

**Valuation issues with Subsurface and Aerial
Volumetric Right of Ways
BC Expropriation Association
Fall Seminar-October 29, 2010**

**Presented by
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Overview

- Valuation issues pertaining to subsurface property rights
- How does the ROW impact property rights and the parent property
- Different methodologies of valuing partial interest takings
- General guide only.
- Canada Line
- Evergreen Line will connect the municipalities of Coquitlam, Port Moody and Burnaby

Canada Line - Cambie and Marine Way, Vancouver



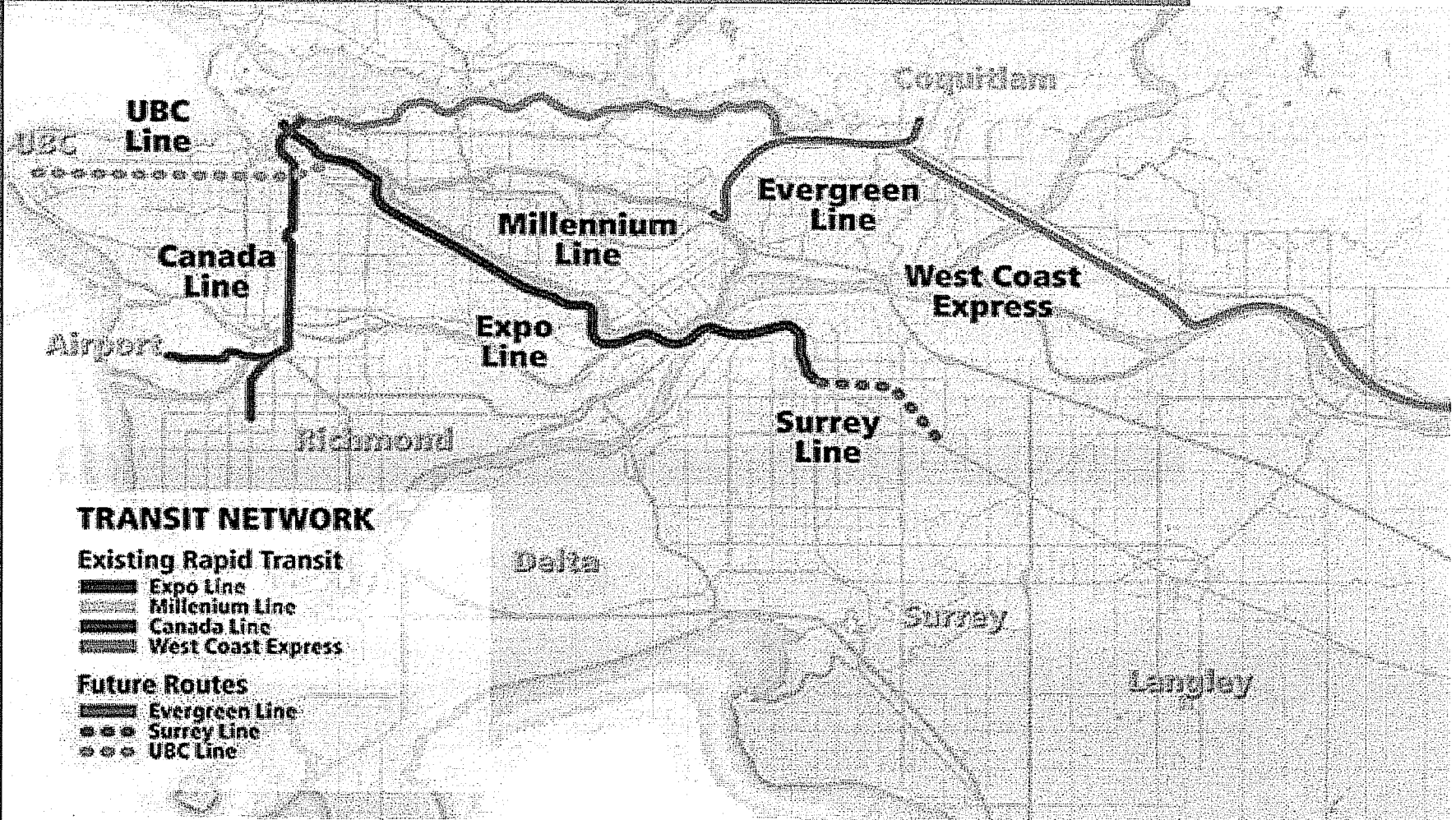
Canada Line - Cambie and Marine



Evergreen Line

- To run north from Lougheed Town Centre in Burnaby and end near Douglas College in Coquitlam.
- 11 kilometres
- 13 minutes to travel from start to end
- Vary from grade, elevated tracks to a tunnelled portion
- The tunnelling portion may impact about 50 properties
- Incorporate the use of a Tunnel Boring Machine
- Integrate with the existing Expo and Millennium SkyTrain lines and the West Coast Express rail service
- Completion is 2014, construction starts early 2011

