



Durham/York Residual Waste Study

Annex E-1:

Supporting Technical Document on System Mass Balances and Diversion Estimates

Report on Selection of Preferred Residuals Processing System

May 30, 2006





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Selection of Preferred
Residuals Processing System

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Appendix A

Annex E-1: Mass Balance and Diversion Estimates

This report provides the mass balance and diversion estimates associated with the four (4) Durham/York Residual Waste Study residuals processing systems. It also provides some information on the quantity of residuals requiring landfill disposal and the number of trucks required to haul this material. Portions of this report are based on information and methodologies developed by the Niagara-Hamilton WastePlan Study.

For the purpose of comparing and evaluating alternative waste residuals processing systems for the Durham/York Residual Waste Study, two assumptions were used for the annual capacity of these systems: a minimum system capacity estimate (250,000 tonnes) and a maximum system capacity estimate (400,000 tonnes). The details behind the rationale for these two assumptions are provided in Section 7 of the “*Additional At-Source Diversion and Residual Quantities to be Managed*” report.

The four (4) Durham/York Residual Waste Study System Alternatives are:

- 1 – Mechanical and Biological Treatment with Biogas Recovery
- 2a – Thermal Treatment of Mixed Waste with Recovery of Materials from the Ash/Char
- 2b – Thermal Treatment of Solid Recovered Fuel
- 2c – Thermal Treatment of Solid Recovered Fuel with Biogas Recovery

The minimum and maximum quantities associated with these alternatives are summarized in Table 1 and Table 2, respectively.

Table 1 Summary of Estimated Minimum Material Quantities (tonnes)

System Alternative	1	2a	2b	2c
Total Quantity Generated	637,200	637,200	637,200	637,200
At-Source Diversion	387,200	387,200	387,200	387,200
Quantity of Residual Waste	250,000	250,000	250,000	250,000
Additional Materials Recycled	10,800	7,800	13,200	13,200
Moisture & Mass Loss-Biological	46,900	0	31,800	46,900
Class “B” Compost Marketed	0	0	0	0
Quantity of Waste to Disposal*	192,400	242,200	205,000	190,000
Percent of Waste to Disposal	30%	38%	32%	30%
Moisture & Mass Loss-Thermal	0	186,100	125,700	78,400
Quantity Residue / Ash/Char Landfilled	192,400	56,100	79,300	111,500

System Alternative	1	2a	2b	2c
Percent of Waste to Landfill	30%	9%	12%	18%
Quantity Fly Ash Managed	0	9,700	5,300	3,500

* To be consistent with the acceptable definition of disposal, this includes both material sent for thermal treatment and that sent to landfill.

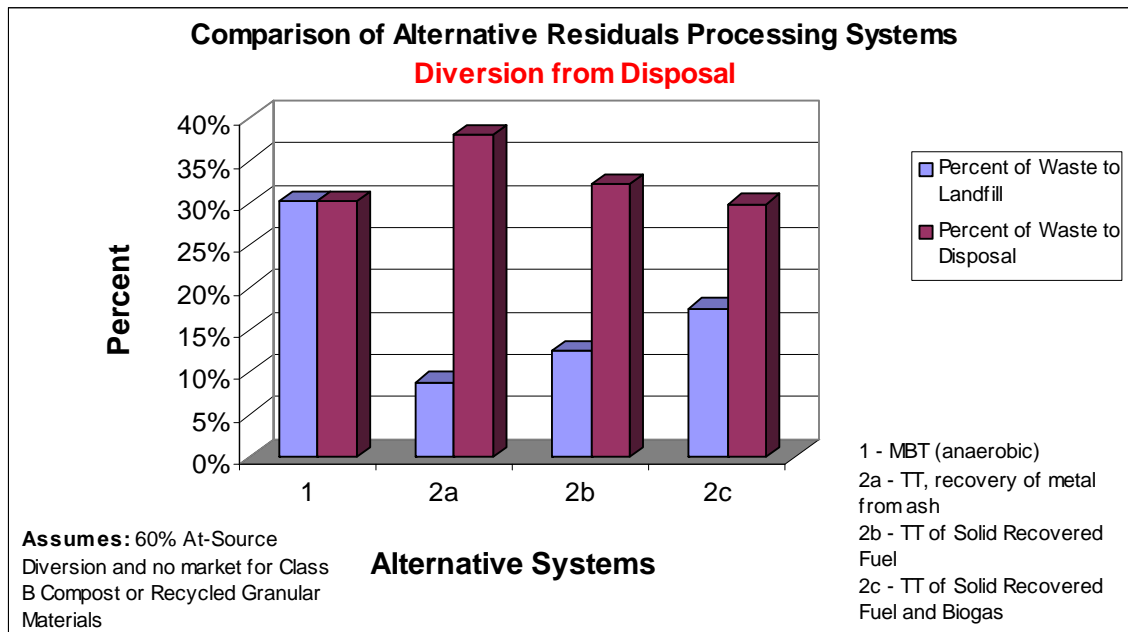
Table 2 Summary of Estimated Maximum Material Quantities (tonnes)

System Alternative	1	2a	2b	2c
Total Quantity Generated	1,000,000	1,000,000	1,000,000	1,000,000
At-Source Diversion	600,000	600,000	600,000	600,000
Quantity of Residual Waste	400,000	400,000	400,000	400,000
Additional Materials Recycled	17,200	12,400	21,100	21,100
Moisture & Mass Loss-Biological	75,000	0	50,900	75,000
Class "B" Compost Marketed	0	0	0	0
Quantity of Waste to Disposal*	307,800	387,600	328,000	303,900
Percent of Waste to Disposal	31%	39%	33%	30%
Moisture & Mass Loss-Thermal	0	291,700	201,100	125,500
Quantity Residue / Ash/Char Landfilled	307,800	89,800	126,900	178,400
Percent of Waste to Landfill	31%	9%	13%	18%
Quantity Fly Ash Managed	0	15,500	8,500	5,500

* To be consistent with the acceptable definition of disposal, this includes both material sent for thermal treatment and that sent to landfill.

Figure 1 illustrates both the percent of materials requiring disposal as well as materials to landfill for all systems.

Figure 1 Percent of Materials to Disposal and to Landfill for All Systems



The assumptions and quantity estimates associated with the four (4) system alternatives are detailed below.

1. Mechanical and Biological Treatment

1.1 System 1 Mechanical Biological Treatment (MBT) with Biogas Recovery

In this system, incoming post diversion waste is assumed to be received on a tipping floor and materials that are unacceptable for mechanical processing (e.g., mattresses) are removed. Some of these unacceptable materials such as large metal parts may be set aside for recycling, but most of the materials are assumed to be sent directly to landfill disposal.

The balance of the post diversion waste stream is assumed to be processed – mechanically treated - to remove recyclables, primarily metal and plastic containers. A relatively small quantity of these recyclable materials remain in the post diversion waste as the vast majority of these materials are assumed to be recovered through at-source diversion programs (e.g., blue box recycling). Mechanical treatment separates the waste stream into a number of fractions, from which some recyclables are removed. A large portion of the material is sent to landfill after removal of recyclables. A portion of the material is sent to biological treatment.

The portion of the remaining material stream that contains the highest percentage of organic materials (heavy, fines) is biologically treated via anaerobic digestion (AD) to breakdown organic materials. This process converts carbon-containing compounds to biogas (primarily methane and carbon dioxide), which in turn can be used to produce energy for in-plant consumption and sold to external users.

The residual materials, including stabilized organic material – digestate from the AD process – are assumed to be landfilled.

In the event Ontario Regulations were to change and the Marketing of “Restricted Use Class “B” Compost” were permitted, then a compost product could be produced from the digestate and marketed. In addition, if Ontario Regulations were to change to permit the marketing of a residue (e.g., grit, broken glass, etc.) amended Granular “B” construction material, then diversion from landfill could be further increased. In summary if these regulatory changes were to occur and if markets could be found for the digestate/compost and residue amended construction aggregate then the diversion achieved under this alternative would increase significantly.

The estimated minimum and maximum tonnage quantities associated with this alternative are summarized in Tables 3 and 4.

Table 3 Summary of Minimum Quantities for System 1

	Base Case (tonnes)	Base Case (% of total generated)	Class “B” Compost & Construction Aggregate Marketed (tonnes)	Class “B” Compost & Construction Aggregate Marketed (% of total generated)
Total Quantity Generated	637,200	100	637,200	100
At-Source Diversion	387,200	60	387,200	60
Quantity of Residual Waste	250,000	40	250,000	40
Additional Materials Recycled	10,800	1.7	22,200	3.5
Moisture & Mass Loss-Biological	46,900	7.4	46,900	7.4
Class “B” Compost Marketed	0	0	23,400	3.7
Quantity Landfilled	192,400	30	157,500	25

Note: Numbers may not add due to rounding.

Table 4 Summary of Maximum Quantities for System 1

	Base Case (tonnes)	Base Case (% of total generated)
Total Quantity Generated	1,000,000	100
At-Source Diversion	600,000	60
Quantity of Residual Waste	400,000	40
Additional Materials Recycled	17,200	1.7
Moisture & Mass Loss-Biological	75,000	7.5
Class “B” Compost Marketed	0	0
Quantity Landfilled	307,800	31

Note: Numbers may not add due to rounding.

Tables 1 – i, ii and iii of Appendix A provide the detailed assumptions and calculations behind these estimates.

The key underlying assumptions employed in the base case analysis are as follows:

- High proportion of “Other Materials” removed as unacceptable waste and sent directly to landfill prior to MBT (e.g., bulky materials such as mattresses or furniture landfilled directly after receipt at depots).
- Indicated individual container materials recovered for recycling. Assumed capture rates slightly less than those claimed by equipment vendors.

- Some easily separated “Other Materials” assumed to be recovered for recycling (e.g., white goods) upon receipt at depot not at MBT facility.
- 10% of paper fibre, all organics, and some inert material (including glass) are sent to the anaerobic digester. A small proportion of the organic portion of the ‘other’ material stream is shredded and sent for digestion.
- Anaerobic digestion assumed to reduce the mass of fibre and organics by 60%.
- Digestate dewatered and sent to landfill for disposal.
- Residues to landfill include:
 - Unacceptable material including bulky items directly landfilled or removed at front end.
 - Majority of paper fibre, plastics, and other materials from mechanical treatment.
 - Stabilized organic material (digestate)
 - Other non-organic residues (e.g., film plastics, grit, broken glass).

2. Thermal Treatment

2.1 System 2a) Thermal Treatment of Mixed Waste with Recovery of Materials from Ash/Char

There are two main types of commercially available thermal treatment technologies: combustion and gasification. Depending on the technology, incoming waste may be received on either a flat tipping floor or into a receiving pit. The waste is inspected and any unacceptable items are removed.

In combustion technologies, hydrocarbons in the waste stream are converted to thermal energy, carbon dioxide, and water. Ash is discharged from the bottom of the grate and is quenched. Exhaust gases from combustion are cleaned prior to being emitted to the atmosphere. The process is exothermic (i.e., requires little to no external energy once combustion has been initiated).

Gasification technologies involve the thermal breakdown of solid materials into a synthetic gas (syngas) and a solid char residue. The process is endothermic (i.e., requires external energy). The syngas (mainly comprised of hydrogen, carbon monoxide, carbon dioxide, and nitrogen) must undergo a cleaning process before it is utilized. After cleaning, the syngas may be used as fuel for reciprocating engines or gas turbines, or it can be combusted in a steam boiler to generate steam.

After thermal treatment, mechanical treatment is utilized to recover metals (primarily ferrous) from the ash or char.

The residual materials, including materials unacceptable for thermal processing and ash or char, are assumed to be landfilled. In addition, residue from the flue gas or syngas cleanup process also requires management.

In the event Ontario Regulations were to change and the marketing of ash amended Granular “B” construction material were permitted, then the diversion achieved under this alternative would increase.

The estimated minimum and maximum tonnage quantities associated with this alternative are summarized in Tables 5 and 6.

Table 5 Summary of Minimum Quantities for System 2a

	Base Case (tonnes)	Base Case (% of total generated)	Ash Amended Granular B (tonnes)	Ash Amended Granular B (% of total generated)
Total Quantity Generated	637,200	100	637,200	100
At-Source Diversion	387,200	60	387,200	60
Quantity of Residual Waste	250,000	40	250,000	40
Moisture & Mass Loss-Thermal	186,100	29	186,100	29
Quantity Material Recycled from Ash	7,800	1.1	43,800	6.9
Quantity Residue & Bottom Ash Landfilled	56,100	9.0	20,100	3.2
Quantity Fly Ash Managed	9,700	1.5	9,700	1.5

Note: Numbers may not add due to rounding.

Table 6 Summary of Maximum Quantities for System 2a

	Base Case (tonnes)	Base Case (% of total generated)
Total Quantity Generated	1,000,000	100
At-Source Diversion	600,000	60
Quantity of Residual Waste	400,000	40
Moisture & Mass Loss-Thermal	291,700	29
Quantity Material Recycled from Ash	12,400	1.2
Quantity Residue & Bottom Ash Landfilled	89,800	9.0
Quantity Fly Ash Managed	15,500	1.6

Note: Numbers may not add due to rounding.

Tables 2a – i, ii and iii of Appendix A provide the detailed assumptions and calculations behind these estimates.

The key underlying assumptions employed in the base case analysis are as follows:

- Some Other Materials (significantly less than under System 1) removed as unacceptable waste prior to incineration (e.g., most bulky waste, such as furniture assumed to be incinerated).
- Metals are recovered from the ash.
- Metal recovery rates set at values assumed to be reasonable based on performance at other thermal facilities.
- Bottom ash sent for landfill disposal.

- Bottom ash content per combustible material based on values provided in Tchobanoglous, et al, Integrated Solid Waste Management, Table 4-3 – Typical data on ultimate analysis of the combustible materials found in residential, commercial and industrial solid wastes.
- Air Pollution Control (APC) waste (Fly Ash), (primarily lime and carbon injected as part of the clean up process), to hazardous waste disposal facilities is equal to 4% of the gross input to the thermal component of the system
- Residues to landfill include:
 - Unacceptable material including bulky items sent directly to landfill or removed at front end
 - Ash/char from thermal processing

Note: Overall ash quantities in System 2a is consistent with vendor data provided to Niagara Region in their Long Term Waste Disposal Study REOI. Ash quantities are also consistent with the quantities from the Burnaby, B.C. energy-from-waste facility.

2.2 System 2b) Thermal Treatment of Solid Recovered Fuel

This system combines mechanical, biological (aerobic), and thermal treatment.

After removal of some unacceptable materials (similar to 2a) the incoming post diversion waste is processed and a portion of the material is separated into “large, dry, light” streams of plastic and paper materials. The other portion of the material includes more “small, wet, heavy” material including food waste residue, which is sent to biological treatment (aerobic composting) for bio-drying.

The waste is then processed mechanically to remove non-combustible materials and to recover some recyclable resources. A solid fuel is recovered and is fed into the thermal process to produce energy.

As mentioned under System 2a, the main thermal technologies are combustion or gasification. Combustion is an exothermic reaction in which hydrocarbons in the waste stream are converted to thermal energy, carbon dioxide, and water. The exhaust gases are cleaned prior to release into the atmosphere and the ash is discharged and quenched. Gasification is an endothermic reaction in which solid material is thermally broken down into syngas and a solid char residue. The syngas is cleaned before it is utilized for the generation of energy.

The materials requiring landfill disposal include the residuals from the recovery of solid fuel, the unacceptable waste and the ash/char from the thermal treatment. In addition, residue from the flue gas or syngas cleanup process also requires management.

In the event Ontario Regulations were to change and the marketing of a waste/ash amended Granular “B” construction material were permitted, then the diversion achieved under this alternative would increase.

York Region has conditionally accepted a proposal from Dongara Corporation to process approximately one-third of York’s post diversion residual waste and to produce a solid recovered fuel. In the event that Dongara is unable to find a suitable market for the fuel pellets, an additional 50,000 tonnes of pellets would enter this system and require thermal treatment.

The estimated minimum and maximum tonnage quantities associated with this alternative are summarized in Tables 7 and 8.

Table 7 Summary of Minimum Quantities for System 2b

	Base Case (tonnes)	Base Case (% of total generated)	Waste/Ash Amended Granular B (tonnes)	Waste/Ash Amended Granular B (% of total generated)
Total Quantity Generated	637,200	100	637,200	100
At-Source Diversion	387,200	60	387,200	60
Quantity of Residual Waste	250,000	40	250,000	40
Additional Materials Recycled	13,200	2.1	23,100	3.6
Moisture & Mass Loss-Biological	31,800	5.0	31,800	5.0
Moisture & Mass Loss-Thermal	125,700	20	124,100	19
Quantity Residue & Bottom Ash Landfilled	79,300	12	65,700	10
Quantity Fly Ash Managed	5,300	0.8	5,200	0.8

Note: Numbers may not add due to rounding.

Table 8 Summary of Maximum Quantities for System 2b

	Base Case (tonnes)	Base Case (% of total generated)
Total Quantity Generated	1,000,000	100
At-Source Diversion	600,000	60
Quantity of Residual Waste	400,000	40
Additional Materials Recycled	21,100	2.1
Moisture & Mass Loss-Biological	50,900	5.1
Moisture & Mass Loss-Thermal	201,100	20
Quantity Residue & Bottom Ash Landfilled	126,900	13
Quantity Fly Ash Managed	8,500	0.9

Note: Numbers may not add due to rounding.

