6115, 6141, & 6159 Flewellyn Road

Transportation Impact Assessment

Step 1 Screening Report

Step 2 Scoping Report

Step 3 Strategy Report

Prepared for:

Caivan (Stittsville) Inc.
3713 Borrisokane Road
Ottawa, ON K2J 4J4

Prepared by:

CGH TRANSPORTATION

6 Plaza Court
Ottawa, ON K2H 7W1

October 2026

PN: 2025-191

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1 Screening

This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines, incorporating the 2023 Revision to Transportation Impact Assessment Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for the TIA Study PM. As shown in the Screening Form, a TIA is required, and this study has been prepared to support a Zoning By-Law amendment and site plan application.

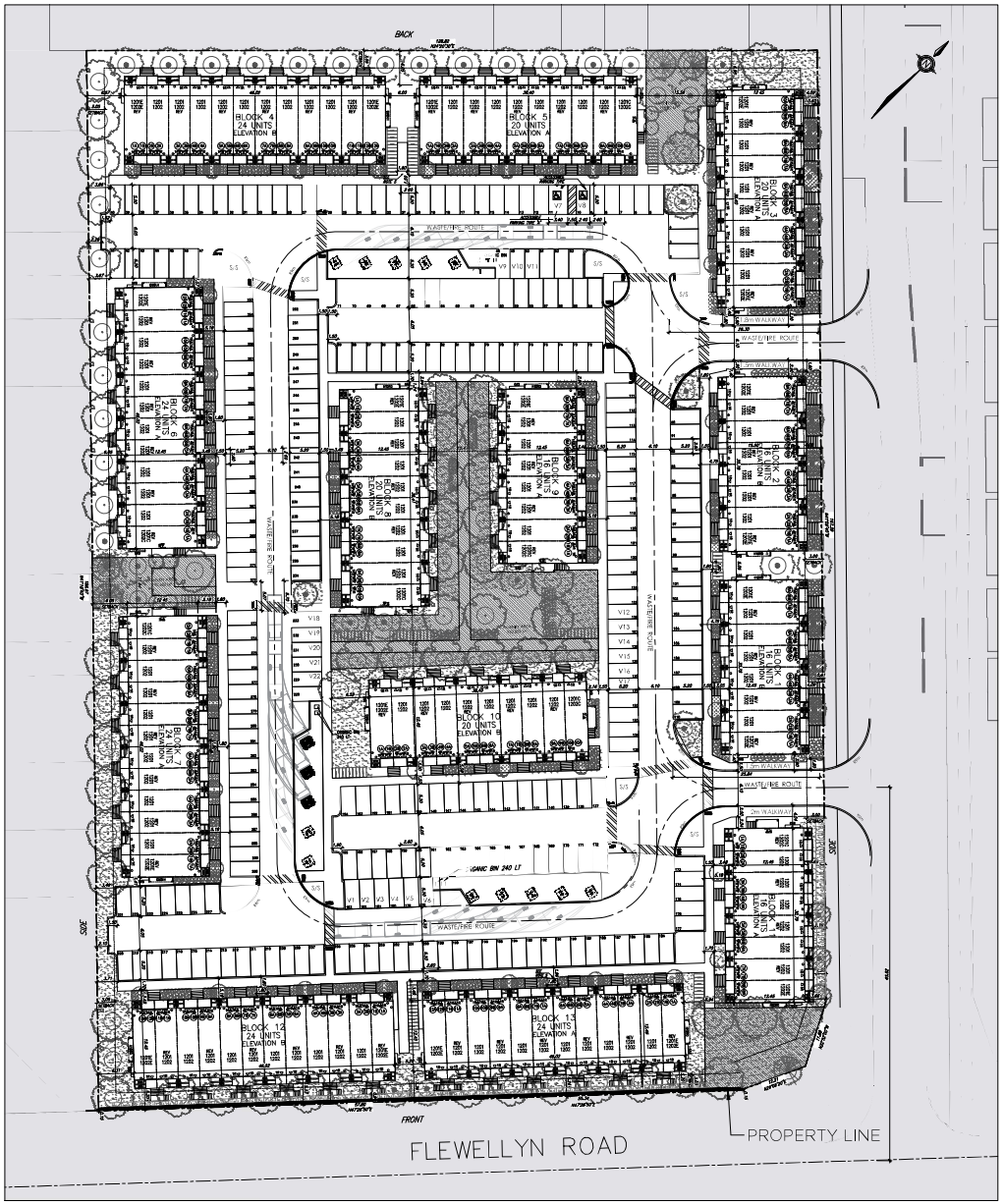
2 Existing and Planned Conditions

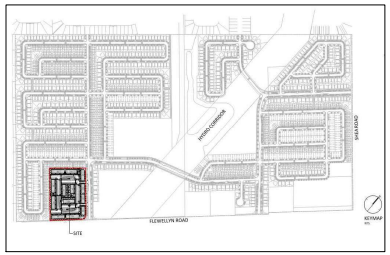
2.1 Proposed Development

The development site is located at 6115, 6141, and 6159 Flewellyn Road, and it is currently zoned as Rural Countryside Zone (RU) and Rural Residential Zone (RR2). The proposed development includes condo block within Phase 1 of the Magnolia subdivision, comprising 264 stacked dwelling units, 290 parking spaces, and 132 bicycle parking spaces. The proposed access configuration includes two private accesses to a new collector road within the subdivision, which connects to Flewellyn Road. The anticipated full build-out is 2029. Figure 1 illustrates the study area context. Figure 2 illustrates the proposed concept plan.

Figure 1: Area Context Plan

Source: http://maps.ottawa.ca/geoOttawa/ Accessed: January 02, 2026





SITE PLAN NOTES

1. DO NOT SCALE DRAWINGS FOR PRINT.
2. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF Q4 ARCHITECTS AND CALVAN. COPYRIGHT RESERVED.
3. WALKWAYS AND CURBS TO BE FITTED INTO PUBLIC ROW WHERE APPLICABLE.
4. REFERENCE CITY OF OTTAWA T.W.S.I. DETAIL SC7.3.
5. WHERE THE CLEAR WIDTH OF WALKWAY IS LESS THAN 1800 MM. PROVIDE A PASSING AREA, 1800 MM WIDE BY 1800 MM LONG (MINIMUM) AT INTERVALS OF 30 METRES OR LESS AS PER SECT. 4 OF OTTAWA ACCESSIBILITY DESIGN STANDARDS 3.3.3- EXTERIOR PATHS OF TRAVEL - CLEAR WIDTH

SITE AREA	23,721.97 m² (2.37 ha)
PAVED AREA	6,161.4 m²
LANDSCAPED AREA	9,252.94 m²
TOTAL BUILDING COVERAGE	6,307.63 m²
TOTAL GROSS FLOOR AREA	29,755.70 m²
DENSITY (UPH)	111.29 UPH
ZONE CATEGORY	I1B

DWELLING BLOCK	DWELLING TYPE	COVERAGE AREA (m²)	GROSS AREA (m²)	UNITS
BLOCKS 4, 6, 7, 12, 13	24 UNITS STACKED DWELLINGS	572.75 m² (per Block)	2,264.86 m² (per Block)	120
BLOCKS 3, 5, 8, 10	20 UNITS STACKED DWELLINGS	477.91 m² (per Block)	1,889.02 m² (per Block)	80
BLOCKS 1, 2, 9, 11	16 UNITS STACKED DWELLINGS	385.07 m² (per Block)	1,513.18 m² (per Block)	64
			TOTAL	264

AMENITY AREAS		
	AREA	COMMENTS
PRIVATE AMENITY AREAS		
REAR DECK	592.42 m²	Lower units (132 units)
REAR PATIOS	1074.50	Lower units where applicable (70 units)
SECOND FLOOR BALCONIES	558.4 m²	Upper units (132 units)
TOTAL PRIVATE AMENITY	2225.3 m²	
COMMUNAL AMENITY AREAS		
AMENITY AREA 1	942.869 m²	
AMENITY AREA 2	198.625 m²	
AMENITY AREA 3	192.682 m²	
TOTAL COMMUNAL AREAS	1,334.2 m²	
TOTAL AMENITY AREAS	3,336.5 m²	
GREEN AREA	251,000 m²	**Not count as amenity area**

** Per the 2014 Guide to the Integrated Accessibility Standards Regulation - Design of Public Spaces Standard, 4% of parking spaces provided for public use must be accessible. 3 of the provided 56 visitor spaces have been designed to be barrier-free, one Type A and one Type B size.

GARBAGE:
REQUESTED BY ZONING:
GARBAGE=0.231 CUBIC YARD /UNIT
RECYCLING=0.0318 CUBIC YARD /UNIT
= 0.042 CUBIC YARD /UNIT
ORDANCE: 240L PER 10 UNITS

0.231 X 264= 60.98 CUBIC YARD = 11 (6 CU YD BINS)
0.0318 X 264 = 4.475 CUBIC YARDS = 1 (6 CU YD BINS)
0.042 X 264 = 16.97 CUBIC YARDS = 3 (6 CU YD BINS)
264/10 = 5.28 UNITS = 6 (240L BIN)

SCALE 1:400 0 5 10 15 20 25 30

THE SITE PLAN IS IN CONJUNCTION WITH THE DRAFT PLAN OF PLAN 1 OF SUBDIVISION, DATED SEPTEMBER 26, 2025 PREPARED BY JD BARNES LIMITED

ZONE PROVISION - PLANNED UNIT DEVELOPMENT		REQUIRED	PROPOSED
ZONE [100X-50]	**R4B** [100X]		
TABLE 80(b)	Min. Lot Width (m)	7.5 m	7.25 m
TABLE 80(b)(i)	Min. Front Yard Setback (m) AREA E of SCHEDULE A1: 3 m	3	5.10
SECTION 80(7)	Min. Interior Side Yard Setback (m)	1.2	6.05
TABLE 80(b)(v)	Minimum external side yard setback (m)	3	4.1
TABLE 80(b)(vi) [100X]	Min. Rear yard setback (m) AREA E of SCHEDULE A1	3	6.05
TABLE 80(b)(x)[100X]	Max Building Height (m)	15	13.5
70(5)(b) [100X]	Soft Landscaped Area (%)	15	18
70(5)(d)	Min. Width of Private Way	6	6.1
70(5)(i)	Min. Setback for Any Wall of a Residential Buildings Within a Planned Unit Development	1.2	6.05
70(5)(o) [100X]	Min. setback for any wall of a residential use building to a private way	1.3	1.57
208	**AMENITY AREA**		
208(1)	Gold min. amenity area (m²) per unit	184 m²	335.5 m²
208(6)	Min. Communal Amenity Area m² (Min. 50% area)	92 m²	334.2 m²
204	**PERMITTED PROJECTION INTO REQUIRED YARDS**		
204(3) [100X]	Fire escapes, Open Stairwells, Stoop (m)	10.4m to lot line	0.6m
204(9a)	Covered or Uncovered Balcony, Porch and Deck	2m no closer than 1.8 to lot line	2m no closer than 1.65 to lot line
	PARKING REQUIREMENTS	**REQUIRED**	**PROPOSED**
6.2(1)	Visitor Parking - 0.1 spaces/unit	26 (0.1)	26 (0.1)
2(251)	Min. Perpendicular Parking Space Size (m)	2.6 x 5.2	2.6 x 5.2
107 (Table 107(a)	Min. Traiques Aisle Width	6.0	6.1 & 6.05
	BARRIER FREE PARKING		
Traffic and Parking Bylaw Section 111	Min. Barrier Free Parking **	2	2
613	**BICYCLE STORAGE**		
613 (Table 613 A)	Min. Bicycle parking space dimension, horizontal (m)	Width: 0.6m length: 1.8m	0.6 1.8
613(6)	Min. Bicycle parking space access aisle Width (m)	1.5	1.5
Table 613B [100X]	Min. Bicycle Parking 0.5 spaces/unit (rounded up)	132	132
407 (7&8)	**LANDSCAPE AREA SURROUNDING PARKING LOT**		
207(7) [100X]	At the terminus of a drive aisle (m)	2	2.1
207(7) [100X]	All other cases (m)	3	3.49
207(8) [100X]	Min. % of parking lot landscape	15 %	17.36 %
217	**REFUSE COLLECTION AREAS**		
217(2)	Min. Waste collection setback to lot line	3	>3m
217(6)	Opaque Screen Min. Height (m)	2	3
217 (3)	Refuse collection areas	0 m²	393.3 m²

Q4A
ARCHITECTS

Q4 ARCHITECTS INC.

4110 YONGE STREET
Suite 602, Toronto ON.
M2P 2B7

T. 416.322.6334
F. 416.322.7294
E. info@q4architects.com

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LEGEND

STACKED TOWNS
ENTRANCE
BALCONY
PORCH
PROJECTION (STAIRS)
PAVERS
SODDING
LIGHT DUTY ASPHALT PARKING
CROSSWALK
CURB (0.2m)
DEPRESSED CURB
TACTILE WALKING SURFACE INDICATOR (NOTE 4)
BLOCK BOUNDARY
WASTE ENCLOSURE FENCE
WOOD PRIVACY FENCE
CURB FIN
RETAINING WALL
PRIVACY FENCE (SEE LANDSCAPE)
METAL FENCE (SEE LANDSCAPE)
NO PARKING
BARRIER FREE PARKING
BARRIER FREE PARKING SIGNAGE
V VISITOR PARKING
BIKE RACKS (10 Bicycles)
EARTH BM (63 m²)
HYDRO TRANSFORMER
LIGHT POLE
SNOW STORAGE AREA
L/A LANDSCAPED AREA
MEDIUM DECIDUOUS TREE*
SMALL DECIDUOUS TREE*
DECIDUOUS SHRUB*
CONIFEROUS SHRUB*
GRASSES/PERENNIALS*
SLOPED GRADE

DIMENSIONS FROM J.D. BARNES DRAFT PLAN, DATED 11.07.2025.
*TREES AND SHRUB LOCATIONS TO BE CONFIRMED ON LANDSCAPE PLAN

7	2nd SUBMISSION	2026/01/23	CT
6	NEW BLOCK NUMBERS	2026/01/21	JM
5	UNIT NUMBERS CHANGE BLOCK 101	2025/12/18	JM
4	RE-ISSUE FOR SPA	2025/12/15	JM
3	ISSUE FOR SPA	2025/12/11	CT
2	ISSUE FOR COORDINATION	2025/12/09	JM
1	ISSUE FOR COORDINATION	2025/11/18	JM

Issued / Revision Chart

Project Title
Magnolia/Stittsville
PHASE 1-STACKED TOWNS
Location OTTAWA, ON.

BLOCK 101 Plan No. 4M-xxxx

Part of lot 24 concession 9 (Gouldbourn)

PINS 04449-3825 (LT)

Legal Name

Client CALVAN

Project No. 25026

Scale **1:400**

Drawn By **CT**

Checked By **CT**

OVERALL SITE PLAN

D07-12-26-0069

SP1

2.2 Existing Conditions

2.2.1 Area Road Network

Flewellyn Road: Flewellyn Road is a City of Ottawa collector road with a two-lane rural cross-section including paved shoulders within the study area. The posted speed limit is 80 km/h, and the existing right of way varies between 20.0 and 26.0 metres within the study area.

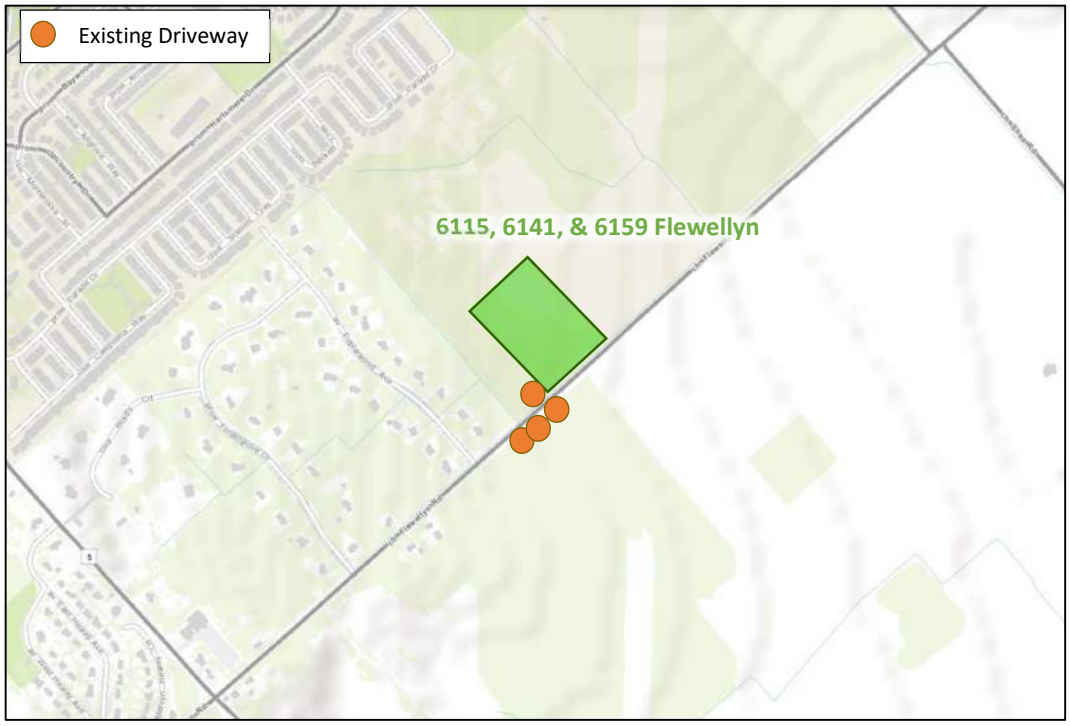
2.2.2 Existing Intersections

Given the development location, no major existing study area intersections are located within one kilometre of the site. The minor intersections in proximity to the development including Flewellyn Road at Poplarwood Avenue and Flewellyn Road at Forestgrove Drive, are not considered in this study.

2.2.3 Existing Driveways

Within 200 metres, driveways are present on both sides of Flewellyn Road to single detached dwellings. Figure 3 illustrates the existing driveways.

Figure 3: Existing Driveways



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: January 02, 2026

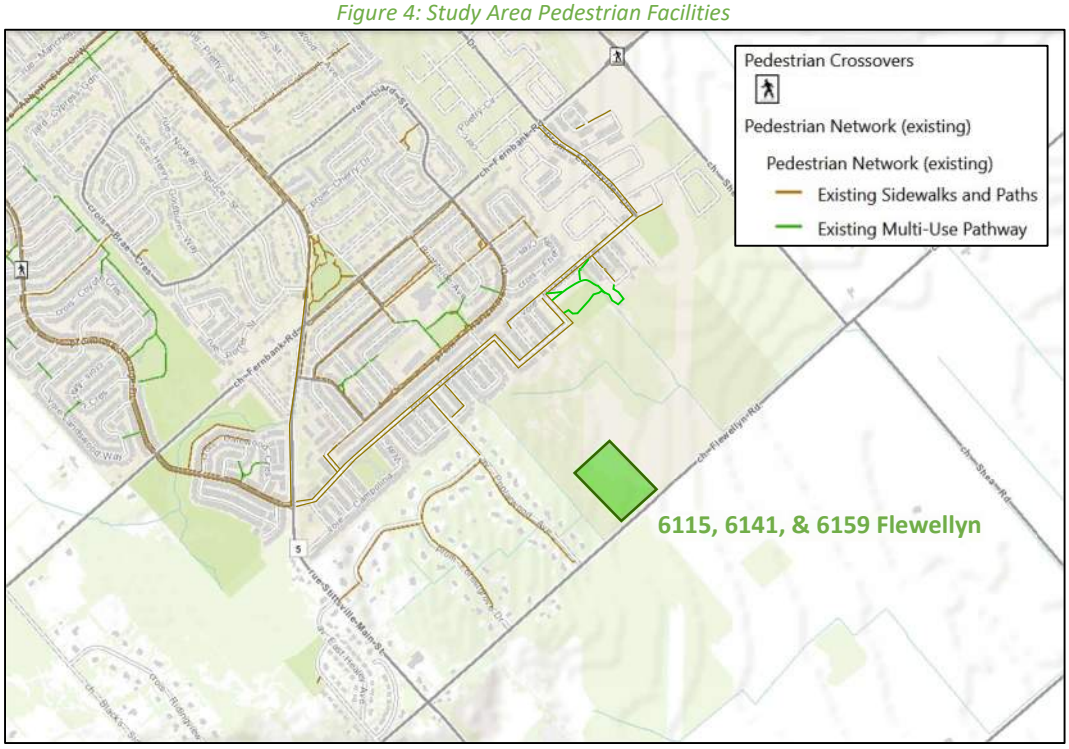
2.2.4 Cycling and Pedestrian Facilities

Figure 4 illustrates the pedestrian facilities in the study area and Figure 5 illustrates the cycling facilities. Considering the plans for other developments and the newly constructed pedestrian and cycling facilities, new community sidewalks and cycling pathways have been included in the figure where possible, despite not being formalized within the City's pedestrian network in geoOttawa. As the area is still developing, these should not be considered a fulsome record of all facilities.

Sidewalks are provided on the west side of Poplarwood Drive, and on the south and west sides of Forestgrove Drive within the study area.

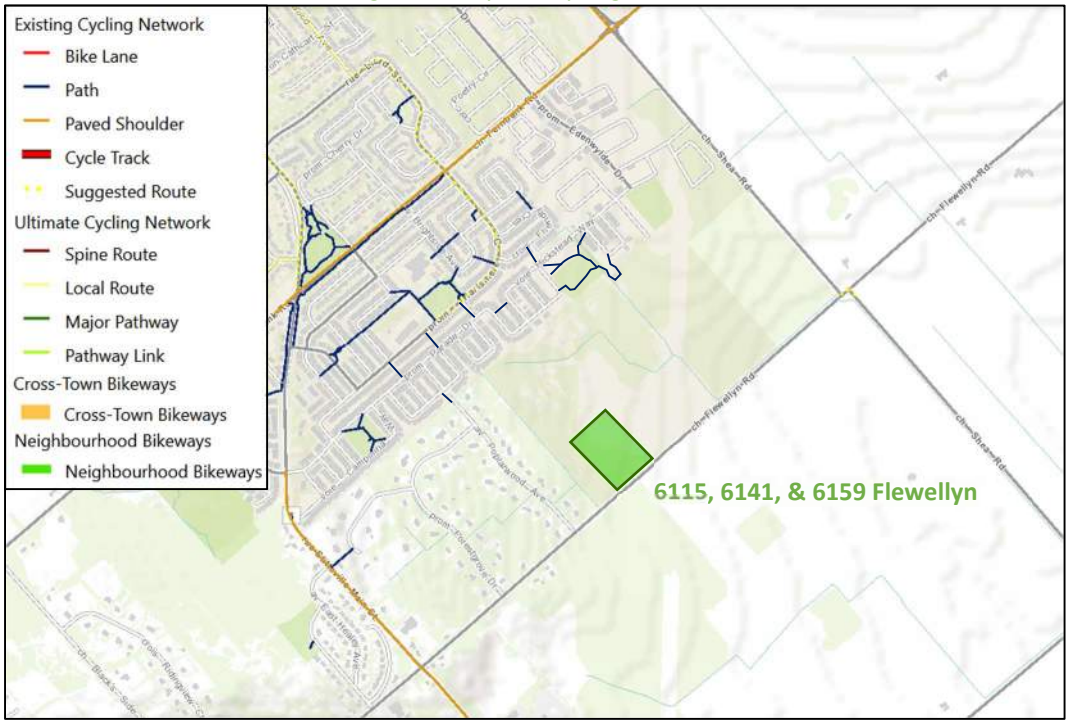
Paved shoulders are present on both sides along Flewellyn Road. A suggested route is noted at the offset Flewellyn Road and Shea Road intersection in the geoOttawa existing cycling network.

Figure 4: Study Area Pedestrian Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: January 02, 2026

Figure 5: Study Area Cycling Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: January 02, 2026

No pedestrian and cyclist volumes are noted within the study area.

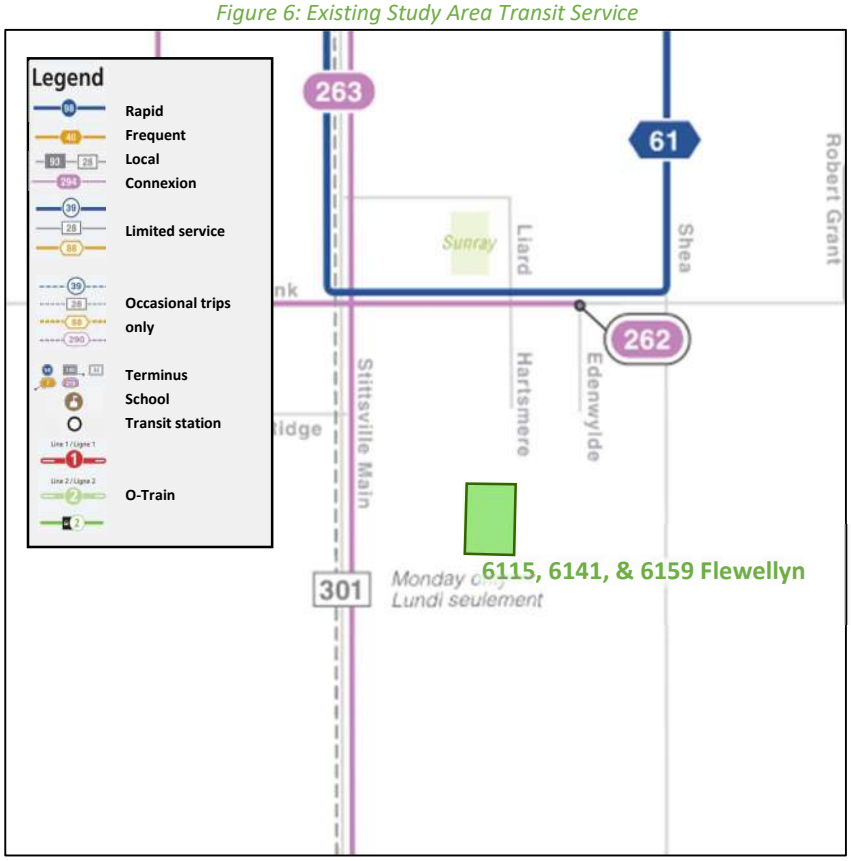
2.2.5 Existing Transit

Figure 6 illustrates the transit system map in proximity to the proposed site and Figure 7 illustrates nearby transit stops. It is noted that no transit stops are present within 400 metres of the site. All transit information is from January 02, 2026 and is included for general information purposes and context to the surrounding area.

