

### FINAL REPORT

# SOLID WASTE MANAGEMENT PLAN

#### **MATTAMY (5150 NINTH LINE) LIMITED**

RWDI #2003990 October 2, 2020

#### **SUBMITTED TO**

#### **Flora Tang**

Flora.Tang@mattamycorp.com

#### Mattamy (5150 Ninth Line) Ltd.

7880 Keele Street, Suite 400 Vaughan, ON L4K 4G7 T: 416.236.9800 ext.243

#### **SUBMITTED BY**

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#### **Consulting Engineers & Scientists**

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## **VERSION HISTORY**

Index	Date	Description	
1	June 26, 2020 Draft Report		
2	September 4, 2020	Draft revised per revised concept plan and comments provided by Mattamy	
3	October 2, 2020	Draft revised per revised concept plan and comments provided by Mattamy, City of Mississauga, and Region of Peel	



#### 1 INTRODUCTION

RWDI AIR Inc. (RWDI) was retained by Mattamy (5150 Ninth Line) Ltd. (Mattamy) to prepare this Solid Waste Management Plan (Plan) for a proposed Plan of Subdivision development located at 5150 Ninth Line, in the City of Mississauga (the Development). Successful completion of the Plan of Subdivision-approval process requires the preparation of a Solid Waste Management Plan, for submission to the Region of Peel (Region) and the City of Mississauga (City), that will provide a clear outline of how solid waste (including green bin wastes, Blue Box Recyclables, and garbage) will be stored, transferred, and collected from the proposed community. The Plan, outlined herein, presents the estimated material quantity and characteristics that are anticipated to be generated from the development and presents a preliminary plan for the storage and collection of the generated waste materials.

#### 1.1 Summary Description of Development Proposal

The proposed Development consists of a developable area of approximately 3.7 hectares located adjacent (west) of Ninth Line in the City of Mississauga. The subject site currently consists of freehold residences fronting Ninth Line, an animal hospital, and open/cleared lands.

The proposed Development is to be constructed in two (2) phases and is to consist of 175 low-rise units on condominium roads, as follows.

Hait Tone	Number of Units		
Unit Type	Phase 1	Phase 2	
Dual Frontage Townhouse	17	0	
Standard Townhouse	67	5	
Freehold Townhouse	17	0	
Back-To-Back Townhouse	26	42	
Total	127	47	

The identification and distribution of the residences to be developed is attached as **APPENDIX A** to this report. The balance of the lands will consist of amenity area, walkways, buffers, and internal streets. Access and egress to the development will be provided from Ninth Line, with internal roadways providing access to the residential Blocks.

#### 1.2 Objectives of the Solid Waste Management Plan

The objectives of the Solid Waste Management Plan are as follows:

- To calculate the volume of Blue Box (BB) recyclables, organics, and garbage that will be collected from the community, once developed.
- To determine the number of containers required to provide for the curb-side collection of wastes.
- To develop an internal collection plan for the BB recyclables, organics, and garbage that provides for the efficient and effective collection and transport of these materials on each collection day.



Material generation and composition data for comparable residential developments were obtained from the documents titled "Roadmap to a Circular Economy in the Region of Peel, Region of Peel Waste Management Division", and Continuous Improvement Fund (CIF) Project No.872: "Multi-Residential Audits & Superintendent Training, City of Toronto, 2016". These data were used to calculate anticipated volumetric requirements for the storage of generated materials, as well as the requirements for set out prior to collection.

## 2 MATERIAL QUANTITIES, COMPOSITION & VOLUME

As a first step in the design of the collection plan for the proposed Development, the quantity of waste materials generated from the residences was calculated for BB recyclables, organics and garbage. These data were used to calculate the volume of materials requiring storage and collection to determine the size and number of containers needed to transport the materials from the Development.

#### 2.1 Material Quantities and Composition

The proposed Development will create a medium-density community comprised of townhouse residences of various configurations. The quantity of waste generated by each household in a multi-residential community was identified by the Region of Peel to be 620 kilograms (kg) per year<sup>1</sup>. The Region also identified that households in single-family, detached, residences generated about 1000 kg per year. For the purposes of this Plan, a wastegeneration quantity of 800 kg per year for the townhouse residences was assumed as a measure of conservatism.