Tables 2b – i, ii and iii of Appendix A provide the detailed assumptions and calculations behind these estimates.

The key underlying assumptions employed in the base case analysis are as follows:

- Obvious unacceptable materials removed (e.g., barbeque propane cylinder).
- Other materials with good fuel value (e.g., mattresses) assumed to be processed and fed back into system for metal and solid recovered fuel recovery.
- With processing of some “Other Materials” (e.g., mattresses) higher metal recycling rates (compared to System 1) are assumed for some “Other Materials”.
- Some recyclable materials recovered such as metals, polycoat and #1 & #2 plastic from mechanical treatment.

- Mechanical treatment separates the residual waste into fractions. The fraction(s) with most of the paper/plastic/other material after recovery of recyclables is sent to fuel preparation. The fraction with the majority of organics is sent for bio-drying.
- The mass loss from organics processing is moisture loss from bio-drying.
- The solid recovered fuel preparation step is via an air classifier where light fuel (e.g., fibre and plastics) separated from heavy residual materials (glass, grit).
- Dried organics (e.g., food waste) are part of the light fuel fraction and are thermally processed.
- Thermal treatment through gasification or combustion of solid recovered fuel. This could be undertaken off-site if regulations permitted (e.g., at a cement kiln).
- Ash assumptions for combustibles are the same as System 2a.
- Air Pollution Control (APC) waste (fly ash) to hazardous waste disposal facilities is equal to 4% of the gross input to the thermal component of the system
- Residues to landfill include:
 - Unacceptable material removed at front end
 - Heavy materials from solid recovered fuel preparation
 - Ash/char from thermal processing

2.3 System 2c) Thermal Treatment of Solid Recovered Fuel with Biogas Recovery

This system is a variation of System 2b that involves the separation of the organic material (e.g., food waste) from the rest of the post diversion waste and the subsequent anaerobic digestion of this organic fraction of the waste stream to produce biogas. Energy is thus produced from both the solid recovered fuel and the biogas.

The residuals from anaerobic digestion, ash/char from the thermal treatment process and the residues from the mechanical treatment process all require landfilling. A small amount of waste from the air pollution control/gas clean-up system also requires management.

In the event Ontario Regulations were to change and the Marketing of “Restricted Use Class “B” Compost” were permitted, then a compost product could be produced from the digestate and marketed. In addition, if Ontario Regulations were to change to permit the marketing of a residue (e.g., grit, broken glass, etc.) amended Granular “B” construction material, then diversion from landfill could be further increased. In summary if these regulatory changes were to occur and if markets could be found for the digestate/compost and residue amended construction aggregate then the diversion achieved under this alternative would increase significantly.

York Region has conditionally accepted a proposal from Dongara Corporation to process approximately one-third of York’s post diversion residual waste and to produce a solid recovered fuel. In the event that Dongara is unable to find a suitable market for the fuel pellets, an additional 50,000 tonnes of pellets would enter this system and require thermal treatment.

The estimated minimum and maximum tonnage quantities associated with this alternative are summarized in Tables 9 and 10.

Table 9 Summary of Minimum Quantities for System 2c

	Base Case (tonnes)	Base Case (% of total generated)	Class "B" Compost & Construction Aggregate Marketed (tonnes)	Class "B" Compost & Construction Aggregate Marketed (% of total generated)
Total Quantity Generated	637,200	100	637,200	100
At-Source Diversion	387,200	60	387,200	60
Quantity of Residual Waste	250,000	40	250,000	40
Additional Materials Recycled	13,200	2.1	24,600	3.9
Moisture & Mass Loss-Biological	46,900	7.4	46,900	7.4
Class "B" Compost Marketed	0	0	22,300	3.5
Moisture & Mass Loss-Thermal	78,400	12	77,000	12
Quantity Residue & Bottom Ash Landfilled	111,500	18	79,200	12
Quantity Fly Ash Managed	3,500	0.5	3,400	0.5

Note: Numbers may not add due to rounding.

Table 10 Summary of Maximum Quantities for System 2c

	Base Case (tonnes)	Base Case (% of total generated)
Total Quantity Generated	1,000,000	100
At-Source Diversion	600,000	60
Quantity of Residual Waste	400,000	40
Additional Materials Recycled	21,100	2.1
Moisture & Mass Loss-Biological	75,000	7.5
Class "B" Compost Marketed	0	0
Moisture & Mass Loss-Thermal	125,500	13
Quantity Residue & Bottom Ash Landfilled	178,400	18
Quantity Fly Ash Managed	5,500	0.6

Note: Numbers may not add due to rounding.

Tables 2c – i, ii and iii of Appendix A provide the detailed assumptions and calculations behind these estimates.

The key underlying assumptions employed in the base case analysis are as follows:

- Removal of unacceptable waste and recovery of recyclables same as System 2b.
- Solid recovered fuel recovered from lights, fibre, plastics and some other materials (selected Other Material recovery rates based on professional judgment).
- Organics separated out as heavy fine material and sent for anaerobic digestion.
- Solid recovered fuel thermally processed (gasification or combustion) on-site along with biogas from anaerobic digester.

- Air Pollution Control (APC) waste (fly ash) to Hazardous Waste Facilities is equal to 4% of the gross input to the EFW component of the system
- Residues to landfill include:
 - Unacceptable material recovered at front-end processing
 - Residue from solid recovered fuel preparation
 - Digestate from anaerobic digestion
 - Ash/char from thermal process

Note: Difference between Systems 2b and 2c – in System 2b organics are dried and thermally processed. In System 2c organics are separated out, anaerobically digested and the digestate is landfilled.

3. Daily Tonnes of Residue to Landfill

Each system generates residual waste that must be landfilled. The tables below summarize the minimum and maximum tonnes of residual waste requiring landfill disposal per day (based on 250 operating days per year). The tonnes per day of residual sent to landfill from each system component, as well as the total residual for each system are shown in Tables 11 and 12.

Table 11 Minimum Daily Tonnes of Residue to Landfill

System	Mechanical Treatment*	Biological Treatment	Thermal Treatment	Total Residual Sent to Landfill
1	585	185	n/a	770
2a	30	n/a	195	225
2b	289	0	28	317
2c	229	185	33	447

* Mechanical treatment includes unacceptable waste, residue from both mechanical treatment and solid recovered fuel preparation.

Table 12 Maximum Daily Tonnes of Residue to Landfill

System	Mechanical Treatment*	Biological Treatment	Thermal Treatment	Total Residual Sent to Landfill
1	935	295	n/a	1,230
2a	48	n/a	311	359
2b	462	0	45	507
2c	366	295	52	713

* Mechanical treatment includes the unacceptable waste, residue from both mechanical treatment and solid recovered fuel preparation.

4. Number of Trucks Required

Packer trucks are used to transport waste collected at the curbside to the facility and can typically hold 10 tonnes per load. It is assumed that all processing system components (mechanical, biological, and thermal) are located at a single site. Transfer trailer trucks are used to transport residue from the facility to the landfill for final disposal and can typically hold 30 tonnes per load. It is assumed that the landfill is not in proximity to the residuals processing facility(ies). Tables 13 and 14 below show the minimum and maximum number of trucks/loads required for

each system per day (assuming 250 operating days per year). The number represents truck traffic in both directions (one-way full truck and one-way empty truck).

Table 13 Minimum Number of Trucks/Loads Required Daily

System	Loads/ Packer Trucks In & Out	Loads/ Transfer Trailer Trucks In & Out
1	200	52
2a	200	16
2b	200	22
2c	200	30

Table 14 Maximum Number of Trucks/Loads Required Daily

System	Loads/ Packer Trucks In & Out	Loads/ Transfer Trailer Trucks In & Out
1	320	84
2a	320	24
2b	320	34
2c	320	48

Appendix A

Mass Balance and Diversion Estimates

Table 1 - i - Minimum System Quantity Assumptions - Durham and York (2011)
System 1: Mechanical and Biological Treatment with Biogas Recovery and Landfilling of Stabilized Residuals

Material Category	Post Diversion Waste	Unacceptable Waste			Mechanical Treatment (MT)					Biological Treatment (BT)				Solid Recovered Fuel Preparation (SRFP)			Thermal Treatment (TT)			Recyclable Recovery from Ash			Residue to Disposal		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
	(Tonnes)	% Residue	Residue to LF (Tonnes)	Input to MT (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Quantity Remaining (Tonnes)	Residue to LF (Tonnes)	% to AD	Input to AD (Tonnes)	% Reduced	Quantity Reduced (Tonnes)	Residue to LF (Tonnes)	% Residue	Residue to LF (Tonnes)	Input to TT (Tonnes)	% Mass Loss	Mass Loss (Tonnes)	Quantity Remaining (Ash) (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Residue to LF (Tonnes)	Quantity Diverted from LF (Tonnes)	Quantity to LF (Tonnes)	% Diverted from Landfill (LF) (Tonnes)
Calculation		C = A x B	D = A - C		F = D x E	G = D - F	H = G - J		J = G x I		L = J x K	M = J - L										W = F + L	X = C + H + M	Y = W / A	
Newspaper	10,701	0%	0	10,701	0%	0	10,701	9,631	10%	1,070	60%	642	428	0%	0	0	0%	0	0	0%	0	0	642	10,059	6%
Magazines/Paperbacks	4,294	0%	0	4,294	0%	0	4,294	3,865	10%	429	60%	258	172	0%	0	0	0%	0	0	0%	0	0	258	4,036	6%
Cardboard	4,427	0%	0	4,427	0%	0	4,427	3,984	10%	443	60%	266	177	0%	0	0	0%	0	0	0%	0	0	266	4,161	6%
Boxboard/Rolls	3,961	0%	0	3,961	0%	0	3,961	3,565	10%	396	60%	238	158	0%	0	0	0%	0	0	0%	0	0	238	3,723	6%
Mixed Household	9,755	0%	0	9,755	0%	0	9,755	8,779	10%	975	60%	585	390	0%	0	0	0%	0	0	0%	0	0	585	9,170	6%
Gable Top Cartons	980	0%	0	980	60%	588	392	353	10%	39	60%	24	16	0%	0	0	0%	0	0	0%	0	0	612	369	62%
Aseptic Containers	147	0%	0	147	60%	88	59	53	10%	6	60%	4	2	0%	0	0	0%	0	0	0%	0	0	92	55	62%
Other Fibre	3,186	0%	0	3,186	0%	0	3,186	2,868	10%	319	60%	191	127	0%	0	0	0%	0	0	0%	0	0	191	2,995	6%
Total Fibre	37,451	0%	0	37,451	2%	676	36,774	33,097	10%	3,677	60%	2,206	1,471	0%	0	0	0%	0	0	0%	0	0	2,883	34,568	8%
PETE	2,000	0%	0	2,000	75%	1,500	500	500	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	1,500	500	75%
HDPE	1,206	0%	0	1,206	75%	904	301	301	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	904	301	75%
PVC	98	0%	0	98	0%	0	98	98	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	98	0%
LDPE & PP	1,471	0%	0	1,471	0%	0	1,471	1,471	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	1,471	0%
Polystyrene	3,088	0%	0	3,088	0%	0	3,088	1,544	50%	1,544	0%	0	1,544	0%	0	0	0%	0	0	0%	0	0	0	3,088	0%
Film	6,176	0%	0	6,176	0%	0	6,176	6,176	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	6,176	0%
Other Plastic	17,059	0%	0	17,059	0%	0	17,059	15,353	10%	1,706	0%	0	1,706	0%	0	0	0%	0	0	0%	0	0	0	17,059	0%
Total Plastic	31,098	0%	0	31,098	8%	2,404	28,693	25,443	11%	3,250	0%	0	3,250	0%	0	0	0%	0	0	0%	0	0	2,404	28,693	8%
Aluminum Cans	735	0%	0	735	85%	625	110	110	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	625	110	85%
Aluminum Foil Trays	490	0%	0	490	30%	147	343	343	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	147	343	30%
Steel Cans	1,716	0%	0	1,716	85%	1,458	257	257	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	1,458	257	85%
Aerosol Cans	490	0%	0	490	85%	417	74	74	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	417	74	85%
Paint Cans	147	0%	0	147	85%	125	22	22	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	125	22	85%
Other Metal	2,279	0%	0	2,279	85%	1,937	342	342	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	1,937	342	85%
Total Metals	5,858	0%	0	5,858	80%	4,710	1,148	1,148	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	4,710	1,148	80%
Food & Beverage Containers	3,186	0%	0	3,186	0%	0	3,186	0	100%	3,186	0%	0	3,186	0%	0	0	0%	0	0	0%	0	0	0	3,186	0%
LCBO Glass	4,093	0%	0	4,093	0%	0	4,093	0	100%	4,093	0%	0	4,093	0%	0	0	0%	0	0	0%	0	0	0	4,093	0%
Other Glass	2,451	0%	0	2,451	0%	0	2,451	0	100%	2,451	0%	0	2,451	0%	0	0	0%	0	0	0%	0	0	0	2,451	0%
Total Glass	9,730	0%	0	9,730	0%	0	9,730	0	100%	9,730	0%	0	9,730	0%	0	0	0%	0	0	0%	0	0	0	9,730	0%
Food Waste	30,309	0%	0	30,309	0%	0	30,309	1,515	95%	28,793	60%	17,276	11,517	0%	0	0	0%	0	0	0%	0	0	17,276	13,033	57%
Leaf and Yard Waste	3,765	0%	0	3,765	0%	0	3,765	188	95%	3,576	60%	2,146	1,431	0%	0	0	0%	0	0	0%	0	0	2,146	1,619	57%
Animal Waste	14,902	0%	0	14,902	0%	0	14,902	745	95%	14,157	60%	8,494	5,663	0%	0	0	0%	0	0	0%	0	0	8,494	6,408	57%
Compostable Fibre	7,696	0%	0	7,696	0%	0	7,696	385	95%	7,311	60%	4,387	2,924	0%	0	0	0%	0	0	0%	0	0	4,387	3,309	57%
Sanitary Products	21,666	0%	0	21,666	0%	0	21,666	1,083	95%	20,583	60%	12,350	8,233	0%	0	0	0%	0	0	0%	0	0	12,350	9,317	57%
Organics	78,338	0%	0	78,338	0%	0	78,338	3,917	95%	74,421	60%	44,652	29,768	0%	0	0	0%	0	0	0%	0	0	44,652	33,685	57%
HHW	765	20%	153	612	0%	0	612	612	0%	0	0%	0	0	0%	0	0	0%	0	0%	0	0	0	0	765	0%
Wood	6,970	25%	1,743	5,228	25%	1,307	3,921	3,725	5%	196	0%	0	196	0%	0	0	0%	0	0	0%	0	0	1,307	5,663	19%
Textiles	6,039	0%	0	6,039	0%	0	6,039	5,737	5%	302	0%	0	302	0%	0	0	0%	0	0	0%	0	0	0	6,039	0%
Building Renovations	14,181	80%	11,345	2,836	0%	0	2,836	2,553	10%	284	0%	0	284	0%	0	0	0%	0	0	0%	0	0	0	14,181	0%
Electronics	382	0%	0	382	50%	191	191	191	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	191	191	50%
White Goods	191	0%	0	191	100%	191	0	0	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	191	0	100%
Other Material	15,530	60%	9,318	6,212	10%	621	5,591	5,032	10%	559	0%	0	559	0%	0	0	0%	0	0	0%	0	0	621	14,909	4%
Tires	0	0%	0	0	0%	0	0	0	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	0	0%
Bulky Goods	26,587	100%	26,587	0	0%	0	0	0	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	26,587	0%
Misc. Goods	16,881	60%	10,129	6,752	10%	675	6,077	5,469	10%	608	0%	0	608	0%	0	0	0%	0	0	0%	0	0	675	16,206	4%
Total Other Material	86,761	68%	59,121	27,641	11%	2,986	24,655	22,707	8%	1,948	0%	0	1,948	0%	0	0	0%	0	0%	0	0	0	2,986	83,776	3%
Total	250,000		59,274	190,726			10,776	179,950		93,027		46,859	46,168		0	0		0		0	0	0	57,635	192,365	
% Post Diversion Waste	100%		24%	76%			4%	35%		37%		19%	18%		0%	0%		0%		0%	0%	0%	23%	77%	23%

Table 1 - ii - Maximum System Quantity Assumptions - Durham and York (2011)
System 1: Mechanical and Biological Treatment with Biogas Recovery and Landfilling of Stabilized Residuals

