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Calgary West Village:

Use of Human Health Risk Assessment to Inform Redevelopment Scenarios

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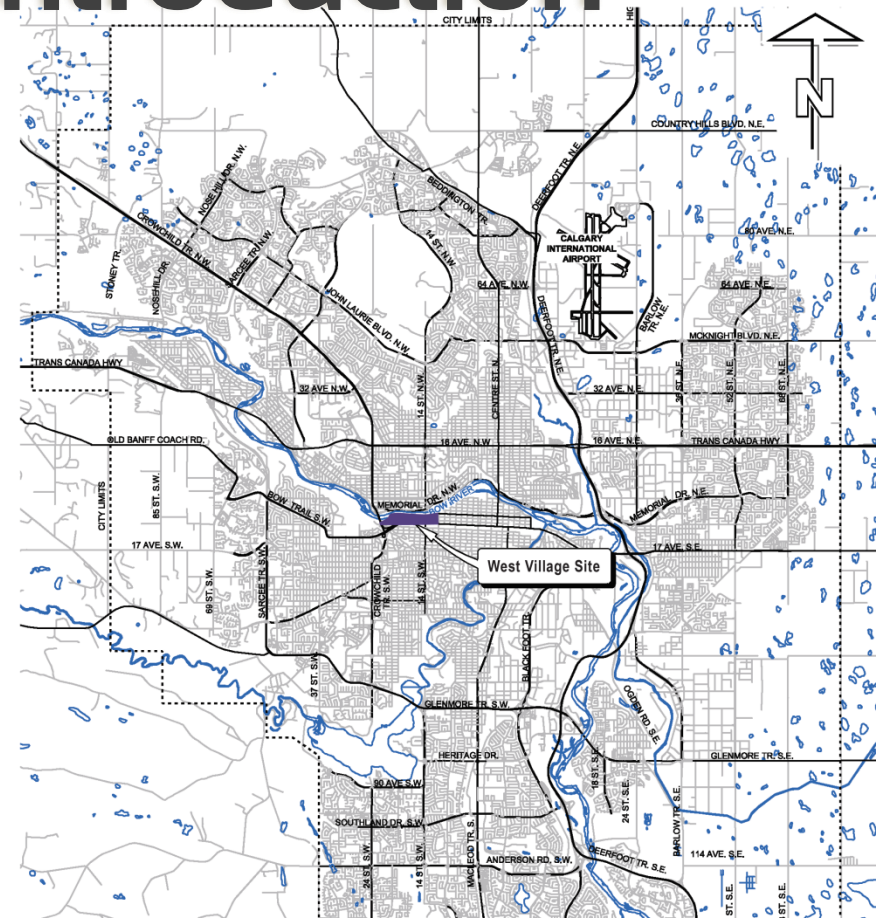
Introduction



