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VANCOUVER AIRSPACE PROJECT

Agenda

AGENDA ITEM	PRESENTER
Introduction	Pascal Larochelle
Background	Kirsten Dawson
Project Approach	Pascal Larochelle
Airspace review process	Chris Rieken
Consultation	Jonathan Bagg
Question Period	All
Next Steps	Pascal Larochelle

AIR TRAFFIC, INTEGRAL TO REGIONAL AND NATIONAL ECONOMIC DEVELOPMENT, CONTINUES TO GROW



The Greater Vancouver Region and Southern Vancouver Island connects Canada to the global economy.

We have seen an increase of more than 100,000 movements across the region per annum compared to five years ago.

16%

Increase in **total** flights

18%

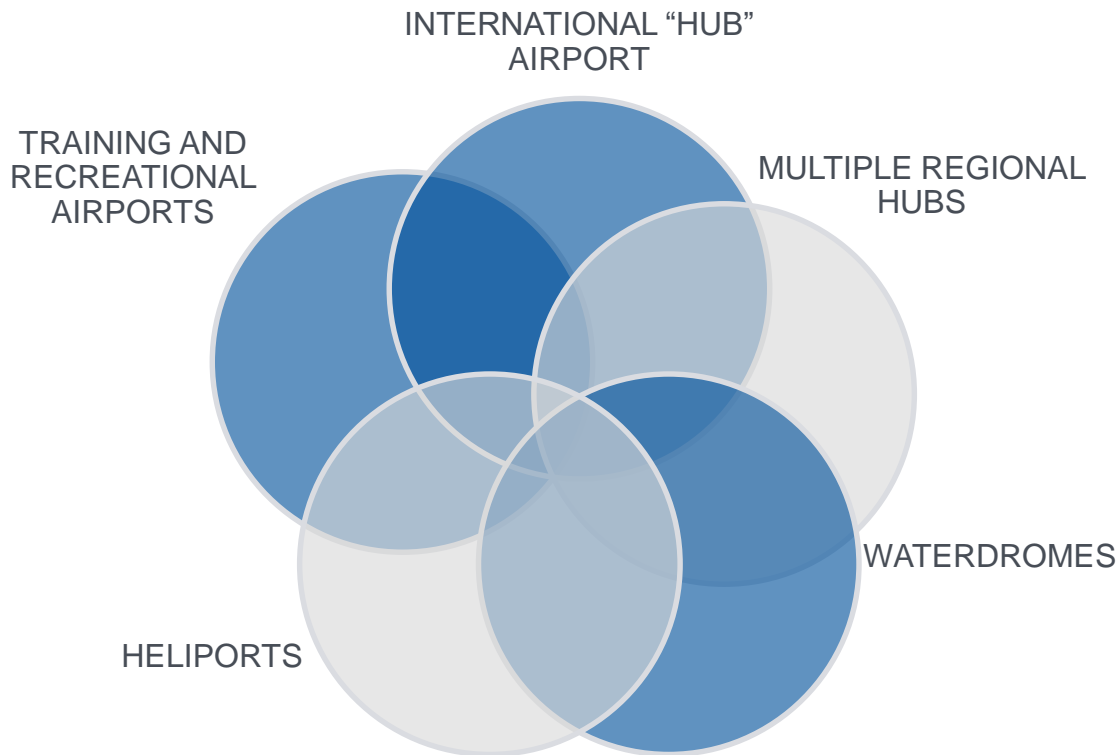
Increase in **IFR** flights

10%

Increase in **VFR** flights

2013 vs 2018

REGION CHARACTERISTICS



IFR operations



VFR operations



Coastal weather patterns



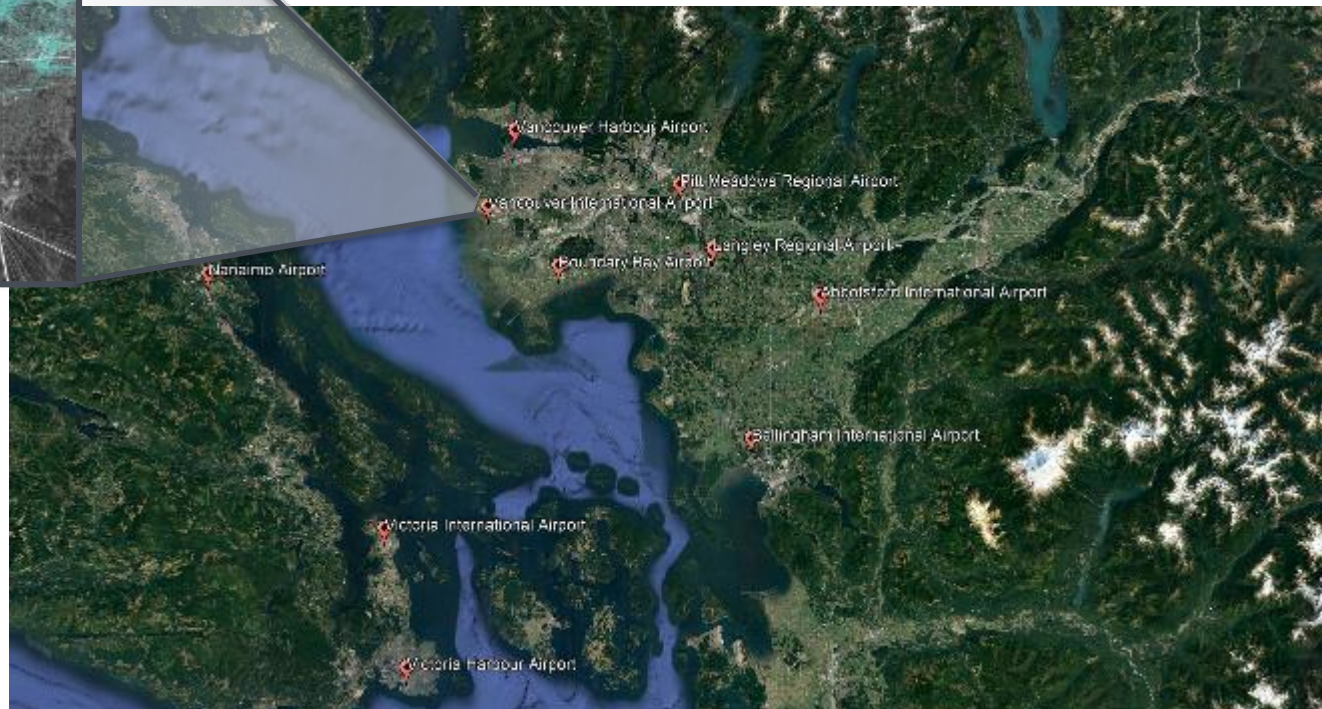
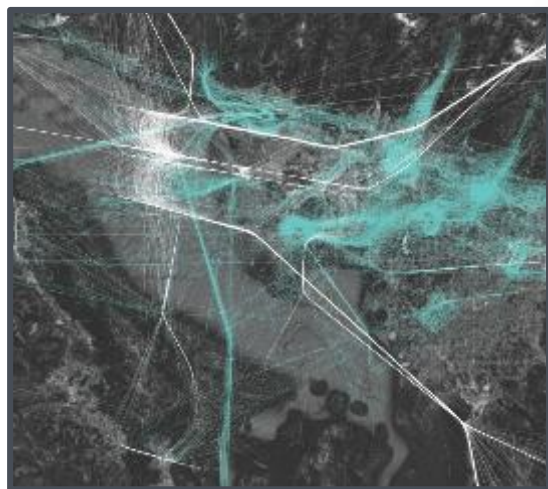
Mountainous terrain



Intricate airspace designations



A COMPLEX, OPERATIONAL ENVIRONMENT



PROJECT OVERVIEW

Why

To modernize the airspace and sustain safe operations in the long-term in anticipation of continued industry growth.

Who

Stakeholders in the Greater Vancouver Region and Southern Vancouver Island areas.

How

Consult, Design, Inform, Implement and Review opportunities to optimize the airspace infrastructure and operation including the following components:

- Airspace and Airway infrastructure – both IFR and VFR
- Preferential IFR Routes, Airspace Classification
- Terminal Operations at principal and regional airports including SID and STAR design, IFR Approaches
- Delivery of IFR and VFR control service
- Charts and Publications
- Noise and Environmental considerations

When

2019 to 2023

**THE GREATER VANCOUVER
REGION AND SOUTHERN
VANCOUVER ISLAND OPERATING
ENVIRONMENT IS A UNIQUE
REGIONAL TRANSPORTATION
NETWORK WITH RELIANCE ON
AIR TRAVEL FOR BUSINESS,
GOVERNMENT ACTIVITY,
RECREATION, AND TOURISM.**

CXH

YVR

YPK

ZBB

YNU

YXX

YYJ

COMPLEX AIRSPACE

-  VFR Arrivals
-  IFR Arrivals

Source: FDE, Google, RDPSR
Prepared by Operational Analysis (sf)

A CULTURE OF SAFETY

Safety is why we exist

- › Our commitment to safety is shared at every level
- › We are industry leaders in establishing a company-wide Safety Management System
- › As a result, our safety record is regarded as one of the best in the world

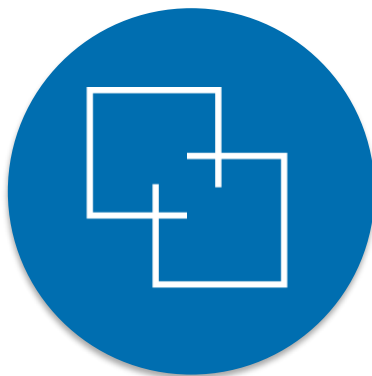


OPPORTUNITIES TO ENHANCE SAFETY – KEY FACTORS



Wake Turbulence

Light VFR operating in
proximity to heavier IFR
traffic



Sector Boundary Complexity

Creates confusion,
uncertainty, and delay in
recognition and resolution
of conflicts



Airspace Classification Constraints

VFR avoiding or restricted
from Class C Airspace operate
in increasingly congested
areas with no positive control



