



TECHNICAL MEMORANDUM

ISSUED FOR USE

To: Andrew Murphy
Mattamy Homes Corporation

Date: September 16, 2024

c:

Memo No.: 04

From: David Walmsley
Walmsley Environmental

File: WE2022-08

Subject: Updated Solid Waste Management Plan for a Development at 3085 Hurontario Str. in the City of Mississauga, Region of Peel

1. Introduction

Walmsley Environmental consulting services (WE) in association with RWDI Air Inc. (RWDI) prepared a Waste Management Plan (WMP) to support an Amendment to the City of Mississauga's Zoning By-law (ZBA) for the development at 3085 Hurontario Str. in the City of Mississauga. The plans and associated drawings have been updated and modified which requires that the WMP, dated 2022, be similarly modified. Further minor modifications were made to the WMP based on input from Mattamy staff. The current Plan is dated September 16, 2024.

Approval of this application will require that the Region of Peel's Waste Management staff sign off on a WMP for the development. The WMP outlines how the system and infrastructure for the transfer, storage, staging and collection of Blue Box (BB) recyclables and mixed waste will be designed and operated in compliance with Peel's Waste Collection Design Standards Manual, 2020 (WCDSM).

In accordance with the current Standards Manual, the Region will provide front-end collection of BB recyclables and garbage for the residential units subject to the following conditions:

- Identified vehicle access and egress routes.
- Minimum turning radius of 13 metres (m) from the centre line of turns in the internal laneways.
- Minimum internal roadway width of 6 m.
- Minimum straight head-on approach to the collection point of 18 m.
- Minimum clear height of 7.5 m from the concrete pad comprising the floor of the collection point which must be clear of sprinkler systems and ducts and should be large enough to accommodate the set-out of the required number of bins without jockeying being required for collection.
- Enough space for the storage of both BB recyclables, garbage bins and bulky items.
- An area of 10 m² for both the storage and staging/collection of bulky items.

Development of a sufficiently detailed and articulate Waste Management Plan (WMP) is critical to ensuring that the preliminary design of the building considers all the fundamental factors for the effective, safe operation of infrastructure and transfer protocols for the management of residential solid waste which will be invisible to the residents and acceptable to the Region of Peel and the City of Mississauga. The need to prepare a WMP is found in the Region Peel's (the Region) WCDSM. dated 2020. The WMP, outlined herein, presents the calculated waste material quantity and characteristics that are anticipated to be

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generated from the development and presents a preliminary plan for the storage and collection of the generated waste materials.

Summary Description of Proposed Development

We understand that Mattamy is proceeding with the development of a mixed use, high-density residential complex, with 10 residential townhouses facing onto an internal roadway and including ground level retail space, at 3085 Hurontario Str. in the City of Mississauga. The development consists of four high rise towers on podiums to be developed in three phases. The townhouses are in the northeast part of the site in the Tower 4 component of the development.

1. Objectives of the Waste Management Plan

The objectives of the WMP are as follows:

- To calculate the volume of BB recyclables and garbage that will be collected from residences in the complex once developed.
- To calculate the amount of waste that would be generated by the businesses that will occupy the commercial space in the complex.
- To determine the number of containers required to provide for the storage and collection of both residential and commercial waste from the complex.
- To develop a plan, with accompanying drawings in pdf and CAD formats, for the receipt, transfer, set out and collection of wastes that provides for the efficient and effective storage, transfer and transport of these materials on each collection day. The drawing, which accompanies this report, illustrates the storage of BB recyclables and garbage in the underground parking facilities as well as the staging and collection of these materials at the ground floor facility,

2. Waste Volume Requirements

Residential Units and Townhouses.

The Region does not collect source-separated organics (SSO) from multi residential developments. Our volumetric calculations, therefore, have presented waste volumes for just the BB recyclables and mixed waste (garbage) streams. We have assumed that the garbage stream will not be compacted to accommodate for the management of the mixed waste generated for the development. Finally, this Plan assumes that the waste generated by the users of the ground floor commercial spaces will be managed via separate contract(s) with private waste collection services and will be collected separately from the 2 residential waste streams.

