Tay Valley Township
Landfill Master Plan Draft

August 23rd, 2016

Maberly

Glen Tay

Stanleyville

Tay Valley Township

Agenda

- Operational Review
- Strategic Plan – Accomplishments - Implications
- Regulator Framework – Including Bill 151
- Landfill Financial Model
- Model Scenario Outcomes
- Future Plan(s) & Summary

Tay Valley Township

Executive Summary

- Compliance Issues
- Cost Savings Through:
  - Operational Considerations
  - Transportation
- Curbside Collection
- Increased Service Delivery at Low Cost !

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Operational Review

- Five Monitored Landfills
  - Two Closed Sites – Noonan's & Christie Lake
  - Three Depots – Glen Tay, Stanleyville & Maberly
- Depots are Open:

WINTER – ALL SITES (after Thanksgiving Weekend)	
Saturday	8 - 4
Wednesday	8 - 4
Glen Tay Site ONLY Monday 8 - 4	
Except: New Year's Day, Family Day, Easter Monday, Remembrance Day, Christmas Day, Boxing Day. Christmas Eve Hours – 8 to Noon New Year's Eve Hours – 8 to Noon	

SUMMER – ALL SITES (Victoria Day Weekend – Thanksgiving)	
Monday	8 - 4
Wednesday	8 - 4
Saturday	8 - 4
Sunday	10 - 6
Except: Canada Day	

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Operational Review - Continued

- All Sites Receive:
  - Waste & Blue Box
  - Metal
  - Glass
  - Tires
  - Reuse – Emporiums
  - Batteries

- Additionally - Glen Tay Receives:
  - Construction and Demolition (C & D)
  - Shingles
  - E-Waste
  - Appliances

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Operational Review - Continued

- Waste is Transported on a ~ Bi-Weekly Schedule from Stanleyville and Maberly to the Glen Tay landfill face.

- Blue Box (BB) Material is pick up as required along with Tires, WEEE, Batteries, C&D and the Scrap Metal Bin.
  - More Blue Box later

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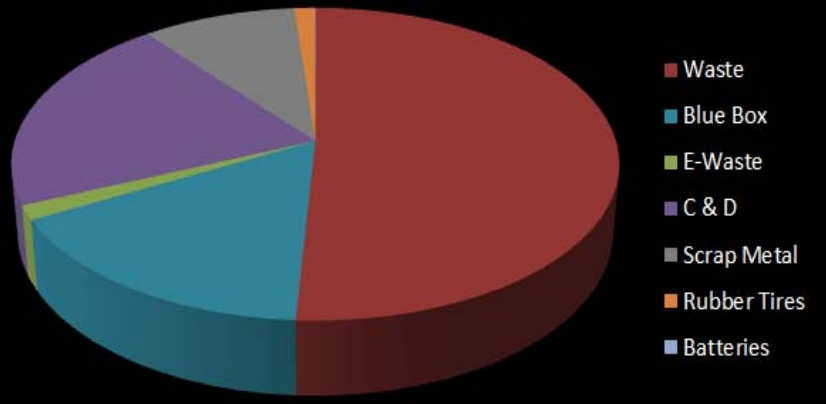
Operational Review - Continued

- Tonnages – Bordering on 50% diversion
  - Landfilled Waste ~833t
  - Diverted tonnages 804t
    - Blue Box 264t
    - E-Waste (WEEE) 24t
    - C&D 340t
    - Scrap Metal 155t
    - Rubber Tires 20t
    - Batteries 1t
    - Reuse 20t



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Operational Review - Continued

- Remaining Landfill Capacity
  - Glen Tay 177,000 m^3 (Phase 1 only)
  - Stanleyville 154,000 m^3
  - Maberly 5,900 m^3
  - The total 336,900 m^3 equates to over 45 years of remaining capacity!
    - Each year with cover is ~ 7000 m^3

Questions?