The composition of waste materials was determined based on the results of audits, undertaken in 2015, at multi-residential developments in the City of Toronto<sup>2</sup>. The breakdown of the composition of waste materials was assumed to be as follows:

- Residential mixed waste (garbage) at 45% by weight.
- BB recyclables at 31% by weight.
- Organics (green bin waste) at 24% by weight.

The total amount of material collected from residential households for the 2015 audit was 582 kg. The quantity of BB recyclables in the garbage stream equaled 89 kg or 15%, with organics equaling 168 kg or 29% of the material audited. The BB recyclables that were diverted comprised 24% of the total with diverted organics comprising 9%. For the purposes of developing the subject waste Plan, it was concluded that higher diversion rates would be possible with an assertive information and communications strategy for residents. A diversion rate of 31% for BB recyclables and 24% for organics were identified as reasonable.

<sup>&</sup>lt;sup>1</sup> Region of Peel, Waste Management Division, Roadmap to a Circular Economy in the Region of Peel, 2018-2041.

<sup>&</sup>lt;sup>2</sup> City of Toronto, CIF Project No. 872: Multi-Residential Audits & Superintendent Training, January 2016, Figure 2, Total Waste Stream Composition (kg/hh/year) pg. 5.



The Region collects BB recyclables and garbage on an alternating bi-weekly basis with organics collected each week. The amount of each material type that would be generated on a weekly basis from each residence type in the proposed community was calculated by multiplying the annual total (800 kg per year) by the projected % composition and dividing that by 52 weeks.

The calculations are as follows:

o BB recyclables,  $(800 \times 0.31/52) \times 2 = 10 \text{ kg/hh/bi-weekly collection.}$ o Organics,  $800 \times 0.24/52 = 4 \text{ kg/hh/weekly collection.}$ o Garbage,  $(800 \times 0.45/52) \times 2 = 14 \text{ kg/hh/bi-weekly collection.}$ 

#### 2.2 Material Volume Calculations

The volume requirements for storage/collection containers for each waste material type were calculated by dividing the bi-weekly or weekly amounts for each type by the applicable density factor (kg/m³) then multiplying by 1000 to generate a required volume in litres (L).

The calculations are as follows:

BB recyclables (10/70) x 1000 = 143 L/hh/bi-weekly collection.
 Organics (4/500) x 1000 = 8 L/hh/weekly collection.
 Garbage (14/130) x 1000 = 108 L/hh/bi-weekly collection.

## 3 MATERIAL HANDLING – DESIGN CONSIDERATIONS

The material handling options for the proposed Development were evaluated based on the material volume calculations outlined in **Section 2.2** of this report, as well as the associated requirements set forth in the Region's WCDSM. It was assumed that the Development would receive curbside, cart-based collection service provided by the Region.

#### 3.1 Applicable Waste Collection Standards

The Development should comply with sections 2 and 3 of the Region's WCDSM. The following requirements were incorporated into the Plan.

**Section 2** of the WCDSM provides the general design standards to accommodate the set out and collection of waste materials. This Plan has been devised based on these requirements as follows:

- All internal roads are to have a minimum width of 6 metres and are to be constructed of a hard-surface
  material designed to support a minimum 35 tonnes which is the weight of a fully loaded waste collection
  vehicle.
- The turning radius from the centre line is to be a minimum of 13 metres on all turns.



- Access routes for waste collection vehicles are to have a grade of no more than 8 percent.
- Waste collection vehicles will not be required to back-up onto a municipal road allowance.

**Section 3** of the WCDSM applies specifically to the proposed townhouse residences. The standards are as follows:

- The set area for each residence must be at least 3 square metres to provide enough space for the placement of 1 garbage cart or 1 recycling cart and 1 cart for organic (green bin) waste as well as overflow waste (i.e., additional bags, yard waste, and bulky items) as may be required.
- A proposed set out area for each residence is identified on the Collection Plan (FIGURE 1, APPENDIX B).
   The set-out area is to be located along a curb and will be directly accessible to the waste collection vehicle.