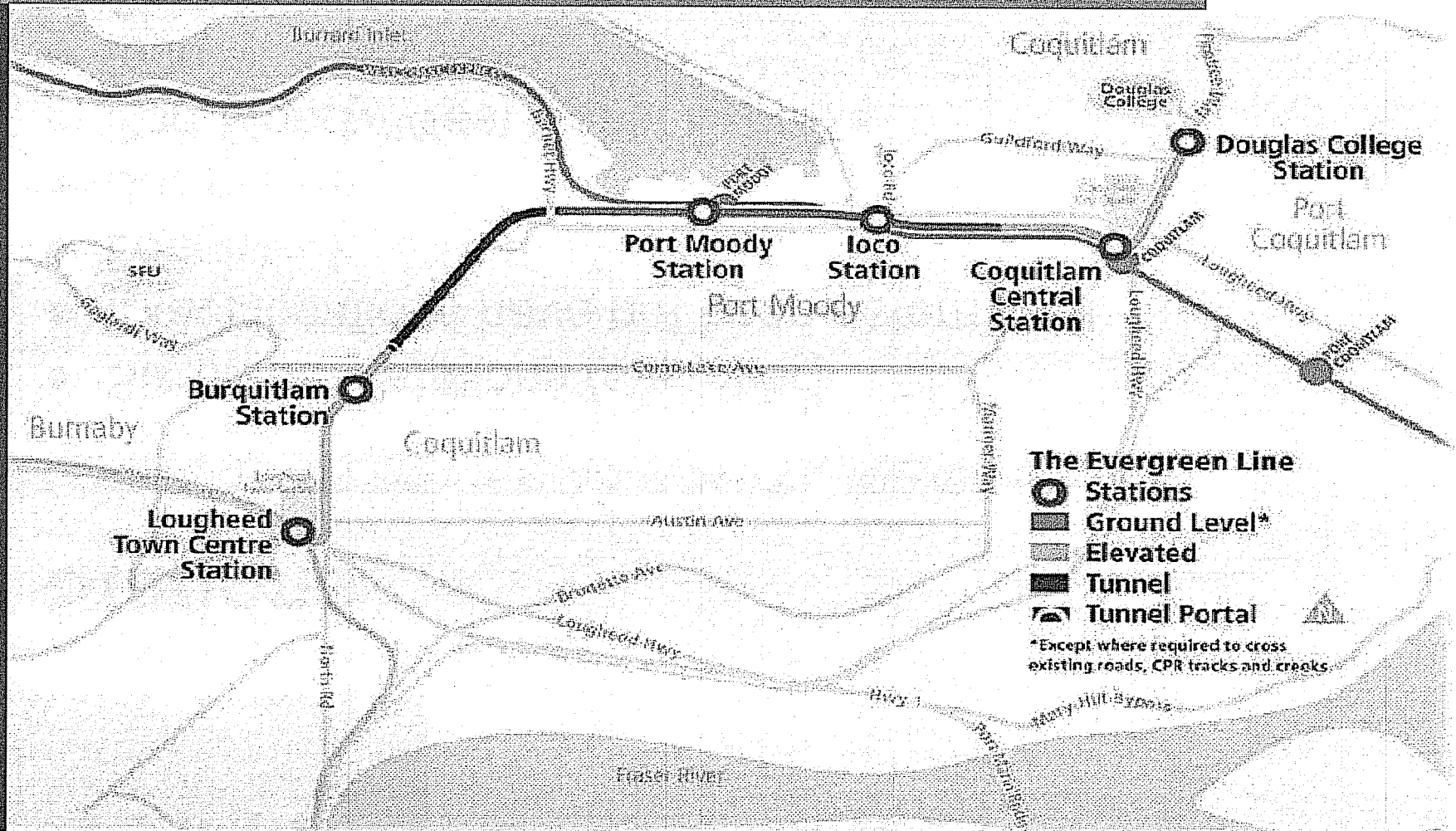
Transit network and Evergreen line



Stations

- Six primary stations (see over)
- Exact locations have not been determined
- Lougheed
- Burquitlam
- Port Moody/West Coast Express
- Ioco
- Coquitlam Central Station
- Coquitlam City Hall/Douglas College
- Additional three stations may be considered