Material Category	Post Diversion Waste	Unacceptable Waste			Mechanical Treatment (MT)					Biological Treatment (BT)				Solid Recovered Fuel Preparation (SRFP)			Thermal Treatment (TT)			Recyclable Recovery from Ash			Residue to Disposal		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
	(Tonnes)	% Residue	Residue to LF (Tonnes)	Input to MT (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Quantity Remaining (Tonnes)	Residue to LF (Tonnes)	% to AD	Input to AD (Tonnes)	% Reduced	Quantity Reduced (Tonnes)	Residue to LF (Tonnes)	% Residue	Residue to LF (Tonnes)	Input to TT (Tonnes)	% Mass Loss	Mass Loss (Tonnes)	Quantity Remaining (Ash) (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Residue to LF (Tonnes)	Quantity Diverted from LF (Tonnes)	Quantity to LF (Tonnes)	% Diverted from Landfill (LF) (Tonnes)
Calculation			C = A x B	D = A - C		F = D x E	G = D - F	H = G - J		J = G x I		L = J x K	M = J - L										W = F + L	X = C + H + M	Y = W / A
Newspaper	17,121	0%	0	17,121	0%	0	17,121	15,409	10%	1,712	60%	1,027	685	0%	0	0	0%	0	0	0%	0	0	1,027	16,094	6%
Magazines/Paperbacks	6,871	0%	0	6,871	0%	0	6,871	6,183	10%	687	60%	412	275	0%	0	0	0%	0	0	0%	0	0	412	6,458	6%
Cardboard	7,083	0%	0	7,083	0%	0	7,083	6,374	10%	708	60%	425	283	0%	0	0	0%	0	0	0%	0	0	425	6,658	6%
Boxboard/Rolls	6,337	0%	0	6,337	0%	0	6,337	5,703	10%	634	60%	380	253	0%	0	0	0%	0	0	0%	0	0	380	5,957	6%
Mixed Household	15,608	0%	0	15,608	0%	0	15,608	14,047	10%	1,561	60%	936	624	0%	0	0	0%	0	0	0%	0	0	936	14,671	6%
Gable Top Cartons	1,569	0%	0	1,569	60%	941	627	565	10%	63	60%	38	25	0%	0	0	0%	0	0	0%	0	0	979	590	62%
Aseptic Containers	235	0%	0	235	60%	141	94	85	10%	9	60%	6	4	0%	0	0	0%	0	0	0%	0	0	147	88	62%
Other Fibre	5,098	0%	0	5,098	0%	0	5,098	4,588	10%	510	60%	306	204	0%	0	0	0%	0	0	0%	0	0	306	4,792	6%
Total Fibre	59,921	0%	0	59,921	2%	1082	58,839	52,955	10%	5,884	60%	3,530	2,354	0%	0	0	0%	0	0	0%	0	0	4,613	55,308	8%
PETE	3,200	0%	0	3,200	75%	2,400	800	800	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	2,400	800	75%
HDPE	1,929	0%	0	1,929	75%	1,447	482	482	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	1,447	482	75%
PVC	157	0%	0	157	0%	0	157	157	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	157	0%
LDPE & PP	2,353	0%	0	2,353	0%	0	2,353	2,353	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	2,353	0%
Polystyrene	4,941	0%	0	4,941	0%	0	4,941	2,471	50%	2,471	0%	0	2,471	0%	0	0	0%	0	0	0%	0	0	0	4,941	0%
Film	9,882	0%	0	9,882	0%	0	9,882	9,882	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	9,882	0%
Other Plastic	27,294	0%	0	27,294	0%	0	27,294	24,565	10%	2,729	0%	0	2,729	0%	0	0	0%	0	0	0%	0	0	0	27,294	0%
Total Plastic	49,756	0%	0	49,756	8%	3,847	45,909	40,709	11%	5,200	0%	0	5,200	0%	0	0	0%	0	0	0%	0	0	3,847	45,909	8%
Aluminum Cans	1,176	0%	0	1,176	85%	1,000	176	176	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	1,000	176	85%
Aluminum Foil Trays	784	0%	0	784	30%	235	549	549	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	235	549	30%
Steel Cans	2,745	0%	0	2,745	85%	2,333	412	412	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	2,333	412	85%
Aerosol Cans	784	0%	0	784	85%	667	118	118	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	667	118	85%
Paint Cans	235	0%	0	235	85%	200	35	35	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	200	35	85%
Other Metal	3,647	0%	0	3,647	85%	3,100	547	547	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	3,100	547	85%
Total Metals	9,372	0%	0	9,372	80%	7,535	1,837	1,837	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	7,535	1,837	80%
Food & Beverage Containers	5,098	0%	0	5,098	0%	0	5,098	0	100%	5,098	0%	0	5,098	0%	0	0	0%	0	0	0%	0	0	0	5,098	0%
LCBO Glass	6,549	0%	0	6,549	0%	0	6,549	0	100%	6,549	0%	0	6,549	0%	0	0	0%	0	0	0%	0	0	0	6,549	0%
Other Glass	3,922	0%	0	3,922	0%	0	3,922	0	100%	3,922	0%	0	3,922	0%	0	0	0%	0	0	0%	0	0	0	3,922	0%
Total Glass	15,569	0%	0	15,569	0%	0	15,569	0	100%	15,569	0%	0	15,569	0%	0	0	0%	0	0	0%	0	0	0	15,569	0%
Food Waste	48,494	0%	0	48,494	0%	0	48,494	2,425	95%	46,069	60%	27,641	18,428	0%	0	0	0%	0	0	0%	0	0	27,641	20,852	57%
Leaf and Yard Waste	6,023	0%	0	6,023	0%	0	6,023	301	95%	5,722	60%	3,433	2,289	0%	0	0	0%	0	0	0%	0	0	3,433	2,590	57%
Animal Waste	23,843	0%	0	23,843	0%	0	23,843	1,192	95%	22,651	60%	13,590	9,060	0%	0	0	0%	0	0	0%	0	0	13,590	10,252	57%
Compostable Fibre	12,314	0%	0	12,314	0%	0	12,314	616	95%	11,698	60%	7,019	4,679	0%	0	0	0%	0	0	0%	0	0	7,019	5,295	57%
Sanitary Products	34,666	0%	0	34,666	0%	0	34,666	1,733	95%	32,933	60%	19,760	13,173	0%	0	0	0%	0	0	0%	0	0	19,760	14,907	57%
Organics	125,340	0%	0	125,340	0%	0	125,340	6,267	95%	119,073	60%	71,444	47,629	0%	0	0	0%	0	0	0%	0	0	71,444	53,896	57%
HHW	1,224	20%	245	979	0%	0	979	979	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	1,224	0%
Wood	11,153	25%	2,788	8,364	25%	2,091	6,273	5,960	5%	314	0%	0	314	0%	0	0	0%	0	0	0%	0	0	2,091	9,061	19%
Textiles	9,663	0%	0	9,663	0%	0	9,663	9,179	5%	483	0%	0	483	0%	0	0	0%	0	0	0%	0	0	0	9,663	0%
Building Renovations	22,690	80%	18,152	4,538	0%	0	4,538	4,084	10%	454	0%	0	454	0%	0	0	0%	0	0	0%	0	0	0	22,690	0%
Electronics	611	0%	0	611	50%	305	305	305	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	305	305	50%
White Goods	306	0%	0	306	100%	306	0	0	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	306	0	100%
Other Material	24,848	60%	14,909	9,939	10%	994	8,945	8,051	10%	895	0%	0	895	0%	0	0	0%	0	0	0%	0	0	994	23,854	4%
Tires	0	0%	0	0	0%	0	0	0	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	0	0%
Bulky Goods	42,538	100%	42,538	0	0%	0	0	0	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	42,538	0%
Misc. Goods	27,009	60%	16,206	10,804	10%	1080	9,723	8,751	10%	972	0%	0	972	0%	0	0	0%	0	0	0%	0	0	1,080	25,929	4%
Total Other Material	138,818	68%	94,593	44,225	11%	4777	39,448	36,331	8%	3,117	0%	0	3,117	0%	0	0	0%	0	0	0%	0	0	4,777	134,041	3%
Total	400,000		94,838	305,162		17,242	287,921	139,078		148,843		74,974	73,869		0	0		0	0		0	0	92,216	307,784	
% Post Diversion Waste	100%		24%	76%		4%		35%		37%		19%	18%		0%	0%		0%	0%		0%	0%	23%	77%	23%

Table 1 - iii
 System Quantity Assumptions - Durham and York (2011) - Class B Compost Marketed and Recycled Granular Construction Materials
 System 1: Mechanical and Biological Treatment with Biogas Recovery and Landfilling of Stabilized Residuals

Material Category	Post Diversion Waste	Unacceptable Waste			Mechanical Treatment (MT)					Biological Treatment (BT)				Solid Recovered Fuel Preparation (SRFP)			Thermal Treatment (TT)			Recyclable Recovery from Ash			Residue to Disposal		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
	(Tonnes)	% Residue	Residue to LF (Tonnes)	Input to MT (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Quantity Remaining (Tonnes)	Residue to LF (Tonnes)	% to AD	Input to AD (Tonnes)	% Reduced	Quantity Reduced (Tonnes)	Residue to LF (Tonnes)	% Residue	Residue to LF (Tonnes)	Input to TT (Tonnes)	% Mass Loss	Mass Loss (Tonnes)	Quantity Remaining (Ash) (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Residue to LF (Tonnes)	Quantity Diverted from LF (Tonnes)	Quantity to LF (Tonnes)	% Diverted from Landfill (LF) (Tonnes)
Calculation			C = A x B	D = A - C		F = D x E	G = D - F	H = G - J		J = G x I		L = J x K	M = J - L									W = F + L	X = C + H + M	Y = W / A	
Newspaper	10,701	0%	0	10,701	0%	0	10,701	9,631	10%	1,070	90%	963	107	0%	0	0	0%	0	0	0%	0	0	963	9,738	9%
Magazines/Paperbacks	4,294	0%	0	4,294	0%	0	4,294	3,865	10%	429	90%	386	43	0%	0	0	0%	0	0	0%	0	0	386	3,908	9%
Cardboard	4,427	0%	0	4,427	0%	0	4,427	3,984	10%	443	90%	398	44	0%	0	0	0%	0	0	0%	0	0	398	4,028	9%
Boxboard/Rolls	3,961	0%	0	3,961	0%	0	3,961	3,565	10%	396	90%	356	40	0%	0	0	0%	0	0	0%	0	0	356	3,604	9%
Mixed Household	9,755	0%	0	9,755	0%	0	9,755	8,779	10%	975	90%	878	98	0%	0	0	0%	0	0	0%	0	0	878	8,877	9%
Gable Top Cartons	980	0%	0	980	60%	588	392	353	10%	39	90%	35	4	0%	0	0	0%	0	0	0%	0	0	624	357	64%
Aseptic Containers	147	0%	0	147	60%	88	59	53	10%	6	90%	5	1	0%	0	0	0%	0	0	0%	0	0	94	54	64%
Other Fibre	3,186	0%	0	3,186	0%	0	3,186	2,868	10%	319	90%	287	32	0%	0	0	0%	0	0	0%	0	0	287	2,899	9%
Total Fibre	37,451	0%	0	37,451	2%	676	36,774	33,097	10%	3,677	90%	3,310	368	0%	0	0	0%	0	0	0%	0	0	3,986	33,464	11%
PETE	2,000	0%	0	2,000	75%	1,500	500	500	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	1,500	500	75%
HDPE	1,206	0%	0	1,206	75%	904	301	301	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	904	301	75%
PVC	98	0%	0	98	0%	0	98	98	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	98	0%
LDPE & PP	1,471	0%	0	1,471	0%	0	1,471	1,471	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	1,471	0%
Polystyrene	3,088	0%	0	3,088	0%	0	3,088	1,544	50%	1,544	0%	0	1,544	0%	0	0	0%	0	0	0%	0	0	0	3,088	0%
Film	6,176	0%	0	6,176	0%	0	6,176	6,176	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	6,176	0%
Other Plastic	17,059	0%	0	17,059	0%	0	17,059	15,353	10%	1,706	0%	0	1,706	0%	0	0	0%	0	0	0%	0	0	0	17,059	0%
Total Plastic	31,098	0%	0	31,098	8%	2,404	28,693	25,443	11%	3,250	0%	0	3,250	0%	0	0	0%	0	0	0%	0	0	2,404	28,693	8%
Aluminum Cans	735	0%	0	735	85%	625	110	110	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	625	110	85%
Aluminum Foil Trays	490	0%	0	490	30%	147	343	343	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	147	343	30%
Steel Cans	1,716	0%	0	1,716	85%	1,458	257	257	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	1,458	257	85%
Aerosol Cans	490	0%	0	490	85%	417	74	74	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	417	74	85%
Paint Cans	147	0%	0	147	85%	125	22	22	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	125	22	85%
Other Metal	2,279	0%	0	2,279	85%	1,937	342	342	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	1,937	342	85%
Total Metals	5,858	0%	0	5,858	80%	4,710	1,148	1,148	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	4,710	1,148	80%
Food & Beverage Containers	3,186	0%	0	3,186	85%	2,708	478	0	100%	478	0%	0	478	0%	0	0	0%	0	0	0%	0	0	2,708	478	85%
LCBO Glass	4,093	0%	0	4,093	85%	3,479	614	0	100%	614	0%	0	614	0%	0	0	0%	0	0	0%	0	0	3,479	614	85%
Other Glass	2,451	0%	0	2,451	85%	2,083	368	0	100%	368	0%	0	368	0%	0	0	0%	0	0	0%	0	0	2,083	368	85%
Total Glass	9,730	0%	0	9,730	85%	8,271	1,460	0	100%	1,460	0%	0	1,460	0%	0	0	0%	0	0	0%	0	0	8,271	1,460	85%
Food Waste	30,309	0%	0	30,309	0%	0	30,309	1,515	95%	28,793	90%	25,914	2,879	0%	0	0	0%	0	0	0%	0	0	25,914	4,395	86%
Leaf and Yard Waste	3,765	0%	0	3,765	0%	0	3,765	188	95%	3,576	90%	3,219	358	0%	0	0	0%	0	0	0%	0	0	3,219	546	86%
Animal Waste	14,902	0%	0	14,902	0%	0	14,902	745	95%	14,157	90%	12,741	1,416	0%	0	0	0%	0	0	0%	0	0	12,741	2,161	86%
Compostable Fibre	7,696	0%	0	7,696	0%	0	7,696	385	95%	7,311	90%	6,580	731	0%	0	0	0%	0	0	0%	0	0	6,580	1,116	86%
Sanitary Products	21,666	0%	0	21,666	0%	0	21,666	1,083	95%	20,583	90%	18,525	2,058	0%	0	0	0%	0	0	0%	0	0	18,525	3,142	86%
Organics	78,338	0%	0	78,338	0%	0	78,338	3,917	95%	74,421	90%	66,979	7,442	0%	0	0	0%	0	0	0%	0	0	66,979	11,359	86%
HHW	765	20%	153	612	0%	0	612	612	0%	0	0%	0	0	0%	0	0	0%	0	0%	0	0	0	0	765	0%
Wood	6,970	25%	1,743	5,228	25%	1,307	3,921	3,725	5%	196	0%	0	196	0%	0	0	0%	0	0	0%	0	0	1,307	5,663	19%
Textiles	6,039	0%	0	6,039	0%	0	6,039	5,737	5%	302	0%	0	302	0%	0	0	0%	0	0	0%	0	0	0	6,039	0%
Building Renovations	14,181	80%	11,345	2,836	20%	567	2,269	2,042	10%	227	0%	0	227	0%	0	0	0%	0	0	0%	0	0	567	13,614	4%
Electronics	382	0%	0	382	50%	191	191	191	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	191	191	50%
White Goods	191	0%	0	191	100%	191	0	0	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	191	0	100%
Other Material	15,530	60%	9,318	6,212	30%	1,864	4,348	3,914	10%	435	0%	0	435	0%	0	0	0%	0	0	0%	0	0	1,864	13,666	12%
Tires	0	0%	0	0	0%	0	0	0	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	0	0%
Bulky Goods	26,587	100%	26,587	0	0%	0	0	0	0%	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	26,587	0%
Misc. Goods	16,881	60%	10,129	6,752	30%	2,026	4,727	4,254	10%	473	0%	0	473	0%	0	0	0%	0	0	0%	0	0	2,026	14,855	12%
Total Other Material	86,761	68%	59,121	27,641	22%	6,146	21,495	19,863	8%	1,632	0%	0	1,632	0%	0	0	0%	0	0%	0	0	0	6,146	80,615	7%
Total	250,000		59,274	190,726		22,207	168,520	84,080		84,440		70,288	14,152		0	0	0	0	0	0	0	0	92,495	157,505	
% Post Diversion Waste	100%		24%	76%		9%		34%		34%		28%	6%		0%	0%	0%	0%	0%	0%	0%	0%	37%	63%	37%

Table 2a - i - Minimum
System Quantity Assumptions - Durham and York (2011)
System 2a: Thermal Treatment of Mixed Waste with Recovery of Materials from the Ash/Char