#### 3.2 Material Sources

Phase 1 and Phase 2 of the development is to include approximately 174 residences consisting of the following.

- Seventeen (17) dual frontage townhouse units.
- Seventy-six (72) standard townhouse units.
- Nineteen (17) freehold townhouse units.
- Sixty-eight (68) back-to-back townhouse units.

Direct access to the townhouse residences will be via internal roadways (APPENDIX A).

#### 3.3 Material Collection

The distribution of carts for each residential block was based on the material volume calculations outlined in **Section 2.2.** Each townhouse residence will receive a dedicated cart for each material stream. Each residence will receive a BB recyclable material (240 L), organics (100 L), and garbage (240 L) cart from the Region. Materials generated at each of the residences would be placed directly into the dedicated carts. Images and dimensions of each type of cart are provided in **APPENDIX C**, for reference.

The waste materials will be placed at the curb, as identified on the Collection Plan (Figure 1, Appendix B), before 7:30 am on the designated waste collection day. The Region collects BB recyclables and garbage on a rotating, biweekly, basis with organics collected on a weekly basis. The collection points identified on the Collection Point Plan (Figure 2, Appendix B) are to provide enough space for the respective collection carts as well as to provide enough space for the placement of overflow waste (i.e., additional bags, yard waste, and bulky items) as may be required. Additional details regarding collection points are outlined in Appendix C for reference.



#### 3.3.1 Restrictions to Visitor Parking

The placement of individual carts along the internal roadways will require that access to the designated visitor parking spaces, located at the southern end of 'CEC Road "A"" (adjacent to Block 3 per FIGURE 1), be 'closed' the evening prior to, and for the duration of collection day, such that unrestricted access for the collection vehicle(s) is maintained. Signage is to be established advising of these parking restrictions for the two (2) referenced visitor parking spaces.

The Region of Peel has concurred with this approach, as noted in an email from Sara Basile, Specialist, Asset Management and State of Good Repair, Infrastructure, Waste Management, Region of Peel, to Flora Tang, Land Development Coordinator, Mattamy Homes, dated September 15, 2020 (APPENDIX D).

#### 3.3.2 Snow Storage

Comments received from the City of Mississauga, were outlined in the document 'Application Status Report Comments Response Matrix for Application No. 21T-M 19 6' dated August 31, 2020, prepared by Mattamy. Included in the comments was a request that "the location of snow storage should also be considered in the concept plan". As such, Mattamy identified conceptual snow storage locations, which are provided on Figure 3 for reference. It is noted the identified locations are conceptual only. Further details can be provided to show compliance with the applicable Transportation and Works design standards (if applicable) at the site plan approval stage. It is noted the identified conceptual snow storage locations are not anticipated to impact the waste collection vehicle route, or collection of individual carts.

#### IN CLOSING 4

We trust that this Solid Waste Management Plan for the proposed Development located at 5150 Ninth Line, in Mississauga, Ontario is satisfactory. Please do not hesitate to contact the undersigned with any questions you may have.