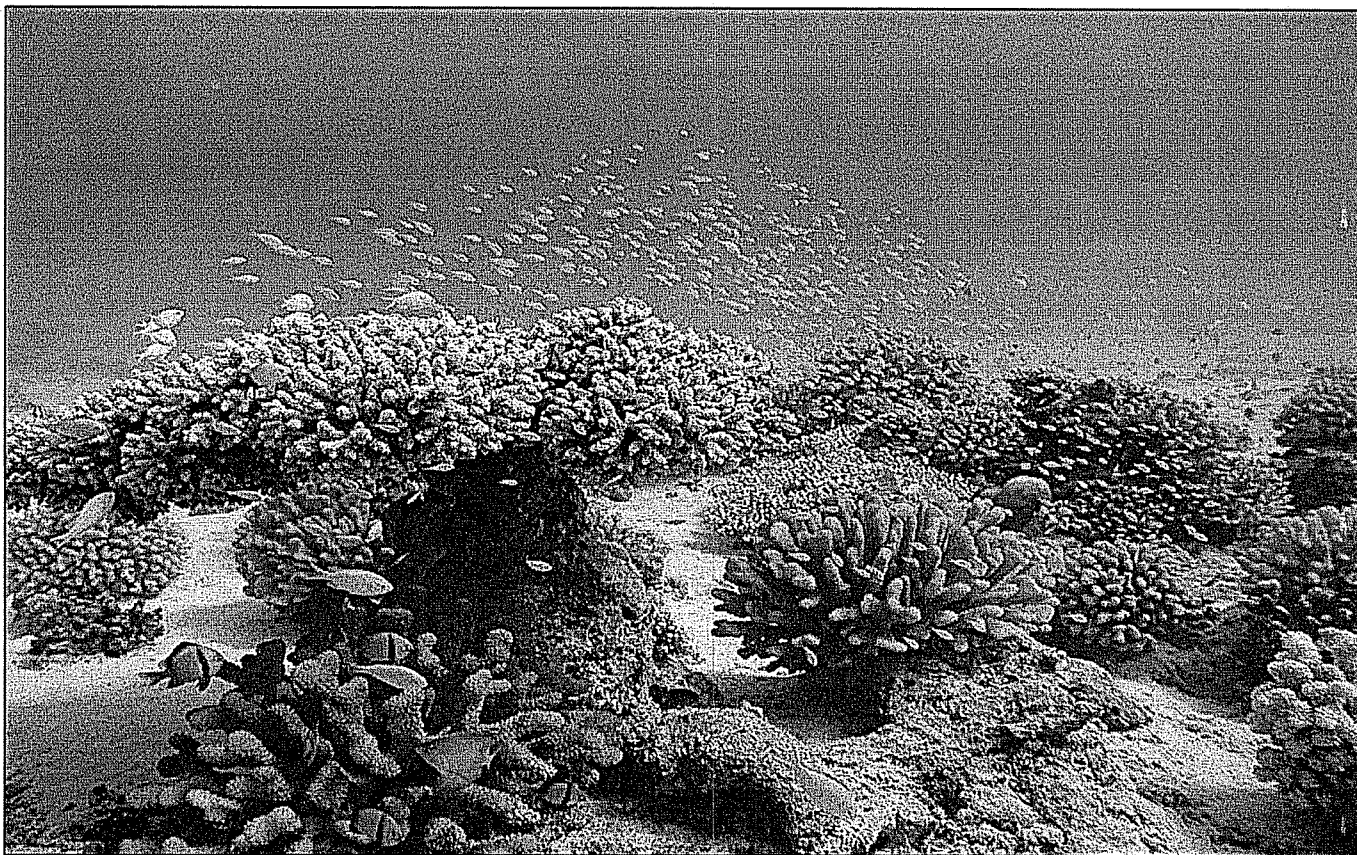
Route map



Evergreen Line

- Approximate location of the tunnel start is Kemsley Ave north of Como Lake Road in Coquitlam
- Emerges just east of Barnet highway
- Runs beneath single family homes, duplexes and multifamily residences
- To a depth of 60 metres
- Unlikely to impact future development potential or adversely affect the existing use of properties
- Necessary due to the steep slope of Clarke Road

