

# ELIA LANDS MISSISSAUGA, ONTARIO, CANADA

Solid Waste & Recycling Management Plan

Issued for Rezoning

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**PRESENTED BY:**

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# SUMMARY

The following provides results of Waste Generation Estimate program for waste handling systems, space program and waste equipment recommendations and concept planning for the solid waste and recycling for Elia Lands Development. Mississauga, Ontario, Canada. The waste program is designed to follow Region of Peel codes for solid waste and recycling.

Elia Lands Development consists of 5 Blocks. Each block comprises of tower buildings and town houses. **Appendix 1** provides summarized data of the development with number of residential units, garbage room sizes and bin counts for the residential component and total commercial area and proposed garbage room sizes for the commercial component of the Development.

The purpose of this development will be mixed use. Comprising majorly of residential and some commercial component.

The Waste Generation Estimate, waste room sizing and bin staging calculations for each block and is provided by Block for residential and commercial in **Appendices 2, 3, 4, 5, and 6**. This calculates the estimated volumes of general trash, recyclables, hazardous and other specialty wastes that will be generated, and area requirements per Region of Peel Code.

The waste generation estimate does not include any initial or on-going project construction waste generation, which is under the planning requirement and coordination by the General Contractor.

There will be designated gravity chute systems in each building for residents. Each building will have a waste garbage room with chute system for collection of residential wastes. During hauler collection times bins and carts will be moved to a bin staging area located on the Ground Floor adjacent to a Type “G” loading bay, required by Region of Peel for residential pick-up.

The provided estimate is utilized as basis for waste area design planning and waste handling equipment specification. Actual waste diversion to landfill can increase/decrease based on the goals and effectiveness to carry out recycling programs by tenants and facility management.

The Region of Peel selected hauler will be responsible for providing waste management services for the principal waste streams. Additional approved private haulers may be contracted for some of the specialty wastes.

The principle waste streams include the following:

- General Trash
- Organic Wastes
- Commingled Recyclables (single-stream plastics, glass, metals/cans, mixed clean paper, cardboard)

In addition, there are other specialty waste streams that will be staged for pick-up in carts, dumpster bins, secured cage/room, hazardous or flammable cabinets, etc. These include:

- E-Waste – print cartridges, computers, electronic cords, phones, etc.
- Bulky Goods and Donatable Items– clothing, household items, furniture, non-perishable food, etc. 10 square meters provided for each tower and rooms accessible by tenants.
- Recyclable Hazardous Waste - batteries (particularly lithium based which are increasingly mandated for separation from landfill), light bulbs, cooking oil, etc.
- Non-Recyclable Hazardous Waste – paints, aerosols cans, chemicals, hazardous oils, bio-medical / sharps (needles) waste, etc. Placed in flammable cabinets; located in Facility Maintenance department.

# WASTE HANDLING SYSTEM

## RESIDENTIAL

### BLOCK 1

Block 1, currently municipally known as 25,35,55 Elia Avenue, comprises of two residential towers namely building 1A & 1B. Building 1 A will have 429 residential units. Based on unit count, building 1 A will require Eight 3 cubic yard bins for compacted Garbage, Eleven 3 cubic yard bins for Recyclables and Five 3 cubic yard bins for Organics waste. To store aforesaid bins, sorting system and compactor, 135 SM of space shall be provided for residential garbage room. During the pickup of bins by Region of Peel waste hauler, bins will be staged in staging area measuring 45 SM as per Region of Peel guidelines.

Building 1B will have 571 residential units. Based on unit count, building 1 B will require Eleven 3 cubic yard bin for compacted garbage, thirteen 3 cubic yard bins for recyclables and six 3 cubic yard bins for organics. To store aforesaid bins, sorting system and compactor, 170 SM of space shall be provided for residential garbage and recycling room. During the pick of bins by Region of Peel waste hauler, bins will be staged in staging area measuring 60 SM as per region of Peel guidelines.

An additional 10 SM of space shall be provided in both building for the storage of Bulk waste by residents. Both buildings of Block 1 with utilize one type 'G' loading space for the pick-up of waste bins by region of Peel.

### BLOCK 2

Block 2, currently municipally known as 136 Eglinton East, comprises of two residential towers namely building 2A & 2B and townhouses. Building 2A will have 564 residential units. Based on unit count, building 2A will require Eleven 3 cubic yard bin for compacted garbage, thirteen 3 cubic yard bins for recyclables and six 3 cubic yard bins for organics. To store aforesaid bins, sorting system and compactor, 170 SM of space shall be provided for residential garbage and recycling room. During the pick of bins by Region of Peel waste hauler, bins will be staged in staging area measuring 60 SM as per region of Peel guidelines.

Building 2B will have 450 residential units. Based on unit count, building 2B will require Nine 3 cubic yard bins for compacted Garbage, Ten 3 cubic yard bins for Recyclables and Five 3 cubic yard bins for Organics waste. To store aforesaid bins, sorting system and compactor, 140 SM of space shall be provided for residential garbage room. During the pickup of bins by Region of Peel waste hauler, bins will be staged in staging area measuring 45 SM as per Region of Peel guidelines.

An additional 10 SM of space shall be provided in both building for the storage of Bulk waste by residents.

There are 32 Stacked Townhouses which will require two 3 cubic yard bin for compacted garbage, two 3 cubic yard bin for comingled recyclables and two 3 cubic yard bin for organics waste. To store aforesaid bins, sorting system and compactor, 50 SM of space shall be provided for residential garbage room. During the pickup of bins by Region of Peel waste hauler, bins will be staged in staging area measuring 5 SM as per Region of Peel guidelines. An additional 10 SM of space shall be provided for the bulk storage by residents.