Yours very truly,

**RWDI** 

Timothy Boc, BES Senior Scientist |

Technical Team Leader - Geosciences

TFB/PJAM/kta

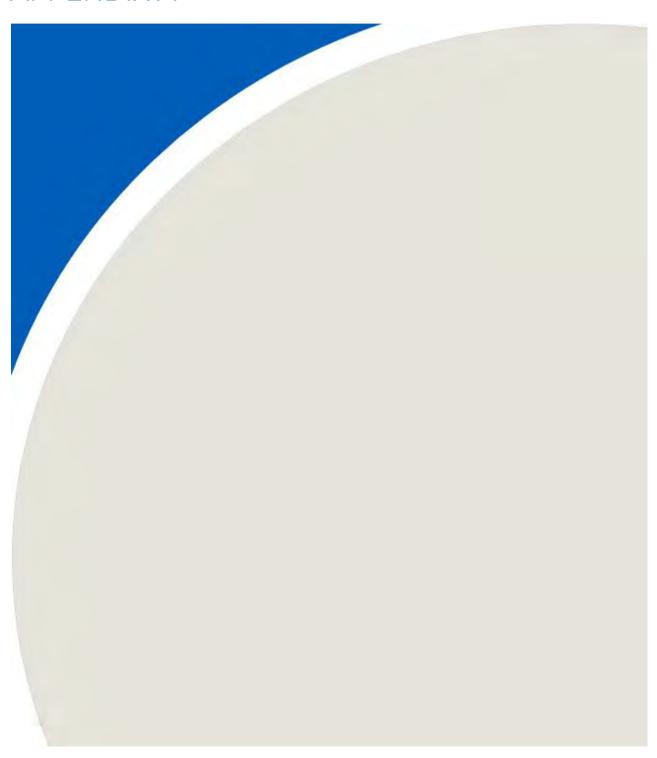
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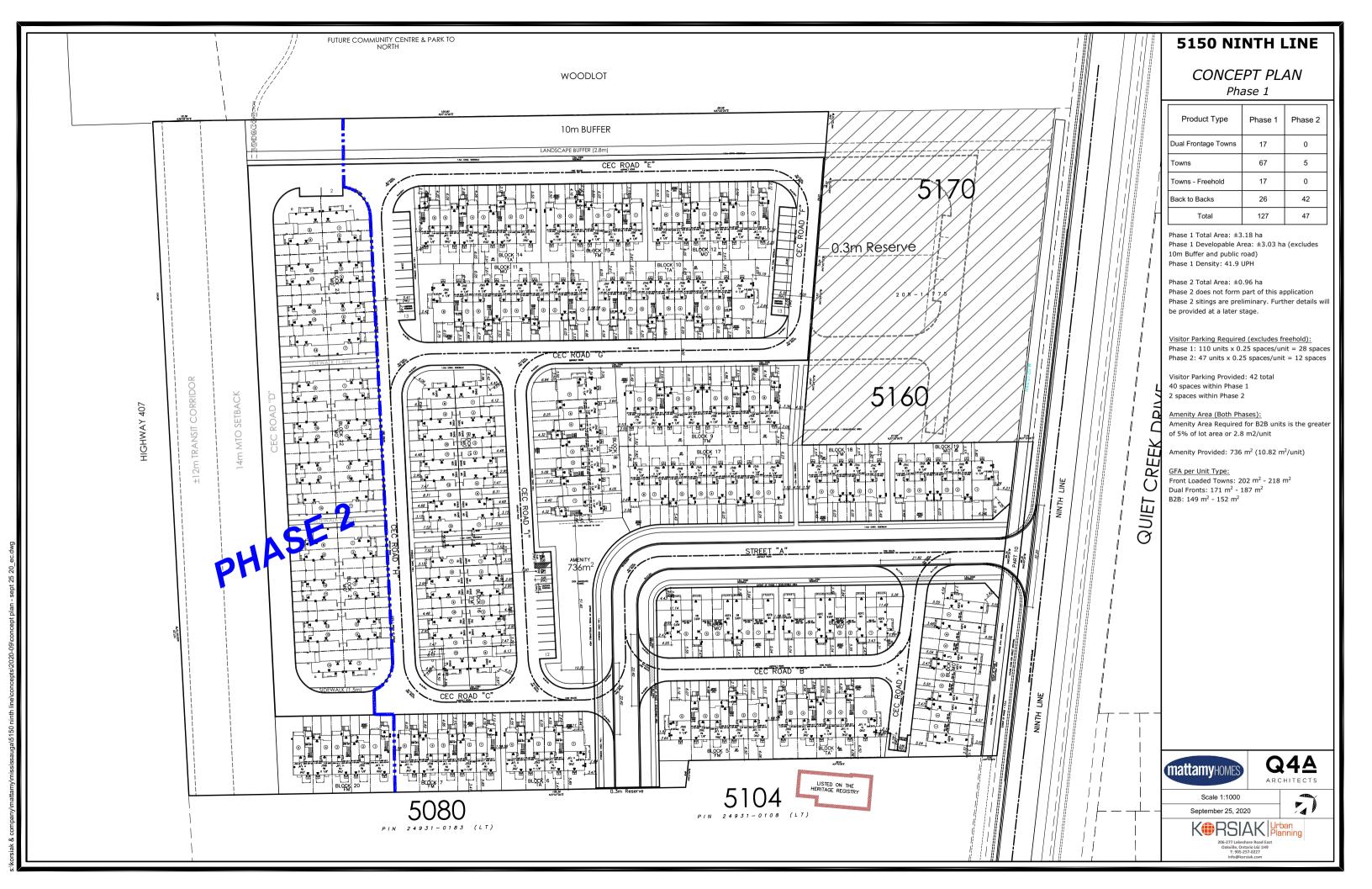
Technical Director | Practice Area Leader - Geosciences | Associate