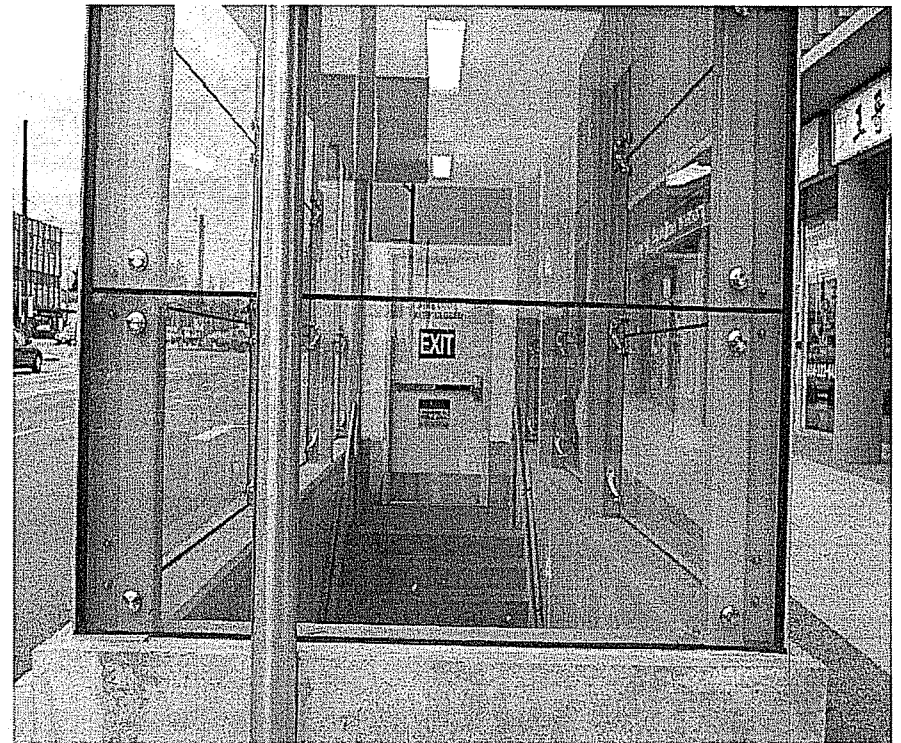
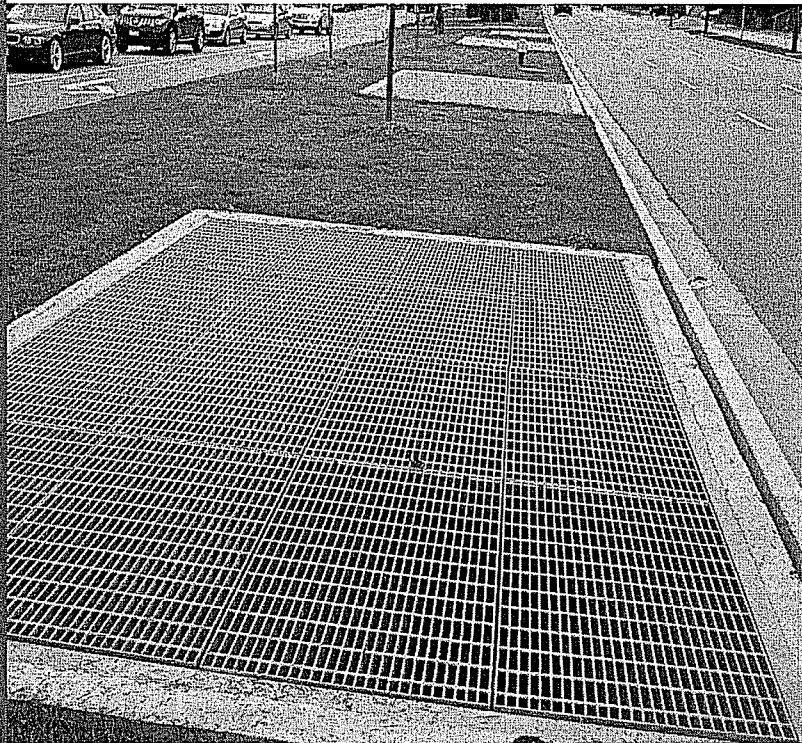
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How does the ROW impact property rights and the parent property

