

Transportation Impact Study

PROPOSED SUBDIVISION DEVELOPMENT

318 Lake Street
Picton, Prince Edward County

April 29, 2025
Project NT-22-282

Prepared for: Homes First Development Corporation

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April 29, 2025

Homes First Development Corporation
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Attention: Alan Hirschfield

**Re: Engineering Service – Transportation Impact Study
Proposed Subdivision Development
318 Lake Street, Picton, Prince Edward County
Our Project No. NT-22-282**

Nextrans Consulting Engineers, a Division of NextEng Consulting Group Inc., is pleased to present the enclosed Transportation Impact Study in support of Official Plan Amendment, Zoning By-law Amendment, and Draft Plan of Subdivision Applications for a proposed subdivision development at the property known as 318 Lake Street, located at the northeast corner of County Road 10 and County Road 22 in Picton, Prince Edward County. The subdivision proposes two mid-rise apartment buildings, townhouses, linked dwellings, and single detached dwellings, for a total of 483 residential dwelling units. A network of streets for the subdivision is proposed. Three (3) site accesses will be provided, including a full moves access at County Road 22, County Road 10 at Ridge Road, and County Road 10 north of County Road 1.

We trust the enclosed sufficiently addresses your needs. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

NEXTRANS CONSULTING ENGINEERS

Prepared by:

A handwritten signature in black ink, appearing to read "John Nhan".

John Nhan, P.Eng.
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Approved by:

A handwritten signature in black ink, appearing to read "Richard Pernicky".

Richard Pernicky, MITE
Principal

Issues and Revisions Registry

Identification	Date	Description of issued and/or revision
Transportation Impact Study	April 28, 2025	First submission DPOS/OPA/ZBA.

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1.0 INTRODUCTION

Nextrans Consulting Engineers (“Nextrans”), a Division of NextEng Consulting Group Inc., has been retained by Homes First Development Corporation (the “client”) to undertake this Transportation Impact Study (TIS) in support of Official Plan Amendment, Zoning By-law Amendment, and Draft Plan of Subdivision Applications for a proposed subdivision development at the property 318 Lake Street (herein referred to as the “subject site”) located northeast of County Road 10 (Lake Street) and County Road 22 (Church Street) in Picton, Prince Edward County. The subject site location is provided in **Figure 1-1**.

1.1. PROPOSED DEVELOPMENT

The architectural site plan and draft plan of subdivision are enclosed in **Appendix A. Table 1-1** summarizes the site statistics. The development proposes a subdivision of two apartment buildings of 6 to 7 storeys, townhouses, linked dwellings, and single detached dwellings, for a total of 483 residential dwelling units. An internal road network for the subdivision is proposed, which will be provided via full moves access at County Road 22 approximately 170m east of County Road 10, County Road 10 at Ridge Road, and County Road 10 approximately 210m north of County Road 1.

Table 1-1: Summary of Site Statistics

Use	Units / GFA
Apartment North	145 units
Apartment South	145 units
Townhouse	86 units
Linked Dwelling	54 units
Single Detached Dwelling	53 units
Total Residential	483 units

1.2. METHODOLOGY AND STUDY HORIZON

The purpose of this study is to determine the transportation impact of the proposed development on the surrounding road network and determine potential mitigation measures as necessary to provide capacity improvements.

The intersection capacity analysis for the study area was assessed for the weekday AM peak hour, weekday PM peak hour, and Saturday peak hour, for the existing condition (existing baseline year), future background, and future total conditions. The traffic operations were analyzed using Synchro 10 which incorporates Highway Capacity Manual (HCM) 2000 methodology for signalized and unsignalized intersections.

For the purposes of this study, a full built-out period of five (5) years was assumed. The traffic operations analysis was undertaken for the existing baseline year of 2025, horizon year of 2030 (assumed year of full buildout) and horizon year of 2035 (five years post full buildout).

Critical movements were identified where an intersection movement experienced a volume to capacity (v/c) ratio of 1.00 or greater. Potential mitigation measures were determined for any critical movements to provide capacity improvements as applicable.

Where 15-minute turning movement count data was unavailable, a peak hour factor of 0.92 was assumed.

1.3. STUDY AREA

The intersection study area was determined by assessing the size of the proposed development and the transportation impact that is anticipated from the proposed development. The study area includes the following intersections.

- County Road 1 (Sandy Hook Road) and Highway 33 (Loyalist Parkway)
- County Road 10 (Lake Street) and County Road 1 (Sandy Hook Road)
- County Road 10 (Lake Street) and Ridge Road / Proposed Street D (Site Access)
- County Road 10 (Lake Street) and County Road 22 (Church Street)
- County Road 10 (Lake Street) and Proposed Street A (Site Access)
- County Road 22 (Church Street) and Proposed Street A (Site Access)

2.0 EXISTING TRANSPORTATION CONDITIONS

2.1. EXISTING ROAD NETWORK

Illustrated in **Figure 2-1** is the existing lane configuration and intersection control of the roads within the study area. The existing road network descriptions are as follows.

- **Ontario Highway 33 (Loyalist Parkway)** is a provincial highway, under the jurisdiction of MTO, that consists of a two-lane road cross section (one lane per direction) and maintains a posted speed limit of 60km/h. The Prince Edward County Transportation Master Plan 2021 classifies Highway 33 as an inter-centre arterial road by County Road 1. The County's Picton Transportation Mater Plan Amendment 2024 classifies Highway 33 as a provincial highway/connecting link, including along the Picton Settlement Area.
 - Highway 33 forms an unsignalized roundabout intersection with County Road 1, with a one-lane approach in each direction. An outside diameter of 25m was assumed based on Google Maps aerial imagery.
- **County Road 1 (Sandy Hook Road)** is an east-west inter-centre collector road, under the jurisdiction of the County, that consists of a two-lane road cross section (one lane per direction) and maintains a posted speed limit of 60km/h except for a posted speed limit of 50km/h between County Road 10 and approximately 560m east of County Road 10.
- **County Road 10 (Lake Street)** is a north-south inter-centre collector road, under the jurisdiction of the County, that consists of a two-lane road cross section (one lane per direction) and maintains a posted speed limit of 60km/h.
- **County Road 22 (Church Street)** is an inter-centre collector road, under the jurisdiction of the County, that consists of a two-lane road cross section (one lane per direction) and maintains a posted speed limit of 80km/h.
- **Ridge Road** is a special service collector road, under the jurisdiction of the County, that consists of a two-lane road cross section (one lane per direction) and maintains a posted speed limit of 70km/h.

2.2. EXISTING TRANSIT FACILITIES

A number of surface transit facilities are available within the broader area to the subject site and provided by County Transit. Transit facilities are not available within a reasonable 800m walking distance from the subject site. **Figure 2-2** illustrates the transit facilities closest to the subject site. The following transit routes are available nearest to the subject site.

- **County Transit Scheduled Bus Route** is a County bus route serviced by Quinte Transit that provides two-way scheduled bus transit service five times a day during weekdays between the Picton Settlement Area and Belleville (see bus schedule in **Appendix B**). The County Transit Scheduled Route operates during the weekday morning and afternoon with headways of 2.5h. Connection to Belleville Transit Terminal is available along this route. The closest bus stop is located approximately 1km radial distance from the subject site at Base 31 along County Road 22 based on the County Transit bus schedule dated January 2025.
- **County Transit On-Demand Service** is an on-demand bus service that provides transport within the County during weekdays that can be booked through an app or through Quinte Transit.
- **County Transit Specialized Service** is a door-to-door transit service that is available for seniors and persons with disabilities.
- **Uride Ride-Share** is a ride-hailing service for travel within the County.

2.3. EXISTING ACTIVE TRANSPORTATION NETWORK

Figure 2-3 illustrates the active transportation facilities within the study area, as extracted from Figure 18 of the Council-approved Picton Transportation Master Plan Amendment March 2025. Within the study area, active transportation facilities are limited. Paved shoulders are available on County Road 22 east of County Road 10. The Millunium Trail is available along Highway 33 by County Road 1.

2.4. TRAFFIC DATA COLLECTION

Turning movement counts (TMC) were recorded by Spectrum Traffic Data for the existing study area intersections during the weekday AM, weekday PM, and Saturday peak periods. It is noted that TMC data was surveyed on Thursday, March 23, 2023, Friday, March 24, 2023, and Saturday March 25, 2023. The Friday traffic counts were used in this study in lieu of the Thursday traffic counts for the weekday AM and PM peak hours given the higher summation of intersection study area traffic counts from the Thursday data than the Friday data. A summary of the traffic data collection is tabulated in **Table 2-1** below. Existing traffic data including TMC data is enclosed in **Appendix B**. The existing TMC volumes were adjusted to 2025 baseline volumes through annual growth rates summarized in **Section 3.2**.

It is noted that the Ridge Road and County Road 10 intersection was not included within the study area following the TMC survey. Hence, traffic counts for the Ridge Road and County Road 10 intersection were unavailable. For this study, the intersection through volumes along County Road 10 were extrapolated from the adjacent intersection TMC volumes. TMC volumes of 20 vehicles in the peak hour per left and right turning movement at the intersection were assumed.

Table 2-1: Summary of Traffic Data Collection

Intersection	Date of Survey	Time of Survey	Source
County Road 1 (Sandy Hook Road) and Highway 33 (Loyalist Parkway)	Thu, Mar 23, 2023	Weekday AM: 7:00am-10:00am	Spectrum Traffic Data
County Road 10 (Lake Street) and County Road 1 (Sandy Hook Road)	Fri, Mar 24, 2023	Weekday PM: 4:00pm-7:00pm	
County Road 10 (Lake Street) and County Road 22 (Church Street)	Sat, Mar 25, 2023	Saturday: 11:00am-5:00pm	

Prince Edward County typically experiences off-peak season traffic (non-summer traffic volumes that are generally from commuters) and peak season traffic (summer traffic volumes bolstered from tourists). On this basis, as the traffic counts for this study were collected during the off-peak period (March), historical traffic data from MTO for Highway 33 near County Road 1 between 2010 and 2021 (excluding 2020) was reviewed to determine an adjustment factor of 41.5% based on the average difference between AADT (annual average daily traffic) data and SADT (summer annual daily traffic) data (see detailed calculations in **Appendix B**). The adjustment factor was applied to all

TMC volumes. New peak season (summer) traffic counts can be collected should the County request this in an addendum to this study.

2.5. EXISTING INTERSECTION CAPACITY ANALYSIS

The existing intersection capacity analysis has been conducted for the weekday AM, weekday PM, and Saturday peak hours. **Figure 2-4** exhibits the existing traffic volumes within the intersection study area. The existing intersection capacity analysis results for the study area intersection is summarized in **Table 2-2**. Detailed Synchro results for existing conditions are provided in **Appendix C**.

Table 2-2: Existing Intersection Capacity Analysis

Intersection	Movement of Interest	Weekday AM Peak Hour					Weekday PM Peak Hour					Saturday Peak Hour				
		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)	
					50 th	95 th				50 th	95 th				50 th	95 th
Unsignalized Intersections																
1: CR1 (Sandy Hook Rd) & Hwy 33	EBLTR	0.26	-	-	-	-	0.37	-	-	-	-	0.24	-	-	-	-
	WBLTR	0.34	-	-	-	-	0.54	-	-	-	-	0.39	-	-	-	-
	NBLTR	0.17	-	-	-	-	0.23	-	-	-	-	0.16	-	-	-	-
	SBLTR	0.25	-	-	-	-	0.33	-	-	-	-	0.15	-	-	-	-
3: CR10 (Lake St & CR1 (Sandy Hook Rd)	EBLR	0.16	11	B	-	5	0.27	13	B	-	9	0.15	11	B	-	4
	NBLT	0.07	8	A	-	2	0.11	8	A	-	3	0.07	8	A	-	2
4: CR10 & Ridge Rd/Street D	EBLR	0.10	11	B	-	3	0.14	14	B	-	4	0.11	12	B	-	3
	NBLT	0.02	1	A	-	1	0.03	1	A	-	1	0.02	1	A	-	1
5: CR10 & CR22	WBLR	0.10	11	B	-	3	0.17	11	B	-	5	0.10	11	B	-	3
	SBLT	0.06	3	A	-	1	0.09	3	A	-	2	0.05	2	A	-	1

The following observations are noted for the study area intersections under the existing condition. Under the existing condition, all intersection movements within the study area operate within capacity, with minimal control delay and acceptable levels of service, for the weekday AM, weekday PM, and Saturday peak hours.

3.0 FUTURE BACKGROUND TRAFFIC CONDITIONS

An assumed five-year full buildout of 2030 and five-year post full build-out year of 2035 were assessed in this study.

3.1. PROPOSED INTERNAL ROAD NETWORK

An internal road network is proposed within the subject site to facilitate access of the proposed development to the external road network. The internal road network is illustrated on the architectural site plan and draft plan of subdivision enclosed within **Appendix A**. The road cross sections proposed for the internal road network for the subject site are enclosed within **Appendix D**.

Public Lane 'X' and Public Lane 'Y' were designed with an 8.5m right-of-way (ROW) based on a previously approved lane cross section for another development within the County. Public Street 'A', Public Street 'B', Public Street 'C', Public Street 'D', and Public Street 'E' were designed with an 18.0m ROW. Public Street 'D' was designed with a 20.0m ROW.

It is Nextrans' opinion that the internal road network is sufficient to accommodate the residential traffic volumes anticipated to be generated by the subject subdivision development.

3.2. FUTURE EXTERNAL ROAD IMPROVEMENTS

A number of potential roadway improvements are identified within the study area based on the Picton Transportation Master Plan Amendment March 2025 (TMP Amendment) (see excerpts in **Appendix B**).

It is noted that within the previous Picton TMP Amendment 2024 (i.e. prior to Council endorsement), County Road 22 was recommended to be extended west of County Road 10, to provide connections to Ridge Road, County Road 1, and ultimately to Highway 33 via an extension of George Wright Boulevard. The County Road 22 and George Wright Boulevard extension would provide a two-lane cross-section with a multi-use path along one side of the road. At the March 11, 2025 meeting of Prince Edward County Council, Council removed the County 22 Extension project from the TMP Amendment's final recommendations and projects list. The George Wright Extension from Highway 33 to County Road 1 is subject to further future study. The Picton TMP Amendment March 2025 reflects these changes.

Intersection geometry improvements and signalization of the County Road 1 and County Road 10 intersection and the County Road 10 and County Road 22 intersection are recommended within the TMP Amendment. Given a phasing of less than five years, signalization was implemented within this study for the 2030 and 2035 horizon years for the County Road 1 and County Road 10 intersection and the County Road 10 and County Road 22 intersection based on the existing intersection lane configurations. **Figure 3-1** illustrates the future lane configuration and intersection control for the study area.

An extension of County Road 1 east of County Road 10 was reviewed in the TMP Amendment as a potential new roadway but was not recommended due to conflict with existing policy direction, development challenges, impacts to the environment, and significant impacts to private property.

3.3. FUTURE ACTIVE TRANSPORTATION IMPROVEMENTS

Within the study area, paved shoulders are recommended along County Road 1, County Road 10, and County Road 22 as identified within the Picton Transportation Master Plan Amendment March 2025 (TMP Amendment) (see excerpts in **Appendix B**).

No improvements to pedestrian facilities within the study area are recommended from the Picton TMP Amendment 2025. It is Nextrans' opinion that County staff provide re-consideration for pedestrian facilities (e.g. sidewalks, multi-use paths) within the study area given the subject development and other significant residential and mixed-use developments are expected within the south Picton area.

3.4. CORRIDOR GROWTH AND BACKGROUND DEVELOPMENTS

Annual compounded growth rates were applied to the study area roads to account for general traffic growth for the intersection study area roads. **Table 3-1** summarizes the annual traffic corridor growth rates for the study area roads based on the growth rates provided in Prince Edward County Transportation Master Plan 2021 (see excerpt in **Appendix B**).

Table 3-1: Annual Growth Rates

Road Corridor	Corridor Annual Growth Rate
Highway 33	2.1%
County Road 1	1.0%
County Road 10	1.0%

County Road 22	1.0%
Ridge Road	1.0%

Further to the corridor traffic growth, two background developments were identified within the broader area to the subject site (see **Appendix B** for excerpts of background development transportation reports). **Table 3-2** summarizes the identified background developments.

Table 3-2: Summary of Background Developments

Development	Description	Source
Loyalist Heights Picton (County Road 1 between Highway 33 and County Road 10)	Residential subdivision of 393 dwellings, including single detached, semi-detached, townhouse, apartment, and seniors' village.	Paradigm (Jul 2022)
Base 31 Area Concept Plan	Two-phase mixed-use subdivision development of 7,500 residential dwelling units and 260 hotel rooms. Phase 1 (assumed in 2030 horizon for this study) consists of 1,600 dwelling units and 60 hotel rooms. In addition to Phase 1, Phase 2 (assumed in 2035 horizon) consists of 5,900 dwelling units and 200 hotel rooms.	TYLin (Sep 2023)

Given that the Base 31 Area Concept Plan will generate a significant number of background development traffic volumes in each of its development phases, the interim (Phase 1) trips generated from the Base 31 development were assumed for the 2030 background development traffic volumes and the ultimate (Phases 1 and 2) trips generated from the Base 31 development were assumed for the 2035 background development traffic volumes. **Figure 3-2** and **Figure 3-3** exhibit the 2030 and 2035 background development traffic volumes, respectively.

3.5. 2030 FUTURE BACKGROUND INTERSECTION CAPACITY ANALYSIS

Figure 3-4 illustrates the 2030 future background traffic volumes. The 2030 future background intersection capacity analysis results for the study area intersections are summarized in **Table 3-3**. Detailed Synchro results are enclosed in **Appendix C**.

Table 3-3: 2030 Future Background Intersection Capacity Analysis Results

Intersection	Movement of Interest	Weekday AM Peak Hour					Weekday PM Peak Hour					Saturday Peak Hour				
		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)	
					50 th	95 th				50 th	95 th				50 th	95 th
Signalized Intersections																
3: CR10 (Lake St & CR1 (Sandy Hook Rd))	Overall	0.39	17	B	-	-	0.42	21	C	-	-	0.37	17	B	-	-
	EBLR	0.70	51	D	27	52	0.65	52	D	22	52	0.47	44	D	10	34
	NBL	0.31	4	A	14	26	0.36	5	A	13	33	0.33	4	A	11	34
	NBT	0.17	4	A	12	23	0.16	4	A	11	28	0.17	4	A	9	29
	SBTR	0.18	10	B	15	31	0.32	12	B	33	80	0.23	9	A	19	45
5: CR10 & CR22	Overall	0.28	25	C	-	-	0.54	14	B	-	-	0.44	16	B	-	-
	WBLR	0.38	69	E	7	33	0.33	39	D	5	27	0.34	44	D	6	26
	NBTR	0.17	2	A	9	24	0.18	3	A	8	22	0.16	3	A	8	21
	SBLT	0.27	3	A	12	31	0.57	7	A	30	82	0.46	5	A	32	42
Unsignalized Intersections																
1: CR1 (Sandy Hook Rd) & Hwy 33	EBLTR	0.37	-	-	-	-	0.67	-	-	-	-	0.47	-	-	-	-
	WBLTR	0.47	-	-	-	-	0.75	-	-	-	-	0.56	-	-	-	-
	NBLTR	0.53	-	-	-	-	0.51	-	-	-	-	0.44	-	-	-	-
	SBLTR	0.37	-	-	-	-	0.56	-	-	-	-	0.32	-	-	-	-
4: CR10 &	EBLR	0.14	14	B	-	4	0.24	20	C	-	7	0.19	16	C	-	6

Ridge Rd/Street D	NBLT	0.03	1	A	-	1	0.04	1	A	-	1	0.04	1	A	-	1
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The following summarizes the observations of the 2030 future background intersection capacity analysis results for the intersection study area. Under the 2030 future background conditions, the study area intersection movements are expected to operate within capacity and in general, acceptable levels of service, for the weekday AM, weekday PM, and Saturday peak hours.

3.6. 2035 FUTURE BACKGROUND INTERSECTION CAPACITY ANALYSIS

Figure 3-5 exhibits the 2035 future background traffic volumes. The 2035 future background capacity analysis results for the study area intersections are summarized in **Table 3-4**. Detailed Synchro results are enclosed in **Appendix C**.

Table 3-4: 2035 Future Background Intersection Capacity Analysis Results

Intersection	Movement of Interest	Weekday AM Peak Hour					Weekday PM Peak Hour					Saturday Peak Hour				
		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)	
					50 th	95 th				50 th	95 th				50 th	95 th
Signalized Intersections																
3: CR10 (Lake St & CR1 (Sandy Hook Rd)	Overall	1.11	67	E	-	-	1.33	144	F	-	-	1.22	96	F	-	-
	EBLR	1.03	103	F	~60.3	#125.4	1.26	170	F	~183.2	#265.7	1.02	85	F	~68.4	#156.8
	NBL	1.08	70	E	~209.7	#283.3	1.31	184	F	~199.5	#274.4	1.24	143	F	~221.8	m#181.5
	NBT	0.25	6	A	21	31	0.27	13	B	31	46	0.27	9	A	26	m24.2
	SBTR	0.76	58	E	41	#75.5	1.04	99	F	~106.4	#170.3	0.95	78	E	66	#116.6
5: CR10 & CR22	Overall	1.28	177	F	-	-	1.78	295	F	-	-	1.69	297	F	-	-
	WBLR	1.38	228	F	~362.0	#418.6	1.20	157	F	~71.1	#145.0	1.63	337	F	~156.8	#218.7
	NBTR	0.30	21	C	48	66	0.24	6	A	15	25	0.23	7	A	18	28
	SBLT	1.21	146	F	~233.5	#294.5	1.94	440	F	~410.9	#491.9	1.70	330	F	~382.5	m#392.6
Unsignalized Intersections																
1: CR1 (Sandy Hook Rd) & Hwy 33	EBLTR	0.61	-	-	-	-	1.69	-	-	-	-	1.11	-	-	-	-
	WBLTR	1.01	-	-	-	-	1.26	-	-	-	-	1.03	-	-	-	-
	NBLTR	1.46	-	-	-	-	1.16	-	-	-	-	1.11	-	-	-	-
	SBLTR	0.74	-	-	-	-	1.37	-	-	-	-	0.95	-	-	-	-
4: CR10 & Ridge Rd/Street D	EBLR	0.60	60	F	-	25	3.71	-	F	-	-	2.06	645	F	-	92
	NBLT	0.09	4	A	-	2	0.20	9	A	-	6	0.15	6	A	-	4

The following summarizes the observations for the 2035 future background intersection capacity analysis results for the intersection study area. Under the 2035 future background condition, a number of intersection movements are expected to operate above capacity with poor levels of service and long 95th percentile queue lengths in the weekday AM, weekday PM, and Saturday peak hours, despite signalization of a number of intersections. This is highly attributed to the significant peak hour traffic volumes generated from the Base 31 development upon its full buildout (i.e. approximately 3,000 two-way trips, 3,900 two-way, and 3,900 two-way trips, in the weekday AM, weekday PM, and Saturday peak hours, respectively) throughout the Picton road network.

4.0 SITE TRAFFIC

4.1. SITE TRIP GENERATION

The vehicle trip generation for proposed development was derived from the Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition for the weekday AM and PM peak hour of adjacent street and Saturday peak hour of generator. It is noted that for townhouse dwellings (LUC 220 Multifamily Housing Low-Rise), the directional distribution was split evenly for inbound and outbound trips for the Saturday peak hour given that the directional distribution is unavailable. A summary of the site trip generation is shown in **Table 4-1**.

Table 4-1: Site Trip Generation

Land Use	Units	Parameter		Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Peak Hour		
				In	Out	Total	In	Out	Total	In	Out	Total
ITE LUC 221 Multifamily Housing (Mid-Rise) Not Close to Rail Transit	290 units	Vehicle Trips	Trip Rate	0.09	0.31	0.40	0.24	0.15	0.39	0.21	0.20	0.41
			ITE Trips	27	89	116	69	44	113	60	57	117
ITE LUC 220 Multifamily Housing (Low-Rise) Not Close to Rail Transit	86 units	Vehicle Trips	Trip Rate	0.14	0.44	0.58	0.43	0.24	0.67	0.21	0.20	0.41
			ITE Trips	12	38	50	37	21	58	18	17	35
ITE LUC 210 Single-Family Detached Housing	53 units	Vehicle Trips	Trip Rate	0.21	0.58	0.79	0.66	0.38	1.04	0.57	0.47	1.04
			ITE Trips	11	31	42	35	20	55	30	25	55
ITE LUC 215 Single-Family Attached Housing	54 units	Vehicle Trips	Trip Rate	0.15	0.33	0.48	0.33	0.24	0.57	0.35	0.39	0.74
			ITE Trips	8	18	26	18	13	31	19	21	40
Total Trips				58	176	234	159	98	257	127	120	247

The proposed development is expected to generate the following.

- 234 two-way auto trips (58 in, 176 out), 257 two-way auto trips (159 in, 98 out), and 247 two-way auto trips (127 in, 120 out), in the weekday AM peak hour, weekday PM peak hour, and Saturday peak hour, respectively.

4.2. TRIP DISTRIBUTION AND ASSIGNMENT

The trip distribution of the auto site traffic volumes was derived from the existing traffic patterns of the study area based on the existing TMC volumes for the weekday AM, weekday PM, and Saturday peak hours. The gateways for the study area included Highway 33, County Road 1, County Road 10, and County Road 22. Using engineering judgement, the site-generated vehicular traffic volumes were assigned accordingly based on the directional trip distribution to reflect the configuration of the site accesses, turning restrictions, and based on logical routing. The trip distribution percentages are summarized in **Table 4-2**. **Figure 4-1** exhibits the site traffic volumes.

Table 4-2: Directional Trip Distribution

Corridor	Direction	Weekday AM Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour	
		In	Out	In	Out	In	Out
Highway 33	Eastbound	19%	32%	18%	28%	20%	28%
	Westbound	28%	19%	32%	19%	34%	23%
County Road 22	Eastbound	0%	7%	0%	8%	0%	5%
	Westbound	6%	0%	7%	0%	5%	0%
County Road 10	Northbound	18%	18%	13%	13%	16%	17%
	Southbound	12%	11%	16%	15%	13%	13%
County Road 1	Northbound	0%	14%	0%	17%	0%	14%
	Southbound	18%	0%	15%	0%	11%	0%

Total	100%	100%	100%	100%	100%	100%
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5.0 FUTURE TOTAL TRAFFIC CONDITIONS

5.1. 2030 FUTURE TOTAL INTERSECTION CAPACITY ANALYSIS RESULTS

Figure 5-1 exhibits the 2030 future total traffic volumes. The results of the 2030 intersection capacity analysis are summarized in **Table 5-1**. Detailed Synchro capacity results are available in **Appendix C**.

Table 5-1: 2030 Future Total Intersection Capacity Analysis Results

Intersection	Movement of Interest	Weekday AM Peak Hour					Weekday PM Peak Hour					Saturday Peak Hour				
		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)	
					50 th	95 th				50 th	95 th				50 th	95 th
Signalized Intersections																
3: CR10 (Lake St & CR1 (Sandy Hook Rd)	Overall	0.45	18	B	-	-	0.53	25	C	-	-	0.48	21	C	-	-
	EBLR	0.75	54	D	32	#59.6	0.78	54	D	45	75	0.72	49	D	30	55
	NBL	0.36	5	A	18	30	0.43	8	A	20	44	0.40	6	A	18	44
	NBT	0.19	4	A	14	24	0.18	6	A	16	35	0.19	5	A	14	36
	SBTR	0.22	12	B	19	37	0.40	18	B	48	103	0.30	14	B	28	66
5: CR10 & CR22	Overall	0.29	25	C	-	-	0.55	14	B	-	-	0.45	15	B	-	-
	WBLR	0.41	69	E	9	35	0.34	39	D	5	28	0.36	44	D	6	27
	NBTR	0.17	2	A	10	25	0.19	3	A	8	23	0.17	3	A	9	22
	SBLT	0.28	3	A	13	33	0.58	7	A	31	85	0.47	3	A	8	19
Unsignalized Intersections																
1: CR1 (Sandy Hook Rd) & Hwy 33	EBLTR	0.38	-	-	-	-	0.71	-	-	-	-	0.50	-	-	-	-
	WBLTR	0.50	-	-	-	-	0.79	-	-	-	-	0.60	-	-	-	-
	NBLTR	0.61	-	-	-	-	0.55	-	-	-	-	0.49	-	-	-	-
	SBLTR	0.38	-	-	-	-	0.59	-	-	-	-	0.34	-	-	-	-
2: CR10 (Lake St) & Street A	WBLR	0.06	11	B	-	2	0.04	13	B	-	1	0.05	12	B	-	1
	SBLT	0.00	0	A	-	0	0.00	0	A	-	0	0.00	0	A	-	0
4: CR10 & Ridge Rd/Street D	EBLTR	0.18	17	C	-	5	0.34	29	D	-	11	0.26	22	C	-	8
	WBLTR	0.07	12	B	-	2	0.06	13	B	-	1	0.06	13	B	-	1
	NBLTR	0.03	1	A	-	1	0.04	1	A	-	1	0.04	1	A	-	1
	SBLTR	0.01	1	A	-	0	0.04	1	A	-	1	0.03	1	A	-	1
6: CR22 & Street A	EBLT	0.00	0	A	-	0	0.00	0	A	-	0	0.00	0	A	-	0
	SBLR	0.03	10	B	-	1	0.02	11	B	-	0	0.02	11	B	-	0

The following summarizes the observations for the 2030 future total intersection capacity analysis results for the intersection study area. Under the 2030 future total condition, all intersection movements are expected to operate within capacity and generally acceptable levels of service in the weekday AM, weekday PM, and Saturday peak hours, similar to the 2030 future background condition. The site accesses are expected to operate well within capacity and good levels of service.

5.2. 2035 FUTURE TOTAL INTERSECTION CAPACITY ANALYSIS

Figure 5-2 illustrates 2035 future total traffic volumes. The results of the intersection capacity analysis under the 2035 future total condition are summarized in **Table 5-1**. Detailed Synchro results are available in **Appendix C**.

Table 5-2: 2035 Future Total Intersection Capacity Analysis Results

Intersection	Movement of Interest	Weekday AM Peak Hour					Weekday PM Peak Hour					Saturday Peak Hour				
		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)	
					50 th	95 th				50 th	95 th				50 th	95 th
Signalized Intersections																
3: CR10 (Lake St & CR1 (Sandy Hook Rd)	Overall	1.19	92	F	-	-	1.40	171	F	-	-	1.31	134	F	-	-
	EBLR	1.16	145	F	~79.3	#142.0	1.36	213	F	~208.7	#291.8	1.23	159	F	~128.9	#196.8
	NBL	1.14	98	F	~237.6	#311.2	1.35	201	F	~210.0	#285.9	1.28	161	F	~231.7	#298.8
	NBT	0.26	6	A	22	33	0.27	13	B	32	47	0.28	9	A	29	42
	SBTR	0.86	69	E	47	#90.3	1.10	117	F	~117.3	#182.5	1.04	101	F	~77.4	#130.6
5: CR10 & CR22	Overall	1.31	186	F	-	-	1.82	310	F	-	-	1.73	313	F	-	-
	WBL	1.41	239	F	~372.3	#428.2	1.28	186	F	~79.3	#153.3	1.69	364	F	~165.7	#227.5
	NBT	0.31	22	C	49	67	0.25	6	A	16	26	0.24	7	A	19	29
	SBT	1.23	156	F	~238.9	#299.9	1.96	452	F	~414.4	#495.4	1.74	344	F	~386.0	m#353.1
Unsignalized Intersections																
1: CR1 (Sandy Hook Rd) & Hwy 33	EBLTR	0.63	-	-	-	-	1.77	-	-	-	-	1.15	-	-	-	-
	WBLTR	1.06	-	-	-	-	1.33	-	-	-	-	1.09	-	-	-	-
	NBLTR	1.54	-	-	-	-	1.20	-	-	-	-	1.16	-	-	-	-
	SBLTR	0.77	-	-	-	-	1.43	-	-	-	-	0.99	-	-	-	-
2: CR10 (Lake St) & Street A	WBLR	0.07	12	B	-	2	0.04	14	B	-	1	0.06	13	B	-	1
	SBLT	0.00	0	A	-	0	0.00	0	A	-	0	0.00	0	A	-	0
4: CR10 & Ridge Rd/Street D	EBLTR	1.32	322	F	-	58	5.07	-	F	-	-	2.92	1078	F	-	105
	WBLTR	0.27	38	E	-	8	0.94	366	F	-	24	0.34	71	F	-	11
	NBLTR	0.09	4	A	-	2	0.20	9	A	-	6	0.15	7	A	-	4
	SBLTR	0.03	1	A	-	1	0.06	5	A	-	2	0.06	3	A	-	2
6: CR22 & Street A	EBLT	0.00	0	A	-	0	0.00	0	A	-	0	0.00	0	A	-	0
	SBLR	0.11	29	D	-	3	0.10	39	E	-	3	0.08	33	D	-	2

The following summarizes the observations for the 2035 future total intersection capacity analysis results for the intersection study area. Under the 2035 future total condition, a number of intersection movements within the study area are expected to continue to operate above capacity with poor levels of service and considerable queueing in the weekday AM, weekday PM, and Saturday peak hours, similar to the 2035 future background condition. As discussed in the 2035 future background condition, the overcapacity is predominantly as a result of the significant traffic volumes generated from the Base 31 development, in which a considerable number of Base 31 traffic volumes are expected to travel to and from Highway 31 via County Road 1, County Road 10, and County Road 22. The Street A accesses along County Road 22 and along County Road 10 are expected to operate with high residual capacity and acceptable levels of service.

6.0 MITIGATION MEASURES

The following mitigation measures are recommended to be explored by the County to improve capacity for the intersection study area in the 2035 future total condition. **Figure 6-1** illustrates the future lane configuration and intersection control based on the recommended mitigation measures.

- County to monitor and provide lane capacity improvements at the County Road 1 and Highway 33 roundabout intersection as necessary in the future.
- At the County Road 10 and County Road 1 intersection:
 - Signalize the intersection.
 - Provide exclusive eastbound left turn lane.
 - Provide eastbound right turn movement with permitted phase and overlap phase with northbound left protected phase to accommodate heavy northbound left and eastbound right traffic volumes.
- At the County Road 10 and Ridge Road / Street D intersection:
 - Signalize the intersection.
 - Provide exclusive northbound left turn lane and southbound left turn lane.
- At the County Road 10 and County Road 22 intersection:
 - Signalize the intersection.
 - Provide exclusive northbound left turn lane and southbound left turn lane.
 - Provide westbound right turn movement with permitted phase and overlap phase with southbound left protected phase to accommodate heavy southbound left and westbound right traffic volumes.

The foregoing signal recommendations were assessed within an intersection capacity analysis for the ultimate 2035 future total condition for all peak hours. **Table 6-1** summarizes the signalized intersection capacity analysis results with mitigate measures. Detailed Synchro reports are enclosed in **Appendix C**.

Table 6-1: 2035 FT Intersection Capacity Analysis Results with Mitigate Measures

Intersection	Movement of Interest	Weekday AM Peak Hour					Weekday PM Peak Hour					Saturday Peak Hour				
		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)	
					50 th	95 th				50 th	95 th				50 th	95 th
Signalized Intersections																
3: CR10 (Lake St & CR1 (Sandy Hook Rd)	Overall	0.96	42	D	-	-	1.03	49	D	-	-	1.01	40	D	-	-
	EBL	0.35	53	D	21	38	0.30	54	D	20	36	0.27	54	D	17	32
	EBR	0.27	11	B	2	12	0.98	49	D	256	#380.3	0.83	27	C	155	221
	NBL	1.04	63	E	~277.7	#353.9	0.91	44	D	174	#260.1	0.99	54	D	226	#314.1
	NBT	0.24	5	A	24	33	0.20	5	A	20	29	0.23	5	A	23	32
	SBT	0.63	55	E	61	90	0.97	84	F	127	#198.2	0.84	67	E	95	#140.3
4: CR10 & Ridge Rd/Street D	Overall	0.80	10	A	-	-	0.96	30	C	-	-	0.80	14	B	-	-
	EBLTR	0.38	70	E	10	29	0.56	73	E	17	40	0.54	72	E	17	38
	WBLTR	0.03	66	E	0	8	0.02	65	E	0	1	0.02	65	E	0	3
	NBL	0.13	2	A	3	m4.6	0.60	65	E	8	m17.4	0.30	17	B	2	m5.0
	NBTR	0.80	6	A	134	m211.8	0.64	4	A	53	m86.5	0.74	5	A	72	194
	SBL	0.07	4	A	1	4	0.11	5	A	3	7	0.11	5	A	2	6
	SBT	0.39	6	A	46	73	1.01	43	D	~480.3	#576.2	0.81	15	B	197	310
5: CR10 &	Overall	1.01	42	D	-	-	0.99	35	D	-	-	0.93	32	C	-	-

CR22	WBL	0.56	71	E	24	40	0.57	75	E	19	35	0.60	76	E	22	36
	WBR	0.98	41	D	288	#414.8	0.64	13	B	87	127	0.80	20	B	160	210
	NBTR	0.93	97	F	90	#138.8	1.03	120	F	99	#164.1	0.88	86	F	92	#134.2
	SBL	0.41	16	B	71	102	0.98	33	C	381	m#384.4	0.89	31	C	328	#372.9
	SBT	0.11	3	A	7	21	0.17	3	A	16	m20.6	0.12	3	A	13	m17.8

Based on the mitigative measures, including signal timing recommendations and intersection road widening for turning lanes, the signalized intersections are expected to operate with significantly improved capacity in the peak hours compared to the 2035 future total condition with no mitigate measures. Nonetheless, a number of intersection movements will continue to operate above capacity due to significant traffic volumes generated from the Base 31 development.

At the County Road 10 and County Road 1 intersection, the eastbound left movement is expected to operate under capacity, with the eastbound right movement able to operate to with overlap phase to the northbound left movement to accommodate the heavy eastbound right and northbound left volumes. Although with improved capacity, the eastbound right movement is expected to operate near capacity in the weekday PM peak hour with a v/c of 0.98, while the northbound left movement is expected to continue to operate above capacity in the weekday AM peak hour and near capacity in the Saturday peak hour. The southbound left movement is expected to operate with a v/c of 0.97 in the weekday PM peak hour.

At the County Road 10 and Ridge Road / Street D intersection, all intersection movements are expected to operate with residual capacity from the introduction of signalization in all peak hours, with the exception of the southbound through movement that is expected to operate above capacity with a v/c of 1.01 in the weekday PM peak hour.

At the County Road 10 and County Road 22 intersection, the intersection is expected to operate with significantly improved capacity in all peak hours. The westbound right movement is expected to operate with residual capacity from the overlap phase with the southbound left movement. The southbound left movement is also expected to operate within capacity. However, the intersection is expected to continue to operate with an overall v/c that is above capacity in the weekday AM peak hour, with the westbound right turn nearing capacity. In the weekday PM peak hour, the northbound through right movement is expected to operate above capacity. An exclusive northbound right turn lane is recommended should there be sufficient right-of-way width to improve capacity for the northbound movements.

7.0 SITE PLAN REVIEW

7.1. VEHICULAR SITE CIRCULATION

Vehicular circulation of the subject site was reviewed using AutoTURN to assess the vehicular functionality of the proposed site access driveways, drive aisles, parking spaces, and loading spaces. Vehicle profiles that were assessed include an NCHRP Report 659 Aerial Fire Truck, HSU TAC-2017 truck (simulating waste collection vehicle), and Snow Plow Truck. The swept path analysis demonstrated that the foregoing tested vehicles were able to access the proposed internal road network without functional conflicts. The vehicle movement diagrams are enclosed.

7.2. WASTE COLLECTION

Loading space requirements as per the County of Prince Edward Comprehensive Zoning By-law 1816-2006 (updated October 2019) were reviewed. Based on Zoning By-law 1816-2006, no loading space is required for apartment buildings. Notwithstanding, a total of two (2) loading spaces (i.e. one loading space per apartment building) will be provided for loading and front-end waste collection activities.

Waste collection for all other proposed dwellings within the subject site (i.e. detached, semi-detached, and townhouse dwelling units) will be provided through municipal curbside waste collection.

8.0 PARKING REVIEW

8.1. VEHICULAR PARKING PROVISION

Table 8-1 summarizes the proposed parking provision for the subdivision development.

Table 8-1: Proposed Parking Provision

Use	Units	Parking Per Unit	Total Parking Provided
Single Detached	53	4.00 (driveway + detached)	212
Linked (Semi-Detached)	54	3.00 (driveway + garage)	162
Townhouse (Rental)	23	1.52 (surface parking lot)	35
Townhouse (Freehold)	63	2.00 (driveway + garage)	126
Apartment North	145	1.10 (surface parking lot)	160
Apartment South	145	1.43 (surface parking lot)	207
Total	483	-	902

8.2. VEHICULAR PARKING REVIEW

The proposed development is currently subject to the parking requirements of the County of Prince Edward Comprehensive Zoning By-law 1816-2006 (updated October 2019). Per Zoning By-law 1816-2006, parking spaces in a private garage for each dwelling may be included within the parking requirement. A summary of the minimum parking requirements is provided in **Table 8-2**.

Table 8-2: Summary of Vehicular Parking Requirements

Use	Units	Zoning By-law 1816-2006		Parking Spaces Provided	Variance (+/-)
		Parking Rate	Parking Spaces Required		
Regular Parking					
Apartment North	145 units	1.25 sp per unit	181	160	-21
Apartment South	145 units	1.25 sp per unit	181	207	+26
Townhouse	86 units	1.50 sp per unit	129	161	+32
Single Detached / Semi-Detached Dwelling	107 units	2.00 sp per unit	214	374	+160
Total Parking			705	902	+197
Barrier-Free Parking					
Apartment North	145 units	-	-	16	+16
Apartment South	145 units			21	+21
Townhouse	86 units	-	-	-	-
Single Detached / Semi-Detached Dwelling	107 units	-	-	-	-
Total Parking			-	37	+37

A minimum overall parking provision of 705 parking spaces is required as per Zoning By-law 1816-2006. The proposed overall parking provision of 902 parking spaces meets the overall parking requirement of 705 spaces.

Per Zoning By-law 1816-2006, Section 5.1.1.v), barrier-free parking is not required for residential uses. Notwithstanding, the subdivision development will provide 37 barrier-free parking spaces for residential apartment use.

8.3. BICYCLE PARKING

Bicycle parking is not required within Zoning By-law 1816-2006. Notwithstanding, a bicycle parking provision of 82 bicycle parking spaces will be provided for residential apartment use, including 72 long-term residential spaces (0.25 bicycle space per unit) and 10 short-term residential spaces (0.034 space per unit).

9.0 TRANSPORTATION DEMAND MANAGEMENT (TDM)

Table 9-1 summarizes the Transportation Demand Management (TDM) Measures that are recommended for the subject site.

Table 9-1: TDM Measures Checklist

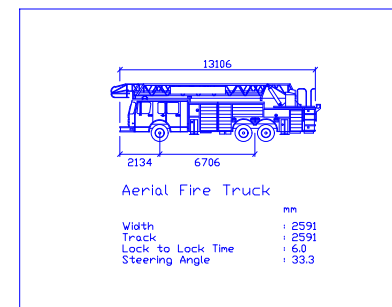
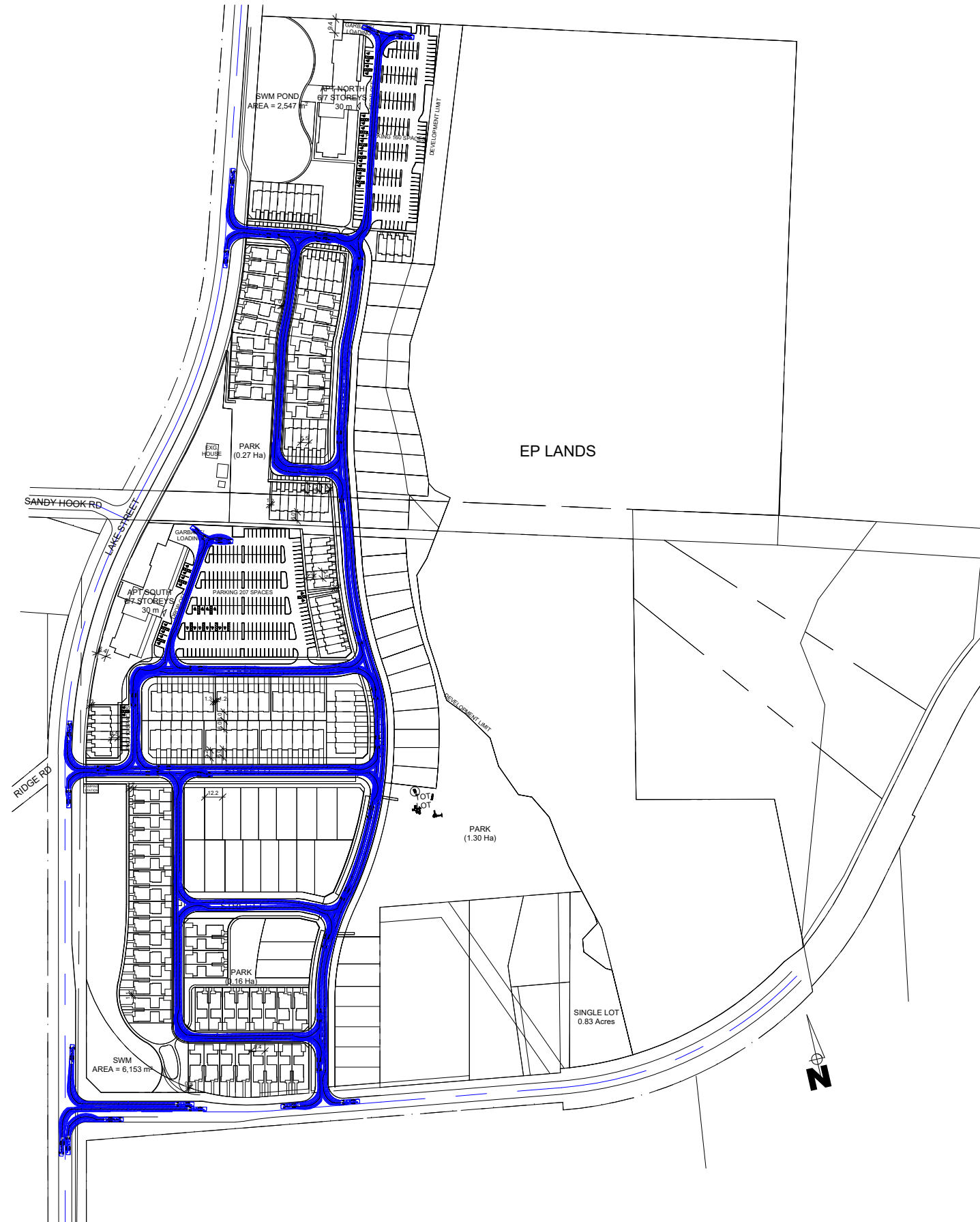
Category	TDM Measure	Responsibility	Estimated Cost
Transit	TDM information package (i.e. County Transit map and schedules, active transportation map, etc).	Applicant	TBD
	Communications strategy and physical location to deliver Information Packages to residents of the development.	Applicant	\$1,500
Active Transportation	Pedestrian connections, including connections to the adjacent streets and planned sidewalks external to the site. Pedestrian facilities internal to the site include sidewalks, appropriate walkways for the apartment buildings, and delineated crosswalks at intersections.	Applicant	The associated cost is included in the site plan agreement
	Bicycle parking – bicycle parking spaces for the apartment buildings will be provided. Resident bicycle parking spaces to be provided within a secure bicycle storage room for each apartment building.	Applicant	The associated cost is included in the site plan agreement
	Bicycle repair station is recommended to be provided within or near the bicycle storage room for each apartment building.	Applicant	The associated cost is included in the site plan agreement

10.0 CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations of this transportation impact study are summarized as follows:

- Under the existing conditions, the intersection movements within the study area operate within capacity for all peak hours.
- Under the 2030 future background condition, the intersection movements within the study area are expected to operate within capacity for all peak hours.
- Under the 2035 future background condition, a number of intersection movements within the study area are expected to operate above capacity in all peak hours due to a significant number of traffic volumes generated from the assumed full buildout of the Base 31 background development.

- The proposed development is expected to generate the following.
 - 234 two-way auto trips (58 in, 176 out), 257 two-way auto trips (159 in, 98 out), and 247 two-way auto trips (127 in, 120 out), in the weekday AM peak hour, weekday PM peak hour, and Saturday peak hour, respectively.
- Under the 2030 future total condition, the intersection movements within the study area are expected to operate within capacity for all peak hours.
- Under the 2035 future total condition, a number of intersections within the study area are expected to continue to operate above capacity in all peak hours due to the considerable traffic volumes generated from the Base 31 development. In comparison to the 2035 future background condition, the proposed development will generate an acceptable traffic impact to the study area road network.
- The following mitigate measures are recommended by the County to explore to improve capacity for the intersections that are expected to operate above capacity in the 2035 future total condition due to the considerable traffic volumes generated from the Base 31 development.
 - County to monitor and provide lane capacity improvements at the County Road 1 and Highway 33 roundabout intersection as necessary in the future.
 - At the County Road 10 and County Road 1 intersection:
 - Signalize the intersection.
 - Provide exclusive eastbound left turn lane.
 - Provide eastbound right turn movement with permitted phase and overlap phase with northbound left protected phase to accommodate heavy northbound left and eastbound right traffic volumes.
 - At the County Road 10 and Ridge Road / Street A intersection:
 - Signalize the intersection.
 - Provide exclusive northbound left turn lane and southbound left turn lane.
 - At the County Road 10 and County Road 22 intersection:
 - Signalize the intersection.
 - Provide exclusive northbound left turn lane and southbound left turn lane.
 - Provide westbound right turn movement with permitted phase and overlap phase with southbound left protected phase to accommodate heavy southbound left and westbound right traffic volumes.
 - County to consider exclusive northbound right turn lane to alleviate overcapacity of the shared northbound through right movement.
- The County is recommended to explore pedestrian facility improvements (e.g. sidewalks and multi-use paths along the study area roads to accommodate pedestrian travel and encourage active transportation.
- County Transit bus service coverage is recommended to be expanded to include the study area intersections adjacent to the subject site to provide transit service for the subject development and nearby future developments within the south Picton area.
- The proposed overall parking provision of 902 parking spaces meets the zoning by-law overall parking requirement of 705 spaces.
- TDM measures are recommended to support the reduction of single-occupant vehicle trips and encourage non-auto (transit, cycle, walk) modes of travel.



KEY PLAN



BENCHMARK

REVISIONS

NO	REVISION	DATE	BY

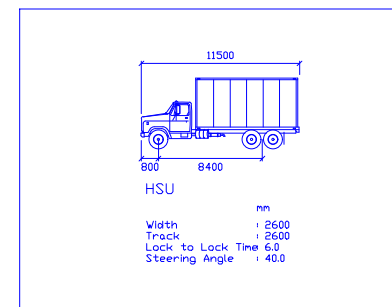
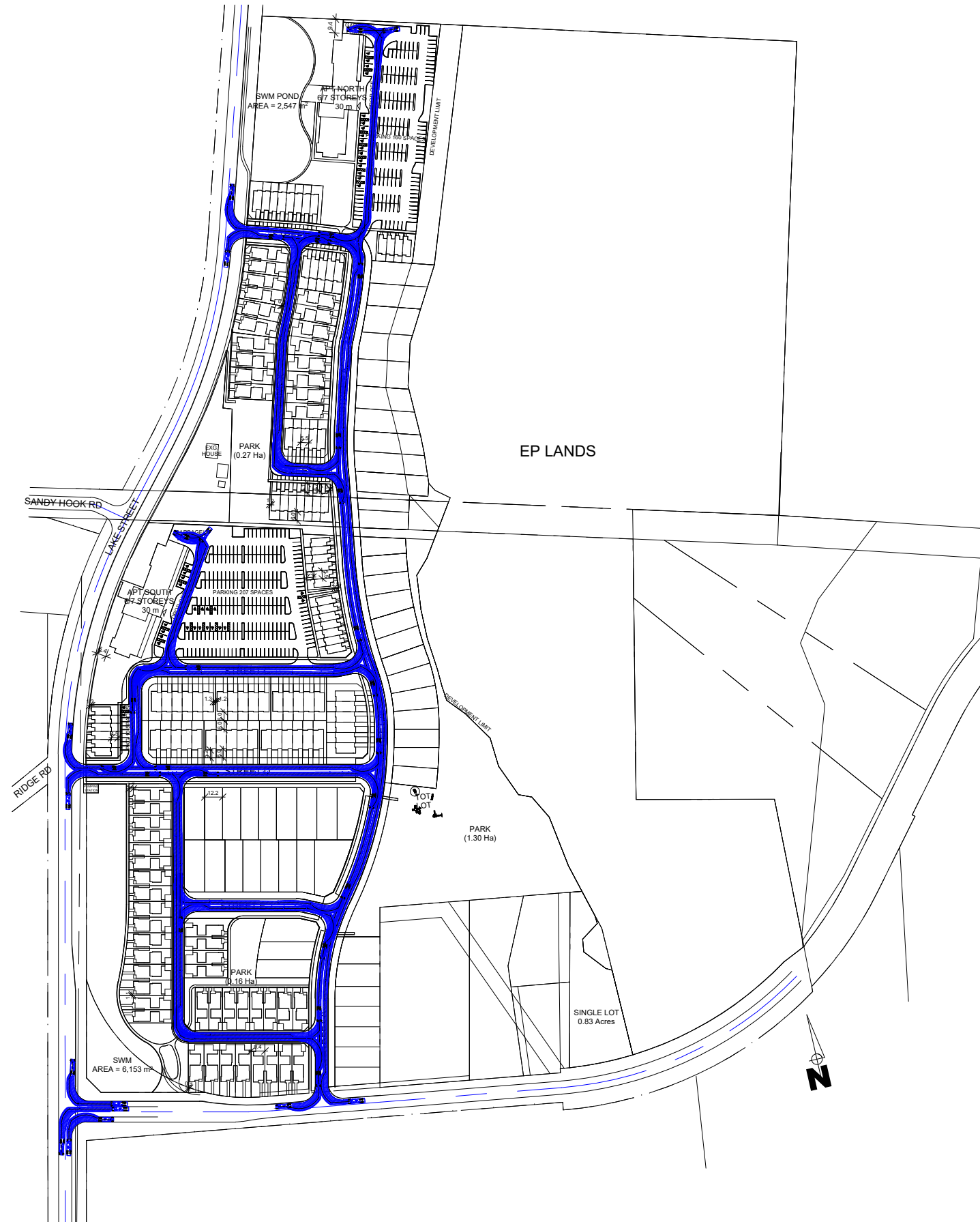
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CONSULTING ENGINEERS
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Web: www.nextrans.ca

PROJECT NAME:
Residential Subdivision Development
318 Lake Street
Prince Edward County

DRAWING TITLE:
AutoTURN Analysis
NCHRP Report 659
Aerial Fire Truck

DESIGN BY: J.N.	DATE: April 28, 2025
CHECKED BY: R.P.	PROJECT NO. NT-22-282
DRAWN BY: J.N.	DRAWING NO. AT-01
SCALE: 1:3500	



KEY PLAN



BENCHMARK

REVISIONS

NO	REVISION	DATE	BY

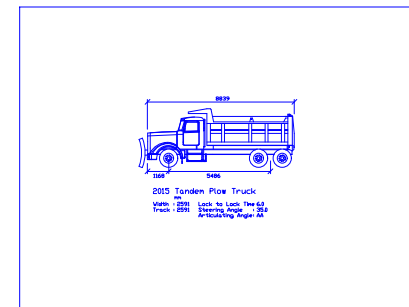
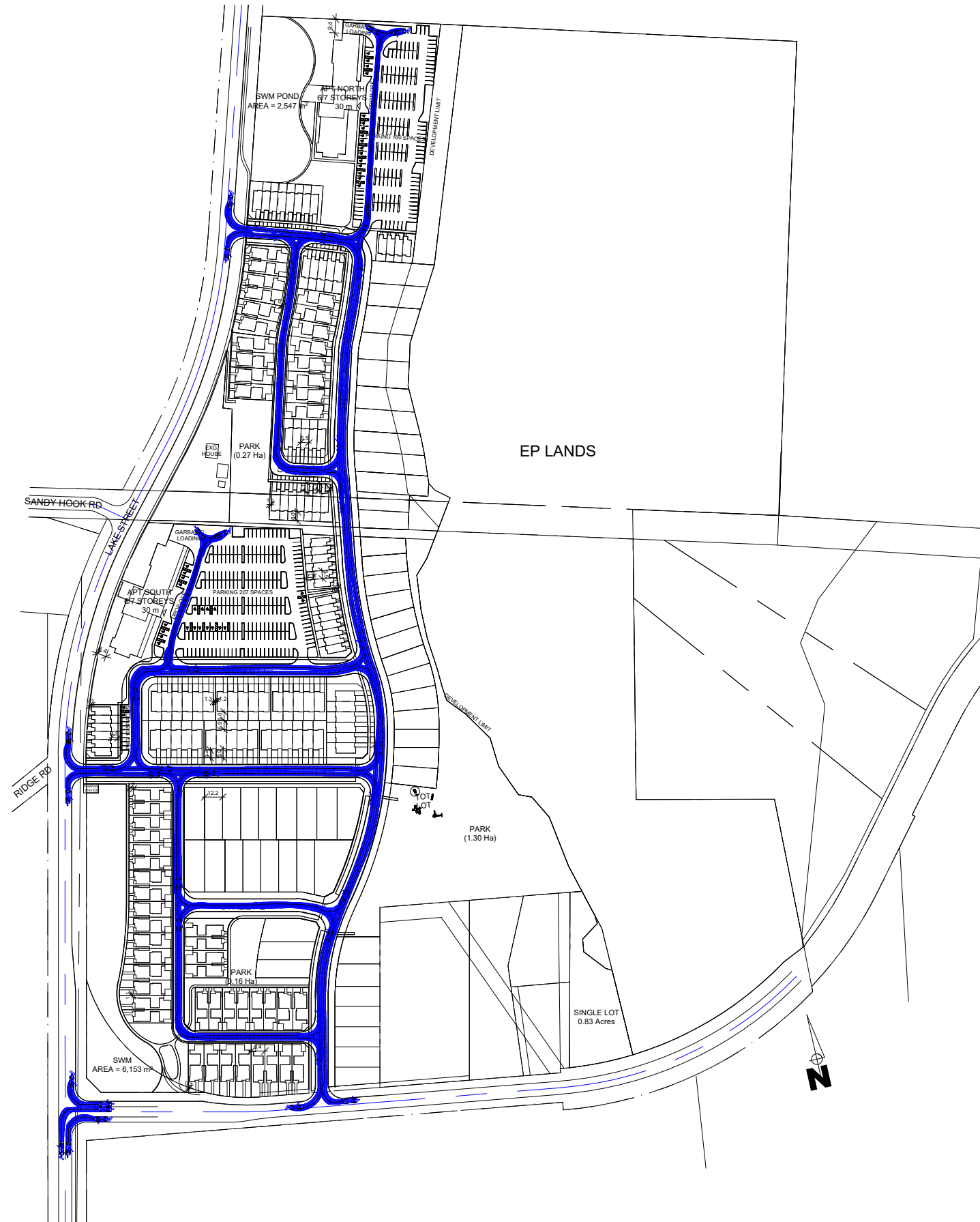
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nextrans
CONSULTING ENGINEERS
Suite 201, 520 Industrial Parkway South
Aurora ON L4G 6W8
Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:
Residential Subdivision Development
318 Lake Street
Prince Edward County

DRAWING TITLE:
AutoTURN Analysis
HSU TAC-2017
Waste Collection

DESIGN BY: J.N.	DATE: April 28, 2025
CHECKED BY: R.P.	PROJECT NO. NT-22-282
DRAWN BY: J.N.	DRAWING NO. AT-02
SCALE: 1:3500	



KEY PLAN



BENCHMARK

REVISIONS

NO	REVISION	DATE	BY

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CONSULTING ENGINEERS
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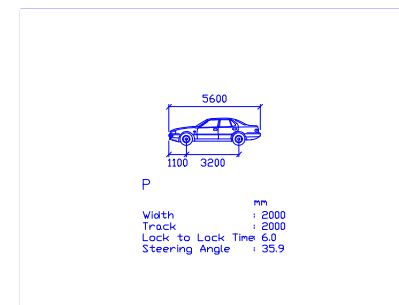
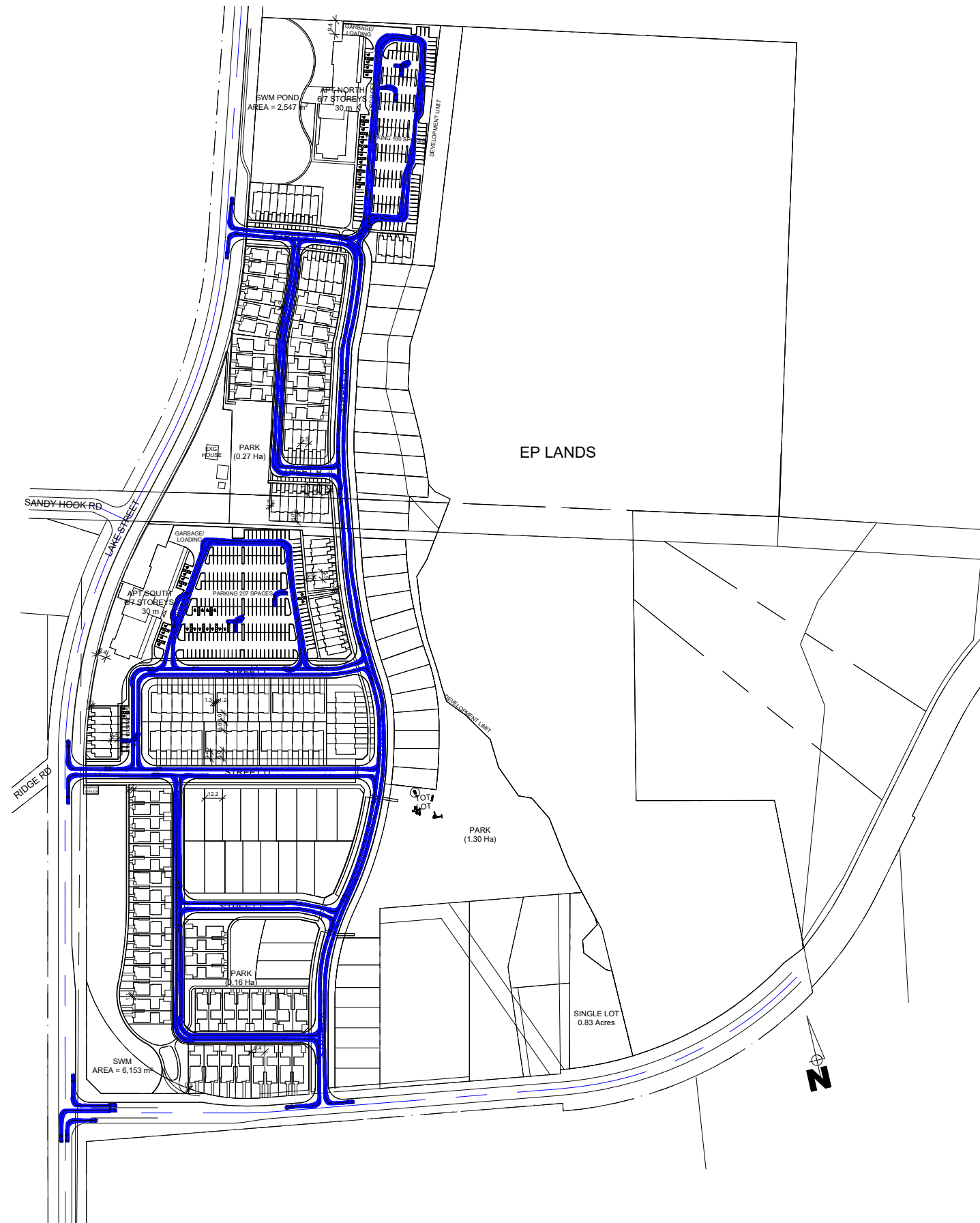
PROJECT NAME:

Residential Subdivision Development
318 Lake Street
Prince Edward County

DRAWING TITLE:

AutoTURN Analysis
MnDOT 2007
2015 Tandem Plow Truck

DESIGN BY: J.N.	DATE: April 28, 2025
CHECKED BY: R.P.	PROJECT NO. NT-22-282
DRAWN BY: J.N.	DRAWING NO. AT-03
SCALE: 1:3500	



KEY PLAN



BENCHMARK

REVISIONS

NO	REVISION	DATE	BY

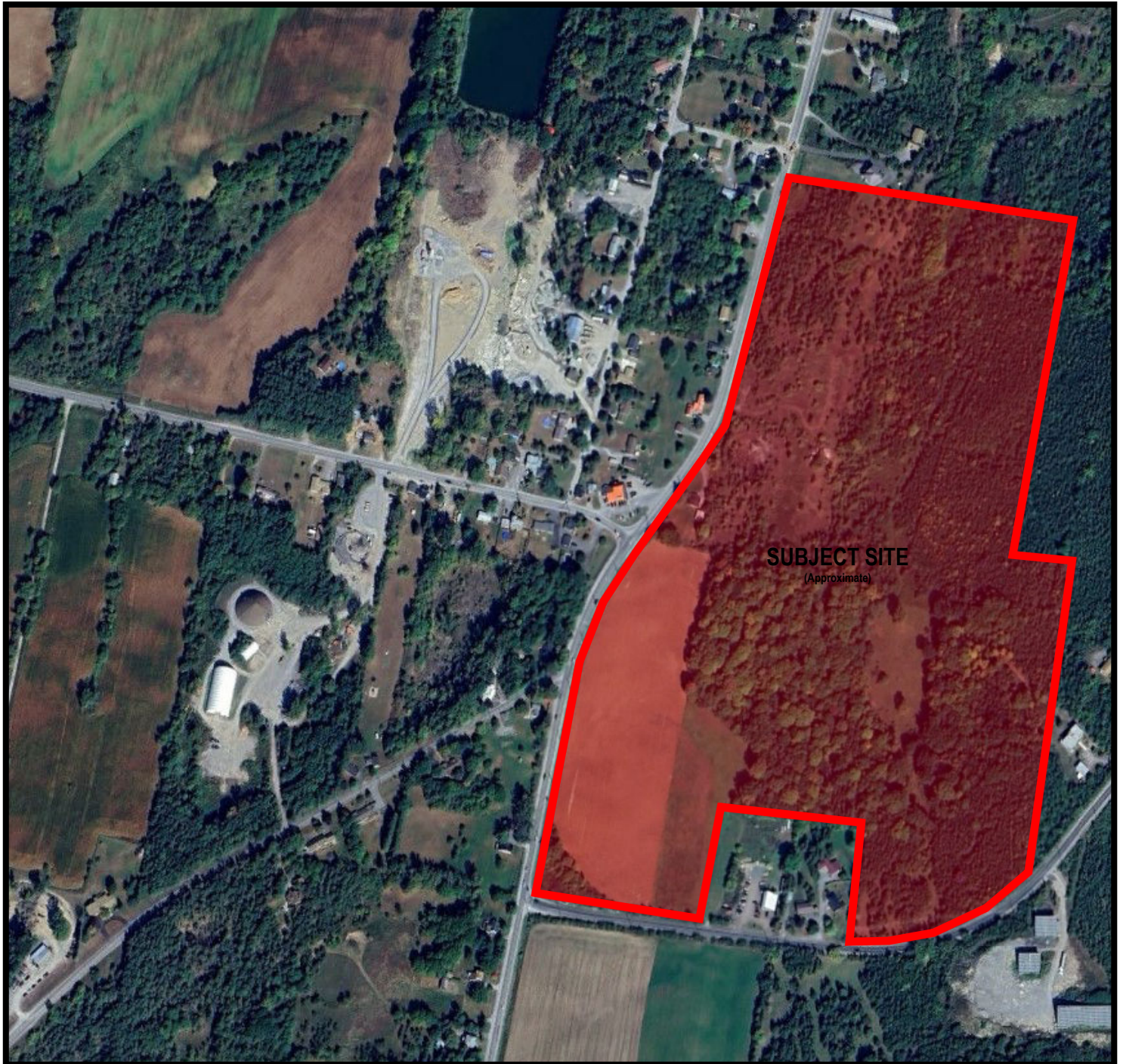
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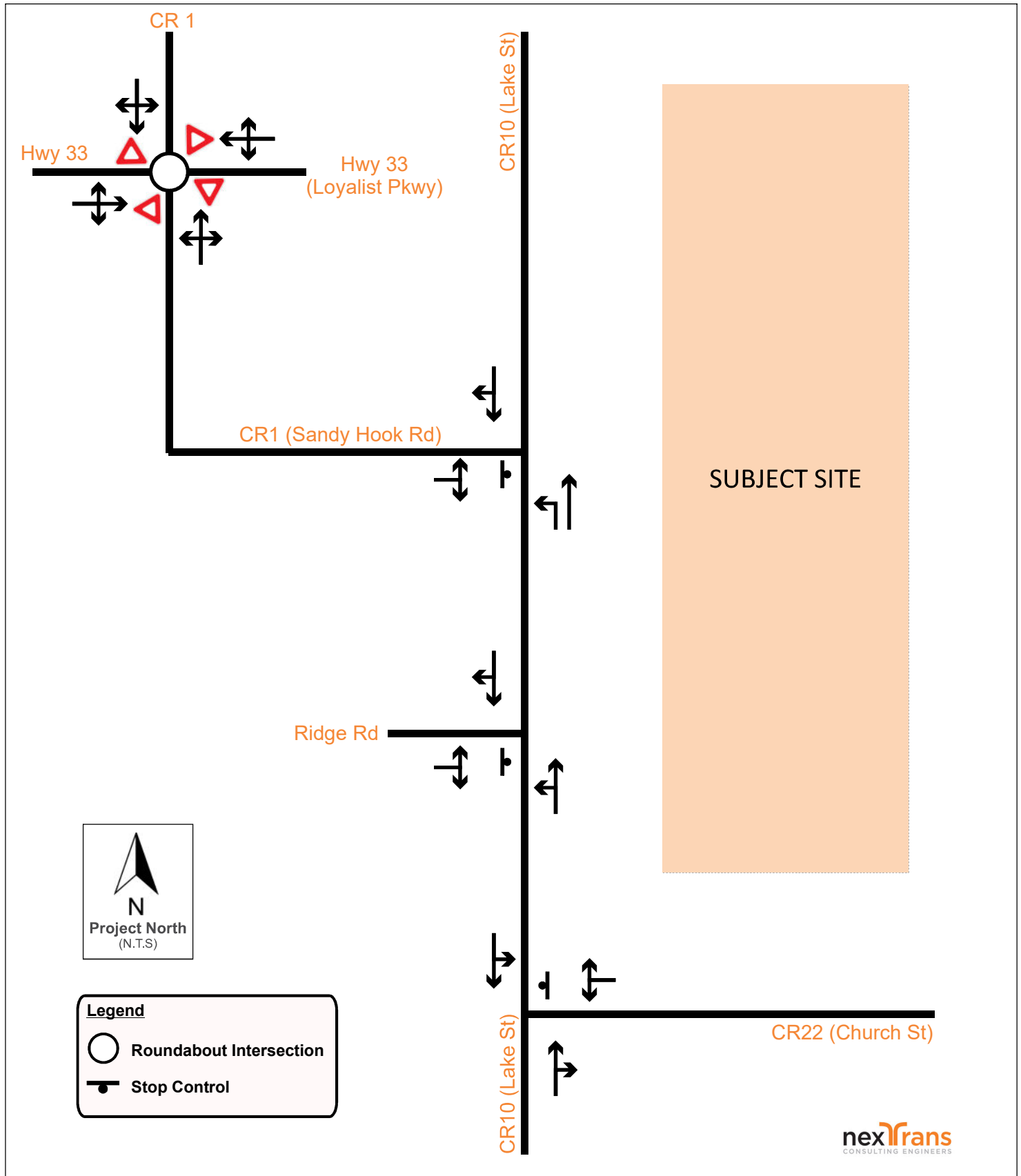
nextrans
CONSULTING ENGINEERS
Suite 201, 520 Industrial Parkway South
Aurora ON L4G 6W8
Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:
Residential Subdivision Development
318 Lake Street
Prince Edward County

