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Establishing a Successful Framework for Risk Assessment of a Large Industrial Naval Base

Dockyard, CFB Esquimalt, Victoria, BC

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CFB Esquimalt Dockyard

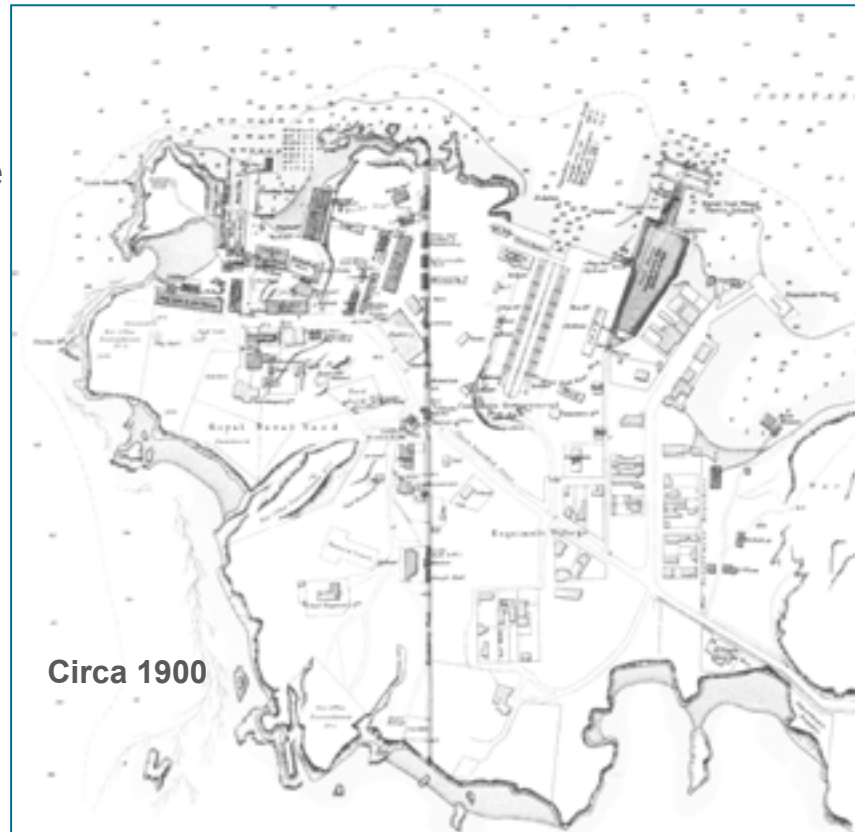
Location

- › Located in Victoria, BC
- › 32 Ha Industrial Property
- › Majority of naval engineering, ship repair and maintenance services undertaken at CFB Esquimalt takes place within HMC Dockyard facility.



Site History

- › Traditional grounds of the Songhees and Esquimalt Nations
- › Royal Navy facilities established in 1855
- › A graving dock was completed in 1887
- › By 1900, industry supportive of Royal Navy and graving dock activities was established on the peninsula
- › The Esquimalt Village was relocated to the east in the late 1930s



Site History (cont')

Historical activities have included:

- › blacksmithing
- › coal storage
- › waste incineration
- › machining
- › petroleum hydrocarbon fuel storage
- › sandblasting, painting, electroplating
- › explosives storage
- › waste oil treatment

Primary Contaminants:

- › hydrocarbons / PAHs
- › metals



Phase I ESA

- › Previous investigations were limited to specific areas or activities
- › Resulted in multiple “sites” each with their own investigation information, datasets, reports
- › Environmental planning focused on individual areas or “sites”
- › Dockyard information was consolidated in 2011 with a comprehensive Phase I ESA with updated APEC / AEC areas
- › Updated list of COPCs



Information Consolidation

- › Definition of Project Area
- › Report Review and Data Consolidation
- › Data Gap Evaluation
- › Data Screening for Risk Assessment



Historical Risk Managed Areas

- › Risk Assessments were completed historically for select “sites”
- › Historical rationale for risk assessment
- › RMA data gaps / hot spots
- › Review of reports indicated the need for a larger site wide risk assessment



Land Use

Unique Setting:

- › Industrial
- › Residential
- › Terrestrial Habitat



Risk Assessment: The Challenge

Creating a Workable Risk Management Plan

- › Significant infrastructure development
- › Dynamic impacts
- › Multiple Chemicals
- › Multiple uses
- › Exposure Scenarios



Risk Assessment: What Makes Dockyard Different?



