

September 2, 2022

County of Lanark  
99 Christie Lake Road  
Perth, ON K7H 3C6

**Attention: Julie Stewart  
Planner**

Dear Ms. Stewart:

**Reference: Transportation Impact Statement  
Appleton Shores  
Part of Lot 4, Concession 10  
Geographic Township of Ramsay  
Municipality of Mississippi Mills, County of Lanark  
Our File No.: 114165**

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This letter is provided as part of a submission package in support of the Draft Plan of Subdivision application for Appleton Shores, located west of the Wilson Street/Old Mill Lane intersection and southwest of the Mississippi River in Appleton. This letter provides a description of the development proposal, a summary of the existing conditions, and an estimate of the projected site traffic during the weekday AM and PM peaks. The internal road pattern, access configuration, and provisions for non-auto modes of transportation are also assessed.

## **1.0 PROPOSED DEVELOPMENT**

The subject site has an area of approximately 7.1 hectares. The proposed development consists of fourteen (14) rural estate lots. The development includes two internal roadways (Street 1 and an extension of Apple Street). Two full movement accesses are proposed. The northerly access is north of the Wilson Street/Old Mill Lane intersection. The southerly access is an extension of Apple Street. The Concept Plan is included in **Appendix A**.

## **2.0 EXISTING CONDITIONS**

### **2.1 Roadways**

Wilson Street (County Road 11) is a rural two-lane collector road with gravel shoulders. The section of Wilson Street adjacent to the proposed subdivision has a posted speed limit of 40kph, with an advisory speed of 20 kph at the sharp curve at the west end of the Mississippi River bridge. A wooden pedestrian walkway is provided along the north side of the Mississippi River bridge.

Old Mill Lane is a rural one-lane laneway. South of Street 1 (the site connection) Old Mill Lane is public and is under the jurisdiction of the Municipality of Mississippi Mills while north of Street 1 it is private. The speed limit is not posted and therefore has a regulatory speed limit of 50kph under the Ontario Highway Traffic Act. Old Mill Lane has a 3.5m to 4.0m wide gravel driving surface, terminating approximately 150m north of Wilson Street. It is proposed to provide a 6m paved travel surface between Street 1 and Wilson Street for the proposed subdivision. North of the proposed access the width of the private block is approximately 5.5m. Old Mill Lane forms a T-intersection with Wilson Street at the west end of the Mississippi River bridge, with stop control on Old Mill Lane.

Apple Street is a rural two-lane local road and is under the jurisdiction of the Municipality of Mississippi Mills. As the speed limit is unposted, it has a regulatory speed of 50kph under the Ontario Highway Traffic Act. Based on aerial photography, Apple Street appears to have a paved width of 5m. Apple Street has a right-of-way width of approximately 15m and terminates approximately 200m west of Wilson Street. Apple Street forms a T-intersection with Wilson Street 110m south of the Mississippi River bridge, measuring centerline to centerline, with stop control provided on Apple Street.

## 2.2 Traffic Volumes

The most recent weekday eight hour turning movement count was conducted by the County of Lanark at the nearby intersection of River Road/Wilson Street/Hill Street in August 2015. In addition, automated traffic counts were conducted by the County over a three-day period at the following locations on the noted dates:

- Wilson Road between River Road and Appleton Sideroad October 27-30, 2020
- Wilson Road between Appleton Hamlet Sign and River Road October 27-30, 2020
- Wilson Road between River Road and Appleton Sideroad October 1-4, 2019
- Wilson Road between River Road and Appleton Sideroad May 3-6, 2016

Since the 2020 count data were collected during the ongoing COVID-19 pandemic, 2019 count data have been carried forward for analysis.

Westbound traffic volumes on the adjacent section of Wilson Street range from 27 to 45 vehicles per hour (vph) in the AM and PM peak hours while eastbound traffic volumes range from 30 to 45 vph, for a two-way total peak hour volume of 60 to 90 vph. The Average Daily Traffic (ADT) on the adjacent section of Wilson Street is about 800 vehicles per day (vpd). Typical Average Annual Daily Traffic (AADT) for a rural collector roadway is estimated at 200 to 10,000 vpd. Traffic along the subject section of Wilson Street is at the lower end of the typical range.