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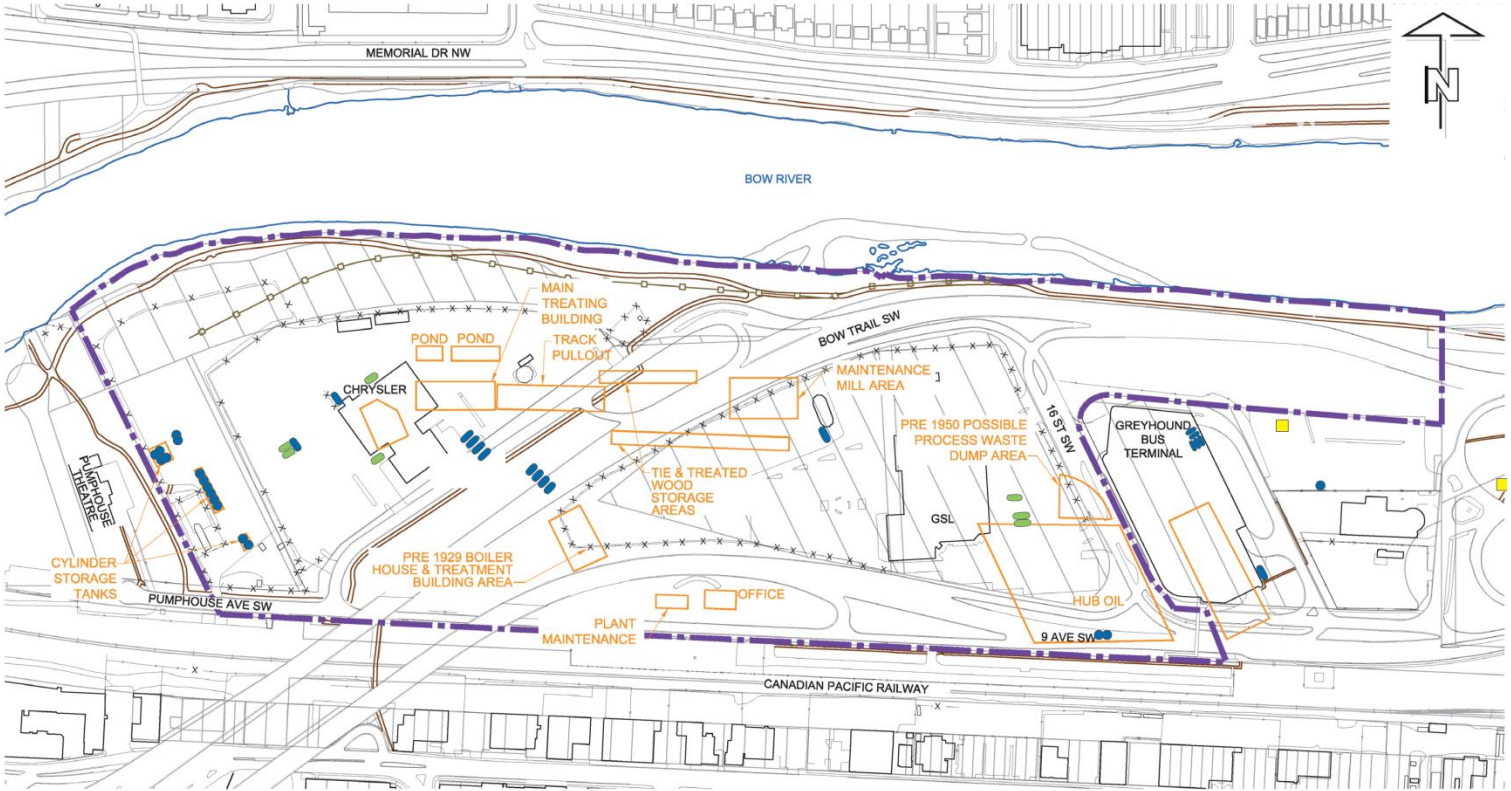
Site Overview



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West Village Area Redevelopment Plan