Material Category	Post Diversion Waste	Unacceptable Waste			Mechanical Treatment (MT)			Biological Treatment (BT)			Solid Recovered Fuel Preparation (SRFP)			Thermal Treatment (TT)			Recyclable Recovery from Ash			Residue to Disposal		
	A (Tonnes)	B % Residue	C Residue to LF (Tonnes)	D Input to TT (Tonnes)	E % Captured	F Recyclables Captured (Tonnes)	G Quantity Remaining (Tonnes)	H % Reduced	I Quantity Reduced (Tonnes)	J Quantity Remaining (Tonnes)	K % Residue	L Residue to LF (Tonnes)	M Input to TT (Tonnes)	N % Mass Loss	O Mass Loss (Tonnes)	P Quantity Remaining (Ash) (Tonnes)	Q % Captured	R Recyclables Captured (Tonnes)	S Residue to LF (Tonnes)	T Quantity Diverted from LF (Tonnes)	U Quantity to LF (Tonnes)	V % Diverted from Landfill (LF) (Tonnes)
Calculation			C = A x B	D = A - C											O = D x N	P = D - O		R = P x Q	S = P - R	T = O + R	U = C + S	V = T / A
Newspaper	10,701	0%	0	10,701	0%	0	0	0%	0	0	0%	0	0	98%	10,487	214	0%	0	214	10,487	214	98%
Magazines/Paperbacks	4,294	0%	0	4,294	0%	0	0	0%	0	0	0%	0	0	78%	3,349	945	0%	0	945	3,349	945	78%
Cardboard	4,427	0%	0	4,427	0%	0	0	0%	0	0	0%	0	0	95%	4,205	221	0%	0	221	4,205	221	95%
Boxboard/Rolls	3,961	0%	0	3,961	0%	0	0	0%	0	0	0%	0	0	95%	3,763	198	0%	0	198	3,763	198	95%
Mixed Household	9,755	0%	0	9,755	0%	0	0	0%	0	0	0%	0	0	95%	9,267	488	0%	0	488	9,267	488	95%
Gable Top Cartons	980	0%	0	980	0%	0	0	0%	0	0	0%	0	0	98%	961	20	0%	0	20	961	20	98%
Aseptic Containers	147	0%	0	147	0%	0	0	0%	0	0	0%	0	0	98%	144	3	0%	0	3	144	3	98%
Other Fibre	3,186	0%	0	3,186	0%	0	0	0%	0	0	0%	0	0	95%	3,027	159	0%	0	159	3,027	159	95%
Total Fibre	37,451	0%	0	37,451	0%	0	0	0%	0	0	0%	0	0	94%	35,203	2,248	0%	0	2,248	35,203	2,248	94%
PETE	2,000	0%	0	2,000	0%	0	0	0%	0	0	0%	0	0	99%	1,980	20	0%	0	20	1,980	20	99%
HDPE	1,206	0%	0	1,206	0%	0	0	0%	0	0	0%	0	0	99%	1,194	12	0%	0	12	1,194	12	99%
PVC	98	0%	0	98	0%	0	0	0%	0	0	0%	0	0	98%	96	2	0%	0	2	96	2	98%
LDPE & PP	1,471	0%	0	1,471	0%	0	0	0%	0	0	0%	0	0	99%	1,456	15	0%	0	15	1,456	15	99%
Polystyrene	3,088	0%	0	3,088	0%	0	0	0%	0	0	0%	0	0	99%	3,057	31	0%	0	31	3,057	31	99%
Film	6,176	0%	0	6,176	0%	0	0	0%	0	0	0%	0	0	98%	6,053	124	0%	0	124	6,053	124	98%
Other Plastic	17,059	0%	0	17,059	0%	0	0	0%	0	0	0%	0	0	98%	16,718	341	0%	0	341	16,718	341	98%
Total Plastic	31,098	0%	0	31,098	0%	0	0	0%	0	0	0%	0	0	98%	30,553	544	0%	0	544	30,553	544	98%
Aluminum Cans	735	0%	0	735	0%	0	0	0%	0	0	0%	0	0	0%	0	735	70%	515	221	515	221	70%
Aluminum Foil Trays	490	0%	0	490	0%	0	0	0%	0	0	0%	0	0	0%	0	490	70%	343	147	343	147	70%
Steel Cans	1,716	0%	0	1,716	0%	0	0	0%	0	0	0%	0	0	0%	0	1,716	80%	1,373	343	1,373	343	80%
Aerosol Cans	490	0%	0	490	0%	0	0	0%	0	0	0%	0	0	0%	0	490	80%	392	98	392	98	80%
Paint Cans	147	0%	0	147	0%	0	0	0%	0	0	0%	0	0	0%	0	147	80%	118	29	118	29	80%
Other Metal	2,279	0%	0	2,279	0%	0	0	0%	0	0	0%	0	0	0%	0	2,279	70%	1,596	684	1,596	684	70%
Total Metals	5,858	0%	0	5,858	0%	0	0	0%	0	0	0%	0	0	0%	0	5,858	74%	4,336	1,522	4,336	1,522	74%
Food & Beverage Containers	3,186	0%	0	3,186	0%	0	0	0%	0	0	0%	0	0	0%	0	3,186	0%	0	3,186	0	3,186	0%
LCBO Glass	4,093	0%	0	4,093	0%	0	0	0%	0	0	0%	0	0	0%	0	4,093	0%	0	4,093	0	4,093	0%
Other Glass	2,451	0%	0	2,451	0%	0	0	0%	0	0	0%	0	0	0%	0	2,451	0%	0	2,451	0	2,451	0%
Total Glass	9,730	0%	0	9,730	0%	0	0	0%	0	0	0%	0	0	0%	0	9,730	0%	0	9,730	0	9,730	0%
Food Waste	30,309	0%	0	30,309	0%	0	0	0%	0	0	0%	0	0	95%	28,793	1,515	0%	0	1,515	28,793	1,515	95%
Leaf and Yard Waste	3,765	0%	0	3,765	0%	0	0	0%	0	0	0%	0	0	95%	3,576	188	0%	0	188	3,576	188	95%
Animal Waste	14,902	0%	0	14,902	0%	0	0	0%	0	0	0%	0	0	95%	14,157	745	0%	0	745	14,157	745	95%
Compostable Fibre	7,696	0%	0	7,696	0%	0	0	0%	0	0	0%	0	0	98%	7,542	154	0%	0	154	7,542	154	98%
Sanitary Products	21,666	0%	0	21,666	0%	0	0	0%	0	0	0%	0	0	95%	20,583	1,083	0%	0	1,083	20,583	1,083	95%
Organics	78,338	0%	0	78,338	0%	0	0	0%	0	0	0%	0	0	95%	74,652	3,686	0%	0	3,686	74,652	3,686	95%
HHW	765	20%	153	612	0%	0	0	0%	0	0	0%	0	0	0%	0	612	0%	0	612	0	765	0%
Wood	6,970	0%	0	6,970	0%	0	0	0%	0	0	0%	0	0	99%	6,901	70	0%	0	70	6,901	70	99%
Textiles	6,039	0%	0	6,039	0%	0	0	0%	0	0	0%	0	0	94%	5,677	362	0%	0	362	5,677	362	94%
Building Renovations	14,181	10%	1,418	12,763	0%	0	0	0%	0	0	0%	0	0	50%	6,381	6,381	10%	638	5,743	7,020	7,161	50%
Electronics	382	0%	0	382	0%	0	0	0%	0	0	0%	0	0	50%	191	191	20%	38	153	229	153	60%
White Goods	191	0%	0	191	0%	0	0	0%	0	0	0%	0	0	0%	0	191	50%	96	96	96	96	50%
Other Material	15,530	10%	1,553	13,977	0%	0	0	0%	0	0	0%	0	0	50%	6,989	6,989	10%	699	6,290	7,687	7,843	50%
Tires	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	-	0%	0	0	0	0	0%
Bulky Goods	26,587	10%	2,659	23,928	0%	0	0	0%	0	0	0%	0	0	50%	11,964	11,964	10%	1,196	10,768	13,160	13,426	50%
Misc. Goods	16,881	10%	1,688	15,193	0%	0	0	0%	0	0	0%	0	0	50%	7,596	7,596	10%	760	6,837	8,356	8,525	50%
Total Other Material	86,761	8%	7,318	79,443	0%	0	0	0%	0	0	0%	0	0	58%	45,699	33,745	10%	3,427	30,318	49,126	37,636	57%
Total	250,000		7,471	242,529		0	0		0	0		0		186,107	56,423		7,763	48,660	193,869	56,131		
% Post Diversion Waste	100%		3%	97%		0%	0%		0%	0%		0%		74%	23%		3%	19%	78%	22%	78%	

Table 2a - ii - Maximum
System Quantity Assumptions - Durham and York (2011)
System 2a: Thermal Treatment of Mixed Waste with Recovery of Materials from the Ash/Char

Material Category	Post Diversion Waste	Unacceptable Waste			Mechanical Treatment (MT)			Biological Treatment (BT)			Solid Recovered Fuel Preparation (SRFP)			Thermal Treatment (TT)			Recyclable Recovery from Ash			Residue to Disposal			
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	
	(Tonnes)	% Residue	Residue to LF (Tonnes)	Input to TT (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Quantity Remaining (Tonnes)	% Reduced	Quantity Reduced (Tonnes)	Quantity Remaining (Tonnes)	% Residue	Residue to LF (Tonnes)	Input to TT (Tonnes)	% Mass Loss	Mass Loss (Tonnes)	Quantity Remaining (Ash) (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Residue to LF (Tonnes)	Quantity Diverted from LF (Tonnes)	Quantity to LF (Tonnes)	% Diverted from Landfill (LF) (Tonnes)	
Calculation			C = A x B	D = A - C											O = D x N	P = D - O		R = P x Q	S = P - R	T = O + R	U = C + S	V = T / A	
Newspaper	17,121	0%	0	17,121	0%	0	0	0%	0	0	0%	0	0	98%	16,779	342	0%	0	342	16,779	342	98%	
Magazines/Paperbacks	6,871	0%	0	6,871	0%	0	0	0%	0	0	0%	0	0	78%	5,359	1,512	0%	0	1,512	5,359	1,512	78%	
Cardboard	7,083	0%	0	7,083	0%	0	0	0%	0	0	0%	0	0	95%	6,728	354	0%	0	354	6,728	354	95%	
Boxboard/Rolls	6,337	0%	0	6,337	0%	0	0	0%	0	0	0%	0	0	95%	6,020	317	0%	0	317	6,020	317	95%	
Mixed Household	15,608	0%	0	15,608	0%	0	0	0%	0	0	0%	0	0	95%	14,827	780	0%	0	780	14,827	780	95%	
Gable Top Cartons	1,569	0%	0	1,569	0%	0	0	0%	0	0	0%	0	0	98%	1,537	31	0%	0	31	1,537	31	98%	
Aseptic Containers	235	0%	0	235	0%	0	0	0%	0	0	0%	0	0	98%	231	5	0%	0	5	231	5	98%	
Other Fibre	5,098	0%	0	5,098	0%	0	0	0%	0	0	0%	0	0	95%	4,843	255	0%	0	255	4,843	255	95%	
Total Fibre	59,921	0%	0	59,921	0%	0	0	0%	0	0	0%	0	0	94%	56,325	3,596	0%	0	3,596	56,325	3,596	94%	
PETE	3,200	0%	0	3,200	0%	0	0	0%	0	0	0%	0	0	99%	3,168	32	0%	0	32	3,168	32	99%	
HDPE	1,929	0%	0	1,929	0%	0	0	0%	0	0	0%	0	0	99%	1,910	19	0%	0	19	1,910	19	99%	
PVC	157	0%	0	157	0%	0	0	0%	0	0	0%	0	0	98%	154	3	0%	0	3	154	3	98%	
LDPE & PP	2,353	0%	0	2,353	0%	0	0	0%	0	0	0%	0	0	99%	2,329	24	0%	0	24	2,329	24	99%	
Polystyrene	4,941	0%	0	4,941	0%	0	0	0%	0	0	0%	0	0	99%	4,892	49	0%	0	49	4,892	49	99%	
Film	9,882	0%	0	9,882	0%	0	0	0%	0	0	0%	0	0	98%	9,685	198	0%	0	198	9,685	198	98%	
Other Plastic	27,294	0%	0	27,294	0%	0	0	0%	0	0	0%	0	0	98%	26,748	546	0%	0	546	26,748	546	98%	
Total Plastic	49,756	0%	0	49,756	0%	0	0	0%	0	0	0%	0	0	98%	48,886	871	0%	0	871	48,886	871	98%	
Aluminum Cans	1,176	0%	0	1,176	0%	0	0	0%	0	0	0%	0	0	0%	0	1,176	70%	824	353	824	353	70%	
Aluminum Foil Trays	784	0%	0	784	0%	0	0	0%	0	0	0%	0	0	0%	0	784	70%	549	235	549	235	70%	
Steel Cans	2,745	0%	0	2,745	0%	0	0	0%	0	0	0%	0	0	0%	0	2,745	80%	2,196	549	2,196	549	80%	
Aerosol Cans	784	0%	0	784	0%	0	0	0%	0	0	0%	0	0	0%	0	784	80%	627	157	627	157	80%	
Paint Cans	235	0%	0	235	0%	0	0	0%	0	0	0%	0	0	0%	0	235	80%	188	47	188	47	80%	
Other Metal	3,647	0%	0	3,647	0%	0	0	0%	0	0	0%	0	0	0%	0	3,647	70%	2,553	1,094	2,553	1,094	70%	
Total Metals	9,372	0%	0	9,372	0%	0	0	0%	0	0	0%	0	0	0%	0	9,372	74%	6,937	2,435	6,937	2,435	74%	
Food & Beverage Containers	5,098	0%	0	5,098	0%	0	0	0%	0	0	0%	0	0	0%	0	5,098	0%	0	5,098	0	5,098	0	
LCBO Glass	6,549	0%	0	6,549	0%	0	0	0%	0	0	0%	0	0	0%	0	6,549	0%	0	6,549	0	6,549	0	
Other Glass	3,922	0%	0	3,922	0%	0	0	0%	0	0	0%	0	0	0%	0	3,922	0%	0	3,922	0	3,922	0	
Total Glass	15,569	0%	0	15,569	0%	0	0	0%	0	0	0%	0	0	0%	0	15,569	0%	0	15,569	0	15,569	0%	
Food Waste	48,494	0%	0	48,494	0%	0	0	0%	0	0	0%	0	0	95%	46,069	2,425	0%	0	2,425	46,069	2,425	95%	
Leaf and Yard Waste	6,023	0%	0	6,023	0%	0	0	0%	0	0	0%	0	0	95%	5,722	301	0%	0	301	5,722	301	95%	
Animal Waste	23,843	0%	0	23,843	0%	0	0	0%	0	0	0%	0	0	95%	22,651	1,192	0%	0	1,192	22,651	1,192	95%	
Compostable Fibre	12,314	0%	0	12,314	0%	0	0	0%	0	0	0%	0	0	98%	12,067	246	0%	0	246	12,067	246	98%	
Sanitary Products	34,666	0%	0	34,666	0%	0	0	0%	0	0	0%	0	0	95%	32,933	1,733	0%	0	1,733	32,933	1,733	95%	
Organics	125,340	0%	0	125,340	0%	0	0	0%	0	0	0%	0	0	95%	119,442	5,898	0%	0	5,898	119,442	5,898	95%	
HHW	1,224	20%	245	979	0%	0	0	0%	0	0	0%	0	0	0%	0	979	0%	0	979	0	1,224	0%	
Wood	11,153	0%	0	11,153	0%	0	0	0%	0	0	0%	0	0	99%	11,041	112	0%	0	112	11,041	112	99%	
Textiles	9,663	0%	0	9,663	0%	0	0	0%	0	0	0%	0	0	94%	9,083	580	0%	0	580	9,083	580	94%	
Building Renovations	22,690	10%	2,269	20,421	0%	0	0	0%	0	0	0%	0	0	50%	10,210	10,210	10%	1,021	9,189	11,231	11,458	50%	
Electronics	611	0%	0	611	0%	0	0	0%	0	0	0%	0	0	50%	305	305	20%	61	244	367	244	60%	
White Goods	306	0%	0	306	0%	0	0	0%	0	0	0%	0	0	0%	0	306	50%	153	153	153	153	50%	
Other Material	24,848	10%	2,485	22,363	0%	0	0	0%	0	0	0%	0	0	50%	11,182	11,182	10%	1,118	10,064	12,300	12,548	50%	
Tires	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	0	0	0%
Bulky Goods	42,538	10%	4,254	38,285	0%	0	0	0%	0	0	0%	0	0	50%	19,142	19,142	10%	1,914	17,228	21,057	21,482	50%	
Misc. Goods	27,009	10%	2,701	24,309	0%	0	0	0%	0	0	0%	0	0	50%	12,154	12,154	10%	1,215	10,939	13,370	13,640	50%	
Total Other Material	138,818	8%	11,709	127,110	0%	0	0	0%	0	0	0%	0	0	58%	73,118	53,992	10%	5,483	48,509	78,601	60,217	57%	
Total	400,000		11,953	388,047		0	0		0	0		0			297,771	90,276		12,420	77,856	310,191	89,809		
% Post Diversion Waste	100%		3%	97%		0%	0%		0%	0%		0%			74%	23%		3%	19%	78%	22%	78%	

Table 2a - iii

System Quantity Assumptions - Durham and York (2011) - Class B Compost Marketed and Recycled Granular Construction Materials
 System 2a: Thermal Treatment of Mixed Waste with Recovery of Materials from the Ash/Char

