Public Consultation Event

For the Development of a

Municipal Solid Waste Management Strategic Plan

Public Consultation Event #3
August 14, 2010

Killaloe Lions Hall
Killaloe, Ontario

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Introductions

- Welcome
- Tyler Peters, Greenview Environmental Management Limited
- Members of Council and Staff

- *<u>Objective</u> - to present the results to date of the feasibility studies and gather input from Township residents/ratepayers for the **development** of a solid waste management strategic plan*

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Event Format

- Slide Presentation
- Questions & Answer Session
- Open House
  - Individual Q&A
  - Discussion

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Presentation Outline

- Review background, purpose and scope of MSWMSP
- Present results of the General Work Plan (GWP) feasibility studies (to date)
- Next Steps

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Recall: Existing WM Status

- Three (3) waste sites manage solid waste generated within the Township
- Only one (1) site has current approvals for landfilling operations, with an estimated three (3) years of site life
- Waste diversion efforts currently divert approximately 35 - 40% of waste generated

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Recall: Problem (Opportunity)

- Limited residual waste disposal capacity remaining at approved landfilling site

- Township requires a long-term (20-year) solution for managing solid waste generated in the Township, that is *economically-feasible* and *environmentally-responsible*

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Recall: Previous Consultations

- Public Consultation Event #1
  - August 8, 2009, over 60 attendees
  - Introduction of the project, gathering of initial comments/input

- Public Consultation Event #2
  - October 24, 2009, 25 attendees
  - Update on preliminary studies, presentation of questionnaire results from PCE#1
  - Purpose and scope of General Work Plan

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Recall: Previous Consultations

- Public Liaison Committee
  - Several public members, Council and staff
  - Four (4) working meetings
  - Information dissemination and communication

- Media
  - Various press articles and releases over past months
  - Considerable interest in the project

Recall: General Work Plan

- Purpose:
  - To undertake a background study of the environment (baseline)
  - To complete a feasibility review of the project alternatives and options
  - To ‘screen’ the alternatives/options to those that are feasible for further consideration
  - To identify what the key aspects of the alternatives/options are for further consideration

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Recall: General Work Plan

- Scope:
  - Based on 2009 preliminary studies and consultations, scope of the GWP was confirmed:
    - Waste Diversion
    - Landfill
    - Waste Export
    - Waste Incineration
  - Detailed cost assessment for economic feasibility

Recall: General Work Plan

- Alternatives / Options:
  - Diversion – 3R's, maximize diversion to the most feasible extent
  - Landfill – capacity expansion at Killaloe site, and/or capacity utilization at Round Lake site
  - Export – transport waste to OVWRC (Pembroke) and/or LaFleche Environmental (Moose Creek)
  - Incineration – consideration of a private and/or public facility

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Recall: GWP - Solid Waste Statistics

Item	Value
Population (2009 StatsCan, equivalent)	2,993
Annual Population Growth (2001 – 2006 StatsCan)	0.46%
Annual Residual Waste Generation (2009, considers diversion)	3,433 m^3 1,202 tonnes
20-Year Residual Waste Quantity (projected, includes cover, considers diversion)	92,000 m^3 30,000 tonnes
Current Remaining Residual Waste Disposal Capacity (Killaloe Site, October 2009)	10,000 m^3 3 Years

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Scope: GWP - Diversion

➲ Diversion:

- Maximizing 3R's - Reduce, Reuse, Recycle to the most feasible extent possible
- Develop a waste recycling strategy in accordance with industry standards, goals, and objectives (Waste Diversion Ontario)
- Integrate the recycling strategy as part of the MSWMSP project – 'integrated plan'
- Undertake a complete 'overhaul' of the Township's diversion programs, per new industry best practices
- Review possible multi-municipal coordination for contracts, scale
- Promotion & Education (P&E)

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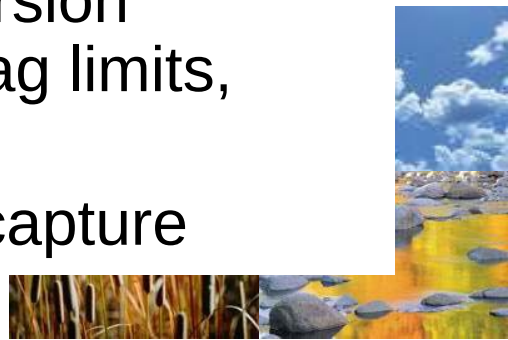
Results: GWP - Diversion

