

Excess Soil Management: Successes, Challenges, and Lessons Learned



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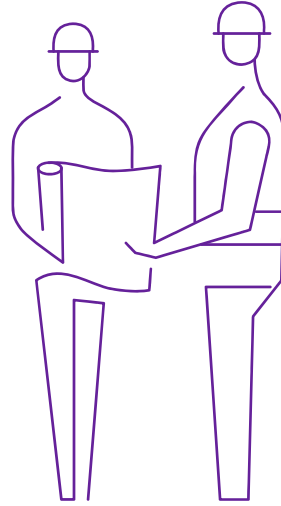
Outline

- Case Studies – Soil Importation, Stockpiling, Matching
 - Successes
 - Challenges
- Lessons Learned
- Future Considerations



Case Studies – Soil Importation

- ✓ 100,000s m³ required
- ✓ 2-year time period targeted
- ✓ RSC site
- ✓ Contractor responsible for importation



3

Case Studies – Soil Importation



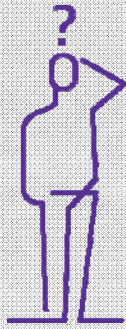
	Approach
Source Sites	<ul style="list-style-type: none"> • Tender call for sources • Infrastructure projects within 2 km of site • Owner identified additional source
Sampling	<ul style="list-style-type: none"> • Parameters for sampling identified via Phase One-type assessment by QP • In-situ and ex-situ; pre-importation • Frequency per O.Reg. 153/04



4

Case Studies – Soil Importation

- Testing pace vs importation
- Tracking of soils and results
- Problematic parameters
 - EC, SAR
 - Metals
 - PHCs



Case Studies – Soil Stockpiling



Case Studies – Soil Stockpiling



	Approach
MOECC	<ul style="list-style-type: none"> • Consultation; first stockpile site under BMP
Design	<ul style="list-style-type: none"> • Assess capacity and implications for neighbouring areas
Standard	<ul style="list-style-type: none"> • Confined Fill Material Criteria (Table C-1)
Sampling Frequency	<ul style="list-style-type: none"> • Source Site and Audit Program; QP decision per MOECC BMP based on source/risk • Auditing at Stockpile site allowed visual versus analytical for low risk sources
Contractor	<ul style="list-style-type: none"> • Responsible for testing and tracking program

7

Case Studies – Soil Stockpiling

Low Risk Fill

- Rock, soil $\geq 10\text{m}$ depth
- 1 sample every $3,000\text{m}^3$
- Audit daily or weekly by visual inspection

Medium Risk Fill

- Shallow rock and soil meeting criteria insitu
- 1 sample every $1,000\text{m}^3$
- Audit $1/10,000\text{m}^3$

High Risk Fill

- Soil $< 1.5\text{m}$, non-native, untested APEC
- 1 sample every 300m^3
- Audit $1/3,000\text{m}^3$

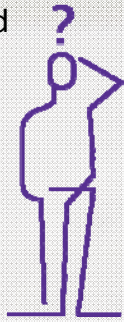
Known High Risk Fill

- Contaminated sites; unknown soil quality
- 1 sample every 160m^3
- Audit $1/800\text{m}^3$

8

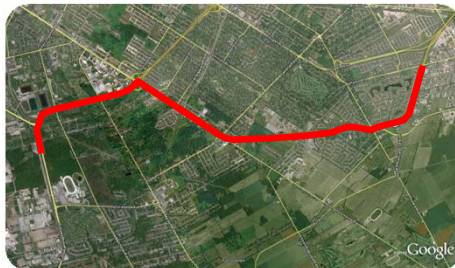
Case Studies – Soil Stockpiling

- ECA for stormwater interceptor
- Impermeable surface
- Problematic parameters
 - EC, HWS Boron
- Accountability for failed samples, rejected soil
- Contract; demonstrating cost-savings



Case Studies – Soil Matching

Windsor Essex Parkway



- 3.5 million m³ of fill generated
- Contractor solely responsible for soil disposal

Amherstburg



- RA/remediation project
- 1 million m³ of fill needed to infill quarry and cap site

Case Studies – Soil Matching



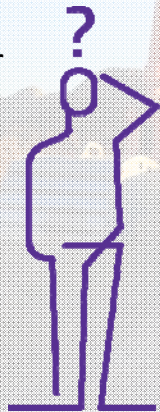
	Approach
Clients	<ul style="list-style-type: none"> • Willingness to connect and discussion options
Quality	<ul style="list-style-type: none"> • Testing indicated appropriate soil quality for receiving site
Time	<ul style="list-style-type: none"> • Construction schedules aligned
Volume	<ul style="list-style-type: none"> • One source could supply entire capping operation



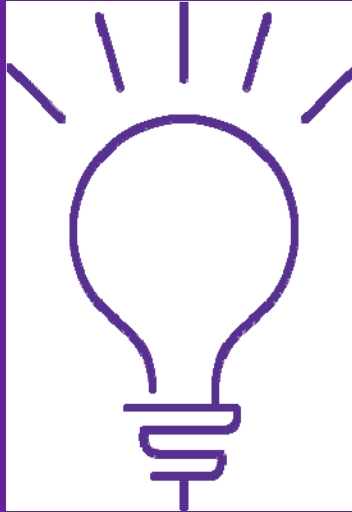
11

Case Studies – Soil Matching

- Negotiating contract
- Closer receiving sites
- Demonstrating cost-savings to contractor