Entire Block 2 will utilize one type 'G' loading space for the pick-up of waste by region of Peel.

### BLOCK 3

Block 3, currently municipally known as 105 Elia Avenue,, comprises of two residential towers namely building 3A & 3B and townhouses. Building 3A will have 487 residential units. Based on unit count, building 3A will require Ten 3 cubic yard bin for compacted garbage, eleven 3 cubic yard bins for recyclables and five 3 cubic yard bins for organics. To store aforesaid bins, sorting system and compactor, 150 SM of space shall be provided for residential garbage and recycling room. During the pick of bins by Region of Peel waste hauler, bins will be staged in staging area measuring 50 SM as per region of Peel guidelines.

Building 3B will have 560 residential units. Based on unit count, building 3B will require Eleven 3 cubic yard bins for compacted Garbage, Thirteen 3 cubic yard bins for Recyclables and Six 3 cubic yard bins for Organics waste. To store aforesaid bins, sorting system and compactor, 170 SM of space shall be provided for residential garbage room. During the pickup of bins by Region of Peel waste hauler, bins will be staged in staging area measuring 60 SM as per Region of Peel guidelines.

An additional 10 SM of space shall be provided in both building for the storage of Bulk waste by residents.

There are 64 Stacked Townhouses which will require two 3 cubic yard bin for compacted garbage, two 3 cubic yard bin for comingled recyclables and two 3 cubic yard bin for organics waste. To store aforesaid bins, sorting system and compactor, 50 SM of space shall be provided for residential garbage room. During the pickup of bins by Region of Peel waste hauler, bins will be staged in staging area measuring 5 SM as per Region of Peel guidelines. An additional 10 SM of space shall be provided for the bulk storage by residents.

Entire Block 3 will utilize one type 'G' loading space for the pick-up of waste by region of Peel.

#### **BLOCK 4**

Block 4, currently municipally known as 4615 Hurontario Street, comprises of two residential towers namely building 4A & 4B. Building 4A will have 494 residential units. Based on unit count, building 4A will require Ten 3 cubic yard bin for compacted garbage, eleven 3 cubic yard bins for recyclables and five 3 cubic yard bins for organics. To store aforesaid bins, sorting system and compactor, 150 SM of space shall be provided for residential garbage and recycling room. During the pick of bins by Region of Peel waste hauler, bins will be staged in staging area measuring 50 SM as per region of Peel guidelines.

Building 4B will have 480 residential units. Based on unit count, building 4B will require Nine 3 cubic yard bins for compacted Garbage, Eleven 3 cubic yard bins for Recyclables and Five 3 cubic yard bins for Organics waste. To store aforesaid bins, sorting system and compactor, 145 SM of space shall be provided for residential garbage room. During the pickup of bins by Region of Peel waste hauler, bins will be staged in staging area measuring 50 SM as per Region of Peel guidelines.

An additional 10 SM of space shall be provided in both building for the storage of Bulk waste by residents. Entire Block 4 will utilize one type 'G' loading space for the pick-up of waste by region of Peel.

#### **BLOCK 5**

Block 5, currently municipally known as 110 Elia Avenue, comprises of one residential tower namely building 4A & townhouses. Building 5A will have 535 residential units. Based on unit count, building 5A will require Ten 3 cubic yard bin for compacted garbage, Twelve 3 cubic yard bins for recyclables and Six 3 cubic yard bins for organics. To store aforesaid bins, sorting system and compactor, 160 SM of space shall be provided for residential garbage and recycling room. During the pick of bins by Region of Peel waste hauler, bins will be staged in staging area measuring 55 SM as per region of Peel guidelines. An additional 10 SM of space shall be provided in building for the storage of Bulk waste by residents.

There are 24 Stacked Townhouses which will require two 3 cubic yard bin for compacted garbage, two 3 cubic yard bin for comingled recyclables and two 3 cubic yard bin for organics waste. To store aforesaid bins, sorting system and compactor, 50 SM of space shall be provided for residential garbage room. During the pickup of bins by Region of Peel waste hauler, bins will be staged in staging area measuring 5 SM as per Region of Peel guidelines. An additional 10 SM of space shall be provided for the bulk storage by residents.

Entire Block 5 will utilize one type 'G' loading space for the pick-up of waste by region of Peel.

### **COMMERCIAL**

#### **BLOCK 1**

Block 1 has 19,717 SM of commercial component in Building 1A. A separate garbage room measuring 324 SM shall be provided for the storage of commercial waste. Commercial waste shall be picked up by private waste hauler. Commercial waste hauler will also utilize the type 'G' loading space, but Region of Peel waste hauler will get preference over private waste hauler to pick up the residential waste.

#### **BLOCK 2**

Block 2 has 834 SM of commercial component in Building 2A. A separate garbage room measuring 80 SM shall be provided for the storage of commercial waste. Commercial waste shall be picked up by private waste hauler. Commercial waste hauler will also utilize the type 'G' loading space, but Region of Peel waste hauler will get preference over private waste hauler to pick up the residential waste.

#### **BLOCK 4**

Block 4 has 1570 SM of commercial component in Building 4A. A separate garbage room measuring 123 SM shall be provided for the storage of commercial waste. Commercial waste shall be picked up by private waste hauler. Commercial waste hauler will also utilize the type 'G' loading space, but Region of Peel waste hauler will get preference over private waste hauler to pick up the residential waste.

