The Corporation of the City of Kawartha Lakes

AGENDA

LINDSAY-OPS LANDFILL PUBLIC REVIEW COMMITTEE

2017-130
Wednesday, April 19, 2017
4:00 P.M.
Weldon Room
City Hall
26 Francis Street, Lindsay, Ontario K9V 5R8

MEMBERS:

Councillor Brian S. Junkin
Chris Appleton
Barry Hodgson
William McLaren
Lloyd Robertson
Larry Scrivens
Ken Trodd

Accessible formats and communication supports are available upon request.

The Corporation of the City of Kawartha Lakes

MINUTES

LINDSAY-OPS LANDFILL PUBLIC REVIEW COMMITTEE

2017-129
Wednesday, March 15, 2017
4:00 P.M.
Weldon Room
City Hall
26 Francis Street, Lindsay, Ontario K9V 5R8

MEMBERS:

Councillor Brian S. Junkin
Lloyd Robertson (Chair)
Chris Appleton (vice Chair)
Barry Hodgson
William McLaren (regrets)
Larry Scrivens
Ken Trodd

Accessible formats and communication supports are available upon request.

1. CALL TO ORDER

The Chair called the meeting to order at 4:00 p.m.

2. ADOPTION OF AGENDA

MOVED BY: Barry Hodgson

SECONDED BY: Councillor Brian Junkin

RESOLVED THAT the agenda be approved with the addition of item 8.3 Committee Budget/ Annual Reports.

CARRIED

3. DISCLOSURES OF PECUNIARY INTEREST

There were no declarations of pecuniary interest noted.

4. APPROVAL OF THE MINUTES OF THE PREVIOUS MEETING

MOVED BY: Councillor Brian Junkin

SECONDED BY: Chris Appleton

RESOLVED THAT the minutes from Wednesday February 15, 2017 be approved as circulated.

CARRIED

5. REPORTS

5.1 PRC Activity Summary Spreadsheet

See attached summary.

6. LANDFILL COMPLAINTS

Three complaints were received regarding off site litter on the adjacent property. Staff are scheduled for regular litter collection when required.

7. LEACHATE OUTBREAKS

No leachate outbreaks.

8. OTHER NEW BUSINESS

8.1 C&D Waste Diversion Study

Staff reviewed the scope of work listed in the project RFQ document with the committee. The finalized work plan with associate timelines will be circulated when available. A draft report and recommendations will be provided to the committee for comment when available.

8.2 Curbside Collection Study

Staff also reviewed the scope of work in the RFQ for this project with the committee. The finalized work plan with associate timelines will be circulated when available. The committee provided some input into the public survey including suggested background and types of questions to ask. A draft report and recommendations will be provided to the committee for comment when available.

8.3 Committee Budget/ Annual Reports

Staff confirmed with the committee that there is no 2017 operating budget for the Lindsay Ops Landfill Public Review Committee. This question was raised to confirm the committees approach to hardcopies of the Lindsay Ops Annual Status reports. The committee is in agreement to receiving CD's with the report and appendices each year. Also, one complete hard copy will be made available with a sign out sheet for committee members to share.

For any other requests, there is a complete hardcopy available in the Lindsay Library for review. If additional hardcopies are required, associated fees will apply as per the City Consolidated Fees By-Law.

9. PUBLIC COMMENT PERIOD

No comments.

10. NEXT MEETING

EFW Tour will take place on Wednesday April 5, carpooling from 12 Peel Street to meet at 12:15 p.m.

Regular meeting on Wednesday April 19, Weldon Room, City Hall, commencing at 4:00 p.m.

11. ADJOURNMENT

Lindsay Ops Landfill Public Review Commitee
Action List

Meeting Date of Activity	Action	Responsilibity	Action Item Date:	Status
15-May-13	PRC requested updates on use of Alternative Daily Cover (ADC) at the Lindsay Ops landfill.	CKL	Monthly	**March 15 Meeting**: Recent correspondence with MOECC and discussion on this amendment application. More details to follow at next meeting.
15-May-13	PRC requested updates on the Landfill Gas Electricity Generation Project.	CKL	Monthly	**March 15 Meeting**: Discussion why kwhr cost was used, concern with forcasted 3% increase each year, still internal questions re: budget allocation and committee requested to continue annual review of preforma.
20-Nov-13	Provide updates to the PRC on the movement of compost operations at the landfill site	CKL	As Available	**March 15 Meeting:** No further update.
15-Jan-14	That the PRC is copied on Staff Reports to Council regarding the Lindsay Ops Landfill	CKL	As Available	**March 15 Meeting:** No further reports to Council.
16-Jul-14	Provide updates to PRC on the progress of the clear bags program	CKL	Monthly	**March 15 Meeting**: Continue to see an increase in amount of recycling collected. Receiving phone calls from small businesses on ow to recycle at their locations.
21-Jan-15	Provide update on quarterly PCB testing (SW3/ SW13)	CKL	Quarterly	**March 15 Meeting:** PCB sampling to be included in Spring GW/ SW sampling.
17-Jun-15	MOECC Comments	CKL	As Available	**March 15 Meeting:** MOECC Inspections completed February 24 and are waiting for finalized inspection reports.
18-Nov-15	Fenelon Pollinator Project Updates	CKL	As Available	**March 15 Meeting:** No update.
20-Jan-16	Cell 4/5 Construction	CKL	As Available	**March 15 Meeting:** Cell construction is complete, final report has been submitted to MOECC. Filling can beginand a roadway is currently being constructed to access the area.
17-Feb-16	Public Open House	CKL	As Available	**March 15 Meeting:** To be hosted September 20, 2017.
15-Jun-16	Litter Fencing	CKL	As Available	**March 15 Meeting:** Has been working well in windy winter weather to catch any blowing litter.
23-Nov-16	Biomonitoring	CKL	As Available	**March 15 Meeting:** Cambium has intially reviewed data to confirm if any immediate issues need to be adressed (none reported). Cabium to complete data interpretation and provide a draft report in May. Will be circulated to committee at this time.
18-Jan-17	SW Results from the WPCP Outfall	CKL	As Available	**March 15 Meeting:** Scheduled for spring monitoring.

To All,

The following email request has been sent to MOECC for clarification with the attached draft internal standard operating procedure (SOP). We have not received any feedback to date but will be sure to add this to the April committee agenda for further discussion.

Angela Porteous, BESc.

Regulatory Compliance Officer

Waste Management Department

City of Kawartha Lakes

12 Peel Street, Lindsay, ON, K9V 5R8

Tel (705) 324-9411 ext. 2360

Fax (705) 328-3122

From: Angela Porteous
Sent: Wednesday, March 29, 2017 1:59 PM
To: 'Rutherford, Glenn (MOECC) (Glenn.Rutherford@ontario.ca)'
Subject: Reuse at the Lindsay Ops landfill
Importance: High

Glenn,

Just wondering if you have had the opportunity to look at my request below? We would like to start internal planning/ approval for this item in April but wanted to touch base with MOECC first.

Reuse at Lindsay Ops:

We have recently met with the local Habitat for Humanity Re:Store in Lindsay to discuss the opportunity of diverting items that are acceptable for reuse to a dedicated bin at the Lindsay Ops landfill.

We are proposing is a short term pilot project (approximately May 1 to September 30, 2017) to evaluate how the system will work for both us and habitat for humanity. Basically, we would have a bin set up at the landfill where attendants would assess loads and direct customers to place any reusable items in this bin. Habitat for Humanity can provide us with training on what can be accepted and would come to the site once or twice a week to look through the items, take what they can use and dispose of the other items in the appropriate disposal locations.

I did not notice anything in our approval #A321504 regarding options to reuse. I am hoping the MOECC is in agreement with running this pilot for the timeframe specified above. Also, if we were to implement this program for the long term would an amendment be required?

Thanks Glenn.

Angela Porteous, BESc.

Regulatory Compliance Officer

Waste Management Department

City of Kawartha Lakes

12 Peel Street, Lindsay, ON, K9V 5R8

Tel (705) 324-9411 ext. 2360

Fax (705) 328-3122

Lindsay Ops Reuse Item Drop Off – Pilot Project

PPE REQUIRED:	SAFETY VEST/CLOTHING	SAFETY BOOTS

PURPOSE: To outline the operation of the Pilot Reuse Partnership with Habitat for Humanity at the Lindsay Ops Landfill Site for May 1 to September 15, 2017.

