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**1005 Dundas Street East  
Oakville, Ontario**

**Prepared For**

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## EXECUTIVE SUMMARY

Cini•Little International Inc. has been retained by 1005 Dundas Street Inc., to investigate waste handling alternatives for the 1005 Dundas Street East 3033 Eight Line development in Oakville, Ontario, located near the intersection of Eight Line and Dundas Street East in Oakville. There are 380 new residential units to be located in the new development in a new 4-8 storeys medium rise building complex.

The new apartment building complex is divided into two blocks: Block A will be 4 storeys high & Block B will be 6-8 storeys high. Each of the two block buildings will have a two-chute system with a bi-sorter type materials diverter and a compactor for garbage only attached to one chute and one stand-alone chute for recyclables. The residents in all of the new buildings will bring their garbage, organics and recycling materials to the chutes room located on their individual floors in each of their buildings. After making the appropriate selection for the garbage and organics materials to be deposited using the chute control panel, they will place the materials in the chute. The materials will drop down to the Residential Garbage and Recycling room located in each of the buildings on the P-1 floor level where the materials will be sorted with the help of bi-sorter into the appropriate container bins. Recycling material will be deposited in stand-alone chute for recyclables. On the designated Collection Day, the Property Management staff will bring up the required garbage container bins and recycling container bins and take the bins over to the Designated Collection Point located in the southwest quadrant of the development to be emptied by bulk-lift front-load waste collection vehicles belonging to the Halton Region. Similarly, on the designated Collection Day, the Property Management staff will bring out the required organic Toter bins to the Designated Collection Point located in the southwest quadrant of the development to be emptied by either a bulk-lift rear-loading or side-loading waste collection vehicles belonging to the Halton Region.

The site will utilize the services of the Halton Region for the pick-up of all garbage, recycling and organic materials for the whole development. Halton Region will provide 95-US Gallon (360 L) Toters for organic collection with rear-loading or side-loading waste collection vehicles. The Developer will procure its own 3 CY containers for compacted garbage and 3 CY containers for uncompacted recycling material collection with bulk-lift front-loading waste collection vehicles. The Property Management Company may choose to opt to utilize and pay for the services of a Private Waste Contractor in future. No refund or credit against region taxes will be applied to the property and should this decision be reversed in the future the site must meet all present criteria and all criteria at the time of application for the re-instatement of Halton Region Waste Collection services. It is the intent that the development will be designed to satisfy the waste handling guidelines of the Halton Region.

Based on our calculations, it is estimated that the new building will generate 121.73 Cubic Meters of waste per week of which 37.48 Cubic Meters can be easily removed for recycling. Thus, a total of 84.26 Cubic Meters of uncompacted waste will be generated and will need to be collected per week with a bulk-lift waste collection vehicle and taken to the landfill site. Using a typical compaction ratio of 3:1, this means that 28.09 Cubic Meters of compacted waste could be collected and taken to the landfill site per week.

There are no commercial areas association with this development.

## INTRODUCTION

The volumes and types of waste presented in this report are estimates based on our own experience and empirical data, as it pertains to multi-tenant mixed use facilities including residential and retail components. The goals of the preferred waste-handling programme are to follow waste handling regulations and to minimize the cost of handling the materials while addressing the problems of storing both recyclable and non-recyclable waste material on site for pick-up. This report will act as a general guideline, with the understanding that a specific detailed program may be refined by the Property Management Company of this complex.

This proposed new development will receive bulk-lift collection of all waste and recycling materials provided by the Halton Region from the Designated Collection Point in the new development.

We welcome comment on the findings herein and will work closely with 1005 Dundas Street Inc. Baron Nelson Architects, the Halton Region and the Town of Oakville Public Works Division to ensure that appropriate waste handling facilities are incorporated. Our goal is to develop a functional project that meets the needs of its owners, tenants, users, and surrounding community, while following waste handling regulations.