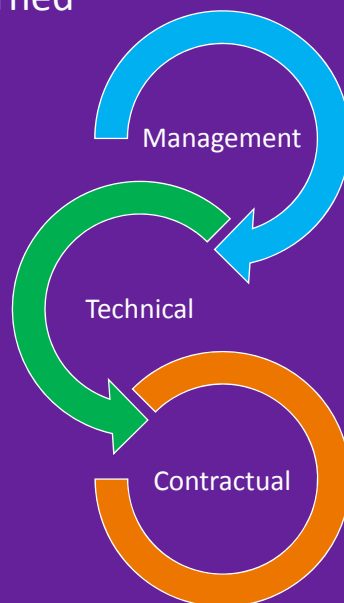


Lessons Learned

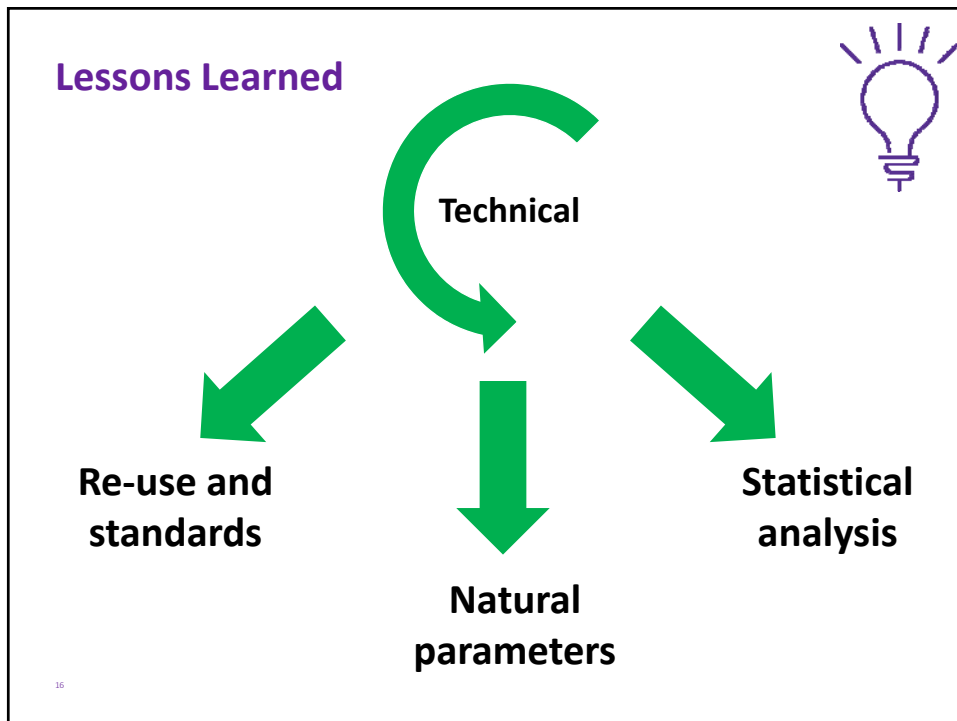
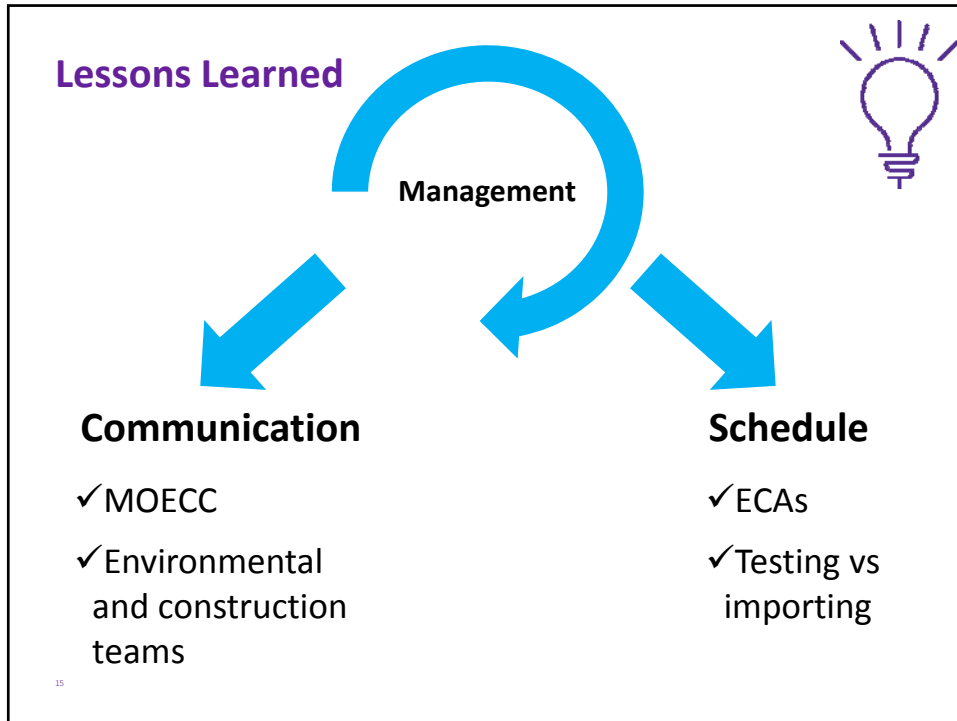