Apple Street currently provides access to nine residential dwellings. Based on standard trip rates, peak hour volumes along Apple Street are expected to be less than 10 vph, with an AADT in the order of 100 vpd. Rural local roads typically carry less than 1,000 vpd. Apple Street is considered a low-volume road.

## 3.0 TRIP GENERATION AND DISTRIBUTION

Trips generated by the proposed development during the weekday AM and PM peak hours have been estimated (See **Table 1**) using the fitted curve equations identified in *Trip Generation Manual, 10<sup>th</sup> Edition* (Institute of Transportation Engineers, Washington DC, 2017). The ITE fitted curve equations were developed from traffic count data collected in over 170 studies of single-family

housing sites. The ITE Trip Generation rates inherently include high auto mode shares and these high auto shares are expected to be realized for this area.

**Table 1: Estimated Trip Generation**

Land Use	ITE Code	Dwelling Units	AM Peak (vph <sup>1</sup> )			PM Peak (vph <sup>1</sup> )		
			IN	OUT	TOTAL	IN	OUT	TOTAL
Single-Family Detached Housing	210	14	4	11	15	9	6	15

1. vph = vehicles per hour

The distribution of site generated trips has been estimated based on the local and commuter traffic patterns and is assumed to be:

- 45% to/from the east
- 55% to/from the south

This trip distribution translates to approximately 7 additional two-way vehicles during the AM and PM peak hours across the Mississippi River bridge and 8 additional two-way vehicles during the peak hours along Wilson Street south of the bridge.

Trip assignment is assumed to be about equal between the access connection to Old Mill Lane and the access connection to Apple Street, based on the proposed lot layout and principles of logical trip routing. The proposed development is expected to add approximately 7-8 vehicles at each access during the AM and the PM peak hours.

#### 4.0 IMPACT ANALYSIS

During the weekday AM and PM peak hours, the additional trips generated by the proposed development is in the order of 10% of the existing traffic volumes along Wilson Street (about 8 vehicles generated by the site and 60-90 existing two-way vehicles per hour on the street). The anticipated total volumes (about 68-98 two-way vehicles during each peak hour) is expected to remain at the lower end of the typical range for a rural collector roadway.

The additional trips along Apple Street are expected to be about 80% of the existing traffic volume on the street (about 8 vehicles generated by the site and about 10 vehicles per hour on the street currently). The projected increase in traffic will be noticeable, however about 18 vehicles per hour is still well within the typical capacity of a rural local roadway.

The increase in traffic volumes is not anticipated to have an adverse impact on the surrounding roadways.

#### 6.0 ON-SITE DESIGN

##### 6.1 Proposed Accesses

The proposed Street 1 intersects Old Mill Lane about 18.5m north of the Wilson Street/Old Mill Lane intersection, measuring nearest edge to nearest edge. Appropriate signage will be considered at the detailed design stage.

The *Transportation Association of Canada (TAC) Geometric Design Guide* suggests a minimum corner clearance of 25m from an access to an arterial or collector road at a major intersection. This dimension is based on providing space for three passenger vehicles to queue at the stop control (in this case, on Old Mill Lane at Wilson Street) without blocking the access. TAC suggests a corner clearance of 15m from an access to a local road at a major intersection. The lesser value reflects the reduced needs associated with lower traffic volumes and a decreased expectation in level of service.

The TAC guidelines note that it is not always feasible to provide the suggested minimum corner clearances, and engineering judgement is often required to determine the best layout for the prevailing roadway conditions.

Since the traffic volumes along the subject section of Wilson Street are at the lower end of the typical range for rural collector roads, and the projected traffic volumes at the proposed Street 1 access are also considered low, safe and acceptable operating conditions are anticipated based on the proposed corner clearance.

The development includes an extension of Apple Street by about 160m to the west. Street 1 will intersect Apple Street approximately 200m west of Wilson Street. No changes are proposed to the existing Wilson Street/Apple Street intersection.