# APPENDIX 1

## ELIA LANDS - SUMMARY WASTE MANAGEMENT PROGRAM

					----NUMBER OF DUMPSTER BINS----		
RESIDENTIAL		No. of Residential Units	GARBAGE ROOM SIZE (Sq.Mt.)	BIN STAGING (PICK-UP) SIZE (Sq.Mt.)	GARBAGE (compacted)	ORGANICS (uncompacted)	COMMINGLED RECYCLABLES (uncompacted)
BLOCK 1	Building 1A	429	135	45	8	5	10
	Building 1B	571	170	60	11	6	13
BLOCK 2	Building 2A	564	170	60	11	6	13
	Building 2B	450	140	45	9	5	10
	Townhouses	32	50	5	2	2	2
BLOCK 3	Building 3A	487	150	50	10	5	11
	Building 3B	560	170	60	11	6	13
	Townhouses	64	50	5	2	2	2
BLOCK 4	Building 4A	494	150	50	10	5	11
	Building 4B	480	145	50	9	5	11
BLOCK 5	Building 5A	535	160	55	10	6	12
	Townhouses	24	50	5	2	2	2

COMMERCIAL	Commercial Area (Sq.Mt.)	GARBAGE ROOM SIZE (Sq.Mt.)
BLOCK 1	19,717	324
BLOCK 2	834	80
BLOCK 4	1,570	123

### NOTES:

1) Number of bins and/or carts in Commercial to be determined based on preferred hauling system.

# APPENDIX 2A

## ELIA LANDS

RESIDENTIAL - BLOCK 1A

WASTE GENERATION ESTIMATE

CUBIC METERS [m<sup>3</sup>] PER WEEK

WASTE GENERATION ESTIMATE(m3)			A	B	C	D	E	F	G	H	I	J
DESCRIPTION	TOTAL UNITS	TOTAL AREA IN m <sup>2</sup>	WASTE GENERATION ESTIMATE IN m <sup>3</sup>	ORGANIC WASTE	CORRUGATED CARDBOARD	GLASS CANS PLASTIC	NEWSPRINT PAPER	E-WASTE	HAZARDOUS MATERIALS	REMOVABLE RECYCLABLE MATERIALS	TOTAL WASTE TO LANDFILL	COMPACTED AT 3:1 RATIO
			A	B	C	D	E	E	E	B+C+D+E+F+G	A - H	I/3
BUILDING A	429	32,098	131.21	26.24	13.12	26.24	6.56	1.31	0.66	72.16	59.04	19.68
Amenity Area		706	1.16	0.23	0.12	0.23	0.06	0.01	0.01	0.64	0.52	0.17
Total Residential	429	429.00	173.12	0.40	0.20	0.40	0.10	0.02	0.01	0.66	72.80	59.57

## RESIDENTIAL - CODE REQUIREMENT

Number of Units 429

Garbage Bins		3 CY	4 CY	6 CY
Uncompacted	Minimum # of Units	18	24	36
Compacted	Maximum # of Units	54	72	N/A
Recycling Bins		3 CY	4 CY	6 CY
Uncompacted	Maximum # of Units	45	60	90
Organic Bins		95 US Gal	3 CY	
Uncompacted	Maximum # of Units	TBA	TBA	

Number of Garbage Bins	3 CY	Room Size		
7.94	8	3 CY Bins	115	
Number of Recycling Bins		Compactor	10	
9.53	10		125	SM
Number of Organic Bins		Plus 10 SM Bulk Space	135	SM
4.29	5	Bin Staging Area For Building A		
		3 CY Bins	9	
Total bins	23	Staging Area*	45	SM

\*No. of Bins To Be Staged Is Equal to One Bin Less Than Maximum No. Of Bins For Any Stream.

# APPENDIX 1B

## ELIA LAND

### RESIDENTIAL - BLOCK 1B

#### WASTE GENERATION ESTIMATE

CUBIC METERS [m<sup>3</sup>] PER WEEK

WASTE GENERATION ESTIMATE(m3)			A	B	C	D	E	F	G	H	I	J
DESCRIPTION	TOTAL	TOTAL	WASTE GENERATION ESTIMATE IN m <sup>3</sup>	ORGANIC WASTE	CORRUGATED CARDBOARD	GLASS CANS PLASTIC	NEWSPRINT PAPER	E-WASTE	HAZARDOUS MATERIALS	REMOVABLE RECYCLABLE MATERIALS	TOTAL WASTE TO LANDFILL	COMPACTED AT 3:1 RATIO
	UNITS	AREA IN m <sup>2</sup>	A	B	C	D	E	E	E	B+C+D+E+F+G	A - H	I/3
BUILDING A	571	42,788	174.63	34.93	17.46	34.93	8.73	1.75	0.87	96.05	78.59	26.20
Amenity Area		528	0.87	0.17	0.09	0.17	0.04	0.00	0.00	0.48	0.39	0.13
Total Residential	571	43,316	175.50	35.10	17.55	35.10	8.78	1.75	0.88	96.53	78.98	26.33

#### RESIDENTIAL - CODE REQUIREMENT

Number of Units		571		
Garbage Bins		3 CY	4 CY	6 CY
Uncompacted	Minimum # of Units	18	24	36
Compacted	Maximum # of Units	54	72	N/A
Recycling Bins		3 CY	4 CY	6 CY
Uncompacted	Maximum # of Units	45	60	90
Organic Bins		95 US Gal	3 CY	
Uncompacted	Maximum # of Units	TBA	TBA	

Number of Garbage Bins		3 CY	Room Size		
	10.57	11.00	3 CY Bins	150	
Number of Recycling Bins			Compactor	10	
	12.69	13		160 SM	
Number of Organic Bins			Plus 10 SM Bulk Space	170 SM	
	5.71	6	Bin Staging Area For Building B		
			3 CY Bins	12	
Total bins		30	Staging Area	60 SM	

\*No. of Bins To Be Staged Is Equal to One Bin Less Than Maximum No. Of Bins For Any Stream.

