

Sustainable Solutions: A Concept for a Soil and Materials Campus



Region of Waterloo

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Presentation Overview

- Background
- Soil and Materials Campus Concept
- Summary of Stakeholder Forum
- Feasibility Study



Background



Background

- Soils and Materials are a valued resource –
Not a Waste
- Other materials include pond sediments,
construction waste and aggregates
- Explore sustainable approaches for soil and
material management
- Divert from landfills



Drivers and Opportunities

- Infill Development - Region's Official Plan and Places to Grow and Rapid Transit
- Investment in Brownfield Redevelopment
- MOE BMP for Excess Soil Management
- MOE Funding under the Showcasing Water Innovation Grant (SWIG) Program



Region's Initiatives

- Pilot Project for Sediment Management - Victoria Park Lake
- Project Scoping and Research Study for the Concept of a Soil and Materials Campus
- Region hosted a Stakeholder Forum to obtain input from key stakeholders
- Feasibility Study for Campus



Soil and Materials Campus Concept



Concept for Soil and Material Campus

SOIL BANK AREA

- "Clean" Soil / Material
- Separated stockpiles
- (Clay, Sand, Fill, Aggregate)
- Drop-off Bays

PROCESSED MATERIAL

- Stockpiles of Treated Materials
- Separated stockpiles (Clay, Sand, Fill, Aggregate, Sediment)

ADMINISTRATIVE BUILDING (ACCELERATOR CENTRE CONCEPT)

- Shared Office Spaces (Partners)
- Shared Laboratory
- Space for Soil Brokerage
- Community Meeting Spaces (meeting rooms, classrooms, education areas)

SOILS TREATMENT AREAS

TREATMENT
AREA 1

TREATMENT
AREA 2

TREATMENT
AREA 3

RESEARCH AREA
PARTNER WITH
UNIVERSITIES OR
OTHER RESEARCH
ORGANIZATIONS

Treatment/Processing
Building (Soil, Wastewater)

FUTURE EXPANSION AREA

Stakeholder Forum Summary



Stakeholder Forum

- Region Hosted Forum in May 2012
- By Invitation Only
- Participants included:
 - Government Agencies (Provincial, Municipal)
 - Various Organizations
 - Consultants and Contractors
 - Academia and Research



Forum Presentations

- Current Framework and Drivers within Region
- Key Issues with Soil and Material Management
- MOE Best Management Practices for Excess Soil
- Reuse of Excess Construction Soils and Materials
- Case Studies – Waterfront Toronto AND Thorold/St. Catharines



Breakout Sessions

- Track One: Policy and Regulatory Considerations
- Track Two: Market, Operational and Financial Considerations



Key Recommendations



Key Items Proposed for Future

- Forecasting and Managing Supply and Demand
- Soil Brokering and Soil Banking
- Soil and Material Classification Streams
- Approach to End-Use Applications



Managing Supply and Demand

- Develop a Database to track:
 - Upcoming projects: including type and quantity of materials
 - End-markets: Fill for residential, industrial or road works, pit/quarry rehabilitation



Soil Brokering and Soil Banking

- Create a formal soil brokering system
- Establish a soil brokering website to coordinate suppliers with end-users
- Adopt systems similar to UK and Netherlands
- Cap amount of excess soil to be stockpiled
- Place at strategic locations within Region



Soil and Material Classification

Classify materials according to:

- Generation Source of Origin
- Quality Characteristics
- Processing and Management Options
- Regulatory Approval
- Beneficial End Use



Approach to End-Use Applications

- Ensure end-use applications are available
- Determine acceptable materials – soil, aggregates, sediment
- Match soil type with land use sensitivity
- Identify options to manage impacted soil and materials through risk-based approach, in-situ treatment
- Establish criteria for soil reuse following treatment



Hierarchal Approach

- Minimize generation of supply
- Reuse soil and material onsite
- Establish brokering networks (websites)
- Temporary stockpiles of materials in soil banks
- Treat and manage soils and materials offsite
- Reuse treated or recycling products



Regulatory Approvals

- Depends on if Campus is classified as a “waste management system” or “processing site”
- Part V Approvals will likely be required
- Use the MOE Excess Fill BMP as a guideline for non-impacted materials
- More details will be required



Feasibility Study



Feasibility Study – Next Steps

- Currently underway
- Background research including upcoming projects within the Region
- Case studies of similar concepts
- Potential locations within Region
- Different operation and financial models including Public-Private Partnerships



Thank You

QUESTIONS



For more information see:

<http://www.regionofwaterloo.ca/en/aboutTheEnvironment/Wastemanagementmasterplan.asp>

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