see page M-12 for the Specific Land Use Map: Aberdeen Village at http://www.richmond.ca/_shared/assets/city_centre556.pdf. This is also noted under Section 6, Amenities;
 - YVR supports the possibility of a pedestrian/bicycle bridge across the Middle Arm of the Fraser River. YVR added this to the evaluation of potential amenities projects. This project can be discussed and considered as part of the development of a sub-area plan of the Sea Island East.
- Richmond staff support cycling and pedestrian facilities on the Dinsmore Bridge, as noted in the list of future capital projects for ground access. We also request that the Master plan include cycling and pedestrian facilities.
- The Master Plan YVR should, it is suggested, also consider separated or off-road cycling infrastructure, particularly along high volume corridors such as the Grant McConachie Way.
 - This is included in the amenities chapter. Many roadworks projects will take place through our capital infrastructure program.
- The Master Plan should acknowledge the long term need to replace the Moray Channel Swing Bridge and make improvements to north-south waterfront trail connections on Lulu Island.
 - We acknowledge the need to replace this bridge. It is under Provincial jurisdiction. The North-South trail connection has been included in the community amenities chapter.
- It is noted that there is currently YVR – City work underway, to reconcile Sea Island roadway ownership and the results be factored into the Master Plan.

6. Amenities

- City staff support the inclusion of a specific chapter on Amenities in the Master Plan.
- Further to the Amenities meeting, Richmond staff attended on August 16, 2016 and the October 21, 2016 Local and Regional Stakeholders Meeting, and request the following:
 - The McArthurGlen Designer Outlet (as noted on page 26 of the Discussion Guide) should be included in the Land Use Section (as it is not an amenity in the usual sense of the word),
-The 2037 Land Use Plan will identify that the land that the designer outlet centre is on is designated for groundside and ground access and parking, but the McArthurGlen Designer Outlet Vancouver Airport is also a community amenity.
 - As Amenities, the following should be included:
 - The playground at the north side of the Outlet,
 - The YVR Chester Johnson Park, walking trails and parks,
 - Wildlife viewing and other ecological opportunities along the Middle Arm, to enhance Sea Island public access, amenities, recreation, public realm, and
 - Protecting the Middle Arm Estuary.
 - We will highlight current amenities but we will also highlight new opportunities in the Master Plan. We can provide educational opportunities about native species, but based on operational activity, wildlife viewing will not be promoted in and around the airfield. Ecological opportunities are supported.

- Point 2 on page 27 of Discussion Guide: Note that 'SICA' in reference to the "Sea Island Conservation Authority" is also an acronym for the 'Sea Island Community Association.
- Point 5 on page 27 of Discussion Guide: City staff recommend noting that jogging loops / pathways / cycling routes are also identified as Amenities for visitors using YVR.
- Proposed Pedestrian / Bicycle Bridge across the Middle Arm City
S
staff recommend including the future Pedestrian / Bicycle Bridge across the Middle Arm of Fraser River, at the west end of Cambie Road, as per the City Centre Area Plan (CCAP),
 - see page M-12 for the Specific Land Use Map: Aberdeen Village at http://www.richmond.ca/shared/assets/city_centre556.pdf.
 - *Noted above that this is something that we support and can be discussed as part of sub-area planning.*
- A City - YVR - Stakeholder - 360 Middle Arm Animated Area
 - For public benefit, Richmond wants to animate, with YVR and others stakeholders, the Middle Arm by preparing with them, a 360 Middle Arm Animated Area (i.e., both sides of the Middle Arm, between the No 2 Road and Sea Island Way Bridges).
 - The purpose of the Study would be to improve public, pedestrian and bicycle access and enjoyment, by providing a continuous 360 pedestrian, bicycle and rolling (wheel chair, scooter) access.
 - This initiative would include a new pedestrian / bicycle bridge over the Middle Arm, better connecting Burkeville to the City Centre, at Cambie Road and a range of public open spaces and placemaking activities (e.g., outlooks, storytelling and picnic spots),
 - City staff recommend that the Study jointly:
 - Identify objectives: for the location and development of future parks and public open spaces (e.g., the location at major nodes in the trails and cycling route system and at highly visible public locations), places that will serve the health and wellness of workers and the public, and which will contribute to the sense of place and cultural identity,
 - *YVR supports the opportunity for a joint study.*
 - Please provide a large copy of the Master Plan Potential Amenities Map for further review and discussion during the early stages of Phase 3.
 - *Potential amenities map provided in phase 2 was intended to facilitate discussion about what is possible for community amenities on Sea Island. We will share our amenities plan in Phase 4. Once a map is developed, we would be pleased to share with Richmond staff. Our amenities projects list includes developing universally accessible multi-use pathways. We welcome further discussions towards a study as part of our sub-area planning for that area.*

7. Environment

- GHG Targets:
City staff recommend that the Master Plan specify GHG emission reduction targets that are contained in the YVR Environmental Management Plan, for clarity and commitment,
-The Master Plan will not identify targets as the targets are updated every 5 years in our Environmental Management Plan which we consult with the Environmental Advisory Committee and is approved by our Board of Directors.
- Airport and Aircraft Noise:
 - Richmond staff support continued efforts by YVR to minimize airport and aircraft day and night time noise by encouraging newer aircrafts and discouraging an increase in night flights.
 - City staff understand that the current 2015 Noise Exposure Forecast (NEF) contours will be updated as part of the Master Plan.
 - City staff request that we review these contours with YVR, as soon as they are available, given the potential impacts on the quality of life and future development in Richmond.
 - *A meeting has been set up between CoR and YVR for February 16, 2017. YVR shared the N70 contour projections and flight path projections as part of phase 3. This is a more meaningful way to share noise to the public.*
 - City staff also recommend that the highlights and key directions of YVR's Five Year Noise Management Plan be appropriately referenced and noted in the Master Plan.
 - *Yes it will be.*
 - Richmond staff support continued efforts by YVR, to minimize airport and aircraft day and night time noise, by encouraging newer aircrafts and discouraging an increase in night flights.
- The Ecological Network
Please ensure that the YVR 2037 Master Plan considers the following:
 - Policies contained in 2041 Richmond OCP, Chapter 9, Island Natural Environment (an Ecological Network approach) - http://www.richmond.ca/shared/assets/OCP_9000_environment34172.pdf, and
 - The Richmond 2015 Ecological Network Management Strategy:

- http://www.richmond.ca/shared/assets/Ecological_Network_Management_Strategy42545.pdf.
- Existing and proposed wildlife viewing or other ecological opportunities should also be noted in the Master plan Amenities chapter.
- Invasive Species Management Plan: Please address how invasive species will be references in the Master Plan.
- *Discussion between YVR and CoR environment teams took place on January 31 prior to Lesley Douglas' departure.*
- *Invasive species management was discussed at the recent joint environmental meeting between YVR and CoR. We have a draft Invasive Species Management Plan which can be discussed at the environment focused meeting. The YVR 2037 Master Plan will reference support of native species and drought resistant plants. Discussion between YVR and CoR environment teams took place on January 31 prior to Lesley Douglas' departure.*
- Richmond will continue to coordinate efforts with YVR regarding the City's Invasive Species Management Plan.

8. Land Use

(1) 2037 Master Plan: Land Use

- Sustainability Theme: Staff support the Sustainability theme of the YVR Master Plan, as it will complement Richmond's 2041 OCP sustainability theme (e.g., accountability for social, economic, and environmental issues, while meeting the business objectives of the Airport and the communities it serves).
- Land Use Principles
City staff support:
 - Airport and airport related uses and avoiding non airport related uses.
 - Avoiding uses which generate non airport traffic (e.g., at the NE corner of the Dinsmore Bridge),
 - *CoR will be included in consultation regarding a sub-area plan for this land*
- Future YVR Sea Island land use should complement the following 2041 Richmond OCP Policy (page 6-12):
 - "Support YVR in promoting airport-related industrial and office development on Sea Island that enhances YVR as the Asia-Pacific Gateway hub of North America, minimizes City transportation and servicing costs, and expands Richmond's business tax base and employment growth" (see <http://www.richmond.ca/cityhall/bylaws/ocp/sched1.htm>)

(2) Master Plan Map Land Use Designations

- City staff recommend preparing a complete Plan map legend (e.g., include hatched areas).
- Page 35 of the Discussion Guide states that new Master Plan land use designations will remain the same (as the current plan); however, the colours (e.g., on page 34 of the Discussion Guide), are not the same, which makes cross referencing the 2027 Plan more time consuming.
 - o *The changes in colours were the graphic designer's artistic perspective for the 2027 land use plan. We have reverted back to the core colours of the 2027 land use plan with slight revisions for clarity.*
- Also, some land use designation titles have been changed (e.g., "Groundside Commercial" is now referred to as "Groundside").
 - o In the last Master Plan an incorrect version was shared (version control issue). The land use definition for groundside has been revised for further clarification.
- In keeping with standard municipal planning practice, City staff recommend that a series of map layers be created. These may include separate layers for Land Use, Amenities, Transportation ("ground access" components such as roads, trails, parking) and urban design framework.
 - o *We will consider this for a way of sharing our plan once finalized in Phase 4.*
- These suggested layers are aimed at enhancing the legibility and 'friendliness' of the Master Plan.
- Also, City staff recommend that areas subject to future "area plans" be shown on the Land Use Plan.

(3) Future Area Plans

Two potential future Area Plans were identified at the October 21, 2016 Local and Regional Stakeholders Meeting: (1) one for the area south of Templeton Station and (2) one between BCIT and the Dinsmore Bridge. It was suggested by Mr. Craig Richmond, YVR, CEO, that these are the two most valuable airport groundside areas. He also noted that the area south of Templeton Station could be considered for high-tech, manufacturing, hotel, research and headquarter functions.

City staff recommend that:

- These and any other future Area Plan areas be clearly labelled in the Master Plan Land Use section,
- The Land Use section of the Master Plan include reasons why these areas would be subject to a future area planning process and what guiding principles would be in place (e.g., focus on airport and airport-related uses, minimize non-airport traffic, provide linkages to existing communities, create a strong urban design framework, address the Fraser River),
- The timing and development of the proposed YVR Templeton Business Park be clarified,
- YVR and the City of Richmond meet early in Phase 3 of the YVR 2037 Master Plan, to review desired land uses in these (and any other) sub areas,
- A strategic development framework be prepared which capitalizes on each area's assets and aligns with both YVR and City objectives,
- Metro Vancouver be involved in discussions related to land use.
- *Future sub-area plans will be addressed separately from the Master Plan, but the land uses are designated and shared as part of phase 3.*

(4) Urban Design

City staff recommend that an YVR Urban Design Framework be included as a chapter in the Master Plan which would:

- Build on YVR's Gateway role and established design vision,
- Establish desired YVR urban design standards, for both the public and private developments.
- Ensure an appropriate complementary design interface with adjacent municipalities (e.g., Richmond, Vancouver),
- Guide future development along the Fraser River (e.g., between BCIT and the Dinsmore Bridge), to require a high quality urban realm and capitalize on the proximity to Richmond City Centre,
- Incorporate wildlife viewing and other ecological opportunities along the Middle Arm.
- *The Master Plan does not delve into design standards but this work is being updated separately. Our permitting process includes design standards and recommendations and our RFP process for major projects includes specific design requirements. We maintain an objective of being universally accessible and to share our valued unique West Coast sense of place.*

9. Other (e.g., Engineering Concerns)

City staff recommend that the Master Plan contain an Engineering section to indicate how:

- YVR's water, sanitary, storm and drainage systems are compatible with Richmond's, and
- YVR will manage flood protection and dike plans, and how they are compatible with Richmond's.
- *Utilities will be addressed in the final plan and there is a technical report that has been developed. City of Richmond staff and Metro Vancouver staff were involved in a Sea Island Water and Sanitary Utility Planning Workshop.*
- *Where relevant, potential climate change risks and uncertainties, as they pertain to Sea Island infrastructure, are identified in the respective Master Plan technical chapters. In many cases the need for additional analysis is identified. The development of a Climate Change Adaptation and Risk Management Plan will enable climate change risks to be assessed and mitigated in a systematic manner, consistent with other jurisdictions in Metro Vancouver and in keeping with best practice guidance. Work on this plan is anticipated to begin in mid 2017.*

10. Related Master Plan Documents

Please clarify what matters will be addressed in separate documents from the Master Plan, for example the:

- Five-Year Airport Noise Management Plan (ANMP) which runs to the end of 2018 will subsequently be updated (for 2019 - 2023), regarding noise contours and more specific noise management strategies,
- *Correct, but Noise contours will be included in Master Plan documentation as well.*
- Five Year Airport Environmental Management Plan (AEMP) which runs to the end of 2019 will subsequently be updated (for 2020 - 2024), to include environmental targets and action plans to address greenhouse gas emissions, potable water, waste management and opportunities to improve ecosystem health,
- *Correct.*
- Airport Land Management Guidelines which will contain improved Building Urban Design Guidelines, and
- *Our land development manual will be updated with urban design guidelines*
- Airport Urban Design Guidelines which will incorporate Sustainable Design Guidelines (e.g., to address energy efficiencies, salmon safe practices).
- *Sustainable Design Guidelines is a separate document but will be referenced in our Land Management Guidelines and will be updated to be in alignment of current strategic objectives as well as to reference newer technology.*

11. Suggested Next Steps/ Phase 3

The following meetings or next steps are proposed:

- Section 1: Phase 2 Consultation Process:

- Please provide Richmond Phase 2 consultation findings:
 - o *Our consultants are working to put this together but because the majority of our consultation was in person and qualitative and summarized by group, the report will represent general themes.*
- Section 3: Master Plan Forecasting Methodology and Airside and Airspace:
 - Please convene a meeting with appropriate local and regional stakeholders to discuss a Regional Airport Strategy,
 - o *We meet with regional airports regularly for information sharing.*
- Section 5: Amenities:
 - Please provide a large copy of the Potential Amenities map for further review and discussion during the early stages of Phase 3,
 - o *Potential amenities in phase 2 were intended to facilitate discussion about what is possible for community amenities on Sea Island. We will share our amenities plan in Phase 4.*
- Section 6: Environment:
 - Please convene a meeting with YVR and City staff to further discuss the environmental items noted above, and
 - o *This is complete. Meeting occurred on January 31.*
- Section 7: Land Use:
 - YVR and the City of Richmond should meet early in Phase 3, to review proposed land uses in potential sub areas and prepare a strategic development framework that capitalizes on each area's assets.
 - o *YVR shared this at the meeting on January 26.*

We look forward to continue working with you on the Master Plan.