# APPENDIX 1C

## ELIA LANDS-Commercial

WASTE SUMMARY	Total Waste Generation Estimate (CM) per week	Total Waste Diversion Estimate (CM/Wk)	General Trash Uncompacted (CM/Wk)	General Trash Compacted 3:1 Ratio (CM/Wk)
COMMERCIAL	112.6	52.7	60.0	20.0
<b>Total</b>	<b>112.6</b>	<b>52.7</b>	<b>60.0</b>	<b>20.0</b>

RECYCLABLES BREAK-DOWN	(1) Organics (CM/Wk)	(2) Corrugated Cardboard (CM/Wk)	(3) Commingled Recyclable (CM/Wk)	(4) Mixed Paper (CM/Wk)	(5) E-Waste & Recyclable Hazardous (CM/Wk)	(6) Non-Recyclable Hazardous (CM/Wk)
COMMERCIAL	12.5	19.5	14.6	4.1	1.0	1.0
<b>Total</b>	<b>12.5</b>	<b>19.5</b>	<b>14.6</b>	<b>4.1</b>	<b>1.0</b>	<b>1.0</b>

- (1) Organic Wastes** include items such as fruits, vegetables, eggs, paper egg containers, plants, coffee grounds, filters, tea bags, soiled paper products (napkins, towels), daily on-site yard maintenance, etc.
- (2) Corrugated Cardboard & Mixed Paper** (non-confidential)
- (3) Co-mingled Recyclables** include plastics, glass, cans/metals (single stream).
- (4) Donatable and Bulk Recycling materials** include equipment, furniture, etc.
- (5) E-Waste & Recyclable Hazardous Materials** include print cartridges, computers, phones, electronic cords, batteries, light bulbs, cooking oil, etc.
- (6) Non-Recyclable Hazardous Wastes** include paints, aerosol cans, chemicals, hazardous oils, etc.



# APPENDIX 2A

## ELIA LANDS

### RESIDENTIAL - BLOCK 2A

#### WASTE GENERATION ESTIMATE

CUBIC METERS [m<sup>3</sup>] PER WEEK

WASTE GENERATION ESTIMATE(m3)			A	B	C	D	E	F	G	H	I	J
DESCRIPTION	TOTAL UNITS	TOTAL AREA IN m <sup>2</sup>	WASTE GENERATION ESTIMATE IN m <sup>3</sup>	ORGANIC WASTE	CORRUGATED CARDBOARD	GLASS CANS PLASTIC	NEWSPRINT PAPER	E-WASTE	HAZARDOUS MATERIALS	REMOVABLE RECYCLABLE MATERIALS	TOTAL WASTE TO LANDFILL	COMPACTED AT 3:1 RATIO
			A	B	C	D	E	E	E	B+C+D+E+F+G	A - H	I/3
BUILDING A	564	40,589	172.49	34.50	17.25	34.50	8.62	1.72	0.86	94.87	77.62	25.87
Amenity Area		2,126	3.50	0.70	0.35	0.70	0.17	0.02	0.02	1.92	1.57	0.52
Total Residential	564	42,715	175.99	35.20	17.60	35.20	8.80	1.74	0.88	96.80	79.20	26.40

#### RESIDENTIAL - CODE REQUIREMENT

Number of Units		564
Garbage Bins		3 CY    4 CY    6 CY
Uncompacted	Minimum # of Units	18    24    36
Compacted	Maximum # of Units	54    72    N/A
Recycling Bins		3 CY    4 CY    6 CY
Uncompacted	Maximum # of Units	45    60    90
Organic Bins		95 US Gal    3 CY
Uncompacted	Maximum # of Units	TBA    TBA

Number of Garbage Bins		3 CY	Room Size	
	10.44	11	3 CY Bins	150
Number of Recycling Bins			Compactor	10
	12.53	13		160 SM
Number of Organic Bins			Plus 10 SM Bulk Spa	170 SM
	5.64	6	Bin Staging Area For Building A	
			3 CY Bins	12
Total bins		30	Staging Area	60 SM

\*No. of Bins To Be Staged Is Equal to One Bin Less Than Maximum No. Of Bins For Any Stream.