Material Category	Post Diversion Waste	Unacceptable Waste			Mechanical Treatment (MT)			Biological Treatment (BT)			Solid Recovered Fuel Preparation (SRFP)			Thermal Treatment (TT)			Recyclable Recovery from Ash			Residue to Disposal			
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	
	(Tonnes)	% Residue	Residue to LF (Tonnes)	Input to TT (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Quantity Remaining (Tonnes)	% Reduced	Quantity Reduced (Tonnes)	Quantity Remaining (Tonnes)	% Residue	Residue to LF (Tonnes)	Input to TT (Tonnes)	% Mass Loss	Mass Loss (Tonnes)	Quantity Remaining (Ash) (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Residue to LF (Tonnes)	Quantity Diverted from LF (Tonnes)	Quantity to LF (Tonnes)	% Diverted from Landfill (LF) (Tonnes)	
Calculation			C = A x B	D = A - C											O = D x N	P = D - O		R = P x Q	S = P - R	T = O + R	U = C + S	V = T / A	
Newspaper	10,701	0%	0	10,701	0%	0	0	0%	0	0	0%	0	0	98%	10,487	214	95%	203	11	10,690	11	100%	
Magazines/Paperbacks	4,294	0%	0	4,294	0%	0	0	0%	0	0	0%	0	0	78%	3,349	945	95%	897	47	4,247	47	99%	
Cardboard	4,427	0%	0	4,427	0%	0	0	0%	0	0	0%	0	0	95%	4,205	221	95%	210	11	4,416	11	100%	
Boxboard/Rolls	3,961	0%	0	3,961	0%	0	0	0%	0	0	0%	0	0	95%	3,763	198	95%	188	10	3,951	10	100%	
Mixed Household	9,755	0%	0	9,755	0%	0	0	0%	0	0	0%	0	0	95%	9,267	488	95%	463	24	9,730	24	100%	
Gable Top Cartons	980	0%	0	980	0%	0	0	0%	0	0	0%	0	0	98%	961	20	95%	19	1	979	1	100%	
Aseptic Containers	147	0%	0	147	0%	0	0	0%	0	0	0%	0	0	98%	144	3	95%	3	0	147	0	100%	
Other Fibre	3,186	0%	0	3,186	0%	0	0	0%	0	0	0%	0	0	95%	3,027	159	95%	151	8	3,178	8	100%	
Total Fibre	37,451	0%	0	37,451	0%	0	0	0%	0	0	0%	0	0	94%	35,203	2,248	95%	2,135	112	37,338	112	100%	
PETE	2,000	0%	0	2,000	0%	0	0	0%	0	0	0%	0	0	99%	1,980	20	95%	19	1	1,999	1	100%	
HDPE	1,206	0%	0	1,206	0%	0	0	0%	0	0	0%	0	0	99%	1,194	12	95%	11	1	1,205	1	100%	
PVC	98	0%	0	98	0%	0	0	0%	0	0	0%	0	0	98%	96	2	95%	2	0	98	0	100%	
LDPE & PP	1,471	0%	0	1,471	0%	0	0	0%	0	0	0%	0	0	99%	1,456	15	95%	14	1	1,470	1	100%	
Polystyrene	3,088	0%	0	3,088	0%	0	0	0%	0	0	0%	0	0	99%	3,057	31	95%	29	2	3,087	2	100%	
Film	6,176	0%	0	6,176	0%	0	0	0%	0	0	0%	0	0	98%	6,053	124	95%	117	6	6,170	6	100%	
Other Plastic	17,059	0%	0	17,059	0%	0	0	0%	0	0	0%	0	0	98%	16,718	341	95%	324	17	17,042	17	100%	
Total Plastic	31,098	0%	0	31,098	0%	0	0	0%	0	0	0%	0	0	98%	30,553	544	95%	517	27	31,071	27	100%	
Aluminum Cans	735	0%	0	735	0%	0	0	0%	0	0	0%	0	0	0%	0	735	70%	515	221	515	221	70%	
Aluminum Foil Trays	490	0%	0	490	0%	0	0	0%	0	0	0%	0	0	0%	0	490	70%	343	147	343	147	70%	
Steel Cans	1,716	0%	0	1,716	0%	0	0	0%	0	0	0%	0	0	0%	0	1,716	80%	1,373	343	1,373	343	80%	
Aerosol Cans	490	0%	0	490	0%	0	0	0%	0	0	0%	0	0	0%	0	490	80%	392	98	392	98	80%	
Paint Cans	147	0%	0	147	0%	0	0	0%	0	0	0%	0	0	0%	0	147	80%	118	29	118	29	80%	
Other Metal	2,279	0%	0	2,279	0%	0	0	0%	0	0	0%	0	0	0%	0	2,279	70%	1,596	684	1,596	684	70%	
Total Metals	5,858	0%	0	5,858	0%	0	0	0%	0	0	0%	0	0	0%	0	5,858	74%	4,336	1,522	4,336	1,522	74%	
Food & Beverage Containers	3,186	0%	0	3,186	0%	0	0	0%	0	0	0%	0	0	0%	0	3,186	95%	3,027	159	3,027	159	95%	
LCBO Glass	4,093	0%	0	4,093	0%	0	0	0%	0	0	0%	0	0	0%	0	4,093	95%	3,888	205	3,888	205	95%	
Other Glass	2,451	0%	0	2,451	0%	0	0	0%	0	0	0%	0	0	0%	0	2,451	95%	2,328	123	2,328	123	95%	
Total Glass	9,730	0%	0	9,730	0%	0	0	0%	0	0	0%	0	0	0%	0	9,730	95%	9,244	487	9,244	487	95%	
Food Waste	30,309	0%	0	30,309	0%	0	0	0%	0	0	0%	0	0	95%	28,793	1,515	95%	1,440	76	30,233	76	100%	
Leaf and Yard Waste	3,765	0%	0	3,765	0%	0	0	0%	0	0	0%	0	0	95%	3,576	188	95%	179	9	3,755	9	100%	
Animal Waste	14,902	0%	0	14,902	0%	0	0	0%	0	0	0%	0	0	95%	14,157	745	95%	708	37	14,865	37	100%	
Compostable Fibre	7,696	0%	0	7,696	0%	0	0	0%	0	0	0%	0	0	98%	7,542	154	95%	146	8	7,688	8	100%	
Sanitary Products	21,666	0%	0	21,666	0%	0	0	0%	0	0	0%	0	0	95%	20,583	1,083	95%	1,029	54	21,612	54	100%	
Organics	78,338	0%	0	78,338	0%	0	0	0%	0	0	0%	0	0	95%	74,652	3,686	95%	3,502	184	78,153	184	100%	
HHW	765	20%	153	612	0%	0	0	0%	0	0	0%	0	0	0%	0	612	0%	0	612	0	765	0%	
Wood	6,970	0%	0	6,970	0%	0	0	0%	0	0	0%	0	0	99%	6,901	70	95%	66	3	6,967	3	100%	
Textiles	6,039	0%	0	6,039	0%	0	0	0%	0	0	0%	0	0	94%	5,677	362	95%	344	18	6,021	18	100%	
Building Renovations	14,181	10%	1,418	12,763	0%	0	0	0%	0	0	0%	0	0	50%	6,381	6,381	75%	4,786	1,595	11,168	3,013	79%	
Electronics	382	0%	0	382	0%	0	0	0%	0	0	0%	0	0	50%	191	191	75%	143	48	334	48	88%	
White Goods	191	0%	0	191	0%	0	0	0%	0	0	0%	0	0	0%	0	191	75%	144	48	144	48	75%	
Other Material	15,530	10%	1,553	13,977	0%	0	0	0%	0	0	0%	0	0	50%	6,989	6,989	70%	4,892	2,097	11,881	3,650	77%	
Tires	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0	0	0	0%
Bulky Goods	26,587	10%	2,659	23,928	0%	0	0	0%	0	0	0%	0	0	50%	11,964	11,964	70%	8,375	3,589	20,339	6,248	77%	
Misc. Goods	16,881	10%	1,688	15,193	0%	0	0	0%	0	0	0%	0	0	50%	7,596	7,596	70%	5,317	2,279	12,914	3,967	77%	
Total Other Material	86,761	8%	7,318	79,443	0%	0	0	0%	0	0	0%	0	0	58%	45,699	33,745	71%	24,068	9,677	69,766	16,995	80%	
Total	250,000		7,471	242,529		0	0		0	0		0			186,107	56,423		43,801	12,621	229,908	20,092		
% Post Diversion Waste	100%		3%	97%		0%	0%		0%	0%		0%		74%	23%		18%	5%	92%	8%	92%		

Table 2b - i - Minimum System Quantity Assumptions - Durham and York (2011)
System 2b: Thermal Treatment of Alternative Fuel

Material Category	Post Diversion Waste	Unacceptable Waste			Mechanical Treatment (MT)					Biological Treatment (BT)				Solid Recovered Fuel Preparation (SRFP)				Thermal Treatment (TT)			Recyclable Recovery from Ash			Residue to Disposal		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
	(Tonnes)	% Residue	Residue to LF (Tonnes)	Input to MT (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Quantity Remaining (Tonnes)	% to SRFP	% to Bio-Drying	Input to Bio-Drying (Tonnes)	% Reduced	Quantity Reduced (Tonnes)	Input to SRFP from BT (Tonnes)	Input to SRFP (Tonnes)	% Residue	Residue to LF (Tonnes)	Input to TT (Tonnes)	Mass Loss	Mass Loss (Tonnes)	Residue to LF (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Residue to LF (Tonnes)	Quantity Diverted from LF (Tonnes)	Quantity to LF (Tonnes)	% Diverted from Landfill (LF) (Tonnes)
Calculation			C = A x B	D = A - C		F = D x E	G = D - F			J = G x I		L = J x K	M = J - L	N = (G x H) + M		P = N x O	Q = N - P		S = Q x R	T = Q - S				X = F + L + S	Y = C + P + T	Z = X / A
Newspaper	10,701	0%	0	10,701	0%	0	10,701	90%	10%	1,070	0%	0	1,070	10,701	5%	535	10,166	98%	9,962	203	0%	0	0	9,962	738	93%
Magazines/Paperbacks	4,294	0%	0	4,294	0%	0	4,294	90%	10%	429	0%	0	429	4,294	5%	215	4,079	78%	3,182	897	0%	0	0	3,182	1,112	74%
Cardboard	4,427	0%	0	4,427	0%	0	4,427	90%	10%	443	0%	0	443	4,427	5%	221	4,205	95%	3,995	210	0%	0	0	3,995	432	90%
Boxboard/Rolls	3,961	0%	0	3,961	0%	0	3,961	90%	10%	396	0%	0	396	3,961	5%	198	3,763	95%	3,575	188	0%	0	0	3,575	386	90%
Mixed Household	9,755	0%	0	9,755	0%	0	9,755	90%	10%	975	0%	0	975	9,755	5%	488	9,267	95%	8,804	463	0%	0	0	8,804	951	90%
Gable Top Cartons	980	0%	0	980	60%	588	392	90%	10%	39	0%	0	39	980	5%	20	373	98%	365	7	0%	0	0	953	27	97%
Aseptic Containers	147	0%	0	147	60%	88	59	90%	10%	6	0%	0	6	147	5%	3	56	98%	55	1	0%	0	0	143	4	97%
Other Fibre	3,186	0%	0	3,186	0%	0	3,186	90%	10%	319	0%	0	319	3,186	5%	159	3,027	95%	2,876	151	0%	0	0	2,876	311	90%
Total Fibre	37,451	0%	0	37,451	2%	676	36,774	90%	10%	3,677	0%	0	3,677	36,774	5%	1,839	34,935	94%	32,813	2,122	0%	0	0	33,489	3,961	89%
PETE	2,000	0%	0	2,000	75%	1,500	500	100%	0%	0	0%	0	0	500	5%	25	475	99%	470	5	0%	0	0	1,970	30	99%
HDPE	1,206	0%	0	1,206	75%	904	301	100%	0%	0	0%	0	0	301	5%	15	286	99%	284	3	0%	0	0	1,188	18	99%
PVC	98	0%	0	98	0%	0	98	100%	0%	0	0%	0	0	98	5%	5	93	98%	91	2	0%	0	0	91	7	93%
LDPE & PP	1,471	0%	0	1,471	0%	0	1,471	100%	0%	0	0%	0	0	1,471	5%	74	1,397	99%	1,383	14	0%	0	0	1,383	87	94%
Polystyrene	3,088	0%	0	3,088	0%	0	3,088	50%	50%	1,544	0%	0	1,544	3,088	5%	154	2,934	99%	2,904	29	0%	0	0	2,904	184	94%
Film	6,176	0%	0	6,176	0%	0	6,176	100%	0%	0	0%	0	0	6,176	5%	309	5,868	98%	5,750	117	0%	0	0	5,750	426	93%
Other Plastic	17,059	0%	0	17,059	0%	0	17,059	90%	10%	1,706	0%	0	1,706	17,059	5%	853	16,206	98%	15,882	324	0%	0	0	15,882	1,177	93%
Total Plastic	31,098	0%	0	31,098	8%	2,404	28,693	89%	11%	3,250	0%	0	3,250	28,693	5%	1,435	27,259	98%	26,764	494	0%	0	0	29,169	1,929	94%
Aluminum Cans	735	0%	0	735	85%	625	110	100%	0%	0	0%	0	0	110	0%	0	110	0%	0	110	0%	0	0	625	110	85%
Aluminum Foil Trays	490	0%	0	490	30%	147	343	100%	0%	0	0%	0	0	343	0%	0	343	0%	0	343	0%	0	0	147	343	30%
Steel Cans	1,716	0%	0	1,716	85%	1,458	257	100%	0%	0	0%	0	0	257	0%	0	257	0%	0	257	0%	0	0	1,458	257	85%
Aerosol Cans	490	0%	0	490	85%	417	74	100%	0%	0	0%	0	0	74	0%	0	74	0%	0	74	0%	0	0	417	74	85%
Paint Cans	147	0%	0	147	85%	125	22	100%	0%	0	0%	0	0	22	0%	0	22	0%	0	22	0%	0	0	125	22	85%
Other Metal	2,279	0%	0	2,279	85%	1,937	342	100%	0%	0	0%	0	0	342	0%	0	342	0%	0	342	0%	0	0	1,937	342	85%
Total Metals	5,858	0%	0	5,858	80%	4,710	1,148	100%	0%	0	0%	0	0	1,148	0%	0	1,148	0%	0	1,148	0%	0	0	4,710	1,148	80%
Food & Beverage Containers	3,186	0%	0	3,186	0%	0	3,186	0%	100%	3,186	0%	0	3,186	3,186	95%	3,027	159	0%	0	159	0%	0	0	0	3,186	0%
LCBO Glass	4,093	0%	0	4,093	0%	0	4,093	0%	100%	4,093	0%	0	4,093	4,093	95%	3,888	205	0%	0	205	0%	0	0	0	4,093	0%
Other Glass	2,451	0%	0	2,451	0%	0	2,451	0%	100%	2,451	0%	0	2,451	2,451	95%	2,328	123	0%	0	123	0%	0	0	0	2,451	0%
Total Glass	9,730	0%	0	9,730	0%	0	9,730	0%	100%	9,730	0%	0	9,730	9,730	95%	9,244	487	0%	0	487	0%	0	0	0	9,730	0%
Food Waste	30,309	0%	0	30,309	0%	0	30,309	5%	95%	28,793	50%	15,154	13,639	15,154	10%	1,515	13,639	95%	12,957	682	0%	0	0	28,111	2,197	93%
Leaf and Yard Waste	3,765	0%	0	3,765	0%	0	3,765	5%	95%	3,576	50%	1,882	1,694	1,882	10%	188	1,694	95%	1,609	85	0%	0	0	3,492	273	93%
Animal Waste	14,902	0%	0	14,902	0%	0	14,902	5%	95%	14,157	50%	7,451	6,706	7,451	10%	745	6,706	95%	6,371	335	0%	0	0	13,821	1,080	93%
Compostable Fibre	7,696	0%	0	7,696	0%	0	7,696	5%	95%	7,311	25%	1,924	5,387	5,772	10%	577	5,195	95%	4,935	260	0%	0	0	6,859	837	89%
Sanitary Products	21,666	0%	0	21,666	0%	0	21,666	5%	95%	20,583	25%	5,417	15,167	16,250	10%	1,625	14,625	95%	13,894	731	0%	0	0	19,310	2,356	89%
Organics	78,338	0%	0	78,338	0%	0	78,338	5%	95%	74,421	41%	31,828	42,593	46,509	10%	4,651	41,858	95%	39,766	2,093	0%	0	0	71,594	6,744	91%
HHW	765	20%	153	612	0%	0	612	100%	0%	0	0%	0	0	612	100%	612	0	0	0	0%	0	0	0	0	765	0%
Wood	6,970	25%	1,743	5,228	25%	1,307	3,921	95%	5%	196	0%	0	196	3,921	10%	392	3,529	98%	3,458	71	0%	0	0	4,765	2,205	68%
Textiles	6,039	0%	0	6,039	0%	0	6,039	95%	5%	302	0%	0	302	6,039	10%	604	5,435	94%	5,109	326	0%	0	0	5,109	930	85%
Building Renovations	14,181	80%	11,345	2,836	0%	0	2,836	90%	10%	284	0%	0	284	2,836	50%	1,418	1,418	98%	1,390	28	0%	0	0	1,390	12,791	10%
Electronics	382	0%	0	382	50%	191	191	100%	0%	0	0%	0	0	191	50%	95	95	98%	94	2	0%	0	0	284	97	75%
White Goods	191	0%	0	191	100%	191	0	100%	0%	0	0%	0	0	0	0%	0	0	0%	0	0	0%	0	0	191	0	100%
Other Material	15,530	60%	9,318	6,212	10%	621	5,591	90%	10%	559	0%	0	559	5,591	50%	2,795	2,795	98%	2,740	56	0%	0	0	3,361	12,169	22%
Tires	0	0%	0	0	0%	0	0	100%	0%	0	0%	0	0	0	0%	0	0	0%	0	0	0%	0	0	0	0	0%
Bulky Goods	26,587	10%	2,659	23,928	10%	2,393	21,535	100%	0%	0	0%	0	0	21,535	50%	10,768	10,768	98%	10,552	215	0%	0	0	12,945	13,642	49%
Misc. Goods	16,881	60%	10,129	6,752	10%	675	6,077	90%	10%	608	0%	0	608	6,077	50%	3,039	3,039	98%	2,978	61	0%	0	0	3,653	13,228	22%
Total Other Material	86,761	41%	35,193	51,569	10%	5,378	46,190	96%	4%	1,948	0%	0	1,948	46,190	41%	19,111	27,079	97%	26,320	759	0%	0	0	31,699</		