The Minimum Stopping Sight Distance (SSD) along roadways with design speeds of 50km/h is 65m. The available SSD for traffic in both directions along Apple Street at Street 1, along Wilson Street at Apple Street, and along Old Mill Lane at Street 1 exceed 70m, meeting the requirement.

## **6.2 Proposed Internal Roadways**

Street 1 and the Apple Street extension will have right-of-way widths of 18m and rural cross-sections consisting of 6m wide paved surfaces and 1.5m wide shoulders. One shoulder along Street 1 and the Apple Street extension will be paved to accommodate pedestrian movements within the development, while the other shoulder will consist of granular material.

Cyclists will be accommodated on-road through the provision of standard 3-metre wide travel lanes. The projected traffic volume and speeds along Street 1 and the Apple Street extension are expected to be low enough to allow cyclists to operate comfortably in a mixed traffic environment. This is consistent with the guidance provided in Book 18 of the *Ontario Traffic Manual, Cycling Facilities* (2021).

## **7.0 CONCLUSIONS AND RECOMMENDATIONS**

The conclusions and recommendations of this Transportation Impact Statement can be summarized as follows:

- The marginal increase in traffic volumes generated by the proposed development is not anticipated to have an adverse traffic related impact on the surrounding roadways.
- Street 1 of the proposed subdivision intersects Old Mill Lane about 18.5m north of the Wilson Street/Old Mill Lane intersection, measuring nearest edge to nearest edge.

- As the traffic volumes along the subject section of Wilson Street are at the lower end of the typical range for rural collector roads, and the projected traffic volumes at the proposed Street 1 access are also considered low, safe and acceptable operating conditions are anticipated based on the proposed corner clearance.
- There is sufficient sight distance at each site connection to the existing road network.
- The internal streets will have one paved shoulder to accommodate pedestrian movements within the development.
- Cyclists will be accommodated on-road through the provision of standard 3-metre wide travel lanes. The on-site traffic volume and speed conditions are expected to be low enough to allow cyclists to operate comfortably in a mixed traffic environment.

The proposed development is recommended from a transportation perspective.