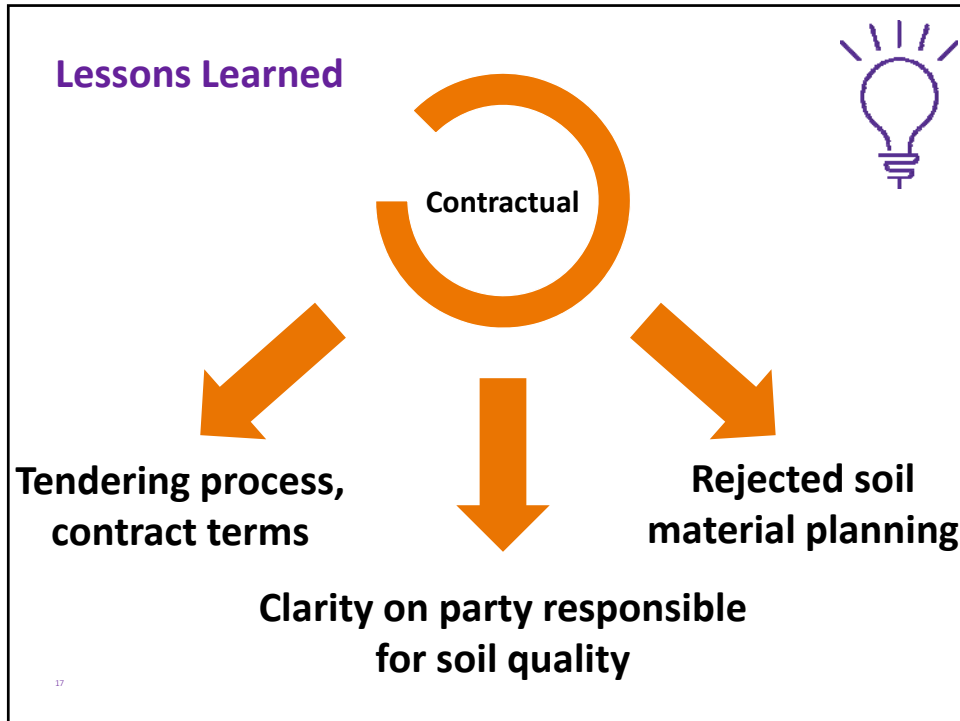
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Lessons Learned

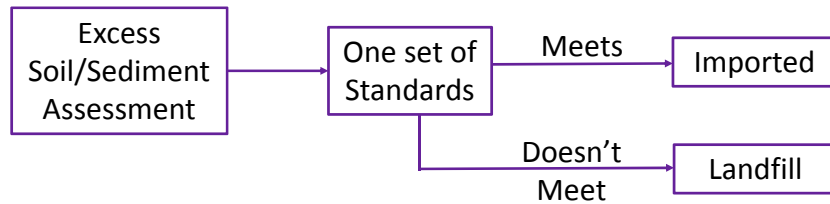


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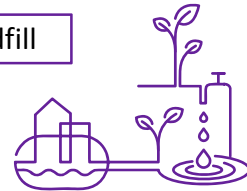
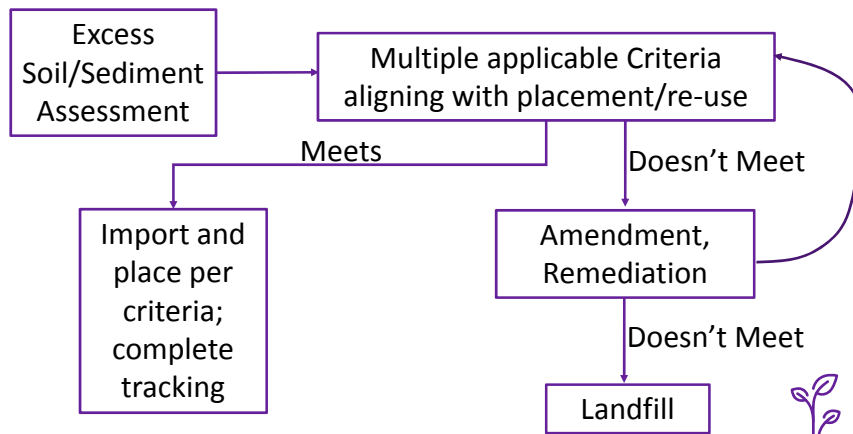


Future Considerations – Traditional Approach



19

Future Considerations – Future Approach



20