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CalgaryNEXT proposal

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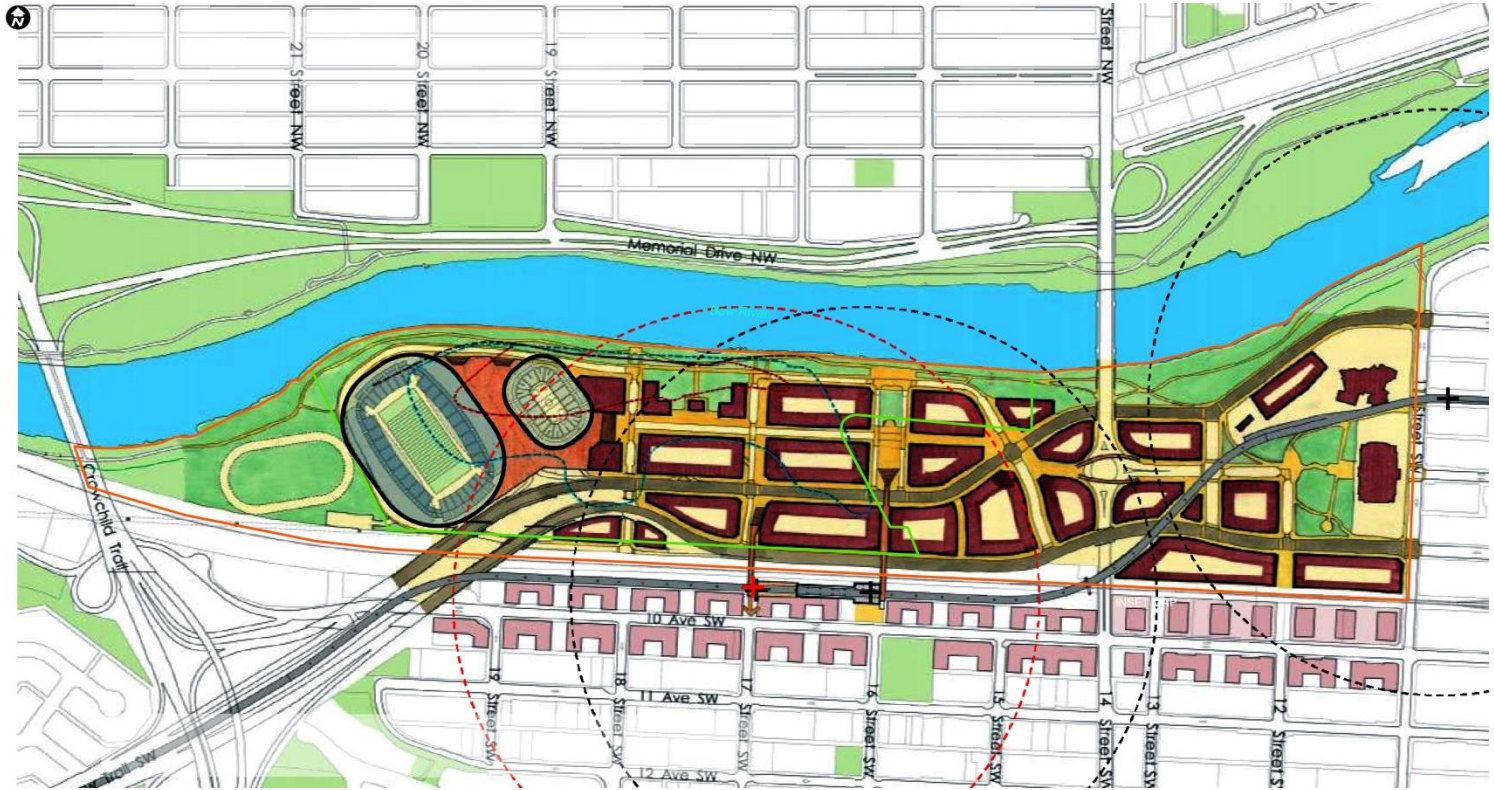
CalgaryNEXT proposal



2015/2016 Activities

- Site investigation (presented earlier)
- Human health risk assessment
- Remedial options (up next)

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Human Health Risk Assessment

- Assess risks to human health
- Inform development scenarios
  - Management/remediation requirements
- Identify where additional assessment is beneficial
- Current and future risks

HHRA Methodology

- Standard risk assessment model
- Methods based on Alberta/Canada guidance
- Consider redevelopment scenarios

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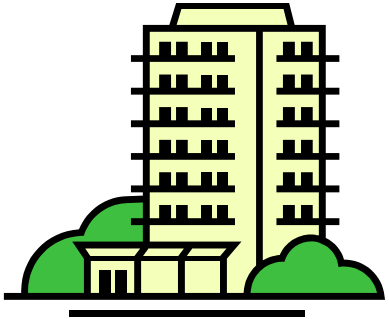
HHRA