DRAWING TITLE:
AutoTURN Analysis
P TAC-2017

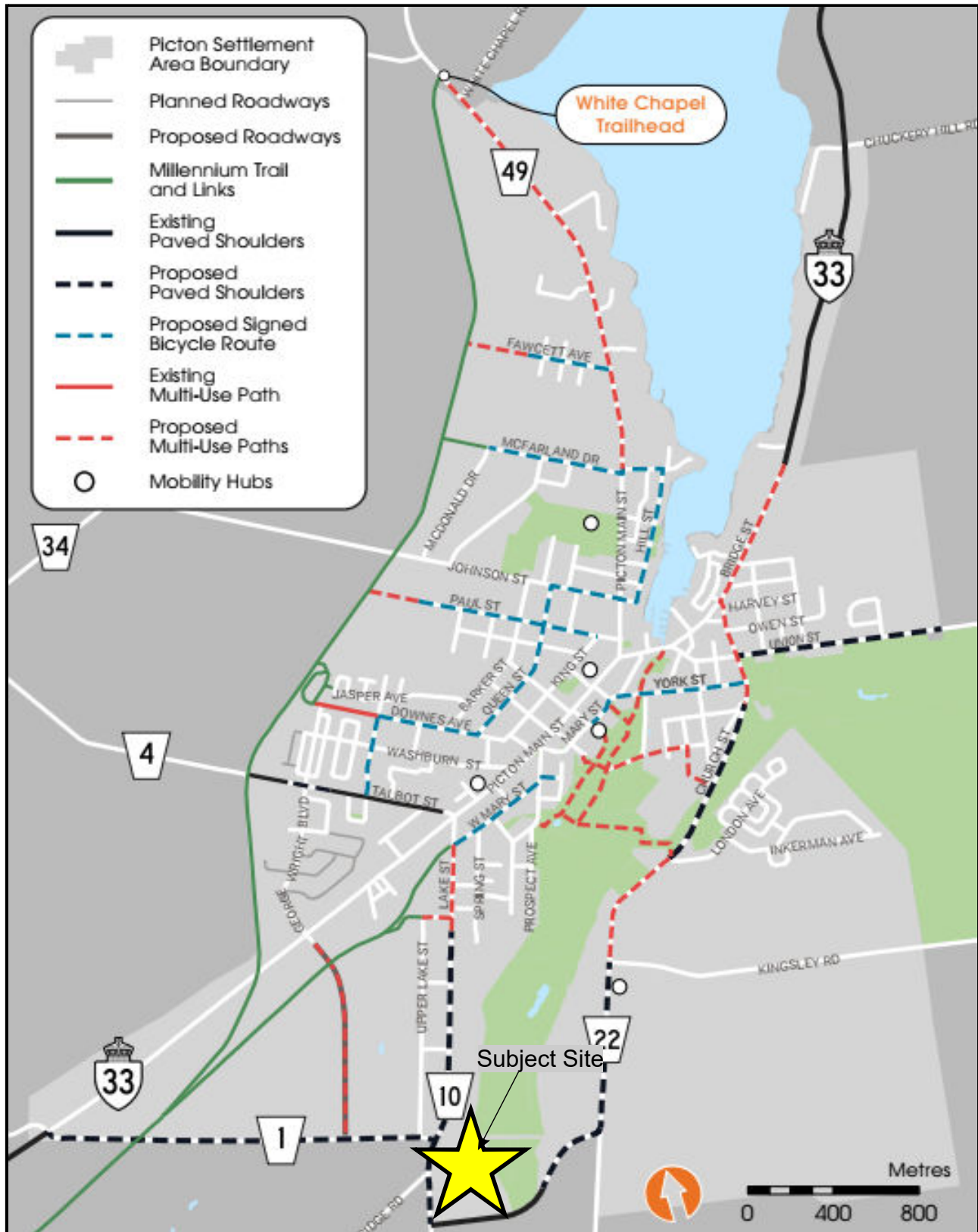
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CHECKED BY: R.P.	PROJECT NO. NT-22-282
DRAWN BY: J.N.	DRAWING NO. AT-04
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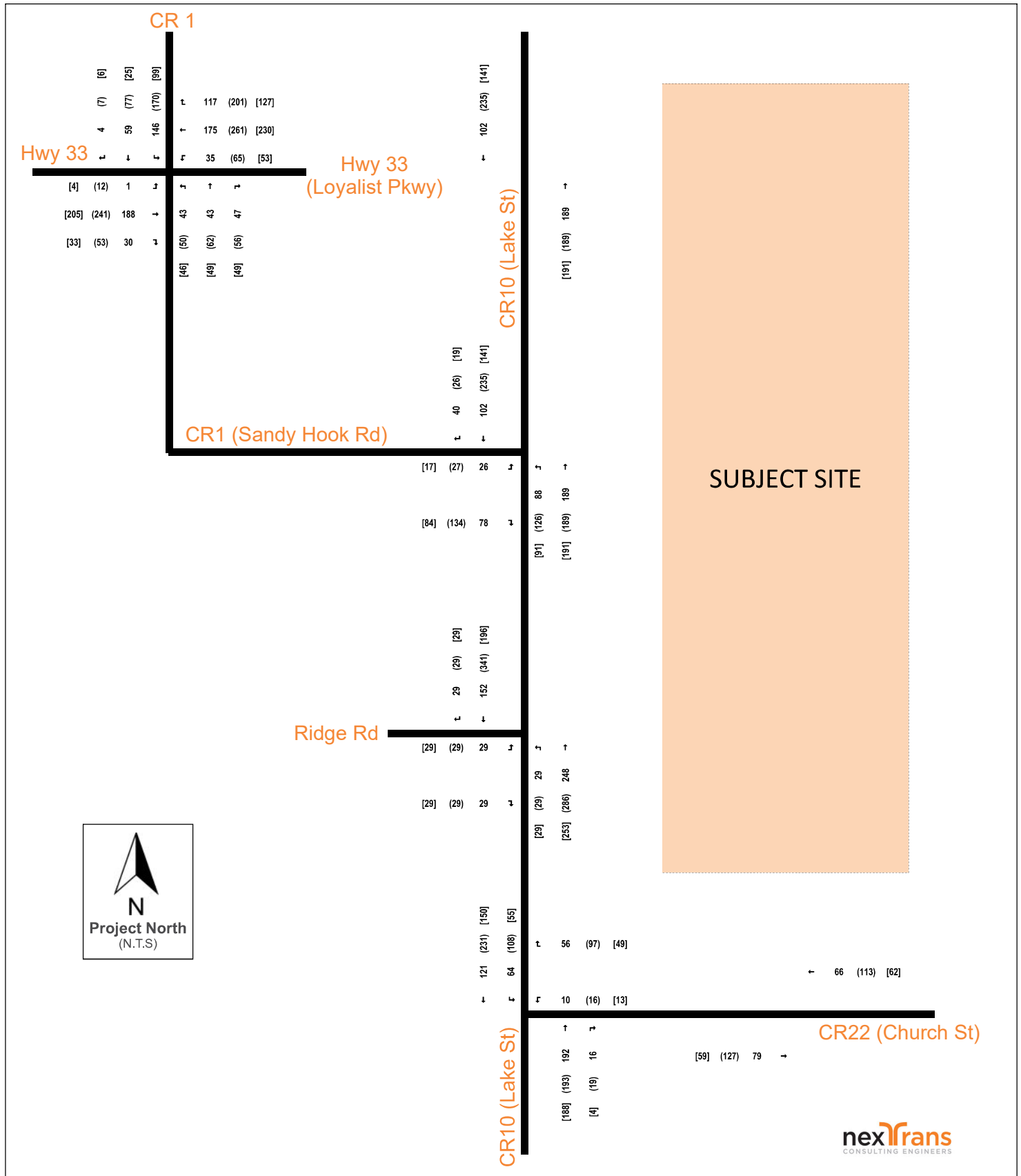


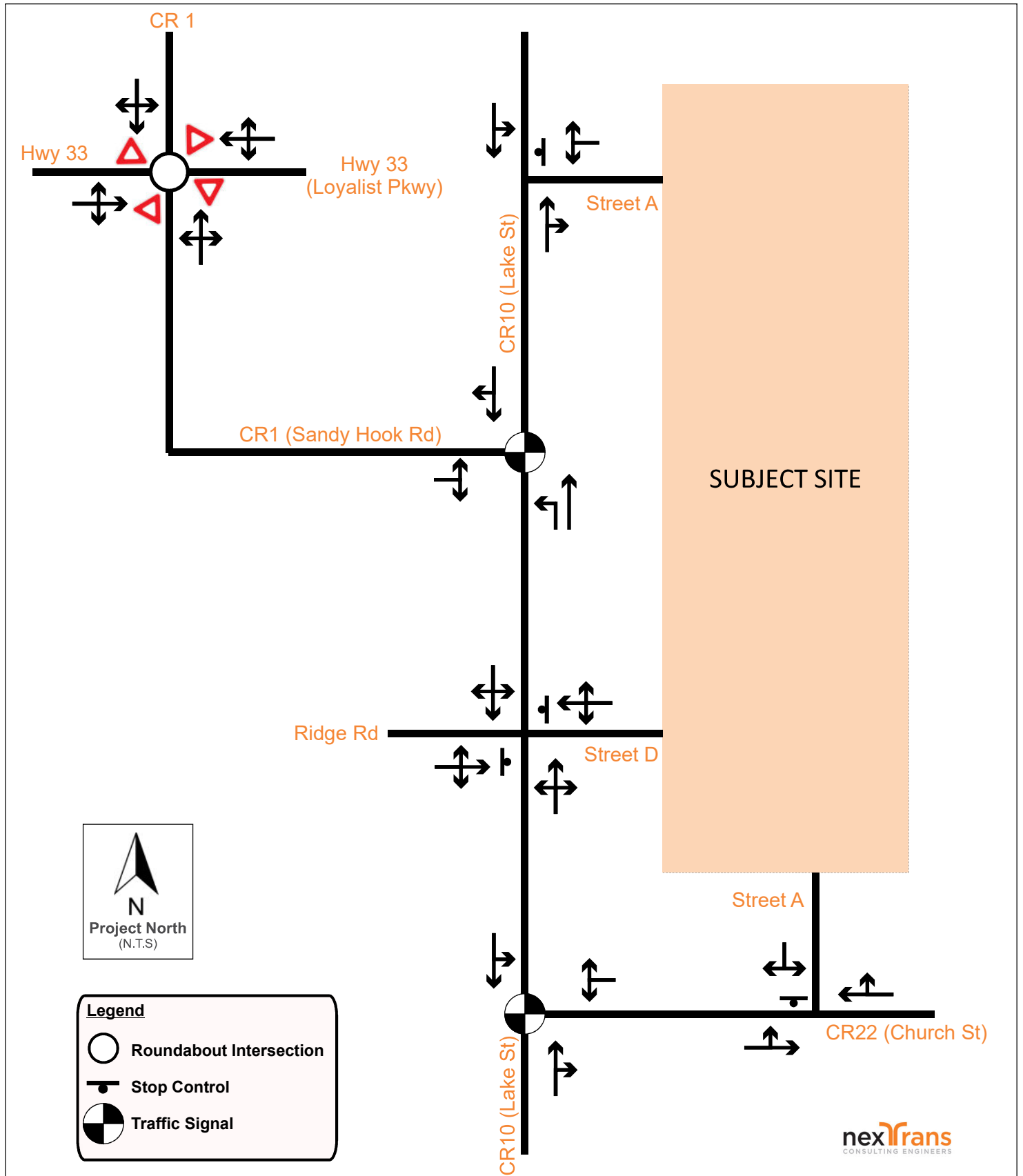


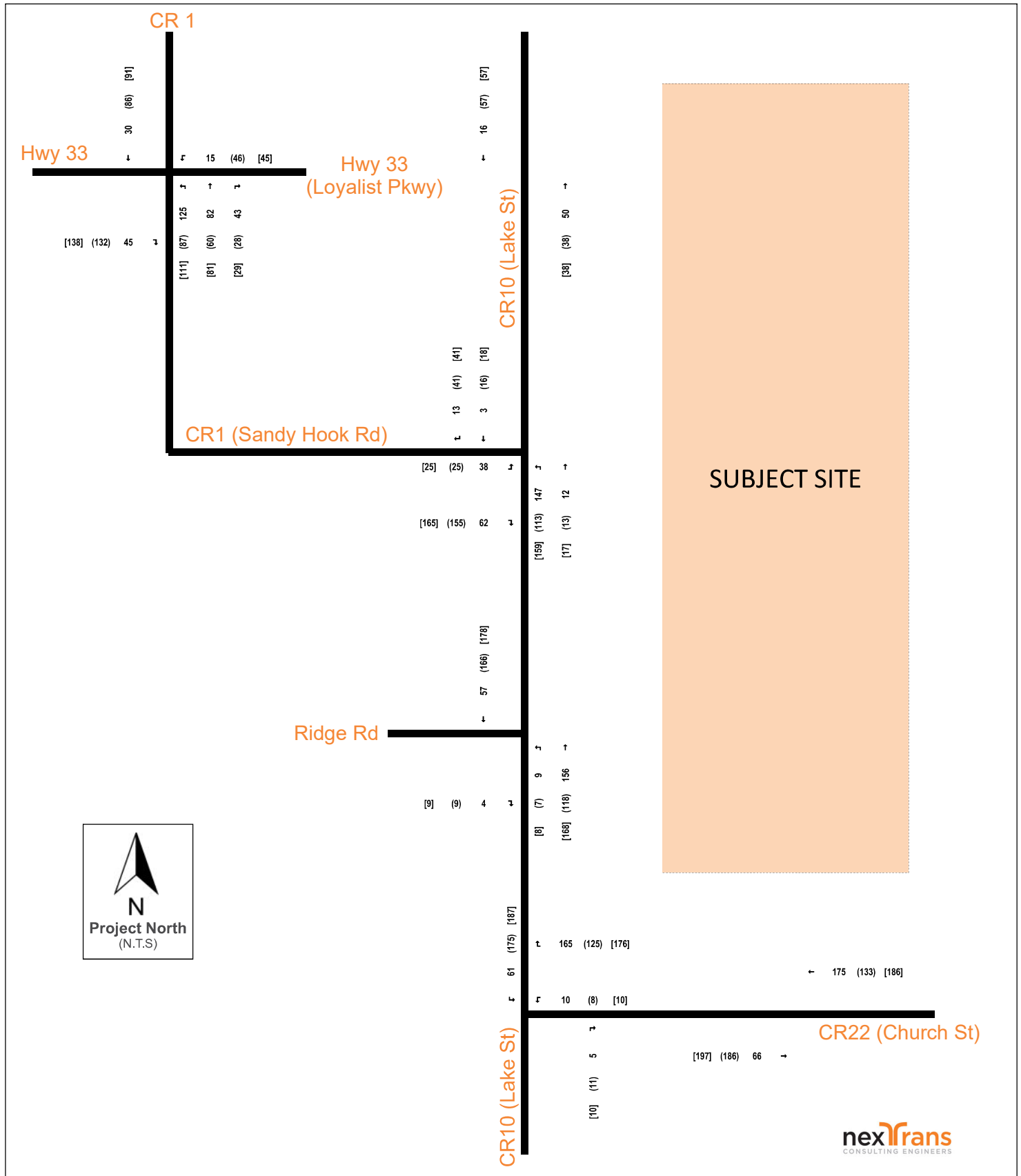
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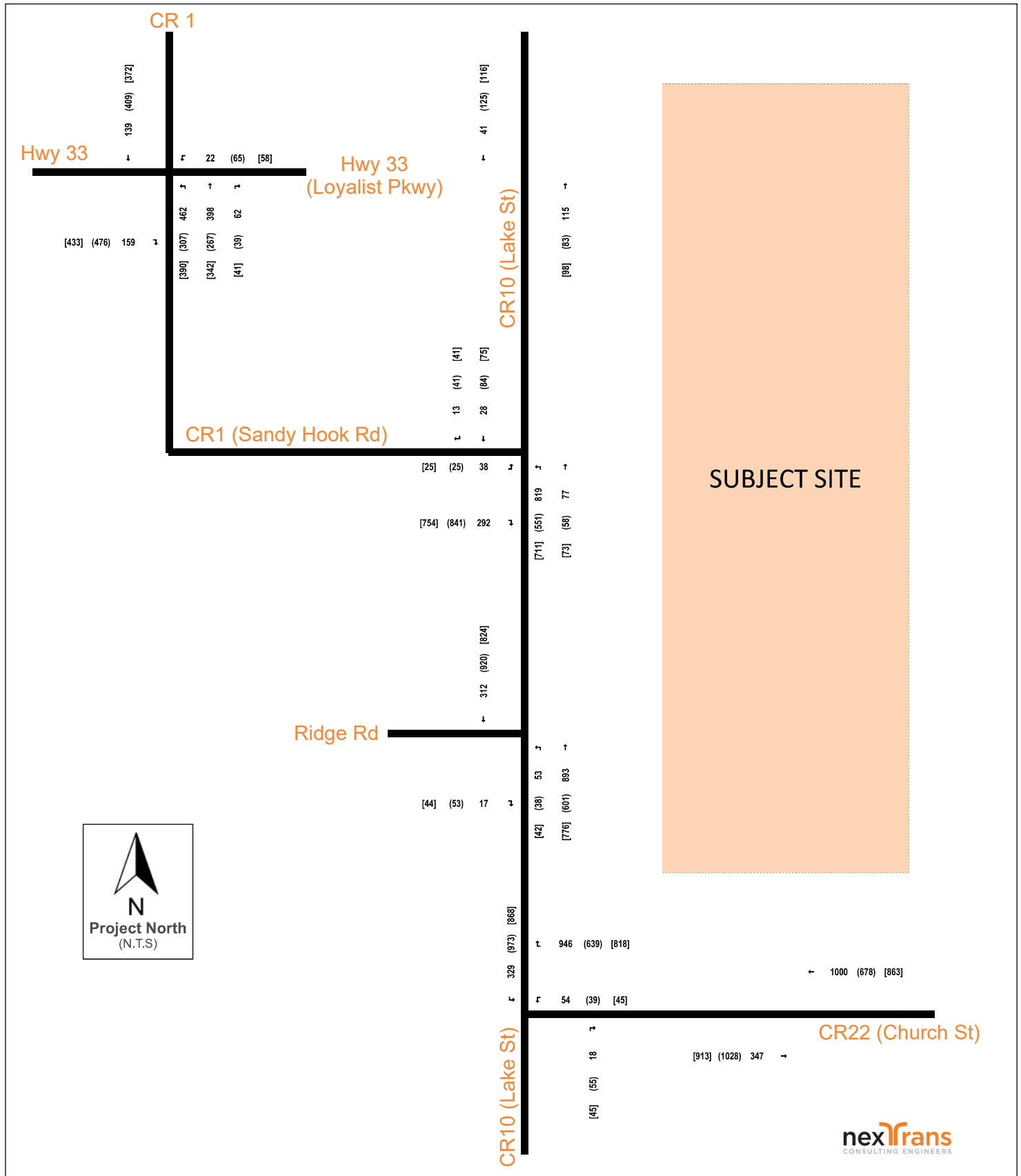


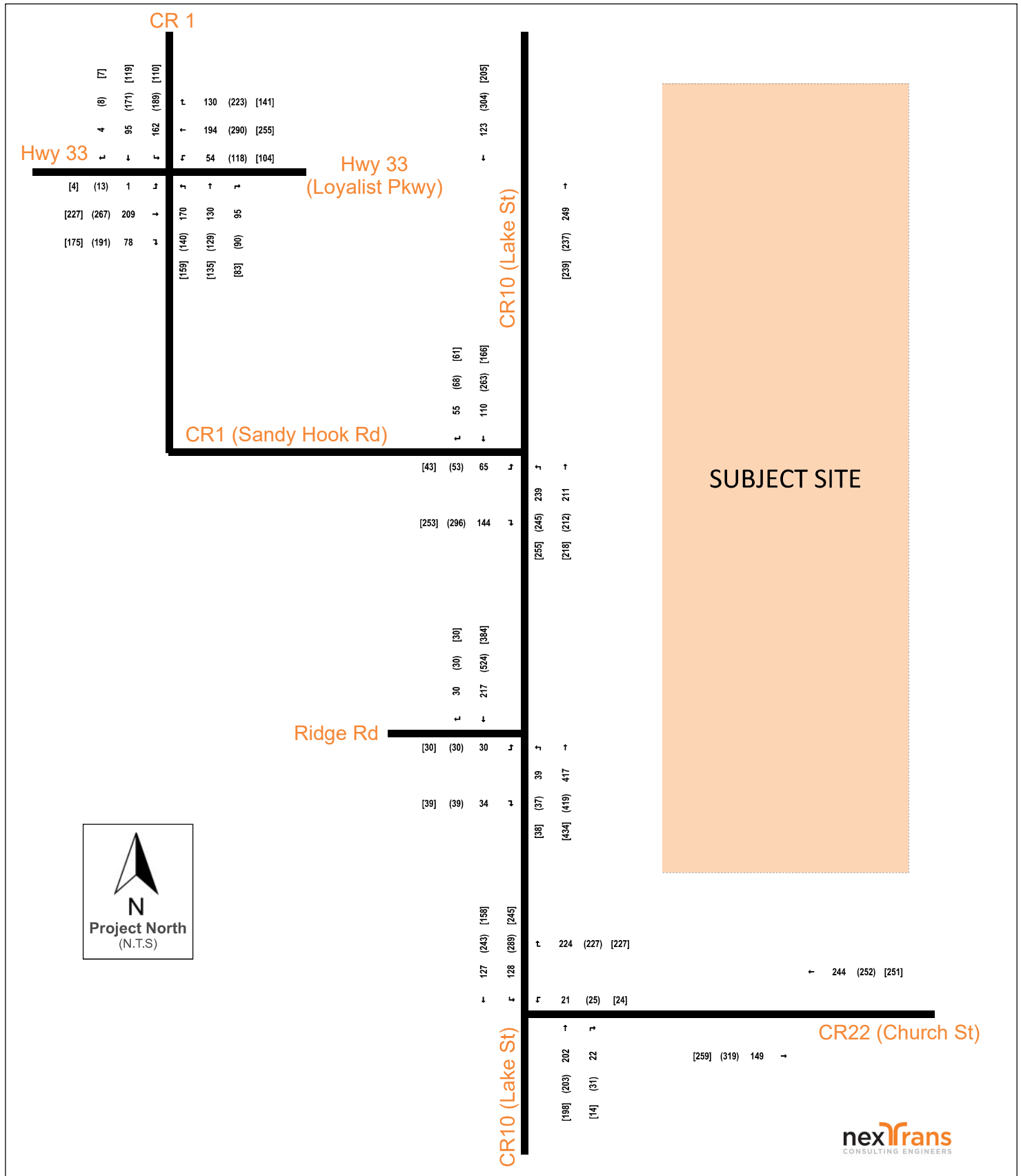
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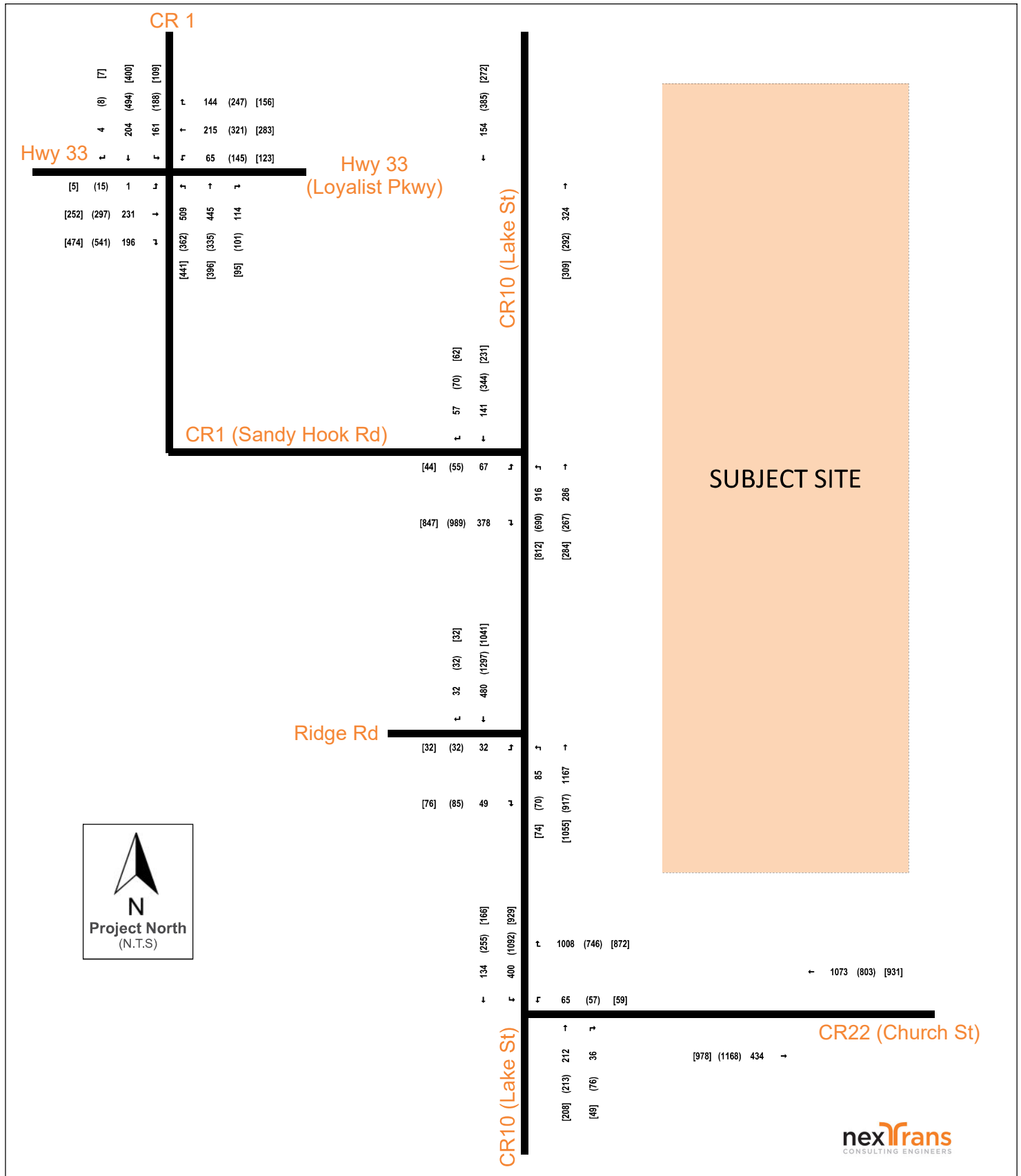


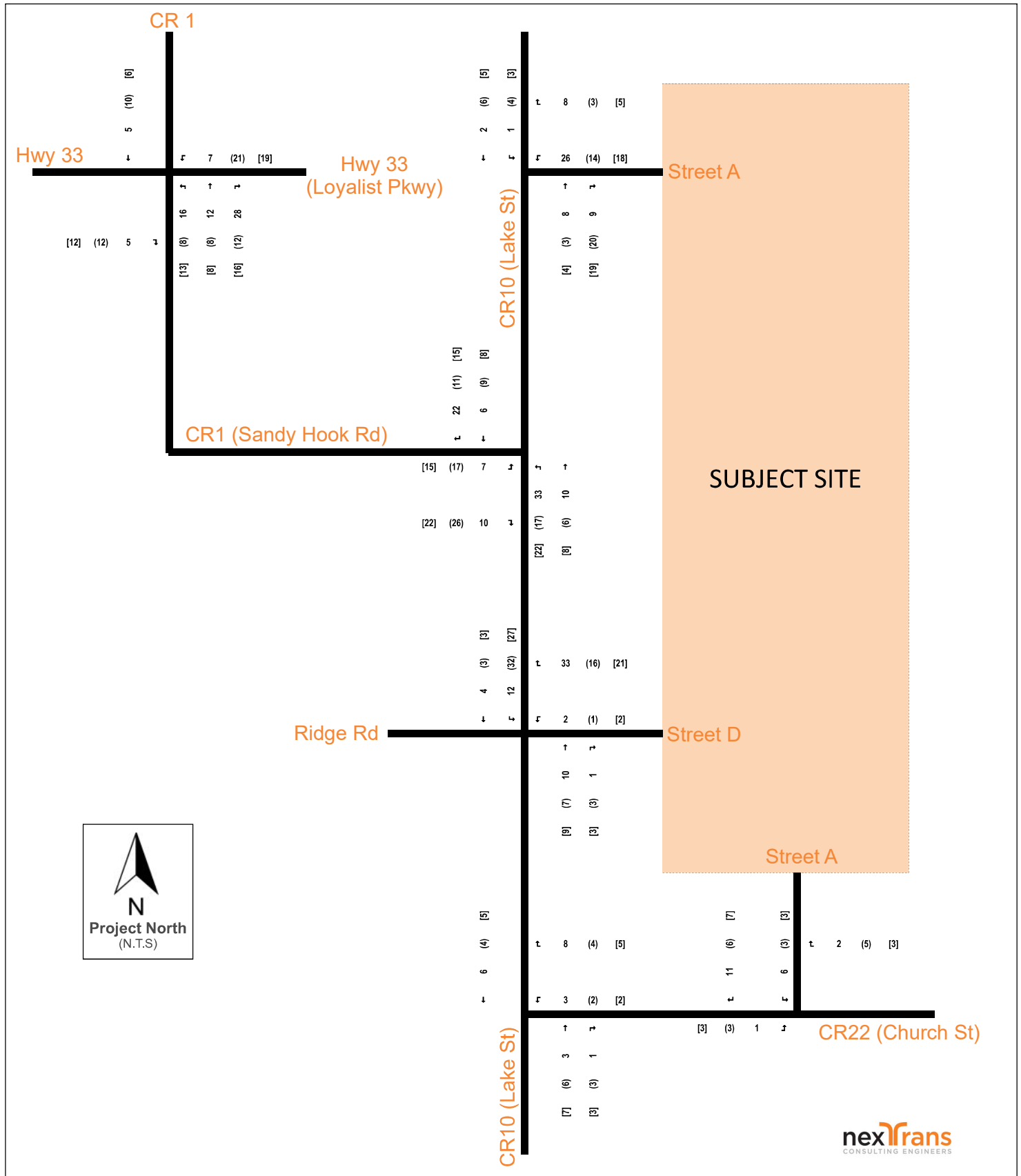


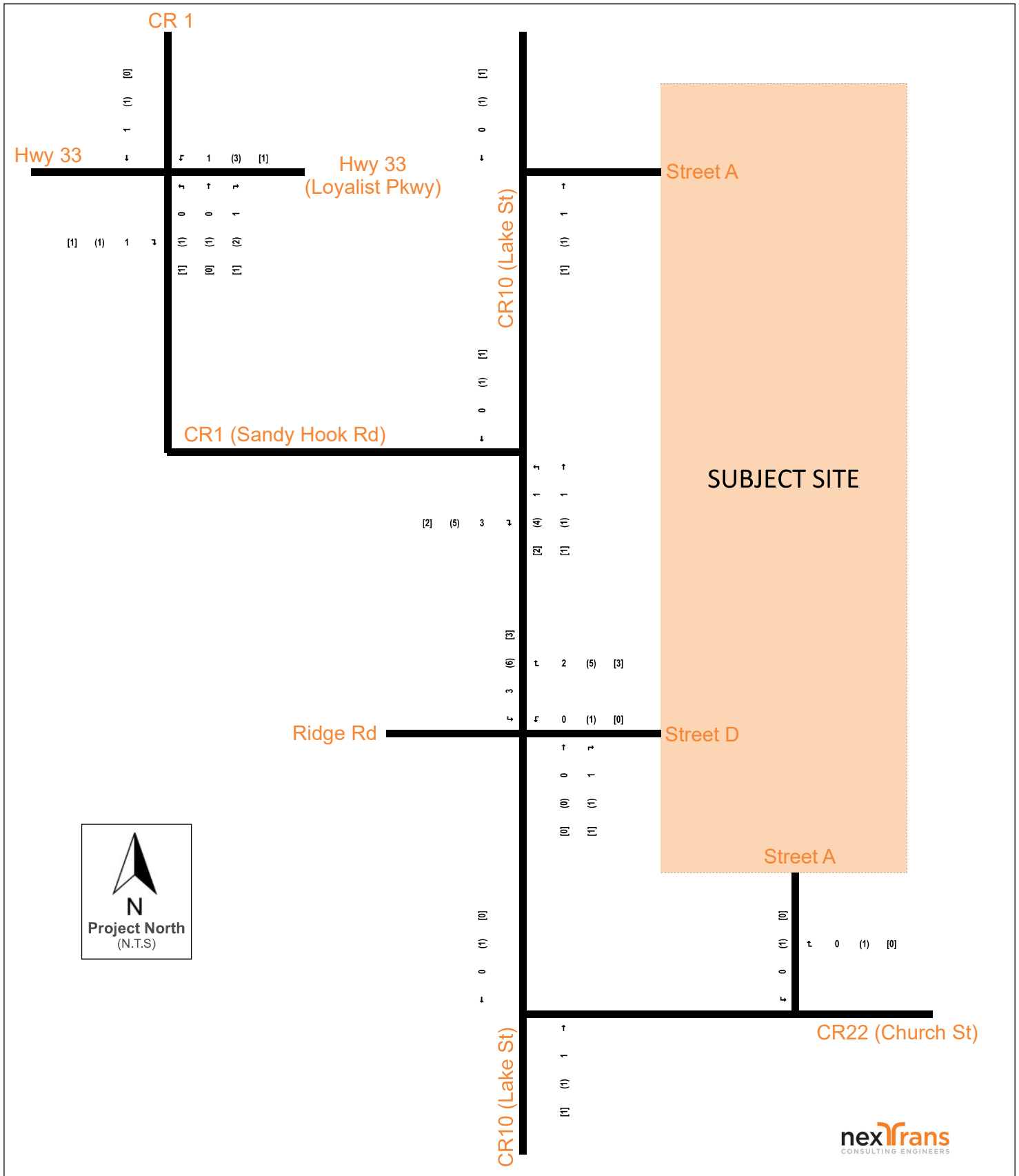


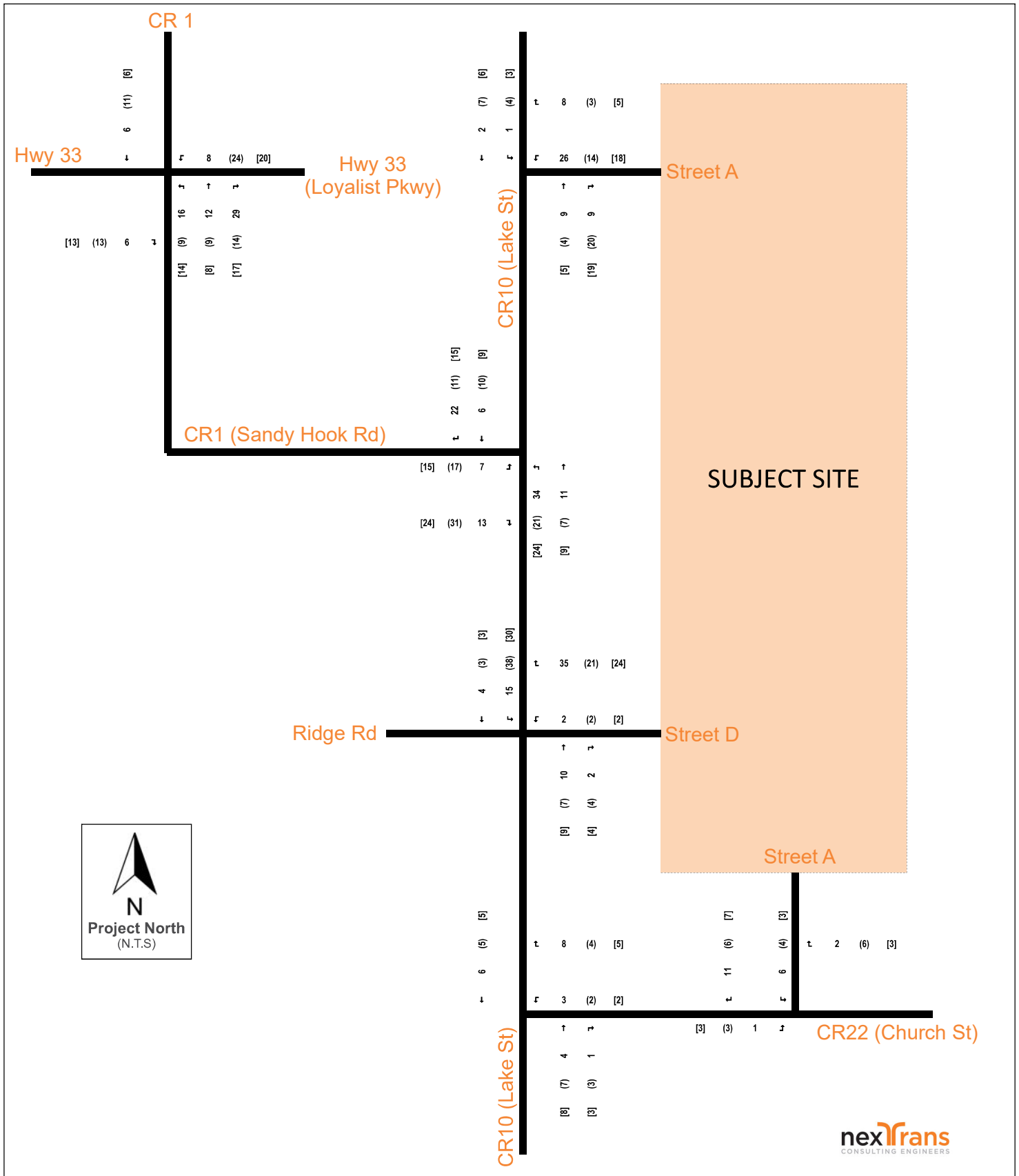


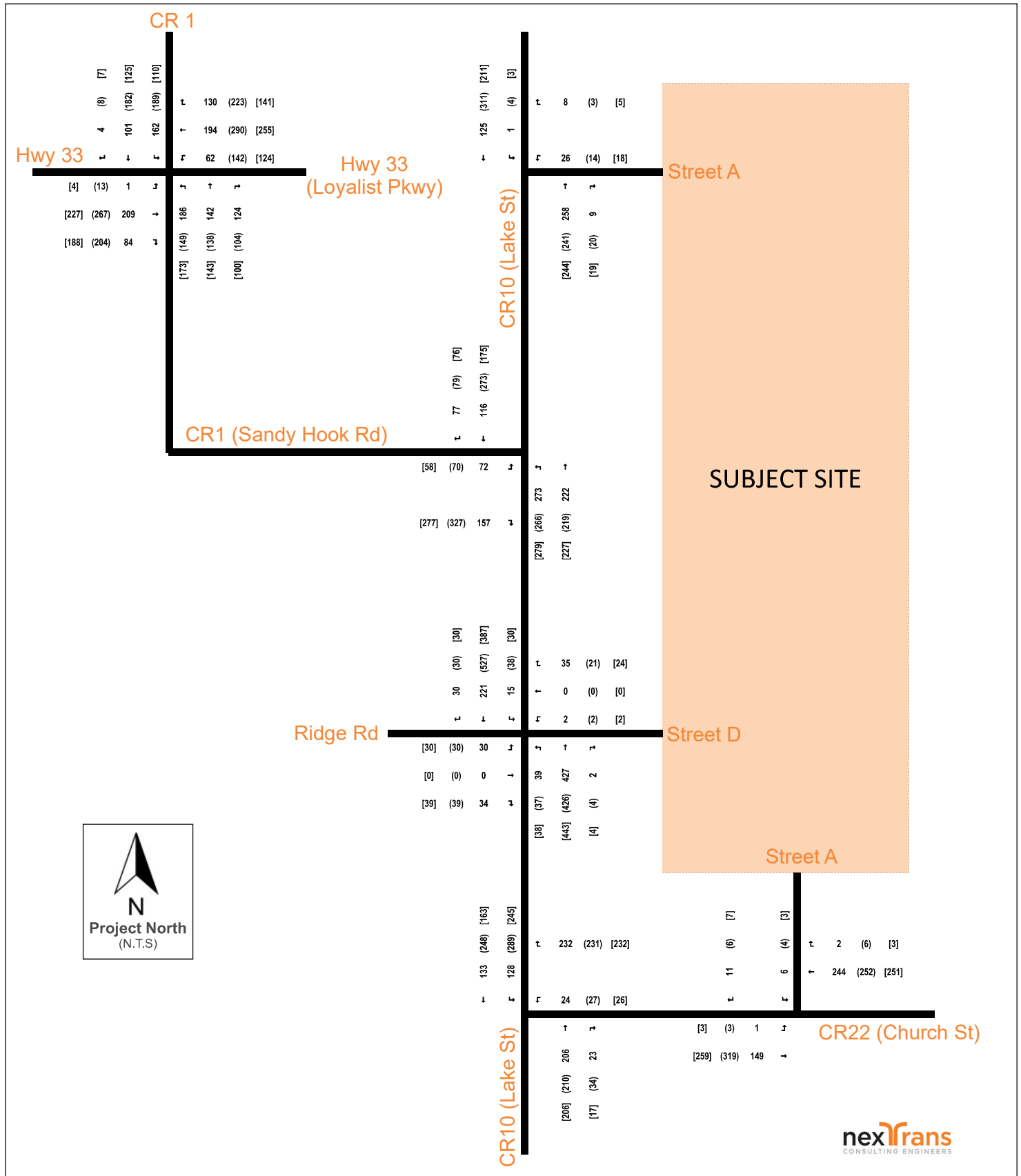


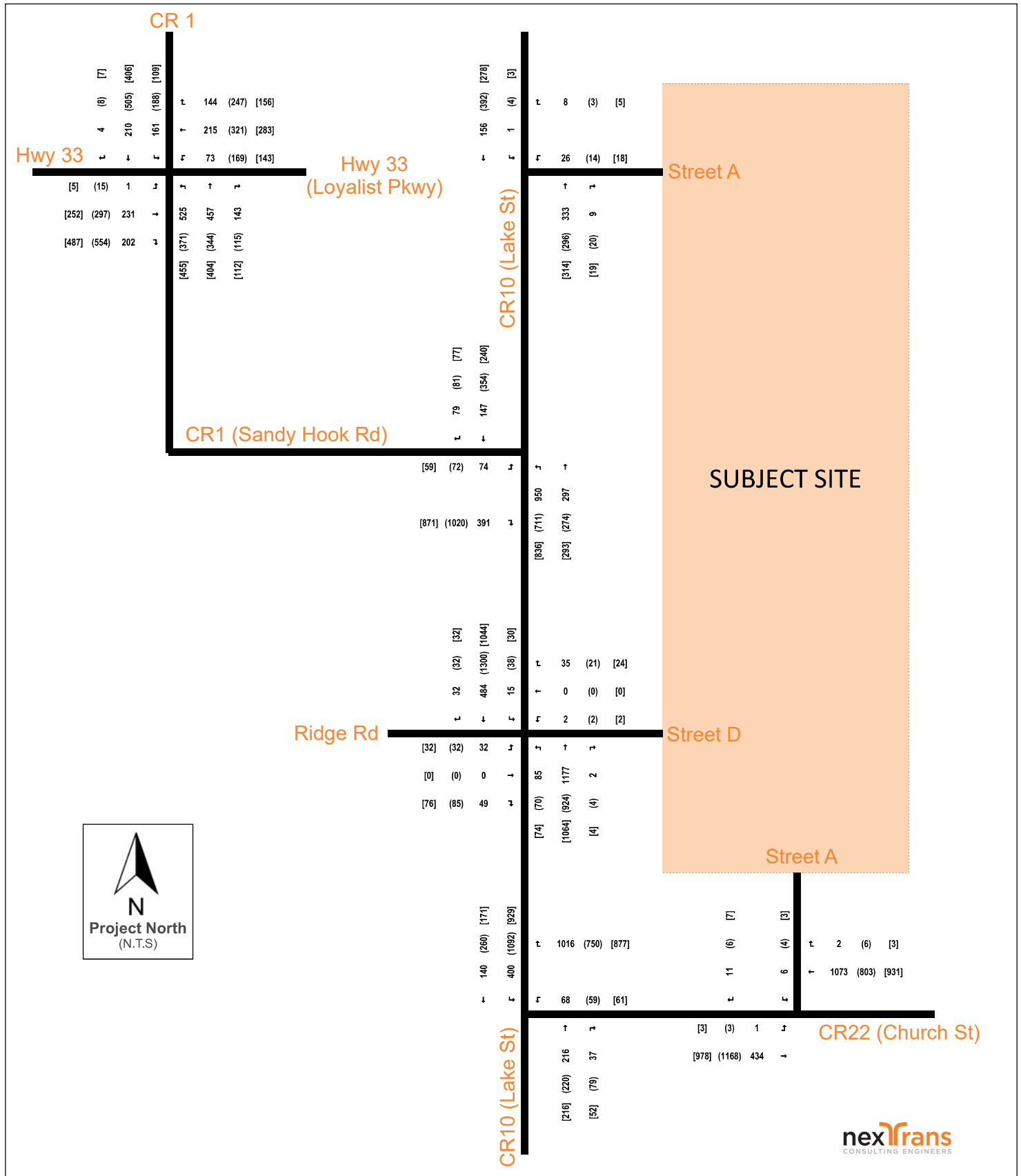


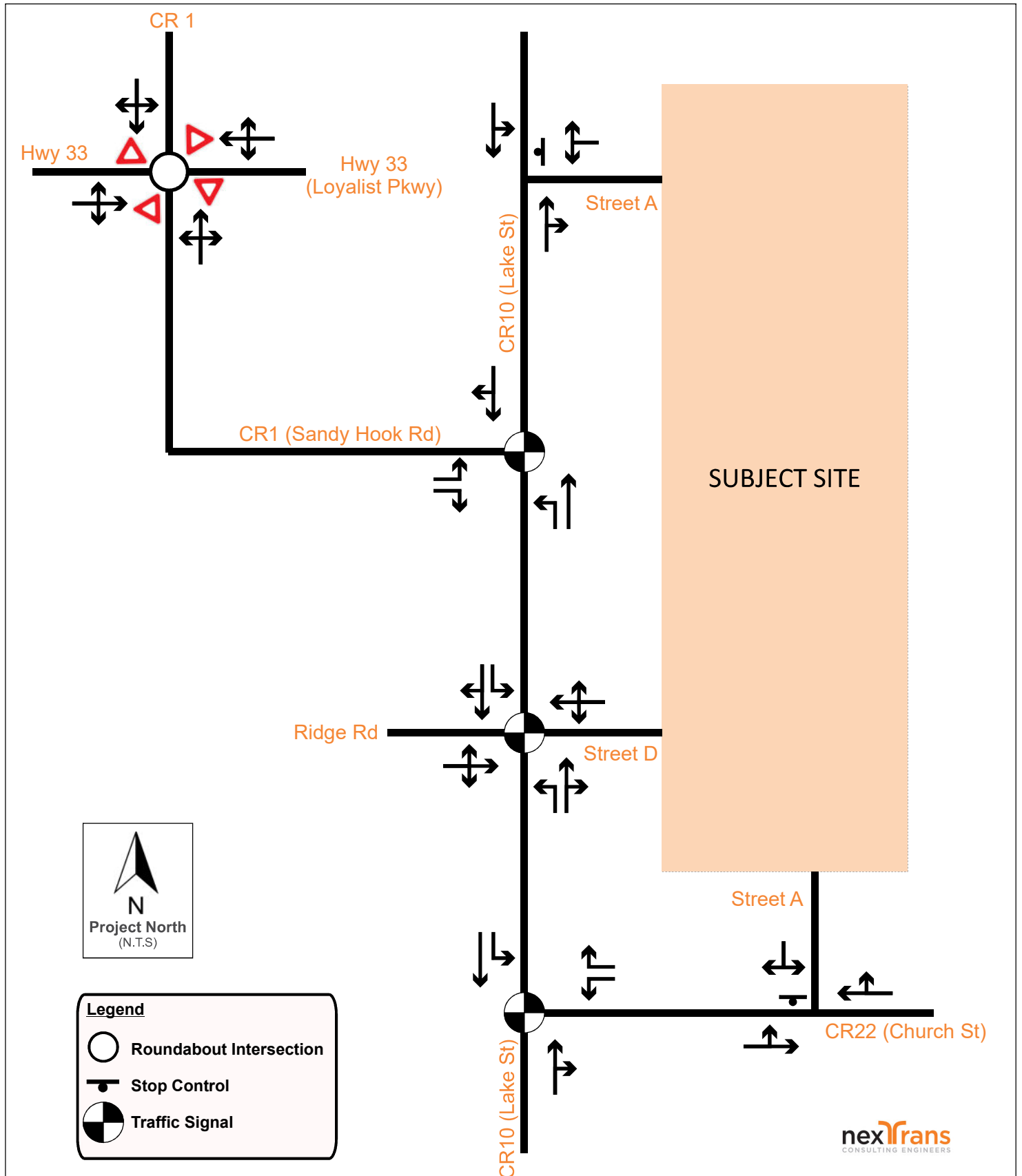






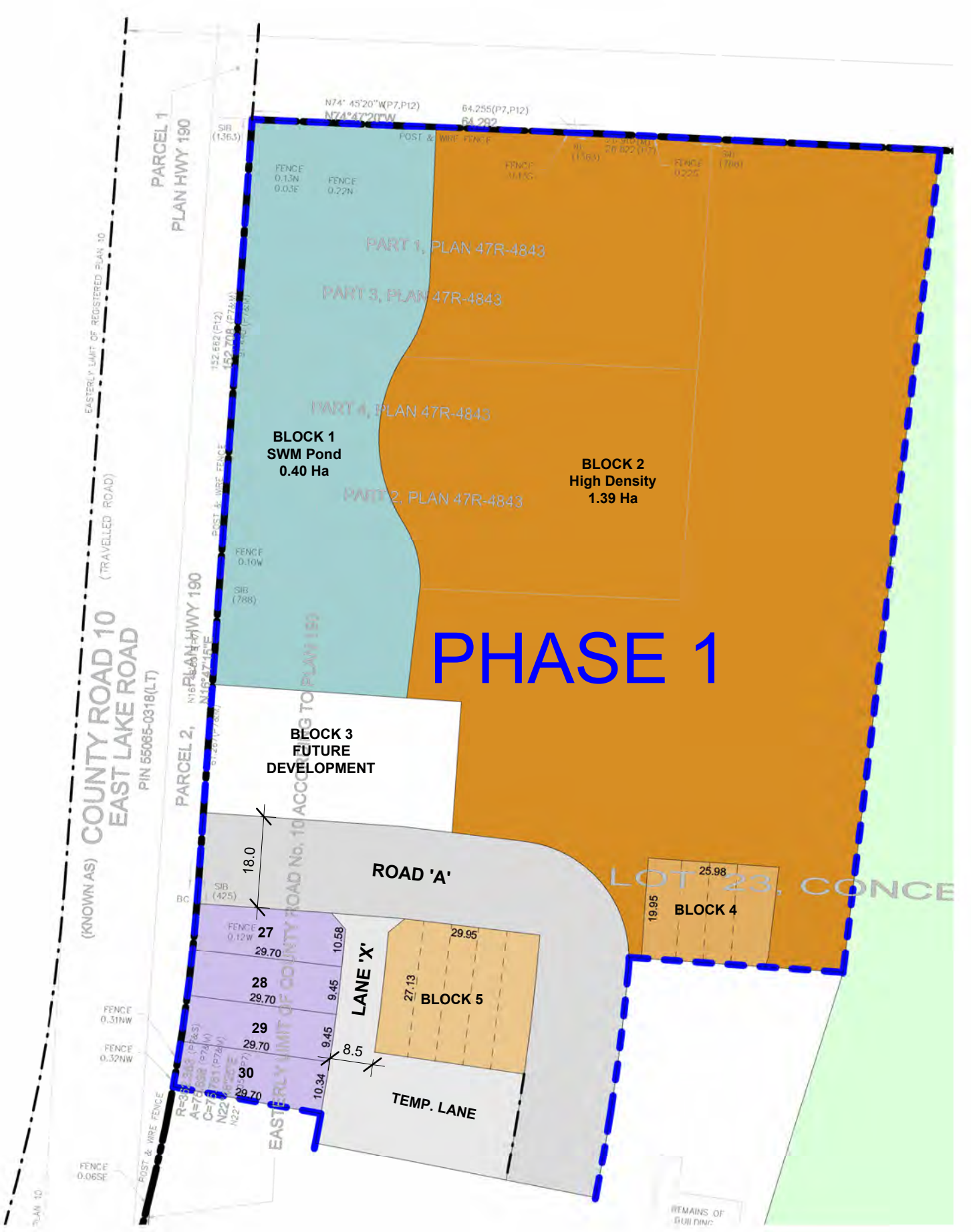
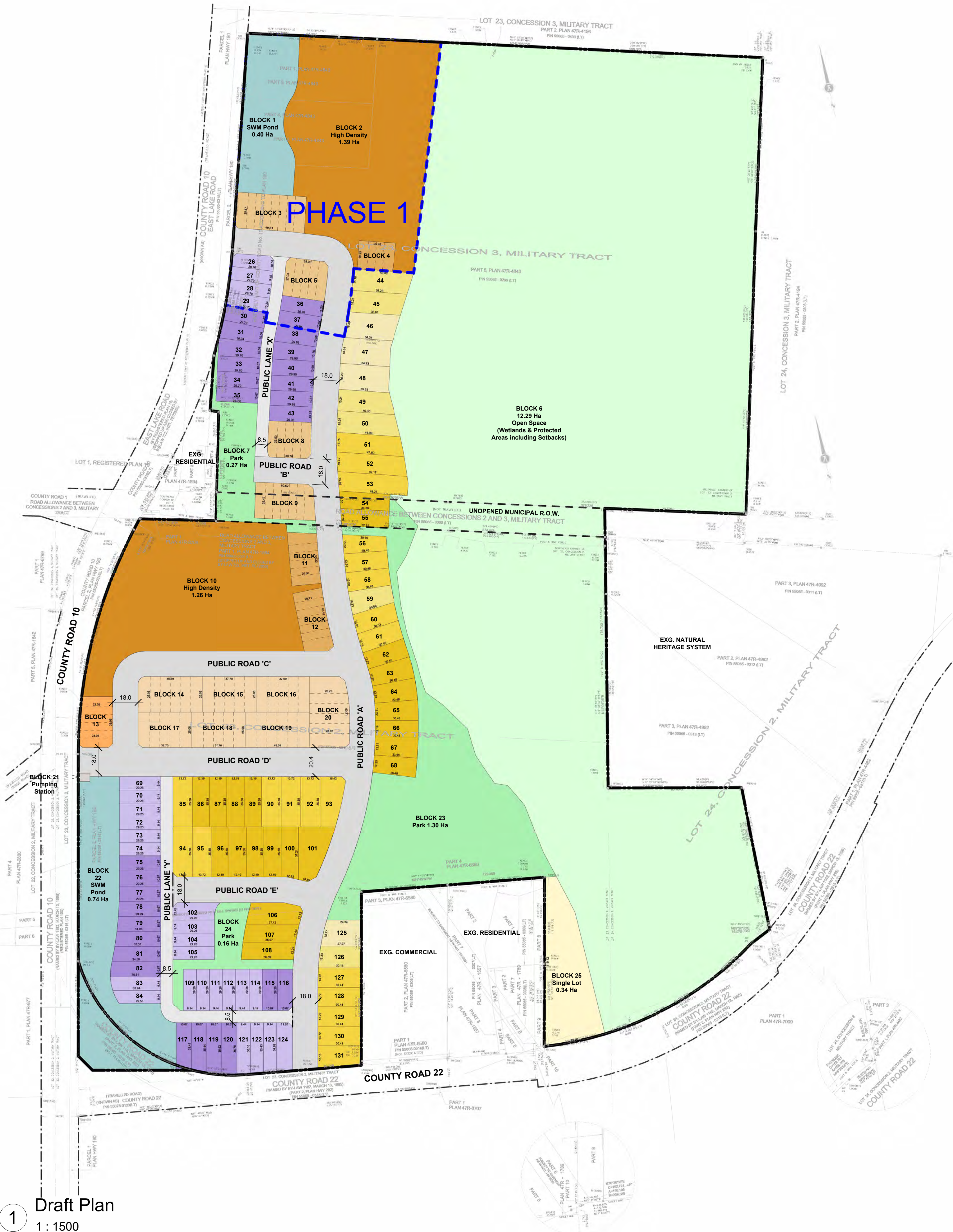






Appendix A

Architectural Site Plan and Draft Plan of
Subdivision



2 Draft Plan Phase 1
1 : 1000

Phase 1 Land Use Schedule						
Lot/ Block #	Unit Type	Min. Lot Width (m)	Min. Lot Width (ft)	No. Units	Area (Ha)	Density (Units/Ha)
Lot 26, 27, 28, 29	Link	9.15m	(30 ft)	4	0.11	36.4
Block 5	Townhouse	5.50m	(18 ft)	5	0.08	62.5
Block 4	Townhouse	5.50m	(18 ft)	4	0.05	80.0
Block 2	High Density			145	1.39	104.3
Net Phase 1 Developable Total				158	1.63	96.9
Block 1	SWM Pond				0.40	
Lane X	R.O.W. Public Lane				0.01	
Road A	R.O.W. Public Street				0.23	
Total Phase 1 Site Area					2.27	

Total Land Use Schedule						
Lot/ Block #	Unit Type	Min. Lot Width (m)	Min. Lot Width (ft)	No. Units	Area (Ha)	Density (Units/Ha)
Lot 26, 27, 28, 29, 69, 70, 71, 72, 73, 74, 83, 84, 102, 103, 104, 105, 109, 110, 111, 112, 113, 114, 121, 122, 123, 124	Link	9.15m	(30 ft)	26	0.75	34.7
Lot 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 75, 76, 77, 78, 79, 80, 81, 82, 115, 116, 117, 118, 119, 120	Link	10.51m	(35 ft)	28	0.94	29.8
Total Link				54	1.69	32.0
Lot 54, 55, 62, 63, 64, 65, 66, 67, 68, 86, 87, 88, 89, 96, 97, 98, 99, 100, 101, 106, 107, 108	Single Detached	12.19m	(40 ft)	22	0.97	22.7
Lot 51, 52, 53, 56, 57, 58, 60, 61, 85, 90, 91, 92, 93, 94, 95, 127, 128, 129, 130, 131	Single Detached	13.35m	(45 ft)	20	0.94	21.3
Lot 44, 45, 49, 50, 59, 126	Single Detached	15.24	(50 ft)	6	0.28	21.4
Lot 46, 47, 48, 125	Single Detached	18.29	(60 ft)	4	0.24	16.7
Lot 25	Single Detached	43.8	(144 ft)	1	0.34	2.9
Total Single Detached				53	2.77	19.1
Block 3, 5, 8, 9	Townhouse	5.50m	(18 ft)	25	0.39	64.1
Block 4, 11, 12, 13	Townhouse	5.50m	(18 ft)	23	0.30	76.7
Block 14, 15, 16, 17, 18, 19, 20	Townhouse	7.00m	(23 ft)	38	0.74	51.4
Total Townhouse				86	1.43	60.1
Block 2, 10	High Density			290	2.65	109.4
Total High Density				290	2.65	109.4
Net Developable Total				483	8.54	56.6
Block 1, 22	SWM Pond				1.14	
Block 21	Pumping Station				0.005	
Lane X, Y	R.O.W. Public Lane				0.34	
Road A, B, C, D, E	R.O.W. Public Street				2.19	
Block 7, 23, 24	Parkland Dedication				1.73	
Block 6	EP Land Conveyance				12.29	
Total Site Area					26.24	

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2. DO NOT SCALE DRAWINGS.

3. CONTRACTOR TO VERIFY JOB SITE, DRAWING DIMENSIONS AND CONDITIONS AND REPORT ANY AND ALL DISCREPANCIES TO THE DESIGNER PRIOR TO CONSTRUCTION.

4. ALL WORK MUST CONFORM TO THE LATEST LOCAL BUILDING CODE, LOCAL BY-LAWS AND NFPA 96.

5. THESE DRAWINGS ARE PROTECTED BY COPYRIGHT.

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LEGAL DESCRIPTION
PART OF LOTS 23 AND 24
CONCESSION 2
MILITARY TRAIL
TOWNSHIP OF HALLOWELL
COUNTY OF PRINCE EDWARD

KEY PLAN - N.T.S.

Revisions		
No.	Description	Date

REQUIRED INFORMATION:
AS REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT

(a) See surveyors certificate
(b) As shown on Draft Plan
(c) As shown on Draft Plan
(d) See Land Use Schedule
(e) See Draft Plan
(f) As shown on Draft Plan
(g) As shown on Draft Plan
(h) Piped water to be provided
(i) Silty clay and sand, some gravel
(j) As shown on Draft Plan
(k) Sanitary and storm sewers to be provided
(l) As shown on Draft Plan

SURVEYORS CERTIFICATE:
I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AS SHOWN ON THIS PLAN AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE ACCURATE AND CORRECTLY SHOWN IN ACCORDANCE WITH A PLAN OF SURVEY PREPARED BY KRCMAR SURVEYORS LTD.

SASA KRCMAR O.L.S.

DATE

OWNERS CERTIFICATE:
I HEREBY AUTHORIZE SWN ARCHITECTS + PLANNERS TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE COUNTY OF PRINCE EDWARD.

HOMES FIRST DEVELOPMENT CORPORATION

DATE

HSPM
HOLDINGS INC.

51 OAK AVENUE, RICHMOND HILL, ON L4C 6R5
BETH@HSPMHOLDINGS.COM

Homes First Development Corporation

Lake Street

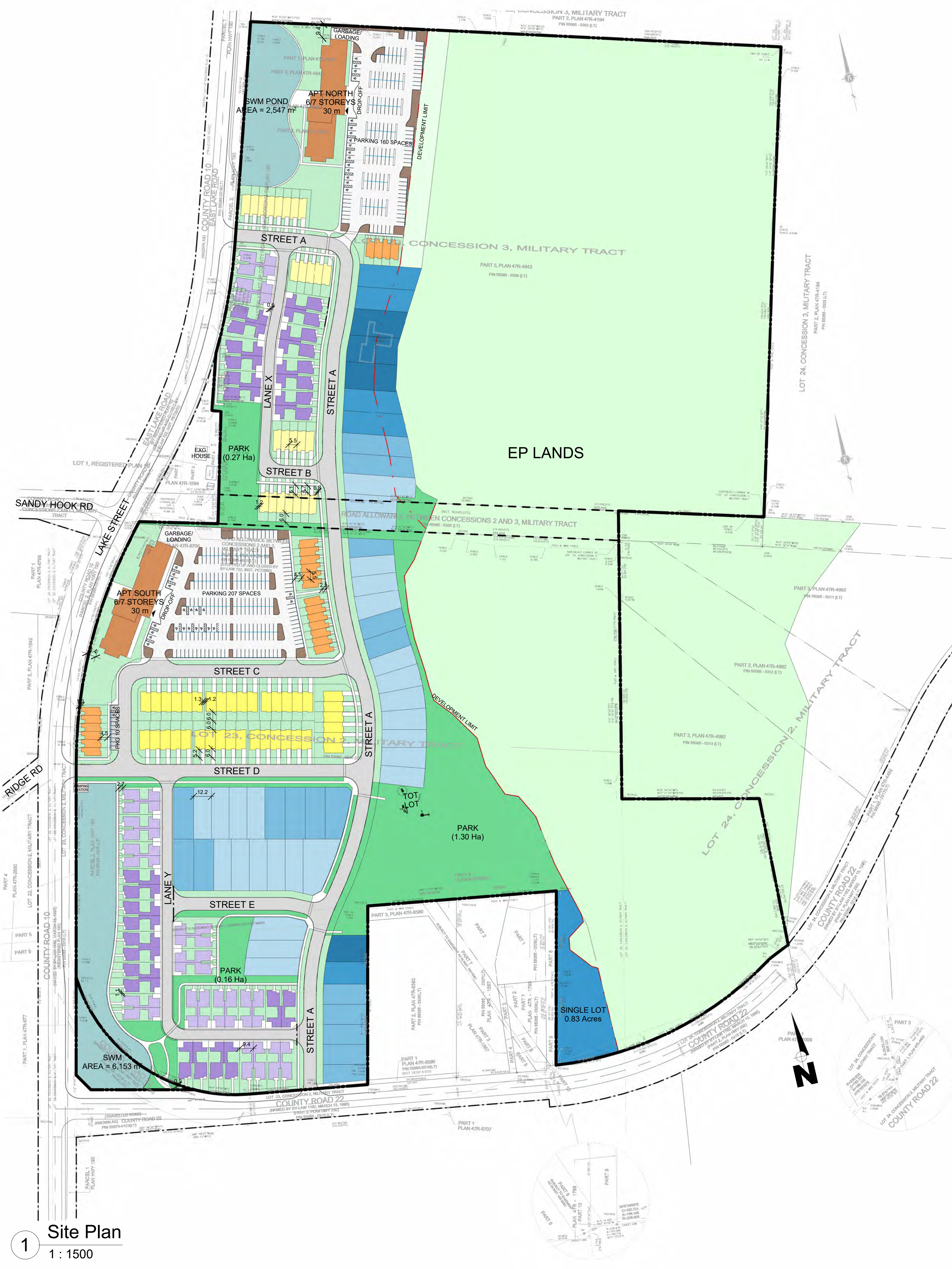
**SUBDIVISION
CONCEPT PLAN**

Project number	22-3
Date	Issue Date
Drawn by	HSPM
Checked by	HSPM

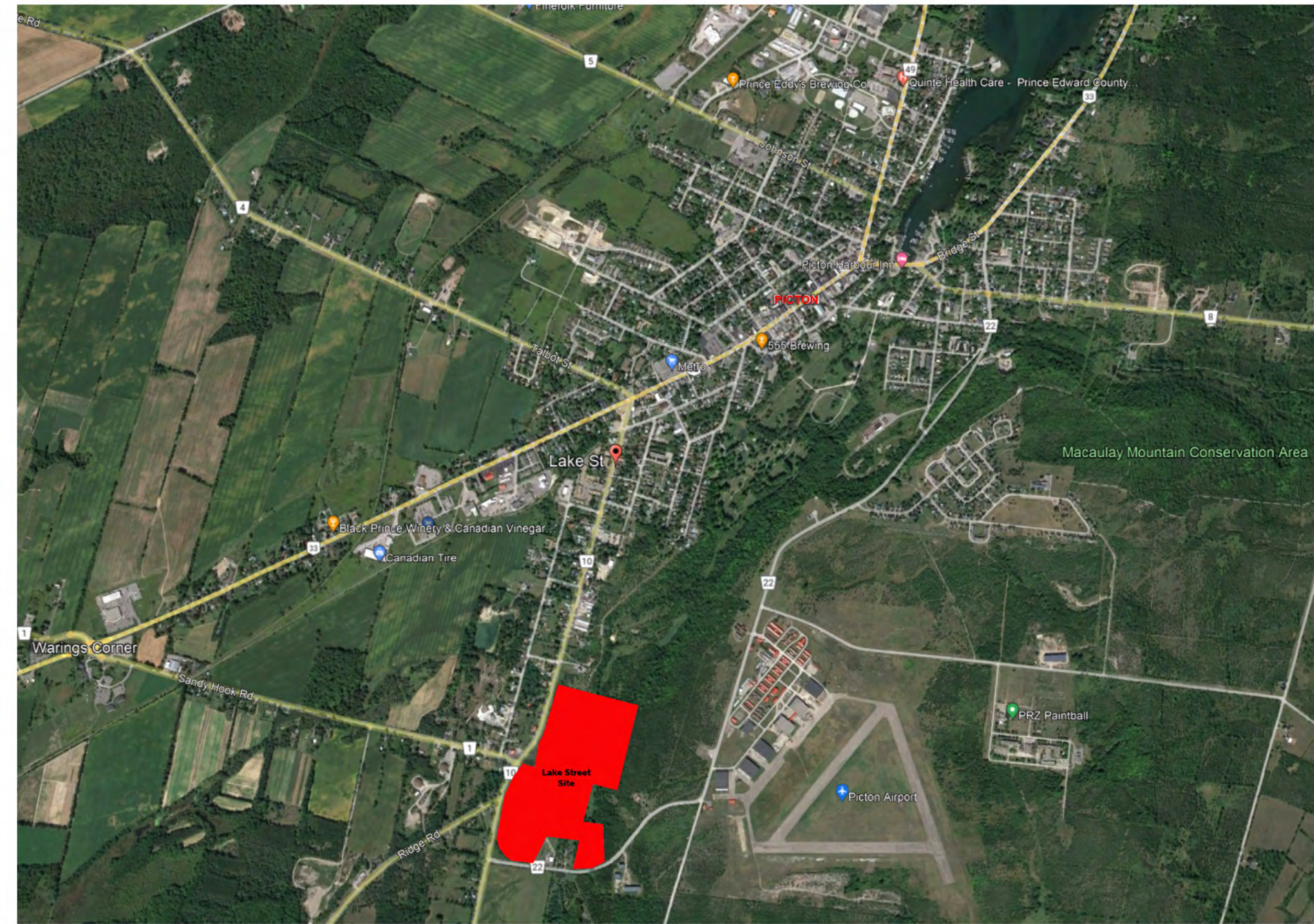
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Scale	As indicated
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1 : 1500



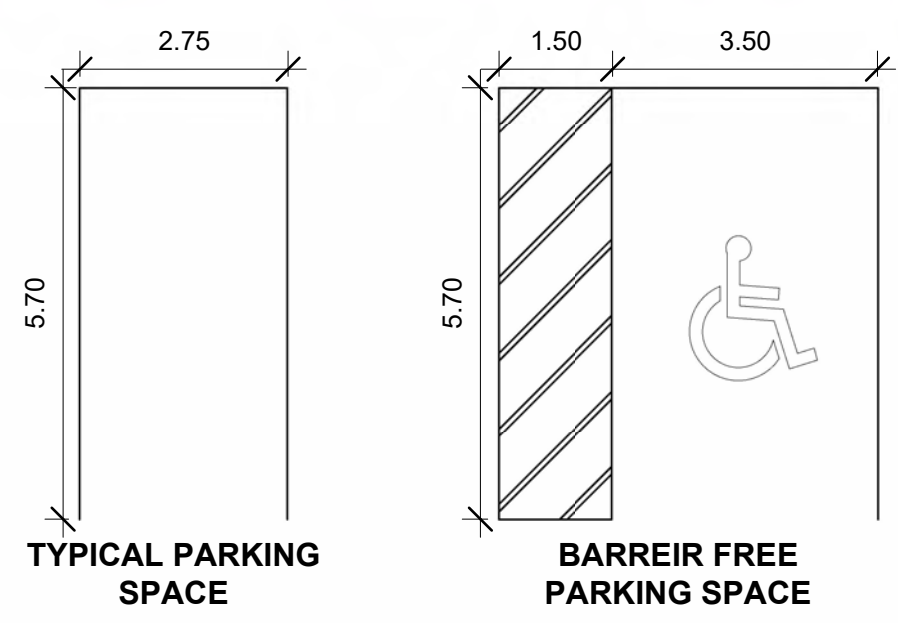
1 Site Plan
1 : 1500



2 Context Plan
1 : 2500

SITE STATISTICS
Lake Street, P.E.C.