- Does it appear on title
- Will it affect development potential
- Bundle of rights
- What are the limitations imposed by the ROW document
- Is the tunnel ROW comparable to other ROW's such as Hydro, Gas, Water line, etc.
- Is there any surface works (i.e. Ventilation shafts, entrance points-see over)

Surface works



Potential owners concerns

- Building structural concerns, site and soil stability
- Noise and vibration caused by the construction and the operation of the transit line after completion of the project
- Impact on market value
- Restrictions on future potential uses for the subsurface (deep underground parking)
- To remove uncertainty, engineering documentation can be reviewed (i.e. soil stability studies and geotechnical reports, etc.)

Assumptions

- Partial takings would be restricted to a volumetric taking plan
- Tunnel will not affect the structural stability of the improvements on the properties overhead
- No noise or vibration-see testing from Canada Line
- To my knowledge there is no such issues or complaints with Canada Line
- Proposed subsurface acquisitions will not permit entry to the surface, ie surface ventilation

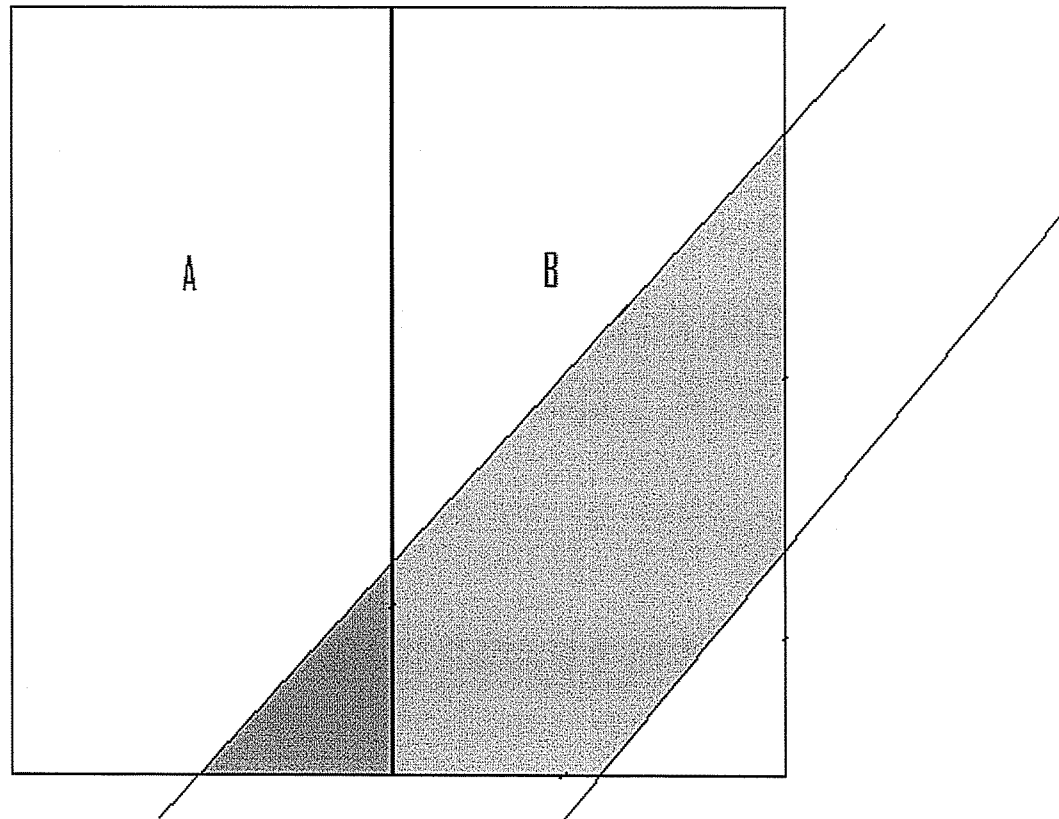
Factors to consider when determining values of subsurface ROW's



Factors to consider when determining values of subsurface ROW's

- **Depth of Tunnel** - shallow versus deep
- **Size of Taking** - see over
- **Point in Time of Taking**
- **Use-Existing and future development potential-** i.e. high rise development