DON'T ASSESS BASED ON THIS:

IF WHAT WE HAVE IS THIS:



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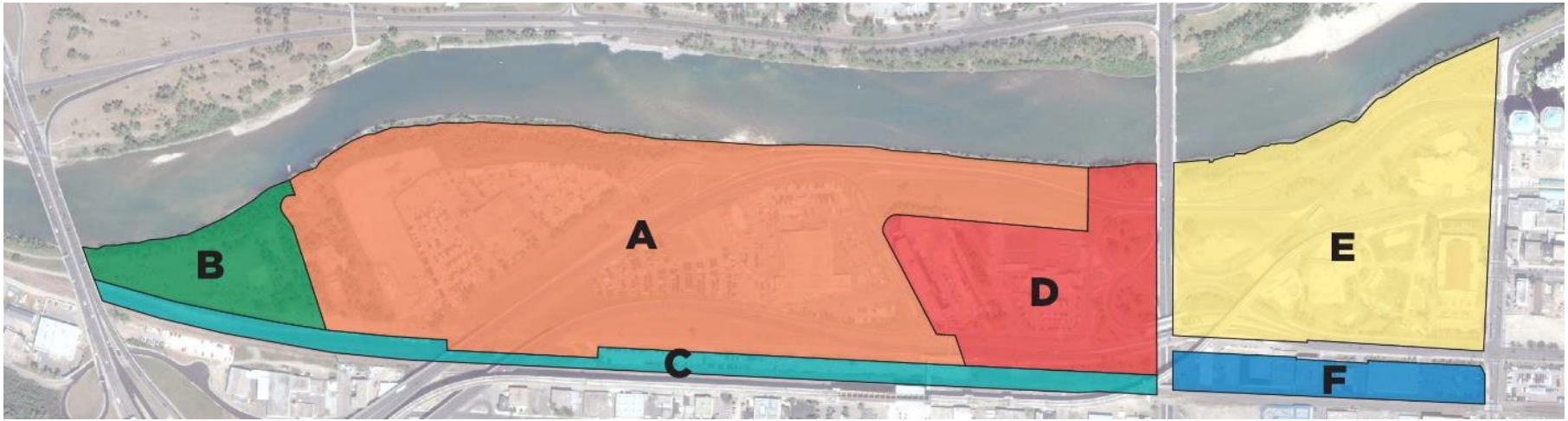
Areas of Concern