SITE AREA			
NORTH PARCEL	119,560.12 m ²	29.53 Acres	11.96 Ha
SOUTH PARCEL	138,104.79 m ²	34.11 Acres	13.81 Ha
TO BE ACQUIRED PEC - CLOSED ROAD ALLOWANCE	2,825.35 m ²	0.70 Acres	0.28 Ha
TO BE ACQUIRED PEC - SW CORNER	1,941.87 m ²	0.48 Acres	0.194 Ha
TOTAL	262,432.13 m ²	64.82 Acres	26.24 Ha
PARKLAND DEDICATION			
E.P. LAND CONVEYANCE	17,278.99 m ²	4.27 Acres	1.73 Ha
S.W.M.	122,894.22 m ²	30.35 Acres	12.29 Ha
DEVELOPABLE	11,456.20 m ²	2.83 Acres	1.15 Ha
	110,802.81 m ²	27.37 Acres	11.08 Ha
G.F.A.			
APARTMENT NORTH	10,325.00 m ²		
APARTMENT SOUTH	10,325.00 m ²		
TOWNHOMES - RENTAL	2,759.32 m ²		
TOWNHOMES - FREEHOLD	9,432.59 m ²		
LINKS	11,729.50 m ²		
SINGLE FAMILY	11,816.88 m ²		
TOTAL	56,382.29 m ²		
F.S.I.			
	0.51		
COVERAGE			
	36.95%		
NUMBER OF UNITS			
APARTMENT NORTH	145		
APARTMENT SOUTH	145		
TOWNHOMES - RENTAL	23		
TOWNHOMES - FREEHOLD	63		
LINKS	54		
SINGLE FAMILY	53		
TOTAL	483		
DENSITY			
	43.59 UNITS/Ha		
PARKING			
APARTMENT NORTH	160 spaces	1.10 spaces/unit	
APARTMENT SOUTH	207 spaces	1.43 spaces/unit	
TOWNHOMES - RENTAL	35 spaces	1.52 spaces/unit	
TOWNHOMES - FREEHOLD	126 spaces	2.00 spaces/unit	
LINKS	162 spaces	3.00 spaces/unit	
SINGLE FAMILY	212 spaces	4.00 spaces/unit	
EV CHARGE STATIONS			
	20 spaces	APARTMENT BUILDINGS ONLY	
LANDSCAPED OPEN AREA			
HARDSCAPE	26,985.92 m ²	24.35%	
SOFTSCAPE	42,874.39 m ²	38.69%	
TOTAL	69,860.31 m ²	63.05%	
HEIGHT			
APARTMENT NORTH	36.00 m MAX.		
APARTMENT SOUTH	36.00 m MAX.		
TOWNHOMES - RENTAL	14.00 m MAX.		
TOWNHOMES - FREEHOLD	14.00 m MAX.		
LINKS	14.00 m MAX.		
SINGLE FAMILY	12.00 m MAX.		
AMENITY SPACE			
APARTMENT NORTH	2.00 m ² /UNIT	290.00 m ²	428.50 m ²
INDOOR AMENITY	4.00 m ² /UNIT	580.00 m ²	2716.81 m ²
OUTDOOR AMENITY			2.96 m ² /UNIT
			18.74 m ² /UNIT
APARTMENT SOUTH	2.00 m ² /UNIT	290.00 m ²	857.00 m ²
INDOOR AMENITY	4.00 m ² /UNIT	580.00 m ²	2187.13 m ²
OUTDOOR AMENITY			5.91 m ² /UNIT
			16.08 m ² /UNIT
BICYCLE STORAGE			
LONG TERM	72	0.25 SPACES/ UNIT	
SHORT TERM	10		
LOADING SPACES			
	2		
DEDICATED SNOW STORAGE AREAS			
AT GRADE	2%	539.72 m ²	



3 Parking Spaces
1 : 100

LEGEND

RENTAL UNITS	
APARTMENT BUILDING B	290 UNITS
TOWNHOMES	23 UNITS
TOTAL	313 UNITS
FREEHOLD UNITS	
TOWNHOMES 18'	25 UNITS
TOWNHOMES 23'	38 UNITS
30' LINK UNIT LOTS	26 UNITS
35' LINK UNIT LOTS	28 UNITS
40' SINGLE LOTS	22 UNITS
45' SINGLE LOTS	20 UNITS
50' SINGLE LOTS	6 UNITS
60' SINGLE LOTS	4 UNITS
SINGLE LOT	1 UNITS
TOTAL	170 UNITS
SITE TOTAL	483 UNITS

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 - ALL WORK MUST CONFORM TO THE LATEST LOCAL BUILDING CODE, LOCAL BY-LAWS AND NFPA 96.
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No.	Description	Date
1	REVISED PER STAFF COMMENTS	3/7/2023
2	REVISED PER ENVIRONMENTAL STUDIES	7/12/2023
3	REVISED PER DRAFT PLAN	26/2/2025

HSPM HOLDINGS INC.

51 OAK AVENUE, RICHMOND HILL, ON L4C 6R5
BETH@HSPMHOLDINGS.COM

Homes First Development Corporation

Lake Street

SITE PLAN

Project number

22-3

Date

Issue Date

Drawn by

HSPM

Checked by

HSPM

A101

Scale

As indicated

Appendix B

Traffic Data

Appendix B-1

TMC Data



Turning Movement Count (3 . COUNTY ROAD 22 & LAKE STREET)

Start Time	N Approach LAKE ST					E Approach COUNTY RD 22					S Approach LAKE ST					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	UTurn S:S	Peds S:	Approach Total		
07:00:00	3	2	0	0	5	1	1	0	0	2	0	18	0	0	18	25	
07:15:00	7	2	0	0	9	10	1	0	0	11	2	27	0	0	29	49	
07:30:00	10	18	0	0	28	10	2	0	0	12	5	27	0	0	32	72	
07:45:00	13	12	0	0	25	14	2	0	0	16	2	41	0	0	43	84	230
08:00:00	10	11	0	0	21	13	1	0	0	14	5	35	0	0	40	75	280
08:15:00	21	4	0	0	25	8	2	0	0	10	1	31	0	0	32	67	298
08:30:00	18	9	0	0	27	9	1	0	0	10	1	21	0	0	22	59	285
08:45:00	25	10	1	0	36	9	3	0	0	12	3	27	0	0	30	78	279
09:00:00	21	8	0	0	29	10	4	0	0	14	2	28	0	0	30	73	277
09:15:00	13	9	0	0	22	11	0	0	0	11	6	35	0	0	41	74	284
09:30:00	18	9	0	0	27	10	2	0	0	12	3	31	0	0	34	73	298
09:45:00	24	16	0	0	40	12	2	0	0	14	2	24	0	0	26	80	300
BREAK																	
16:00:00	21	14	0	0	35	13	2	0	0	15	1	25	0	0	26	76	
16:15:00	30	15	0	0	45	9	4	0	0	13	2	29	0	0	31	89	
16:30:00	37	9	0	0	46	15	4	0	0	19	1	21	0	0	22	87	
16:45:00	33	12	0	0	45	9	4	0	0	13	3	24	0	0	27	85	337
17:00:00	36	20	0	0	56	9	2	0	0	11	0	17	0	0	17	84	345
17:15:00	32	11	0	0	43	11	0	0	0	11	0	19	0	0	19	73	329
17:30:00	28	9	0	0	37	12	1	0	0	13	0	18	0	0	18	68	310
17:45:00	24	12	0	0	36	10	0	0	0	10	5	18	0	0	23	69	294
18:00:00	29	8	0	0	37	8	1	0	0	9	0	16	0	0	16	62	272
18:15:00	19	6	0	0	25	10	3	0	0	13	3	17	0	0	20	58	257
18:30:00	18	6	0	0	24	4	2	0	0	6	0	22	0	0	22	52	241
18:45:00	14	5	0	0	19	5	1	0	0	6	0	15	0	0	15	40	212
Grand Total	504	237	1	0	742	232	45	0	0	277	47	586	0	0	633	1652	-
Approach%	67.9%	31.9%	0.1%		-	83.8%	16.2%	0%		-	7.4%	92.6%	0%		-	-	-
Totals %	30.5%	14.3%	0.1%		44.9%	14%	2.7%	0%		16.8%	2.8%	35.5%	0%		38.3%	-	-
Heavy	12	6	0		-	9	2	0		-	2	18	0		-	-	-
Heavy %	2.4%	2.5%	0%		-	3.9%	4.4%	0%		-	4.3%	3.1%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 09:00 AM - 10:00 AM Weather: Overcast Clouds (2.15 °C)

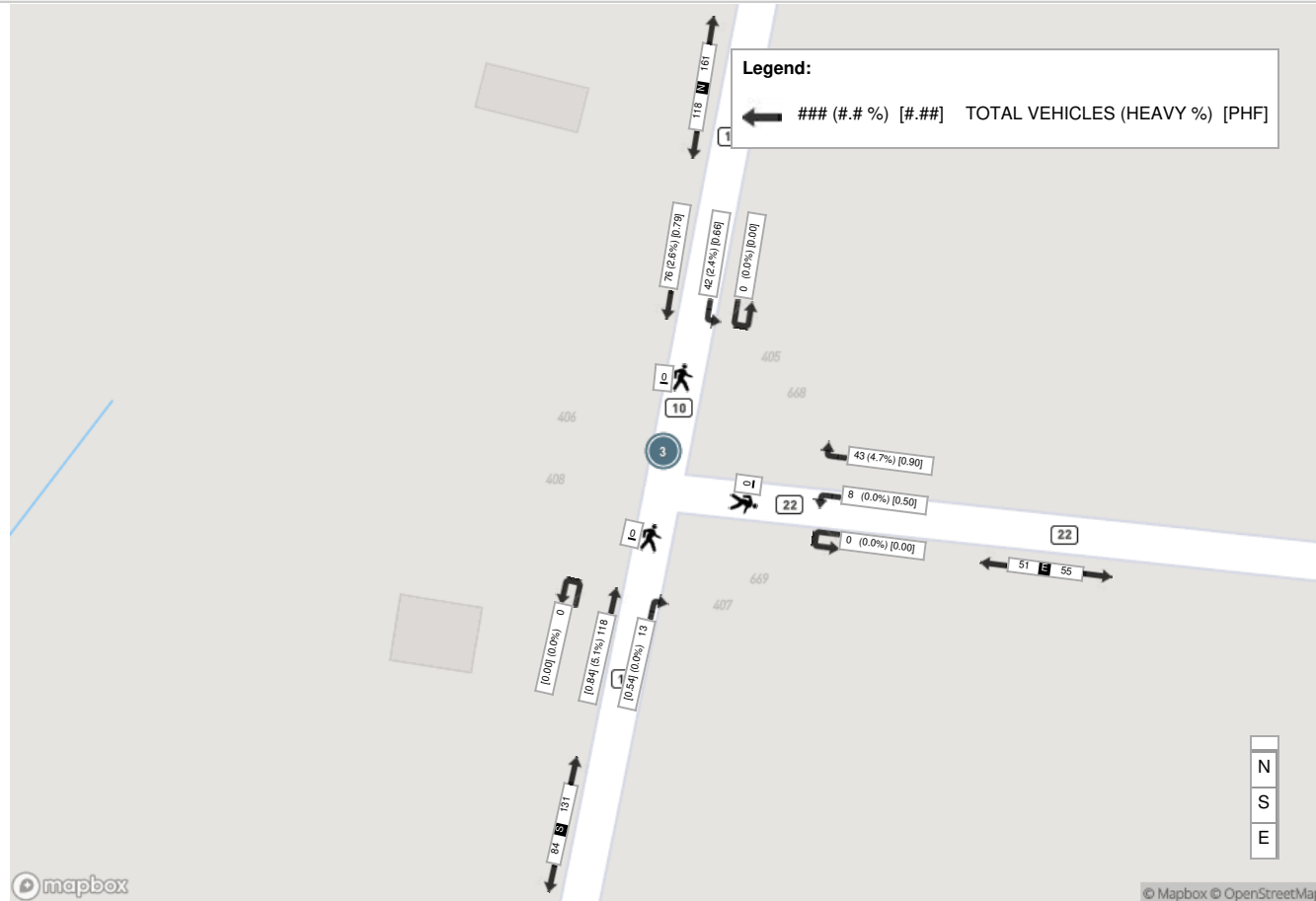
Start Time	N Approach LAKE ST					E Approach COUNTY RD 22					S Approach LAKE ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
09:00:00	21	8	0	0	29	10	4	0	0	14	2	28	0	0	30	73
09:15:00	13	9	0	0	22	11	0	0	0	11	6	35	0	0	41	74
09:30:00	18	9	0	0	27	10	2	0	0	12	3	31	0	0	34	73
09:45:00	24	16	0	0	40	12	2	0	0	14	2	24	0	0	26	80
Grand Total	76	42	0	0	118	43	8	0	0	51	13	118	0	0	131	300
Approach%	64.4%	35.6%	0%		-	84.3%	15.7%	0%		-	9.9%	90.1%	0%		-	-
Totals %	25.3%	14%	0%		39.3%	14.3%	2.7%	0%		17%	4.3%	39.3%	0%		43.7%	-
PHF	0.79	0.66	0		0.74	0.9	0.5	0		0.91	0.54	0.84	0		0.8	-
Heavy	2	1	0		3	2	0	0		2	0	6	0		6	-
Heavy %	2.6%	2.4%	0%		2.5%	4.7%	0%	0%		3.9%	0%	5.1%	0%		4.6%	-
Lights	74	41	0		115	41	8	0		49	13	112	0		125	-
Lights %	97.4%	97.6%	0%		97.5%	95.3%	100%	0%		96.1%	100%	94.9%	0%		95.4%	-
Single-Unit Trucks	1	1	0		2	2	0	0		2	0	2	0		2	-
Single-Unit Trucks %	1.3%	2.4%	0%		1.7%	4.7%	0%	0%		3.9%	0%	1.7%	0%		1.5%	-
Buses	0	0	0		0	0	0	0		0	0	4	0		4	-
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0%	3.4%	0%		3.1%	-
Articulated Trucks	1	0	0		1	0	0	0		0	0	0	0		0	-
Articulated Trucks %	1.3%	0%	0%		0.8%	0%	0%	0%		0%	0%	0%	0%		0%	-



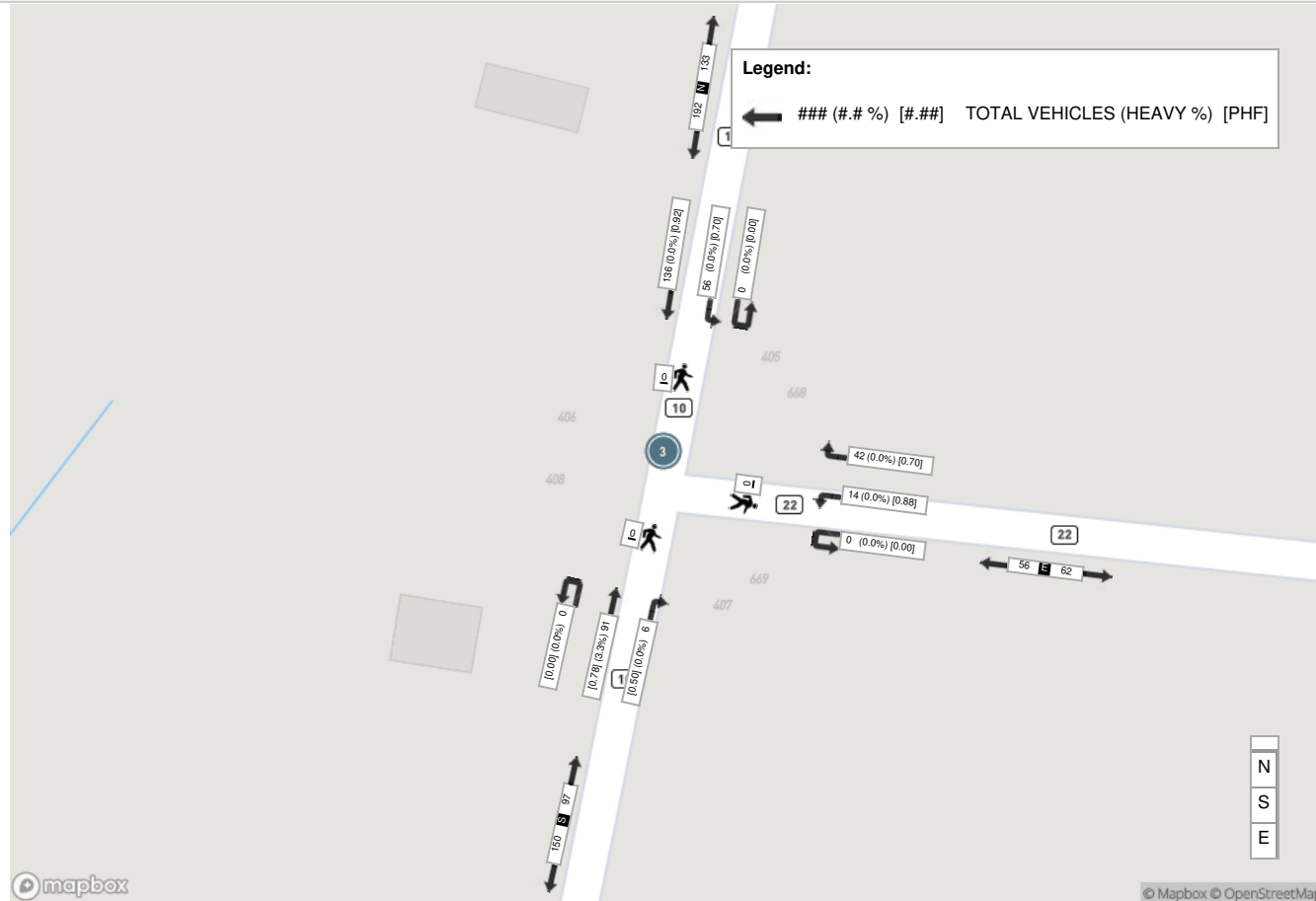
Peak Hour: 04:15 PM - 05:15 PM Weather: Light Rain (4.76 °C)

Start Time	N Approach LAKE ST					E Approach COUNTY RD 22					S Approach LAKE ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
16:15:00	30	15	0	0	45	9	4	0	0	13	2	29	0	0	31	89
16:30:00	37	9	0	0	46	15	4	0	0	19	1	21	0	0	22	87
16:45:00	33	12	0	0	45	9	4	0	0	13	3	24	0	0	27	85
17:00:00	36	20	0	0	56	9	2	0	0	11	0	17	0	0	17	84
Grand Total	136	56	0	0	192	42	14	0	0	56	6	91	0	0	97	345
Approach%	70.8%	29.2%	0%		-	75%	25%	0%		-	6.2%	93.8%	0%		-	-
Totals %	39.4%	16.2%	0%		55.7%	12.2%	4.1%	0%		16.2%	1.7%	26.4%	0%		28.1%	-
PHF	0.92	0.7	0		0.86	0.7	0.88	0		0.74	0.5	0.78	0		0.78	-
Heavy	0	0	0		0	0	0	0		0	0	3	0		3	-
Heavy %	0%	0%	0%		0%	0%	0%	0%		0%	0%	3.3%	0%		3.1%	-
Lights	136	56	0		192	42	14	0		56	6	88	0		94	-
Lights %	100%	100%	0%		100%	100%	100%	0%		100%	100%	96.7%	0%		96.9%	-
Single-Unit Trucks	0	0	0		0	0	0	0		0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Buses	0	0	0		0	0	0	0		0	0	3	0		3	-
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0%	3.3%	0%		3.1%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-

Peak Hour: 09:00 AM - 10:00 AM Weather: Overcast Clouds (2.15 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Light Rain (4.76 °C)





Turning Movement Count (3 . COUNTY ROAD 22 & LAKE STREET)

Start Time	N Approach LAKE ST					E Approach COUNTY RD 22					S Approach LAKE ST					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	UTurn S:S	Peds S:	Approach Total		
07:00:00	11	2	0	0	13	2	2	0	0	4	2	17	0	0	19	36	
07:15:00	10	6	0	0	16	15	1	0	0	16	0	26	0	0	26	58	
07:30:00	15	11	0	0	26	14	2	0	0	16	7	26	0	0	33	75	
07:45:00	11	15	0	0	26	15	1	0	0	16	2	35	0	0	37	79	248
08:00:00	16	11	0	0	27	10	0	0	0	10	4	22	0	0	26	63	275
08:15:00	25	8	0	0	33	9	3	0	0	12	4	31	0	0	35	80	297
08:30:00	19	15	0	0	34	13	2	0	0	15	3	29	0	0	32	81	303
08:45:00	26	8	0	0	34	10	2	0	0	12	1	34	0	0	35	81	305
09:00:00	21	10	0	0	31	8	1	0	0	9	2	23	0	0	25	65	307
09:15:00	18	11	0	0	29	8	2	0	0	10	5	47	0	0	52	91	318
09:30:00	21	5	0	0	26	11	1	0	0	12	2	27	0	0	29	67	304
09:45:00	20	11	0	0	31	7	1	0	0	8	2	31	0	0	33	72	295
BREAK																	
16:00:00	29	13	0	0	42	19	4	0	0	23	5	42	0	0	47	112	
16:15:00	41	25	0	1	66	17	3	0	0	20	3	34	0	0	37	123	
16:30:00	45	13	0	0	58	14	2	0	0	16	3	25	0	0	28	102	
16:45:00	45	24	0	0	69	17	2	0	0	19	2	33	0	0	35	123	460
17:00:00	51	19	0	0	70	12	3	0	0	15	3	19	0	0	22	107	455
17:15:00	33	19	0	0	52	14	2	0	0	16	1	20	0	0	21	89	421
17:30:00	30	11	0	0	41	10	1	0	0	11	1	21	0	0	22	74	393
17:45:00	27	14	0	0	41	11	1	0	0	12	5	16	0	0	21	74	344
18:00:00	32	11	0	0	43	10	1	0	0	11	1	21	0	0	22	76	313
18:15:00	24	12	0	0	36	4	4	0	0	8	1	18	0	0	19	63	287
18:30:00	25	16	0	0	41	6	4	0	0	10	1	15	0	0	16	67	280
18:45:00	21	11	0	0	32	7	0	0	0	7	0	18	0	0	18	57	263
Grand Total	616	301	0	1	917	263	45	0	0	308	60	630	0	0	690	1915	-
Approach%	67.2%	32.8%	0%	-	-	85.4%	14.6%	0%	-	-	8.7%	91.3%	0%	-	-	-	-
Totals %	32.2%	15.7%	0%	-	47.9%	13.7%	2.3%	0%	-	16.1%	3.1%	32.9%	0%	-	36%	-	-
Heavy	17	6	0	-	-	12	2	0	-	-	2	20	0	-	-	-	-
Heavy %	2.8%	2%	0%	-	-	4.6%	4.4%	0%	-	-	3.3%	3.2%	0%	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 08:30 AM - 09:30 AM Weather: Overcast Clouds (-1.62 °C)

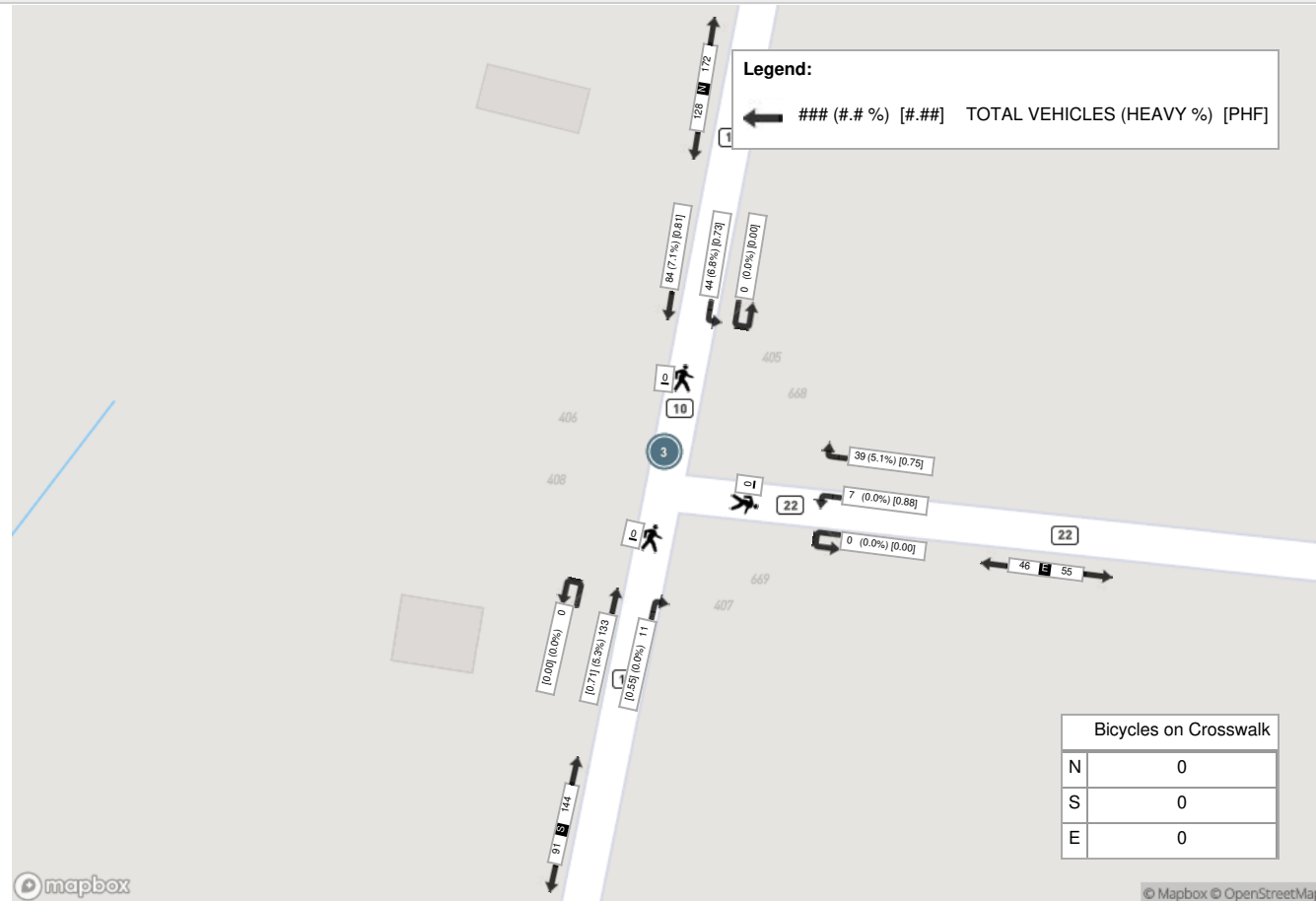
Start Time	N Approach LAKE ST					E Approach COUNTY RD 22					S Approach LAKE ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
08:30:00	19	15	0	0	34	13	2	0	0	15	3	29	0	0	32	81
08:45:00	26	8	0	0	34	10	2	0	0	12	1	34	0	0	35	81
09:00:00	21	10	0	0	31	8	1	0	0	9	2	23	0	0	25	65
09:15:00	18	11	0	0	29	8	2	0	0	10	5	47	0	0	52	91
Grand Total	84	44	0	0	128	39	7	0	0	46	11	133	0	0	144	318
Approach%	65.6%	34.4%	0%		-	84.8%	15.2%	0%		-	7.6%	92.4%	0%		-	-
Totals %	26.4%	13.8%	0%		40.3%	12.3%	2.2%	0%		14.5%	3.5%	41.8%	0%		45.3%	-
PHF	0.81	0.73	0		0.94	0.75	0.88	0		0.77	0.55	0.71	0		0.69	-
Heavy	6	3	0		9	2	0	0		2	0	7	0		7	-
Heavy %	7.1%	6.8%	0%		7%	5.1%	0%	0%		4.3%	0%	5.3%	0%		4.9%	-
Lights	78	41	0		119	37	7	0		44	11	126	0		137	-
Lights %	92.9%	93.2%	0%		93%	94.9%	100%	0%		95.7%	100%	94.7%	0%		95.1%	-
Single-Unit Trucks	2	3	0		5	2	0	0		2	0	3	0		3	-
Single-Unit Trucks %	2.4%	6.8%	0%		3.9%	5.1%	0%	0%		4.3%	0%	2.3%	0%		2.1%	-
Buses	3	0	0		3	0	0	0		0	0	4	0		4	-
Buses %	3.6%	0%	0%		2.3%	0%	0%	0%		0%	0%	3%	0%		2.8%	-
Articulated Trucks	1	0	0		1	0	0	0		0	0	0	0		0	-
Articulated Trucks %	1.2%	0%	0%		0.8%	0%	0%	0%		0%	0%	0%	0%		0%	-
Bicycles on Road	0	0	0		0	0	0	0		0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-



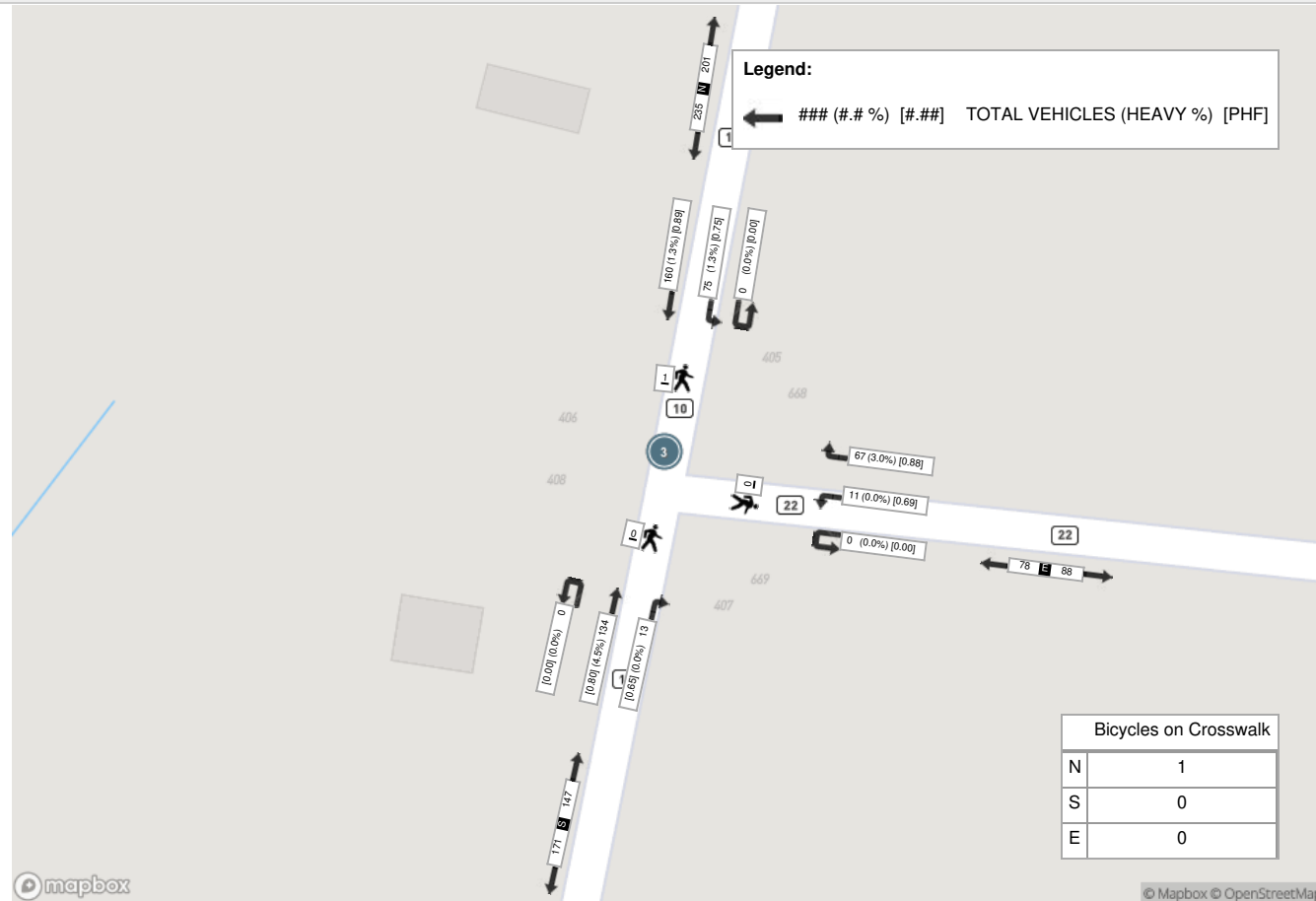
Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (4.65 °C)

Start Time	N Approach LAKE ST					E Approach COUNTY RD 22					S Approach LAKE ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
16:00:00	29	13	0	0	42	19	4	0	0	23	5	42	0	0	47	112
16:15:00	41	25	0	1	66	17	3	0	0	20	3	34	0	0	37	123
16:30:00	45	13	0	0	58	14	2	0	0	16	3	25	0	0	28	102
16:45:00	45	24	0	0	69	17	2	0	0	19	2	33	0	0	35	123
Grand Total	160	75	0	1	235	67	11	0	0	78	13	134	0	0	147	460
Approach%	68.1%	31.9%	0%		-	85.9%	14.1%	0%		-	8.8%	91.2%	0%		-	-
Totals %	34.8%	16.3%	0%		51.1%	14.6%	2.4%	0%		17%	2.8%	29.1%	0%		32%	-
PHF	0.89	0.75	0		0.85	0.88	0.69	0		0.85	0.65	0.8	0		0.78	-
Heavy	2	1	0		3	2	0	0		2	0	6	0		6	-
Heavy %	1.3%	1.3%	0%		1.3%	3%	0%	0%		2.6%	0%	4.5%	0%		4.1%	-
Lights	157	73	0		230	65	11	0		76	13	127	0		140	-
Lights %	98.1%	97.3%	0%		97.9%	97%	100%	0%		97.4%	100%	94.8%	0%		95.2%	-
Single-Unit Trucks	1	0	0		1	0	0	0		0	0	2	0		2	-
Single-Unit Trucks %	0.6%	0%	0%		0.4%	0%	0%	0%		0%	0%	1.5%	0%		1.4%	-
Buses	1	0	0		1	1	0	0		1	0	4	0		4	-
Buses %	0.6%	0%	0%		0.4%	1.5%	0%	0%		1.3%	0%	3%	0%		2.7%	-
Articulated Trucks	0	1	0		1	1	0	0		1	0	0	0		0	-
Articulated Trucks %	0%	1.3%	0%		0.4%	1.5%	0%	0%		1.3%	0%	0%	0%		0%	-
Bicycles on Road	1	1	0		2	0	0	0		0	0	1	0		1	-
Bicycles on Road %	0.6%	1.3%	0%		0.9%	0%	0%	0%		0%	0%	0.7%	0%		0.7%	-
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	100%	-	-	-	-	0%	-	-	-	-	0%	-	-

Peak Hour: 08:30 AM - 09:30 AM Weather: Overcast Clouds (-1.62 °C)



Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (4.65 °C)





Turning Movement Count (3 . COUNTY ROAD 22 & LAKE STREET)

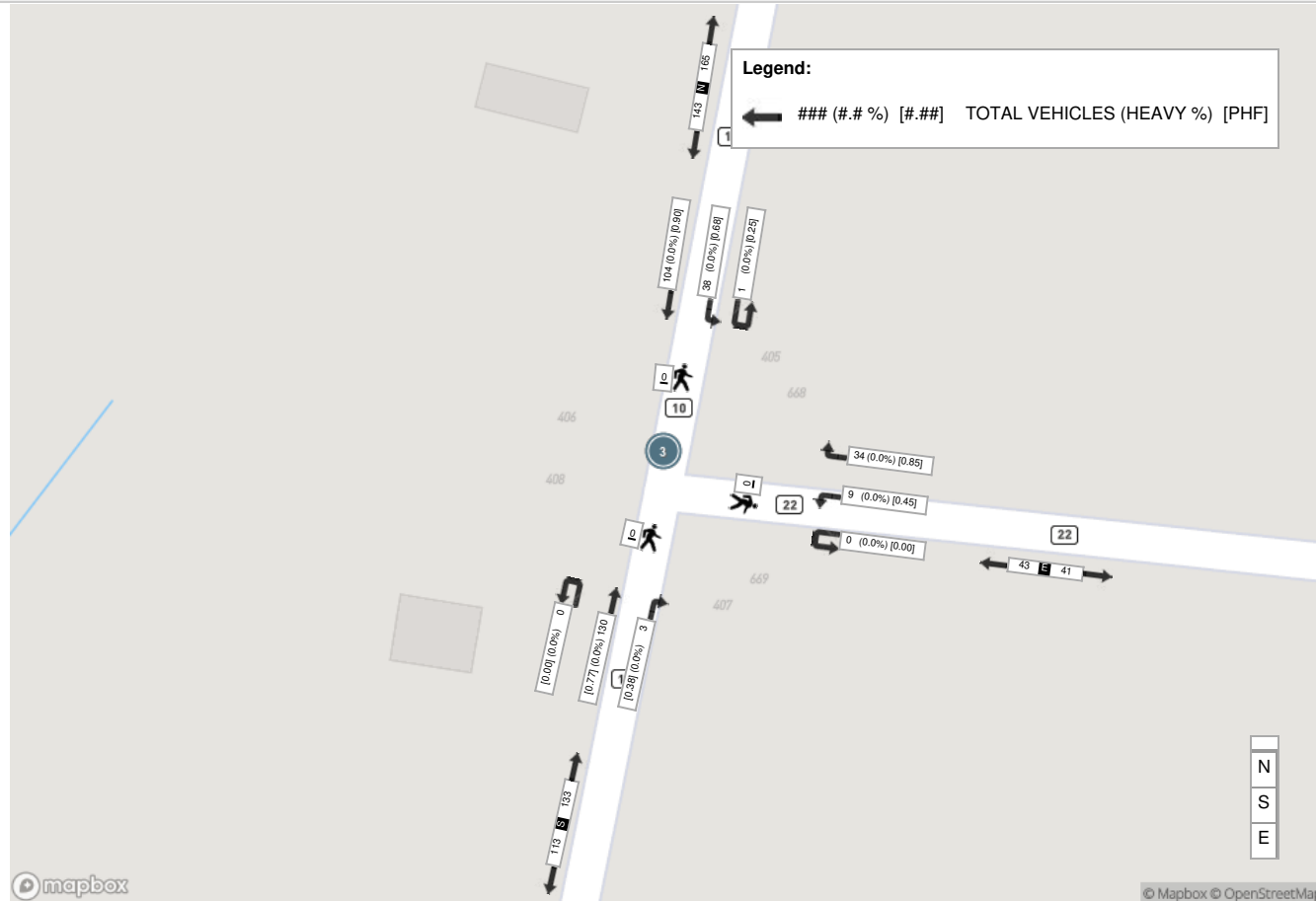
Start Time	N Approach LAKE ST					E Approach COUNTY RD 22					S Approach LAKE ST					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	UTurn S:S	Peds S:	Approach Total		
11:00:00	25	7	0	0	32	10	3	0	0	13	1	23	0	0	24	69	
11:15:00	25	6	0	0	31	10	5	0	0	15	0	29	0	0	29	75	
11:30:00	27	14	0	0	41	8	0	0	0	8	1	42	0	0	43	92	
11:45:00	23	11	1	0	35	10	2	0	0	12	2	33	0	0	35	82	318
12:00:00	29	7	0	0	36	6	2	0	0	8	0	26	0	0	26	70	319
12:15:00	15	8	0	0	23	16	1	0	0	17	1	28	0	0	29	69	313
12:30:00	23	4	0	0	27	14	5	0	0	19	1	28	0	0	29	75	296
12:45:00	37	9	0	0	46	8	0	0	0	8	2	24	0	0	26	80	294
13:00:00	23	9	0	0	32	2	1	0	0	3	1	19	0	0	20	55	279
13:15:00	23	8	0	0	31	7	2	0	0	9	0	20	0	0	20	60	270
13:30:00	30	7	0	0	37	7	1	0	0	8	2	22	0	0	24	69	264
13:45:00	18	12	0	0	30	7	1	0	0	8	3	20	0	0	23	61	245
14:00:00	22	8	0	0	30	8	2	0	0	10	1	25	0	0	26	66	256
14:15:00	21	8	0	0	29	6	0	0	0	6	1	25	0	0	26	61	257
14:30:00	18	8	0	0	26	6	0	0	0	6	1	23	0	0	24	56	244
14:45:00	23	7	0	0	30	9	2	0	0	11	3	19	0	0	22	63	246
15:00:00	22	6	0	0	28	11	3	0	0	14	0	21	0	0	21	63	243
15:15:00	34	9	0	0	43	5	3	0	0	8	4	13	0	0	17	68	250
15:30:00	25	4	0	0	29	6	3	0	0	9	2	20	0	0	22	60	254
15:45:00	36	4	0	0	40	9	3	0	0	12	0	15	0	0	15	67	258
16:00:00	21	10	0	0	31	8	1	0	0	9	1	18	0	0	19	59	254
16:15:00	28	13	0	0	41	14	3	0	0	17	0	12	0	0	12	70	256
16:30:00	20	7	0	0	27	14	1	0	0	15	0	17	0	0	17	59	255
16:45:00	17	7	0	0	24	7	2	0	0	9	1	18	0	0	19	52	240
Grand Total	585	193	1	0	779	208	46	0	0	254	28	540	0	0	568	1601	-
Approach%	75.1%	24.8%	0.1%		-	81.9%	18.1%	0%		-	4.9%	95.1%	0%		-	-	-
Totals %	36.5%	12.1%	0.1%		48.7%	13%	2.9%	0%		15.9%	1.7%	33.7%	0%		35.5%	-	-
Heavy	0	0	0		-	1	0	0		-	0	0	0		-	-	-
Heavy %	0%	0%	0%		-	0.5%	0%	0%		-	0%	0%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 11:15 AM - 12:15 PM Weather: Snow (0.83 °C)

Start Time	N Approach LAKE ST					E Approach COUNTY RD 22					S Approach LAKE ST					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
11:15:00	25	6	0	0	31	10	5	0	0	15	0	29	0	0	29	75
11:30:00	27	14	0	0	41	8	0	0	0	8	1	42	0	0	43	92
11:45:00	23	11	1	0	35	10	2	0	0	12	2	33	0	0	35	82
12:00:00	29	7	0	0	36	6	2	0	0	8	0	26	0	0	26	70
Grand Total	104	38	1	0	143	34	9	0	0	43	3	130	0	0	133	319
Approach%	72.7%	26.6%	0.7%		-	79.1%	20.9%	0%		-	2.3%	97.7%	0%		-	-
Totals %	32.6%	11.9%	0.3%		44.8%	10.7%	2.8%	0%		13.5%	0.9%	40.8%	0%		41.7%	-
PHF	0.9	0.68	0.25		0.87	0.85	0.45	0		0.72	0.38	0.77	0		0.77	-
Heavy	0	0	0		0	0	0	0		0	0	0	0		0	-
Heavy %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Lights	104	38	1		143	34	9	0		43	3	130	0		133	-
Lights %	100%	100%	100%		100%	100%	100%	0%		100%	100%	100%	0%		100%	-
Single-Unit Trucks	0	0	0		0	0	0	0		0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-

Peak Hour: 11:15 AM - 12:15 PM Weather: Snow (0.83 °C)





Turning Movement Count (2 . SANDY HOOK ROAD & LAKE STREET)

Start Time	N Approach LAKE ST					S Approach LAKE ST					W Approach SANDY HOOK RD					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	2	3	0	0	5	18	5	0	0	23	2	1	0	0	3	31	
07:15:00	6	9	0	0	15	15	22	0	0	37	2	2	0	0	4	56	
07:30:00	7	16	0	0	23	29	12	0	0	41	16	6	0	0	22	86	
07:45:00	6	15	0	1	21	38	23	0	0	61	9	5	0	0	14	96	269
08:00:00	2	12	0	0	14	39	14	0	0	53	14	6	0	0	20	87	325
08:15:00	0	17	0	0	17	29	15	0	0	44	13	3	0	0	16	77	346
08:30:00	3	17	0	0	20	27	13	0	0	40	14	3	0	0	17	77	337
08:45:00	5	23	0	0	28	27	15	0	0	42	16	3	0	0	19	89	330
09:00:00	3	21	0	0	24	27	17	0	0	44	11	4	0	0	15	83	326
09:15:00	4	17	0	0	21	36	17	0	0	53	10	1	0	0	11	85	334
09:30:00	7	20	0	0	27	28	13	0	0	41	12	2	0	0	14	82	339
09:45:00	6	30	0	0	36	24	18	0	0	42	14	2	0	0	16	94	344
BREAK																	
16:00:00	5	27	0	0	32	26	15	0	0	41	15	4	0	0	19	92	
16:15:00	2	32	0	0	34	30	13	0	0	43	20	4	0	0	24	101	
16:30:00	8	37	0	0	45	22	19	0	0	41	19	5	0	0	24	110	
16:45:00	3	29	0	0	32	21	13	0	0	34	18	2	0	0	20	86	389
17:00:00	4	34	0	0	38	16	14	0	0	30	23	5	0	0	28	96	393
17:15:00	5	36	0	0	41	15	15	0	0	30	19	9	0	0	28	99	391
17:30:00	1	27	0	0	28	15	15	0	0	30	10	4	0	0	14	72	353
17:45:00	2	26	0	0	28	18	14	0	0	32	16	4	0	0	20	80	347
18:00:00	2	29	0	0	31	18	10	0	0	28	12	2	0	0	14	73	324
18:15:00	2	17	0	0	19	17	13	0	0	30	11	1	0	0	12	61	286
18:30:00	2	17	0	0	19	22	8	0	2	30	11	0	0	13	11	60	274
18:45:00	5	17	0	0	22	14	10	0	0	24	6	4	0	0	10	56	250
Grand Total	92	528	0	1	620	571	343	0	2	914	313	82	0	13	395	1929	-
Approach%	14.8%	85.2%	0%		-	62.5%	37.5%	0%		-	79.2%	20.8%	0%		-	-	-
Totals %	4.8%	27.4%	0%		32.1%	29.6%	17.8%	0%		47.4%	16.2%	4.3%	0%		20.5%	-	-
Heavy	4	9	0		-	19	7	0		-	8	3	0		-	-	-
Heavy %	4.3%	1.7%	0%		-	3.3%	2%	0%		-	2.6%	3.7%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast Clouds (2.15 °C)

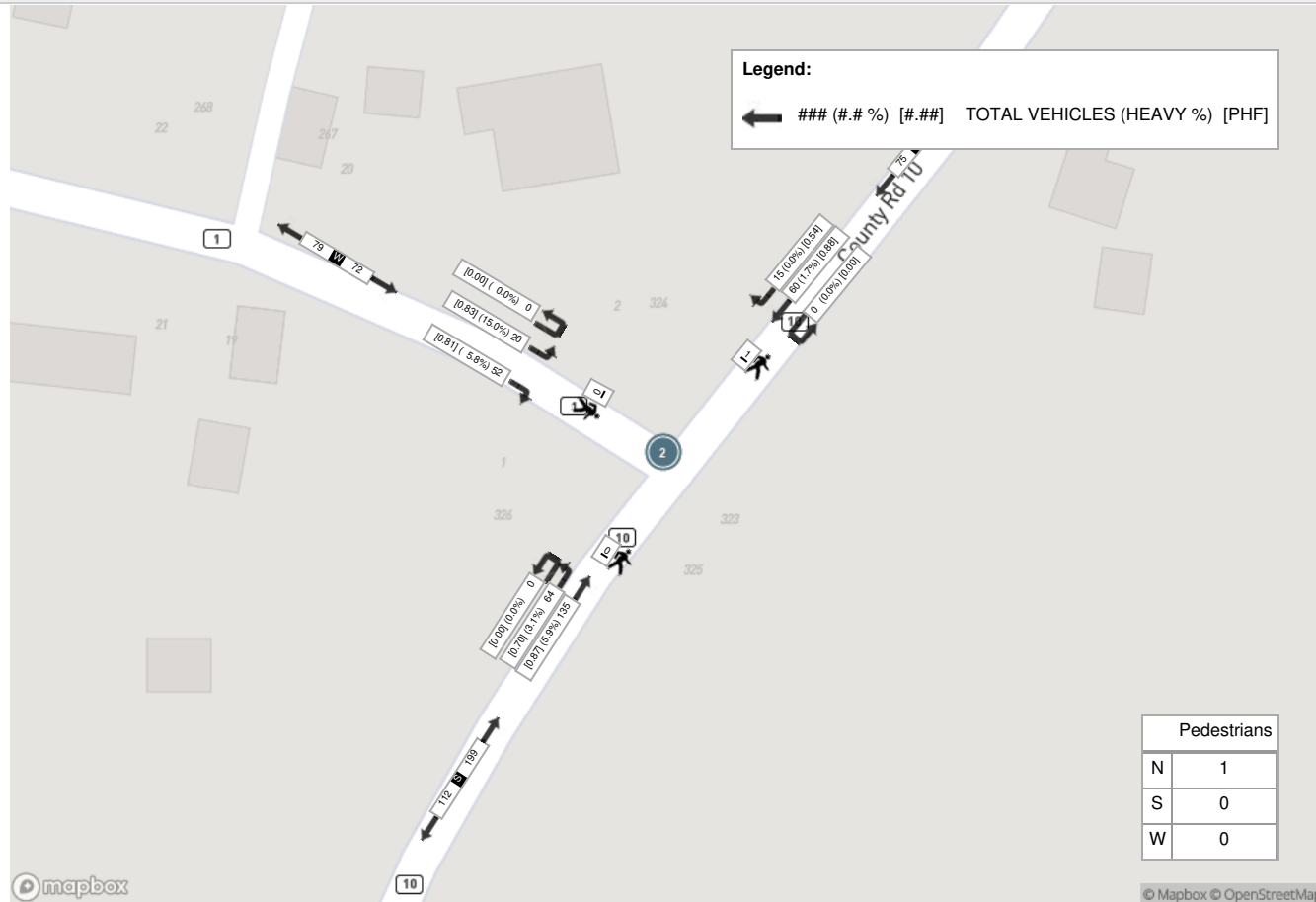
Start Time	N Approach LAKE ST					S Approach LAKE ST					W Approach SANDY HOOK RD					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
07:30:00	7	16	0	0	23	29	12	0	0	41	16	6	0	0	22	86
07:45:00	6	15	0	1	21	38	23	0	0	61	9	5	0	0	14	96
08:00:00	2	12	0	0	14	39	14	0	0	53	14	6	0	0	20	87
08:15:00	0	17	0	0	17	29	15	0	0	44	13	3	0	0	16	77
Grand Total	15	60	0	1	75	135	64	0	0	199	52	20	0	0	72	346
Approach%	20%	80%	0%		-	67.8%	32.2%	0%		-	72.2%	27.8%	0%		-	-
Totals %	4.3%	17.3%	0%		21.7%	39%	18.5%	0%		57.5%	15%	5.8%	0%		20.8%	-
PHF	0.54	0.88	0		0.82	0.87	0.7	0		0.82	0.81	0.83	0		0.82	-
Heavy	0	1	0		1	8	2	0		10	3	3	0		6	-
Heavy %	0%	1.7%	0%		1.3%	5.9%	3.1%	0%		5%	5.8%	15%	0%		8.3%	-
Lights	15	59	0		74	127	62	0		189	49	17	0		66	-
Lights %	100%	98.3%	0%		98.7%	94.1%	96.9%	0%		95%	94.2%	85%	0%		91.7%	-
Single-Unit Trucks	0	1	0		1	3	1	0		4	2	3	0		5	-
Single-Unit Trucks %	0%	1.7%	0%		1.3%	2.2%	1.6%	0%		2%	3.8%	15%	0%		6.9%	-
Buses	0	0	0		0	3	1	0		4	1	0	0		1	-
Buses %	0%	0%	0%		0%	2.2%	1.6%	0%		2%	1.9%	0%	0%		1.4%	-
Articulated Trucks	0	0	0		0	2	0	0		2	0	0	0		0	-
Articulated Trucks %	0%	0%	0%		0%	1.5%	0%	0%		1%	0%	0%	0%		0%	-
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
Pedestrians%	-	-	-	100%	-	-	-	-	0%	-	-	-	-	0%	-	-



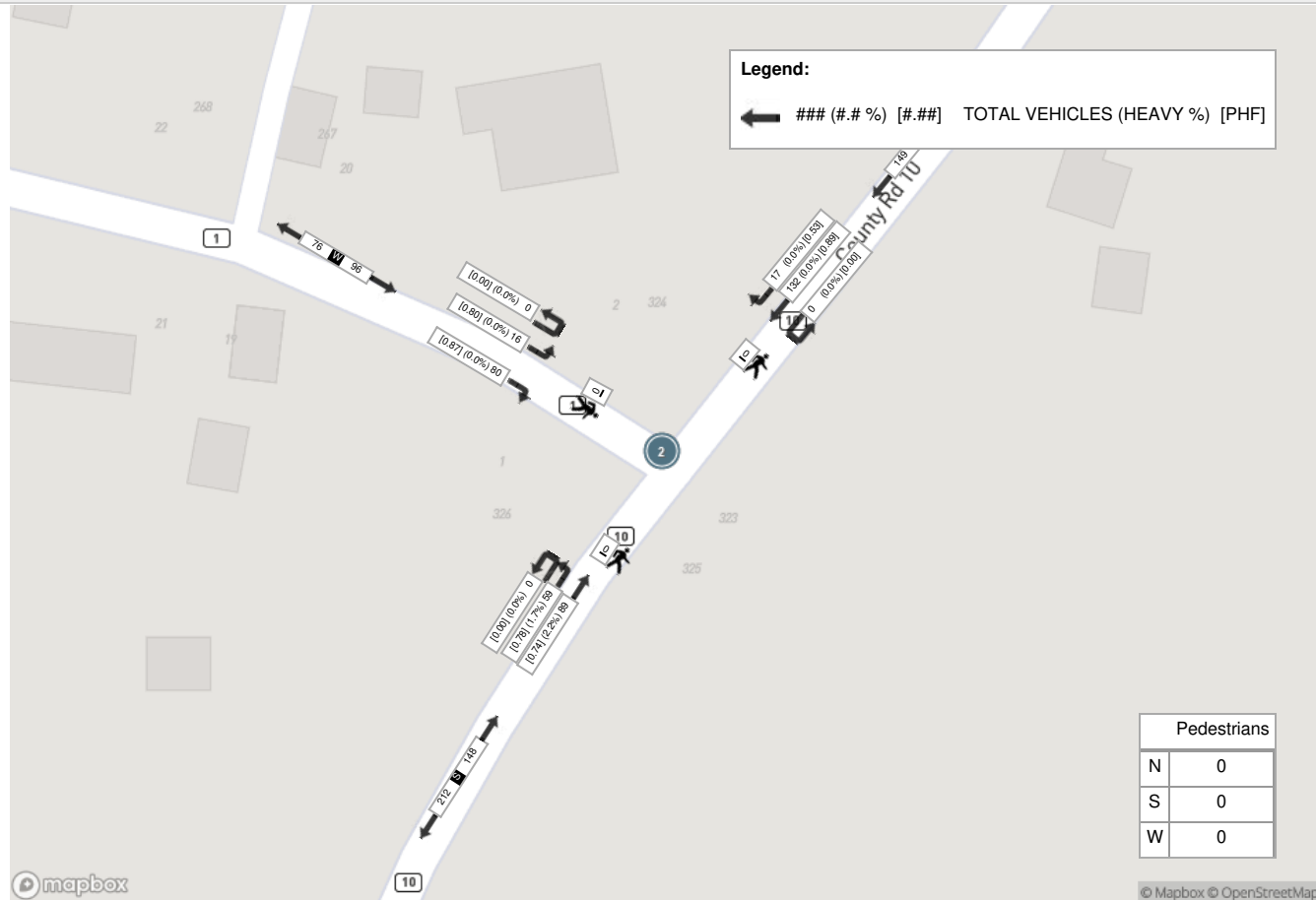
Peak Hour: 04:15 PM - 05:15 PM Weather: Light Rain (4.76 °C)

Start Time	N Approach LAKE ST					S Approach LAKE ST					W Approach SANDY HOOK RD					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
16:15:00	2	32	0	0	34	30	13	0	0	43	20	4	0	0	24	101
16:30:00	8	37	0	0	45	22	19	0	0	41	19	5	0	0	24	110
16:45:00	3	29	0	0	32	21	13	0	0	34	18	2	0	0	20	86
17:00:00	4	34	0	0	38	16	14	0	0	30	23	5	0	0	28	96
Grand Total	17	132	0	0	149	89	59	0	0	148	80	16	0	0	96	393
Approach%	11.4%	88.6%	0%		-	60.1%	39.9%	0%		-	83.3%	16.7%	0%		-	-
Totals %	4.3%	33.6%	0%		37.9%	22.6%	15%	0%		37.7%	20.4%	4.1%	0%		24.4%	-
PHF	0.53	0.89	0		0.83	0.74	0.78	0		0.86	0.87	0.8	0		0.86	-
Heavy	0	0	0		0	2	1	0		3	0	0	0		0	-
Heavy %	0%	0%	0%		0%	2.2%	1.7%	0%		2%	0%	0%	0%		0%	-
Lights	17	132	0		149	87	58	0		145	80	16	0		96	-
Lights %	100%	100%	0%		100%	97.8%	98.3%	0%		98%	100%	100%	0%		100%	-
Single-Unit Trucks	0	0	0		0	0	0	0		0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Buses	0	0	0		0	2	1	0		3	0	0	0		0	-
Buses %	0%	0%	0%		0%	2.2%	1.7%	0%		2%	0%	0%	0%		0%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-

Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast Clouds (2.15 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Light Rain (4.76 °C)





Turning Movement Count (2 . SANDY HOOK ROAD & LAKE STREET)

Start Time	N Approach LAKE ST					S Approach LAKE ST					W Approach SANDY HOOK RD					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	6	11	0	0	17	15	7	0	0	22	3	2	0	0	5	44	
07:15:00	4	10	0	0	14	24	16	0	0	40	9	5	0	0	14	68	
07:30:00	8	17	0	0	25	34	17	0	0	51	12	3	0	0	15	91	
07:45:00	10	14	0	0	24	39	20	0	0	59	13	6	0	0	19	102	305
08:00:00	3	21	0	0	24	24	15	0	0	39	13	8	0	0	21	84	345
08:15:00	7	19	0	0	26	34	9	0	0	43	16	1	0	0	17	86	363
08:30:00	2	16	0	0	18	34	15	0	0	49	19	2	0	0	21	88	360
08:45:00	5	24	0	0	29	28	22	0	0	50	15	6	0	0	21	100	358
09:00:00	0	20	0	0	20	23	15	0	0	38	16	6	0	0	22	80	354
09:15:00	5	24	0	0	29	37	17	0	0	54	8	2	0	0	10	93	361
09:30:00	3	21	0	0	24	27	13	0	0	40	9	6	0	0	15	79	352
09:45:00	7	23	0	0	30	28	21	0	0	49	13	4	0	0	17	96	348
BREAK																	
16:00:00	4	33	0	0	37	43	25	0	0	68	20	6	0	0	26	131	
16:15:00	5	42	0	0	47	31	23	0	0	54	23	4	0	0	27	128	
16:30:00	3	49	0	0	52	25	19	0	0	44	17	3	0	0	20	116	
16:45:00	6	39	0	0	45	32	20	0	0	52	33	6	0	0	39	136	511
17:00:00	3	37	0	0	40	20	15	0	0	35	34	4	0	0	38	113	493
17:15:00	5	34	0	0	39	26	13	0	0	39	22	7	0	0	29	107	472
17:30:00	5	34	0	0	39	23	13	0	0	36	18	5	0	0	23	98	454
17:45:00	2	27	0	0	29	20	10	0	0	30	16	4	0	0	20	79	397
18:00:00	2	22	0	0	24	22	12	0	0	34	24	2	0	0	26	84	368
18:15:00	3	24	0	0	27	14	7	0	0	21	14	2	0	0	16	64	325
18:30:00	1	32	0	0	33	16	9	0	0	25	14	2	0	0	16	74	301
18:45:00	5	19	0	0	24	20	13	0	0	33	14	1	0	0	15	72	294
Grand Total	104	612	0	0	716	639	366	0	0	1005	395	97	0	0	492	2213	-
Approach%	14.5%	85.5%	0%		-	63.6%	36.4%	0%		-	80.3%	19.7%	0%		-	-	-
Totals %	4.7%	27.7%	0%		32.4%	28.9%	16.5%	0%		45.4%	17.8%	4.4%	0%		22.2%	-	-
Heavy	4	16	0		-	17	17	0		-	7	5	0		-	-	-
Heavy %	3.8%	2.6%	0%		-	2.7%	4.6%	0%		-	1.8%	5.2%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast Clouds (-1.62 °C)

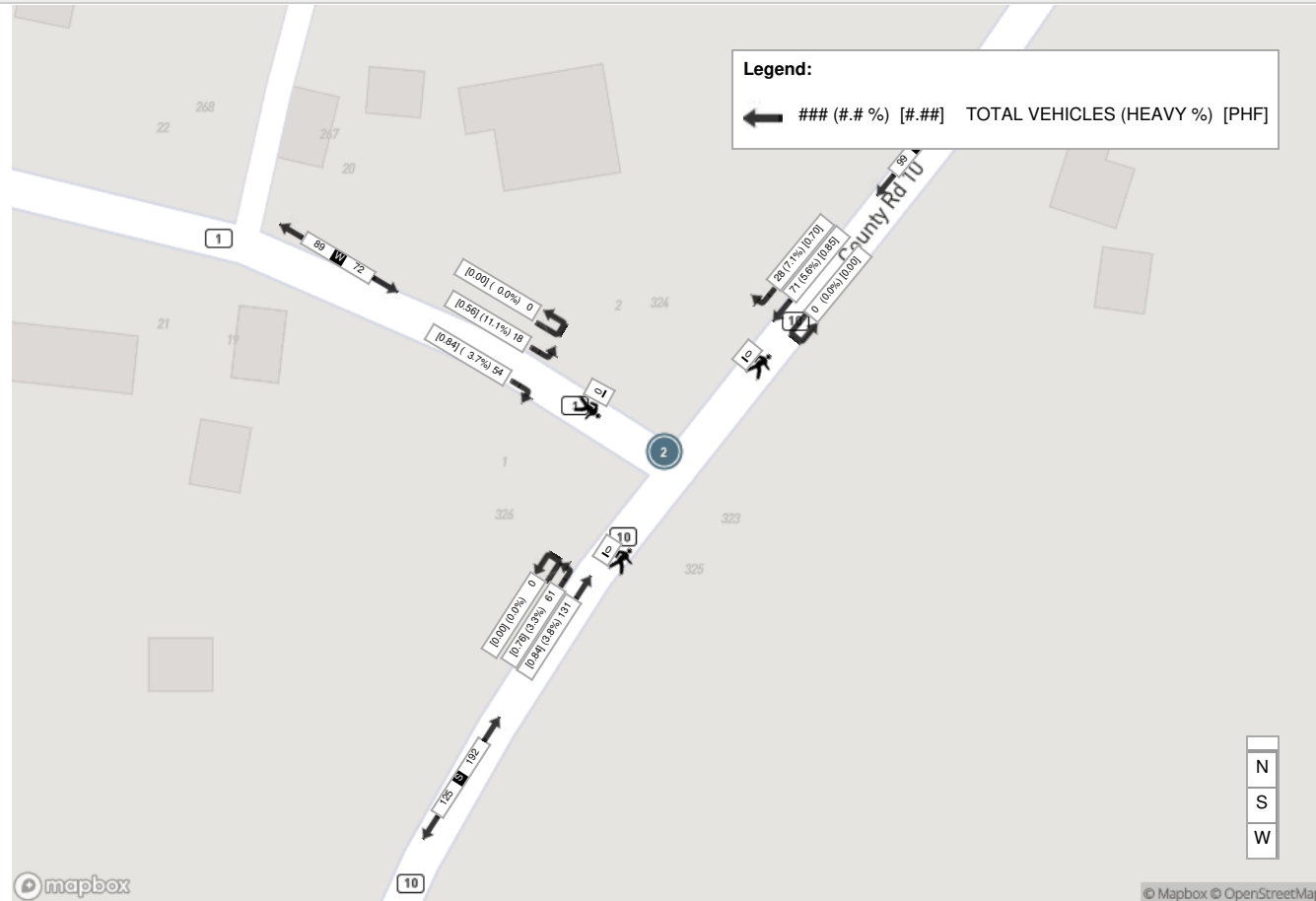
Start Time	N Approach LAKE ST					S Approach LAKE ST					W Approach SANDY HOOK RD					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
07:30:00	8	17	0	0	25	34	17	0	0	51	12	3	0	0	15	91
07:45:00	10	14	0	0	24	39	20	0	0	59	13	6	0	0	19	102
08:00:00	3	21	0	0	24	24	15	0	0	39	13	8	0	0	21	84
08:15:00	7	19	0	0	26	34	9	0	0	43	16	1	0	0	17	86
Grand Total	28	71	0	0	99	131	61	0	0	192	54	18	0	0	72	363
Approach%	28.3%	71.7%	0%		-	68.2%	31.8%	0%		-	75%	25%	0%		-	-
Totals %	7.7%	19.6%	0%		27.3%	36.1%	16.8%	0%		52.9%	14.9%	5%	0%		19.8%	-
PHF	0.7	0.85	0		0.95	0.84	0.76	0		0.81	0.84	0.56	0		0.86	-
Heavy	2	4	0		6	5	2	0		7	2	2	0		4	-
Heavy %	7.1%	5.6%	0%		6.1%	3.8%	3.3%	0%		3.6%	3.7%	11.1%	0%		5.6%	-
Lights	26	67	0		93	125	58	0		183	52	16	0		68	-
Lights %	92.9%	94.4%	0%		93.9%	95.4%	95.1%	0%		95.3%	96.3%	88.9%	0%		94.4%	-
Single-Unit Trucks	2	3	0		5	2	1	0		3	2	2	0		4	-
Single-Unit Trucks %	7.1%	4.2%	0%		5.1%	1.5%	1.6%	0%		1.6%	3.7%	11.1%	0%		5.6%	-
Buses	0	1	0		1	3	1	0		4	0	0	0		0	-
Buses %	0%	1.4%	0%		1%	2.3%	1.6%	0%		2.1%	0%	0%	0%		0%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Bicycles on Road	0	0	0		0	1	1	0		2	0	0	0		0	-
Bicycles on Road %	0%	0%	0%		0%	0.8%	1.6%	0%		1%	0%	0%	0%		0%	-



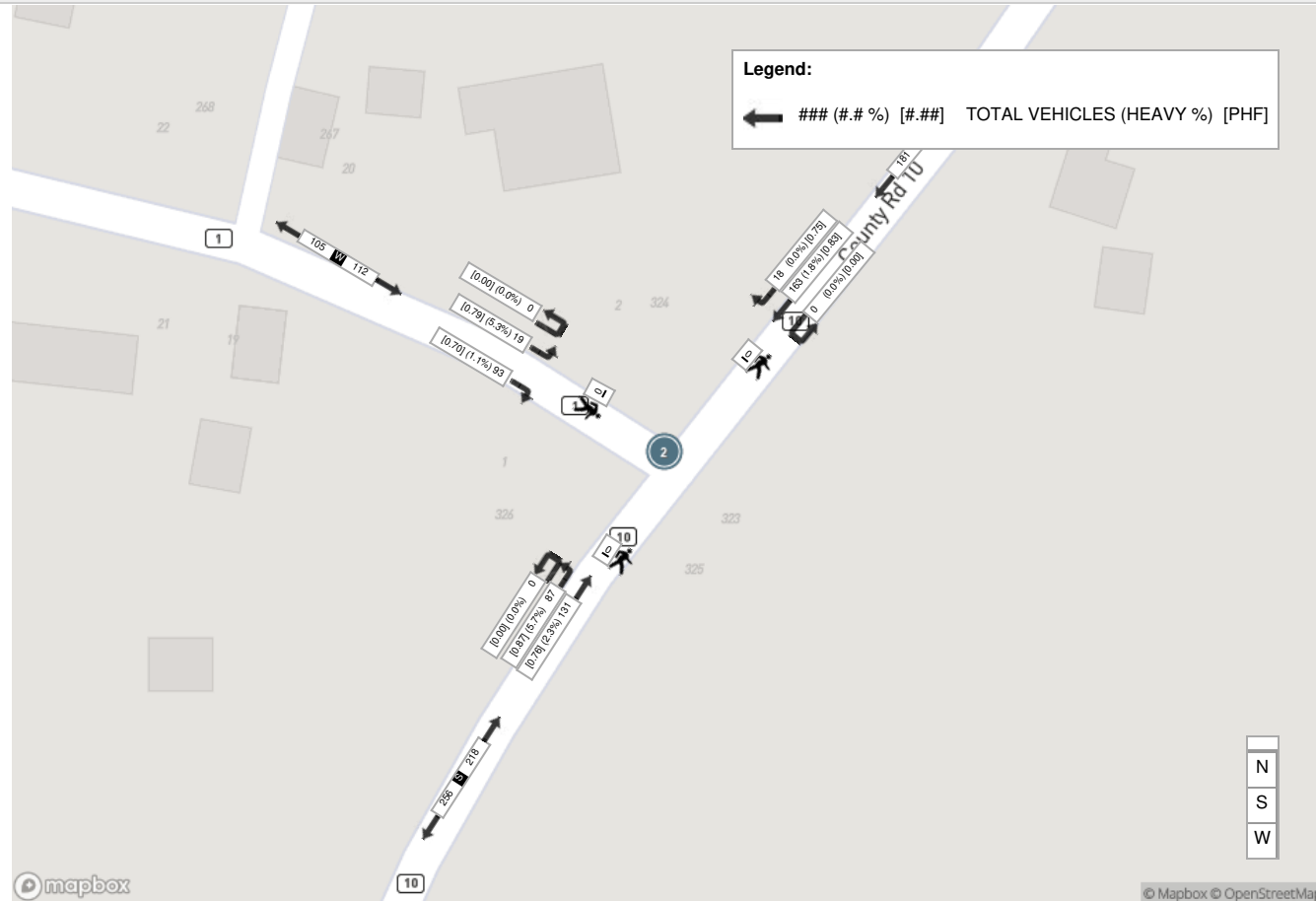
Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (4.65 °C)

Start Time	N Approach LAKE ST					S Approach LAKE ST					W Approach SANDY HOOK RD					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
16:00:00	4	33	0	0	37	43	25	0	0	68	20	6	0	0	26	131
16:15:00	5	42	0	0	47	31	23	0	0	54	23	4	0	0	27	128
16:30:00	3	49	0	0	52	25	19	0	0	44	17	3	0	0	20	116
16:45:00	6	39	0	0	45	32	20	0	0	52	33	6	0	0	39	136
Grand Total	18	163	0	0	181	131	87	0	0	218	93	19	0	0	112	511
Approach%	9.9%	90.1%	0%		-	60.1%	39.9%	0%		-	83%	17%	0%		-	-
Totals %	3.5%	31.9%	0%		35.4%	25.6%	17%	0%		42.7%	18.2%	3.7%	0%		21.9%	-
PHF	0.75	0.83	0		0.87	0.76	0.87	0		0.8	0.7	0.79	0		0.72	-
Heavy	0	3	0		3	3	5	0		8	1	1	0		2	-
Heavy %	0%	1.8%	0%		1.7%	2.3%	5.7%	0%		3.7%	1.1%	5.3%	0%		1.8%	-
Lights	18	159	0		177	128	81	0		209	92	18	0		110	-
Lights %	100%	97.5%	0%		97.8%	97.7%	93.1%	0%		95.9%	98.9%	94.7%	0%		98.2%	-
Single-Unit Trucks	0	0	0		0	1	1	0		2	1	0	0		1	-
Single-Unit Trucks %	0%	0%	0%		0%	0.8%	1.1%	0%		0.9%	1.1%	0%	0%		0.9%	-
Buses	0	2	0		2	2	3	0		5	0	1	0		1	-
Buses %	0%	1.2%	0%		1.1%	1.5%	3.4%	0%		2.3%	0%	5.3%	0%		0.9%	-
Articulated Trucks	0	1	0		1	0	1	0		1	0	0	0		0	-
Articulated Trucks %	0%	0.6%	0%		0.6%	0%	1.1%	0%		0.5%	0%	0%	0%		0%	-
Bicycles on Road	0	1	0		1	0	1	0		1	0	0	0		0	-
Bicycles on Road %	0%	0.6%	0%		0.6%	0%	1.1%	0%		0.5%	0%	0%	0%		0%	-

Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast Clouds (-1.62 °C)



Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (4.65 °C)





Turning Movement Count (2 . SANDY HOOK ROAD & LAKE STREET)