Yours truly,

**NOVATECH**

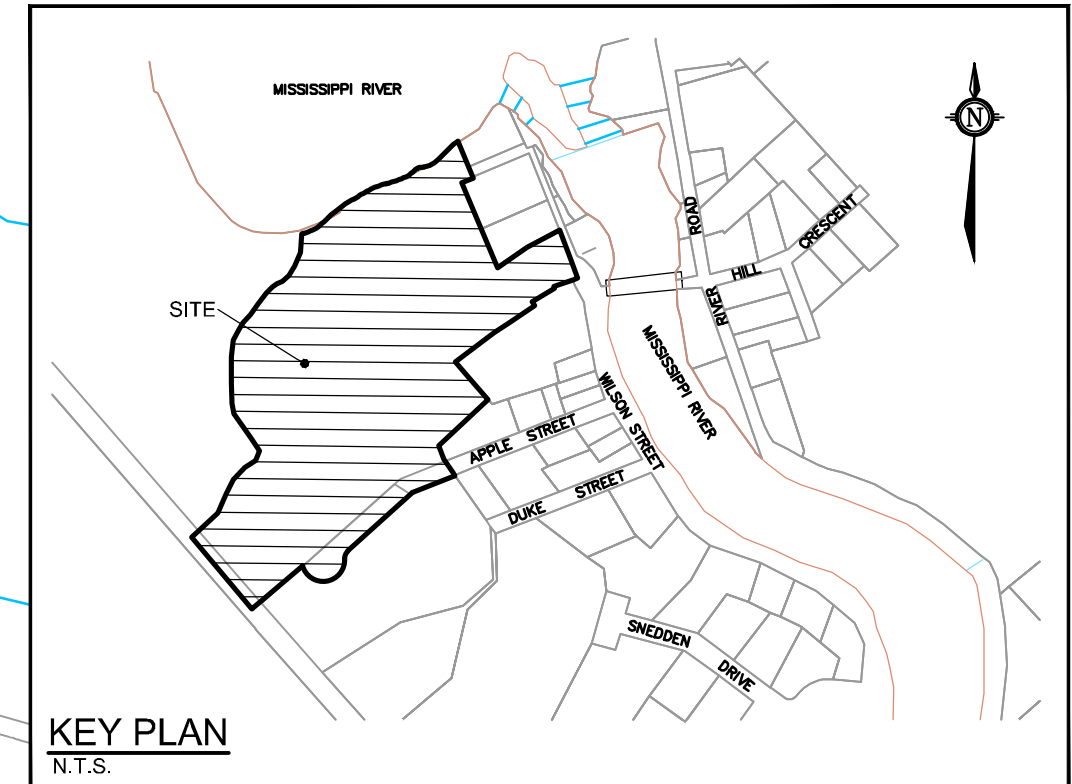
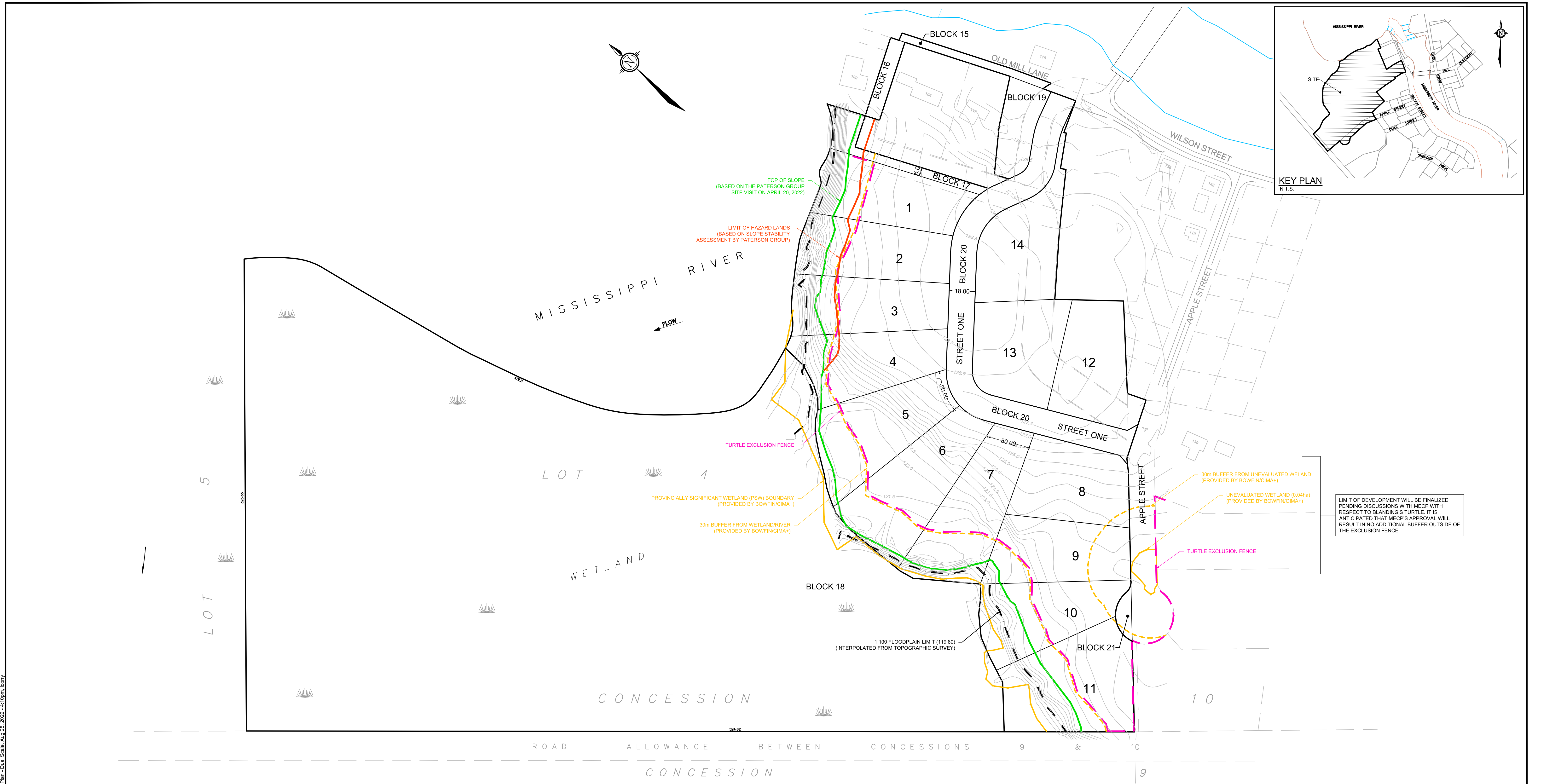