# APPENDIX 2B

## ELIA LAND

### RESIDENTIAL - BLOCK 2B

#### WASTE GENERATION ESTIMATE

#### CUBIC METERS [m<sup>3</sup>] PER WEEK

WASTE GENERATION ESTIMATE(m3)			A	B	C	D	E	F	G	H	I	J
DESCRIPTION	TOTAL	TOTAL	WASTE GENERATION ESTIMATE IN m <sup>3</sup>	ORGANIC WASTE	CORRUGATED CARDBOARD	GLASS CANS PLASTIC	NEWSPRINT PAPER	E-WASTE	HAZARDOUS MATERIALS	REMOVABLE RECYCLABLE MATERIALS	TOTAL WASTE TO LANDFILL	COMPACTED AT 3:1 RATIO
	UNITS	AREA IN m <sup>2</sup>										
			A	B	C	D	E	E	E	B+C+D+E+F+G	A - H	I/3
BUILDING B	450	31,384	137.63	27.53	13.76	27.53	6.88	1.38	0.69	75.70	61.93	20.64
Amenity Area		1,356	2.23	0.45	0.22	0.45	0.11	0.01	0.01	1.23	1.00	0.33
Total Residential	450	32,740	139.86	27.97	13.99	27.97	6.99	1.39	0.70	76.92	62.94	20.98

#### RESIDENTIAL - CODE REQUIREMENT

Number of Units		450		
Garbage Bins		3 CY	4 CY	6 CY
Uncompacted	Minimum # of Units	18	24	36
Compacted	Maximum # of Units	54	72	N/A
Recycling Bins		3 CY	4 CY	6 CY
Uncompacted	Maximum # of Units	45	60	90
Organic Bins		95 US Gal	3 CY	
Uncompacted	Maximum # of Units	TBA	TBA	

Number of Garbage Bins		3 CY	Room Size	
	8.33	9	3 CY Bins	120
Number of Recycling Bins			Compactor	10
	10.00	10		130 SM
Number of Organic Bins			Plus 10 SM Bulk Space	140 SM
	4.5	5	Bin Staging Area For Building B	
			3 CY Bins	9
Total bins		24	Staging Area	45 SM

\*No. of Bins To Be Staged Is Equal to One Bin Less Than Maximum No. Of Bins For Any Stream.

# APPENDIX 2C

## ELIA LAND

### RESIDENTIAL - BLOCK 2 TOWNHOUSES

#### WASTE GENERATION ESTIMATE

CUBIC METERS [m<sup>3</sup>] PER WEEK

WASTE GENERATION ESTIMATE(m3)			A	B	C	D	E	F	G	H	I	J
DESCRIPTION	TOTAL	TOTAL	WASTE GENERATION ESTIMATE IN m <sup>3</sup>	ORGANIC WASTE	CORRUGATED CARDBOARD	GLASS CANS PLASTIC	NEWSPRINT PAPER	E-WASTE	HAZARDOUS MATERIALS	REMOVABLE RECYCLABLE MATERIALS	TOTAL WASTE TO LANDFILL	COMPACTED AT 3:1 RATIO
	UNITS	AREA IN m <sup>2</sup>										
			A	B	C	D	E	E	E	B+C+D+E+F+G	A - H	I/3
BUILDING TH	32	4,602	9.79	1.96	0.98	1.96	0.49	0.10	0.05	5.38	4.40	1.47
Amenity Area		-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Residential	32	4,602	9.79	1.96	0.98	1.96	0.49	0.10	0.05	5.38	4.40	1.47

#### RESIDENTIAL - CODE REQUIREMENT

Number of Units		32
Garbage Bins		
		3 CY
Uncompacted	Minimum # of Units	18
Compacted	Maximum # of Units	54
		72
		N/A
Recycling Bins		
		3 CY
Uncompacted	Maximum # of Units	45
		60
		90
Organic Bins		
		95 US Gal
		3 CY
Uncompacted	Maximum # of Units	TBA
		TBA

Number of Garbage Bins		3 CY	Room Size	
	0.59	2	3 CY Bins	30
Number of Recycling Bins			Compactor	10
	0.71	2		40 SM
Number of Organic Bins			Plus 10 SM Bulk Spa	50 SM
	0.32	2	Bin Staging Area For Building B	
			3 CY Bins	1
Total bins		6	Staging Area	5 SM

\*No. of Bins To Be Staged Is Equal to One Bin Less Than Maximum No. Of Bins For Any Stream.

# APPENDIX 2D

ELIA LANDS Waste Generation Estimate- Commercial			Total Waste Generation Estimate Cubic Meters (CM) per WEEK	(1) Organics / Compostable (CM/Wk)	(2) Corrugated Cardboard (CM/Wk)	(3) Commingled Recyclable (CM/Wk)	(4) Mixed Paper (CM/Wk)	(5) Universal & Recyclable Hazardous (CM/Wk)	(6) Non- Recyclable Hazardous (CM/Wk)	Total Diversion from Landfill	Total Diversion %	General Trash (CM/Wk)	Compacted 3:1 Ratio (CM/Wk)	
		Square Meter												
RETAIL														
Ground Floor	Retail	834	6.24	0.31	1.25	0.94	0.12	0.06	0.06	2.7	44%	3.5	1.2	
OFFICE														
PARKING														
P1-P2	Residential Parking		8.64	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0%	8.6	2.9	
P1-P4	Non-Residential Parking		0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0%	0.3	0.1	
TOTAL WASTE VOLUMES			834	15.1	0.3	1.2	0.9	0.1	0.1	0.1	2.7		12.4	4.1