TRAINING:

- Review of this SOP

ACTIONS	DETAILS
Acceptable Reuse Items	Bulky Items - Dressers, desks, chairs, cabinets, bed frames, mirrors, tables, outdoor furniture, etc. Houseware/Kitchenware - Plates, pots and pans, glasses, mugs, utensils, teapots, etc. (packed in boxes – no loose items) - Paintings, pictures, serving bowls, decorative accessories, small mirrors, etc. Construction/Demolition Materials - Doors, windows, used wood in good condition, sinks, vanities, tiles in good condition, etc. Outdoor equipment

	- Skiis, golf clubs, snowshoes, bicycles, rollerblades, ski/snowboard boots, shovels, seed spreaders, non-motorized grass mower, etc.
Unacceptable Reuse Items	Electronics Mattresses Power tools Clothing/Footwear
Site Layout	A 40 yard closed top roll off bin will be placed on the tarmac below the sawtooth area where the bins for boat and bale wrap are stored. Signs will be placed on the doors of the reuse bin do indicate that it is a drop off bin only. Items cannot be taken from the bin. Sign or indication of Habitat for humanities involvement and contact information can also be included.
CUSTOMER ARRIVES WITH MATERIAL FOR REUSE DROPOFF	• Customer to scale in at the scalehouse and receive weigh ticket. The standard tipping fee will be applied to the load. • If sawtooth landfill attendant identifies a reusable item in the load they can direct the customer to drop off material at reuse bin on their way to scale out of the site. • The customer will be asked to place the item in the bin as far back as possible so not to block space for future items to be put into the bin. • Customer to scale out - obtain final customer weight and charge standard waste tipping fee. • Transaction complete.
REUSE DROPOFF BIN IS FULL	• If the reuse drop off bin is full the attendant will contact waste admin assistant to coordinate pick up with habitat for humanity. • The door for the reuse bin will be closed by equipment operator when they have the opportunity and no other reuse items will be accepted until Habitat for humanity empties the bin.

HABITAT FOR HUMANITY CLEANS OUT BIN	• Habitat for humanity will arrive onsite to review contents of the bin on a regular basis tbd (weekly or twice weekly). • If the bin is full Habitat for humanity will be notified and may choose to come out more frequently. • Items that Habitat for humanity can reuse and take to their store will be loaded into their truck first. Items that they cannot reuse will be loaded into the back of the truck and taken to the sawtooth to be properly disposed in the waste or scrap metal bins. • The bin will be left empty by Habitat for humanity and the door left open to start receiving materials again.
MATERIAL TRACKING	• An inbound and outbound weight will be taken of the Habitat for humanity pick up and logged in transfer station. (Item to be added).
POST PILOT PROJECT	• At the conclusion of the pilot project on September 15, 2017 a review will be completed. • Attendants will stop directing customers to the reuse bin. Customers wishing to have items resused may be directed to the ReStore until approval for a permanent drop off program in Lindsay is recommended and approved. • The City will request input from Habitat for humanity throughout the project but the end of the project will be an opportunity to summarize any changes and options for program improvement from their end. • The City will review diversion quantities, impact on staff and any additional material requirements for continued operation of a reuse drop off program. • The City will make recommendations on continuation of the program to the Waste Strategy Task Force and Lindsay Ops PRC. • Depending on the outcome staff will also prepare a report to Council to endorse continuing the program with or without changes. Approval for long term operation from MOECC will be sought if agreed to by Council and required.

March 23, 2017 Project No. 1775960

Angela Porteous, BESc., Regulatory Compliance Officer
The Corporation of the City of Kawartha Lakes
12 Peel Street
Lindsay, Ontario
K9V 5R8

RESPONSE TO MOECC COMMENTS
APPLICATION FOR APPROVAL OF INDUSTRIAL SEWAGE WORKS
AMENDMENT OF ECA # 8668-92MTK7 FOR COMPOST PAD STORMWATER POND
RELOCATION OF EXISTING LEAF AND YARD WASTE COMPOSTING OPERATIONS
LINDSAY/OPS LANDFILL SITE
LINDSAY, ONTARIO [MOECC REFERENCE NO. 1402-A5AM7C]

Dear Angela,

As requested, this letter provides responses to review comments received from the Ministry of Environment and Climate Change (letter from Stefanos Habtom, Senior Wastewater Engineer, dated January 31, 2017) on the above-noted Industrial Sewage Works application and supporting documentation prepared by Stantec Consulting Limited. The application is for the stormwater management pond (SWMP) that will service the proposed Compost Facility at the north end of the Lindsay / Ops Landfill Site. The proposed Compost Facility and associated SWMP will replace the existing Compost Facility and SWMP located at the south end of the landfill expansion area. Approval for the proposed Compost Facility was granted as an Amendment to ECA No. A321504 (Notice 1) dated October 5, 2015.

Review Comment No. 1

I have reviewed the report titled "Supporting 1. Documentation for ECA Amendment (A3211504) - Relocation of Existing Leaf and Yard Waste Composting Operations -Lindsay-Ops Landfill Site" dated January 2015. Section 3.2 - Stormwater Management Design which provides ***only a general description*** *of the stormwater management pond design is not adequate to assess the proposed stormwater management pond design basis and design specifications. Section 3.2 indicates that the SWM facility will be a wetland-type facility and the submitted Drawing No. C-100 shows an extended detention pond with a forebay. Please submit a detailed stormwater management pond design based on the Ministry's "Stormwater Management Planning and Design Manual" March 2003 providing details regarding the type of the proposed SWM pond, sizing specifications and how it meets MOECC design requirements i.e. pond depth, length, permanent storage capacity, extended storage capacity, stage storage capacity for design storm events, attenuation of all storm events to pre-development levels, outlet control specifications, and all other pertinent design information.*

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Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

Response

Please refer to the Technical Memorandum in Attachment A of this letter for the requested design information and supporting calculations pertaining to the proposed SWMP.

Review

The proposal is for a leaf and yard waste composting facility operation. Please submit details about the composting operation including what parts of the composting operation are conducted in the open, the management of leachate generated from the compost pad operation, management of potentially contaminated stormwater runoff from the composting operation, and segregation of non-contact stormwater runoff from the site.

Response

The operating practices for the proposed new Compost Facility will be the same as those for the existing facility and will be in accordance with Regulation 101/94, Part V – Leaf and Yard Waste Composting Sites, Sections 31 to 33 and ECA No. A321504. Only Leaf and Yard waste will be received for composting. The material will be weighed at the on-site scale as received. The designated drop-off area on the Compost Pad will be inspected on a daily basis to identify any unacceptable materials such as plastic bags, construction debris etc. All of the composting operations will be conducted in the open. The maximum amount of Leaf and Yard waste at the new Compost Facility at any time in not to exceed 8000 tonnes. Further requirements on the operation of the new Compost Facility are given in Condition 6.2 of the October 5 ECA No. A321504 Amendment (Notice 1) for the Lindsay-Ops landfill Site. Additional requirements are given in the City's Safe Operating Procedure (SOP) applicable to all of their composting facilities. A copy of the City's SOP is provided as Attachment B of this letter.

All leachate from the Compost Pad area will discharge to a perimeter swale which in turn discharges to the proposed SWMP as shown on the Detailed Design Drawings. The SWMP has been designed as a wetland-type facility to provide water quantity and water quality control for stormwater runoff from the Compost Pad as well as the existing transfer area, HHW building and associated asphalt areas. All of the run-off from this capture area will be managed as "potentially contaminated run-off" (i.e., will not be segregated into contact and non-contact run-off). The SWMP accommodates the volume of a 25 year storm (2,230 m^3) in a pond sized to hold 4,000 m^3. There is no outlet from the pond except for an overflow spillway to the north ditch when the 4,000 m^3 storage capacity is exceeded. With evaporation, infiltration and water uptake by plant materials, the potential for overflow is small and would occur only under exceptional circumstances.

Review Comment No 3

The stomwater monitoring program included under Table C-3: Surface Water Sampling of the Waste ECA No. A321504 issued March 8, 2013 will be used as monitoring requirements in the amended sewage works ECA. To ensure that potentially leachate contaminated stormwater is not discharged from the proposed composting stromwater management pond to the Scugog River, please submit a list parameters of concern and associated trigger levels to be used for the operation of the SWM pond i.e to allow discharge of non-contaminated stormwater to Scugog River and dispose off-site potentially contaminated stormwater for proper treatment. These trigger parameters should be representative of the quality of leachate being generated from the composting operation and based on the Provincial Water Quality Objectives (PWQO).

Response

Monitoring Program

In accordance with the October 5, 2015 Amendment to ECA No. A321504 (Notice 1), the surface water monitoring program for the new Compost Pad Facility involves the following two new stations (refer to Figure 1 for locations):

CP#1 - main retention area of the SWMP, and

CP#2 - north drainage ditch immediately downstream of the SWMP outflow spillway.

The monitoring frequency for stations CP#1 and CP#2 is twice per year (spring and late summer/early fall).

The analytical parameters for stations CP#1 and CP#2 are the same as those for the existing Compost Pad surface water monitoring program as listed in Table C-4 (Schedule E) of the March 8, 2013 Amended ECA, with the addition of tannins and lignins as required by the October 5, 2015 ECA Amendment (Notice 1). The list of parameters is provided below.