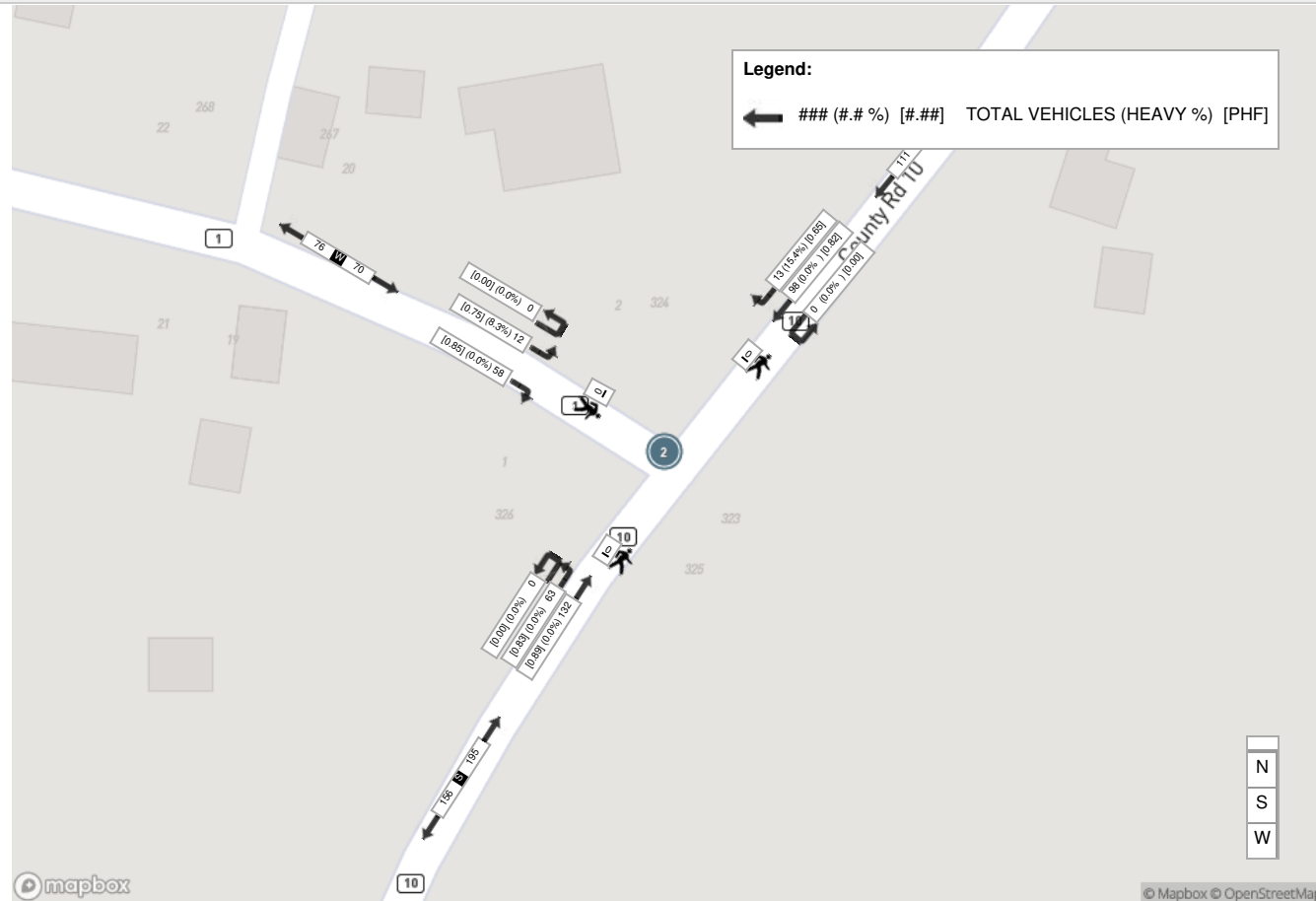
Start Time	N Approach LAKE ST					S Approach LAKE ST					W Approach SANDY HOOK RD					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
11:00:00	1	25	0	0	26	28	14	0	0	42	12	2	0	0	14	82	
11:15:00	5	19	0	0	24	31	13	0	0	44	16	2	0	0	18	86	
11:30:00	4	30	0	0	34	37	19	0	0	56	13	4	0	0	17	107	
11:45:00	3	24	0	0	27	36	17	0	0	53	17	4	0	0	21	101	376
12:00:00	5	25	0	0	30	20	13	0	0	33	13	3	0	0	16	79	373
12:15:00	3	15	0	0	18	21	24	0	0	45	12	1	0	0	13	76	363
12:30:00	5	27	0	0	32	29	18	0	0	47	7	4	0	0	11	90	346
12:45:00	5	22	0	0	27	18	20	0	0	38	26	2	0	0	28	93	338
13:00:00	2	23	0	0	25	13	16	0	0	29	15	2	0	0	17	71	330
13:15:00	2	17	0	0	19	21	10	0	0	31	19	4	0	0	23	73	327
13:30:00	3	23	0	0	26	23	8	0	0	31	17	0	0	0	17	74	311
13:45:00	3	20	0	0	23	18	13	0	0	31	15	6	0	0	21	75	293
14:00:00	2	22	0	0	24	27	11	0	0	38	12	2	0	0	14	76	298
14:15:00	8	20	0	0	28	18	15	0	0	33	14	1	0	0	15	76	301
14:30:00	3	15	0	0	18	15	17	0	0	32	12	3	0	0	15	65	292
14:45:00	4	23	0	0	27	20	11	0	0	31	11	8	0	0	19	77	294
15:00:00	3	24	0	0	27	24	11	0	0	35	8	3	0	0	11	73	291
15:15:00	2	35	0	0	37	14	8	0	0	22	10	3	0	0	13	72	287
15:30:00	4	22	0	0	26	19	12	0	0	31	10	6	0	0	16	73	295
15:45:00	5	31	0	0	36	15	13	0	0	28	16	3	0	0	19	83	301
16:00:00	2	21	0	0	23	19	9	0	0	28	15	1	0	0	16	67	295
16:15:00	2	27	0	0	29	15	13	0	0	28	16	3	0	0	19	76	299
16:30:00	2	20	0	0	22	22	13	0	0	35	8	2	0	0	10	67	293
16:45:00	2	18	0	0	20	20	7	0	0	27	10	4	0	0	14	61	271
Grand Total	80	548	0	0	628	523	325	0	0	848	324	73	0	0	397	1873	-
Approach%	12.7%	87.3%	0%		-	61.7%	38.3%	0%		-	81.6%	18.4%	0%		-	-	-
Totals %	4.3%	29.3%	0%		33.5%	27.9%	17.4%	0%		45.3%	17.3%	3.9%	0%		21.2%	-	-
Heavy	5	1	0		-	1	1	0		-	0	3	0		-	-	-
Heavy %	6.3%	0.2%	0%		-	0.2%	0.3%	0%		-	0%	4.1%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 11:00 AM - 12:00 PM Weather: Snow (0.83 °C)

Start Time	N Approach LAKE ST					S Approach LAKE ST					W Approach SANDY HOOK RD					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
11:00:00	1	25	0	0	26	28	14	0	0	42	12	2	0	0	14	82
11:15:00	5	19	0	0	24	31	13	0	0	44	16	2	0	0	18	86
11:30:00	4	30	0	0	34	37	19	0	0	56	13	4	0	0	17	107
11:45:00	3	24	0	0	27	36	17	0	0	53	17	4	0	0	21	101
Grand Total	13	98	0	0	111	132	63	0	0	195	58	12	0	0	70	376
Approach%	11.7%	88.3%	0%		-	67.7%	32.3%	0%		-	82.9%	17.1%	0%		-	-
Totals %	3.5%	26.1%	0%		29.5%	35.1%	16.8%	0%		51.9%	15.4%	3.2%	0%		18.6%	-
PHF	0.65	0.82	0		0.82	0.89	0.83	0		0.87	0.85	0.75	0		0.83	-
Heavy	2	0	0		2	0	0	0		0	0	1	0		1	-
Heavy %	15.4%	0%	0%		1.8%	0%	0%	0%		0%	0%	8.3%	0%		1.4%	-
Lights	11	98	0		109	132	63	0		195	58	11	0		69	-
Lights %	84.6%	100%	0%		98.2%	100%	100%	0%		100%	100%	91.7%	0%		98.6%	-
Single-Unit Trucks	2	0	0		2	0	0	0		0	0	1	0		1	-
Single-Unit Trucks %	15.4%	0%	0%		1.8%	0%	0%	0%		0%	0%	8.3%	0%		1.4%	-

Peak Hour: 11:00 AM - 12:00 PM Weather: Snow (0.83 °C)





Turning Movement Count (1 . SANDY HOOK ROAD & LOYALIST PARKWAY)

Start Time	N Approach SANDY HOOK RD						E Approach LOYALIST PKWY						S Approach SANDY HOOK RD						W Approach LOYALIST PKWY						Int. Total (15 min)	Int. Total (1 hr)
	Right N-W	Thru N-S	Left N-E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	0	1	12	0	0	13	8	15	0	1	0	24	2	5	0	0	0	7	0	13	0	0	0	13	57	
07:15:00	0	2	10	0	0	12	10	9	2	0	0	21	4	14	8	0	0	26	4	15	0	0	0	19	78	
07:30:00	0	15	30	0	0	45	11	21	6	0	0	38	7	9	2	0	0	18	1	22	0	0	0	23	124	
07:45:00	4	8	26	0	0	38	12	20	4	0	0	36	6	8	8	0	0	22	8	32	2	0	0	42	138	397
08:00:00	0	10	29	0	0	39	9	24	6	0	0	39	5	7	5	0	0	17	4	30	1	0	0	35	130	470
08:15:00	2	9	29	0	0	40	16	30	3	1	0	50	14	6	1	0	0	21	4	25	0	0	0	29	140	532
08:30:00	1	7	34	0	0	42	16	26	9	0	0	51	6	7	2	0	0	15	5	42	0	0	0	47	155	563
08:45:00	1	12	24	0	0	37	10	37	2	0	0	49	8	6	6	0	0	20	7	47	0	0	0	54	160	585
09:00:00	2	5	15	0	0	22	13	16	8	0	0	37	8	8	5	0	0	21	6	34	0	1	0	41	121	576
09:15:00	0	8	14	0	0	22	16	29	5	2	0	52	6	6	10	0	0	22	4	26	1	0	0	31	127	563
09:30:00	1	7	21	0	0	29	20	39	1	0	0	60	7	4	9	0	0	20	4	46	0	0	0	50	159	567
09:45:00	0	8	26	0	0	34	19	33	4	1	0	57	12	5	3	0	0	20	7	38	0	0	0	45	156	563
BREAK																										
16:00:00	1	10	20	0	0	31	27	42	10	0	0	79	11	10	3	0	0	24	5	34	1	0	0	40	174	
16:15:00	0	11	24	0	0	35	36	37	8	0	0	81	6	13	4	0	0	23	9	29	1	0	0	39	178	
16:30:00	2	8	17	0	0	27	38	47	10	0	0	95	7	12	5	0	0	24	7	33	1	0	0	41	187	
16:45:00	1	7	20	0	0	28	25	31	8	1	0	65	7	3	4	0	0	14	8	35	0	0	0	43	150	689
17:00:00	1	8	24	0	0	33	31	51	9	1	0	92	8	8	4	0	0	20	7	41	1	1	0	50	195	710
17:15:00	0	9	21	0	0	30	23	30	12	2	0	67	6	5	7	0	0	18	10	36	1	0	0	47	162	694
17:30:00	1	8	26	0	0	35	24	42	5	1	0	72	8	6	4	0	0	18	1	14	0	0	0	15	140	647
17:45:00	1	7	17	0	0	25	21	26	8	0	0	55	4	4	6	0	0	14	5	21	0	0	0	26	120	617
18:00:00	2	5	15	0	0	22	17	32	7	0	0	56	4	5	4	0	0	13	6	28	0	0	0	34	125	547
18:15:00	0	6	17	0	0	23	13	18	7	2	0	40	6	4	4	0	0	14	3	19	1	0	0	23	100	485
18:30:00	1	9	8	0	0	18	11	22	3	0	0	36	4	3	2	0	0	9	0	23	1	0	0	24	87	432
18:45:00	0	3	15	0	0	18	8	29	2	1	0	40	2	6	7	0	0	15	3	17	1	0	0	21	94	406
Grand Total	21	183	494	0	0	698	434	706	139	13	0	1292	158	164	113	0	0	435	118	700	12	2	0	832	3257	-
Approach%	3%	26.2%	70.8%	0%		-	33.6%	54.6%	10.8%	1%		-	36.3%	37.7%	26%	0%		-	14.2%	84.1%	1.4%	0.2%		-	-	-
Totals %	0.6%	5.6%	15.2%	0%		21.4%	13.3%	21.7%	4.3%	0.4%		39.7%	4.9%	5%	3.5%	0%		13.4%	3.6%	21.5%	0.4%	0.1%		25.5%	-	-
Heavy	1	7	21	0		-	18	26	4	0		-	2	5	3	0		-	2	28	1	0		-	-	-
Heavy %	4.8%	3.8%	4.3%	0%		-	4.1%	3.7%	2.9%	0%		-	1.3%	3%	2.7%	0%		-	1.7%	4%	8.3%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-



Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (2.15 °C)

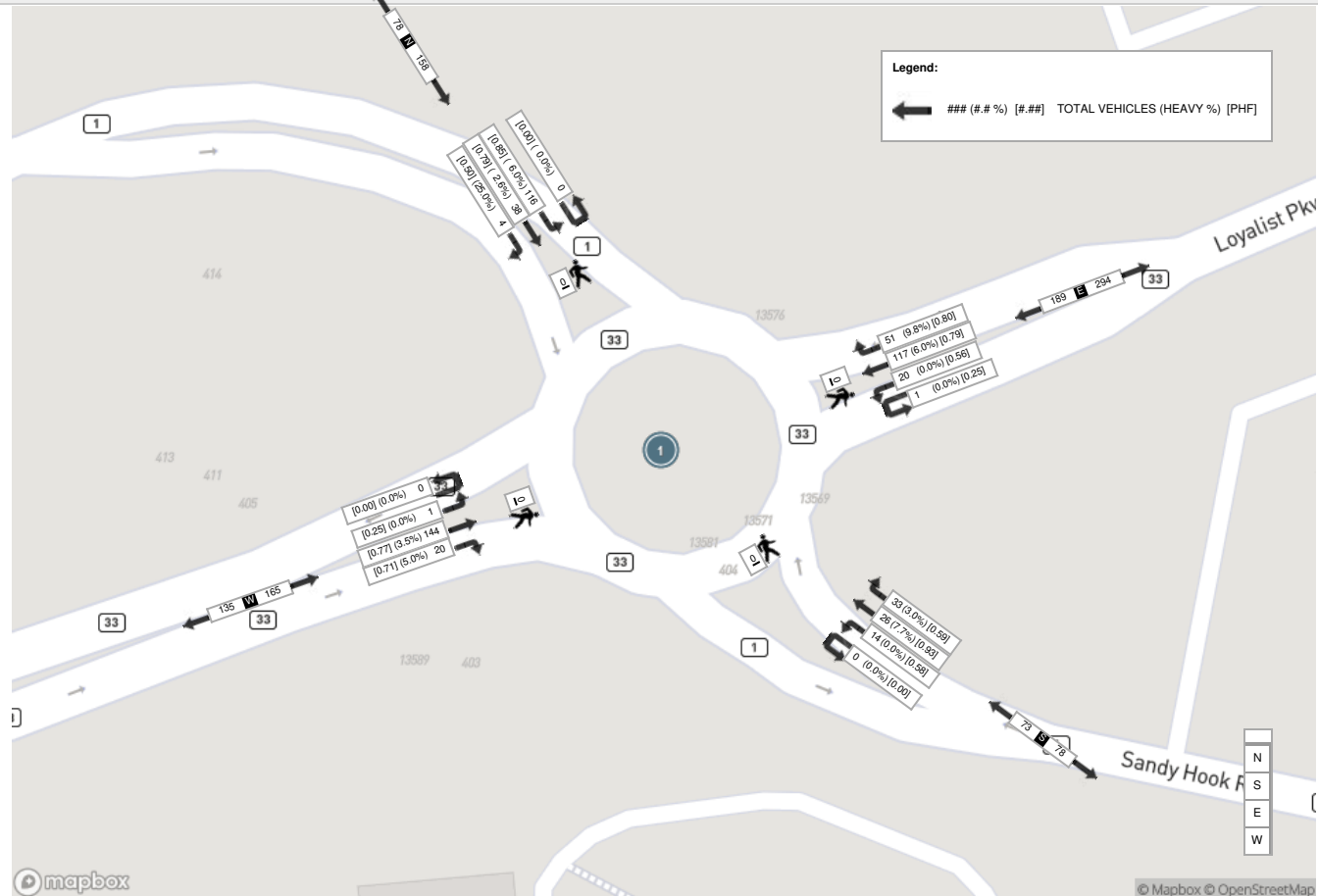
Start Time	N Approach SANDY HOOK RD						E Approach LOYALIST PKWY						S Approach SANDY HOOK RD						W Approach LOYALIST PKWY						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	0	10	29	0	0	39	9	24	6	0	0	39	5	7	5	0	0	17	4	30	1	0	0	35	130
08:15:00	2	9	29	0	0	40	16	30	3	1	0	50	14	6	1	0	0	21	4	25	0	0	0	29	140
08:30:00	1	7	34	0	0	42	16	26	9	0	0	51	6	7	2	0	0	15	5	42	0	0	0	47	155
08:45:00	1	12	24	0	0	37	10	37	2	0	0	49	8	6	6	0	0	20	7	47	0	0	0	54	160
Grand Total	4	38	116	0	0	158	51	117	20	1	0	189	33	26	14	0	0	73	20	144	1	0	0	165	585
Approach%	2.5%	24.1%	73.4%	0%		-	27%	61.9%	10.6%	0.5%		-	45.2%	35.6%	19.2%	0%		-	12.1%	87.3%	0.6%	0%		-	-
Totals %	0.7%	6.5%	19.8%	0%		27%	8.7%	20%	3.4%	0.2%		32.3%	5.6%	4.4%	2.4%	0%		12.5%	3.4%	24.6%	0.2%	0%		28.2%	-
PHF	0.5	0.79	0.85	0		0.94	0.8	0.79	0.56	0.25		0.93	0.59	0.93	0.58	0		0.87	0.71	0.77	0.25	0		0.76	-
Heavy	1	1	7	0		9	5	7	0	0		12	1	2	0	0		3	1	5	0	0		6	-
Heavy %	25%	2.6%	6%	0%		5.7%	9.8%	6%	0%	0%		6.3%	3%	7.7%	0%	0%		4.1%	5%	3.5%	0%	0%		3.6%	-
Lights	3	37	109	0		149	46	110	20	1		177	32	24	14	0		70	19	139	1	0		159	-
Lights %	75%	97.4%	94%	0%		94.3%	90.2%	94%	100%	100%		93.7%	97%	92.3%	100%	0%		95.9%	95%	96.5%	100%	0%		96.4%	-
Single-Unit Trucks	0	0	3	0		3	2	3	0	0		5	1	1	0	0		2	1	1	0	0		2	-
Single-Unit Trucks %	0%	0%	2.6%	0%		1.9%	3.9%	2.6%	0%	0%		2.6%	3%	3.8%	0%	0%		2.7%	5%	0.7%	0%	0%		1.2%	-
Buses	0	1	1	0		2	3	3	0	0		6	0	0	0	0		0	0	1	0	0		1	-
Buses %	0%	2.6%	0.9%	0%		1.3%	5.9%	2.6%	0%	0%		3.2%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.6%	-
Articulated Trucks	1	0	3	0		4	0	1	0	0		1	0	1	0	0		1	0	3	0	0		3	-
Articulated Trucks %	25%	0%	2.6%	0%		2.5%	0%	0.9%	0%	0%		0.5%	0%	3.8%	0%	0%		1.4%	0%	2.1%	0%	0%		1.8%	-



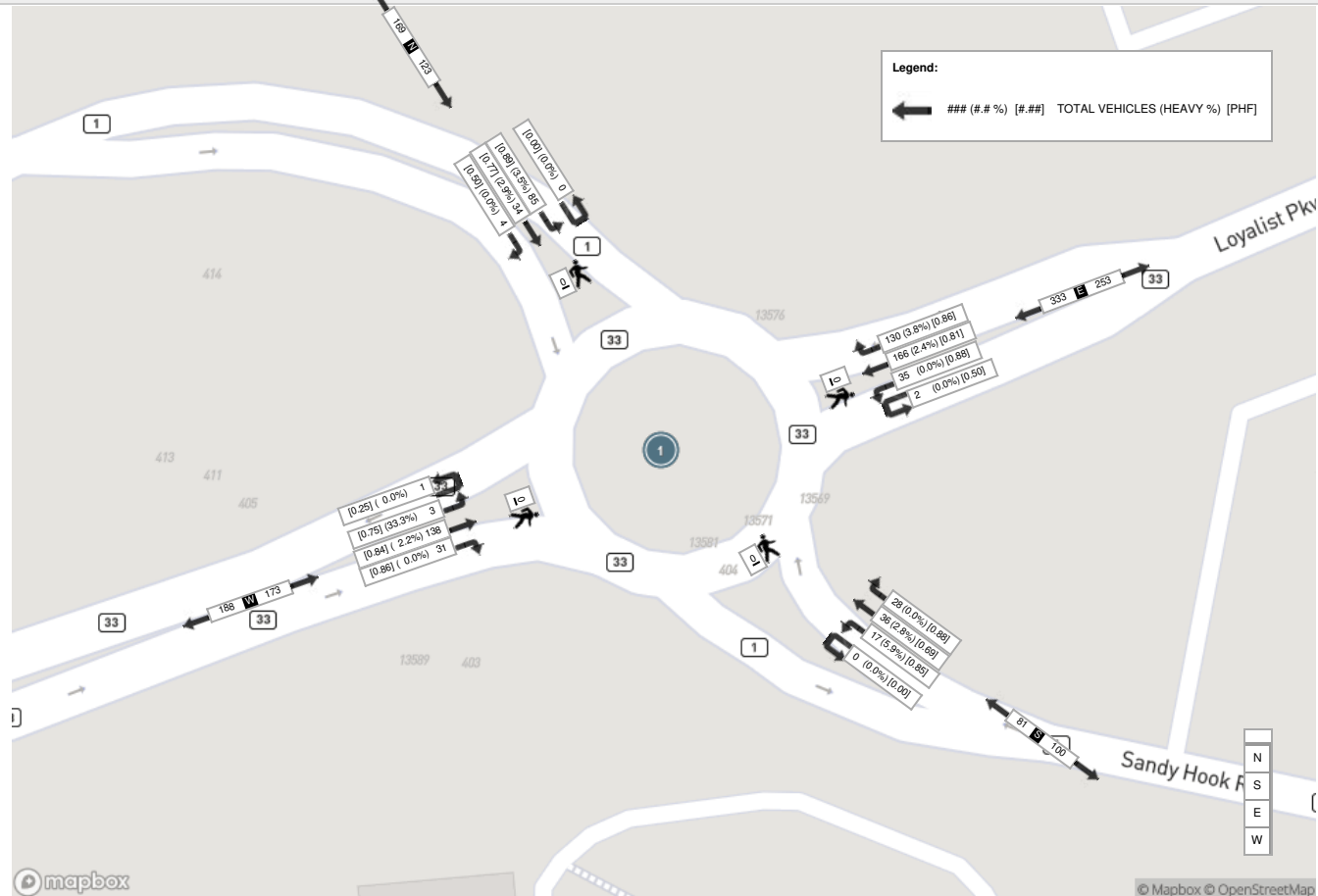
Peak Hour: 04:15 PM - 05:15 PM Weather: Light Rain (4.76 °C)

Start Time	N Approach SANDY HOOK RD						E Approach LOYALIST PKWY						S Approach SANDY HOOK RD						W Approach LOYALIST PKWY						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:15:00	0	11	24	0	0	35	36	37	8	0	0	81	6	13	4	0	0	23	9	29	1	0	0	39	178
16:30:00	2	8	17	0	0	27	38	47	10	0	0	95	7	12	5	0	0	24	7	33	1	0	0	41	187
16:45:00	1	7	20	0	0	28	25	31	8	1	0	65	7	3	4	0	0	14	8	35	0	0	0	43	150
17:00:00	1	8	24	0	0	33	31	51	9	1	0	92	8	8	4	0	0	20	7	41	1	1	0	50	195
Grand Total	4	34	85	0	0	123	130	166	35	2	0	333	28	36	17	0	0	81	31	138	3	1	0	173	710
Approach%	3.3%	27.6%	69.1%	0%		-	39%	49.8%	10.5%	0.6%		-	34.6%	44.4%	21%	0%		-	17.9%	79.8%	1.7%	0.6%		-	-
Totals %	0.6%	4.8%	12%	0%		17.3%	18.3%	23.4%	4.9%	0.3%		46.9%	3.9%	5.1%	2.4%	0%		11.4%	4.4%	19.4%	0.4%	0.1%		24.4%	-
PHF	0.5	0.77	0.89	0		0.88	0.86	0.81	0.88	0.5		0.88	0.88	0.69	0.85	0		0.84	0.86	0.84	0.75	0.25		0.87	-
Heavy	0	1	3	0		4	5	4	0	0		9	0	1	1	0		2	0	3	1	0		4	-
Heavy %	0%	2.9%	3.5%	0%		3.3%	3.8%	2.4%	0%	0%		2.7%	0%	2.8%	5.9%	0%		2.5%	0%	2.2%	33.3%	0%		2.3%	-
Lights	4	33	82	0		119	125	162	35	2		324	28	35	16	0		79	31	135	2	1		169	-
Lights %	100%	97.1%	96.5%	0%		96.7%	96.2%	97.6%	100%	100%		97.3%	100%	97.2%	94.1%	0%		97.5%	100%	97.8%	66.7%	100%		97.7%	-
Single-Unit Trucks	0	1	2	0		3	3	2	0	0		5	0	0	0	0		0	0	1	1	0		2	-
Single-Unit Trucks %	0%	2.9%	2.4%	0%		2.4%	2.3%	1.2%	0%	0%		1.5%	0%	0%	0%	0%		0%	0%	0.7%	33.3%	0%		1.2%	-
Buses	0	0	1	0		1	0	1	0	0		1	0	1	1	0		2	0	0	0	0		0	-
Buses %	0%	0%	1.2%	0%		0.8%	0%	0.6%	0%	0%		0.3%	0%	2.8%	5.9%	0%		2.5%	0%	0%	0%	0%		0%	-
Articulated Trucks	0	0	0	0		0	2	1	0	0		3	0	0	0	0		0	0	2	0	0		2	-
Articulated Trucks %	0%	0%	0%	0%		0%	1.5%	0.6%	0%	0%		0.9%	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.2%	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast Clouds (2.15 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Light Rain (4.76 °C)





Turning Movement Count (1 . SANDY HOOK ROAD & LOYALIST PARKWAY)

Start Time	N Approach SANDY HOOK RD						E Approach LOYALIST PKWY						S Approach SANDY HOOK RD						W Approach LOYALIST PKWY						Int. Total (15 min)	Int. Total (1 hr)	
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total			
07:00:00	0	2	7	0	0	9	9	5	1	0	0	15	2	12	1	0	0	15	3	11	0	0	0	14	53		
07:15:00	0	4	16	0	0	20	15	12	1	0	0	28	3	7	6	0	0	16	4	19	0	0	0	23	87		
07:30:00	1	12	27	0	0	40	6	20	4	0	0	30	8	9	5	0	0	22	3	24	1	0	0	28	120		
07:45:00	4	10	26	0	0	40	22	22	4	0	0	48	7	7	7	0	0	21	7	38	2	0	0	47	156	416	
08:00:00	4	6	23	0	0	33	17	31	3	0	0	51	7	8	8	0	0	23	3	38	1	0	0	42	149	512	
08:15:00	1	5	25	0	0	31	16	21	7	0	0	44	4	3	6	0	0	13	7	34	0	1	0	42	130	555	
08:30:00	1	13	32	0	0	46	16	36	6	2	0	60	8	6	7	0	0	21	7	35	0	0	0	42	169	604	
08:45:00	0	12	24	0	0	36	17	30	5	0	0	52	4	14	6	0	0	24	3	29	0	0	0	32	144	592	
09:00:00	2	9	27	0	0	38	24	31	6	1	0	62	11	3	8	0	0	22	6	34	1	0	0	41	163	606	
09:15:00	0	6	16	0	0	22	24	24	7	0	0	55	9	6	8	0	0	23	5	32	0	0	0	37	137	613	
09:30:00	1	7	25	0	0	33	20	24	4	0	0	48	7	4	6	0	0	17	5	45	0	0	0	50	148	592	
09:45:00	2	8	18	0	0	28	13	33	3	0	0	49	12	8	7	0	0	27	3	43	2	0	0	48	152	600	
BREAK																											
16:00:00	2	9	36	0	0	47	28	51	8	2	0	89	6	6	11	0	0	23	11	43	6	0	0	60	219		
16:15:00	2	16	31	0	0	49	40	43	11	0	0	94	12	19	5	0	0	36	9	40	0	0	0	49	228		
16:30:00	0	10	23	0	0	33	33	35	9	0	0	77	11	10	7	0	0	28	5	45	1	0	0	51	189		
16:45:00	1	17	25	0	0	43	38	52	17	0	0	107	9	7	11	0	0	27	12	39	1	0	0	52	229	865	
17:00:00	0	11	25	0	0	36	40	55	11	0	0	106	6	9	6	0	0	21	15	29	2	0	0	46	209	855	
17:15:00	4	14	27	0	0	45	35	44	7	2	0	88	4	5	3	0	0	12	6	21	0	0	0	27	172	799	
17:30:00	0	9	24	0	0	33	21	38	8	2	0	69	6	3	11	0	0	20	10	33	0	1	0	44	166	776	
17:45:00	1	13	27	0	0	41	17	35	7	0	0	59	2	4	4	0	0	10	2	36	2	0	0	40	150	697	
18:00:00	1	13	26	0	0	40	16	27	9	0	0	52	7	3	6	0	0	16	5	33	0	0	0	38	146	634	
18:15:00	0	9	18	0	0	27	13	28	6	1	0	48	3	7	4	0	0	14	6	24	0	0	0	30	119	581	
18:30:00	1	11	19	0	0	31	12	40	1	0	0	53	5	2	8	0	0	15	4	31	0	0	0	35	134	549	
18:45:00	3	7	22	0	0	32	9	38	10	0	0	57	7	5	7	0	0	19	2	21	1	0	0	24	132	531	
Grand Total	31	233	569	0	0	833	501	775	155	10	0	1441	160	167	158	0	0	485	143	777	20	2	0	942	3701	-	
Approach%	3.7%	28%	68.3%	0%		-	34.8%	53.8%	10.8%	0.7%		-	33%	34.4%	32.6%	0%		-	15.2%	82.5%	2.1%	0.2%		-	-	-	
Totals %	0.8%	6.3%	15.4%	0%		22.5%	13.5%	20.9%	4.2%	0.3%		38.9%	4.3%	4.5%	4.3%	0%		13.1%	3.9%	21%	0.5%	0.1%		25.5%	-	-	
Heavy	0	5	20	0		-	12	18	1	0		-	3	8	9	0		-	5	18	0	0		-	-	-	
Heavy %	0%	2.1%	3.5%	0%		-	2.4%	2.3%	0.6%	0%		-	1.9%	4.8%	5.7%	0%		-	3.5%	2.3%	0%	0%		-	-	-	
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	



Peak Hour: 08:30 AM - 09:30 AM Weather: Overcast Clouds (-1.62 °C)

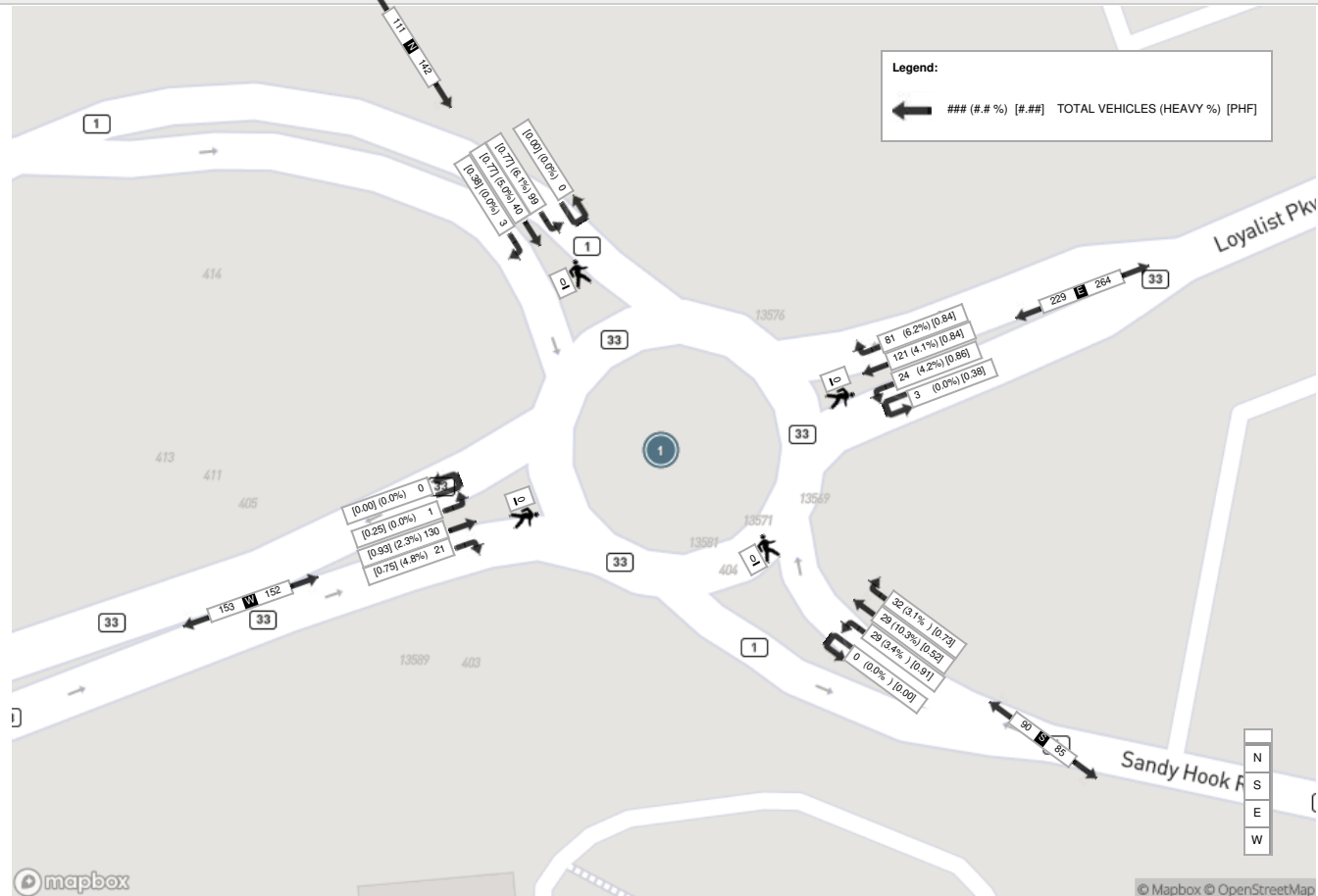
Start Time	N Approach SANDY HOOK RD						E Approach LOYALIST PKWY						S Approach SANDY HOOK RD						W Approach LOYALIST PKWY						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:30:00	1	13	32	0	0	46	16	36	6	2	0	60	8	6	7	0	0	21	7	35	0	0	0	42	169
08:45:00	0	12	24	0	0	36	17	30	5	0	0	52	4	14	6	0	0	24	3	29	0	0	0	32	144
09:00:00	2	9	27	0	0	38	24	31	6	1	0	62	11	3	8	0	0	22	6	34	1	0	0	41	163
09:15:00	0	6	16	0	0	22	24	24	7	0	0	55	9	6	8	0	0	23	5	32	0	0	0	37	137
Grand Total	3	40	99	0	0	142	81	121	24	3	0	229	32	29	29	0	0	90	21	130	1	0	0	152	613
Approach%	2.1%	28.2%	69.7%	0%		-	35.4%	52.8%	10.5%	1.3%		-	35.6%	32.2%	32.2%	0%		-	13.8%	85.5%	0.7%	0%		-	-
Totals %	0.5%	6.5%	16.2%	0%		23.2%	13.2%	19.7%	3.9%	0.5%		37.4%	5.2%	4.7%	4.7%	0%		14.7%	3.4%	21.2%	0.2%	0%		24.8%	-
PHF	0.38	0.77	0.77	0		0.77	0.84	0.84	0.86	0.38		0.92	0.73	0.52	0.91	0		0.94	0.75	0.93	0.25	0		0.9	-
Heavy	0	2	6	0		8	5	5	1	0		11	1	3	1	0		5	1	3	0	0		4	-
Heavy %	0%	5%	6.1%	0%		5.6%	6.2%	4.1%	4.2%	0%		4.8%	3.1%	10.3%	3.4%	0%		5.6%	4.8%	2.3%	0%	0%		2.6%	-
Lights	3	38	93	0		134	76	116	23	3		218	31	26	28	0		85	20	127	1	0		148	-
Lights %	100%	95%	93.9%	0%		94.4%	93.8%	95.9%	95.8%	100%		95.2%	96.9%	89.7%	96.6%	0%		94.4%	95.2%	97.7%	100%	0%		97.4%	-
Single-Unit Trucks	0	1	4	0		5	4	3	1	0		8	1	2	0	0		3	1	1	0	0		2	-
Single-Unit Trucks %	0%	2.5%	4%	0%		3.5%	4.9%	2.5%	4.2%	0%		3.5%	3.1%	6.9%	0%	0%		3.3%	4.8%	0.8%	0%	0%		1.3%	-
Buses	0	0	1	0		1	0	1	0	0		1	0	1	1	0		2	0	1	0	0		1	-
Buses %	0%	0%	1%	0%		0.7%	0%	0.8%	0%	0%		0.4%	0%	3.4%	3.4%	0%		2.2%	0%	0.8%	0%	0%		0.7%	-
Articulated Trucks	0	1	1	0		2	1	1	0	0		2	0	0	0	0		0	0	1	0	0		1	-
Articulated Trucks %	0%	2.5%	1%	0%		1.4%	1.2%	0.8%	0%	0%		0.9%	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.7%	-
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-



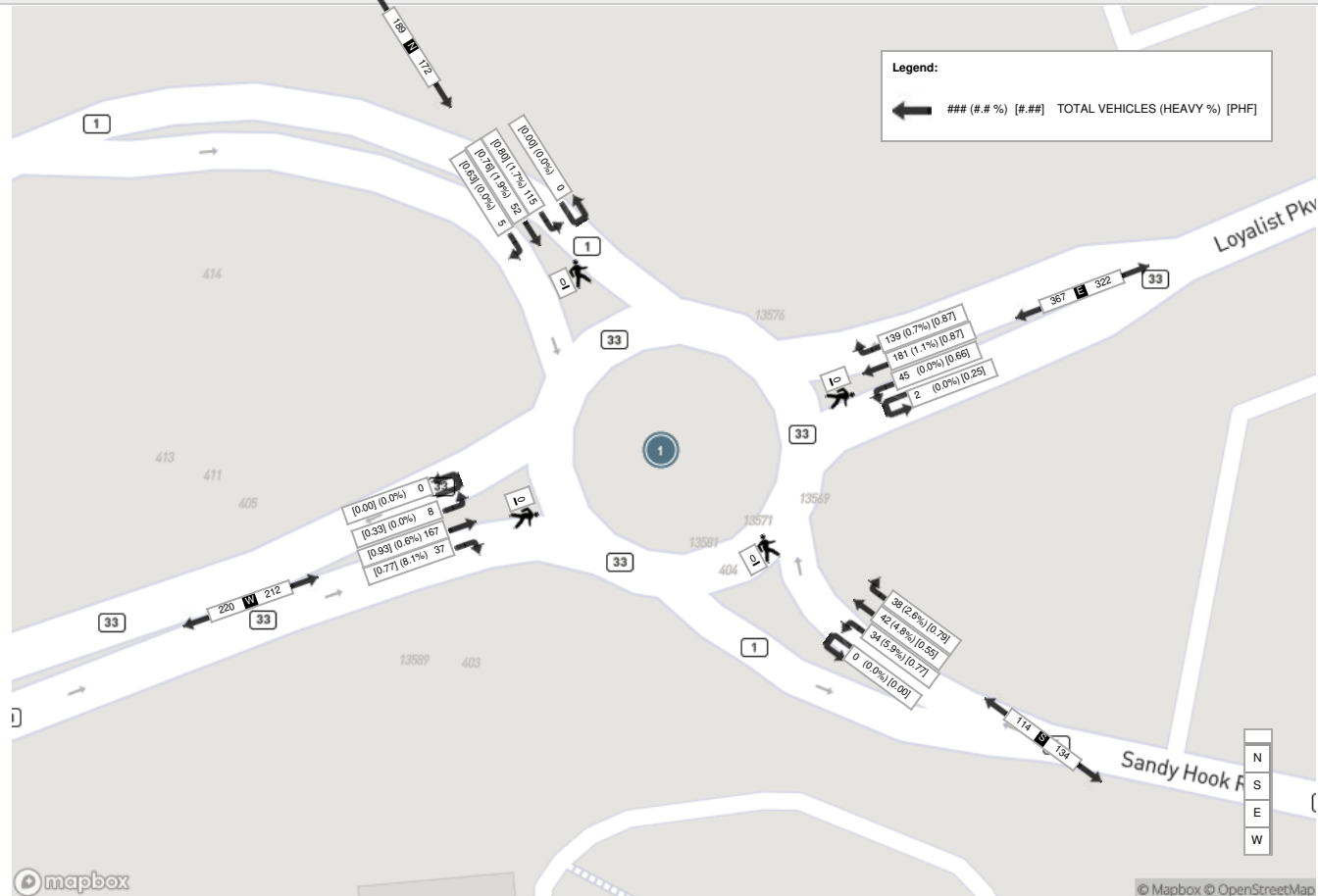
Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (4.65 °C)

Start Time	N Approach SANDY HOOK RD						E Approach LOYALIST PKWY						S Approach SANDY HOOK RD						W Approach LOYALIST PKWY						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:00:00	2	9	36	0	0	47	28	51	8	2	0	89	6	6	11	0	0	23	11	43	6	0	0	60	219
16:15:00	2	16	31	0	0	49	40	43	11	0	0	94	12	19	5	0	0	36	9	40	0	0	0	49	228
16:30:00	0	10	23	0	0	33	33	35	9	0	0	77	11	10	7	0	0	28	5	45	1	0	0	51	189
16:45:00	1	17	25	0	0	43	38	52	17	0	0	107	9	7	11	0	0	27	12	39	1	0	0	52	229
Grand Total	5	52	115	0	0	172	139	181	45	2	0	367	38	42	34	0	0	114	37	167	8	0	0	212	865
Approach%	2.9%	30.2%	66.9%	0%		-	37.9%	49.3%	12.3%	0.5%		-	33.3%	36.8%	29.8%	0%		-	17.5%	78.8%	3.8%	0%		-	-
Totals %	0.6%	6%	13.3%	0%		19.9%	16.1%	20.9%	5.2%	0.2%		42.4%	4.4%	4.9%	3.9%	0%		13.2%	4.3%	19.3%	0.9%	0%		24.5%	-
PHF	0.63	0.76	0.8	0		0.88	0.87	0.87	0.66	0.25		0.86	0.79	0.55	0.77	0		0.79	0.77	0.93	0.33	0		0.88	-
Heavy	0	1	2	0		3	1	2	0	0		3	1	2	2	0		5	3	1	0	0		4	-
Heavy %	0%	1.9%	1.7%	0%		1.7%	0.7%	1.1%	0%	0%		0.8%	2.6%	4.8%	5.9%	0%		4.4%	8.1%	0.6%	0%	0%		1.9%	-
Lights	5	51	113	0		169	138	179	45	2		364	37	40	32	0		109	34	166	8	0		208	-
Lights %	100%	98.1%	98.3%	0%		98.3%	99.3%	98.9%	100%	100%		99.2%	97.4%	95.2%	94.1%	0%		95.6%	91.9%	99.4%	100%	0%		98.1%	-
Single-Unit Trucks	0	1	1	0		2	1	1	0	0		2	1	1	0	0		2	2	0	0	0		2	-
Single-Unit Trucks %	0%	1.9%	0.9%	0%		1.2%	0.7%	0.6%	0%	0%		0.5%	2.6%	2.4%	0%	0%		1.8%	5.4%	0%	0%	0%		0.9%	-
Buses	0	0	1	0		1	0	1	0	0		1	0	1	1	0		2	1	1	0	0		2	-
Buses %	0%	0%	0.9%	0%		0.6%	0%	0.6%	0%	0%		0.3%	0%	2.4%	2.9%	0%		1.8%	2.7%	0.6%	0%	0%		0.9%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	1	0		1	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	2.9%	0%		0.9%	0%	0%	0%	0%		0%	-
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-

Peak Hour: 08:30 AM - 09:30 AM Weather: Overcast Clouds (-1.62 °C)



Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (4.65 °C)





Turning Movement Count (1 . SANDY HOOK ROAD & LOYALIST PARKWAY)

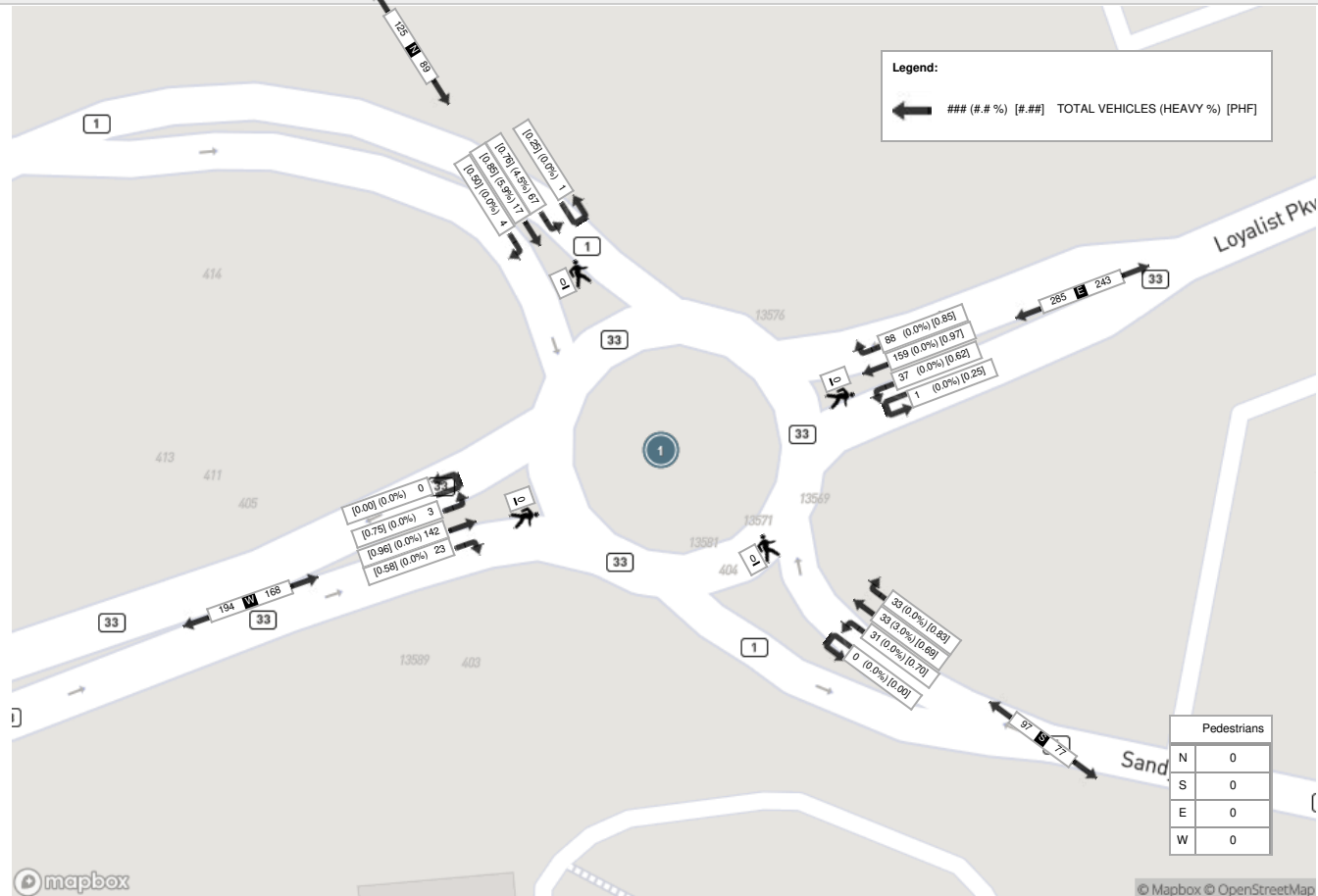
Start Time	N Approach SANDY HOOK RD						E Approach LOYALIST PKWY						S Approach SANDY HOOK RD						W Approach LOYALIST PKWY						Int. Total (15 min)	Int. Total (1 hr)
	Right N-W	Thru N-S	Left N-E	UTurn N-N	Peds N:	Approach Total	Right E-N	Thru E-W	Left E-S	UTurn E-E	Peds E:	Approach Total	Right S-E	Thru S-N	Left S-W	UTurn S-S	Peds S:	Approach Total	Right W-S	Thru W-E	Left W-N	UTurn W-W	Peds W:	Approach Total		
11:00:00	2	5	19	0	0	26	31	27	6	1	0	65	10	6	3	0	0	19	4	33	2	0	0	39	149	
11:15:00	1	6	23	0	0	30	25	33	12	1	0	71	7	3	3	0	0	13	3	44	0	0	0	47	161	
11:30:00	3	6	18	0	0	27	19	30	6	0	0	55	8	11	7	0	0	26	3	46	0	0	0	49	157	
11:45:00	0	5	16	0	0	21	18	40	9	0	0	67	9	10	7	0	0	26	10	36	1	0	0	47	161	628
12:00:00	2	2	17	0	0	21	21	41	15	0	0	77	5	7	8	0	0	20	6	34	0	0	0	40	158	637
12:15:00	0	5	12	0	0	17	26	37	5	0	0	68	10	12	11	0	0	33	5	35	1	0	0	41	159	635
12:30:00	2	5	22	1	0	30	23	41	8	1	0	73	9	4	5	0	0	18	2	37	1	0	0	40	161	639
12:45:00	2	4	11	0	0	17	26	39	12	0	0	77	11	7	6	0	0	24	11	26	0	0	0	37	155	633
13:00:00	0	9	14	0	0	23	29	33	8	0	0	70	11	2	8	0	0	21	3	29	2	0	0	34	148	623
13:15:00	3	13	21	0	0	37	17	29	6	0	0	52	3	4	3	0	0	10	3	22	1	0	0	26	125	589
13:30:00	0	8	18	0	0	26	19	28	6	1	0	54	10	2	4	0	0	16	3	40	0	0	0	43	139	567
13:45:00	1	4	24	0	0	29	20	32	8	0	0	60	8	5	3	0	0	16	6	37	1	0	0	44	149	561
14:00:00	2	3	13	0	0	18	15	26	6	0	0	47	3	4	4	0	0	11	7	44	3	0	0	54	130	543
14:15:00	2	3	18	0	0	23	16	30	13	1	0	60	11	6	5	0	0	22	5	30	1	0	0	36	141	559
14:30:00	2	5	10	0	0	17	19	38	9	0	0	66	4	9	7	0	0	20	1	29	2	0	0	32	135	555
14:45:00	0	6	20	0	0	26	20	32	5	1	0	58	11	4	3	0	0	18	4	25	1	0	0	30	132	538
15:00:00	0	6	11	0	0	17	20	40	6	0	0	66	11	5	3	0	0	19	2	30	1	0	0	33	135	543
15:15:00	0	5	12	0	0	17	24	37	5	0	0	66	1	7	5	0	1	13	2	28	1	0	0	31	127	529
15:30:00	1	6	16	0	0	23	26	36	6	2	0	70	7	6	3	0	0	16	4	40	1	1	0	46	155	549
15:45:00	3	10	12	0	0	25	23	39	8	0	0	70	8	6	2	0	0	16	0	29	0	0	0	29	140	557
16:00:00	0	5	14	0	0	19	15	29	5	0	0	49	7	7	2	0	0	16	7	30	0	0	0	37	121	543
16:15:00	1	8	17	0	0	26	25	29	8	0	0	62	4	11	1	0	0	16	8	25	1	0	0	34	138	554
16:30:00	0	4	15	0	0	19	12	30	5	1	0	48	5	6	4	0	0	15	4	28	3	0	0	35	117	516
16:45:00	1	6	16	0	0	23	14	32	6	0	0	52	3	4	1	0	0	8	2	14	1	0	0	17	100	476
Grand Total	28	139	389	1	0	557	503	808	183	9	0	1503	176	148	108	0	1	432	105	771	24	1	0	901	3393	-
Approach%	5%	25%	69.8%	0.2%		-	33.5%	53.8%	12.2%	0.6%		-	40.7%	34.3%	25%	0%		-	11.7%	85.6%	2.7%	0.1%		-	-	-
Totals %	0.8%	4.1%	11.5%	0%		16.4%	14.8%	23.8%	5.4%	0.3%		44.3%	5.2%	4.4%	3.2%	0%		12.7%	3.1%	22.7%	0.7%	0%		26.6%	-	-
Heavy	0	4	7	0		-	9	4	0	0		-	0	2	0	0		-	0	2	0	0		-	-	-
Heavy %	0%	2.9%	1.8%	0%		-	1.8%	0.5%	0%	0%		-	0%	1.4%	0%	0%		-	0%	0.3%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-



Peak Hour: 11:45 AM - 12:45 PM Weather: Snow (0.83 °C)

Start Time	N Approach SANDY HOOK RD						E Approach LOYALIST PKWY						S Approach SANDY HOOK RD						W Approach LOYALIST PKWY						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
11:45:00	0	5	16	0	0	21	18	40	9	0	0	67	9	10	7	0	0	26	10	36	1	0	0	47	161
12:00:00	2	2	17	0	0	21	21	41	15	0	0	77	5	7	8	0	0	20	6	34	0	0	0	40	158
12:15:00	0	5	12	0	0	17	26	37	5	0	0	68	10	12	11	0	0	33	5	35	1	0	0	41	159
12:30:00	2	5	22	1	0	30	23	41	8	1	0	73	9	4	5	0	0	18	2	37	1	0	0	40	161
Grand Total	4	17	67	1	0	89	88	159	37	1	0	285	33	33	31	0	0	97	23	142	3	0	0	168	639
Approach%	4.5%	19.1%	75.3%	1.1%		-	30.9%	55.8%	13%	0.4%		-	34%	34%	32%	0%		-	13.7%	84.5%	1.8%	0%		-	-
Totals %	0.6%	2.7%	10.5%	0.2%		13.9%	13.8%	24.9%	5.8%	0.2%		44.6%	5.2%	5.2%	4.9%	0%		15.2%	3.6%	22.2%	0.5%	0%		26.3%	-
PHF	0.5	0.85	0.76	0.25		0.74	0.85	0.97	0.62	0.25		0.93	0.83	0.69	0.7	0		0.73	0.58	0.96	0.75	0		0.89	-
Heavy	0	1	3	0		4	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	-
Heavy %	0%	5.9%	4.5%	0%		4.5%	0%	0%	0%	0%		0%	0%	3%	0%	0%		1%	0%	0%	0%	0%		0%	-
Lights	4	16	64	1		85	88	159	37	1		285	33	32	31	0		96	23	142	3	0		168	-
Lights %	100%	94.1%	95.5%	100%		95.5%	100%	100%	100%	100%		100%	100%	97%	100%	0%		99%	100%	100%	100%	0%		100%	-
Single-Unit Trucks	0	1	1	0		2	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	-
Single-Unit Trucks %	0%	5.9%	1.5%	0%		2.2%	0%	0%	0%	0%		0%	0%	3%	0%	0%		1%	0%	0%	0%	0%		0%	-
Buses	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Articulated Trucks	0	0	2	0		2	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0%	3%	0%		2.2%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 11:45 AM - 12:45 PM Weather: Snow (0.83 °C)



Appendix B-2

Bus Transit Schedule

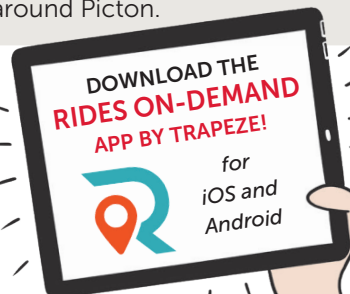


1 WHAT IS THE SCHEDULED ROUTE?

Our scheduled bus route circles Picton, then heads to Belleville via Bloomfield, returns and circles Picton again, five times a day, five days a week (Monday-Friday).

Folks can ride to Belleville and back for school, work, appointments, connections to VIA Rail and more.

Since the route circles Picton both before and after Belleville, it's also useful for getting around Picton.



2 ON-DEMAND SERVICE

Get a ride anywhere in the County for only \$5! Weekdays, when space available. Ride to another County address, and back again, or ride to a bus stop to transfer on to Belleville.

Only \$5 per ride?

How is that possible?!



Since specialized transit vehicles already cross the County, carrying registered seniors and people living with disabilities, seats may be booked by the public on a space-available basis. Service runs Monday-Friday, 6:15am-6pm. **Users can book through the app or contact Quinte Transit the day before.**

3 SPECIALIZED SERVICE



Clients who qualify, (over 55, or living with disabilities) can receive door-to-door service, once they are registered with County Transit.

To register, fill out form at:
www.countytransit.ca

4 NAVIGATE WITH GOOGLE MAPS

County Transit is now on Google Maps, offering door-to-door directions including bus and train transfer times from your home in the County to any destination in Belleville, Kingston, Toronto, Montreal - anywhere transit goes.

For more info, visit: www.countytransit.ca

CONTACT US!

POINT YOUR PHONE'S CAMERA AT THIS QR CODE!



Visit: www.countytransit.ca

Call: 613-392-9640

or toll-free: 1-855-283-9640

Email: info@quintetransit.ca

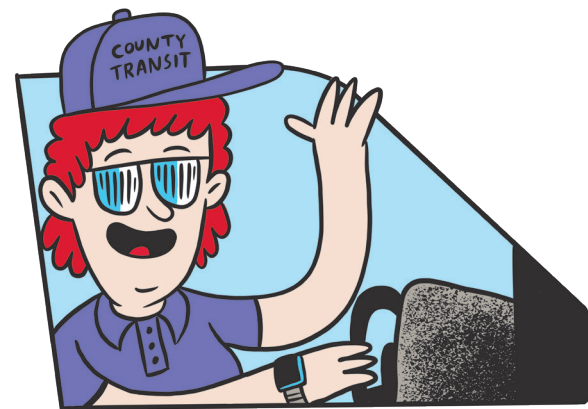
County Transit is a service of the municipality of Prince Edward County.
County Transit is operated by Quinte Transit.



Revised Jan.1, 2025

County Transit

Map, Schedule and More!



1

Scheduled route to and from Belleville

2

On-demand service within the County, or transfer to Belleville

3

Specialized service for seniors 55+ and people with disabilities

4

Navigate with Google Maps Transit directions



PROVIDED BY QUINTE TRANSIT

Weekday Scheduled Route



I love the bus!



Works for us!



Fares: One-way, exact change, OR e-transfer to billing@quintetransit.ca

Adult

\$3.50 within Picton
\$5 to Bloomfield
\$11 to Belleville
NOW \$10 TO BELLEVILLE!

Student / Senior Specialized

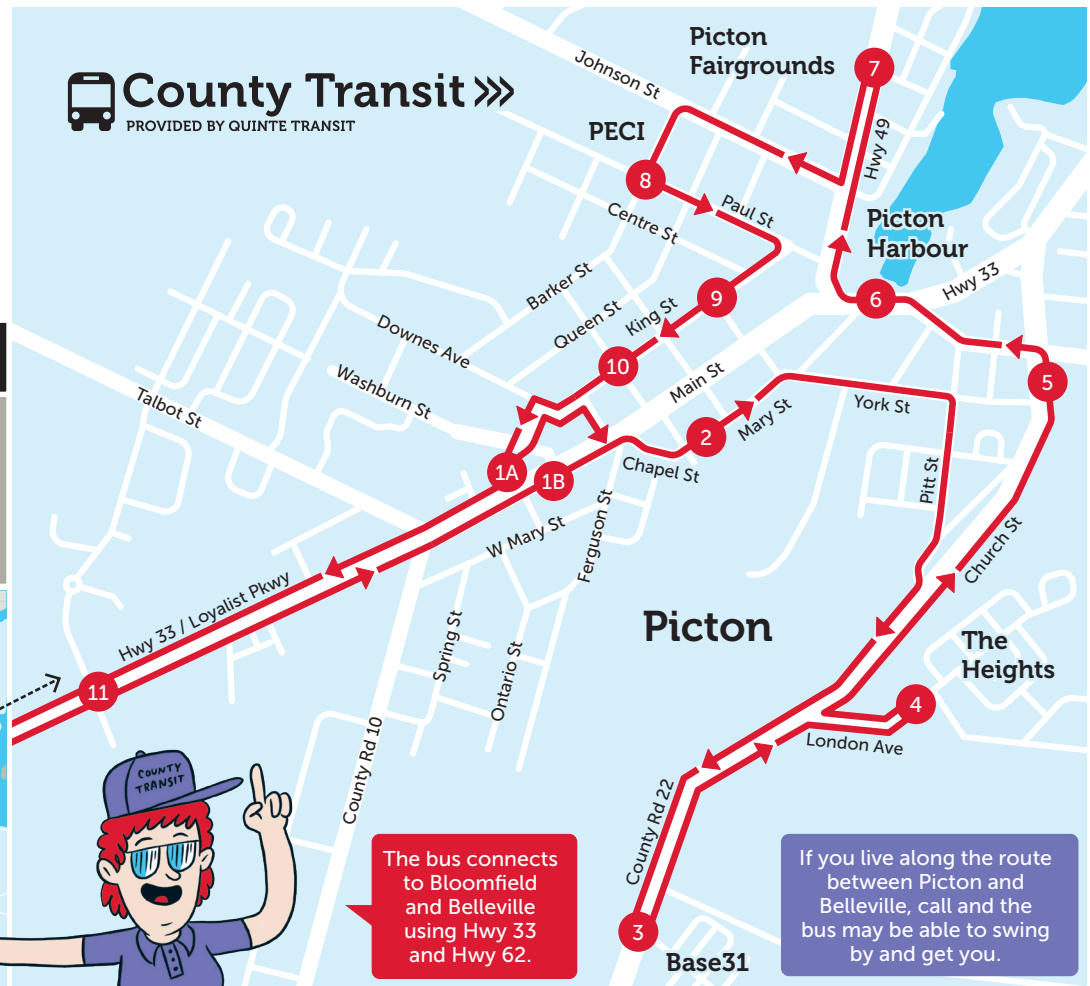
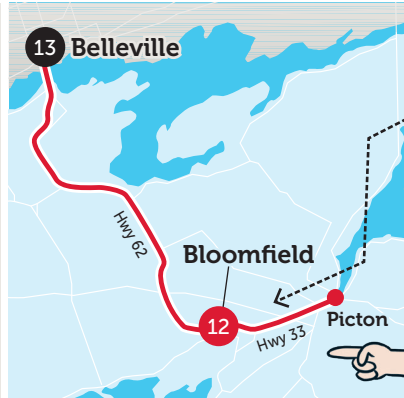
\$2.50 within Picton
\$4.25 to Bloomfield
\$7 to Belleville

Children

13 yrs old & under
NOW RIDE FREE!

About the schedule

- The times at each stop are listed below each stop name.
- The bus moves in the same direction as the schedule. Left to right shows where the bus stops next.
- For all timed stops in the schedule, buses always run either on time or slightly late.
- The bus will wait at timed stops until the scheduled time. Be there 5 minutes before.
- If your stop is untimed, be there at the time for the prior stop.



The bus connects to Bloomfield and Belleville using Hwy 33 and Hwy 62.

If you live along the route between Picton and Belleville, call and the bus may be able to swing by and get you.

FROM PICTON TO BELLEVILLE >>> MONDAY TO FRIDAY

FROM BELLEVILLE TO PICTON >>> MONDAY TO FRIDAY

METRO PICTON GROCERY STORE	MARY ST	BASE 31	MACAULAY VILLAGE LONDON AVE	MACAULAY MUSEUM	PICTON HARBOUR	CRYSTAL PALACE	PAUL ST near BARKER	KING ST near ROSS	KING ST near BOWERY	METRO PICTON GROCERY STORE	LOYALIST PKWY AT GEORGE WRIGHT BLVD	BLOOMFIELD NORTHBOUND	arrival	depart	BLOOMFIELD SOUTHBOUND	LOYALIST PKWY AT GEORGE WRIGHT BLVD	86 MAIN ST PICTON NEAR KFC	MARY ST	BASE 31	MACAULAY VILLAGE LONDON AVE	MACAULAY MUSEUM	PICTON HARBOUR	CRYSTAL PALACE	PAUL ST near BARKER	KING ST near ROSS	KING ST near BOWERY	METRO PICTON GROCERY STORE
1A	2	3	4	5	6	7	8	9	10	1A	11	12			12	11	1B	2	3	4	5	6	7	8	9	10	1A
06:15a	*	06:23a	*	06:29a	*	06:34a	06:37a	06:40a	*	06:43a	**	06:50a	07:25a	07:35a	08:00a	**	08:08a	*	08:14a	*	08:20a	*	08:25a	08:28a	08:31a	*	08:34a
08:45a	*	08:53a	*	08:59a	*	09:04a	09:07a	09:10a	*	09:13a	**	09:20a	09:55a	10:05a	10:30a	**	10:38a	*	10:44a	*	10:50a	*	10:55a	10:58a	11:01a	*	11:04a
11:45a	*	11:53a	*	11:59a	*	12:04p	12:07p	12:10p	*	12:13p	**	12:20p	12:55p	01:05p	01:30p	**	01:38p	*	01:44p	*	01:50p	*	01:55p	01:58p	02:01p	*	02:04p
02:15p	*	02:23p	*	02:29p	*	02:34p	02:37p	02:40p	*	02:43p	**	02:50p	03:25p	03:35p	04:00p	**	04:08p	*	04:14p	*	04:20p	*	04:25p	04:28p	04:31p	*	04:34p
04:45p	*	04:53p	*	04:59p	*	05:04p	05:07p	05:10p	*	05:13p	**	05:20p	05:55p	06:05p	06:30p	**	06:38p	*	06:44p	*	06:50p	*	06:55p	06:58p	07:01p	*	07:04p

* Indicates an untimed stop. If your stop is untimed, be there at the time for the prior stop.

RED Indicates the final stop of the day.

Appendix B-3

AADT vs SADT Calculations



Ministry of
Transportation

Highway
Standards
Branch

Traffic
Office

Provincial Highways

Traffic Volumes

1988-2019, 2021

King's Highways / Secondary Highways / Tertiary Roads

Ministry Contact:

Provincial Traffic Office (905)-704-2960

Abstract:

This annual publication contains averaged traffic volume information and collision rate information for each of the sections of highway under MTO jurisdiction.

Key Words:

Annual Average Daily Traffic volume (AADT), Summer Average Daily Traffic volume (SADT), Summer Average Weekday Traffic volume (SAWDT), Winter Average Daily Traffic volume (WADT), Collision Rate (CR)

Year	Highway	Location Description	Dist (KM)	Pattern Type	AADT	SADT	SWADT	WADT	Truck AADT	Total Collisions	Total CR	Trucks Collisions	Truck CR
2011	33			CTR	6,900	8,400	8,050	5,850	210	0	0.0	0	0.0
2012	33			CTR	5,900	7,150	7,050	5,000	180	0	0.0	0	0.0
2013	33			CTR	6,450	7,850	8,100	5,500	190	0	0.0	0	0.0
2014	33			CTR	6,750	8,250	8,300	5,750	200	4	0.8	0	0.0
2015	33			CTR	6,800	8,300	8,350	5,800	200	6	1.2	0	0.0
2016	33			CTR	6,800	8,300	8,350	5,800	200	4	0.8	0	0.0
2017	33			CTR	6,850	9,150	9,100	5,600	210	3	0.6	0	0.0
2018	33			CTR	6,900	9,200	9,200	5,600	210	2	0.4	0	0.0
2019	33			CTR	6,900	9,200	9,150	5,600	210	3	0.6	0	0.0
2021	33			CTR	6,950	9,050	9,000	5,650	210	4	0.8	0	0.0
1988	33	PR ED RD 1/SANDY HOOK RD (S) SCOHARIE RD (N)	2.6	CTR	4,050	5,250	4,950	3,400	490	4	1.0	0	0.0
1989	33			CTR	4,200	5,350	5,100	3,600	500	1	0.2	0	0.0
1990	33			CTR	4,200	5,250	4,950	3,650	500	2	0.5	0	0.0
1991	33			CTR	4,200	5,300	5,250	3,650	500	3	0.7	0	0.0
1992	33			CTR	3,800	4,650	4,500	3,300	460	2	0.5	0	0.0
1993	33			CTR	3,800	4,800	4,600	3,250	460	3	0.8	0	0.0
1994	33			CTR	3,800	4,850	4,650	3,200	460	6	1.6	0	0.0
1995	33			CTR	3,800	4,900	4,650	3,200	460	1	0.3	0	0.0
1996	33			CTR	4,000	5,100	4,900	3,350	480	7	1.8	0	0.0
1997	33			CTR	4,200	5,400	5,150	3,550	500	2	0.5	0	0.0
1998	33			CTR	4,450	5,650	5,450	3,750	530	2	0.5	0	0.0
1999	33			CTR	4,550	5,750	5,500	3,800	550	1	0.2	0	0.0
2000	33			CTR	4,400	5,550	5,300	3,700	530	2	0.5	0	0.0
2001	33			CTR	4,500	5,700	5,450	3,800	540	1	0.2	0	0.0
2002	33			CTR	4,600	5,800	5,550	3,900	550	2	0.5	0	0.0
2003	33			CTR	4,700	5,850	5,600	4,000	560	4	0.9	0	0.0
2004	33			CTR	4,650	5,850	5,650	3,900	560	3	0.7	0	0.0
2005	33			CTR	4,900	6,050	5,850	4,150	590	0	0.0	0	0.0
2006	33			CTR	5,000	6,200	5,950	4,250	600	0	0.0	0	0.0
2007	33			CTR	5,100	6,300	6,250	4,300	610	0	0.0	0	0.0
2008	33			CTR	5,200	6,450	6,300	4,400	620	2	0.4	0	0.0
2009	33			CTR	5,250	6,400	6,200	4,450	630	1	0.2	0	0.0
2010	33			T	5,350	7,800	7,500	3,400	640	0	0.0	0	0.0
2011	33			T	5,450	7,400	7,350	4,250	650	0	0.0	0	0.0
2012	33			T	4,100	5,950	6,000	2,650	490	0	0.0	0	0.0
2013	33			T	5,350	7,800	7,650	3,400	640	2	0.4	0	0.0
2014	33			T	5,400	7,900	7,800	3,450	650	1	0.2	0	0.0
2015	33			T	5,500	8,050	7,950	3,500	660	2	0.4	0	0.0
2016	33			T	5,550	8,100	8,050	3,550	670	0	0.0	0	0.0
2017	33			T	5,600	7,700	7,700	4,450	670	3	0.6	0	0.0
2018	33			T	5,700	7,800	7,850	4,500	680	3	0.5	0	0.0

Year	Highway	Location Description	Dist (KM)	Pattern Type	AADT	SADT	SWADT	WADT	Truck AADT	Total Collisions	Total CR	Trucks Collisions	Truck CR
2019	33			T	5,750	7,900	7,950	4,550	690	5	0.9	0	0.0
2021	33			T	5,900	7,900	7,950	4,650	710	1	0.2	0	0.0
2021	33	BLOOMFIELD E LTS L 11 START OF NA	72.2										
2021	33	HWY 14 END OF NA END OF HWY											
2012	34	ST OF HWY 34 (PATROL YARD ENTRANCE)	0.7	UC	5,200	5,250	5,550	4,950	780	2	1.4	0	0.0
2013	34			UC	4,750	4,750	4,800	4,500	710	0	0.0	0	0.0
2014	34			UC	5,200	5,200	5,000	4,950	780	2	1.4	1	0.7
2015	34			C	5,050	5,550	5,400	4,550	760	1	0.7	0	0.0
2016	34			C	5,050	5,550	5,400	4,550	760	4	2.9	1	0.7
2017	34			C	5,150	5,650	5,600	4,650	770	5	3.6	2	1.4
2018	34			C	5,100	5,600	5,550	4,600	760	3	2.2	0	0.0
2019	34			C	5,100	5,550	5,550	4,600	760	0	0.0	0	0.0
2021	34			C	5,150	5,600	5,550	4,650	770	1	0.7	0	0.0
1988	34	HWY 417 IC	5.3	C	2,900	3,200	3,200	2,600	720	8	1.4	0	0.0
1989	34			C	3,100	3,450	3,450	2,800	780	9	1.5	1	0.2
1990	34			C	3,200	3,550	3,550	2,900	800	9	1.5	0	0.0
1991	34			C	3,150	3,450	3,500	2,850	790	3	0.5	0	0.0
1992	34			C	3,400	3,650	3,750	3,150	850	4	0.6	2	0.3
1993	34			C	3,650	4,000	4,050	3,350	910	7	1.0	2	0.3
1994	34			LT	3,800	5,550	5,350	2,750	950	1	0.1	0	0.0
1995	34			LT	3,900	5,600	5,450	2,850	980	4	0.5	1	0.1
1996	34			LT	4,000	5,650	5,500	2,950	1,000	8	1.0	0	0.0
1997	34			C	4,100	4,650	4,650	3,700	530	6	0.8	1	0.1
1998	34			C	4,100	4,650	4,650	3,700	530	1	0.1	0	0.0
1999	34			C	4,250	4,750	4,800	3,800	550	1	0.1	0	0.0
2000	34			C	4,050	4,600	4,600	3,650	530	4	0.5	1	0.1
2001	34			C	4,450	5,000	5,000	4,000	670	3	0.3	2	0.2
2002	34			C	4,500	5,050	5,100	4,050	680	6	0.7	0	0.0
2003	34			C	4,800	5,350	5,400	4,350	720	3	0.3	0	0.0
2004	34			C	4,700	5,300	5,300	4,250	700	5	0.5	0	0.0
2005	34			C	4,650	5,200	5,200	4,200	700	8	0.9	1	0.1
2006	34			C	4,900	5,450	5,500	4,400	740	0	0.0	0	0.0
2007	34			C	4,800	5,350	5,400	4,300	720	3	0.3	0	0.0
2008	34			C	4,900	5,400	5,350	4,400	740	2	0.2	0	0.0
2009	34			C	4,650	5,100	5,150	4,200	700	6	0.7	0	0.0
2010	34			C	5,050	5,550	5,600	4,550	760	3	0.3	0	0.0
2011	34			C	5,100	5,600	5,650	4,600	760	6	0.6	0	0.0
2012	34			UC	4,650	4,700	5,000	4,400	700	4	0.4	1	0.1
2013	34			UC	5,150	5,150	5,200	4,900	770	6	0.6	1	0.1
2014	34			UC	5,200	5,200	5,000	4,950	780	10	1.0	2	0.2
2015	34			C	5,400	5,950	5,800	4,850	810	7	0.7	1	0.1

Corridor Growth - 318 Lake Street, Picton

HWY 33 (LOYALIST PARKWAY)

HWY 33 (PR ED RD 1/SANDY HOOK RD (S) SCOHARIE RD (N))

Year	Pattern Type	AADT	SADT	Change (SADT vs AADT)	%Change SADT vs AADT
2010	T	5,350	7,800	2,450	45.8%
2011	T	5,450	7,400	1,950	35.8%
2012	T	4,100	5,950	1,850	45.1%
2013	T	5,350	7,800	2,450	45.8%
2014	T	5,400	7,900	2,500	46.3%
2015	T	5,500	8,050	2,550	46.4%
2016	T	5,550	8,100	2,550	45.9%
2017	T	5,600	7,700	2,100	37.5%
2018	T	5,700	7,800	2,100	36.8%
2019	T	5,750	7,900	2,150	37.4%
2021	T	5,900	7,900	2,000	33.9%
Average:				2,241	41.5%

AADT - average annual daily traffic volumes

SADT - summer average daily traffic volumes

Appendix B-4

Picton TMP 2021 Excerpt (Road Growth Rates)

Historical summer annual weekday daily traffic (SAWDT) was available for Highway 62, County Road 33, and County Road 49 within the County. The growth trends were analyzed with regression analyses and the derived annual growth rates are provided in **Table 2-4**.