Peter-James Mauro P.Eng., QPESA



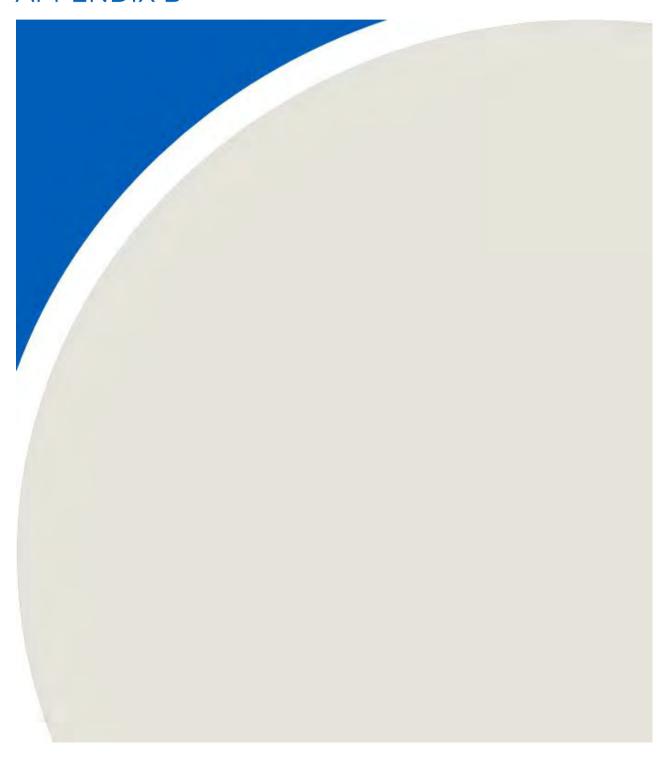
## APPENDIX A







## APPENDIX B

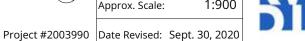




Mattamy (5150 Ninth Line) Ltd.

1. Base map provided by Mattamy (5150 Ninth Line) Ltd. (2020).

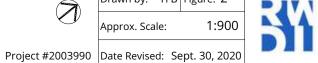
**LEGEND:** 





Mattamy (5150 Ninth Line) Ltd.

