



# Zoning & By-Law Amendment to Prohibit Coal Handling and Storage at Marine Terminals and Berths

**Public Hearing**

July 9<sup>th</sup>, 2013

# Agenda

- Council Motion
- Coal Usage and Impacts
- Approaches to Coal Dust Mitigation
- Coal Exports from West Coast of North America
- Coal Handling Facility Project Inquiry
- Proposed Expansions to Coal Handling Facilities in Lower Mainland
- City of Vancouver Options for Impact/Influence
- Proposed By-law Banning Coal

# Council Motion

At CoV Council on March 13<sup>th</sup> 2013 it was resolved:

*that City staff report back on a by-law to prevent the expansion of, or creation of new, coal export infrastructure within the City of Vancouver.*

At CoV Council on June 25<sup>th</sup> 2013 it was resolved:

*THAT, to prohibit the handling, storage and trans-shipment of coal at Marine Terminals and Berths, the General Manager of Planning and Development Services be instructed to make application to amend Section 10 of the Zoning and Development By-law, generally as presented in Appendix A of the Policy Report dated June 21, 2013, entitled “The Prohibition of Coal Handling and Storage at Marine Terminals and Berths”, and that the application be referred to a Public Hearing;*

# Coal Impact to City Plans & Residents

- Coal affects two key City initiatives:
  - **Greenest City Action Plan**
    - Greenhouse gas emissions resulting from burning coal (Goal 2, Climate Leadership).
    - Detrimental impact to urban air quality from coal dust (Goal 9, Clean Air)
  - **Healthy City Initiative**
    - Currently under development
    - Coal shipments will have significant impacts to residents living near the rail routes or the terminals

# Coal Usage and Environmental Impacts

## Primary Coal Uses

### Thermal Coal



Power Generation

### Metallurgical Coal



Steel Making

## Primary Coal Impacts

### Mining & Transport



Dust & respiratory problems

### Combustion



GHGs, Smog, NO<sub>2</sub>, particulates, mercury emissions

# Health Impacts of Coal Dust

- The health impacts of particulate matter, like coal dust, depend on exposure level and particle size, however, health effects are both acute and chronic and can include, but are not limited to:
  - Cardiovascular disease, e.g. heart disease, lung disease, lung cancer
  - Respiratory disease, e.g. asthma
  - Birth defects
- It has been known for a long time that:

*“improvements in air quality are likely to result in corresponding improvements in public health” [1]*
- Of less certainty is the exposure generated by coal shipping and storage;
  - This is specific to local factors including transport route, wind, method of transport and local building topology

[1] Dockery D. W., Pope A. C. *Acute Respiratory Effects of Particulate Air Pollution*. Annual Review of Public Health 1994, 15, pp.107-132

# Health Impacts of Coal Dust

## Fraser Health and Vancouver Coastal Health (VCH) joint letter to Port Metro Van in Dec 2012 states:

- *“Port side activities could have impacts outside of the port - for example air emissions and noise”*
- *“Port side activities invariably involve outside of port activities in the adjacent communities and neighbourhoods - for example road and rail traffic from movement of goods*

## • VCH letter to the GVRD board in June 2013 (regarding Fraser Surrey Docks proposed expansion):

- *“the coal dust dispersion modeling provided is deficient in its description. The sources included in the modeling, the assumptions made, and the durations expected are not clearly articulated and it appears that not all of the handling issues have been identified.”*
- **Information pertaining to the transport of coal to the site** “...is totally lacking in its ability to provide reassurance to us [VCH] and to the potentially affected public.”

# Health Authority and Metro Vancouver Positions

*Vancouver Coast Health suggests (in their June 1013 letter):*

- *To see proper Health Impact Assessments completed for all new and expanded coal developments*
- *Metro Vancouver to address the shortcomings of the Fraser Surrey Docks air quality modelling as part of Metro's Air Quality permitting process*
- *Rectification of modelling shortcomings prior to an Air Quality Permit being issued.*

*In June 2013 letter Vancouver Coastal Health outlined what they wish to see included in an HIA as well as the air quality monitoring and verification requirements needed to allay concern.*

*Metro Van have voted to:*

- *Write to Port Metro Vancouver*
  - *Requesting detailed information on their permitting process*
  - *Advise of their support for an HIA*
  - *Express opposition to new and expanded coal shipments from the Fraser River Estuary*
- *Request that Port Metro Vancouver, Transport Canada and Environment Canada require necessary mitigation measures and monitoring to address sources not with the jurisdiction of Metro Vancouver.*

