

CERTIFICATION FORM FOR TIA STUDY PM

TRANSPORTATION IMPACT ASSESSMENT REPORTS

On 14 June 2017, the Council of the City of Ottawa adopted new Transportation Impact Assessment (TIA) Guidelines. In adopting the guidelines, Council established a requirement for those preparing and delivering transportation impact assessments and reports to sign a letter of certification.

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 s/he meets 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;
- 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 licensed¹ or registered² professional in good standing, whose field of expertise is either
 - Transportation engineering
 - Transportation planning

^{1,2} 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.

Dated at Ottawa this 19 day of January, 2023
(City)

Name: Kimberley Hunton, P. Eng.

Professional Title: Project Manager, Transportation Planning

Signature of individual certifier that they meet the above criteria

OFFICE CONTACT INFORMATION

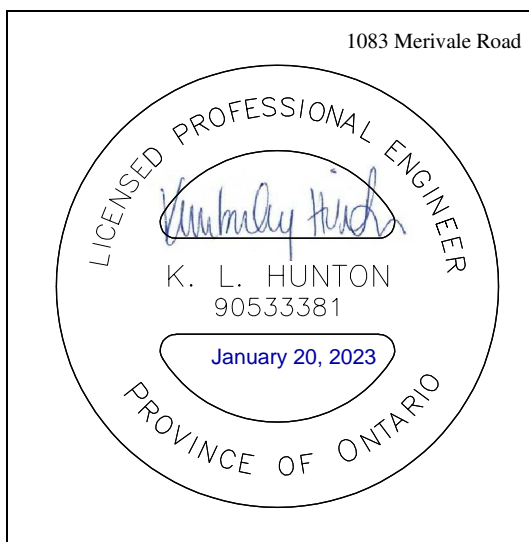
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STAMP





MEMO

TO: Josiane Gervais, P.Eng – Project Manager, Infrastructure Approvals
FROM: Kimberley Hunton, P.Eng.
SUBJECT: 1083 Merivale Road – Transportation Safety Memo
DATE: January 19, 2022

INTRODUCTION

This transportation safety memo has been prepared in support of the Site Plan Control Application for the proposed development at 1083 Merivale Road. The site currently includes a vacated single-family detached house. The proposed redevelopment of the site is for the construction of a multi-storey residential care facility with 53 units, cafeteria, kitchen and programming space as well as a basement facility to be utilized by the Shepherds of Good Hope.

In accordance with the City of Ottawa’s 2017 Transportation Impact Assessment (TIA) Guidelines, a screening form was prepared and submitted to the City for their review, see **Appendix A**. The screening form identified a TIA would be required due to the safety trigger being met. As the trip generation trigger was not met and following discussions with the City of Ottawa TPM staff, it was indicated that a full TIA would not be required and that the requirements for the TIA would be met with the preparation of a transportation safety memo assessing two primary safety concerns: the collision history at the Merivale/Kirkwood intersection, and the access design of the driveway on Merivale Road.

EXISTING CONDITIONS

The proposed development, shown in **Figure 1**, is located on Merivale Road at the Kirkwood Avenue intersection. The development will share a parking lot with the existing building at 1095 Merivale Road that is accessible by Emperor Avenue. Additionally, the development will be accessible by an existing driveway on Merivale Road.



Figure 1: Location of Proposed Development (Source: Google Maps)



The access on Merivale Road is less than 5m south of the stop line on the southern leg of the Merivale/Kirkwood intersection. The access is a right-in/right-out, does not connect to the parking lot on Emperor Avenue and will be used by delivery trucks and as a fire route only. It is anticipated that up to two food/supply deliveries will be made per day, generally between 8 a.m. and noon. The site plan for the proposed development can be found in **Appendix B**.

SAFETY CONCERNS

COLLISION HISTORY

A review of publicly available collision data indicated that there were 36 collisions at the Merivale/Kirkwood intersection over a 5-year period¹. The detailed collision history from 2015-2019 was acquired from the City of Ottawa for additional analysis. Some key findings include:

- The maximum number of collisions in a given year was nine (2016 and 2019) which on an annual basis was not enough to identify an upward or downward trend in collision rate.
- There were no fatal collisions.
- 83% of the recorded collisions resulted in property damage only.
- Nearly 70% (25 of 36) collisions occurred during daylight.
- Less than 30% (10 of 36) collisions occurred during the anticipated delivery window of 8 a.m. to noon.
- The most common type of collision was as a result of a turning movement (36%).
- Rear end collisions accounted for 22% and sideswipes for 19%.
- Nearly half of the collisions (17 of 36) occurred in the intersection between opposing streams of traffic.
- Only eight collisions occurred on the south leg of the intersection.
- Of the eight collisions on the south leg of the intersection, five occurred in the NBL turning lane (including rear-end collisions, sideswipes and single motor vehicle collisions)

The detailed summary of collisions from 2015-2019 and additional analysis tables are attached as **Appendix C**.