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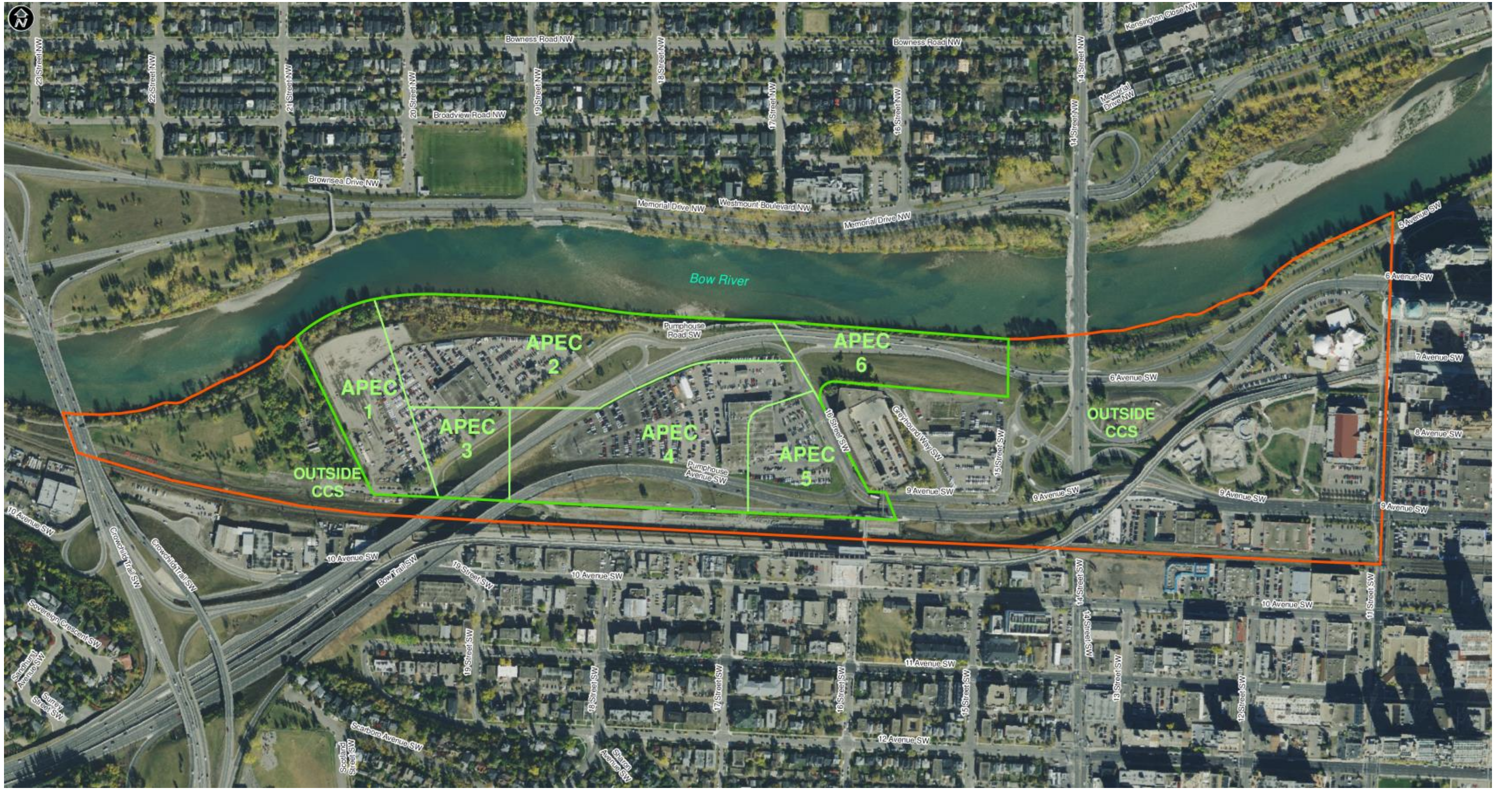