Tay Valley Township

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Strategic Plan

- 3.1 Initiative - Identify Remaining Useful Life at the Landfill Sites
  - Retain engineering consultant to profile life cycle of each landfill with remaining capacity
  - Remaining capacity is part of the yearly reports to the Ministry of Environment (MOE) ~ 330,000 m^3 35 to 45 years.
  - Identify options to optimize landfill life cycle and identify extension triggers
  - Reuse Centre - Efficient use and reuse of cover material - Diversion both Blue Box and Non Blue Box
  - Develop a financial plan to support the ongoing operations including post closure
  - Yearly contribution of $25,000 could be reduced

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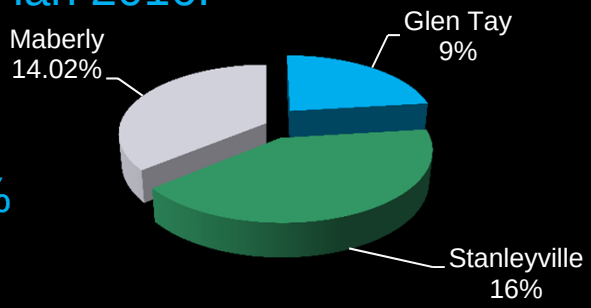
Strategic Plan - Continued

- 3.2 Initiative - Develop a Waste Diversion Strategy to Maximize Remaining Landfill Capacity
  - Develop and implement a Reuse Centre
  - Operational since 2014 - measured diversion of 20+ tonnes in 2015.
  - Conduct a cost benefit analysis of implementing weigh scale
  - Considered in 2014 reconsidered in Master Plan 2016.
  - Conduct a waste audit
  - Completed in 2010 – Organics:
    - Glen Tay 9%, Stanleyville 16%, Maberly 14%
  - Examine options to divert organics
  - To be reconsidered in 2016 Plan e.g. composter $40
  - Explore markets for additional recyclables
  - Bale & boat wrap limited success -bales landfilled



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Strategic Plan - Continued

- 3.2 Initiative - Develop a Waste Diversion Strategy to Maximize Remaining Landfill Capacity
  - Enhance public education efforts to encourage positive behavior
  - Ongoing – Tires, E-Waste, Batteries – Tax Bills & Shared Lineage… Plastic?
  - Balance the needs of good environmental stewardship, long term sustainability
  - Balance? - Reports to the MOE each year
  - Review user fees to ensure revenues cover costs of waste streams
  - Large portion of this plan in the landfill model section
  - Reduce the number of bag tags issued per HH by 2015
  - Clear bags Introduced in 2016 and number of free bag tags reduced

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Regulator Framework & Bill 151

- Environmental Protection Act (EPA)
  - Legislative framework for the establishment of waste management facilities
  - For a substantive change the Ministry requires an application for a Environmental Compliance Approval (ECA) under Part 5 Section 27 requiring:
    - Operational and Development Plan (OD)
      - Legal Survey
      - Operational Plan

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Regulator Framework & Bill 151 - Continued

- Operational and Development Plan
  - Phase 1 working closely with MOE to utilize site space.

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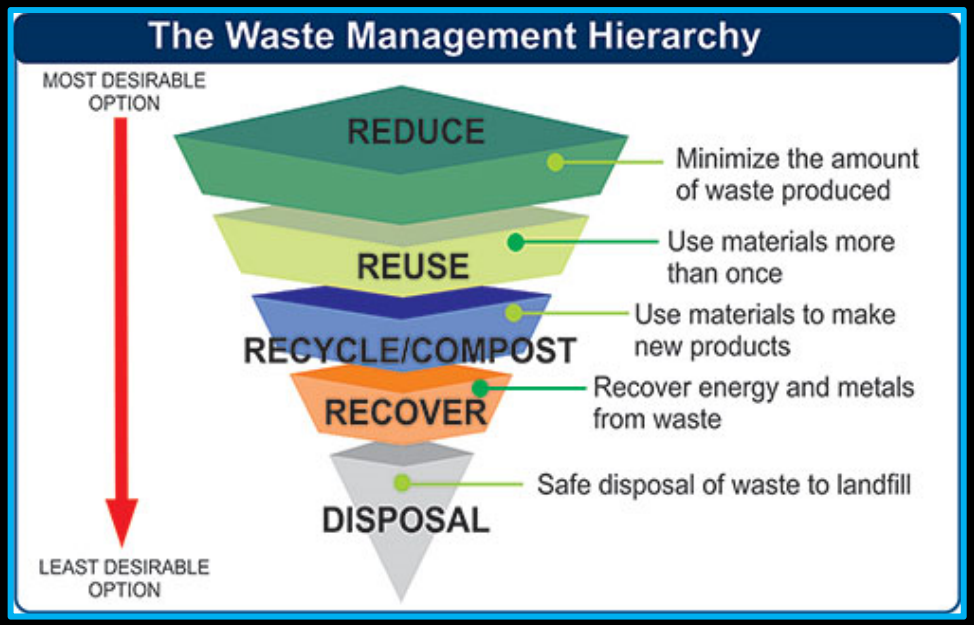
Regulator Framework & Bill 151 - Continued