The results of the collision history analysis indicate that there is no consistent pattern to the collisions at the intersection, that the collision severity is relatively low and that there has been no growth in the frequency of collisions from 2015-2019. Additionally, only a small portion of collisions occurred on the south leg of the intersection with most occurring in the NBL turning lane.

ACCESS DESIGN

The proposed development and its existing driveway are located just south (less than 5m) of the Merivale/Kirkwood intersection. The truck loading area, as shown on the proposed site plan, will be accessible via the Merivale driveway. Additionally, the Merivale Road access would be a fire access route. An AutoTurn analysis for the anticipated delivery vehicles (MSU) and Fire Trucks was carried out is attached as **Appendix D**. The MSU is able to safely turn around within the site thereby not requiring any reverse movements within the public right of way. The fire truck is capable of turning into the site; the fire access route is less than 90m long on the site and therefore per Ontario Building Code (Section 3.2.5.6), there is no requirement for the fire truck to be able to turn around within the site. A fire truck on departure would reverse back out to Merivale Road, however this is done with flagging operations by the firefighters.

Finally, the 2017 Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads requires a sight distance for right-turns from a minor road of 120 m for a single-unit vehicle along a road with a design speed of 50 km/h. From our desktop review of the access, see **Figure 2**, there appear to be no sightline issues.

¹ <https://maps.bikeottawa.ca/collisions>



Figure 2: Desktop Sightline Review

CONCLUSION

As requested by the City of Ottawa, a transportation safety analysis was conducted for the proposed development at 1083 Merivale Road. Both the collision history and the Merivale Road access were analyzed for the site. The collision history indicated no patterns of growth or repetition at the Merivale/Kirkwood intersection. Moreover, only eight collisions over a 5-year period occurred on the south leg of the intersection, where the driveway for the proposed development is located, with five of those collisions occurring in the NBL turning lane.


The AutoTurn analysis indicated that both MSUs and Fire Trucks will be able to manoeuvre the right-in/right-out access along Merivale Road without issue. The desktop sightline review indicated that there are no obstructions within the line of sight for exiting trucks turning back on to Merivale Road.

Kimberley Hunton, P.Eng.
 Manager, Transportation Planning

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APPENDIX

A SCREENING FORM



City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	1083 Merivale Road
Description of Location	Located at the intersection of Merivale Road and Kirkwood Avenue
Land Use Classification	Residential Care Facility
Development Size (units)	70 units
Development Size (m ²)	726
Number of Accesses and Locations	Two (both existing): 1 on Merivale Road and 1 on Emperor Avenue
Phase of Development	1
Buildout Year	2024

If available, please attach a sketch of the development or site plan to this form.

2. Trip Generation Trigger

Considering the Development’s Land Use type and Size (as filled out in the previous section), please refer to the Trip Generation Trigger checks below.

Land Use Type	Minimum Development Size
Single-family homes	40 units
Townhomes or apartments	90 units
Office	3,500 m ²
Industrial	5,000 m ²
Fast-food restaurant or coffee shop	100 m ²
Destination retail	1,000 m ²
Gas station or convenience market	75 m ²

** If the development has a land use type other than what is presented in the table above, estimates of person-trip generation may be made based on average trip generation characteristics represented in the current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.*

If the proposed development size is greater than the sizes identified above, the Trip Generation Trigger is satisfied.

ITE LUC 254 (Congregate Care Facility): Less than 20 peak hour trips

3. Location Triggers

	Yes	No
Does the development propose a new driveway to a boundary street that is designated as part of the City’s Transit Priority, Rapid Transit or Spine Bicycle Networks?		X
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?*		X

*DPA and TOD are identified in the City of Ottawa Official Plan (DPA in Section 2.5.1 and Schedules A and B; TOD in Annex 6). See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA).

If any of the above questions were answered with ‘Yes,’ the Location Trigger is satisfied.

