



Traffic Impact Study

7564 Tenth Line, Proposed Industrial Development

August 2025 | Project # 100658
Prologis



TYLin



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1 INTRODUCTION

1.1 Scope and Objective

T.Y. Lin International Canada Inc. (TYLin) was retained by Prologis to complete a Traffic Impact Study (TIS) in support of the proposed industrial development at 7564 Tenth Line West in the City of Mississauga, within the Region of Peel. The proposed development consists of three buildings:

- Industrial Building DC4 – 26,823 m² GFA
- Industrial Building DC5 – 30,503 m² GFA
- Data Centre – 20,338 m² GFA

The proposed development is proposed to include a total of 536 parking spaces, inclusive of 20 accessible parking spaces and 45 electric vehicle (EV) spaces.

The purpose of this study is to evaluate the potential transportation impacts associated with the proposed development and to ensure the site design complies with applicable municipal, regional, and provincial standards. The specific objectives are to:

- ▶ Determine the anticipated traffic volumes generated by the proposed development during the weekday AM and PM peak periods.
- ▶ Assess the impacts of the site-generated traffic on the existing and future roadway network for the 2032 and 2037 horizon years.
- ▶ Confirm that the site plan, access configuration, and on-site circulation meet the applicable City of Mississauga and Region of Peel standards, as well as the Transportation Association of Canada (TAC) guidelines, including:
- ▶ AutoTURN vehicle maneuvering analysis for passenger vehicles, emergency service vehicles, waste collection vehicles, and WB-20 tractor-semitrailers.
- ▶ Review of access location, width, curb radii, corner clearance, intersection spacing, and intersection angle.
- ▶ Sightline assessment at key internal intersections in accordance with municipal and Transportation Association of Canada (TAC) guidelines.
- ▶ Prepare a Transportation Demand Management (TDM) Plan in alignment with the City of Mississauga's sustainable transportation objectives.
- ▶ Conduct a parking and loading review to confirm that site provisions meet the City's Zoning By-law requirements.

A detailed scope of work was submitted by TYLin to the City of Mississauga, the Region of Peel, and



the Ontario Ministry of Transportation (MTO) for review and comment. The approved pre-consultation checklist and the City of Mississauga's certification form are provided in Appendix A.

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2 SITE CHARACTERISTICS

2.1 Study Environment

The subject site is located within the City of Mississauga, the Region of Peel, on the southwest side of Tenth Line West, northeast of Ninth Line, north of Argentia Road, and south of Highways 401 and 407.

The latest iteration of the site plan includes three buildings:

- Industrial Building DC4 – 26,823 m² GFA
- Industrial Building DC5 – 30,503 m² GFA
- Data Centre – 20,338 m² GFA

The site plan proposes two access points from Tenth Line West. The northern access will serve the Data Centre, while the southern access will be provided through an easement with the property to the south, via an extension of the existing laneway. A total of 536 parking spaces are proposed, including 20 accessible spaces and 45 electric vehicle (EV) spaces. The proposed development site and surrounding road network are illustrated in Figure 2-1.

Figure 2-1 Site Location



Source: Google Earth

2.2 Development Context

The proposed development consists of two industrial buildings and one data centre. The industrial component is located within Block A, which has a total area of 120,735.87 m². Within Block A:

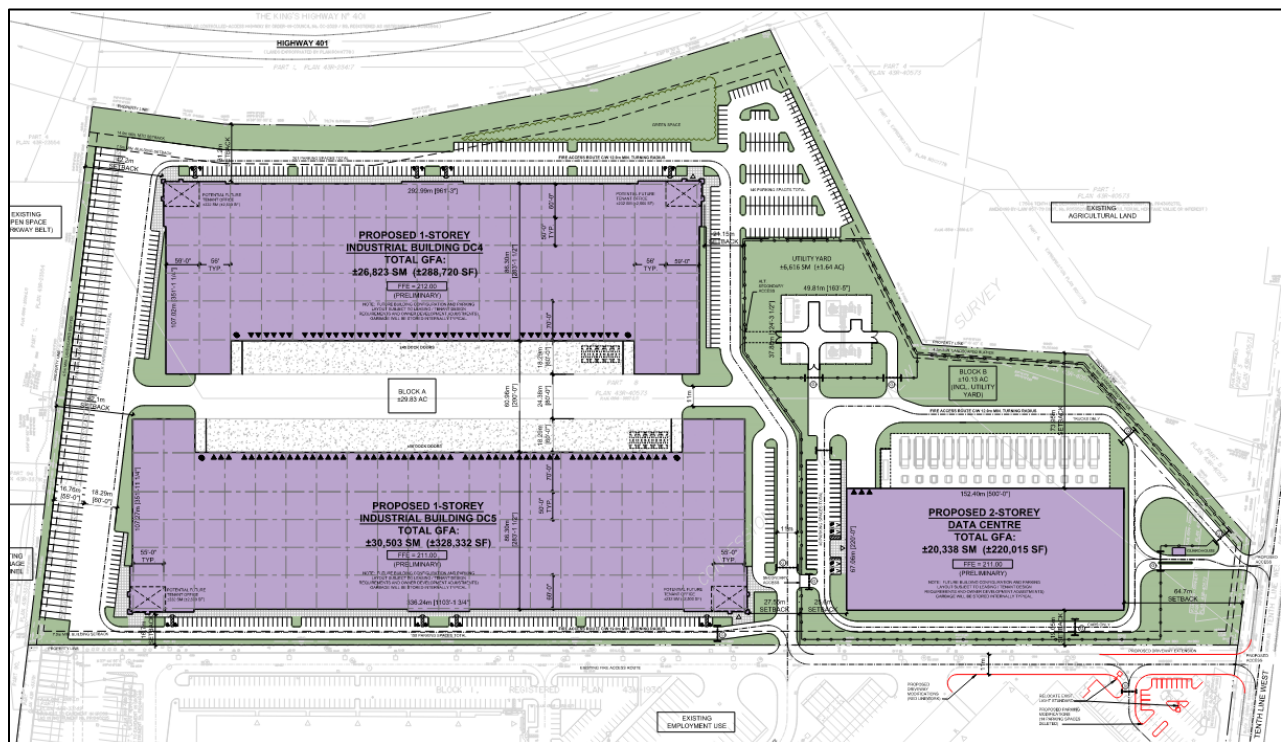
- Industrial Building DC4 occupies approximately 26,823 m² GFA.
- Industrial Building DC5 occupies approximately 30,503 m² GFA.

Block B is designated for the Data Centre and has a total site area of 40,981.79 m², with a building GFA of 20,338 m² (10,219 m² per floor over two floors).

The site includes two access points from Tenth Line West. The northern access is dedicated to the Data Centre, while the southern access will be provided via an easement over the adjacent property to the south, extending the existing laneway.

The proposed draft site plan, showing the development layout and access points, is illustrated in Figure 2-2. The full site plan is provided in Appendix B.

Figure 2-2 Site Plan



2.3 Study Area Intersections

The following intersections have been included in the study area:

Existing Intersections

- ▶ Winston Churchill Boulevard & Highway 401 Eastbound Ramp Terminal (Signalized)
- ▶ Winston Churchill Boulevard & Highway 401 Westbound Ramp Terminal (Signalized)
- ▶ Winston Churchill Boulevard & Argentia Road (Signalized)
- ▶ Derry Road & Highway 407 Northbound Ramp Terminal (Signalized)
- ▶ Derry Road & Highway 407 Southbound Ramp Terminal (Signalized)
- ▶ Argentia Road & Winston Churchill Boulevard (Signalized)
- ▶ Tenth Line West & Argentia Road (Signalized)
- ▶ Ninth Line & Argentia Road (Signalized)

Future Intersections

- ▶ Tenth Line West & North Site Access (Unsignalized)
- ▶ Tenth line West & South Site Access (Unsignalized)

3 EXISTING CONDITIONS

3.1 Road Network

The following describes the existing road network within the study area.

- ▶ **Argentia Road:** is a major collector road under the jurisdiction of the City of Mississauga. Within the study area, it has a three-lane cross section consisting of one travel lane in each direction and a continuous centre two-way left-turn lane between the intersections of Argentia Rd/Nineth Line and Argentia Rd/Tenth Line West. The roadway includes dedicated bike lanes on both sides, sidewalks on both sides, and has a posted speed limit of 60 km/h.
- ▶ **Tenth Line West:** is a north-south major collector road under the jurisdiction of the City of Mississauga. North of the Argentia Road intersection, it ends at a cul-de-sac at Highway 401. Within this area (North of Argentia Road), Tenth Line West is a two-lane undivided roadway with no posted speed limit. According to the Ontario Highway Traffic Act, the default speed limit of 50 km/h applies where no speed limit is posted. There are no sidewalks, bike lanes, or shoulders in this section. South of Argentia Road, Tenth Line West transitions to a two-lane undivided roadway with sidewalks and bike lanes on both sides. The posted speed limit in this section is 50 km/h.
- ▶ **Nineth Line:** is a north-south major arterial road under the jurisdiction of the City of Mississauga, located east of Highway 407. Within the study area, it has a two-lane undivided cross-section including unpaved shoulders and no sidewalks or bike lanes. The road transitions to a paved surface at the highway overpasses crossing Highways 401 and 407, north of the study area. The roadway has a posted speed limit of 60 km/h near its intersection with Argentia Road.
- ▶ **Derry Road West:** is an east-west major arterial road under the jurisdiction of Peel Region and designated as Regional Road 5. Within the study area, it is a four-lane roadway with multi-use paths and sidewalks on both sides. The posted speed limit along Derry Road West is 60 kilometers per hour.
- ▶ **Winston Churchill Boulevard:** is a major arterial road under the jurisdiction of Peel Region and designated as Regional Road 19. It is a six-lane roadway with a posted speed limit of 60 kilometers per hour. Within the study area, it has a center median to separate opposing traffic. North of the intersection between it and Argentia Rd, there are no bike