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VANCOUVER AIRSPACE PROJECT

APPROACH

Pascal Larochelle
Project Manager

STAKEHOLDERS



VANCOUVER AIRSPACE MODERNIZATION PROJECT

- Prepare for anticipated growth
- Identify improvements in consideration of safety
- Reduce constraints

Considerations



- Global Navigation Satellite Systems (GNSS)
- Performance Based Navigation (PBN)
- ACC Sectorization
- VFR / IFR structure
- Airspace Classification

Significant advances in aviation technology



- Consultations with airlines, general aviation, floatplane and helicopter operators, airports, associations, communities and our employees
- Build concepts of operations that balance varied stakeholder interests

Components



GOALS

Reduce
risk

Manage
Growth

Manage the Impact to
the Environment

Modernize
Airspace System

Balance the Needs of
Stakeholder Groups

Consideration of
long-term

- Commercial and Air Carriers
- Flight Training and Recreational
- Airports
- Communities

SCOPE

- › Airspace and Airway infrastructure – both IFR and VFR
- › Preferential IFR Routes
- › IFR Navigation infrastructure
- › Airspace Classification
- › Terminal Operations at principal and regional airports
- › SID and STAR design
- › IFR Approaches
- › Delivery of IFR and VFR control service
- › Charts and Publications
- › Noise and Environmental considerations

AREAS OF OPPORTUNITY

Airspace & Airways
Infrastructure



Terminal Operations
& Regional Airports



Noise and
Environmental
Awareness



Optimizing Flow of
Traffic at Airports
Across the Region



TOR - PHASED APPROACH

Phase 1

- Research & Concept Development with stakeholders. No pre-determined outcomes.
- Concept development phase to generate Option Cases
- Business Case to analyze options for viability

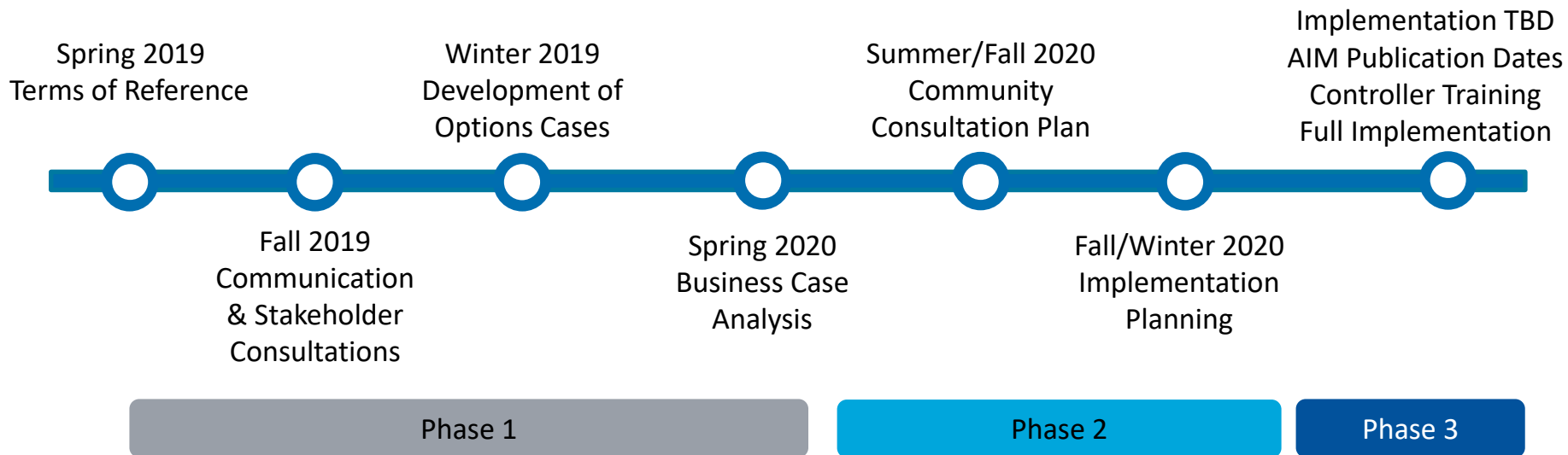
Phase 2

- Public engagement plan and multi department implementation plans
- Aeronautical Study Processes, as appropriate

Phase 3

- Implementation
 - Phasing to support AIM production, controller training, resource management