General Chemistry

Conductivity (field and lab), pH (field and lab), alkalinity, hardness, COD, DOC, temperature (field), Total Dissolved Solids, Total Kjeldhl Nitrogen, ammonia-N, total phosphorus

Major Ions

Chloride, fluoride, nitrite, nitrate, sulphate, calcium, iron, magnesium, manganese, potassium, sodium

Trace Metals

Aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, molybdenum, mercury, nickel, selenium, silver, strontium, thallium, vanadium, zinc

Organics

Total Phenols, Tannins and Lignins, Total PCBs (spring and late summer/early fall every third year).

Although not part of the new Compost Pad surface water monitoring program, data from the existing monitoring stations SW4 and SW 14 located along the north drainage ditch upstream and downstream, respectively, of the Compost Pad will also be used to assess potential impacts associated with the Compost Facility operation. Figure 1 shows their location. As required by the October 5, 2015 ECA Amendment (Notice 1), these existing stations are monitored on a quarterly basis (winter, spring, summer and fall) for the same parameters noted above for the proposed CP#1 and CP#2 stations but with additional parameter groups such as volatile organic compounds that are appropriate for monitoring landfill impacts.

Trigger Parameters and Concentrations

The October 5, 2015 ECA amendment does not identify any trigger parameters / concentrations specific to the discharge from the proposed Compost Pad SWMP. Similarly, there are no trigger parameters / concentrations for surface water discharge from the existing Compost Pad SWMP. However, for the existing Compost Pad SWMP, the discharge is conveyed via ditches to the landfill SWMP west of the landfill expansion area which does have trigger parameters / concentrations for its inlet and outlet monitoring stations as specified in the March 8, 2013 ECA. For the inlet station SW15 (see Figure 1), additional sampling is required if the ammonia-N concentration exceeds 1.0 mg/L and/or if the pH falls outside the range of 6 to 8.5. For the outlet station SW18,

an ammonia-N concentration of 5 mg/L and/or a pH outside the range of 6.0 to 8.5 triggers closure of the outflow structure to prevent discharge to the north ditch. Of note though is that the selection of ammonia-N and pH as the trigger parameters for the landfill SWMP relates to their significance as key parameters in landfill leachate rather than in the Compost Pad drainage.

As an example of the expected "typical" water quality for the proposed Compost Pad SWMP, the attached Table 1 shows the 2015 water quality monitoring results for discharge from the existing Compost Pad SWMP. Also shown for comparison are the Provincial Water Quality Objectives (PWQO) and the water quality results obtained for the north ditch background station SW-4 on the same monitoring dates. Based on this information, the key parameters that are likely to be significantly elevated in the Compost Pad SWMP relative to PWQO and background surface water quality in the north ditch are phosphorus and iron. Both have concentrations between 10 and 100 times their respective PWQO values of 0.02 mg/L and 0.3 mg/L. However, both parameters are largely associated with particulate matter washed from the Compost Pad rather than being in a dissolved state. As such, their concentrations in the pond water column are expected to decrease as the suspended solids settle out. Other parameters that do not have a PWQO value but are at relatively high concentrations in the SWMP compared to concentrations at the background north ditch station SW-4 are Chemical Oxygen Demand, Dissolved Organic Carbon, potassium and Tanins and Lignins. They represent additional key indicator parameters for identifying potential impacts associated with discharge from the new Compost Facility.

For phosphorus, the concentrations in the Compost Pad SWMP shown in Table 1 are comparable to the maximum allowable monthly average concentration of 0.2 mg/L (i.e, 10 times PWQO) for the Lindsay-Ops Water Pollution Control Plant (WPCP) discharge. As a further comparison, the phosphorus loading from the proposed Compost Pad SWMP under the 25 year, 24 hour rainfall event assuming 0.6 mg/L phosphorus concentration is 2.4 kg/day which is less than the 4.3 kg/day monthly average loading allowed for the WPCP effluent discharge.

Considering the expected water quality for the proposed SWMP and that pond is designed as a wetland-type feature with limited potential for overflow, the application of trigger parameters / concentrations for the pond discharge is not warranted at this time. This approach is consistent with the March 8, 2013 ECA for the existing Compost Facility and the October 5, 2015 ECA amendment for the proposed Compost Facility which do not impose any trigger parameters/concentrations.

As surface water quality data becomes available from the semi-annual monitoring at the proposed Stations CP#1 and CP#2, the need for a trigger mechanism that would prohibit discharge to the north ditch and initiate pumping to the landfill SWMP for further treatment will be re-assessed taking into account any impacts at CP #2 and SW15 (i.e., the north ditch downstream stations) attributable to overflow from the SWMP. This re-assessment will be presented each year in the Annual Status Report for the Lindsay Ops Landfill which is submitted by April 30 as required by Condition 15.1 of the March 8, 2013 ECA.

We trust that the above responses adequately address the Ministry's review comments. Please contact us should you have any questions or require further clarification.

Yours truly,

GOLDER ASSOCIATES LTD.

Frank Barone, Ph.D., P.Eng.
Principal

FSB/sm/rb/jl

Table 1	Example Comparison of Existing Compost Pad SWMP Water Quality (2015) with PWQO and North Ditch Upstream Station SW4 Water Quality
Figure 1	Surface Water Monitoring Locations
Attachment A	Technical Memorandum – Stormwater Management Pond Design
Attachment B	City of Kawartha Lakes Safe Operating Procedure (SOP) for Composting Facilities

https://golderassociates.sharepoint.com/sites/11085g/shared documents/correspondence/letters/1775960 ltr 2017march23 response to moecc comments.docx

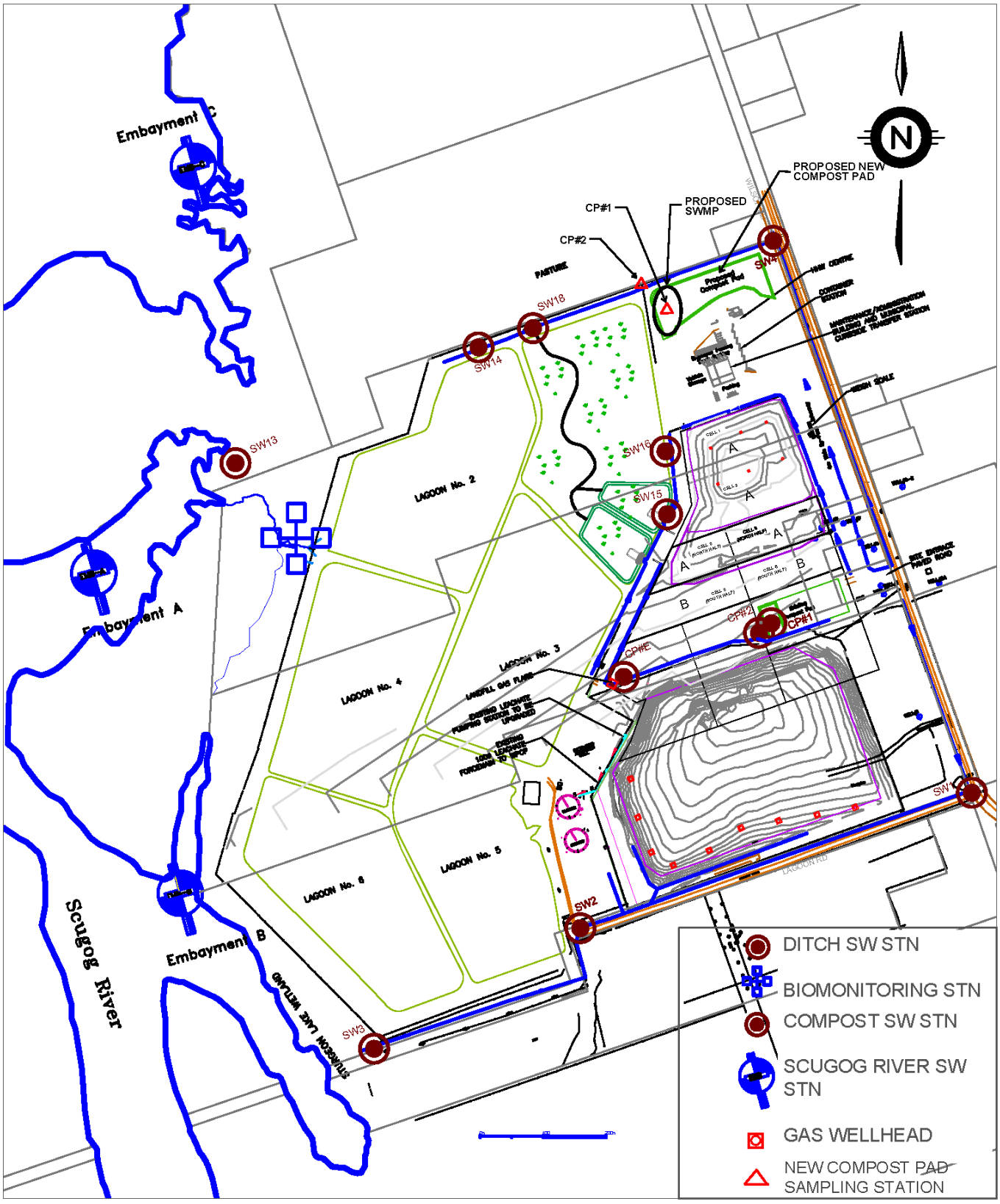
TABLES

Table 1: Example Comparison of Existing Compost Pad SWMP Water Quality (2015) with PWQO and North Ditch Upstream Station SW4 Water Quality