For clarification, please contact me at 604-276-4139.

Terry Crowe
Manager, Policy Planning



YVR 2037 Master Plan Phase 2 – Building A World Class Sustainable Airport

Consultation Summary Report of Richmond Residents' Feedback

September to November 2016



PREPARED
BY:





About this Report

Lucent Quay Consulting Inc. (Lucent Quay) prepared this report for Vancouver Airport Authority (YVR). Lucent Quay is a Vancouver-based communications firm specializing in community and stakeholder engagement. YVR retained Lucent Quay to develop, plan and implement YVR 2037, a multi-phase and multi-year consultation in support of YVR's new Master Plan.

As part of its scope of work, Lucent Quay develops consultation input tools and reports on findings, including analysis of all survey feedback and consultation input received. This consultation report summarizes survey input received from Phase 2 consultation participants who identified themselves as Richmond residents (as per question 33 of the feedback form). Phase 2 consultation took place from September 2 through to November 15, 2016.

The complete Phase 2 consultation summary report with feedback received from all members of the public and from stakeholders, including Richmond participants, is available at YVR2037.ca.

All feedback and input was sourced from YVR 2037's consultation website and its accompanying online survey. The website and online survey was hosted by EngagementHQ, a third-party online community engagement platform designed to help organizations connect with the public while protecting anonymity of responses. EngagementHQ, not YVR, stores personal information collected in connection with responses to the survey.

EngagementHQ stores all of its data in Canada and uses the latest firewall and encryption technology to protect private information. YVR's collection, use and disclosure of personal information is regulated by the Personal Information Protection and Electronic Documents Act (Canada), or similar privacy legislation applicable in the user's Province, as amended from time to time.





1 Consultation Summary Results

Vancouver International Airport (YVR) updates its Master Plan every 10 years as a requirement of the Airport Authority's Ground Lease with Transport Canada, and as a best practice for long-term planning for the future airport. The four-phase Master Plan consultation and engagement process develops a 20-year plan to guide land use decision-making while considering sustainability at each step of the planning process.

During Phase 1 in 2015, the Master Plan Team looked out 40 years (to 2057) and asked participants what their airport of the future looked like. The feedback received during Phase 1 consultation informed the Master Plan Team's review as it looked at the 20-year planning period (to 2037); all remaining phases of consultation will focus on the 20-year period to 2037.

Phase 2 consultation, which ran from September 2 to November 15, 2016, sought feedback on six key focus areas for discussion: Terminals, Airside and Airspace, Ground Access, Environment, Amenities, and Land Use.

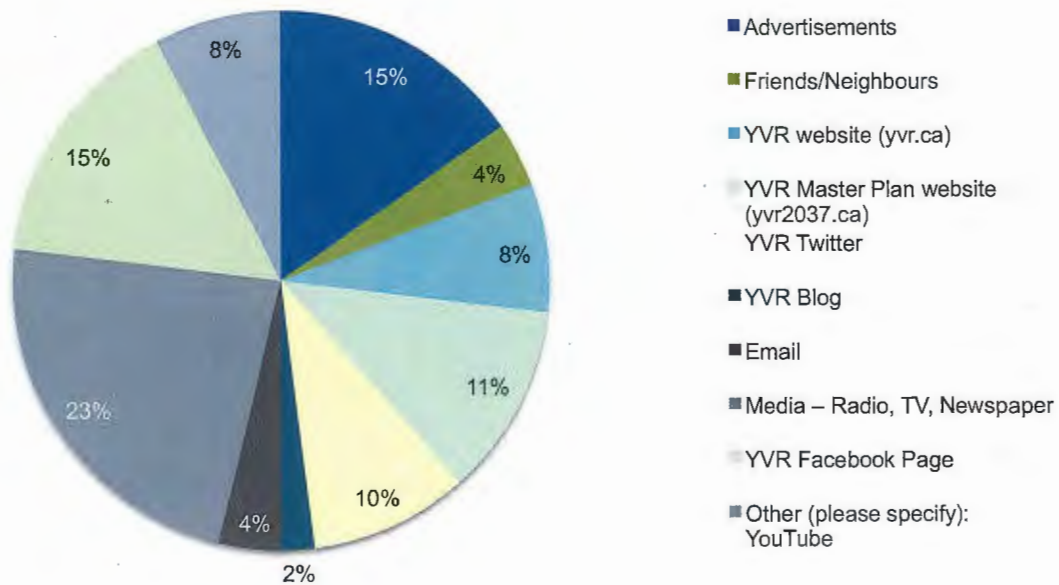
This report summarizes feedback from Richmond residents only during Phase 2 consultation. A comprehensive Phase 2 consultation summary report summarizing feedback received from all members of the public and from stakeholders is available under separate cover on the Master Plan website (YVR2037.ca).

A total of 162 feedback surveys were submitted for consideration during Phase 2, with 33 surveys representing Richmond residents. The reader is cautioned that the results presented reflect the views of a small sample of self-identified Richmond residents who opted to participate in the consultation, and may not be representative of the broader Richmond community.

1.1 FEEDBACK SURVEY RESULTS

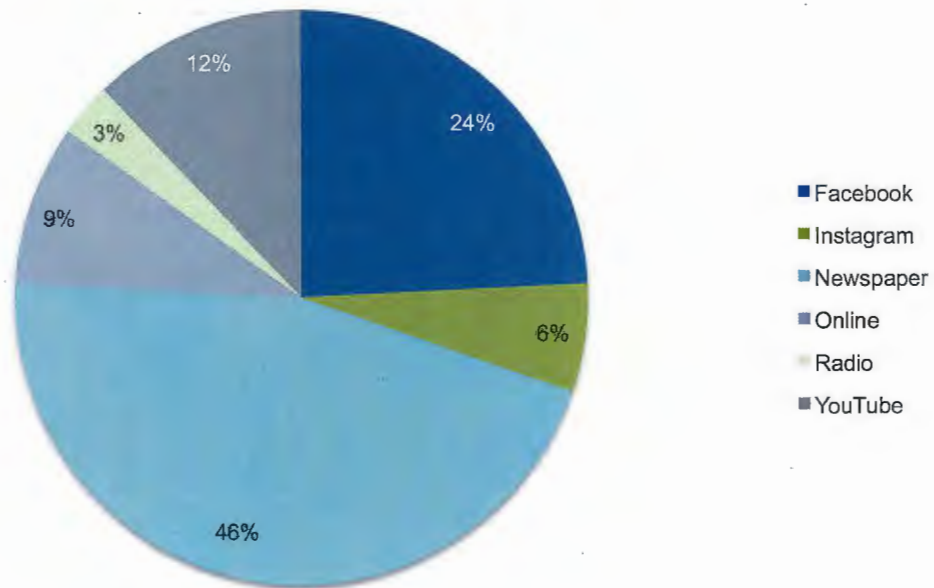
1. How did you learn about YVR 2037 Phase 2 consultation? Please check all that apply. (N=33) Respondents could select more than one option.

Media and advertising played a significant role in informing Richmond residents about the consultation process.



2. Did you learn about the YVR 2037 consultation through any of the following advertisements? Please check all that apply. (N=28)

Respondents could select more than one option.



3. Did you participate in Phase 1 consultation for YVR 2037? (N=32)

Most Phase 2 participants (90 per cent) did not participate in Phase 1.



4. What comments, if any, do you have about the consultation process for YVR 2037 Master Plan? (N=19)

- Positive feedback on YVR's consultation process
- Suggestions for additional notification and advertising
- General comments on YVR's consultation process – request for more in-depth discussions and a desire for the public workshops to be longer in length
- General suggestions for sustainability initiatives, such as encouraging employees to use transit and more efficient aircraft
- Desire for designated areas for walking and electric carts in the terminal
- Comment about ground access congestion, such as on the Arthur Laing Bridge and Two Road Bridge
- General comment about consultation process
- Suggestion to include travelling public in consultation, such as those flying through YVR

“Very cool process to involve the community [in].”

“Well organized/ managed consultation process. Wish we had more time in the focus area discussions.”

5. How would you like to be engaged in future phases of consultation for YVR 2037? (N=24)

- Most respondents noted that they would like to be notified through email, social media or online engagement methods
- Many respondents noted a desire to participate at in-person meetings, workshops or community events
- Many commented that continued surveys are a good way to be engaged
- Some participants noted general positive comments about the consultation process
- Other engagement methods included traditional media advertisements and through the YVR newsletter

“Town hall meetings, especially for the residents of Northeast Richmond.”

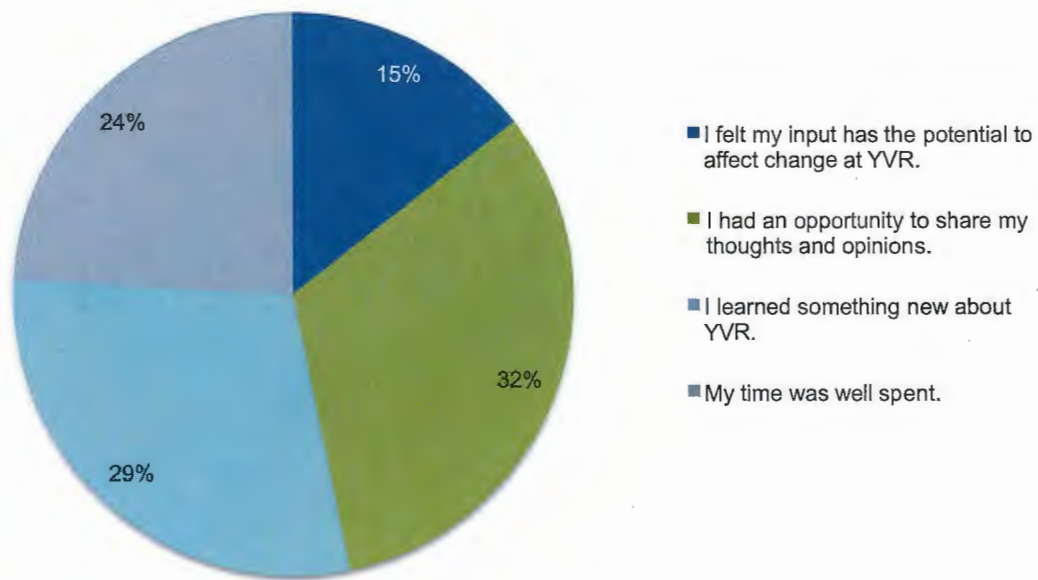
“[I] would be happy to participate in the future phases of Planning.”

Additional General Comments:

- Request to be engaged in future Master Plan consultation
- Suggestion to outline benefits to individual residents
- Suggestion to solve existing issues first
- Suggestion for increased capacity at YVR Canada Line station
- Request to consider impacts to nearby residents for future planning
- General comment about the consultation process

6. Please review the statements below and select the one(s) that best describe your experience with YVR 2037 consultation. Please check all that apply.
 (N=26) Respondents could select more than one option.

Sixty-two per cent of all respondents selected more than one statement to describe their experience during the YVR 2037 consultation, with most noting the opportunity to share their views and to learn something new, as noted in the chart below.