APPROXIMATE TIMELINES





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VANCOUVER AIRSPACE PROJECT

AIRSPACE REVIEW PROCESS

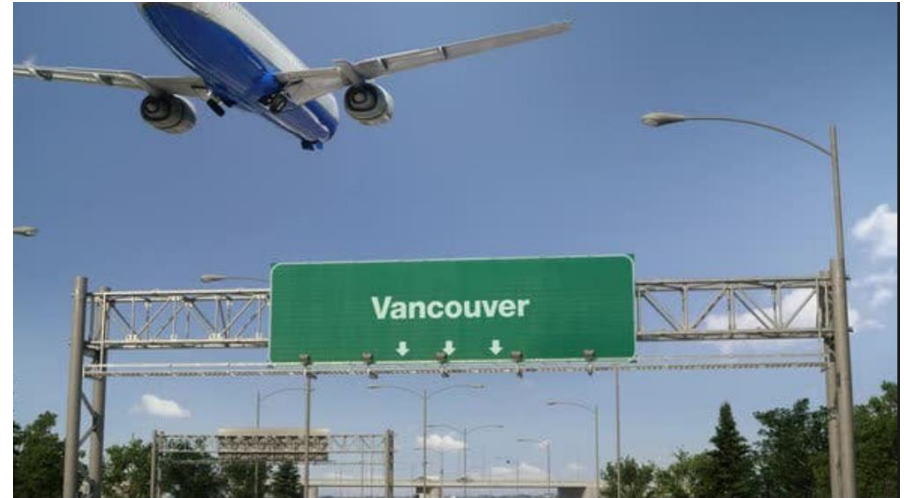
Chris Rieken
NATIONAL MANAGER
Operational Deployment Team

AIRSPACE REVIEW PROCESS

- > Collaboration and communication key to success
 - Consistent information to all involved

- > Stakeholders participate in discussions aimed at applying consistent airspace design practices
 - Concept development
 - Concept consultation
 - Pre-implementation activities
 - Post Implementation review

- > Airspace concept takes into consideration interdependencies of departure, arrival and en-route lateral and vertical paths



PROJECT STAKEHOLDERS

- Commercial
- Flight Schools
- Recreational/private pilots
- Airport Authorities
- COPA, BCGA
- Community officials
- Communities
- DND/Military
- Transport Canada
- FAA
- RPAS/UTM
- Operational Staff



ODT PROCEDURE DESIGN WORKSHOPS

What are the requirements?

- > Phase(s) of flight?
- > What are the current and expected traffic flows?
- > Identify influencing Factors
 - Airspace available
 - Navigation infrastructure available
 - Aircraft equipage
 - Airspace requirements
 - ATC operational environment



AIRSPACE REVIEW CONSIDERATIONS

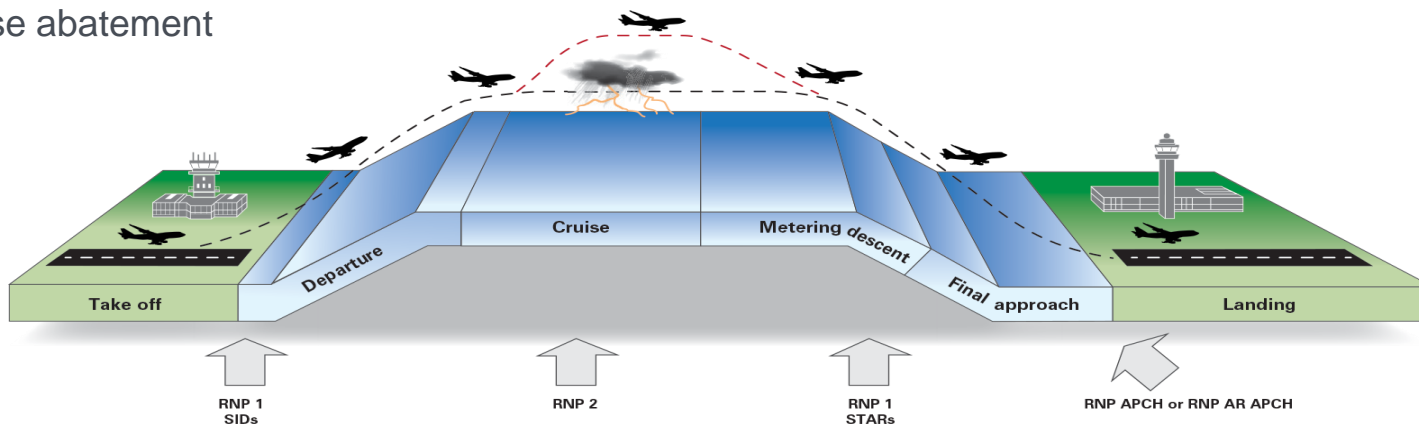
Factors to consider

Airspace

- › Controlled or uncontrolled
- › Special use
- › Terrain/obstacles
- › Advisory or restricted
- › Noise abatement

Navigation Infrastructure

- › DME coverage to support RNAV
- › Remove reliance on ground based fixes with RNAV
- › NAVAID Modernization Plan