## COMPONENTS:

- One Residential development with a new building with a total of 562 residential units:
  - Block A Building 103 units – 4 storeys in height
  - Block B Building 277 units – 6-8 storeys in height
- Each new building will have one Residential Garbage and Recycling Room which is located on the P-1 floor level in the parking garage. Each building will have a two-chute system with a bi-sorter type materials diverter and a compactor for garbage only attached to one chute and one stand-alone chute for recyclables.
- There are total of 513 parking spaces on two levels of underground parking.
- The development will receive bulk-lift waste and recycling collection of all materials using 3 CY (2.3 CM) container bins for garbage and comingled recycling and 95-US Gallon (360 L) Toter Carts for organics.
- The site will satisfy the Town of Oakville and the Halton Region requirements for waste pick up of garbage and recycling materials for residential complex.
- 1005 Dundas Street Inc. is required to submit a Waste Management Plan for Site Plan Approval.
- Cini•Little International, Inc will prepare documents according to all regulatory requirements.

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## CONSTRUCTION WASTE

During the construction period appropriate measures will be put in place through contract documentation to ensure that recycling of applicable materials is incorporated. Separate bins should be designated to hold wood, drywall, corrugated cardboard, and any other Recyclable materials generated during construction. The responsibility of recycling co-ordination will be included in the construction manager's responsibilities to ensure that all local regulations are adhered to and that any other practical means of recycling will be incorporated. Construction practices, which will provide control and possibly reduce the amount of waste generated, should also be included.

Suggested policies to be incorporated into waste management procedures during construction are:

- The removal of any soil/clean fill to an area where it can be used effectively to minimize impact on landfill sites in accordance with environmental strategies and regulations.
- The General Contractor will make provisions to separate the soil/fill removed from the site during excavation to ensure that any contaminated materials are properly remediated in accordance with the above statement.
- The provision of designated bins on-site should be available for the recovery of the following construction materials
  - Asphalt
  - Concrete
  - Clean Fill
  - Drywall
  - Glass
  - Metal
  - Wood
- The purchase of recycled construction materials, such as drywall, where available on the market should be purchased whenever possible at competitive pricing, quality and security of supply.
- All available systems and methods of construction should be environmentally safe to ensure minimal disruption and damage to the surrounding areas.

## GENERATION ESTIMATE

Table 1 illustrates the waste and Recyclable material generation estimates for this complex. The estimates are calculated in volumes shown as Cubic Meters per week. All calculations are shown uncompacted with the exception of the last column, which shows the waste to landfill as compacted. These volumes, in conjunction with the architectural plans, are used to determine the equipment, spaces and frequency of collection required to service the building.

**TABLE 1  
WASTE GENERATION ESTIMATE  
CUBIC METERS PER WEEK**

DESCRIPTION	TOTAL UNITS	TOTAL AREA IN SM	"A" WASTE GENERATION ESTIMATE CM	"B" FOOD WASTE	"C" CORRUGATED CARDBOARD	"D" GLASS CANS PLASTIC	"E" NEWSPRINT PAPER	"F" REMOVABLE RECYCLABLE MATERIALS	"G" TOTAL WASTE TO LANDFILL	"H" COMPACTED AT 3:1 RATIO
			"A"	"B"	"C"	"D"	"E"	"B"+"C"+"D"+"E"	"A"-F"	"G"/3
<b>RESIDENTIAL</b>										
Block A	103	-	31.50	3.15	1.58	2.21	3.15	10.08	21.42	7.14
Block B	277	-	84.72	8.47	4.24	5.93	8.47	27.11	57.61	19.20
Amenity Area		437.0	1.44	0.00	0.07	0.10	0.12	0.29	1.15	0.38
<i>Sub Total</i>	380	437.0	117.66	11.62	5.88	8.24	11.74	37.48	80.18	26.73
Parking Spaces	513		3.92	0.00	0.00	0.00	0.00	0.00	3.92	1.31
<i>Total Residential</i>		437.0	121.58	11.62	5.88	8.24	11.74	37.48	84.10	28.03
<b>TOTAL</b>		<b>437.0</b>	<b>121.58</b>	<b>11.62</b>	<b>5.88</b>	<b>8.24</b>	<b>11.74</b>	<b>37.48</b>	<b>84.10</b>	<b>28.03</b>

Based on the calculations above, it is estimated that the whole development will generate 121.58 Cubic Meters of waste per week of which 37.48 Cubic Meters can be easily removed for recycling. Using a typical compaction ratio of 3:1, a total of 28.09 Cubic Meters of compacted waste will be collected weekly by bulk-lift vehicles and taken to the landfill site.