Routes #263 and #301 travel along Stittsville Main Street. The frequency of these routes within proximity of the proposed site based on January 02, 2026 service levels are:

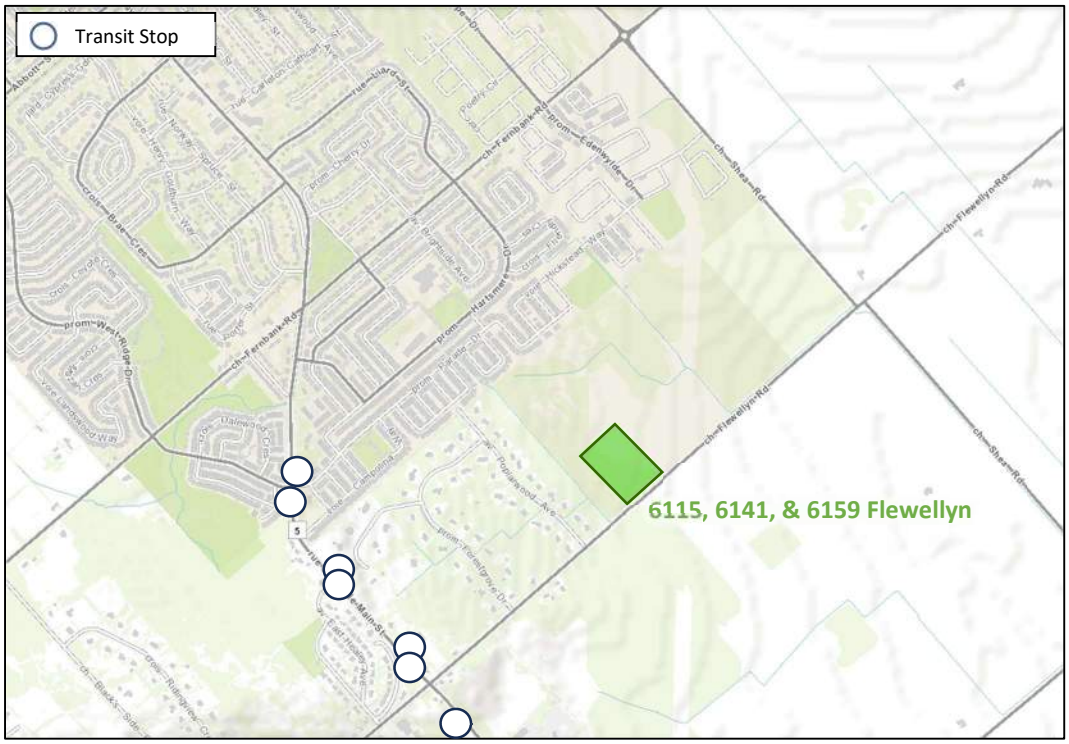
- Route # 263 – Three morning buses and four afternoon buses per day in the peak direction
- Route # 301 – One morning bus and one afternoon bus on Monday in the peak direction

Figure 6: Existing Study Area Transit Service



Source: http://www.octranspo.com/ Accessed: January 02, 2026

Figure 7: Existing Study Area Transit Stops



Source: http://www.octranspo.com/ Accessed: January 02, 2026

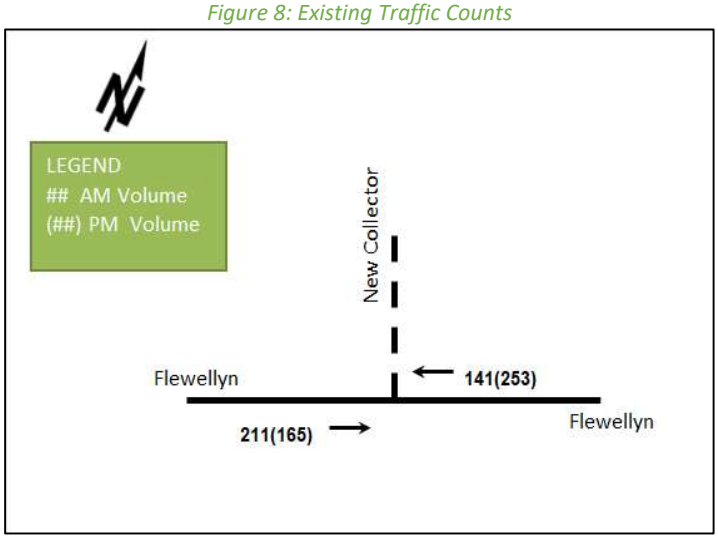
2.2.6 Existing Area Traffic Management Measures

There are no existing area traffic management measures within the study area.

2.2.7 Existing Peak Hour Travel Demand

Given the development location, there are no major intersections within one kilometre of the study area. The existing two-way volumes on Flewellyn Road is illustrated in Figure 8.

Figure 8: Existing Traffic Counts



2.2.8 Collision Analysis

Collision data have been acquired from the City of Ottawa open data website (data.ottawa.ca) for five years prior to the commencement of this TIA for the surrounding study area road network (2018-2022). Table 1 summarizes the collision types and conditions in the study area, Figure 9 illustrates the intersections and segments analyzed, and Table 2 summarizes the total collisions for each of these locations. Collision data are included in Appendix B.

Table 1: Study Area Collision Summary, 2018-2022

		Number	%
Total Collisions		**9**	**100%**
Classification	**Fatality**	0	0%
	Non-Fatal Injury	0	0%
	Property Damage Only	9	100%
Initial Impact Type	**Approaching**	0	0%
	Angle	0	0%
	Rear end	1	11%
	Sideswipe	0	0%
	Turning Movement	0	0%
	SMV Unattended	0	0%
	SMV Other	8	89%
	Other	0	0%
Road Surface Condition	**Dry**	5	56%
	Wet	1	11%
	Loose Snow	1	11%
	Slush	1	11%
	Packed Snow	1	11%
	Ice	0	0%
Pedestrian Involved		0	0%
Cyclists Involved		0	0%

Figure 9: Study Area Collision Records

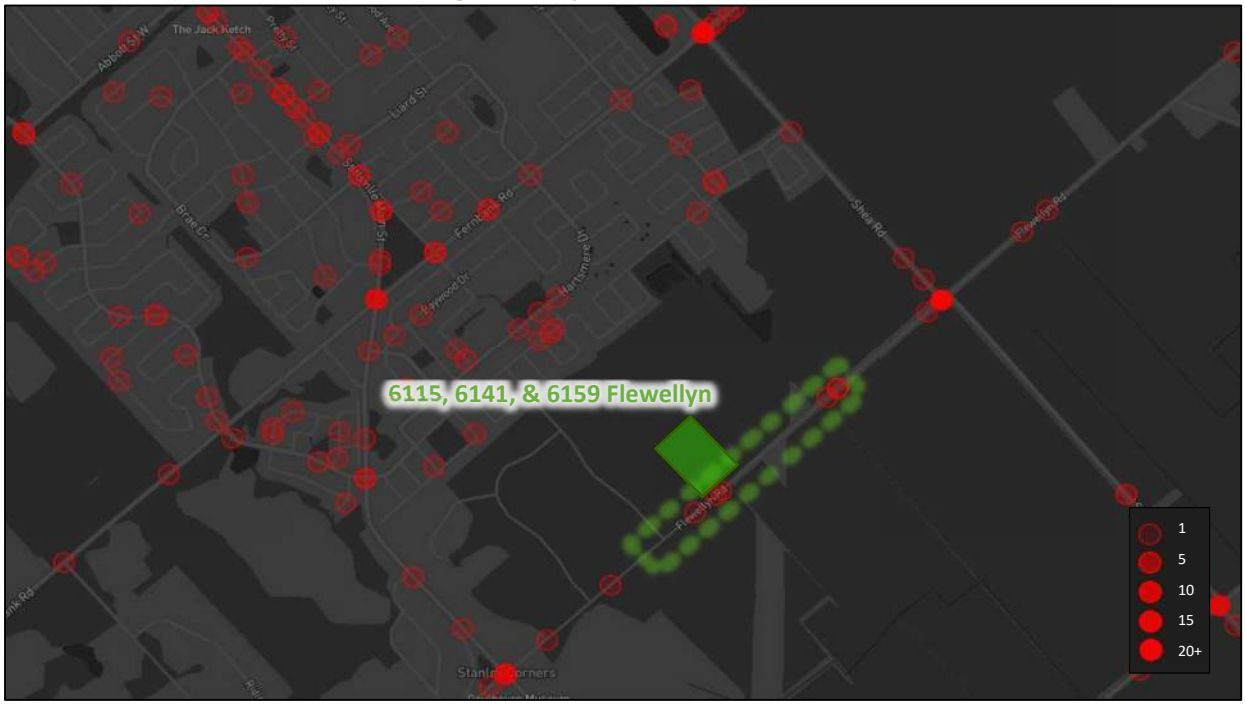


Table 2: Summary of Collision Locations, 2016-2020

	Number	%
Intersections / Segments	**9**	**100%**
Flewellyn Road between Poplarwood Avenue and Shea Road	8	89%
Flewellyn Road between Forestgrove Drive and Poplarwood Avenue	1	11%

Within the study area, the segments of Flewellyn Road between Poplarwood Avenue and Shea Road and Flewellyn Road between Forestgrove Drive and Poplarwood Avenue had a total of nine collisions during the 2018-2022 time period, all of which involved property damage only. The collision types are most represented by SMV other with eight collisions and rear end with one collision. Weather conditions may affect collisions at this location. No further collision review is required at this location as part of this study.

2.3 Planned Conditions

2.3.1 Changes to the Area Transportation Network

2.3.1.1 Transportation Master Plan (2025)

The Transportation Master Plan (2025) includes a Capital Infrastructure Plan identifying transportation investment to support the forecasted growth and strategic connectivity and livability targets for the City. It also identifies committed projects, and a subset of priority projects that are expected to be implemented by 2046 based on current affordability assumptions. Projects noted in the greater Stittsville area included within the Capital Infrastructure Plan are:

- Transit Network
  - Priority
    - Fernbank Road transit priority corridor
    - Stittsville Main Road transit priority corridor
    - Hazeldean Road transit priority corridor
  - Needs-Based
    - Median bus rapid transit from Hazeldean Station to Abbott Street East (Robert Grant Transitway)
- Road Network
  - Committed
    - Robert Grant Avenue Extension from Abbott Street to Hazeldean Road
  - Priority
    - Robert Grant Avenue Extension, including a new two-lane road between Palladium Drive and Hazeldean Road
    - Implementing new active transportation facilities on both sides of Fernbank Road from West Ridge Drive to Shea Road and improving connectivity to the existing pathway on the south side of Fernbank from Stittsville Main Street to Hartsmere Drive
    - Implementing new sidewalks and cycletracks on both sides of Shea Road from Abbott Street to the Stittsville South W4 future community
- Cycling Network-Rural
    - Rural paved shoulder along Flewellyn Road (*already implemented*)

2.3.2 Other Study Area Developments

1770 & 1820 Shea Road (Eder Lands)

The proposed development application includes an official plan amendment application to construct 222 townhomes and 140 single detached homes. The TIA anticipated 2030 as the build-out year and estimates that the development would generate 149 AM and 180 PM peak hour two-way auto trips. The build-out is now anticipated to be later than this initial assessment and likely beyond the horizons considered for within this TIA. (CGH Transportation, 2025)

5993, 6115, 6141, 6159 Flewellyn Road & 6070 Fernbank Road

The proposed development application includes a plan of subdivision application to construct 558 townhomes, 566 single-detached homes, 442 stacked townhomes. The development is anticipated to be built out by 2030 and to generate 566 AM and 689 PM peak hour two-way auto trips. This TIA includes the subject development as part of the plan of subdivision. (CGH Transportation, 2025)

1883 Stittsville Main Street

The proposed development application includes a site plan application to construct seven three-storey stacked townhouses including a total of 84 dwelling units. No TIA is available for this development.

3 Study Area and Time Periods

3.1 Study Area

The study area will include the intersection of:

- Flewellyn Road at:
    - New Collector Road (Future Conditions)

The boundary road will be Flewellyn Road, and Screenline 56 is present within proximity to the site although it will not be assessed.

3.2 Time Periods

As the proposed development is composed entirely of residential units the AM and PM peak hours are the time periods influenced by the site.

3.3 Horizon Years

The anticipated build-out year is 2029. As a result, the full build-out plus five years horizon year is 2034.

4 Development-Generated Travel Demand

4.1 Mode Shares

Examining the mode shares recommended in the TRANS Trip Generation Manual (2020) for the Kanata/Stittsville and Rural Southwest districts, derived from the most recent National Capital Region Origin-Destination survey (OD Survey), the existing average district mode shares by land use have been summarized in Table 3.

Table 3: TRANS Trip Generation Manual Recommended Mode Shares – Kanata/Stittsville & Rural Southwest

Travel Mode	Multi-Unit (Low-Rise)			
	Kanata/Stittsville		Rural Southwest	
	AM	PM	AM	PM
Auto Driver	52%	58%	66%	62%
Auto Passenger	14%	17%	13%	19%
Transit	22%	17%	21%	16%
Cycling	0%	0%	1%	3%
Walking	11%	8%	0%	0%
Total	**100%**	**100%**	**100%**	**100%**

Examining the above mode shares for the adjacent districts, a combined modal share for the subject development has been developed as a baseline for the expected travel modes of the development. Table 4 summarizes the expected modes shares for the development area.

Table 4: Expected Development Mode Shares

Travel Mode	Multi-Unit (Low-Rise)	
	AM	PM
Auto Driver	55%	58%
Auto Passenger	15%	19%
Transit	21%	16%
Cycling	2%	2%
Walking	7%	5%
Total	**100%**	**100%**

4.2 Trip Generation

This TIA has been prepared using the vehicle and person trip rates for the residential dwellings using the TRANS Trip Generation Manual (2020). Table 5 summarizes the person trip rates for the proposed residential land use for each peak period.

Table 5: Trip Generation Person Trip Rates by Peak Period

Land Use	Land Use Code	Peak Period	Person Trip Rates
Multi-Unit (Low-Rise)	220 (TRANS)	AM	1.35
		PM	1.58

Using the above person trip rates, the total person trip generation has been estimated. Table 6 summarizes the total person trip generation.

Table 6: Total Residential Person Trip Generation by Peak Period

Land Use	Units	AM Peak Period			PM Peak Period		
		In	Out	Total	In	Out	Total
Multi-Unit (Low-Rise)	264	107	249	356	234	183	417

Using the above mode share targets and the person trip rates, the person trips by mode have been projected. Trip generation by peak hour has been forecasted using the prescribed peak period conversion factors presented in the TRANS Trip Generation Manual (2020) for the residential component. Table 7 summarizes the residential trip generation by mode and peak hour.

Table 7: Trip Generation by Mode

Travel Mode		AM Peak Hour				PM Peak Hour			
		Mode Share	In	Out	Total	Mode Share	In	Out	Total
Multi-Unit (Low-Rise)	Auto Driver	**55%**	28	66	94	**58%**	59	47	106
	Auto Passenger	**15%**	8	18	25	**19%**	20	15	35
	Transit	**21%**	12	29	41	**16%**	17	14	31
	Cycling	**2%**	1	3	4	**2%**	1	1	2
	Walking	**7%**	5	11	15	**5%**	6	5	11
	Total	**100%**	**54**	**127**	**179**	**100%**	**103**	**82**	**185**

As shown above, a total of 94 AM and 106 PM new peak hour two-way vehicle trips are projected as a result of the proposed development.

4.3 Trip Distribution

To understand the travel patterns of the subject development, the OD Survey has been reviewed to determine the travel for the residential component, and these patterns were applied based on the build-out of Kanata/Stittsville and Rural Southwest districts. Table 8 below summarizes the distributions.

Table 8: OD Survey Distribution –Kanata/Stittsville and Rural Southwest districts

To/From	Residential % of Trips
North	80%
South	3%
East	12%
West	5%
Total	**100%**

4.4 Trip Assignment

Using the distribution outlined above, turning movement splits, and access to major transportation infrastructure, the trips generated by the site have been assigned to the study area road network. Table 9 summarizes the proportional assignment to the study area roadways. Compared to the overall subdivision TIA, the condo block within Phase 1 will only be able to utilize the intersection of Flewellyn Road at the new collector road in the interim conditions. Once the remaining portions of the subdivision develop and extend to Shea Road, traffic assignment will be consistent with the overall subdivision TIA, utilizing both new collector roads along Flewellyn and the new collector road along Shea Road. Figure 10 illustrates the new site generated volumes in the interim conditions and Figure 11 illustrates the new site generated volumes in the ultimate conditions.

Table 9: Trip Assignment

To/From	Via (Interim Conditions)	Via (Ultimate Conditions)
North	35% Flewellyn Rd (W) 45% Flewellyn Rd (E)	35% Flewellyn Rd (W) 10% Shea Rd (N) 35% Flewellyn Rd (E)
South	3% Flewellyn Rd (W)	3% Flewellyn Rd (W)
East	12% Flewellyn Rd (E)	12% Flewellyn Rd (E)
West	5% Flewellyn Rd (W)	5% Flewellyn Rd (W)
Total	**100%**	**100%**

Figure 10: New Site Generation Auto Volumes (Interim Conditions)

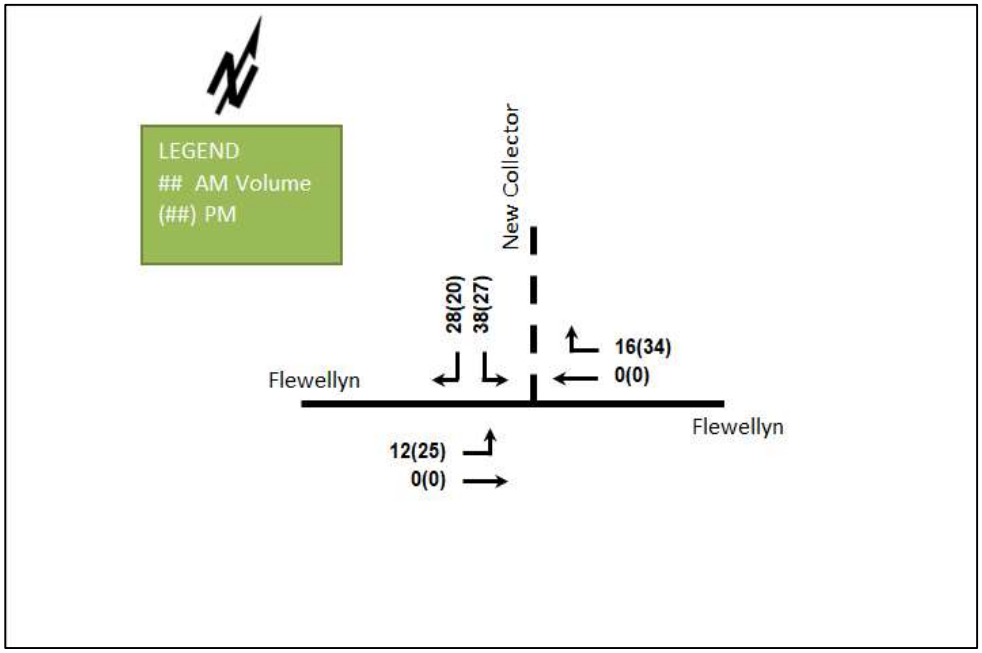
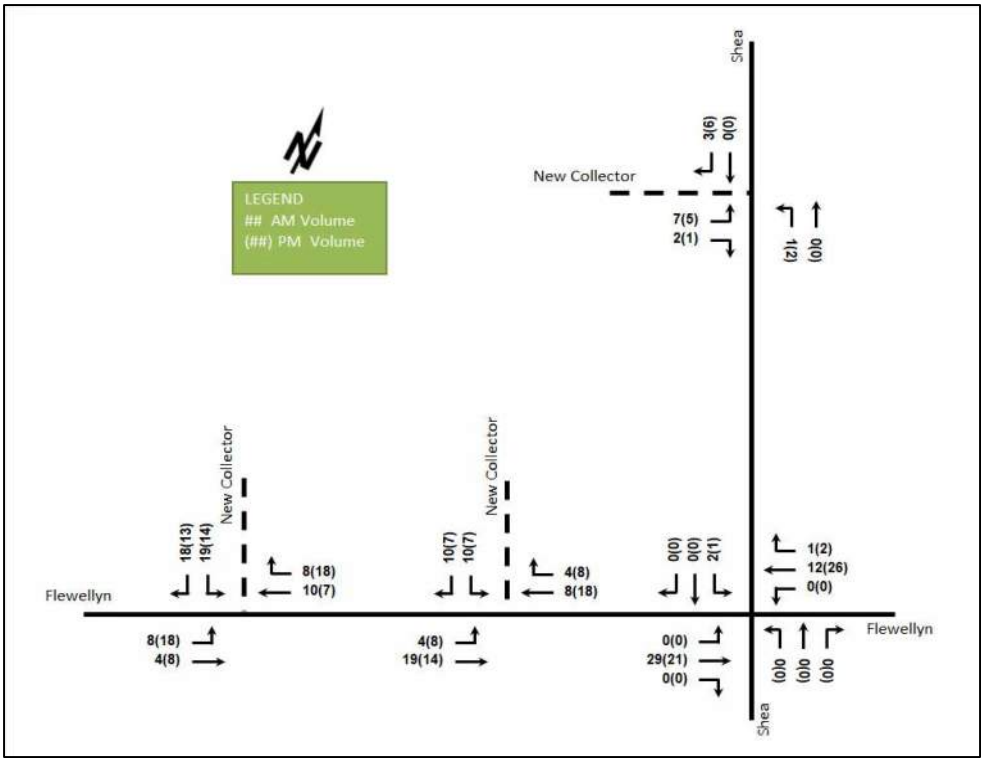


Figure 11: New Site Generation Auto Volumes (Ultimate Conditions)



5 Exemption Review

Table 10 summarizes the exemptions for this TIA.

Table 10: Exemption Review

Module	Element	Explanation	Exempt/Required
Site Design and TDM			
Development Design	4.1.2 Circulation and Access	Only required for site plan and zoning by-law applications	Required
	4.1.3 New Street Networks	Only required for plans of subdivision	Exempt
Parking	4.2.1 Parking Supply	Only required for site plan and zoning by-law applications	Required
Boundary Street Design		All applications	Required
Transportation Demand Management	All Elements	Only required when the development generates more than 60 person-trips	Required
Network Impact			
Background Network Travel Demand	All Elements	Only required when one or more other Network Impact Modules are triggered when the development generates more than 75 auto or transit trips	Required
Demand Rationalization		Only required when one or more other Network Impact Modules when the development generates more than 75 auto trips	Required
Neighbourhood Traffic Calming	4.6.1 Adjacent Neighbourhoods	If the development meets all of the following criteria along the route(s) site generated traffic is expected to utilize between an arterial road and the site's access: 1. Access to Collector or Local; 2. "Significant sensitive land use presence" exists, where there is at least two of the following adjacent to the subject street segment: • School (within 250m walking distance); • Park; • Retirement / Older Adult Facility (i.e. long-term care and retirement homes); • Licenced Child Care Centre; • Community Centre; or • 50%, or greater, of adjacent property along the route(s) is occupied by residential lands and a minimum of 10 occupied residential units are present on the route. 3. Application is for Zoning By-Law Amendment or Draft Plan of Subdivision; 4. At least 75 site-generated auto trips; 5. Site Trip Infiltration is expected. Site traffic will increase peak hour vehicle volumes along the route by 50% or more.	Exempt

Module	Element	Explanation	Exempt/Required
Transit	4.7.1 Transit Route Capacity	Only required when the development generates more than 75 transit trips	Exempt
	4.7.2 Transit Priority Requirements	Only required when the development generates more than 75 auto trips	Required
Network Concept		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of equivalent volume permitted by established zoning	Exempt
Intersection Design	4.4.1-2/4.9.1 Intersection Control	Only required when the development generates more than 75 auto trips	Required
	4.4.3/4.9.2 Intersection Design	Only required when the development generates more than 75 auto trips	Required

6 Development Design

6.1 Design for Sustainable Modes

The proposed site connects to the subdivision via an internal loop with two accesses onto a new collector road within the subdivision. Within the site, walkways with minimum width of 1.5 metres provide internal circulation, and pedestrian crosswalks have been provided throughout the development. The walkways also provide connections to the adjacent pedestrian and cycling facilities along the new collector road.

Due to the grading constraints along the south side of the proposed site, no pedestrian connections are feasible to Flewellyn Road. Therefore, the only pedestrian connection to Flewellyn Road will be via the new collector road.

Planned bus stops will be located on both sides of the new collector road, approximately 25.0 metres north of the northernmost access, facilitating travel by transit.

The infrastructure TDM checklist is provided in Appendix C.

6.2 Circulation and Access

Vehicular access is provided via two 6.1-metre-wide two-way full-movement accesses on the new collector road and the internal dive aisles lead to the surface parking spaces. Garbage facilities are located to the north, west, and south of the surface parking lot and garbage trucks can navigate the site and access these locations. The site meets fire route requirements for emergency services. Turning templates are provided in Appendix D.

7 Parking

7.1 Parking Supply

The site is proposed to include a total of 290 vehicle parking spaces, including 264 residential parking spaces and 26 visitor parking spaces, and 132 bicycle parking spaces.

According to the new Zoning By-Law (2026-50) for Area E, a maximum parking ratio of 1.5 spaces per dwelling unit is permitted. Therefore, the maximum permitted parking supply is 396 spaces. The new Zoning By-Law (2026-50) also requires a minimum visitor parking ratio of 0.1 spaces per dwelling unit, resulting in a minimum 25 visitor parking spaces. The proposed vehicle parking spaces meet the By-Law requirements.

According to the new Zoning By-Law (2026-50), no minimum short-term or long-term bicycle parking is required for buildings with four or fewer dwelling units. Given that each townhome building within the site contains two units, no minimum bicycle parking requirements are considered applicable.

8 Boundary Street Design

Table 11 summarizes the MMLOS analysis for the boundary streets of Flewellyn Road and the new collector road. Both roadways are within the "Suburban" area. The MMLOS worksheets has been provided in Appendix E.

Table 11: Boundary Street MMLOS Analysis

Segment	Conditions	Pedestrian LOS		Bicycle LOS		Transit LOS		Public Realm LOS	
		PLOS	Target	BLOS	Target	TLOS	Target	PRLOS	Target
Flewellyn Road	Existing	E	C	C	C	-	E	D	D
	Future					C			
New Collector Road	Future	A	C	A	C	C	E	A	A

Flewellyn Road will not meet the pedestrian LOS targets in the existing and future conditions. To meet the theoretical PLOS targets, either a 2.0 metre sidewalk with a 1.5-2.99 metre boulevard would be required, or a 2.0-metre sidewalk combined with a reduction in operating speed to 50 km/h. Given the presence of ditches and the rural conditions along Flewellyn Road, the addition of sidewalks along the site frontage is not considered feasible until urbanized. Additionally, Flewellyn is located at the edge of the urban boundary, and no pedestrian connections are expected to the south. The connectivity is focused towards the north within the subdivision and integrating with the existing community. Therefore, it is recommended that the existing paved shoulders remain and provide the rural connectivity on Flewellyn Road.

Flewellyn Road will meet the bicycle, transit, and public realm LOS targets in the existing and future conditions.

The new collector road will meet the pedestrian, bicycle, transit, and public realm LOS targets.

9 Transportation Demand Management

9.1 Context for TDM

The mode shares used within the TIA represent the unmodified district mode shares for a combined modal share of the Kanata/Stittsville and Rural Southwest districts. These mode shares include a maximum of 24% for transit, 2% for cycling, and 8% for walking. Considering the context of the proposed development, post-occupancy TDM measures will be recommended to support achieving the mode share targets for the proposed development.

Total bedrooms within the development are subject to finalize layouts of the units. No age restrictions are noted.

9.2 Need and Opportunity

The subject site has been assumed to rely predominantly on auto travel, followed by transit, walking, and cycling, and those assumptions have been carried through the analysis. It is anticipated that future pedestrian facilities and cycling facilities provided within the subdivision, along with transit service providing local service through the subject site, will be the primary methods of supporting the community. Supporting TDM measures are recommended to encourage shifts toward sustainable modes and mitigate the risks associated with failing to meet mode share targets.