# APPENDIX 3A

## ELIA LANDS

### RESIDENTIAL - BLOCK 3A

#### WASTE GENERATION ESTIMATE

CUBIC METERS [m<sup>3</sup>] PER WEEK

WASTE GENERATION ESTIMATE(m3)			A	B	C	D	E	F	G	H	I	J
DESCRIPTION	TOTAL	TOTAL	WASTE GENERATION ESTIMATE IN m <sup>3</sup>	ORGANIC WASTE	CORRUGATED CARDBOARD	GLASS CANS PLASTIC	NEWSPRINT PAPER	E-WASTE	HAZARDOUS MATERIALS	REMOVABLE RECYCLABLE MATERIALS	TOTAL WASTE TO LANDFILL	COMPACTED AT 3:1 RATIO
	UNITS	AREA IN m <sup>2</sup>										
			A	B	C	D	E	E	E	B+C+D+E+F+G	A - H	I/3
BUILDING A	487	38,037	148.94	29.79	14.89	29.79	7.45	1.49	0.74	81.92	67.02	22.34
Amenity Area		1,124	1.85	0.37	0.19	0.37	0.09	0.01	0.01	1.02	0.83	0.28
Parking	1200		12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.00	4.00
<b>Total Residential</b>	<b>487</b>	<b>39,161</b>	<b>150.79</b>	<b>30.16</b>	<b>15.08</b>	<b>30.16</b>	<b>7.54</b>	<b>1.50</b>	<b>0.75</b>	<b>82.94</b>	<b>67.86</b>	<b>22.62</b>

#### RESIDENTIAL - CODE REQUIREMENT

Number of Units		487
Garbage Bins		3 CY
Uncompacted	Minimum # of Units	18
Compacted	Maximum # of Units	54
Recycling Bins		3 CY
Uncompacted	Maximum # of Units	45
Organic Bins		95 US Gal
Uncompacted	Maximum # of Units	TBA

Number of Garbage Bins		3 CY	Room Size	
	9.02	10	3 CY Bins	130
Number of Recycling Bins			Compactor	10
	10.82	11		140 SM
Number of Organic Bins			Plus 10 SM Bulk Space	150 SM
	4.87	5	Bin Staging Area For Building A	
<b>Total bins</b>		<b>26</b>	<b>Staging Area</b>	<b>50 SM</b>

\*No. of Bins To Be Staged Is Equal to One Bin Less Than Maximum No. Of Bins For Any Stream.

# APPENDIX 3B

## ELIA LAND

### RESIDENTIAL - BLOCK 3B

#### WASTE GENERATION ESTIMATE

#### CUBIC METERS [m<sup>3</sup>] PER WEEK

WASTE GENERATION ESTIMATE(m3)			A	B	C	D	E	F	G	H	I	J
DESCRIPTION	TOTAL UNITS	TOTAL AREA IN m <sup>2</sup>	WASTE GENERATION ESTIMATE IN m <sup>3</sup>	ORGANIC WASTE	CORRUGATED CARDBOARD	GLASS CANS PLASTIC	NEWSPRINT PAPER	E-WASTE	HAZARDOUS MATERIALS	REMOVABLE RECYCLABLE MATERIALS	TOTAL WASTE TO LANDFILL	COMPACTED AT 3:1 RATIO
			A	B	C	D	E	E	E	B+C+D+E+F+G	A - H	I/3
BUILDING B	560	44,910	171.27	34.25	17.13	34.25	8.56	1.71	0.86	94.20	77.07	25.69
Amenity Area	1,457		2.40	0.48	0.24	0.48	0.12	0.01	0.01	1.32	1.08	0.36
Total Residential	560	46,367	173.67	34.73	17.37	34.73	8.68	1.72	0.87	95.52	78.15	26.05

#### RESIDENTIAL - CODE REQUIREMENT

Number of Units 560

Garbage Bins			3 CY	4 CY	6 CY
Uncompacted	Maximum # of Units		18	24	36
Compacted	Maximum # of Units		54	72	N/A
Recycling Bins			3 CY	4 CY	6 CY
Uncompacted	Maximum # of Units		45	60	90
Organic Bins			95 US Gal	3 CY	
Uncompacted	Maximum # of Units		TBA	TBA	

Number of Garbage Bins		3 CY	Room Size		
	10.37	11	3 CY Bins	150	
Number of Recycling Bins			Compactor	10	
	12.44	13		160	SM
Number of Organic Bins			Plus 10 SM Bulk Space	170	SM
	5.6	6	Bin Staging Area For Building B		
			3 CY Bins	12	
Total bins		30	Staging Area	60	SM

\*No. of Bins To Be Staged Is Equal to One Bin Less Than Maximum No. Of Bins For Any Stream.

# APPENDIX 3C

## ELIA LAND

### RESIDENTIAL

#### WASTE GENERATION ESTIMATE

#### CUBIC METERS [m<sup>3</sup>] PER WEEK

WASTE GENERATION ESTIMATE(m3)			A	B	C	D	E	F	G	H	I	J
DESCRIPTION	TOTAL	TOTAL	WASTE GENERATION ESTIMATE IN m <sup>3</sup>	ORGANIC WASTE	CORRUGATED CARDBOARD	GLASS CANS PLASTIC	NEWSPRINT PAPER	E-WASTE	HAZARDOUS MATERIALS	REMOVABLE RECYCLABLE MATERIALS	TOTAL WASTE TO LANDFILL	COMPACTED AT 3:1 RATIO
	UNITS	AREA IN m <sup>2</sup>										
			A	B	C	D	E	E	E	B+C+D+E+F+G	A - H	I/3
BUILDING TH	64	9,205	19.57	3.91	1.96	3.91	0.98	0.20	0.10	10.77	8.81	2.94
Amenity Area		-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Residential	64	9,205	19.57	3.91	1.96	3.91	0.98	0.20	0.10	10.77	8.81	2.94

#### RESIDENTIAL - CODE REQUIREMENT

Number of Units		64
Garbage Bins		3 CY
Uncompacted	Minimum # of Units	18
Compacted	Maximum # of Units	54
Recycling Bins		3 CY
Uncompacted	Maximum # of Units	45
Organic Bins		95 US Gal
Uncompacted	Maximum # of Units	TBA

Number of Garbage Bins	3 CY	Room Size	
1.19	2	3 CY Bins	30
Number of Recycling Bins		Compactor	10
1.42	2		40 SM
Number of Organic Bins		Plus 10 SM Bulk Space	50 SM
0.64	2	Bin Staging Area For Building A	
		3 CY Bins	1
Total bins	6	Staging Area	5 SM

\*No. of Bins To Be Staged Is Equal to One Bin Less Than Maximum No. Of Bins For Any Stream.