Jennifer Luong, P.Eng.  
Senior Project Manager | Transportation

# APPENDIX A

## Concept Plan



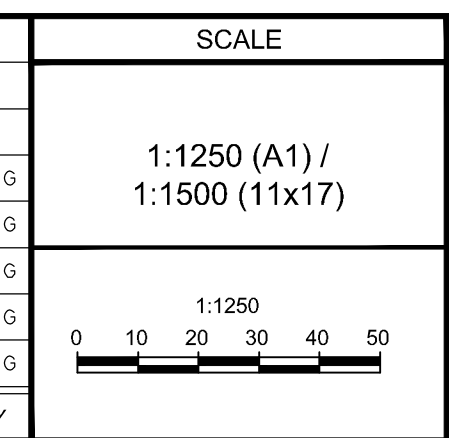


LIMIT OF DEVELOPMENT WILL BE FINALIZED PENDING DISCUSSIONS WITH MECF WITH RESPECT TO BLANDING'S TURTLE. IT IS ANTICIPATED THAT MECF'S APPROVAL WILL RESULT IN NO ADDITIONAL BUFFER OUTSIDE OF THE EXCLUSION FENCE.

**SOURCE REFERENCE:**  
 Legal Information: *Draft Plan of Subdivision Callon Dietz OLS / August 12, 2022 / NAD83 MTM Zone 9*  
 Topographic Information: *Draft Plan of Subdivision Callon Dietz OLS / August 12, 2022 / NAD83 MTM Zone 9*

**NOTE:**  
 THE POSITION OF ALL POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	DATE	BY
5.	ISSUED FOR COORDINATION	SEP 1/22	SMG
4.	ISSUED FOR COORDINATION	AUG 25/22	SMG
3.	ISSUED FOR COORDINATION	AUG 17/22	SMG
2.	ISSUED FOR COORDINATION	JUL 21/22	SMG
1.	ISSUED FOR COMMENT	SEP 08/21	SMG



**FOR REVIEW ONLY**

**NOVATECH**  
 Engineers, Planners & Landscape Architects  
 Suite 200, 240 Michael Cowpland Drive  
 Ottawa, Ontario, Canada K2M 1P6  
 Telephone (613) 254-9643  
 Facsimile (613) 254-5867  
 Website www.novatech-eng.com

MUNICIPALITY of MISSISSIPPI MILLS APPLETON SHORES		PROJECT No. 114165-00
DRAWING NAME CONCEPT PLAN - 14 Lots		REV REV #5
		DRAWING No. 114165-CP2021

M:\2021\114165-CP2021\114165-CP2021.dwg, Concept Plan - Dual Scale, Aug 25, 2022 - 4:10pm, lcozy

## **APPENDIX B**

### Traffic Count Data



Approach Street													
	River (CR. 11)			Wilson			River (TWP)			Hill			Total
Time	Left Turn	Straight	Right Turn	Left Turn	Straight	Right Turn	Left Turn	Straight	Right Turn	Left Turn	Straight	Right Turn	(per hour)
8:00:00 AM	0	4	19	11	0	10	14	5	0	1	1	1	66
9:00:00 AM	0	5	15	16	1	10	12	3	1	2	0	0	65
10:00:00 AM	0	4	16	16	1	14	11	1	2	1	1	0	67
11:00:00 AM	0	3	21	20	1	14	21	1	2	0	1	0	84
12:00:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	0
12:30:00 PM	0	0	25	9	0	6	3	1	0	1	0	0	45
1:00:00 PM	0	5	32	27	0	17	14	6	0	1	0	0	102
2:00:00 PM	1	3	24	23	1	12	15	4	2	0	2	0	87
3:00:00 PM	0	7	45	27	2	15	11	8	1	1	1	1	119
Total (per day)	1	31	197	149	6	98	101	29	8	7	6	2	635