➲ Diversion:

- Reduce, Reuse, **Recycle** (3R's)
- Current diversion rate of 40%; capture rate estimated at 40%
- Municipal program among the most cost–effective in the province
- Service provider change imminent
- Program material list challenges
- Interest in possible multi-municipal approach
- Consideration for various diversion incentive 'tools': clear bags, bag limits, increased collection, etc.
- Diversion target = 50%; 70% capture



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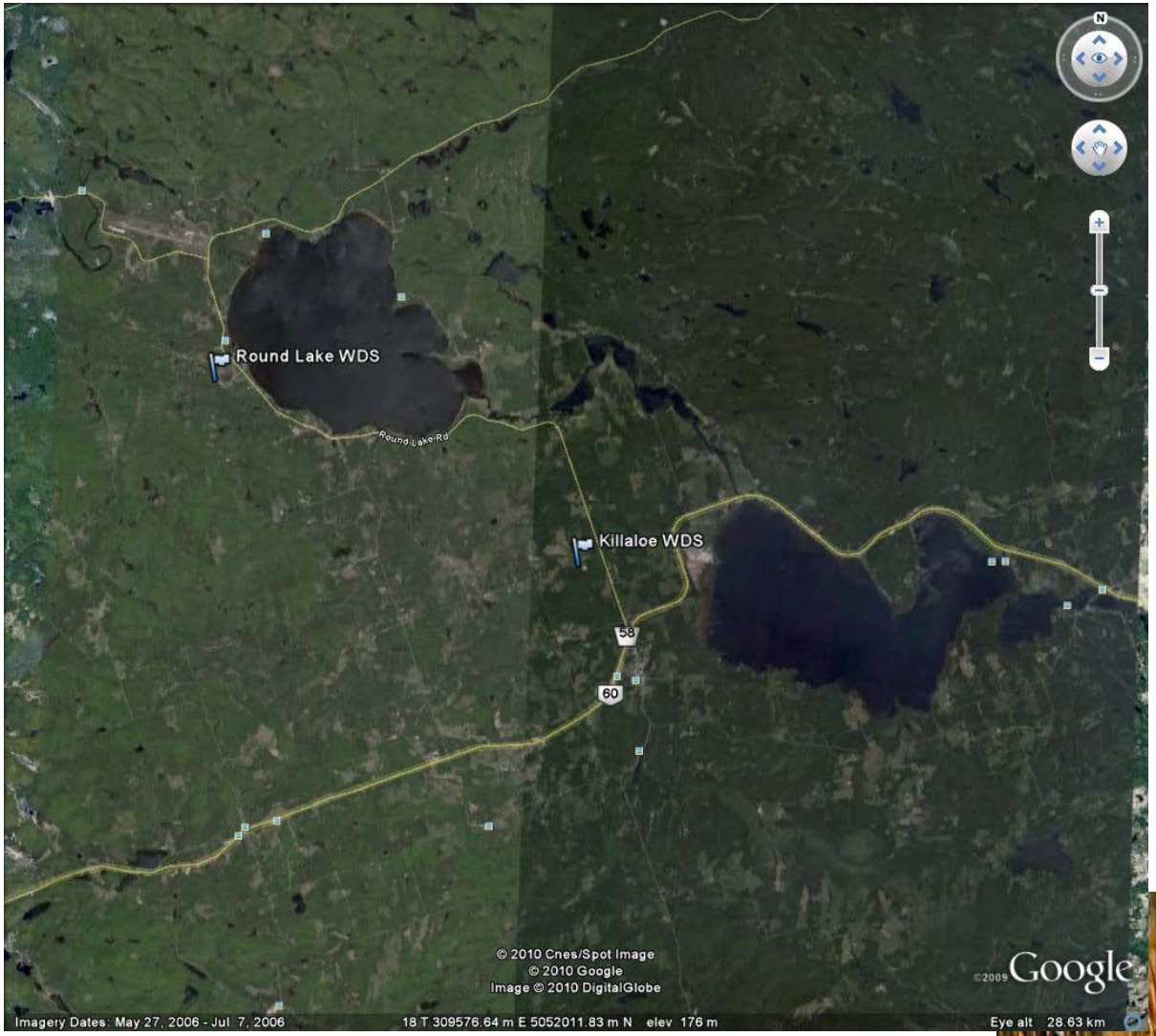
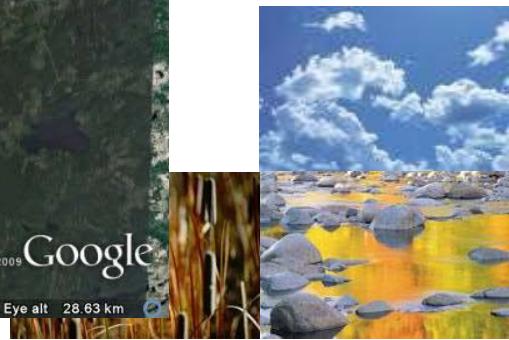
Scope: GWP - Landfill