Table 2-4. Forecasted Traffic Growth Rates

Roads	Annual Compound Growth Rate (%)
Highway 62	1.4*
County Road 33 (Loyalist Parkway)	2.1*
County Road 49	2.1*
All Other Roads	1.0

* Calculated using MTO historical summer annual weekday daily traffic counts.

Considering Highways 62, 33 and 49 are the gateways into and out of the County as well as the main highways connecting the settlement areas, it is expected that these roadways will experience higher traffic volumes, which will dissipate as they travel through the County network. An annual growth rate of 1.0 percent was applied for all other County Roads corresponding to the overall population growth rate of 0.9 percent, as noted in **Section 2.2.2**.

Lane capacities of the roadways indicate the number of vehicles that can travel past a given point in an hour and are determined by a number of factors, including posted speed limit, width of the travel lane, intersections and driveways along a segment, and the physical quality of a road. Lane capacities for the County were estimated through a comparison of similar municipalities including Brant County, Simcoe County, Township of Centre Wellington and City of Kingston. The County's road classifications were compared to these municipalities and an appropriate lane capacity was assigned as noted in **Table 2-5**. A conservative approach was taken when assigning road capacities with lower assumed capacities than some of the comparator jurisdictions. The lower capacity assumptions were due to limited roadway widths (including limited shoulders) and concerns about the physical condition of many of the County roadways.

The traffic volumes used to analyze base conditions (2019) and the corresponding lane capacities are illustrated in **Figure 2-9** and **Figure 2-10**, respectively. The resulting relationship between the existing traffic demand and total capacity is expressed as a volume to capacity (v/c) ratio, where the vehicle traffic volumes are divided by the capacity of the lanes. The corresponding v/c ratios are illustrated in **Figure 2-11**. Based on findings and thresholds adopted by other municipalities in Ontario, a v/c ratio threshold of 0.85 (85% of the roadway capacity is consumed by vehicular traffic) was used to determine if roadways have adequate capacity; roadways at or above a v/c ratio of 0.85 should be considered for transportation improvements.

Overall, the existing typical summer weekday traffic volumes are adequately accommodated by the existing roadway capacity at all analyzed locations during the weekday a.m. and p.m. peak hours with v/c ratios under 0.85. The maximum v/c ratio under existing conditions is 0.71 and 0.82 in the a.m. and p.m. peak hours, respectively, at the Highway 62 Norris Whitney Bridge.

The vehicle traffic analysis considers vehicle volumes midblock (not at intersections) and midweek (not on weekends). It is recognized that select intersections may experience capacity constraints at select times (usually on weekends in the summer) and perception may be that more capacity is needed. As transportation best practice when planning County-wide, to make best use of available financial resources, and to not "over-build" a road corridor, the typical volumes during the busiest season (summer) are considered. Congestion at select locations during peak periods should be dealt with on a case-by-case basis. In general, the County road network typically has adequate capacity (in many cases plenty of additional capacity) to accommodate existing traffic volumes.

Appendix B-5

Picton TMP Amendment March 2025 Excerpts



PICTON SETTLEMENT AREA MASTER TRANSPORTATION PLAN AMENDMENT

The Corporation of the
County of Prince Edward



TheCounty
PRINCE EDWARD COUNTY • ONTARIO

FINAL REPORT
MARCH 2025



Figure 8: 2021 Official Plan Functional Highway Classification System

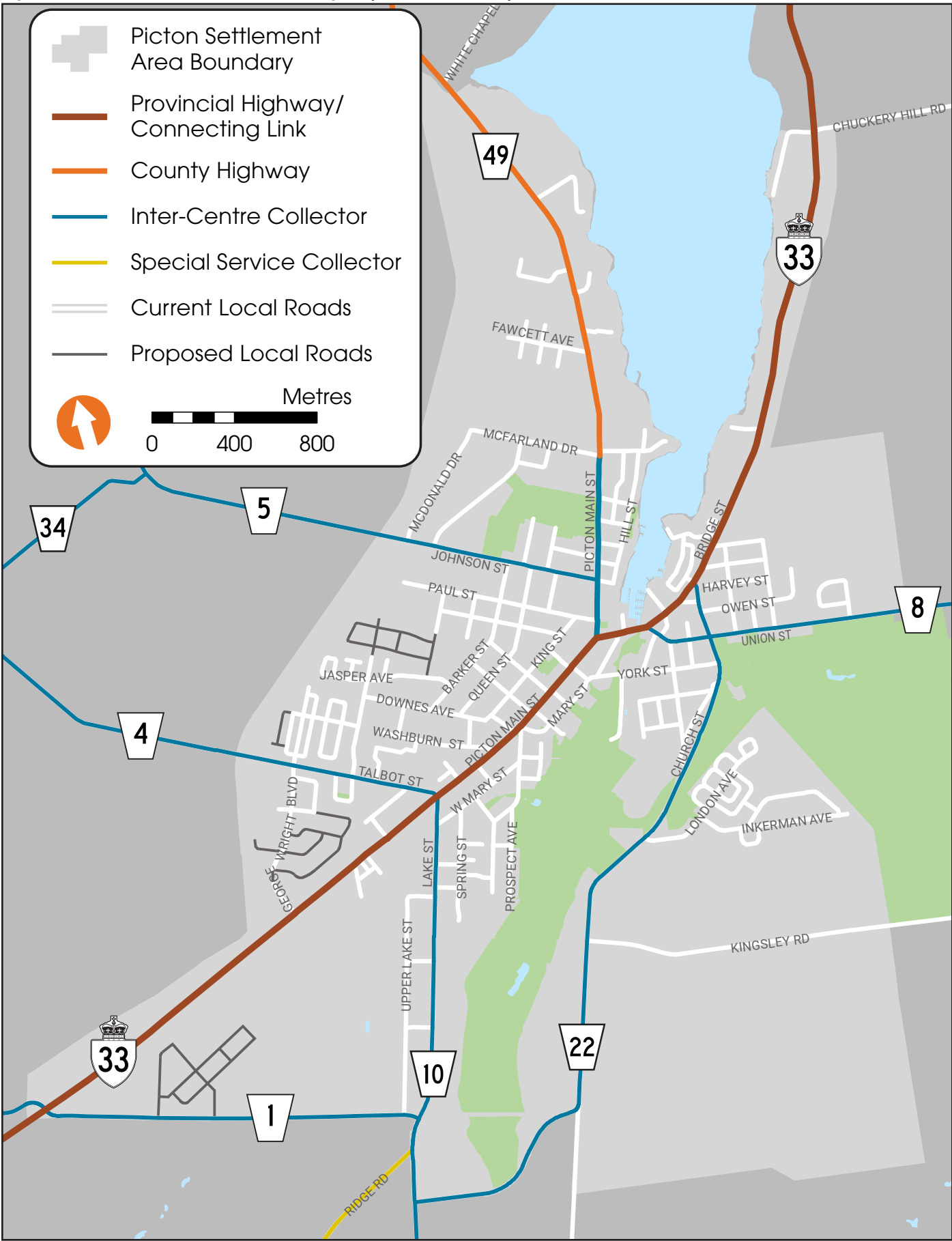


Figure 11: Current County Transit Fixed Route Service and Stops



Figure 12: Existing Active Transportation Facilities

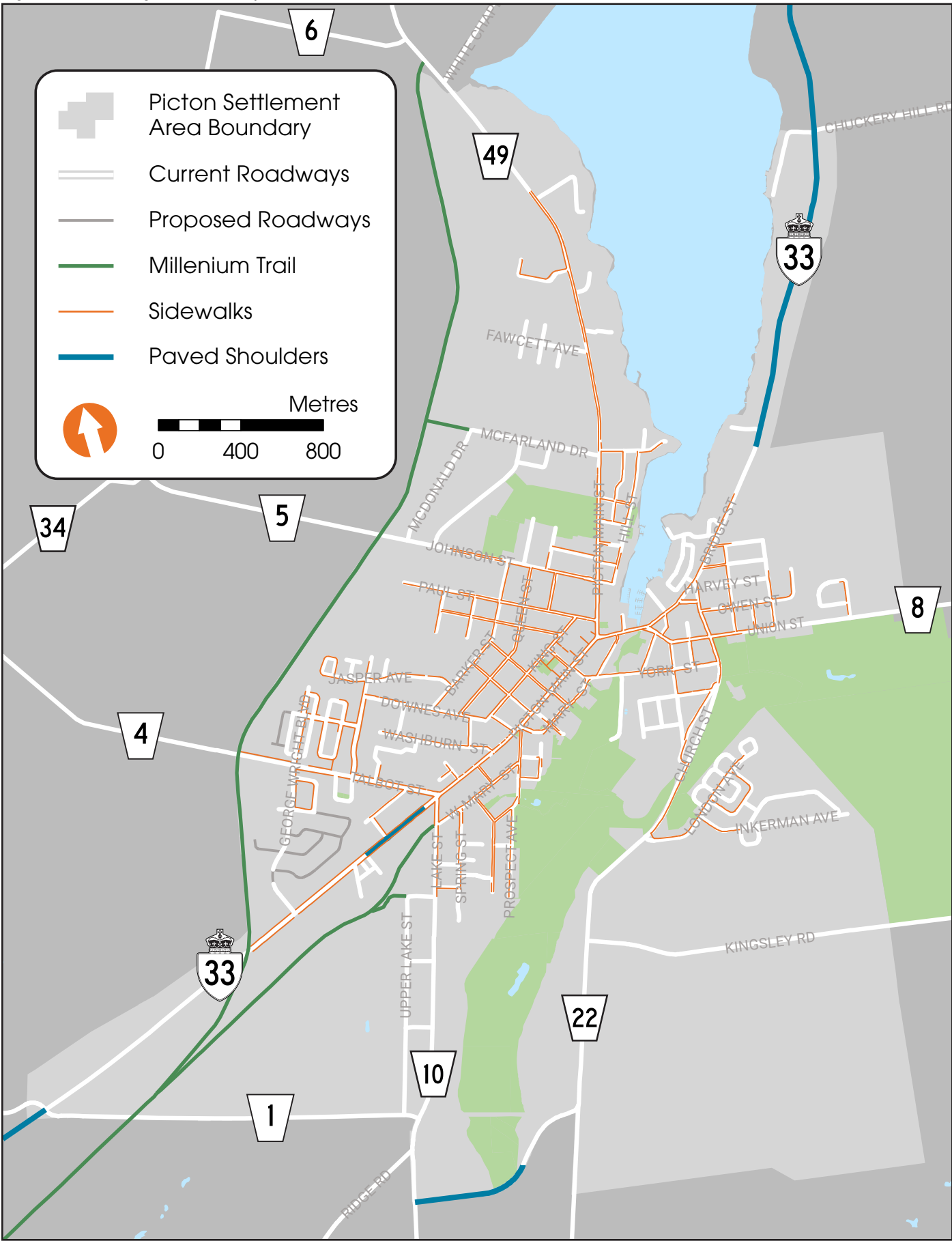


Figure 13: Pedestrian Connections and Range

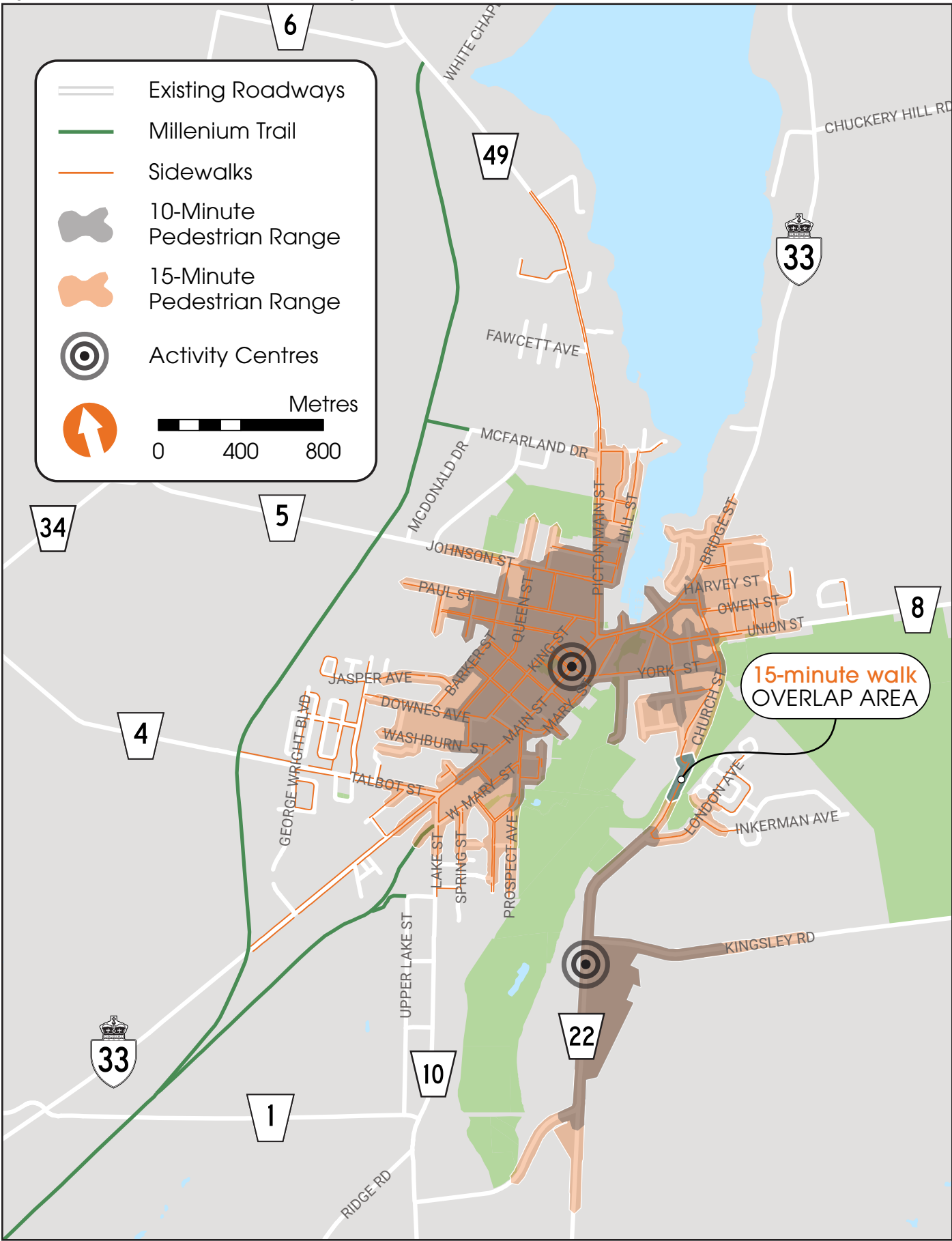


Figure 18: Recommended Bicycle Facility Network

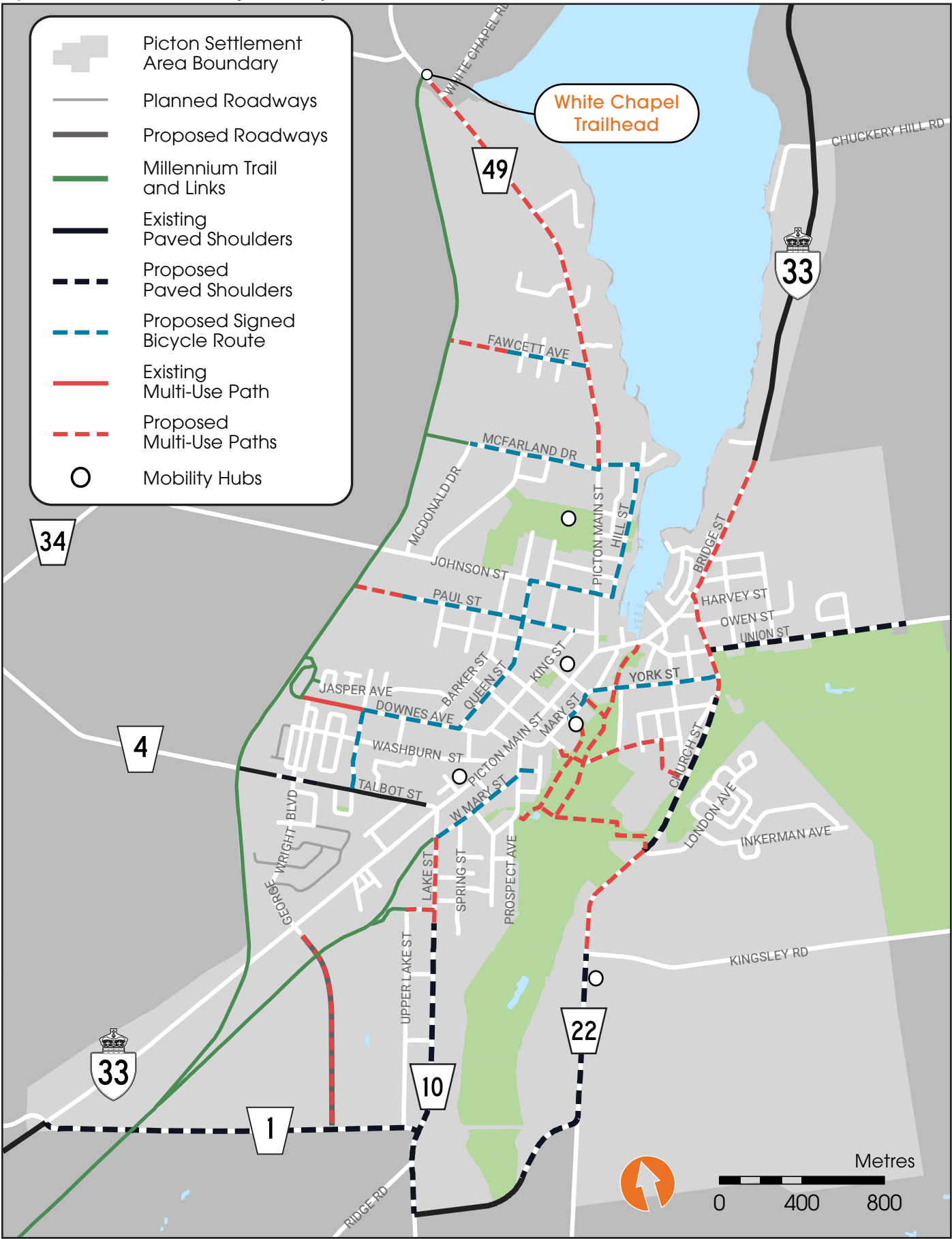
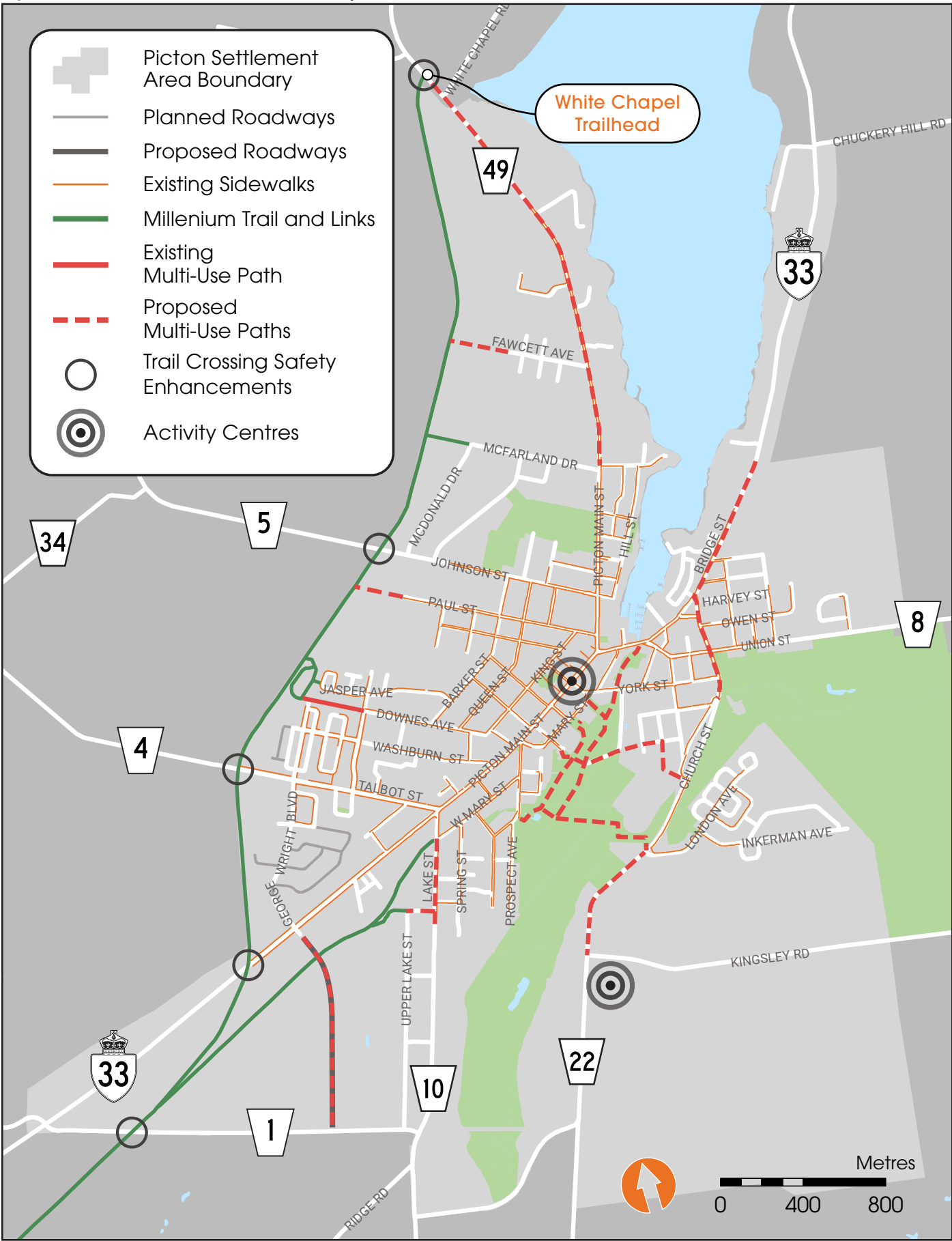


Figure 19: Recommended Pedestrian Facility Network



steering effort as well as noted surface distress limited to less than 10 percent of the road segment length. Nearly 60 roadway segments rate six or less, indicating greater proportions of surface distress, driver burden, and conditions that accelerate vehicle wear.

Over 90 percent of sidewalk segments surveyed rated seven or higher with an overall average rating of 8.7 (**Table 11**). Ratings between seven and ten indicate sidewalks where surface distress is limited to 10 percent or less of the section and where only 5 to 15 percent of the surface is subject to spalling or large horizontal/vertical cracks. Less than 25 segments rated six or less, indicating greater proportions of surface distress, spalling, and cracking that impact pedestrians or more likely those using mobility aids.

Table 11: Average Sidewalk Condition Rating Frequency

Rating	Count	Frequency
1 – 3	7	2%
4 – 6	17	5%
7 – 10	307	93%

Roadway and sidewalk segments rated one, two, or three that fall below a rating of three may pose significant safety/operational concerns for users and exhibit severe surface distress/distortion, pavement structure failure, and inadequate drainage. Road sections and sidewalks found to be in poor condition are listed in the survey report.

The survey identified several sidewalk sections as being under 1.5 metres in width. Some of these walkways may not be widened to the minimum 1.5 metre standard due to insufficient available road allowance or other local issues. It is recommended that those sidewalks which have a width less than 1.5 metres and for which property constraints are not an issue are to be considered for inclusion in the Town’s capital budget to correct these deficiencies.

To effectively maximize the cost-to-benefit ratio of limited rehabilitation dollars, improvement priority should be based on the roadway and sidewalk

condition ratings and the Average Annual Daily Traffic (AADT) volume observed along a segment. AADT values are not currently widely available for Picton roadways. In proceeding with a capital repair program, AADT volumes for roadway segments should be measured or approximated in order to best program improvement projects.

New Roadway Assessment

The study team assessed the feasibility, cost, and compatibility with amendment objectives of potential new roadway links. While not all located within the settlement area, the new links would perform functions directly influencing the connectivity of Picton’s transportation system (**Figure 20**).

One potential roadway, an extension of County Road 1, would exist in a previously unopened roadway allowance. The others, extension of County Road 22, extension of George Wright Boulevard, and a new road linking Hull Road to County Road 1 would require additional property acquisition or easement.

Routes linking the Loyalist Parkway to County Road 22 were proposed to add connectivity between the Heights Development Area and Picton Main Street. A route linking County Road 1 west of Picton to County Road 34 was conceived to support an alternate routing of truck traffic. Cost estimates for construction of any of these alternatives include consideration of grading, 7.5 metre pavement width for travel lanes, partially paved shoulder, drainage, creek crossings, and intersection modifications where they cross or connect to the existing roadway network (**Table 12**).

Using the evaluation criteria described at length in the Action Plan, the study team screened potential roadway alternatives. The screening drew clear distinctions between the combined George Wright Boulevard and County Road 22 link versus the other alternatives in areas related to network connectivity, natural heritage, and existing policy alignment.

The proposed Hull Road Branch and County Road 1 Extension projects are not recommended due to incompatibility with existing policy direction, implementation complexity, and potential impacts to the environment. Directly linking County Road 1 to County Road 34 via a new roadway has the potential to impact an existing wetland as defined by the County’s Official Plan, which states that development shall not be permitted within or within 50 metres of an identified wetland. Additionally, creation of this link would result in significant anticipated impacts to private property.

Figure 20: New Roadway Evaluation Alternatives

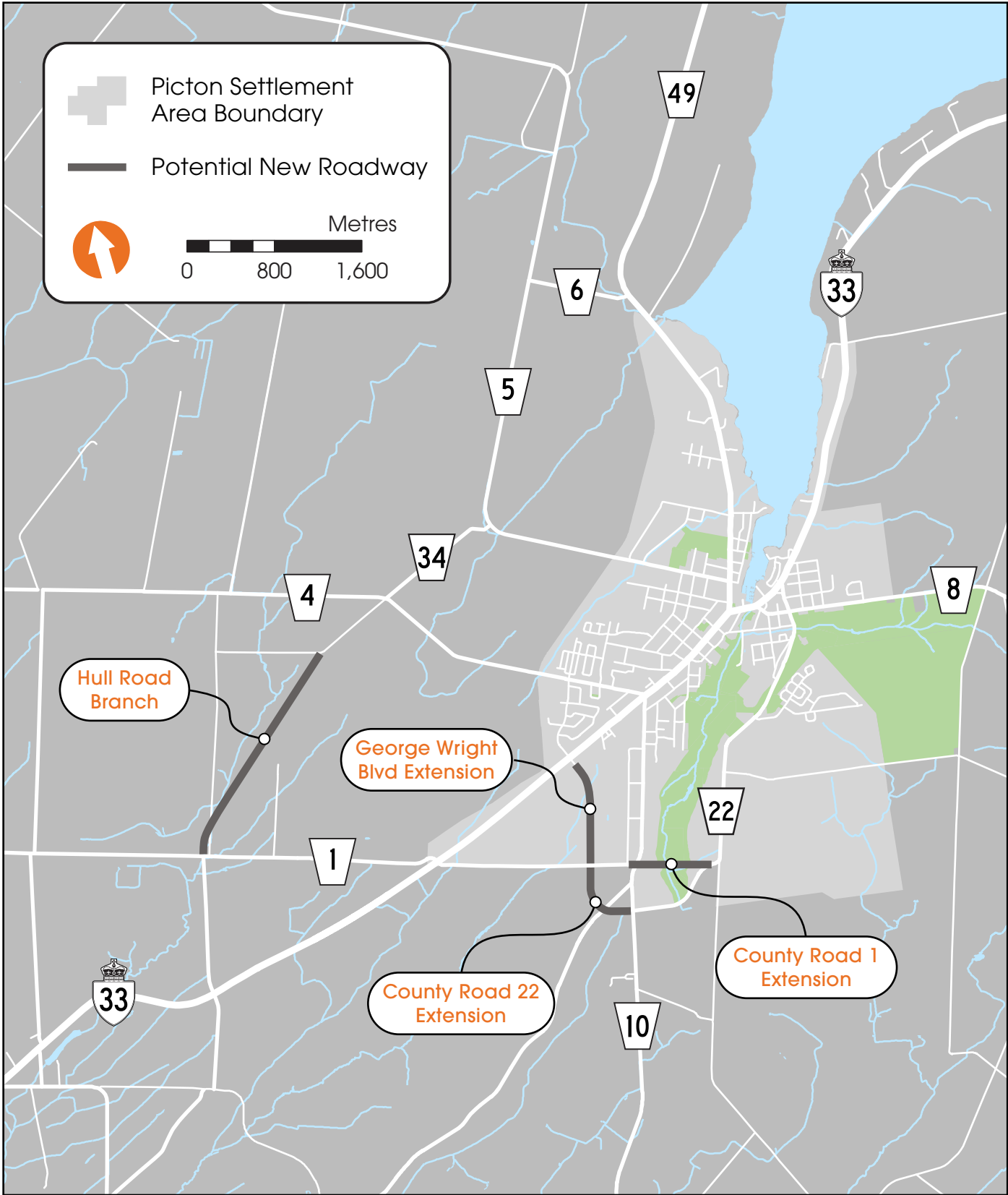


Table 12: New Roadway Assessment Capital Cost Estimates

Proposed Roadway	Cost
George Wright Boulevard Extension	\$5,495,349
County Road 22 Extension	\$4,930,880
County Road 1 Extension	\$6,838,558
Hull Road Branch	\$11,638,536

NOTE: All figures in 2024 dollars (\$) excluding tax, contingency, design, and approvals costs. Capital estimates also exclude utilities, illumination, and property acquisition/easement cost. Estimates subject to further review at preliminary/detailed design stage.

Grade and topography considerations associated with the County Road 1 extension – an elevation difference of approximately 40 metres – introduces significant implementation difficulty. Additionally, implementation would potentially impact planning, policy, and protection areas. The corridor would cross significant valleylands as designated by the Official Plan, within which development shall not be permitted. Furthermore, portions of the area traversed by the proposed facility are designated as the Marsh Creek Environmental Protection Area and as Park and Open Space Area per Picton Urban Centre Secondary Plan.

At the March 11, 2025 meeting of the Prince Edward County Council, Motion 2025-132 removed new construction of a County Road 22 extension from the Transportation Master Plan Amendment's final recommendations and project list.

As a retained new roadway proposal, the George Wright Boulevard Extension will be subject to additional future study per the Municipal Class Environmental Assessment and/or Planning Act application process.

Truck Routing and Restrictions

Nearly all goods currently used in Prince Edward County are delivered to their end location via truck. The legacy roadway network coupled with industrial activity at its outskirts leads to transportation challenges related to through-routed truck traffic travelling through the centre of Picton.

Restricting truck traffic in the centre of a town aims to strike a balance between the quality of life, quality of the urban experience, and economic considerations. As the size of trucks increases, so do their blind spots, which can pose risks to pedestrians, cyclists, and other vehicles, especially in areas where vulnerable road users are commonly found. Restricting truck traffic in the busiest active transportation corridors attempts to reduce the chances of serious injury to the most unprotected.

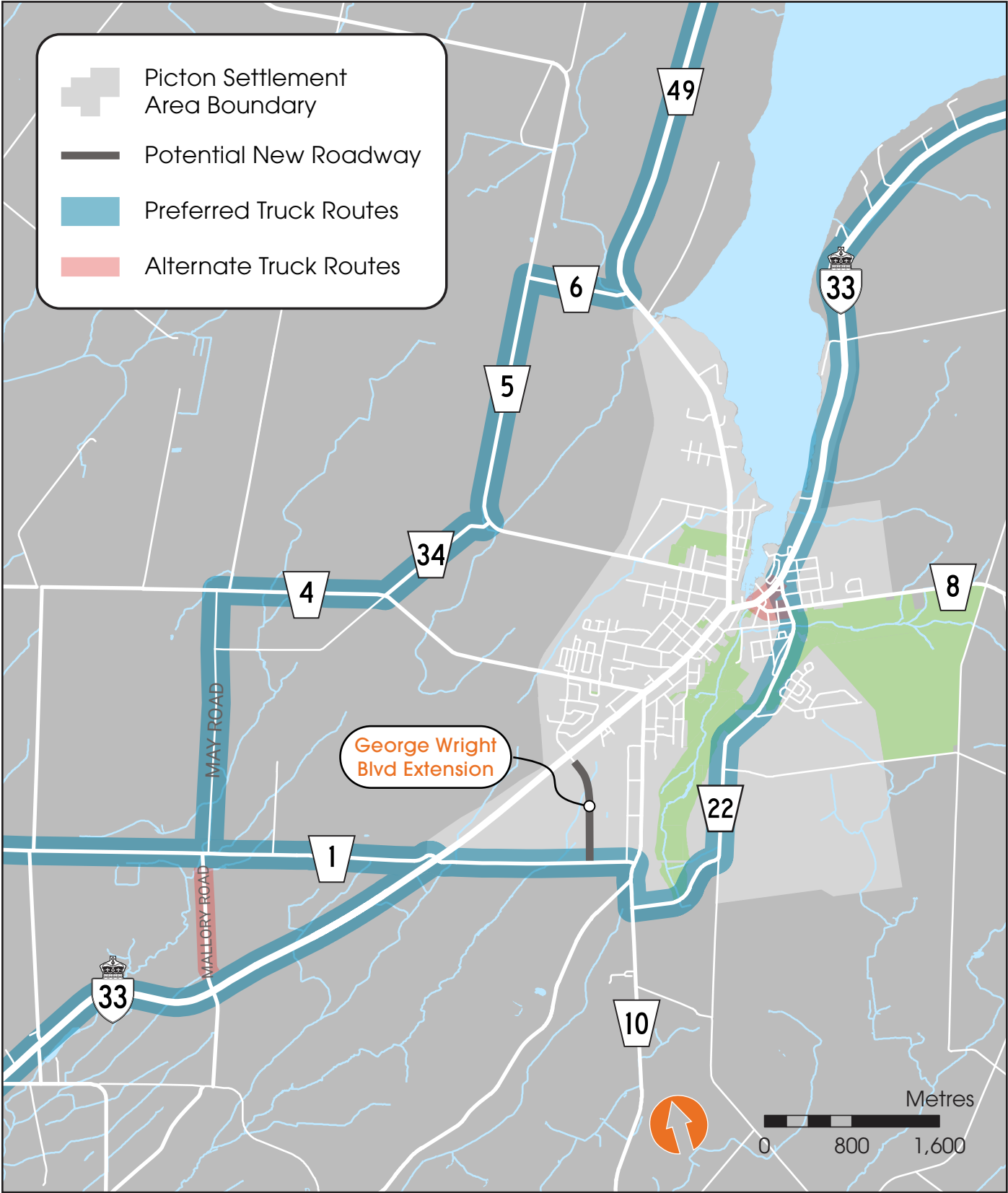
Negative effects of congestion, noise, and pollution compound on the narrow lanes of Picton Main Street and Bridge Street. Heavy trucks cause wear and tear on roads and bridges, especially when frequently stopping and starting. When mixed with increased general vehicle volume during tourist season, truck traffic generates prolonged noise and additional air pollution in a district designed to promote sidewalk activity characterized by outdoor seating and patios.

The 2021 TMP effort performed an assessment of multiple truck traffic management alternatives. This Amendment, through separate internal analysis and consultation, reiterates many of those recommendations with slight modifications. Designating a preferred freight network that avoids Downtown Picton is part of a comprehensive safety strategy that seeks to reduce traffic stress for active modes on key downtown corridors while addressing acute operational issues at the downtown intersections related to grade, seasonality, and traffic volumes.

A preferred truck route network would help to ensure that trucks utilize appropriate roads in and around the Picton Settlement Area while supporting the secure and prompt transportation of products. It carries an additional recognition of the need to minimize the impacts of truck traffic on broader community concerns while protecting roadway infrastructure in strategic locations. Any truck accessing a destination within the settlement area would be authorized to take the most direct route to that destination.

The recommended network (**Figure 21**) identifies preferred and alternate truck routes. The western truck route, which uses a combination of May Road and County Roads 4, 34, 5, and 6 to reach County Road 49, acknowledges the likelihood of truck traffic to use County Road 1 to Picton from Highway 62 rather than Highway 33. The preferred eastern route utilizes County Roads 1, 10, and 22 to reach Highway 33.

Figure 21: Preferred Truck Route Network



An alternate routing follows Union Street rather than making use of Church Street north of Union Street to link County Road 22 and Highway 33.

As the express purpose of a preferred truck network is to regulate only truck traffic and not divert other forms of vehicular traffic away from Picton, designated routes largely following existing roadways do not represent a travel time reduction or a bypass solution.

Using Union Street as part of a commercial vehicle network is less desirable due to intersection geometry constraints at Bridge and Union Streets (insufficient turning radius of 7 metres) for what would be the dominant freight turning movement. Such a routing would also add an additional turn at Church and Union Streets that reduces the efficiency of the route. The preferred truck route recommendation includes a redesign and reconstruction of Church Street between Bridge and Union Streets to safely accommodate greater freight movement as well as active transportation modes.

However, pending reconstruction of Church Street north of Union Street as a multimodal corridor, an intersection assessment may be performed at Union Street and Bridge Street to determine if geometric modifications are feasible to support large vehicle turning movements.

Adding specificity to the intention of the regulations, a truck is defined as any single- or multi-trailer vehicle or a single unit vehicle with four axles or more. Preferred truck routes, typically inter-centre collector roads that provide multiple connections into and around Picton, should be defined by Ontario Traffic Manual-compliant RB-61 Heavy Trucks Permitted signage.



Alternate truck routes, while not preferred, represent an option for truck traffic attempting to travel certain route combinations. Some alternative routings follow existing roadways intended as interim routes until potential new roadways or improvements are constructed.

Restricted roadways, defined at the discretion of the municipality, do not permit truck traffic and should be signed with conforming RB-62 No Heavy Trucks signage to support understanding and compliance of restrictions. The



network assumes non-connecting local streets to be truck restricted. The routing and restriction policy should allow trucks to deviate from preferred and alternate routes to reach a final destination within Picton by taking the shortest possible path from the truck route on roads that are not specifically designated for or restrictive of truck traffic.

Truck Supportive Infrastructure

As acknowledged in the 2021 County Transportation Master Plan, roadway load ratings present concerns and challenges in the definition of a preferred truck network as only Highway 33 and County Road 49 are not subject to recurring annual spring load restrictions.

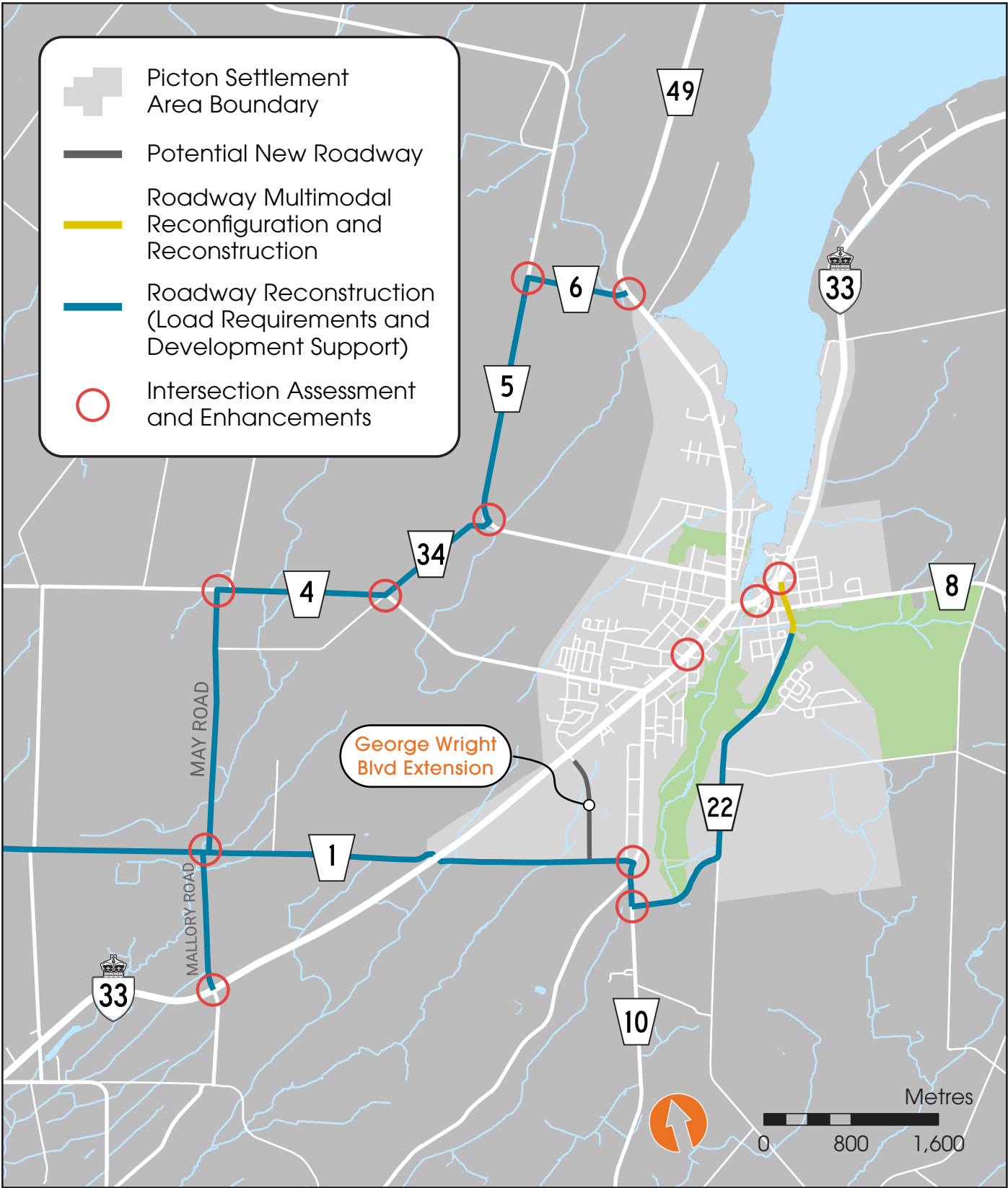
Designating truck routes on other County roads would require investment in reconstruction to accommodate full loads throughout the year. Reconstruction creates an opportunity to simultaneously install recommended active transportation network improvements. Additionally, assessment to identify the feasibility, scope, and cost of potential modification of the geometry, grade, and signalization of identified intersections are necessary to maximize the suitability of the preferred routes to a design vehicle (**Figure 22**). The identification of Mallory Road as an alternate branch of western route is related to sensitivity of complex factors at the offset intersection with County Road 1 and May Road. This particular assessment should be cognizant of environmental impacts related to the Bloomfield Creek watershed. Potential complementary improvements include wildlife fencing, culverts, or signage, along and in advance of preferred and restricted routes.

Finally, as previously stated in the 2021 County TMP, the municipality may choose to incrementally implement various truck route supportive investments over time. Each improvement should lead to greater utilization of the routes versus downtown roadways, demonstrating increasing effectiveness in meeting community goals.

Other Intersection Assessments

In addition to intersection assessments to accommodate larger design vehicles, the Master Plan Amendment recommends an assessment and reconfiguration/operational improvements at the irregular intersection of Walton, Ferguson, Chapel, and Main Streets. As the potential solution may require the realignment of one or more legs of the intersection, and the capital costs likely to exceed a requirements threshold, the entirety of the project has been classified Schedule C and will be subject to additional phases of the MCEA process in the future.

Figure 22: Recommended Roadway/Intersection Projects



Appendix A

Recommended
Project Costs
and
Prioritization

Unit Price Schedule

ID	Description	Unit	2024 Unit Value	Comments/Assumptions
1	Signed Bike Route with Sharrow Lane Markings	Linear km	\$ 11,760	Price for both sides of the road, includes route signs every 330m, and sharrow stencil every 75m as per Ministry Guidelines.
2	Signed Bike Route with Buffered Paved Shoulder in conjunction with existing road reconstruction / resurfacing	Linear km	\$ 417,220	Price for both sides of the road, 1.5m paved shoulder + 0.5 to 1.0m paved buffer, assumes cycling project pays for additional granular base, asphalt, edge lines and signs (buffer zone framed by white edge lines)
3	Conventional 1.5m-1.8m Bicycle Lanes by Adding Bike Lane Markings and Signs	Linear km	\$ 32,760	Price for both sides of the road, includes signs, stencils, and edge line. Price is for thermoplastic paint.
4	Conventional 1.5m-1.8m Bicycle Lanes in Conjunction with a New Road or Road Reconstruction Project	Linear km	\$ 365,980	Price for both sides of the road, assumes 1.5m bike lanes on both sides of the roadway (1.5m x 2 sides = 3.0m). Includes catch basin leads, asphalt, signs, pavement markings sub-base only. Road project funds all other improvements
5	Buffered Bicycle Lane with Flex Bollards - Assumed New Road or Road Reconstruction/Widening Already Planned	Linear km	\$ 525,820	Price for both sides of the road, assumes 1.5m bike lanes + flex bollards centered in hatched buffer zone at 10m intervals. Includes catch basin leads, asphalt, signs, edge line pavement markings (both sides of buffer zone) sub-base only.
6	Uni-directional Cycle Tracks: Raised and Curb Separated - Retrofit Existing Roadway	Linear km	\$ 809,850	Both sides. Includes construction but excludes design and signal modifications. Form of cycle track and materials as well as related components such as bike signals, upgrade/modification of signal controllers, utility/lighting pole relocations, bike boxes etc. are excluded and are project specific and will impact unit price.
7	New Hard Surface Off-Road Multi-Use Trail Outside of Road Right-of-Way	Linear km	\$ 484,020	3.0m wide hard surface pathway (asphalt) within park setting (normal conditions) 90mm asphalt depth. Price depends of scale / complexity of project. Excludes drainage features and landscaping
8	Granular Surface Off-Road Multi-Use Trail Outside of Road Right-of-Way	Linear km	\$ 233,300	3.0m wide, compacted stone dust surface normal site conditions. Price depends of scale / complexity of project. Excludes drainage features and landscaping
9	Sidewalk, New Construction, Single Side of Roadway, Adjacent to Curb	Linear km	\$ 463,170	Price for 1.8m concrete sidewalk. Include site prep., select utility relocation, minor drainage modifications / traffic control.
10	Trail Crossing Safety Improvements	each	\$ 37,315	Includes high-visibility painted crosswalk
11	Roundabout, New Construction	each	\$ 1,268,453	Price to construct a roundabout. Includes removals and streetlighting. Does not include landscaping or servicing infrastructure.
12	Signalized Intersection	each	\$ 400,000	Includes only the capital and installation costs of new traffic signals. Does not include geometric modifications, removals, streetlighting, landscaping, or servicing infrastructure.
13	Widen and Add Lanes to a Two-Lane Non-Local Roadway	Linear km	\$ 3,834,646	All-inclusive price to widen an existing roadway per Ministry of Transportation of Ontario parametric estimating guide.
14	Construct a New or Extend an Existing Two-Lane Non-Local Roadway	Linear km	\$ 3,222,060	All-inclusive price to create or extend an existing roadway per Ministry of Transportation of Ontario parametric estimating guide.
15	Construct a New or Extend an Existing Urban Local Street	Linear km	\$ 3,058,227	All-inclusive price to create or extend an existing local street per City of Ottawa development cost.
16	Two Way Active Transportation Multi-Use path within road right-of-way	Linear km	\$ 471,300	3.0m wide hard surface pathway (asphalt) within road right of way (no utility relocations). Price assumes existing sidewalk to be removed.
16b	Two Way Active Transportation Multi-Use path within road right-of-way	Linear km	\$ 400,650	2.5m wide hard surface pathway (asphalt) within road right of way (no utility relocations). Price assumes existing sidewalk to be removed.

*All unit prices exclude tax, contingency, design and approvals costs.

Transportation Improvement Projects and Evaluation Scores																		
Mode	ID	Facility	Roadway	Description	Limits	Linear KM	Construction Cost	Environmental Assessment Class	Project Evaluation									Phase
									Network Connectivity	Network Balance and Resilience	Access to Destinations	System Safety and Accessibility	Environmental and Cultural Heritage	Existing Policy Alignment	Implementation Cost and Complexity	Development, Growth, and Travel Demand	Total Score	
Cycling Facilities	PSA1	Signed Route	Fawcett Avenue	Signed cycling route with signage and sharrow markings on the roadway both directions.	Between County Road 49 in the east and the terminus of Fawcett Avenue in the west (proposed Fawcett Avenue Extension Multi-Use Path).	0.4	\$4,410	Exempt	3	3	2	2	4	3	4	1	22	<5
	PSA2	Signed Route	McFarland Drive	Signed cycling route with signage and sharrow markings on the roadway both directions.	Between Picton Main Street in the east and McDonald Drive (Millennium Trail Stub) in the west.	0.4	\$4,539	Exempt	3	3	2	2	4	3	4	1	22	<5
	PSA3	Signed Route	Spencer and Hill Streets	Signed cycling route with signage and sharrow markings on the roadway both directions.	Between Picton Main Street in the north and Johnson Street in the south.	0.9	\$10,737	Exempt	3	3	2	2	4	3	4	1	22	<5
	PSA4	Signed Route	Johnson Street	Signed cycling route with signage and sharrow markings on the roadway both directions.	Between Picton Main Street in the east and Queen Street in the west.	0.3	\$3,822	Exempt	3	3	2	2	4	4	4	2	24	<5
	PSA5	Signed Route	Queen Street	Signed cycling route with signage and sharrow markings on the roadway both directions.	Between Johnson Street in the north and Downes Avenue in the south.	0.8	\$9,643	Exempt	3	3	3	2	4	3	4	1	23	<5
	PSA6	Signed Route	Paul Street	Signed cycling route with signage and sharrow markings on the roadway both directions.	Between Barker Street in the east and the terminus of Paul Street in the west (proposed Paul Street Extension Multi-Use Path).	0.5	\$5,880	Exempt	2	3	3	2	4	3	4	1	22	<5
	PSA7	Signed Route	Downes Avenue	Signed cycling route with signage and sharrow markings on the roadway both directions.	Between Queen Street in the east and Curtis Street in the west.	0.5	\$5,480	Exempt	2	3	3	2	4	4	4	2	24	<5
	PSA8	Signed Route	Curtis Street	Signed cycling route with signage and sharrow markings on the roadway both directions.	Between Downes Avenue in the north and Talbot Street in the south.	0.4	\$4,657	Exempt	3	3	4	2	4	3	4	1	24	<5
	PSA9	Signed Route	West Mary Street and Jackson Lane	Signed cycling route with signage and sharrow markings on the roadway both directions.	Between the proposed Delphi Park Multi-Use Path in the east and Lake Street in the west.	0.6	\$7,338	Exempt	4	4	4	2	4	4	4	2	28	<5
	PSA10	Signed Route	Mary, and York Streets	Signed cycling route with signage and sharrow markings on the roadway both directions.	Between Church Street in the east and the proposed Delphi Park Multi-Use Path in the west.	0.8	\$9,326	Exempt	4	4	4	2	4	4	4	2	28	<5
	PSA11	Paved Shoulder	Union Street	Painted bike lane with signage and cycling lane markings both directions.	Between east of John Street in the east and Church Street in the west.	0.4	\$12,940	Exempt	4	4	4	3	4	4	3	2	28	<5
	PSA12	Paved Shoulder	Paul Street	Painted bike lane with signage and cycling lane markings both directions.	Between King Street in the east and Barker Street in the west.	0.4	\$12,318	Exempt	2	3	4	3	4	3	3	1	23	<5
	PSA13	Paved Shoulder	Talbot Street	Connection of striping to denote paved shoulder on both sides of the roadway	Approximately 100 metres on either side of George Wright Boulevard/Markland Avenue.	0.2	\$6,683	Exempt	4	4	4	3	4	4	3	2	28	<5
	PSA14	Paved Shoulder	Church Street	Buffered Paved shoulder with signage on both sides of the roadway.	Between Old Church Street in the north and London Avenue in the south.	0.8	\$344,207	Exempt	3	3	4	4	4	4	2	4	28	5-10
	PSA15	Paved Shoulder	County Road 1	Buffered Paved shoulder with signage on both sides of the roadway.	Between County Road 10 in the east and Provincial Highway 33 in the west.	1.7	\$725,963	Exempt	3	3	3	4	4	4	2	3	26	5-10
	PSA16	Paved Shoulder	County Road 8	Buffered Paved shoulder with signage on both sides of the roadway.	From east of John Street in the west to the eastern Settlement Area boundary and beyond.*	0.5	\$226,550	Exempt	3	3	3	4	4	4	2	2	25	5-10
	PSA17	Paved Shoulder	County Road 10	Buffered Paved shoulder with signage on both sides of the roadway.	From the County Roads Department facility in the north to the southern Settlement Area boundary (County Road 22) and beyond.*	1.4	\$592,452	Exempt	3	3	3	4	4	4	2	4	27	5-10
	PSA18	Paved Shoulder	County Road 22	Buffered Paved shoulder with signage on both sides of the roadway.	From Kingsley Road in the north to existing paved shoulders along County Road 22.	1.2	\$509,008	Exempt	3	3	4	4	4	4	2	4	28	5-10
Multi-Use Facilities	PSA19	Multi-Use Path	Delhi Park Connections	New Multi-Use Path to provide direct bicycle and pedestrian connections between Downtown Picton and the Heights Development Area per the Delhi Park Community Connections Plan (Phase 1). Includes lengths of standard at-grade facilities and a yet-to-be-determined design to negotiate significant grade differences.	From County Road 22 in the south through Delhi Park to Mary Street.	1.7	\$681,105	Exempt	4	4	4	2	3	3	2	3	25	5-10
	PSA20	Multi-Use Path	Delhi Park Connections	New Multi-Use Path to provide direct bicycle and pedestrian connections between Downtown Picton and the Heights Development Area per the Delhi Park Community Connections Plan (later phase). Includes lengths of standard at-grade facilities and a yet-to-be-determined design to negotiate significant grade differences.	From County Road 22 in the south through Delhi Park to connections with Ferguson Street, Bowery Street, and the Mary Street Parking Lot.	1.3	\$500,813	Exempt	4	4	4	2	3	3	2	3	25	10-20
	PSA21	Multi-Use Path	Marsh Creek Path	New Multi-Use Path described in the Delhi Park Community Connections plan to provide direct and separated bicycle and pedestrian connections between Delhi Park and Picton Harbour.	From York Street in the south through Marsh Creek Park to Bridge Street in the north	0.2	\$92,150	Exempt	4	4	4	2	3	3	2	3	25	5-10
	PSA22	Multi-Use Path	County Road 22	New Multi-Use Path to provide bicycle and pedestrian connections between Base31 and Picton Heights.	Between London Avenue in the north and Kingsley Road in the south.	0.6	\$245,598	Exempt	3	4	3	3	4	4	2	3	26	5-10
	PSA23	Multi-Use Path	County Road 49	New bi-directional Multi-Use Path to provide direct and separated cycling infrastructure between the northern terminus of the Millennium Trail and the proposed Picton cycling network.	Between the Millennium Trail in the north and McFarland Drive in the south.	2.2	\$865,404	Exempt	2	4	3	4	4	4	2	2	25	5-10
	PSA24	Multi-Use Path	Lake Street	New bi-directional Multi-Use Path to provide direct and separated cycling infrastructure between proposed rural improvements and the proposed Picton cycling network.	Between West Mary Street (Millennium Trail trailhead) in the north and the County Roads Department facility in the south.	0.4	\$166,270	Exempt	2	4	3	4	4	4	3	2	26	<5
	PSA25	Multi-Use Path	Bridge Street	New bi-directional Multi-Use Path to provide direct and separated cycling infrastructure between paved shoulder portions of Provincial Highway 33 and the proposed Picton cycling network.	From south of Laird Lane in the north (end of paved shoulders) to Church Street in the south.	0.7	\$288,869	Exempt	2	4	4	4	4	4	3	2	27	<5
	PSA26	Multi-Use Path	Church Street	Per the proposed Church Street roadway reconfiguration, new bi-directional Multi-Use Path to separate cycling infrastructure parallel to a forseen high-activity corridor.	Between Bridge Street in the north and Old Church Street in the south.	0.5	\$205,133	Included in any necessary EA for Church Street reconstruction	2	4	3	4	4	4	1	4	26	10-20
	PSA27	Multi-Use Path	Fawcett Avenue Extension	New Multi-Use Path to provide neighborhood bicycle and pedestrian connection to the Millennium Trail	Between Fawcett Avenue in the east and the Millennium Trail in the west.	0.3	\$120,195	Exempt	4	3	3	3	3	3	3	2	24	<5
	PSA28	Multi-Use Path	Paul Street Extension	New Multi-Use Path to provide neighborhood bicycle and pedestrian connection to the Millennium Trail	Between Paul Street in the east and the Millennium Trail in the west.	0.2	\$96,156	Exempt	4	3	3	3	3	3	3	2	24	<5
	PSA29	Multi-Use Path	Upper Lake Street	New Multi-Use Path to provide neighborhood bicycle and pedestrian connection to the Millennium Trail	Between Lake Street in the east and the Millennium Trail spur access point in the west.	0.2	\$69,312	Exempt	2	2	2	2	4	4	3	2	21	<5
	PSA30	Multi-Use Path	George Wright Boulevard Extension	Per the proposed George Wright Boulevard roadway extension, new bi-directional Multi-Use Path to separate pedestrian and cycling infrastructure parallel to a forseen high-activity corridor.	Between Provincial Highway 33 in the north and County Road 1 in the south.	0.9	\$376,611	Included in any necessary EA or Planning Application for George Wright Boulevard Extension	4	4	4	3	2	2	1	4	24	10-20
	PSA32	Roadway Crossing Enhancements (Trail)	County Road 1/Sandy Hook Road	Safety enhancements including solar and battery powered flashing beacons, high visibility pavement markings, and signage	Where the Millennium Trail crosses County Road 1.	N/A	\$37,315	Exempt	2	3	2	4	4	3	3	1	22	<5
	PSA33	Roadway Crossing Enhancements (Trail)	Provincial Highway 33	Safety enhancements including solar and battery powered flashing beacons, high visibility pavement markings, and signage	Where the Millennium Trail crosses the Loyalist Parkway.	N/A	\$37,315	Exempt	2	3	2	4	4	3	3	1	22	<5
	PSA34	Roadway Crossing Enhancements (Trail)	County Road 4/Talbot Street	Safety enhancements including solar and battery powered flashing beacons, high visibility pavement markings, and signage	Where the Millennium Trail crosses County Road 4.	N/A	\$37,315	Exempt	2	3	2	4	4	3	3	1	22	<5
	PSA35	Roadway Crossing Enhancements (Trail)	County Road 5/Johnson Street	Safety enhancements including solar and battery powered flashing beacons, high visibility pavement markings, and signage	Where the Millennium Trail crosses County Road 5.	N/A	\$37,315	Exempt	2	3	2	4	4	3	3	1	22	<5
	PSA36	Roadway Crossing Enhancements (Trail)	County Road 49	Safety enhancements including solar and battery powered flashing beacons, high visibility pavement markings, and signage	Where the Millennium Trail crosses County Road 49 at the White Chapel trail head.	N/A	\$37,315	Exempt	2	3	2	4	4	3	3	1	22	<5

Mode	ID	Facility	Roadway	Description	Limits	Linear KM	Construction Cost	Environmental Assessment Class	Project Evaluation									Phase
									Network Connectivity	Network Balance and Resilience	Access to Destinations	System Safety and Accessibility	Environmental and Cultural Heritage	Existing Policy Alignment	Implementation Cost and Complexity	Development, Growth, and Travel Demand	Total Score	
Roadways	PSA37	Roadway Reconfiguration	Church Street	Complete reconstruction and reallocation of right-of-way to support multimodal needs including freight movement. Will have an accompanying Multi-Use Path on one side of the road.	Between Bridge Street in the north and Old Church Street in the south.	0.5	\$1,649,695	Exempt	2	2	3	4	4	4	1	4	24	10-20
	PSA38	Roadway Extension	George Wright Boulevard Extension	New two-lane roadway to more directly link the Heights Development Area to Main Street Picton in tandem with the County Road 22 Extension. Will have an accompanying Multi-Use Path on one side of the road.	Between Provincial Highway 33 in the north and County Road 1 in the south.	0.9	\$5,495,349	Schedule C or Planning Application (Integrated EA)	4	3	4	3	2	2	1	4	23	10-20
	PSA42	Roadway Reconstruction	May Road	Complete reconstruction within the current right-of-way to upgrade the roadway to higher standards that eliminate the need for spring load restrictions.	Between County Road 4 in the north and County Road 1 in the south.	2.4	\$7,765,165	Exempt	2	3	2	3	3	3	1	2	19	10-20
	PSA43	Roadway Reconstruction	County Road 1	Complete reconstruction within the current right-of-way to upgrade the roadway to higher standards that eliminate the need for spring load restrictions.	From County Road 10 in the east to Provincial Highway 62 in the west.	10.6	\$34,121,615	Exempt	2	3	2	3	3	3	1	4	21	10-20
	PSA44	Roadway Reconstruction	County Road 4	Complete reconstruction within the current right-of-way to upgrade the roadway to higher standards that eliminate the need for spring load restrictions.	From County Road 34 in the east to May Road in the west.	1.6	\$4,994,193	Exempt	2	3	2	3	3	3	1	2	19	10-20
	PSA45	Roadway Reconstruction	County Road 5	Complete reconstruction within the current right-of-way to upgrade the roadway to higher standards that eliminate the need for spring load restrictions.	From County Road 6 in the north to County Road 34 in the south.	2.3	\$7,346,297	Exempt	2	3	2	3	3	3	1	2	19	10-20
	PSA46	Roadway Reconstruction	County Road 6	Complete reconstruction within the current right-of-way to upgrade the roadway to higher standards that eliminate the need for spring load restrictions.	From County Road 49 in the east to County Road 5 in the west.	0.9	\$2,993,294	Exempt	2	3	2	3	3	3	1	2	19	10-20
	PSA47	Roadway Reconstruction	County Road 10	Complete reconstruction within the current right-of-way to upgrade the roadway to higher standards that eliminate the need for spring load restrictions.	From County Road 1 in the north to County Road 22 in the south.	0.4	\$1,288,824	Exempt	2	3	2	3	3	3	1	4	21	10-20
	PSA48	Roadway Reconstruction	County Road 22	Complete reconstruction within the current right-of-way to upgrade the roadway to higher standards that eliminate the need for spring load restrictions.	From Provincial Highway 33 (Bridge Street) in the north to County Road 10 in the south.	3.2	\$10,439,474	Exempt	2	3	2	3	3	3	1	4	21	10-20
	PSA49	Roadway Reconstruction	County Road 34	Complete reconstruction within the current right-of-way to upgrade the roadway to higher standards that eliminate the need for spring load restrictions.	From County Road 5 in the east to County Road 4 in the west.	1.2	\$3,834,251	Exempt	2	3	2	3	3	3	1	2	19	10-20
	PSA50	Intersection Signalization	Bridge Street/Church Street	Upgrade existing intersection to a signalized intersection synchronized with intersections at Union Street and Picton Main Street.	At the intersection of Bridge Street (Highway 33) and Church Street (CR 22).	N/A	\$400,000	Exempt	3	2	4	3	4	3	2	3	24	5-10
	PSA51	Intersection Realignment	Walton Street/Ferguson Street/Chapel Street/Main Street	Intersection geometry and traffic flow assessment and associated improvements to reduce conflict and congestion.	At the intersection of Walton, Ferguson, Chapel, and Main Streets.	N/A	\$2,500,000	Schedule B	2	2	2	3	3	2	4	2	20	10-20
	PSA52	Intersection Modifications	Bridge Street/Union Street	Intersection geometry and traffic flow assessment and associated improvements to reduce conflict and congestion including potential signalization and synchronization with intersections at Church Street and Picton Main Street.	At the intersection of Bridge Street (Highway 33) and Union Street (CR 8).	N/A	\$950,000	Exempt	3	2	3	3	4	3	2	3	23	<5
	PSA53	Intersection Modifications	County Road 49/County Road 6	Intersection geometry assessment and associated improvements to comfortably accommodate large freight design vehicles.	At the intersection of County Road 49 and County Road 6.	N/A	\$950,000	Exempt	2	3	2	3	3	3	2	2	20	<5
	PSA54	Intersection Modifications	County Road 6/County Road 5	Intersection geometry assessment and associated improvements to comfortably accommodate large freight design vehicles.	At the intersection of County Road 6 and County Road 5.	N/A	\$950,000	Exempt	2	3	2	3	3	3	2	2	20	<5
	PSA55	Intersection Modifications	County Road 5/County Road 34	Intersection geometry assessment and associated improvements to comfortably accommodate large freight design vehicles.	At the intersection of County Road 5 and County Road 34.	N/A	\$950,000	Exempt	2	3	2	3	3	3	2	2	20	<5
	PSA56	Intersection Modifications	County Road 34/County Road 4	Intersection geometry assessment and associated improvements to comfortably accommodate large freight design vehicles.	At the intersection of County Road 34 and Old Belleville Road (CR 4).	N/A	\$950,000	Exempt	2	3	2	3	3	3	2	2	20	<5
	PSA57	Intersection Modifications	County Road 4/May Road	Intersection geometry assessment and associated improvements to comfortably accommodate large freight design vehicles.	At the intersection of Old Belleville Road (CR 4) and May Road.	N/A	\$950,000	Exempt	2	3	2	3	3	3	2	2	20	<5
	PSA58	Intersection Modifications	May Road/County Road 1/Mallory Road	Intersection geometry assessment and associated improvements to comfortably accommodate large freight design vehicles.	At multiple offset intersections at the junction of May Road, County Road 1, and Mallory Road.	N/A	\$950,000	Exempt	2	3	2	3	3	3	2	2	20	<5
	PSA59	Intersection Modifications	Mallory Road/Provincial Highway 33	Intersection geometry assessment and associated improvements to comfortably accommodate large freight design vehicles.	At the intersection of Mallory Road and Provincial Highway 33.	N/A	\$950,000	Exempt	2	3	2	3	3	3	2	2	20	<5
	PSA60	Intersection Modifications	County Road 1/County Road 10	Intersection geometry assessment and associated improvements to comfortably accommodate large freight design vehicles dependent on selected roadway extensions.	At the intersection of County Road 1 and County Road 10.	N/A	\$950,000	Exempt	2	3	3	3	3	3	2	4	23	<5
	PSA61	Intersection Modifications	County Road 10/County Road 22	Intersection geometry assessment and associated improvements to comfortably accommodate large freight design vehicles dependent on selected roadway extensions.	At the intersection of County Road 10 and County Road 22.	N/A	\$950,000	Exempt	2	3	3	3	3	3	2	4	23	<5

Special Highlighted Entries

- X.X** - Includes a length of County Road 1 that extends beyond the study area to Highway 62, reflecting the more common approach of trucks from the West.
- \$X** - Reflects cost uncertainty of projects related to intersection assessments and modifications in support of preferred and alternate truck routes. Cost estimates are maximum figures for full geometric reconfiguration. Assessment is likely to yield Cost reductions dependent on location needs.
- X** - Reflects uncertainty regarding the final length, configuration, facility type, and costs of a multi-use path linking Downtown Picton to the Heights Development Area as described in the Delhi Park Community Connections Active Transportation Plan 2034. Costs are likely to increase due to structural needs related to a large grade change once routing and design considerations are finalized.

Appendix B-6

Background Developments



Transportation Impact Assessment

Base31 Area Concept Plan – Prince Edward County

September 2023

PEC Community Partners Inc.

TYLin

3.2 Development Context

The development area is proposed to be developed into a mixed-use neighborhood community including but not limited to; single family detached, single family attached, multifamily mid-rise units, and commercial land uses. A total of 7,500 residential units and a hotel are currently planned for the development and is subject to change based on future studies. The existing Base31 Revitalization District area is intended to serve as the central commercial/residential hub of the community encompassing the densest residential developments and the majority of the commercial & recreational land uses. The hotel is also being contemplated on the west side of County Road 22 immediately across from the Revitalization District. Other institutional and small commercial / retail developments are expected to be scattered throughout the villages, with the trips expected to be captured internally within the development lands. The community will be primarily served by County Road 22/Church Street, Kingsley Road, and Clarke Road.

The Area Concept Plan of the development is shown in **Figure 3-2** and a full-size map can be found in **Appendix C**.

Figure 3-2 Area Concept Plan



The development is divided into 12 residential villages including the existing Base31 Revitalization District as shown in **Figure 3-3**.

Figure 3-3 Proposed Block Map



The land use breakdown for each of the villages are detailed in **Table 5-1**.

The site is planned to be developed in multiple phases. Phase one is comprised of the Base31 Revitalization District, Village A, and a hotel located on the west side of Country Road 22. Phase one is planned to be completed by the 2031 interim horizon year. The remaining villages will be built out over several years. 2031 and 2041 will be considered the interim and ultimate horizon years for the purposes of analysis.

3.3 Study Area

The following study area intersections have been included based on the Terms of Reference submitted to the County:

- ▶ County Road 22/Church Road & Airport Lane
- ▶ County Road 22/Church Road & County Road 10/Lake Street

5 SITE TRAFFIC

5.1 Development Trip Generation

5.1.1 Land Use and Residential Distribution

Development trip generation was estimated according to the Institute of Transportation Engineers (ITE) 11th Edition Trip Generation Manual and historical/forecasted visitor data.

Residential uses were represented by ITE Land Use Code (LUC) **210** for “single family detached”, LUC **215** for “single family attached”, LUC **221** for “multifamily midrise”, and LUC **310** for “hotel”. The site is planned to be analyzed in two phases. Phase one is comprised of the Base31 Revitalization District, Village A, and a 60-bed hotel, planned to be completed by the interim 2031 horizon year. Note that the number of rooms for the hotel on the west side of County Road 22 has been estimated based on discussions with the landowner group and is subject to change as the development is further detailed. The remaining site area and villages are planned to be analyzed by the ultimate 2041 horizon year. Additionally, the hotel is assumed to be expanded to 200 beds by the ultimate horizon year. **Table 5-1** outlines the unit type distribution.