There are 103 units in the Block A building. According to Halton Region guidelines the Block A building will require two 3 CY (2.3 CM) container bins for this estimated volume. The garbage container bins will require 10 SM of space for their storage. On collection days, these garbage container bins will be towed up by the Property Management Company staff using a small tractor type vehicle and taken over to the Designated Collection Point located in the southwest quadrant of the development where they will be emptied by a front-loading bulk-lift waste collection vehicle belonging to the Halton Region.

There are 277 units in the Block B building. According to Halton Region guidelines the Block B building will require four 3 CY (2.3 CM) container bins for this estimated volume. The garbage container bins will require 20 SM of space for their storage. On collection days, these garbage container bins will be towed up by the Property

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Management Company staff using a small tractor type vehicle and taken over to the Designated Collection Point located in the southwest quadrant of the development where they will be emptied by a front-loading bulk-lift waste collection vehicle belonging to the Halton Region.

The Halton Region has now acquired technology in their sorting system so that the cardboard and paper fibre streams can be commingled with the metal, glass and plastic waste streams. The Halton Region no longer requires the residents to sort their recycling materials before they deposit them in the recycling chutes or bins.

The Halton Region guidelines requires one 3 CY (2.3 CM) recycling container bins for each 42 residential units. According to these Halton Region guidelines the Block A building will require three 3 CY (2.3 CM) recycling container bins for this estimated volume. The recycling container bins space allocation will be added to that of the garbage spatial requirements for each building. This will create a total space requirement for the combination Residential Garbage and Recycling Room in the Block A building of a minimum of 39.75 Square Meters. On collection days, these recycling container bins will be towed up by the Property Management Company staff using a small tractor type vehicle and taken over to the Designated Collection Point located in the southwest quadrant of the development where they will be collected by front-loading bulk-lift waste collection vehicle belonging to the Halton Region.

According to these Halton Region guidelines the Block B building will require seven 3 CY (2.3 CM) container bins for this estimated volume. The recycling container bins space allocation will be added to that of the garbage spatial requirements for each building. This will create a total space requirement for the combination Residential Garbage and Recycling Room in the Block B building of a minimum of 76.40 Square Meters. On collection days, these recycling container bins will be towed up by the Property Management Company staff using a small tractor type vehicle and taken over to the Designated Collection Point located in the southwest quadrant of the development where they will be emptied by a front-loading bulk-lift waste collection vehicle belonging to the Halton Region.

The Halton Region requires one organic 95 US Gallon (360 L) Toter cart for each 25 residential units. According to these Halton Region guidelines the Block A building will require five 95 US Gallon (360 L) Toter carts for this estimated volume. The organic Toter cart space allocation will be added to that of the garbage spatial requirements for each building. This will create a total space requirement for the combination Residential Garbage and Recycling Room of 39.75 Square Meters in the Block A Building. The organic Toter carts will be towed up by the Property Management Company staff using a small tractor type vehicle to the Designated Collection Point located in the southwest quadrant of the development where the bins will be emptied by the appropriate bulk-lift waste collection vehicle belonging to the Halton Region.

According to these Halton Region guidelines the Block B building will require twelve 95 US Gallon (360 L) Toter carts for this estimated volume. The organic Toter cart space allocation will be added to that of the garbage spatial

requirements for each building. This will create a total space requirement for the combination Residential Garbage and Recycling Room of 76.40 Square Meters in the Block B Building. The organic Toter carts will be towed up by the Property Management Company staff using a small tractor type vehicle to the Designated Collection Point located in the southwest quadrant of the development where the bins will be emptied by the appropriate bulk-lift waste collection vehicle belonging to the Halton Region.

## **WASTE HANDLING SYSTEM**

### ***A. General Waste***

#### **Residential Waste Materials:**

All garbage waste will be deposited by the building residents into the waste chute located in each of the new buildings, accessible from each floor via a small vestibule. The waste chute will be connected to a bi sorter material diverter connected to a compactor in the Residential Garbage and Recycling Room located on the P-1 floor level in each of the new buildings. The garbage waste drops into a compactor and will be compacted into 3 Cubic Yard (2.3 Cubic Meter) containers. The second chute selection capability of the materials diverter will be used in conjunction with the Halton Region's collection program of organic materials for multiple unit dwellings. Recycling materials will be deposited into the standalone chute. The recyclable materials will not be compacted and will be collected in the recycling container bins located in the Residential Garbage and Recycling room in each of the new buildings.