1/2 Hr Lunch

## Traffic Summary

Station # - HF25D50W, Cr 11 011023 River Road to Appleton Side Rd 9 (Co. Rd. #17)

Date - October 27, 2020 to October 30, 2020 (3 days of data)

Volume						
	Total	Weekday	Weekend	ADT	AWDT	AWET
Combined	2111	2111	0	704	704	0
North	1043	1043	0	348	348	0
South	1068	1068	0	356	356	0
Days	3	3	-	3	3	-

Speed				
	All Days	Weekdays	Weekend	
Mean speed	61.7	61.7	-	km/h
Median speed	61.2	61.2	-	km/h
85% speed	70.9	70.9	-	km/h

PSL = 60 km/h

Class				
Class (Scheme F3)	All Days	%	Weekdays	Weekend
1 - CYCLE	5	0.2%	5	0
2 - PC	1465	69.4%	1465	0
3 - 2A-4T	535	25.3%	535	0
4 - BUS	28	1.3%	28	0
5 - 2A-6T	56	2.7%	56	0
6 - 3A-SU	20	0.9%	20	0
7 - 4A-SU	0	0.0%	0	0
8 - <5A DBL	0	0.0%	0	0
9 - 5A DBL	2	0.1%	2	0
10 - >6A DBL	0	0.0%	0	0
11 - <6A MULTI	0	0.0%	0	0
12 - 6A MULTI	0	0.0%	0	0
13 - >6A MULTI	0	0.0%	0	0

Average Daily Volume							
	Mon	Tue	Wed	Thu	Fri	Sat	Sun
North	0	334	365	344	0	0	0
South	0	345	373	350	0	0	0
Combined	0	679	738	694	0	0	0
AM Pk North	-	28	28	27	-	-	-
PM Pk North	-	37	47	38	-	-	-
AM Pk South	-	35	28	29	-	-	-
PM Pk South	-	43	45	35	-	-	-
Days	-	1	1	1	-	-	-

## Traffic Summary

Station # - HF36NTAV, Cr 11 011015 Appleton Hamlet Sign to River Rd

Date - October 27, 2020 to October 30, 2020 (3 days of data)

Volume						
	Total	Weekday	Weekend	ADT	AWDT	AWET
Combined	2732	2732	0	911	911	0
North	1344	1344	0	448	448	0
South	1388	1388	0	463	463	0
Days	3	3	-	3	3	-

Speed				
	All Days	Weekdays	Weekend	
Mean speed	50.1	50.1	-	km/h
Median speed	50.4	50.4	-	km/h
85% speed	57.6	57.6	-	km/h

PSL = 60 km/h

Class				
Class (Scheme F3)	All Days	%	Weekdays	Weekend
1 - CYCLE	17	0.6%	17	0
2 - PC	1932	70.7%	1932	0
3 - 2A-4T	630	23.1%	630	0
4 - BUS	50	1.8%	50	0
5 - 2A-6T	36	1.3%	36	0
6 - 3A-SU	54	2.0%	54	0
7 - 4A-SU	6	0.2%	6	0
8 - <5A DBL	0	0.0%	0	0
9 - 5A DBL	6	0.2%	6	0
10 - >6A DBL	0	0.0%	0	0
11 - <6A MULTI	0	0.0%	0	0
12 - 6A MULTI	0	0.0%	0	0
13 - >6A MULTI	1	0.0%	1	0

Average Daily Volume							
	Mon	Tue	Wed	Thu	Fri	Sat	Sun
North	0	437	472	435	0	0	0
South	0	435	498	455	0	0	0
Combined	0	872	970	890	0	0	0
AM Pk North	-	32	29	31	-	-	-
PM Pk North	-	48	65	47	-	-	-
AM Pk South	-	35	47	44	-	-	-
PM Pk South	-	53	52	48	-	-	-
Days	-	1	1	1	-	-	-