Table 5-1 Land Use Breakdown

Village	Single Family Detached LUC 210	Single Family Attached LUC 215	Multifamily Midrise LUC 221	Hotel LUC 310	Total
Phase 1 - 2031					
Base31 Revitalization District	0	0	800	0	800
Village A	220	80	500	0	800
Hotel	0	0	0	60	60
Phase 1 Subtotal	220	80	1300	60	1660
Phase 2 - 2041					
Village B	220	220	150	0	590
Village C	220	220	150	0	590
Village D	220	220	150	0	590

Village E	220	220	150	0	590
Village F	500	500	500	0	1500
Village G	205	200	0	0	405
Village H	220	200	0	0	420
Village I	205	200	0	0	405
Village J	205	200	0	0	405
Village K	205	200	0	0	405
Hotel Expansion	0	0	0	140	140
Phase 2 Total	1920	1880	600	140	4540
Overall Total	5280	4920	4800	200 Hotel Rooms	7500 Units 200 Hotel Rooms

Base31 Revitalization District Commercial Land Use

Based on the current Area Concept Plan it is assumed that the 70-acre Base31 Revitalization District will have the majority of the non-residential land uses within the overall development. Other smaller commercial / institutional (schools) land uses within the remaining blocks are expected to generate more internal and non-auto trips. The Revitalization District non-residential trip generation was estimated by reviewing the forecasted daily volume of visitors to the Revitalization District, excluding major events, in order to determine the day-to-day trip generation. Based on the forecast rates provided, it is expected that the Base31 Revitalization District non-residential commercial lands would attract a peak hourly trip volume of 181 two-way trips by the 2031 horizon year and a maximum capacity of 190 two-way trips by 2032. As a conservative approach, the peak hourly trip volume of 190 two-way trips has been utilized for both the 2031 and 2041 horizon years. This peak is expected to occur during the Saturday peak hour. The relative trip rates have been compared to **LUC 820** for "Shopping Centre > 150k", to derive the AM and PM peak hour trip volumes, as well as an inbound / outbound split distribution.

Based on our discussions with PECCPI, the Base31 Revitalization District is intended to become a destination which operates throughout the year, so it was not necessary to create an off-peak and on-peak trip generation.

5.1.2 Trip Generation Methodology

A non-auto trip reduction factor of 25% was applied to all trips. This rate is based on similar municipalities in Ontario such as the City of Guelph or City of Barrie which have a dense multiuse core area surrounded by lower density residential development similar to the Base31 Revitalization District and its surrounding villages. It is also noted that Picton has a higher-than-average retirement community with 34.6% of the population aged 65 years or over (compared to the provincial average of 15.5%)¹. This would lead towards lower vehicle ownership rates and a heavier reliance on transit, rideshare / taxis, and active transportation.

Additionally, the development is designed to prioritize active transportation modes with the network of on and off-street facilities. The transportation demand management strategies outlined in **Section 8** will further support the non-auto trip reduction factor.

Table 5-2 outlines the trip generation for each block and land-use of the development site. The full detailed trip generation calculations can be found in **Appendix G**.

¹ Based on 2016 Canadian Census Data

Table 5-2 Trip Generation

Peak Hour Trip Generation											
Village	Unit Type	Units	Weekday AM			Weekday PM			Weekend Midday		
			In	Out	Total	In	Out	Total	In	Out	Total
2031 Interim Horizon Year											
Base31 Revitali- zation District	Multifamily Midrise	800	51	171	222	142	91	233	119	115	234
	Non Residential (peak)	-	22	14	36	70	76	146	99	91	190
Village A	Single Family Detached	220	29	86	115	97	58	155	82	70	152
	Single Family Attached	80	7	21	28	20	14	34	16	18	34
	Multifamily Midrise	500	32	106	138	89	57	146	74	72	146
-	Hotel (Phase 1)	60 Rooms	10	7	17	7	6	13	20	15	35
Phase 1 Total Trips		1600 units 60 Rooms	151	405	556	425	302	727	410	381	791
2041 Ultimate Horizon Year											
Village B	Single Family Detached	220	29	86	115	97	58	155	82	70	152
	Single Family Attached	220	20	59	79	55	38	93	45	49	94
	Multifamily Midrise	150	10	32	42	27	17	44	22	22	44
Village C	Single Family Detached	220	29	86	115	97	58	155	82	70	152

	Single Family Attached	220	20	59	79	55	38	93	45	49	94
	Multifamily Midrise	150	10	32	42	27	17	44	22	22	44
Village D	Single Family Detached	220	29	86	115	97	58	155	82	70	152
	Single Family Attached	220	20	59	79	55	38	93	45	49	94
	Multifamily Midrise	150	10	32	42	27	17	44	22	22	44
Village E	Single Family Detached	220	29	86	115	97	58	155	82	70	152
	Single Family Attached	220	20	59	79	55	38	93	45	49	94
	Multifamily Midrise	150	10	32	42	27	17	44	22	22	44
Village F	Single Family Detached	500	66	196	262	222	130	352	186	159	345
	Single Family Attached	500	45	135	180	126	88	214	103	111	214
	Multifamily Midrise	500	32	106	138	89	57	146	74	72	146
Village G	Single Family Detached	205	27	81	108	91	53	144	76	65	141
	Single Family Attached	200	18	54	72	50	35	85	41	44	85
Village H	Single Family Detached	220	29	86	115	97	58	155	82	70	152

	Single Family Attached	200	18	54	72	50	35	85	41	44	85
Village I	Single Family Detached	205	27	81	108	91	53	144	76	65	141
	Single Family Attached	200	18	54	72	50	35	85	41	44	85
Village J	Single Family Detached	205	27	81	108	91	53	144	76	65	141
	Single Family Attached	200	18	54	72	50	35	85	41	44	85
Village K	Single Family Detached	205	27	81	108	91	53	144	76	65	141
	Single Family Attached	200	18	54	72	50	35	85	41	44	85
-	Hotel Expansion (Phase 2)	200 Rooms	39	31	40	46	44	100	61	47	108
Phase 2 Total Trips		5900 units 200 Rooms	645	1856	2501	1910	1216	3126	1611	1503	3114
Overall Total Trips		7500 Units 200 Rooms	786	2254	3040	2328	1512	3840	2001	1869	3870

Under the interim 2031 phase conditions the development is expected to generate 556 total two-way trips in the weekday AM peak hour with 151 inbound and 405 outbound. The development is expected to generate 425 inbound trips and 302 outbound trips in the weekday PM peak hour for a total of 727 two-way trips. The Saturday mid-day peak hour is expected to generate 410 inbound trips and 381 outbound trips for a total of 791 two-way trips.

Under the ultimate build out conditions there is an expected 3,040 two-way trips consisting of 786 inbound trips and 2,254 outbound trips in the weekday AM peak hour. In the weekday PM peak hour, there is expected to be a total of 3,840 two-way trips generated with 2,328 inbound and 1,512 outbound. The Saturday peak hour is expected to generate 2,001 inbound trips and 1,869 outbound trips for a total of 3,870 two-way trips.

5.2 Site Trip Distribution, Assignment, and Internal Capture

The site traffic has been distributed throughout the internal road network as well as the broader external roads.

The distribution of trips is based on 2019 Urban SDK data of travel patterns for Picton and engineering judgement. **Table 5-3** outlines the Urban SDK data used. The raw Urban SDK data can be found in **Appendix G**.

Table 5-3 Urban SDK Travel Data

Destination	Travel Demand
External (outside the Bay of Quinte)	39.0%
Picton (Internal)	29.0%
Other areas within the Bay of Quinte	16.0%
Belleville	8.0%
Bloomfield	2.0%
Sandbanks & South Shore	2.0%
Wellington	1.0%
Trenton & CFB Trenton	1.0%
Tyendinaga & Deseronto	0.5%
Napanee	0.5%
Kingston	0.5%
Bath, OPG Lennox, Millhaven, Bombardier	0.5%
Total	100%

The travel demand was applied to all the potential gateways in the study network. The destinations of 'Other areas within the Bay of Quinte' and 'External (Outside of the Bay of Quinte)' were assigned based on the existing traffic volumes observed from the traffic

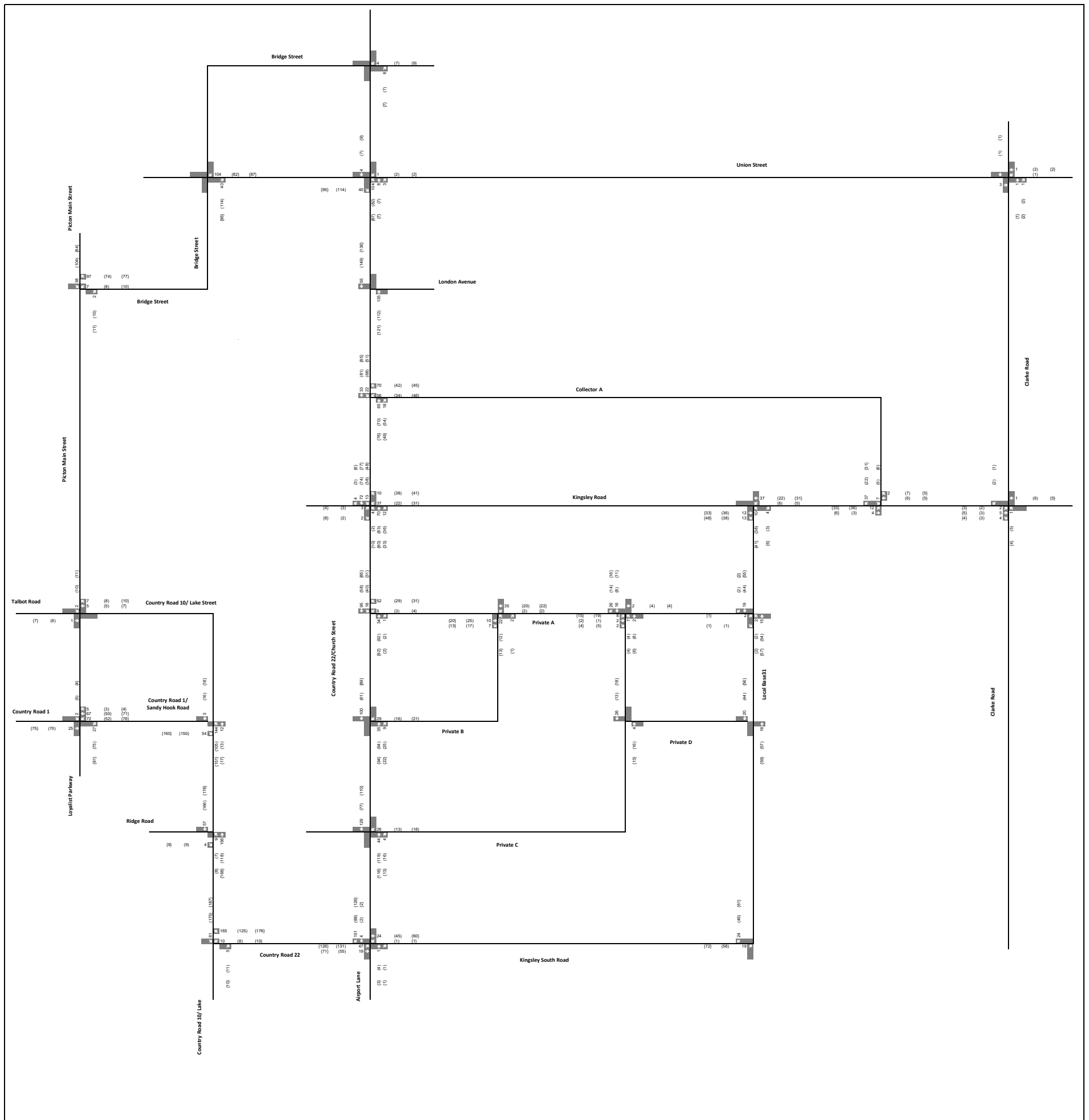
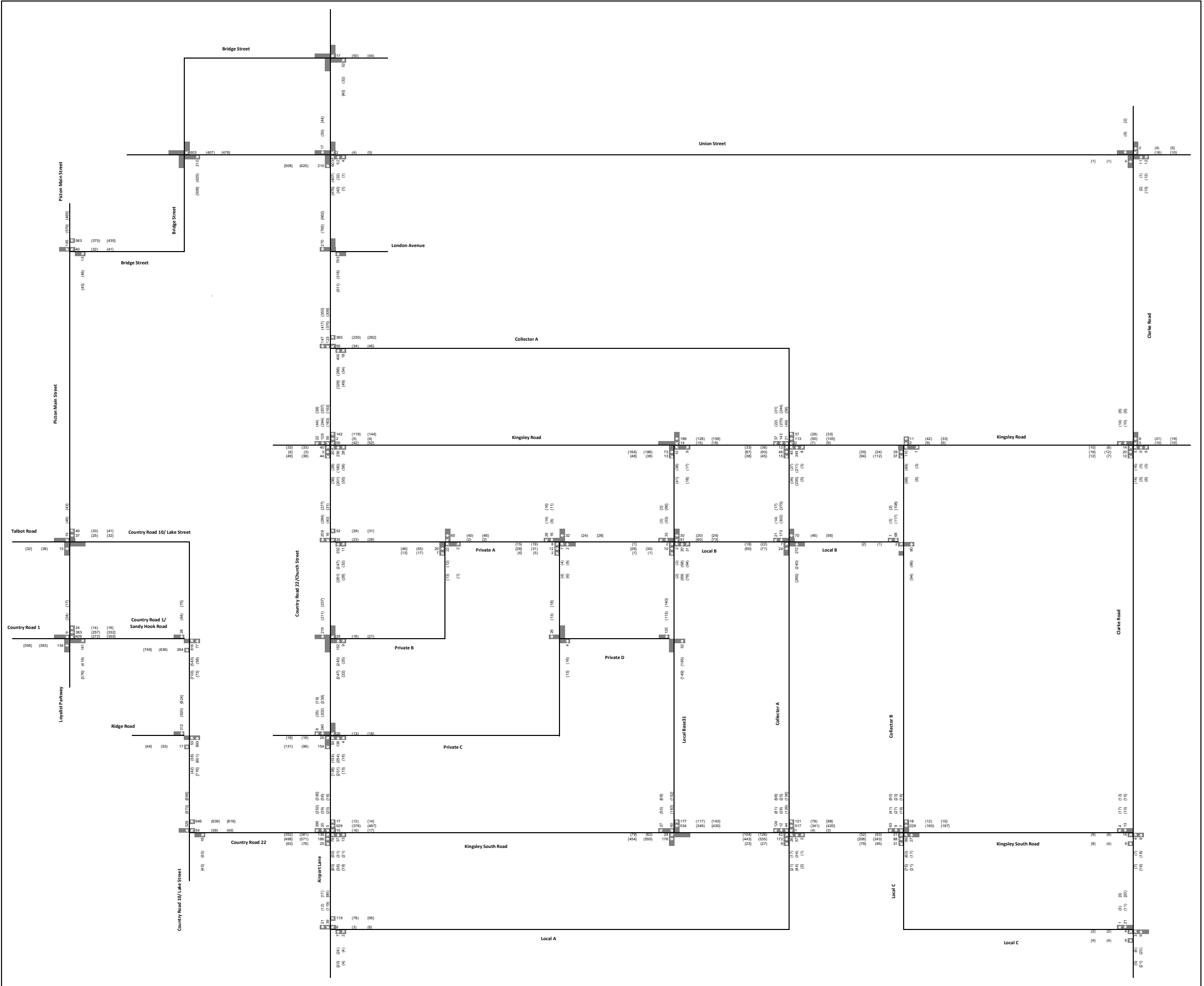


Figure 5-1



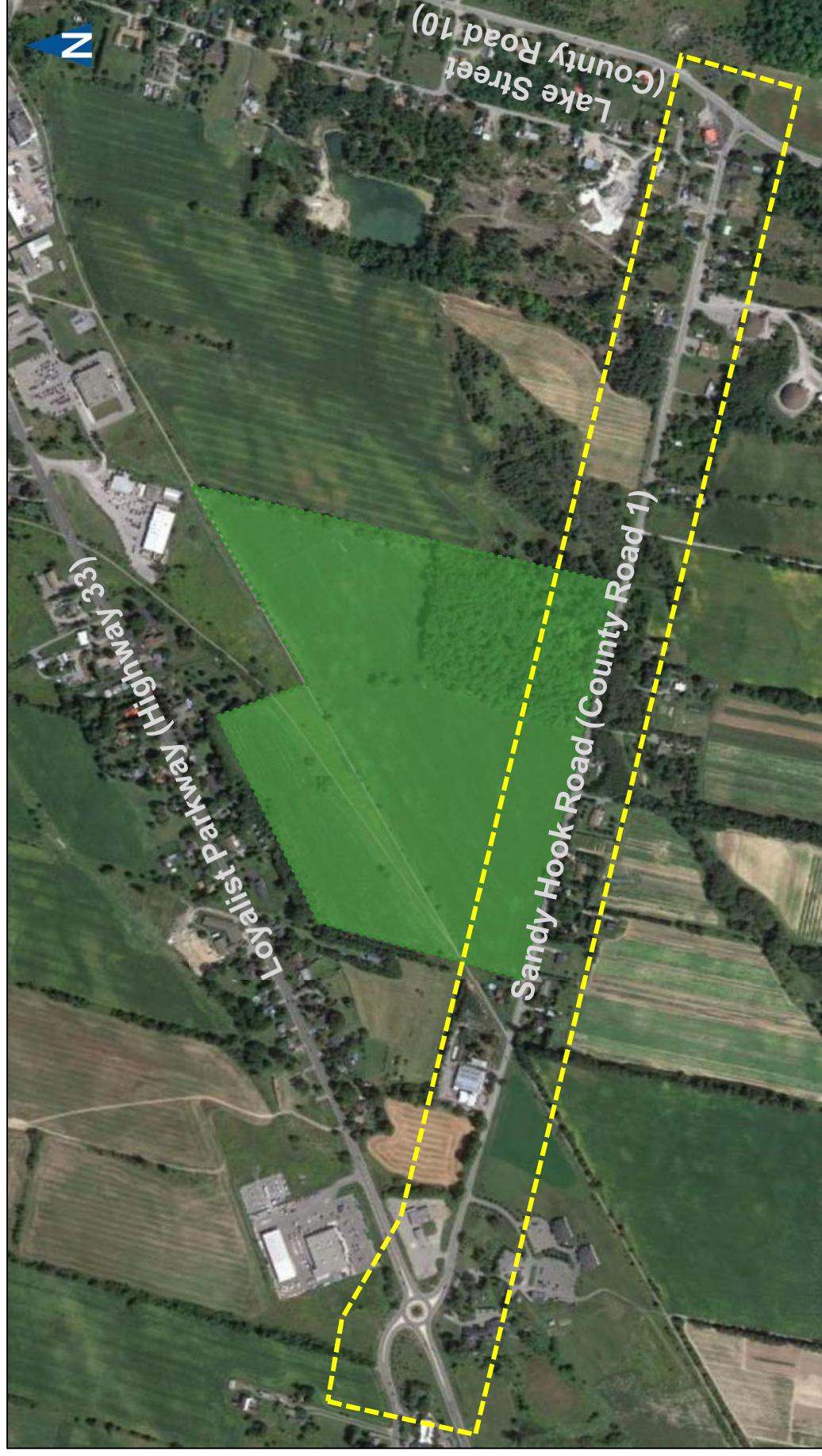


Loyalist Heights (Picton) Transportation Impact Study

Paradigm Transportation Solutions Limited

July 2022
200188





Subject Site and Study Area

2 Proposed Development

The residential subdivision proposes a total of 393 residential units.

Table 2.1 summarizes the proposed dwelling types and the number of units.

TABLE 2.1: PROPOSED DEVELOPMENT STATISTICS

Dwelling Type	# of Units
Detached Single-Family House	101
Semi-Detached House	56
Townhouse	45
Apartment/Condominium	156
Senior's Village	35
Total	393

The subdivision would be served by an internal roadway network, accessed by Sandy Hook Road (County Road 1). Pedestrian connections to the adjacent trail network are proposed. The adjacent Millennium Trail is an active transportation route.

Vehicular access to the subdivision is proposed via two full-movement driveway connections with Sandy Hook Road (County Road 1), herein referred to as the North Access and South Access.

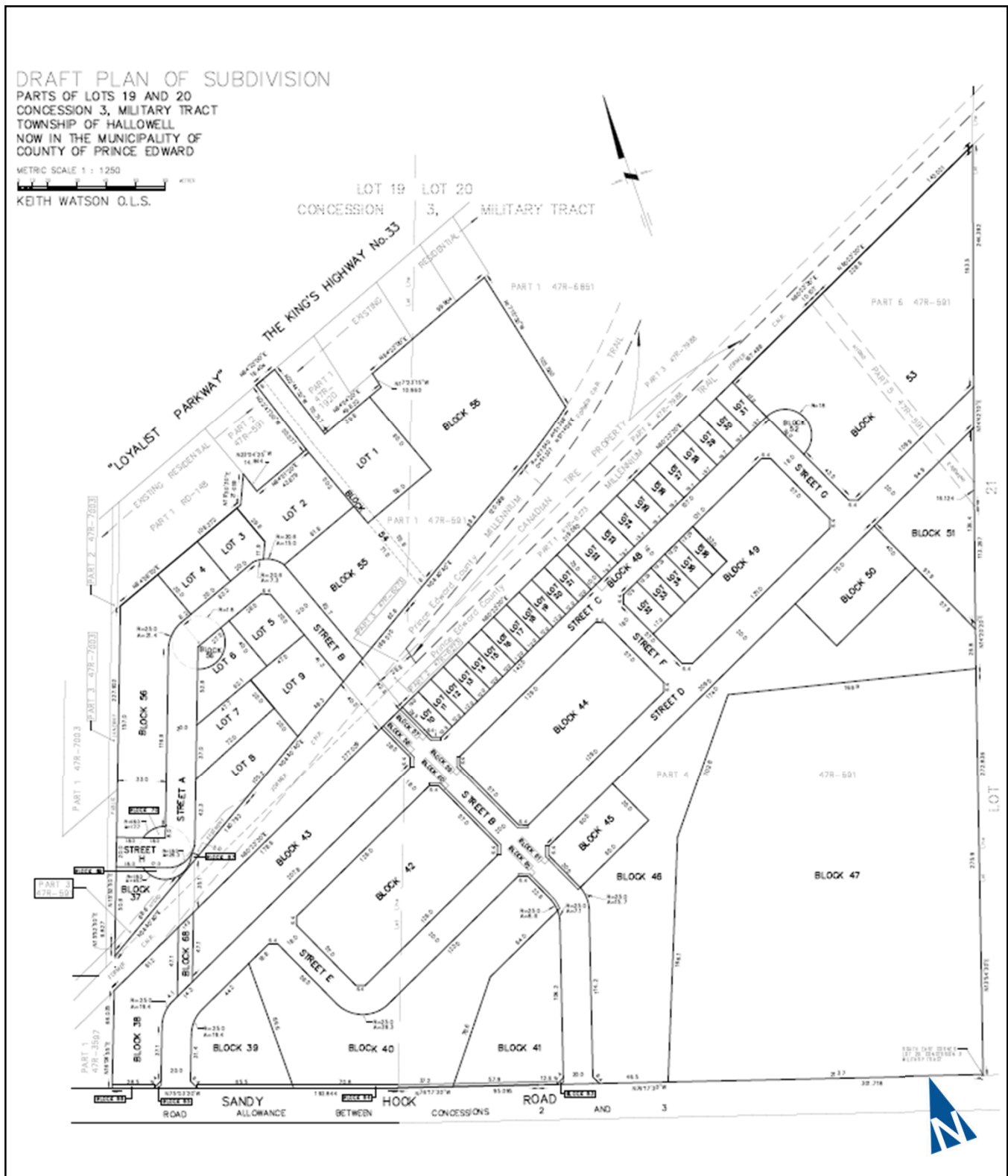
The North Access would be spaced approximately 470.0 metres east of the splitter island of the Loyalist Parkway (Highway 33)/Sandy Hook Road (County Road 1) roundabout intersection. This would exceed the minimum separation identified by the MTO during pre-study consultation.

The spacing between the proposed North Access driveway and South Access driveway is approximately 350.0 metres.

For the purposes of assessment, it is assumed that the subdivision would be constructed in a single phase with build-out occurring by 2027.

Figure 2.1 illustrates the draft plan of subdivision.





3 Existing Conditions

3.1 Road Network

The characteristics of the roads and intersections near the subject site are described below. Reference was made to Schedule B: Secondary Plan Transportation Map, Picton Urban Centre Secondary Plan (June 2014).

- ▶ **Loyalist Parkway (Ontario Highway 33)** is an east-west roadway that operates under the jurisdiction of MTO. The roadway has a two-lane cross section within the study area, transitioning to an urban four-lane cross section, east of County Road 1. The roadway has a posted speed limit of 60 kilometres per hour. The Picton Urban Centre Secondary Plan classifies Loyalist Parkway as an Arterial Road.
- ▶ **Sandy Hook Road (County Road 1)** is a southeast-northwest, two-lane roadway that operates under the jurisdiction of the County. Within the study area, the roadway has a posted speed limit of 60 kilometres per hour south of Highway 33, transitioning to 50 kilometres per hour approaching County Road 10. The roadway has a rural cross-section, with no provision of dedicated pedestrian or cycling facilities. The Picton Urban Centre Secondary Plan classifies Sandy Hook Road as a Collector Road.
 - An unsignalized roundabout intersection is formed with Loyalist Parkway (Highway 33). All intersection legs are single lane approaches, with no pedestrian crossings provided. This roundabout has an outside diameter of approximately 45.0 metres.
- ▶ **Lake Street (County Road 10)** is a southwest-northeast two-lane roadway that operates under the jurisdiction of the County of Prince Edward. Within the study area, the road has a posted speed limit of 60 kilometres per hour. The Picton Urban Centre Secondary Plan classifies Lake Street as a Collector Road.
 - An unsignalized “T” intersection is formed with Sandy Hook Road (County Road 10). Stop control is provided on the Sandy Hook Road approach. An auxiliary eastbound left turn lane is provided on Lake Street (County Road 10). It was observed in the field that a short 15.0 m westbound right turn taper is provided on Lake Street (County Road 10).



For the purpose of the report, as Loyalist Parkway (Highway 33) and Lake Street (County Road 10) are generally orientated northeast/southwest, they will herein be referenced as orientated east-west. Sandy Hook Road (County Road 1) is generally orientated northwest/southeast, it will herein be referenced as north-south.

Figure 3.1 illustrates the existing lane configurations and traffic control.



Appendix C

Synchro Reports

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

EXAM
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	1	188	30	35	175	117	43	43	47	146	59	4
Future Volume (veh/h)	1	188	30	35	175	117	43	43	47	146	59	4
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	1	207	33	38	192	129	47	47	52	160	65	4
Approach Volume (veh/h)	241			359			146			229		
Crossing Volume (veh/h)	263			95			368			277		
High Capacity (veh/h)	1127			1286			1037			1114		
High v/c (veh/h)	0.21			0.28			0.14			0.21		
Low Capacity (veh/h)	927			1071			847			916		
Low v/c (veh/h)	0.26			0.34			0.17			0.25		
Intersection Summary												
Maximum v/c High			0.28									
Maximum v/c Low			0.34									
Intersection Capacity Utilization			58.2%		ICU Level of Service				B			

HCM Unsignalized Intersection Capacity Analysis

3: CR10/CR10 (Lake St & CR1 (Sandy Hook Rd))

EXAM
01-27-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	78	88	189	102	40
Future Volume (Veh/h)	26	78	88	189	102	40
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	29	88	99	212	115	45
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	548	138	160			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	548	138	160			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	94	90	93			
cM capacity (veh/h)	449	906	1413			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	117	99	212	160		
Volume Left	29	99	0	0		
Volume Right	88	0	0	45		
cSH	723	1413	1700	1700		
Volume to Capacity	0.16	0.07	0.12	0.09		
Queue Length 95th (m)	4.6	1.8	0.0	0.0		
Control Delay (s)	10.9	7.7	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s)	10.9	2.5	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization			28.9%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

4: CR10 & Ridge Rd

EXAM
01-27-2025

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	29	29	29	248	152	29
Future Volume (Veh/h)	29	29	29	248	152	29
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	32	32	270	165	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	515	181	197			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	515	181	197			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	96	98			
cM capacity (veh/h)	508	862	1376			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	64	302	197			
Volume Left	32	32	0			
Volume Right	32	0	32			
cSH	639	1376	1700			
Volume to Capacity	0.10	0.02	0.12			
Queue Length 95th (m)	2.7	0.6	0.0			
Control Delay (s)	11.3	1.0	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.3	1.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		1.8				
Intersection Capacity Utilization		37.8%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

5: CR10 & CR22

EXAM
01-27-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	56	192	16	64	121
Future Volume (Veh/h)	10	56	192	16	64	121
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	11	64	221	18	74	139
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	517	230			239	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	517	230			239	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	98	92			94	
cM capacity (veh/h)	492	802			1299	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	75	239	213			
Volume Left	11	0	74			
Volume Right	64	18	0			
cSH	734	1700	1299			
Volume to Capacity	0.10	0.14	0.06			
Queue Length 95th (m)	2.7	0.0	1.4			
Control Delay (s)	10.5	0.0	3.1			
Lane LOS	B		A			
Approach Delay (s)	10.5	0.0	3.1			
Approach LOS	B					
Intersection Summary						
Average Delay		2.7				
Intersection Capacity Utilization		35.0%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

EXPM
01-27-2025

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Right Turn Channelized													
Traffic Volume (veh/h)	12	241	53	65	261	201	50	62	56	170	77	7	
Future Volume (veh/h)	12	241	53	65	261	201	50	62	56	170	77	7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Hourly flow rate (vph)	13	256	56	69	278	214	53	66	60	181	82	7	
Approach Volume (veh/h)	325			561			179			270			
Crossing Volume (veh/h)	332			132			450			400			
High Capacity (veh/h)	1067			1249			971			1011			
High v/c (veh/h)	0.30			0.45			0.18			0.27			
Low Capacity (veh/h)	874			1038			788			823			
Low v/c (veh/h)	0.37			0.54			0.23			0.33			
Intersection Summary													
Maximum v/c High	0.45												
Maximum v/c Low	0.54												
Intersection Capacity Utilization	76.7%			ICU Level of Service						D			

HCM Unsignalized Intersection Capacity Analysis

3: CR10/CR10 (Lake St & CR1 (Sandy Hook Rd))

EXPM
01-27-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	134	126	189	235	26
Future Volume (Veh/h)	27	134	126	189	235	26
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	29	143	134	201	250	28
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	733	264	278			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	733	264	278			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	92	82	89			
cM capacity (veh/h)	343	777	1262			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	172	134	201	278		
Volume Left	29	134	0	0		
Volume Right	143	0	0	28		
cSH	640	1262	1700	1700		
Volume to Capacity	0.27	0.11	0.12	0.16		
Queue Length 95th (m)	8.7	2.8	0.0	0.0		
Control Delay (s)	12.7	8.2	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s)	12.7	3.3		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			4.2			
Intersection Capacity Utilization			40.7%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

4: CR10 & Ridge Rd

EXPM
01-27-2025

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	29	29	29	286	341	29
Future Volume (Veh/h)	29	29	29	286	341	29
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	32	32	311	371	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	762	387	403			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	762	387	403			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	95	97			
cM capacity (veh/h)	363	661	1156			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	64	343	403			
Volume Left	32	32	0			
Volume Right	32	0	32			
cSH	468	1156	1700			
Volume to Capacity	0.14	0.03	0.24			
Queue Length 95th (m)	3.8	0.7	0.0			
Control Delay (s)	13.9	1.0	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.9	1.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		1.5				
Intersection Capacity Utilization		49.2%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

5: CR10 & CR22

EXPM
01-27-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	16	97	193	19	108	231
Future Volume (Veh/h)	16	97	193	19	108	231
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	17	104	208	20	116	248
Pedestrians						1
Lane Width (m)						3.6
Walking Speed (m/s)						1.2
Percent Blockage						0
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	698	219			228	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	698	219			228	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	87			91	
cM capacity (veh/h)	374	818			1346	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	121	228	364			
Volume Left	17	0	116			
Volume Right	104	20	0			
cSH	701	1700	1346			
Volume to Capacity	0.17	0.13	0.09			
Queue Length 95th (m)	5.0	0.0	2.3			
Control Delay (s)	11.2	0.0	3.1			
Lane LOS	B		A			
Approach Delay (s)	11.2	0.0	3.1			
Approach LOS	B					
Intersection Summary						
Average Delay		3.5				
Intersection Capacity Utilization		46.6%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

EXSAT
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	4	205	33	53	230	127	46	49	49	99	25	6
Future Volume (veh/h)	4	205	33	53	230	127	46	49	49	99	25	6
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	4	207	33	54	232	128	46	49	49	100	25	6
Approach Volume (veh/h)	244			414			144			131		
Crossing Volume (veh/h)	179			99			311			332		
High Capacity (veh/h)	1204			1282			1085			1067		
High v/c (veh/h)	0.20			0.32			0.13			0.12		
Low Capacity (veh/h)	997			1068			890			874		
Low v/c (veh/h)	0.24			0.39			0.16			0.15		
Intersection Summary												
Maximum v/c High	0.32											
Maximum v/c Low	0.39											
Intersection Capacity Utilization	59.6%			ICU Level of Service			B					

HCM Unsignalized Intersection Capacity Analysis

3: CR10/CR10 (Lake St & CR1 (Sandy Hook Rd))

EXSAT
01-27-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	84	91	191	141	19
Future Volume (Veh/h)	17	84	91	191	141	19
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	19	95	103	217	160	22
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	594	171	182			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	594	171	182			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	96	89	93			
cM capacity (veh/h)	424	878	1405			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	114	103	217	182		
Volume Left	19	103	0	0		
Volume Right	95	0	0	22		
cSH	745	1405	1700	1700		
Volume to Capacity	0.15	0.07	0.13	0.11		
Queue Length 95th (m)	4.3	1.9	0.0	0.0		
Control Delay (s)	10.7	7.8	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s)	10.7	2.5	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.3			
Intersection Capacity Utilization			29.7%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

4: CR10 & Ridge Rd

EXSAT
01-27-2025

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	29	29	29	253	196	29
Future Volume (Veh/h)	29	29	29	253	196	29
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	32	32	275	213	32
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	568	229	245			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	568	229	245			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	96	98			
cM capacity (veh/h)	473	810	1321			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	64	307	245			
Volume Left	32	32	0			
Volume Right	32	0	32			
cSH	597	1321	1700			
Volume to Capacity	0.11	0.02	0.14			
Queue Length 95th (m)	2.9	0.6	0.0			
Control Delay (s)	11.8	1.0	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.8	1.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		1.7				
Intersection Capacity Utilization		40.4%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

5: CR10 & CR22

EXSAT
01-27-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	49	188	4	55	150
Future Volume (Veh/h)	13	49	188	4	55	150
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	15	56	216	5	63	172
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	516	218			221	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	516	218			221	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	93			95	
cM capacity (veh/h)	498	826			1360	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	71	221	235			
Volume Left	15	0	63			
Volume Right	56	5	0			
cSH	725	1700	1360			
Volume to Capacity	0.10	0.13	0.05			
Queue Length 95th (m)	2.6	0.0	1.2			
Control Delay (s)	10.5	0.0	2.4			
Lane LOS	B		A			
Approach Delay (s)	10.5	0.0	2.4			
Approach LOS	B					
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			34.8%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

FBAM 2030
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	1	209	78	54	194	130	170	130	95	162	95	4
Future Volume (veh/h)	1	209	78	54	194	130	170	130	95	162	95	4
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	1	230	86	59	213	143	187	143	104	178	104	4
Approach Volume (veh/h)	317			415			434			286		
Crossing Volume (veh/h)	341			331			409			459		
High Capacity (veh/h)	1059			1068			1004			964		
High v/c (veh/h)	0.30			0.39			0.43			0.30		
Low Capacity (veh/h)	867			874			817			782		
Low v/c (veh/h)	0.37			0.47			0.53			0.37		
Intersection Summary												
Maximum v/c High			0.43									
Maximum v/c Low			0.53									
Intersection Capacity Utilization			70.7%		ICU Level of Service				C			

Queues

FBAM 2030

01-27-2025

3: CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	65	144	239	211	110	55
Future Volume (vph)	65	144	239	211	110	55
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.907				0.955	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1599	0	1752	1827	1706	0
Flt Permitted	0.985		0.580			
Satd. Flow (perm)	1599	0	1070	1827	1706	0
Satd. Flow (RTOR)	97				21	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	11%	4%	3%	4%	6%	7%
Adj. Flow (vph)	73	162	269	237	124	62
Shared Lane Traffic (%)						
Lane Group Flow (vph)	235	0	269	237	186	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	22.0		10.0	22.0	22.0	
Total Split (s)	24.0		54.0	76.0	22.0	
Total Split (%)	24.0%		54.0%	76.0%	22.0%	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	C-Max	C-Max	
Act Effct Green (s)	13.6		74.4	74.4	58.0	
Actuated g/C Ratio	0.14		0.74	0.74	0.58	
v/c Ratio	0.78		0.31	0.17	0.19	
Control Delay	41.8		5.4	4.7	10.8	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	41.8		5.4	4.7	10.8	
LOS	D		A	A	B	
Approach Delay	41.8			5.1	10.8	
Approach LOS	D			A	B	
Queue Length 50th (m)	27.1		14.4	12.4	14.9	

Queues

FBAM 2030

01-27-2025

3: CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (m)	51.6		26.3	22.8	30.9	
Internal Link Dist (m)	1706.3			148.7	179.9	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	367		1123	1359	997	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.64		0.24	0.17	0.19	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 15.5

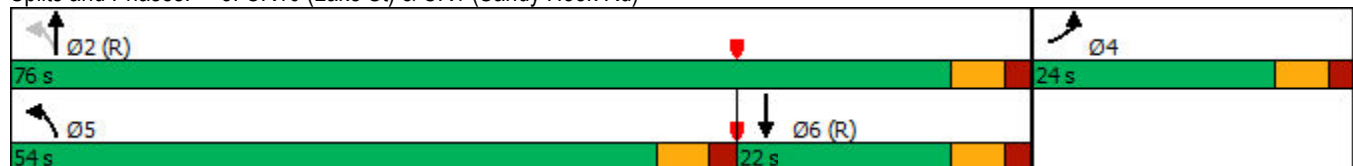
Intersection LOS: B

Intersection Capacity Utilization 49.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: CR10 (Lake St) & CR1 (Sandy Hook Rd)



HCM Signalized Intersection Capacity Analysis

3: CR10 (Lake St) & CR1 (Sandy Hook Rd)

FBAM 2030
01-27-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	65	144	239	211	110	55
Future Volume (vph)	65	144	239	211	110	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.91		1.00	1.00	0.95	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1598		1752	1827	1706	
Flt Permitted	0.98		0.58	1.00	1.00	
Satd. Flow (perm)	1598		1070	1827	1706	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	73	162	269	237	124	62
RTOR Reduction (vph)	84	0	0	0	9	0
Lane Group Flow (vph)	151	0	269	237	177	0
Heavy Vehicles (%)	11%	4%	3%	4%	6%	7%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Actuated Green, G (s)	13.6		74.4	74.4	57.9	
Effective Green, g (s)	13.6		74.4	74.4	57.9	
Actuated g/C Ratio	0.14		0.74	0.74	0.58	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	217		867	1359	987	
v/s Ratio Prot	c0.09		c0.03	0.13	0.10	
v/s Ratio Perm			c0.20			
v/c Ratio	0.70		0.31	0.17	0.18	
Uniform Delay, d1	41.2		4.1	3.8	9.9	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	9.3		0.2	0.3	0.4	
Delay (s)	50.6		4.3	4.0	10.3	
Level of Service	D		A	A	B	
Approach Delay (s)	50.6			4.2	10.3	
Approach LOS	D			A	B	
Intersection Summary						
HCM 2000 Control Delay			17.2		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.39			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			49.8%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

4: CR10/CR10 (Lake St) & Ridge Rd

FBAM 2030
01-27-2025

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	34	39	417	217	30
Future Volume (Veh/h)	30	34	39	417	217	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	37	42	453	236	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				236	173	
pX, platoon unblocked						
vC, conflicting volume	790	252	269			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	790	252	269			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	95	97			
cM capacity (veh/h)	348	786	1295			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	70	495	269			
Volume Left	33	42	0			
Volume Right	37	0	33			
cSH	493	1295	1700			
Volume to Capacity	0.14	0.03	0.16			
Queue Length 95th (m)	3.9	0.8	0.0			
Control Delay (s)	13.5	1.0	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.5	1.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		1.7				
Intersection Capacity Utilization		51.1%		ICU Level of Service		A
Analysis Period (min)		15				

Queues
5: CR10 & CR22

FBAM 2030
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	21	224	202	22	128	127
Future Volume (vph)	21	224	202	22	128	127
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.877		0.987			
Flt Protected	0.996					0.976
Satd. Flow (prot)	1587	0	1794	0	0	1733
Flt Permitted	0.996					0.719
Satd. Flow (perm)	1587	0	1794	0	0	1277
Satd. Flow (RTOR)	257		5			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	5%	5%	0%	7%	7%
Adj. Flow (vph)	24	257	232	25	147	146
Shared Lane Traffic (%)						
Lane Group Flow (vph)	281	0	257	0	0	293
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	22.0		22.0		22.0	22.0
Total Split (s)	66.0		84.0		84.0	84.0
Total Split (%)	44.0%		56.0%		56.0%	56.0%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	6.0		6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	10.5		127.5			127.5
Actuated g/C Ratio	0.07		0.85			0.85
v/c Ratio	0.81		0.17			0.27
Control Delay	27.7		2.6			3.4
Queue Delay	0.0		0.0			0.0
Total Delay	27.7		2.6			3.4
LOS	C		A			A
Approach Delay	27.7		2.6			3.4
Approach LOS	C		A			A
Queue Length 50th (m)	7.4		9.2			11.9

Queues
5: CR10 & CR22

FBAM 2030
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 95th (m)	33.0		23.7			30.9
Internal Link Dist (m)	113.0		263.3			211.6
Turn Bay Length (m)	15.0					
Base Capacity (vph)	789		1526			1085
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.36		0.17			0.27

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 11.4

Intersection LOS: B

Intersection Capacity Utilization 55.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: CR10 & CR22



HCM Signalized Intersection Capacity Analysis

5: CR10 & CR22

FBAM 2030
01-27-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	21	224	202	22	128	127
Future Volume (vph)	21	224	202	22	128	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.88		0.99			1.00
Flt Protected	1.00		1.00			0.98
Satd. Flow (prot)	1586		1794			1732
Flt Permitted	1.00		1.00			0.72
Satd. Flow (perm)	1586		1794			1277
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	24	257	232	25	147	146
RTOR Reduction (vph)	239	0	1	0	0	0
Lane Group Flow (vph)	42	0	256	0	0	293
Heavy Vehicles (%)	0%	5%	5%	0%	7%	7%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	10.5		127.5			127.5
Effective Green, g (s)	10.5		127.5			127.5
Actuated g/C Ratio	0.07		0.85			0.85
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	111		1524			1085
v/s Ratio Prot	c0.03		0.14			
v/s Ratio Perm						c0.23
v/c Ratio	0.38		0.17			0.27
Uniform Delay, d1	66.6		2.0			2.2
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	2.2		0.2			0.6
Delay (s)	68.8		2.2			2.8
Level of Service	E		A			A
Approach Delay (s)	68.8		2.2			2.8
Approach LOS	E		A			A
Intersection Summary						
HCM 2000 Control Delay			24.9		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.28			
Actuated Cycle Length (s)			150.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			55.7%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

FBPM 2030
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	13	267	191	118	290	223	140	129	90	189	171	8
Future Volume (veh/h)	13	267	191	118	290	223	140	129	90	189	171	8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	14	284	203	126	309	237	149	137	96	201	182	9
Approach Volume (veh/h)	501			672			382			392		
Crossing Volume (veh/h)	509			300			499			584		
High Capacity (veh/h)	927			1094			934			873		
High v/c (veh/h)	0.54			0.61			0.41			0.45		
Low Capacity (veh/h)	748			898			755			701		
Low v/c (veh/h)	0.67			0.75			0.51			0.56		
Intersection Summary												
Maximum v/c High	0.61											
Maximum v/c Low	0.75											
Intersection Capacity Utilization	100.9%			ICU Level of Service					G			

Queues

FBPM 2030

01-27-2025

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	53	296	245	212	263	68
Future Volume (vph)	53	296	245	212	263	68
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885				0.972	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1643	0	1703	1863	1818	0
Flt Permitted	0.993		0.468			
Satd. Flow (perm)	1643	0	839	1863	1818	0
Satd. Flow (RTOR)	270				11	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	1%	6%	2%	2%	0%
Adj. Flow (vph)	56	315	261	226	280	72
Shared Lane Traffic (%)						
Lane Group Flow (vph)	371	0	261	226	352	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	22.0		10.0	22.0	22.0	
Total Split (s)	41.0		38.0	69.0	31.0	
Total Split (%)	37.3%		34.5%	62.7%	28.2%	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	C-Max	C-Max	
Act Effct Green (s)	14.1		83.9	83.9	65.8	
Actuated g/C Ratio	0.13		0.76	0.76	0.60	
v/c Ratio	0.83		0.36	0.16	0.32	
Control Delay	29.0		6.1	4.8	14.4	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	29.0		6.1	4.8	14.4	
LOS	C		A	A	B	
Approach Delay	29.0			5.5	14.4	
Approach LOS	C			A	B	
Queue Length 50th (m)	21.7		13.4	11.2	33.3	

Queues

FBPM 2030

01-27-2025

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (m)	52.2		32.6	27.5	80.2	
Internal Link Dist (m)	1706.3			148.7	179.9	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	706		890	1420	1091	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.53		0.29	0.16	0.32	

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 15.3

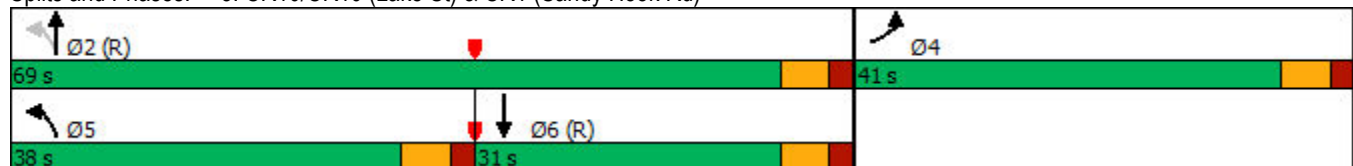
Intersection LOS: B

Intersection Capacity Utilization 67.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



HCM Signalized Intersection Capacity Analysis

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

FBPM 2030
01-27-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	53	296	245	212	263	68
Future Volume (vph)	53	296	245	212	263	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.89		1.00	1.00	0.97	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1643		1703	1863	1819	
Flt Permitted	0.99		0.47	1.00	1.00	
Satd. Flow (perm)	1643		839	1863	1819	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	56	315	261	226	280	72
RTOR Reduction (vph)	235	0	0	0	4	0
Lane Group Flow (vph)	136	0	261	226	348	0
Heavy Vehicles (%)	5%	1%	6%	2%	2%	0%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Actuated Green, G (s)	14.1		83.9	83.9	65.8	
Effective Green, g (s)	14.1		83.9	83.9	65.8	
Actuated g/C Ratio	0.13		0.76	0.76	0.60	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	210		734	1420	1088	
v/s Ratio Prot	c0.08		c0.04	0.12	0.19	
v/s Ratio Perm			c0.23			
v/c Ratio	0.65		0.36	0.16	0.32	
Uniform Delay, d1	45.6		4.4	3.5	11.0	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	6.7		0.3	0.2	0.8	
Delay (s)	52.2		4.7	3.8	11.8	
Level of Service	D		A	A	B	
Approach Delay (s)	52.2			4.2	11.8	
Approach LOS	D			A	B	
Intersection Summary						
HCM 2000 Control Delay			21.1		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.42			
Actuated Cycle Length (s)			110.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			67.8%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

4: CR10 & Ridge Rd

FBPM 2030
01-27-2025

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	39	37	419	524	30
Future Volume (Veh/h)	30	39	37	419	524	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	42	40	455	570	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				236	173	
pX, platoon unblocked	0.93	0.93	0.93			
vC, conflicting volume	1122	586	603			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1092	515	532			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	84	92	96			
cM capacity (veh/h)	211	519	960			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	75	495	603			
Volume Left	33	40	0			
Volume Right	42	0	33			
cSH	316	960	1700			
Volume to Capacity	0.24	0.04	0.35			
Queue Length 95th (m)	7.2	1.0	0.0			
Control Delay (s)	19.9	1.2	0.0			
Lane LOS	C	A				
Approach Delay (s)	19.9	1.2	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		1.8				
Intersection Capacity Utilization		63.4%		ICU Level of Service		B
Analysis Period (min)		15				

Queues
5: CR10 & CR22

FBPM 2030
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	227	203	31	289	243
Future Volume (vph)	25	227	203	31	289	243
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98					
Frt	0.878		0.982			
Flt Protected	0.995					0.974
Satd. Flow (prot)	1583	0	1803	0	0	1832
Flt Permitted	0.995					0.700
Satd. Flow (perm)	1583	0	1803	0	0	1317
Satd. Flow (RTOR)	244		19			
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	3%	4%	0%	1%	1%
Adj. Flow (vph)	27	244	218	33	311	261
Shared Lane Traffic (%)						
Lane Group Flow (vph)	271	0	251	0	0	572
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	22.0		22.0		22.0	22.0
Total Split (s)	22.0		68.0		68.0	68.0
Total Split (%)	24.4%		75.6%		75.6%	75.6%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	6.0		6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effect Green (s)	9.0		69.0			69.0
Actuated g/C Ratio	0.10		0.77			0.77
v/c Ratio	0.72		0.18			0.57
Control Delay	18.3		3.5			7.9
Queue Delay	0.0		0.0			0.0
Total Delay	18.3		3.5			7.9
LOS	B		A			A
Approach Delay	18.3		3.5			7.9



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach LOS	B		A			A
Queue Length 50th (m)	4.7		7.8			29.8
Queue Length 95th (m)	26.8		21.6			82.0
Internal Link Dist (m)	113.0		263.3			211.6
Turn Bay Length (m)	15.0					
Base Capacity (vph)	482		1387			1009
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.56		0.18			0.57

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 9.5

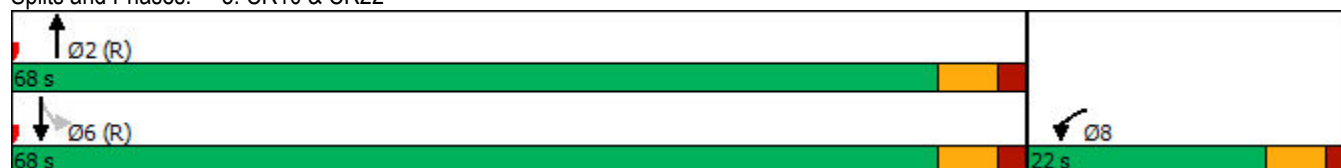
Intersection LOS: A

Intersection Capacity Utilization 71.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: CR10 & CR22



HCM Signalized Intersection Capacity Analysis

5: CR10 & CR22

FBPM 2030
01-27-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Volume (vph)	25	227	203	31	289	243
Future Volume (vph)	25	227	203	31	289	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		1.00			1.00
Frpb, ped/bikes	0.98		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.88		0.98			1.00
Flt Protected	1.00		1.00			0.97
Satd. Flow (prot)	1584		1804			1831
Flt Permitted	1.00		1.00			0.70
Satd. Flow (perm)	1584		1804			1316
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	27	244	218	33	311	261
RTOR Reduction (vph)	220	0	4	0	0	0
Lane Group Flow (vph)	51	0	247	0	0	572
Confl. Peds. (#/hr)		1				
Heavy Vehicles (%)	0%	3%	4%	0%	1%	1%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	9.0		69.0			69.0
Effective Green, g (s)	9.0		69.0			69.0
Actuated g/C Ratio	0.10		0.77			0.77
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	158		1383			1008
v/s Ratio Prot	c0.03		0.14			
v/s Ratio Perm						c0.43
v/c Ratio	0.33		0.18			0.57
Uniform Delay, d1	37.7		2.8			4.3
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	1.2		0.3			2.3
Delay (s)	38.9		3.1			6.7
Level of Service	D		A			A
Approach Delay (s)	38.9		3.1			6.7
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			13.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			71.9%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

FBSAT 2030
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	4	227	175	104	255	141	159	135	83	110	119	7
Future Volume (veh/h)	4	227	175	104	255	141	159	135	83	110	119	7
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	4	229	177	105	258	142	161	136	84	111	120	7
Approach Volume (veh/h)	410			505			381			238		
Crossing Volume (veh/h)	336			301			344			524		
High Capacity (veh/h)	1064			1093			1057			916		
High v/c (veh/h)	0.39			0.46			0.36			0.26		
Low Capacity (veh/h)	871			897			865			739		
Low v/c (veh/h)	0.47			0.56			0.44			0.32		
Intersection Summary												
Maximum v/c High	0.46											
Maximum v/c Low	0.56											
Intersection Capacity Utilization	86.2%			ICU Level of Service					E			

Queues

FBSAT 2030

01-27-2025

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	43	253	255	218	166	61
Future Volume (vph)	43	253	255	218	166	61
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885				0.964	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1651	0	1805	1900	1761	0
Flt Permitted	0.993		0.542			
Satd. Flow (perm)	1651	0	1030	1900	1761	0
Satd. Flow (RTOR)	286				16	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	8%	0%	0%	0%	0%	15%
Adj. Flow (vph)	49	288	290	248	189	69
Shared Lane Traffic (%)						
Lane Group Flow (vph)	337	0	290	248	258	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	22.0		10.0	22.0	22.0	
Total Split (s)	32.0		43.0	68.0	25.0	
Total Split (%)	32.0%		43.0%	68.0%	25.0%	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	C-Max	C-Max	
Act Effct Green (s)	10.5		77.5	77.5	61.2	
Actuated g/C Ratio	0.10		0.78	0.78	0.61	
v/c Ratio	0.78		0.33	0.17	0.24	
Control Delay	21.7		5.4	4.5	10.7	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	21.7		5.4	4.5	10.7	
LOS	C		A	A	B	
Approach Delay	21.7			5.0	10.7	
Approach LOS	C			A	B	
Queue Length 50th (m)	9.9		11.1	9.3	19.1	

Queues

FBSAT 2030

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

01-27-2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (m)	33.7		34.3	29.0	45.3	
Internal Link Dist (m)	1706.3			148.7	179.9	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	640		1084	1471	1084	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.53		0.27	0.17	0.24	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 11.2

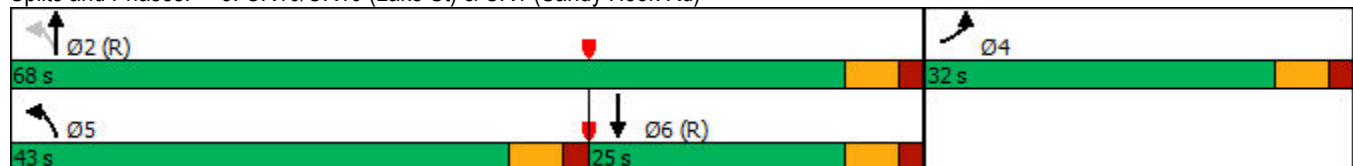
Intersection LOS: B

Intersection Capacity Utilization 59.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



HCM Signalized Intersection Capacity Analysis

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

FBSAT 2030
01-27-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	43	253	255	218	166	61
Future Volume (vph)	43	253	255	218	166	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.88		1.00	1.00	0.96	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1649		1805	1900	1761	
Flt Permitted	0.99		0.54	1.00	1.00	
Satd. Flow (perm)	1649		1030	1900	1761	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	49	288	290	248	189	69
RTOR Reduction (vph)	256	0	0	0	6	0
Lane Group Flow (vph)	81	0	290	248	252	0
Heavy Vehicles (%)	8%	0%	0%	0%	0%	15%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Actuated Green, G (s)	10.5		77.5	77.5	61.3	
Effective Green, g (s)	10.5		77.5	77.5	61.3	
Actuated g/C Ratio	0.10		0.78	0.78	0.61	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	173		877	1472	1079	
v/s Ratio Prot	c0.05		c0.03	0.13	0.14	
v/s Ratio Perm			c0.22			
v/c Ratio	0.47		0.33	0.17	0.23	
Uniform Delay, d1	42.1		3.3	2.9	8.7	
Progression Factor	1.00		1.16	1.17	1.00	
Incremental Delay, d2	2.0		0.2	0.2	0.5	
Delay (s)	44.1		4.0	3.6	9.2	
Level of Service	D		A	A	A	
Approach Delay (s)	44.1			3.9	9.2	
Approach LOS	D			A	A	
Intersection Summary						
HCM 2000 Control Delay			17.1	HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.37			
Actuated Cycle Length (s)			100.0	Sum of lost time (s)		18.0
Intersection Capacity Utilization			59.6%	ICU Level of Service		B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

4: CR10 & Ridge Rd

FBSAT 2030
01-27-2025

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	39	38	434	384	30
Future Volume (Veh/h)	30	39	38	434	384	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	42	41	472	417	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				236	173	
pX, platoon unblocked	0.99	0.99	0.99			
vC, conflicting volume	988	434	450			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	983	424	441			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	93	96			
cM capacity (veh/h)	263	624	1109			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	75	513	450			
Volume Left	33	41	0			
Volume Right	42	0	33			
cSH	389	1109	1700			
Volume to Capacity	0.19	0.04	0.26			
Queue Length 95th (m)	5.6	0.9	0.0			
Control Delay (s)	16.4	1.1	0.0			
Lane LOS	C	A				
Approach Delay (s)	16.4	1.1	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		1.7				
Intersection Capacity Utilization		61.0%		ICU Level of Service		B
Analysis Period (min)		15				

Queues
5: CR10 & CR22

FBSAT 2030
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	227	198	14	245	158
Future Volume (vph)	24	227	198	14	245	158
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.878		0.991			
Flt Protected	0.995					0.971
Satd. Flow (prot)	1660	0	1883	0	0	1845
Flt Permitted	0.995					0.679
Satd. Flow (perm)	1660	0	1883	0	0	1290
Satd. Flow (RTOR)	261		8			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	28	261	228	16	282	182
Shared Lane Traffic (%)						
Lane Group Flow (vph)	289	0	244	0	0	464
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	22.0		22.0		22.0	22.0
Total Split (s)	26.0		74.0		74.0	74.0
Total Split (%)	26.0%		74.0%		74.0%	74.0%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	6.0		6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	9.2		78.8			78.8
Actuated g/C Ratio	0.09		0.79			0.79
v/c Ratio	0.74		0.16			0.46
Control Delay	19.6		3.3			5.3
Queue Delay	0.0		0.0			0.0
Total Delay	19.6		3.3			5.3
LOS	B		A			A
Approach Delay	19.6		3.3			5.3
Approach LOS	B		A			A
Queue Length 50th (m)	5.5		8.1			31.6

Queues
5: CR10 & CR22

FBSAT 2030
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 95th (m)	26.4		20.6			41.8
Internal Link Dist (m)	113.0		263.3			211.6
Turn Bay Length (m)						
Base Capacity (vph)	540		1485			1016
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.54		0.16			0.46

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 8.9

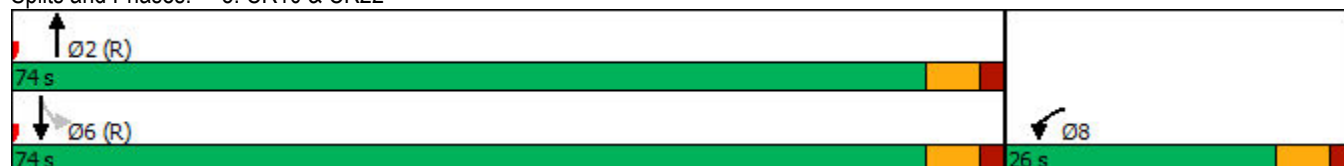
Intersection LOS: A

Intersection Capacity Utilization 63.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: CR10 & CR22



HCM Signalized Intersection Capacity Analysis

5: CR10 & CR22

FBSAT 2030
01-27-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	227	198	14	245	158
Future Volume (vph)	24	227	198	14	245	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.88		0.99			1.00
Flt Protected	1.00		1.00			0.97
Satd. Flow (prot)	1660		1883			1844
Flt Permitted	1.00		1.00			0.68
Satd. Flow (perm)	1660		1883			1291
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	28	261	228	16	282	182
RTOR Reduction (vph)	237	0	2	0	0	0
Lane Group Flow (vph)	52	0	242	0	0	464
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	9.2		78.8			78.8
Effective Green, g (s)	9.2		78.8			78.8
Actuated g/C Ratio	0.09		0.79			0.79
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	152		1483			1017
v/s Ratio Prot	c0.03		0.13			
v/s Ratio Perm						c0.36
v/c Ratio	0.34		0.16			0.46
Uniform Delay, d1	42.6		2.6			3.5
Progression Factor	1.00		1.00			0.87
Incremental Delay, d2	1.3		0.2			1.4
Delay (s)	43.9		2.8			4.5
Level of Service	D		A			A
Approach Delay (s)	43.9		2.8			4.5
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			15.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.44			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			63.5%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

FBAM 2035
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	1	231	196	65	215	144	509	445	114	161	204	4
Future Volume (veh/h)	1	231	196	65	215	144	509	445	114	161	204	4
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	1	254	215	71	236	158	559	489	125	177	224	4
Approach Volume (veh/h)	470			465			1173			405		
Crossing Volume (veh/h)	472			1049			432			866		
High Capacity (veh/h)	955			598			985			695		
High v/c (veh/h)	0.49			0.78			1.19			0.58		
Low Capacity (veh/h)	773			462			801			545		
Low v/c (veh/h)	0.61			1.01			1.46			0.74		
Intersection Summary												
Maximum v/c High	1.19											
Maximum v/c Low	1.46											
Intersection Capacity Utilization	135.2%			ICU Level of Service					H			

Queues

FBAM 2035

01-27-2025

3: CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	67	378	916	286	141	57
Future Volume (vph)	67	378	916	286	141	57
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885				0.961	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1589	0	1752	1827	1718	0
Flt Permitted	0.993		0.287			
Satd. Flow (perm)	1589	0	529	1827	1718	0
Satd. Flow (RTOR)	249				17	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	11%	4%	3%	4%	6%	7%
Adj. Flow (vph)	75	425	1029	321	158	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	500	0	1029	321	222	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	22.0		10.0	22.0	22.0	
Total Split (s)	24.0		54.0	76.0	22.0	
Total Split (%)	24.0%		54.0%	76.0%	22.0%	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	C-Max	C-Max	
Act Effct Green (s)	18.0		70.0	70.0	16.0	
Actuated g/C Ratio	0.18		0.70	0.70	0.16	
v/c Ratio	1.02		1.08	0.25	0.77	
Control Delay	67.8		71.7	6.0	55.9	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	67.8		71.7	6.0	55.9	
LOS	E		E	A	E	
Approach Delay	67.8			56.1	55.9	
Approach LOS	E			E	E	
Queue Length 50th (m)	~60.3		~209.7	20.8	40.6	

Queues

FBAM 2035

01-27-2025

3: CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (m)	#125.4		#283.3	31.3	#75.5	
Internal Link Dist (m)	1706.3			148.7	179.9	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	490		957	1278	289	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	1.02		1.08	0.25	0.77	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 58.9

Intersection LOS: E

Intersection Capacity Utilization 103.7%

ICU Level of Service G

Analysis Period (min) 15

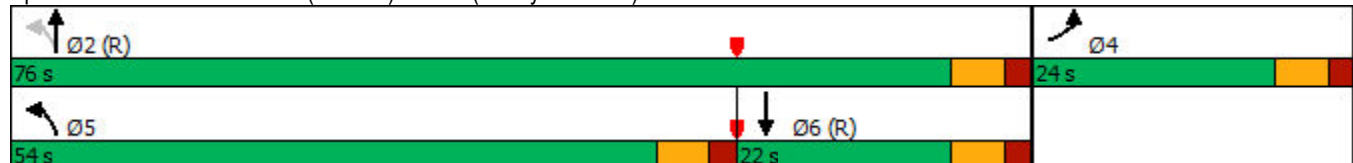
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: CR10 (Lake St) & CR1 (Sandy Hook Rd)



HCM Signalized Intersection Capacity Analysis

3: CR10 (Lake St) & CR1 (Sandy Hook Rd)

FBAM 2035
01-27-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	67	378	916	286	141	57
Future Volume (vph)	67	378	916	286	141	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.89		1.00	1.00	0.96	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1589		1752	1827	1718	
Flt Permitted	0.99		0.29	1.00	1.00	
Satd. Flow (perm)	1589		529	1827	1718	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	75	425	1029	321	158	64
RTOR Reduction (vph)	204	0	0	0	14	0
Lane Group Flow (vph)	296	0	1029	321	208	0
Heavy Vehicles (%)	11%	4%	3%	4%	6%	7%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Actuated Green, G (s)	18.0		70.0	70.0	16.0	
Effective Green, g (s)	18.0		70.0	70.0	16.0	
Actuated g/C Ratio	0.18		0.70	0.70	0.16	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	286		957	1278	274	
v/s Ratio Prot	c0.19		c0.52	0.18	0.12	
v/s Ratio Perm			c0.24			
v/c Ratio	1.03		1.08	0.25	0.76	
Uniform Delay, d1	41.0		18.8	5.5	40.2	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	62.4		51.5	0.5	17.7	
Delay (s)	103.4		70.3	5.9	57.9	
Level of Service	F		E	A	E	
Approach Delay (s)	103.4			55.0	57.9	
Approach LOS	F			E	E	
Intersection Summary						
HCM 2000 Control Delay			67.0		HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.11			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			103.7%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

4: CR10/CR10 (Lake St) & Ridge Rd

FBAM 2035
01-27-2025

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	49	85	1167	480	32
Future Volume (Veh/h)	32	49	85	1167	480	32
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	53	92	1268	522	35
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				236	173	
pX, platoon unblocked	0.96	0.94	0.94			
vC, conflicting volume	1992	540	557			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1864	475	494			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	50	90	91			
cM capacity (veh/h)	70	553	1003			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	88	1360	557			
Volume Left	35	92	0			
Volume Right	53	0	35			
cSH	147	1003	1700			
Volume to Capacity	0.60	0.09	0.33			
Queue Length 95th (m)	25.0	2.4	0.0			
Control Delay (s)	60.3	3.6	0.0			
Lane LOS	F	A				
Approach Delay (s)	60.3	3.6	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay		5.1				
Intersection Capacity Utilization		108.1%		ICU Level of Service		G
Analysis Period (min)		15				

Queues
5: CR10 & CR22

FBAM 2035
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	65	1008	212	36	400	134
Future Volume (vph)	65	1008	212	36	400	134
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.873		0.981			
Flt Protected	0.997					0.964
Satd. Flow (prot)	1580	0	1787	0	0	1712
Flt Permitted	0.997					0.551
Satd. Flow (perm)	1580	0	1787	0	0	978
Satd. Flow (RTOR)	598		8			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	5%	5%	0%	7%	7%
Adj. Flow (vph)	75	1159	244	41	460	154
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1234	0	285	0	0	614
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	22.0		22.0		22.0	22.0
Total Split (s)	66.0		84.0		84.0	84.0
Total Split (%)	44.0%		56.0%		56.0%	56.0%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	6.0		6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	60.0		78.0			78.0
Actuated g/C Ratio	0.40		0.52			0.52
v/c Ratio	1.25		0.31			1.21
Control Delay	140.4		21.0			144.3
Queue Delay	0.0		0.0			0.0
Total Delay	140.4		21.0			144.3
LOS	F		C			F
Approach Delay	140.4		21.0			144.3
Approach LOS	F		C			F
Queue Length 50th (m)	~362.0		48.2			~233.5

Queues
5: CR10 & CR22

FBAM 2035
01-27-2025

	↖	↗	↑	↘	↙	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 95th (m)	#418.6		66.0			#294.5
Internal Link Dist (m)	113.0		263.3			211.6
Turn Bay Length (m)	15.0					
Base Capacity (vph)	990		933			508
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	1.25		0.31			1.21

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.25

Intersection Signal Delay: 125.6

Intersection LOS: F

Intersection Capacity Utilization 123.5%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: CR10 & CR22



HCM Signalized Intersection Capacity Analysis

5: CR10 & CR22

FBAM 2035
01-27-2025

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	L	L
Traffic Volume (vph)	65	1008	212	36	400	134
Future Volume (vph)	65	1008	212	36	400	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.87		0.98			1.00
Flt Protected	1.00		1.00			0.96
Satd. Flow (prot)	1580		1787			1712
Flt Permitted	1.00		1.00			0.55
Satd. Flow (perm)	1580		1787			979
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	75	1159	244	41	460	154
RTOR Reduction (vph)	359	0	4	0	0	0
Lane Group Flow (vph)	875	0	281	0	0	614
Heavy Vehicles (%)	0%	5%	5%	0%	7%	7%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	60.0		78.0			78.0
Effective Green, g (s)	60.0		78.0			78.0
Actuated g/C Ratio	0.40		0.52			0.52
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	632		929			509
v/s Ratio Prot	c0.55		0.16			
v/s Ratio Perm						c0.63
v/c Ratio	1.38		0.30			1.21
Uniform Delay, d1	45.0		20.5			36.0
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	182.9		0.8			110.2
Delay (s)	227.9		21.3			146.2
Level of Service	F		C			F
Approach Delay (s)	227.9		21.3			146.2
Approach LOS	F		C			F
Intersection Summary						
HCM 2000 Control Delay			176.8		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.28			
Actuated Cycle Length (s)			150.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			123.5%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

FBPM 2035
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	15	297	541	145	321	247	362	335	101	188	494	8
Future Volume (veh/h)	15	297	541	145	321	247	362	335	101	188	494	8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	16	316	576	154	341	263	385	356	107	200	526	9
Approach Volume (veh/h)	908			758			848			735		
Crossing Volume (veh/h)	880			757			532			880		
High Capacity (veh/h)	687			759			910			687		
High v/c (veh/h)	1.32			1.00			0.93			1.07		
Low Capacity (veh/h)	538			601			734			538		
Low v/c (veh/h)	1.69			1.26			1.16			1.37		
Intersection Summary												
Maximum v/c High	1.32											
Maximum v/c Low	1.69											
Intersection Capacity Utilization	173.2%			ICU Level of Service					H			

Queues

FBPM 2035

01-27-2025

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	55	989	690	267	344	70
Future Volume (vph)	55	989	690	267	344	70
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.872				0.977	
Flt Protected	0.997		0.950			
Satd. Flow (prot)	1632	0	1703	1863	1826	0
Flt Permitted	0.997		0.129			
Satd. Flow (perm)	1632	0	231	1863	1826	0
Satd. Flow (RTOR)	670				9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	1%	6%	2%	2%	0%
Adj. Flow (vph)	59	1052	734	284	366	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1111	0	734	284	440	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	22.0		10.0	22.0	22.0	
Total Split (s)	41.0		38.0	69.0	31.0	
Total Split (%)	37.3%		34.5%	62.7%	28.2%	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	C-Max	C-Max	
Act Effct Green (s)	35.0		63.0	63.0	25.0	
Actuated g/C Ratio	0.32		0.57	0.57	0.23	
v/c Ratio	1.14		1.31	0.27	1.05	
Control Delay	90.6		180.5	12.7	97.4	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	90.6		180.5	12.7	97.4	
LOS	F		F	B	F	
Approach Delay	90.6			133.7	97.4	
Approach LOS	F			F	F	
Queue Length 50th (m)	~183.2		~199.5	30.5	~106.4	

Queues

FBPM 2035

01-27-2025

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (m)	#265.7		#274.4	46.3	#170.3	
Internal Link Dist (m)	1706.3			148.7	179.9	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	976		560	1066	421	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	1.14		1.31	0.27	1.05	

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.31

Intersection Signal Delay: 108.8

Intersection LOS: F

Intersection Capacity Utilization 139.8%

ICU Level of Service H

Analysis Period (min) 15

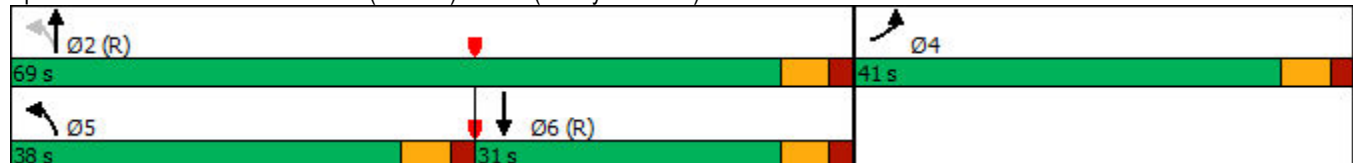
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