**Table 2b - ii - Maximum
System Quantity Assumptions - Durham and York (2011)
System 2b: Thermal Treatment of Alternative Fuel**

Material Category	Post Diversion Waste	Unacceptable Waste			Mechanical Treatment (MT)					Biological Treatment (BT)				Solid Recovered Fuel Preparation (SRFP)				Thermal Treatment (TT)			Recyclable Recovery from Ash			Residue to Disposal		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
	(Tonnes)	% Residue	Residue to LF (Tonnes)	Input to MT (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Quantity Remaining (Tonnes)	% to SRFP	% to Bio-Drying	Input to Bio-Drying (Tonnes)	% Reduced	Quantity Reduced (Tonnes)	Input to SRFP from BT (Tonnes)	Input to SRFP (Tonnes)	% Residue	Residue to LF (Tonnes)	Input to TT (Tonnes)	Mass Loss	Mass Loss (Tonnes)	Residue to LF (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Residue to LF (Tonnes)	Quantity Diverted from LF (Tonnes)	Quantity to LF (Tonnes)	% Diverted from Landfill (LF) (Tonnes)
Calculation			C = A x B	D = A - C		F = D x E	G = D - F			J = G x I		L = J x K	M = J - L	N = (G x H) + M		P = N x O	Q = N - P		S = Q x R	T = Q - S				X = F + L + S	Y = C + P + T	Z = X / A
Newspaper	17,121	0%	0	17,121	0%	0	17,121	90%	10%	1,712	0%	0	1,712	17,121	5%	856	16,265	98%	15,940	325	0%	0	0	15,940	1,181	93%
Magazines/Paperbacks	6,871	0%	0	6,871	0%	0	6,871	90%	10%	687	0%	0	687	6,871	5%	344	6,527	78%	5,091	1,436	0%	0	0	5,091	1,779	74%
Cardboard	7,083	0%	0	7,083	0%	0	7,083	90%	10%	708	0%	0	708	7,083	5%	354	6,728	95%	6,392	336	0%	0	0	6,392	691	90%
Boxboard/Rolls	6,337	0%	0	6,337	0%	0	6,337	90%	10%	634	0%	0	634	6,337	5%	317	6,020	95%	5,719	301	0%	0	0	5,719	618	90%
Mixed Household	15,608	0%	0	15,608	0%	0	15,608	90%	10%	1,561	0%	0	1,561	15,608	5%	780	14,827	95%	14,086	741	0%	0	0	14,086	1,522	90%
Gable Top Cartons	1,569	0%	0	1,569	60%	941	627	90%	10%	63	0%	0	63	627	5%	31	596	98%	584	12	0%	0	0	1,525	43	97%
Aseptic Containers	235	0%	0	235	60%	141	94	90%	10%	9	0%	0	9	94	5%	5	89	98%	88	2	0%	0	0	229	6	97%
Other Fibre	5,098	0%	0	5,098	0%	0	5,098	90%	10%	510	0%	0	510	5,098	5%	255	4,843	95%	4,601	242	0%	0	0	4,601	497	90%
Total Fibre	59,921	0%	0	59,921	2%	1,082	58,839	90%	10%	5,884	0%	0	5,884	58,839	5%	2,942	55,897	94%	52,501	3,396	0%	0	0	53,583	6,338	89%
PETE	3,200	0%	0	3,200	75%	2,400	800	100%	0%	0	0%	0	0	800	5%	40	760	99%	752	8	0%	0	0	3,152	48	99%
HDPE	1,929	0%	0	1,929	75%	1,447	482	100%	0%	0	0%	0	0	482	5%	24	458	99%	454	5	0%	0	0	1,901	29	99%
PVC	157	0%	0	157	0%	0	157	100%	0%	0	0%	0	0	157	5%	8	149	98%	146	3	0%	0	0	146	11	93%
LDPE & PP	2,353	0%	0	2,353	0%	0	2,353	100%	0%	0	0%	0	0	2,353	5%	118	2,235	99%	2,213	22	0%	0	0	2,213	140	94%
Polystyrene	4,941	0%	0	4,941	0%	0	4,941	50%	50%	2,471	0%	0	2,471	4,941	5%	247	4,694	99%	4,647	47	0%	0	0	4,647	294	94%
Film	9,882	0%	0	9,882	0%	0	9,882	100%	0%	0	0%	0	0	9,882	5%	494	9,388	98%	9,200	188	0%	0	0	9,200	682	93%
Other Plastic	27,294	0%	0	27,294	0%	0	27,294	90%	10%	2,729	0%	0	2,729	27,294	5%	1,365	25,929	98%	25,411	519	0%	0	0	25,411	1,883	93%
Total Plastic	49,756	0%	0	49,756	8%	3,847	45,909	89%	11%	5,200	0%	0	5,200	45,909	5%	2,295	43,614	98%	42,823	791	0%	0	0	46,670	3,086	94%
Aluminum Cans	1,176	0%	0	1,176	85%	1,000	176	100%	0%	0	0%	0	0	176	0%	0	176	0%	0	176	0%	0	0	1,000	176	85%
Aluminum Foil Trays	784	0%	0	784	30%	235	549	100%	0%	0	0%	0	0	549	0%	0	549	0%	0	549	0%	0	0	235	549	30%
Steel Cans	2,745	0%	0	2,745	85%	2,333	412	100%	0%	0	0%	0	0	412	0%	0	412	0%	0	412	0%	0	0	2,333	412	85%
Aerosol Cans	784	0%	0	784	85%	667	118	100%	0%	0	0%	0	0	118	0%	0	118	0%	0	118	0%	0	0	667	118	85%
Paint Cans	235	0%	0	235	85%	200	35	100%	0%	0	0%	0	0	35	0%	0	35	0%	0	35	0%	0	0	200	35	85%
Other Metal	3,647	0%	0	3,647	85%	3,100	547	100%	0%	0	0%	0	0	547	0%	0	547	0%	0	547	0%	0	0	3,100	547	85%
Total Metals	9,372	0%	0	9,372	80%	7,535	1,837	100%	0%	0	0%	0	0	1,837	0%	0	1,837	0%	0	1,837	0%	0	0	7,535	1,837	80%
Food & Beverage Containers	5,098	0%	0	5,098	0%	0	5,098	0%	100%	5,098	0%	0	5,098	5,098	95%	4,843	255	0%	0	255	0%	0	0	0	5,098	0%
LCBO Glass	6,549	0%	0	6,549	0%	0	6,549	0%	100%	6,549	0%	0	6,549	6,549	95%	6,222	327	0%	0	327	0%	0	0	0	6,549	0%
Other Glass	3,922	0%	0	3,922	0%	0	3,922	0%	100%	3,922	0%	0	3,922	3,922	95%	3,725	196	0%	0	196	0%	0	0	0	3,922	0%
Total Glass	15,569	0%	0	15,569	0%	0	15,569	0%	100%	15,569	0%	0	15,569	15,569	95%	14,790	778	0%	0	778	0%	0	0	0	15,569	0%
Food Waste	48,494	0%	0	48,494	0%	0	48,494	5%	95%	46,069	50%	24,247	21,822	24,247	10%	2,425	21,822	95%	20,731	1,091	0%	0	0	44,978	3,516	93%
Leaf and Yard Waste	6,023	0%	0	6,023	0%	0	6,023	5%	95%	5,722	50%	3,012	2,710	3,012	10%	301	2,710	95%	2,575	136	0%	0	0	5,587	437	93%
Animal Waste	23,843	0%	0	23,843	0%	0	23,843	5%	95%	22,651	50%	11,921	10,729	11,921	10%	1,192	10,729	95%	10,193	536	0%	0	0	22,114	1,729	93%
Compostable Fibre	12,314	0%	0	12,314	0%	0	12,314	5%	95%	11,698	25%	3,078	8,620	9,235	10%	924	8,312	95%	7,896	416	0%	0	0	10,975	1,339	89%
Sanitary Products	34,666	0%	0	34,666	0%	0	34,666	5%	95%	32,933	25%	8,667	24,266	26,000	10%	2,600	23,400	95%	22,230	1,170	0%	0	0	30,896	3,770	89%
Organics	125,340	0%	0	125,340	0%	0	125,340	5%	95%	119,073	41%	50,925	68,148	74,415	10%	7,442	66,974	95%	63,625	3,349	0%	0	0	114,550	10,790	91%
HHW	1,224	20%	245	979	0%	0	979	100%	0%	0	0%	0	0	979	100%	979	0	0%	0	0	0%	0	0	0	1,224	0%
Wood	11,153	25%	2,788	8,364	25%	2,091	6,273	95%	5%	314	0%	0	314	6,273	10%	627	5,646	98%	5,533	113	0%	0	0	7,624	3,528	68%
Textiles	9,663	0%	0	9,663	0%	0	9,663	95%	5%	483	0%	0	483	9,663	10%	966	8,696	94%	8,175	522	0%	0	0	8,175	1,488	85%
Building Renovations	22,690	80%	18,152	4,538	0%	0	4,538	90%	10%	454	0%	0	454	4,538	50%	2,269	2,269	98%	2,224	45	0%	0	0	2,224	20,466	10%
Electronics	611	0%	0	611	50%	305	305	100%	0%	0	0%	0	0	305	50%	153	153	98%	150	3	0%	0	0	455	156	75%
White Goods	306	0%	0	306	100%	306	0	100%	0%	0	0%	0	0	0	0%	0	0	0%	0	0	0%	0	0	306	0	100%
Other Material	24,848	60%	14,909	9,939	10%	994	8,945	90%	10%	895	0%	0	895	8,945	50%	4,473	4,473	98%	4,383	89	0%	0	0	5,377	19,471	22%
Tires	0	0%	0	0	0%	0	0	100%	0%	0	0%	0	0	0	0%	0	0	0%	0	0	0%	0	0	0	0	0%
Bulky Goods	42,538	10%	4,254	38,285	10%	3,828	34,456	100%	0%	0	0%	0	0	34,456	50%	17,228	17,228	98%	16,884	345	0%	0	0	20,712	21,827	49%
Misc. Goods	27,009	60%	16,206	10,804	10%	1,080	9,723	90%	10%	972	0%	0	972	9,723	50%	4,862	4,862	98%	4,764	97	0%	0	0	5,845	21,165	22%
Total Other Material	138,818	41%	56,308	82,510	10%	8,606	73,904	96%	4%	3,117	0%	0	3,117	73,904	41%	30,578										

Table 2b - iii
System Quantity Assumptions - Durham and York (2011) - Class B Compost Marketed and Recycled Granular Construction Materials
System 2b: Thermal Treatment of Alternative Fuel

Material Category	Post Diversion Waste	Unacceptable Waste			Mechanical Treatment (MT)				Biological Treatment (BT)				Solid Recovered Fuel Preparation (SRFP)				Thermal Treatment (TT)			Recyclable Recovery from Ash			Residue to Disposal			
	A (Tonnes)	B % Residue	C Residue to LF (Tonnes)	D Input to MT (Tonnes)	E % Captured	F Recyclables Captured (Tonnes)	G Quantity Remaining (Tonnes)	H % to SRFP	I % to Bio-Drying	J Input to Bio-Drying (Tonnes)	K % Reduced	L Quantity Reduced (Tonnes)	M Input to SRFP from BT (Tonnes)	N Input to SRFP (Tonnes)	O % Residue	P Residue to LF (Tonnes)	Q Input to TT (Tonnes)	R % Mass Loss	S Mass Loss (Tonnes)	T Quantity Remaining (ash) (Tonnes)	U % Captured	V Recyclables Captured (Tonnes)	W Residue to LF (Tonnes)	X Quantity Diverted from LF (Tonnes)	Y Quantity to LF (Tonnes)	Z % Diverted from Landfill (LF) (Tonnes)
Calculation			C = A x B	D = A - C		F = D x E	G = D - F		J = G x I		L = J x K	M = J - L	N = (G x H) + M		P = N x O	Q = N - P		S = Q x R	T = Q - S		V = T x U	W = T - U	X = F + L + S + V	Y = C + P + W	Z = X / A	
Newspaper	10,701	0%	0	10,701	0%	0	10,701	90%	10%	1,070	0%	0	1,070	10,701	5%	535	10,166	98%	9,962	203	95%	193	10	10,155	545	95%
Magazines/Paperbacks	4,294	0%	0	4,294	0%	0	4,294	90%	10%	429	0%	0	429	4,294	5%	215	4,079	78%	3,182	897	95%	853	45	4,035	260	94%
Cardboard	4,427	0%	0	4,427	0%	0	4,427	90%	10%	443	0%	0	443	4,427	5%	221	4,205	95%	3,995	210	95%	200	11	4,195	232	95%
Boxboard/Rolls	3,961	0%	0	3,961	0%	0	3,961	90%	10%	396	0%	0	396	3,961	5%	198	3,763	95%	3,575	188	95%	179	9	3,753	207	95%
Mixed Household	9,755	0%	0	9,755	0%	0	9,755	90%	10%	975	0%	0	975	9,755	5%	488	9,267	95%	8,804	463	95%	440	23	9,244	511	95%
Gable Top Cartons	980	0%	0	980	60%	588	392	90%	10%	39	0%	0	39	392	5%	20	373	98%	365	7	95%	7	0	960	20	98%
Aseptic Containers	147	0%	0	147	60%	88	59	90%	10%	6	0%	0	6	59	5%	3	56	98%	55	1	95%	1	0	144	3	98%
Other Fibre	3,186	0%	0	3,186	0%	0	3,186	90%	10%	319	0%	0	319	3,186	5%	159	3,027	95%	2,876	151	95%	144	8	3,019	167	95%
Total Fibre	37,451	0%	0	37,451	2%	676	36,774	90%	10%	3,677	0%	0	3,677	36,774	5%	1,839	34,935	94%	32,813	2,122	95%	2,016	106	35,506	1,945	95%
PETE	2,000	0%	0	2,000	75%	1,500	500	100%	0%	0	0%	0	0	500	5%	25	475	99%	470	5	95%	5	0	1,975	25	99%
HDPE	1,206	0%	0	1,206	75%	904	301	100%	0%	0	0%	0	0	301	5%	15	286	99%	284	3	95%	3	0	1,191	15	99%
PVC	98	0%	0	98	0%	0	98	100%	0%	0	0%	0	0	98	5%	5	93	98%	91	2	95%	2	0	93	5	95%
LDPE & PP	1,471	0%	0	1,471	0%	0	1,471	100%	0%	0	0%	0	0	1,471	5%	74	1,397	99%	1,383	14	95%	13	1	1,396	74	95%
Polystyrene	3,088	0%	0	3,088	0%	0	3,088	50%	50%	1,544	0%	0	1,544	3,088	5%	154	2,934	99%	2,904	29	95%	28	1	2,932	156	95%
Film	6,176	0%	0	6,176	0%	0	6,176	100%	0%	0	0%	0	0	6,176	5%	309	5,868	98%	5,750	117	95%	111	6	5,862	315	95%
Other Plastic	17,059	0%	0	17,059	0%	0	17,059	90%	10%	1,706	0%	0	1,706	17,059	5%	853	16,206	98%	15,882	324	95%	308	16	16,190	869	95%
Total Plastic	31,098	0%	0	31,098	8%	2,404	28,693	89%	11%	3,250	0%	0	3,250	28,693	5%	1,435	27,259	98%	26,764	494	95%	470	25	29,638	1,459	95%
Aluminum Cans	735	0%	0	735	85%	625	110	100%	0%	0	0%	0	0	110	0%	0	110	0%	0	110	0%	0	110	625	110	85%
Aluminum Foil Trays	490	0%	0	490	30%	147	343	100%	0%	0	0%	0	0	343	0%	0	343	0%	0	343	0%	0	343	147	343	30%
Steel Cans	1,716	0%	0	1,716	85%	1,458	257	100%	0%	0	0%	0	0	257	0%	0	257	0%	0	257	0%	0	257	1,458	257	85%
Aerosol Cans	490	0%	0	490	85%	417	74	100%	0%	0	0%	0	0	74	0%	0	74	0%	0	74	0%	0	74	417	74	85%
Paint Cans	147	0%	0	147	85%	125	22	100%	0%	0	0%	0	0	22	0%	0	22	0%	0	22	0%	0	22	125	22	85%
Other Metal	2,279	0%	0	2,279	85%	1,937	342	100%	0%	0	0%	0	0	342	0%	0	342	0%	0	342	0%	0	342	1,937	342	85%
Total Metals	5,858	0%	0	5,858	80%	4,710	1,148	100%	0%	0	0%	0	0	1,148	0%	0	1,148	0%	0	1,148	0%	0	1,148	4,710	1,148	80%
Food & Beverage Containers	3,186	0%	0	3,186	70%	2,230	956	0%	100%	956	0%	0	956	956	95%	908	48	0%	0	48	95%	45	2	2,276	910	71%
LCBO Glass	4,093	0%	0	4,093	70%	2,865	1,228	0%	100%	1,228	0%	0	1,228	1,228	95%	1,167	61	0%	0	61	95%	58	3	2,924	1,170	71%
Other Glass	2,451	0%	0	2,451	70%	1,716	735	0%	100%	735	0%	0	735	735	95%	699	37	0%	0	37	95%	35	2	1,751	700	71%
Total Glass	9,730	0%	0	9,730	70%	6,811	2,919	0%	100%	2,919	0%	0	2,919	2,919	95%	2,773	146	0%	0	146	95%	139	7	6,950	2,780	71%
Food Waste	30,309	0%	0	30,309	0%	0	30,309	5%	95%	28,793	50%	15,154	13,639	15,154	10%	1,515	13,639	95%	12,957	682	95%	648	34	28,759	1,550	95%
Leaf and Yard Waste	3,765	0%	0	3,765	0%	0	3,765	5%	95%	3,576	50%	1,882	1,694	1,882	10%	188	1,694	95%	1,609	85	95%	80	4	3,572	192	95%
Animal Waste	14,902	0%	0	14,902	0%	0	14,902	5%	95%	14,157	50%	7,451	6,706	7,451	10%	745	6,706	95%	6,371	335	95%	319	17	14,140	762	95%
Compostable Fibre	7,696	0%	0	7,696	0%	0	7,696	5%	95%	7,311	25%	1,924	5,387	5,772	10%	577	5,195	95%	4,935	260	95%	247	13	7,106	590	92%
Sanitary Products	21,666	0%	0	21,666	0%	0	21,666	5%	95%	20,583	25%	5,417	15,167	16,250	10%	1,625	14,625	95%	13,894	731	95%	695	37	20,005	1,662	92%
Organics	78,338	0%	0	78,338	0%	0	78,338	5%	95%	74,421	41%	31,828	42,593	46,509	10%	4,651	41,858	95%	39,766	2,093	95%	1,988	105	73,582	4,756	94%
HHW	765	20%	153	612	0%	0	612	100%	0%	0	0%	0	0	612	100%	612	0	0	0	0%	0	0	0	0	765	0%
Wood	6,970	25%	1,743	5,228	25%	1,307	3,921	95%	5%	196	0%	0	196	3,921	10%	392	3,529	98%	3,458	71	95%	67	4	4,832	2,138	69%
Textiles	6,039	0%	0	6,039	0%	0	6,039	95%	5%	302	0%	0	302	6,039	10%	604	5,435	94%	5,109	326	95%	310	16	5,419	620	90%
Building Renovations	14,181	80%	11,345	2,836	20%	567	2,269	90%	10%	227	0%	0	227	2,269	50%	1,134	1,134	98%	1,112	23	75%	17	6	1,696	12,485	12%
Electronics	382	0%	0	382	50%	191	191	100%	0%	0	0%	0	0	191	50%	95	95	98%	94	2	75%	1	0	286	96	75%
White Goods	191	0%	0	191	100%	191	0	100%	0%	0	0%	0	0	0	0%	0	0	0%	0	0	75%	0	0	191	0	100%
Other Material	15,530	60%	9,318	6,212	30%	1,864	4,348	90%	10%	435	0%	0	435	4,348	50%	2,174	2,174	98%	2,131	43	70%	30	13	4,025	11,505	26%
Tires	0	0%	0	0	0%	0	0	100%	0%	0	0%	0	0	0	0%	0	0	0%	0	0	0%	0	0	0	0	0%
Bulky Goods	26,587	10%	2,659	23,928	10%	2,393	21,535	100%	0%	0	0%	0	0	21,535	50%	10,768	10,768	98%	10,552	215	70%	151	65	13,096	13,491	49%
Misc. Goods	16,881	60%	10,129	6,752	30%	2,026	4,727	90%	10%	473	0%	0	473	4,727	50%	2,363	2,363	98%	2,316	47	70%	33	14	4,375	12,506	26%
Total Other Material	86,761	41%	35,193	51,569	17%	8,539	43,030	96%	4%	1,632	0%	0	1,632	43,030	41%	17,531	25,499	97%								