4. Safety Triggers

	Yes	No
Are posted speed limits on a boundary street are 80 km/hr or greater?		X
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?		X
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)?		X
Is the proposed driveway within auxiliary lanes of an intersection?		X
Does the proposed driveway make use of an existing median break that serves an existing site?		X
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?		X
Does the development include a drive-thru facility?		X

If any of the above questions were answered with ‘Yes,’ the Safety Trigger is satisfied.

5. Summary

	Yes	No
Does the development satisfy the Trip Generation Trigger?		X
Does the development satisfy the Location Trigger?		X
Does the development satisfy the Safety Trigger?		X

If none of the triggers are satisfied, the TIA Study is complete. If one or more of the triggers is satisfied, the TIA Study must continue into the next stage (Screening and Scoping).

APPENDIX

B SITE PLAN



STRUCTURAL ENGINEER
 name
 address
 phone
 email

MECHANICAL ENGINEER
 name
 address
 phone
 email

ELECTRICAL ENGINEER
 name
 address
 phone
 email

LANDSCAPE ARCHITECT
 name
 address
 phone
 email

STAMP

REV DATE ISSUE

NOTES

1. OWNERSHIP OF THE COPYRIGHT OF THE DESIGN AND THE WORKS EXECUTED FROM THE DESIGN REMAINS WITH CSV ARCHITECTS, AND MAY NOT BE REPRODUCED IN ANY FORM WITHOUT THE WRITTEN CONSENT OF CSV ARCHITECTS.
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3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER PROJECT DRAWINGS AND SPECIFICATIONS.
4. DO NOT SCALE DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY DIMENSIONS ON SITE.
5. ALL WORK SHALL BE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE AND ALL SUPPLEMENTS AND APPLICABLE MUNICIPAL REGULATIONS.

CLIENT

SHEPHERDS OF GOOD HOPE
 OTTAWA
 ONTARIO, CANADA

PROJECT

SGH 1083 MERIVALE

1083 Merivale Road
 Ottawa, ON K1Z 6A9

TITLE

SITE PLAN

PROJECT NO: 2021-0111
 DRAWN: Author
 APPROVED: Approver
 SCALE: As indicated
 DATE PRINTED: 2022-10-18 1:29:13 PM

REV DRAWING NO.

SITE PLAN GENERAL NOTES:

1. ALL GENERAL SITE INFORMATION AND CONDITIONS COMPILED FROM EXISTING PLANS AND SURVEYS
2. DO NOT SCALE THIS DRAWING
3. REPORT ANY DISCREPANCIES PRIOR TO COMMENCING WORK. NO RESPONSIBILITY IS BORN BY THE CONSULTANT FOR UNKNOWN SUBSURFACE CONDITIONS
4. CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY ERRORS AND/OR OMISSIONS TO THE CONSULTANT
5. REINSTATE ALL AREAS AND ITEMS DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES TO THE SATISFACTION OF THE CONSULTANT
6. CONTRACTOR TO LAYOUT PLANTING BEDS, PATHWAYS ETC. TO APPROVAL OF CONSULTANT PRIOR TO ANY JOB EXCAVATION
7. THE ACCURACY OF THE POSITION OF UTILITIES IS NOT GUARANTEED - CONTRACTOR TO VERIFY PRIOR TO EXCAVATION
8. INDIVIDUAL UTILITY COMPANY MUST BE CONTACTED FOR CONFIRMATION OF UTILITY EXISTENCE AND LOCATION PRIOR TO DIGGING
9. ALL DISTURBED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE NOTED