- Recycling and Composting of Municipal Waste
  - OR 101/94 target of 50% reduction 1987 to 2000
    - High expectations for a cultural change in waste



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Regulator Framework & Bill 151 - Continued

- Landfill Sites under the EPA - OR 232/98
  - Landfill Operation & Design, Monitoring & Closure
- Bill 90 Waste Diversion
  - Promote 3 R's given Royal Assent 2002 - Created WDO
- MOE Guidelines B-7 and B-9
  - Provincial water quality objectives

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Regulator Framework & Bill 151 - Continued

- Bill 151
  - The evolving tonne:
    - Newsprint once 80% of tonnage now less than 25%
    - New Package Formats – light weighting – lifestyle
    - Fiber Evolution – home shopping → internet deliveries in Old Corrugated Cardboard (OCC)

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Regulator Framework & Bill 151 - Continued

- Bill 151 - Waste Free Ontario Act (WFO)
  - Bill 91 was designed to replace Bill 90 but died in the legislature during the 2014 election
  - Bill 151 primary responsibility is to transition Blue Box, Tires and Electronics to producer responsibility under the Resource Recovery and Circular Economies Act
  - Replaces WDO with the “Authority” -- 3 years

Continuous Improvement Fund and AMO say
“Know your Costs!”

Questions?

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Landfill Model
Base Case

- Why model? – To combine operational and financial data into a decision making tool.
- Model is divided in to 3 segments
  - Landfill
    - 1. Waste that goes to all sites but ends up at the face of the Glen Tay Site
  - Diversion
    - 2. Blue Box (BB)
    - 3. Other Diversion – Non Blue Box

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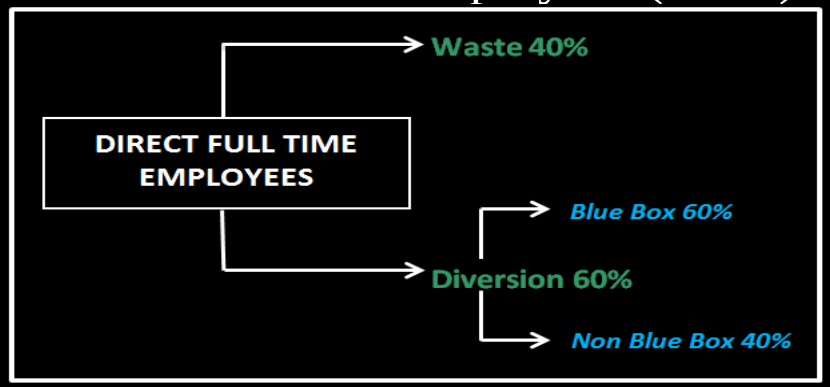
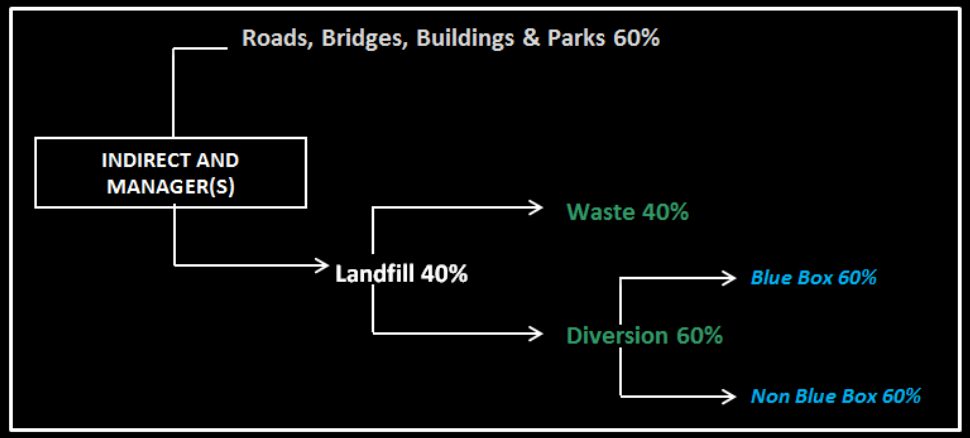
Landfill Model
Base Case - Labour

- Direct Full Time Employees (FTEs)



- Indirect and Manager(s) 2 FTEs 40% to landfills



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Landfill Model
Base Case – General and Blue Box

- All 3 Sections of the Model have:
  - Transportation costs
  - Revenue specific to the section
- The Blue Box Section has:
  - WDO Model for the funding from the Stewards
- Capital Purchases are:
  - Reflected in each sections – Site Cost's Depreciation Line