AIRSPACE REVIEW CONSIDERATIONS

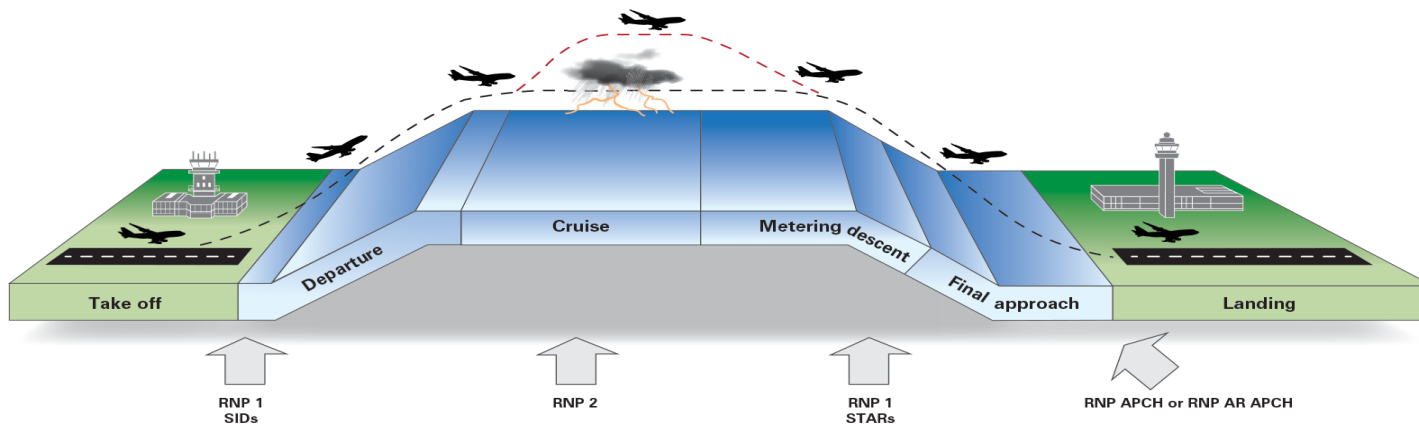
Factors to consider

Airports

- › Operational requirements
- › Noise sensitivities
- › Construction impacts
- › Other issues

Other stakeholders

- › Military
- › Flight training
- › Helicopter or Float Operations
- › Recreational



AIRSPACE REVIEW CONSIDERATIONS

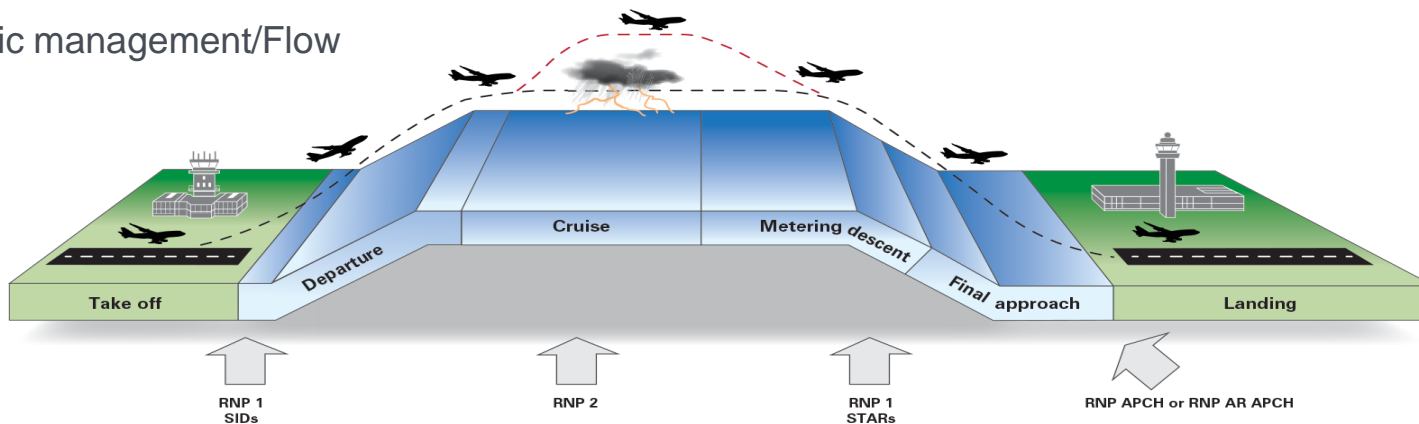
Factors to consider

Aircraft/Operators

- › Types/performance
- › Flight ops (IFR/VFR/SVFR)
- › Scheduled/GA
- › Navigation capabilities/performance
- › Traffic management/Flow