Size of Taking



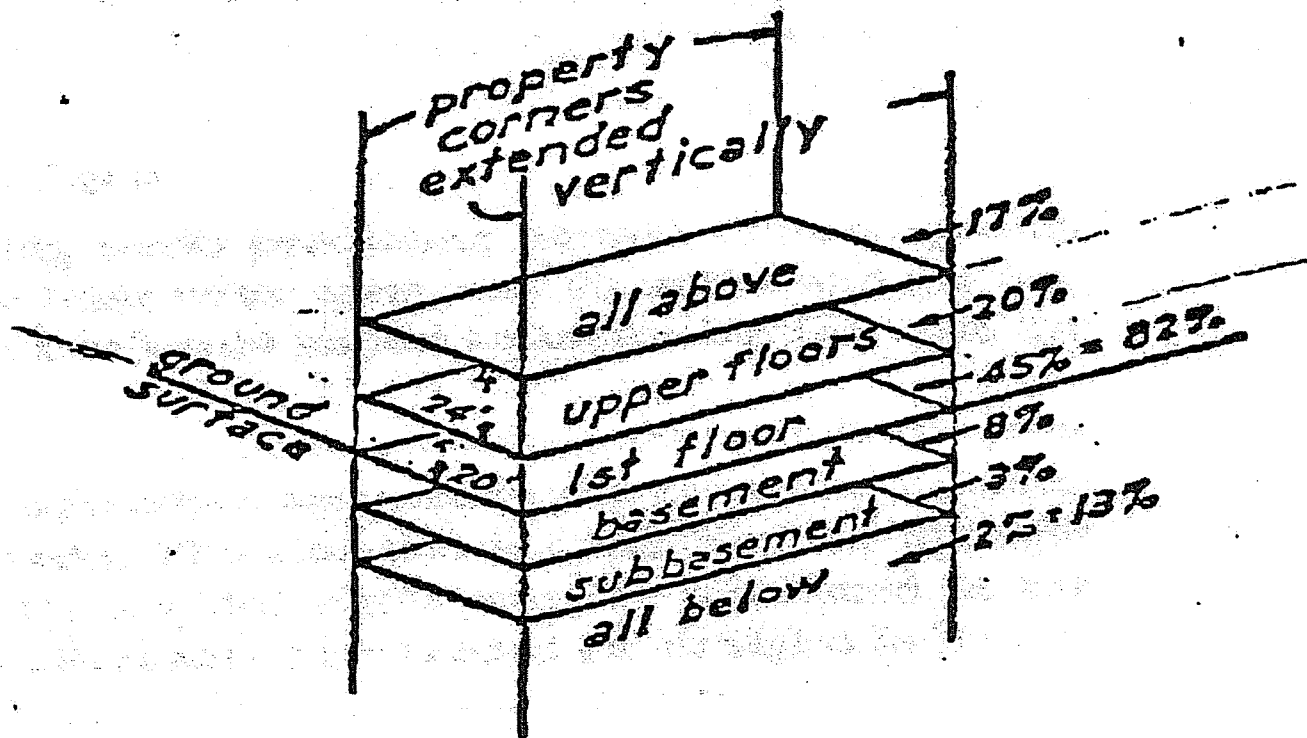
Methods to determine value

- Before and After Approach - Is it realistic to measure net impact on value given the lack of sales
- General studies here and other countries
- % of the fee simple land value
- Actual settlements
- Paired sales
- Formulas such as Schmutz (see over)

Schmutz Formula

- Condemnation Appraisal Handbook by George L. Schmutz, dated 1963, Chapter 16.
- Developed a model (see over) in which:
 - 82% of the fee simple interest is assigned to surface and air space rights
 - A total of 13% for all subsurface rights
 - Within the 13%, 8% assigned to the basement level
 - 3% to the sub-basement level
 - 2% to all subsurface rights below the sub-basement level.

Schmutz Formula



Canada Line site in False Creek



Schmutz Formula allocation of the fee value for the various sections

- Surface of a lot to 20 feet or first floor: 45%
 - Next 24 feet above first floor: 20%
 - Everything above 44 feet above the ground: 17%
 - **Basement:** 8%
 - **Subbasement:** 3%
 - **All below subbasement:** 2%
-
- **The sum of all %'s total 95% instead of 100%**
 - Values of two or more separate ownerships in the fee is less than if the entire fee is held as one.
 - The 5% difference is due to the divided use of the property