	PWQO (mg/L)	June / 2015 (mg/L)		November / 2015 (mg/L)	
		Existing Compost Pad CP#1	North Ditch Upstream SW4	Existing Compost Pad CP#1	North Ditch Upstream SW4
General Chemistry					
Conductivity (field)	-	599	756	843	800
pH (filed)	6.5 – 8.5	7.6	8.1	7.7	8.2
Alkalinity	-	215	312	287	256
Hardness	-	173	305	239	339
Chemical Oxygen Demand	-	97	13	180	<5
Dissolved Organic Carbon	-	18	8	53	4
Total Dissolved Solids	-	303	401	468	458
Total Suspended Solids	-	16	5	38	8
Total Kjeldhl Nitrogen	-	2	1	5	0.7
Ammonia – N	-	0.15	<0.01	0.06	0.01
Un-ionized Ammonia-N	0.02	<0.01	<0.01	<0.01	<0.01
Phosphorous	0.02	0.16	0.03	0.62	0.06
Major Irons					
Chloride	-	43	45	72	56
Fluoride		<0.1	0.1	0.1	0.1
Nitrite	-	<0.1	<0.1	<0.1	<0.1
Nitrate		<0.1	2	<0.1	7
Sulphate		2	13	4	49
Calcium		58	109	79	123
Iron	0.3	1.1	0.082	2.7	0.15
Magnesium		7	8	10	8
Manganese		0.51	0.037	0.46	0.048
Potassium		51	0.5	107	1.5
Sodium		13	29	20	37
Trace Metals					
Aluminum (filtered)	0.075	0.07	0.05	0.39	0.06
Antimony	0.02	<0.0001	0.0002	0.0003	0.0001
Arsenic	0.005	0.001	0.0003	0.0034	0.0002
Baruim	-	0.103	0.033	0.178	0.045
Beryllium	1.1	<0.002	<0.0002	<0.002	<0.0002
Boron	0.2	0.027	0.005	0.022	0.007
Cadmium	0.0005	<0.00002	0.00002	0.0001	<0.00002
Chromium	0.001	<0.0002	<0.0002	0.0007	0.0003
Cobolt	0.0009	<0.005	<0.005	<0.005	<0.005
Copper	0.005	<0.0001	0.0003	0.0056	0.0008
Lead	0.005	0.00006	<0.00002	0.0013	0.00011

	PWQO (mg/L)	June / 2015 (mg/L)		November / 2015 (mg/L)	
		Existing Compost Pad CP#1	North Ditch Upstream SW4	Existing Compost Pad CP#1	North Ditch Upstream SW4
Molybdenum	0.04	0.0001	0.0001	0.0005	0.0002
Mercury (filered)	0.0002	<0.00002	<0.00002	<0.00002	<0.00002
Nickel	0.025	<0.01	<0.01	<0.01	<0.01
Selenium	0.1	<0.001	<0.001	<0.001	<0.001
Silver	0.0001	<0.00002	<0.00002	0.00005	<0.00002
Strontium	-	0.22	0.31	0.30	0.33
Thallium	0.0003	<0.00005	<0.00005	<0.00005	<0.00005
Vanadium	0.007	0.0002	0.0004	0.0012	0.0003
Zinc	0.02	<0.005	<0.005	0.047	<0.005
Organics					
Total Phenols	0.001	<0.001	<0.001	<0.001	<0.001
Tanins and Lignins		3.9	-	1.3	0.1

FIGURES



CLIENT
CITY OF KAWARTHA LAKES

PROJECT
COMPOST PAD RELOCATION
LINDSAY/OPS LANDFILL, LINDSAY, ONTARIO

CONSULTANT
Golder Associates

YYYY-MM-DD	2017-03-21
PREPARED	RW
DESIGNED	-
REVIEWED	SR
APPROVED	FB

TITLE
SURFACE WATER MONITORING LOCATIONS

PROJECT NO.	CONTROL	REV.	FIGURE
1775960	0001	A	1

ATTACHMENT A

TECHNICAL MEMORANDUM

DATE March 24, 2017 **PROJECT No.** 1775960

TO Angela Porteous, BESc. Regulatory Compliance Officer
City of Kawartha Lakes

FROM Luis Vasquez and Frank Barone **EMAIL** Frank_Barone@golder.com

STORM WATER MANAGEMENT POND DESIGN SUMMARY
RELOCATION OF EXISTING LEAF AND YARD WASTE COMPOSTING OPERATIONS – LINDSAY – OPS LANDFILL SITE

1.0 INTRODUCTION

This technical memorandum provides supporting information for the storm water management design prepared by Stantec for the proposed relocation of the existing Leaf and Yard Waste Composting Operations at the Lindsay/Ops Landfill Site. A stamped detailed design drawing was provided by Stantec as part of the documentation for the October 5, 2015 ECA Amendment (A3211504) without an accompanying design report.

The Stantec detailed design and the supporting documentation provided in this technical memorandum are based on the Stormwater Management Planning and Design Manual (MOE, 2003). The Design Manual includes wetlands as one of the types of water management facilities that can be used for “end-of-pipe” control.

2.0 STORM WATER MANAGEMENT

The storm water management system is comprised of the following components:

- A storm water management pond to manage surface runoff from the Compost Pad as well as the existing transfer area, HHW building and associated asphalt areas; and
- A perimeter swale that collects surface runoff from the compost pad and conveys runoff to the storm water management pond.

The characteristics of the pond and the swale based on the Stantec design drawing are summarized in Table 1. The stage-storage capacity curve for the pond is tabulated in Table 2.

Table 1: Characteristics of the Storm Water Management System

Water Management Pond		Overflow Spillway and Collection Swale	
Pond total length	110 m	Overflow spillway section	Triangular
Pond bottom width	15 m	Overflow spillway depth	0.3 m
Pond side slopes	5H:1V	Overflow spillway total width	3.0 m
Pond bottom elevation (Forebay and Aftbay)	252.7 m	Overflow spillway side slopes	5H:1V
Pond top elevation	254.5 m	Overflow spillway lining	100 mm D_{50} riprap

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6925 Century Avenue, Suite #100, Mississauga, Ontario, Canada L5N 7K2
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Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

Water Management Pond		Overflow Spillway and Collection Swale	
Overflow spillway invert elevation	254.2 m	Collection swale section	Triangular
Pond maximum depth	1.5 m	Collection swale depth	0.6 m
Pond freeboard	0.3 m	Collection swale total width	6.0 m
Forebay length	58 m	Collection swale side slopes	5H:1V
Forebay bottom width	15 m	Collection swale lining	100 mm D_{50} riprap
Forebay berm height	0.3 m	Collection swale gradient	0.5%

Table 2: Storm Water Management Pond Stage-Storage Curve

Elevation (m)	Area (m^2)	Volume (m^3)
254.50[1]	4,140	3,532
254.25	3,306	3,161
254.20[2]	3,157	3,092
254.00	2,559	2,816
253.75	1,897	2,480
253.50	1,318	2,154
253.25	819	1,838
253.00	398	1,533
252.75	59	1,197

[1] Top of berm elevation

[2] Spillway invert

3.0 HYDROLOGY ANALYSIS

3.1 Storm Hyetographs

The closest meteorological stations to the site operated by Environment Canada are listed in Table 3.

Table 3: Environment Canada Meteorological Stations

Station Name	Station ID	Latitude/ Longitude	Altitude	Period of Record used to Derive IDF Data	Distance from Site
Lindsay Filtration Plant	6164432	44º 21' N 78º 44' W	251 m	1965 - 1989	5 km
Peterborough Airport	6166418	44º 14' N 78º 22' W	191 m	1971 - 2006	54 km
Orillia Brain	6115811	44º 36' N 79º 26' W	250 m	1965 - 2004	42 km

From the three stations shown in Table 3, the Lindsay Filtration Plant station is the closest to the site. The Peterborough Airport and Orillia Brain stations have more recent records. Upon comparison of Intensity-Duration-Frequency (IDF) data for the three stations, it was observed that rainfall values are higher at Lindsay Filtration Plant for short durations of less than 2 hours and return periods up to 25 years. The

Peterborough Airport IDF data presents higher rainfall values for durations higher than 2 hours and return periods higher than 25 years.