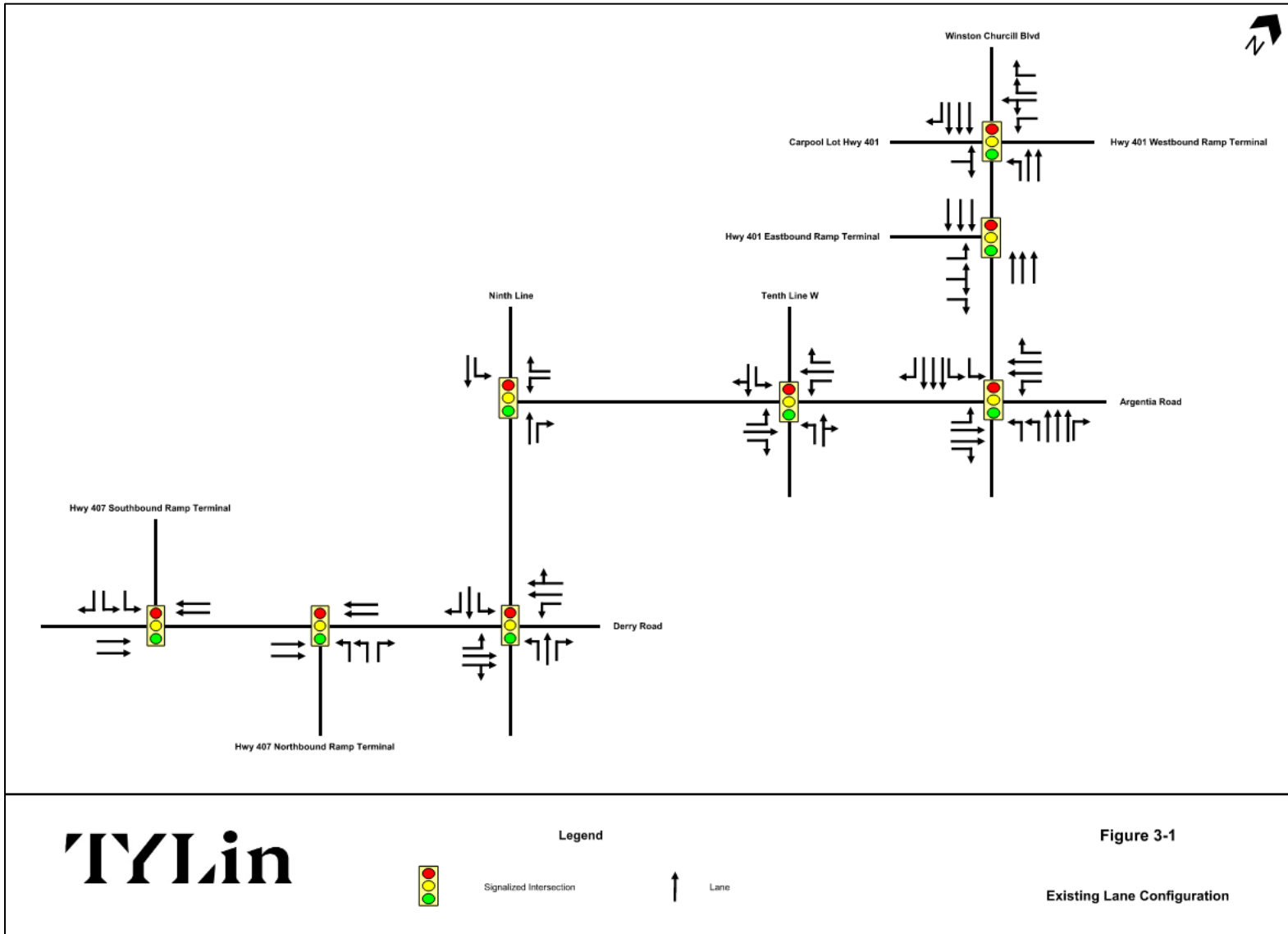
lanes and sidewalks only present on the western side for a short duration. South of the intersection, there are sidewalks and multi-use paths on either side of the road.

- ▶ **Highway 401:** is a provincial freeway under the jurisdiction of the Ministry of Transportation of Ontario (MTO). Within the study area, there are two on-ramps from Winston Churchill Boulevard providing access to eastbound Highway 401, and two on-ramps providing access to westbound Highway 401. Additionally, there is one off-ramp from eastbound Highway 401 and one off-ramp from westbound Highway 401, both connecting to Winston Churchill Boulevard.
- ▶ **Highway 407:** is a privately tolled highway under the jurisdiction of 407 ETR Concession Company Limited. Within the study area, there are two on-ramps from Derry Road providing access to northbound Highway 407, and two on-ramps providing access to southbound Highway 407. Additionally, there is one off-ramp from eastbound Highway 407 and one off-ramp from westbound Highway 407, both providing access to Derry Road.

A lane configuration diagram is provided in Figure 3-1.

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Figure 3-1 Existing Lane Configuration



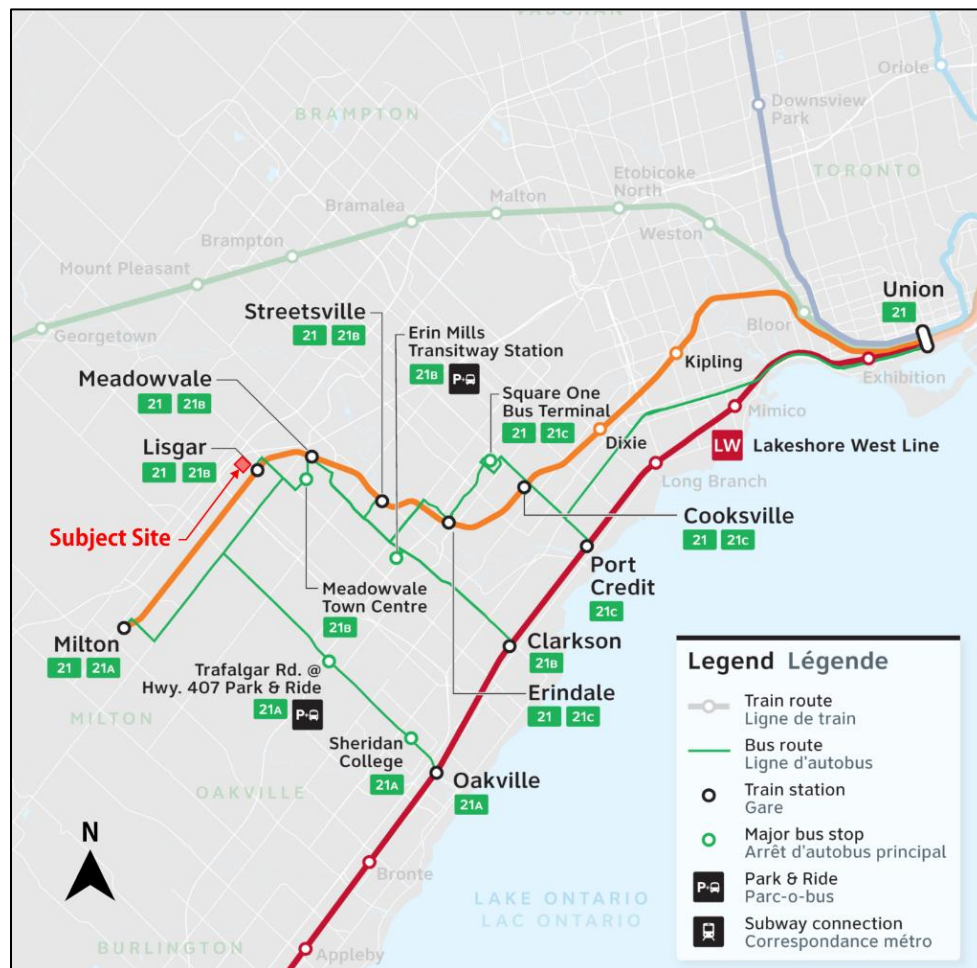
3.2 Transit Network

The subject site is served by GO Regional Rail and Bus transit, Mississauga's MiWay Bus Transit, Brampton Transit Route, and Milton Transit. With many options within a 1 km distance from the proposed site, transit becomes a viable option for people travelling to and from the site.

3.2.1 GO Regional Transit

The closest GO Station to the site is Lisgar GO Station, which is a train and bus station that is located within a 1km radius south of the site access on Tenth Line West. This offers GO Bus and GO Train connections to the routes shown in Figure 3-2

Figure 3-2 GO Transit Network



[Source: Routes & Departures | GO Transit](#)

3.2.2 MiWay (Mississauga) Transit

Within the study area, there are two MiWay municipal bus routes.

- ▶ **MiWay Route 38 (Argentia & Winston Churchill)** operates Monday to Friday throughout the day with approximately 30-minute frequency. The route travels generally a north-south direction between Meadowvale Town Centre in the north and Cooksville GO Station in the south. Within the study area, the route serves stops on Argentia Road and Winston Churchill Boulevard. Route 38 connects to Lisgar GO Station and Brampton Transit Route at the same stop on Argentia Road, less than 1 km from the subjected site.
- ▶ **MiWay Route 43 (Matheson-Argentia)** operates Monday to Friday during peak hours with approximately 45-minute frequency. During the P.M. peak hours, the route generally travels in an east-west direction between SmartCentres Meadowvale in the west and Commerce Boulevard at Renforth Station in the east. During A.M. peak hours, the route generally travels in a north-south direction between SmartCentres Meadowvale in the north and Meadowvale Town Centre in the south. Within the study area, the route serves a single stop at Argentia Road west of Winston Churchill Boulevard approximately 1 km from the subjected site.

Figure 3-3 MiWay Transit Route Near Site



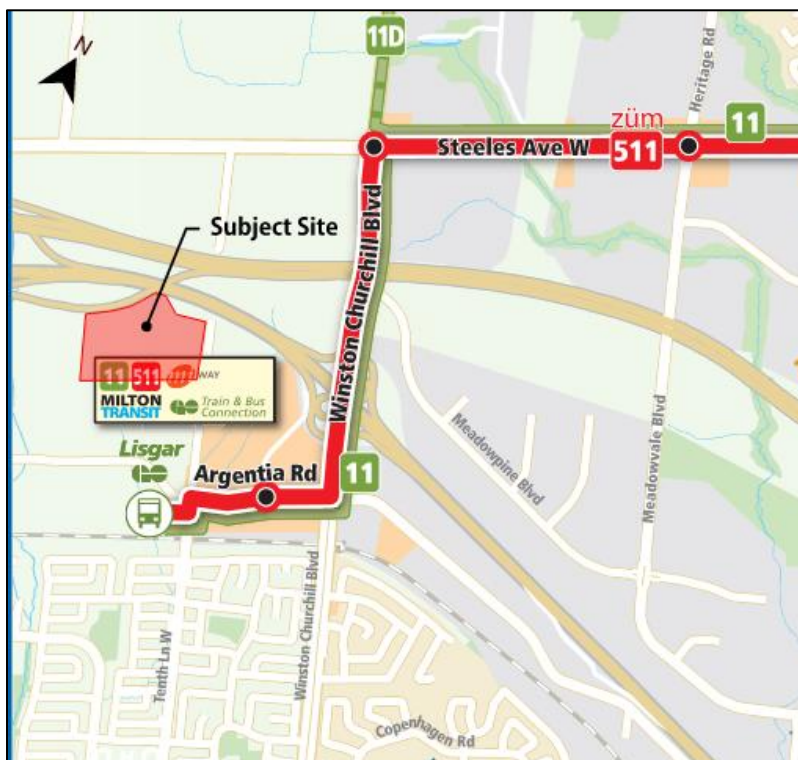
Source: MiWay System Maps

3.2.3 Brampton Transit Route

Within the study area, there are two city of Brampton bus routes. Both bus routes include stops less than 1 km from the subjected site.

- ▶ **Brampton Transit Route 511** operates Monday to Sunday and primarily runs along Steeles Avenue and generally travels in an east-west direction between Lisgar GO in the west and Humber College in the east. It operates at 15 to 20-minute frequency on weekdays and 30-minute frequency on weekends. Within the study area, the route serves one stop along Argentia Road. It connects to Lisgar GO Station, Mississauga's MiWay transit route, and Milton Transit.
- ▶ **Brampton Transit Route 11** operates Monday to Sunday and primarily runs along Steeles Avenue and generally travels in an east-west direction between Lisgar GO in the west and Humber College in the east. Heading west, it operates at 20 to 45-minute frequencies on weekdays and 40 to 55-minute frequencies on weekends. Heading east, it operates at 10 to 23-minutes frequencies on weekdays and 20 to 27-minute frequencies on weekends. Within the study area, the route has stops along Argentia Road and Winston Churchill Boulevard. It connects Mississauga's MiWay transit route, Milton Transit, and Lisgar GO trains and buses.

Figure 3-4 Brampton Transit Route Near Site



[Source: City of Brampton](#) | [Brampton Transit](#) | [iRide School Routes](#)

3.2.4 Milton Transit

Route 21 Steeles is a new addition to the Town of Milton's bus route that generally runs in the east-west direction between Milton GO Station in the west and Lisgar GO Station in the east. From Monday to Sunday, it operates at 35-minute frequency. Within the study area, it services one stop at Lisgar GO.

Figure 3-5 Milton Transit 21 Steeles Route



[Source: Transit Schedules and Routes - Town of Milton](#)

3.3 Pedestrian Routes

Within the vicinity of the proposed site, Argientia Road is the closest roadway to the site with sidewalks on both sides, which will support pedestrian movement within the study area. However, there are no sidewalks on either side of Tenth Line W where the two proposed site accesses are located.