9.3 TDM Program

The "suite of post occupancy TDM measures" has been summarized in the TDM checklists for the residential land uses. The checklist is provided in Appendix C. The key TDM measures recommended include:

- Provide a multimodal travel option information package to new residents
- Provide transit incentives for new residents
- Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels

10 Background Network Travel Demands

10.1 Transportation Network Plans

The transportation network plans were discussed in Section 2.3 and will be considered in the analysis.

10.2 Background Growth

A review of the background projections from the City's TRANS Regional Model for the 2022 and 2046 horizons was completed to determine the background growth for the study area roadway. The background TRANS model growth rates are summarized in Table 12 and the TRANS model plots are provided in Appendix F.

Table 12: TRANS Regional Model Projections – Study Area Growth Rates – AM Peak Hour

Street	TRANS 2022 to 2046	
	Eastbound	Westbound
Flewellyn Rd	5.51%	4.77%

The explicit developments identified within this report would form the primary local growth for the existing volumes and the background growth rates would be subject to regional travel through the area. This background growth would be related to rural development and planned development in Richmond Village. Given these factors, a 2.0% compound annual growth rate was bi-directionally applied to the Table 12background road network.

10.3 Other Developments

The background developments explicitly considered in the background conditions (Section 2.3.2) include:

- 5993, 6115, 6141, 6159 Flewellyn Road & 6070 Fernbank Road

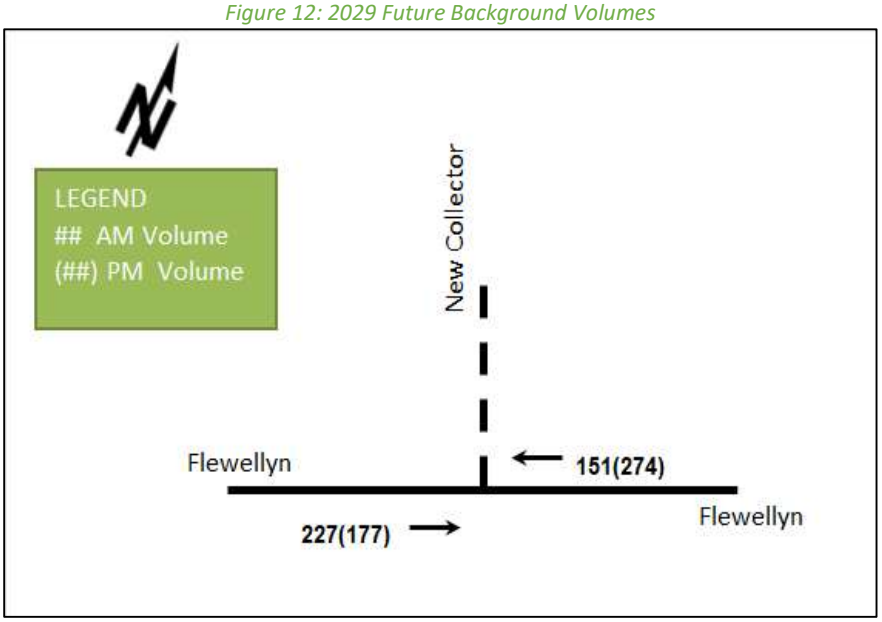
The development volumes for the development within the study area have been provided in Appendix G. The development at 5993, 6115, 6141, 6159 Flewellyn Road & 6070 Fernbank Road includes the subject development, therefore the corresponding number of trips for the condo block within Phase 1 have been deducted from the total development trip volumes.

11 Demand Rationalization

11.1 Future Background Intersection Operations

Figure 12 illustrates the 2029 background volumes. Given Flewellyn Road operates under free-flow conditions, and no intersection exist to assess the operations.

Figure 12: 2029 Future Background Volumes



11.2 2034 Future Background Intersection Operations

Figure 13 illustrates the 2034 background volumes and Table 13 summarizes the 2034 background intersection operations. Synchro 11 has been used to model the unsignalized intersections and the level of service is based on HCM 2010 delay for stop-controlled intersections. The synchro worksheets for the 2034 future background horizon are provided in Appendix H.

Figure 13: 2034 Future Background Volumes

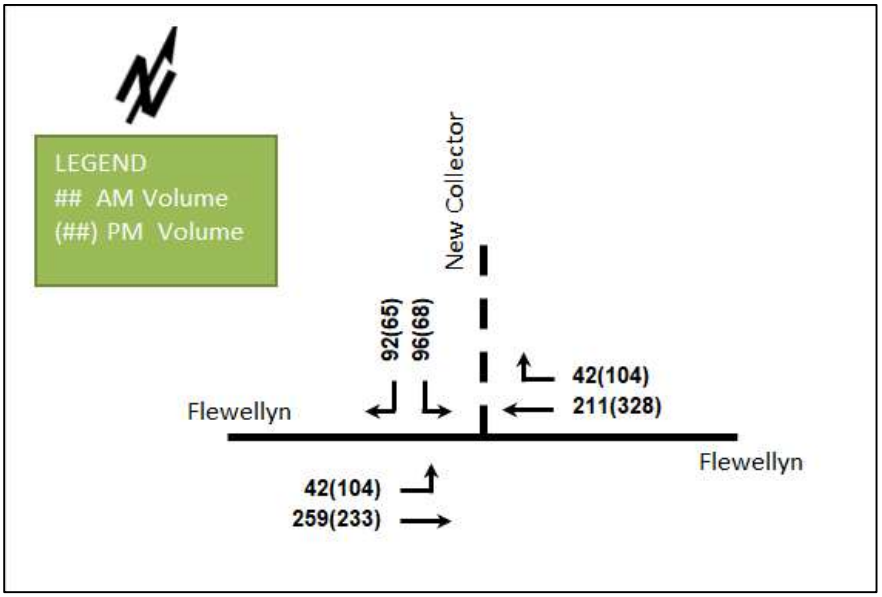


Table 13: 2034 Future Background Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Flewellyn Road at New Collector Road *Unsignalized*	EBL/T	A	0.03	7.8	0.8	A	0.09	8.5	2.3
	WBT/R	-	-	-	-	-	-	-	-
	SBL/R	B	0.32	14.1	10.5	C	0.32	17.6	9.8
	Overall	**A**	**-**	**4.0**	**-**	**A**	**-**	**3.6**	**-**
	Mitigation Measure: Eastbound Left Turn Lane								
	EBL	A	0.03	7.8	0.8	A	0.09	8.5	2.3
	EBT	-	-	-	-	-	-	-	-
	WBT/R	-	-	-	-	-	-	-	-
	SBL/R	B	0.32	14.0	10.5	C	0.32	17.4	9.8
	Overall	**A**	**-**	**4.0**	**-**	**A**	**-**	**3.5**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 1.00
Delay = average vehicle delay in seconds
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

During both the AM and PM peak hours, the study area intersection is anticipated to operate well. No capacity issues are noted.

All-way stop control warrant analysis was performed for the study area intersection and the warrants were not met. All-way stop control warrant calculation sheets are provided in Appendix I.

The eastbound left turn at the intersection met the warrant during the PM peak hours. The provision of 25.0-metre auxiliary eastbound left-turn lane at this intersection has been analyzed. The inclusion of the turn lane has a negligible impact on the operations; therefore, the intersection may remain operationally functional until such time a left-turn lane can be provided. The left-turn warrant calculation sheets are provided in Appendix J.

Right turn volume has been reviewed at the intersection, and no issue is noted the operations at this location. As an unsignalized location, no warrants are available and the need is based on operations and creating an undue hazard. No hazard is considered at this location due to the volumes along Flewellyn Road and gradual construction and occupation of the residential lands will be a learned and expected condition. On this basis, an auxiliary right-turn lane is not recommended. Furthermore, there is limited right-of-way for a widening, with City expropriation likely required on the south side of Flewellyn Road to accommodate multiple auxiliary lanes.

11.3 Transit Priority

Site traffic is anticipated to have negligible impact on transit movements through the study area.

12 Access Intersection Design

12.1 Location and Design of Access

The site accesses are proposed to be two-way and to permit full movements. The southernmost access (Access #1) is located approximately 50.0 metres from the southern property line and approximately 59.0 metres from Flewellyn Road. The northernmost access (Access #2) is located approximately 49.0 metres from the northern property line and approximately 75.0 metres from the internal collector road within the Magnolia subdivision. The access meets the 3.0-metre offset requirement from the adjacent property line, and 45-metre offset requirement from the adjacent road right-of-way from the Private Approach By-Law. The Geometric Design Guide for Canadian Roads (TAC, 2017) suggest minimum corner clearance value for driveways of 25.0 metres along collector road and thus the site accesses meet this guideline.

The accesses are proposed to be 6.1 metres wide at its typical dimension and 24.1 metres at the curb line with corner radii of 9.0 meters. The Private Approach By-Law permits a maximum width of 9.0 metres at the highway line and 19.0 metres in width at the curb line or roadway edge for a two-way access. The proposed driveway widths are recommended to be approved.

The throat length to the first on-site conflict is approximately 20 metres at both site accesses. The TAC Geometric Design Guidelines requires a throat length of 25 metres for apartment land use with more than 200 units on a collector road. Based on the forecasted trip generation, 28 inbound auto trips are expected during the AM peak hour and 59 inbound auto trips during the PM peak hour. Assuming all the site trips used a single access, this equates to an average of approximately one vehicle arriving every two minutes during the AM peak and one arriving every minute during the PM peak. Given this, the current throat length is considered sufficient to limit spillback onto the new collector road within the subdivision.

12.2 Intersection Control

The intersection of Flewellyn Road at the new collector road is proposed to be stop-controlled on the minor approach.

12.3 Access Intersection Design

12.3.1 2029 Future Total Intersection Operations

The 2029 future total intersection volumes are illustrated in Figure 14 and the intersection operations are summarized below in Table 14. Synchro 11 has been used to model the unsignalized intersection and the level of service is based on HCM 2010 delay for the stop-controlled intersection. The synchro worksheets for the 2029 future total horizon are provided in Appendix K.

Figure 14: 2029 Future Total Volumes

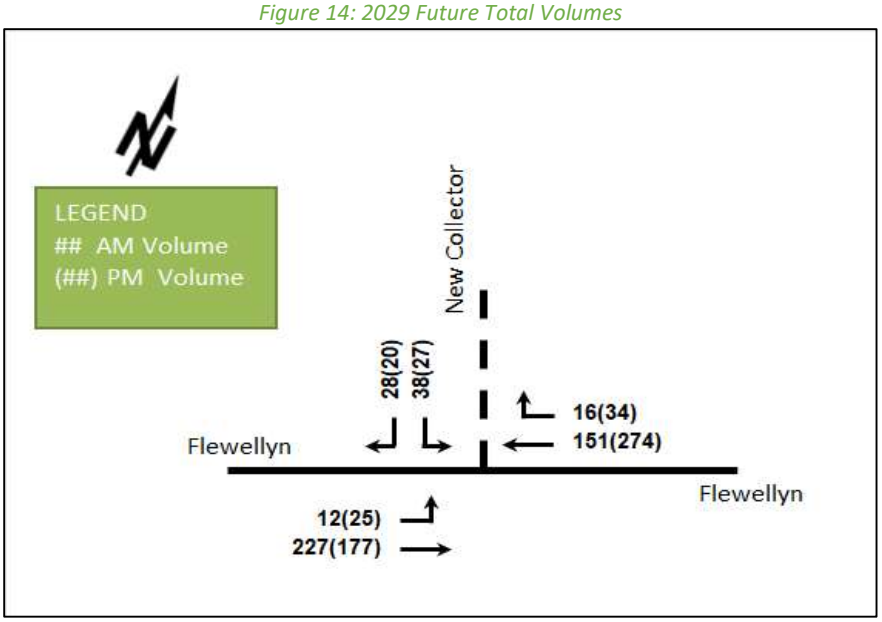


Table 14: 2029 Future Total Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Flewellyn Road at New Collector Road *Unsignalized*	EBL/T	A	0.01	7.6	0.0	A	0.02	7.9	0.8
	WBT/R	-	-	-	-	-	-	-	-
	SBL/R	B	0.10	10.8	2.3	B	0.08	11.7	2.3
	Overall	**A**	**-**	**1.7**	**-**	**A**	**-**	**1.4**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 1.00
Delay = average vehicle delay in seconds
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

During both the AM and PM peak hours, the study area intersection is anticipated to operate well. No capacity issues are noted.

All-way stop control warrant analysis was performed for the study area intersection and the warrants were not meet. All-way stop control warrant calculation sheets are provided in Appendix I.

The left-turn warrant analysis was performed for the intersection and the warrants were not met. The left-turn warrant calculation sheets are provided in Appendix J.

Right turn volume has been reviewed at the intersection, and no issue is noted the operations at this location. As an unsignalized location, no warrants are available and the need is based on operations and creating an undue hazard. On this basis, an auxiliary right-turn lane is not recommended. Furthermore, there is limited right-of-way for a widening, with City expropriation likely required on the south side of Flewellyn Road to accommodate multiple auxiliary lanes.

12.3.2 2034 Future Total Intersection Operations

The 2034 future total intersection volumes are illustrated in Figure 15 and the intersection operations are summarized below in Table 15. Synchro 11 has been used to model the unsignalized intersection and the level of service is based on HCM 2010 delay for the stop-controlled intersection. The synchro worksheets for the 2034 future total horizon are provided in Appendix L.

Figure 15: 2034 Future Total Volumes

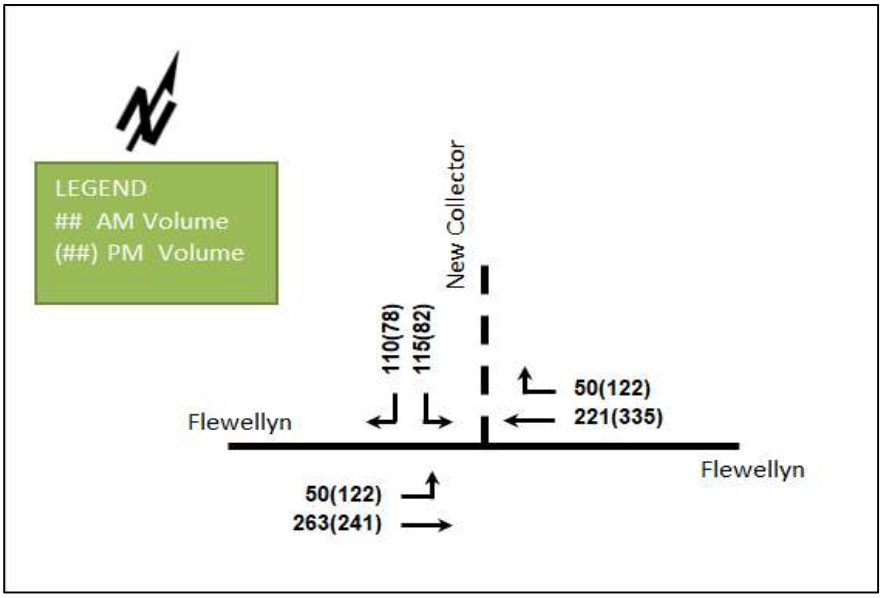


Table 15: 2034 Future Total Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay	Q (95th)	LOS	V/C	Delay	Q (95th)
Flewellyn Road at New Collector Road *Unsignalized*	EBL/T	A	0.04	7.9	0.8	A	0.11	8.7	3.0
	WBT/R	-	-	-	-	-	-	-	-
	SBL/R	C	0.40	15.7	14.3	C	0.42	20.9	15.0
	Overall	**A**	**-**	**4.9**	**-**	**A**	**-**	**4.5**	**-**
	Mitigation Measure: Eastbound Left Turn Lane								
	EBL	A	0.04	7.9	0.8	A	0.11	8.7	3.0
	EBT	-	-	-	-	-	-	-	-
	WBT/R	-	-	-	-	-	-	-	-
	SBL/R	C	0.40	15.7	14.3	C	0.41	20.5	15.0
	Overall	**A**	**-**	**4.9**	**-**	**A**	**-**	**4.4**	**-**

Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 1.00
Delay = average vehicle delay in seconds
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

During both the AM and PM peak hours, the study area intersection is anticipated to operate well.

All-way stop control warrant analysis was performed for the study area intersection and the warrants were not met. All-way stop control warrant calculation sheets are provided in Appendix I.

As noted in the 2034 future background conditions, the eastbound left turn at the study area intersection met the warrant for consideration during the PM peak hours. The provision of 30.0-metre auxiliary eastbound left-turn lane at the intersection has been analyzed. The inclusion of the turn lane has a negligible impact on the operations; therefore, the intersection may remain operationally functional until such time a left-turn lane can be provided. The left-turn warrant calculation sheets are provided in Appendix J.

Right turn volume has been reviewed at the intersection, and no issue is noted the operations at this location.

12.3.3 Intersection MMLOS

The study area intersection is unsignalized, therefore, no MMLOS is required.

13 Summary of Improvements Indicated and Modifications Options

The following summarizes the analysis and results presented in this TIA report:

Proposed Site and Screening

- The proposed site includes condo block within Phase 1 of the Magnolia subdivision, comprising 264 stacked dwelling units, 290 parking spaces, and 132 bicycle parking spaces
- The proposed access configuration comprises two private accesses to a new collector road within the subdivision, connecting to Flewellyn Road
- The development is proposed to be completes as a single phase by 2029

TIA Screening and Exemptions

- The TIA Screening form indicated a full TIA was required due to trip generation and safety triggers
- The exemption review for the TIA did not require new street networks, background network travel demand, demand rationalization, neighbourhood traffic calming review, transit review, network concept review, intersection control review, and intersection design review

Existing Conditions

- Stittsville Main Street and Huntley Road are arterial roads, and Flewellyn Road and Shea Road are collector roads in the study area
- Future roadways include a new collector road
- Sidewalks are provided on the west side of Poplarwood Drive, and on the south and west sides of Forestgrove Drive within the study area
- Paved shoulders are present on both sides along Stittsville Main Street south of Etta Street, Huntley Road, and Flewellyn Road
- No transit stops are present within 400 metres of the proposed site
- During both the AM and PM peak hours, the study area intersections operate well
- Shea Road at Flewellyn Road met the all-way stop-control warrants for consideration, and the operation is acceptable to remain as a minor stop-control condition
- The Stittsville Main Street / Huntley Road at Flewellyn Road intersection met the Signal Justification 1 only and is recommended to remain as all-way stop-control
- Within the study area, the collision types are most represented by SMV other with eight collisions and rear end with one collision

Planned Conditions

- Fernbank Road transit priority corridor, Stittsville Main Road transit priority corridor, and Hazeldean Road transit priority corridor are identified as transit priority projects, and Robert Grant Transitway median BRT from Hazeldean Station to Abbott Street East is identified as a needs-based project within the TMP Transit Network
- Robert Grant Avenue is being extended northwards from Abbott Street to Hazeldean Road, identified as a committed road project within the TMP Road Network
- Robert Grant Avenue Extension, including a new two-lane road between Palladium Drive and Hazeldean Road, implementing new active transportation facilities on both sides of Fernbank Road from West Ridge Drive to Shea Road and improving connection to the existing pathway on the south side of Fernbank from Stittsville Main Street to Hartsmere Drive, and implementing new sidewalks and cycletracks on both sides of Shea Road from Abbott Street to the northern edge of the Stittsville South W4 future community are identified as priority road projects within the TMP Road Network
- Rural paved shoulder along Flewellyn Road have been constructed as identified within the TMP cycling network (already implemented)

Development Generated Travel Demand

- The proposed development is forecasted produce 179 two-way people trips during the AM peak hour and 185 two-way people trips during the PM peak hour
- Of the forecasted people trips, 94 two-way trips will be vehicle trips during the AM peak hour and 106 two-way trips will be vehicle trips during the PM peak hour
- Of the forecasted trips, 80% are anticipated to travel north, 12% to the east, and 5% to the west and 3% to the south

Development Design

- The proposed site connects to the subdivision via an internal loop with two accesses onto a new collector road within the subdivision

- Internal walkways with minimum width of 1.5 metres provide access between buildings, the surrounding facilities and connect to the future sidewalks along both sides of the new collector road
- Pedestrian crosswalks have been provided within the site development
- The proposed site provides connections to the future cycletrack along the new collector road
- The only pedestrian connection to Flewellyn Road will be via the new collector road, due to the grading constraints and retaining walls along the south side of the proposed site
- Planned bus stops will be located on both sides of the new collector road, approximately 25.0 metres north of the northernmost access
- Garbage facilities are located to the north, west, and south of the surface parking lot
- Waste collection will occur within the drive aisle at the bin locations, and standard fire lane geometry has been provided

Parking

- The site is proposed to include a total of 290 vehicle parking spaces, including 264 residential parking spaces and 26 visitor parking spaces and 132 bicycle parking spaces
- The proposed vehicle parking spaces meet the Zoning By-Law (2026-50) requirements
- Given that each townhome building within the site contains two units, no minimum bicycle parking requirement are considered applicable

Boundary Street Design

- Flewellyn Road will not meet the pedestrian LOS targets in the existing and future conditions
- To meet the theoretical PLOS targets, either a 2.0 metre sidewalk with a 1.5-2.99 metre boulevard would be required, or a 2.0-metre sidewalk combined with a reduction in operating speed to 50 km/h
- The existing pave shoulders along Flewellyn Road are recommended to remain due to the presence of ditches, the rural context of the corridor, and its location at the edge of the urban boundary
- Flewellyn Road will meet the bicycle, transit, and public realm LOS targets in the existing and future conditions
- The new collector road will meet all LOS targets

TDM

- Supportive TDM measures to be included within the proposed development should include:
  - Provide a multimodal travel option information package to new residents
  - Provide transit incentives for new residents
  - Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels

Background Conditions

- The background developments were explicitly included in the background conditions, along with background growth applied on the study area roadways
- During both the AM and PM peak hours, the intersection in the study area operates well in the future background conditions
- No capacity constraints are noted at the study area intersection in the background conditions
- Although the eastbound left turn at the intersection of Flewellyn Road at the new collector road met the left-turn warrants in the 2034 future background conditions, the inclusion of the turn lane has a negligible

impact on the operations; therefore, the intersection may remain operationally functional until a left-turn lane can be provided

- No issues are noted at the study area intersection to require an auxiliary right-turn lane, and it is not recommended on that basis

Intersection Design

- The accesses are proposed to be 6.1 metre-wide at its typical dimension and 24.1 metres at the curb line with corner radii of 9.0 meters
- The access meets the offset requirement from the adjacent property line and from the adjacent road right-of-way from the Private Approach By-Law
- Throat length is considered adequate, and corner clearance meets the TAC suggested minimum values
- During both the AM and PM peak hours, the study area intersection is anticipated to operate well in the 2029 and 2034 future total conditions
- Although the eastbound left turn at the intersection of Flewellyn Road at the new collector road met the left-turn warrants for consideration in the 2034 future total conditions, the inclusion of the turn lane has a negligible impact on the operations; therefore, the intersection may remain operationally functional until a left-turn lane can be provided
- In both the 2029 and 2034 future total conditions, no issues are noted at the study area intersection that would require an auxiliary right-turn lane; therefore, it is not recommended on that basis

14 Conclusion

It is recommended that, from a transportation perspective, the proposed development applications proceed.

Prepared By:

Reihaneh Azhdar

Reihaneh Azhdar
Transportation Engineering, Intern

Reviewed By:

LICENSED PROFESSIONAL ENGINEER
A. J. HARTE
100149314
2026-10-02
PROVINCE OF ONTARIO

Andrew Harte, P.Eng.
Senior Transportation Engineer

Appendix A

TIA Screening Form and PM Certification Form

CGH TRANSPORTATION

6 Plaza Court
Ottawa, ON K2H 7W1

City of Ottawa 2023 Revisions to 2017 TIA Guidelines
Step 1 - Screening Form

Date: 2025-01-07
Project Number: 2025-191
Project Reference: Magnolia Condo Block Phase 1

1.1 Description of Proposed Development	
Municipal Address	6115, 6159, 6141 Flewellyn Road
Description of Location	North of Flewellyn Road, east of Poplarwood Avenue
Land Use Classification	Rural Countryside Zone (RU) and Rural Residential Zone (RR2)
Development Size	264 stacked dwellings
Accesses	two private accesses to a new collector road within the subdivision, which connects to Flewellyn Road
Phase of Development	Single
Buildout Year	2029
TIA Requirement	Full TIA Required

1.2 Trip Generation Trigger		
Land Use Type	Multi-Family (Low-Rise)	
Development Size	264	Units
Trip Generation Trigger	Yes	

1.3 Location Triggers	
Does the development propose a new driveway to a boundary street that is designated as part of the Transit Priority Network, Rapid Transit network or Cross-Town Bikeways?	No
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)?	No
Location Trigger	No

1.4. Safety Triggers	
Are posted speed limits on a boundary street 80 km/hr or greater?	Yes
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	No
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?	No
Is the proposed driveway within auxiliary lanes of an intersection?	No
Does the proposed driveway make use of an existing median break that serves an existing site?	No
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?	No
Does the development include a drive-thru facility?	No
Safety Trigger	Yes

Certification Form for TIA Study PM

TIA Plan Reports

On April 14, 2022, the Province's Bill 109 received Royal Assent providing legislative direction to implement the More Homes for Everyone Act, 2022 aiming to increase the supply of a range of housing options to make housing more affordable. Revisions have been made to the TIA guidelines to comply with Bill 109 and streamline the process for applicants and staff.

Individuals submitting TIA reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Ottawa's Official Plan, the Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines.

By submitting the attached TIA report (and any associated documents) and signing this document, the individual acknowledges that they meet the four criteria listed below.

CERTIFICATION

- ☑ I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines; (Update effective July 2023)

- ☑ I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;

- ☑ I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and

- ☑ I am either a licensed or registered[1] professional in good standing, whose field of expertise
  - ☑ is either transportation engineering
  - ☐ or transportation planning.

[1] License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.

City Of Ottawa
Planning, Real Estate and Economic Development
110 Laurier Avenue West, 4th fl.
Ottawa, ON
K1P 1J1
Tel. : 613-580-2424
Fax: 613-560-6006

Dated at Ottawa (City) this 17 day of August, 20 23 .