Considering that larger storms will maximize the required pond volume, the IDF data from the Peterborough Airport station was used to size the storm water management facilities (Table 4).

Table 4: Peterborough Airport (ID 6166418) Intensity-Duration-Frequency Data (1971-2006)

Duration (min)	Return Period (years)					
	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
	Rainfall Amount (mm)					
5	7.7	10.1	11.7	13.7	15.2	16.7
10	11.4	14.6	16.8	19.5	21.5	23.5
15	14.0	18.3	21.1	24.7	27.4	30.0
30	18.0	23.9	27.8	32.8	36.4	40.1
60	22.1	30.1	35.4	42.1	47.1	52.0
120	27.7	39.8	47.8	57.9	65.4	72.9
360	38.7	52.4	61.5	72.9	81.4	89.9
720	44.4	58.9	68.5	80.6	89.5	98.4
1440	49.0	65.0	75.6	88.9	98.9	108.7
	Rainfall Intensity (mm/hr)					
5	92.0	121.0	140.2	164.4	182.3	200.2
10	68.2	87.7	100.7	117.0	129.1	141.1
15	56.0	73.1	84.5	98.8	109.4	120.0
30	35.9	47.8	55.6	65.5	72.9	80.2
60	22.1	30.1	35.4	42.1	47.1	52.0
120	13.9	19.9	23.9	29.0	32.7	36.4
360	6.4	8.7	10.2	12.2	13.6	15.0
720	3.7	4.9	5.7	6.7	7.5	8.2
1440	2.0	2.7	3.1	3.7	4.1	4.5

3.2 Catchments

The Compost Pad has a total drainage area of 10,830 m^2 (1.08 ha) reporting to the on-site pond. Also reporting to the pond is the existing transfer area, HHW building and associated asphalt areas, which occupy approximately 18,253 m^2 (1.83 ha). The catchment area of the pond itself is 3,532 m^2 (0.35 ha). The swale total surface area is 2,595 m^2 (0.26 ha).

The time of concentration for the Compost Pad was calculated using the Bransby Williams Formula, which is recommended in MTO (1999) for surfaces with a runoff coefficient higher than 0.4. Based on the Compost Pad configuration, the longest path is approximately 75 m long with an average slope of 3.47%, resulting in a time of concentration of 5.5 minutes.

The same equation was used to calculate the time of concentration for the existing transfer area, HHW building and associated asphalt areas. Based on the longest path of approximately 140 m and an assumed average slope of 1%, the resulting time of concentration is 8.5 minutes.

The total time of concentration adding all the areas reporting to the collection swale is 14 minutes. For conservative purposes a time of concentration of 10 minutes was adopted.

A runoff coefficient of 0.80 was selected for the Compost Pad area, which corresponds to a compacted granular material (i.e., limestone screenings and Granular B) and slopes ranging from 5% to 10% (MTO 1999). A runoff coefficient of 1.0 was adopted (conservatively) for all other areas.

3.3 Peak Flows and Runoff Volumes

The Rational Method was used to calculate peak flows. It is the commonly used approach for peak flow estimation for small drainage areas and is based on runoff coefficients (Section 3.2) and rainfall intensity (Table 4). The calculations were carried out for return periods ranging from 2 to 100 years. The time of rain was matched to the time of concentration in order to select the event duration for calculation of peak flow rate, which is the underlying assumption with the Rational Method. The peak flows are presented in Table 5.

A similar approach was used to calculate runoff volumes considering the runoff coefficient and the rainfall amount for return periods ranging from 2 to 100 years. However, a duration of 24 hours was selected to calculate runoff volumes resulting from larger storm events to be managed in the storm water management pond. The runoff volumes are presented in Table 5.

Table 5: Estimated Peak Inflows and Runoff Volumes into the Storm Water Management Pond

Return Period (year)	Peak Inflow for 10-min Duration Events (m^3/s)	Total Volume for 24-hr Duration Events (m^3)
2	0.57	1,619
5	0.76	2,147
10	0.90	2,497
25	1.0	2,937
50	1.1	3,267
100	1.3	3,591

4.0 WATER MANAGEMENT FACILITIES DESIGN

4.1 Swale Design

The Manning's Formula was used to calculate the flow capacity of the swale that collects runoff from the Compost Pad and asphalt areas for conveyance to the storm water management pond. Considering that the swale will be lined with riprap for erosion protection, a roughness coefficient (Manning's n value) of 0.035 was selected to calculate the flow capacity.

The estimated water depth in the channel to convey a flow of 1.0 m^3/s (resulting from the 10-min, 25-year storm rainfall event) is 0.51 m. The associated peak flow velocity is 0.8 m/s. The flow capacity for the maximum water depth of 0.6 m (i.e., the total swale depth) is 1.6 m^3/s, with a corresponding flow velocity of 0.9 m/s. The flow capacity is greater than the peak flow for the 10-min, 100-year storm rainfall event (Table 5).

4.2 Pond Design

The proposed pond will act as a sedimentation/infiltration pond as the outlet invert is 1.5 m above the pond base. The forebay is shallow (0.3m deep) and will act as a sediment trap to reduce the amount of sediment reaching the main portion of the pond, thereby improving the long-term infiltration capacity of the pond base soils.

The storm water management pond was designed by Stantec to safely store 110% of the runoff volume resulting from the 24-hr, 25-year rainfall storm event (Stantec 2015). This event generates a total volume of 2,937 m^3 (Table 5) and results in a target volume of 3,230 m^3 when increased by 10%. The total pond storage capacity up to the invert of the overflow spillway is approximately 3,100 m^3 (Table 2), which is adequate to contain the total volume of the design storm and very close to the target volume (2% less than the target value).

It is worth noting that using IDF data from the Lindsay Filtration Plant station, the 24-hr, 25-year rainfall storm event generates 2,491 m^3 and results in a target volume of 2,740 m^3 when increased by 10%, with both values being within the total pond storage capacity.

The soils beneath the pond consist of sandy silt to silty sand with a hydraulic conductivity of $1x10^{-5}$ cm/s or higher. Typical percolation rates will range from 25 to 60 mm/hr although likely closer to the lower end of the range. The estimated daily percolation rates are presented in Table 6.

Table 6: Estimated Percolation Rates From the Storm Water Management Pond

Pond Base Area (m^2)	Percolation Rate[a] (mm/hr)	Percolation Rate (m^3/day)
1,197[b]	25	718
	60	1,724
2,158[c]	25	1,295
	60	3,108

[a] Source: MOE (2003)

[b] Pond bottom area

[c] Pond average area

When comparing the range of pond inflows up to the 25-year return event and the range of daily percolation rates, it can be inferred that the pond inflows will infiltrate within two to four days following the storm event. The storm water management pond is therefore large enough to store and infiltrate/evaporate the collected runoff for rainfall events ranging from 2 to 25-year return periods with minimal discharge through the overflow spillway. As a result, there is no permanent pool, only extended storage capacity that corresponds to approximately 3,100 m^3, which is the volume up to the overflow spillway.

An overflow spillway has been provided to attenuate flow rates and discharge the excess runoff resulting from storm events that exceed the maximum pond capacity. The active storage volume of the pond is approximately 3,530 m^3 (Table 2). Flood routing for rainfall storm events with 50-year and 100-year return period indicate that the pond can attenuate post-development flow rates below pre-development flow rates as shown in Table 7.

Table 7: Estimated Peak Discharge

Return Period (year)	Pre-development Peak Flow (m^3/s)	Post-development Peak Flow (Pond Discharge)[1] (m^3/s)
2	0.28	0
5	0.37	0
10	0.42	0
25	0.50	0
50	0.55	0.02
100	0.61	0.07

[1] Assuming the pond is empty at the beginning of the storm event

Although there is not expected to be a regular discharge to surface water from the pond, the water quality storage requirements based on receiving waters was calculated using Table 3.2 of MOE (2003). For an impervious level of 85% and a protection level to comply with 80% long-term suspended solids removal, the required storage volume is 116 m^3 for an infiltration pond considering the Compost Pad area plus adjacent asphalt areas (2.91 ha). The forebay section of the storm water management pond has a volume capacity of approximately 186 m^3, which exceeds the storage requirement for infiltration ponds.

To maintain efficient infiltration, it is recommended that the pond be inspected quarterly and cleared of loose sediment and debris as required.

5.0 CONCLUSIONS

The storm water management pond has adequate capacity to manage the runoff volumes resulting from storm events of 24-hour duration ranging from 2 to 25-year return period. Likewise, the collection swale has adequate capacity to convey the peak flow resulting from storm events of 10-min duration ranging from 2 to 25-year return period.