3.4 Cycling Routes

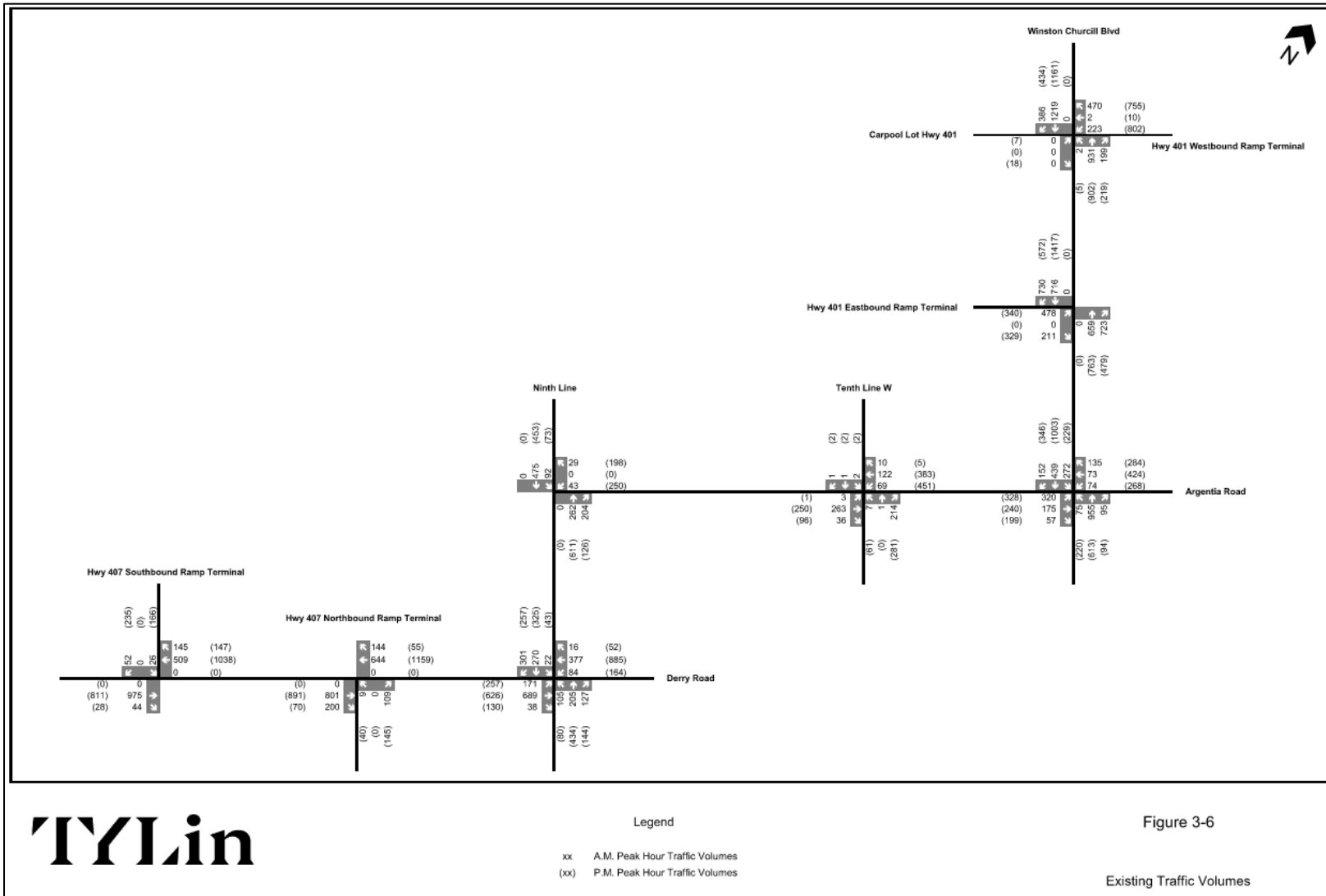
Within the vicinity of the proposed development, there are designated cycling routes on both sides of the road along Argientia Road and on Tenth Line West, south of its intersection with Argientia Road. These routes are marked with pavement markings that separate cyclists from vehicle traffic.

3.5 Existing Traffic Volumes

Traffic Volumes for existing conditions were obtained via turning movement counts (TMC) data commissioned by TYLin and conducted on August 6th, 2025. Due to the industrial nature of the site, its surrounding land uses, and location in relation to institutional buildings, the use of summer counts was proposed and deemed appropriate for the site. Based on coordination with City Staff, and approval of the Terms of Reference (TOR) attached in Appendix A, TYLin used the summer counts to prepare the existing conditions traffic model with traffic volumes as per Figure 3-6 below. All TMC data can be found in Appendix C.

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Figure 3-6 Existing Traffic Volumes



4 FUTURE CONDITIONS

4.1 Background Growth

Future traffic volumes for the 2032 (H1) and 2037 (H2) horizon years were developed by applying compounded annual growth rates to the existing (2025) traffic volumes. Growth rates were obtained from the City of Mississauga and the Region of Peel, based on the jurisdiction of each roadway.

For the 2025 to 2031 period, the growth rates provided by the City of Mississauga take into account the planned widening of Highway 401, which is why rates may appear higher than typical background growth values.

For the 2031 to 2037 period, the growth rates reflect the planned widening of Ninth Line from one through lane in each direction to two through lanes in each direction, resulting in relatively higher rates along Ninth Line compared to other corridors.

Table 4-1 summarizes the annual growth rates applied in the analysis:

Table 4-1 Background Developments

Roadway/ Jurisdiction	Directions	2025-2031 Rate	2031-2037 Rate	Source/Notes
Winston Churchill Boulevard (City)	NB/SB	3.0% AM/PM	1.0% AM 0.5% PM	City of Mississauga
Tenth Line West (City)	NB/SB	1.0% AM/PM	1.0% AM/PM	City of Mississauga
Ninth Line (City)	NB/SB	2.5% AM 2.0% PM	6.5% AM/PM	City of Mississauga
Argentia Road (City)	EB/WB	2.5% AM/PM	2.5% AM/PM	City of Mississauga
Derry Road (Region of Peel) ¹	EB/WB	0.5% AM/PM	0.5% AM/PM	Region of Peel
Highway 401 Ramp Terminals (MTO) ²	EB/WB	1.0% AM/PM	1.0% AM/PM	MTO
Highway 407 Ramp Terminals (407 International inc.) ³	NB/SB	1.0% AM/PM	1.0% AM/PM	407 Internal Inc.

¹ The 0.5% annual growth rate for Derry Road was based on values provided by the Region of Peel in a 2330 & 2360 Argentia Road- Proposed Industrial Development traffic study. The 2031–2041 rate was applied to the 2031–2037 period in this study.

² Highway 401 ramp terminals under MTO jurisdiction, a 1.0% annual growth rate was used as per a review of historical AADT volumes found on iCorridor.

³ Highway 407 ramp terminals under 407 International inc. Jurisdiction, a 1.0% annual growth rate was assumed due to absence of agency provided rates, remaining in line with Highway 401.

The confirmation of these growth rates, along with the correspondence from the agencies, is provided in Appendix A.

4.2 Background Developments

A review of the City of Mississauga's Planning Information Hub and Active Development Applications database confirmed that there are no active development applications within the area of influence of the proposed development site. This was further confirmed through correspondence with reviewing agencies.

4.3 Planned Network Improvements

TYLin is aware of 2 planned network improvements within the Vicinity of the proposed development.

The Proposed Site is within the MTO Area of Interest for the new proposed Highway 413 which is planned to the north of the site. At this time the project is still within the preliminary phase and as such no detailed design has been completed to date. It is our understanding that the proposed construction will not have an impact on the subject site. Timelines for the completion of the project are still unknown at this time and as such the planned Highway 413 is not being considered as part of this TIS.

The City of Mississauga has undergone an EA assessment for the widening of Ninth Line Road. This EA concludes that widening of Ninth Line to the south of Derry Road is warranted from 2 lanes to 4 with timelines subjected to council review. Additionally, the widening of Ninth Line north of the study section, Derry Road intersection to Highway 401 overpass, is proposed with a timeline of 2033. As such TYLin incorporated the proposed widening of Ninth Line north of Derry Road for the background and total 2037 horizon analysis.

Figure 4-1 illustrates the future proposed lane configurations.

4.4 Horizon Years

In accordance with the City of Mississauga's Transportation Impact Study (TIS) Guidelines and the Ministry of Transportation of Ontario (MTO) requirements, the following study horizon years were established for this assessment: Existing Year (2025), 5-Year post buildout Horizon (2032), and 10-Year post buildout Horizon (2037). These horizons provide a basis for evaluating existing conditions, short-term post-buildout impacts, and longer-term traffic operations within the study area.

4.5 Future Background Traffic Volumes

Future background traffic volumes were developed by applying the compounded annual growth rates described in Section 4.1 to the existing (2025) baseline traffic volumes for each study intersection. Growth rates were obtained from the City of Mississauga, the Region of Peel, and the Ministry of Transportation of Ontario (MTO), depending on the jurisdiction of each roadway.

The 2032 (5-year) and 2037 (10-year) background traffic volumes represent the traffic growth anticipated within the study area from the 2025 baseline year, independent of the proposed development. Figure 4-2 presents the 2032 future background weekday AM and PM peak hour traffic volumes, while Figure 4-3 presents the corresponding 2037 future background volumes.

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Figure 4-1 Future Lane Configuration