- Feasibility reviews for continued landfill operations for the 20-year planning period
- Township waste generation = 3,500 m^3 per year, marginally increasing over time
- Options:
  - Killaloe WDS – capacity expansion (lateral/vertical/reclamation)
  - Round Lake WDS – capacity utilization (existing)
- Preliminary feasibility studies undertaken to assess potential impacts on the environment:
  - Natural heritage
  - Cultural heritage
  - Hydrogeological
  - Economical

Scope: GWP - Landfill

➲ Study Area:





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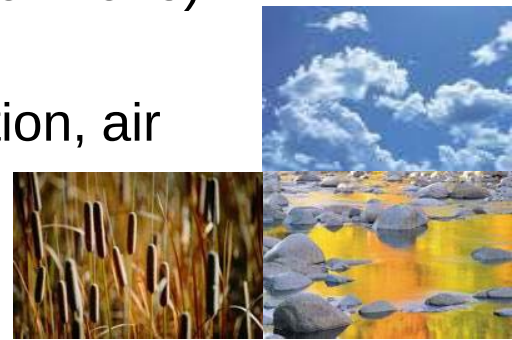
Scope: GWP – Landfill (Killaloe Site)

- Feasibility review for a capacity <u>expansion</u> at the Killaloe Site:
  - Lateral/vertical expansion of existing landfill limits
  - Landfill reclamation (mining) within existing limits
- Target expansion residual waste volume = <u>up to 100,000 m^3</u>
- Key considerations:
  - Groundwater and surface water quality (monitored)
  - Natural heritage features
  - Land requirements (buffer, attenuation zone)
  - Operational scenarios
  - Reclamation – current landfill utilization, air quality
  - Economics