1. Base map provided by Mattamy (5150 Ninth Line) Ltd. (2020).



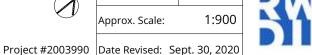
**Conceptual Snow Storage Plan** 

Solid Waste Management Plan, 5150 Ninth Line, Mississauga, Ontario

1. Base map provided by Mattamy (5150 Ninth Line) Ltd. (2020).

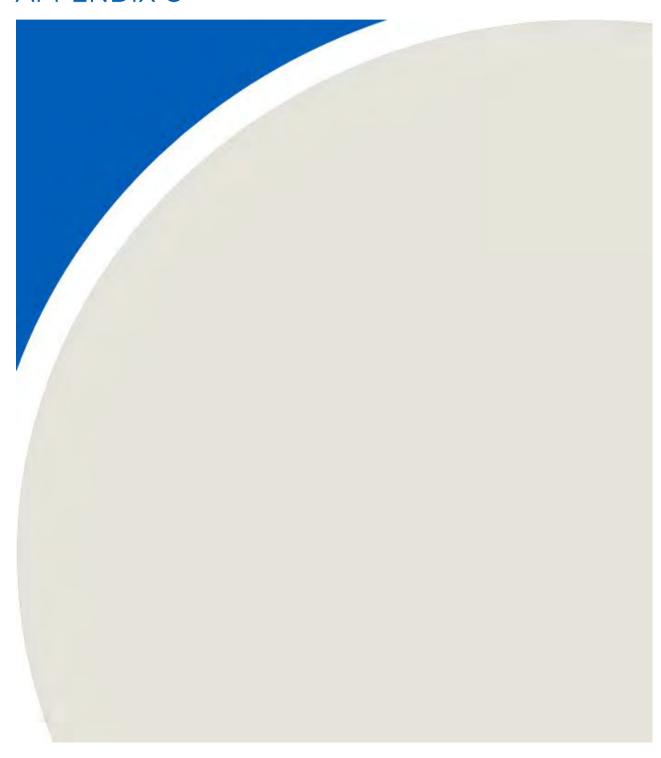
Drawn by: TFB Figure: 3

1:900 Approx. Scale:





## APPENDIX C



#### **CARTS USED FOR CURBSIDE WASTE COLLECTION**



**Small Garbage Cart** 



**Medium Garbage Cart** 



Large Garbage Cart



**Organics Cart** 



**Small Recycling Cart** 



**Medium Recycling Cart** 



**Large Recycling Cart** 

Notes:

1. Cart images and dimensions from Waste Collection Design Standards Manual, Region of Peel Public Works Department, Waste Management Division.

## WASTE/RECYCLING CART IMAGES & DIMENSIONS

Solid Waste Strategy 5150-5170 Ninth Line South Development, *Mattamy (5150 Ninth Line) Ltd.*  FIGURE NUMBER PROJECT NUMBER
C-1 2003990

APPROX. SCALE DATE REVISED

NTS 06/20/2020



#### **APPENDIX 9: WASTE COLLECTION POINT EXAMPLES**

## COLLECTION POINT FOR SINGLE-DETACHED, SEMI-DETACHED, TOWNHOUSES AND MULTI-RESIDENTIAL COMPLEXES UP TO SIX UNITS DWELLING UNITS





Collection Point must be at least 3 square metres (32 square feet) in order to provide sufficient space for the placement of two Carts: maximum one (1) large Garbage or Recycling (360 litres or 79 Imperial gallons) Cart and one (1) Source Separated Organics (100 litres or 21 imperial gallons) Cart, overflow Waste (i.e. additional bags), Yard Waste Receptacles and Bulky Items. In addition, a minimum 1 metre (3ft.) space between each Cart must be

## <u>OUTDOOR CONCELAED WASTE COLLECTION POINT FOR</u> <u>MULTI-RESIDENTIAL COMPLEXES, STACKED TOWNHOUSES AND MIXED USE BUILDINGS</u>

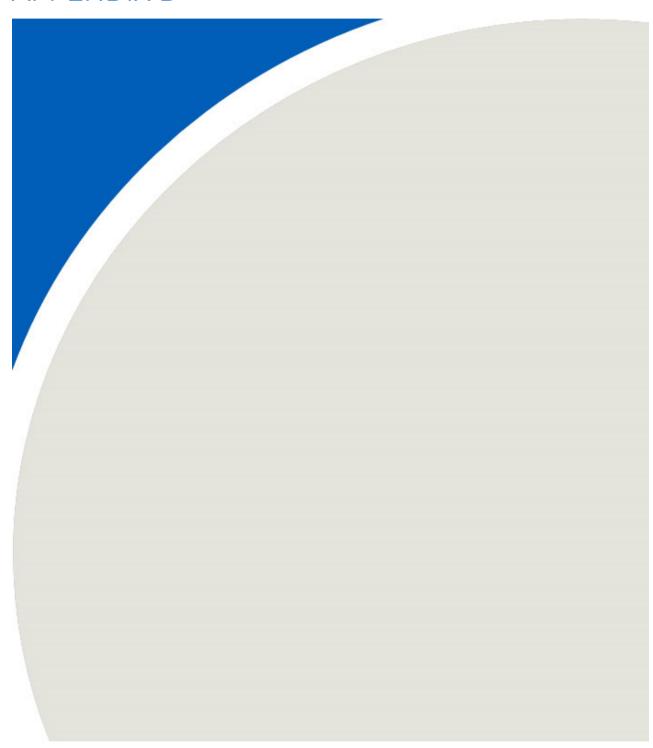




Concealed Waste Collection Points must have a level and solid (Max. 2% slope) concrete pad. The concrete pad should extend a minimum of 1.5 metres in length outside of the collection point to accommodate the front wheels of the waste collection vehicle. All Concealed Waste Collection Point specifications can be found in section 4.1