Name : Andrew Harte

Professional title: Senior Transportation Engineer / Vice-President Ottawa

Signature of individual certifier that s/he/they meet the above criteria

Office Contact Information (Please Print)
Address: 6 Plaza Court
City / Postal Code: Ottawa, K2H 7W1
Telephone / Extension: 613-697-3797
Email Address: andrew.harte@cghtransportation.com

Stamp

Revision Date: June 2023

Appendix B

Collision Data

CGH TRANSPORTATION

Accident Date	Accident Year	Accident Time	Location	Environment Condition	Light	Traffic Control	Traffic Control Condition	Classification Of Accident	Initial Impact Type	Road Surface Condition	# Vehicles	# Motorcycles	# Bicycles	# Pedestrians
2018-04-04	2018	20:24	FLEWELLYN RD btwn FORESTGROVE DR & POPLARWOOD AVE (__3Z06DV)	06 - Strong wind	07 - Dark	10 - No control	0	03 - P.D. only	07 - SMV other	01 - Dry	1	0	0	0
2018-11-16	2018	18:23	FLEWELLYN RD btwn POPLARWOOD AVE & SHEA RD (__3ZAI9O)	03 - Snow	07 - Dark	10 - No control	0	03 - P.D. only	07 - SMV other	03 - Loose snow	1	0	0	0
2019-01-10	2019	9:15	FLEWELLYN RD btwn POPLARWOOD AVE & SHEA RD (__3ZAI9O)	03 - Snow	01 - Daylight	10 - No control	0	03 - P.D. only	03 - Rear end	05 - Packed snow	2	0	0	0
2019-01-24	2019	8:33	FLEWELLYN RD btwn POPLARWOOD AVE & SHEA RD (__3ZAI9O)	04 - Freezing Rain	01 - Daylight	10 - No control	0	03 - P.D. only	07 - SMV other	04 - Slush	1	0	0	0
2019-09-27	2019	20:05	FLEWELLYN RD btwn POPLARWOOD AVE & SHEA RD (__3ZAI9O)	01 - Clear	07 - Dark	10 - No control	0	03 - P.D. only	07 - SMV other	01 - Dry	1	0	0	0
2020-09-27	2020	23:15	FLEWELLYN RD btwn POPLARWOOD AVE & SHEA RD (__3ZAI9O)	01 - Clear	07 - Dark	10 - No control	0	03 - P.D. only	07 - SMV other	01 - Dry	1	0	0	0
2020-11-09	2020	6:36	FLEWELLYN RD btwn POPLARWOOD AVE & SHEA RD (__3ZAI9O)	01 - Clear	07 - Dark	10 - No control	0	03 - P.D. only	07 - SMV other	01 - Dry	1	0	0	0
2021-12-02	2021	19:47	FLEWELLYN RD btwn POPLARWOOD AVE & SHEA RD (__3ZAI9O)	02 - Rain	07 - Dark	10 - No control	0	03 - P.D. only	07 - SMV other	02 - Wet	1	0	0	0
2022-08-24	2022	23:50	FLEWELLYN RD btwn POPLARWOOD AVE & SHEA RD (__3ZAI9O)	01 - Clear	07 - Dark	10 - No control	0	03 - P.D. only	07 - SMV other	01 - Dry	1	0	0	0

Appendix C

TDM Checklist

CGH TRANSPORTATION

TDM Measures Checklist:
Residential Developments (multi-family, condominium or subdivision)

Legend

- BASIC — The measure is generally feasible and effective, and in most cases would benefit the development and its users
- BETTER — The measure could maximize support for users of sustainable modes, and optimize development performance
- ★ — The measure is one of the most dependably effective tools to encourage the use of sustainable modes

		TDM measures: *Residential developments*	Check if proposed & add descriptions
	1.	**TDM PROGRAM MANAGEMENT**	
	1.1	**Program coordinator**	
BASIC ★	1.1.1	Designate an internal coordinator, or contract with an external coordinator	☐
	1.2	**Travel surveys**	
BETTER	1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
	2.	**WALKING AND CYCLING**	
	2.1	**Information on walking/cycling routes & destinations**	
BASIC	2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances *(multi-family, condominium)*	☐
	2.2	**Bicycle skills training**	
BETTER	2.2.1	Offer on-site cycling courses for residents, or subsidize off-site courses	☐

		TDM measures: *Residential developments*	Check if proposed & add descriptions
	3.	**TRANSIT**	
	3.1	**Transit information**	
BASIC	3.1.1	Display relevant transit schedules and route maps at entrances *(multi-family, condominium)*	☐
BETTER	3.1.2	Provide real-time arrival information display at entrances *(multi-family, condominium)*	☐
	3.2	**Transit fare incentives**	
BASIC ★	3.2.1	Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit	☐
BETTER	3.2.2	Offer at least one year of free monthly transit passes on residence purchase/move-in	☑
	3.3	**Enhanced public transit service**	
BETTER ★	3.3.1	Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels *(subdivision)*	☑
	3.4	**Private transit service**	
BETTER	3.4.1	Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)	☐
	4.	**CARSHARING & BIKESHARING**	
	4.1	**Bikeshare stations & memberships**	
BETTER	4.1.1	Contract with provider to install on-site bikeshare station *(multi-family)*	☐
BETTER	4.1.2	Provide residents with bikeshare memberships, either free or subsidized *(multi-family)*	☐
	4.2	**Carshare vehicles & memberships**	
BETTER	4.2.1	Contract with provider to install on-site carshare vehicles and promote their use by residents	☐
BETTER	4.2.2	Provide residents with carshare memberships, either free or subsidized	☐
	5.	**PARKING**	
	5.1	**Priced parking**	
BASIC ★	5.1.1	Unbundle parking cost from purchase price *(condominium)*	☐
BASIC ★	5.1.2	Unbundle parking cost from monthly rent *(multi-family)*	☐

		TDM measures: *Residential developments*	Check if proposed & add descriptions
		6. TDM MARKETING & COMMUNICATIONS	
		6.1 Multimodal travel information	
BASIC	★	6.1.1 Provide a multimodal travel option information package to new residents	☑
		6.2 Personalized trip planning	
BETTER	★	6.2.1 Offer personalized trip planning to new residents	☐

TDM-Supportive Development Design and Infrastructure Checklist:
Residential Developments (multi-family or condominium)

Legend

REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☑
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☑
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☑
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☑
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☑

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☑
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☑
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☑
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☑
	1.3	**Amenities for walking & cycling**	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☐
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☐

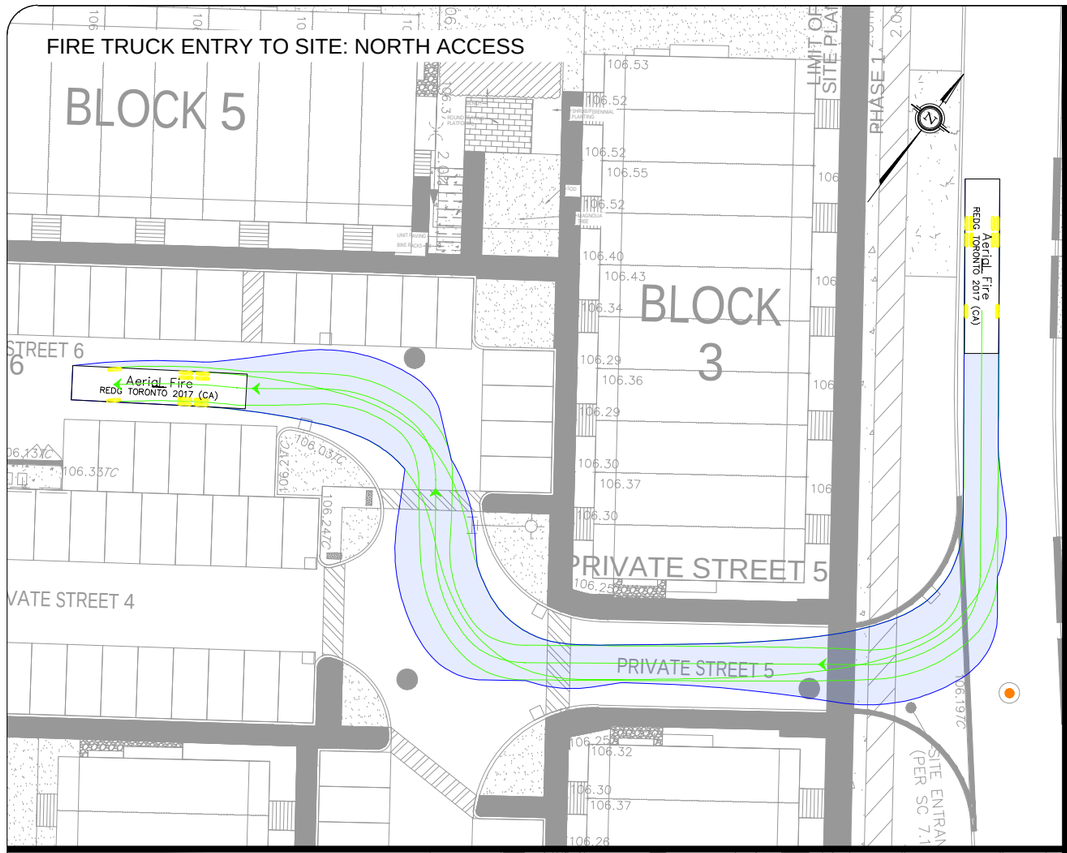
		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☐
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	☐
	2.3	**Bicycle repair station**	
BETTER	2.3.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐

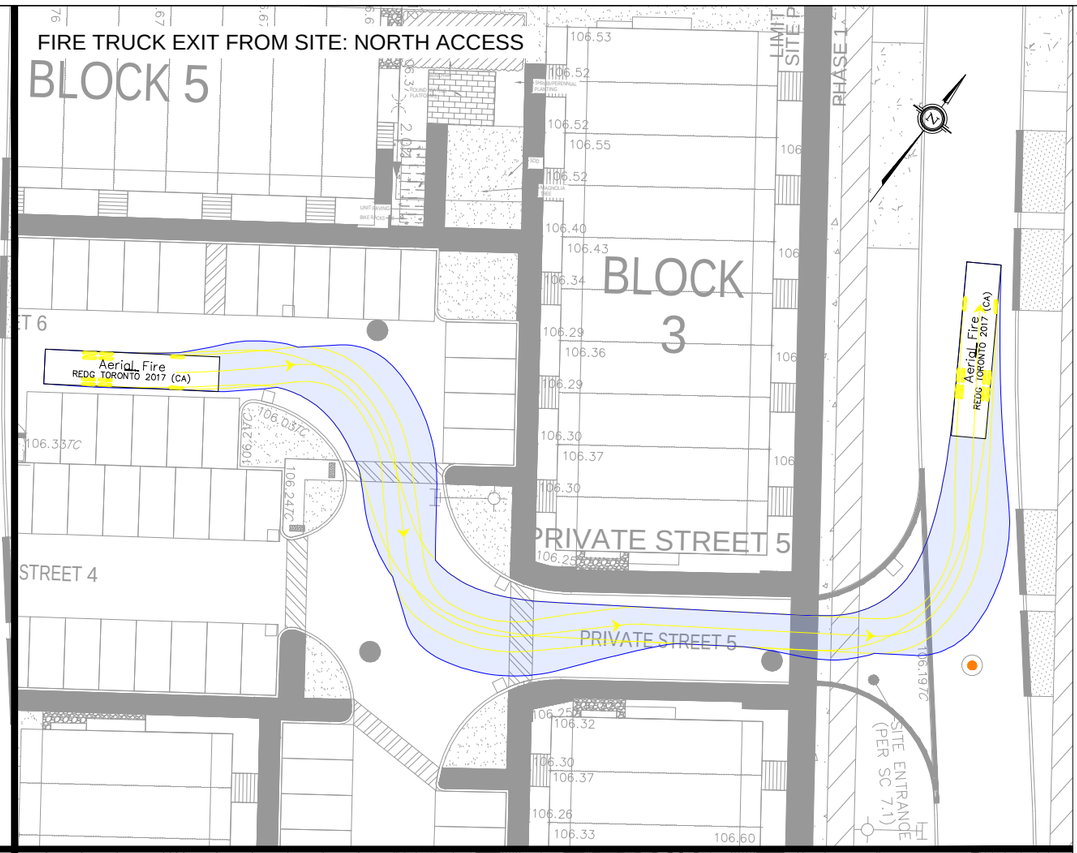
		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses *(see Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☐
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	☐

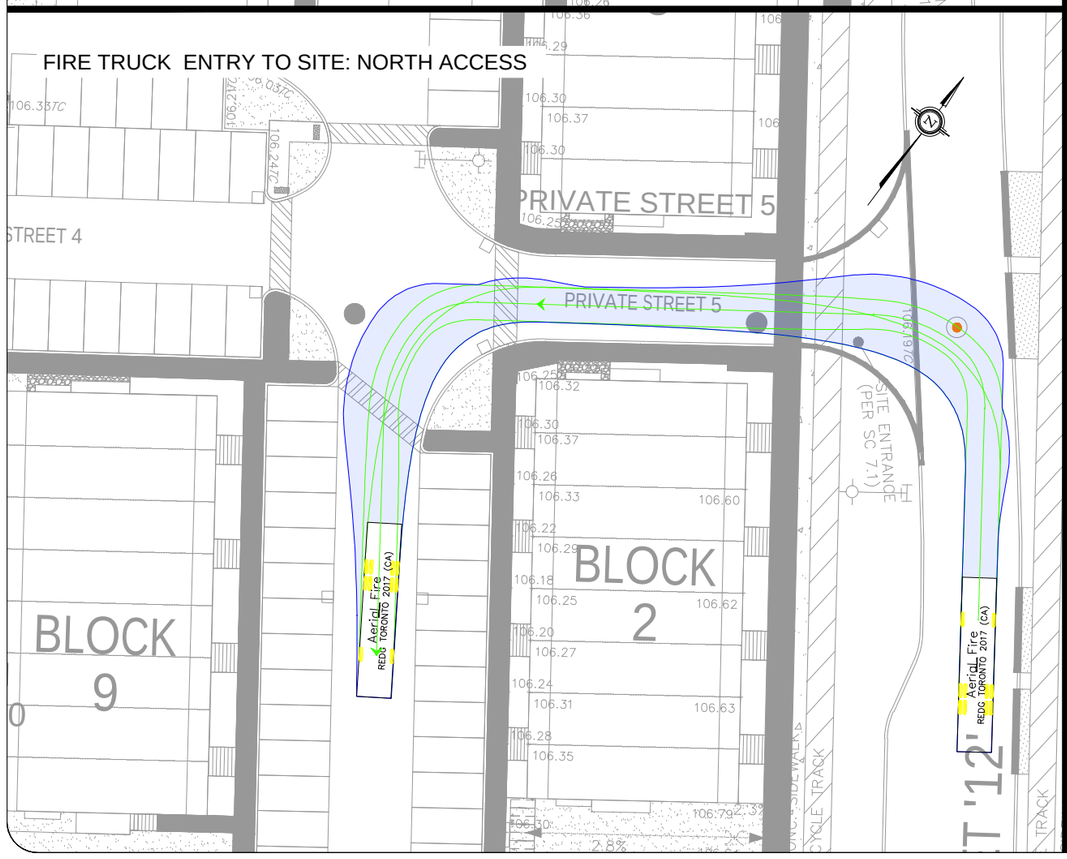
Appendix D

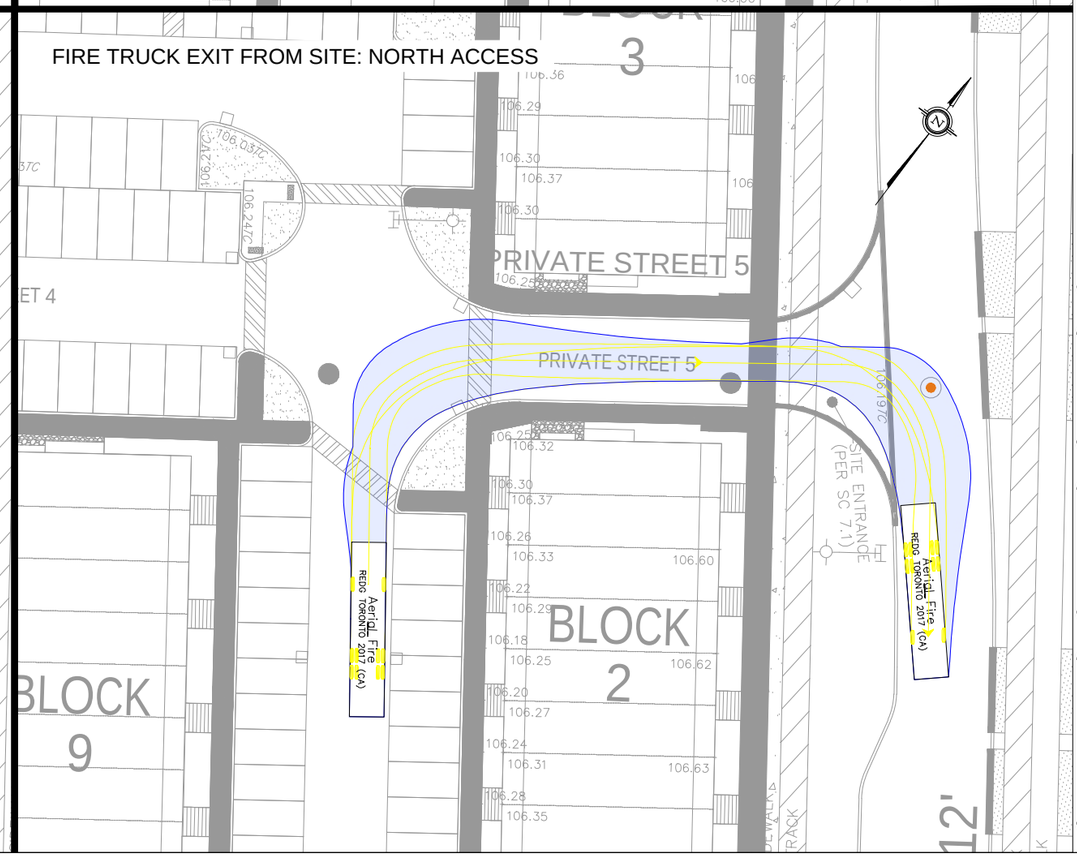
Turning Templates

CGH TRANSPORTATION









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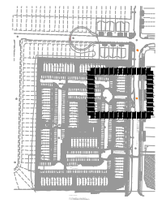
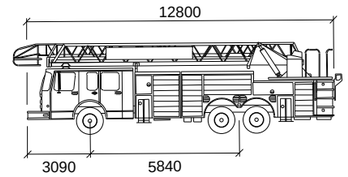




Aerial Fire

	mm
Width	: 2540
Track	: 2540
Lock to Lock Time	: 6.0
Steering Angle	: 37.0

Legend:

Forward/In
Forward/Out
Reverse

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review:	CH	2026-10-02

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: Caivan Communities
3713 Borrisokane Road
Ottawa, On
K2J 4J4

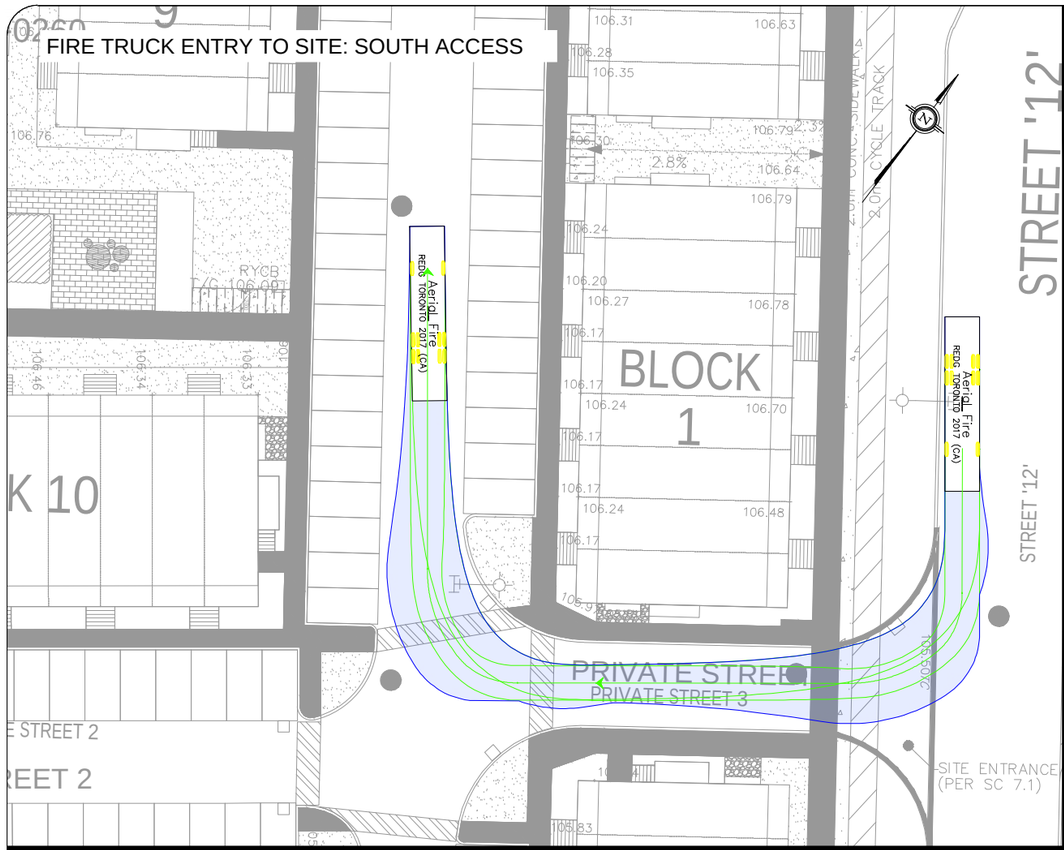
ARCHITECT:

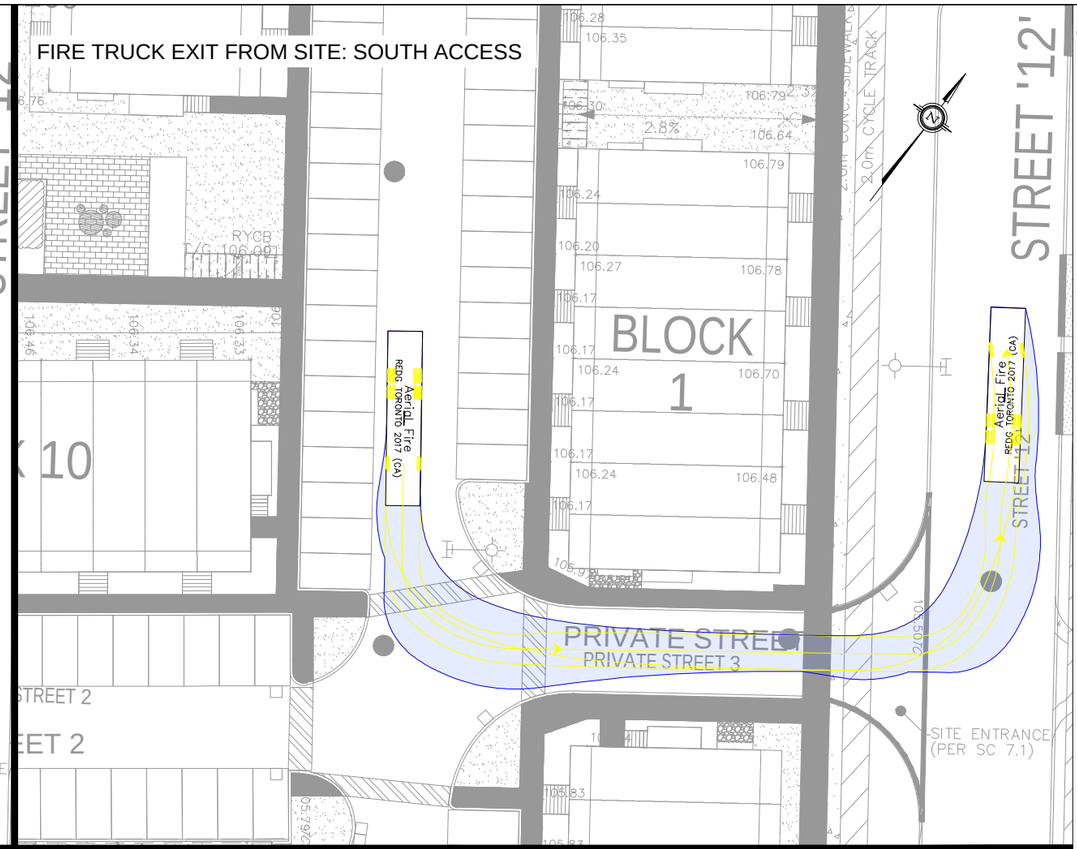
SITE: Magnolia Condo Block

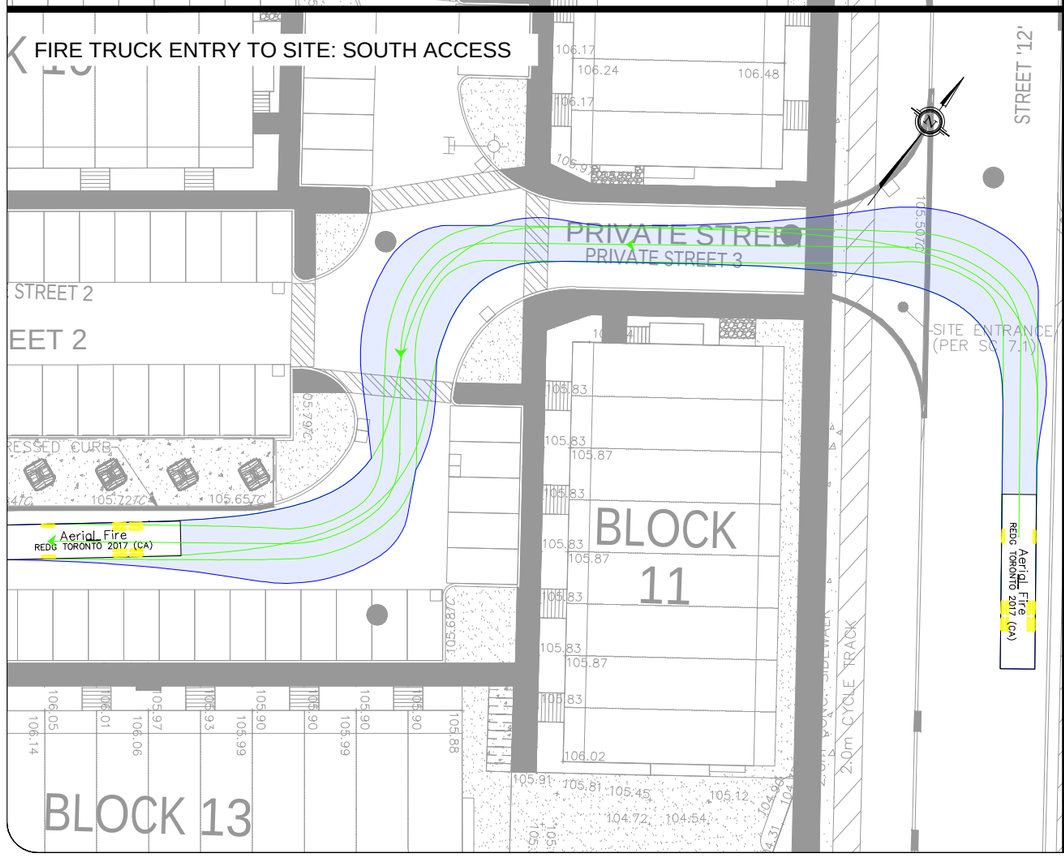
TITLE: Fire Truck
Turning Template (1)