7. Please provide your contact information if you would like to receive YVR 2037 Master Plan project updates. (N=31)

Almost three-quarters of respondents (74 per cent) expressed interest in receiving updates and provided contact information, as illustrated in the response detail below.



Terminals

8. What have you seen or experienced at other airport terminals that you would like to have at YVR? (N=29) Key theme responses include:

- Desire for activities, entertainment, play areas and quiet areas
- Positive support of existing YVR terminal
- Suggestions for arrivals and departures vehicle area
- Desire for layover accommodations such as showers and sleeping pods
- Desire for more shopping and restaurant options with mention of including cultural diversity that Vancouver is known for, and duty free shopping upon arrival, not at departures
- Comments about improving baggage services, queue management, and parking/shuttle service
- Desire for improved cycling access and bike storage
- Improved in-terminal amenities such as a passenger train, the number of moving walkways, and desire for improved viewing decks
- Desire for quieter nighttime operations, and related impacts on nearby residents
- Comments about streamlining airport security operations and reducing bottlenecks

“I think YVR is a worldwide leader.”

“I would love to see a sit down restaurant beyond Milestones, perhaps something that reflects Vancouver like dim sum.”

9. Please use the space provided below to share your comments or questions about the proposed centralized expansion plan for future terminal improvements at YVR. (N=14) Responses include:

- Desire for operational efficiency
- Suggestion for increased moving walkways
- Strong support for Centre terminal option and for a phased planning approach
- Support for status quo of terminals until change absolutely necessary
- Questions about runways, security area, and transportation between terminals
- Suggestion to improve International terminal

“The centralized expansion plan is good and practical. This will allow the normal operations to be smooth, even with the ongoing expansion.

[It is also] an opportunity to include more outlets for battery charging for mobile phones/computers and other gadgets, and virtual reality/interactive activities. YVR airport can double up as a tourist destination by showcasing art, cuisine and giving a glimpse of the rest of Canada.”

10. Please use this space to provide any additional comments you have about existing YVR terminals. (N=18) Key theme responses include:

- General positive comments on terminals
- Support for terminal expansion
- Desire for increased operational efficiency, including streamlined security and improved noise mitigation
- Suggestion for increased shopping, food options, and better value choices
- Desire for increased/improved seating
- Suggestions for terminal design, including support for terminal art
- General suggestion for improvement
- Comment about increased capacity at Arrivals greeting area

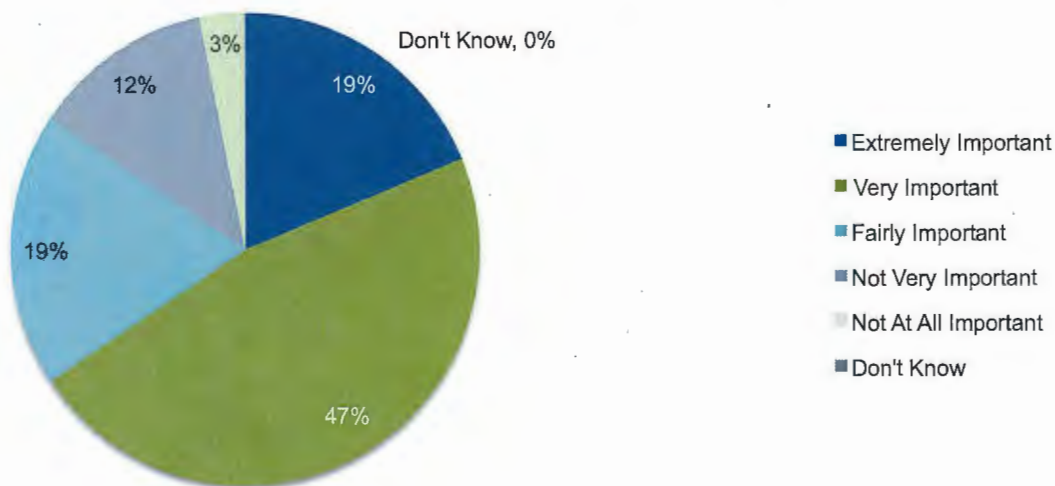
“The terminals are remarkably clean and well kept by North American standards. I believe the YVR team has much to be proud of.”

Airside/Airspace

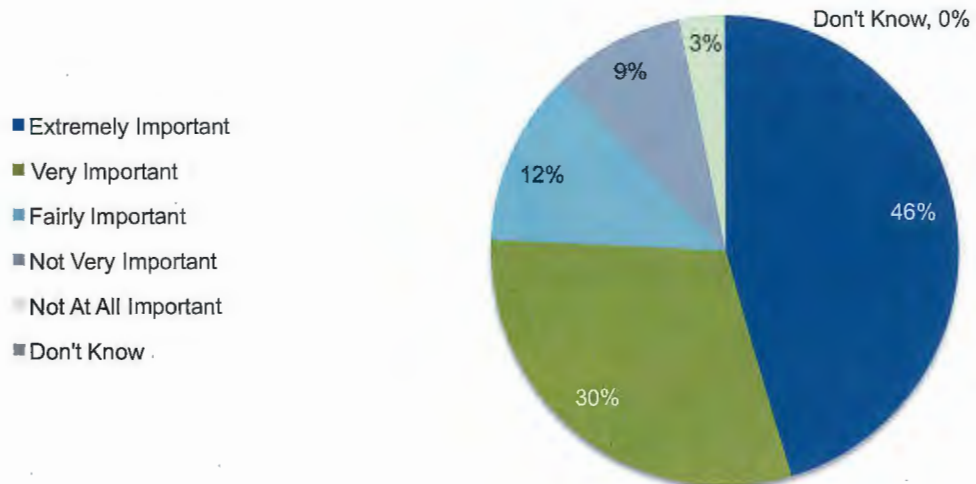
11. How important are each of the following airside activities to you, to achieve the vision of creating a world-class sustainable gateway between Asia and the Americas? Respondents could select more than one option.

Of the six airside activities, “Balancing the needs of the airport with those of the community environment and business” was seen as most important, while minimizing noise and expanding on existing environmental initiatives were seen as the most important overall. Results for each area are shown in the following charts.

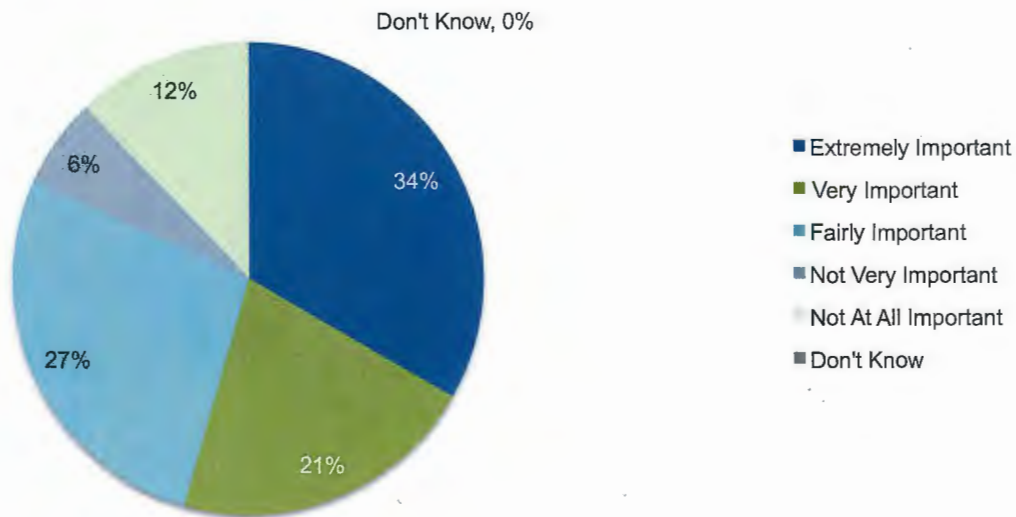
11.1 Reduce delay for airlines and passengers (N=32)



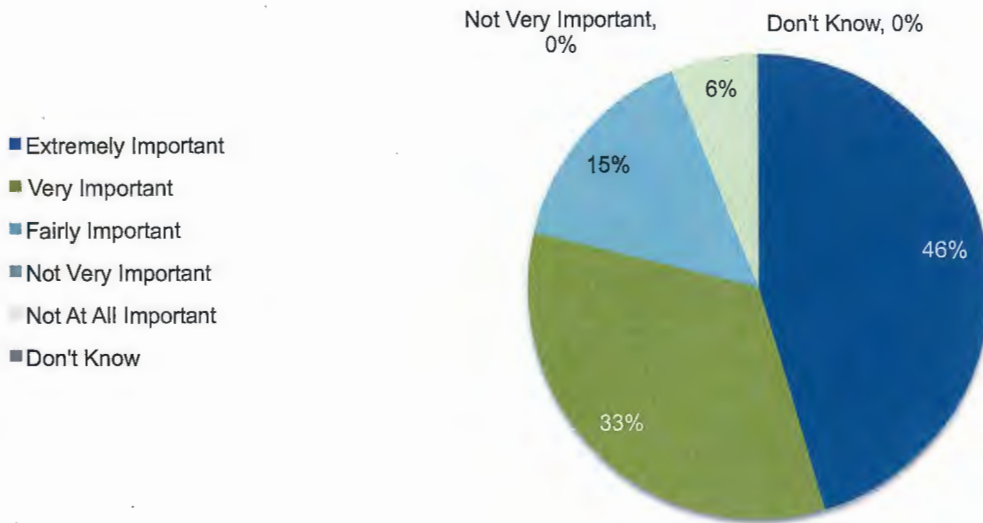
11.2 Minimize noise impacts to neighbouring communities (N=33)



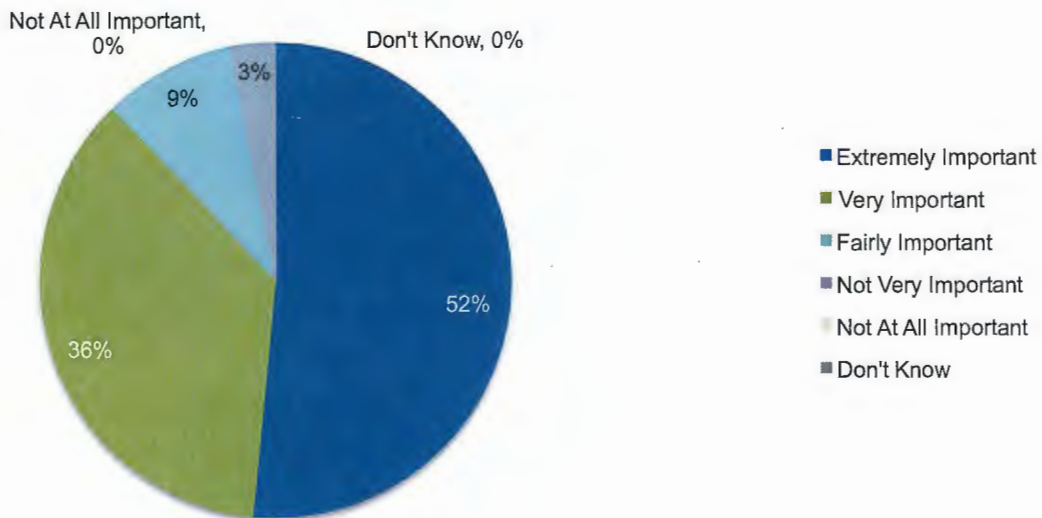
11.3 Expand airport operations to add more air service and connections to more destinations (N=33)



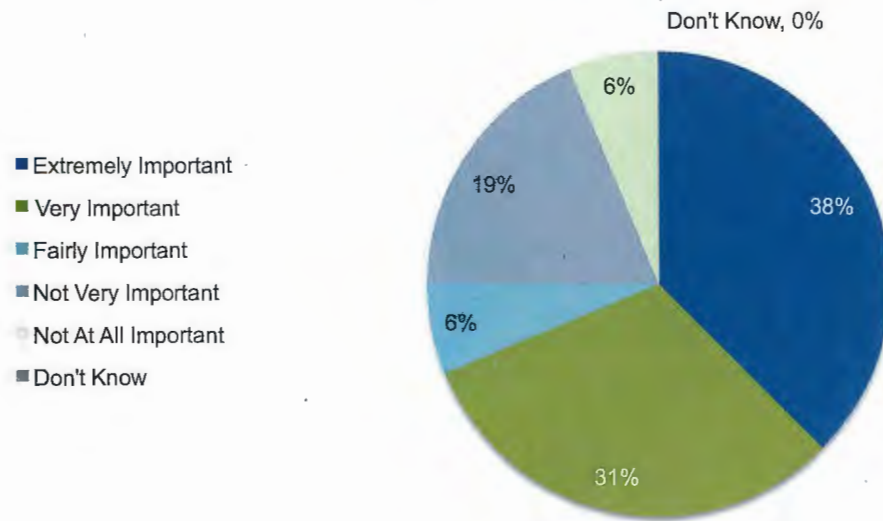
11.4 Build upon our existing environmental initiatives to reduce GHG emissions and conservation efforts (N=33)



11.5 Balance the needs of the airport with those of the community environment and business (N=33)



11.6 Improve our runways and other airside infrastructure to accommodate potential future growth (N=32)



12. Please use the space below to provide any comments or suggestions about airside operations at YVR (where aircraft operate on the ground, including runways, taxiways and aprons). (N=13) Responses include:

- Support for North-South Taxiway
- General support for improvements (e.g. taxiways, runway expansion)
- Concerns about noise impacts on nearby communities and residential areas, specifically related to seaplanes and nighttime operations
- Concerns about location of de-icing facilities
- Suggestion to maximize use of North Runway
- Suggestion for additional plane spotting platforms

“I generally travel internationally, so I know the proposed North-South Taxiway is long overdue. Time and fuel would be saved ...”