Table 2c - i - Minimum
System Quantity Assumptions - Durham and York (2011)
System 2c: Thermal Treatment of Alternative Fuel with Biogas Recovery

Material Category	Post Diversion Waste	Unacceptable Waste			Mechanical Treatment (MT)					Biological Treatment (BT)				Solid Recovered Fuel Preparation (SRFP)			Thermal Treatment (TT)			Recyclable Recovery from Ash			Residue to Disposal			
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
	(Tonnes)	% Residue	Residue to LF (Tonnes)	Input to MT (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Quantity Remaining (Tonnes)	% to SRFP	% to AD	Input to AD (Tonnes)	% Reduced	Quantity Reduced (Tonnes)	Residue to LF (Tonnes)	Input to SRFP (Tonnes)	% Residue	Residue to LF (Tonnes)	Input to TT (Tonnes)	Mass Loss	Mass Loss (Tonnes)	Quantity Remaining (Ash) (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Residue to LF (Tonnes)	Quantity Diverted from LF (Tonnes)	Quantity to LF (Tonnes)	% Diverted from Landfill (LF) (Tonnes)
Calculation			C = A x B	D = A - C		F = D x E	G = D - F		J = G x I		L = J x K	M = J - L	N = G x H		P = N x O	Q = N - P		S = Q x R	T = Q - S				X = F + L + S	Y = C + M + P + T	Z = X / A	
Newspaper	10,701	0%	0	10,701	0%	0	10,701	90%	10%	1,070	60%	642	428	9,631	5%	482	9,149	98%	8,966	183	0%	0	183	9,608	1,093	90%
Magazines/Paperbacks	4,294	0%	0	4,294	0%	0	4,294	90%	10%	429	60%	258	172	3,865	5%	193	3,671	78%	2,864	808	0%	0	808	3,121	1,173	73%
Cardboard	4,427	0%	0	4,427	0%	0	4,427	90%	10%	443	60%	266	177	3,984	5%	199	3,785	95%	3,596	189	0%	0	189	3,861	565	87%
Boxboard/Rolls	3,961	0%	0	3,961	0%	0	3,961	90%	10%	396	60%	238	158	3,565	5%	178	3,386	95%	3,217	169	0%	0	169	3,455	506	87%
Mixed Household	9,755	0%	0	9,755	0%	0	9,755	90%	10%	975	60%	585	390	8,779	5%	439	8,340	95%	7,923	417	0%	0	417	8,509	1,246	87%
Gable Top Cartons	980	0%	0	980	60%	588	392	90%	10%	39	60%	24	16	353	5%	18	335	98%	329	7	0%	0	7	940	40	96%
Aseptic Containers	147	0%	0	147	60%	88	59	90%	10%	6	60%	4	2	53	5%	3	50	98%	49	1	0%	0	1	141	6	96%
Other Fibre	3,186	0%	0	3,186	0%	0	3,186	90%	10%	319	60%	191	127	2,868	5%	143	2,724	95%	2,588	136	0%	0	136	2,779	407	87%
Total Fibre	37,451	0%	0	37,451	2%	676	36,774	90%	10%	3,677	60%	2,206	1,471	33,097	5%	1,655	31,442	94%	29,532	1,910	0%	0	1,910	32,415	5,036	87%
PETE	2,000	0%	0	2,000	75%	1,500	500	100%	0%	0	0%	0	0	500	5%	25	475	99%	470	5	0%	0	5	1,970	30	99%
HDPE	1,206	0%	0	1,206	75%	904	301	100%	0%	0	0%	0	0	301	5%	15	286	99%	284	3	0%	0	3	1,188	18	99%
PVC	98	0%	0	98	0%	0	98	100%	0%	0	0%	0	0	98	5%	5	93	98%	91	2	0%	0	2	91	7	93%
LDPE & PP	1,471	0%	0	1,471	0%	0	1,471	100%	0%	0	0%	0	0	1,471	5%	74	1,397	99%	1,383	14	0%	0	14	1,383	87	94%
Polystyrene	3,088	0%	0	3,088	0%	0	3,088	50%	50%	1,544	0%	0	1,544	5%	77	1,467	99%	1,452	15	0%	0	15	1,452	1,636	47%	
Film	6,176	0%	0	6,176	0%	0	6,176	100%	0%	0	0%	0	0	6,176	5%	309	5,868	98%	5,750	117	0%	0	117	5,750	426	93%
Other Plastic	17,059	0%	0	17,059	0%	0	17,059	90%	10%	1,706	0%	0	1,706	15,353	5%	768	14,585	98%	14,293	292	0%	0	292	14,293	2,765	84%
Total Plastic	31,098	0%	0	31,098	8%	2,404	28,693	89%	11%	3,250	0%	0	3,250	25,443	5%	1,272	24,171	98%	23,724	447	0%	0	447	26,128	4,969	84%
Aluminum Cans	735	0%	0	735	85%	625	110	100%	0%	0	0%	0	0	110	0%	0	110	0%	0	110	0%	0	110	625	110	85%
Aluminum Foil Trays	490	0%	0	490	30%	147	343	100%	0%	0	0%	0	0	343	0%	0	343	0%	0	343	0%	0	343	147	343	30%
Steel Cans	1,716	0%	0	1,716	85%	1,458	257	100%	0%	0	0%	0	0	257	0%	0	257	0%	0	257	0%	0	257	1,458	257	85%
Aerosol Cans	490	0%	0	490	85%	417	74	100%	0%	0	0%	0	0	74	0%	0	74	0%	0	74	0%	0	74	417	74	85%
Paint Cans	147	0%	0	147	85%	125	22	100%	0%	0	0%	0	0	22	0%	0	22	0%	0	22	0%	0	22	125	22	85%
Other Metal	2,279	0%	0	2,279	85%	1,937	342	100%	0%	0	0%	0	0	342	0%	0	342	0%	0	342	0%	0	342	1,937	342	85%
Total Metals	5,858	0%	0	5,858	80%	4,710	1,148	100%	0%	0	0%	0	0	1,148	0%	0	1,148	0%	0	1,148	0%	0	1,148	4,710	1,148	80%
Food & Beverage Containers	3,186	0%	0	3,186	0%	0	3,186	0%	100%	3,186	0%	0	3,186	0	0%	0	0	0%	0	0	0%	0	0	0	3,186	0%
LCBO Glass	4,093	0%	0	4,093	0%	0	4,093	0%	100%	4,093	0%	0	4,093	0	0%	0	0	0%	0	0	0%	0	0	0	4,093	0%
Other Glass	2,451	0%	0	2,451	0%	0	2,451	0%	100%	2,451	0%	0	2,451	0	0%	0	0	0%	0	0	0%	0	0	0	2,451	0%
Total Glass	9,730	0%	0	9,730	0%	0	9,730	0%	100%	9,730	0%	0	9,730	0	0%	0	0	0%	0	0	0%	0	0	0	9,730	0%
Food Waste	30,309	0%	0	30,309	0%	0	30,309	5%	95%	28,793	60%	17,276	11,517	1,515	0%	0	1,515	0%	0	1,515	0%	0	1,515	17,276	13,033	57%
Leaf and Yard Waste	3,765	0%	0	3,765	0%	0	3,765	5%	95%	3,576	60%	2,146	1,431	188	0%	0	188	0%	0	188	0%	0	188	2,146	1,619	57%
Animal Waste	14,902	0%	0	14,902	0%	0	14,902	5%	95%	14,157	60%	8,494	5,663	745	0%	0	745	0%	0	745	0%	0	745	8,494	6,408	57%
Compostable Fibre	7,696	0%	0	7,696	0%	0	7,696	5%	95%	7,311	60%	4,387	2,924	385	0%	0	385	0%	0	385	0%	0	385	4,387	3,309	57%
Sanitary Products	21,666	0%	0	21,666	0%	0	21,666	5%	95%	20,583	60%	12,350	8,233	1,083	0%	0	1,083	0%	0	1,083	0%	0	1,083	12,350	9,317	57%
Organics	78,338	0%	0	78,338	0%	0	78,338	5%	95%	74,421	60%	44,652	29,768	3,917	0%	0	3,917	0%	0	3,917	0%	0	3,917	44,652	33,685	57%
HHW	765	20%	153	612	0%	0	612	100%	0%	0	0%	0	0	612	100%	612	0	0%	0	0%	0	0	0	0	765	0%
Wood	6,970	25%	1,743	5,228	25%	1,307	3,921	95%	5%	196	0%	0	196	3,725	10%	372	3,352	98%	3,285	67	0%	0	67	4,592	2,378	66%
Textiles	6,039	0%	0	6,039	0%	0	6,039	95%	5%	302	0%	0	302	5,737	10%	574	5,163	94%	4,854	310	0%	0	310	4,854	1,185	80%
Building Renovations	14,181	80%	11,345	2,836	0%	0	2,836	90%	10%	284	0%	0	284	2,553	50%	1,276	1,276	98%	1,251	26	0%	0	26	1,251	12,930	9%
Electronics	382	0%	0	382	50%	191	191	100%	0%	0	0%	0	0	191	50%	95	95	98%	94	2	0%	0	2	284	97	75%
White Goods	191	0%	0	191	100%	191	0	100%	0%	0	0%	0	0	0	0%	0	0	0%	0	0	0%	0	0	191	0	100%
Other Material	15,530	60%	9,318	6,212	10%	621	5,591	90%	10%	559	0%	0	559	5,032	50%	2,516	2,516	98%	2,466	50	0%	0	50	3,087	12,443	20%
Tires	0	0%	0	0	0%	0	0	100%	0%	0	0%	0	0	0	0%	0	0	0%	0	0	0%	0	0	0	0	0%
Bulky Goods	26,587	10%	2,659	23,928	10%	2,393	21,535	100%	0%	0	0%	0	0	21,535	50%	10,768	10,768	98%	10,552	215	0%	0	215	12,945	13,642	49%
Misc. Goods	16,881	60%	10,129	6,752	10%	675	6,077	90%	10%	608	0%	0	608	5,469	50%	2,735	2,735	98%	2,680	55	0%	0	55	3,355	13,526	20%
Total Other Material	86,761	41%	35,193	51,569	10%	5,378	46,190	96%	4%	1,948	0%	0	1,948	44,242	41%	18,336	25,906	97%	25,181	725	0%	0	725	30,559	56,202	35%
Total																										

Table 2c - ii - Maximum
System Quantity Assumptions - Durham and York (2011)
System 2c: Thermal Treatment of Alternative Fuel with Biogas Recovery

