APPENDIX N

View Impact & Shadow Analysis

FIBRECO

Fibreco Export Terminal Enhancement
Permit Application Document

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1.0 VIEW IMPACT ANALYSIS

1.1 Overview

A View Impact Analysis has been completed for the Fibreco Export Terminal Enhancement Project. The purpose of this analysis is to provide insight into the impact of the Terminal Enhancement on the surrounding viewscape.

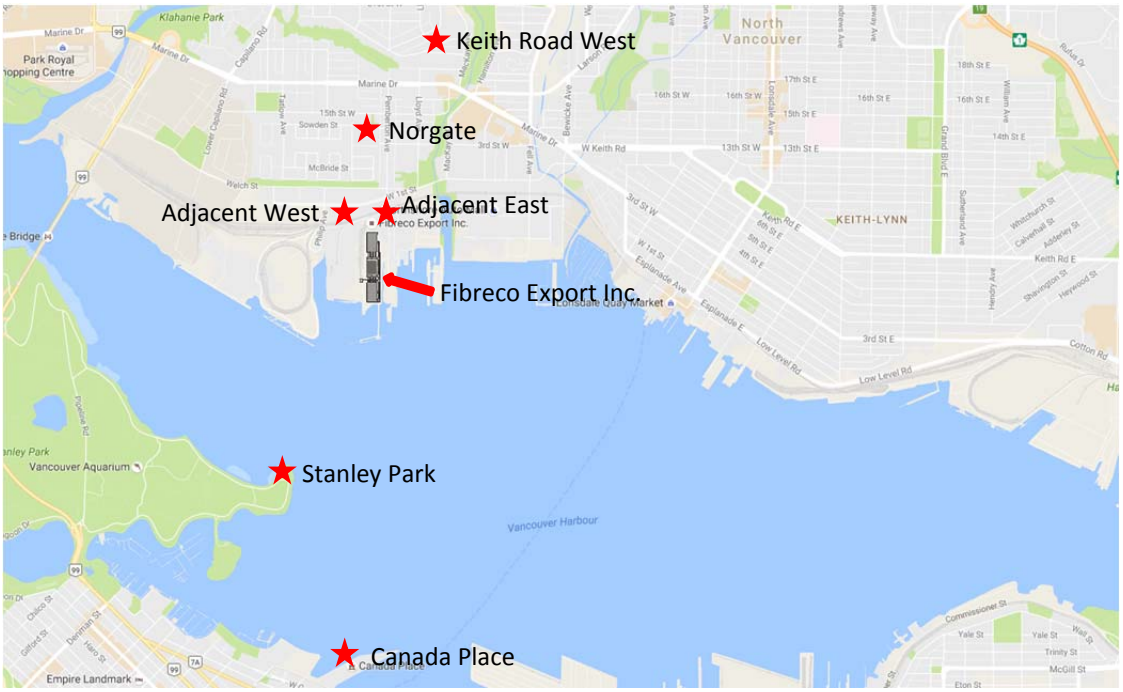
1.2 View Impact Assessment Methodology

View impacts were assessed using renderings of the Terminal Enhancement facility superimposed on photographs taken of various locations in North Vancouver and from locations in Vancouver across Vancouver Harbour.

The locations selected for analysis were:

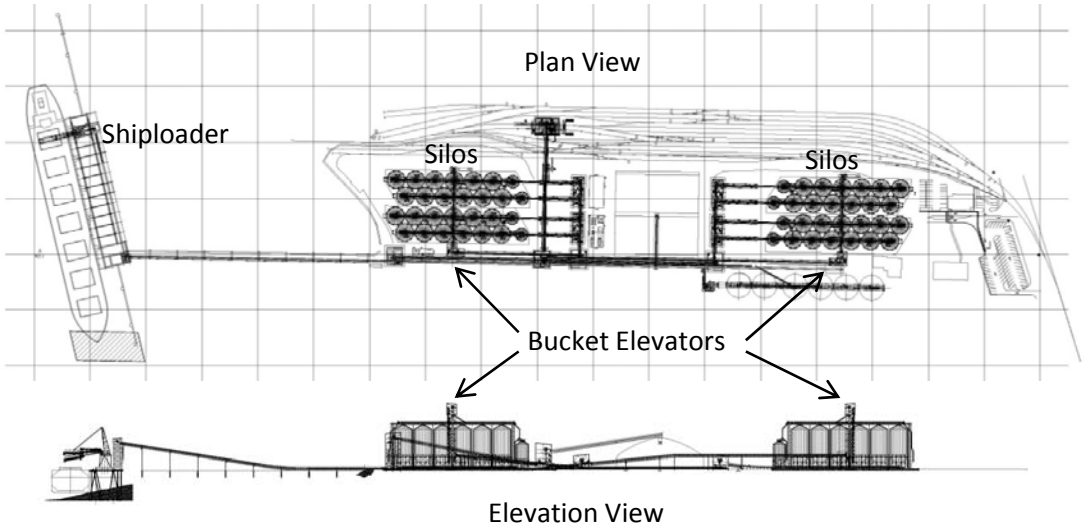
- Keith Road West
- Norgate neighborhood
- Adjacent West property
- Adjacent East property
- Stanly Park at Brockton Lighthouse (Vancouver)
- Canada Place (Vancouver)

The map below shows the locations of the views.



1.3 Site Description

The new silos and conveyor towers potentially create view impacts on the surrounding area. The highest structure will be the two (2) bucket elevator towers which are 56 m (180 ft.) The bulk of the footprint is the silos which are 38 m high (124 ft.). The top of the conveyors above the silos is 40 m (131 ft.). The drawings below illustrate the locations of the components.

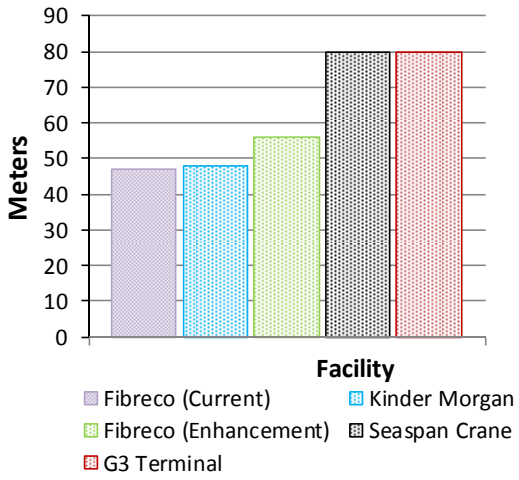


Elevation View

The photo on the below left illustrate an aerial view of the terminal as it currently is configured. The below right photo illustrates the site with the model of the Terminal Enhancement superimposed.

1.4 Comparative Structure Heights

The lands to the West and East of the Fibreco property primarily contain industrial facilities and have a varying degree of equipment heights. The chart to the right shows a comparison of neighboring maximum heights including the proposed and permitted new G3 Terminal. The current highest point on the Fibreco sight is the shiploader with the boom extended which is 47m (154 ft.).



The heights of the silos, conveyors and towers are well within the heights of surrounding equipment elevations.

1.5 Views - Keith Road West

Various locations in the 1100 block on Keith Road West were reviewed. At most locations on the street the view to the terminal is blocked by trees and other vegetation. The photo to the right illustrates this. Other views that were reviewed are:

Illustration A: Slight view of view of the terminal area. Only the tops of the bucket elevator towers and silos will be visible from this location.

Illustration B: The terminal and silos are visible with only a small amount of additional city view blocked. The harbour and Vancouver skyline views are still intact.

1.6 Views - Norgate Neighborhood

Illustration C: Views were analyzed for the corner of McBride Street and Pinewood Crescent as well as from the playground at Norgate Community Elementary School. The equipment at the terminal is not visible from these locations.

1.7 Views - Adjacent Properties

Illustration D and E: The silos, towers and conveyor systems are clearly visible from the adjacent commercial and industrial properties. The adjacent properties are industrial facilities also containing large equipment. The open chip piles will no longer be present and the materials handled will be contained within the silos.