# APPENDIX 4A

## ELIA LANDS

RESIDENTIAL - BLOCK 4A  
WASTE GENERATION ESTIMATE  
CUBIC METERS [m<sup>3</sup>] PER WEEK

WASTE GENERATION ESTIMATE(m3)			A	B	C	D	E	F	G	H	I	J
DESCRIPTION	TOTAL UNITS	TOTAL AREA IN m <sup>2</sup>	WASTE GENERATION ESTIMATE IN m <sup>3</sup>	ORGANIC WASTE	CORRUGATED CARDBOARD	GLASS CANS PLASTIC	NEWSPRINT PAPER	E-WASTE	HAZARDOUS MATERIALS	REMOVABLE RECYCLABLE MATERIALS	TOTAL WASTE TO LANDFILL	COMPACTED AT 3:1 RATIO
			A	B	C	D	E	E	E	B+C+D+E+F+G	A - H	I/3
BUILDING A	494	36,897	151.08	30.22	15.11	30.22	7.55	1.51	0.76	83.10	67.99	22.66
Amenity Area		689	1.13	0.23	0.11	0.23	0.06	0.01	0.01	0.62	0.51	0.17
Total Residential	494	37,586	152.22	30.44	15.22	30.44	7.61	1.52	0.76	83.72	68.50	22.83

### RESIDENTIAL - CODE REQUIREMENT

Number of Units		494			
Garbage Bins		3 CY	4 CY	6 CY	
Uncompacted	Minimum # of Units	18	24	36	
Compacted	Maximum # of Units	54	72	N/A	
Recycling Bins		3 CY	4 CY	6 CY	
Uncompacted	Maximum # of Units	45	60	90	
Organic Bins		95 US Gal	3 CY		
Uncompacted	Maximum # of Units	TBA	TBA		

Number of Garbage Bins		3 CY	Room Size	
	9.15	10	3 CY Bins	130
Number of Recycling Bins			Compactor	10
	10.98	11		140 SM
Number of Organic Bins			Plus 10 SM Bulk Spa	150 SM
	4.94	5	Bin Staging Area For Building A	
			3 CY Bins	10
Total bins		26	Staging Area	50 SM

\*No. of Bins To Be Staged Is Equal to One Bin Less Than Maximum No. Of Bins For Any Stream.



# APPENDIX 4B

## ELIA LAND

### RESIDENTIAL - BLOCK 4B

#### WASTE GENERATION ESTIMATE

#### CUBIC METERS [m<sup>3</sup>] PER WEEK

WASTE GENERATION ESTIMATE(m3)			A	B	C	D	E	F	G	H	I	J
DESCRIPTION	TOTAL	TOTAL	WASTE GENERATION ESTIMATE IN m <sup>3</sup>	ORGANIC WASTE	CORRUGATED CARDBOARD	GLASS CANS PLASTIC	NEWSPRINT PAPER	E-WASTE	HAZARDOUS MATERIALS	REMOVABLE RECYCLABLE MATERIALS	TOTAL WASTE TO LANDFILL	COMPACTED AT 3:1 RATIO
	UNITS	AREA IN m <sup>2</sup>										
			A	B	C	D	E	E	E	B+C+D+E+F+G	A - H	I/3
BUILDING A	480	36,646	146.80	29.36	14.68	29.36	7.34	1.47	0.73	80.74	66.06	22.02
Amenity Area		521	0.86	0.17	0.09	0.17	0.04	0.00	0.00	0.47	0.39	0.13
Total Residential	480	37,167	147.66	29.53	14.77	29.53	7.38	1.47	0.74	81.21	66.45	22.15

#### RESIDENTIAL - CODE REQUIREMENT

Number of Units		480		
Garbage Bins		3 CY	4 CY	6 CY
Uncompacted	Minimum # of Units	18	24	36
Compacted	Maximum # of Units	54	72	N/A
Recycling Bins		3 CY	4 CY	6 CY
Uncompacted	Maximum # of Units	45	60	90
Organic Bins		95 US Gal	3 CY	
Uncompacted	Maximum # of Units	TBA	TBA	

Number of Garbage Bins	3 CY	Room Size	
8.89	9	3 CY Bins	125
Number of Recycling Bins		Compactor	10
10.67	11		135 SM
Number of Organic Bins		Plus 10 SM Bulk Space	145 SM
4.8	5	Bin Staging Area For Building B	
		3 CY Bins	10
Total bins	25	Staging Area	50 SM

\*No. of Bins To Be Staged Is Equal to One Bin Less Than Maximum No. Of Bins For Any Stream.