HCM Signalized Intersection Capacity Analysis

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

FBPM 2035
01-27-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	55	989	690	267	344	70
Future Volume (vph)	55	989	690	267	344	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.87		1.00	1.00	0.98	
Flt Protected	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	1633		1703	1863	1826	
Flt Permitted	1.00		0.13	1.00	1.00	
Satd. Flow (perm)	1633		231	1863	1826	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	59	1052	734	284	366	74
RTOR Reduction (vph)	457	0	0	0	7	0
Lane Group Flow (vph)	654	0	734	284	433	0
Heavy Vehicles (%)	5%	1%	6%	2%	2%	0%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Actuated Green, G (s)	35.0		63.0	63.0	25.0	
Effective Green, g (s)	35.0		63.0	63.0	25.0	
Actuated g/C Ratio	0.32		0.57	0.57	0.23	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	519		560	1066	415	
v/s Ratio Prot	c0.40		c0.38	0.15	0.24	
v/s Ratio Perm			c0.37			
v/c Ratio	1.26		1.31	0.27	1.04	
Uniform Delay, d1	37.5		31.4	11.8	42.5	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	132.1		152.3	0.6	56.0	
Delay (s)	169.6		183.7	12.5	98.5	
Level of Service	F		F	B	F	
Approach Delay (s)	169.6			135.9	98.5	
Approach LOS	F			F	F	

Intersection Summary

HCM 2000 Control Delay	144.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	139.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

4: CR10 & Ridge Rd

FBPM 2035
01-27-2025

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	85	70	917	1297	32
Future Volume (Veh/h)	32	85	70	917	1297	32
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	92	76	997	1410	35
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				236	173	
pX, platoon unblocked	0.79	0.79	0.79			
vC, conflicting volume	2576	1428	1445			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2866	1408	1430			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	31	80			
cM capacity (veh/h)	12	134	375			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	127	1073	1445			
Volume Left	35	76	0			
Volume Right	92	0	35			
cSH	34	375	1700			
Volume to Capacity	3.71	0.20	0.85			
Queue Length 95th (m)	Err	6.0	0.0			
Control Delay (s)	Err	9.0	0.0			
Lane LOS	F	A				
Approach Delay (s)	Err	9.0	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay		483.7				
Intersection Capacity Utilization		119.6%		ICU Level of Service		H
Analysis Period (min)		15				

Queues
5: CR10 & CR22

FBPM 2035
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	57	746	213	76	1092	255
Future Volume (vph)	57	746	213	76	1092	255
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98					
Frt	0.875		0.964			
Flt Protected	0.996					0.961
Satd. Flow (prot)	1577	0	1779	0	0	1808
Flt Permitted	0.996					0.577
Satd. Flow (perm)	1577	0	1779	0	0	1085
Satd. Flow (RTOR)	640		46			
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	3%	4%	0%	1%	1%
Adj. Flow (vph)	61	802	229	82	1174	274
Shared Lane Traffic (%)						
Lane Group Flow (vph)	863	0	311	0	0	1448
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	22.0		22.0		22.0	22.0
Total Split (s)	22.0		68.0		68.0	68.0
Total Split (%)	24.4%		75.6%		75.6%	75.6%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	6.0		6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effect Green (s)	16.0		62.0			62.0
Actuated g/C Ratio	0.18		0.69			0.69
v/c Ratio	1.07		0.25			1.94
Control Delay	63.9		5.0			445.9
Queue Delay	0.0		0.0			0.0
Total Delay	63.9		5.0			445.9
LOS	E		A			F
Approach Delay	63.9		5.0			445.9

Queues
5: CR10 & CR22

FBPM 2035
01-27-2025



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach LOS	E		A			F
Queue Length 50th (m)	~71.1		15.2			~410.9
Queue Length 95th (m)	#145.0		25.2			#491.9
Internal Link Dist (m)	113.0		263.3			211.6
Turn Bay Length (m)	15.0					
Base Capacity (vph)	806		1239			747
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	1.07		0.25			1.94

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.94

Intersection Signal Delay: 267.9

Intersection LOS: F

Intersection Capacity Utilization 154.1%

ICU Level of Service H

Analysis Period (min) 15

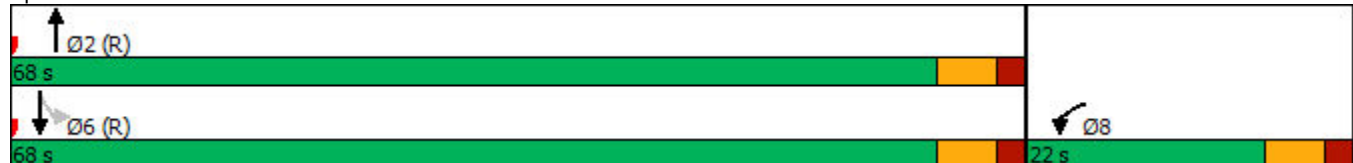
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: CR10 & CR22



HCM Signalized Intersection Capacity Analysis

5: CR10 & CR22

FBPM 2035
01-27-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	W	T
Traffic Volume (vph)	57	746	213	76	1092	255
Future Volume (vph)	57	746	213	76	1092	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		1.00			1.00
Frpb, ped/bikes	0.98		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.87		0.96			1.00
Flt Protected	1.00		1.00			0.96
Satd. Flow (prot)	1577		1780			1808
Flt Permitted	1.00		1.00			0.58
Satd. Flow (perm)	1577		1780			1086
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	61	802	229	82	1174	274
RTOR Reduction (vph)	526	0	14	0	0	0
Lane Group Flow (vph)	337	0	297	0	0	1448
Confl. Peds. (#/hr)		1				
Heavy Vehicles (%)	0%	3%	4%	0%	1%	1%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	16.0		62.0			62.0
Effective Green, g (s)	16.0		62.0			62.0
Actuated g/C Ratio	0.18		0.69			0.69
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	280		1226			748
v/s Ratio Prot	c0.21		0.17			
v/s Ratio Perm						c1.33
v/c Ratio	1.20		0.24			1.94
Uniform Delay, d1	37.0		5.2			14.0
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	120.2		0.5			426.0
Delay (s)	157.2		5.7			440.0
Level of Service	F		A			F
Approach Delay (s)	157.2		5.7			440.0
Approach LOS	F		A			F
Intersection Summary						
HCM 2000 Control Delay			295.4		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.78			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			154.1%		ICU Level of Service	H
Analysis Period (min)			15			

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

FBSAT 2035
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	5	252	474	123	283	156	441	396	95	109	400	7
Future Volume (veh/h)	5	252	474	123	283	156	441	396	95	109	400	7
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	5	255	479	124	286	158	445	400	96	110	404	7
Approach Volume (veh/h)	739			568			941			521		
Crossing Volume (veh/h)	638			850			370			855		
High Capacity (veh/h)	836			704			1035			701		
High v/c (veh/h)	0.88			0.81			0.91			0.74		
Low Capacity (veh/h)	668			553			845			550		
Low v/c (veh/h)	1.11			1.03			1.11			0.95		
Intersection Summary												
Maximum v/c High	0.91											
Maximum v/c Low	1.11											
Intersection Capacity Utilization	165.7%			ICU Level of Service			H					

Queues

FBSAT 2035

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

01-27-2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	44	847	812	284	231	62
Future Volume (vph)	44	847	812	284	231	62
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.872				0.972	
Flt Protected	0.998		0.950			
Satd. Flow (prot)	1647	0	1805	1900	1790	0
Flt Permitted	0.998		0.160			
Satd. Flow (perm)	1647	0	304	1900	1790	0
Satd. Flow (RTOR)	781				12	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	8%	0%	0%	0%	0%	15%
Adj. Flow (vph)	50	963	923	323	263	70
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1013	0	923	323	333	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	22.0		10.0	22.0	22.0	
Total Split (s)	32.0		43.0	68.0	25.0	
Total Split (%)	32.0%		43.0%	68.0%	25.0%	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	C-Max	C-Max	
Act Effct Green (s)	26.0		62.0	62.0	19.0	
Actuated g/C Ratio	0.26		0.62	0.62	0.19	
v/c Ratio	1.01		1.24	0.27	0.95	
Control Delay	40.1		141.3	8.8	78.0	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	40.1		141.3	8.8	78.0	
LOS	D		F	A	E	
Approach Delay	40.1			106.9	78.0	
Approach LOS	D			F	E	
Queue Length 50th (m)	~68.4		~221.8	25.7	65.6	

Queues

FBSAT 2035

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

01-27-2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (m)	#156.8		m#181.5	m24.2	#116.6	
Internal Link Dist (m)	1706.3			148.7	179.9	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	1006		743	1178	349	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	1.01		1.24	0.27	0.95	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.24

Intersection Signal Delay: 77.1

Intersection LOS: E

Intersection Capacity Utilization 130.7%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

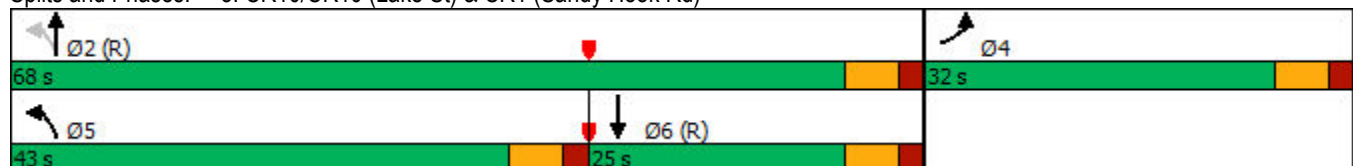
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



HCM Signalized Intersection Capacity Analysis

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

FBSAT 2035
01-27-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	44	847	812	284	231	62
Future Volume (vph)	44	847	812	284	231	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.87		1.00	1.00	0.97	
Flt Protected	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	1646		1805	1900	1790	
Flt Permitted	1.00		0.16	1.00	1.00	
Satd. Flow (perm)	1646		304	1900	1790	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	50	962	923	323	262	70
RTOR Reduction (vph)	578	0	0	0	10	0
Lane Group Flow (vph)	435	0	923	323	323	0
Heavy Vehicles (%)	8%	0%	0%	0%	0%	15%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Actuated Green, G (s)	26.0		62.0	62.0	19.0	
Effective Green, g (s)	26.0		62.0	62.0	19.0	
Actuated g/C Ratio	0.26		0.62	0.62	0.19	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	427		743	1178	340	
v/s Ratio Prot	c0.26		c0.46	0.17	0.18	
v/s Ratio Perm			c0.31			
v/c Ratio	1.02		1.24	0.27	0.95	
Uniform Delay, d1	37.0		25.4	8.7	40.0	
Progression Factor	1.00		1.22	0.97	1.00	
Incremental Delay, d2	48.4		112.6	0.2	37.8	
Delay (s)	85.4		143.4	8.6	77.8	
Level of Service	F		F	A	E	
Approach Delay (s)	85.4			108.5	77.8	
Approach LOS	F			F	E	
Intersection Summary						
HCM 2000 Control Delay			95.5		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.22			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			130.7%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

4: CR10 & Ridge Rd

FBSAT 2035
01-27-2025

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	76	74	1055	1041	32
Future Volume (Veh/h)	32	76	74	1055	1041	32
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	83	80	1147	1132	35
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				236	173	
pX, platoon unblocked	0.86	0.85	0.85			
vC, conflicting volume	2456	1150	1167			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2574	1088	1108			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	63	85			
cM capacity (veh/h)	21	223	536			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	118	1227	1167			
Volume Left	35	80	0			
Volume Right	83	0	35			
cSH	57	536	1700			
Volume to Capacity	2.06	0.15	0.69			
Queue Length 95th (m)	91.6	4.2	0.0			
Control Delay (s)	645.3	6.4	0.0			
Lane LOS	F	A				
Approach Delay (s)	645.3	6.4	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay		33.4				
Intersection Capacity Utilization		129.5%		ICU Level of Service		H
Analysis Period (min)		15				

Queues
5: CR10 & CR22

FBSAT 2035
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	59	872	208	49	929	166
Future Volume (vph)	59	872	208	49	929	166
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.874		0.974			
Flt Protected	0.997					0.959
Satd. Flow (prot)	1656	0	1851	0	0	1822
Flt Permitted	0.997					0.572
Satd. Flow (perm)	1656	0	1851	0	0	1087
Satd. Flow (RTOR)	663		26			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	68	1002	239	56	1068	191
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1070	0	295	0	0	1259
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	22.0		22.0		22.0	22.0
Total Split (s)	26.0		74.0		74.0	74.0
Total Split (%)	26.0%		74.0%		74.0%	74.0%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	6.0		6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	20.0		68.0			68.0
Actuated g/C Ratio	0.20		0.68			0.68
v/c Ratio	1.24		0.23			1.70
Control Delay	134.5		6.0			337.5
Queue Delay	0.0		0.0			0.0
Total Delay	134.5		6.0			337.5
LOS	F		A			F
Approach Delay	134.5		6.0			337.5
Approach LOS	F		A			F
Queue Length 50th (m)	~156.8		18.2			~382.5

Queues
5: CR10 & CR22

FBSAT 2035
01-27-2025

	↖	↗	↑	↘	↙	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 95th (m)	#218.7		27.6			m#392.6
Internal Link Dist (m)	113.0		263.3			211.6
Turn Bay Length (m)						
Base Capacity (vph)	861		1267			739
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	1.24		0.23			1.70

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.70

Intersection Signal Delay: 217.5

Intersection LOS: F

Intersection Capacity Utilization 146.3%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

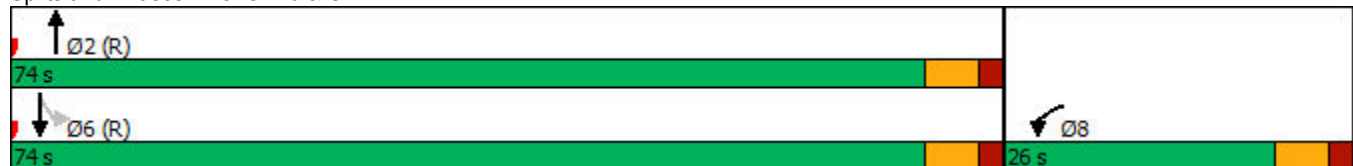
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: CR10 & CR22



HCM Signalized Intersection Capacity Analysis

5: CR10 & CR22

FBSAT 2035
01-27-2025

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	WT	WT	NT	NT	SL	SL
Traffic Volume (vph)	59	872	208	49	929	166
Future Volume (vph)	59	872	208	49	929	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.87		0.97			1.00
Flt Protected	1.00		1.00			0.96
Satd. Flow (prot)	1655		1851			1823
Flt Permitted	1.00		1.00			0.57
Satd. Flow (perm)	1655		1851			1088
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	68	1002	239	56	1068	191
RTOR Reduction (vph)	530	0	8	0	0	0
Lane Group Flow (vph)	540	0	287	0	0	1259
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	20.0		68.0			68.0
Effective Green, g (s)	20.0		68.0			68.0
Actuated g/C Ratio	0.20		0.68			0.68
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	331		1258			739
v/s Ratio Prot	c0.33		0.15			
v/s Ratio Perm						c1.16
v/c Ratio	1.63		0.23			1.70
Uniform Delay, d1	40.0		6.1			16.0
Progression Factor	1.00		1.00			0.70
Incremental Delay, d2	297.0		0.4			319.1
Delay (s)	337.0		6.5			330.3
Level of Service	F		A			F
Approach Delay (s)	337.0		6.5			330.3
Approach LOS	F		A			F
Intersection Summary						
HCM 2000 Control Delay			296.6		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.69			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			146.3%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

FTAM 2030
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	1	209	84	62	194	130	186	142	124	162	101	4
Future Volume (veh/h)	1	209	84	62	194	130	186	142	124	162	101	4
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	1	230	92	68	213	143	204	156	136	178	111	4
Approach Volume (veh/h)	323			424			496			293		
Crossing Volume (veh/h)	357			361			409			485		
High Capacity (veh/h)	1046			1043			1004			945		
High v/c (veh/h)	0.31			0.41			0.49			0.31		
Low Capacity (veh/h)	855			852			817			764		
Low v/c (veh/h)	0.38			0.50			0.61			0.38		
Intersection Summary												
Maximum v/c High			0.49									
Maximum v/c Low			0.61									
Intersection Capacity Utilization			75.1%		ICU Level of Service				D			

HCM Unsignalized Intersection Capacity Analysis

2: CR10 (Lake St) & Street A

FTAM 2030
01-27-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	26	8	258	9	1	125
Future Volume (Veh/h)	26	8	258	9	1	125
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	29	9	290	10	1	140
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)			204			
pX, platoon unblocked	0.99	0.99			0.99	
vC, conflicting volume	437	295			300	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	426	283			288	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	99			100	
cM capacity (veh/h)	582	753			1273	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	38	300	141			
Volume Left	29	0	1			
Volume Right	9	10	0			
cSH	616	1700	1273			
Volume to Capacity	0.06	0.18	0.00			
Queue Length 95th (m)	1.6	0.0	0.0			
Control Delay (s)	11.2	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	11.2	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization		24.1%		ICU Level of Service		A
Analysis Period (min)		15				

Queues

FTAM 2030

01-27-2025

3: CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	72	157	273	222	116	77
Future Volume (vph)	72	157	273	222	116	77
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.908				0.946	
Flt Protected	0.984		0.950			
Satd. Flow (prot)	1598	0	1752	1827	1689	0
Flt Permitted	0.984		0.561			
Satd. Flow (perm)	1598	0	1035	1827	1689	0
Satd. Flow (RTOR)	95				29	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	11%	4%	3%	4%	6%	7%
Adj. Flow (vph)	81	176	307	249	130	87
Shared Lane Traffic (%)						
Lane Group Flow (vph)	257	0	307	249	217	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	22.0		10.0	22.0	22.0	
Total Split (s)	24.0		54.0	76.0	22.0	
Total Split (%)	24.0%		54.0%	76.0%	22.0%	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	C-Max	C-Max	
Act Effct Green (s)	14.7		73.3	73.3	55.6	
Actuated g/C Ratio	0.15		0.73	0.73	0.56	
v/c Ratio	0.82		0.36	0.19	0.23	
Control Delay	45.9		6.1	5.0	11.9	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	45.9		6.1	5.0	11.9	
LOS	D		A	A	B	
Approach Delay	45.9			5.6	11.9	
Approach LOS	D			A	B	
Queue Length 50th (m)	31.9		18.4	14.3	18.6	

Queues

FTAM 2030

01-27-2025

3: CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (m)	#59.6		30.1	24.0	37.2	
Internal Link Dist (m)	1706.3			148.7	179.9	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	365		1103	1339	951	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.70		0.28	0.19	0.23	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 17.0

Intersection LOS: B

Intersection Capacity Utilization 54.6%

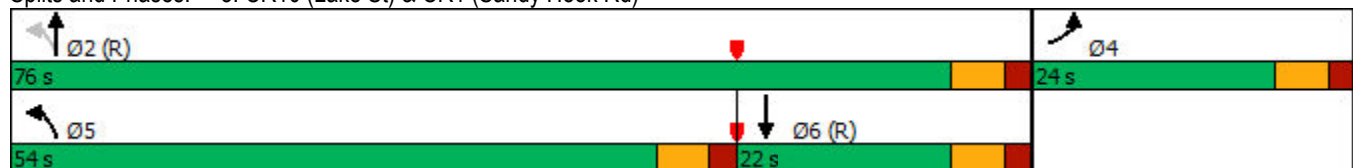
ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: CR10 (Lake St) & CR1 (Sandy Hook Rd)



HCM Signalized Intersection Capacity Analysis

3: CR10 (Lake St) & CR1 (Sandy Hook Rd)

FTAM 2030
01-27-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	72	157	273	222	116	77
Future Volume (vph)	72	157	273	222	116	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.91		1.00	1.00	0.95	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1598		1752	1827	1689	
Flt Permitted	0.98		0.56	1.00	1.00	
Satd. Flow (perm)	1598		1034	1827	1689	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	81	176	307	249	130	87
RTOR Reduction (vph)	81	0	0	0	13	0
Lane Group Flow (vph)	176	0	307	249	204	0
Heavy Vehicles (%)	11%	4%	3%	4%	6%	7%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Actuated Green, G (s)	14.7		73.3	73.3	55.5	
Effective Green, g (s)	14.7		73.3	73.3	55.5	
Actuated g/C Ratio	0.15		0.73	0.73	0.56	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	234		842	1339	937	
v/s Ratio Prot	c0.11		c0.04	0.14	0.12	
v/s Ratio Perm			c0.22			
v/c Ratio	0.75		0.36	0.19	0.22	
Uniform Delay, d1	40.9		4.6	4.1	11.3	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	12.8		0.3	0.3	0.5	
Delay (s)	53.7		4.8	4.4	11.8	
Level of Service	D		A	A	B	
Approach Delay (s)	53.7			4.7	11.8	
Approach LOS	D			A	B	
Intersection Summary						
HCM 2000 Control Delay			18.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.45			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			54.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

4: CR10/CR10 (Lake St) & Ridge Rd/Street D

FTAM 2030
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	34	2	0	35	39	427	2	15	221	30
Future Volume (Veh/h)	30	0	34	2	0	35	39	427	2	15	221	30
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	0	37	2	0	38	42	464	2	16	240	33
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)							236			173		
pX, platoon unblocked												
vC, conflicting volume	876	838	256	874	854	465	273				466	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	876	838	256	874	854	465	273				466	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	86	100	95	99	100	94	97				99	
cM capacity (veh/h)	243	288	782	248	282	597	1290				1095	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	70	40	508	289								
Volume Left	33	2	42	16								
Volume Right	37	38	2	33								
cSH	383	558	1290	1095								
Volume to Capacity	0.18	0.07	0.03	0.01								
Queue Length 95th (m)	5.3	1.8	0.8	0.4								
Control Delay (s)	16.5	11.9	1.0	0.6								
Lane LOS	C	B	A	A								
Approach Delay (s)	16.5	11.9	1.0	0.6								
Approach LOS	C	B										
Intersection Summary												
Average Delay				2.5								
Intersection Capacity Utilization				52.4%	ICU Level of Service				A			
Analysis Period (min)				15								

Queues
5: CR10 & CR22

FTAM 2030
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	232	206	23	128	133
Future Volume (vph)	24	232	206	23	128	133
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.878		0.987			
Flt Protected	0.995					0.976
Satd. Flow (prot)	1588	0	1794	0	0	1733
Flt Permitted	0.995					0.721
Satd. Flow (perm)	1588	0	1794	0	0	1280
Satd. Flow (RTOR)	267		5			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	5%	5%	0%	7%	7%
Adj. Flow (vph)	28	267	237	26	147	153
Shared Lane Traffic (%)						
Lane Group Flow (vph)	295	0	263	0	0	300
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	22.0		22.0		22.0	22.0
Total Split (s)	66.0		84.0		84.0	84.0
Total Split (%)	44.0%		56.0%		56.0%	56.0%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	6.0		6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	10.9		127.1			127.1
Actuated g/C Ratio	0.07		0.85			0.85
v/c Ratio	0.81		0.17			0.28
Control Delay	28.2		2.7			3.5
Queue Delay	0.0		0.0			0.0
Total Delay	28.2		2.7			3.5
LOS	C		A			A
Approach Delay	28.2		2.7			3.5
Approach LOS	C		A			A
Queue Length 50th (m)	8.6		9.8			12.8

Queues

5: CR10 & CR22

FTAM 2030
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 95th (m)	34.8		25.1			33.0
Internal Link Dist (m)	113.0		263.3			211.6
Turn Bay Length (m)	15.0					
Base Capacity (vph)	795		1521			1084
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.37		0.17			0.28

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 11.8

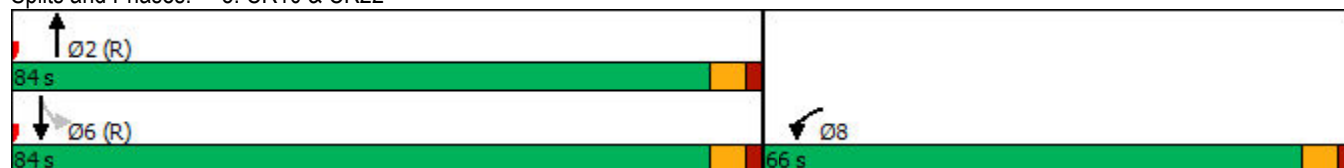
Intersection LOS: B

Intersection Capacity Utilization 57.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: CR10 & CR22



HCM Signalized Intersection Capacity Analysis

5: CR10 & CR22

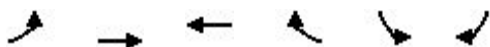
FTAM 2030
01-27-2025

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	232	206	23	128	133
Future Volume (vph)	24	232	206	23	128	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.88		0.99			1.00
Flt Protected	1.00		1.00			0.98
Satd. Flow (prot)	1588		1794			1733
Flt Permitted	1.00		1.00			0.72
Satd. Flow (perm)	1588		1794			1281
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	28	267	237	26	147	153
RTOR Reduction (vph)	248	0	1	0	0	0
Lane Group Flow (vph)	47	0	262	0	0	300
Heavy Vehicles (%)	0%	5%	5%	0%	7%	7%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	10.9		127.1			127.1
Effective Green, g (s)	10.9		127.1			127.1
Actuated g/C Ratio	0.07		0.85			0.85
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	115		1520			1085
v/s Ratio Prot	c0.03		0.15			
v/s Ratio Perm						c0.23
v/c Ratio	0.41		0.17			0.28
Uniform Delay, d1	66.5		2.0			2.3
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	2.4		0.2			0.6
Delay (s)	68.9		2.3			2.9
Level of Service	E		A			A
Approach Delay (s)	68.9		2.3			2.9
Approach LOS	E		A			A
Intersection Summary						
HCM 2000 Control Delay			25.4		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.29			
Actuated Cycle Length (s)			150.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			57.0%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

6: CR22 & Street A

FTAM 2030
01-27-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	149	244	2	6	11
Future Volume (Veh/h)	1	149	244	2	6	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	162	265	2	7	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		137				
pX, platoon unblocked						
vC, conflicting volume	267				430	266
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	267				430	266
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	98
cM capacity (veh/h)	1308				586	778
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	163	267	19			
Volume Left	1	0	7			
Volume Right	0	2	12			
cSH	1308	1700	694			
Volume to Capacity	0.00	0.16	0.03			
Queue Length 95th (m)	0.0	0.0	0.7			
Control Delay (s)	0.1	0.0	10.3			
Lane LOS	A		B			
Approach Delay (s)	0.1	0.0	10.3			
Approach LOS			B			
Intersection Summary						
Average Delay		0.5				
Intersection Capacity Utilization		23.0%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

FTPM 2030
01-27-2025

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Right Turn Channelized													
Traffic Volume (veh/h)	13	267	204	142	290	223	149	138	104	189	182	8	
Future Volume (veh/h)	13	267	204	142	290	223	149	138	104	189	182	8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Hourly flow rate (vph)	14	284	217	151	309	237	159	147	111	201	194	9	
Approach Volume (veh/h)	515				697				417				404
Crossing Volume (veh/h)	546				320				499				619
High Capacity (veh/h)	900				1077				934				848
High v/c (veh/h)	0.57				0.65				0.45				0.48
Low Capacity (veh/h)	725				883				755				679
Low v/c (veh/h)	0.71				0.79				0.55				0.59
Intersection Summary													
Maximum v/c High	0.65												
Maximum v/c Low	0.79												
Intersection Capacity Utilization	103.8%				ICU Level of Service				G				

HCM Unsignalized Intersection Capacity Analysis

2: CR10 (Lake St) & Street A

FTPM 2030
01-27-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	14	3	241	20	4	311
Future Volume (Veh/h)	14	3	241	20	4	311
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	15	3	256	21	4	331
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)			204			
pX, platoon unblocked	0.98	0.98			0.98	
vC, conflicting volume	606	266			277	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	591	246			257	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	100			100	
cM capacity (veh/h)	464	785			1298	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	18	277	335			
Volume Left	15	0	4			
Volume Right	3	21	0			
cSH	498	1700	1298			
Volume to Capacity	0.04	0.16	0.00			
Queue Length 95th (m)	0.9	0.0	0.1			
Control Delay (s)	12.5	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	12.5	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			29.6%	ICU Level of Service		A
Analysis Period (min)			15			

Queues

FTPM 2030

01-27-2025

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	70	327	266	219	273	79
Future Volume (vph)	70	327	266	219	273	79
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.889				0.970	
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1646	0	1703	1863	1815	0
Flt Permitted	0.991		0.417			
Satd. Flow (perm)	1646	0	747	1863	1815	0
Satd. Flow (RTOR)	226				12	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	1%	6%	2%	2%	0%
Adj. Flow (vph)	74	348	283	233	290	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	422	0	283	233	374	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	22.0		10.0	22.0	22.0	
Total Split (s)	41.0		38.0	69.0	31.0	
Total Split (%)	37.3%		34.5%	62.7%	28.2%	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	C-Max	C-Max	
Act Effct Green (s)	20.5		77.5	77.5	56.3	
Actuated g/C Ratio	0.19		0.70	0.70	0.51	
v/c Ratio	0.86		0.43	0.18	0.40	
Control Delay	36.3		9.3	7.2	21.6	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	36.3		9.3	7.2	21.6	
LOS	D		A	A	C	
Approach Delay	36.3			8.4	21.6	
Approach LOS	D			A	C	
Queue Length 50th (m)	44.9		20.0	15.8	47.5	

Queues

FTPM 2030

01-27-2025

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (m)	74.7		43.7	35.0	103.4	
Internal Link Dist (m)	1706.3			148.7	179.9	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	677		804	1311	934	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.62		0.35	0.18	0.40	

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 21.1

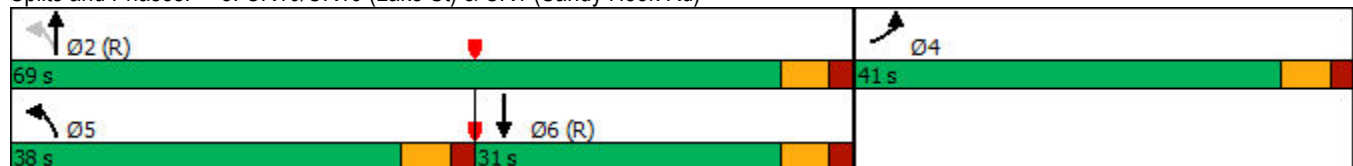
Intersection LOS: C

Intersection Capacity Utilization 73.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



HCM Signalized Intersection Capacity Analysis

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

FTPM 2030
01-27-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	70	327	266	219	273	79
Future Volume (vph)	70	327	266	219	273	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.89		1.00	1.00	0.97	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1646		1703	1863	1814	
Flt Permitted	0.99		0.42	1.00	1.00	
Satd. Flow (perm)	1646		748	1863	1814	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	74	348	283	233	290	84
RTOR Reduction (vph)	184	0	0	0	6	0
Lane Group Flow (vph)	238	0	283	233	368	0
Heavy Vehicles (%)	5%	1%	6%	2%	2%	0%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Actuated Green, G (s)	20.5		77.5	77.5	56.3	
Effective Green, g (s)	20.5		77.5	77.5	56.3	
Actuated g/C Ratio	0.19		0.70	0.70	0.51	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	306		658	1312	928	
v/s Ratio Prot	c0.14		c0.06	0.13	0.20	
v/s Ratio Perm			c0.24			
v/c Ratio	0.78		0.43	0.18	0.40	
Uniform Delay, d1	42.6		7.0	5.5	16.4	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	11.8		0.5	0.3	1.3	
Delay (s)	54.4		7.5	5.8	17.7	
Level of Service	D		A	A	B	
Approach Delay (s)	54.4			6.7	17.7	
Approach LOS	D			A	B	
Intersection Summary						
HCM 2000 Control Delay			25.2	HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio			0.53			
Actuated Cycle Length (s)			110.0	Sum of lost time (s)		18.0
Intersection Capacity Utilization			73.0%	ICU Level of Service		C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

4: CR10 & Ridge Rd/Street D

FTPM 2030
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	39	2	0	21	37	426	4	38	527	30
Future Volume (Veh/h)	30	0	39	2	0	21	37	426	4	38	527	30
Sign Control	Stop				Stop				Free		Free	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	0	42	2	0	23	40	463	4	41	573	33
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)							236			173		
pX, platoon unblocked	0.90	0.90	0.90	0.90	0.90	0.90						
vC, conflicting volume	1240	1218	590	1258	1233	465	606	467				
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1210	1187	487	1231	1203	465	505	467				
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1	4.1				
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2	2.2				
p0 queue free %	75	100	92	98	100	96	96	96				
cM capacity (veh/h)	129	156	522	120	153	597	952	1094				
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	75	25	507	647								
Volume Left	33	2	40	41								
Volume Right	42	23	4	33								
cSH	224	453	952	1094								
Volume to Capacity	0.34	0.06	0.04	0.04								
Queue Length 95th (m)	11.3	1.4	1.1	0.9								
Control Delay (s)	29.0	13.4	1.2	1.0								
Lane LOS	D	B	A	A								
Approach Delay (s)	29.0	13.4	1.2	1.0								
Approach LOS	D	B										
Intersection Summary												
Average Delay			3.0									
Intersection Capacity Utilization			56.7%	ICU Level of Service				B				
Analysis Period (min)			15									

Queues
5: CR10 & CR22

FTPM 2030
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	27	231	210	34	289	248
Future Volume (vph)	27	231	210	34	289	248
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98					
Frt	0.879		0.981			
Flt Protected	0.995					0.974
Satd. Flow (prot)	1585	0	1802	0	0	1832
Flt Permitted	0.995					0.696
Satd. Flow (perm)	1585	0	1802	0	0	1309
Satd. Flow (RTOR)	248		21			
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	3%	4%	0%	1%	1%
Adj. Flow (vph)	29	248	226	37	311	267
Shared Lane Traffic (%)						
Lane Group Flow (vph)	277	0	263	0	0	578
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	22.0		22.0		22.0	22.0
Total Split (s)	22.0		68.0		68.0	68.0
Total Split (%)	24.4%		75.6%		75.6%	75.6%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	6.0		6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	9.0		69.0			69.0
Actuated g/C Ratio	0.10		0.77			0.77
v/c Ratio	0.73		0.19			0.58
Control Delay	18.6		3.5			8.1
Queue Delay	0.0		0.0			0.0
Total Delay	18.6		3.5			8.1
LOS	B		A			A
Approach Delay	18.6		3.5			8.1

Queues
5: CR10 & CR22

FTPM 2030
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach LOS	B		A		A	
Queue Length 50th (m)	5.1		8.3		30.8	
Queue Length 95th (m)	27.5		22.6		84.7	
Internal Link Dist (m)	113.0		263.3		211.6	
Turn Bay Length (m)	15.0					
Base Capacity (vph)	485		1385		1002	
Starvation Cap Reductn	0		0		0	
Spillback Cap Reductn	0		0		0	
Storage Cap Reductn	0		0		0	
Reduced v/c Ratio	0.57		0.19		0.58	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 9.6

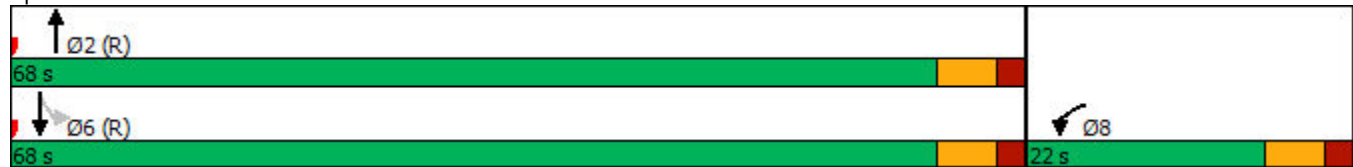
Intersection LOS: A

Intersection Capacity Utilization 73.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 5: CR10 & CR22



HCM Signalized Intersection Capacity Analysis

5: CR10 & CR22

FTPM 2030
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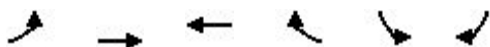
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Volume (vph)	27	231	210	34	289	248
Future Volume (vph)	27	231	210	34	289	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		1.00			1.00
Frpb, ped/bikes	0.98		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.88		0.98			1.00
Flt Protected	0.99		1.00			0.97
Satd. Flow (prot)	1585		1802			1832
Flt Permitted	0.99		1.00			0.70
Satd. Flow (perm)	1585		1802			1309
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	29	248	226	37	311	267
RTOR Reduction (vph)	223	0	5	0	0	0
Lane Group Flow (vph)	54	0	258	0	0	578
Confl. Peds. (#/hr)		1				
Heavy Vehicles (%)	0%	3%	4%	0%	1%	1%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	9.0		69.0			69.0
Effective Green, g (s)	9.0		69.0			69.0
Actuated g/C Ratio	0.10		0.77			0.77
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	158		1381			1003
v/s Ratio Prot	c0.03		0.14			
v/s Ratio Perm						c0.44
v/c Ratio	0.34		0.19			0.58
Uniform Delay, d1	37.7		2.9			4.4
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	1.3		0.3			2.4
Delay (s)	39.0		3.2			6.8
Level of Service	D		A			A
Approach Delay (s)	39.0		3.2			6.8
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			13.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.55			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			73.0%		ICU Level of Service	D
Analysis Period (min)			15			

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

6: CR22 & Street A

FTPM 2030
01-27-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	319	252	6	4	6
Future Volume (Veh/h)	3	319	252	6	4	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	347	274	7	4	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		137				
pX, platoon unblocked						
vC, conflicting volume	281				630	278
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	281				630	278
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1293				447	766
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	350	281	11			
Volume Left	3	0	4			
Volume Right	0	7	7			
cSH	1293	1700	609			
Volume to Capacity	0.00	0.17	0.02			
Queue Length 95th (m)	0.1	0.0	0.4			
Control Delay (s)	0.1	0.0	11.0			
Lane LOS	A		B			
Approach Delay (s)	0.1	0.0	11.0			
Approach LOS			B			
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			29.2%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

FTSAT 2030
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	4	227	188	124	255	141	173	143	100	110	125	7
Future Volume (veh/h)	4	227	188	124	255	141	173	143	100	110	125	7
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	4	229	190	125	258	142	175	144	101	111	126	7
Approach Volume (veh/h)	423			525			420			244		
Crossing Volume (veh/h)	362			323			344			558		
High Capacity (veh/h)	1042			1075			1057			891		
High v/c (veh/h)	0.41			0.49			0.40			0.27		
Low Capacity (veh/h)	851			880			865			717		
Low v/c (veh/h)	0.50			0.60			0.49			0.34		
Intersection Summary												
Maximum v/c High	0.49											
Maximum v/c Low	0.60											
Intersection Capacity Utilization	91.1%			ICU Level of Service			F					

HCM Unsignalized Intersection Capacity Analysis

2: CR10 (Lake St) & Street A

FTSAT 2030
01-27-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	18	5	244	19	3	211
Future Volume (Veh/h)	18	5	244	19	3	211
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	20	6	277	22	3	240
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)			204			
pX, platoon unblocked	0.98	0.98			0.98	
vC, conflicting volume	534	288			299	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	516	266			277	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	99			100	
cM capacity (veh/h)	512	764			1274	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	26	299	243			
Volume Left	20	0	3			
Volume Right	6	22	0			
cSH	554	1700	1274			
Volume to Capacity	0.05	0.18	0.00			
Queue Length 95th (m)	1.2	0.0	0.1			
Control Delay (s)	11.8	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	11.8	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay		0.6				
Intersection Capacity Utilization		24.0%		ICU Level of Service		A
Analysis Period (min)		15				

Queues

FTSAT 2030

01-27-2025

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	58	277	279	227	175	76
Future Volume (vph)	58	277	279	227	175	76
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.888				0.959	
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1649	0	1805	1900	1743	0
Flt Permitted	0.991		0.496			
Satd. Flow (perm)	1649	0	942	1900	1743	0
Satd. Flow (RTOR)	232				19	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	8%	0%	0%	0%	0%	15%
Adj. Flow (vph)	66	315	317	258	199	86
Shared Lane Traffic (%)						
Lane Group Flow (vph)	381	0	317	258	285	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	22.0		10.0	22.0	22.0	
Total Split (s)	32.0		43.0	68.0	25.0	
Total Split (%)	32.0%		43.0%	68.0%	25.0%	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	C-Max	C-Max	
Act Effct Green (s)	15.7		72.3	72.3	52.6	
Actuated g/C Ratio	0.16		0.72	0.72	0.53	
v/c Ratio	0.84		0.40	0.19	0.31	
Control Delay	31.3		8.1	6.6	17.1	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	31.3		8.1	6.6	17.1	
LOS	C		A	A	B	
Approach Delay	31.3			7.4	17.1	
Approach LOS	C			A	B	
Queue Length 50th (m)	29.6		17.7	13.8	27.8	

Queues

FTSAT 2030

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

01-27-2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (m)	55.1		44.2	35.7	66.2	
Internal Link Dist (m)	1706.3			148.7	179.9	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	600		999	1372	926	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.64		0.32	0.19	0.31	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 17.0

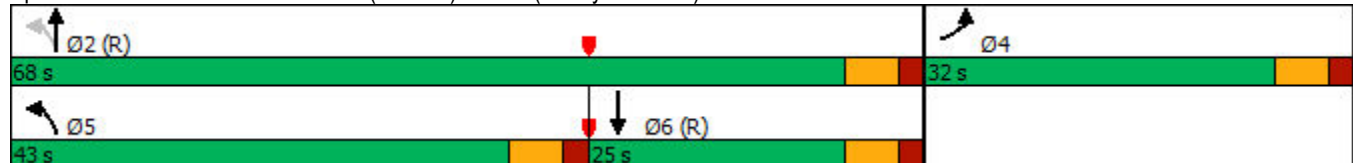
Intersection LOS: B

Intersection Capacity Utilization 64.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



HCM Signalized Intersection Capacity Analysis

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

FTSAT 2030
01-27-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	58	277	279	227	175	76
Future Volume (vph)	58	277	279	227	175	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.89		1.00	1.00	0.96	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1651		1805	1900	1744	
Flt Permitted	0.99		0.50	1.00	1.00	
Satd. Flow (perm)	1651		943	1900	1744	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	66	315	317	258	199	86
RTOR Reduction (vph)	196	0	0	0	9	0
Lane Group Flow (vph)	185	0	317	258	276	0
Heavy Vehicles (%)	8%	0%	0%	0%	0%	15%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Actuated Green, G (s)	15.7		72.3	72.3	52.7	
Effective Green, g (s)	15.7		72.3	72.3	52.7	
Actuated g/C Ratio	0.16		0.72	0.72	0.53	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	259		799	1373	919	
v/s Ratio Prot	c0.11		c0.05	0.14	0.16	
v/s Ratio Perm			c0.23			
v/c Ratio	0.72		0.40	0.19	0.30	
Uniform Delay, d1	40.0		5.2	4.4	13.3	
Progression Factor	1.00		1.13	1.12	1.00	
Incremental Delay, d2	9.1		0.3	0.3	0.8	
Delay (s)	49.1		6.2	5.2	14.1	
Level of Service	D		A	A	B	
Approach Delay (s)	49.1			5.8	14.1	
Approach LOS	D			A	B	
Intersection Summary						
HCM 2000 Control Delay			21.0	HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio			0.48			
Actuated Cycle Length (s)			100.0	Sum of lost time (s)		18.0
Intersection Capacity Utilization			64.6%	ICU Level of Service		C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

4: CR10 & Ridge Rd/Street D

FTSAT 2030
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	39	2	0	24	38	443	4	30	387	30
Future Volume (Veh/h)	30	0	39	2	0	24	38	443	4	30	387	30
Sign Control	Stop				Stop				Free		Free	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	0	42	2	0	26	41	482	4	33	421	33
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)							236			173		
pX, platoon unblocked	0.97	0.97	0.97	0.97	0.97		0.97					
vC, conflicting volume	1096	1072	438	1112	1086	484	454	486				
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1085	1060	409	1101	1075	484	426	486				
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1	4.1				
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2	2.2				
p0 queue free %	81	100	93	99	100	96	96	97				
cM capacity (veh/h)	172	204	626	163	200	583	1104	1077				
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	75	28	527	487								
Volume Left	33	2	41	33								
Volume Right	42	26	4	33								
cSH	289	492	1104	1077								
Volume to Capacity	0.26	0.06	0.04	0.03								
Queue Length 95th (m)	8.1	1.4	0.9	0.8								
Control Delay (s)	21.8	12.8	1.1	0.9								
Lane LOS	C	B	A	A								
Approach Delay (s)	21.8	12.8	1.1	0.9								
Approach LOS	C	B										
Intersection Summary												
Average Delay				2.7								
Intersection Capacity Utilization				52.0%	ICU Level of Service			A				
Analysis Period (min)				15								

Queues
5: CR10 & CR22

FTSAT 2030
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	26	232	206	17	245	163
Future Volume (vph)	26	232	206	17	245	163
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.879		0.989			
Flt Protected	0.995					0.971
Satd. Flow (prot)	1662	0	1879	0	0	1845
Flt Permitted	0.995					0.675
Satd. Flow (perm)	1662	0	1879	0	0	1282
Satd. Flow (RTOR)	267		9			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	30	267	237	20	282	187
Shared Lane Traffic (%)						
Lane Group Flow (vph)	297	0	257	0	0	469
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	22.0		22.0		22.0	22.0
Total Split (s)	26.0		74.0		74.0	74.0
Total Split (%)	26.0%		74.0%		74.0%	74.0%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	6.0		6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	9.3		78.7			78.7
Actuated g/C Ratio	0.09		0.79			0.79
v/c Ratio	0.75		0.17			0.47
Control Delay	19.8		3.3			3.6
Queue Delay	0.0		0.0			0.0
Total Delay	19.8		3.3			3.6
LOS	B		A			A
Approach Delay	19.8		3.3			3.6
Approach LOS	B		A			A
Queue Length 50th (m)	5.9		8.6			7.8

Queues
5: CR10 & CR22

FTSAT 2030
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 95th (m)	26.9		22.0			19.0
Internal Link Dist (m)	113.0		263.3			211.6
Turn Bay Length (m)						
Base Capacity (vph)	546		1480			1008
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.54		0.17			0.47

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 8.2

Intersection LOS: A

Intersection Capacity Utilization 64.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: CR10 & CR22



HCM Signalized Intersection Capacity Analysis

5: CR10 & CR22

FTSAT 2030
01-27-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	26	232	206	17	245	163
Future Volume (vph)	26	232	206	17	245	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.88		0.99			1.00
Flt Protected	0.99		1.00			0.97
Satd. Flow (prot)	1661		1880			1845
Flt Permitted	0.99		1.00			0.67
Satd. Flow (perm)	1661		1880			1282
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	30	267	237	20	282	187
RTOR Reduction (vph)	242	0	2	0	0	0
Lane Group Flow (vph)	55	0	255	0	0	469
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	9.3		78.7			78.7
Effective Green, g (s)	9.3		78.7			78.7
Actuated g/C Ratio	0.09		0.79			0.79
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	154		1479			1008
v/s Ratio Prot	c0.03		0.14			
v/s Ratio Perm						c0.37
v/c Ratio	0.36		0.17			0.47
Uniform Delay, d1	42.5		2.6			3.6
Progression Factor	1.00		1.00			0.48
Incremental Delay, d2	1.4		0.3			1.4
Delay (s)	44.0		2.9			3.1
Level of Service	D		A			A
Approach Delay (s)	44.0		2.9			3.1
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			14.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.45			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			64.8%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

6: CR22 & Street A

FTSAT 2030
01-27-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	259	251	3	3	7
Future Volume (Veh/h)	3	259	251	3	3	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	282	273	3	3	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		137				
pX, platoon unblocked						
vC, conflicting volume	276				562	274
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	276				562	274
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1299				490	769
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	285	276	11			
Volume Left	3	0	3			
Volume Right	0	3	8			
cSH	1299	1700	666			
Volume to Capacity	0.00	0.16	0.02			
Queue Length 95th (m)	0.1	0.0	0.4			
Control Delay (s)	0.1	0.0	10.5			
Lane LOS	A		B			
Approach Delay (s)	0.1	0.0	10.5			
Approach LOS			B			
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			26.0%		ICU Level of Service	
Analysis Period (min)			15		A	

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

FTAM 2035
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	1	231	202	73	215	144	525	457	143	161	210	4
Future Volume (veh/h)	1	231	202	73	215	144	525	457	143	161	210	4
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	1	254	222	80	236	158	577	502	157	177	231	4
Approach Volume (veh/h)	477			474			1236			412		
Crossing Volume (veh/h)	488			1080			432			893		
High Capacity (veh/h)	942			583			985			679		
High v/c (veh/h)	0.51			0.81			1.25			0.61		
Low Capacity (veh/h)	762			449			801			532		
Low v/c (veh/h)	0.63			1.06			1.54			0.77		
Intersection Summary												
Maximum v/c High	1.25											
Maximum v/c Low	1.54											
Intersection Capacity Utilization	140.4%			ICU Level of Service					H			

HCM Unsignalized Intersection Capacity Analysis

2: CR10 (Lake St) & Street A

FTAM 2035
01-27-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	26	8	333	9	1	156
Future Volume (Veh/h)	26	8	333	9	1	156
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	29	9	374	10	1	175
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)			204			
pX, platoon unblocked	0.95	0.95			0.95	
vC, conflicting volume	556	379			384	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	508	322			327	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	99			100	
cM capacity (veh/h)	502	689			1184	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	38	384	176			
Volume Left	29	0	1			
Volume Right	9	10	0			
cSH	537	1700	1184			
Volume to Capacity	0.07	0.23	0.00			
Queue Length 95th (m)	1.8	0.0	0.0			
Control Delay (s)	12.2	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	12.2	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay		0.8				
Intersection Capacity Utilization		28.1%		ICU Level of Service		A
Analysis Period (min)		15				

Queues

FTAM 2035

3: CR10 (Lake St) & CR1 (Sandy Hook Rd)

01-27-2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	74	391	950	297	147	79
Future Volume (vph)	74	391	950	297	147	79
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.886				0.953	
Flt Protected	0.992		0.950			
Satd. Flow (prot)	1589	0	1752	1827	1703	0
Flt Permitted	0.992		0.224			
Satd. Flow (perm)	1589	0	413	1827	1703	0
Satd. Flow (RTOR)	232				23	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	11%	4%	3%	4%	6%	7%
Adj. Flow (vph)	83	439	1067	334	165	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	522	0	1067	334	254	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	22.0		10.0	22.0	22.0	
Total Split (s)	24.0		54.0	76.0	22.0	
Total Split (%)	24.0%		54.0%	76.0%	22.0%	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	C-Max	C-Max	
Act Effct Green (s)	18.0		70.0	70.0	16.0	
Actuated g/C Ratio	0.18		0.70	0.70	0.16	
v/c Ratio	1.10		1.15	0.26	0.87	
Control Delay	93.2		100.4	6.1	67.0	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	93.2		100.4	6.1	67.0	
LOS	F		F	A	E	
Approach Delay	93.2			77.9	67.0	
Approach LOS	F			E	E	
Queue Length 50th (m)	~79.3		~237.6	21.9	46.7	

Queues

FTAM 2035

3: CR10 (Lake St) & CR1 (Sandy Hook Rd)

01-27-2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (m)	#142.0		#311.2	32.6	#90.3	
Internal Link Dist (m)	1706.3			148.7	179.9	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	476		931	1278	291	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	1.10		1.15	0.26	0.87	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.15

Intersection Signal Delay: 80.3

Intersection LOS: F

Intersection Capacity Utilization 108.4%

ICU Level of Service G

Analysis Period (min) 15

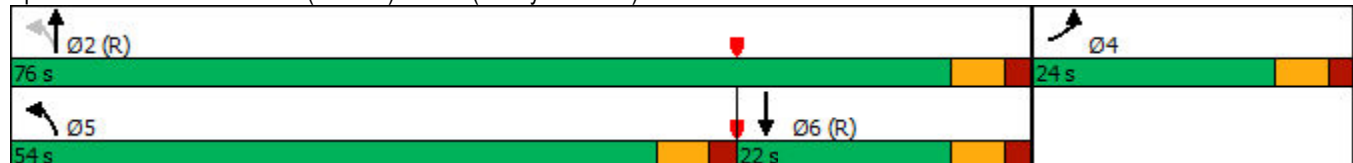
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: CR10 (Lake St) & CR1 (Sandy Hook Rd)



HCM Signalized Intersection Capacity Analysis

3: CR10 (Lake St) & CR1 (Sandy Hook Rd)

FTAM 2035
01-27-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	74	391	950	297	147	79
Future Volume (vph)	74	391	950	297	147	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.89		1.00	1.00	0.95	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1590		1752	1827	1702	
Flt Permitted	0.99		0.22	1.00	1.00	
Satd. Flow (perm)	1590		414	1827	1702	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	83	439	1067	334	165	89
RTOR Reduction (vph)	190	0	0	0	19	0
Lane Group Flow (vph)	332	0	1067	334	235	0
Heavy Vehicles (%)	11%	4%	3%	4%	6%	7%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Actuated Green, G (s)	18.0		70.0	70.0	16.0	
Effective Green, g (s)	18.0		70.0	70.0	16.0	
Actuated g/C Ratio	0.18		0.70	0.70	0.16	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	286		932	1278	272	
v/s Ratio Prot	c0.21		c0.55	0.18	0.14	
v/s Ratio Perm			c0.25			
v/c Ratio	1.16		1.14	0.26	0.86	
Uniform Delay, d1	41.0		20.3	5.5	40.9	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	103.7		77.9	0.5	28.5	
Delay (s)	144.7		98.3	6.0	69.4	
Level of Service	F		F	A	E	
Approach Delay (s)	144.7			76.3	69.4	
Approach LOS	F			E	E	
Intersection Summary						
HCM 2000 Control Delay			91.9		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.19			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			108.4%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

4: CR10/CR10 (Lake St) & Ridge Rd/Street D

FTAM 2035
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	0	49	2	0	35	85	1177	2	15	484	32
Future Volume (Veh/h)	32	0	49	2	0	35	85	1177	2	15	484	32
Sign Control	Stop				Stop				Free			
Grade	0%				0%				0%			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	0	53	2	0	38	92	1279	2	16	526	35
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)							236			173		
pX, platoon unblocked	0.95	0.95	0.95	0.95	0.95	0.93	0.95				0.93	
vC, conflicting volume	2078	2040	544	2092	2057	1280	561				1281	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1993	1954	495	2009	1971	1263	513				1264	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	0	100	90	94	100	80	91				97	
cM capacity (veh/h)	31	54	547	34	52	192	1001				510	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	88	40	1373	577								
Volume Left	35	2	92	16								
Volume Right	53	38	2	35								
cSH	72	156	1001	510								
Volume to Capacity	1.22	0.26	0.09	0.03								
Queue Length 95th (m)	54.4	7.7	2.4	0.8								
Control Delay (s)	275.1	35.8	3.7	0.9								
Lane LOS	F	E	A	A								
Approach Delay (s)	275.1	35.8	3.7	0.9								
Approach LOS	F	E										
Intersection Summary												
Average Delay			15.0									
Intersection Capacity Utilization			116.5%	ICU Level of Service				H				
Analysis Period (min)			15									

Queues
5: CR10 & CR22

FTAM 2035
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	68	1016	216	37	400	140
Future Volume (vph)	68	1016	216	37	400	140
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.873		0.980			
Flt Protected	0.997					0.964
Satd. Flow (prot)	1580	0	1786	0	0	1712
Flt Permitted	0.997					0.548
Satd. Flow (perm)	1580	0	1786	0	0	973
Satd. Flow (RTOR)	592		9			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	5%	5%	0%	7%	7%
Adj. Flow (vph)	78	1168	248	43	460	161
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1246	0	291	0	0	621
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	22.0		22.0		22.0	22.0
Total Split (s)	66.0		84.0		84.0	84.0
Total Split (%)	44.0%		56.0%		56.0%	56.0%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	6.0		6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	60.0		78.0			78.0
Actuated g/C Ratio	0.40		0.52			0.52
v/c Ratio	1.26		0.31			1.23
Control Delay	147.5		21.1			152.6
Queue Delay	0.0		0.0			0.0
Total Delay	147.5		21.1			152.6
LOS	F		C			F
Approach Delay	147.5		21.1			152.6
Approach LOS	F		C			F
Queue Length 50th (m)	~372.3		49.3			~238.9

Queues
5: CR10 & CR22

FTAM 2035
01-27-2025

	↖	↗	↑	↘	↙	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 95th (m)	#428.2		67.1			#299.9
Internal Link Dist (m)	113.0		263.3			211.6
Turn Bay Length (m)	15.0					
Base Capacity (vph)	987		933			505
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	1.26		0.31			1.23

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.26

Intersection Signal Delay: 131.9

Intersection LOS: F

Intersection Capacity Utilization 124.7%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: CR10 & CR22



HCM Signalized Intersection Capacity Analysis

5: CR10 & CR22

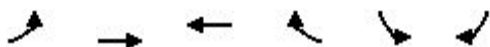
FTAM 2035
01-27-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	68	1016	216	37	400	140
Future Volume (vph)	68	1016	216	37	400	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.87		0.98			1.00
Flt Protected	1.00		1.00			0.96
Satd. Flow (prot)	1580		1786			1712
Flt Permitted	1.00		1.00			0.55
Satd. Flow (perm)	1580		1786			973
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	78	1168	248	43	460	161
RTOR Reduction (vph)	355	0	4	0	0	0
Lane Group Flow (vph)	891	0	287	0	0	621
Heavy Vehicles (%)	0%	5%	5%	0%	7%	7%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	60.0		78.0			78.0
Effective Green, g (s)	60.0		78.0			78.0
Actuated g/C Ratio	0.40		0.52			0.52
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	632		928			505
v/s Ratio Prot	c0.56		0.16			
v/s Ratio Perm						c0.64
v/c Ratio	1.41		0.31			1.23
Uniform Delay, d1	45.0		20.6			36.0
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	193.6		0.9			119.8
Delay (s)	238.6		21.5			155.8
Level of Service	F		C			F
Approach Delay (s)	238.6		21.5			155.8
Approach LOS	F		C			F
Intersection Summary						
HCM 2000 Control Delay			185.5		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.31			
Actuated Cycle Length (s)			150.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			124.7%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

6: CR22 & Street A

FTAM 2035
01-27-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	434	1073	2	6	11
Future Volume (Veh/h)	1	434	1073	2	6	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	472	1166	2	7	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		137				
pX, platoon unblocked						
vC, conflicting volume	1168				1641	1167
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1168				1641	1167
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				94	95
cM capacity (veh/h)	605				111	238
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	473	1168	19			
Volume Left	1	0	7			
Volume Right	0	2	12			
cSH	605	1700	168			
Volume to Capacity	0.00	0.69	0.11			
Queue Length 95th (m)	0.0	0.0	3.0			
Control Delay (s)	0.0	0.0	29.2			
Lane LOS	A		D			
Approach Delay (s)	0.0	0.0	29.2			
Approach LOS			D			
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			66.6%		ICU Level of Service	
Analysis Period (min)			15			
			C			

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

FTPM 2035
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	15	297	554	169	321	247	371	344	115	188	505	8
Future Volume (veh/h)	15	297	554	169	321	247	371	344	115	188	505	8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	16	316	589	180	341	263	395	366	122	200	537	9
Approach Volume (veh/h)	921			784			883			746		
Crossing Volume (veh/h)	917			777			532			916		
High Capacity (veh/h)	666			747			910			667		
High v/c (veh/h)	1.38			1.05			0.97			1.12		
Low Capacity (veh/h)	520			590			734			521		
Low v/c (veh/h)	1.77			1.33			1.20			1.43		
Intersection Summary												
Maximum v/c High	1.38											
Maximum v/c Low	1.77											
Intersection Capacity Utilization	178.4%			ICU Level of Service					H			

HCM Unsignalized Intersection Capacity Analysis

2: CR10 (Lake St) & Street A

FTPM 2035
01-27-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	14	3	296	20	4	392
Future Volume (Veh/h)	14	3	296	20	4	392
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	15	3	315	21	4	417
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)			204			
pX, platoon unblocked	0.93	0.93			0.93	
vC, conflicting volume	750	326			336	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	697	242			253	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			100	
cM capacity (veh/h)	382	748			1236	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	18	336	421			
Volume Left	15	0	4			
Volume Right	3	21	0			
cSH	416	1700	1236			
Volume to Capacity	0.04	0.20	0.00			
Queue Length 95th (m)	1.1	0.0	0.1			
Control Delay (s)	14.1	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	14.1	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay		0.4				
Intersection Capacity Utilization		33.8%		ICU Level of Service		A
Analysis Period (min)		15				

Queues

FTPM 2035

01-27-2025

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	72	1020	711	274	354	81
Future Volume (vph)	72	1020	711	274	354	81
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.874				0.975	
Flt Protected	0.997		0.950			
Satd. Flow (prot)	1635	0	1703	1863	1823	0
Flt Permitted	0.997		0.129			
Satd. Flow (perm)	1635	0	231	1863	1823	0
Satd. Flow (RTOR)	666				10	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	1%	6%	2%	2%	0%
Adj. Flow (vph)	77	1085	756	291	377	86
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1162	0	756	291	463	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	22.0		10.0	22.0	22.0	
Total Split (s)	41.0		38.0	69.0	31.0	
Total Split (%)	37.3%		34.5%	62.7%	28.2%	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	C-Max	C-Max	
Act Effct Green (s)	35.0		63.0	63.0	25.0	
Actuated g/C Ratio	0.32		0.57	0.57	0.23	
v/c Ratio	1.19		1.35	0.27	1.10	
Control Delay	113.6		197.0	12.8	112.5	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	113.6		197.0	12.8	112.5	
LOS	F		F	B	F	
Approach Delay	113.6			145.8	112.5	
Approach LOS	F			F	F	
Queue Length 50th (m)	~208.7		~210.0	31.5	~117.3	

Queues

FTPM 2035

01-27-2025

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (m)	#291.8		#285.9	47.4	#182.5	
Internal Link Dist (m)	1706.3			148.7	179.9	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	974		560	1066	422	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	1.19		1.35	0.27	1.10	

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.35

Intersection Signal Delay: 126.0

Intersection LOS: F

Intersection Capacity Utilization 145.0%

ICU Level of Service H

Analysis Period (min) 15

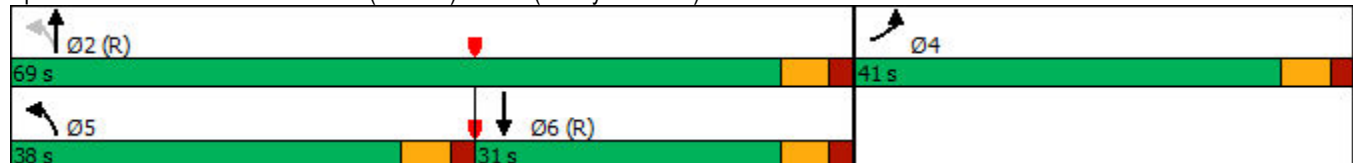
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



HCM Signalized Intersection Capacity Analysis

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

FTPM 2035
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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	72	1020	711	274	354	81
Future Volume (vph)	72	1020	711	274	354	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.87		1.00	1.00	0.97	
Flt Protected	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	1634		1703	1863	1823	
Flt Permitted	1.00		0.13	1.00	1.00	
Satd. Flow (perm)	1634		231	1863	1823	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	77	1085	756	291	377	86
RTOR Reduction (vph)	454	0	0	0	8	0
Lane Group Flow (vph)	708	0	756	291	455	0
Heavy Vehicles (%)	5%	1%	6%	2%	2%	0%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Actuated Green, G (s)	35.0		63.0	63.0	25.0	
Effective Green, g (s)	35.0		63.0	63.0	25.0	
Actuated g/C Ratio	0.32		0.57	0.57	0.23	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	519		560	1066	414	
v/s Ratio Prot	c0.43		c0.39	0.16	0.25	
v/s Ratio Perm			c0.38			
v/c Ratio	1.36		1.35	0.27	1.10	
Uniform Delay, d1	37.5		31.4	11.9	42.5	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	175.9		169.1	0.6	74.0	
Delay (s)	213.4		200.5	12.5	116.5	
Level of Service	F		F	B	F	
Approach Delay (s)	213.4			148.2	116.5	
Approach LOS	F			F	F	
Intersection Summary						
HCM 2000 Control Delay			171.1		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.40			
Actuated Cycle Length (s)			110.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			145.0%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

4: CR10 & Ridge Rd/Street D

FTPM 2035
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	0	85	2	0	21	70	924	4	38	1300	32
Future Volume (Veh/h)	32	0	85	2	0	21	70	924	4	38	1300	32
Sign Control	Stop				Stop				Free			
Grade	0%				0%				0%			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	0	92	2	0	23	76	1004	4	41	1413	35
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)							236			173		
pX, platoon unblocked	0.79	0.79	0.79	0.79	0.79	0.79						
vC, conflicting volume	2694	2672	1430	2762	2688	1006	1448	1008				
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3019	2992	1412	3107	3012	1006	1434	1008				
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1	4.1				
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2	2.2				
p0 queue free %	0	100	31	0	100	92	80	94				
cM capacity (veh/h)	5	8	133	1	8	293	372	687				
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	127	25	1084	1489								
Volume Left	35	2	76	41								
Volume Right	92	23	4	35								
cSH	16	16	372	687								
Volume to Capacity	8.07	1.54	0.20	0.06								
Queue Length 95th (m)	Err	29.3	6.0	1.5								
Control Delay (s)	Err	759.6	9.2	4.4								
Lane LOS	F	F	A	A								
Approach Delay (s)	Err	759.6	9.2	4.4								
Approach LOS	F	F										
Intersection Summary												
Average Delay			479.1									
Intersection Capacity Utilization			101.7%	ICU Level of Service					G			
Analysis Period (min)			15									

Queues
5: CR10 & CR22

FTPM 2035
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	59	750	220	79	1092	260
Future Volume (vph)	59	750	220	79	1092	260
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98					
Frt	0.875		0.964			
Flt Protected	0.996					0.961
Satd. Flow (prot)	1577	0	1779	0	0	1808
Flt Permitted	0.996					0.572
Satd. Flow (perm)	1577	0	1779	0	0	1076
Satd. Flow (RTOR)	622		46			
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	3%	4%	0%	1%	1%
Adj. Flow (vph)	63	806	237	85	1174	280
Shared Lane Traffic (%)						
Lane Group Flow (vph)	869	0	322	0	0	1454
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	22.0		22.0		22.0	22.0
Total Split (s)	22.0		68.0		68.0	68.0
Total Split (%)	24.4%		75.6%		75.6%	75.6%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	6.0		6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effect Green (s)	16.0		62.0			62.0
Actuated g/C Ratio	0.18		0.69			0.69
v/c Ratio	1.10		0.26			1.96
Control Delay	74.7		5.1			456.5
Queue Delay	0.0		0.0			0.0
Total Delay	74.7		5.1			456.5
LOS	E		A			F
Approach Delay	74.7		5.1			456.5

Queues
5: CR10 & CR22

FTPM 2035
01-27-2025



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach LOS	E		A			F
Queue Length 50th (m)	~79.3		16.1			~414.4
Queue Length 95th (m)	#153.3		26.4			#495.4
Internal Link Dist (m)	113.0		263.3			211.6
Turn Bay Length (m)	15.0					
Base Capacity (vph)	791		1239			741
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	1.10		0.26			1.96

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.96

Intersection Signal Delay: 276.1

Intersection LOS: F

Intersection Capacity Utilization 155.3%

ICU Level of Service H

Analysis Period (min) 15

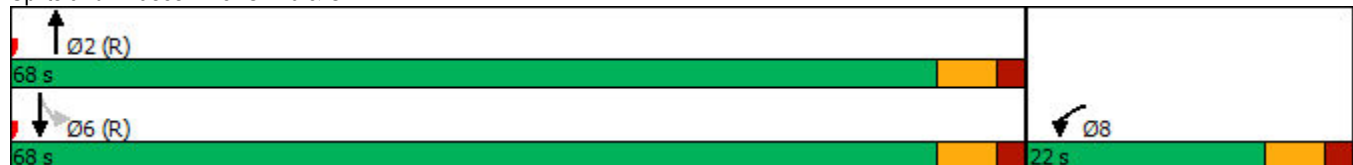
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: CR10 & CR22



HCM Signalized Intersection Capacity Analysis

5: CR10 & CR22

FTPM 2035
01-27-2025

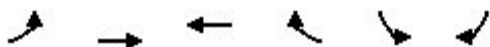
						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	59	750	220	79	1092	260
Future Volume (vph)	59	750	220	79	1092	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		1.00			1.00
Frpb, ped/bikes	0.98		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.87		0.96			1.00
Flt Protected	1.00		1.00			0.96
Satd. Flow (prot)	1577		1780			1808
Flt Permitted	1.00		1.00			0.57
Satd. Flow (perm)	1577		1780			1076
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	63	806	237	85	1174	280
RTOR Reduction (vph)	511	0	14	0	0	0
Lane Group Flow (vph)	358	0	308	0	0	1454
Confl. Peds. (#/hr)		1				
Heavy Vehicles (%)	0%	3%	4%	0%	1%	1%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	16.0		62.0			62.0
Effective Green, g (s)	16.0		62.0			62.0
Actuated g/C Ratio	0.18		0.69			0.69
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	280		1226			741
v/s Ratio Prot	c0.23		0.17			
v/s Ratio Perm						c1.35
v/c Ratio	1.28		0.25			1.96
Uniform Delay, d1	37.0		5.3			14.0
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	149.4		0.5			437.9
Delay (s)	186.4		5.8			451.9
Level of Service	F		A			F
Approach Delay (s)	186.4		5.8			451.9
Approach LOS	F		A			F
Intersection Summary						
HCM 2000 Control Delay			310.4		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.82			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			155.3%		ICU Level of Service	H
Analysis Period (min)			15			

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

6: CR22 & Street A

FTPM 2035
01-27-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	1168	803	6	4	6
Future Volume (Veh/h)	3	1168	803	6	4	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	1270	873	7	4	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		137				
pX, platoon unblocked						
vC, conflicting volume	880				2152	876
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	880				2152	876
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				92	98
cM capacity (veh/h)	777				53	351
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	1273	880	11			
Volume Left	3	0	4			
Volume Right	0	7	7			
cSH	777	1700	116			
Volume to Capacity	0.00	0.52	0.10			
Queue Length 95th (m)	0.1	0.0	2.5			
Control Delay (s)	0.2	0.0	39.3			
Lane LOS	A		E			
Approach Delay (s)	0.2	0.0	39.3			
Approach LOS			E			
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			73.9%		ICU Level of Service	
Analysis Period (min)			15			
			D			

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

FTSAT 2035
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	5	252	487	143	283	156	455	404	112	109	406	7
Future Volume (veh/h)	5	252	487	143	283	156	455	404	112	109	406	7
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	5	255	492	144	286	158	460	408	113	110	410	7
Approach Volume (veh/h)	752			588			981			527		
Crossing Volume (veh/h)	664			873			370			890		
High Capacity (veh/h)	818			691			1035			681		
High v/c (veh/h)	0.92			0.85			0.95			0.77		
Low Capacity (veh/h)	653			541			845			533		
Low v/c (veh/h)	1.15			1.09			1.16			0.99		
Intersection Summary												
Maximum v/c High	0.95											
Maximum v/c Low	1.16											
Intersection Capacity Utilization	170.2%			ICU Level of Service					H			

HCM Unsignalized Intersection Capacity Analysis

2: CR10 (Lake St) & Street A

FTSAT 2035
01-27-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	18	5	314	19	3	278
Future Volume (Veh/h)	18	5	314	19	3	278
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	20	6	357	22	3	316
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)			204			
pX, platoon unblocked	0.93	0.93			0.93	
vC, conflicting volume	690	368			379	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	627	280			291	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	99			100	
cM capacity (veh/h)	417	709			1189	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	26	379	319			
Volume Left	20	0	3			
Volume Right	6	22	0			
cSH	461	1700	1189			
Volume to Capacity	0.06	0.22	0.00			
Queue Length 95th (m)	1.4	0.0	0.1			
Control Delay (s)	13.3	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	13.3	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay		0.5				
Intersection Capacity Utilization		27.7%		ICU Level of Service		A
Analysis Period (min)		15				

Queues

FTSAT 2035

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

01-27-2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	59	871	836	293	240	77
Future Volume (vph)	59	871	836	293	240	77
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.874				0.967	
Flt Protected	0.997		0.950			
Satd. Flow (prot)	1647	0	1805	1900	1772	0
Flt Permitted	0.997		0.160			
Satd. Flow (perm)	1647	0	304	1900	1772	0
Satd. Flow (RTOR)	719				14	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	8%	0%	0%	0%	0%	15%
Adj. Flow (vph)	67	990	950	333	273	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1057	0	950	333	361	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	22.0		10.0	22.0	22.0	
Total Split (s)	32.0		43.0	68.0	25.0	
Total Split (%)	32.0%		43.0%	68.0%	25.0%	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	C-Max	C-Max	
Act Effct Green (s)	26.0		62.0	62.0	19.0	
Actuated g/C Ratio	0.26		0.62	0.62	0.19	
v/c Ratio	1.10		1.28	0.28	1.04	
Control Delay	73.9		157.1	8.8	97.7	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	73.9		157.1	8.8	97.7	
LOS	E		F	A	F	
Approach Delay	73.9			118.6	97.7	
Approach LOS	E			F	F	
Queue Length 50th (m)	~128.9		~234.0	26.8	~77.4	