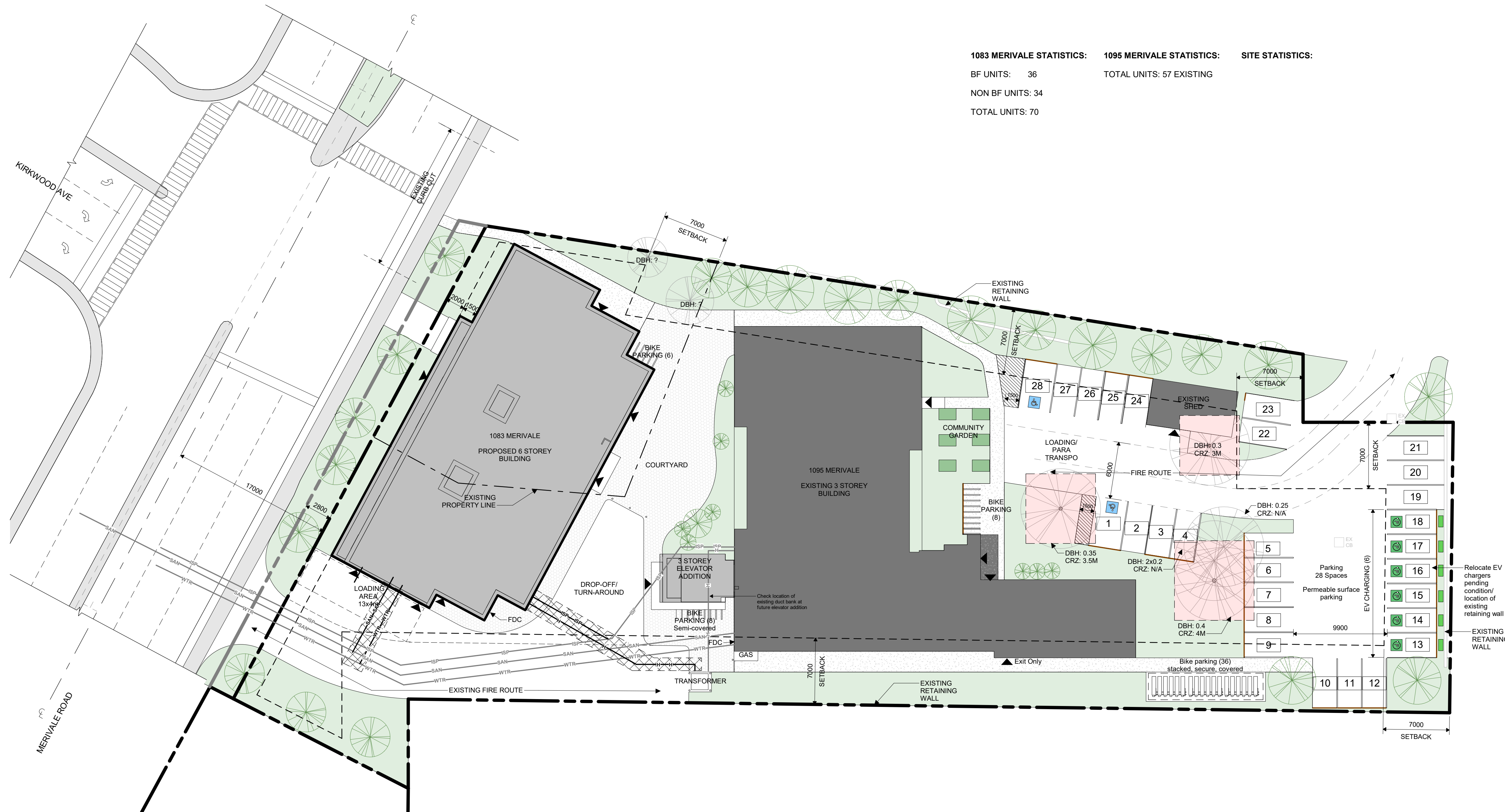
SITE PLAN KEYNOTES:

- # SAMPLE TEXT
- # SAMPLE TEXT
- # SAMPLE TEXT
- # SAMPLE TEXT
- # SAMPLE TEXT

SITE PLAN LEGEND:

- EXISTING
- ASPHALT PAVING
- GRASS
- CONCRETE SIDEWALK
- CONCRETE PAD
- MULCH/PLANTING
- GRAVEL/RIVERSTONE/MAINTENANCE STRIP
- STONE DUST/SAND
- PAVER TYPE 1
- PAVER TYPE 2
- EXISTING MATERIAL 1
- EXISTING MATERIAL 2
- EMERGENCY EXIT
- SERVICE DOORS
- BUILDING MAIN ENTRANCE
- PROPERTY LINE
- FENCE PER LANDSCAPE
- DOMESTIC WATER
- SANITARY
- STORM
- ELECTRICAL SERVICE (BELOW GRADE)
- GAS
- INTERNET SERVICE PROVIDER
- CATCH BASIN
- CATCH BASIN
- LIGHT STANDARD
- LIGHT STANDARD EXISTING
- FIRE HYDRANT
- FIRE HYDRANT EXISTING
- MANHOLE
- MANHOLE EXISTING
- UTILITY POLE
- UTILITY POLE EXISTING
- CUSTOM SYMBOL
- CUSTOM SYMBOL EXISTING
- SIAMESE CONNECTION
- DROPPED CURB
- TREE
- SHRUB

1083 MERIVALE STATISTICS: **1095 MERIVALE STATISTICS:** **SITE STATISTICS:**
 BF UNITS: 36 TOTAL UNITS: 57 EXISTING
 NON BF UNITS: 34
 TOTAL UNITS: 70