13. Please use the space below to provide any comments or suggestions about airspace operations at YVR (where aircraft fly when arriving and departing). (N=14) Responses include:

- Comments about noise impacts on nearby communities and residential areas, and recent improvements in this area
- General support for current airspace operations at YVR
- Comments about improved efficiency and safety
- Comment that consideration needs to be taken when designing flight paths over residential areas
- Comment that early morning and late night flights should follow flight paths with less noise
- Suggestion to maximize use of and expand North Runway
- Request for online radar tool showing incoming flights

“Noise abatement is a concern for parts of Richmond, however newer plane technology is helping here, plus people need to know living next to an international airport has drawbacks.”

“Flight plans and hours of operation need to be sensitive to the needs of neighbouring residential areas.”

14. Our growth forecasts indicate that the need for an additional runway before 2037 is unlikely, however, a new runway will require a long lead-time for planning, consultation, environmental assessment, approvals and construction, so it's important to think about it now. Please use the space provided below to provide your feedback about future runways at YVR. (N=18) Key theme responses include:

- General positive comments about an additional runway
- Concerns about noise impacts of a new runway on nearby communities and residential areas
- Suggestions to maximize existing runway capacity prior to building a new one
- Comments that a new runway is not yet needed
- Comments expressing opposition to a new runway
- Comments about the cost associated with building a new runway
- Concerns about environmental effects

“With the new runway not being needed before 2037, there is great importance to keep the existing runways being highly efficient.”

15. Do you have a preference for either the Close-In South Parallel Runway or the Foreshore Runway? Please check only one. (N=27)



Prefer not to answer
 Prefer the Close-in South Parallel Runway
 Prefer the Foreshore Runway

Please explain your preference (N=18) Key theme responses for each include:

Foreshore Runway

- Suggestions that the Foreshore Runway would reduce noise for local communities, and reduce congestion
- Suggestions the Foreshore Runway will allow for future growth
- Concerns about environmental impacts associated with the Foreshore runway

Close-In South Parallel Runway

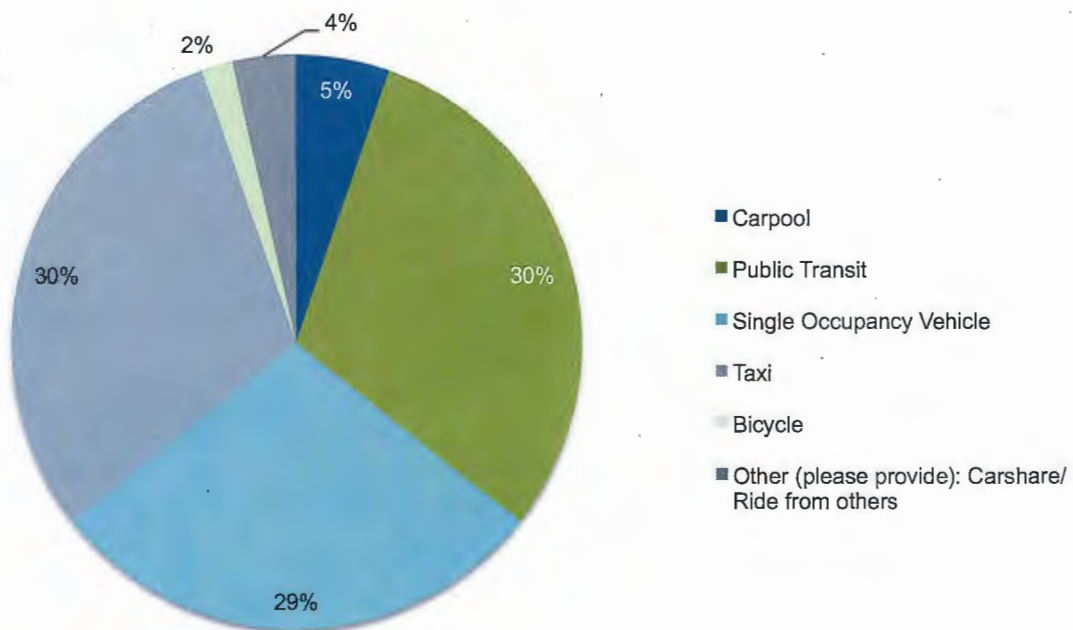
- Comment that Close-In South Parallel Runway would have safety risks due to crosswinds

General Comments

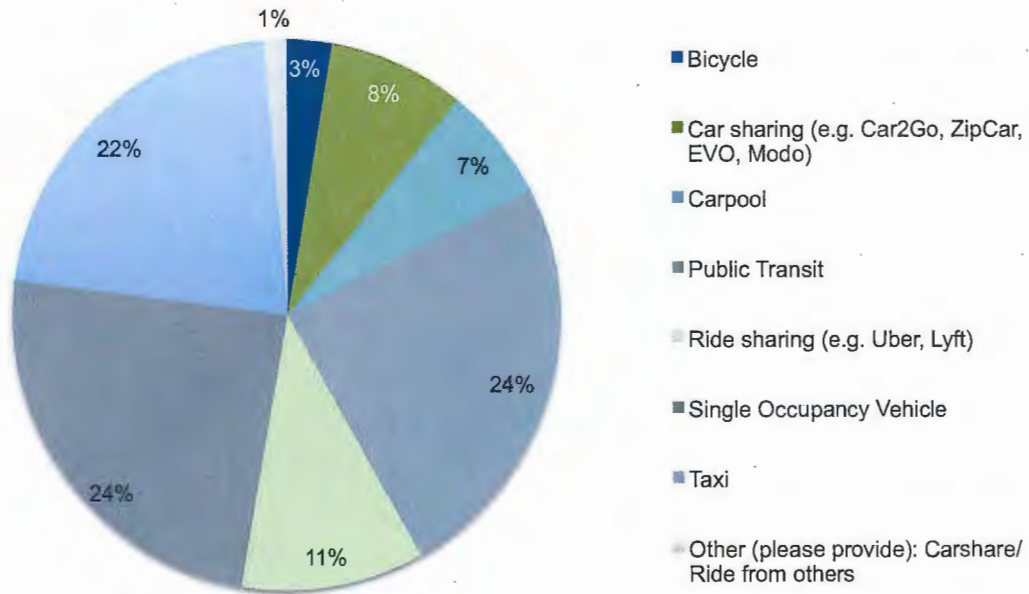
- Suggestion to maximize capacity on existing runways before building new ones
- The nearby community impacts should be considered
- Comment that there is not enough information to make a decision
- Comments that the preferred option is that which has least environmental impact

Ground Access

16. When travelling to YVR, currently which of the following modes are you most likely to choose? Please check all that apply. (N=33)



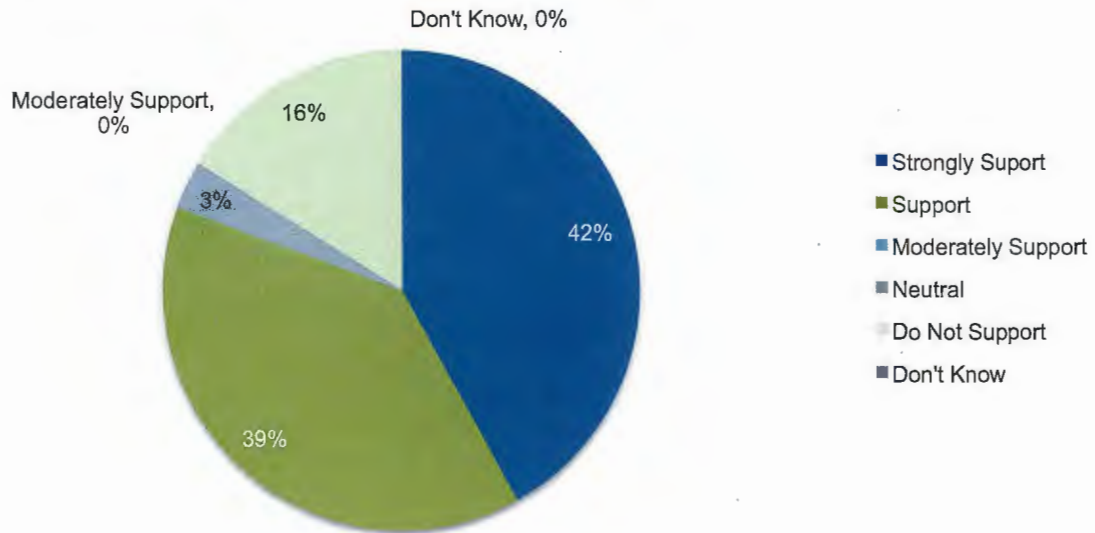
17. When travelling to YVR in the future, which of the following modes are you most likely to choose? Please check all that apply. (N=33)



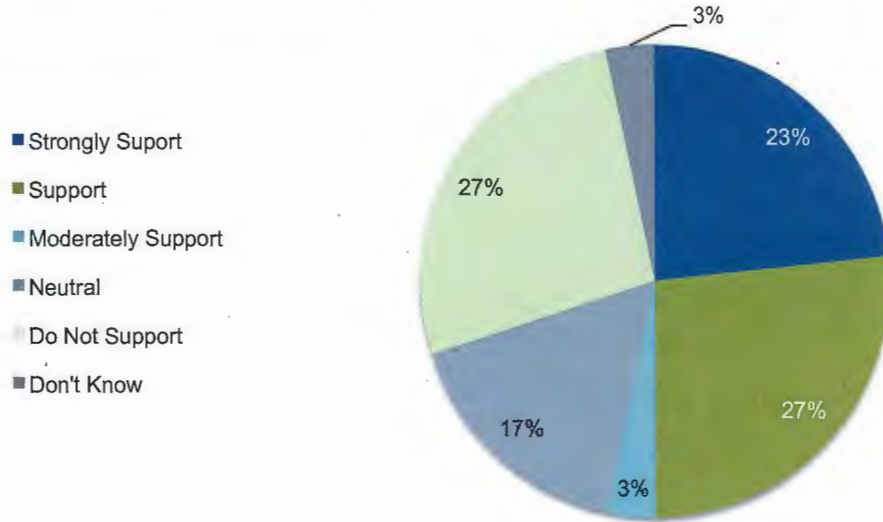
18. YVR is considering a number of different projects to improve ground access to and from the airport in the future. How important to you are each of the following ground access considerations? Please select all that apply.

Of the four ground access considerations, a “priority lane on Russ Baker Way for airport bound traffic” was seen as most important consideration, followed closely by the other three, as illustrated in the charts below.