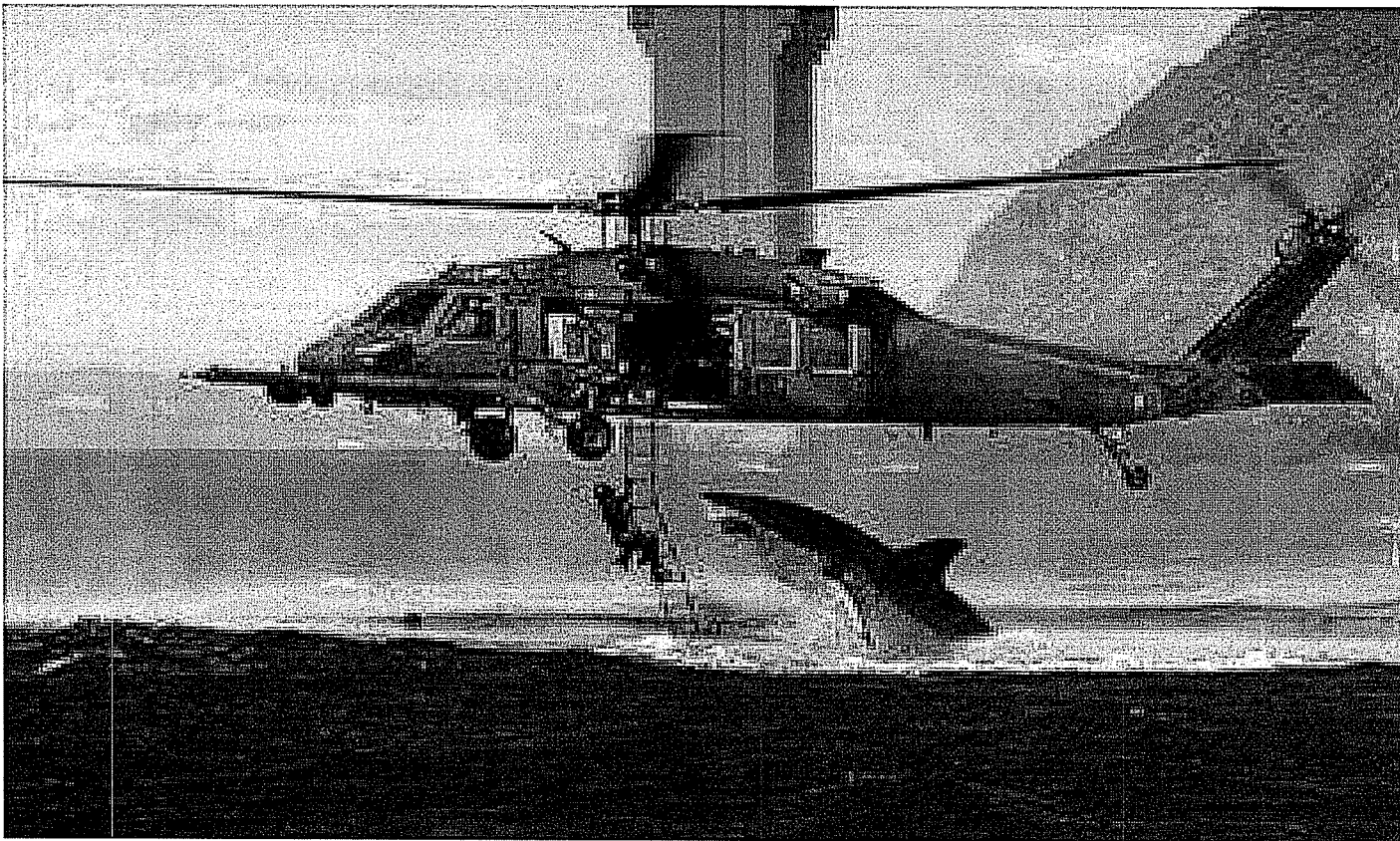
Summary

- Reasonable estimate of % of “bundle of rights” taken from the fee simple ownership (i.e. jar of marbles)
- Compensation is not for a reduction in value of the land but.....
 - for the “nuisance” factor and cloud on title of having the subsurface SROW charge registered
- Although there may be no evidence that a deep tunnel will impact the utility and value of a property.....
 - all interests in real estate, no matter how small, have some value