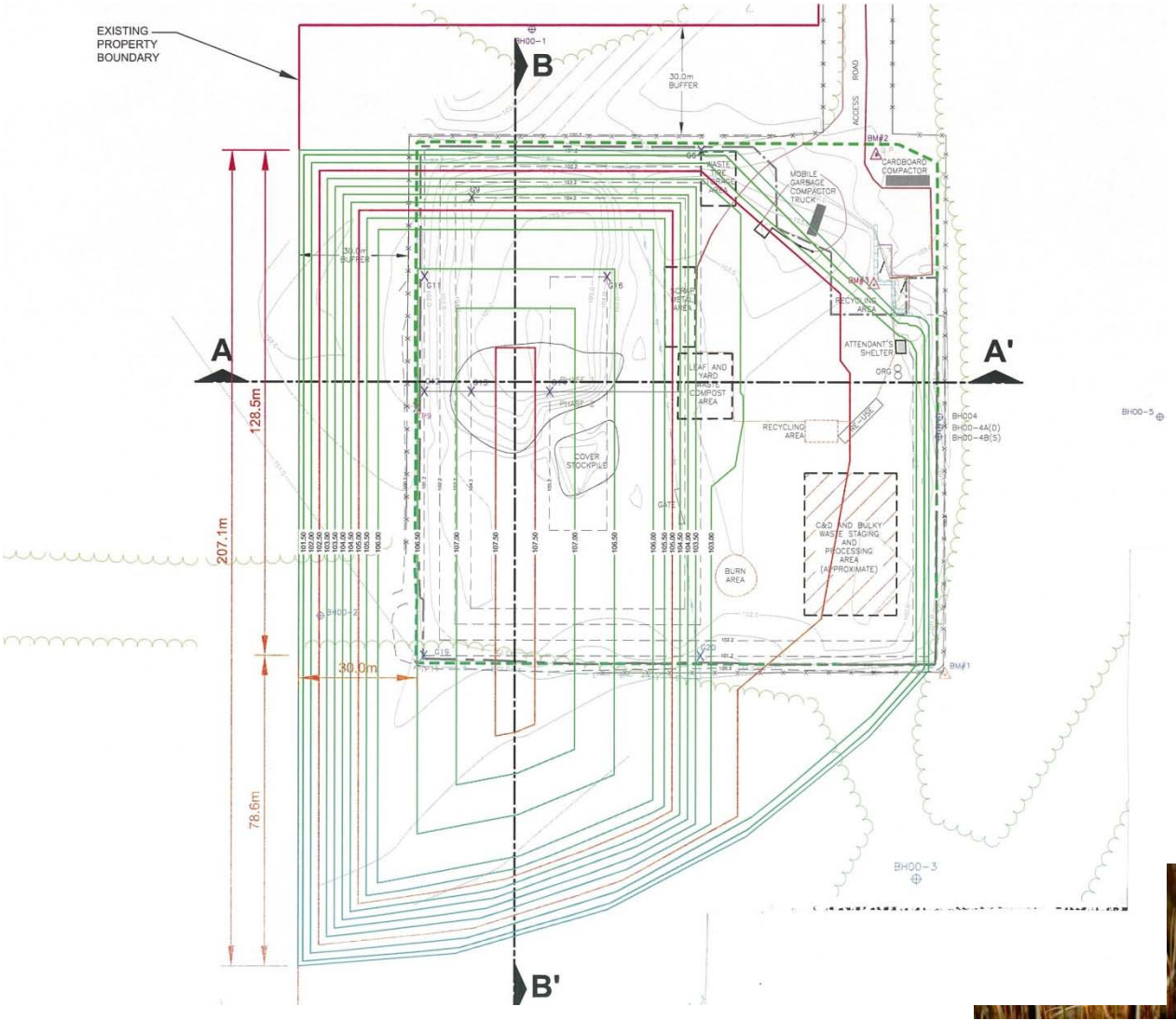


Results: GWP – Landfill (Killaloe Site)

- Lateral/Vertical Expansion:
  - Preference for natural attenuation for environmental and cost considerations
  - Considered lateral (vertical) expansions of various configurations to the west and south of the site
  - Hydrogeological assessment findings indicate up to 100,000 m^3 may be feasible with a western and southern lateral (vertical) expansion
  - Natural heritage review notes the adjacent lowlands are part of the Killaloe Swamp, a Provincially Significant Wetland
  - Minimal relative additional cost for expansion development

Results: GWP – Landfill (Killaloe Site)

➲ Lateral/Vertical Expansion:



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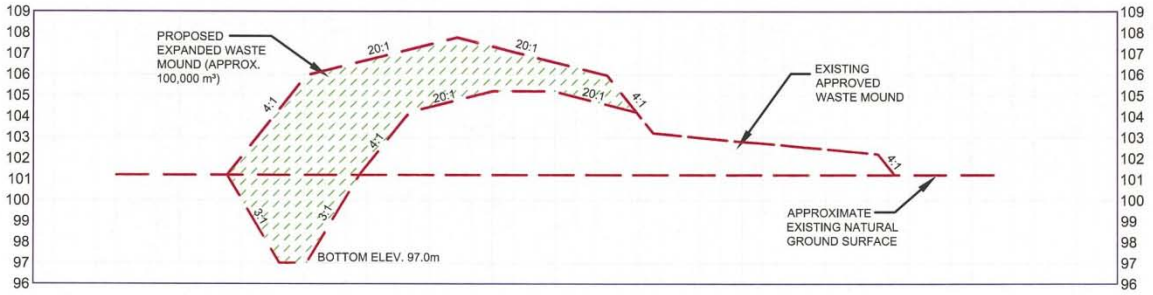
Results: GWP – Landfill (Killaloe Site)

➲ Lateral/Vertical Expansion:



Section A-A'