1.8 Views - City of Vancouver

Illustration F and G: The new silos and conveyors will be slightly visible from the Vancouver side of Vancouver Harbour. Composite views from the Canada Place deck were analyzed for impact just before sunrise and at sunrise.

Illustration H: The Terminal Enhancement is viewable from the Brockton Point Lighthouse although this vantage point is approximately 50% closer to the terminal than Vancouver City proper.

1.9 Views - Comments on Impact

Keith Road West: The view from Keith Road West will not be significantly impacted. The view of the terminal is blocked by trees in most areas. The areas that allow a view of the terminal through the trees still provide a view of the harbor and Vancouver skyline.

Norgate Community: The terminal is not visible from the vantage points that the impact analysis was conducted. The terminal may be visible from some areas of Norgate but those views would also contain the existing industrial infrastructure along the waterfront.

Adjacent Properties: Although the silos will be fully visible from the adjacent properties the general site appearance will be much cleaner with the removal of the open chip piles. As all of the neighboring sites conduct similar industrial activity there should not be any negative impacts.

Vancouver Side of Harbour: Although the silos and structures are visible from Stanley Park they have little impact on the view. The silos are slightly higher than the chip piles, however, with product containment the site has a much cleaner look providing a positive effect.

2.0 SHADOW ANALYSIS

2.1 Overview

A Shadow Analysis has been completed for the Fibreco Export Terminal Enhancement Project. The purpose of this analysis is to provide insight into the impact the Terminal Enhancement on creating shadowing in the surrounding area.

2.2 Shadow Assessment Methodology

Shadow impacts were assessed using renderings of the Terminal Enhancement facility superimposed on a Google Earth view with full daylight background. The full daylight background is used to better observe the shadowing. The times selected for analysis were 9 AM, 12 PM and 3 PM at the start of each of the four seasons:

- Spring Equinox (March 20)
- Summer Solstice (June 21)
- Fall Equinox (September 22)
- Winter Solstice (December 21)

The shadows are all shown on a full daylight background.

See Illustrations I, J, K and L.

2.3 Shadows - Comments on Impact

With the shadowing projected onto a full daylight background some of the shadowing appears exaggerated as in "real time" the background would be darker closer to sunrise and sunset. None of the shadow views observed should cause a negative impact on the surrounding areas.

Spring Equinox: There are slight shadows cast to the property on the west in the morning. For the balance of the day the shadow effect is confined to the Fibreco site.

Summer Solstice: The shadow effect is confined to the Fibreco site through each of the times of day projected.

Fall Equinox: Similar to the Spring Equinox there are slight shadows cast to the property on the west in the morning. There is also some minor shadowing onto McKeen Avenue. For the balance of the day the shadow effect is confined to the Fibreco site.

Winter Solstice: The 9 AM view does not show a shadow as the sun is not high enough to create a shadow. There is shadowing on the rail tracks and industrial area to the north of the terminal from the 12 PM and 3 PM sun.

Illustration A - Keith Road West View #1

Current:

With terminal enhancement:

Illustration B - Keith Road West View #2

Current:

With terminal enhancement:

Illustration C - Norgate View

Norgate Community Elementary School:

McBride and Pinewood:

Illustration D - Adjacent West View

Current:

With Terminal Enhancement:

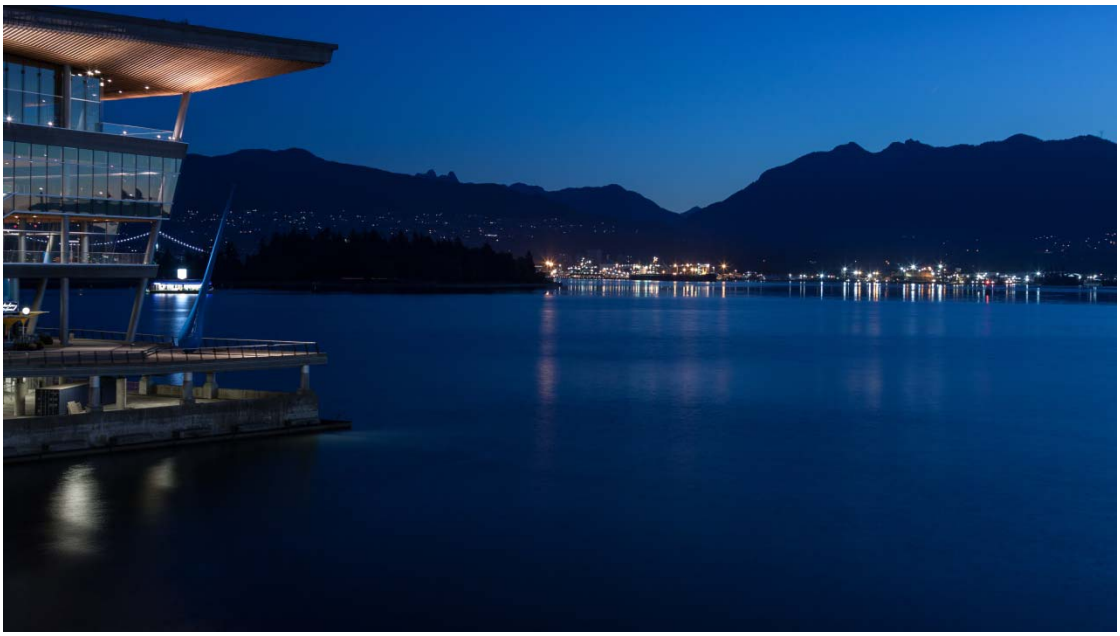
Illustration E - Adjacent East View

Current:

With Terminal Enhancement:

Illustration F - Canada Place Night View