According to subsection 3.5 (c) of Peel's By-Law to regulate the collection of waste (By-Law 35-2015) the Region collects garbage, or mixed waste, twice per week from multi-residential complexes on the scheduled collection days and according to subsection 3.6 (a) BB recyclables are collected on a weekly basis. The waste materials generated in each of the buildings will be transferred via chute systems to storage rooms in the 1st parking level in each building. The materials will be transported before each collection day to the staging and collection facility located on the ground floor of Buildings.

For the purposes of this Plan, we based the per residential generation rate for garbage and BB recyclables based on recognized municipal best practices. A rate of 0.05 cubic yards/unit/week was used for garbage and a rate of 0.067 cubic yards/unit/week was used for recyclables. Based on most-recent statistics for the development, the residential unit count for each building is as follows:

- Tower 1 (Phase 1) – 461

- Tower 2 (Phase 1) – 488
 - Tower 3 (Phase 2) – 417
 - Tower 4 (Phase 3) – 325
- Total units = **1,691**

Waste volume generated per unit on a weekly basis assuming the above-noted best practices-based volumes is as follows:

- Tower 1 (Phase 1)
 - Garbage – (461×0.07) yds/week / 4 yd bin = 8. four yd bins per weekly collection or 4 bins per twice-weekly collection.
 - Recyclables – $(461 \times 0.067) / 4 = 8$, four yd bins per weekly collection. +1 contingency bin for a total of 9 bins.
- Tower 2 (Phase 1)
 - Garbage – $(489 \times 0.07) / 4 = 9$, four yd. bins per weekly collection or 4+ bins per twice-weekly collection.
 - Recyclables – $(489 \times 0.067) / 4 = 8$, four yd bins per weekly collection +1 contingency bin for a total of 9 bins.
- Tower 3 (Phase 2)
 - Garbage – $(417 \times 0.07) / 4 = 7$, four yd bins per weekly collection or 3+ bins per weekly collection
 - Recyclables – $(417 \times 0.067) / 4 = 7$, four yd bins per weekly collection +1 contingency bin for a total of 8 bins.
- Tower 4 (Phase 3)
 - Garbage – $(325 \times 0.07) / 4 = 6$, four yd bins per weekly collection or 3 bins per twice-weekly collection.
 - Recyclables – $(325 \times 0.067) / 4 = 6$, four yd bins per weekly collection + 1 contingency bin for a total of 7 bins.

Residents in the 10 townhouses located at Tower 4, will generate additional waste as follows:

- Total annual waste generation from each townhouse would be 681 kg of material. Based on a composition study completed by the City of Toronto, this total can be divided into 2 streams as 30% recyclables and 70% mixed waste resulting in the generation of 204 kg of recyclables/unit/year and 477 kg of mixed waste/unit/year.
- The volume of each stream that will require storage and collection each week is:
 - Recyclables = $(204 \text{ kg} / 52 \text{ weeks}) / \text{a density factor of } 70 \text{ kg/m}^3 \times 1000 \text{ L} = 56 \text{ L} \times 10 \text{ townhouse units} = 560 \text{ litres of recyclables} / \text{week}.$
 - Mixed waste = $(477 \text{ kg} / 52 \text{ weeks}) / 170 \text{ kg/m}^3 \times 1000 \text{ L} = 54 \text{ L of garbage} / \text{week} \times 10 \text{ townhouse units} = 540 \text{ liters of garbage} / \text{week}.$

There is direct internal access to the parking level storage room for residents of the townhouses via a chute room located on an internal hallway. Material from both the townhouses would be managed with the waste from the residential units in Tower 4 of the development.