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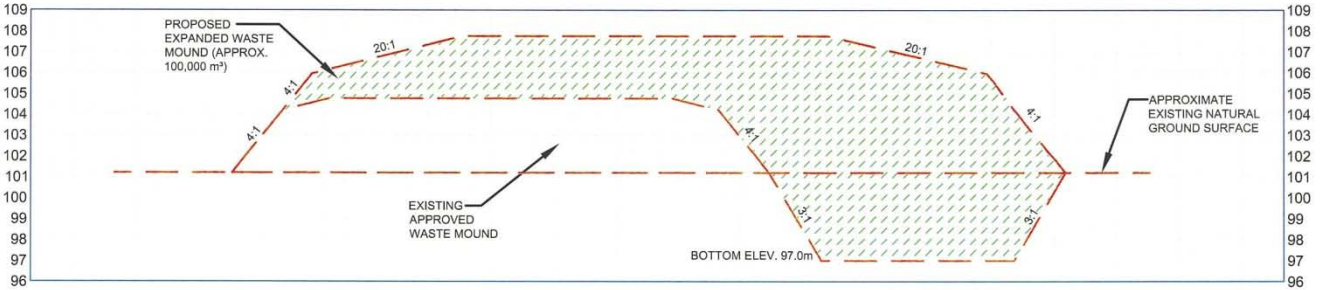

Section B-B'

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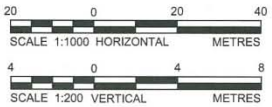

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Results: GWP – Landfill (Killaloe Site)

➲ Landfill Reclamation:

- Boreholes advanced in 2005 and 2010 to record landfill mound utilization
- Current utilization estimated at 80% (waste)
- Significant capital cost ($1M)
- Environmental concerns – air quality, odour/dust

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Scope: GWP – Landfill (Round Lake Site)

- Feasibility review for a capacity utilization at the Round Lake Site:
  - Approved available capacity of approximately 75,000 m^3
- Target expansion residual waste volume = up to 100,000 m^3
- Key considerations:
  - Groundwater and surface water quality (monitored)
  - Natural heritage features
  - Land requirements (attenuation zone)
  - Operational scenarios
  - Economics

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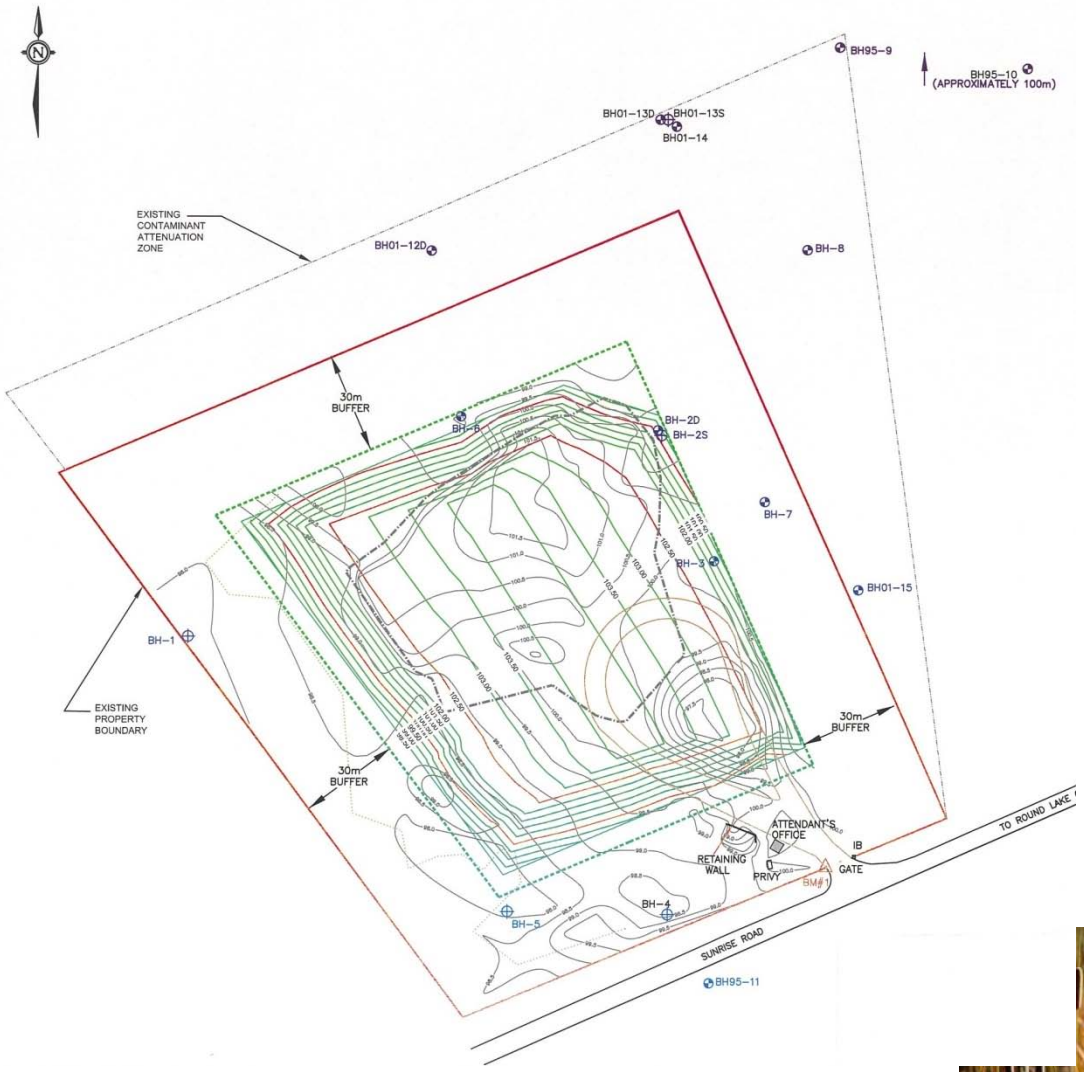
Results: GWP – Landfill (Round Lake Site)