ZONING PROVISION	REQUIRED	PROVIDED	PARKING QUEING + LOADING	REQUIRED	PROVIDED	LEGAL DESCRIPTION
MIN. LOT WIDTH			RESIDENTIAL SPACES			
MIN. LOT AREA			VISITOR SPACES			
MIN. FRONT YARD SETBACK			ACCESSIBLE PARKING			
MIN. CORNER YARD SETBACK			BICYCLE PARKING			
MIN. REAR YARD SETBACK			REFUSE COLLECTION			
MIN. INTERIOR YARD SETBACK			GARBAGE COLLECTION			
MAX. HEIGHT						
AMENITY AREA						
LANDSCAPED AREA						

LEGAL DESCRIPTION	MUNICIPAL ADDRESS	SITE AREA	BUILDING AREA	GROSS FLOOR AREA	BUILDING HEIGHT	ZONE	SCHEDULE 1:	SCHEDULE 2:
	1083 MERIVALE ROAD, OTTAWA, ON K1Z 6A9	_____m ²	726 m ²	_____m ²	_____m 6 STOREYS		AREA _____m ²	AREA _____m ²

APPENDIX

C COLLISION ANALYSIS



Vehicle Collision Classification

Count of Accident Time	Column Labels					
Row Labels	2015	2016	2017	2018	2019	Grand Total
02 - Non-fatal injury	1	1	1	2	1	6
03 - P.D. only	5	8	3	6	8	30
Grand Total	6	9	4	8	9	36

Weather Conditions

Count of Location	Column Labels					
Row Labels	2015	2016	2017	2018	2019	Grand Total
01 - Clear	5	9	3	5	8	30
02 - Rain			1	1	1	3
03 - Snow	1			2		3
Grand Total	6	9	4	8	9	36

Light Conditions

Count of Accident Time	Column Labels					
Row Labels	2015	2016	2017	2018	2019	Grand Total
01 - Daylight	4	5	2	7	7	25
05 - Dusk			1			1
07 - Dark	2	4	1	1	2	10
Grand Total	6	9	4	8	9	36

Initial Impact

Count of Accident Time	Column Labels					
Row Labels	2015	2016	2017	2018	2019	Grand Total
02 - Angle	1	1	1	1		4
03 - Rear end	1	5		2		8
04 - Sideswipe	2		1	2	2	7
05 - Turning movement	1	1	2	3	6	13
07 - SMV other	1	2			1	4
Grand Total	6	9	4	8	9	36

Driver Action (Driver 1 Action as primary label and Driver 2 Action included as sub-label)

Count of Accident Time	Column Labels					
Row Labels	2015	2016	2017	2018	2019	Grand Total
01 - Driving properly	5	7	4	6	8	30
00 - Unknown	1		1	1		3
01 - Driving properly				1		1
02 - Following too close		2				2
04 - Speed too fast for condition		1				1
06 - Improper turn	1	1	1	2	1	6
07 - Disobeyed traffic control					1	1
08 - Failed to yield right-of-way	1	1	1		5	8
10 - Lost control	1	1		2		4
12 - Improper lane change	1		1		1	3
99 - Other		1				1
02 - Following too close				1		1
99 - Other				1		1
08 - Failed to yield right-of-way				1		1
06 - Improper turn				1		1
(blank)	1	2			1	4
01 - Driving properly	1					1
08 - Failed to yield right-of-way					1	1
10 - Lost control		2				2
Grand Total	6	9	4	8	9	36