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Landfill Model
Blue Box Transportation Costs and Material Revenue - 2015

BB Transportation Cost	tonnes	lifts	$/lift	bin rental	t/lift	Cost	$101,284
Cans	25	175	$38.43	0	0.14	$6,725	
OCC	**81.09**	**1225**	**$38.43**	**6900**	**0.07**	**$53,977**	
Paper	104	334	$38.43	0	0.31	$12,836	
Plastics	54	722	$38.43	0	0.07	$27,746	
BB Material Revenue	tonnes	lifts	unit price ave			Revenue	-$78,137
Cans	25	175	$63.67			$1,591.75	
OCC	**81.09**	**1225**	**$44.73**			**$3,627.16**	
Paper	104	334	$13.92			$1,447.68	
Plastics	54	722	-$86.00			-$4,644.00	
	264.09	tonnes			$2,022.59		
Blue Box Sales	20		$10.00			$200	
WDO Contribution estimate						$75,915	

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Landfill Model
Base Case – Waste Costs

- Waste Net Cost - $322k/y for all sites
  - Labour $111k
  - Site Cost $ 42k
  - Compaction Cover $ 76k
  - Engineering and Monitoring $ 75k
  - Transportation $ 50k
  - Waste Revenue $ -32k
  - $/t waste -- $395/t

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Base Case – Waste Costs Points of Interest

- Waste Net Cost - $322k/y for all sites
  - Compaction Cover-was $45k/y needs to be higher ~ $75k/y
  - Engineering and Monitoring-was $149k/y now at $75k/y
  - Transportation $50k
  - Waste Revenue $32k – predominantly shingles & multi user fees - only $350 from bag tags
  - $/t waste -- $395/t

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Landfill Model
Base Case – Blue Box Costs

- Blue Box Net Cost - $139k/y
  - Labour $100k
  - Site Cost $ 13k
  - Advertising $ 3k
  - Transportation $101k
  - Blue Box Revenue $ -78k
  - $/t waste -- $525/t

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Base Case – Blue Box Costs Points of Interest

- Blue Box Net Cost - $139k/y
  - Labour $100k
  - Transportation Cost $101k
    - OCC = 1225 Lifts/Year = $ 54,000/y
    - Plastic = $28,000/y and increasing
  - Blue Box Revenue $ 78k
    - $ (76k) from WDO –data call
    - $ (2k) for material
  - $/t Blue Box -- $525/t

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Landfill Model
Base Case – Non BB Costs

- Non Blue Box Diversion (NBB) Net Cost - $116k/y
  - Labour $ 67k
  - Site Cost $ 8k
  - Transportation $ 92k
  - Non Blue Box Revenue $-52k
  - $/t NBBD -- $207/t

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Base Case – Non BB Costs Points of Interest

- Non Blue Box Diversion (NBBD) Net Cost - $116/y
  - Labour $ 67k
  - Transportation $ 92k
    - Metal, C&D, Brush, Freon Removal, Hazardous Home Waste
      - C&D = $71,000/y (transportation and tipping fees)
  - Non Blue Box Revenue $-52k
  - $/t Non Blue Box -- $207/t

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Landfill Model
Base Case – Segments

- Total Landfill Net Cost $577k/y
- Waste Net Cost $322k/y
  - Waste/tonne costs $395/t
- Blue Box Net Costs $139k/y
  - BB/tonne costs $595/t
- Non Blue Box Diversion Net $116k/y
  - NBB diversion/tonne costs $207/t

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Landfill Model
Waste, Blue Box & Non Blue Box
Net Costs -2015

Summary	Waste	BB	NBB	Total
Gross \costs				
Labour	$110,614	$99,933	$66,622	$277,169
Site Costs	$42,077	$12,579	$8,386	$63,043
Cover	$76,400			$76,400
MOE Reports	$74,600			$74,600
Advertizing		$3,018		$3,018
Transportation	$50,410	$101,284	$92,463	$244,157
Revenue	-$32,047	-$78,252	-$51,623	-$161,923
Total Net Costs	$322,053	$138,562	$115,848	$576,464

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Landfill Model 2016-2017 Savings

- C&D Revenue 25% increase **($ 7,900)**
  - Signs, Training
  - Need set fees/measurable amounts
  - Changes to the fees By-Law
- Fully Utilize Compactors **($ 8,800)**
  - Full by early Sunday in the Summer
- Only Thursday Waste Cover **($ 8,700)**
  - Contractor can better utilize his machinery

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Landfill Model 2016-2018 Capital Investment