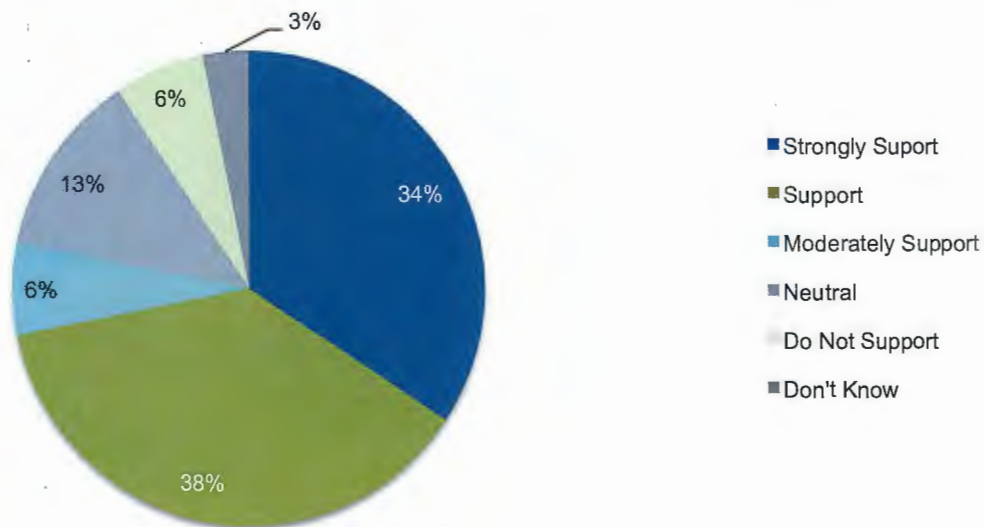
Provide a priority lane on Russ Baker Way for airport bound traffic to bypass Vancouver Richmond traffic (N=31)



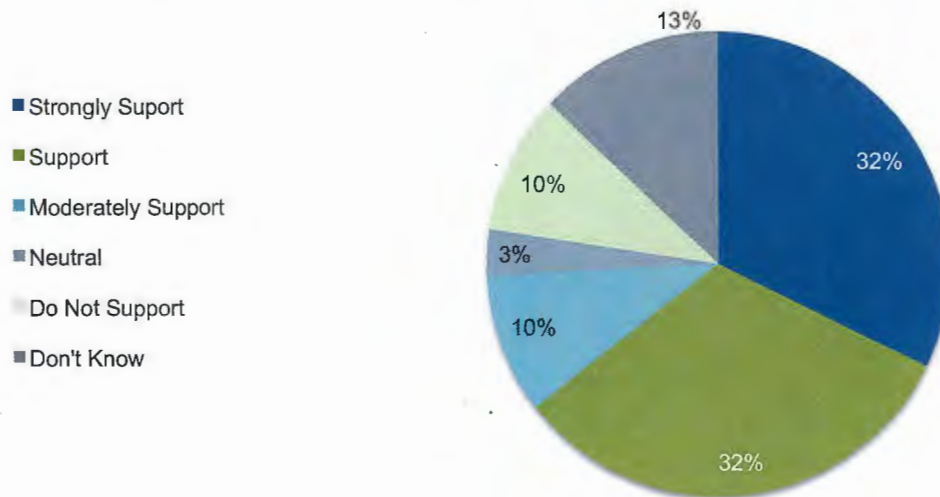
Construct a separated cycling lane on the Arthur Laing Bridge (N=30)



Extend Templeton Street between Grant McConachie Way and Russ Baker Way (N=32)



Provide a fast bus service to and from the Surrey Park and Ride to YVR (N=31)



19. YVR has frequent rapid transit service (Canada Line). Please use the space below to comment on what, if anything, would make you more likely to take transit to and from the airport or other Sea Island destinations. (N=21) Key theme responses include:

- Remove TransLink addfare from Canada Line ticket cost
- Create connections to Canada Line from Fraser Valley (e.g. Surrey, Maple Ridge, etc.)
- Extended/24-hour Canada Line service times, and more frequent service
- Better transit connections to get to Canada Line from other areas of city
- Increase station size and accessibility for travellers
- Transit not convenient to use due to area of residence
- General positive comments about current Canada Line service
- Work with TransLink to add luggage racks and other related services to trains and buses
- Extension of Canada Line from Richmond Centre to Railway Avenue
- Add other Sea Island stations, such as McArthur Glen Outlet Mall, Delta Hotel, Harbour Air and the South Terminal

“YVR should consider working with TransLink to provide express bus service to YVR from areas that are not connected via the Canada line. Bus services are not designed currently for airport passengers.”

20. Please use the space provided below to share any comments or questions you have about ground access to and from YVR? (N=17) Key theme responses include:

- Improve infrastructure to local bridges, including Arthur Laing, Dinsmore and Moray bridges
- Add separated, paved bike lanes to improve cyclist accessibility to YVR
- General positive comments about current YVR ground access
- Support for Templeton extension to Russ Baker Way
- Improved design and safety of passenger pick-up area
- Suggestion to fine those who ignore signage and rules
- Comment that vehicles provide quicker access than transit
- Suggestion to maximize all roads on Sea Island prior to adding infrastructure

“A separated, paved cycling network already gets from Richmond to the Flight Path Park, then it dumps you onto the street again. Extend that along Templeton up to the Outlet Mall... and ideally bring it all the way up along the north end of Sea Island to Iona.”

Environment

21. Based on your experience, do you have any recommendations of innovative environmental management practices or initiatives that YVR should consider? (N=19) Key theme responses include:

- Support for alternate energy sources such as solar panels, wind turbines, kinetic energy collection
- Some noted energy conservation initiatives
- Recycling initiatives; reduce use of paper
- Some mentioned tree planting
- Support for rain water capture
- Positive comments on current environmental initiatives
- Comments about reduction noise and air pollution
- Suggestion to follow industry standards, such as Platinum LEED standard
- One respondent noted that they do not have enough information to comment
- Suggestion to install ground power for aircraft

“There is a huge roof area that could be used for solar panels. YVR should aim to be (as an airport terminal) a zero emission building through various initiatives in 20 years.”

22. We are considering several new projects for environmental planning in the future. Please use the space provided for any comments you have about these projects or environmental management at YVR. (N=13) Key theme responses include:

- Overall strong support for all new projects listed for YVR’s environmental planning
- Positive comments about environmental initiatives
- Support for in-terminal composting facility
- Support for increasing number of gates with pre-conditioned air units so that aircraft can turn off their engines and reduce idling
- Support for rainwater capture and reuse in the terminal
- Support for District Energy Geoexchange, if affordable
- Support for recycling initiatives, such as reducing paper use
- Solar panels, wind turbines, kinetic energy collection
- Suggestion for recycling awareness education, to help people learn how to properly recycle
- Suggestion to use shore power for RCMP vehicle at terminal to reduce idling

“All good. Let’s make YVR sustainable as much as possible.”

“I applaud your efforts to minimize any negative impact future expansion of the airport will have on the community at large. Some will be more practical than others.”

Amenities

23. What amenities on Sea Island do you use today? (N=17) Key theme responses include:

- Many indicated they visit the McArthur Glen Designer Outlet Mall
- Many indicated they use the food court and restaurants
- Many indicated they used plane spotting locations at YVR
- Some indicated they use Iona Beach and Park
- Some respondents noted that they primarily use the airport and parking facilities, without any specific amenities
- Some said they use the walking trails and bike paths
- Some respondents indicated they do not use Sea Island amenities
- Some respondents said they use Larry Berg Flight Path Park
- Other responses included: Flying Beaver, hotel restaurants and airport lounges

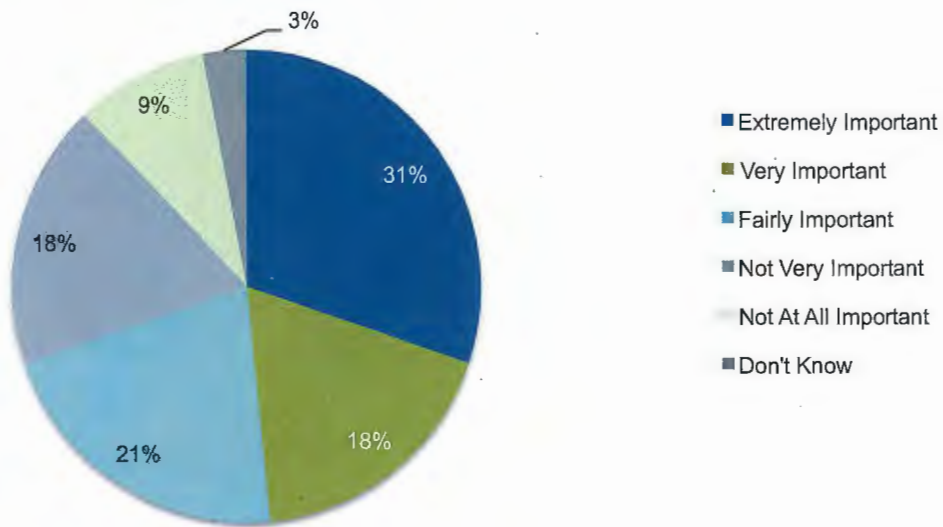
"I frequently cycle to Iona Beach. I would use the plane spotting area north of the runway, but there is limited parking there."

"I take my son on the train to the terminal viewing platform and McArthur Glen. [I'm also a] frequent user of bike paths and Flight Path Park."

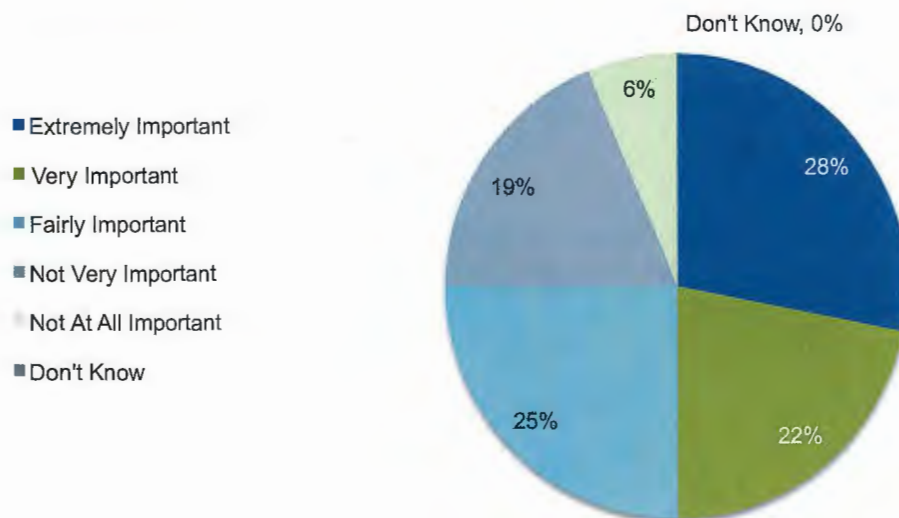
24. How important are each of the following amenities to you? Please select all that apply.

Of the six types of amenities, natural areas, a plane spotting platform and walking trails were seen as the top three priorities, as illustrated in the charts below.

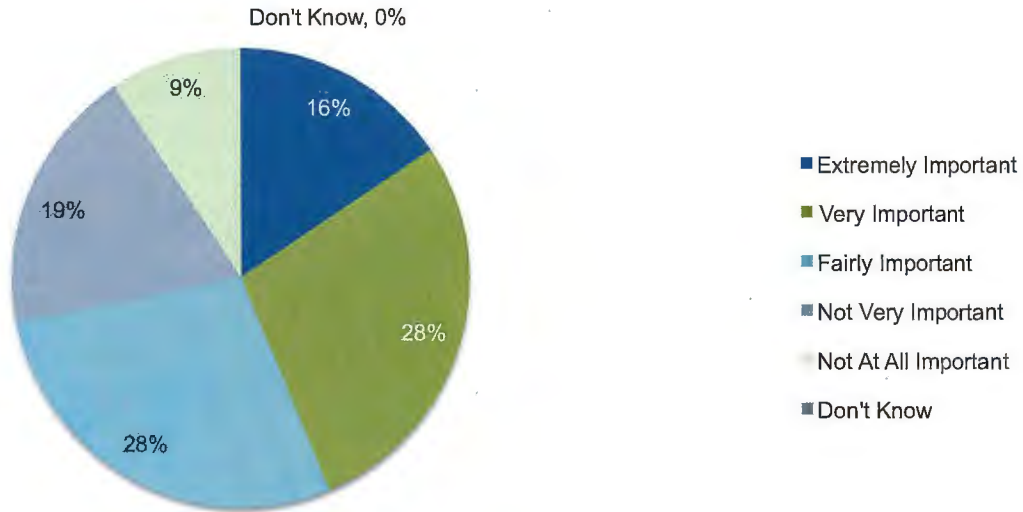
Plane Spotting Platform (N=33)



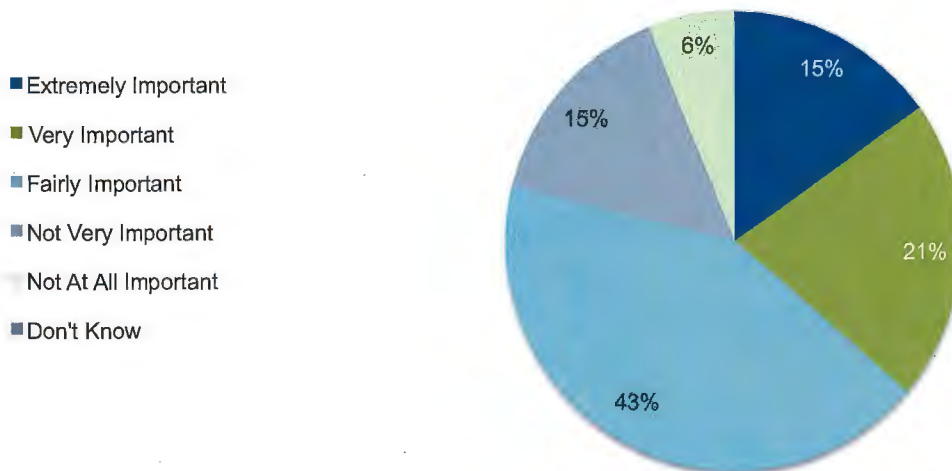
Walking Paths (N=32)