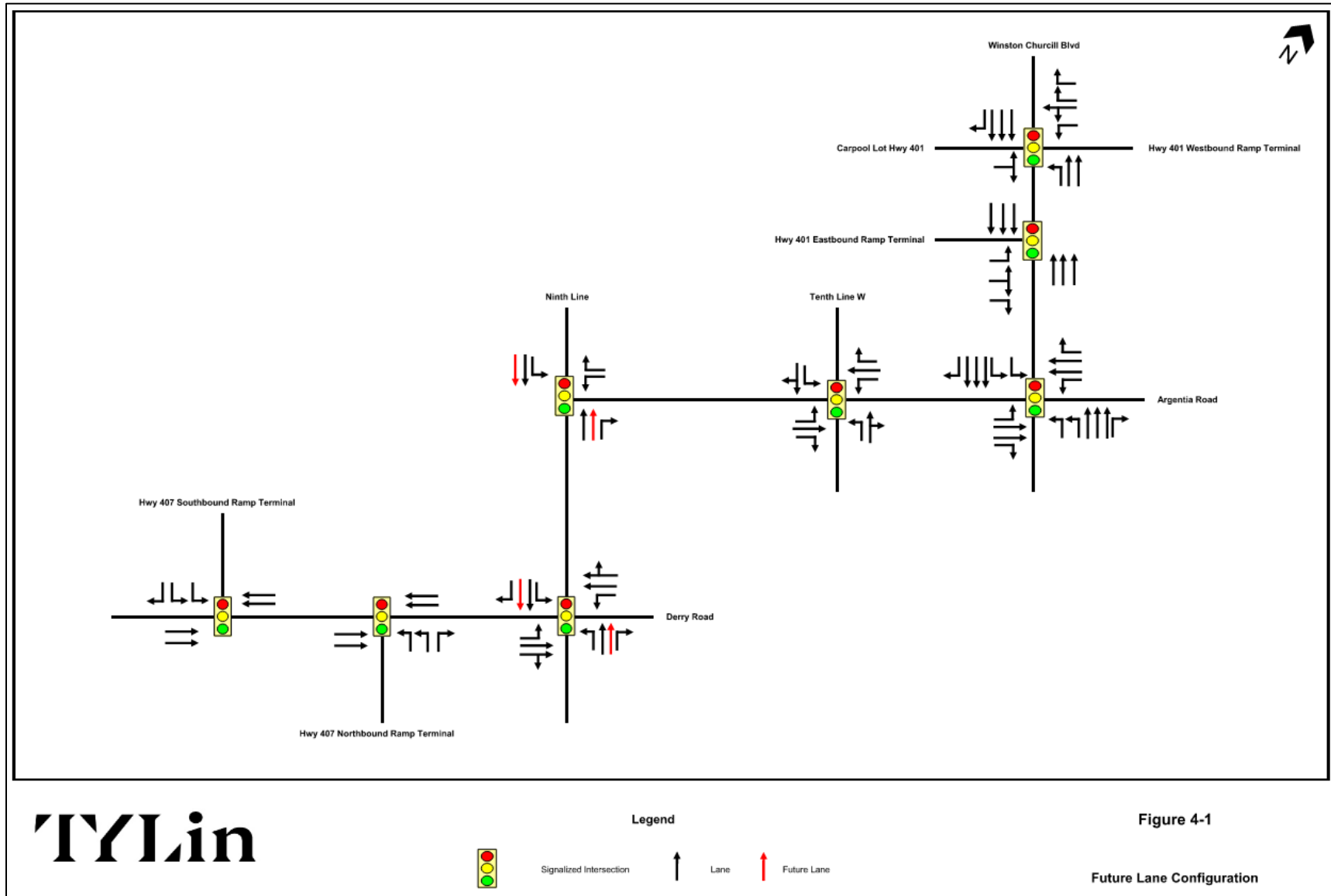


Figure 4-2 Future Background Traffic Volumes-2032

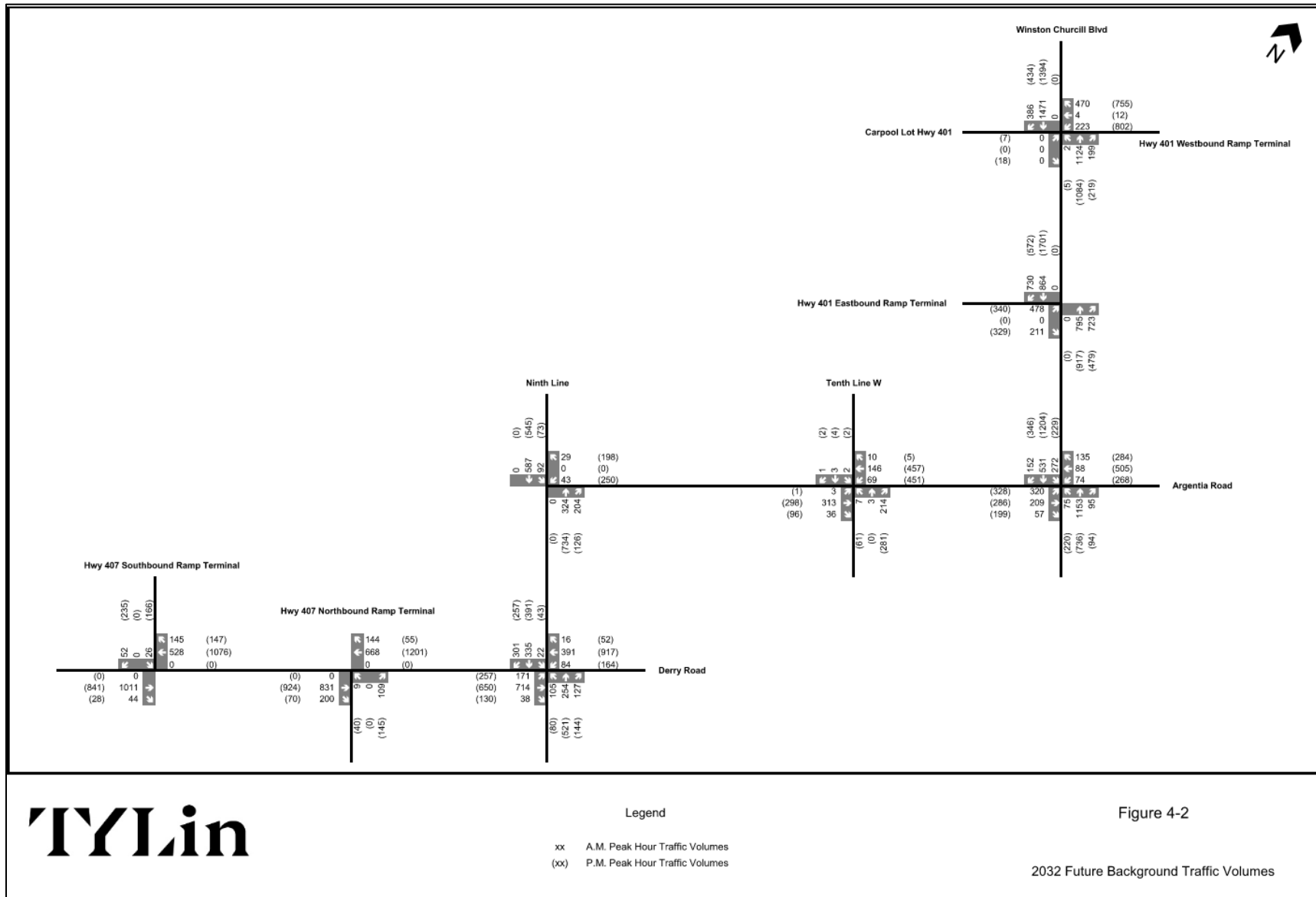
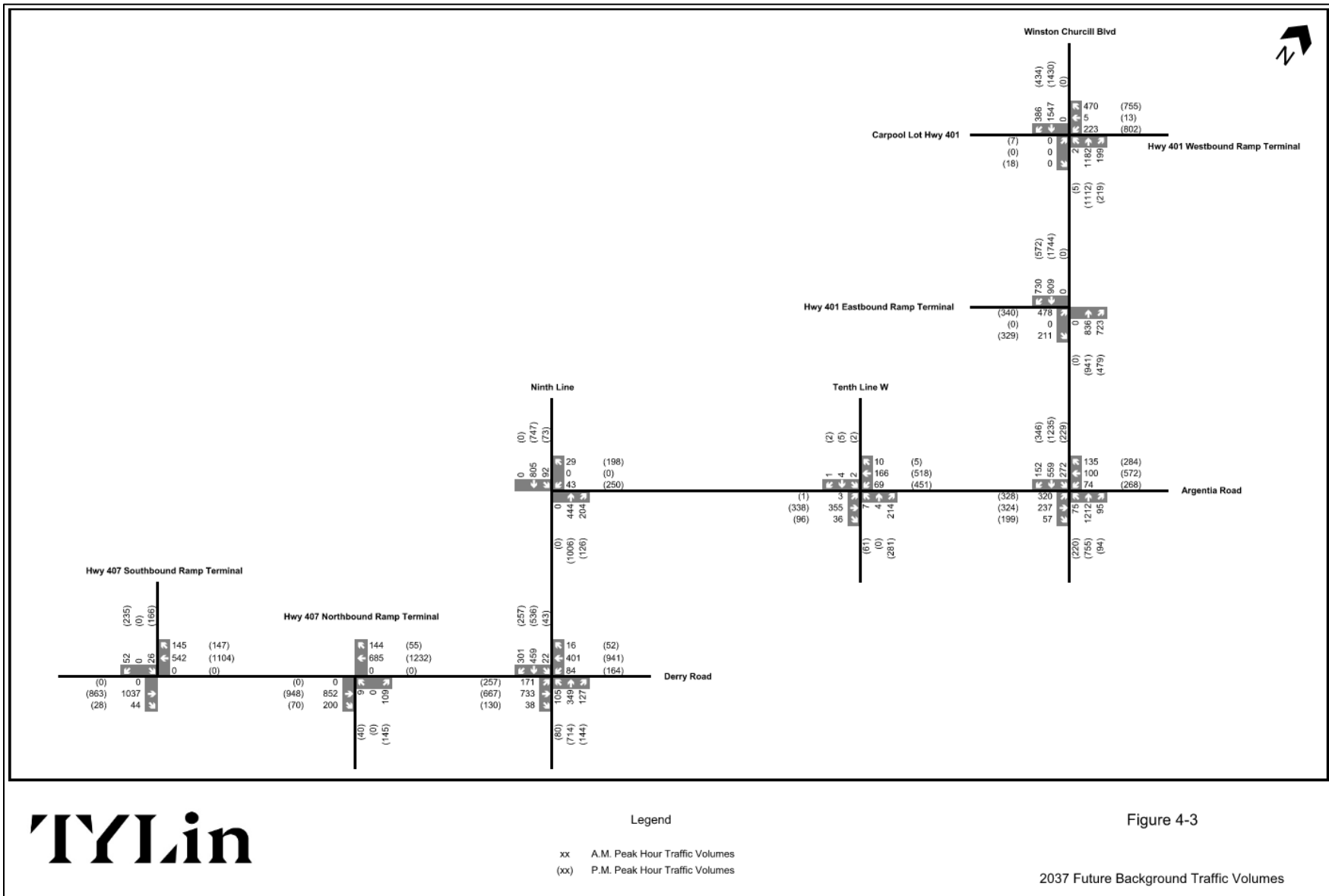


Figure 4-3 Future Background Traffic Volumes-2037



5 FUTURE TOTAL TRAFFIC VOLUMES

5.1 Site Trip Generation

Trip generation was estimated using the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. Based on the latest site plan, the proposed development includes:

- Data Centre: 20,338 m² (220,015 ft²) GFA, 2-storey
- Industrial Building DC4: 26,823 m² (288,720 ft²) GFA, 1-storey
- Industrial Building DC5: 30,503 m² (328,332 ft²) GFA, 1-storey

The total gross floor area (GFA) of the proposed development is 77,664 m² (837,067 ft²). For trip generation:

- The data centre was assessed under ITE Land Use Code (LUC) 160 – Data Centre, which provides peak hour vehicle trip estimates for facilities with primarily employee, maintenance, and service traffic.
- The industrial buildings (DC4 and DC5) were assessed under ITE Land Use Code (LUC) 150 – Warehousing.

Table 5-1 summarizes the estimated weekday AM and PM peak-hour trip generation for each land use based on the fitted curve equations from the ITE Manual, with the corresponding inbound/outbound splits applied.

Table 5-1 Site Trip Generation for Warehouse

Land Use	Parameters	Peak Hour Trip Generation					
		Weekday AM			Weekday PM		
		In	Out	Total	In	Out	Total
LUC 160 Data Centre 220,015 ft ² (20,338 m ²)	Fitted Curve Equation	T=0.13(X)-5.63			T=0.11(X)-5.65		
	Trip Distribution	55%	45%	100%	30%	70%	100%
	Gross Auto Trips	13	10	23	6	13	19
LUC 150 Warehousing 617,052 ft ² (57,326 m ²)	Fitted Curve Equation	T=0.12(X)+23.62			T=0.12(X)+26.48		
	Trip Distribution	77%	23%	100%	28%	72%	100%
	Gross Auto Trips	75	23	98	28	73	101
Total Vehicle Trips		88	33	121	34	86	120

A total of 121 site trips, consisting of 88 inbound and 33 outbound trips, are predicted to be generated by the subject site during the AM peak hour. During the PM peak hour, 34 inbound and 86 outbound net auto site trips are predicted, totaling 120 trips.

5.2 Site Trip Distribution and Assignment

The distribution of site-generated traffic was derived from the 2022 Transportation Tomorrow Survey (TTS) summary data for Traffic Analysis Zones (TAZ) 3817, 3819, 3719, 3720, 3616, 3617, and 3638, and assigned to the road network accordingly.

The resulting site traffic distribution is summarized in Table 5-2. Figure 5-1 illustrates the assigned site-generated traffic for the data centre, while Figure 5-2 presents the assigned site-generated traffic for the industrial buildings (DC4 and DC5), and Figure 5-3 provides the total site-generated traffic.