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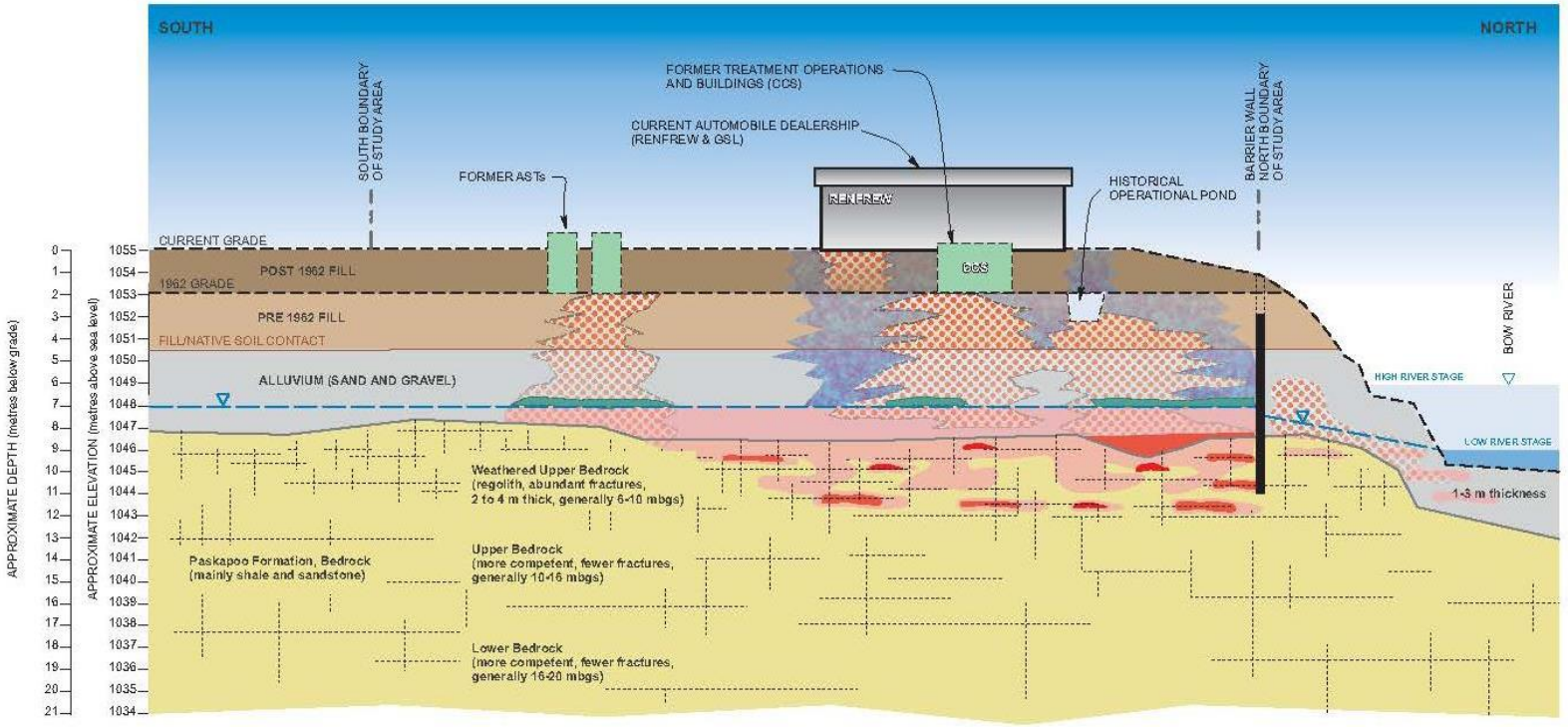
Contaminant Situation



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Chemicals of Potential Concern

- Screened vs. guidelines, substances with no guidelines
- PHC (incl. BTEX); PAH (creosote-related); halogenated aliphatics, aromatics, phenols; dioxins/furans; metals

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Land Use Assumptions

- No single-family residences
- No ground level residential
- Underground parkades in most buildings
- Municipal water supply