There is no permanent pool in the storm water management pond because the facility is large enough to store and infiltrate/evaporate the collected runoff for rainfall storm events up to the 24-hr, 25-yr return without discharge through an outlet pipe. The pond is equipped with an overflow spillway to discharge in a controlled manner the runoff resulting from storm events that exceed the maximum pond capacity. The overflow discharges into an existing ditch at the north end of the pond.

The runoff volume from rainfall storm events up to the design event (i.e., 24-hr, 25-year event) is fully contained by the pond without discharge given that there is no outlet pipe and the overflow spillway is not activated. If the design rainfall event is exceeded, the pond will attenuate post-development flow rates to existing or lower flow rates through storage and controlled discharge through the overflow spillway.

6.0 REFERENCES

MOE (Ministry of the Environment). 2003. *Stormwater Management Planning and Design Manual*, March 2003.

MTO (Ministry of Transportation of Ontario). 1999. *Drainage Management Manual*, 1997-1999.

Stantec. 2015. *Supporting Documentation for ECA Amendment (A321504) – Relocation of Existing Leaf and Yard Waste Composting Operations*. Report 165640083 prepared for the City of Kawartha Lakes dated January 2015.

Luis Vasquez, M.Sc., P.Eng.
Water Resources Engineer

Frank Barone, Ph.D., P.Eng.
Principal

LV/DVK/FSB/rb/jl

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ATTACHMENT B

Leaf and Yard Waste Handling

PPE REQUIRED:	PROTECTIVE CLOTHING	SAFETY BOOTS	EYE PROTECTION	SAFETY GLOVES
				

ACTIONS	DETAILS
Weigh Incoming Leaf and Yard Waste	• All loads of leaf and yard waste will be weighed on landfill scales by onsite Landfill Attendants • Landfill Attendants will notify the Operations Supervisor as soon as the daily volume of leaf and yard material accepted will exceed maximum daily quantity (including curbside material): ○ **Lindsay Ops**: 240 tonnes (2,242 yards) per day ○ **Fenelon**: 250 tonnes (2,335 yards) per day ○ **Eldon and Laxton:** 150 tonnes (1,400 yards) per day ○ **Somerville:** 150 tonnes (1,400 yards) per day
Segregate Materials	• Landfill Attendants will direct customers to correct locations and separate into fine and coarse • ***Fine Material*** is leaf and yard waste that is less than seven (7) centimetres in diameter • ***Coarse Material*** consists of tree stumps, limbs or other woody materials greater than seven (7) centimetres in diameter
Maintain Windrow Pile	• Fine material must be windrowed by Equipment Operators ○ **Lindsay Ops and Fenelon**: every 4 days ○ **Eldon, Somerville and Laxton**: every week • ***New Windrow Piles*** require ○ Weekly temperature readings will be taken until the pile reaches 55°C from one (1) metre within the pile. This will be measured and documented by Equipment Operators with thermometer stored in the equipment garage. ○ Piles that reach 55°C will be turned once per week

	(Wednesday's) for five (5) weeks by Equipment Operators ○ After the fifth week the temperature must reach 55°C to begin curing without new leaf and yard material added to the pile • ***Curing Windrow Piles*** require • Equipment Operators to turn curing piles at least once per month while curing (Wednesday) • Temperature of curing piles will be recorded weekly by Equipment Operators • Piles must cure for a minimum of six (6) months
Compost Log Sheet	**<u>Lindsay Ops and Fenelon</u>** • The ***Compost Log Sheet*** shall be completed once per week by Equipment Operator (Wednesday) • The Compost Log Sheets are stored in a binder, kept in the administration building for access by all staff
Operational Problems	• Any noted operational problems associated with windrow piles will be reported immediately to the Crew Leader or Operations Supervisor • ***Operational problems*** include odor, incorrect material sorting or waste deposited incorrectly • The Crew Leader or Operations Supervisor will provide direction to staff to remedy the operational problem • All operational problems and remedial action taken must be documented in the Compost Log Sheet
Grind Coarse Material	• Waste Technician will coordinate grinding of coarse material to produce wood chips: ○ **Fenelon**: biannually ○ **Lindsay Ops**: quarterly ○ **Eldon, Somerville and Laxton**: annually • Waste Technician will document date and quantity of ground material in the Compost Log Sheet and the master excel file
Distribution/Use of Wood Chips	• Crew Leader and Operations Supervisor will coordinate use and distribution of wood chips • Quantity and date of all wood chips leaving the stockpile must be recorded in the Compost Log Sheet

Distribution/Use of Compost	• Each windrow of compost must be sampled by the Waste Technician once curing is complete, prior to distribution • Quantities of compost removed from the compost pad for use as alternative daily cover must be recorded in the Compost Log Sheet • If compost meets chemical parameters it can be used onsite for alternative daily cover and interim cover at Lindsay Ops, Fenelon, Eldon and Laxton

Compile and Review Data	• Daily quantities will be recorded at the scale house and entered into master excel file by Regulatory Compliance Officer
	• On a monthly basis Regulatory Compliance Officer will review tonnes of material onsite (considering material that has been used or taken offsite) and summarize in the master excel file
	• Quantities of stockpiled course material cannot exceed:
	  ○ **Fenelon**: 1,500 tonnes (14,000 yards)
	  ○ **Lindsay Ops**: 750 tonnes (7,000 yards)
	  ○ **Eldon, Somerville and Laxton**: 500 tonnes (4,670 yards)
	• Daily wind speed, wind direction and air temperature will be measured at the Lindsay Ops weather station and data downloaded by the Waste Technician and entered into a master excel file by the Regulatory Compliance Officer

MOECC Reporting Requirements	• Annual reporting for each site will include a summary of
	  ○ Compost Daily Log Sheets
	  ○ Master Excel File data
	  ○ Scalehouse leaf and yard waste quantities
	  ○ Chipping and Grinding
	  ○ Chemical analysis completed for compost

Ontario

Ministry of the Environment and Climate Change
Ministère de l'Environnement et de l'Action en matière de changement climatique

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER A321504
Notice No. 3
Issue Date: March 27, 2017

The Corporation of the City of Kawartha Lakes
12 Peel St Lindsay
Kawartha Lakes, Ontario
K9V 3L8

Site Location: Lindsay-Ops Landfill Site
51 Wilson Road, Lot 25,26,27, Conc. 6, former Ops Township
Lot 25,26,27, Concession 6, Ops
Kawartha Lakes City,
K9V 4R3

You are hereby notified that I have amended Approval No. A321504 issued on March 8, 2013 and amended on October 2015 and May 26, 2016 for **the continued use and north expansion of the Lindsay-Ops Landfill Site**, consisting of a **21.2 hectare waste fill area** (existing fill area and north expansion fill area) within a total site area of **53.9 hectares** (36.9 hectares north of Lagoon Road right-of-way, 17 hectares south of Lagoon Road right-of-way), as shown on Map 1-2, Surrounding Land Use, and Map 2-1, Property Plan, Earth Tech Canada Inc., March 2001 (Item 35(m) in Schedule "A" attached to this *ECA*), and more particularly described in Item 35(c) and Item 22 in Schedule "A" attached to this *ECA ., as follows:*

Following definition is hereby added :

"Partially Composted Leaf and Yard Waste" is leaf and yard waste which has not been composted in strict accordance with Sections 31 to 33 of Regulation 101/94, Part V- Leaf and Yard Waste Composting Sites and can not be defined as Compost.

Condition 5.14 (2) is hereby revoked and replaced :

(2) The following materials are approved by the Director be used as Alternative Daily Cover. (The material thickness with the exception of Item (f) and (i) must be 150 mm in thickness):

a. Soil;
b. Foundry sand;
c. Wood chips;
d. Compost;

e. Shingles;
f. Flexible Membranes (tarps, Enviro Cover); and
g. Blasting mats.
h Partially Composted leaf and yard waste from onsite composting
i Steel plates

Condition 6.2 (3) (c), Condition 6.2 (3) (e), Condition 6.2(4) and Condition 6.4(c) is hereby revoked and replaced as follows :

6.2(3)(c) Leaf and Yard waste coarse material that is segregated for grinding shall be grinded quarterly (four times per year) at a minimum unless agreed to by the District Manager.

6.2(3)(e) On a trial basis, during three years, following the completion of the relocated leaf and yard composting facility construction, the temperature of each composting mass shall be measured and recorded weekly, at a minimum until the requirements in paragraphs 4 and 5 of Section 31 of Part V of the Regulation 101/94 have been satisfied. During the curing phase the temperature shall be measured and recorded weekly.

6.2(4) The *Owner* shall prepare and submit a Report to the *District Manager* within 3 years following the completion of the relocated leaf and yard composting facility construction , providing results of the monitoring of the relocated Leaf and Yard Composting Facility and compliance with Conditions 6.2(1), 6.2(2) and 6.2(3). The Report shall include at a minimum, the sampling analysis of the finished compost and document recommendations for continuation or amendment of Condition 6.2(3)(e).