Commercial Spaces:

This Plan assumes that the waste generated by the occupants of the ground floor commercial spaces will be managed via separate contract(s) with private waste collection services. Because the commercial waste would comprise three waste streams (recyclables, organics and garbage) it would likely have to be stored and collected separately from the residential waste. Collection of the commercial waste could utilize the two-ground floor staging and collection facilities that have been designed to manage the residential streams. The private collection service provider would have to be able to collect three streams.

There are 1,222 m² of commercial space identified in the development. It is distributed among the towers as follows:

- Tower 1, 918 m² of restaurant space.
- Tower 2, 304 m² of space for a fitness facility.

The waste generation for the commercial spaces has been calculated based on a referenced number = $0.05 \text{ kg/m}^2 / \text{day} \times \text{the space, in m}^2 \text{ identified in each tower}$. These numbers were multiplied by an assumed six working days per week for the total quantity of waste generated per week from each of the towers. The composition of wastes from the Tower 1 proposed restaurants can be broken down as 40% food waste (organics), 40% recyclables (packaging) and, 20% garbage, (other). The composition of the wastes from the towers 2 & 3 has been assumed to be 60% recyclables (packaging), 10% food waste (lunches, etc.) and 30% garbage (other) The quantities per weekly collection and the associated volumes for the commercial (retail) space in each tower are estimated to be:

Tower 1:

- Food waste: $(918 \times 0.05) \times 6 \times 0.40 = 110 \text{ kg}$ of food waste per weekly collection.
- Recyclables: $(918 \times 0.05) \times 6 \times 0.40 = 110 \text{ kg}$ of packaging per weekly collection.
- Garbage: $(918 \times 0.05) \times 6 \times 0.20 = 55 \text{ kg}$ of garbage per weekly collection.

Tower 2:

- Food waste: $(304 \times 0.05) \times 6 \times 0.10 = 9 \text{ kg}$ per weekly collection.
- Recyclables: $(304 \times 0.05) \times 6 \times 0.60 = 55 \text{ kg}$ per weekly collection.
- Garbage: $(304 \times 0.05) \times 6 \times 0.30 = 27 \text{ kg}$ per weekly collection.

Tower 3:

These materials would be collected separately and could be transferred to the staging and collection facilities located on the ground floor of towers 2 and 3. We recommend that the waste services for the commercial spaces be provided via a direct, private contract. In this scenario, collection could occur more frequently to reduce the volume of waste being managed and the number of containers required to get the job done.

3. Waste Handling & Design Considerations

The waste material handling for the residences was evaluated based on the material volume calculations outlined in Section 2 of this report as well as the associated requirements set forth in the Region's WCDSM. Because mixed waste will be collected twice per week, a total of 10 bins will be staged per collection while 19 bins of recyclables will be staged for each weekly collection event. Bulky items will be collected, as required, on the second mixed waste collection day of the week.

3.1 Applicable Waste Collection Standards

The design standards applicable to the subject development as summarized in section 1 of this report and **Section 4** of the WCDSM, which applies to multi-residential complexes, states that:

- Solid waste from the apartments will be collected for complex Phase 1 in the dedicated "waste receipt & storage" rooms in the P1 level of the underground parking facility and transferred to the designated "waste staging and collection" facility on the ground floor of Buildings
- BB recyclables and mixed waste materials are not compacted after having been received via the materials chutes.
- Separate chutes will be provided for BB recyclables and garbage unless a single chute can be equipped with an automated mechanical separation system to direct materials into respective front-end bins at the chute room. These materials will be received in front-end bins in the dedicated garbage room located on the P1 level for each building of the development.
- The staging and collection to be provided on the ground floor of Tower 2, will be designed and constructed in compliance with the following requirements in addition to those outlined in Section 1.0 "Introduction" of this Plan:

- A minimum width of 3 m for each front-end bin is required in the staging area. Outside the collection point, a clear height of 4.4 metres from the top of the access road, along the waste collection vehicle access and egress route is required. The clear height of 4.4 metres is free of obstructions such as sprinkler systems, ducts, wires, trees, or balconies.
 - A flashing warning light system to prevent pedestrian and vehicle traffic from crossing the path of a reversing collection vehicle exiting the collection point areas is required. A convex mirror to aid the driver when backing up will be installed to facilitate collection.
 - A minimum of 10 m² will be provided for the storage and staging of bulky items.
- The internal roadways must be minimum of 6 m in width and must be constructed of a hard surface material, such as asphalt, or concrete designed to support a minimum of 35 tonnes, the weight of a fully loaded waste collection vehicle.
 - If the waste collection vehicle is required to drive onto or over a supported structure (such as an air grate, transformer cover, or underground parking garage) the Region must be provided with a letter from a professional engineer (licensed by Professional Engineers Ontario) certifying that the structure can safely support a fully loaded Waste Collection Vehicle weighing 35 tonnes.
 - Outside the collection point, a clear height of 4.4 metres from the top of the access road, along the waste collection vehicle access and egress route is required. The clear height of 4.4 metres is free of obstructions such as sprinkler systems, ducts, wires, trees, or balconies.
 - Since the proposed waste collection point area is considered to be a safety concern by Regional staff, for the vehicle to reverse out of, a flashing warning light system will be installed to prevent pedestrian and vehicle traffic from crossing the path of a reversing collection vehicle exiting the collection point. It is also advised to install use a convex mirror to aid the driver when backing up to facilitate collection.

3.2 Material Staging and Collection

3.2.1 Storage & Staging of Waste from Townhouse Units

The management of the waste material generated from each residential unit will consist of two steps. The first will entail the transfer of waste materials daily to a dedicated storage room with direct access to the residents. The second step will entail the staging and collection of the materials in accordance with the Region's Standards and collection schedule. The materials will be transferred to the storage room in the P1 parking level below Tower 4.

3.2.2 Staging & Collection of Waste from the Towers

Residents in the apartment suites will dispose of their BB recyclables and garbage via a chute-based system. As the materials are received in the storage rooms, located on the P1 Level of each building, they will be automatically directed to either the recycling or mixed waste front-end bins. There is sufficient space provided for the storage of recyclables and uncompacted mixed waste between collections. On the evening before each collection day, the bins will be transported, by building management staff, from the P1 chute and storage rooms to the staging & collection facility on the ground floor of either tower 2 or 3.

Waste materials will be set out in the staging area where the bins will have to be jockeyed for collection. The staging area identified in Figure 2, which accompanies this Plan, provides enough space for the BB recyclable bins as well space for jockeying the bins into position for collection. Further, Figure 2 depicts the spatial requirements at the staging/collection facility

for the mixed waste bins plus the 10 m² area for bulky items to be set out for collection on the second weekly mixed waste collection event as may be required.

Bulky or oversize materials will be transferred to the respective storage room by residents in the multi-residential buildings where maintenance staff will transfer the materials to the tower 2 and 3 staging/collection facilities as appropriate.

3.2.2 Collection

The routing of the collection vehicle has been depicted in Figure 2 which accompanies this Plan. The movement pattern for the collection vehicle complies with the Region's Standards.

3.2.3 Conclusion

The subject Waste Management Plan supports the conclusion that the development at 3085 Hurontario Str. will provide enough space for the storage, staging and collection of Blue Box recyclables and uncompacted mixed waste from the residential suites as well as the 3 identified waste streams from the commercial spaces. The Plan has not accommodated for the management of source-separated organics from the residential suites since the Region does not require this for multi-unit residential developments.

We trust this report meets your present requirements.