# Health Impact Assessments

- A Health Impact Assessment (HIA) is:

*“a combination of procedures, methods and tools by which a policy, program or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population.”*

- Port Metro Vancouver can require an HIA, but would not include shipping impacts.
- Metro Vancouver may request Air Quality impact modelling in the immediate vicinity of any facility requiring an Air Quality Permit;
  - This would not include public health impacts.
  - No such request has been made to date.
- Vancouver Coastal Health does not have the power to demand an HIA.
- Transport Canada or Environment Canada can demand an HIA.
- Provincially, under the *BC Public Health Act*, the Medical Health Officer can intervene, and/or require an HIA.

# Coal Dust Mitigation Approaches

- It is estimated that up to 500*lbs*<sup>1</sup> of coal is lost per rail-car in a typical journey.
- Coal loaded onto rail-cars is ‘profiled’ (shaped) to reduce the wind effects and amount of dust generated;
  - The effectiveness of this approach is questionable
- Once in rail-cars coal is sprayed with ‘surfactants’ to produce a crust to reduce the amount of dust generated.
  - Concerns exist that this coating breaks up in transit and becomes ineffective.<sup>2</sup>
  - Tarps and covers aren’t used as coal releases flammable gases which tarps or covers could trap, thereby causing a risk of fire.
  - At handling locations enclosures and extraction systems are more effective at controlling dust.

1. <http://www.coaltrainfacts.org/key-facts>

2. [http://www.oregonlive.com/environment/index.ssf/2013/04/sierra\\_club\\_plans\\_to\\_sue\\_railr.html](http://www.oregonlive.com/environment/index.ssf/2013/04/sierra_club_plans_to_sue_railr.html)

# Current Coal Exports from West Coast North America

## British Columbia

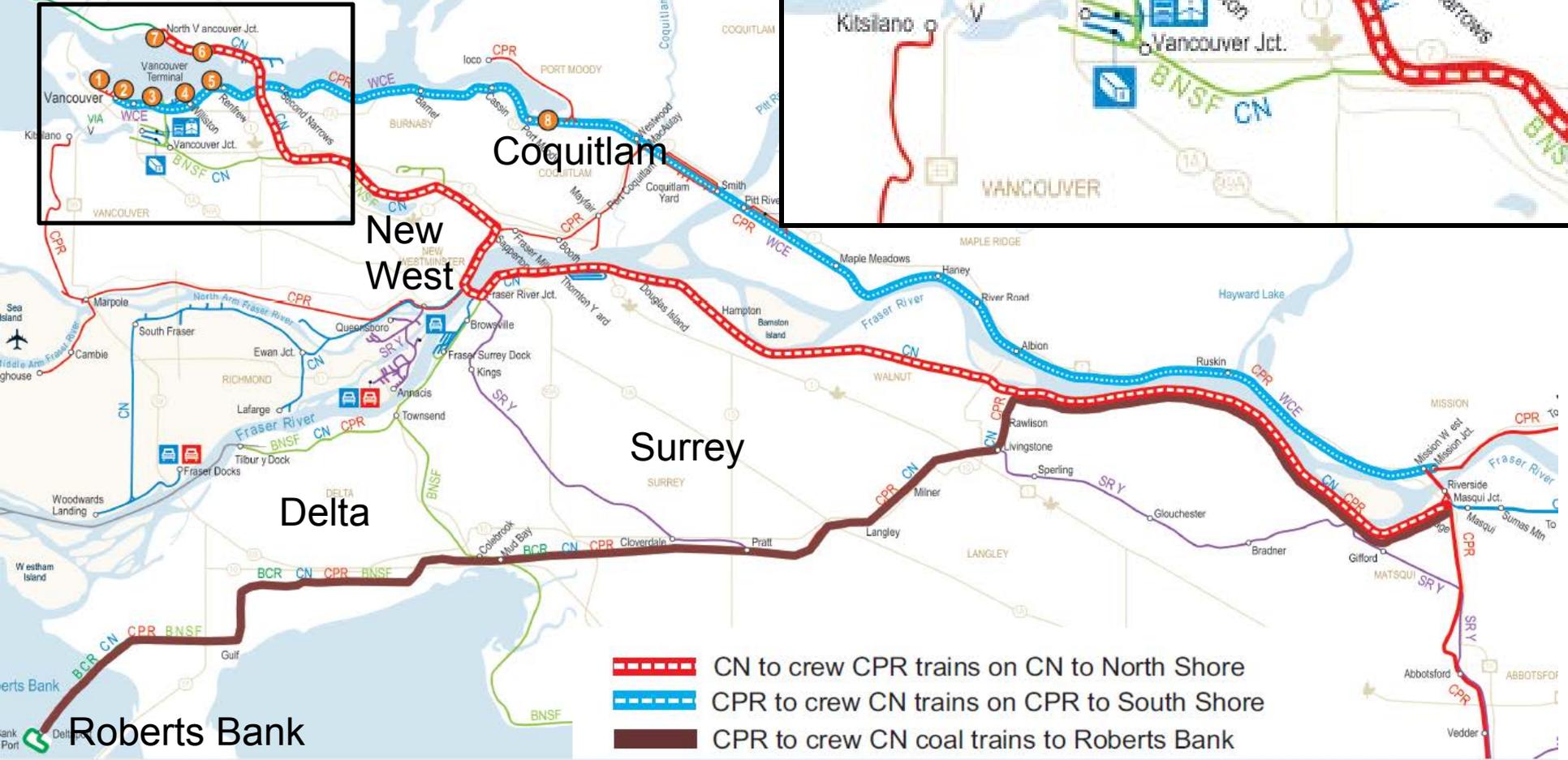
Port of Call	Province / State	Annual West Coast Exports (metric tonnes)	% Total West Coast Export	Year of Data
Robert's Bank, Delta	BC	24,700,000	54%	2010
Neptune, Burrard Inlet, North Van.	BC	8,000,000	18%	2010
Ridley, Prince Rupert	BC	8,300,000	18%	2010
There are coal <i>handling</i> facilities at Texada Island and Campbell River. Annual handling tonnages N/A				