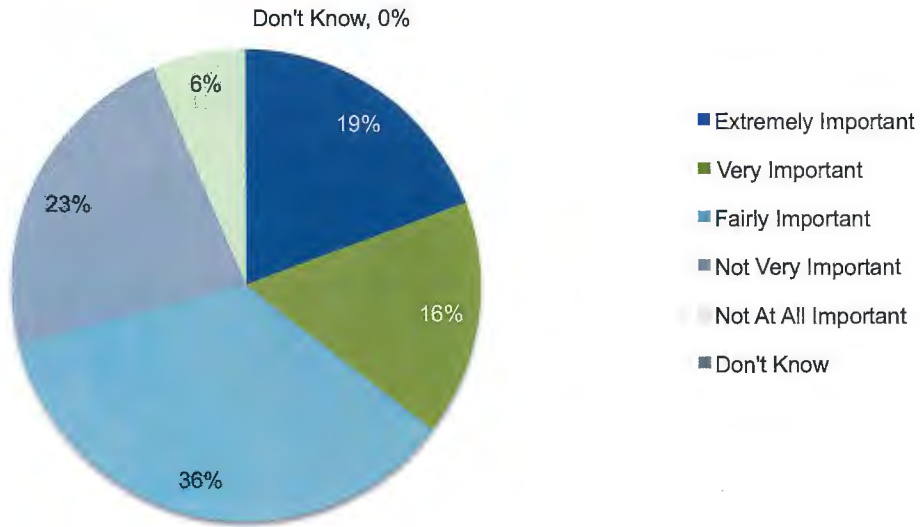
Road Improvements for Commuter Cycling (N=32)



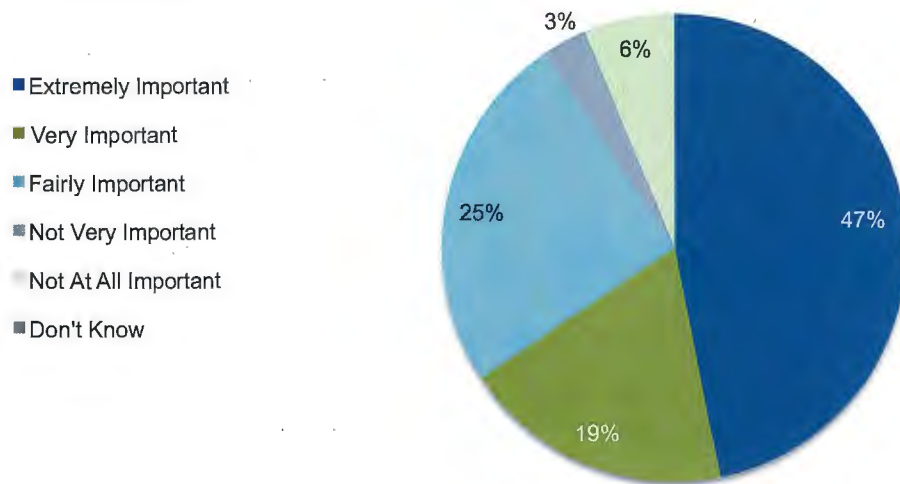
Recreational Cycling (N=33)



Multiuse Pathways (N=31)



Natural Areas (N=32)



25. YVR offers a variety of amenities on Sea Island and at the airport and has plans to introduce new amenities in the future. What would increase your interest in using amenities at YVR? (N=18) Key theme responses include:

- Many indicated a desire for a separated cycling network
- Many people noted increasing accessibility
- Support for more plane spotting locations
- Some said YVR should focus on its operational efficiency instead
- Some noted food court and restaurant options, including food trucks at outdoor venues on Sea Island.
- Desire for additional park and recreation areas on Sea Island, including more walking trails
- Other responses included: sports facilities, employee discounts and quiet areas.
- Comment noting unfamiliarity with existing amenities
- Suggestion to remove airport fee on Canada Line
- Suggestion to showcase B.C. and Canadian art and products in airport
- Suggestion to make airport feel like “community hub”

“Offer more local BC and Canadian products. Include nicely designed products that will showcase the creativity of people.”

26. In order to improve amenities at YVR, what other recreational opportunities should YVR consider? (N=15) Responses include:

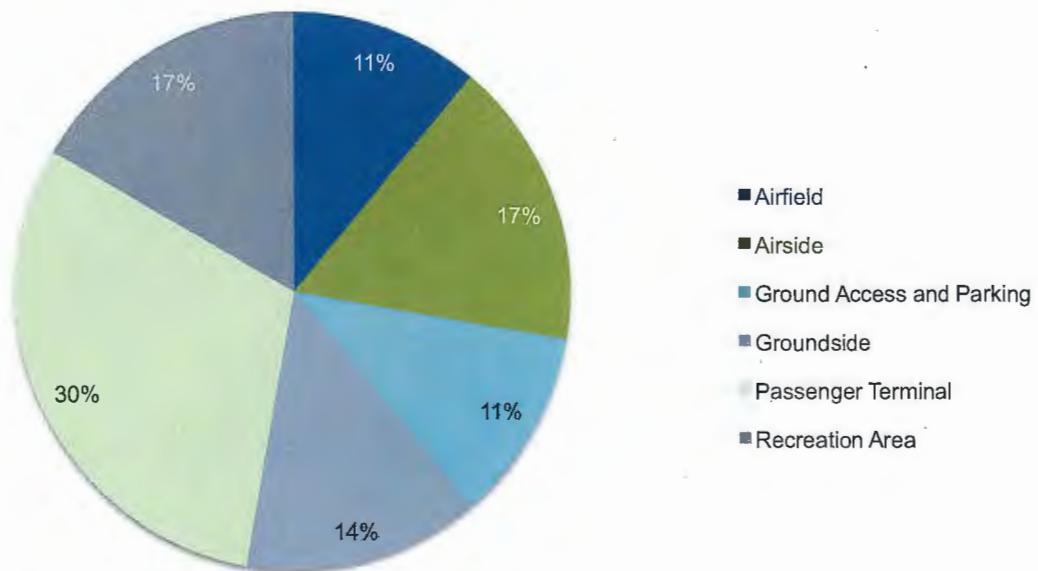
- Support for interactive and recreational activities for children
- Some suggested fitness facilities or sporting venues
- Some respondents said tree planting and park creation, including park benches and outdoor seating areas
- Some said to focus on operational efficiency instead
- Some focused on access, specifically to Iona Park
- Amenities mentioned included golf courses, gym, multi-use observation platform and grocery store
- Suggestion to improve/pave multi-use pathways around Sea Island

“Tree planting and park creation of lands south of BCIT to match Richmond’s future river-front park. Perhaps with a board and/or pedestrian and cyclist bridge connection.”

Land Use

27. We recommend maintaining the existing land use designations. Among the six land use designations, please indicate if you are interested in any of the areas, and if yes, why. Please check all that apply. (N=20)

Respondents could select more than one option.



28. As part of our work in the future, we will develop sub-area plans for each land use designation. What comments or questions, if any, do you have related to the development of sub-plans? (N=8) Responses include:

- Comments about improving ground access
- Comments indicating interest in public consultation for the area sub-plans
- Suggestion to work with community groups such as Richmond Active Transit Committee, HUB-YVR

“Airfield, ground access and recreational areas all interest the public and we should be consulted.”

29. How would you like to be informed and engaged as we develop these sub-area plans? (N=14) Key theme responses include:

- Majority indicated they would like to be informed by email and online
- Other respondents indicated a preference for public meetings and events and newspaper advertisements
- Suggestion to publish meeting minutes for public review and understanding of decision-making process
- Suggestion to notify through the Richmond Active Transit Committee

Additional general comments included:

- Increase staffing in security lines to move more efficiently
- Questions about changes to ground access for YVR

30. Please use the space provided below for any additional comments or questions you have about land use at YVR. (N=9) Responses include:

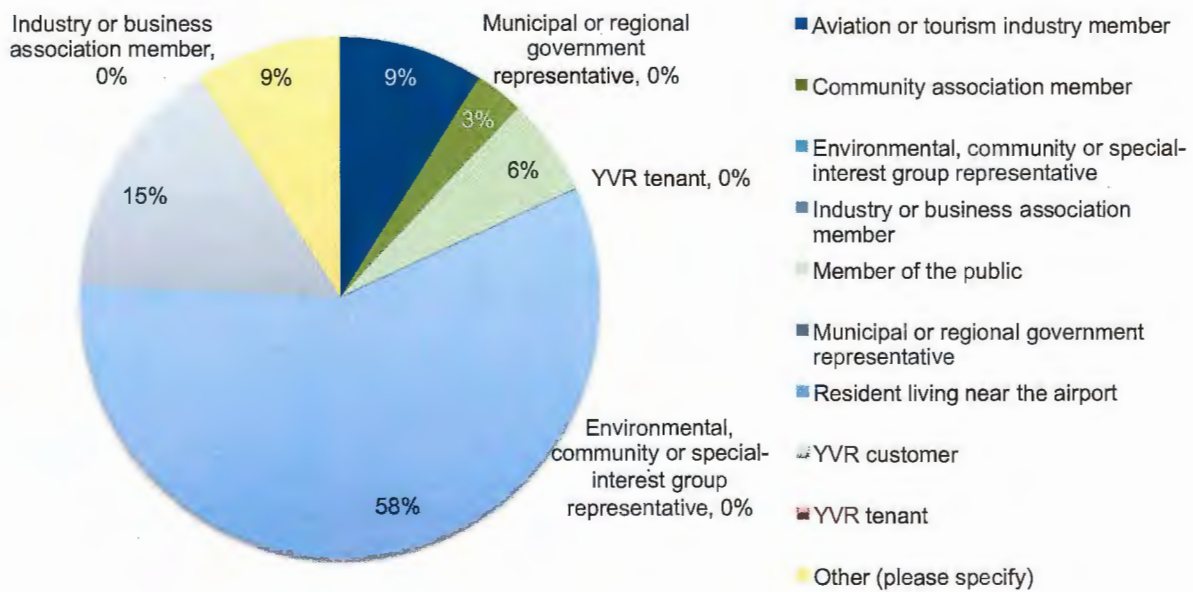
- Improving customer experience
- YVR is already too large for Richmond
- Introduce use of virtual reality technology to visualize proposed land use amendments/changes
- Improve/pave multi-use pathways around Sea Island
- Question about how far expansion plans extend into water

“Pave the path from
McArthur Glen to Iona.”

General

31. Which of the following best describes you? Please check only one. (N=33)

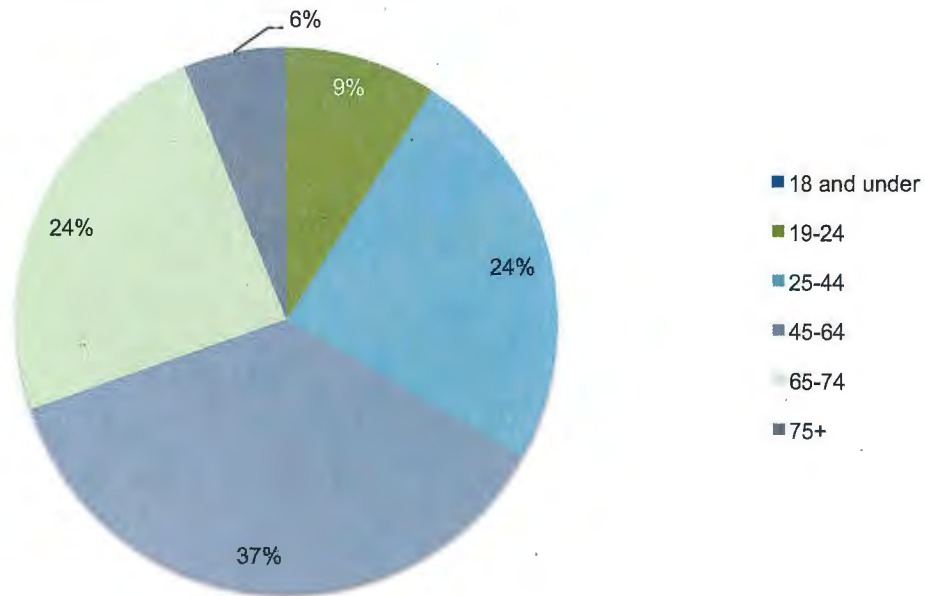
Residents living near the airport represented the majority of respondents (58 per cent), followed by YVR customers (15 per cent).