Respectfully submitted,
Walmsley Environmental



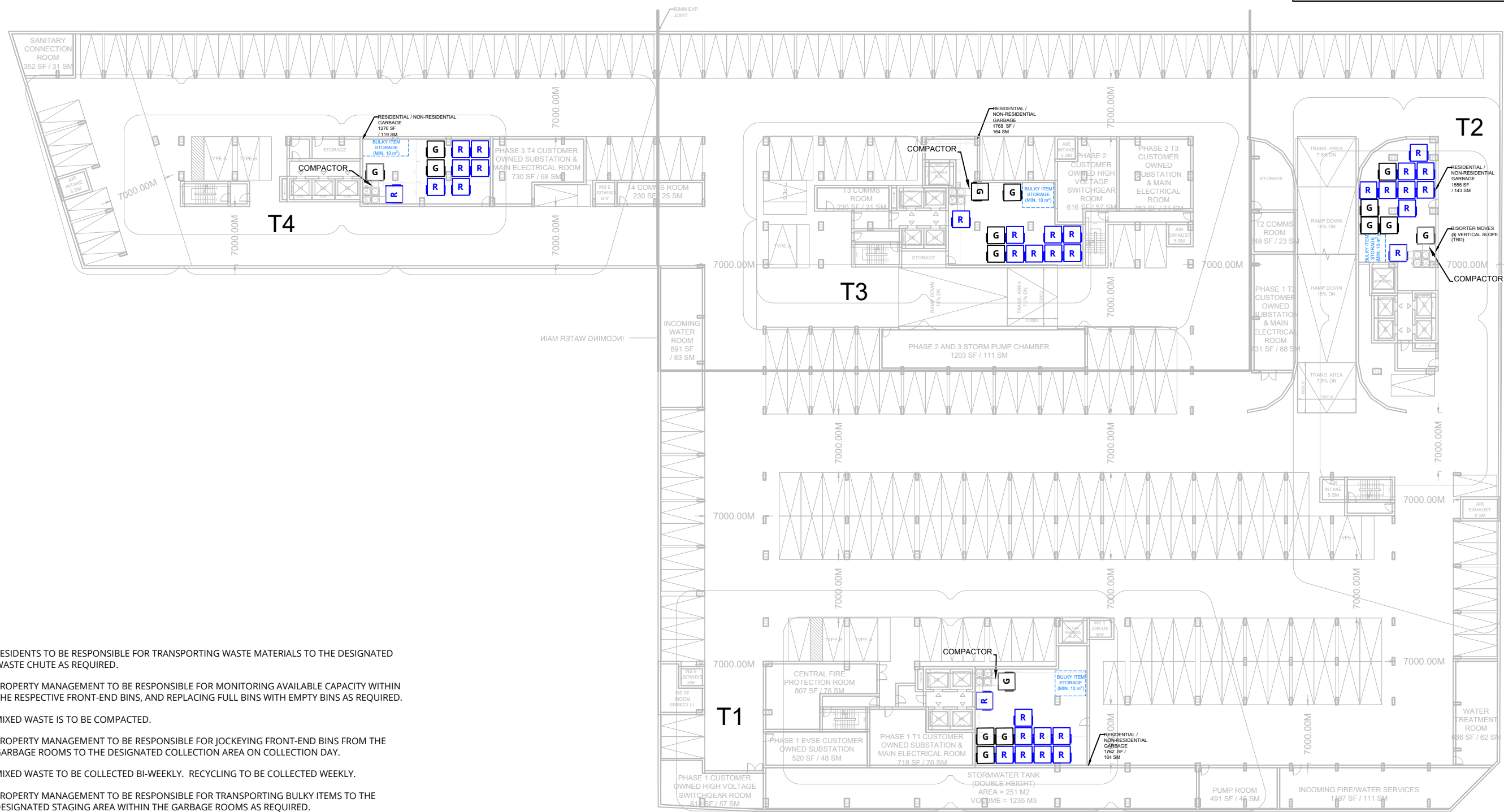
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LEGEND:

R 4 -CUBIC YARD FRONT-END BIN - RECYCLABLES

G 4 -CUBIC YARD FRONT-END BIN - MIXED WASTE



- NOTES:**
1. RESIDENTS TO BE RESPONSIBLE FOR TRANSPORTING WASTE MATERIALS TO THE DESIGNATED WASTE CHUTE AS REQUIRED.
 2. PROPERTY MANAGEMENT TO BE RESPONSIBLE FOR MONITORING AVAILABLE CAPACITY WITHIN THE RESPECTIVE FRONT-END BINS, AND REPLACING FULL BINS WITH EMPTY BINS AS REQUIRED.
 3. MIXED WASTE IS TO BE COMPACTED.
 4. PROPERTY MANAGEMENT TO BE RESPONSIBLE FOR JOCKEYING FRONT-END BINS FROM THE GARBAGE ROOMS TO THE DESIGNATED COLLECTION AREA ON COLLECTION DAY.
 5. MIXED WASTE TO BE COLLECTED BI-WEEKLY. RECYCLING TO BE COLLECTED WEEKLY.
 6. PROPERTY MANAGEMENT TO BE RESPONSIBLE FOR TRANSPORTING BULKY ITEMS TO THE DESIGNATED STAGING AREA WITHIN THE GARBAGE ROOMS AS REQUIRED.
 7. PROPERTY MANAGEMENT TO BE RESPONSIBLE FOR TRANSPORTING BULKY ITEMS FROM THE HOLDING AREA TO THE DESIGNATED COLLECTION AREA ON COLLECTION DAY.
 8. BULKY ITEMS TO BE COLLECTED ON THE SAME DAY AS GARBAGE-ONLY COLLECTION, SUCH THAT SUFFICIENT SPACE IS AVAILABLE WITHIN THE COLLECTION AREA.
 9. BASE PLAN PROVIDED BY 3XN GXN (2024).



Recyclables and Mixed Waste Storage Plan - P1 Level
 Solid Waste Management Plan, 3085 Hurontario St., Mississauga, ON