- Two Compactors at Glen Tay **($ 11,000)**
  - OD & timeline to MOE, purchase cost
- Weigh Scale for C&D ($200/t)
  - OD, service/calibration, space & staging **($10,000)**
  - Tipping fees accurately determined by scale
  - Staffing Included - yearly cost increase **$36,000!**

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Landfill Financial Model
Other Considerations

- 10% Waste to Recycling **$ 14.4k**
  - Clear bags
  - More cost to divert to Blue Box
- Waste Net Neutral (WNN) **($ 322k)**
  - 3$ bag tag, no exchange program
  - Revenue generated

Note: this is not a savings to the taxpayer

- It is an exchange of payment methods or source of funds
- Volatile revenue source against fixed expenses

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Landfill Model
2016-2017 Roll Off

- Our Own Roll Off - Utilizing IBS of ELP trucks

- Re-purpose of Plow Truck **$12,600**
- Waste Transport Including Labour **($35,000)**
- C&D and Metal **($71,200)**
- Dedicated Roll Off **($52,900)**

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Landfill Model
Transfer BB to MRF

- A MRF is a Materials Recover Facility
  - Located locally in:

    Kingston, Ottawa, Brockville and Belleville

- There Would be no Savings to do this In-House
  - Would require a full time driver - 2 loads daily
  - Purchase of a dedicated roll off truck
  - Reduction in transportation costs is more than off-set by vehicle purchase and labour costs
  - Totalling $81,000

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Landfill Model Curbside

- Two Local Municipal Approaches
  - Drummond North Elmsley – Contractor Picks Up and Places Waste and Recycling at Municipal Site
    - Approximately a $600,000 plus in expenditure
      - $190/Household, shown on tax bills
      - Requires site to be maintained and to be open to public
  - Rideau Lakes – Municipal Personnel Pick up Waste and 2 Stream Recycling and Deliver to Municipal Site
    - Roll Off and adding enough bins to accommodate waste and recycling for a week
    - There are significant possibilities for TVT

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Landfill Model Scenarios – Curbside

- Curbside
  - Continuing with a roll off truck the starting place for savings is ($53,000). Debenture purchase of trucks and reallocation of personnel
    - $29,000
  - Debenture Payments & Depreciation
    - $66,000
  - Charging $1 per tag
    - ($40,000)

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Landfill Future Plan(s)

- Extension of Present BB and Transportation Contract
- Phase 1 and Compliance at Glen Tay
  - OD and ECA – Operational Improvements
- Acquisition of Roll Off Truck(s)
  - Waste Transportation
  - and Other Diversion Transport

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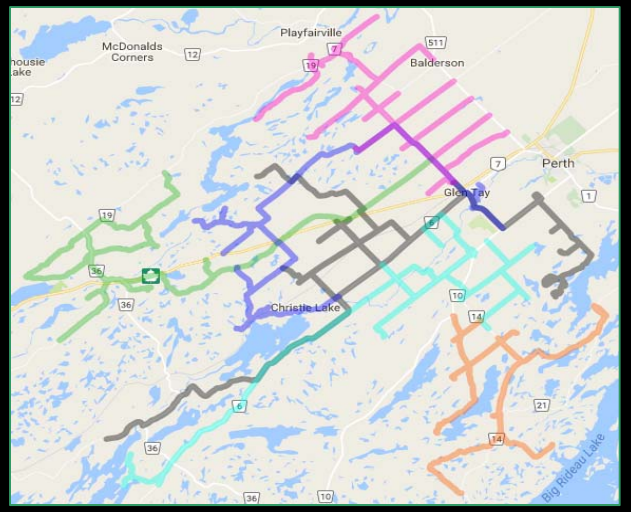
Landfill Future Plan(s)

- Curbside Collection
  - Acquisition of Collection & Compaction Truck(s)
  - Design of Routes
  - Communication to Residents
  - Re-design of Landfills



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Landfill Master Plan Summary

- Compliance Issues – Working With MOE, McIntosh Perry and Rock Lake to Rectify
- Operational Improvement Cost Savings
  - Full Compactors
  - One Day Waste Cover
  - Increased C&D
- Future Revenue Through Bill 151
- Capital Cost Reductions
  - Compactor, Roll Off

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Landfill Master Plan Summary

- Curbside Collection
  - Provides necessary service to the aging population and attractive service to busy families
    - Long term risk to not have curbside in place
  - Environmentally responsible
    - 2 trucks rather than 1000s of cars/wk
  - Major increased service delivery with little cost to the community as a whole.

THE END

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