Other (please specify):

1. Canadian Voter
2. Very frequent flyer

32. Please indicate your age range. (N=33)

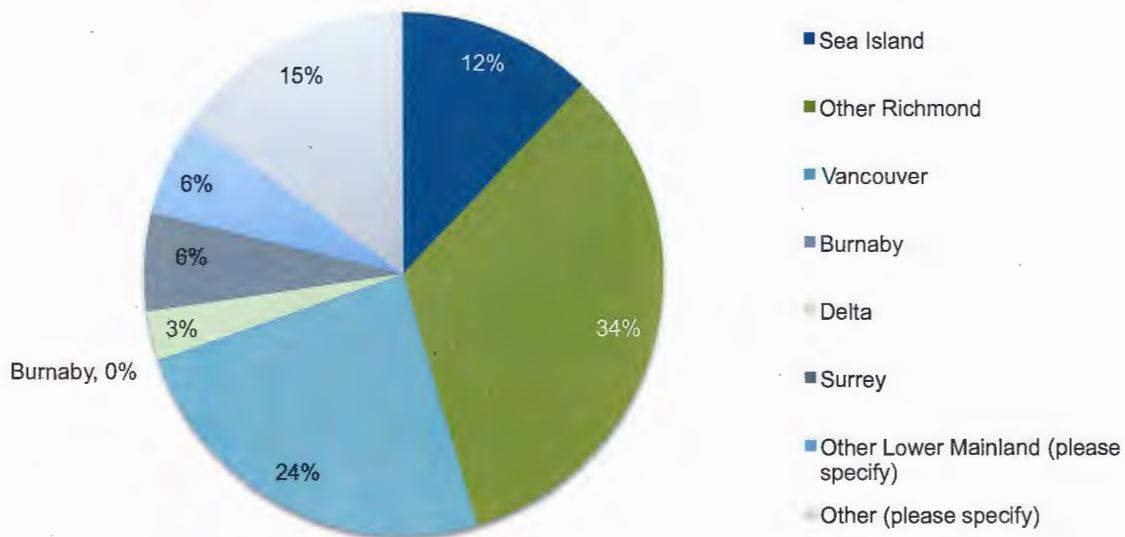


33. Where do you live? (N=33)

This report is based on feedback received from Richmond residents only.

34. Where do you primarily work/attend school? (N=33)

Majority of respondents indicated that they work on Sea Island (12 per cent), or elsewhere in Richmond (34 per cent), followed by Vancouver (24 per cent).

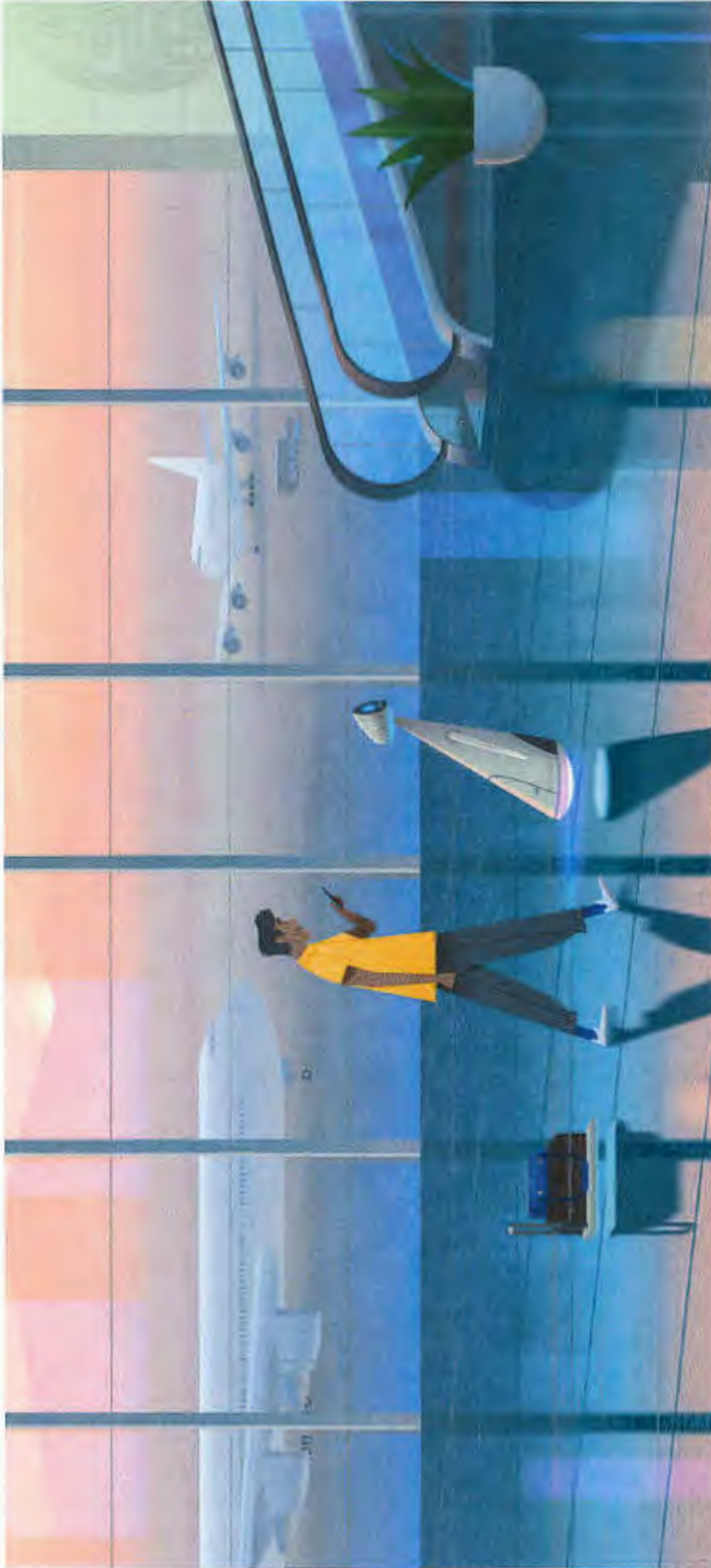


Other Lower Mainland (please specify)	
New Westminster	1
Retired	1

Other (please specify)	
Another city (work for airline and "commute")	1
Retired	3
Work from home (Steveston)	1



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MASTER
PLAN  YVR
2037

YVR 2037 MASTER PLAN HIGHLIGHTS

ABOUT VANCOUVER INTERNATIONAL AIRPORT (YVR)

Vancouver International Airport (YVR) is Canada's second busiest airport, managed by Vancouver Airport Authority—a community-based, not-for-profit organization. Our Board of Directors, nominated by municipalities and organizations in the community we serve, sets the strategic vision for the future and provides accountability and oversight for the management of the Airport Authority and YVR. As there are no shareholders, we reinvest all profits back into airport operations and development to maintain the highest level of safety and efficiency.

Between 2013 and 2015, YVR passenger numbers increased by over one million per year. In 2016, those numbers grew by another two million. By year's end, we served a record-setting 22.1 million travellers who arrived, departed and connected, via 55 airlines, to more than 122 destinations worldwide.

YVR is committed to being a leader in sustainability. We're also committed to creating an airport that British Columbia can be proud of—a premier global gateway, a local economic generator and a community contributor. We are your airport and we take pride in managing it for you.

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CONSULTATION

CONSULTATION

YVR has developed Flight Plan 2037, a 20-year plan that ensures that Vancouver International Airport is prepared to meet anticipated growth, stay competitive and maintain our position as one of the world's leading airports.

Flight Plan 2037 includes a Capital Plan, Financial Plan and the YVR 2037 Master Plan—the plan that we are currently undertaking which helps guide land use decision-making while considering sustainability at each step in the planning process. These plans will help us meet the needs of our communities, business partners and employees. We recognize that effective planning takes a range of views and options into consideration.

We implemented a consultation process for the YVR 2037 Master Plan that used a variety of tools and methods to gather information and facilitate meaningful engagement with business partners, employees, passengers and our community.

In **Phase 1** (2015), we sought feedback on your long-term vision for the future. You told us that you wanted YVR to maintain our excellent, personable customer experiences. You asked us to utilize technology for greater efficiency and increase travel connections and direct destinations. And you insisted on us retaining a focus on sustainability.

In **Phase 2** (2016), we shared some of the possibilities for key elements of the Master Plan. You provided insightful feedback which helped us prioritize and select a preferred state for each of the six focus areas.

We were encouraged by your supportive comments and constructive feedback. Key themes that emerged included significant interest in the terminal, specifically around amenities that would help make the travel process more streamlined and enjoyable. Environmental initiatives and accessibility were also themes that resonated with our stakeholders and the community.

Thank you for your involvement and sharing your insights, questions, opinions and vision for the future in **Phase 2**. We are pleased to share how your input has influenced our plan for the future. In **Phase 3** (2017), we are looking for you to confirm that our plan reflects the needs of our stakeholders, business partners and the community and identify any final elements for consideration.

PHASE 2 CONSULTATION

- 700 people engaged in person
- 16,900 visitors to our website
- 40 million impressions
- 22 stakeholder meetings
- 4 public meetings
- 5 roadshow stops across Metro Vancouver

- PHASE 1: Our World in 2037 [Completed September 2015]
- PHASE 2: Building a World Class Sustainable Airport [Completed November 2016]
- PHASE 3: YVR 2037 Master Plan Highlights
January 18, 2017 - Consultation Open
February 8, 2017 - Open House
February 20, 2017 - Consultation Closed
- PHASE 4: Approval of YVR 2037 Master Plan 2017/2018



TERMINAL EXPANSION

Our current terminal can accommodate 25 million passengers. We have had exceptional growth, greeting a record-breaking 22 million passengers in 2016. We are already planning and designing our next expansions, starting with Pier D and the East Concourse.

We received many innovative ideas and suggestions from experiences at other airports around the world to incorporate into our terminal design. Participants spoke about more diverse food options and restaurant experiences, layover amenities such as sleeping pods and showers, opportunities for bringing the West Coast outdoors into the terminal—and the integration of a comprehensive mobility plan to ensure passengers move through our terminal safely and efficiently. We have shared this wealth of ideas with our terminal planning team and look forward to showing you how some of these ideas will be implemented as our terminal is expanded.



During Phase 2 consultation for the Master Plan, we heard from participants about their support for our recommended centralized terminal expansion. Our proposed terminal configuration is designed to accommodate 35 million passengers and can be incrementally updated and adapted in response to our growth. We will maintain operations at the South Terminal Building and protect adequate land for the ongoing operation of the float plane terminal which supports our regional connectivity. Looking beyond our 35 million passenger movements, there is a potential need for another terminal. Therefore, we will protect land within our airfield for a satellite terminal.

AIRSIDE & AIRSPACE

As an international airport, YVR provides the infrastructure and operational services to meet evolving industry technology and standards while balancing the need for a sustainable airport for our community. In Phase 2, we heard that it was important to reduce delays for airlines and passengers and to improve runways and airside infrastructure for future growth. We will address these matters thoughtfully while maximizing our current resources to delay the need for an additional runway.

A new runway requires extensive planning, consultation, environmental permitting and regulatory requirements which can take upwards of 10 years to complete. Given the long lead time, we anticipate that planning for an additional runway will occur during the timeframe of the 2037 Master Plan.

In Phase 2, we asked if there was a preference for the Foreshore or Close-In South Parallel Runway. The feedback we received was split down the middle, with one third of respondents undecided. We understand that this is a complicated and important decision, we acknowledge that there are concerns relating to noise impacts and the proximity to the City of Richmond for the Close-In South Parallel Runway and we recognize that there are environmental and cost concerns relating to the Foreshore Runway. This is an important issue for our community and stakeholders. We value your input and will consult with you as we explore options in the future.

Within the next 10 years, we will build the North-South Taxiway (NST)—an above-grade taxiway where planes will taxi over Grant McConachie Way and the Canada Line.

On the horizon since our 2027 Master Plan, this resulted in constructing the Canada Line at ground level at Templeton and the Island stations. Building the NST provides a direct link between the runway ends and the terminal, enabling a more balanced use of the parallel runways and an all-weather taxiway that is more efficient. It also means shorter taxiing distances for aircraft, thereby reducing greenhouse gases, and taxiing time for passengers and airlines.

In the near term, we will explore expanding the use of the North Runway for departures to delay the need for an additional runway. We will also begin planning for the

construction of the North Runway End Safety Areas and potential runway extension. We look forward to getting out and engaging the community, sharing information and discussing this aspect of the project in 2017.

Innovation in aviation has led to the development of planes that are quieter and more efficient. As we grow, we will continue to strive to minimize noise impacts for our neighbouring communities.