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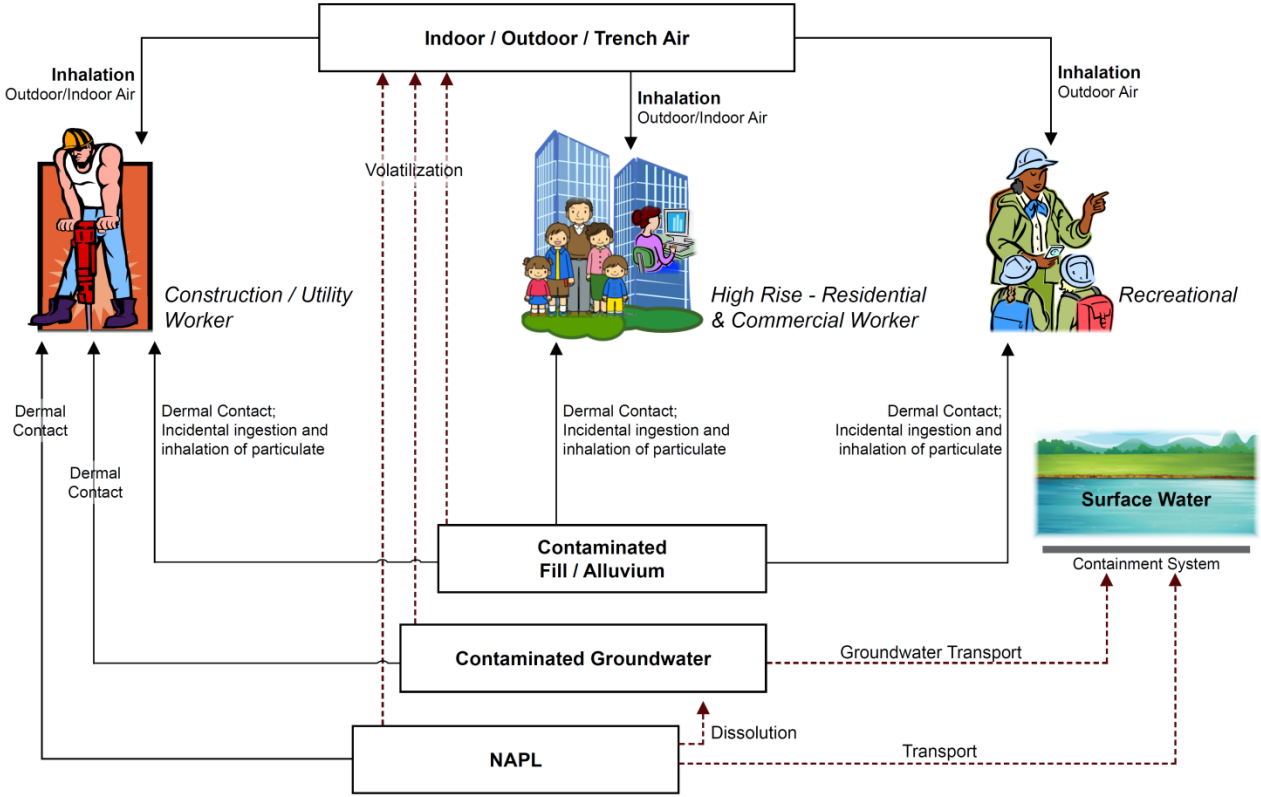
Conceptual Site Model



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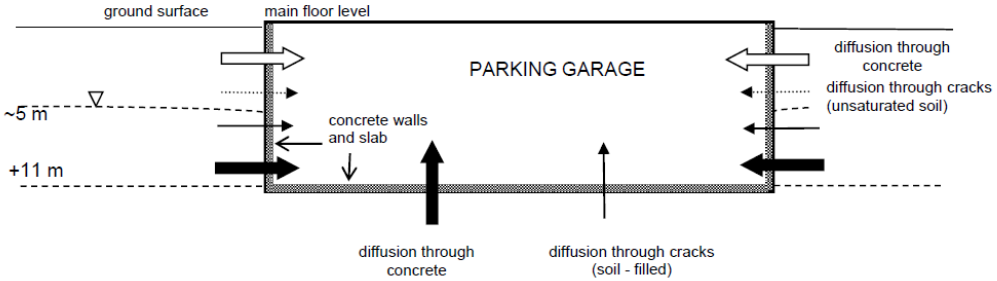
Vapour modelling

- Standard assumptions based on small buildings
- Want to look at high rise with parkade
- Effects of risk management



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HHRA Results

- Direct contact – ok with 1 m clean soil in green spaces
- Outdoor vapour inhalation – ok
- Indoor vapour inhalation (parkade/high rise) – ok
- Some risks for workers in trenches → manage

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Limitations of the HHRA

- Only considers human health
- Only considers risks within the proposed development area
- Based on specific redevelopment plans
- Limited data outside Canada Creosote site

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Challenges/Learnings

- Coordination between multiple firms
- Tight timeline and conducting HHRA while data still being collected
- Complex site, large area
  - Outstanding data gaps, particularly outside CCS

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