6.4(c) The HHW Depot may receive HHW during the maximum operating hours of 7:00 am and 7:00 pm from Monday through Saturday.

The following Items are hereby added to Schedule "A" and form part of the Environmental Compliance Approval No. A321504;

93. Application for Amendment of the Provisional Environmental Compliance Approval for a Waste Disposal Site dated December 6 2016 and received on December 8,2016 and signed by Mr. David Kerr, Manager, Solid Waste Services including the City of Kawartha Lakes, regarding changes to the Cover Materials and Monitoring Requirements.

The reasons for this amendment to the Approval are as follows:

1. The reason for amending the condition 5,14(2) is to approve the additional material as an alteranative daily cover

2. The reason for amending condition 6.2(3)(e) and 6.2(4) is to allow the City to submit the requirement after the completion of the construction of the relocated leaf and yard composting facility.

This Notice shall constitute part of the approval issued under Approval No. A321504 dated March 8, 2013

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of Part II.1 of the Environmental Protection Act
Ministry of the Environment and Climate Change
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 27th day of March, 2017

Dale D. Gable

Dale Gable, P.Eng.
Director
appointed for the purposes of Part II.1 of the

HV/

c: District Manager, MOECC Peterborough
Angela Porteous, The Corporation of the City of Kawartha Lakes

TO: Angela Porteous, City of Kawartha Lakes
FROM: Dave Faris Yousif, Reclay StewardEdge
DATE: January 17, 2017
RE: Options for a Construction & Demolition Waste Recycling Program at the City of Kawartha Lakes: Consultation & Assessment Plan

1. Objective

The City of Kawartha Lakes (City) has selected Reclay StewardEdge Inc. (RSE) to investigate the feasibility of implementing a construction and demolition (C&D) waste landfill drop-off program and identify strategies for resource recovery of C&D materials.

2. Consultations

Consultations will be carried out with a minimum of ten Ontario municipalities and eight industries and non-municipal organizations.

Municipalities

Information collected from the municipal consultations will include the C&D material types and amounts that are accepted and collected, financial aspects of the municipal program (public cost, operating and capital cost, any positive returns), the amount of landfill space saved and impact to diversion rate, end markets and processors and municipal contact information, with notes.

The proposed list of municipalities to be consulted:

Municipality	Rationale
County of Simcoe	Existing C&D recycling program and in close proximity
City of Orillia	Existing C&D recycling program and in close proximity
County of Peterborough	Some diversion of C&D materials. Identified increased C&D diversion as a priority in master plan
City of Peterborough	High diversion rate municipality with existing C&D material diversion
Region of Durham	Existing C&D recycling program
Region of York	Existing C&D recycling program
City of Guelph	Existing C&D recycling program
Muskoka District	Some C&D recycling, seasonal municipality
County of Northumberland	High diversion rate municipality and in close proximity
City of Ottawa	Identified C&D recycling as a priority in master plan

Industry

The intent of consultations with industry will be to primarily identify the opportunities (outlets, markets) that exist for C&D recycling. We also hope to identify industries standards and specifications for receiving material (for example, are mixed loads acceptable or must C&D waste be sorted by material type). The consultations will also seek to identify the range of industry fees and costs associated with C&D recycling. Lastly, in our consultations we hope to identify reuse options. All contact information and notes from the consultations will be provided to the City.

The proposed list of industries and contacts to be consulted:

Rebecca Mustard[1], Manager of Economic Development	Kelly Maloney[1], Agricultural Development Officer
Index Environmental	M&M Disposal
New West Gypsum Recycling	Habitat for Humanity
Try Recycling	Countrywide Recycling
Ken Redmond	Cement manufacturers

3. Waste Assessment Methodology

The proposed waste assessment methodology:

- Combination of weight and visual audit of sample materials from all landfills
- When auditors not on-site, all C&D material loads during sample period need to be set aside as dedicated piles until auditors are able to assess the load
- Weight of each load will need to be tracked separately, and if possible, generator and vehicle type (input as a note on scale ticket). C&D loads from the general public should not be combined in one bin until auditors have had a chance to audit load
- A list of material categories (below) will be utilized to track composition
- When on-site, auditors will inspect each load. Photographs and a visual volumetric measurement will be taken. Auditors will also record the length, width, and height of each load to aid in an estimation of volume
- Recorded volumes will later be converted into weights based on standard material bulk density conversion factors, and the net weight of each individual truck load
- Weight of miscellaneous materials in homogenous loads will be captured

[1] As a first point of contact.

4. Material Assessment Categories

The material assessments will be based on the following audit categories:

Major Category	Sub Categories
Brick and Concrete	Cut offs, broken bricks, spilled concrete, cut or broken blocks, concrete with metal, asphalt
Cardboard	Boxes, sleeves on side of pallet loads
Carpet	Cuttings/remnants, underpadding
Drywall	Cutoffs, broken or damaged pieces, cut outs for windows/doors, compound, plaster
Fines	Fill, aggregate
Fixtures	Vanities, countertops, toilets, sinks
Insulation	Cuttings, damaged pieces, blown, blocks
Metal	Electrical, beams, light tracks, hangers, pipe, conduit
Plastic	Cuttings from plastic pipe, plastic film/wrap
Roofing Shingles	Cutoffs, damaged shingles, tar paper
Tile	Floor tiles, floor cutoffs, ceiling tiles, ceramics
Wood	Lumber cut-offs, damaged studs, skids, clean wood, particle board, wood flooring, treated vs. untreated wood
Other	Electrical wire, glass, construction paper
Non C&D Materials	Blue box recyclables, HHW, organics, general waste, furniture, bulky plastics

5. Waste Assessment Schedule

Based on a 10 to 11 day sample schedule, the waste assessment schedule is proposed below:

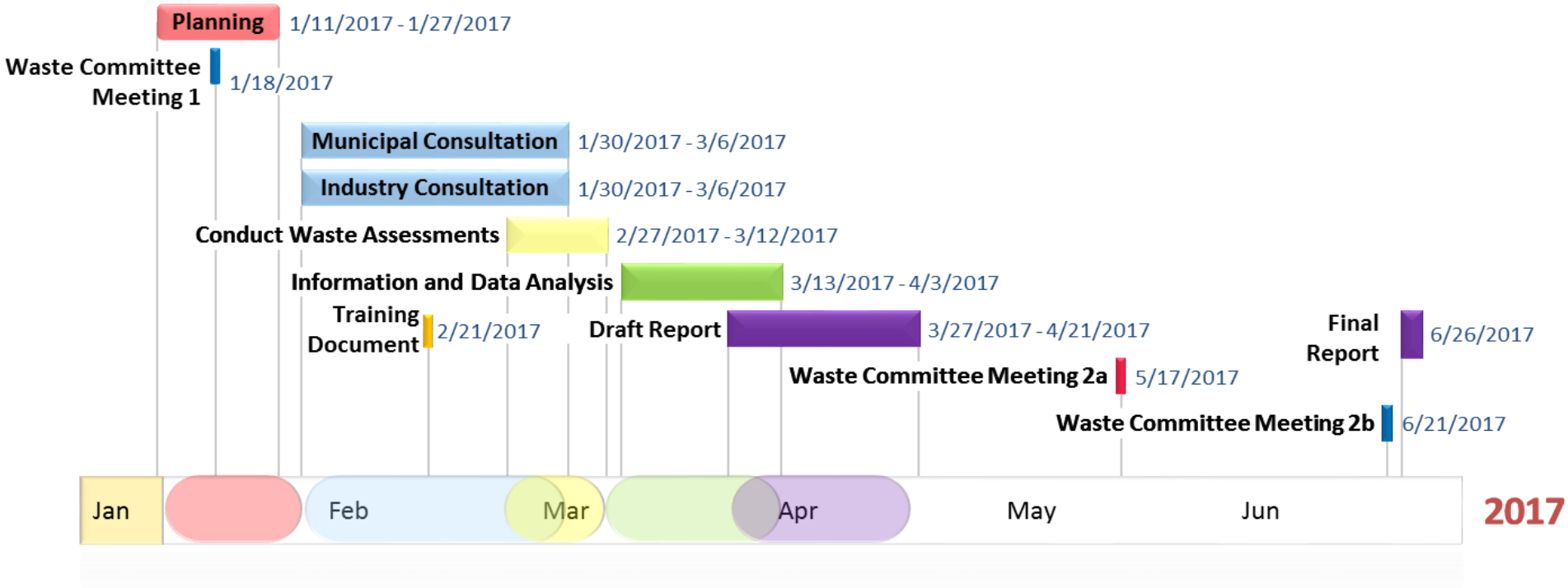
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Week 1	February 27 Fenelon Somerville	February 28 Lindsay	March 1 Fenelon Eldon	March 2 Lindsay Laxton	March 3 Lindsay Somerville	March 4 Fenelon Eldon	March 5
Week 2	March 6 Laxton Fenelon Somerville	March 7 Lindsay	March 8 Fenelon Eldon	March 9 Lindsay Laxton	Back-Up Dates – March 10-12		

6. Preliminary Notes of Consideration and Requests

The following is a list of notes of consideration and requests we would like to identify prior to carrying out the assessment and, eventually, analysis:

- Need to be able to ensure that C&D loads tipped not in the presence of auditors are not altered (e.g. scrap metal removed by landfill staff)
- Keys to rural landfill sites. Auditors may need to assess C&D loads after landfill closure. RSE will ensure keys are returned to the City
- Site plans of the five landfill sites and possible C&D program locations

7. Project Timeline



TO: Angela Porteous, City of Kawartha Lakes
FROM: Dave Faris Yousif, Reclay StewardEdge
DATE: March 23, 2017
RE: City of Kawartha Lakes Investigation of Options for Curbside Collection: Workplan

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1. Objective

The City of Kawartha Lakes (City) has selected Reclay StewardEdge Inc. (RSE) to investigate the most efficient approach to curbside collection. The investigation will be in alignment with the City curbside collection options identified in the waste management strategy and RFQ 2016-011.