Table 5-2 Site Trip Distribution

To/From	Distribution (%)			
	AM peak period		PM peak period	
	Inbound	Outbound	Inbound	Outbound
Northwest	6%	5%	8%	12%
North	1%	2%	4%	2%
Northeast	8%	6%	8%	8%
East	7%	19%	18%	10%
Southeast	35%	35%	27%	35%
South	31%	26%	26%	23%
Southwest	8%	6%	6%	6%
West	4%	2%	3%	4%
Total	100%	100%	100%	100%

5.3 Future Total Traffic Volumes

The future total traffic volumes during the weekday peak hours for the 2032 and 2037 planning horizons were derived by combining the corresponding estimates of site-generated traffic with the background traffic volumes. Figure 5-4 summarizes the future total traffic volumes for the 2032 planning horizon during the weekday AM and PM peak hours, while Figure 5-5 presents the future total traffic volumes for the 2037 planning horizon during the weekday AM and PM peak hours.

Figure 5-1 Industrial Buildings Site Traffic

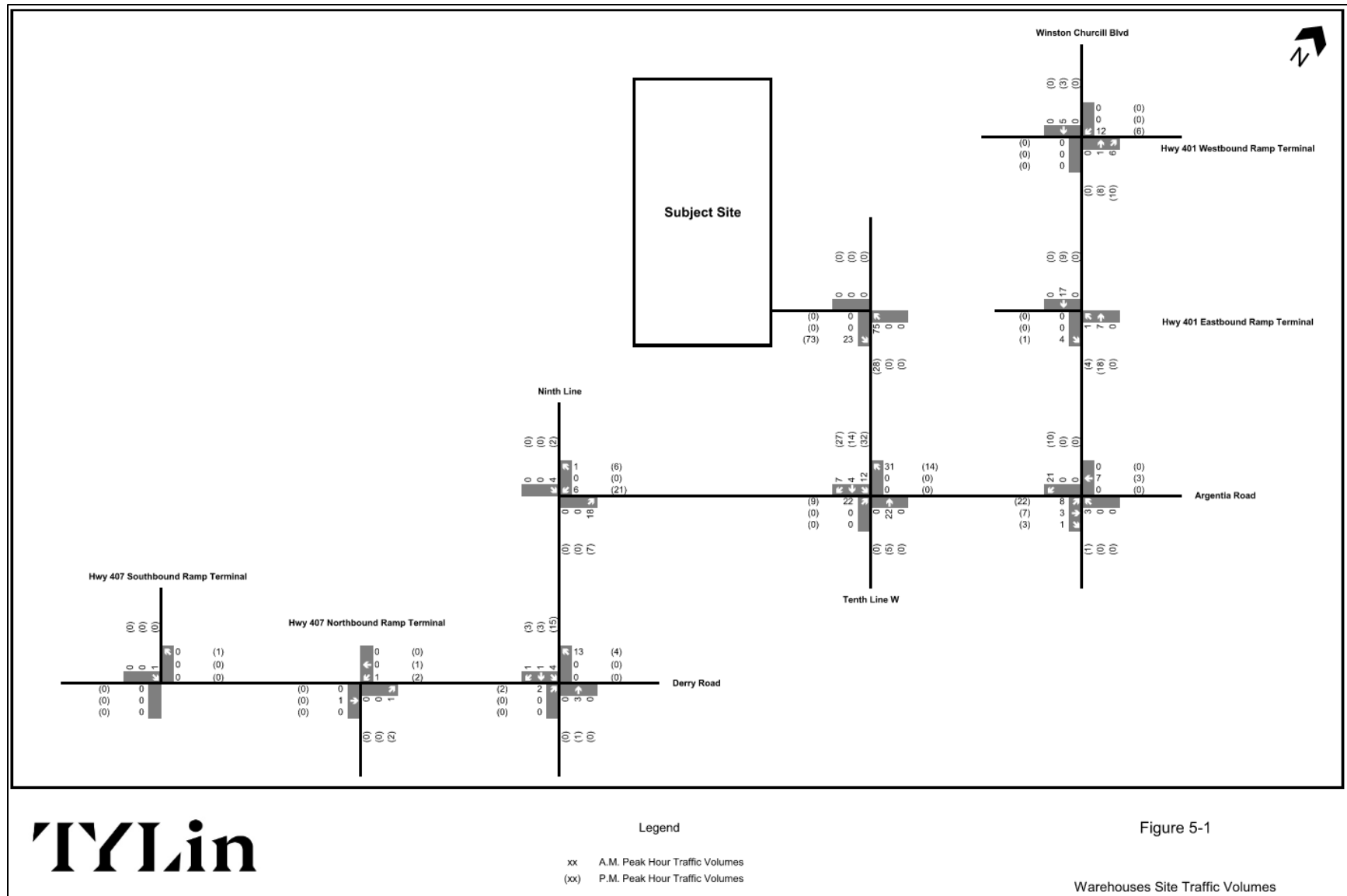


Figure 5-2 Data Centre Site Traffic

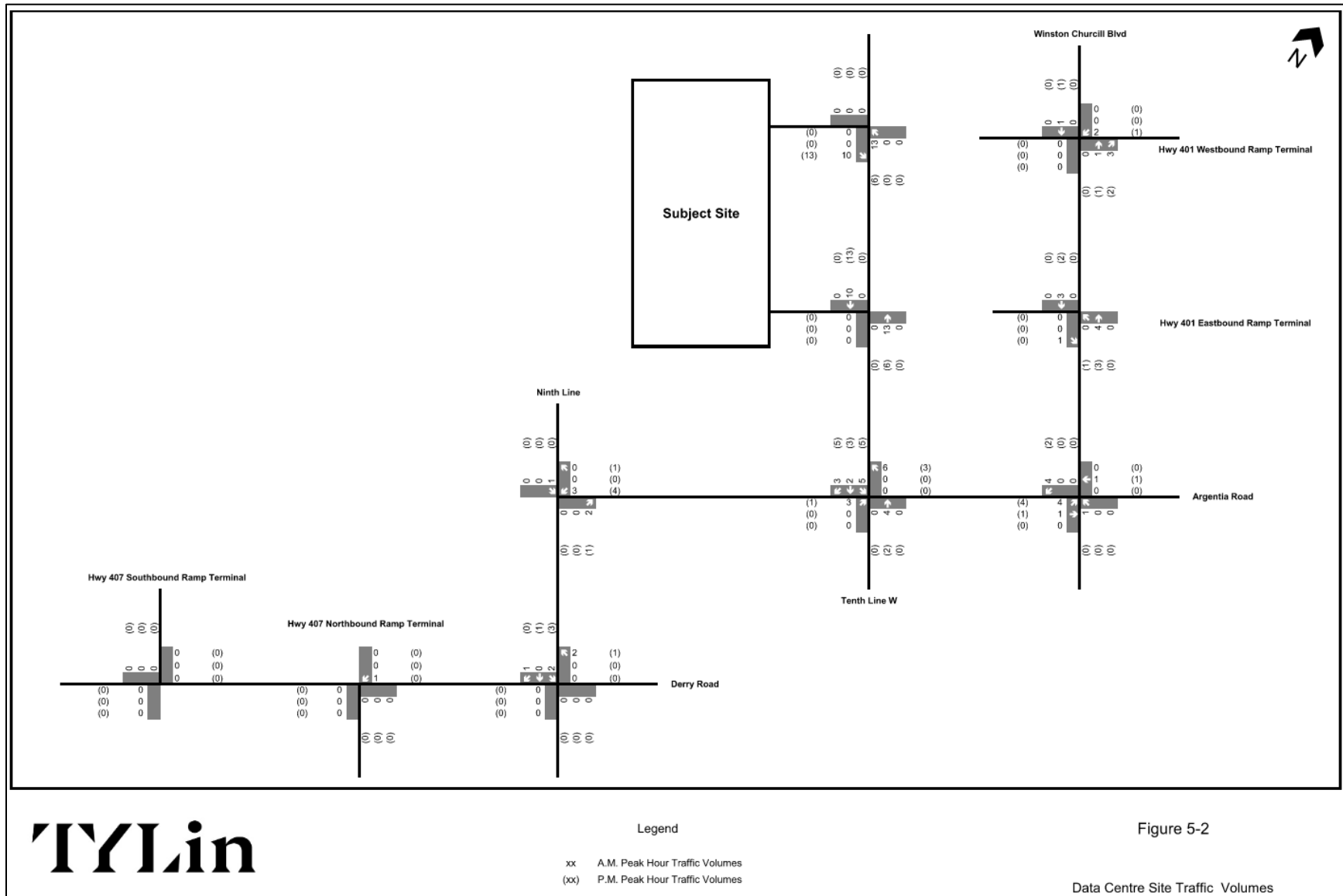


Figure 5-3 Total Site Traffic

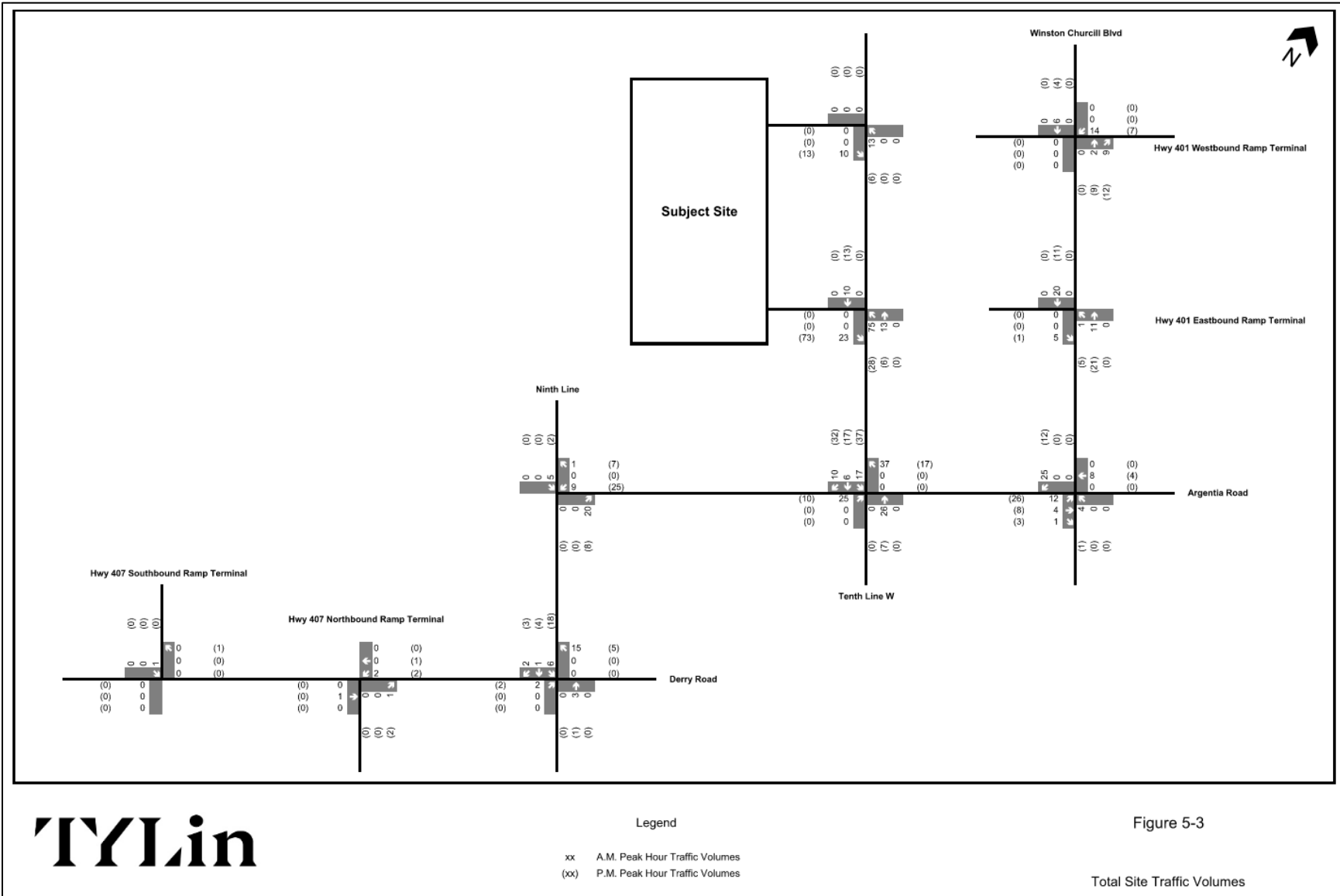


Figure 5-4 Future Total (2032) Traffic Volumes

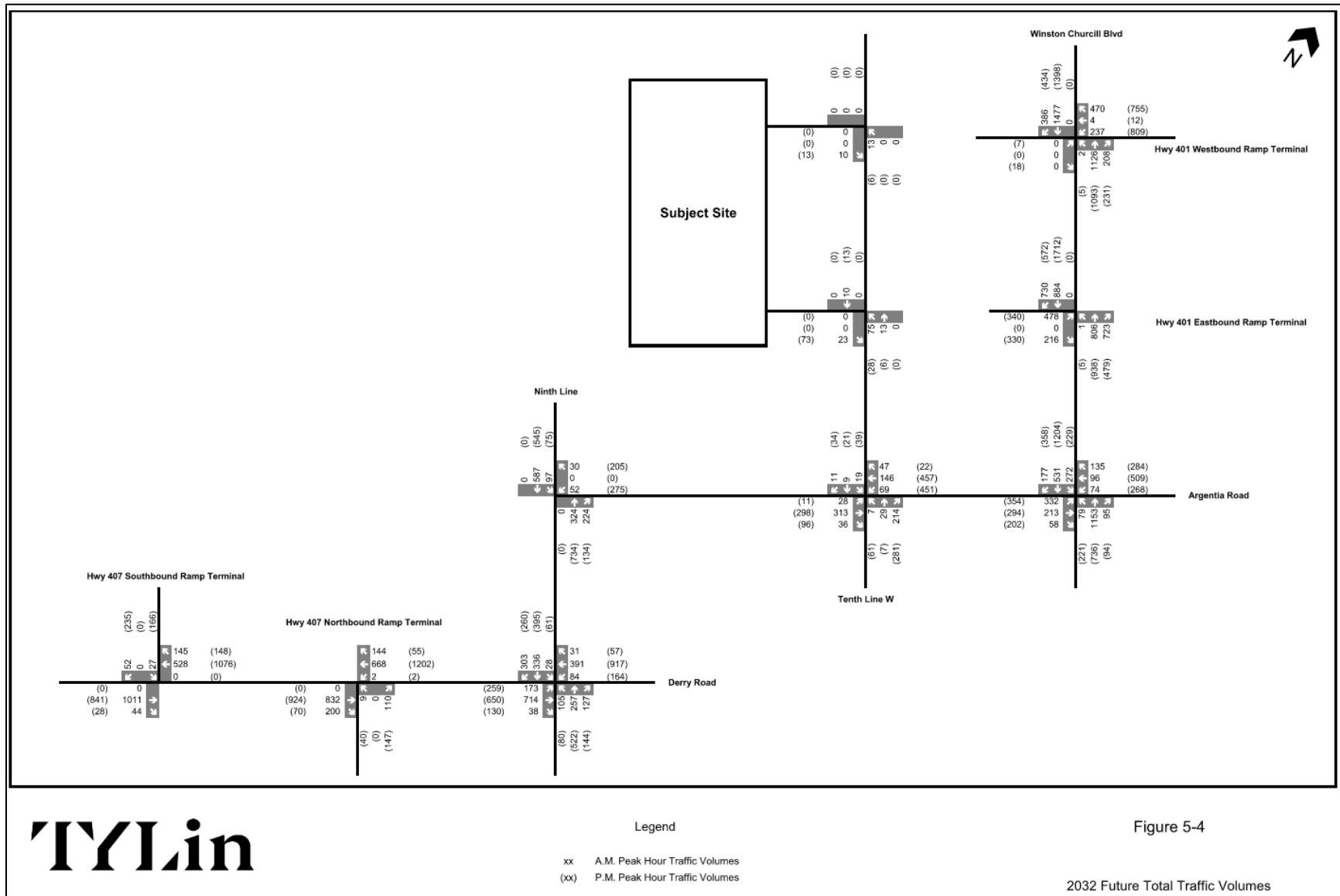
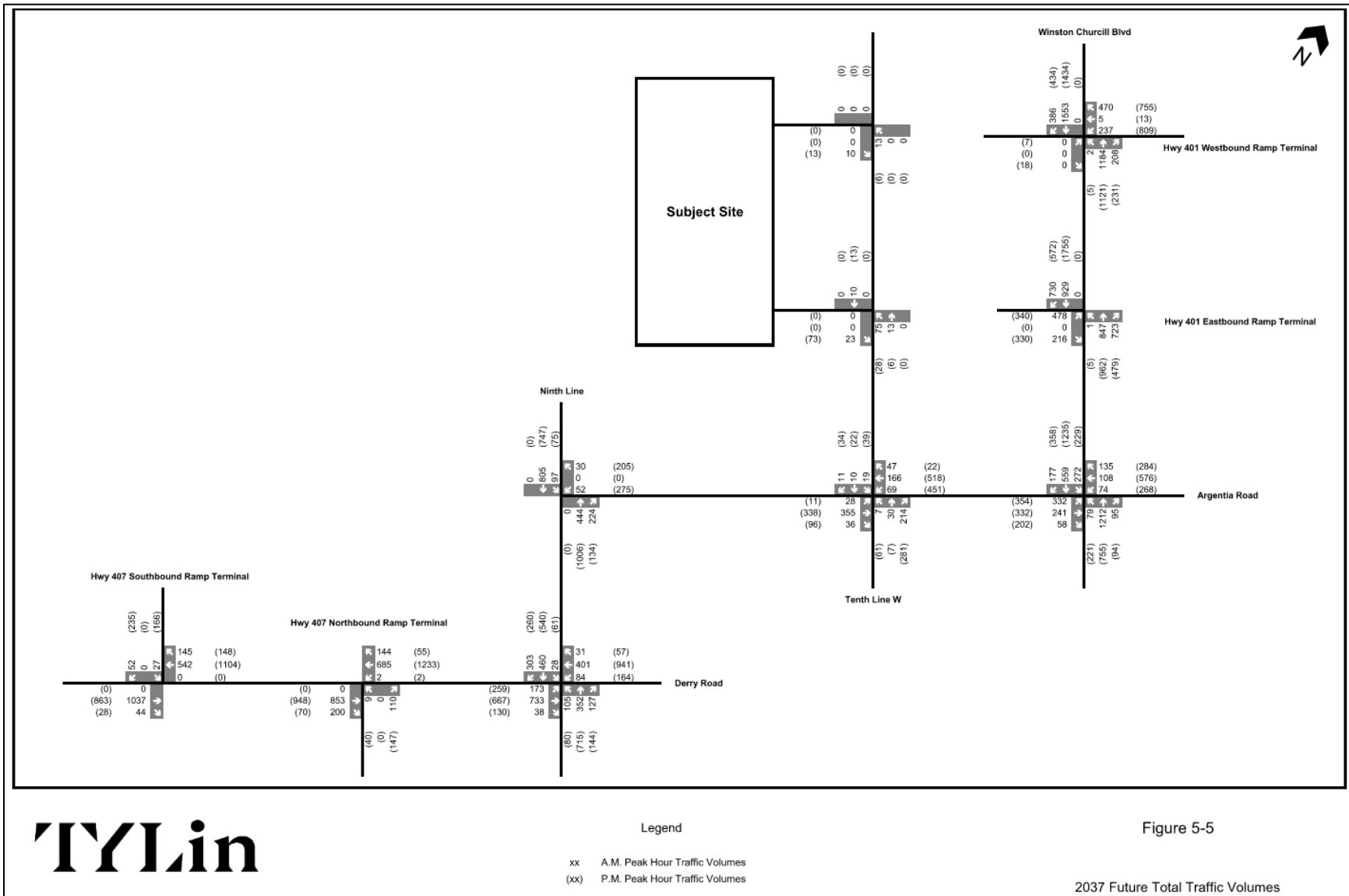


Figure 5-5 Future Total (2037) Traffic Volumes



6 TRAFFIC CAPACITY ANALYSIS

The traffic capacity analysis identifies how well the intersections and access driveways are operating and how they are expected to operate in the future. The analysis contained in this report utilized the Highway Capacity Manual (HCM) methodology within the Synchro Software package. The reported intersection volume-to-capacity ratios (v/c) are a measure of the saturation volume for each turning movement, while the levels-of-service (LOS) are a measure of the average delay for each turning movement.

In accordance with the Ministry of Transportation (MTO) capacity requirements, capacity analysis was performed for all proposed site access points and study intersections. At signalized intersections, movements with a v/c ratio greater than 0.85 are deemed “critical” and evaluated for possible operational improvements. For ramps, terminal ramp approaches with a v/c ratio greater than 0.75 are also deemed critical and assessed for potential improvements.

The following tables summarize the Synchro/HCM capacity results for the study intersections during the weekday a.m. and p.m. peak hours under baseline (2025), future background and future total (2032 and 2037) traffic conditions. Detailed Synchro reports are attached in Appendix E.

6.1 Existing Conditions

The traffic capacity analysis results for the intersections in the study area are summarized in Table 6-1 for both the weekday a.m. and p.m. peak hours under existing traffic conditions. The existing signal timing plans were obtained from the City of Mississauga, Region of Peel. Signal timing data for Highway 401 and 407 ramp terminals were not provided, as such signal timings were prepared based on MTO Traffic Signal Operating and Timing Policy in conjunction with OTM book 12. All signal timing plans provided are located within Appendix D.