ATC

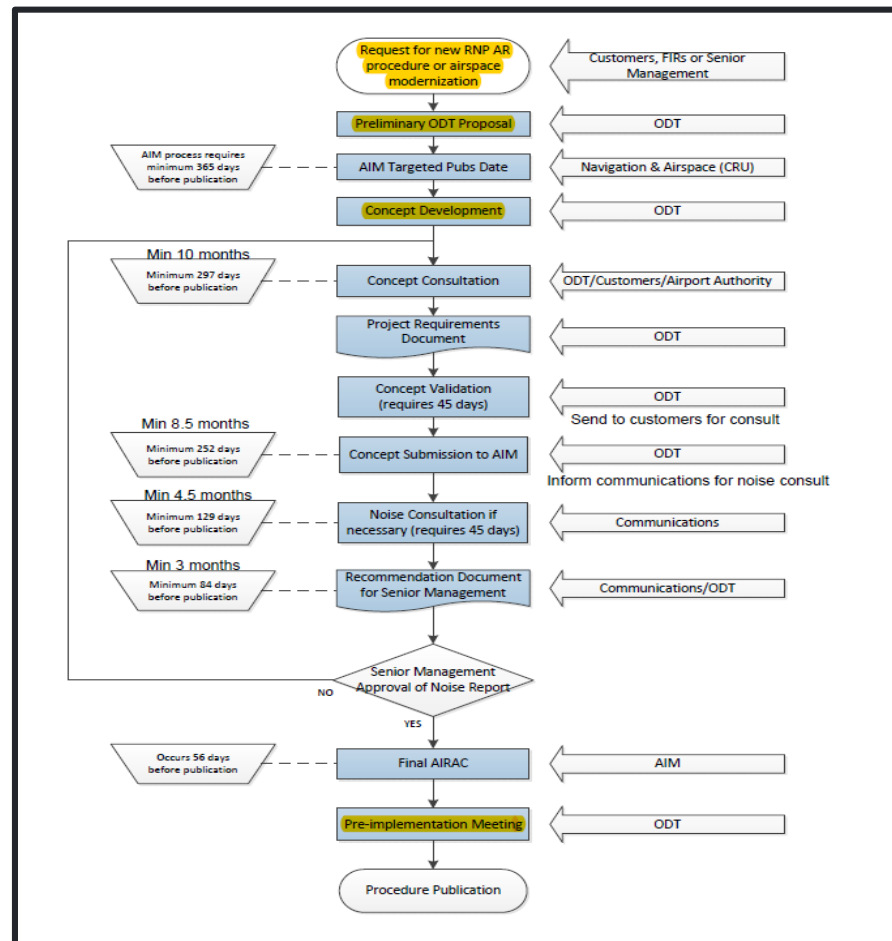
- › Sectorization
- › Airspace constraints
- › Traffic flows
- › Traffic management



IT'S ALL ABOUT THE PROCESS

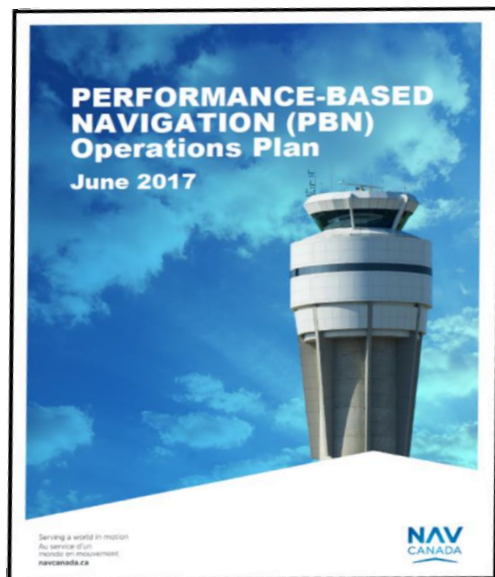
> Some key activities bound by timelines

- Publication process cut-offs
- FAA coordination
- Flight inspection activities
- FIR sign-off
- Community noise engagement/consultation

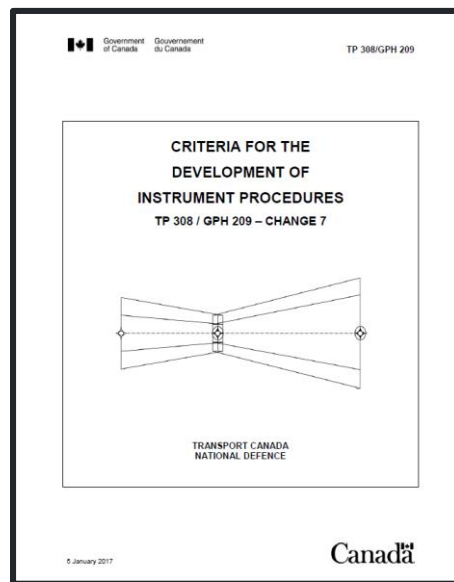


SOME KEY PROJECT DOCUMENTS

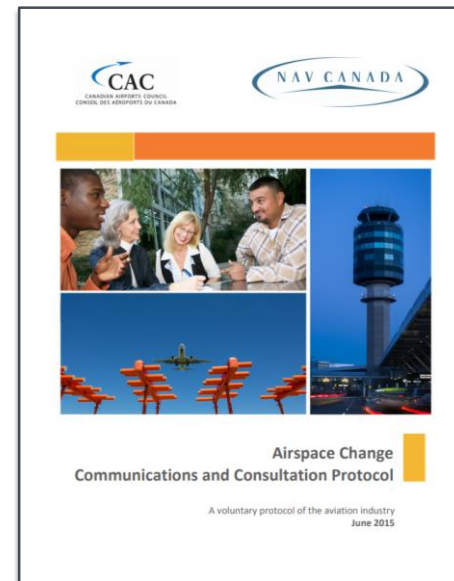
PBN OPS Plan



TP308 – Design Criteria



Noise Consultation Protocol





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2019-10-11

VANCOUVER AIRSPACE MODERNIZATION PROJECT

Stakeholder Engagement Approach

STAKEHOLDER ENGAGEMENT OVERVIEW

- › **Stakeholder Engagement Forums**
- › Airport-level Working Groups
- › Community Consultation