Current:



With Terminal Enhancement:

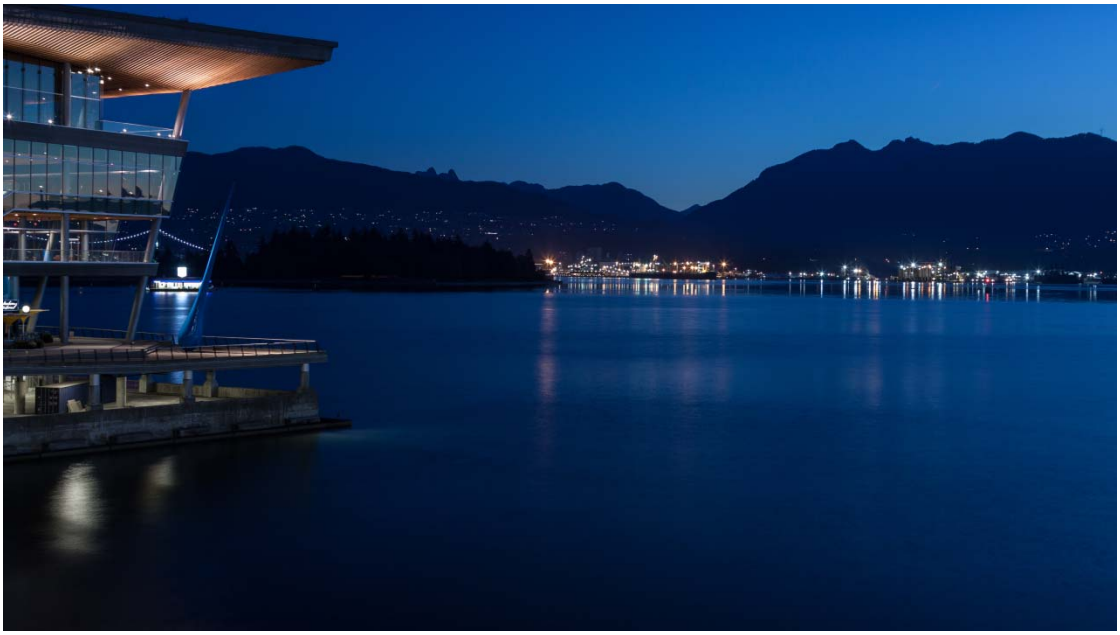
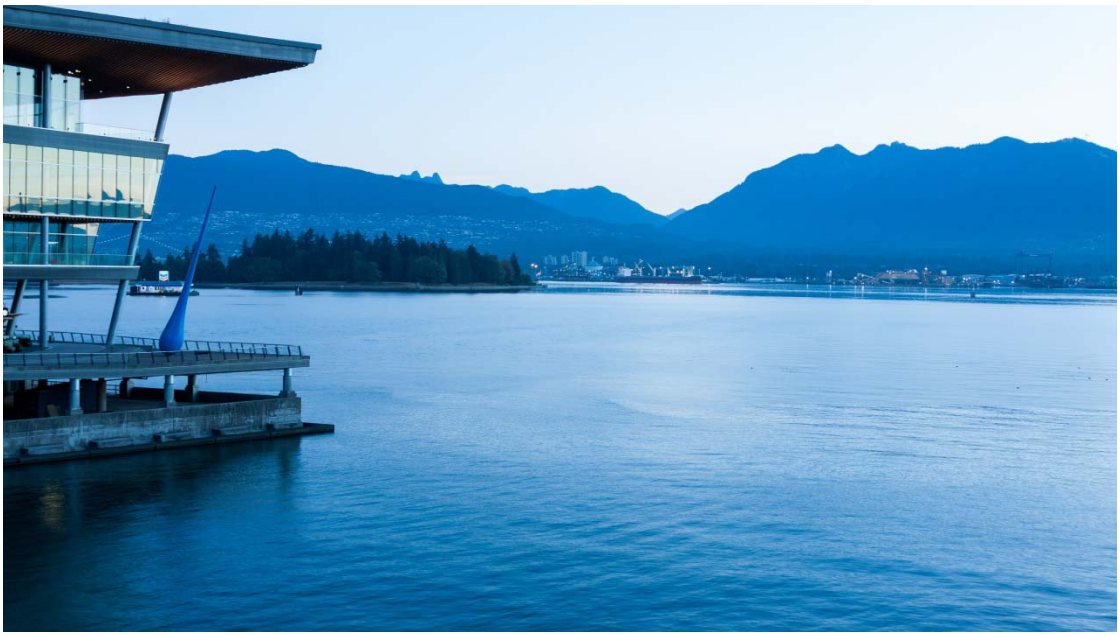