List of Collisions on South Leg of Merivale/Kirkwood Intersection

Year	Date	Vehicle 1 Type	Vehicle 2 Type	Env. Condition	Light	Classification Of Accident	Initial Impact Type	Vehicle 1 Manoeuvre	Apparent Driver 1 Action	Vehicle 2 Manoeuvre	Apparent Driver 2 Action
2015	2015-01-29	01 - Automobile, station wagon	04 - Passenger van	03 - Snow	07 - Dark	03 - P.D. only	04 - Sideswipe	07 - Changing lanes	12 - Improper lane change	04 - Turning left	01 - Driving properly
2015	2015-09-01	01 - Automobile, station wagon	-	01 - Clear	01 - Daylight	03 - P.D. only	07 - SMV other	04 - Turning left	01 - Driving properly	-	-
2016	2016-02-17	01 - Automobile, station wagon	-	01 - Clear	07 - Dark	03 - P.D. only	07 - SMV other	01 - Going ahead	10 - Lost control	-	-
2016	2016-02-17	01 - Automobile, station wagon	01 - Automobile, station wagon	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	04 - Turning left	04 - Speed too fast for condition	04 - Turning left	01 - Driving properly
2016	2016-04-30	01 - Automobile, station wagon	01 - Automobile, station wagon	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	04 - Turning left	10 - Lost control	04 - Turning left	01 - Driving properly
2016	2016-10-15	13 - Truck - tractor	01 - Automobile, station wagon	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	01 - Going ahead	02 - Following too close	01 - Going ahead	01 - Driving properly
2018	2018-04-04	05 - Pick-up truck	01 - Automobile, station wagon	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	02 - Slowing or stopping	10 - Lost control	01 - Going ahead	01 - Driving properly
2019	2019-04-16	01 - Automobile, station wagon	-	01 - Clear	01 - Daylight	02 - Non-fatal injury	07 - SMV other	04 - Turning left	08 - Failed to yield right-of-way	-	-



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: KIRKWOOD AVE @ MERIVALE RD

Traffic Control: Traffic signal

Total Collisions: 36

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jan-29, Thu,21:10	Snow	Sideswipe	P.D. only	Loose snow	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Passenger van	Other motor vehicle	
2015-Feb-05, Thu,08:27	Clear	Sideswipe	P.D. only	Slush	East	Turning right	Truck and trailer	Other motor vehicle	0
					East	Turning right	Passenger van	Other motor vehicle	
2015-Apr-30, Thu,10:14	Clear	Angle	P.D. only	Dry	West	Going ahead	Bicycle	Other motor vehicle	0
					North	Turning left	Passenger van	Cyclist	
2015-Jul-27, Mon,08:55	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Aug-17, Mon,21:34	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Motorcycle	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Sep-01, Tue,11:21	Clear	SMV other	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other	0
2016-Jan-27, Wed,11:48	Clear	Turning movement	Non-fatal injury	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2016-Feb-04, Thu,07:43	Clear	SMV other	P.D. only	Wet	South	Going ahead	Pick-up truck	Skidding/sliding	0
2016-Feb-17, Wed,18:50	Clear	Rear end	P.D. only	Slush	North	Turning left	Automobile, station wagon	Skidding/sliding	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Feb-17, Wed,20:14	Clear	SMV other	P.D. only	Ice	North	Going ahead	Automobile, station wagon	Pole (utility, power)	0
2016-Apr-30, Sat,19:32	Clear	Rear end	P.D. only	Dry	North	Turning left	Automobile, station wagon	Skidding/sliding	0
					North	Turning left	Automobile, station wagon	Skidding/sliding	
2016-Jul-26, Tue,16:08	Clear	Angle	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Sep-24, Sat,13:49	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: KIRKWOOD AVE @ MERIVALE RD

Traffic Control: Traffic signal

Total Collisions: 36

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Oct-15, Sat,14:50	Clear	Rear end	P.D. only	Dry	North	Going ahead	Truck - tractor	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Dec-20, Tue,20:15	Clear	Rear end	P.D. only	Wet	East	Going ahead	Snow plow	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jan-06, Fri,10:31	Clear	Sideswipe	P.D. only	Packed snow	East	Changing lanes	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2017-Apr-04, Tue,22:22	Rain	Turning movement	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Apr-24, Mon,15:30	Clear	Angle	P.D. only	Dry	South	Unknown	Unknown	Other motor vehicle	0
					East	Turning right	Pick-up truck	Other motor vehicle	
2017-Aug-25, Fri,19:17	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jan-15, Mon,09:44	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jan-26, Fri,11:24	Clear	Sideswipe	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Truck - tractor	Other motor vehicle	
2018-Jan-31, Wed,18:06	Snow	Turning movement	Non-fatal injury	Loose snow	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Feb-06, Tue,14:16	Snow	Angle	P.D. only	Loose snow	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: KIRKWOOD AVE @ MERIVALE RD

Traffic Control: Traffic signal

Total Collisions: 36

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Apr-04, Wed,11:55	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Unknown	Other motor vehicle	
2018-Apr-10, Tue,13:30	Clear	Sideswipe	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Jul-13, Fri,16:06	Clear	Turning movement	P.D. only	Dry	North	Turning left	Unknown	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2018-Sep-18, Tue,15:54	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Apr-16, Tue,11:30	Clear	SMV other	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Pedestrian	1
2019-May-07, Tue,14:50	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2019-May-16, Thu,12:18	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-13, Fri,16:10	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-23, Mon,12:30	Clear	Sideswipe	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Oct-03, Thu,17:28	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-01, Sun,17:10	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-06, Fri,21:27	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