Approximately every other day or so day the garbage container bins in the Residential Garbage and Recycling Room in each of the new buildings may be full. Property Management staff personnel will detach the full garbage container bin, move it aside, and replace it with an empty garbage container bin. Two garbage container bins for the Block A building and four garbage container bins for the Block B building will be made available for the collection of residential building waste for the estimated volume as per Halton Region Guidelines. Once a week the garbage container bins from the new buildings will be towed up by the Property Management Company staff using a small tractor type vehicle to the Designated Collection Point located in the southwest quadrant of the development. The bins will be emptied by a Halton Region front-loading bulk-lift vehicle. Once the garbage container bins have been emptied, they will be returned to the Residential Garbage and Recycling Rooms in each the new buildings by Property Management staff personnel. The format of the Designated Collection Point located in the southwest quadrant of the development must satisfy the requirements of the Halton Region and be able to hold all of the garbage container bins on Collection Day until they have been emptied by the Halton Region bulk-lift vehicle.

The waste chute and materials diverter sorting system should have the capability of being locked out while the container bin or Toter bin replacement or maintenance is taking place.

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## **B. Recyclable Materials**

### **Residential Recycling Materials:**

All residents will take their recyclable materials and deposit them into the stand-alone chute in each of the new buildings that is accessible from their floor via a small vestibule. The materials will drop into 3 CY (2.3 Cubic Meter) recycling containers located in the Residential Garbage and Recycling Rooms in each building.

Approximately every other day or so the recycling container bins in the Residential Garbage and Recycling Room in each of the Block buildings may be full. Building Maintenance staff personnel will remove the full recycling container bin, move it aside, and replace it with an empty recycling container bin. Three recycling container bins for the Block A building and seven recycling Toter bins for the Block B building will be made available for the collection of residential building recyclables for the estimated volume as per Halton Region Guidelines. Once a week the recycling container bins from the Residential Garbage and Recycling Rooms in each building will be towed up by the Property Management Company staff using a small tractor type vehicle to the Designated Collection Point located in the southwest quadrant of the development where the bins will be emptied by the front loading bulk-lift waste collection vehicle belonging to the Halton Region.

The second chute selection capability of the bi-sorter diverter system will be used for the collection of organic recycling materials. Organic recycling materials will be deposited in the same waste chute in the same manner as the garbage. The Halton Region has developed a program for the collection of organic materials for multiple unit dwellings using 95-US Gallon (360 L) Toter bins. Once a week the organic Toter bins will be towed up by Property Management Staff personnel from the Residential Garbage and Recycling Rooms in each building by small tractor type vehicle and taken to the Designated Collection Point located in the southwest quadrant of the new development. The materials will be collected in 95-US Gallon (360 L) organic Toter bins that will be emptied by a rear-loading or side-loading Halton Region bulk-lift vehicle.

### **I. Corrugated Cardboard**

It is estimated that the residents will be able to separate 1.58 Cubic Meters of cardboard in the Block A building and 4.24 Cubic meters in the Block B building for recycling each week. Cardboard will be deposited by the residents into the stand-alone recycling chute located on each of the floors in their respective buildings. The materials will drop into 3 CY (2.3 cubic meters) recycling container bins located in the Residential Garbage and Recycling Room on the P-1 floor level in each of the buildings. Large pieces of cardboard may need to be handled separately at the discretion of the Property Management Company. Once a week the recycling container bins from each of the Residential Garbage and Recycling Rooms will be towed up by Property Management staff personnel using a small tractor type vehicle and taken out to the Designated Collection Point located in the southwest quadrant the new development to be emptied by vehicles belonging to the Halton Region.

## II. Newsprint

It is estimated that the residents will be able to separate 3.15 Cubic Meters of paper in the Block A building and 8.47 Cubic meters in the Block B building for recycling each week. The papers will be deposited by the residents stand-alone recycling chute located on each of the floors in their respective buildings. The materials will drop into 3 CY (2.3 cubic meters) recycling container bins located in the Residential Garbage and Recycling Room on the P-1 floor level in each of the buildings. Once a week the recycling container bins from each of the Residential Garbage and Recycling Rooms will be towed up by Property Management staff personnel using a small tractor type vehicle and taken out to the Designated Collection Point located in the southwest quadrant of the new development to be emptied by vehicles belonging to the Halton Region.