- Site Utilization:
  - Preference for natural attenuation for environmental and cost considerations
  - No expansion of existing landfill limits considered – existing capacity approved
  - Hydrogeological assessment findings indicate:
    - Up to 35,000 m^3 may be feasible with current attenuation lands (municipally-owned)
    - Up to 95,000 m^3 may be feasible with attenuation zone extension (privately-owned)
  - Natural heritage review notes sensitive natural heritage values in the regional area of the Round Lake site/Sherwood River
  - Minimal/moderate relative additional cost for utilization development

Results: GWP – Landfill (Round Lake Site)

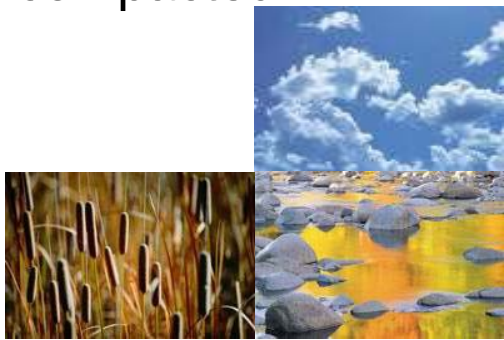
➲ Site Utilization:



Scope: GWP – Waste Export

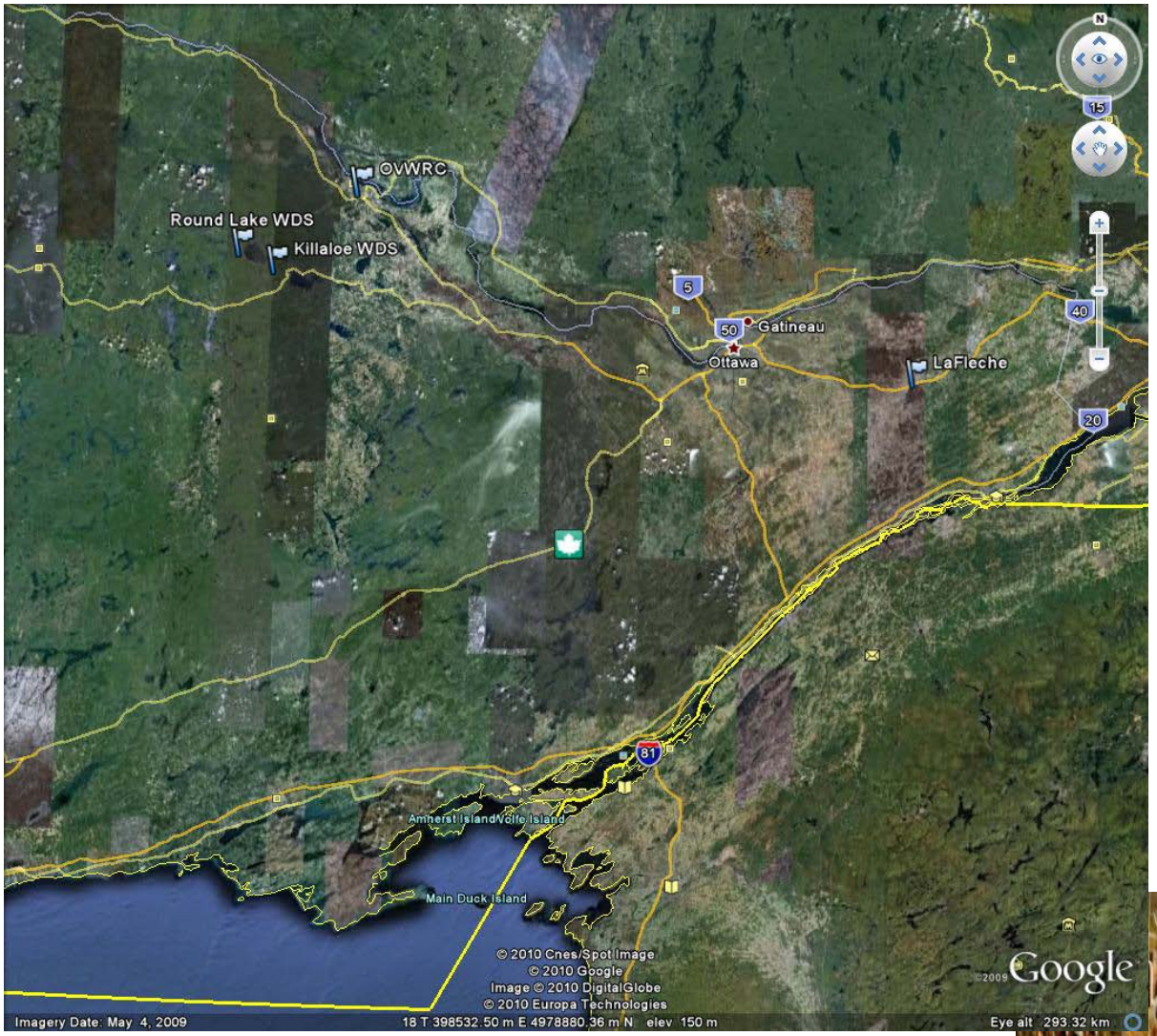
- Feasibility review for <u>exportation or transfer of waste to an approved facility</u> outside of the municipality:
  - Ottawa Valley Waste Recovery Centre (OVWRC), Pembroke, Ontario
  - LaFleche Environmental Inc., Moose Creek, Ontario

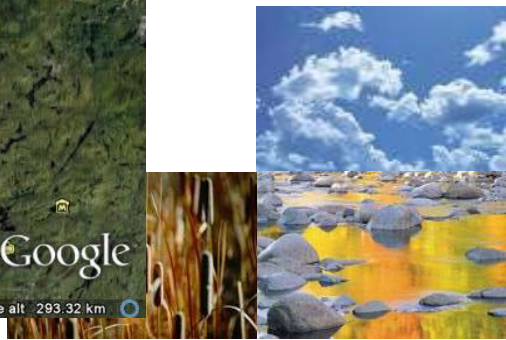
- Key considerations:
  - Economics
  - Service security/flexibility
  - Optimized operational scenarios – minimized handling, centralized transfer facility, compacted and/or multiple loads



Scope: GWP – Waste Export

➲ Study Area:





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Results: GWP – Waste Export (OVWRC)

- Export to OVWRC (Pembroke, Ontario)
  - Full-service facility and operation, only 125 km round-trip
  - Economic valuation completed (independent)
  - Cost considerations (waste)
    - Partnership costs
    - Landfill-related infrastructure costs (regulatory)
    - Operating contributions
    - Royalty/compensation fees
  - Partnership arrangement – sharing of assets/liabilities
  - Recycling cost reduction (free haulage/tipping)
  - Operating security

Results: GWP – Waste Export (LaFleche)

- Export to LaFleche Environmental (Moose Creek, Ontario)
  - Large, private, landfill operation (bio-reactor)
  - Extended distance, 460 km round-trip
  - Long-term agreements available
  - Haulage cost considerations (waste)
  - Need for recycling program service (independent)
  - Operating security

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Scope: GWP – Waste Incineration