## US Western Seaboard

Port of Call	Province / State	Annual West Coast Exports (metric tonnes)	% Total West Coast Export	Year of Data
Seattle	WA	3,500,000	8%	2011
Los Angeles	CA	975,000	2%	2011
Some exports (100's of tonnes) also from: Portland, San Francisco and San Diego				

*Currently BC accounts for about 90% of West Coast North American coal exports*

# Coal Rail/Shipping Information



# Population Exposure Along Rail Road Routes

The rail road route through Vancouver to the Port, which would be the most likely route for bringing coal to the Port, impacts a potentially large population.

Distance From Track	Current Exposed Population
200m, 1 city block	7,000
500m, 3 city blocks	26,500

Within Metro Vancouver existing and potential rail routes that handle coal have about 150,000 people living within 500m.

# Proposed Expansions to Coal Handling Facilities in Lower Mainland

## Lower Mainland

						Permitting	
Port of Call	Current Annual Exports (metric tonnes)	Proposed Expansion (metric tonnes)	% Increase	Proposed Maximum Capacity (metric tonnes)	Expansion Completion Date	Port Metro Vancouver	Metro Vancouver
Neptune, Burrard Inlet, North Van	8,000,000	10,000,000	125%	18,500,000	Unknown	Permit Issued Jan. 2013	Under Review
Fraser Surrey Docks, Surrey	0	4,000,000 - 8,000,000	N/A	8,000,000	N/A	Under Review	Under Review
Robert's Bank, Delta	24,700,000	0	N/A		---	---	---
<b>TOTALS</b>	<b>32,700,000</b>	<b>18,000,000</b>	<b>55%</b>	<b>50,700,000</b>			

Proposed expansions would increase regional exports by 55% and provincial exports by 44%

## Western US

Washington State is reviewing a bulk terminal proposal for Whatcom County, potential for 54 million tonnes per year, the majority of which would be coal.

# Council Options for Impact/Influence

## Within CoV Jurisdiction

- Amendments to the Zoning and Development By-law
  - Change “Marine Terminal or Berth” use to prohibit bulk storage or trans shipment of coal as part of the use
  - Some zones already prohibit coal products and coal tar products

## Out of COV Jurisdiction

- Road Corridor - Goods transport on truck route system is co-managed by City/Translink and governed by Translink
- Rail Corridor - Goods on rail through Vancouver are governed by Transport Canada

# Prohibiting Coal in Vancouver

## Current By-Law Situation

- Marine Terminal or Berth is permitted as a conditional approval use in six zones in Zoning & Development By-Law
- Current definition of Marine Terminal or Berth would allow handling and storage of coal.