Risk Assessment: The Approach

Determining Goals

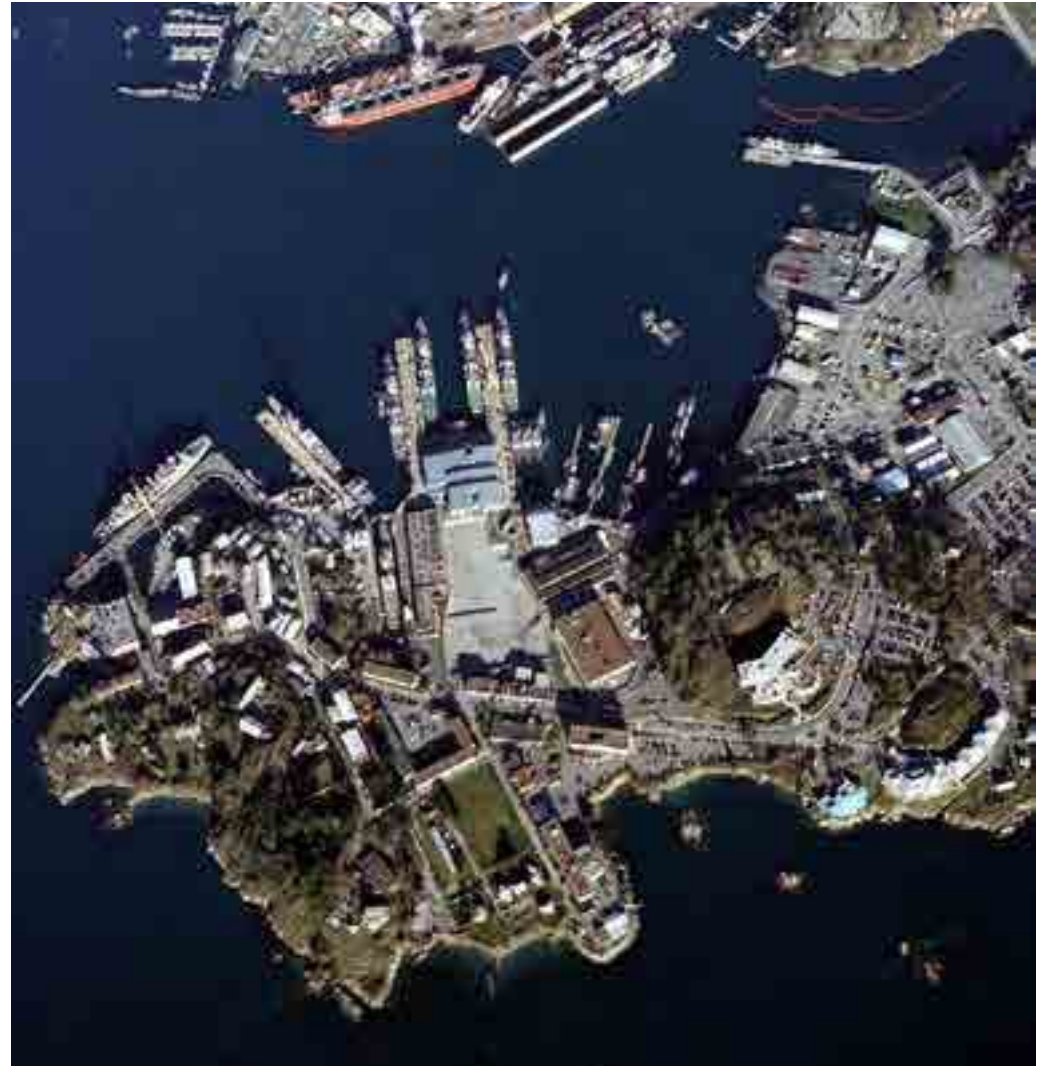
- › Address uses and diverse habitat
- › Needs to be site wide and reflect exposure settings
- › Must be manageable



Risk Assessment: The Results

Determine Risk-based Targets

- › Based on Site Use and Exposure Settings
- › Allows to Target Specific Areas
- › Streamline with Site Data Management
- › Determine Next-Steps



CFB Dockyard Framework: Final Thoughts

Take away for other sites:

- › Use what you have to get a sense of the problem
 - › *Historical reports and data*
 - › *Current and Future Land Use*

- › Find a solution that works for your site
 - › *Grouping of APECs/AECs*
 - › *Re-evaluation of RMAs*
 - › *Data Gap Assessment and Data Management Approach*
 - › *Receptor Usage Patterns and Habitats*

This approach is applicable for the management of other large sites with multiple historical and current uses, diverse settings and/or on-going operations. Current plans are to use this approach for other large properties of CFB Esquimalt.





Thank you.

Questions?