Table 6-1 Existing 2025 Capacity Analysis

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
Winston Churchill Blvd & Hwy 401 WB Ramp (Signalized)	Overall	0.53	20	B	0.71	38	D
	EBL	0.00	0	-	0.12	75	E
	EBR	0.00	0	-	0.01	74	E
	WBL	0.64	74	E	0.76	53	D
	WBLT	0.63	73	E	0.75	52	D
	WBR	0.53	68	E	0.36	40	D
	NBL	0.01	3	A	0.04	21	C
	NBT	0.48	9	A	0.73	36	D
	SBT	0.36	6	A	0.54	20	C
Winston Churchill Blvd & Hwy 401 EB Ramp (Signalized)	Overall	0.57	24	C	0.68	21	C
	EBLR	0.80	67	E	0.78	66	E
	EBR	0.37	55	D	0.76	70	E
	NBT	0.21	9	A	0.25	9	A
	SBT	0.51	12	B	0.65	10	A
Winston Churchill Blvd & Argentia Rd (Signalized)	Overall	0.50	48	D	0.58	50	D
	EBL	1.07	142	F	1.03	130	F
	EBT	0.49	68	E	0.44	61	E
	EBR	0.04	56	E	0.32	48	D
	WBL	0.38	63	E	0.79	64	E
	WBT	0.31	71	E	0.77	71	E
	WBR	0.35	57	E	0.61	55	D
	NBL	0.40	74	E	0.66	75	E
	NBT	0.35	20	B	0.24	24	C
	NBR	0.07	17	B	0.06	21	C
	SBL	0.69	60	E	0.67	68	E
	SBT	0.15	19	B	0.41	29	C
Tenth Line W & Argentia Rd (Signalized)	Overall	0.26	14	B	0.62	16	B
	EBL	0.00	10	A	0.01	13	B
	EBT	0.31	12	B	0.36	17	B
	EBR	0.02	10	A	0.07	14	B
	WBL	0.11	6	A	0.74	16	B
	WBT	0.12	6	A	0.40	11	B
	WBR	0.01	6	A	0.00	7	S
	NBL	0.03	23	C	0.19	22	C
	NBTR	0.14	23	C	0.19	22	C
	SBL	0.02	26	C	0.01	28	C

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
	SBTR	0.00	26	C	0.01	28	C
Ninth Line & Argentia Rd (Signalized)	<i>Overall</i>	<i>0.39</i>	<i>7</i>	<i>A</i>	<i>0.61</i>	<i>15</i>	<i>C</i>
	WBL	0.18	27	C	0.50	21	C
	WBR	0.02	26	C	0.16	19	B
	NBT	0.24	5	A	0.67	16	B
	NBR	0.14	5	A	0.08	8	A
	SBL	0.14	5	A	0.30	12	B
	SBT	0.43	7	A	0.52	13	B
Ninth Line & Derry Rd (Signalized)	<i>Overall</i>	<i>0.49</i>	<i>34</i>	<i>C</i>	<i>0.80</i>	<i>41</i>	<i>D</i>
	EBL	0.29	14	B	0.73	29	C
	EBTR	0.39	21	C	0.47	29	C
	WBL	0.22	16	B	0.41	19	B
	WBT	0.22	21	C	0.62	35	D
	NBL	0.45	44	D	0.45	44	D
	NBT	0.40	44	D	0.84	61	E
	NBR	0.08	39	D	0.10	39	D
	SBL	0.10	52	D	0.51	58	E
	SBT	0.78	71	E	0.84	72	E
	SBR	0.20	53	D	0.17	50	D
Hwy 407 NB Ramp & Derry Rd E	<i>Overall</i>	<i>0.37</i>	<i>5</i>	<i>A</i>	<i>0.50</i>	<i>7</i>	<i>A</i>
	EBT	0.40	3	A	0.45	5	A
	WBT	0.25	2	A	0.54	7	A
	NBL	0.04	34	C	0.08	22	C
	NBR	0.07	35	C	0.34	26	C
Derry Rd & Hwy 407 SB Ramp	<i>Overall</i>	<i>0.35</i>	<i>4</i>	<i>A</i>	<i>0.56</i>	<i>9</i>	<i>A</i>
	EBT	0.38	3	A	0.38	6	A
	WBT	0.26	1	A	0.55	5	A
	SBL	0.10	35	C	0.25	21	C
	SBR	0.04	34	C	0.60	30	C

Under existing conditions all movements at all study intersections operate under capacity with a v/c of 0.84, a delay of 75s or less and a LOS of E or better, with the exception of the Winston Churchill Blvd & Argentia Rd where the eastbound left turn lane operates at an LOS of F, a v/c above 1 and a delays over 130s in both the AM and PM peak hours. The ramp terminals at Highway 401 and Winston Churchill Boulevard are nearing or at critical v/c of 0.75.

6.2 Future Background Conditions

The traffic capacity analysis results for the study area intersections under 2032 future background conditions are summarized in Table 6-2, and the results under 2037 future background traffic conditions are summarized in Table 6-3, for both the weekday AM and PM peak hours. These scenarios serve as a baseline for comparison for the future horizons, representing the scenario where there is no development built.

Note that the signal timing splits for intersections has been optimized using Synchro's built in optimization feature for the future conditions, and this improvement has been carried forward for all future scenarios.

Table 6-2 Future Background 2032 Capacity Analysis

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal	<i>Overall</i>	<i>0.82</i>	<i>15</i>	<i>B</i>	<i>0.81</i>	<i>32</i>	<i>C</i>
	EBL	0.00	0	0	0.07	72	E
	EBR	0.00	0	0	0.11	1	A
	WBL	0.62	79	E	0.76	55	D
	WBTL	0.61	78	E	0.75	54	D
	WBR	0.82	29	C	0.57	7	A
	NBL	0.01	5	A	0.05	27	C
	NBT	0.56	12	B	0.81	36	D
	SBT	0.44	7	A	0.63	34	C
	SBR	0.37	3	A	0.52	13	B
Winston Churchill Blvd & Hwy 401 EB Ramp Terminal	<i>Overall</i>	<i>0.80</i>	<i>23</i>	<i>C</i>	<i>0.77</i>	<i>21</i>	<i>C</i>
	EBLR	0.80	69	E	0.77	67	E
	EBR	0.57	41	D	0.77	75	E
	NBT	0.25	13	B	0.30	9	A
	SBT	0.56	11	B	0.75	12	B
Winston Churchill Blvd & Argentia Rd	<i>Overall</i>	<i>0.80</i>	<i>37</i>	<i>D</i>	<i>0.80</i>	<i>46</i>	<i>D</i>
	EBL	0.80	83	F	0.77	80	E
	EBT	0.40	63	E	0.39	54	D
	EBR	0.14	4	A	0.36	21	C
	WBL	0.40	54	D	0.67	48	D
	WBT	0.39	77	E	0.80	72	E
	WBR	0.39	24	C	0.56	34	C

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
	NBL	0.40	79	E	0.66	79	E
	NBT	0.44	24	C	0.32	31	C
	NBR	0.11	1	A	0.13	3	A
	SBL	0.72	65	E	0.67	72	E
	SBT	0.19	20	C	0.54	42	D
	SBR	0.14	5	A	0.37	17	B
Tenth Line W & Argentia Rd	<i>Overall</i>	<i>0.49</i>	<i>9</i>	<i>A</i>	<i>0.82</i>	<i>17</i>	<i>B</i>
	EBL	0.00	12	B	0.00	14	B
	EBT	0.36	14	B	0.82	41	D
	EBR	0.05	0	A	0.15	4	A
	WBL	0.10	5	A	0.74	18	B
	WBT	0.13	7	A	0.46	12	B
	WBR	0.01	0	A	0.01	0	A
	NBL	0.02	19	B	0.17	20	B
	NBTR	0.49	8	A	0.42	2	A
	SBL	0.02	27	C	0.01	30	C
	SBTR	0.01	25	C	0.02	26	C
Ninth Line & Argentia Rd	<i>Overall</i>	<i>0.46</i>	<i>8</i>	<i>A</i>	<i>0.76</i>	<i>16</i>	<i>B</i>
	WBL	0.12	21	C	0.47	23	C
	WBR	0.07	8	A	0.36	9	A
	NBT	0.25	7	A	0.76	19	B
	NBR	0.18	2	A	0.14	2	A
	SBL	0.13	8	A	0.39	17	B
	SBT	0.46	10	A	0.59	14	B
Ninth Line & Derry Rd E/Derry Rd W	<i>Overall</i>	<i>0.81</i>	<i>30</i>	<i>C</i>	<i>0.87</i>	<i>42</i>	<i>D</i>
	EBL	0.30	17	B	0.77	38	D
	EBTR	0.43	25	C	0.52	34	C
	WBL	0.23	17	B	0.43	20	C
	WBT	0.24	26	C	0.68	43	D
	NBL	0.44	40	D	0.44	39	D
	NBT	0.43	42	D	0.87	64	E
	NBR	0.21	5	A	0.24	5	A
	SBL	0.09	45	D	0.57	79	E
	SBT	0.81	72	E	0.84	71	E

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
	<i>SBR</i>	0.52	7	A	0.44	7	A
Hwy 407 NB Ramp Terminal & Derry Rd E	<i>Overall</i>	<i>0.48</i>	<i>3</i>	<i>A</i>	<i>0.56</i>	<i>7</i>	<i>A</i>
	EBT	0.41	3	A	0.47	5	A
	WBT	0.26	2	A	0.56	8	A
	NBL	0.04	32	C	0.08	21	C
	NBR	0.48	14	B	0.49	18	B
Derry Rd E & Hwy 407 SB Ramp Terminal	<i>Overall</i>	<i>0.39</i>	<i>3</i>	<i>A</i>	<i>0.65</i>	<i>9</i>	<i>A</i>
	EBT	0.39	3	A	0.39	7	A
	WBT	0.27	2	A	0.58	5	A
	SBL	0.10	34	C	0.25	19	B
	SBR	0.34	16	B	0.65	24	C

During the 2032 background traffic horizon, all study intersections and movements are anticipated to operate well with v/c 0.87 or less, delays of 80s or less, and a LOS of E or better with the exception of Winston Churchill Blvd & Argentinia Rd where the EBL is shown to operate at an LOS of F during the am peak hour. However there is still shown to be reserve capacity at this movement after signal timing adjustments were undertaken.

Table 6-3 Future Background 2037 Capacity Analysis

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal	<i>Overall</i>	<i>0.83</i>	<i>15</i>	<i>B</i>	<i>0.83</i>	<i>32</i>	<i>C</i>
	EBL	0.00	0	0	0.07	72	E
	EBR	0.00	0	0	0.11	1	A
	WBL	0.62	78	E	0.76	55	D
	WBTL	0.61	77	E	0.75	54	D
	WBR	0.83	30	C	0.57	7	A
	NBL	0.01	4	A	0.05	27	C
	NBT	0.59	12	B	0.83	36	D
	SBT	0.46	7	A	0.64	35	C
	SBR	0.37	3	A	0.52	13	B
Winston Churchill Blvd & Hwy 401 EB Ramp Terminal	<i>Overall</i>	<i>0.80</i>	<i>23</i>	<i>C</i>	<i>0.77</i>	<i>21</i>	<i>C</i>
	EBLR	0.80	69	E	0.77	67	E
	EBR	0.59	44	D	0.77	75	E
	NBT	0.27	15	B	0.31	8	A
	SBT	0.58	11	B	0.76	12	B
Winston Churchill Blvd & Argentia Rd	<i>Overall</i>	<i>0.82</i>	<i>37</i>	<i>D</i>	<i>0.80</i>	<i>47</i>	<i>D</i>
	EBL	0.82	85	F	0.77	80	E
	EBT	0.46	65	E	0.41	53	D
	EBR	0.14	4	A	0.34	19	B
	WBL	0.41	55	D	0.64	43	D
	WBT	0.43	77	E	0.80	70	E
	WBR	0.39	24	C	0.53	31	C
	NBL	0.40	79	E	0.66	79	E
	NBT	0.46	24	C	0.35	34	C
	NBR	0.11	1	A	0.13	3	A
	SBL	0.72	65	E	0.67	73	E
	SBT	0.20	21	C	0.59	45	D
	SBR	0.14	5	A	0.38	18	B
Tenth Line W & Argentia Rd	<i>Overall</i>	<i>0.49</i>	<i>10</i>	<i>A</i>	<i>0.93</i>	<i>22</i>	<i>C</i>
	EBL	0.00	12	B	0.00	14	B
	EBT	0.40	14	B	0.93	57	E
	EBR	0.05	0	A	0.15	4	A
	WBL	0.11	5	A	0.79	21	C