## Traffic Summary

**Station #** - HG518ZVN, Cr 11 011023 River Road to Appleton Sideroad (Co. Rd. #17)

**Date** - Tuesday, October 01, 2019 to Friday, October 04, 2019 (3 days of data)

Volume						
	Total	Weekday	Weekend	ADT	AWDT	AWET
Combined	2278	2278	0	759	759	0
East	1097	1097	0	366	366	0
West	1181	1181	0	394	394	0
Days	3	3	-	3	3	-

Speed				
	All Days	Weekdays	Weekend	
Mean speed	51.8	51.8	-	km/h
Median speed	53.6	53.6	-	km/h
85% speed	64.4	64.4	-	km/h

PSL = 60 km/h

Class				
Class (Scheme F3)	All Days	%	Weekdays	Weekend
1 - CYCLE	18	0.8%	18	0
2 - PC	1556	68.3%	1556	0
3 - 2A-4T	536	23.5%	536	0
4 - BUS	26	1.1%	26	0
5 - 2A-6T	58	2.5%	58	0
6 - 3A-SU	82	3.6%	82	0
7 - 4A-SU	2	0.1%	2	0
8 - <5A DBL	0	0.0%	0	0
9 - 5A DBL	0	0.0%	0	0
10 - >6A DBL	0	0.0%	0	0
11 - <6A MULTI	0	0.0%	0	0
12 - 6A MULTI	0	0.0%	0	0
13 - >6A MULTI	0	0.0%	0	0

Average Daily Volume							
	Mon	Tue	Wed	Thu	Fri	Sat	Sun
East	0	333	391	373	0	0	0
West	0	356	425	400	0	0	0
Combined	0	689	816	773	0	0	0
AM Pk East	-	33	30	37	-	-	-
PM Pk East	-	39	44	35	-	-	-
AM Pk West	-	27	34	33	-	-	-
PM Pk West	-	44	43	42	-	-	-
Days	-	1	1	1	-	-	-

## Traffic Summary

Station # - FJ199DQZ, CR 11 011023 River Road to Appleton Sideroad (Co. Rd. #17)

Date - 0:00 Tuesday, May 03, 2016 to 0:00 Friday, May 06, 2016 (3 days of data)

Volume						
	Total	Weekday	Weekend	ADT	AWDT	AWET
Combined	2350	2350	0	783	783	0
North	1108	1108	0	369	369	0
South	1242	1242	0	414	414	0
Days	3	3	-	3	3	-

Speed				
	All Days	Weekdays	Weekend	
Mean speed	62.4	62.4	-	km/h
Median speed	62.3	62.3	-	km/h
85% speed	72.0	72.0	-	km/h

PSL = 60 km/h

Class				
Class (Scheme F3)	All Days	%	Weekdays	Weekend
1 - CYCLE	29	1.2%	29	0
2 - PC	1644	70.0%	1644	0
3 - 2A-4T	510	21.7%	510	0
4 - BUS	37	1.6%	37	0
5 - 2A-6T	89	3.8%	89	0
6 - 3A-SU	35	1.5%	35	0
7 - 4A-SU	1	0.0%	1	0
8 - <5A DBL	0	0.0%	0	0
9 - 5A DBL	1	0.0%	1	0
10 - >6A DBL	2	0.1%	2	0
11 - <6A MULTI	0	0.0%	0	0
12 - 6A MULTI	0	0.0%	0	0
13 - >6A MULTI	2	0.1%	2	0

Average Daily Volume							
	Mon	Tue	Wed	Thu	Fri	Sat	Sun
North	0	360	374	374	0	0	0
South	0	424	383	435	0	0	0
Combined	0	784	757	809	0	0	0
AM Pk North	-	29	30	26	-	-	-
PM Pk North	-	31	38	38	-	-	-
AM Pk South	-	37	34	31	-	-	-
PM Pk South	-	51	38	55	-	-	-
Days	-	1	1	1	-	-	-