- Feasibility review for incineration or thermal treatment of waste in the municipality:
  - Township facility (Township owned/operated)
  - Township facility (Privately owned/operated)
  - Export facility (Municipal/Privately owned/operated)

- Key considerations:
  - Economics
  - Operational constraints – sizing, feedstock, Energy-from-waste
  - Transportation (local and export)
  - Siting vs. export

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Results: GWP – Waste Incineration

- Municipal:
  - Significant capital cost for construction and operation (typically 2x landfill)
  - Operational challenges – feedstock, EFW
  - Technological dependability (small scale, unproven)
  - Operating authority and responsibility
  - Siting – location?
- Export:
  - Transportation cost – Ottawa, Sault Ste. Marie
  - No interest from existing facilities – minimal tonnage
  - Long-term operating security – reliability
- General:
  - Undermines recycling efforts?
  - Environmental – air, water
  - Feedstock pretreatment
  - Residue disposal

Scope: GWP – Economic Assessment

- Preliminary cost assessment of the various waste alternatives and related options:
  - Additional costs, increase (decrease) over status quo
  - Residual waste specific (garbage only)
  - 20-year planning period, commencing in 2012
- Key considerations:
  - Assumptions of alternative/option are suitable, with negligible environmental concerns
  - Capital costs for facility upgrades, operational amendments
  - Inflation, amortization of capital expenditures over $100k
  - Equipment replacements (rolling stock)
  - Presentation of results in an easily understandable format

Results: GWP – Economic Assessment

Waste Management Alternative and Option	Estimated Additional Cost Per $100k Assessment
Landfill	
Killaloe Site Lateral / Vertical Expansion	$ 50
Killaloe Site Reclamation	$ 80
Round Lake Site Utilization	$ 70
Waste Export	
Ottawa Valley Waste Recovery Centre (Township Haulage)	$ 350
Ottawa Valley Waste Recovery Centre (Contracted Haulage)	$ 250
LaFleche Environmental (Township Haulage)	$ 330
Waste Incineration	$ 40,000

Results: GWP – Economic Assessment

➲ Landfill:

- Land acquisition and/or easement costs based on current property assessment values of adjacent properties
- Ministry of the Environmental approvals (EAA and EPA)
- Site preparation and development
- Capital equipment – landfill compactor
- Additional environmental monitoring
- Equipment maintenance (operating)

➲ Key Findings:

- Landfilling options are somewhat capital intensive, with minimal operating cost considerations
- Existing infrastructure
- Land need assessment to be confirmed

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Results: GWP – Economic Assessment

- Export:
  - Land acquisition and/or easement costs not typically necessary
  - Ministry of the Environmental approvals minimal – EPA only
  - Site preparation and development
  - Considerable capital equipment – waste compaction equipment, transfer vehicle (option)
  - No additional environmental monitoring
  - Equipment maintenance (operating)

- <u>Key Findings</u>:
  - Partnership and related contributions considerable at OVWRC
  - Transportation costs significant
  - Reasonably secure agreement basis, varying flexibility based on partnership/independence

Results: GWP – Economic Assessment

- Incineration:
  - Ministry of the Environmental approvals complex – new technology (EAA and EPA)
  - Siting challenges, preparation and development
  - $100M capital cost for construction, additional operating
  - Preference for EFW, electrical infrastructure constraints, offset by electrical rates*
  - Extensive environmental monitoring, air, water, land

- <u>Key Findings</u>:
  - Unproven technology in Ontario
  - Significant capital cost
  - Feedstock dependability
  - Large municipality/regional scale

Summary

- The following has been presented:
  - Reviewed MSWMSP objectives, and scope of the GWP feasibility studies
  - The technical and economic results of the feasibility studies of the alternatives and related options

Next Steps

- Upload PCE#3 documents to webpage
- Summarize GWP studies into a DRAFT documentation report – August 31, 2010
- Questionnaire circulation – August 31, 2010
- Review and summarize questionnaire results – Fall 2010
- Council review of all components in early 2011

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Questions?

RECYCLING

ORGANICS PILOT PROJECT
MOLOK DIVERSION SYSTEM
ACCEPTABLE COMPOST MATERIALS
NO PLASTICS OF ANY TYPE
ORGANICS
ORGANICS
molok
molok

Open House

- Refreshments

- Individual questions to myself, Council, Township staff

- Thank you for attending, and have a great summer!

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