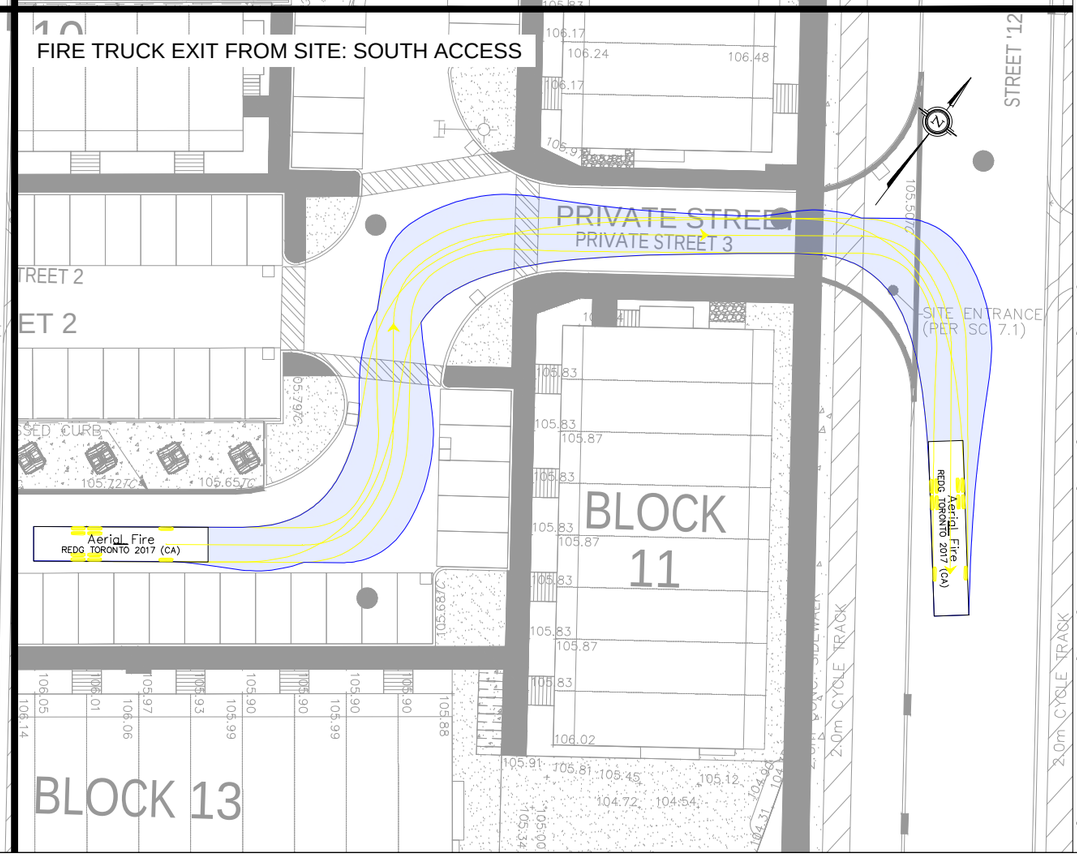
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2026-10-02	CH	AL

PROJECT NO:	DRAWING NO:	REVISION:
2025-191	001	01









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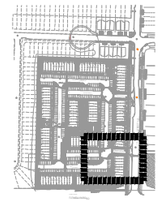
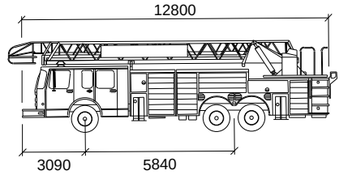




Aerial Fire

	mm
Width	: 2540
Track	: 2540
Lock to Lock Time	: 6.0
Steering Angle	: 37.0

Legend:

- Forward/In
- Forward/Out
- Reverse

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review:	CH	2026-10-02

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: Caivan Communities
3713 Borrisokane Road
Ottawa, On
K2J 4J4

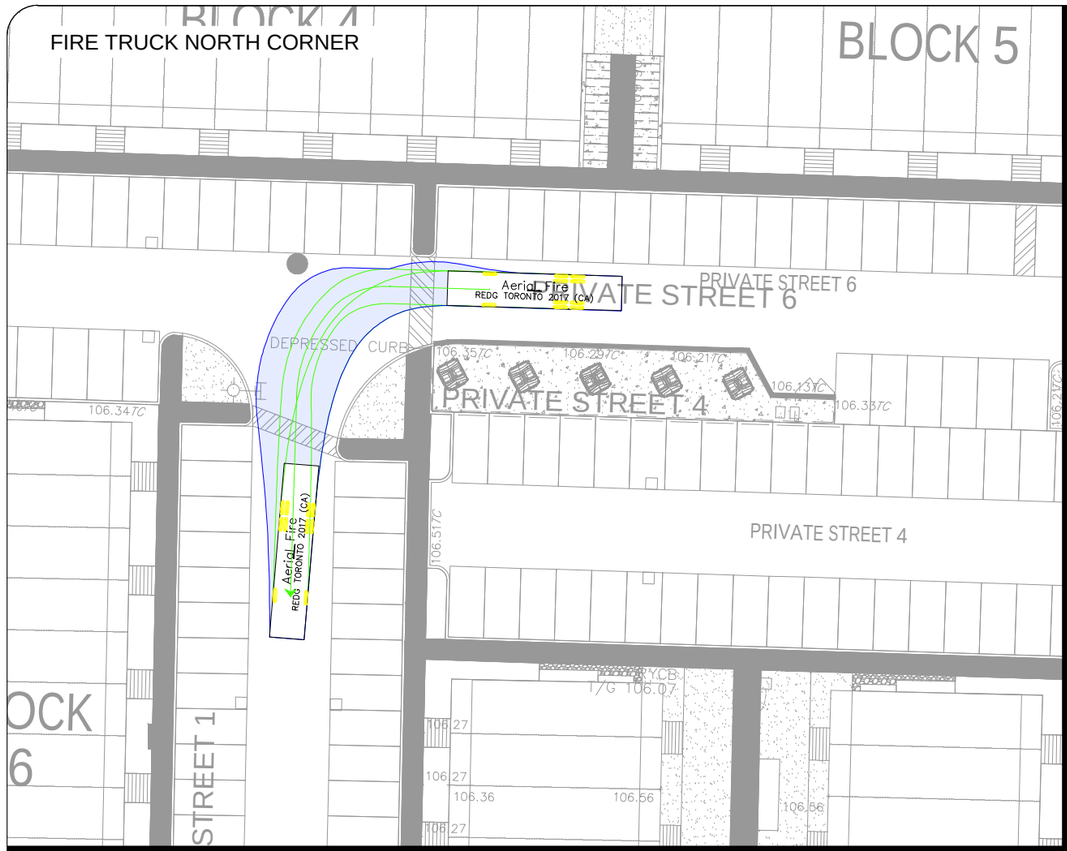
ARCHITECT:

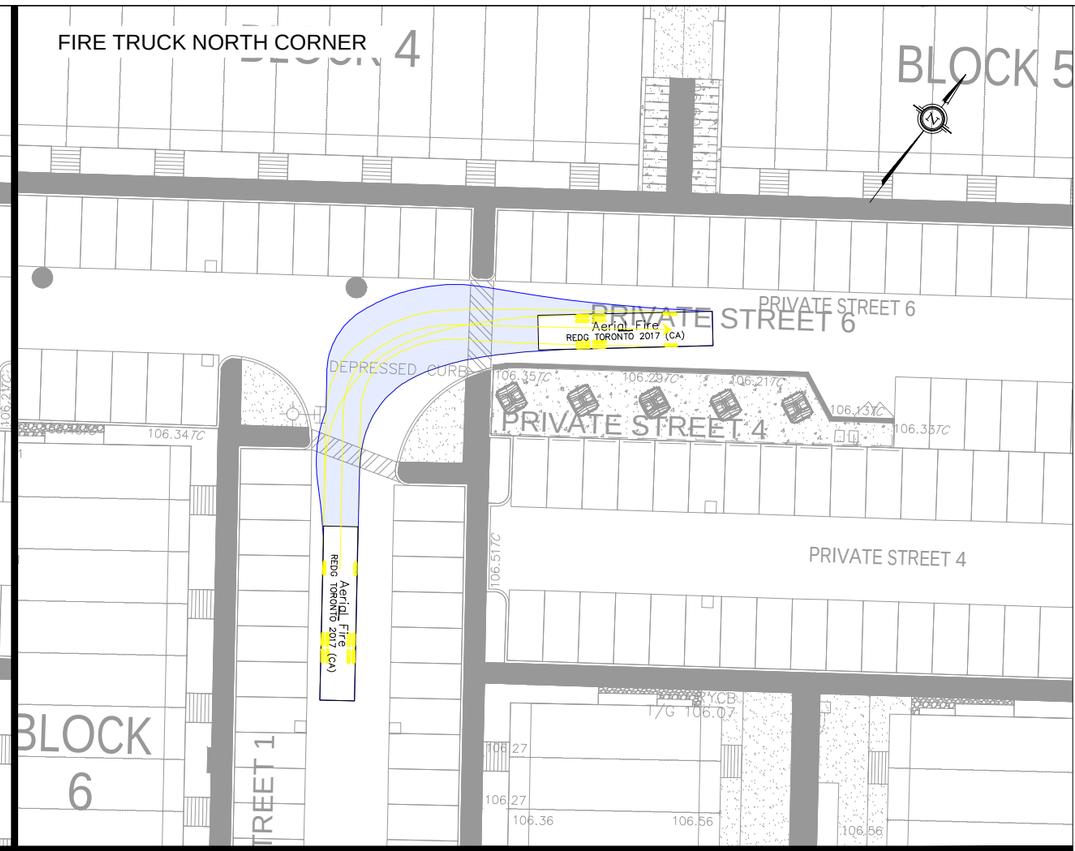
SITE: Magnolia Condo Block

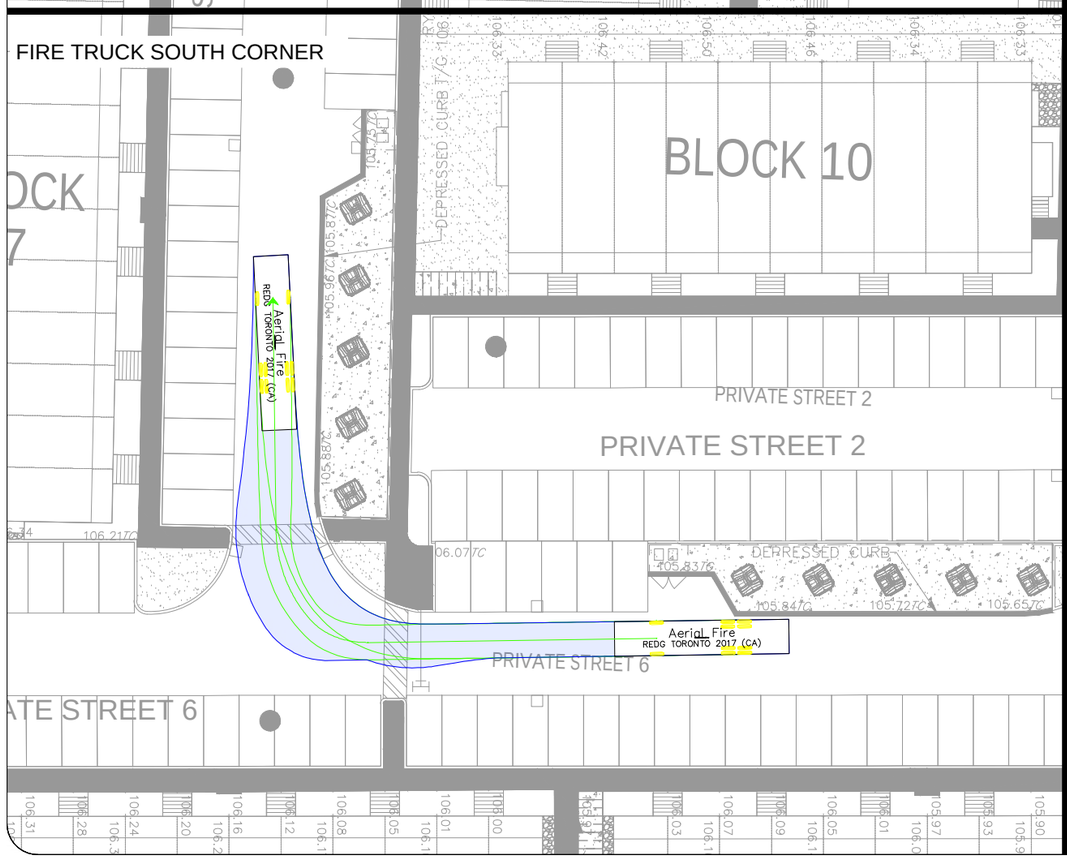
TITLE: FIre Truck Turning Template (2)

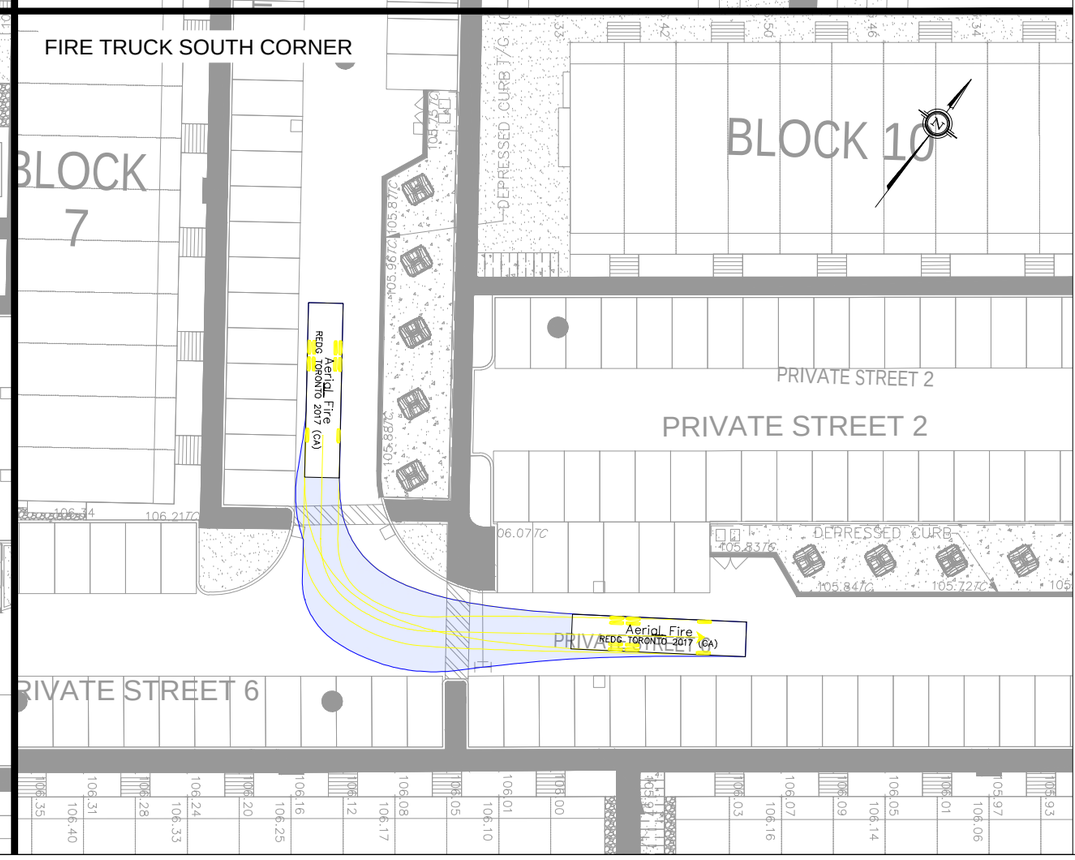
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2026-10-02	CH	AL

PROJECT NO:	DRAWING NO:	REVISION:
2025-191	002	01









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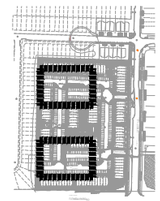
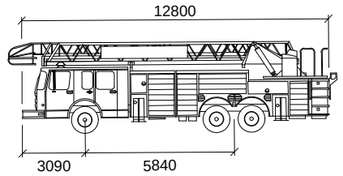




Aerial Fire

	mm
Width	: 2540
Track	: 2540
Lock to Lock Time	: 6.0
Steering Angle	: 37.0

Legend:

Forward/In

Forward/Out

Reverse

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review:	CH	2026-10-02

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: Caivan Communities
3713 Borrisokane Road
Ottawa, On
K2J 4J4

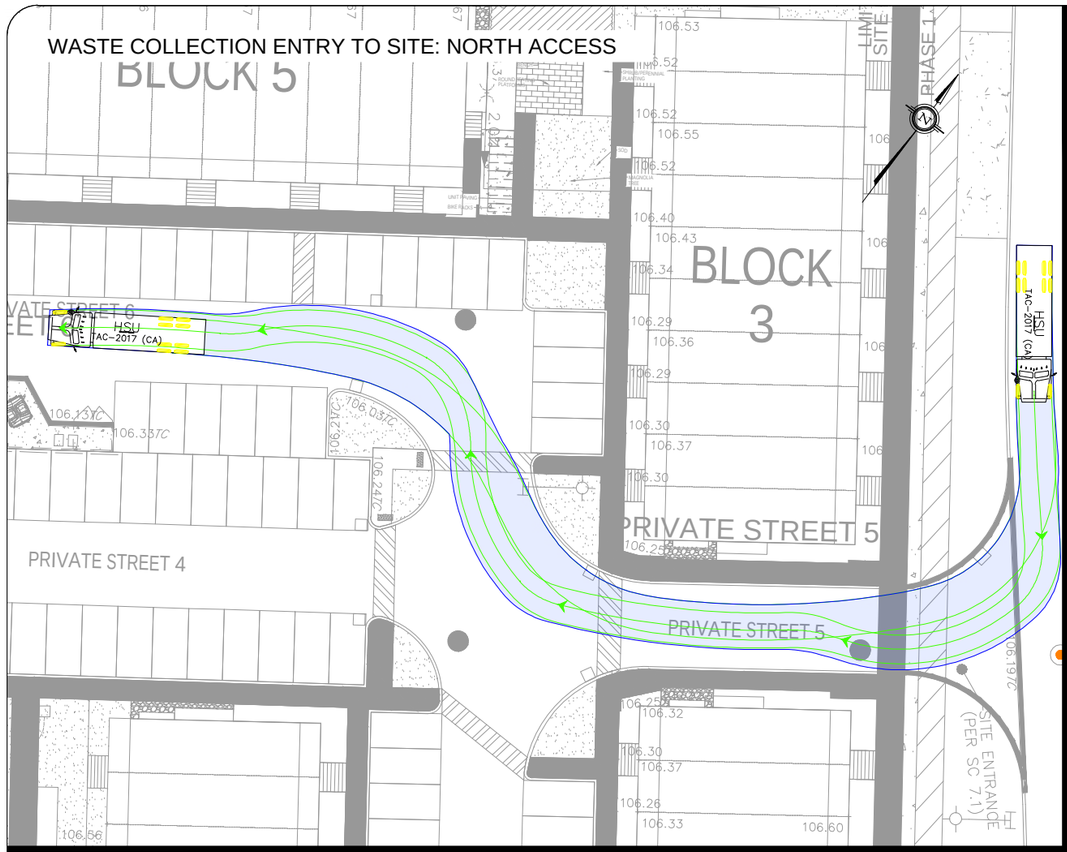
ARCHITECT:

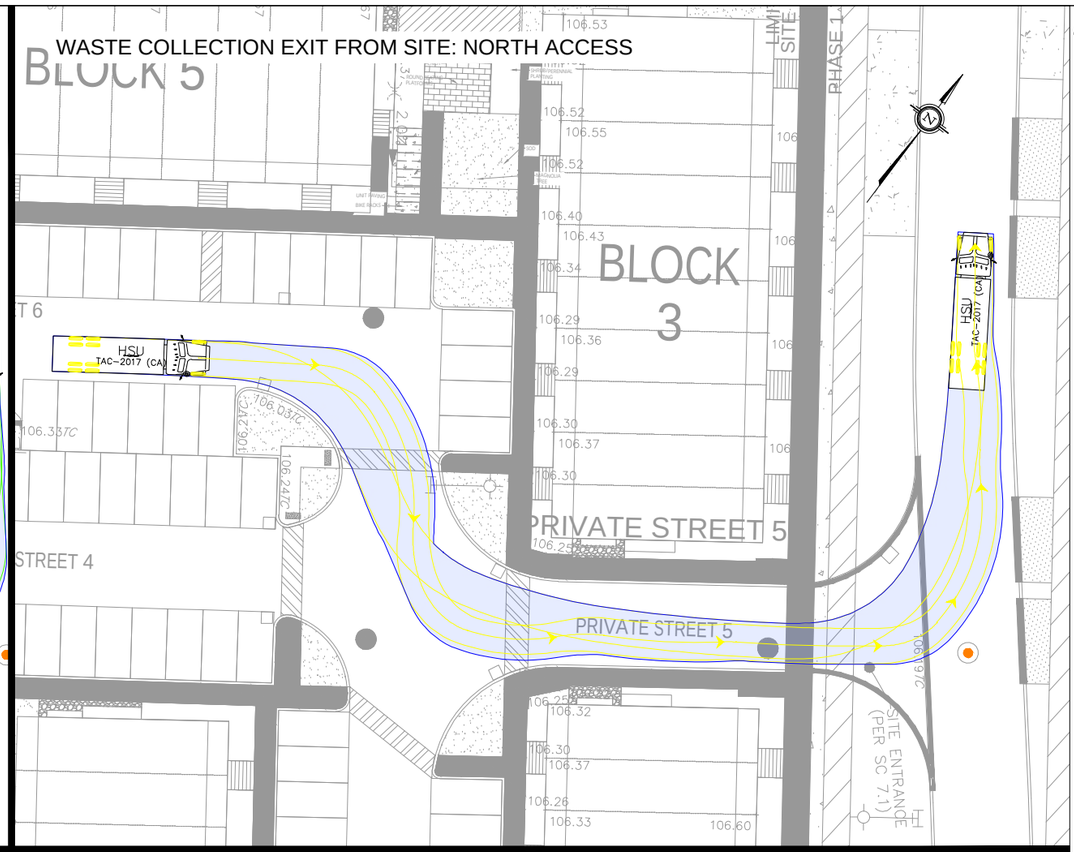
SITE: Magnolia Condo Block

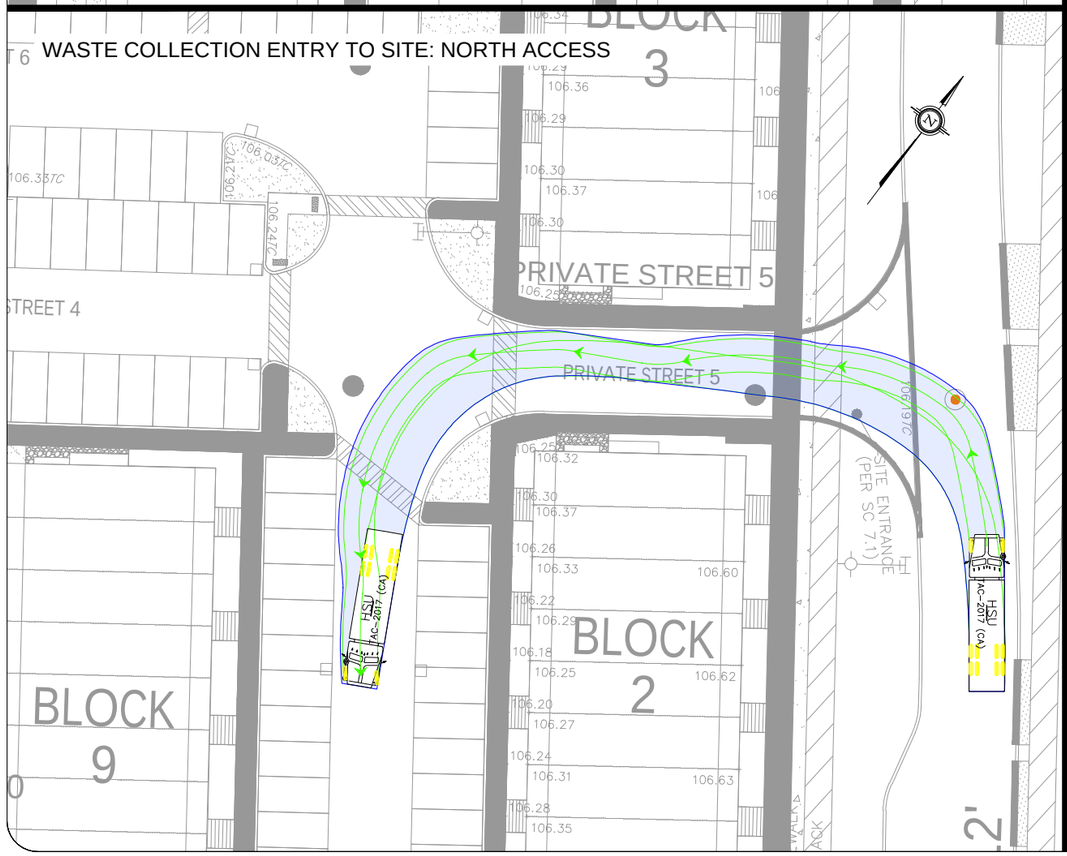
TITLE: FIre Truck Turning Template (3)

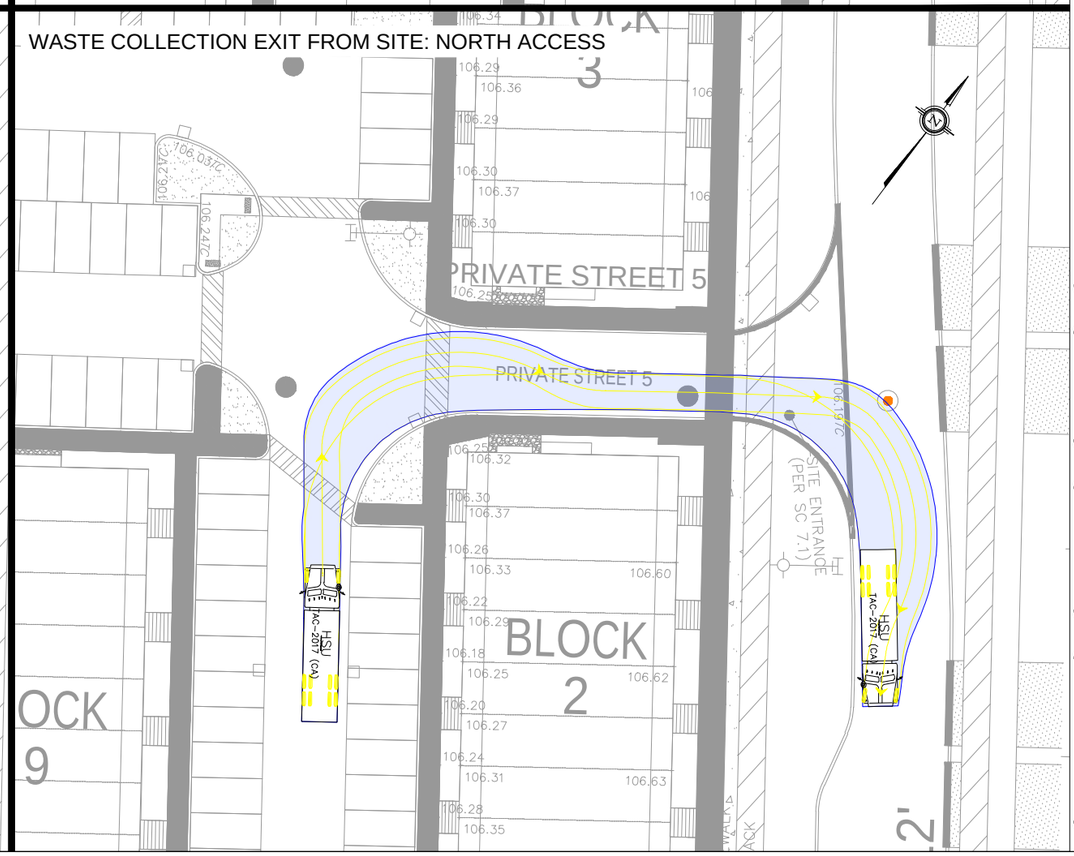
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2026-10-02	CH	AL