# APPENDIX 4C

ELIA LANDS Waste Generation Estimate- Commercial		Total Waste Generation Estimate Cubic Yards (CM) per WEEK	(1) Organics / Compostable (CM/Wk)	(2) Corrugated Cardboard (CM/Wk)	(3) Commingled Recyclable (CM/Wk)	(4) Mixed Paper (CM/Wk)	(5) Universal & Recyclable Hazardous (CM/Wk)	(6) Non-Recyclable Hazardous (CM/Wk)	Total Diversion from Landfill	Total Diversion %	General Trash (CM/Wk)	Compacted 3:1 Ratio (CM/Wk)
Square Meter												
<b>RETAIL</b>												
Ground Floor	Retail	785	6.93	0.35	1.39	1.04	0.14	0.07	3.0	44%	3.9	1.3
Ground Floor	Retail- F&B	785	16.38	3.28	3.28	2.46	0.33	0.16	9.7	59%	6.7	2.2
<b>OFFICE</b>												
<b>PARKING</b>												
P1-P3	Residential Parking		8.49	0.00	0.00	0.00	0.00	0.00	0.0	0%	8.5	2.8
<b>TOTAL WASTE VOLUMES</b>		<b>1,570</b>	<b>31.8</b>	<b>3.6</b>	<b>4.7</b>	<b>3.5</b>	<b>0.5</b>	<b>0.2</b>	<b>12.7</b>		<b>19.1</b>	<b>6.4</b>

# APPENDIX 5A

## ELIA LANDS

### RESIDENTIAL- BLOCK 5A

#### WASTE GENERATION ESTIMATE

CUBIC METERS [m³] PER WEEK

WASTE GENERATION ESTIMATE(m3)			A	B	C	D	E	F	G	H	I	J
DESCRIPTION	TOTAL UNITS	TOTAL AREA IN m²	WASTE GENERATION ESTIMATE IN m³	ORGANIC WASTE	CORRUGATED CARDBOARD	GLASS CANS PLASTIC	NEWSPRINT PAPER	E-WASTE	HAZARDOUS MATERIALS	REMOVABLE RECYCLABLE MATERIALS	TOTAL WASTE TO LANDFILL	COMPACTED AT 3:1 RATIO
			A	B	C	D	E	E	E	B+C+D+E+F+G	A - H	I/3
BUILDING A	535	40,919	163.62	32.72	16.36	32.72	8.18	1.64	0.82	89.99	73.63	24.54
Amenity Area		702	1.16	0.23	0.12	0.23	0.06	0.01	0.01	0.64	0.52	0.17
Parking	600		4.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.59	1.53
Total Residential	535	41,621	169.37	32.96	16.48	32.96	8.24	1.64	0.82	90.63	78.74	26.25

### RESIDENTIAL- CODE REQUIREMENT

Number of Units 535

Garbage Bins		3 CY	4 CY	6 CY
Uncompacted	Maximum # of Units	18	24	36
Compacted	Maximum # of Units	54	72	N/A
Recycling Bins		3 CY	4 CY	6 CY
Uncompacted	Maximum # of Units	45	60	90
Organic Bins		95 US Gal	3 CY	
Uncompacted	Maximum # of Units	TBA	TBA	

Number of Garbage Bins	3 CY	Room Size		
9.91	10	3 CY Bins	140	
Number of Recycling Bins		Compactor	10	
11.89	12		150	SM
Number of Organic Bins		Plus 10 SM Bulk Space	160	SM
5.35	6	Bin Staging Area For Building A		
		3 CY Bins	11	
Total bins		28 Staging Area	55	SM

\*No. of Bins To Be Staged Is Equal to One Bin Less Than Maximum No. Of Bins For Any Stream.

# APPENDIX 5B

## ELIA LAND

### RESIDENTIAL

#### WASTE GENERATION ESTIMATE

CUBIC METERS [m<sup>3</sup>] PER WEEK

WASTE GENERATION ESTIMATE(m3)			A	B	C	D	E	F	G	H	I	J
DESCRIPTION	TOTAL	TOTAL	WASTE GENERATION ESTIMATE IN m <sup>3</sup>	ORGANIC WASTE	CORRUGATED CARDBOARD	GLASS CANS PLASTIC	NEWSPRINT PAPER	E-WASTE	HAZARDOUS MATERIALS	REMOVABLE RECYCLABLE MATERIALS	TOTAL WASTE TO LANDFILL	COMPACTED AT 3:1 RATIO
	UNITS	AREA IN m <sup>2</sup>	A	B	C	D	E	E	E	B+C+D+E+F+G	A - H	I/3
BUILDING TH	24	3,444	7.34	1.47	0.73	1.47	0.37	0.07	0.04	4.04	3.30	1.10
Amenity Area			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Residential	24	3,444	7.34	1.47	0.73	1.47	0.37	0.07	0.04	4.04	3.30	1.10

### RESIDENTIAL- CODE REQUIREMENT

Number of Units 24

Garbage Bins		3 CY	4 CY	6 CY
Uncompacted	Maximum # of	18	24	36
Compacted	Maximum # of	54	72	N/A
	Units			
Recycling Bins		3 CY	4 CY	6 CY
Uncompacted	Maximum # of	45	60	90
	Units			
Organic Bins		95 US Gal	3 CY	
Uncompacted	Maximum # of	TBA	TBA	
	Units			

Number of Garbage Bins	3 CY	Room Size	
	0.44	2	3 CY Bins 30
Number of Recycling Bins			Compactor 10
	0.53	2	40 SM
Number of Organic Bins			Plus 10 SM Bulk Space 50 SM
	0.24	2	Bin Staging Area For Building A
			3 CY Bins 1
Total bins		6	Staging Area 5 SM

\*No. of Bins To Be Staged Is Equal to One Bin Less Than Maximum No. Of Bins For Any Stream.