STAKEHOLDER VIEW - VAMP

Industry Panels

Commercial Operators
GA and Flight Training
Airport Authorities
Municipal Planners
NAV CANADA Management
and Employees



Working Groups

ODT + Local FIR SMEs
Local Operators
Specific Airport Authorities



Community Consultation

Residents
Elected Officials
Municipal Planning Officials
Media/Social Media

GARNERING INDUSTRY AND COMMUNITY INPUT

- › **Four Stakeholder Forums** to ensure early and effective input in to the development of viable concepts of operation.
- › A representative cross-section of industry and community officials.
- › Does not in any way preclude other consultation processes, including the [Level of Service Policy](#) or the [Airspace Change Communication and Consultation Protocol](#).
- › **Aim to balance stakeholder interests** to the extent possible. NAV CANADA is committed to sharing project information in a transparent and timely manner through this process.

ABOUT THE STAKEHOLDER FORUMS

Recreational and Flight Training (RAFT)

Comprised of major flight training establishments operating in the region and representatives from recognized aviation advocacy organizations.

Commercial and Air Carriers (C&AC)

Comprised of commercial operators – including commercial floatplane and helicopter operations – airlines and industry representatives.

Airport Authorities (AA)

Comprised of all airport authorities within the scope of the project.

Community Officials (CO)

Comprised of participants identified through the public engagement plan developed by the NAV CANADA Stakeholder Relations team.

OUR COMMITMENT

- › Make relevant project materials available to forum participants.
- › Ensure clarity on project goals.
- › Encourage active participation.
- › Consider stakeholder impacts.
- › Summarize feedback to panel participants.
- › Consider what can and can't be accommodated and provide rationales.
- › Report back on progress and consider further enhancements.



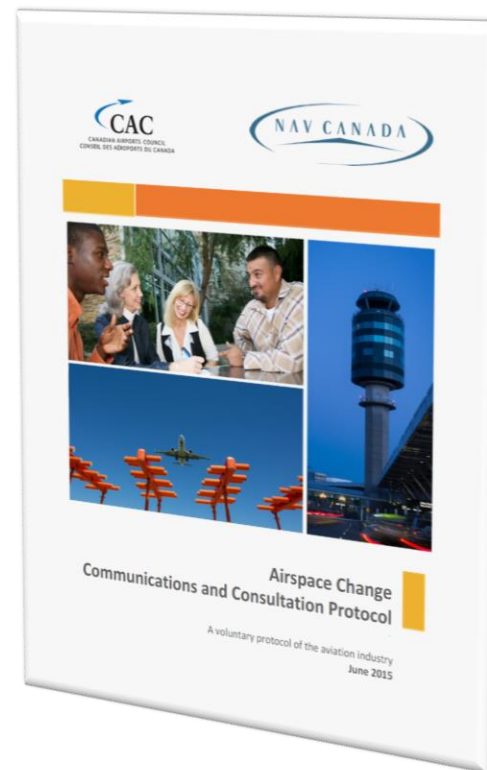
Working Groups

- › Working groups will have the task of providing input in to the Operational Deployment Team to support development of local design concepts.
- › This will provide the opportunity for industry stakeholders who are familiar with the specific operation to discuss requirements and interact with airspace designers and operations staff.

COMMUNITY CONSULTATION

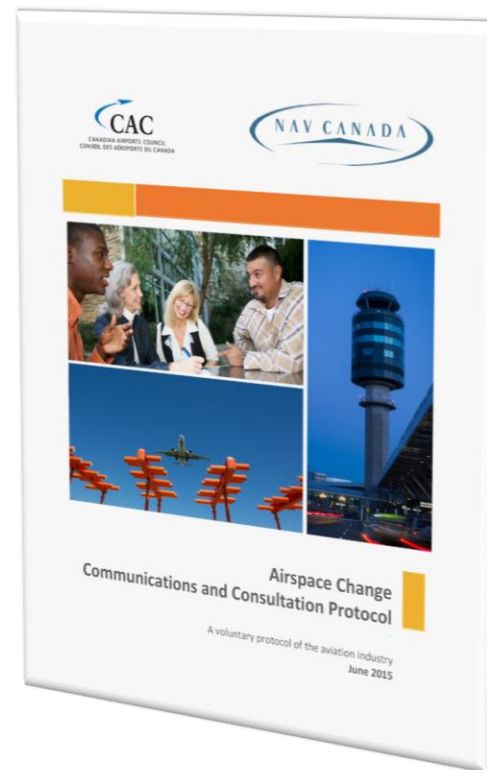
FRAMEWORK FOR OUTREACH

- › Protocol developed at request of Minister for Transport.
- › Signed by Canadian Airports Council and NAV CANADA.
- › Concept of the “proponent”.
- › Specific key timelines and components of the consultation.
- › Promotes collaboration between airport authorities and ANSP in planning community engagement.



FRAMEWORK FOR OUTREACH

“NAV CANADA and the Canadian Airports Council have signed this protocol to signal an industry-wide commitment to open and transparent engagement with our stakeholders and community. We recognize that airspace and airport operations, and updates or changes to these operations, can impact communities in material ways.”