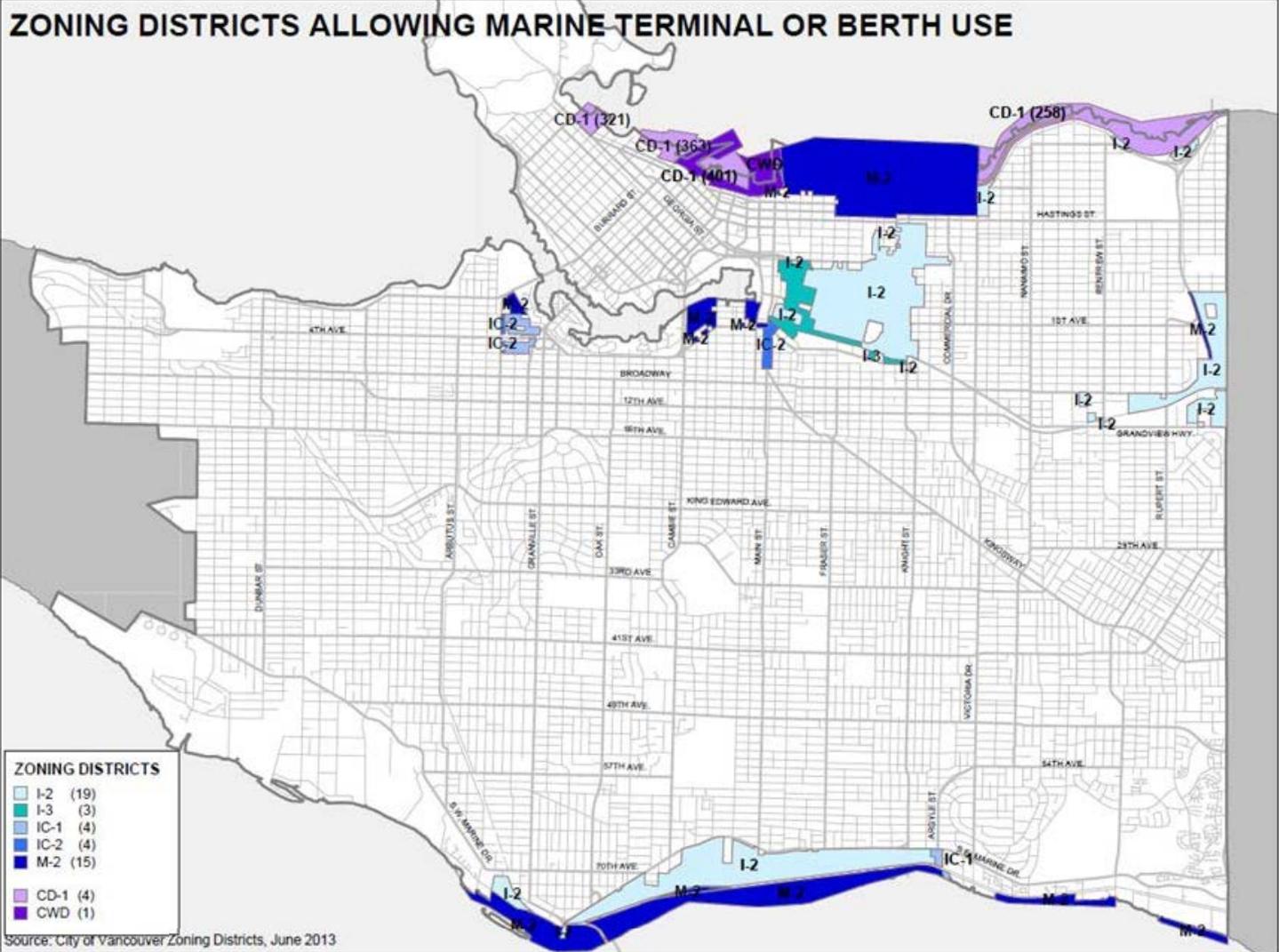
## By-Law Amendments to Prohibit Coal

- City Council can amend the Zoning & Development By-Law to prohibit the handling & storage of coal from Marine Terminal or Berth.