## APPENDIX D



#### **Timothy Boc**

From: Basile, Sara <sara.basile@peelregion.ca>
Sent: Tuesday, September 15, 2020 4:13 PM

**To:** Flora Tang

**Cc:** Lalingo, Anthony; Harder, Ranelyn; Craig Scarlett

Subject: RE: 5150 Ninth Line South - Waste Management Comments (OZ 19 18 & 21T-M 19 6)

Hi Flora.

I have good news. I spoke with our Waste Collections staff and since this is the only unit on site that has an issue, we are willing to accept the design as shown.

Please include the no parking signs next to those visitor parking spaces, but no other changes will be required. Ensure all turns show the 13 metre turning radius requirement as well.

I appreciate you bringing this to our attention and working with us to find a solution that works for everyone.

Have a nice night, Sara

#### Sara Basile

Specialist, Asset Management and State of Good Repair Infrastructure, Waste Management Region of Peel 10 Peel Centre Drive, Suite A (4<sup>th</sup> Floor) Brampton, ON L6T 4B9

Office: (905) 791-7800 ext. 4891

Cell: (416) 278-1596



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From: Flora Tang <Flora.Tang@mattamycorp.com>

Sent: September 15, 2020 3:19 PM

To: Basile, Sara <sara.basile@peelregion.ca>

Cc: Lalingo, Anthony <anthony.lalingo@peelregion.ca>; Harder, Ranelyn <ranelyn.harder@peelregion.ca>; Craig Scarlett

<Craig.Scarlett@mattamycorp.com>

Subject: RE: 5150 Ninth Line South - Waste Management Comments (OZ 19 18 & 21T-M 19 6)

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Hi Sara,

Thanks for the note and suggestions below. We've looked into the 2 visitor parking spaces that you mentioned and unfortunately, there isn't sufficient room for a parallel space. We've also looked into replacing the spaces elsewhere across the site, however, our planner has confirmed that it wouldn't be possible.

The City has previously expressed concerns about not having enough visitor spaces being evenly spread across the site, which we're concerned they would re-consider if we have to lose the 2 spaces. Are there alternative arrangements for this particular unit? Would the Region accept the 2 visitor parking spaces if we enforce a "No Parking" sign between the hours of garbage collection? I trust that further details could be provided at the Site Plan stage.

I welcome your thoughts and advice.

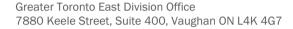
Thanks in advance,

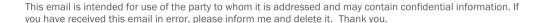
**mattamv**homi



**c** (437) 227-0736

Flora.Tang@mattamycorp.com





From: Basile, Sara < sara.basile@peelregion.ca > Sent: Monday, September 14, 2020 4:15 PM
To: Flora Tang < Flora.Tang@mattamycorp.com >

Cc: Lalingo, Anthony <anthony.lalingo@peelregion.ca>; Harder, Ranelyn <a ranelyn.harder@peelregion.ca>

Subject: RE: 5150 Ninth Line South - Waste Management Comments (OZ 19 18 & 21T-M 19 6)

Hi Flora,

No we generally don't permit collection points that will block a driveway. Since this is the only issue on the site that I can see, I want to try to work with you to find a solution.

Would it be possible to relocate the 2 visitor parking spaces? Using the space as roadway would provide enough clearance to the waste collection vehicle to collect from that unit. Perhaps they can be turned into parallel spaces on the same road?

#### Sara Basile

Specialist, Asset Management and State of Good Repair Infrastructure, Waste Management Region of Peel 10 Peel Centre Drive, Suite A (4<sup>th</sup> Floor) Brampton, ON L6T 4B9

Office: (905) 791-7800 ext. 4891

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From: Flora Tang <Flora.Tang@mattamycorp.com>

Sent: September 14, 2020 1:27 PM

To: Basile, Sara < sara.basile@peelregion.ca>

Cc: Lalingo, Anthony <anthony.lalingo@peelregion.ca>; Harder, Ranelyn <ranelyn.harder@peelregion.ca>

Subject: RE: 5150 Ninth Line South - Waste Management Comments (OZ 19 18 & 21T-M 19 6)

#### CAUTION: EXTERNAL MAIL. DO NOT CLICK ON LINKS OR OPEN ATTACHMENTS YOU DO NOT TRUST.

Hi Sara,

Thanks for your note below. One of the minor concerns that our planner flagged was the waste collection point located at the corner unit at the end of Block 3 (located on CEC Road A, facing Ninth Line, by the 2 visitor parking spaces).