Mattamy Homes Canada



Drawn by: TFB	Figure: 1
Approx. Scale: 1:500	
Date Revised: Aug. 15, 2024	

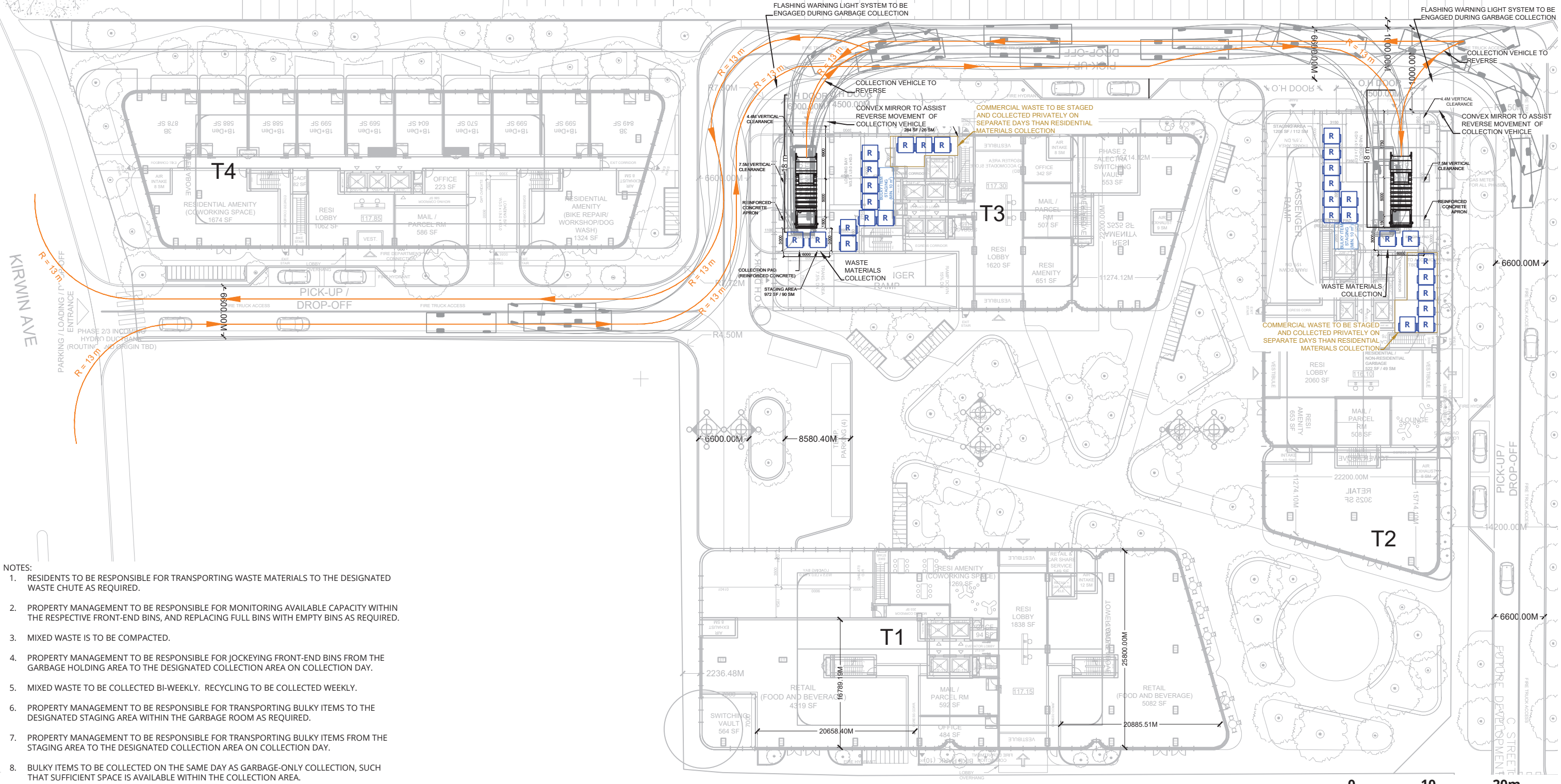


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LEGEND:

- R 4 -CUBIC YARD FRONT-END BIN - RECYCLABLES
- PROPOSED COLLECTION ROUTE
- COLLECTION VEHICLE



- NOTES:**
1. RESIDENTS TO BE RESPONSIBLE FOR TRANSPORTING WASTE MATERIALS TO THE DESIGNATED WASTE CHUTE AS REQUIRED.
 2. PROPERTY MANAGEMENT TO BE RESPONSIBLE FOR MONITORING AVAILABLE CAPACITY WITHIN THE RESPECTIVE FRONT-END BINS, AND REPLACING FULL BINS WITH EMPTY BINS AS REQUIRED.
 3. MIXED WASTE IS TO BE COMPACTED.
 4. PROPERTY MANAGEMENT TO BE RESPONSIBLE FOR JOCKEYING FRONT-END BINS FROM THE GARBAGE HOLDING AREA TO THE DESIGNATED COLLECTION AREA ON COLLECTION DAY.
 5. MIXED WASTE TO BE COLLECTED BI-WEEKLY. RECYCLING TO BE COLLECTED WEEKLY.
 6. PROPERTY MANAGEMENT TO BE RESPONSIBLE FOR TRANSPORTING BULKY ITEMS TO THE DESIGNATED STAGING AREA WITHIN THE GARBAGE ROOM AS REQUIRED.
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 8. BULKY ITEMS TO BE COLLECTED ON THE SAME DAY AS GARBAGE-ONLY COLLECTION, SUCH THAT SUFFICIENT SPACE IS AVAILABLE WITHIN THE COLLECTION AREA.
 9. BASE PLAN PROVIDED BY 3XN GXX (2024).



Recyclables Staging and Collection Plan - Ground Floor
 Solid Waste Management Plan, 3085 Hurontario St., Mississauga, ON

Mattamy Homes Canada



Drawn by: TFB	Figure: 2
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Date Revised: Jul. 15, 2024	



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