Illustration G - Canada Place Morning View

Current:



With Terminal Enhancement:

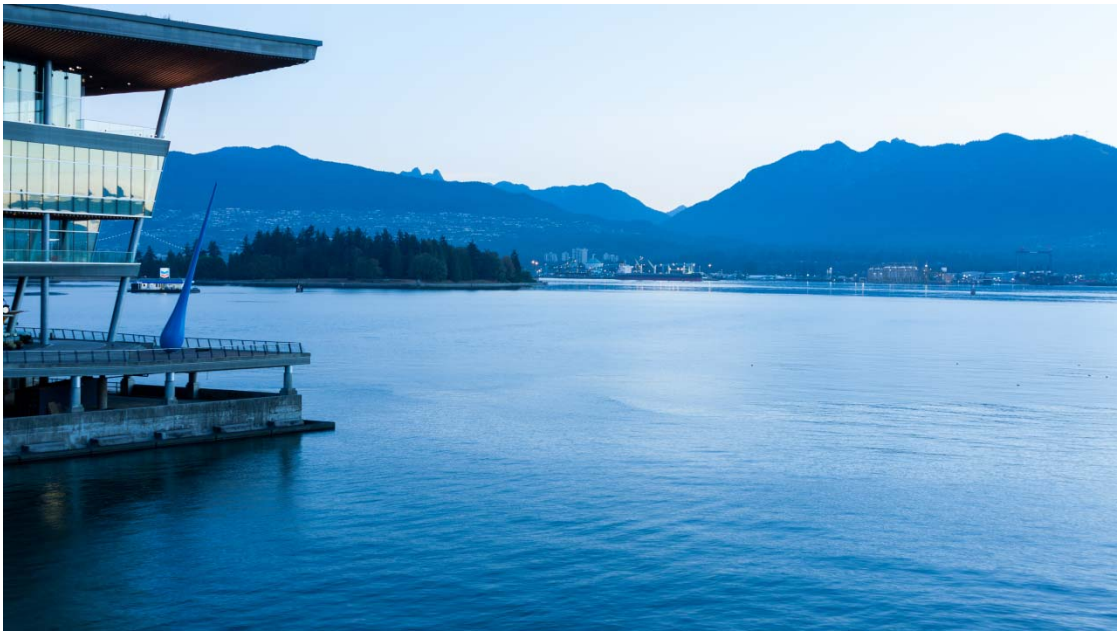


Illustration H - Stanley Park View

Current:

With Terminal Enhancement:

Illustration I - Spring Equinox Shadow

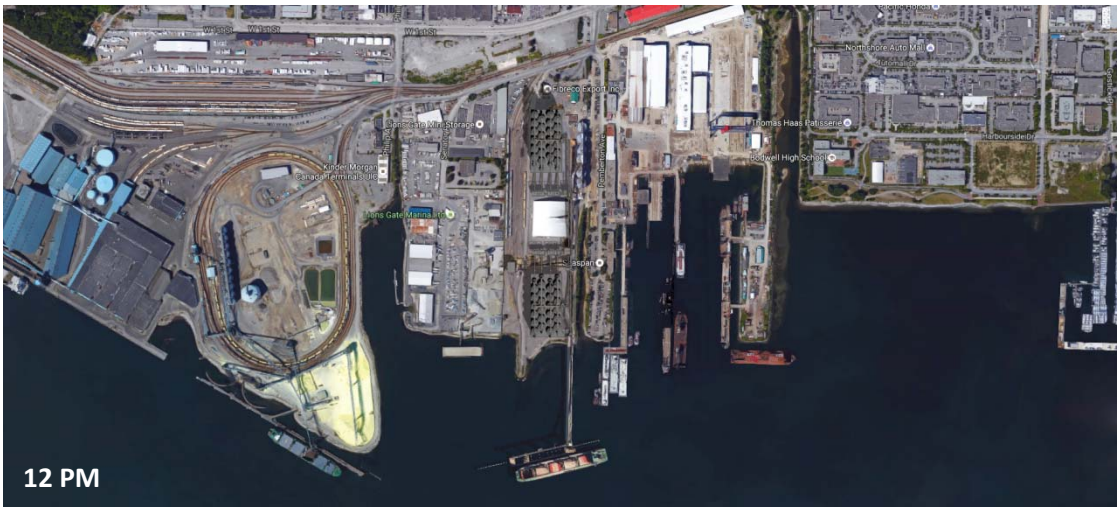
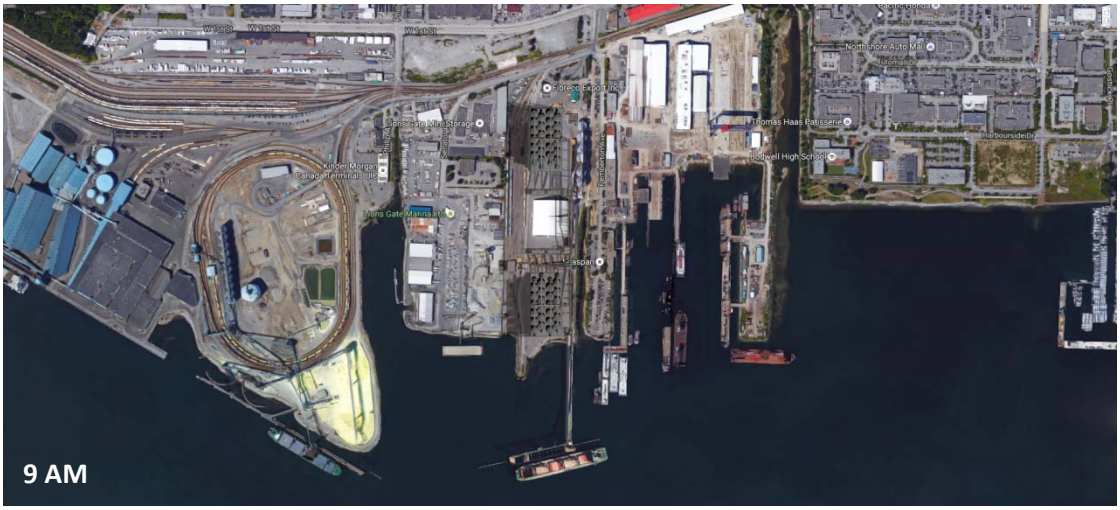
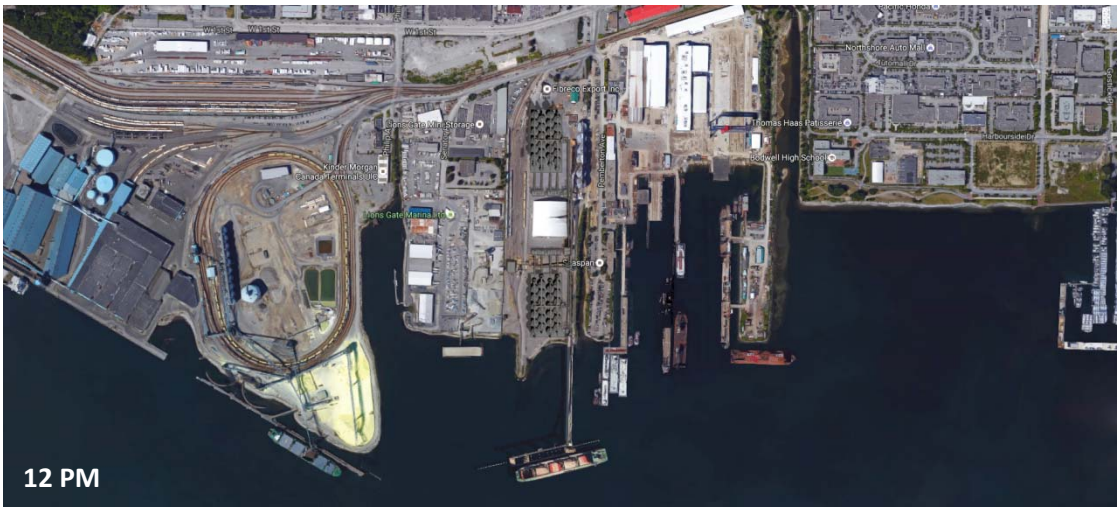