CONSULTATION THRESHOLDS



When is consultation required?

- Moving flight path laterally below 4,000', over populated areas
- OR
- Procedure increases volume on an existing flight path (+30%/+15%)

+ at an airport with:
more than **60,000** IFR movements

COMMUNITY OUTREACH AROUND AIRSPACE CHANGE SINCE 2015

Consultation

Calgary

Ottawa

Edmonton

Kelowna

Winnipeg

Billy Bishop

Halifax

Toronto

Communication

St. John's

Regina

Brandon

Saskatoon

Quebec City

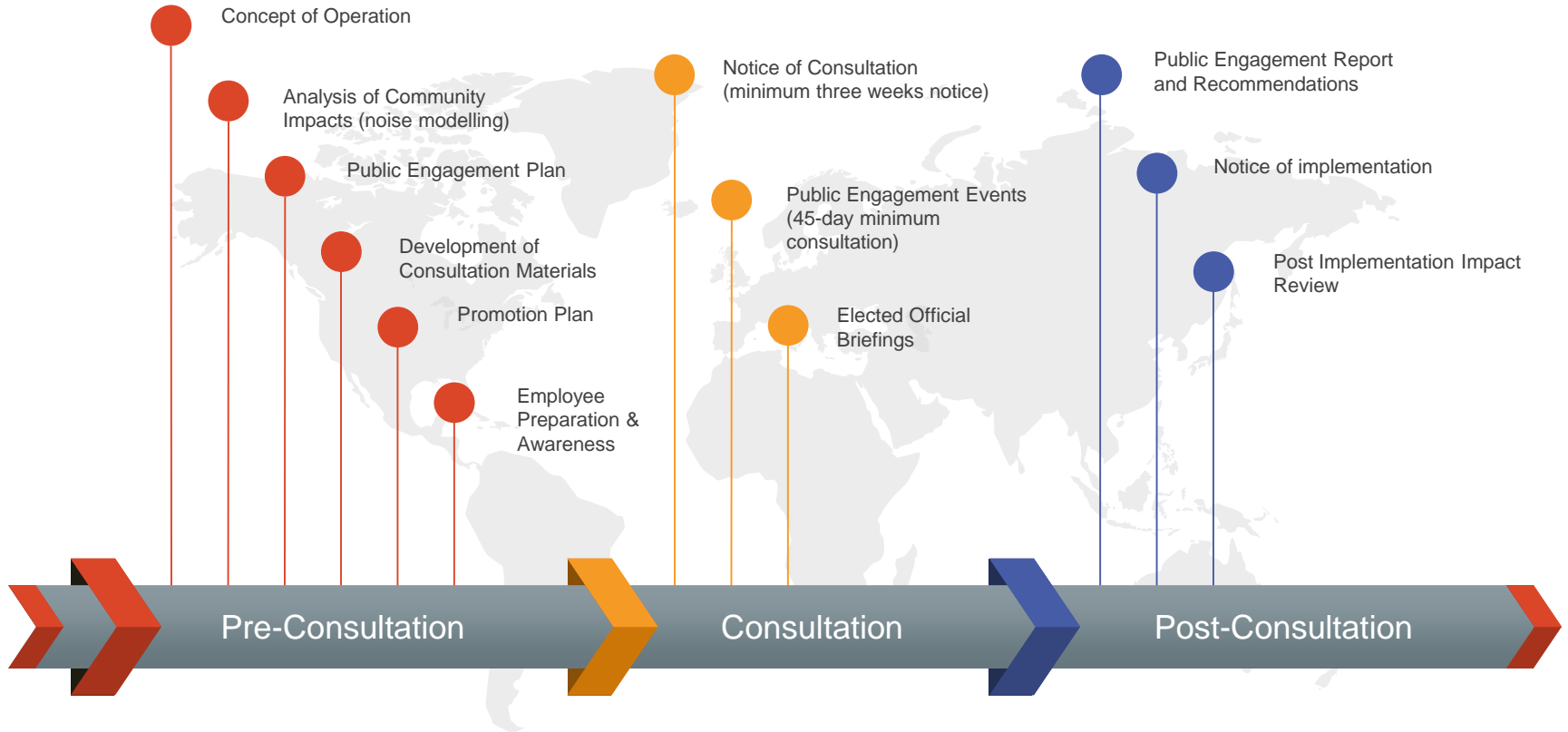
Thunder Bay

WHAT WE CAN EXPECT - VAMP

- › Requirement for broad-based public consultation.
- › Around YVR, but likely extended to communities surrounding other airports – based on impacts.
- › Public engagement plans developed jointly with airport authorities.
- › Need for a regional consultation team



PUBLIC ENGAGEMENT MILESTONES



DISCUSSION

Seeking your feedback on:

- › Project Approach
- › Feedback on engagement processes
- › Questions on airspace design

NEXT STEPS

- › Operator survey
- › Airport Working Groups to be initiated in coming weeks
- › Engage Internal Design Teams
- › Create Option Cases
- › Next round of forums – Feb/Mar



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