GROUND ACCESS



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Enabling safe, efficient, convenient and reliable ground access is a key priority of the Master Plan. We own and are responsible for the majority of the road network on Sea Island, as well as two main bridges that provide access to it—the Arthur Laing and Dinsmore bridges. We also invested \$300 million in the Canada Line extension to Sea Island and YVR now has some of the highest transit ridership of any airport in North America—about 25 per cent, an achievement that makes us proud.

In Phase 1 and 2, we heard that regional connectivity was of the utmost importance for municipalities and the public, with public transit being the most recurring theme in all of our meetings and feedback surveys. We are committed to being active in discussions and in collaboration with regional agencies and authorities in transit, transportation and policy development relating to transit access and mobility pricing.

Large numbers of people expressed a desire to travel to YVR on transit. TransLink is implementing their 10-Year Infrastructure Plan which includes initiatives to expand capacity on the Canada Line. We will monitor and proactively address YVR Airport Station capacity constraints in an effort to provide a seamless experience getting on and off the Canada Line.

We will work with TransLink and regional agencies to improve transit options for air passengers, employees and cargo. We will also work with the British Columbia Ministry of Transportation and Infrastructure and the City of Richmond to enhance the connection between Highway 99 and Sea Island, including the replacement of the Moray Channel Bridge and network improvements.

In Phase 2, we learned about your level of support and feedback on various ground access and road infrastructure options. There was strong support for the Russ Baker Way high priority vehicle lane and the extension of Templeton Street to Russ Baker Way. Both options will be explored further. We will also implement upgrades or replacement to various other infrastructure such as the Dinsmore Bridge, YVR's parkade, the Sea Island road network and include cycling and pedestrian infrastructure in upcoming road work projects.

We will prepare for ridesharing, carsharing, peer-to-peer car rental and autonomous vehicles at YVR and will consult with government and stakeholders, as appropriate, to develop the necessary regulations and permitting processes, ensuring that adequate curbside infrastructure and staging areas are allocated.



ENVIRONMENT

Sustainability is embedded in YVR's corporate culture and is intrinsic to our strategy and business practices. We strive to be a world class sustainable airport that values excellence in environmental management. We do this by reducing our impact on Sea Island and the surrounding environment through a variety of methods. These include the management of wildlife to keep birds and planes safe, management of storm water and protecting water quality, management of waste with diverse recycling and organics programs. We recently became the world's first Salmon-Safe certified airport which acknowledges our ongoing efforts and commitment to transform our land and water management practices. These practices and standards will guide our operation and development in the future as we strive to innovate and improve the way we manage our airport and Sea Island.

Feedback in Phase 1 consultation highlighted that we share a similar vision with our communities. We learned about the region's desire for sustainable travel options that reduce carbon emissions and for YVR to be a self-sustaining airport with a reduced environmental footprint. Phase 2 consultation built upon this foundation—here, you provided us with specific suggestions on potential infrastructure, projects and programs that could be implemented and that could help balance the diverse environmental aspects of managing an airport.

We received innovative ideas for initiatives to implement at the airport. The good news is that many of these suggestions are programs that we have well underway such as:

- Installation of additional electric vehicle charging stations.
- Increasing availability of pre-conditioned air for aircraft at gates. Planes plug-in to YVR's power.
- Rainwater capture and reuse in terminal.
- Increasing drought resistant plants in landscaping.
- More solar panels.
- Developing a coordinated strategy for waste management on Sea Island.
- Alternative energy sources such as a District Energy Geoexchange System.

As our airport grows, we will continue to seek opportunities to integrate alternative energy sources, initiate the capture and reuse of rainwater, and minimize our waste. We will continue to update our Environmental Management Plan every 5 years which will identify specific programs and initiatives to achieve environmental sustainability. It includes a framework to guide sustainable environmental management of the airport, key strategic environmental priorities and goals, targets and actions to advance environmental performance and ecosystem health.

COMMUNITY AMENITIES

We are committed to being a good community steward—and that includes helping to provide recreational amenities on Sea Island. In Phase 2, we learned that Sea Island's history and public spaces are important to the local community. We respect this and will ensure that adequate green space and other amenities are incorporated into projects as we continue to grow. YPR 2037 will include a plane spotting location for the North Runway and develop a continuous pathway system from the Terminal to the Templeton Canada Line station and from the Designer Outlet to Flight Path Park along Templeton Street.

In coordination with other organizations responsible for land use on Sea Island, we will work to complete a continuous, universally accessible, multi-use pathway around the island on the dyke from the Sea Island Conservation Area to the Coast Guard facility. We will endeavor to communicate the various leisure opportunities on Sea Island to promote active recreation and access to nature so our community can enjoy the incredible, diverse offerings of Sea Island.





LAND USE

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Infrastructure initiatives and developments will be guided by our 2037 Land Use Plan for the next 10 years. Our new plan is approved. The plan will outline how we build and how we use airport lands in a way that respects our operations, our environment and our community. The land use plan provides clarity as to where and what types of development can take place.

We are required to update and submit our land use plan every 10 years to the Federal Minister of Transport for approval.

In Phase 2, the majority of people we heard from wanted to retain the former and expanded as we developed our area lands. We are committed to sharing information and consulting with affected stakeholders and interested parties as we develop these plans.

The YVR 2037 Land Use Plan is based on the 2027 Land Use Plan and has been modified to incorporate consideration to potential uses and development beyond the 20-year planning horizon. When reviewing the Land Use Plan, the areas that are marked as two different colours represent land that is multi-use within the same area.

The airfield is essential to the airport's core function of enabling aircraft to take off and land safely and efficiently. This role – establishing airfield space – takes precedence over all other land uses on Sea Island.

Allocating land required for terminal expansion is our next highest consideration. The Land Use Plan has been updated to identify a potential location for an Infield Terminal. The Infield Terminal is important to long-term

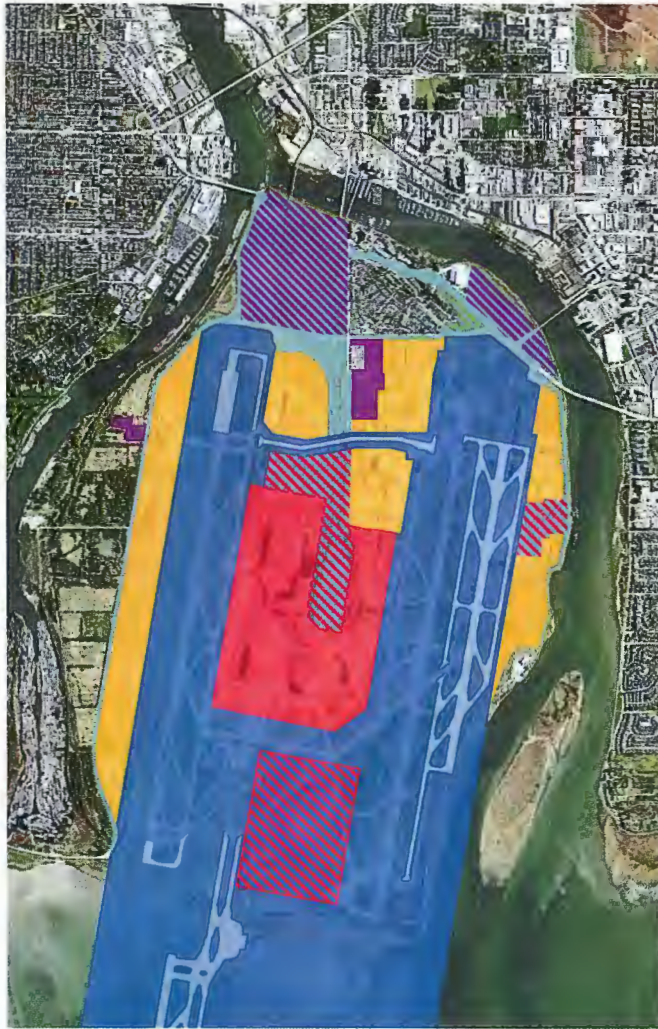
planning beyond the 20-year horizon of this plan as the potential location will play a role when considering future airfield improvements that last beyond 2037.

Airside land is extremely valuable and is considered beach front property in the airport world. Suitable uses of these airside lands are for: business and development with specific airfield maintenance and target-related functions. Ground access and parking were also considered as a priority at our public meetings. Ground access is our last, but not least, priority and includes roads, transit, parking, signage and other supportive infrastructure that enables access for passengers, employees and cargo to and from the airport. In Phase 2, we discussed the importance of cycling and pedestrian infrastructure. As a result, we have revised our definition to support active transportation.

Groundside and recreational areas are areas of land use that support our core airport business. Our previous Master Plan called this designation Groundside Commercial. We have revised this for YVR 2037 to ensure that it reflects uses for the land that fit within the airport use framework but may not be specifically commercial. Although small amounts of recreational areas have been designated, it is our intention that recreational opportunities will be integrated throughout Sea Island,

LAND USE PLAN 2037 MAP

- AIRFIELD**
 Land for existing and future airfield to support the safe movement of aircraft. Includes runways, runway end safety areas, taxiways, airside roads, navigational aids and other facilities. Interim uses are permitted.
- MINIMAL**
 Land for existing and future passenger terminal facilities, lounges, and ancillary commercial and operational uses. Interim uses are permitted.
- INSIDE**
 Land for existing and future uses that require direct access to the airfield. Priority to be given to those uses requiring access to aircraft cargo buildings, aircraft maintenance, etc.) and then to those uses requiring vehicle access to the airfield. Interim uses are permitted.
- GROUND SIDE**
 Land for uses not requiring direct access to the airfield. Uses can be:
 1. Aviation Related: Uses that are directly related to ongoing airport operations.
 2. Aviation Dependent: Uses that benefit from close access to aviation services.
 3. Aviation Compatible: Uses that support the ongoing development of WR as a sustainable gateway and connecting hub. Interim uses are permitted.
- GROUND ACCESS AND PARKING**
 Land that enables the flow of goods and people to, from and around Sea Island. Includes bridges, roads, the Canada Line, cycling and walking corridors, public and employee parking, commercial transportation and car rentals. Interim uses are permitted.
- RECREATIONAL AREA**
 Designate lands for recreational uses.



CNCL 494 NEXT STEPS

We want to ensure that our plan aligns with your vision of YVR 2037. Please provide your feedback online at www.YVR2037.ca.

You can also download a feedback form online and mail it to:

P.O. Box 23750
Airport Postal Outlet
Richmond, BC
Canada

Phase 3 consultation will be open from January 18 to February 20. We hope to see you at our Open House on Wednesday, February 8, 2017 from 5 p.m. to 7 p.m. at Vancouver International Airport.

At the culmination of this phase we will be sharing YVR 2037 with the Federal Minister of Transport for approval. We look forward to sharing our official plan with you once it is approved.



YVR's Planning Document Hierarchy

1. **Flight Path 2037** (released on January 18, 2017): YVR's overarching blueprint for the future includes a Capital Plan, Terminal Plan, Financial Plan and the YVR 2037 Master Plan;
2. **YVR Five Year Strategic Plan**
3. **YVR Annual operating Plan**
4. **YVR 2037 Master Plan (Current Focus)**
 - includes Utility chapter (e.g., utilities, water, sanitary, storm drainage)
5. **YVR Sub - Area Plans**
 - YVR anticipates that the 1st one will be the YVR Templeton Office Park, east of the Templeton Station, and the lands between BCIT and the Dinsmore Bridge.
6. **Sea Island Infrastructure Upgrade Plan (not public)**
 - addresses utilities, water, sanitary, storm drainage)
 - YVR will update it over the next couple of years
7. **YVR Airport Land Management Guidelines** which will:
 - A.) improve YVR's Airport Building Urban Design Guidelines (e.g., design standards, universal accessibility, West Coast uniqueness), and
 - B.) incorporate Sustainable Design Guidelines, to address energy efficiencies and salmon safe practices.
8. **YVR Five-Year Aeronautical Noise Management Plan (NMP)** which:
 - A.) YVR' latest 2037 Airport Noise Exposure Frequency (NEF) Study does not change its existing 2015 NEF contours or their noise impacts which the City uses to manage its 2041 Official Community Plan (OCP) Aircraft Noise Sensitive Development (ANSD) uses (e.g., residential, provincially approved K - 12 school and day care facilities, and hospitals);
 - B.) YVR's The Current Five-Year Aeronautical Noise Management Plan (NMP):
 - runs to the end of 2018, and
 - will subsequently be updated (for 2019 - 2023), as necessary regarding noise contours and more specific noise management strategies.
9. **YVR Five Year Environmental Management Plan (EMP)** which:
 - A.) runs to the end of 2019, and
 - B.) will subsequently be updated (for 2020 - 2024), to address:
 - environmental targets and action plans, and
 - greenhouse gas emissions,
 - potable water,
 - waste management and
 - opportunities to improve ecosystem health;
10. **YVR Invasive Species Management Plan.**
11. **YVR Climate Change Adaptation and Risk Management Plan,**