PROJECT NO:	DRAWING NO:	REVISION:
2025-191	003	01









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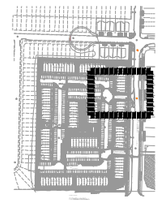
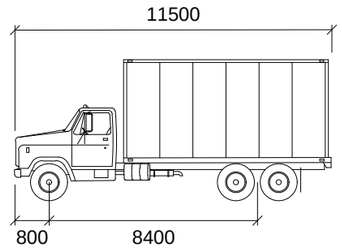




HSU

	mm
Width	: 2600
Track	: 2600
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

Legend:

Forward/In

Forward/Out

Reverse

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review:	CH	2026-10-02

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: Caivan Communities
3713 Borrisokane Road
Ottawa, On
K2J 4J4

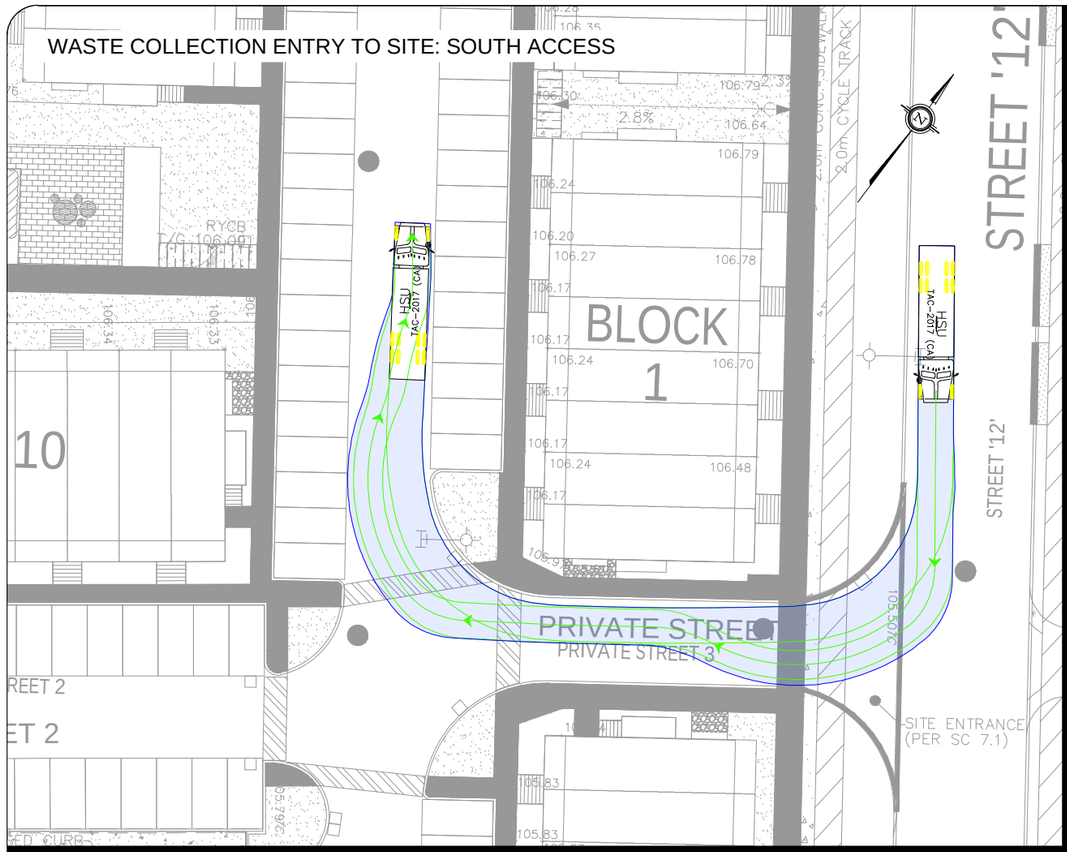
ARCHITECT:

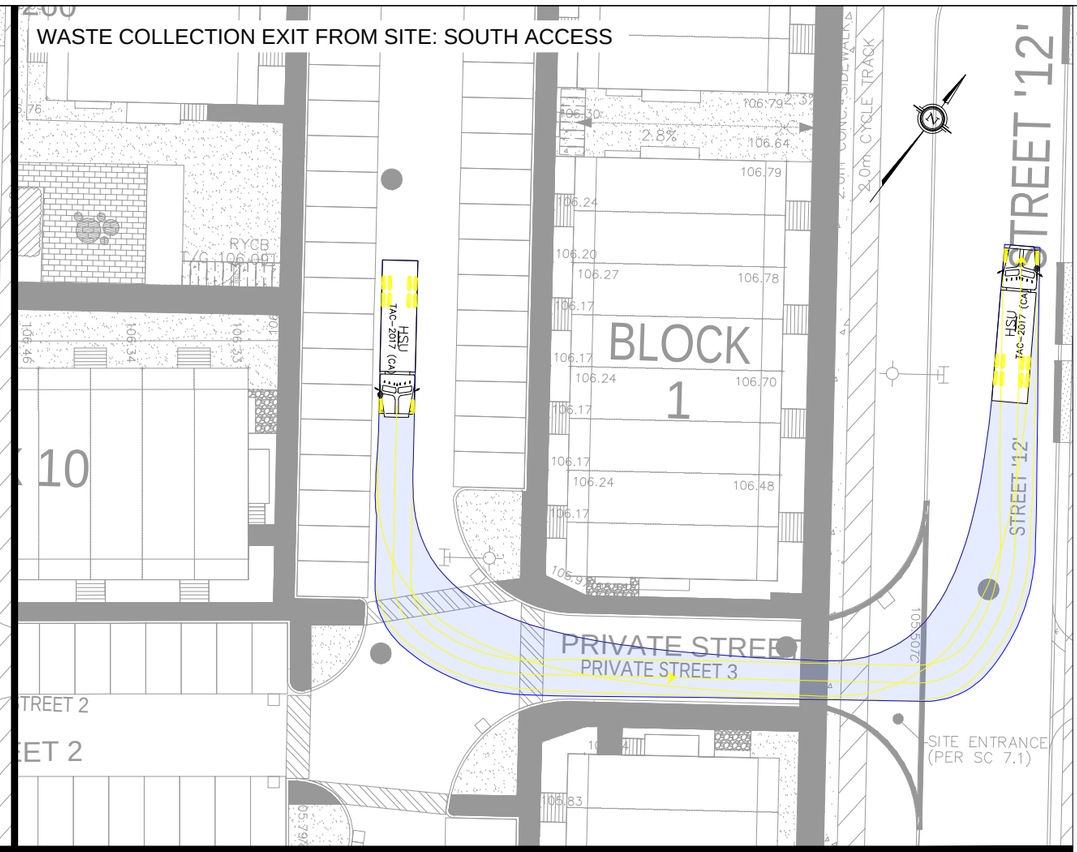
SITE: Magnolia Condo Block

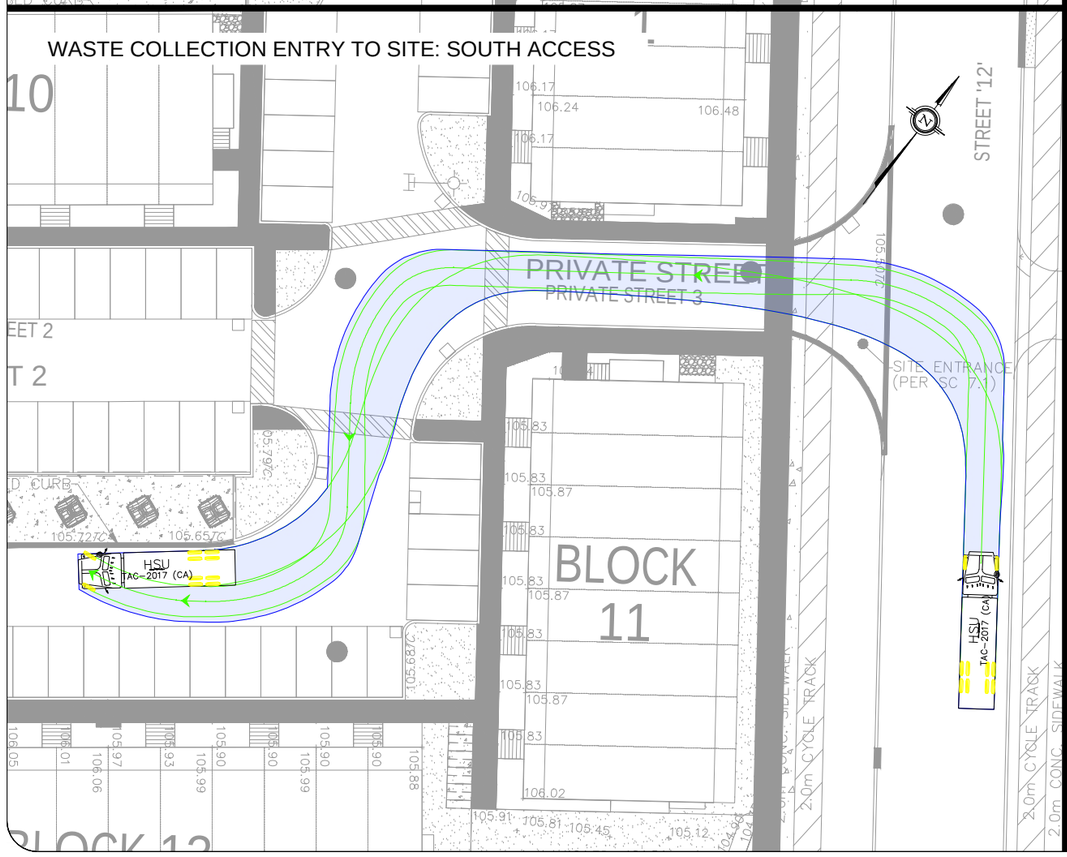
TITLE: Waste Collection Turning Template (1)

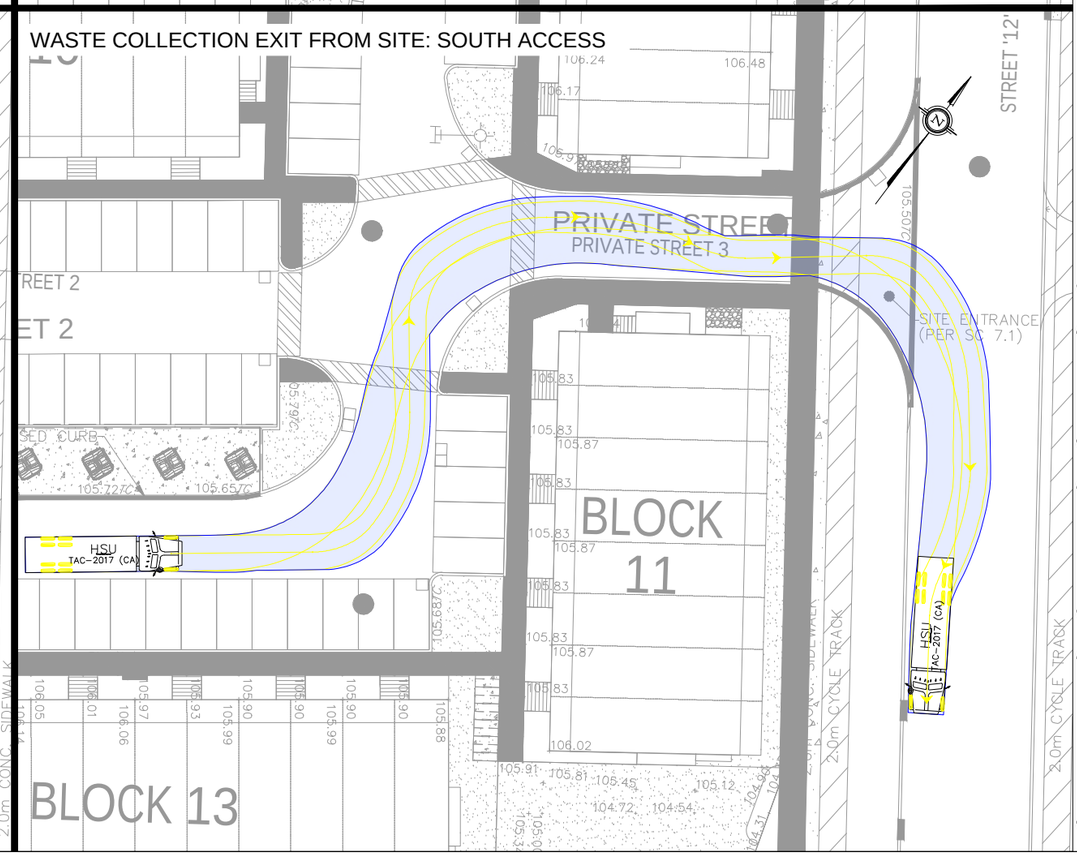
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2026-10-02	CH	AL

PROJECT NO:	DRAWING NO:	REVISION:
2025-191	004	01









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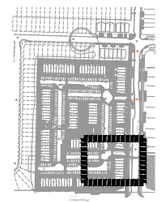

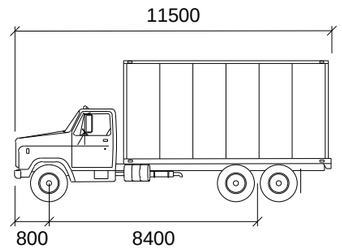

HSU

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Track	:	2600
Lock to Lock Time	:	6.0
Steering Angle	:	40.0

Legend:

- Forward/In
- Forward/Out
- Reverse

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review:	CH	2026-10-02

STATUS:

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6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: Caivan Communities
3713 Borrisokane Road
Ottawa, On
K2J 4J4

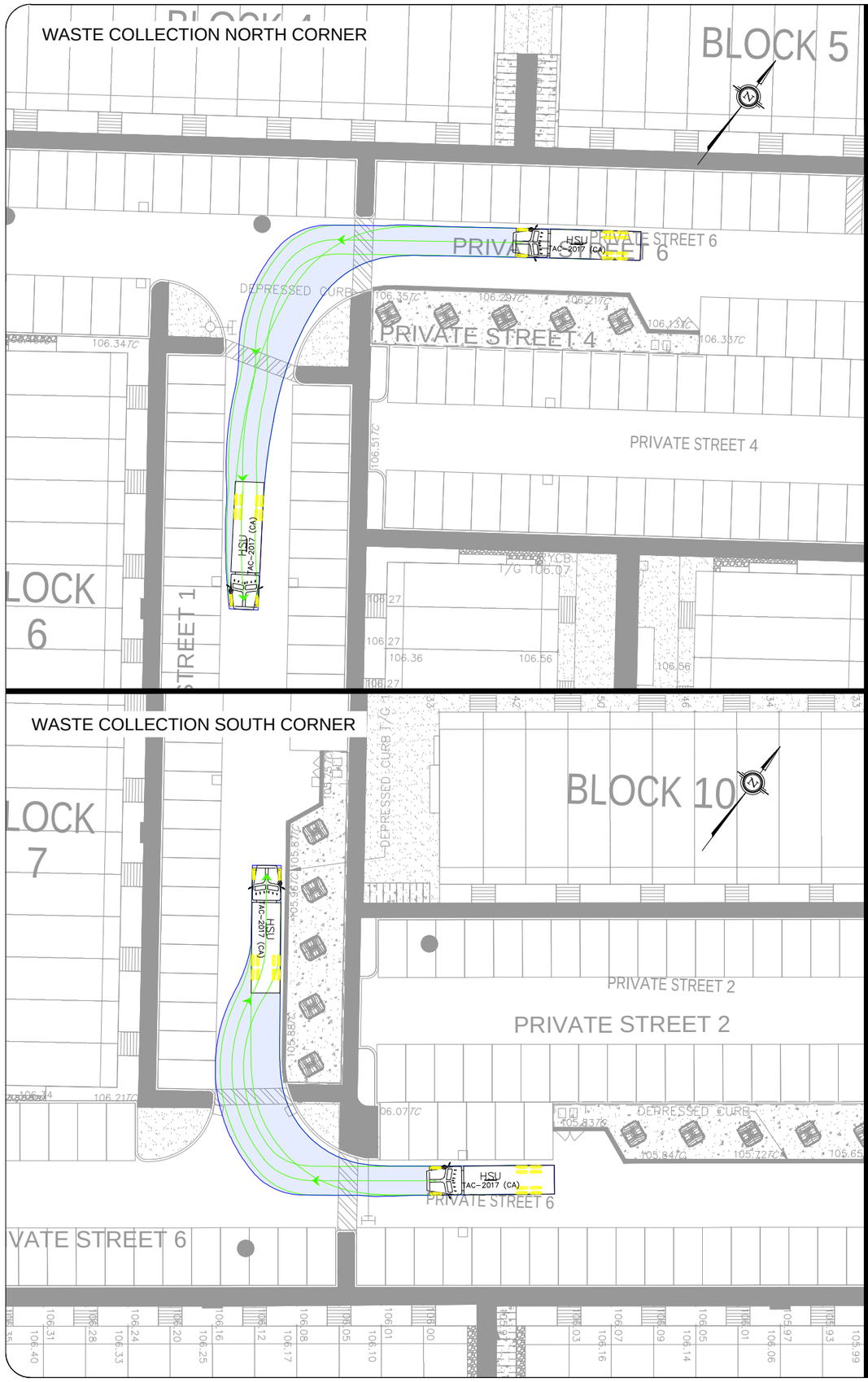
ARCHITECT:

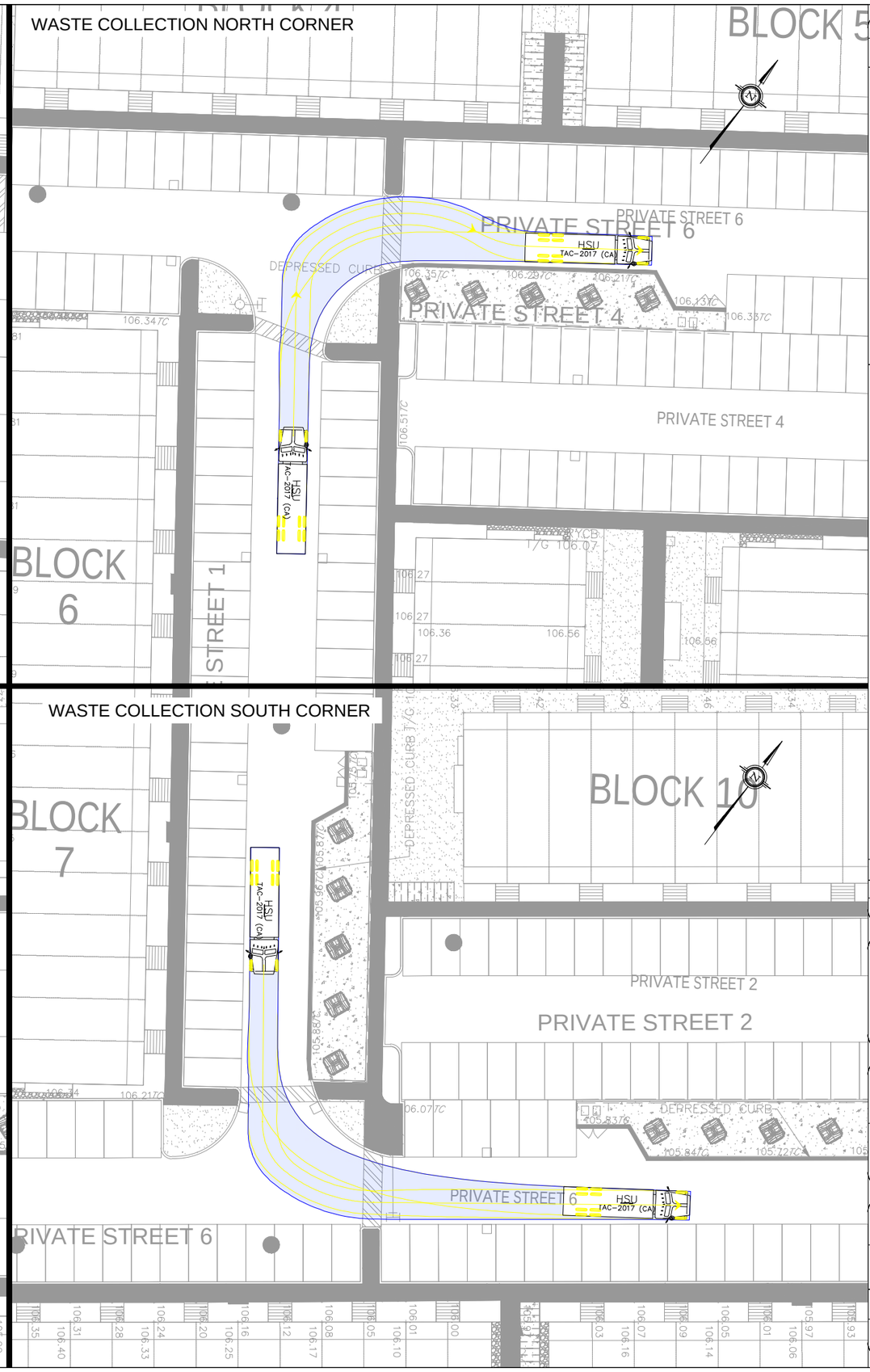
SITE: Magnolia Condo Block

TITLE: Waste Collection Turning Template (2)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2026-10-02	CH	AL

PROJECT NO:	DRAWING NO:	REVISION:
2025-191	005	01





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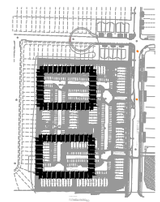

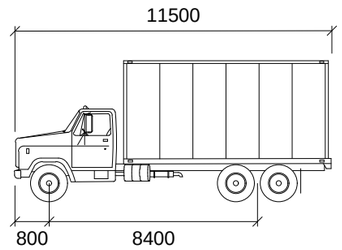

HSU

	mm
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Track	: 2600
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

Legend:

- Forward/In
- Forward/Out
- Reverse

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review:	CH	2026-10-02

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: Caivan Communities
3713 Borrisokane Road
Ottawa, On
K2J 4J4

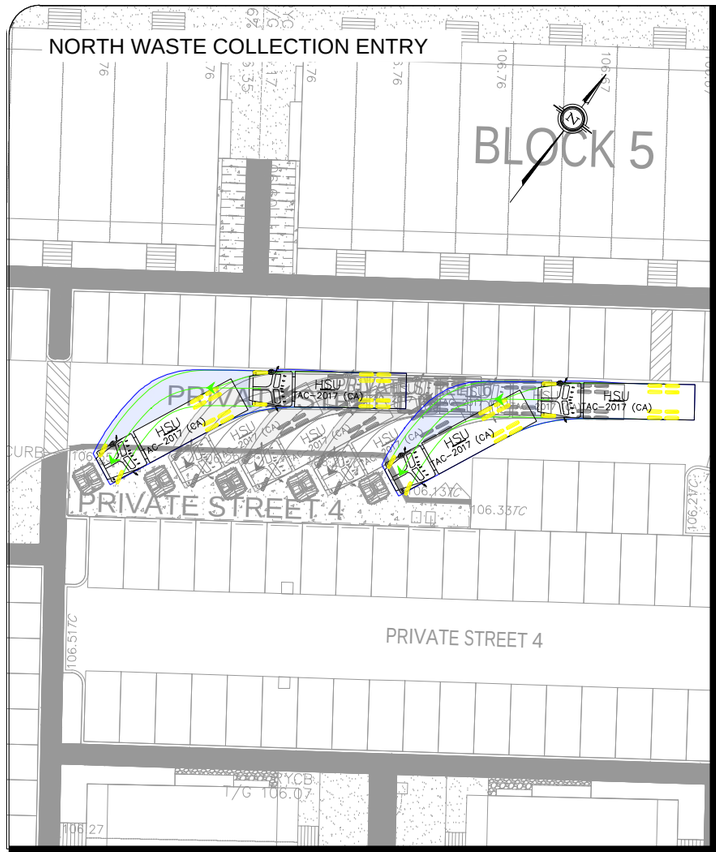
ARCHITECT:

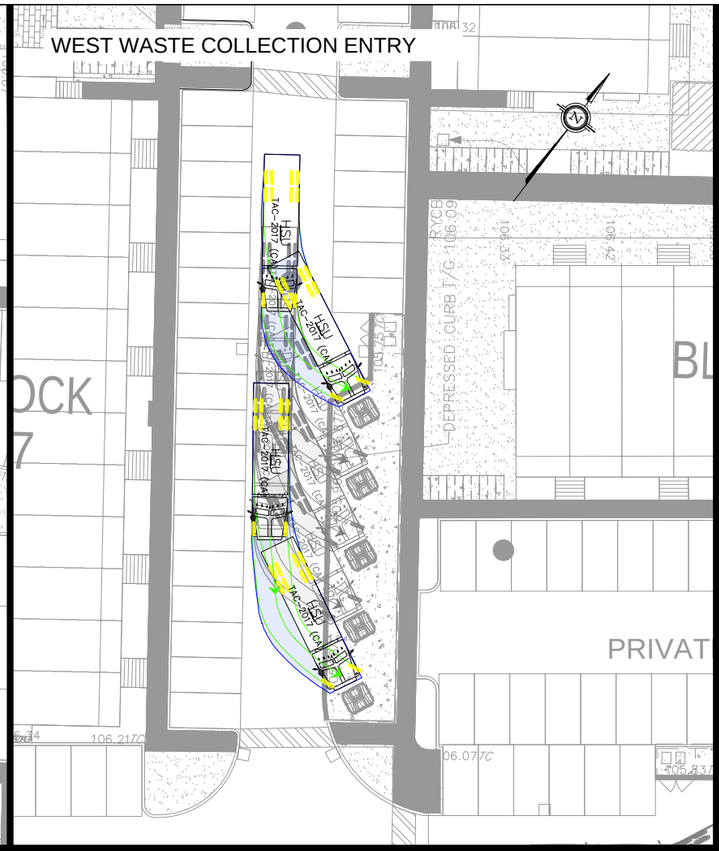
SITE: Magnolia Condo Block

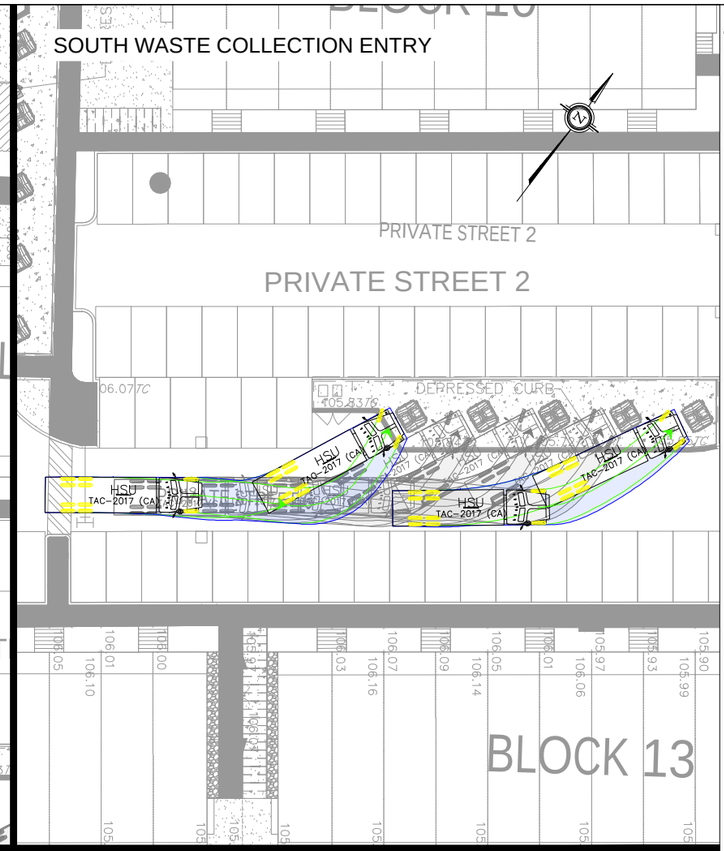
TITLE: Waste Collection Turning Template (3)