2. Curbside Waste Audit

The following outlines the methodology for the curbside waste audit:

- Audit will be based on a one-week collection schedule (Monday to Thursday) during the containers blue box collection week.
- City staff will identify the audit locations, 20 sample points in the five designated areas (Lindsay, Fenelon Falls, Bobvaygeon, Bethany and Coboconk), spread out over 4 days. A total of 100 set out locations will be collected and sorted.
- The collection of material from set out on a street identified by the City be based on a randomized interval. For example, material will be collected from every third set out point.
- Consideration should be given by the City to identify contingency sample points in the event that materials are not available for pick-up from designated sample points.
- The City will coordinate with collection service provider Miller to delay pick-up to allow auditors collection of sample materials.
- Compositional audits to be performed at the City's Lindsay Ops landfill transfer station building utilizing similar methodology as used by Stewardship Ontario in their curbside audits.

In conjunction with this study's audit, RSE will utilize previous curbside audits to calculate up to date generation and capture rates.

Material Assessment Categories

The compositional audit will be based on the following audit categories:

Major Category	Sub Categories
Paper	Newspapers including Inserts and Flyers; Magazines, Catalogues, and Telephone Directories; Office Paper
Paper Packaging	Corrugated Cardboard & Kraft Paper; Boxboard & Molded

	Pulp; Gable top cartons; Aseptic cartons; Paper cups; Paper ice cream containers; Other laminated packaging; Composite cans
Plastics	Clear PET bottles, jugs and jars; PET thermoforms; Opaque PET; HDPE bottles, jugs and jars; PVC Containers; LDPE/HDPE Film; Plastic laminates; #4 LDPE – Rigid; #5 PP - bottles and jugs; #6 PS - Expanded polystyrene; #6 PS - Non-expanded; Single serve coffee pods (Keurig, Tassimo); Black Plastic; Other Rigid Plastic Packaging; Large HDPE & PP Pails & Lids; Other Plastics - non-packaging/durable
Metals	Aluminum food and beverage cans; Aluminum foil & Aerosols; Steel food and beverage cans; Steel aerosol containers; Other metal containers
Glass	Clear Glass food and beverage containers; Colored/Mixed Glass food and beverage containers; Non-recognizable glass
Organic Waste	Food or liquid waste (found within a container); Food or liquid waste (not within a container)
Electronics	All waste electronics
Household Waste	All household hazardous waste including propane tanks, needles, CFL bulbs, etc.
Other	Other Non Recyclables

Audit Timeline

The week of May 29 to June 1 has been identified as the week to carry out the one-week waste audit.

3. Consultations with Municipalities

Consultations will be carried out with a minimum of ten Ontario municipalities. Information generated from the municipal consultations will include a summary of the municipality's waste collection program (e.g. weekly vs. bi-weekly, one bag vs. multi-bag). The municipalities identified for the consultations do not include any municipalities with a collection program for source separated organics. These same municipalities currently encourage backyard composting initiatives, thus it will be important to understand the tools and measures provided that support backyard composting. RSE will also collect relevant examples of previously issued public tenders and RFP for curbside collection.

The proposed list of municipalities to be consulted are:

County of Northumberland	**Haldimand County**
City of Peterborough	**City of Owen Sound**

Dysart et al	**Municipality of West Grey**
City of Belleville	**City of Stratford**
City of Brockville	**City of Cornwall**

4. Consultations with the Public

RSE sees the public consultations as an avenue that allow the public to freely comment on the below identified curbside collection options and share their thoughts on program priorities. Ideally, RSE will work with City staff to implement the online and in-print surveys in order to gauge residential opinions on:

- The proposed curbside collection changes and potential participation;
- Support and buy in for proposed curbside collection changes; and
- Preferred curbside collection options.

The survey questions will most likely require the public to provide responses through ranking and multiple-choice, with only one or two opportunities to provide general feedback through open-ended questions. A survey consisting of primarily closed questions will produce standardized information, which will be easier to summarize and analyze.

The surveys will focus on the following curbside collection options:

- Curbside bag limit reduction
- Bi-weekly curbside waste collection
- Clear bag collection of waste[1]
- Weekly collection of recyclables maintaining two streams
- Weekly collection of recyclables using a single stream
- Increase curbside commercial recycling limits
- Consideration for an annual bag tag distribution program
- Seasonality frequency considerations

This also may be an opportunity to ask about construction and demolition (C&D) waste diversion. A positive response from the surveys would provide additional impetus for a C&D diversion program.

Survey format is as follows:

- Introduction (purpose of survey, completion details (e.g. 10 questions and 10 minutes to complete), submission details (e.g. drop off location, email, or online survey)

[1] Question here will gauge satisfaction levels for the clear bag change.

- About the person being surveyed (age, gender, part of the City they live in, type of dwelling, household size)
- Curbside collection options

Survey Timeline

A draft of the survey questions will be presented to the City for their review by April 10, 2017. The survey questions and content will also be discussed during the April 19, 2017 Task Force meeting. Consultation with the public will then be undertaken from April 24 to May 5, 2017. If public engagement is limited, the surveys response timeframe will be extended by one week. Analysis of survey responses will take place following the end of the response time frame.

Online Survey

The online survey questionnaire would be developed by RSE with the City's input. It is important that the question wording and placement are as close to identical to the in-print survey as possible so that results can be compared between the two surveys. It would include the same demographic questions, so that the results of the two surveys can be compared based on key demographic criteria such as age and household composition and size.

RSE would use the data from the surveys to generate a wide range of computer tables complete with detailed cross tabulations. This would include tables based on key demographic criteria, location (Lindsay, Fenelon Falls, etc.), rural or urban, seasonal or permanent, level of participation and support for curbside collection options, and preferred options.

The online survey will be valuable in providing input from segments of the population that are geared to social media and who possibly no longer have landlines. The success of the online survey in delivering a large number of completions is dependent on attracting a sizable sample. RSE will prepare the survey (format, questions, etc.) and ask that the City assist in disseminating the survey to the public. Here are some suggestions for the City to support and promote the online survey:

- Insert a prominent survey link on the City's home webpage
- Support the survey with social media (Twitter and Facebook accounts)
- Publicize the survey in local newspapers and at other City events and public meetings
- My waste app
- Email to City staff
- Email to the cottage associations to reach seasonal residents

In-Person Survey

Utilizing a similar survey structure as the online survey, the in-print surveys provide a non-

electronic user the ability to complete the survey. Hard copies[2] of the surveys will be made available for completion at local community locations such as libraries and recreational centres. Surveys could also be provided at public waste drop off locations. Completed surveys would be returned to designated locations for collection. The data from the hard copy surveys will be incorporated with data from the online surveys.

[2] Link to the online survey will be included on the hard copy version of the survey.

5. Project Timeline

Feb

- February 28, 2017 - Review of Background Information

March

- March 7, 2017 - Draft Workplan
- March 23, 2017 - Final Workplan
- March 27-April 7, 2017 - Consult with Municipalities

April

- April 10, 2017 - Draft Survey Questions
- April 19, 2017 - Task Force In-Person Meeting: Intro Meeting
- April 24-May 5, 2017 - Consult with the Public

May

- May 8-12, 2017 - Survey Data Analysis
- May 15, 2017 - Report Outline
- May 29-June 1, 2017 - Curbside Waste Audits

June

- June 5-9, 2017 - Curbside Data Analysis
- June 15, 2017 - Draft Report
- June 21, 2017 - Task Force In-Person Meeting: Review of Findings
- June 30, 2017 - Final Report with Recommendations