Material Category	Post Diversion Waste	Unacceptable Waste			Mechanical Treatment (MT)					Biological Treatment (BT)				Solid Recovered Fuel Preparation (SRFP)				Thermal Treatment (TT)			Recyclable Recovery from Ash			Residue to Disposal			
	A (Tonnes)	B % Residue	C Residue to LF (Tonnes)	D Input to MT (Tonnes)	E % Captured	F Recyclables Captured (Tonnes)	G Quantity Remaining (Tonnes)	H % to SRFP	I % to AD	J Input to AD (Tonnes)	K % Reduced	L Quantity Reduced (Tonnes)	M Residue to LF (Tonnes)	N Input to SRFP (Tonnes)	O % Residue	P Residue to LF (Tonnes)	Q Input to TT (Tonnes)	R % Mass Loss	S Mass Loss (Tonnes)	T Quantity Remaining (Ash) (Tonnes)	U % Captured	V Recyclables Captured (Tonnes)	W Residue to LF (Tonnes)	X Quantity Diverted from LF (Tonnes)	Y Quantity to LF (Tonnes)	Z % Diverted from Landfill (LF) (Tonnes)	
Calculation			C = A x B	D = A - C		F = D x E	G = D - F		J = G x I		L = J x K	M = J - L	N = G x H		P = N x O	Q = N - P		S = Q x R	T = Q - S				X = F + L + S	Y = C + M + P + T	Z = X / A		
Newspaper	17,121	0%	0	17,121	0%	0	17,121	90%	10%	1,712	60%	1,027	685	15,409	5%	770	14,638	98%	14,346	293	0%	0	293	15,373	1,748	90%	
Magazines/Paperbacks	6,871	0%	0	6,871	0%	0	6,871	90%	10%	687	60%	412	275	6,183	5%	309	5,874	78%	4,582	1,292	0%	0	1,292	4,994	1,876	73%	
Cardboard	7,083	0%	0	7,083	0%	0	7,083	90%	10%	708	60%	425	283	6,374	5%	319	6,056	95%	5,753	303	0%	0	303	6,178	905	87%	
Boxboard/Rolls	6,337	0%	0	6,337	0%	0	6,337	90%	10%	634	60%	380	253	5,703	5%	285	5,418	95%	5,147	271	0%	0	271	5,528	810	87%	
Mixed Household	15,608	0%	0	15,608	0%	0	15,608	90%	10%	1,561	60%	936	624	14,047	5%	702	13,345	95%	12,677	667	0%	0	667	13,614	1,994	87%	
Gable Top Cartons	1,569	0%	0	1,569	60%	941	627	90%	10%	63	60%	38	25	565	5%	28	536	98%	526	11	0%	0	11	1,505	64	96%	
Aseptic Containers	235	0%	0	235	60%	141	94	90%	10%	9	60%	6	4	85	5%	4	80	98%	79	2	0%	0	2	226	10	96%	
Other Fibre	5,098	0%	0	5,098	0%	0	5,098	90%	10%	510	60%	306	204	4,588	5%	229	4,359	95%	4,141	218	0%	0	218	4,447	651	87%	
Total Fibre	59,921	0%	0	59,921	2%	1082	58,839	90%	10%	5,884	60%	3,530	2,354	52,955	5%	2,648	50,307	94%	47,251	3,056	0%	0	3,056	51,863	8,058	87%	
PETE	3,200	0%	0	3,200	75%	2,400	800	100%	0%	0	0%	0	0	800	5%	40	760	99%	752	8	0%	0	8	3,152	48	99%	
HDPE	1,929	0%	0	1,929	75%	1,447	482	100%	0%	0	0%	0	0	482	5%	24	458	99%	454	5	0%	0	5	1,901	29	99%	
PVC	157	0%	0	157	0%	0	157	100%	0%	0	0%	0	0	157	5%	8	149	98%	146	3	0%	0	3	146	11	93%	
LDPE & PP	2,353	0%	0	2,353	0%	0	2,353	100%	0%	0	0%	0	0	2,353	5%	118	2,235	99%	2,213	22	0%	0	22	2,213	140	94%	
Polystyrene	4,941	0%	0	4,941	0%	0	4,941	50%	50%	2,471	0%	0	2,471	5%	124	2,347	99%	2,324	23	0%	0	23	2,324	2,618	47%		
Film	9,882	0%	0	9,882	0%	0	9,882	100%	0%	0	0%	0	0	9,882	5%	494	9,388	98%	9,200	188	0%	0	188	9,200	682	93%	
Other Plastic	27,294	0%	0	27,294	0%	0	27,294	90%	10%	2,729	0%	0	2,729	24,565	5%	1,228	23,336	98%	22,870	467	0%	0	467	22,870	4,424	84%	
Total Plastic	49,756	0%	0	49,756	8%	3,847	45,909	89%	11%	5,200	0%	0	5,200	40,709	5%	2,035	38,674	98%	37,959	715	0%	0	715	41,806	7,951	84%	
Aluminum Cans	1,176	0%	0	1,176	85%	1,000	176	100%	0%	0	0%	0	0	176	0%	0	176	0%	0	176	0%	0	176	1,000	176	85%	
Aluminum Foil Trays	784	0%	0	784	30%	235	549	100%	0%	0	0%	0	0	549	0%	0	549	0%	0	549	0%	0	549	235	549	30%	
Steel Cans	2,745	0%	0	2,745	85%	2,333	412	100%	0%	0	0%	0	0	412	0%	0	412	0%	0	412	0%	0	412	2,333	412	85%	
Aerosol Cans	784	0%	0	784	85%	667	118	100%	0%	0	0%	0	0	118	0%	0	118	0%	0	118	0%	0	118	667	118	85%	
Paint Cans	235	0%	0	235	85%	200	35	100%	0%	0	0%	0	0	35	0%	0	35	0%	0	35	0%	0	35	200	35	85%	
Other Metal	3,647	0%	0	3,647	85%	3,100	547	100%	0%	0	0%	0	0	547	0%	0	547	0%	0	547	0%	0	547	3,100	547	85%	
Total Metals	9,372	0%	0	9,372	80%	7,535	1,837	100%	0%	0	0%	0	0	1,837	0%	0	1,837	0%	0	1,837	0%	0	1,837	7,535	1,837	80%	
Food & Beverage Containers	5,098	0%	0	5,098	0%	0	5,098	0%	100%	5,098	0%	0	5,098	0	0%	0	0	0%	0	0	0%	0	0	0	5,098	0	0%
LCBO Glass	6,549	0%	0	6,549	0%	0	6,549	0%	100%	6,549	0%	0	6,549	0	0%	0	0	0%	0	0	0%	0	0	0	6,549	0	0%
Other Glass	3,922	0%	0	3,922	0%	0	3,922	0%	100%	3,922	0%	0	3,922	0	0%	0	0	0%	0	0	0%	0	0	0	3,922	0	0%
Total Glass	15,569	0%	0	15,569	0%	0	15,569	0%	100%	15,569	0%	0	15,569	0	0%	0	0	0%	0	0	0%	0	0	0	15,569	0	0%
Food Waste	48,494	0%	0	48,494	0%	0	48,494	5%	95%	46,069	60%	27,641	18,428	2,425	0%	0	2,425	0%	0	2,425	0%	0	2,425	27,641	20,852	57%	
Leaf and Yard Waste	6,023	0%	0	6,023	0%	0	6,023	5%	95%	5,722	60%	3,433	2,289	301	0%	0	301	0%	0	301	0%	0	301	3,433	2,590	57%	
Animal Waste	23,843	0%	0	23,843	0%	0	23,843	5%	95%	22,651	60%	13,590	9,060	1,192	0%	0	1,192	0%	0	1,192	0%	0	1,192	13,590	10,252	57%	
Compostable Fibre	12,314	0%	0	12,314	0%	0	12,314	5%	95%	11,698	60%	7,019	4,679	616	0%	0	616	0%	0	616	0%	0	616	7,019	5,295	57%	
Sanitary Products	34,666	0%	0	34,666	0%	0	34,666	5%	95%	32,933	60%	19,760	13,173	1,733	0%	0	1,733	0%	0	1,733	0%	0	1,733	19,760	14,907	57%	
Organics	125,340	0%	0	125,340	0%	0	125,340	5%	95%	119,073	60%	71,444	47,629	6,267	0%	0	6,267	0%	0	6,267	0%	0	6,267	71,444	53,896	57%	
HHW	1,224	20%	245	979	0%	0	979	100%	0%	0	0%	0	0	979	100%	979	0	0%	0	0%	0	0	0	0	1,224	0%	
Wood	11,153	25%	2,788	8,364	25%	2091	6,273	95%	5%	314	0%	0	314	5,960	10%	596	5,364	98%	5,256	107	0%	0	107	7,347	3,805	66%	
Textiles	9,663	0%	0	9,663	0%	0	9,663	95%	5%	483	0%	0	483	9,179	10%	918	8,262	94%	7,766	496	0%	0	496	7,766	1,897	80%	
Building Renovations	22,690	80%	18,152	4,538	0%	0	4,538	90%	10%	454	0%	0	454	4,084	50%	2,042	2,042	98%	2,001	41	0%	0	41	2,001	20,688	9%	
Electronics	611	0%	0	611	50%	305	305	100%	0%	0	0%	0	0	305	50%	153	153	98%	150	3	0%	0	3	455	156	75%	
White Goods	306	0%	0	306	100%	306	0	100%	0%	0	0%	0	0	0	0%	0	0	0%	0	0	0%	0	0	306	0	100%	
Other Material	24,848	60%	14,909	9,939	10%	994	8,945	90%	10%	895	0%	0	895	8,051	50%	4,025	4,025	98%	3,945	81	0%	0	81	4,939	19,909	20%	
Tires	0	0%	0	0	0%	0	0	100%	0%	0	0%	0	0	0	0%	0	0	0%	0	0	0%	0	0	0	0	0%	
Bulky Goods	42,538	10%	4,254	38,284	10%	3828	34,456	100%	0%	0	0%	0	0	34,456	50%	17,228	17,228	98%	16,884	345	0%	0	345	20,712	21,827	49%	
Misc. Goods	27,009	60%	16,206	10,804	10%	1080	9,723	90%	10%	972	0%	0	972	8,751	50%	4,376	4,376	98%	4,288	88	0%	0	88	5,368	21,641	20%	
Total Other Material	138,818	41%	56,308	82,510	10%	8606	73,904	96%	4%	3,117	0%	0	3,117	70,787	41%	29,338	41,449	97%	40,290	1,159	0%	0	1,159</				

Table 2c - iii
System Quantity Assumptions - Durham and York (2011) - Class B Compost Marketed and Recycled Granular Construction Materials
System 2c: Thermal Treatment of Alternative Fuel with Biogas Recovery

Material Category	Post Diversion Waste	Unacceptable Waste			Mechanical Treatment (MT)					Biological Treatment (BT)				Solid Recovered Fuel Preparation (SRFP)				Thermal Treatment (TT)			Recyclable Recovery from Ash			Residue to Disposal		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
	(Tonnes)	% Residue	Residue to LF (Tonnes)	Input to MT (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Quantity Remaining (Tonnes)	% to SRFP	% to AD	Input to AD (Tonnes)	% Reduced	Quantity Reduced (Tonnes)	Residue to LF (Tonnes)	Input to SRFP (Tonnes)	% Residue	Residue to LF (Tonnes)	Input to TT (Tonnes)	Mass Loss	Mass Loss (Tonnes)	Quantity Remaining (Ash) (Tonnes)	% Captured	Recyclables Captured (Tonnes)	Residue to LF (Tonnes)	Quantity Diverted from LF (Tonnes)	Quantity to LF (Tonnes)	% Diverted from Landfill (LF) (Tonnes)
Calculation			C = A x B	D = A - C		F = D x E	G = D - F		J = G x I		L = J x K	M = J - L	N = G x H		P = N x O	Q = N - P		S = Q x R	T = Q - S				X = F + L + S	Y = C + M + P + T	Z = X / A	
Newspaper	10,701	0%	0	10,701	0%	0	10,701	90%	10%	1,070	60%	642	428	9,631	5%	482	9,149	98%	8,966	183	0%	0	183	9,608	1,093	90%
Magazines/Paperbacks	4,294	0%	0	4,294	0%	0	4,294	90%	10%	429	60%	258	172	3,865	5%	193	3,671	78%	2,864	808	0%	0	808	3,121	1,173	73%
Cardboard	4,427	0%	0	4,427	0%	0	4,427	90%	10%	443	60%	266	177	3,984	5%	199	3,785	95%	3,596	189	0%	0	189	3,861	565	87%
Boxboard/Rolls	3,961	0%	0	3,961	0%	0	3,961	90%	10%	396	60%	238	158	3,565	5%	178	3,386	95%	3,217	169	0%	0	169	3,455	506	87%
Mixed Household	9,755	0%	0	9,755	0%	0	9,755	90%	10%	975	60%	585	390	8,779	5%	439	8,340	95%	7,923	417	0%	0	417	8,509	1,246	87%
Gable Top Cartons	980	0%	0	980	60%	588	392	90%	10%	39	60%	24	16	353	5%	18	335	98%	329	7	0%	0	7	940	40	96%
Aseptic Containers	147	0%	0	147	60%	88	59	90%	10%	6	60%	4	2	53	5%	3	50	98%	49	1	0%	0	1	141	6	96%
Other Fibre	3,186	0%	0	3,186	0%	0	3,186	90%	10%	319	60%	191	127	2,868	5%	143	2,724	95%	2,588	136	0%	0	136	2,779	407	87%
Total Fibre	37,451	0%	0	37,451	2%	676	36,774	90%	10%	3,677	60%	2,206	1,471	33,097	5%	1,655	31,442	94%	29,532	1,910	0%	0	1,910	32,415	5,036	87%
PETE	2,000	0%	0	2,000	75%	1,500	500	100%	0%	0	0%	0	0	500	5%	25	475	99%	470	5	0%	0	5	1,970	30	99%
HDPE	1,206	0%	0	1,206	75%	904	301	100%	0%	0	0%	0	0	301	5%	15	286	99%	284	3	0%	0	3	1,188	18	99%
PVC	98	0%	0	98	0%	0	98	100%	0%	0	0%	0	0	98	5%	5	93	98%	91	2	0%	0	2	91	7	93%
LDPE & PP	1,471	0%	0	1,471	0%	0	1,471	100%	0%	0	0%	0	0	1,471	5%	74	1,397	99%	1,383	14	0%	0	14	1,383	87	94%
Polystyrene	3,088	0%	0	3,088	0%	0	3,088	50%	50%	1,544	0%	0	1,544	1,544	5%	77	1,467	99%	1,452	15	0%	0	15	1,452	1,636	47%
Film	6,176	0%	0	6,176	0%	0	6,176	100%	0%	0	0%	0	0	6,176	5%	309	5,868	98%	5,750	117	0%	0	117	5,750	426	93%
Other Plastic	17,059	0%	0	17,059	0%	0	17,059	90%	10%	1,706	0%	0	1,706	15,353	5%	768	14,585	98%	14,293	292	0%	0	292	14,293	2,765	84%
Total Plastic	31,098	0%	0	31,098	8%	2,404	28,693	89%	11%	3,250	0%	0	3,250	25,443	5%	1,272	24,171	98%	23,724	447	0%	0	447	26,128	4,969	84%
Aluminum Cans	735	0%	0	735	85%	625	110	100%	0%	0	0%	0	0	110	0%	0	110	0%	0	110	0%	0	110	625	110	85%
Aluminum Foil Trays	490	0%	0	490	30%	147	343	100%	0%	0	0%	0	0	343	0%	0	343	0%	0	343	0%	0	343	147	343	30%
Steel Cans	1,716	0%	0	1,716	85%	1,458	257	100%	0%	0	0%	0	0	257	0%	0	257	0%	0	257	0%	0	257	1,458	257	85%
Aerosol Cans	490	0%	0	490	85%	417	74	100%	0%	0	0%	0	0	74	0%	0	74	0%	0	74	0%	0	74	417	74	85%
Paint Cans	147	0%	0	147	85%	125	22	100%	0%	0	0%	0	0	22	0%	0	22	0%	0	22	0%	0	22	125	22	85%
Other Metal	2,279	0%	0	2,279	85%	1,937	342	100%	0%	0	0%	0	0	342	0%	0	342	0%	0	342	0%	0	342	1,937	342	85%
Total Metals	5,858	0%	0	5,858	80%	4,710	1,148	100%	0%	0	0%	0	0	1,148	0%	0	1,148	0%	0	1,148	0%	0	1,148	4,710	1,148	80%
Food & Beverage Containers	3,186	0%	0	3,186	85%	2,708	478	0%	100%	478	0%	0	478	0	0%	0	0	0%	0	0	0%	0	0	2,708	478	85%
LCBO Glass	4,093	0%	0	4,093	85%	3,479	614	0%	100%	614	0%	0	614	0	0%	0	0	0%	0	0	0%	0	0	3,479	614	85%
Other Glass	2,451	0%	0	2,451	85%	2,083	368	0%	100%	368	0%	0	368	0	0%	0	0	0%	0	0	0%	0	0	2,083	368	85%
Total Glass	9,730	0%	0	9,730	85%	8,271	1,460	0%	100%	1,460	0%	0	1,460	0	0%	0	0	0%	0	0	0%	0	0	8,271	1,460	85%
Food Waste	30,309	0%	0	30,309	0%	0	30,309	5%	95%	28,793	90%	25,914	2,879	1,515	0%	0	1,515	0%	0	1,515	0%	0	1,515	25,914	4,395	86%
Leaf and Yard Waste	3,765	0%	0	3,765	0%	0	3,765	5%	95%	3,576	90%	3,219	358	188	0%	0	188	0%	0	188	0%	0	188	3,219	546	86%
Animal Waste	14,902	0%	0	14,902	0%	0	14,902	5%	95%	14,157	90%	12,741	1,416	745	0%	0	745	0%	0	745	0%	0	745	12,741	2,161	86%
Compostable Fibre	7,696	0%	0	7,696	0%	0	7,696	5%	95%	7,311	90%	6,580	731	385	0%	0	385	0%	0	385	0%	0	385	6,580	1,116	86%
Sanitary Products	21,666	0%	0	21,666	0%	0	21,666	5%	95%	20,583	90%	18,525	2,058	1,083	0%	0	1,083	0%	0	1,083	0%	0	1,083	18,525	3,142	86%
Organics	78,338	0%	0	78,338	0%	0	78,338	5%	95%	74,421	90%	66,979	7,442	3,917	0%	0	3,917	0%	0	3,917	0%	0	3,917	66,979	11,359	86%
HHW	765	20%	153	612	0%	0	612	100%	0%	0	0%	0	0	612	100%	612	0	0%	0	0%	0	0	0	0	765	0%
Wood	6,970	25%	1,743	5,228	25%	1,307	3,921	95%	5%	196	0%	0	196	3,725	10%	372	3,352	98%	3,285	67	0%	0	67	4,592	2,378	66%
Textiles	6,039	0%	0	6,039	0%	0	6,039	95%	5%	302	0%	0	302	5,737	10%	574	5,163	94%	4,854	310	0%	0	310	4,854	1,185	80%
Building Renovations	14,181	80%	11,345	2,836	20%	567	2,269	90%	10%	227	0%	0	227	2,042	50%	1,021	1,021	98%	1,001	20	0%	0	20	1,568	12,613	11%
Electronics	382	0%	0	382	50%	191	191	100%	0%	0	0%	0	0	191	50%	95	95	98%	94	2	0%	0	2	284	97	75%
White Goods	191	0%	0	191	100%	191	0	100%	0%	0	0%	0	0	0	0%	0	0	0%	0	0	0%	0	0	191	0	100%
Other Material	15,530	60%	9,318	6,212	30%	1,864	4,348	90%	10%	435	0%	0	435	3,914	50%	1,957	1,957	98%	1,918	39	0%	0	39	3,781	11,749	24%
Tires	0	0%	0	0	0%	0	0	100%	0%	0	0%	0	0	0	0%	0	0	0%	0	0	0%	0	0	0	0	0%
Bulky Goods	26,587	10%	2,659	23,928	10%	2,393	21,535	100%	0%	0	0%	0	0	21,535	50%	10,768	10,768	98%	10,552	215	0%	0	215	12,945	13,642	49%
Misc. Goods	16,881	60%	10,129	6,752	30%	2,026	4,727	90%	10%	473	0%	0	473	4,254	50%	2,127	2,127	98%	2,084	43	0%	0	43	4,110	12,771	24%
Total Other Material	86,761	41%	35,193	51,569	17%	8,539	43,030	96%	4%	1,632	0%	0	1,632	41,398	41%	16,914	24,484	97%	23,787	696	0%	0	696	32,326		