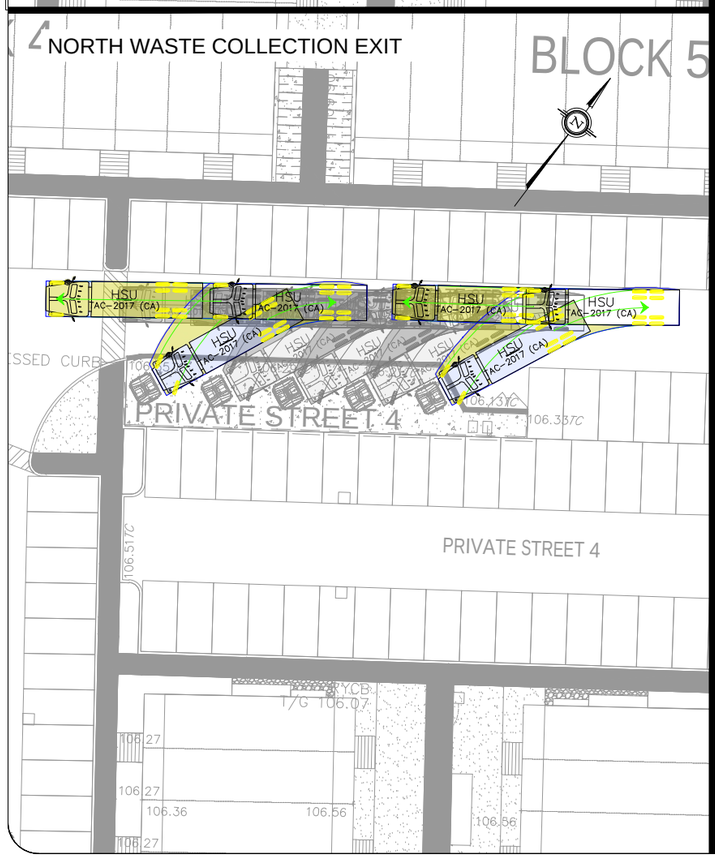
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2026-10-02	CH	AL

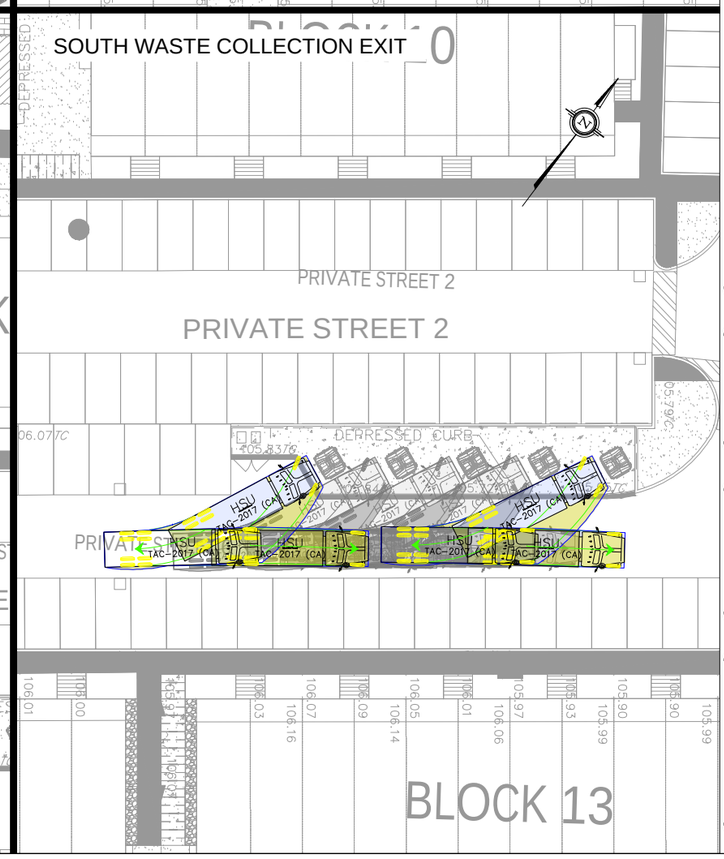
PROJECT NO:	DRAWING NO:	REVISION:
2025-191	006	01











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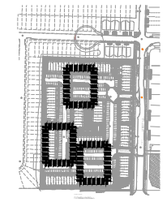
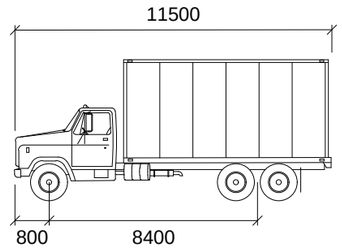




HSU

		mm
Width	:	2600
Track	:	2600
Lock to Lock Time	:	6.0
Steering Angle	:	40.0

Legend:

- Forward/In
- Forward/Out
- Reverse
- Repetitive Movements

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review:	CH	2026-10-02

STATUS:

CGH Transportation
6 Plaza Court
Ottawa, ON
K2H 7W1
(343) 999-9117

CLIENT: Caivan Communities
3713 Borrisokane Road
Ottawa, On
K2J 4J4

ARCHITECT:

SITE: Magnolia Condo Block

TITLE: Waste Collection Turning Template (1)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2026-10-02	CH	AL

PROJECT NO:	DRAWING NO:	REVISION:
2025-191	007	01

Appendix E

MMLOS Analysis

CGH TRANSPORTATION

Multi-Modal Level of Service - Segments Form

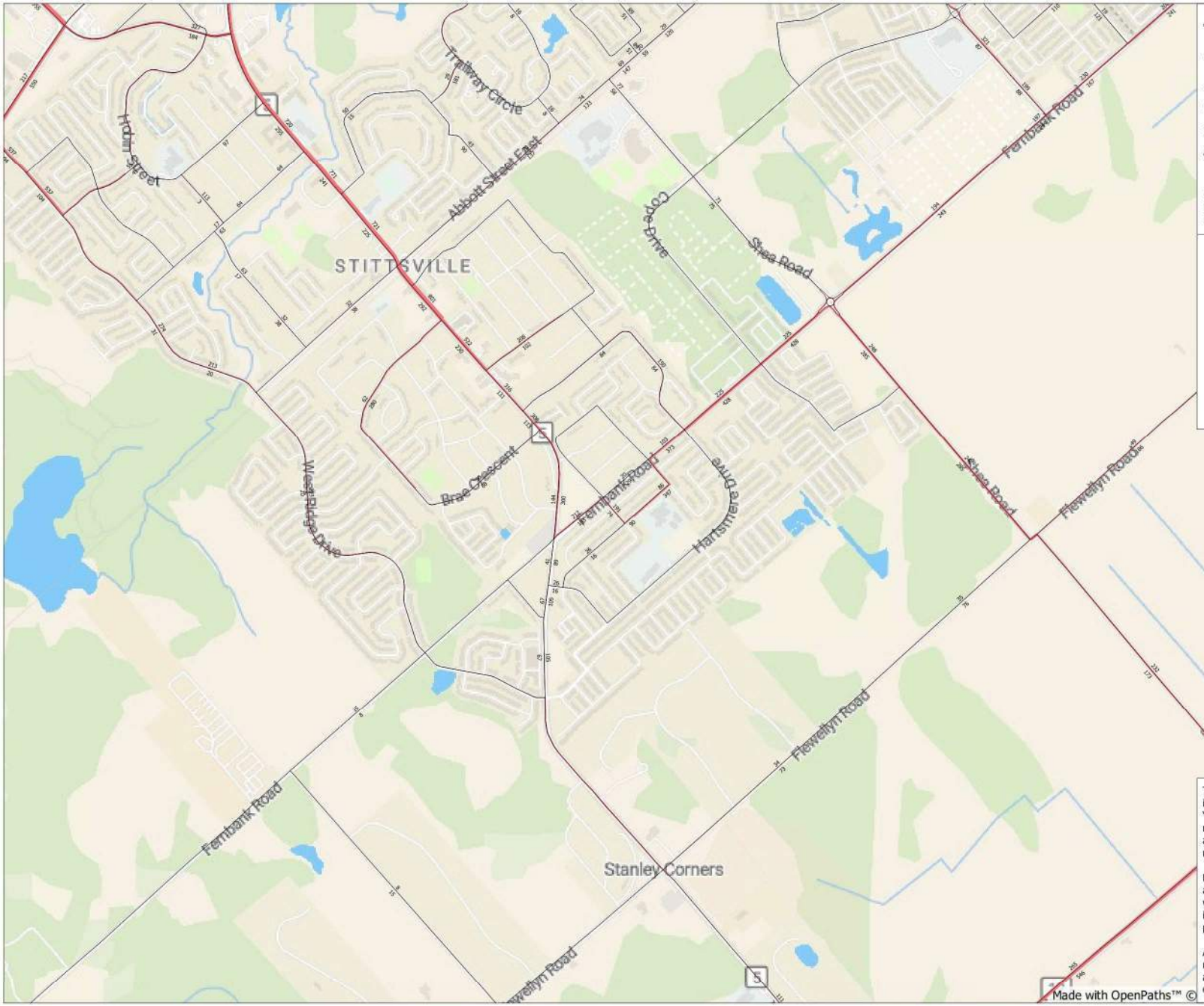
Project: Magnolia Condo Block Phase 1
Consultant: CGH Transportation Inc.
Date: Jan 7, 2026
Scenario: Existing and Future

	Segment Name	Flewellyn		New Collector Road	
	OP Transect / Policy Area	Outer Urban or Suburban		Outer Urban or Suburban	
	Segment Component	Majority (>50%)		Majority (>50%)	
	Side of Street	N		W	E or S
Pedestrian	PLOS Inputs				
	Posted Speed (km/h)	80 km/h		40 km/h	
	Two-Way ADT	4,200		3,400	
	Pedestrian Facility	None		Sidewalk	
	Does the facility meet the TMP Sidewalk or MUP Policy? If not, for MUPs, does the location have a low volume of peak daily users AND are pedestrian volumes likely less than 20% of total users?	No		Yes	
	Facility Width (m)	1.80m		2.00m	
	Offset from Motor Vehicle Travel Lanes (m)	< 0.5m		≥ 3.0m	
	Presence of Adjacent Parking?	-		Yes	
	General Purpose Curb Lane ADT	≤ 3000		≤ 3000	
	Max. Distance between Controlled Crossings (m)	-		201-230m	
	Score	0.75	-	4.75	-
	PLOS	E	-	A	-
	Target PLOS	C		C	
Bicycle	BLOS Inputs				
	Cycling Route Classification	Elsewhere		Elsewhere	
	Cycling Facility	Paved Shoulder without Buffer	Input PLOS First	Cycle Track	Input PLOS First
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)	Yes		-	
	Facility Operation	-		-	
	Pedestrian/Cyclist Volume	-		-	
	Facility Width	1.5-1.99m		-	
	Boulevard/Buffer Width (excluding curb)	-		-	
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)	Cross-Street		Cross-Street	
	Number of Travel Lanes at Crossing	≤ 2		≤ 2	
	Crossing includes Median Refuge (≥ 2.7m)	No		No	
	Cross-street Posted Speed (km/h)	50 km/h		40 km/h	
	Cycling Path Blockages (e.g. bus stops and/or loading zones)	Rare		-	
	Score	3.30	-	4.85	-
	BLOS	C	-	A	-
	Target BLOS	C		C	
Transit	TLOS Inputs				
	Transit Facility	Mixed Traffic		Mixed Traffic	
	Facility Type	Mixed Traffic		Mixed Traffic	
	Expected Transit Running Time	Slightly Impeded		Slightly Impeded	
	Transit Travel Speed (if available)	Enter Speed (if available)		Enter Speed (if available)	
	TLOS	C	-	C	-
	Target TLOS	E (D for frequent transit routes)		E (D for frequent transit routes)	
Public Realm	PRLOS Inputs				
	Context	Other Streets	Input PLOS and BLOS First	Other Streets	Input PLOS and BLOS First
	Inner Boulevard Width	≤ 0.6m		≤ 0.6m	
	Middle Boulevard Width	≤ 0.5m		≥ 3.0m	
	Outer Boulevard (Frontage) Width	≤ 0.5m		1.5-1.99m	
	Transit Route on Segment?	No		Yes	
	Bus Stop Elements	-		Curbside landing zone with no shelter	
	Number of Midblock Traffic Lanes (both travel directions)	≤ 2		≤ 2	
	Score	13.50	-	25.80	-
	PRLOS	D	-	A	-
		D		A	

Appendix F

TRANS Models

CGH TRANSPORTATION



TRANS Regional Model

Version 1.01 - Assigned December, 2024

AM Peak Hour Total Traffic Volume

Stittsville South

2022 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: Nov 2025
EMME Scenario: 22002

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

Distance (m)

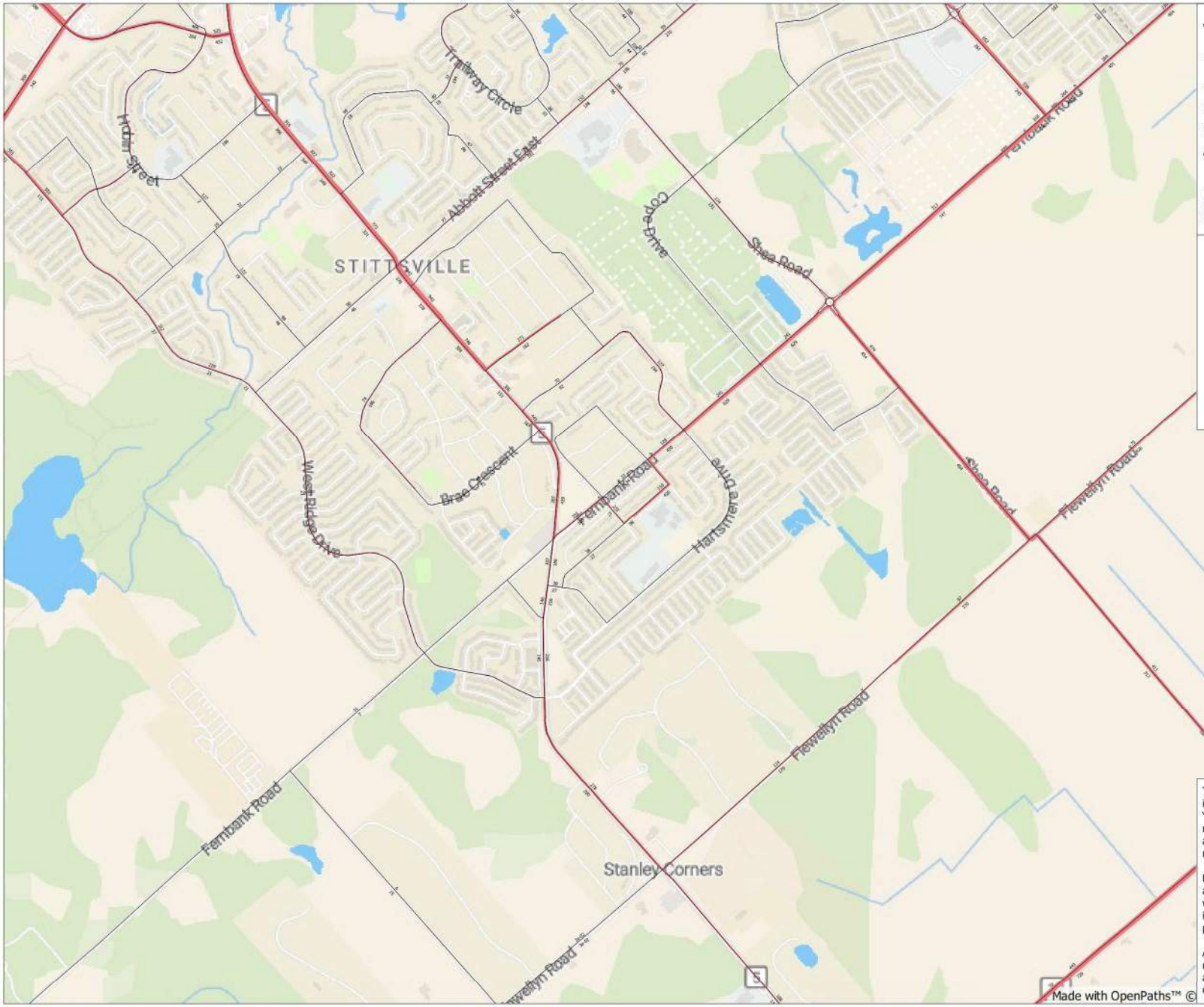
200 400 600 800

N

The TRANS model is continuously refined & maintained, and all information is provided in good faith. However, model outputs are provided "as is", and no warranty or guarantee is provided as to the accuracy, reliability or reasonableness of the results. In using this data, you agree to accept any and all risks arising from any incorrect, incomplete, or misleading information.

Recipients are required to use caution and professional judgement in using and interpreting model outputs. In particular, caution should be used when focusing on a geographically limited area (such as a single road or intersection), as the model is primarily designed to simulate regional-scale phenomena and has been calibrated at a regional level.

As general good practice, it is recommended that the user confirm the network coding within the area of interest, and compare base year forecasts against traffic count data to assess the extent to which the model may be over- or under-estimating the travel demand.



TRANS Regional Model

Version 1.01 - Assigned December, 2024

AM Peak Hour Total Traffic Volume

Stittsville South

2046 Model - Priority Network

N/A

User Initials: TIMW
Plot Prepared: Nov, 2025
EMME Scenario: 46011

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

Distance (m)

200 400 600 800

N

The TRANS model is continuously refined & maintained, and all information is provided in good faith. However, model outputs are provided "as is", and no warranty or guarantee is provided as to the accuracy, reliability or reasonableness of the results. In using this data, you agree to accept any and all risks arising from any incorrect, incomplete, or misleading information.

Recipients are required to use caution and professional judgement in using and interpreting model outputs. In particular, caution should be used when focusing on a geographically limited area (such as a single road or intersection), as the model is primarily designed to simulate regional-scale phenomena and has been calibrated at a regional level.

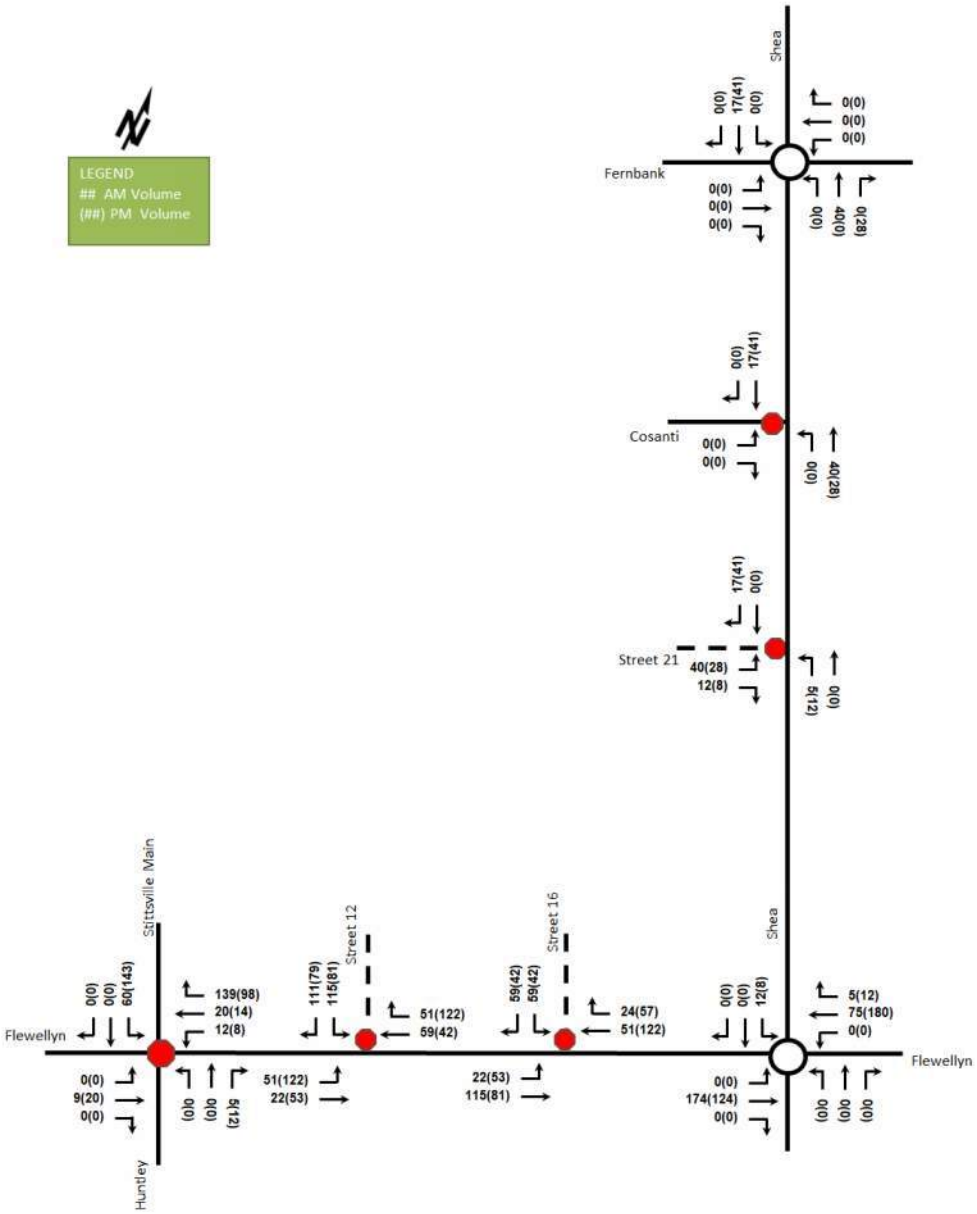
As general good practice, it is recommended that the user confirm the network coding within the area of interest, and compare base year forecasts against traffic count data to assess the extent to which the model may be over- or under-estimating the travel demand.

Appendix G

Background Developments

CGH TRANSPORTATION

5993 & 6115 Flewellyn Road & 6070 Fernbank Road & 59 Aridus Crescent
(CGH, 2025)



Appendix H

Synchro Intersection Worksheets – 2034 Future Background Conditions

CGH TRANSPORTATION

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	259	211	42	96	92
Future Vol, veh/h	42	259	211	42	96	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	259	211	42	96	92

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	253	0	-	0	575	232
Stage 1	-	-	-	-	232	-
Stage 2	-	-	-	-	343	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1312	-	-	-	480	807
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	719	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1312	-	-	-	462	807
Mov Cap-2 Maneuver	-	-	-	-	462	-
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	719	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1312	-	-	-	584
HCM Lane V/C Ratio	0.032	-	-	-	0.322
HCM Control Delay (s)	7.8	0	-	-	14.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.4

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	104	233	328	104	68	65
Future Vol, veh/h	104	233	328	104	68	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	233	328	104	68	65

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	432	0	-	0	821	380
Stage 1	-	-	-	-	380	-
Stage 2	-	-	-	-	441	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1128	-	-	-	344	667
Stage 1	-	-	-	-	691	-
Stage 2	-	-	-	-	648	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1128	-	-	-	308	667
Mov Cap-2 Maneuver	-	-	-	-	308	-
Stage 1	-	-	-	-	618	-
Stage 2	-	-	-	-	648	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	17.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1128	-	-	-	418
HCM Lane V/C Ratio	0.092	-	-	-	0.318
HCM Control Delay (s)	8.5	0	-	-	17.6
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	1.3

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	259	211	42	96	92
Future Vol, veh/h	42	259	211	42	96	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	259	211	42	96	92

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	253	0	-	0	575	232
Stage 1	-	-	-	-	232	-
Stage 2	-	-	-	-	343	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1312	-	-	-	480	807
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	719	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1312	-	-	-	465	807
Mov Cap-2 Maneuver	-	-	-	-	465	-
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	719	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1312	-	-	-	587
HCM Lane V/C Ratio	0.032	-	-	-	0.32
HCM Control Delay (s)	7.8	-	-	-	14
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.4

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	104	233	328	104	68	65
Future Vol, veh/h	104	233	328	104	68	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	233	328	104	68	65

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	432	0	-	0	821	380
Stage 1	-	-	-	-	380	-
Stage 2	-	-	-	-	441	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1128	-	-	-	344	667
Stage 1	-	-	-	-	691	-
Stage 2	-	-	-	-	648	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1128	-	-	-	312	667
Mov Cap-2 Maneuver	-	-	-	-	312	-
Stage 1	-	-	-	-	627	-
Stage 2	-	-	-	-	648	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	17.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1128	-	-	-	422
HCM Lane V/C Ratio	0.092	-	-	-	0.315
HCM Control Delay (s)	8.5	-	-	-	17.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	1.3

Appendix I

All-Way Stop-Control Warrant Calculation

CGH TRANSPORTATION

Warrant for AWSC at Fewlellyn Road at New Collector Road (FB2034)

Volume Criteria		
Major Street 2-Way Hourly Volume (per 8-hr period)	Minor Street 2-Way Hourly Volume (per 8-hr period)	Minor Street Pedestrian 2-Way Hourly Volume (per 8-hr period)
4119	993	0
Control Required		
Total Vehicle Volume	YES	
Minor Street Volume & Pedestrian Volume	NO	
	3-Way Stop	4-Way Stop
Vehicle Split	NO	NO

Warrant for AWSC at Fewlellyn Road at New Collector Road (FT2029)

Volume Criteria		
Major Street 2-Way Hourly Volume (per 8-hr period)	Minor Street 2-Way Hourly Volume (per 8-hr period)	Minor Street Pedestrian 2-Way Hourly Volume (per 8-hr period)
2855	356	0
Control Required		
Total Vehicle Volume	YES	
Minor Street Volume & Pedestrian Volume	NO	
	3-Way Stop	4-Way Stop
Vehicle Split	NO	NO

Warrant for AWSC at Fewlellyn Road at New Collector Road (FT2034)

Volume Criteria		
Major Street 2-Way Hourly Volume (per 8-hr period)	Minor Street 2-Way Hourly Volume (per 8-hr period)	Minor Street Pedestrian 2-Way Hourly Volume (per 8-hr period)
4378	1194	0
Control Required		
Total Vehicle Volume	YES	
Minor Street Volume & Pedestrian Volume	NO	
	3-Way Stop	4-Way Stop
Vehicle Split	NO	NO

Appendix J

Left-Turn Warrant Calculation

CGH TRANSPORTATION

Existing

Design Speed

80 km/h

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing
AM	0	211	0	0	141	0	0	0	0	0	0	0	0.0%	211	141
PM	0	165	0	0	253	0	0	0	0	0	0	0	0.0%	165	253

