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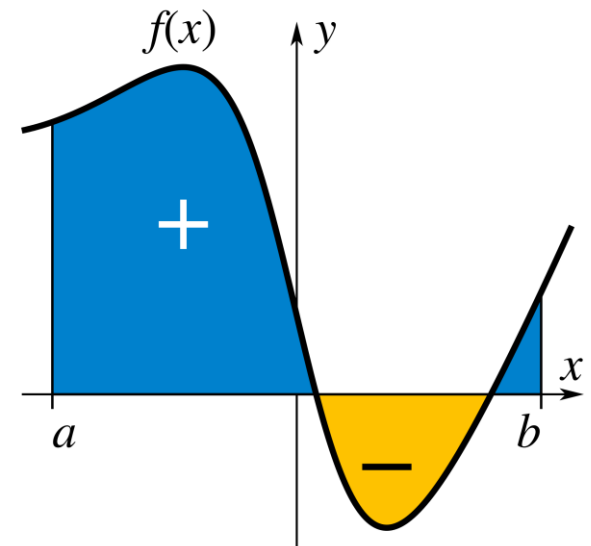
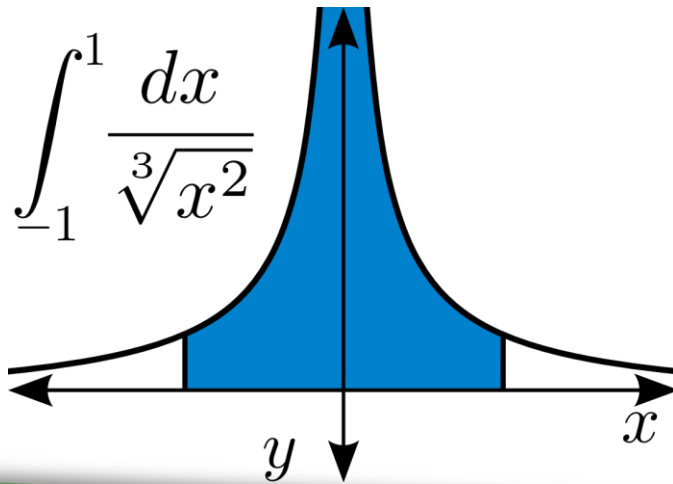
Integrated Stormwater Management

EMA Presentation – April 2017


David Lumb, P.Eng.

What is “Integrated”?

$$\int_p^x \rho_i U_i^2 dx$$



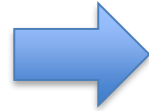
What is “Integrated”?



Stormwater
Management



Site Review and Risk Assessment



Source Control



Stormwater Infrastructure



Operation and Management

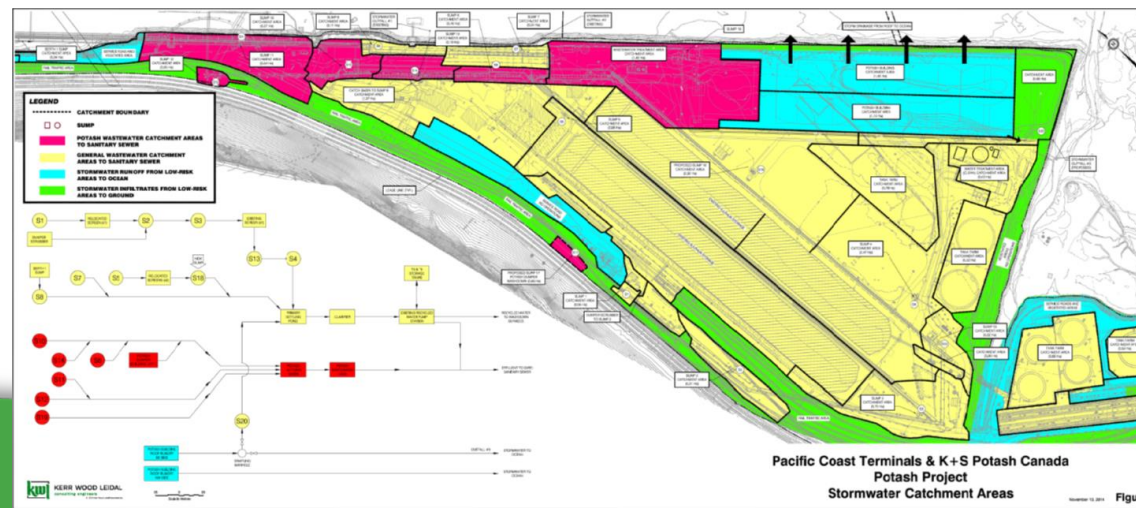


Monitoring

Integrated Stormwater Management

Site Review and Risk Assessment

- ❑ Identifying Activities
- ❑ Documenting Infrastructure
 - Transfer Stations
 - Storm Sewers
 - Drainage Catchment Areas
- ❑ Identification of 'High Risk' areas and activities
 - Transfer operations
 - Fueling Areas
 - Uncovered Storage



Integrated Stormwater Management

Source Control

- ❑ Cover the Areas
- ❑ Catch the Spills
 - Spill Containment
 - Transfer Station Pads
- ❑ Operating Practices
 - Fuel Limiter example



Source Control

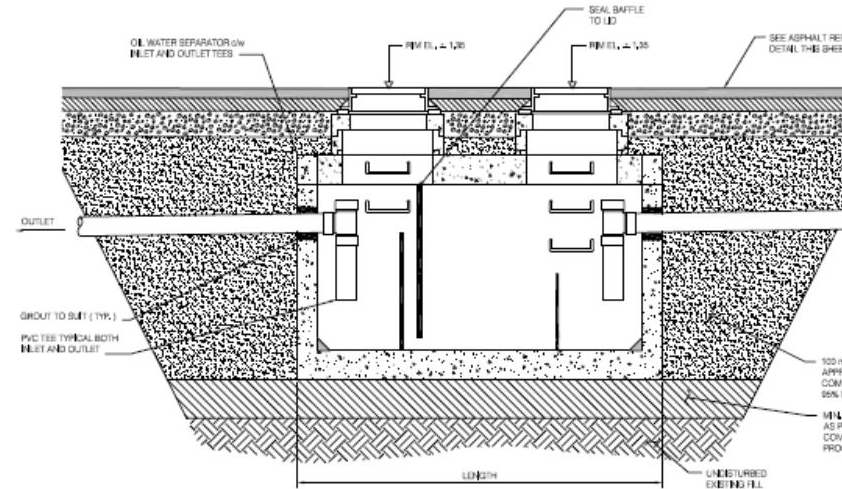
❑ Spill Containment



Integrated Stormwater Management

Stormwater Infrastructure

- ❑ Spill Containment Systems
- ❑ Catch Basins and Storm Sewers
- ❑ Treatment Systems
- ❑ Oil Water Separators



Clarifier



Operation and Management

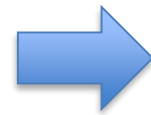
- Operating Practices
- Spill Response Procedures
- Discharges
- Maintenance
- Monitoring



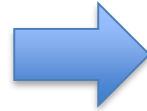
Stormwater: INTEGRATED



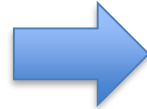
Stormwater
Management



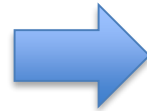
Operation and Management



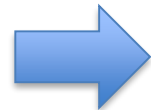
Site Inventory and Risk Assessment



Source Control



Stormwater Infrastructure



Monitoring

Questions?

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