Queues

FTSAT 2035

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

01-27-2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (m)	#196.8		m#188.8	m25.0	#130.6	
Internal Link Dist (m)	1706.3			148.7	179.9	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	960		743	1178	348	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	1.10		1.28	0.28	1.04	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.28

Intersection Signal Delay: 98.3

Intersection LOS: F

Intersection Capacity Utilization 135.8%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

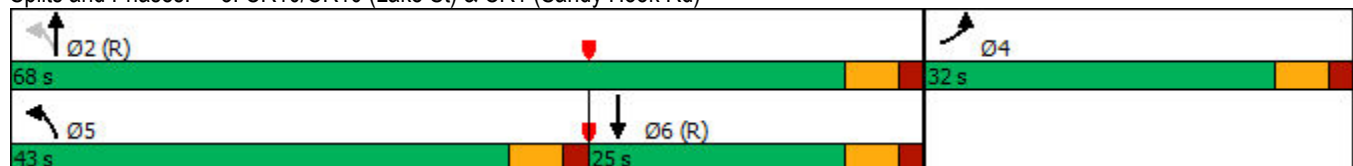
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



HCM Signalized Intersection Capacity Analysis

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

FTSAT 2035
01-27-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	59	871	836	293	240	77
Future Volume (vph)	59	871	836	293	240	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.87		1.00	1.00	0.97	
Flt Protected	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	1646		1805	1900	1773	
Flt Permitted	1.00		0.16	1.00	1.00	
Satd. Flow (perm)	1646		304	1900	1773	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	67	990	950	333	273	88
RTOR Reduction (vph)	532	0	0	0	11	0
Lane Group Flow (vph)	525	0	950	333	350	0
Heavy Vehicles (%)	8%	0%	0%	0%	0%	15%
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Actuated Green, G (s)	26.0		62.0	62.0	19.0	
Effective Green, g (s)	26.0		62.0	62.0	19.0	
Actuated g/C Ratio	0.26		0.62	0.62	0.19	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	427		743	1178	336	
v/s Ratio Prot	c0.32		c0.47	0.18	0.20	
v/s Ratio Perm			c0.32			
v/c Ratio	1.23		1.28	0.28	1.04	
Uniform Delay, d1	37.0		25.5	8.8	40.5	
Progression Factor	1.00		1.22	0.97	1.00	
Incremental Delay, d2	122.3		128.6	0.2	60.1	
Delay (s)	159.3		159.7	8.7	100.6	
Level of Service	F		F	A	F	
Approach Delay (s)	159.3			120.5	100.6	
Approach LOS	F			F	F	
Intersection Summary						
HCM 2000 Control Delay			133.0		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.31			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			135.8%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

4: CR10 & Ridge Rd/Street D

FTSAT 2035
01-27-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	0	76	2	0	24	74	1064	4	30	1044	32
Future Volume (Veh/h)	32	0	76	2	0	24	74	1064	4	30	1044	32
Sign Control	Stop				Stop				Free			
Grade	0%				0%				0%			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	0	83	2	0	26	80	1157	4	33	1135	35
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)							236			173		
pX, platoon unblocked	0.85	0.85	0.84	0.85	0.85	0.98	0.84				0.98	
vC, conflicting volume	2564	2540	1152	2620	2555	1159	1170				1161	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2695	2667	1089	2762	2685	1152	1109				1154	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	0	100	62	65	100	89	85				94	
cM capacity (veh/h)	9	15	221	6	15	236	532				594	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	118	28	1241	1203								
Volume Left	35	2	80	33								
Volume Right	83	26	4	35								
cSH	28	61	532	594								
Volume to Capacity	4.24	0.46	0.15	0.06								
Queue Length 95th (m)	Err	14.3	4.2	1.4								
Control Delay (s)	Err	107.6	6.6	2.3								
Lane LOS	F	F	A	A								
Approach Delay (s)	Err	107.6	6.6	2.3								
Approach LOS	F	F										
Intersection Summary												
Average Delay			460.9									
Intersection Capacity Utilization			110.6%	ICU Level of Service				H				
Analysis Period (min)			15									

Queues
5: CR10 & CR22

FTSAT 2035
01-27-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	61	877	216	52	929	171
Future Volume (vph)	61	877	216	52	929	171
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.874		0.974			
Flt Protected	0.997					0.959
Satd. Flow (prot)	1656	0	1851	0	0	1822
Flt Permitted	0.997					0.564
Satd. Flow (perm)	1656	0	1851	0	0	1072
Satd. Flow (RTOR)	648		27			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	70	1008	248	60	1068	197
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1078	0	308	0	0	1265
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0		4.0	4.0
Minimum Split (s)	22.0		22.0		22.0	22.0
Total Split (s)	26.0		74.0		74.0	74.0
Total Split (%)	26.0%		74.0%		74.0%	74.0%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	6.0		6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	20.0		68.0			68.0
Actuated g/C Ratio	0.20		0.68			0.68
v/c Ratio	1.27		0.24			1.74
Control Delay	146.6		6.1			351.7
Queue Delay	0.0		0.0			0.0
Total Delay	146.6		6.1			351.7
LOS	F		A			F
Approach Delay	146.6		6.1			351.7
Approach LOS	F		A			F
Queue Length 50th (m)	~165.7		19.2			~386.0

Queues
5: CR10 & CR22

FTSAT 2035
01-27-2025

	↖	↗	↑	↘	↙	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 95th (m)	#227.5		28.8			m#353.1
Internal Link Dist (m)	113.0		263.3			211.6
Turn Bay Length (m)						
Base Capacity (vph)	849		1267			728
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	1.27		0.24			1.74

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.74

Intersection Signal Delay: 228.1

Intersection LOS: F

Intersection Capacity Utilization 147.6%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

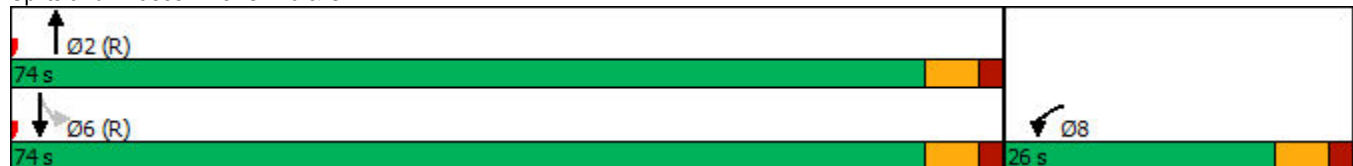
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: CR10 & CR22



HCM Signalized Intersection Capacity Analysis

5: CR10 & CR22

FTSAT 2035
01-27-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	61	877	216	52	929	171
Future Volume (vph)	61	877	216	52	929	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.87		0.97			1.00
Flt Protected	1.00		1.00			0.96
Satd. Flow (prot)	1655		1850			1823
Flt Permitted	1.00		1.00			0.56
Satd. Flow (perm)	1655		1850			1072
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	70	1008	248	60	1068	197
RTOR Reduction (vph)	518	0	9	0	0	0
Lane Group Flow (vph)	560	0	299	0	0	1265
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	20.0		68.0			68.0
Effective Green, g (s)	20.0		68.0			68.0
Actuated g/C Ratio	0.20		0.68			0.68
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	331		1258			728
v/s Ratio Prot	c0.34		0.16			
v/s Ratio Perm						c1.18
v/c Ratio	1.69		0.24			1.74
Uniform Delay, d1	40.0		6.1			16.0
Progression Factor	1.00		1.00			0.66
Incremental Delay, d2	323.6		0.4			333.5
Delay (s)	363.6		6.6			344.0
Level of Service	F		A			F
Approach Delay (s)	363.6		6.6			344.0
Approach LOS	F		A			F
Intersection Summary						
HCM 2000 Control Delay			312.8		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.73			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			147.6%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

6: CR22 & Street A

FTSAT 2035
01-27-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	978	931	3	3	7
Future Volume (Veh/h)	3	978	931	3	3	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	1063	1012	3	3	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		137				
pX, platoon unblocked						
vC, conflicting volume	1015				2082	1014
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1015				2082	1014
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	97
cM capacity (veh/h)	691				59	292
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	1066	1015	11			
Volume Left	3	0	3			
Volume Right	0	3	8			
cSH	691	1700	141			
Volume to Capacity	0.00	0.60	0.08			
Queue Length 95th (m)	0.1	0.0	2.0			
Control Delay (s)	0.1	0.0	32.8			
Lane LOS	A		D			
Approach Delay (s)	0.1	0.0	32.8			
Approach LOS			D			
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			63.9%		ICU Level of Service	
Analysis Period (min)			15		B	

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

FTAM 2035 (Mitigation Measures)

01-28-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	1	231	202	73	215	144	525	457	143	161	210	4
Future Volume (veh/h)	1	231	202	73	215	144	525	457	143	161	210	4
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	1	254	222	80	236	158	577	502	157	177	231	4
Approach Volume (veh/h)	477			474			1236			412		
Crossing Volume (veh/h)	488			1080			432			893		
High Capacity (veh/h)	942			583			985			679		
High v/c (veh/h)	0.51			0.81			1.25			0.61		
Low Capacity (veh/h)	762			449			801			532		
Low v/c (veh/h)	0.63			1.06			1.54			0.77		
Intersection Summary												
Maximum v/c High	1.25											
Maximum v/c Low	1.54											
Intersection Capacity Utilization	140.4%			ICU Level of Service					H			

HCM Unsignalized Intersection Capacity Analysis

2: CR10 (Lake St) & Street A

FTAM 2035 (Mitigation Measures)

01-28-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	26	8	333	9	1	156
Future Volume (Veh/h)	26	8	333	9	1	156
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	29	9	374	10	1	175
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLT			TWLT
Median storage veh			2			2
Upstream signal (m)			204			
pX, platoon unblocked	0.96	0.96			0.96	
vC, conflicting volume	556	379			384	
vC1, stage 1 conf vol	379					
vC2, stage 2 conf vol	177					
vCu, unblocked vol	517	332			337	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	99			100	
cM capacity (veh/h)	652	685			1184	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	38	384	176			
Volume Left	29	0	1			
Volume Right	9	10	0			
cSH	660	1700	1184			
Volume to Capacity	0.06	0.23	0.00			
Queue Length 95th (m)	1.5	0.0	0.0			
Control Delay (s)	10.8	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	10.8	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay		0.7				
Intersection Capacity Utilization		28.1%		ICU Level of Service		A
Analysis Period (min)		15				

Queues

FTAM 2035 (Mitigation Measures)

01-28-2025

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	74	391	950	297	147	79
Future Volume (vph)	74	391	950	297	147	79
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.953	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1626	1553	1752	1827	1703	0
Flt Permitted	0.950		0.313			
Satd. Flow (perm)	1626	1553	577	1827	1703	0
Satd. Flow (RTOR)		418			18	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	11%	4%	3%	4%	6%	7%
Adj. Flow (vph)	83	439	1067	334	165	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	83	439	1067	334	254	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot	pm+ov	pm+pt	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4	2			
Detector Phase	4	5	5	2	6	
Switch Phase						
Minimum Initial (s)	20.0	25.0	25.0	10.0	30.0	
Minimum Split (s)	26.0	31.0	31.0	22.0	36.0	
Total Split (s)	26.0	73.0	73.0	109.0	36.0	
Total Split (%)	19.3%	54.1%	54.1%	80.7%	26.7%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	Max	Max	C-Max	C-Max	
Act Effect Green (s)	20.0	93.0	103.0	103.0	30.0	
Actuated g/C Ratio	0.15	0.69	0.76	0.76	0.22	
v/c Ratio	0.35	0.37	1.04	0.24	0.65	
Control Delay	56.2	1.7	62.2	5.1	52.9	
Queue Delay	0.0	0.0	22.8	0.7	0.0	
Total Delay	56.2	1.7	85.0	5.8	52.9	
LOS	E	A	F	A	D	
Approach Delay	10.4			66.1	52.9	
Approach LOS	B			E	D	
Queue Length 50th (m)	21.2	1.7	~277.7	23.6	60.8	

Queues

FTAM 2035 (Mitigation Measures)

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

01-28-2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (m)	37.7	11.5	#353.9	33.0	90.3	
Internal Link Dist (m)	1706.3			148.7	179.9	
Turn Bay Length (m)	30.0		110.0			
Base Capacity (vph)	240	1199	1023	1393	392	
Starvation Cap Reductn	0	0	137	726	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.35	0.37	1.20	0.50	0.65	

Intersection Summary

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 51.2

Intersection LOS: D

Intersection Capacity Utilization 109.3%

ICU Level of Service H

Analysis Period (min) 15

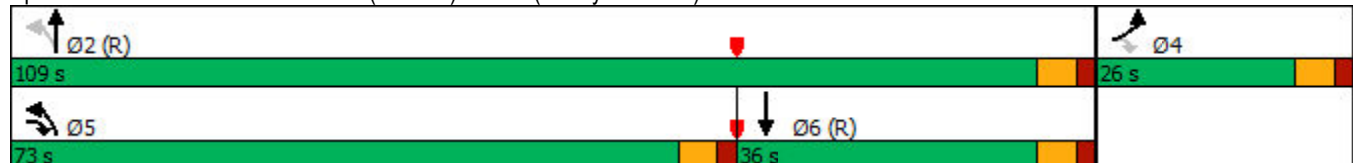
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



HCM Signalized Intersection Capacity Analysis

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

FTAM 2035 (Mitigation Measures)

01-28-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	74	391	950	297	147	79
Future Volume (vph)	74	391	950	297	147	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.95	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1626	1553	1752	1827	1702	
Flt Permitted	0.95	1.00	0.31	1.00	1.00	
Satd. Flow (perm)	1626	1553	578	1827	1702	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	83	439	1067	334	165	89
RTOR Reduction (vph)	0	149	0	0	14	0
Lane Group Flow (vph)	83	290	1067	334	240	0
Heavy Vehicles (%)	11%	4%	3%	4%	6%	7%
Turn Type	Prot	pm+ov	pm+pt	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	20.0	87.0	103.0	103.0	30.0	
Effective Green, g (s)	20.0	87.0	103.0	103.0	30.0	
Actuated g/C Ratio	0.15	0.64	0.76	0.76	0.22	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	240	1069	1023	1393	378	
v/s Ratio Prot	c0.05	0.13	c0.52	0.18	0.14	
v/s Ratio Perm		0.05	c0.28			
v/c Ratio	0.35	0.27	1.04	0.24	0.63	
Uniform Delay, d1	51.6	10.3	22.7	4.6	47.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	0.1	40.0	0.4	7.9	
Delay (s)	52.5	10.5	62.7	5.0	55.4	
Level of Service	D	B	E	A	E	
Approach Delay (s)	17.2			48.9	55.4	
Approach LOS	B			D	E	
Intersection Summary						
HCM 2000 Control Delay			42.1		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.96			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			109.3%		ICU Level of Service	H
Analysis Period (min)			15			
c Critical Lane Group						

Queues

FTAM 2035 (Mitigation Measures)

4: CR10 & Ridge Rd/Street D

01-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	0	49	2	0	35	85	1177	2	15	484	32
Future Volume (vph)	32	0	49	2	0	35	85	1177	2	15	484	32
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.919			0.872						0.991	
Flt Protected		0.981			0.998		0.950			0.950		
Satd. Flow (prot)	0	1679	0	0	1621	0	1770	1863	0	1770	1846	0
Flt Permitted		0.891			0.975		0.406			0.160		
Satd. Flow (perm)	0	1525	0	0	1584	0	756	1863	0	298	1846	0
Satd. Flow (RTOR)		55			55						6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	0	53	2	0	38	92	1279	2	16	526	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	88	0	0	40	0	92	1281	0	16	561	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	25.0		40.0	40.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		8.5	31.0		46.0	46.0	
Total Split (s)	22.0	22.0		22.0	22.0		9.0	128.0		119.0	119.0	
Total Split (%)	14.7%	14.7%		14.7%	14.7%		6.0%	85.3%		79.3%	79.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		4.5	6.0		6.0	6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Act Effect Green (s)		9.4			9.4		130.1	128.6		117.9	117.9	
Actuated g/C Ratio		0.06			0.06		0.87	0.86		0.79	0.79	
v/c Ratio		0.60			0.27		0.13	0.80		0.07	0.39	
Control Delay		45.6			12.4		1.9	7.4		5.1	6.1	
Queue Delay		0.0			0.0		0.0	8.1		0.0	1.5	
Total Delay		45.6			12.4		1.9	15.5		5.1	7.6	
LOS		D			B		A	B		A	A	
Approach Delay		45.6			12.4			14.6			7.5	
Approach LOS		D			B			B			A	
Queue Length 50th (m)		10.2			0.0		3.2	134.0		1.0	45.7	
Queue Length 95th (m)		28.8			7.9		m4.6	m211.8		3.5	73.0	

Queues

FTAM 2035 (Mitigation Measures)

4: CR10 & Ridge Rd/Street D

01-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)	295.1			199.4			211.6			148.7		
Turn Bay Length (m)							40.0			15.0		
Base Capacity (vph)	211			218			697			234		
Starvation Cap Reductn	0			0			0			0		
Spillback Cap Reductn	0			0			0			0		
Storage Cap Reductn	0			0			0			0		
Reduced v/c Ratio	0.42			0.18			0.13			0.07		

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 13.9

Intersection LOS: B

Intersection Capacity Utilization 92.1%

ICU Level of Service F

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: CR10 & Ridge Rd/Street D

								
128 s			22 s			22 s		
								
9 s			119 s			22 s		

HCM Signalized Intersection Capacity Analysis

4: CR10 & Ridge Rd/Street D

FTAM 2035 (Mitigation Measures)

01-28-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	0	49	2	0	35	85	1177	2	15	484	32
Future Volume (vph)	32	0	49	2	0	35	85	1177	2	15	484	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		4.5	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.87		1.00	1.00		1.00	0.99	
Flt Protected		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1678			1620		1770	1862		1770	1845	
Flt Permitted		0.89			0.98		0.41	1.00		0.16	1.00	
Satd. Flow (perm)		1526			1583		755	1862		298	1845	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	0	53	2	0	38	92	1279	2	16	526	35
RTOR Reduction (vph)	0	52	0	0	37	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	36	0	0	3	0	92	1281	0	16	560	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		9.4			9.4		128.6	128.6		117.9	117.9	
Effective Green, g (s)		9.4			9.4		128.6	128.6		117.9	117.9	
Actuated g/C Ratio		0.06			0.06		0.86	0.86		0.79	0.79	
Clearance Time (s)		6.0			6.0		4.5	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		95			99		689	1596		234	1450	
v/s Ratio Prot							0.01	c0.69			0.30	
v/s Ratio Perm		c0.02			0.00		0.11			0.05		
v/c Ratio		0.38			0.03		0.13	0.80		0.07	0.39	
Uniform Delay, d1		67.5			66.0		2.2	4.9		3.6	4.9	
Progression Factor		1.00			1.00		1.07	0.97		1.00	1.00	
Incremental Delay, d2		2.6			0.1		0.0	1.3		0.6	0.8	
Delay (s)		70.1			66.1		2.4	6.0		4.2	5.7	
Level of Service		E			E		A	A		A	A	
Approach Delay (s)		70.1			66.1			5.8			5.7	
Approach LOS		E			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			9.6				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			92.1%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

Queues
5: CR10 & CR22

FTAM 2035 (Mitigation Measures)

01-28-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	68	1016	216	37	400	140
Future Volume (vph)	68	1016	216	37	400	140
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.980			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	1538	1786	0	1687	1776
Flt Permitted	0.950				0.147	
Satd. Flow (perm)	1805	1538	1786	0	261	1776
Satd. Flow (RTOR)		166	5			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	5%	5%	0%	7%	7%
Adj. Flow (vph)	78	1168	248	43	460	161
Shared Lane Traffic (%)						
Lane Group Flow (vph)	78	1168	291	0	460	161
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane	Yes		Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot	pm+ov	NA		pm+pt	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8			6	
Detector Phase	8	1	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	20.0	10.0		20.0	10.0
Minimum Split (s)	22.0	26.0	22.0		26.0	22.0
Total Split (s)	22.0	96.0	32.0		96.0	128.0
Total Split (%)	14.7%	64.0%	21.3%		64.0%	85.3%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	Max	C-Max		Max	C-Max
Act Effct Green (s)	11.7	112.0	26.0		126.3	126.3
Actuated g/C Ratio	0.08	0.75	0.17		0.84	0.84
v/c Ratio	0.55	0.98	0.93		0.41	0.11
Control Delay	80.7	38.2	95.2		14.8	3.4
Queue Delay	0.0	0.8	46.4		0.0	0.0
Total Delay	80.7	38.9	141.6		14.8	3.4
LOS	F	D	F		B	A
Approach Delay	41.5		141.6			11.9
Approach LOS	D		F			B
Queue Length 50th (m)	24.0	287.7	89.5		70.6	6.8

Queues
5: CR10 & CR22

FTAM 2035 (Mitigation Measures)

01-28-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 95th (m)	39.9	#414.8	#138.8		102.1	20.7
Internal Link Dist (m)	113.0		263.3			211.6
Turn Bay Length (m)	40.0				100.0	
Base Capacity (vph)	192	1190	313		1115	1494
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	5	55		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.41	0.99	1.13		0.41	0.11

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 46.5

Intersection LOS: D

Intersection Capacity Utilization 86.5%

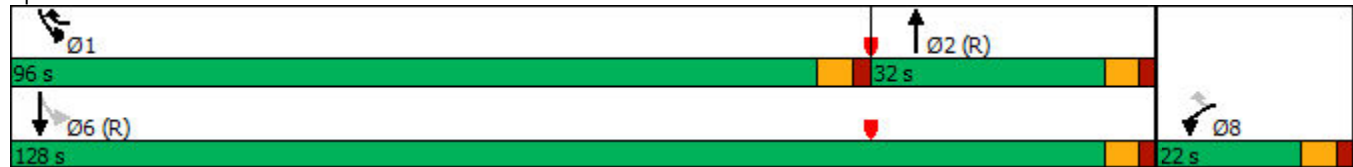
ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: CR10 & CR22



HCM Signalized Intersection Capacity Analysis

5: CR10 & CR22

FTAM 2035 (Mitigation Measures)

01-28-2025

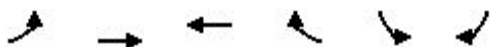
						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	68	1016	216	37	400	140
Future Volume (vph)	68	1016	216	37	400	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	1538	1786		1687	1776
Flt Permitted	0.95	1.00	1.00		0.15	1.00
Satd. Flow (perm)	1805	1538	1786		261	1776
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	78	1168	248	43	460	161
RTOR Reduction (vph)	0	49	4	0	0	0
Lane Group Flow (vph)	78	1119	287	0	460	161
Heavy Vehicles (%)	0%	5%	5%	0%	7%	7%
Turn Type	Prot	pm+ov	NA		pm+pt	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	11.7	106.0	26.0		126.3	126.3
Effective Green, g (s)	11.7	106.0	26.0		126.3	126.3
Actuated g/C Ratio	0.08	0.71	0.17		0.84	0.84
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	140	1148	309		1116	1495
v/s Ratio Prot	0.04	c0.61	c0.16		0.26	0.09
v/s Ratio Perm		0.12			0.09	
v/c Ratio	0.56	0.98	0.93		0.41	0.11
Uniform Delay, d1	66.7	20.8	61.1		8.7	2.1
Progression Factor	1.00	1.00	1.00		1.72	1.42
Incremental Delay, d2	4.7	20.6	35.8		1.1	0.1
Delay (s)	71.4	41.3	96.9		16.1	3.1
Level of Service	E	D	F		B	A
Approach Delay (s)	43.2		96.9			12.7
Approach LOS	D		F			B
Intersection Summary						
HCM 2000 Control Delay			41.7		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.01			
Actuated Cycle Length (s)			150.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			86.5%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

6: CR22 & Street A

FTAM 2035 (Mitigation Measures)

01-28-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰		↰	
Traffic Volume (veh/h)	1	434	1073	2	6	11
Future Volume (Veh/h)	1	434	1073	2	6	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	472	1166	2	7	12
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLT	TL			
Median storage (veh)		2	2			
Upstream signal (m)		137				
pX, platoon unblocked						
vC, conflicting volume	1168				1641	1167
vC1, stage 1 conf vol					1167	
vC2, stage 2 conf vol					474	
vCu, unblocked vol	1168				1641	1167
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	95
cM capacity (veh/h)	605				276	238
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	473	1168	19			
Volume Left	1	0	7			
Volume Right	0	2	12			
cSH	605	1700	251			
Volume to Capacity	0.00	0.69	0.08			
Queue Length 95th (m)	0.0	0.0	2.0			
Control Delay (s)	0.0	0.0	20.5			
Lane LOS	A		C			
Approach Delay (s)	0.0	0.0	20.5			
Approach LOS			C			
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			66.6%	ICU Level of Service		C
Analysis Period (min)			15			

Queues

FTPM 2035 (Mitigation Measures)

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

01-28-2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	72	1020	711	274	354	81
Future Volume (vph)	72	1020	711	274	354	81
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.975	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1719	1599	1703	1863	1823	0
Flt Permitted	0.950		0.098			
Satd. Flow (perm)	1719	1599	176	1863	1823	0
Satd. Flow (RTOR)		161			8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	1%	6%	2%	2%	0%
Adj. Flow (vph)	77	1085	756	291	377	86
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	1085	756	291	463	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot	pm+ov	pm+pt	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4	2			
Detector Phase	4	5	5	2	6	
Switch Phase						
Minimum Initial (s)	20.0	25.0	25.0	10.0	30.0	
Minimum Split (s)	26.0	31.0	31.0	22.0	36.0	
Total Split (s)	26.0	68.0	68.0	109.0	41.0	
Total Split (%)	19.3%	50.4%	50.4%	80.7%	30.4%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	Max	Max	Max	C-Max	C-Max	
Act Effct Green (s)	20.0	88.0	103.0	103.0	35.0	
Actuated g/C Ratio	0.15	0.65	0.76	0.76	0.26	
v/c Ratio	0.30	0.99	0.91	0.20	0.97	
Control Delay	55.0	44.7	43.9	4.9	82.6	
Queue Delay	0.0	0.0	47.0	0.0	0.0	
Total Delay	55.0	44.7	91.0	4.9	82.6	
LOS	D	D	F	A	F	
Approach Delay	45.4			67.0	82.6	
Approach LOS	D			E	F	
Queue Length 50th (m)	19.5	255.5	173.6	20.0	127.3	

Queues

FTPM 2035 (Mitigation Measures)

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

01-28-2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (m)	36.1	#380.3	#260.1	28.7	#198.2	
Internal Link Dist (m)	1706.3			148.7	179.9	
Turn Bay Length (m)	30.0		110.0			
Base Capacity (vph)	254	1098	835	1421	478	
Starvation Cap Reductn	0	0	156	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.30	0.99	1.11	0.20	0.97	

Intersection Summary

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 60.3

Intersection LOS: E

Intersection Capacity Utilization 98.2%

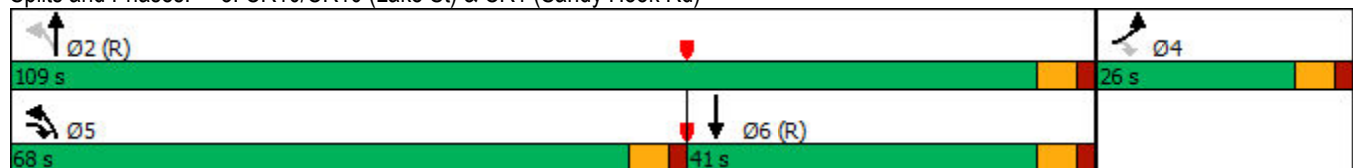
ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



HCM Signalized Intersection Capacity Analysis

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

FTPM 2035 (Mitigation Measures)

01-28-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	72	1020	711	274	354	81
Future Volume (vph)	72	1020	711	274	354	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.97	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1719	1599	1703	1863	1823	
Flt Permitted	0.95	1.00	0.10	1.00	1.00	
Satd. Flow (perm)	1719	1599	175	1863	1823	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	77	1085	756	291	377	86
RTOR Reduction (vph)	0	63	0	0	6	0
Lane Group Flow (vph)	77	1022	756	291	457	0
Heavy Vehicles (%)	5%	1%	6%	2%	2%	0%
Turn Type	Prot	pm+ov	pm+pt	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	20.0	82.0	103.0	103.0	35.0	
Effective Green, g (s)	20.0	82.0	103.0	103.0	35.0	
Actuated g/C Ratio	0.15	0.61	0.76	0.76	0.26	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	254	1042	835	1421	472	
v/s Ratio Prot	0.04	c0.45	0.42	0.16	0.25	
v/s Ratio Perm		0.19	c0.28			
v/c Ratio	0.30	0.98	0.91	0.20	0.97	
Uniform Delay, d1	51.3	25.7	29.2	4.5	49.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.1	23.6	15.2	0.3	34.3	
Delay (s)	54.3	49.3	44.4	4.8	83.7	
Level of Service	D	D	D	A	F	
Approach Delay (s)	49.6			33.4	83.7	
Approach LOS	D			C	F	
Intersection Summary						
HCM 2000 Control Delay			49.2		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.03			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			98.2%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

Queues

FTPM 2035 (Mitigation Measures)

4: CR10 & Ridge Rd/Street D

01-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	0	85	2	0	21	70	924	4	38	1300	32
Future Volume (vph)	32	0	85	2	0	21	70	924	4	38	1300	32
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.902			0.876			0.999			0.996	
Flt Protected		0.986			0.996		0.950			0.950		
Satd. Flow (prot)	0	1657	0	0	1625	0	1770	1861	0	1770	1855	0
Flt Permitted		0.898			0.930		0.033			0.267		
Satd. Flow (perm)	0	1509	0	0	1518	0	61	1861	0	497	1855	0
Satd. Flow (RTOR)		71			55			1			2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	0	92	2	0	23	76	1004	4	41	1413	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	127	0	0	25	0	76	1008	0	41	1448	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	25.0		40.0	40.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		8.5	31.0		46.0	46.0	
Total Split (s)	22.0	22.0		22.0	22.0		9.7	128.0		118.3	118.3	
Total Split (%)	14.7%	14.7%		14.7%	14.7%		6.5%	85.3%		78.9%	78.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		4.5	6.0		6.0	6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Act Effect Green (s)		11.0			11.0		128.5	127.0		116.0	116.0	
Actuated g/C Ratio		0.07			0.07		0.86	0.85		0.77	0.77	
v/c Ratio		0.72			0.15		0.60	0.64		0.11	1.01	
Control Delay		53.0			2.5		39.4	4.2		5.6	44.2	
Queue Delay		0.7			0.0		0.0	0.9		0.0	34.5	
Total Delay		53.7			2.5		39.4	5.0		5.6	78.7	
LOS		D			A		D	A		A	E	
Approach Delay		53.7			2.5			7.5			76.7	
Approach LOS		D			A			A			E	
Queue Length 50th (m)		17.2			0.0		8.3	53.1		2.9	~480.3	
Queue Length 95th (m)		39.8			1.2		m17.4	m86.5		7.1	#576.2	

Queues

FTPM 2035 (Mitigation Measures)

4: CR10 & Ridge Rd/Street D

01-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)	295.1			199.4			211.6			148.7		
Turn Bay Length (m)							40.0			15.0		
Base Capacity (vph)	224			211			126			384		
Starvation Cap Reductn	0			0			0			0		
Spillback Cap Reductn	13			0			0			0		
Storage Cap Reductn	0			0			0			0		
Reduced v/c Ratio	0.60			0.12			0.60			0.11		

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 47.4

Intersection LOS: D

Intersection Capacity Utilization 94.0%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: CR10 & Ridge Rd/Street D

								
Ø2 (R)			Ø4			Ø8		
128 s			22 s			22 s		
								
Ø5			Ø6 (R)			Ø8		
9.7 s			118.3 s			22 s		

HCM Signalized Intersection Capacity Analysis

FTPM 2035 (Mitigation Measures)

4: CR10 & Ridge Rd/Street D

01-28-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	0	85	2	0	21	70	924	4	38	1300	32
Future Volume (vph)	32	0	85	2	0	21	70	924	4	38	1300	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		4.5	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.90			0.88		1.00	1.00		1.00	1.00	
Flt Protected		0.99			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1658			1625		1770	1862		1770	1856	
Flt Permitted		0.90			0.93		0.03	1.00		0.27	1.00	
Satd. Flow (perm)		1509			1517		62	1862		498	1856	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	0	92	2	0	23	76	1004	4	41	1413	35
RTOR Reduction (vph)	0	66	0	0	23	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	61	0	0	2	0	76	1008	0	41	1448	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		11.0			11.0		127.0	127.0		116.0	116.0	
Effective Green, g (s)		11.0			11.0		127.0	127.0		116.0	116.0	
Actuated g/C Ratio		0.07			0.07		0.85	0.85		0.77	0.77	
Clearance Time (s)		6.0			6.0		4.5	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		110			111		126	1576		385	1435	
v/s Ratio Prot							0.03	c0.54			c0.78	
v/s Ratio Perm		c0.04			0.00		0.48			0.08		
v/c Ratio		0.56			0.02		0.60	0.64		0.11	1.01	
Uniform Delay, d1		67.1			64.5		52.6	3.8		4.2	17.0	
Progression Factor		1.00			1.00		1.12	0.62		1.00	1.00	
Incremental Delay, d2		6.0			0.1		5.3	1.3		0.6	25.9	
Delay (s)		73.1			64.5		64.5	3.7		4.8	42.9	
Level of Service		E			E		E	A		A	D	
Approach Delay (s)		73.1			64.5			8.0			41.9	
Approach LOS		E			E			A			D	
Intersection Summary												
HCM 2000 Control Delay		30.0					HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio		0.96										
Actuated Cycle Length (s)		150.0					Sum of lost time (s)			16.5		
Intersection Capacity Utilization		94.0%					ICU Level of Service			F		
Analysis Period (min)		15										
c Critical Lane Group												

Queues
5: CR10 & CR22

FTPM 2035 (Mitigation Measures)

01-28-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	59	750	220	79	1092	260
Future Volume (vph)	59	750	220	79	1092	260
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98				
Frt		0.850	0.964			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	1568	1779	0	1787	1881
Flt Permitted	0.950				0.126	
Satd. Flow (perm)	1805	1529	1779	0	237	1881
Satd. Flow (RTOR)		194	10			
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	3%	4%	0%	1%	1%
Adj. Flow (vph)	63	806	237	85	1174	280
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	806	322	0	1174	280
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane	Yes		Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot	pm+ov	NA		pm+pt	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8			6	
Detector Phase	8	1	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	20.0	10.0		20.0	10.0
Minimum Split (s)	22.0	26.0	22.0		26.0	22.0
Total Split (s)	22.0	95.0	33.0		95.0	128.0
Total Split (%)	14.7%	63.3%	22.0%		63.3%	85.3%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	Max	C-Max		Max	C-Max
Act Effct Green (s)	10.6	106.2	27.0		129.9	131.1
Actuated g/C Ratio	0.07	0.71	0.18		0.87	0.87
v/c Ratio	0.50	0.69	0.98		0.97	0.17
Control Delay	79.5	12.4	103.7		33.5	2.9
Queue Delay	0.0	0.0	0.0		41.1	0.0
Total Delay	79.5	12.4	103.7		74.6	2.9
LOS	E	B	F		E	A
Approach Delay	17.3		103.7			60.8

Queues
5: CR10 & CR22

FTPM 2035 (Mitigation Measures)

01-28-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach LOS	B		F			E
Queue Length 50th (m)	19.4	87.3	98.9		381.3	16.1
Queue Length 95th (m)	35.0	127.2	#164.1		m#384.4	m20.6
Internal Link Dist (m)	113.0		263.3			211.6
Turn Bay Length (m)	40.0				100.0	
Base Capacity (vph)	192	1164	328		1206	1644
Starvation Cap Reductn	0	0	0		221	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.33	0.69	0.98		1.19	0.17

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 51.7

Intersection LOS: D

Intersection Capacity Utilization 105.2%

ICU Level of Service G

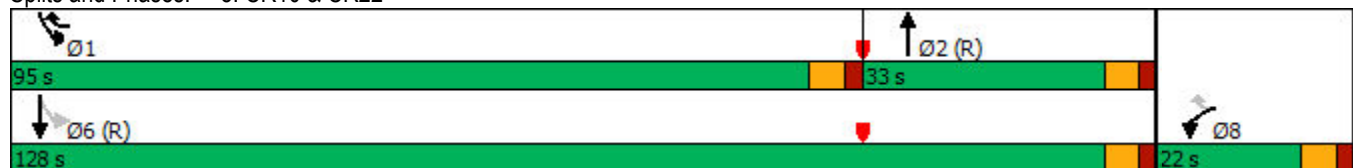
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: CR10 & CR22



HCM Signalized Intersection Capacity Analysis

5: CR10 & CR22

FTPM 2035 (Mitigation Measures)

01-28-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	59	750	220	79	1092	260
Future Volume (vph)	59	750	220	79	1092	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	1565	1780		1787	1881
Flt Permitted	0.95	1.00	1.00		0.13	1.00
Satd. Flow (perm)	1805	1565	1780		237	1881
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	63	806	237	85	1174	280
RTOR Reduction (vph)	0	57	8	0	0	0
Lane Group Flow (vph)	63	749	314	0	1174	280
Confl. Peds. (#/hr)		1				
Heavy Vehicles (%)	0%	3%	4%	0%	1%	1%
Turn Type	Prot	pm+ov	NA		pm+pt	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	9.3	106.2	25.8		128.7	128.7
Effective Green, g (s)	9.3	106.2	25.8		128.7	128.7
Actuated g/C Ratio	0.06	0.71	0.17		0.86	0.86
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	111	1170	306		1204	1613
v/s Ratio Prot	0.03	c0.41	0.18		c0.63	0.15
v/s Ratio Perm		0.07			c0.21	
v/c Ratio	0.57	0.64	1.03		0.98	0.17
Uniform Delay, d1	68.4	11.7	62.1		22.3	1.8
Progression Factor	1.00	1.00	1.00		1.10	1.37
Incremental Delay, d2	6.5	1.2	58.1		8.6	0.1
Delay (s)	74.9	12.9	120.2		33.2	2.5
Level of Service	E	B	F		C	A
Approach Delay (s)	17.4		120.2			27.3
Approach LOS	B		F			C
Intersection Summary						
HCM 2000 Control Delay			35.3		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.99			
Actuated Cycle Length (s)			150.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			105.2%		ICU Level of Service	G
Analysis Period (min)			15			

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

1: CR1 (Sandy Hook Rd) & Hwy 33

FTSAT 2035 (Mitigation Measures)

01-28-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	5	252	487	143	283	156	455	404	112	109	406	7
Future Volume (veh/h)	5	252	487	143	283	156	455	404	112	109	406	7
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	5	255	492	144	286	158	460	408	113	110	410	7
Approach Volume (veh/h)	752			588			981			527		
Crossing Volume (veh/h)	664			873			370			890		
High Capacity (veh/h)	818			691			1035			681		
High v/c (veh/h)	0.92			0.85			0.95			0.77		
Low Capacity (veh/h)	653			541			845			533		
Low v/c (veh/h)	1.15			1.09			1.16			0.99		
Intersection Summary												
Maximum v/c High	0.95											
Maximum v/c Low	1.16											
Intersection Capacity Utilization	170.2%			ICU Level of Service					H			

HCM Unsignalized Intersection Capacity Analysis

2: CR10 (Lake St) & Street A

FTSAT 2035 (Mitigation Measures)

01-28-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	18	5	314	19	3	278
Future Volume (Veh/h)	18	5	314	19	3	278
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	20	6	357	22	3	316
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLT			TWLT
Median storage veh			2			2
Upstream signal (m)			204			
pX, platoon unblocked	0.96	0.96			0.96	
vC, conflicting volume	690	368			379	
vC1, stage 1 conf vol	368					
vC2, stage 2 conf vol	322					
vCu, unblocked vol	654	318			330	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	99			100	
cM capacity (veh/h)	606	696			1189	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	26	379	319			
Volume Left	20	0	3			
Volume Right	6	22	0			
cSH	624	1700	1189			
Volume to Capacity	0.04	0.22	0.00			
Queue Length 95th (m)	1.0	0.0	0.1			
Control Delay (s)	11.0	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	11.0	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			27.7%	ICU Level of Service		A
Analysis Period (min)			15			

Queues

FTSAT 2035 (Mitigation Measures)

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

01-28-2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	59	871	836	293	240	77
Future Volume (vph)	59	871	836	293	240	77
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.967	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1671	1615	1805	1900	1772	0
Flt Permitted	0.950		0.175			
Satd. Flow (perm)	1671	1615	332	1900	1772	0
Satd. Flow (RTOR)		243			11	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	8%	0%	0%	0%	0%	15%
Adj. Flow (vph)	67	990	950	333	273	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	990	950	333	361	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane				Yes	Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot	pm+ov	pm+pt	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4	2			
Detector Phase	4	5	5	2	6	
Switch Phase						
Minimum Initial (s)	20.0	25.0	25.0	10.0	30.0	
Minimum Split (s)	26.0	31.0	31.0	22.0	36.0	
Total Split (s)	26.0	71.0	71.0	109.0	38.0	
Total Split (%)	19.3%	52.6%	52.6%	80.7%	28.1%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	Max	Max	Max	C-Max	C-Max	
Act Effect Green (s)	20.0	91.0	103.0	103.0	32.0	
Actuated g/C Ratio	0.15	0.67	0.76	0.76	0.24	
v/c Ratio	0.27	0.85	0.99	0.23	0.84	
Control Delay	54.4	20.8	52.9	5.0	66.1	
Queue Delay	0.0	0.0	38.3	0.7	0.0	
Total Delay	54.4	20.8	91.2	5.7	66.1	
LOS	D	C	F	A	E	
Approach Delay	22.9			69.0	66.1	
Approach LOS	C			E	E	
Queue Length 50th (m)	16.9	155.0	226.3	23.4	94.6	

Queues

FTSAT 2035 (Mitigation Measures)

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

01-28-2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (m)	31.6	221.4	#314.1	32.1	#140.3	
Internal Link Dist (m)	1706.3			148.7	179.9	
Turn Bay Length (m)	30.0		110.0			
Base Capacity (vph)	247	1167	962	1449	428	
Starvation Cap Reductn	0	0	169	779	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.27	0.85	1.20	0.50	0.84	

Intersection Summary

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 50.6

Intersection LOS: D

Intersection Capacity Utilization 103.0%

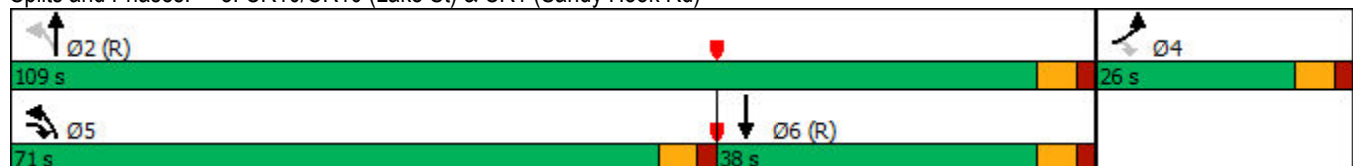
ICU Level of Service G

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)



HCM Signalized Intersection Capacity Analysis

3: CR10/CR10 (Lake St) & CR1 (Sandy Hook Rd)

FTSAT 2035 (Mitigation Measures)

01-28-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	59	871	836	293	240	77
Future Volume (vph)	59	871	836	293	240	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.97	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1671	1615	1805	1900	1773	
Flt Permitted	0.95	1.00	0.17	1.00	1.00	
Satd. Flow (perm)	1671	1615	332	1900	1773	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	67	990	950	333	273	88
RTOR Reduction (vph)	0	90	0	0	8	0
Lane Group Flow (vph)	67	900	950	333	353	0
Heavy Vehicles (%)	8%	0%	0%	0%	0%	15%
Turn Type	Prot	pm+ov	pm+pt	NA	NA	
Protected Phases	4	5	5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	20.0	85.0	103.0	103.0	32.0	
Effective Green, g (s)	20.0	85.0	103.0	103.0	32.0	
Actuated g/C Ratio	0.15	0.63	0.76	0.76	0.24	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	247	1088	962	1449	420	
v/s Ratio Prot	0.04	c0.40	c0.48	0.18	0.20	
v/s Ratio Perm		0.16	c0.28			
v/c Ratio	0.27	0.83	0.99	0.23	0.84	
Uniform Delay, d1	51.0	19.3	27.6	4.6	49.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.7	7.2	26.2	0.4	18.0	
Delay (s)	53.7	26.6	53.8	5.0	67.0	
Level of Service	D	C	D	A	E	
Approach Delay (s)	28.3			41.1	67.0	
Approach LOS	C			D	E	
Intersection Summary						
HCM 2000 Control Delay			39.6		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.01			
Actuated Cycle Length (s)			135.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			103.0%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						

Queues

FTSAT 2035 (Mitigation Measures)

4: CR10 & Ridge Rd/Street D

01-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	0	76	2	0	24	74	1064	4	30	1044	32
Future Volume (vph)	32	0	76	2	0	24	74	1064	4	30	1044	32
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.905			0.875			0.999			0.996	
Flt Protected		0.985			0.996		0.950			0.950		
Satd. Flow (prot)	0	1660	0	0	1623	0	1770	1861	0	1770	1855	0
Flt Permitted		0.890			0.948		0.127			0.203		
Satd. Flow (perm)	0	1500	0	0	1545	0	237	1861	0	378	1855	0
Satd. Flow (RTOR)		64			55							3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	0	83	2	0	26	80	1157	4	33	1135	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	118	0	0	28	0	80	1161	0	33	1170	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	25.0		40.0	40.0	
Minimum Split (s)	22.0	22.0		22.0	22.0		8.5	31.0		46.0	46.0	
Total Split (s)	22.0	22.0		22.0	22.0		10.0	128.0		118.0	118.0	
Total Split (%)	14.7%	14.7%		14.7%	14.7%		6.7%	85.3%		78.7%	78.7%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		1.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		4.5	6.0		6.0	6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Act Effect Green (s)		10.9			10.9		128.6	127.1		116.4	116.4	
Actuated g/C Ratio		0.07			0.07		0.86	0.85		0.78	0.78	
v/c Ratio		0.70			0.17		0.30	0.74		0.11	0.81	
Control Delay		53.5			4.8		3.4	6.2		5.9	17.0	
Queue Delay		0.6			0.0		0.0	1.5		0.0	48.5	
Total Delay		54.1			4.8		3.4	7.7		5.9	65.5	
LOS		D			A		A	A		A	E	
Approach Delay		54.1			4.8			7.4			63.8	
Approach LOS		D			A			A			E	
Queue Length 50th (m)		16.6			0.0		2.3	71.6		2.3	197.0	
Queue Length 95th (m)		38.3			2.6		m5.0	194.0		6.2	309.5	

Queues

FTSAT 2035 (Mitigation Measures)

4: CR10 & Ridge Rd/Street D

01-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (m)	295.1			199.4			211.6			148.7		
Turn Bay Length (m)							40.0			15.0		
Base Capacity (vph)	217			213			265			293		
Starvation Cap Reductn	0			0			0			0		
Spillback Cap Reductn	12			0			0			0		
Storage Cap Reductn	0			0			0			0		
Reduced v/c Ratio	0.58			0.13			0.30			0.11		

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 35.7

Intersection LOS: D

Intersection Capacity Utilization 84.6%

ICU Level of Service E

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: CR10 & Ridge Rd/Street D

								
Ø2 (R)			Ø4			Ø6 (R)		
128 s			22 s			22 s		
								
Ø5			Ø8					
10 s			118 s			22 s		

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	0	76	2	0	24	74	1064	4	30	1044	32
Future Volume (vph)	32	0	76	2	0	24	74	1064	4	30	1044	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		4.5	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.91			0.87		1.00	1.00		1.00	1.00	
Flt Protected		0.99			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1661			1623		1770	1862		1770	1854	
Flt Permitted		0.89			0.95		0.13	1.00		0.20	1.00	
Satd. Flow (perm)		1500			1544		237	1862		379	1854	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	0	83	2	0	26	80	1157	4	33	1135	35
RTOR Reduction (vph)	0	59	0	0	26	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	59	0	0	2	0	80	1161	0	33	1169	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		10.9			10.9		127.1	127.1		116.4	116.4	
Effective Green, g (s)		10.9			10.9		127.1	127.1		116.4	116.4	
Actuated g/C Ratio		0.07			0.07		0.85	0.85		0.78	0.78	
Clearance Time (s)		6.0			6.0		4.5	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		109			112		264	1577		294	1438	
v/s Ratio Prot							0.01	c0.62			c0.63	
v/s Ratio Perm		c0.04			0.00		0.24			0.09		
v/c Ratio		0.54			0.02		0.30	0.74		0.11	0.81	
Uniform Delay, d1		67.1			64.6		16.7	4.6		4.1	10.2	
Progression Factor		1.00			1.00		0.97	0.78		1.00	1.00	
Incremental Delay, d2		5.0			0.1		0.3	1.7		0.8	5.1	
Delay (s)		72.2			64.6		16.5	5.3		4.9	15.3	
Level of Service		E			E		B	A		A	B	
Approach Delay (s)		72.2			64.6			6.0			15.0	
Approach LOS		E			E			A			B	
Intersection Summary												
HCM 2000 Control Delay			13.9			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)				16.5		
Intersection Capacity Utilization			84.6%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

Queues
5: CR10 & CR22

FTSAT 2035 (Mitigation Measures)

01-28-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	61	877	216	52	929	171
Future Volume (vph)	61	877	216	52	929	171
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.974			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	1615	1851	0	1805	1900
Flt Permitted	0.950				0.145	
Satd. Flow (perm)	1805	1615	1851	0	276	1900
Satd. Flow (RTOR)		203	7			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	70	1008	248	60	1068	197
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	1008	308	0	1068	197
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane	Yes		Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot	pm+ov	NA		pm+pt	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8			6	
Detector Phase	8	1	2		1	6
Switch Phase						
Minimum Initial (s)	5.0	20.0	10.0		20.0	10.0
Minimum Split (s)	22.0	26.0	22.0		26.0	22.0
Total Split (s)	22.0	93.0	35.0		93.0	128.0
Total Split (%)	14.7%	62.0%	23.3%		62.0%	85.3%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode	None	Max	C-Max		Max	C-Max
Act Effct Green (s)	11.2	109.0	29.0		129.4	130.6
Actuated g/C Ratio	0.07	0.73	0.19		0.86	0.87
v/c Ratio	0.52	0.82	0.85		0.89	0.12
Control Delay	79.9	17.6	78.4		32.2	3.2
Queue Delay	0.0	0.0	8.9		32.5	0.0
Total Delay	79.9	17.7	87.3		64.6	3.2
LOS	E	B	F		E	A
Approach Delay	21.7		87.3			55.0
Approach LOS	C		F			E
Queue Length 50th (m)	21.5	159.7	92.2		328.4	13.3

Queues
5: CR10 & CR22

FTSAT 2035 (Mitigation Measures)

01-28-2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 95th (m)	36.4	210.4	#134.2		#372.9	m17.8
Internal Link Dist (m)	113.0		263.3			211.6
Turn Bay Length (m)	40.0				100.0	
Base Capacity (vph)	192	1229	363		1200	1654
Starvation Cap Reductn	0	0	0		196	0
Spillback Cap Reductn	0	4	36		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.36	0.82	0.94		1.06	0.12

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 45.2

Intersection LOS: D

Intersection Capacity Utilization 85.2%

ICU Level of Service E

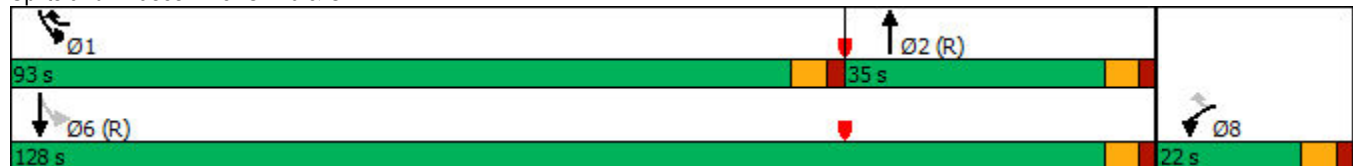
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: CR10 & CR22



HCM Signalized Intersection Capacity Analysis

5: CR10 & CR22

FTSAT 2035 (Mitigation Measures)

01-28-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	61	877	216	52	929	171
Future Volume (vph)	61	877	216	52	929	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	1615	1850		1805	1900
Flt Permitted	0.95	1.00	1.00		0.15	1.00
Satd. Flow (perm)	1805	1615	1850		276	1900
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	70	1008	248	60	1068	197
RTOR Reduction (vph)	0	62	6	0	0	0
Lane Group Flow (vph)	70	946	302	0	1068	197
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot	pm+ov	NA		pm+pt	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	9.8	104.2	27.8		128.2	128.2
Effective Green, g (s)	9.8	104.2	27.8		128.2	128.2
Actuated g/C Ratio	0.07	0.69	0.19		0.85	0.85
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	117	1186	342		1198	1623
v/s Ratio Prot	0.04	c0.50	0.16		c0.56	0.10
v/s Ratio Perm		0.08			c0.20	
v/c Ratio	0.60	0.80	0.88		0.89	0.12
Uniform Delay, d1	68.2	15.7	59.5		19.4	1.8
Progression Factor	1.00	1.00	1.00		1.24	1.47
Incremental Delay, d2	8.0	3.8	26.6		6.7	0.1
Delay (s)	76.2	19.5	86.1		30.8	2.7
Level of Service	E	B	F		C	A
Approach Delay (s)	23.2		86.1			26.4
Approach LOS	C		F			C
Intersection Summary						
HCM 2000 Control Delay			32.0		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.93			
Actuated Cycle Length (s)			150.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			85.2%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

6: CR22 & Street A

FTSAT 2035 (Mitigation Measures)

01-28-2025

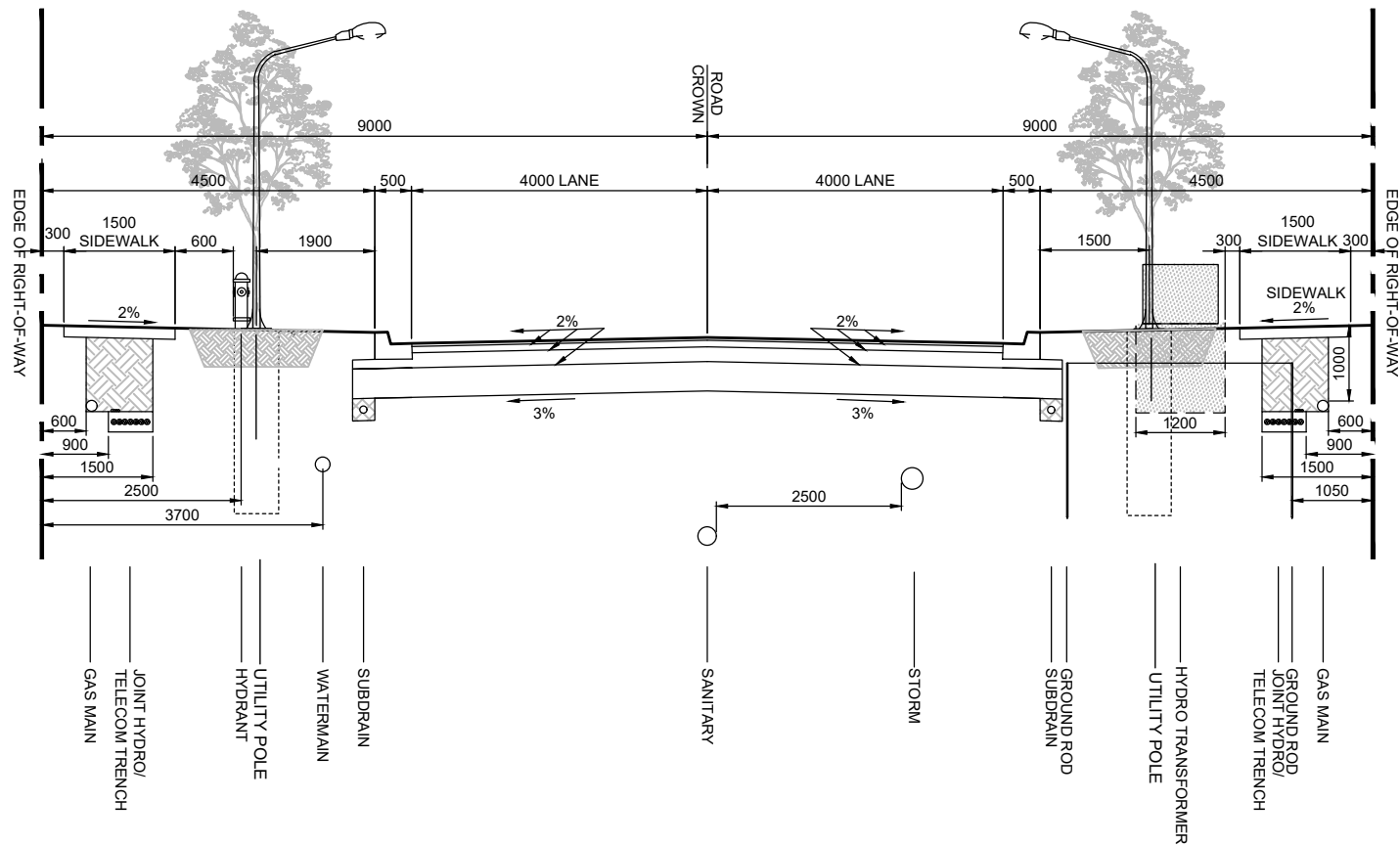


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	978	931	3	3	7
Future Volume (Veh/h)	3	978	931	3	3	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	1063	1012	3	3	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLT	TL			
Median storage veh		2	2			
Upstream signal (m)		137				
pX, platoon unblocked						
vC, conflicting volume	1015				2082	1014
vC1, stage 1 conf vol					1014	
vC2, stage 2 conf vol					1069	
vCu, unblocked vol	1015				2082	1014
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	97
cM capacity (veh/h)	691				242	292
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	1066	1015	11			
Volume Left	3	0	3			
Volume Right	0	3	8			
cSH	691	1700	277			
Volume to Capacity	0.00	0.60	0.04			
Queue Length 95th (m)	0.1	0.0	1.0			
Control Delay (s)	0.1	0.0	18.6			
Lane LOS	A		C			
Approach Delay (s)	0.1	0.0	18.6			
Approach LOS			C			
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			63.9%	ICU Level of Service		B
Analysis Period (min)			15			

Appendix D

Right-Of-Way Cross Sections

(8.5m Laneway, 18.0m Local Road, 20.0m
Local Road)



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
2. WASTEWATER SYSTEMS, STORM WATER SYSTEMS AND WATER SYSTEMS TO BE DESIGNED AS PER ENGINEERING STANDARDS AND GUIDELINES.
3. LIGHT STANDARD AND POLE BASE LOCATION AND DEPTH SHALL BE AS PER ILLUMINATION DESIGN AND CONSULTATION WITH THE DEVELOPMENT ENGINEER.
4. REFER TO TRANSPORTATION SYSTEMS MANUAL FOR PAVEMENT DESIGN METHODOLOGY.
5. TREES SHALL BE AS PER PRINCE EDWARD COUNTY TREE POLICY.



18.0m LOCAL ROAD ROAD ALLOWANCE - RESIDENTIAL 8.0m ASPHALT

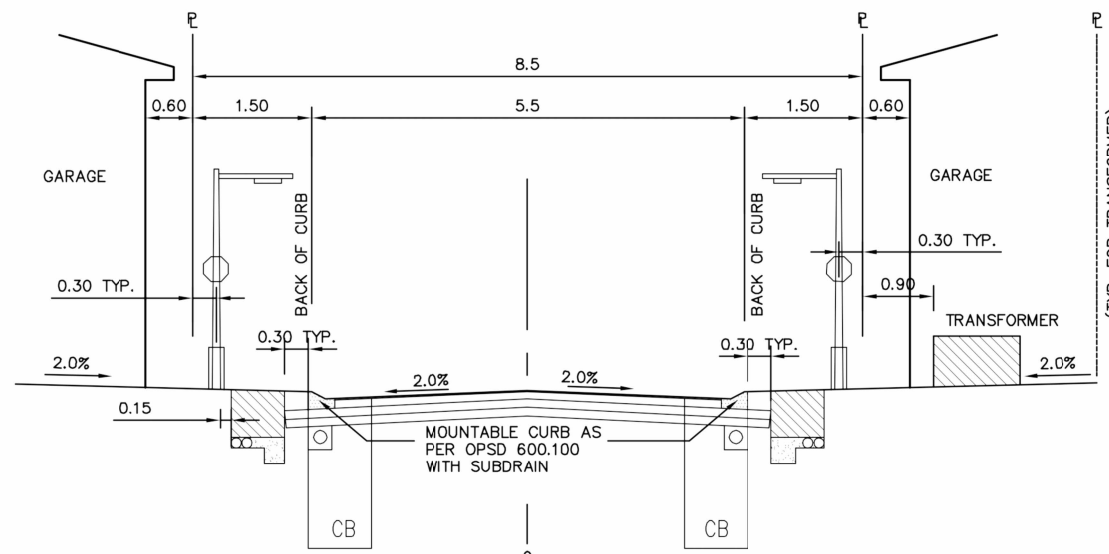
REV No.

1

DATE: JUNE 2022

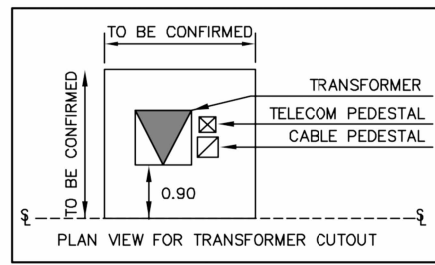
SCALE: N.T.S.

PSD-018



0.00 - PROPERTY LINE
0.60 - SIDEWALK LIGHTS
0.60 - C. J.U.L.T.
1.50 - CURB
4.25 - STORM (WHERE REQUIRED)
1.50 - CURB
0.60 - C. J.U.L.T.
0.30 - SIDEWALK LIGHTS
0.00 - PROPERTY LINE

- NOTES
1. LANE R.O.W. TO BE WIDENED PERIODICALLY TO ACCOMMODATE TRANSFORMERS, SWITCH GEARS AND UTILITY PEDESTALS, AND HYDRANTS WHERE NECESSARY.
 2. WHERE PRACTICAL, BELL AND CABLE TV PEDESTALS TO BE INSTALLED WITHIN TRANSFORMER NOTCHES.
 3. GARAGES TO BE SET BACK MIN. 0.60m FROM STREETLINE. EAVES MAY EXTEND INTO SET BACK, BUT EAVES OR GARAGE FOUNDATION SHALL NOT ENROACH ONTO R.O.W.
 4. PUBLIC LANE LIGHTING TO BE PROVIDED.
 5. PROVIDE FULL DEPTH GRANULAR PAVEMENT STRUCTURE FOR A MINIMUM WIDTH OF 300mm BEHIND EACH CURB.

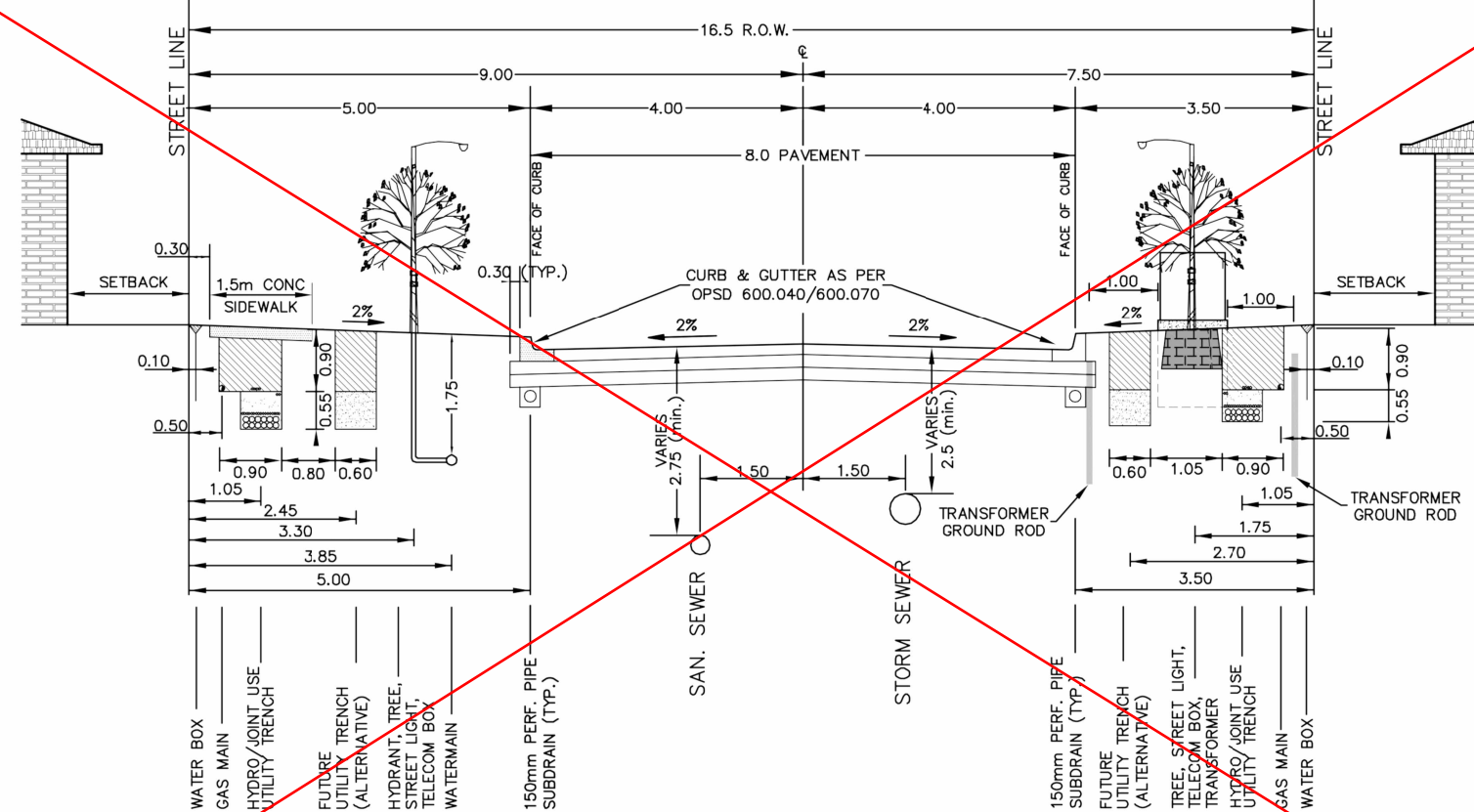


8.5m WIDE RESIDENTIAL LANE
(WITH UTILITIES)

PROJECT No:

FIGURE No:

6.1

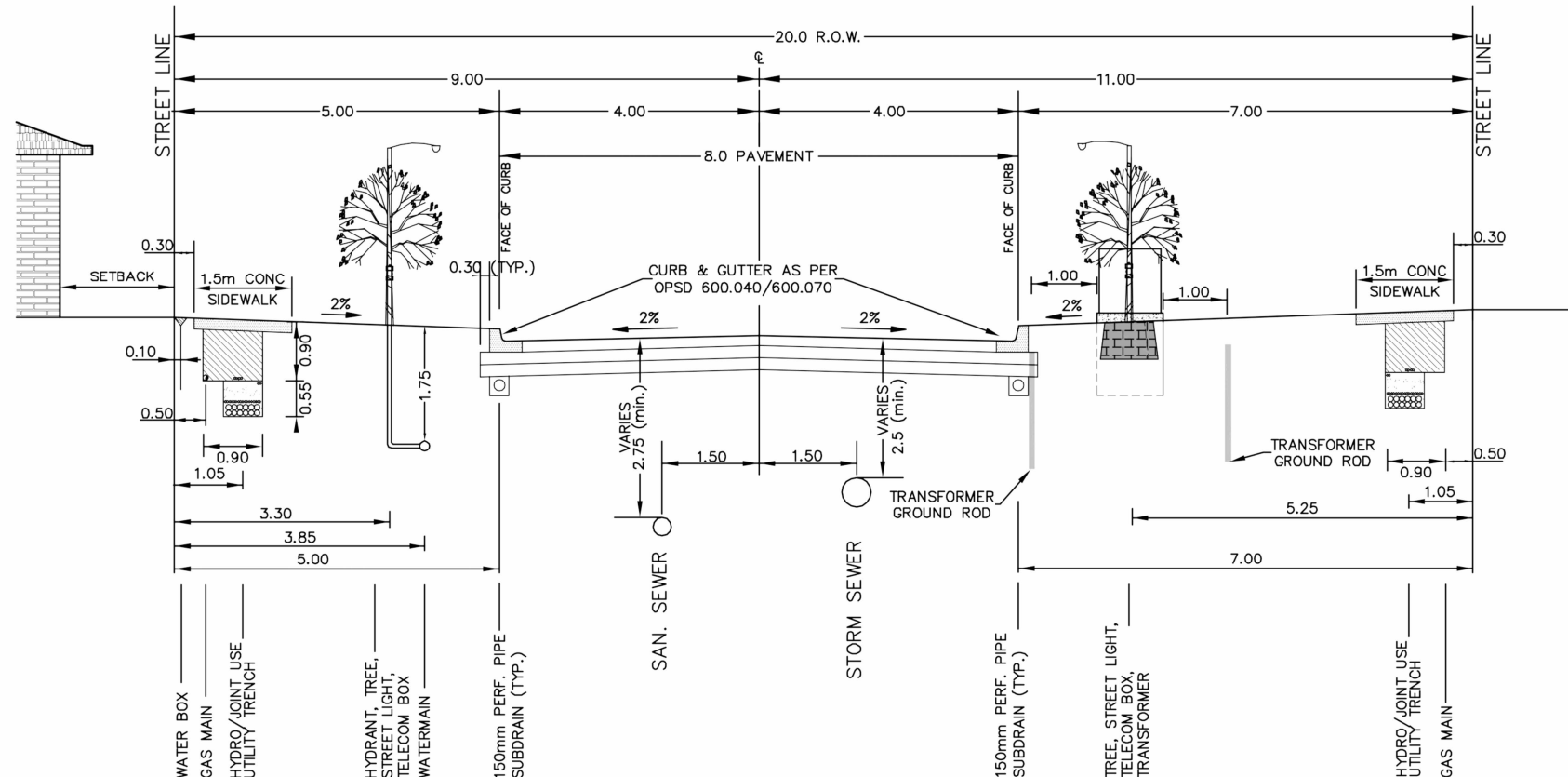


16.5m WIDE RIGHT-OF-WAY
CROSS SECTION

PROJECT No:

FIGURE No:

6.2



20.0m WIDE RIGHT-OF-WAY
CROSS SECTION

PROJECT No:

FIGURE No:

6.3

NOTE:
THESE SECTIONS WERE USED FOR A SUBDIVISION PROJECT IN PRINCE EDWARD COUNTY. ACTUAL SECTIONS MAY VARY BASED ON FUTURE DESIGN.

1. THIS DRAWING IS THE PROPERTY OF THE DESIGNER AND MAY NOT BE USED IN WHOLE OR IN PART FOR ANY PROJECT OTHER THAN THAT DESIGNATED HEREIN.
2. DO NOT SCALE DRAWINGS.
3. CONTRACTOR TO VERIFY JOB SITE, DRAWING DIMENSIONS AND CONDITIONS AND REPORT ANY AND ALL DISCREPANCIES TO THE DESIGNER PRIOR TO CONSTRUCTION.
4. ALL WORK MUST CONFORM TO THE LATEST LOCAL BUILDING CODE, LOCAL BY-LAWS AND NFPA 96.
5. THESE DRAWINGS ARE PROTECTED BY COPYRIGHT.

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Revisions		
No.	Description	Date

HSPM

HOLDINGS INC.

51 OAK AVENUE, RICHMOND HILL, ON L4C 6R5
BETH@HSPMHOLDINGS.COM

Homes First Development Corporation

318 Lake Street

R.O.W. Sections

Project number	22-3
Date	Issue Date
Drawn by	HSPM
Checked by	HSPM

A102

Scale