Location: KIRKWOOD AVE @ MERIVALE RD

Traffic Control: Traffic signal

Total Collisions: 36

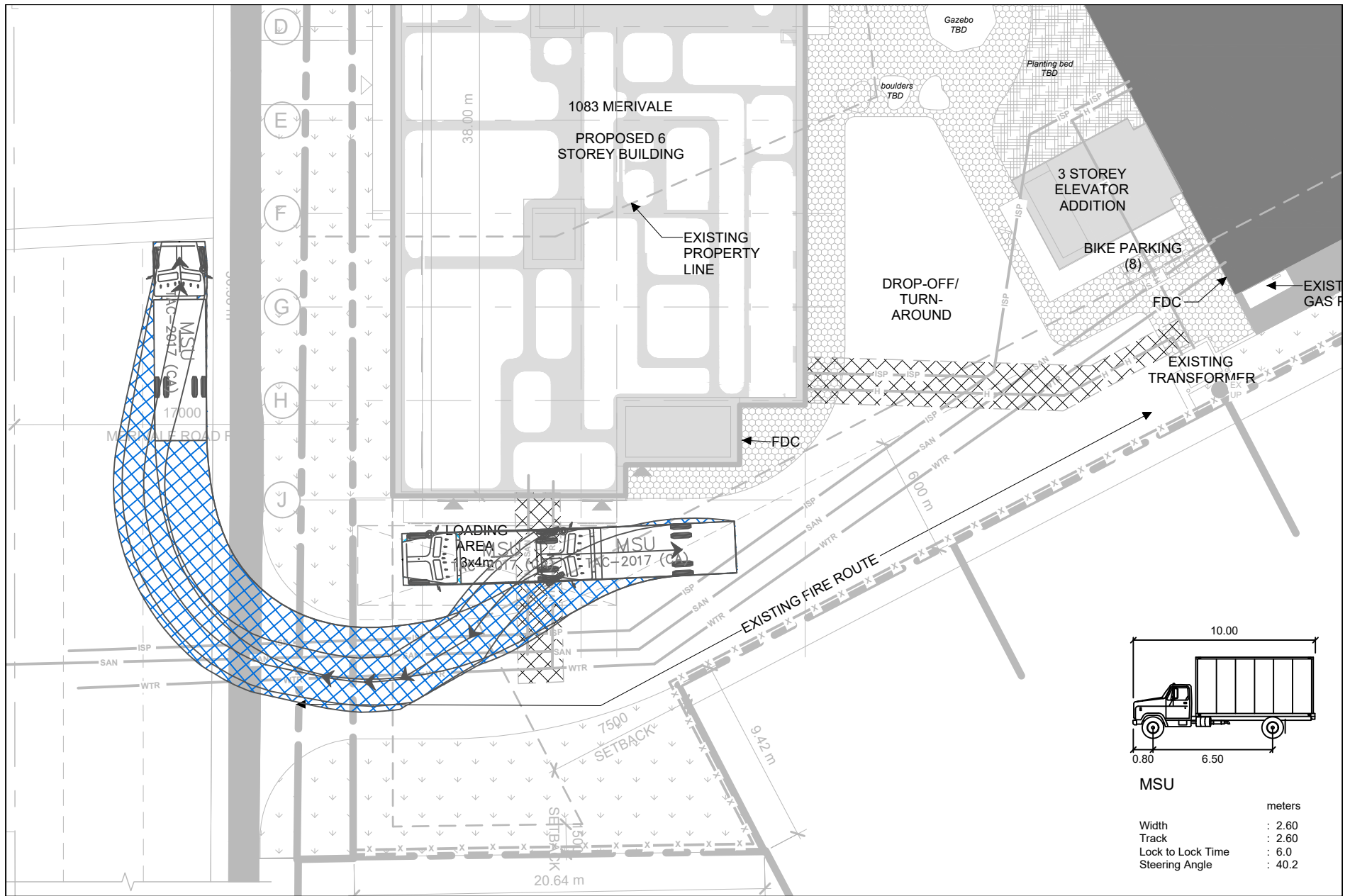
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Dec-14, Sat, 13:30	Rain	Turning movement	P.D. only	Wet	North	Turning left	Delivery van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