We are worried that the proposed location on the driveway would not be accepted upon further review. Could you confirm that the location proposed is acceptable for the Region?

Thanks in advance,

mattamyHOME





Flora.Tang@mattamycorp.com

Greater Toronto East Division Office 7880 Keele Street, Suite 400, Vaughan ON L4K 4G7

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From: Basile, Sara < <a href="mailto:sara.basile@peelregion.ca">sent: Monday, September 14, 2020 10:53 AM</a>
To: Flora Tang < <a href="mailto:Flora.Tang@mattamycorp.com">Flora.Tang@mattamycorp.com</a>

Cc: Lalingo, Anthony <anthony.lalingo@peelregion.ca>; Harder, Ranelyn <ranelyn.harder@peelregion.ca>

Subject: RE: 5150 Ninth Line South - Waste Management Comments (OZ 19 18 & 21T-M 19 6)

Good Morning Flora,

Apologies for the delay.

The attached drawing addresses the collection point requirements. We will need to see turning radii labelled as a minimum of 13 metres to the centreline of the road on all turns. We don't accept turning radii measured to the curb of the road.

Feel free to call if you have any further questions.

Thanks, Sara

#### Sara Basile

Specialist, Asset Management and State of Good Repair Infrastructure, Waste Management Region of Peel 10 Peel Centre Drive, Suite A (4<sup>th</sup> Floor) Brampton, ON L6T 4B9 Office: (905) 791-7800 ext. 4891

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**From:** Flora Tang < <a href="mailto:Flora.Tang@mattamycorp.com">Flora.Tang@mattamycorp.com</a>>

Sent: September 11, 2020 1:44 PM

To: Basile, Sara < <a href="mailto:sara.basile@peelregion.ca">sara.basile@peelregion.ca</a>>

Cc: Lalingo, Anthony <anthony.lalingo@peelregion.ca>

Subject: RE: 5150 Ninth Line South - Waste Management Comments (OZ 19 18 & 21T-M 19 6)

#### CAUTION: EXTERNAL MAIL. DO NOT CLICK ON LINKS OR OPEN ATTACHMENTS YOU DO NOT TRUST.

Hi Sara.

Kindly following up on the below email. I'm hoping to get your attention on our collection point diagram and whether it fully addresses your comments.

We are diligently working on our upcoming re-submission in hopes to receive draft plan and re-zoning approval from the City. Appreciate all the advice and comments you can provide at this time.

Thanks in advance,





Flora.Tang@mattamycorp.com

Greater Toronto East Division Office 7880 Keele Street, Suite 400, Vaughan ON L4K 4G7

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From: Flora Tang

Sent: Friday, September 4, 2020 12:33 PM

To: sara.basile@peelregion.ca

**Cc:** Lalingo, Anthony <a href="mailto:anthony.lalingo@peelregion.ca">; Claire Finoro <<u>Claire.Finoro@rwdi.com</u>>; Timothy Boc

<Timothy.Boc@RWDI.com>

Subject: 5150 Ninth Line South - Waste Management Comments (OZ 19 18 & 21T-M 19 6)

Hi Sara,

Hope this email finds you well. I'm reaching out today to clarify your comment for the above-referenced application. You have requested for a separate drawing detailing the garbage truck turning radii and collection areas throughout the development.

We have completed a figure confirming the turning radii, proposed waste collection path and proposed collection areas on all lots. Could you please confirm whether the attached figure would fully address your comment and concerns?

Thanks in advance,





**c** (437) 227-0736 Flora.Tang@mattamycorp.com

Greater Toronto East Division Office 7880 Keele Street, Suite 400, Vaughan ON L4K 4G7

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