## III. Glass, Plastics and Metals

The waste glass, plastic and metals will be deposited by the residents into the stand-alone recycling chute located on each of the floors in their respective buildings where the materials will drop into 3 CY (2.3 cubic meters) recycling container bins located in the Residential Garbage and Recycling Room on the P-1 floor level of each the building. It is estimated that the residents will be able to separate 2.21 Cubic Meters of waste glass, plastic and metals in the Block A building and 5.93 Cubic meters in the Block B building for recycling each week. Once a week the recycling container bins from each of the Residential Garbage and Recycling Rooms will be towed up by Property Management staff personnel using a small tractor type vehicle and taken out to the Designated Collection Point located in the southwest quadrant of the new development to be emptied by vehicles belonging to the Halton Region.

## IV. Food Waste

There will be no commercial food waste to be collected form the complex. Any food waste generated will be collected as part of the organics collection program for the residential buildings.

## V. Other Recyclable Materials

Other materials that may be readily separated from residential building waste include, white goods, bulk items and, in the case of renovations and/or owner improvements, metal and wood studs, other metals and drywall. Removal of these items may require special arrangements with both the Property Management Company and the Halton Region for the pick-up and removal from the new buildings. 10 SM of space has been provided on P-1 floor level for the storage of bulky items.

Wood and construction drywall have both been banned from landfill sites and must be handled separately from the regular waste stream. Large volumes of these materials are not expected to be generated in this complex. However, in the case of any major renovations, the construction drywall should be handled separately and collected by a recycler or by the construction contractor.

### ***C. Hazardous Materials***

Based on the nature of the new development, very few hazardous materials are likely to be discarded once the building is complete and operational.

Recommended is the provision of a fireproof, lockable cabinet in the Residential Garbage and Recycling Room in each of the new buildings or in the office of the Property Management Company for the safe holding of waste painting supplies, household chemicals, pest and weed control containers and other materials that may be hazardous under some conditions. A cabinet of approximately 1.2 x 0.6 m would be sufficient to hold these materials.

### ***D. Landscape Waste***

There is no landscape waste associated with this development project as it is expected the Landscape Contractor will be responsible for removing their own materials from the site.

## VEHICLE REQUIREMENTS

The following are the general requirements for Municipal Waste Collection vehicles and are worth noting.

### RESIDENTIAL CITY VEHICLE COLLECTION REQUIREMENTS

- City trucks will perform no more than a three-point turn with a minimum turning radius of 13.0 m.
- Municipal trucks must enter and exit the street in a forward motion.
- Garbage and Recycling Toter cart must be in an open area ready for collection and easily removed after dumping with a direct straight-in access of 18 m.
- A paved or level Designated Waste Collection Point Loading Space loading area with minimal dimensions of 13 m x 3.5 m (Minimum 4 m if enclosed) with a vertical clearance of 7.5 m over the whole area is required.
- Waste collection route and loading area shall be levelled to +/- 2% and designed to support weight up to 35 tonnes. Certification Letter shall be submitted along with SPA drawings.
- Minimum lane/aisle widths of 6 meters for two-way traffic and 4.5 meters for one-way traffic.

### DESIGNATED WASTE COLLECTION POINT LOADING SPACE REQUIREMENTS:

It is expected that this facility will use rear or side loading bulk-lift waste collection vehicles belonging to the Halton Region and/or the Town of Oakville. The length of truck varies but the overall length would be in the range of 9.1 m to 12.0 m. No large self-contained compactor container with cart dumper is planned for at this site. There is one Designated Waste Collection Point in this development, and it is located in the southwest quadrant of the development. A Traffic Consultant has verified that all anticipated vehicular movement into/on/out of the development is sufficient and compliant with applicable standards and requirements.

We welcome comment on the information contained above, and will work closely with 1005 Dundas Street Inc., Baron Nelson Architects, retained professionals, the Halton Region and the Town of Oakville Public Works Division to ensure that appropriate waste handling facilities are incorporated.



APPENDIX TWO: Level One Plan (A203)



APPENDIX THREE: P-1 Level Plan (A202)



APPENDIX FOUR: Truck Study by Paradigm