APPENDIX

D AUTOTURN ANALYSIS



C:\Users\cajpo70918\WSP_03651221-08265-00 - 14_10 Transp_Planning\04 Technical\01 Analysis\AutoTurn



Date Site Plan Received: 2022-11-10

Scale: NTS

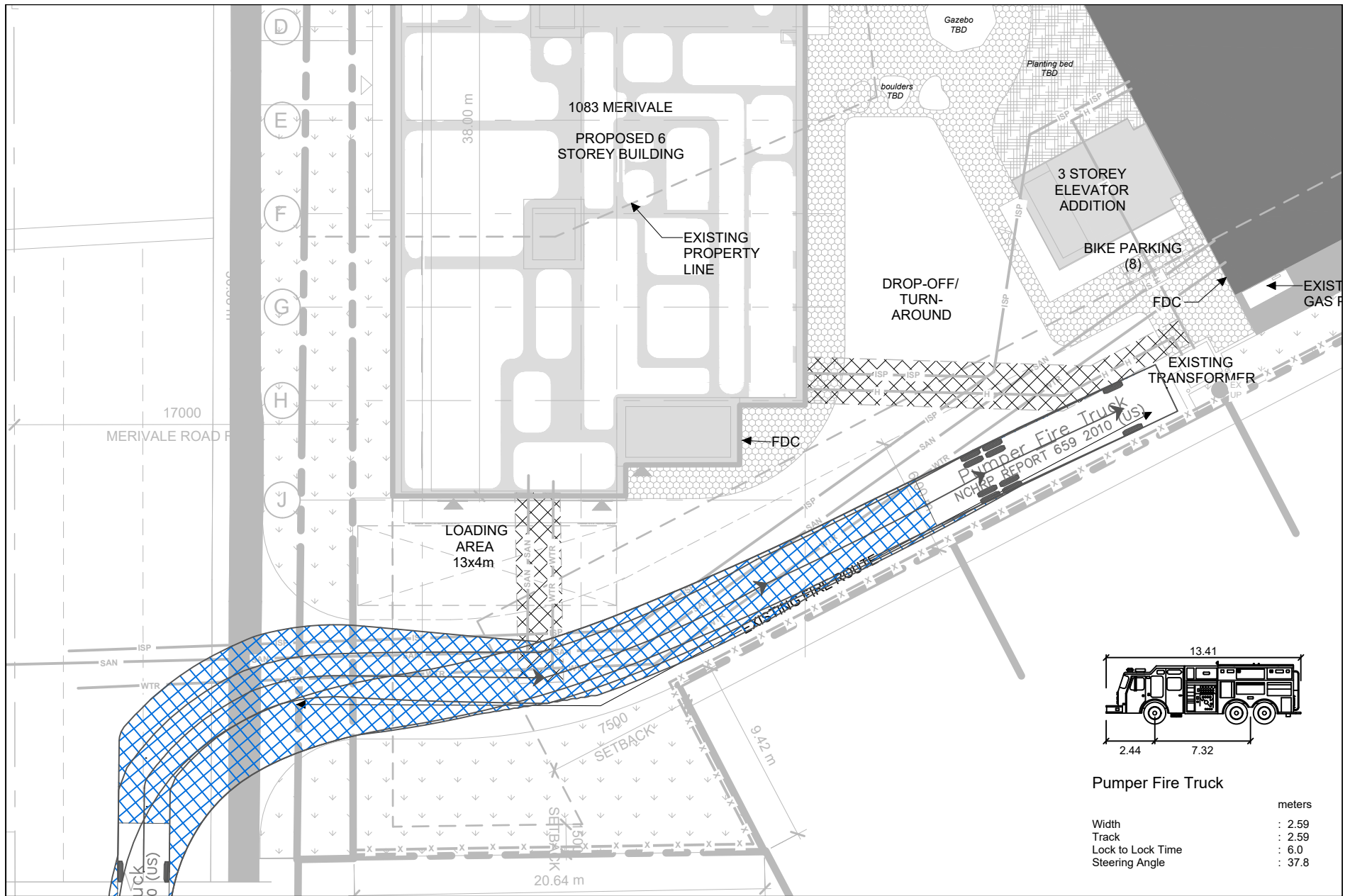


Appendix D - Figure 2

MSU (Outbound) Turning Model

1083 Merivale Road - Transportation Safety Review

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Date Site Plan Received: 2022-11-10

Scale: NTS



Appendix D - Figure 3 Fire Truck (Inbound) Turning Model 1083 Merivale Road - Transportation Safety Review