## The proposed addition of Section 10.38 under General Regulations:

- 10.38.1 A marine terminal or berth must not be used for the bulk storage and handling and trans-shipment of coal.

# Affected Zones of Proposed Amendment

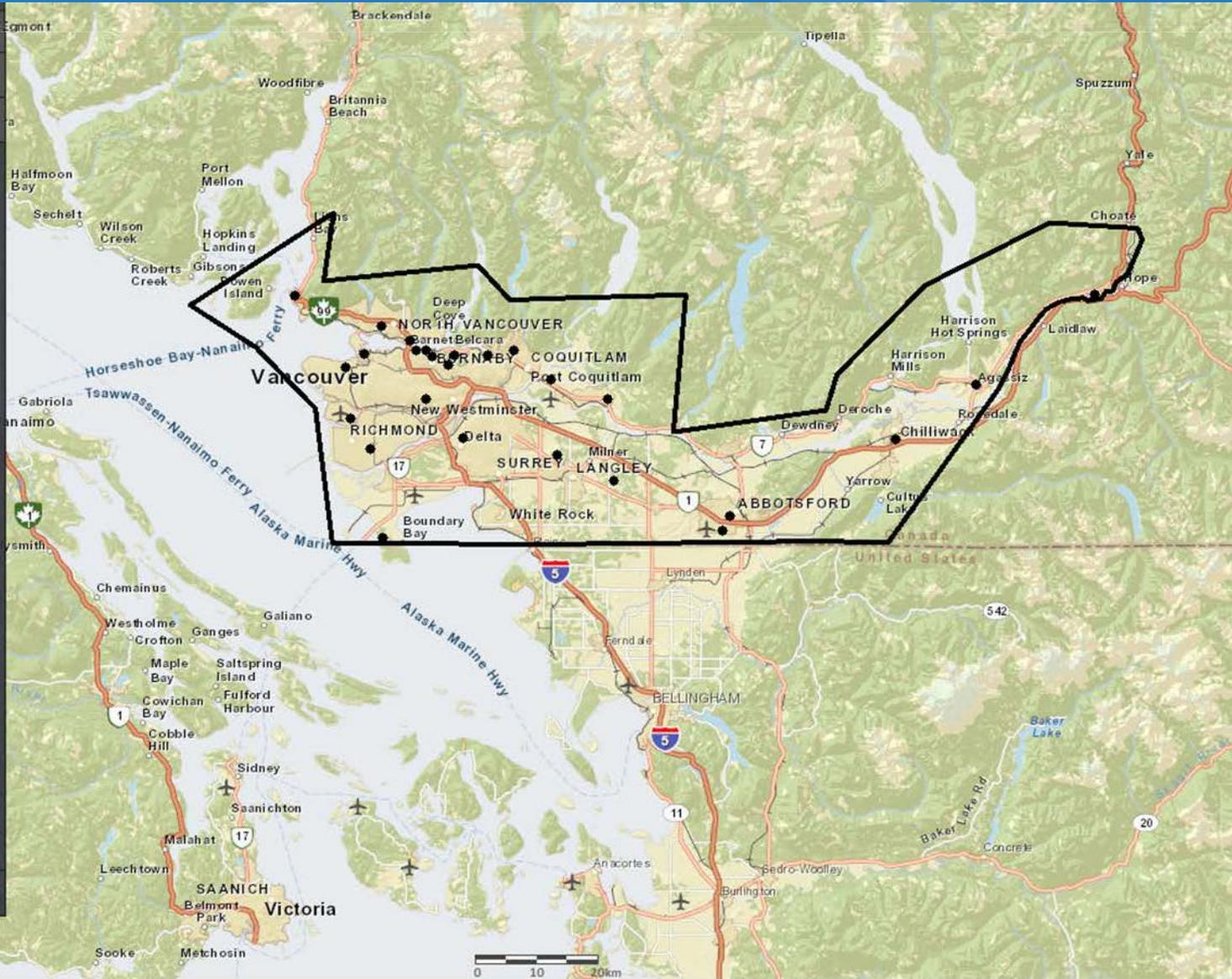


# Questions/Considerations?



# Air Quality Monitoring Network: Metro Vancouver

Current Air Quality - By Station
Current Air Quality - By Pollutant
Current Weather - By Station



# Air Quality Monitoring: Vancouver

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Current Air Quality - By Station

Current Air Quality - By Pollutant

Current Weather - By Station