Illustration J - Summer Solstice Shadow





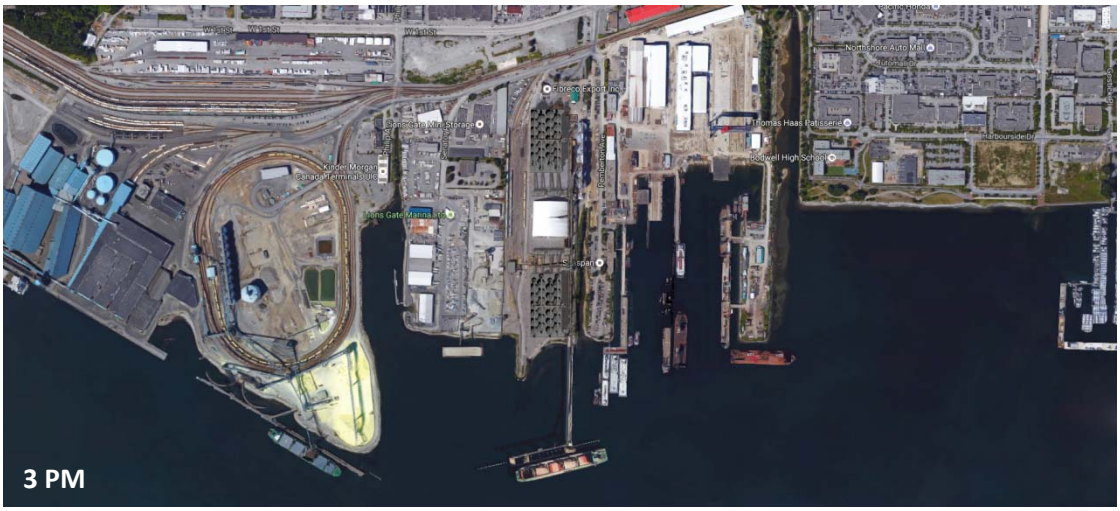
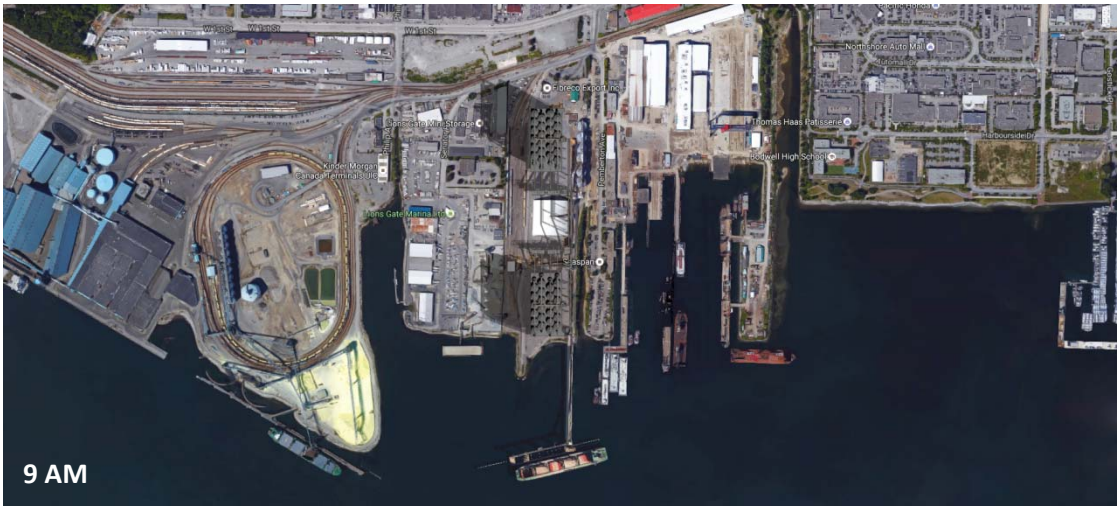


Illustration K - Fall Equinox Shadow



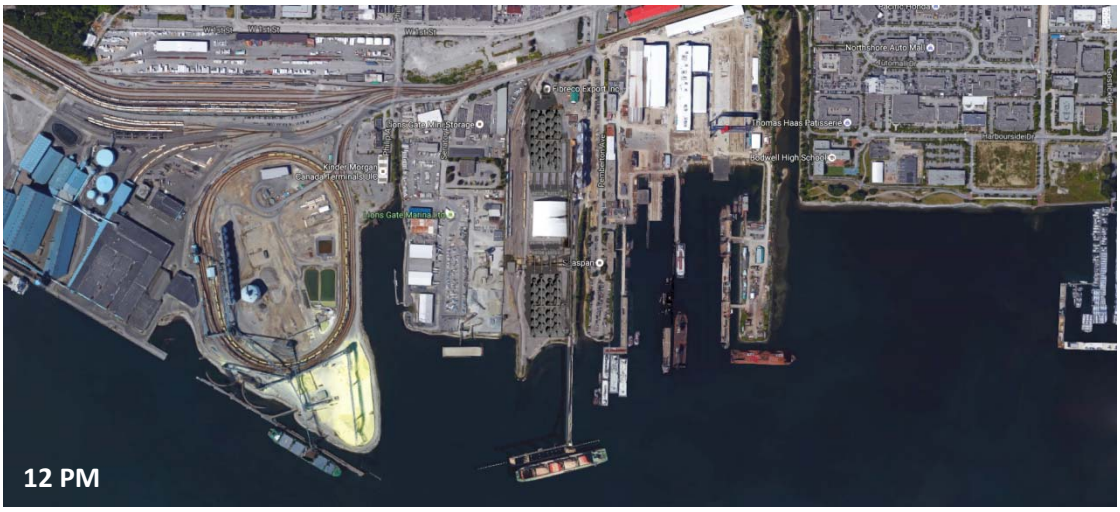


Illustration L - Winter Solstice Shadow