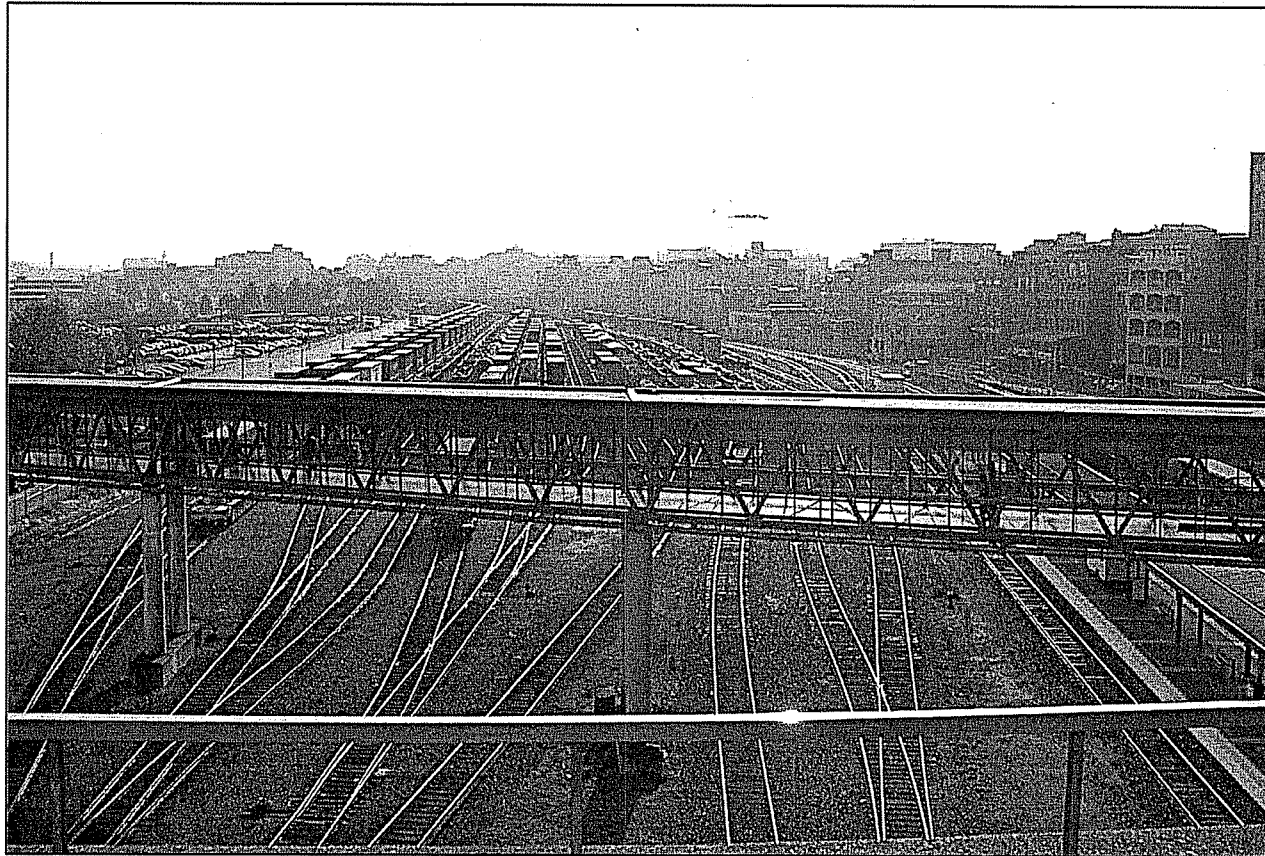
Summary

- Gratuitous payment
- Uncertainty and issues diminish with time
- The challenge: determine a % of fee value in line with other tunnel and ROW subsurface settlement patterns and models

Air Space



Air space rights



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AIR SPACE PARCELS – A BRIEF LOOK AT SPATIAL ENTITLEMENT AS INTERESTS IN LAND

Spatial interests, a 2D versus 3D preamble , a quantum of increased technicality

What is a conventional parcel of land, how is it created and recorded

What is an air space parcel and how is it created and recorded

What are the differences and similarities in respect to part 9 of the land title act

What is an air space plan and how is one created

Are additional rights conveyed as part of the original grant

Can air space parcels be subdivided and or consolidated

What is a parent parcel and or a remainder

What is the ongoing relationship between the parent parcel and the air space parcel

What are the spatial limitations of air space parcels

Are air space parcels tax assessable

Air space rights of ways and easements

Historical and practical applications of air space rights and interests

Approving officers, government authorities and formal applications

Single site covenants and code compliance alternatives

Support and operating agreements

Pitfalls, practicality and technically complex issues

What imaginative processes are ongoing and what may the future hold