Future Background 2029

Design Speed

80 km/h

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing
AM	0	227	0	0	151	0	0	0	0	0	0	0	0.0%	227	151
PM	0	177	0	0	274	0	0	0	0	0	0	0	0.0%	177	274

Future Background 2034

Design Speed

80 km/h

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing
AM	42	259	0	0	211	42	0	0	0	96	0	92	14.0%	301	253
PM	104	233	0	0	328	104	0	0	0	68	0	65	30.9%	337	432

Future Total 2029

Design Speed

80 km/h

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing
AM	12	227	0	0	151	17	0	0	0	38	0	29	5.0%	239	168
PM	26	177	0	0	274	34	0	0	0	27	0	21	12.8%	203	308

Future Total 2034

Design Speed

80 km/h

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing
AM	51	263	0	0	221	51	0	0	0	115	0	111	16.2%	314	272
PM	122	241	0	0	335	122	0	0	0	82	0	78	33.6%	363	457

Existing

Design Speed: 50 km/h

Yes

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing
AM	0	211	0	0	141	0	0	0	0	0	0	0	#DIV/0!	0	0
PM	0	165	0	0	253	0	0	0	0	0	0	0	#DIV/0!	0	0

Future Background 2029

Design Speed: 50 km/h

Yes

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing
AM	0	227	0	0	151	0	0	0	0	0	0	0	#DIV/0!	0	0
PM	0	177	0	0	274	0	0	0	0	0	0	0	#DIV/0!	0	0

Future Background 2034

Design Speed: 50 km/h

Yes

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing
AM	42	259	0	0	211	42	0	0	0	96	0	92	51.1%	188	0
PM	104	233	0	0	328	104	0	0	0	68	0	65	51.1%	133	0

Future Total 2029

Design Speed: 50 km/h

Yes

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing
AM	12	227	0	0	151	17	0	0	0	38	0	29	56.7%	67	0
PM	26	177	0	0	274	34	0	0	0	27	0	21	56.3%	48	0

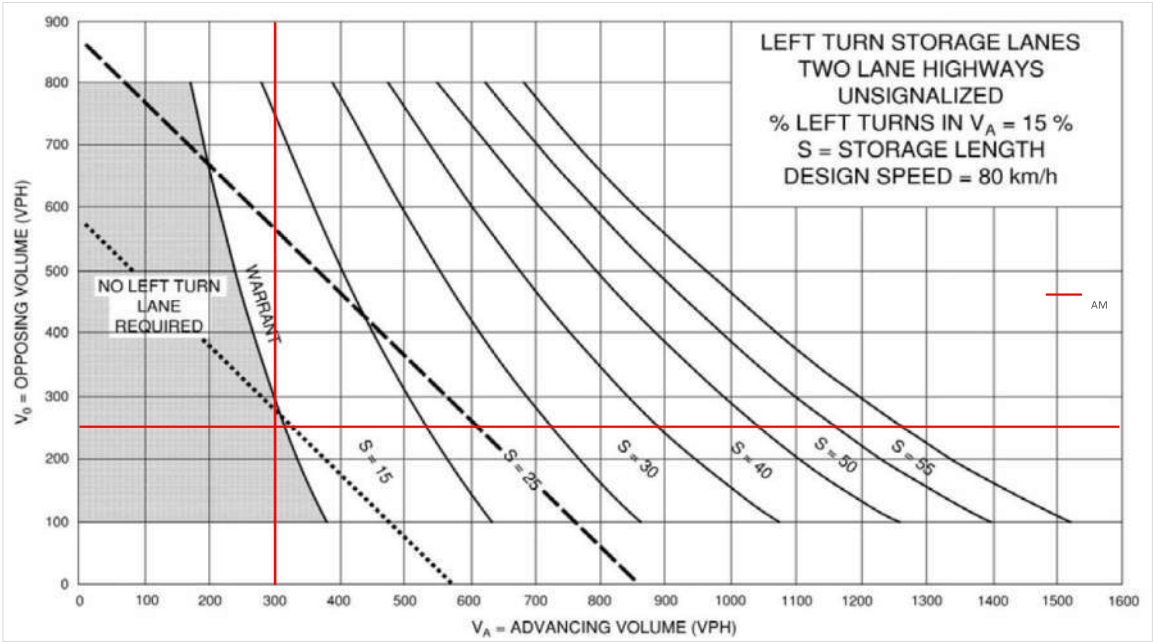
Future Total 2034

Design Speed: 50 km/h

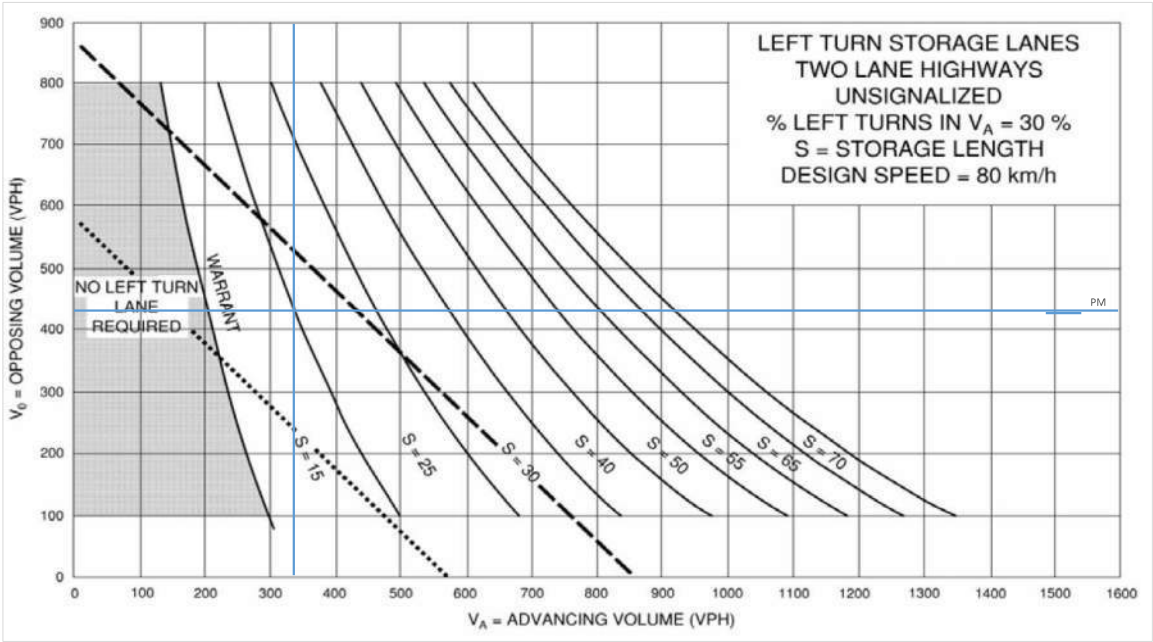
Yes

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing
AM	51	263	0	0	221	51	0	0	0	115	0	111	50.9%	226	0
PM	122	241	0	0	335	122	0	0	0	82	0	78	51.3%	160	0

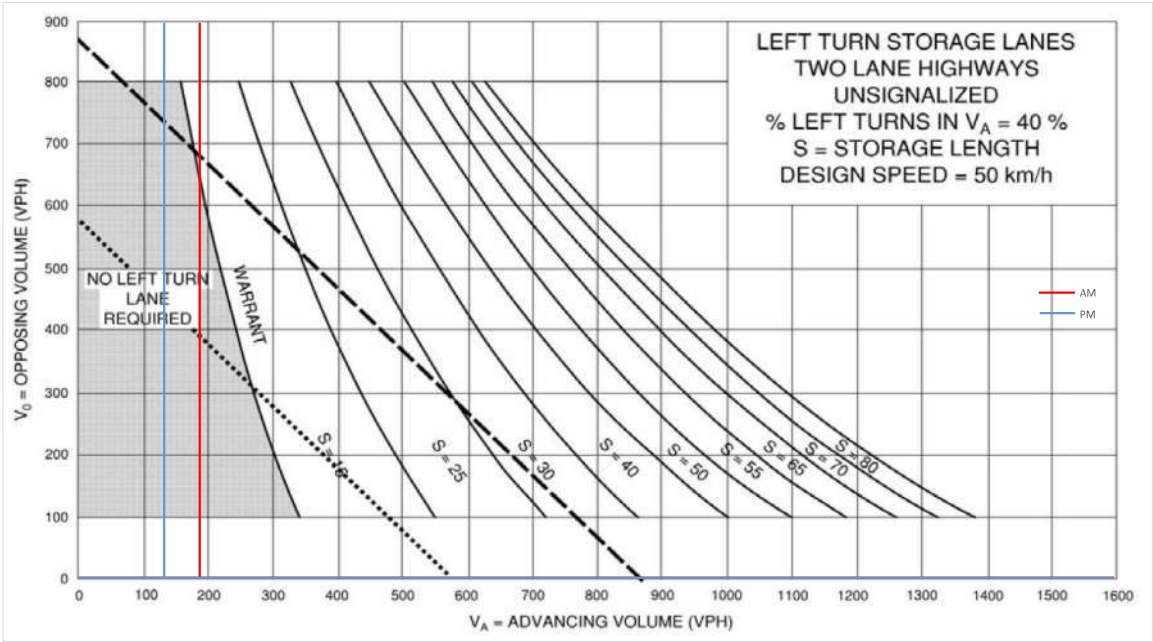
Future Background 2034 - Eastbound Left



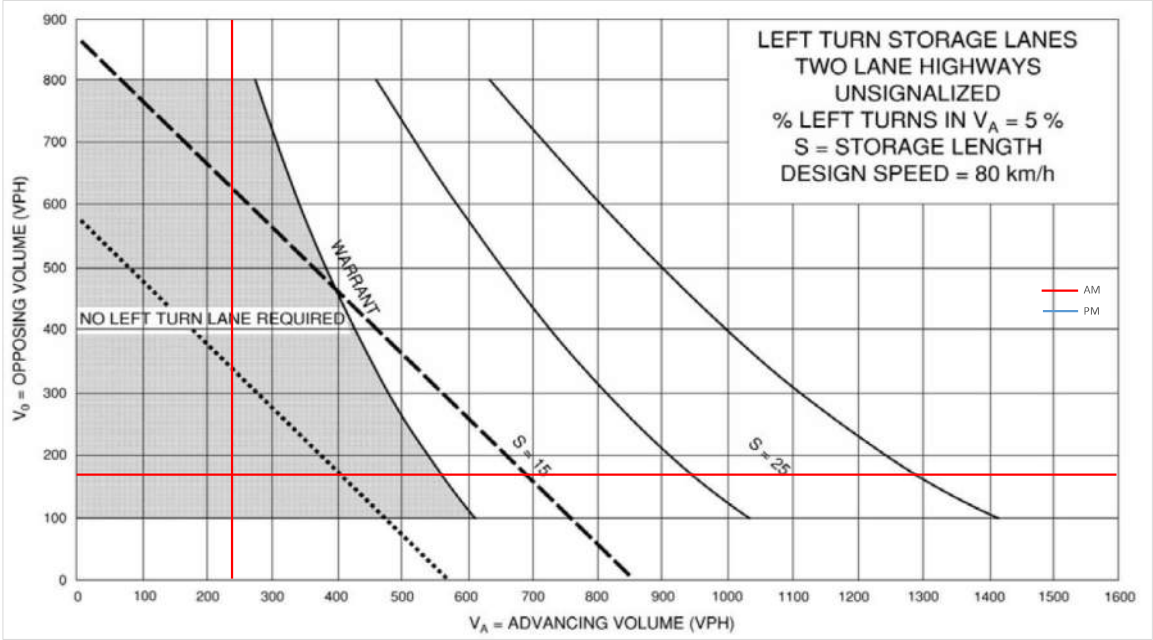
Future Background 2034 - Eastbound Left



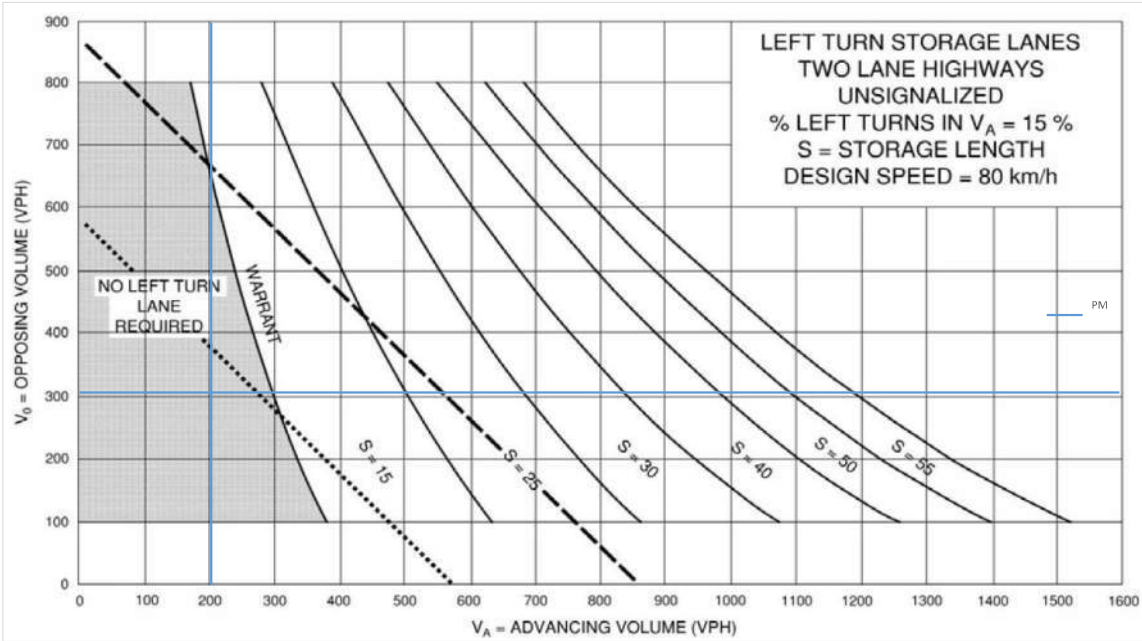
Future Background 2034 - Southbound Left



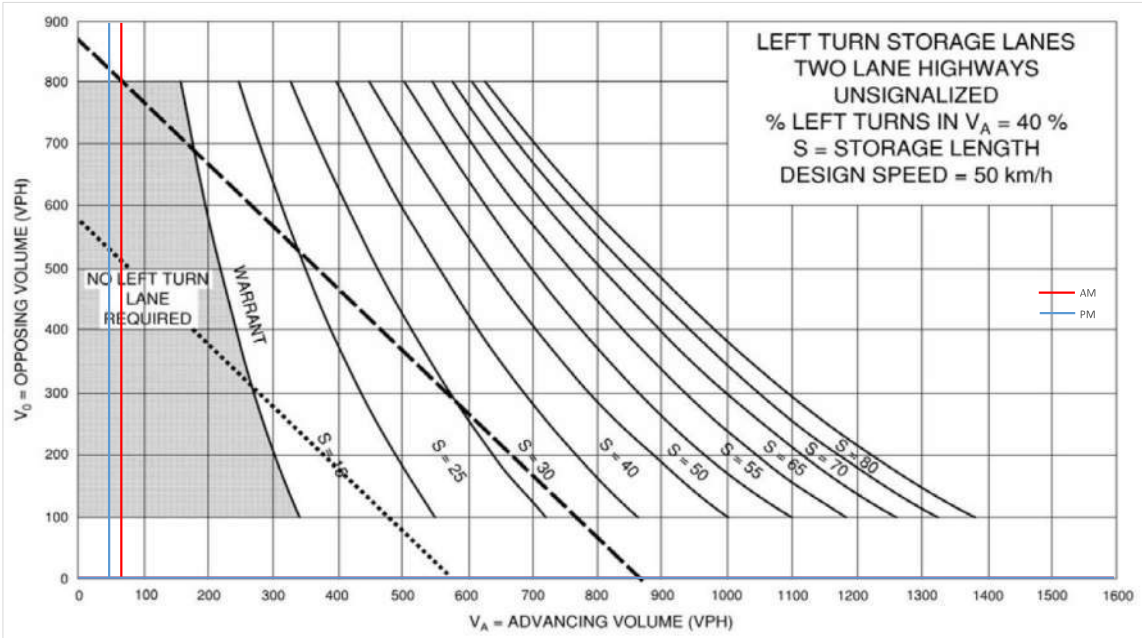
Future Total 2029 - Eastbound Left



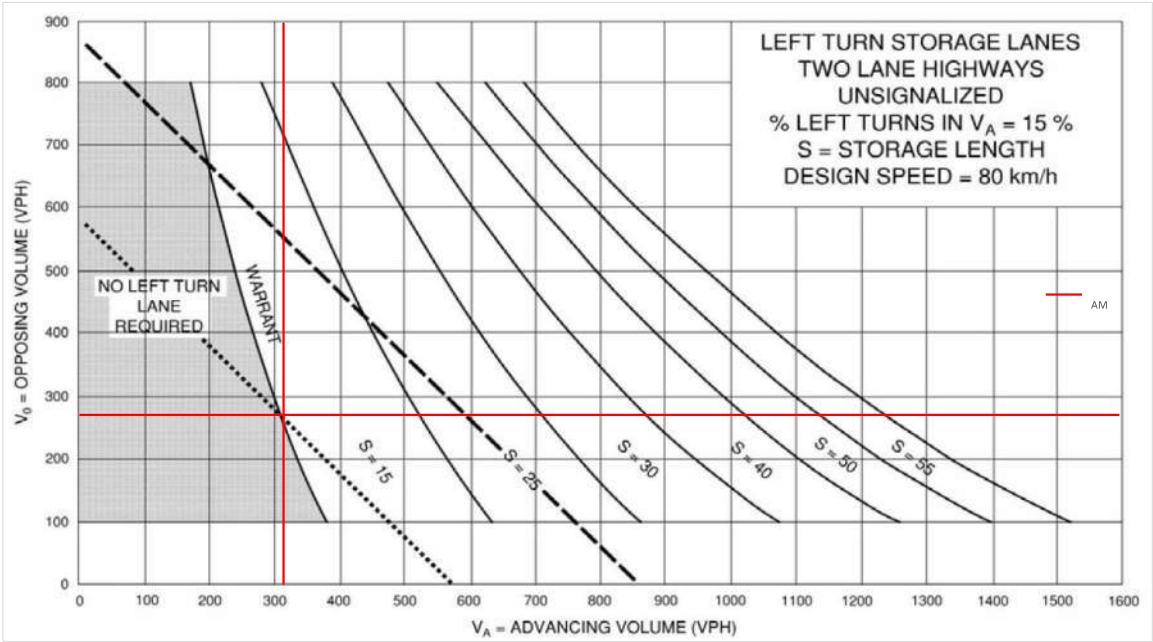
Future Total 2029 - Eastbound Left



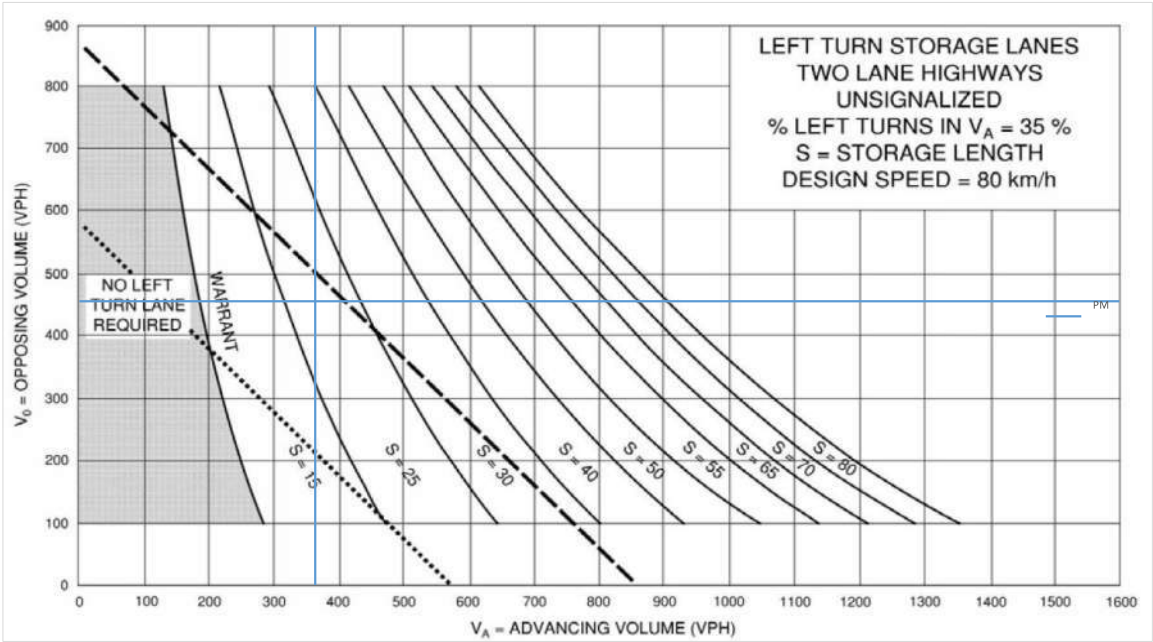
Future Total 2029 - Southbound Left



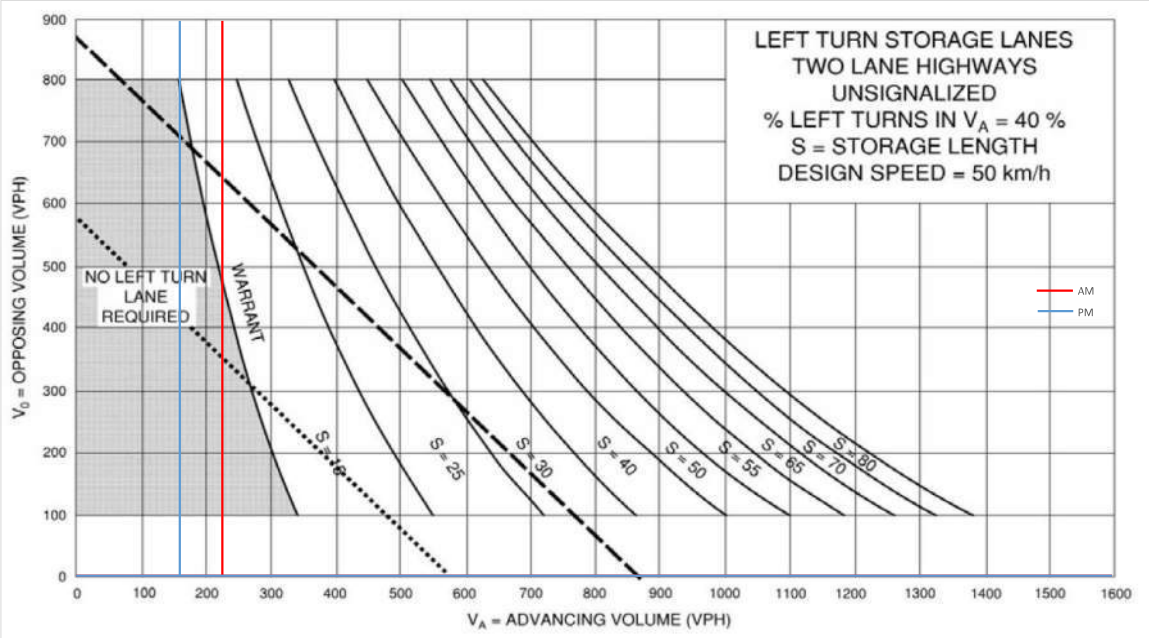
Future Total 2034 - Eastbound Left



Future Total 2034 - Eastbound Left



Future Total 2034 - Southbound Left



Appendix K

Synchro Intersection Worksheets – 2029 Future Total Conditions

CGH TRANSPORTATION

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	227	151	17	38	29
Future Vol, veh/h	12	227	151	17	38	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	227	151	17	38	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	168	0	-	0	411	160
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	251	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1410	-	-	-	597	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	791	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1410	-	-	-	591	885
Mov Cap-2 Maneuver	-	-	-	-	591	-
Stage 1	-	-	-	-	860	-
Stage 2	-	-	-	-	791	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1410	-	-	-	690
HCM Lane V/C Ratio	0.009	-	-	-	0.097
HCM Control Delay (s)	7.6	0	-	-	10.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	26	177	274	34	27	21
Future Vol, veh/h	26	177	274	34	27	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	177	274	34	27	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	308	0	-	0	520	291
Stage 1	-	-	-	-	291	-
Stage 2	-	-	-	-	229	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1253	-	-	-	516	748
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	809	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1253	-	-	-	504	748
Mov Cap-2 Maneuver	-	-	-	-	504	-
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	809	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1253	-	-	-	588
HCM Lane V/C Ratio	0.021	-	-	-	0.082
HCM Control Delay (s)	7.9	0	-	-	11.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Appendix L

Synchro Intersection Worksheets – 2034 Future Total Conditions

CGH TRANSPORTATION

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	51	263	221	51	115	111
Future Vol, veh/h	51	263	221	51	115	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	263	221	51	115	111

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	272	0	-	0	612	247
Stage 1	-	-	-	-	247	-
Stage 2	-	-	-	-	365	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1291	-	-	-	456	792
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	702	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1291	-	-	-	435	792
Mov Cap-2 Maneuver	-	-	-	-	435	-
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	702	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1291	-	-	-	559
HCM Lane V/C Ratio	0.04	-	-	-	0.404
HCM Control Delay (s)	7.9	0	-	-	15.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.9

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	122	241	335	122	82	78
Future Vol, veh/h	122	241	335	122	82	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	122	241	335	122	82	78

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	457	0	-	0	881	396
Stage 1	-	-	-	-	396	-
Stage 2	-	-	-	-	485	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1104	-	-	-	317	653
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	619	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1104	-	-	-	276	653
Mov Cap-2 Maneuver	-	-	-	-	276	-
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	619	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	20.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1104	-	-	-	384
HCM Lane V/C Ratio	0.111	-	-	-	0.417
HCM Control Delay (s)	8.7	0	-	-	20.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	2

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	51	263	221	51	115	111
Future Vol, veh/h	51	263	221	51	115	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	30	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	263	221	51	115	111

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	272	0	-	0	612	247
Stage 1	-	-	-	-	247	-
Stage 2	-	-	-	-	365	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1291	-	-	-	456	792
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	702	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1291	-	-	-	438	792
Mov Cap-2 Maneuver	-	-	-	-	438	-
Stage 1	-	-	-	-	762	-
Stage 2	-	-	-	-	702	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1291	-	-	-	561
HCM Lane V/C Ratio	0.04	-	-	-	0.403
HCM Control Delay (s)	7.9	-	-	-	15.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.9

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	122	241	335	122	82	78
Future Vol, veh/h	122	241	335	122	82	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	30	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	122	241	335	122	82	78

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	457	0	-	0	881	396
Stage 1	-	-	-	-	396	-
Stage 2	-	-	-	-	485	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1104	-	-	-	317	653
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	619	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1104	-	-	-	282	653
Mov Cap-2 Maneuver	-	-	-	-	282	-
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	619	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	20.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1104	-	-	-	390
HCM Lane V/C Ratio	0.111	-	-	-	0.41
HCM Control Delay (s)	8.7	-	-	-	20.5
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	2