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
	WBT	0.15	7	A	0.52	3	B
	WBR	0.01	0	A	0.01	0	A
	NBL	0.02	19	B	0.17	20	B
	NBTR	0.49	1	A	0.43	3	A
	SBL	0.02	27	C	0.01	30	C
	SBTR	0.02	25	C	0.03	26	C
Ninth Line & Argentia Rd	<i>Overall</i>	<i>0.33</i>	<i>7</i>	<i>A</i>	<i>0.54</i>	<i>13</i>	<i>B</i>
	WBL	0.12	21	C	0.47	23	C
	WBR	0.07	8	A	0.40	16	B
	NBT	0.18	6	A	0.54	12	B
	NBR	0.18	2	A	0.14	2	A
	SBL	0.15	8	A	0.36	15	B
	SBT	0.33	7	A	0.46	11	B
Ninth Line & Derry Rd E/Derry Rd W	<i>Overall</i>	<i>0.74</i>	<i>30</i>	<i>C</i>	<i>0.77</i>	<i>38</i>	<i>D</i>
	EBL	0.28	13	B	0.72	28	C
	EBTR	0.40	20	C	0.47	29	C
	WBL	0.21	13	B	0.40	16	B
	WBT	0.22	21	C	0.62	36	D
	NBL	0.46	46..0	D	0.43	44	D
	NBT	0.36	46	D	0.74	55	D
	NBR	0.24	7	A	0.27	6	A
	SBL	0.12	54	D	0.51	75	E
	SBT	0.74	69	E	0.77	67	E
	SBR	0.58	10	A	0.50	8	A
Hwy 407 NB Ramp Terminal & Derry Rd E	<i>Overall</i>	<i>0.48</i>	<i>3</i>	<i>A</i>	<i>0.58</i>	<i>8</i>	<i>A</i>
	EBT	0.42	3	A	0.48	5	A
	WBT	0.27	2	A	0.58	8	A
	NBL	0.04	32	C	0.08	21	C
	NBR	0.48	14	B	0.16	18	B
Derry Rd E & Hwy 407 SB Ramp Terminal	<i>Overall</i>	<i>0.40</i>	<i>3</i>	<i>A</i>	<i>0.65</i>	<i>9</i>	<i>A</i>
	EBT	0.40	3	A	0.41	7	A
	WBT	0.28	1	A	0.59	6	A
	SBL	0.10	34	C	0.24	19	B
	SBR	0.34	16	B	0.65	24	C

During the 2037 background traffic horizon, all study intersections and movements are anticipated to operate well with v/c 0.83 or less, delays of 80s or less, and a LOS of E or better. Exceptions include the intersection of Winston Churchill Blvd & Argentia Rd where the EBL is shown to operate at an LOS of F during the am peak hour due to high delay. However, there is still shown to be reserve capacity at this movement after signal timing adjustments were undertaken. Additionally, the EBT movement at the intersection of Tenth Line W & Argentia Rd is shown to operate with a v/c of 0.93 during the PM peak hour, illustrating that the movement is near capacity. It is anticipated that this may be improved through increasing the signal timing from the existing 100s cycle length.

6.3 Future Total Conditions

The future total road network consists of the future background traffic combined with the subject site traffic. Two new site access intersections will be added to the east of the development on Tenth Line West Road. All site accesses will be unsignalized and permit full movements. The traffic capacity analysis results for the intersections in the study area are summarized in Table 6-4 for the 2032 horizon year and in Table 6-5 for the 2037 horizon year, for both the weekday AM and PM peak hours.

Table 6-4 Future Total 2032 Capacity Analysis

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal	<i>Overall</i>	<i>0.82</i>	<i>15</i>	<i>B</i>	<i>0.83</i>	<i>32</i>	<i>C</i>
	EBL	0.00	0	0	0.07	72	E
	EBR	0.00	0	0	0.11	1	A
	WBL	0.64	79	E	0.76	54	D
	WBTL	0.63	79	E	0.75	54	D
	WBR	0.82	28	C	0.57	7	A
	NBL	0.01	4	A	0.05	28	C
	NBT	0.57	12	B	0.83	37	D
	SBT	0.44	7	A	0.63	35	C
	SBR	0.37	3	A	0.49	13	B
Winston Churchill Blvd & Hwy 401 EB Ramp Terminal	<i>Overall</i>	<i>0.80</i>	<i>23</i>	<i>C</i>	<i>0.77</i>	<i>21</i>	<i>C</i>
	EBLR	0.80	68	E	0.77	67	E
	EBR	0.59	43	D	0.77	75	E
	NBT	0.26	14	B	0.30	9	A
	SBT	0.57	11	B	0.75	12	B

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
Winston Churchill Blvd & Argentia Rd	<i>Overall</i>	<i>0.82</i>	<i>37</i>	<i>D</i>	<i>0.80</i>	<i>47</i>	<i>D</i>
	EBL	0.82	84	F	0.79	80	E
	EBT	0.40	63	E	0.38	54	D
	EBR	0.14	4	A	0.35	20	C
	WBL	0.40	54	D	0.67	47	D
	WBT	0.42	77	E	0.80	72	E
	WBR	0.39	24	C	0.56	33	C
	NBL	0.41	79	E	0.67	79	E
	NBT	0.44	24	C	0.33	32	C
	NBR	0.11	1	A	0.13	3	A
	SBL	0.72	65	E	0.67	71	E
	SBT	0.19	21	C	0.55	43	D
	SBR	0.17	5	A	0.38	17	B
Tenth Line W & Argentia Rd	<i>Overall</i>	<i>0.54</i>	<i>10</i>	<i>B</i>	<i>0.83</i>	<i>18</i>	<i>B</i>
	EBL	0.05	12	B	0.03	15	B
	EBT	0.36	14	B	0.83	42	D
	EBR	0.05	0	A	0.16	4	A
	WBL	0.10	5	A	0.74	18	B
	WBT	0.13	7	A	0.46	12	B
	WBR	0.05	1	A	0.03	0	A
	NBL	0.02	19	B	0.17	20	B
	NBTR	0.54	10	A	0.49	6	A
	SBL	0.17	31	C	0.28	35	D
	SBTR	0.07	19	B	0.22	18	B
Ninth Line & Argentia Rd	<i>Overall</i>	<i>0.46</i>	<i>8</i>	<i>A</i>	<i>0.76</i>	<i>16</i>	<i>B</i>
	WBL	0.15	20	C	0.52	24	C
	WBR	0.07	8	A	0.38	9	A
	NBT	0.25	8	A	0.76	19	B
	NBR	0.19	2	A	0.15	2	A
	SBL	0.14	8	A	0.40	17	B
	SBT	0.46	10	A	0.59	14	B
Ninth Line & Derry Rd E/Derry Rd W	<i>Overall</i>	<i>0.81</i>	<i>30</i>	<i>C</i>	<i>0.86</i>	<i>43</i>	<i>D</i>
	EBL	0.32	17	B	0.78	41	D
	EBTR	0.43	25	C	0.52	35	C

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
	WBL	0.23	17	B	0.44	21	C
	WBT	0.28	26	C	0.70	44	D
	NBL	0.44	39	D	0.44	38	D
	NBT	0.43	42	D	0.86	62	E
	NBR	0.21	5	A	0.23	5	A
	SBL	0.11	46	D	0.77	104	F
	SBT	0.81	72	E	0.83	70	E
	SBR	0.52	7	A	0.45	7	A
Hwy 407 NB Ramp Terminal & Derry Rd E	<i>Overall</i>	<i>0.48</i>	<i>3</i>	<i>A</i>	<i>0.56</i>	<i>8</i>	<i>4</i>
	EBT	0.41	3	A	0.47	5	A
	WBT	0.26	2	A	0.56	8	A
	NBL	0.04	32	C	0.08	21	C
	NBR	0.48	14	B	0.49	18	B
Derry Rd E & Hwy 407 SB Ramp Terminal	<i>Overall</i>	<i>0.39</i>	<i>3</i>	<i>A</i>	<i>0.65</i>	<i>9</i>	<i>A</i>
	EBT	0.39	3	A	0.39	7	A
	WBT	0.27	2	A	0.58	6	A
	SBL	0.11	34	C	0.25	19	B
	SBR	0.34	16	B	0.65	24	C
Tenth Line W & Northern Access	<i>Overall</i>	-	<i>7</i>	<i>A</i>	-	<i>8</i>	<i>A</i>
	EBLR	0.01	8	A	0.014	9	A
	NBTR	0.01	7	A	0.004	7	A
	SBTL	-	-	-	-	-	-
Tenth Line W & Southern Access	<i>Overall</i>	-	<i>6</i>	<i>A</i>	-	<i>7</i>	<i>A</i>
	EBLR	0.02	8	A	0.074	9	A
	NBTR	0.05	7	A	0.019	7	A
	SBTL	-	-	-	-	-	-

The 2032 Total Traffic analysis results are shown to be very similar to the 2032 background traffic analysis with only the EBL movement at Winston Churchill Blvd & Argentia Rd is shown to operate at an LOS of F during the am peak hour. However, the movement continues to have reserved capacity. All proposed site accesses are anticipated to operate well below capacity with minimal delays.

Table 6-5 Future Total 2037 Capacity Analysis

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal	<i>Overall</i>	<i>0.82</i>	<i>15</i>	<i>B</i>	<i>0.85</i>	<i>33</i>	<i>C</i>
	EBL	0.00	0	0	0.07	72	E
	EBR	0.00	0	0	0.11	1	A
	WBL	0.64	79	E	0.76	54	D
	WBTL	0.64	78	E	0.75	54	D
	WBR	0.82	29	C	0.57	7	A
	NBL	0.01	4	A	0.06	28	C
	NBT	0.59	12	B	0.85	37	D
	SBT	0.46	8	A	0.65	35	D
	SBR	0.37	3	A	0.52	14	B
Winston Churchill Blvd & Hwy 401 EB Ramp Terminal	<i>Overall</i>	<i>0.80</i>	<i>23</i>	<i>C</i>	<i>0.77</i>	<i>21</i>	<i>C</i>
	EBLR	0.80	68	E	0.77	67	E
	EBR	0.60	46	D	0.77	75	E
	NBT	0.27	15	B	0.31	8	A
	SBT	0.59	11	B	0.77	13	B
Winston Churchill Blvd & Argentia Rd	<i>Overall</i>	<i>0.82</i>	<i>38</i>	<i>D</i>	<i>0.80</i>	<i>48</i>	<i>D</i>
	EBL	0.82	84	F	0.79	80	E
	EBT	0.45	63	E	0.40	52	D
	EBR	0.14	4	A	0.34	18	B
	WBL	0.40	54	D	0.63	42	D
	WBT	0.46	78	E	0.80	70	E
	WBR	0.39	23	C	0.53	31	C
	NBL	0.41	79	E	0.67	79	E
	NBT	0.47	25	C	0.36	35	C
	NBR	0.11	1	A	0.14	3	A
	SBL	0.72	64	E	0.67	73	E
	SBT	0.20	21	C	0.60	47	D
	SBR	0.17	5	A	0.40	19	B
Tenth Line W & Argentia Rd	<i>Overall</i>	<i>0.54</i>	<i>11</i>	<i>B</i>	<i>0.94</i>	<i>23</i>	<i>C</i>
	EBL	0.05	12	B	0.03	16	B
	EBT	0.40	14	B	0.94	59	E
	EBR	0.05	0	A	0.16	4	A
	WBL	0.11	5	A	0.79	22	C

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
	WBT	0.15	7	A	0.52	13	B
	WBR	0.05	1	A	0.03	0	A
	NBL	0.02	19	B	0.17	20	B
	NBTR	0.54	10	A	0.49	6	A
	SBL	0.17	31	C	0.28	35	D
	SBTR	0.08	20	B	0.23	18	B
Ninth Line & Argentia Rd	<i>Overall</i>	<i>0.33</i>	<i>7</i>	<i>A</i>	<i>0.54</i>	<i>13</i>	<i>B</i>
	WBL	0.15	20	C	0.52	24	C
	WBR	0.07	8	A	0.42	16	B
	NBT	0.18	6	A	0.54	12	B
	NBR	0.19	2	A	0.50	2	A
	SBL	0.16	8	A	0.37	16	B
	SBT	0.33	7	A	0.42	11	B
Ninth Line & Derry Rd E/Derry Rd W	<i>Overall</i>	<i>0.73</i>	<i>30</i>	<i>C</i>	<i>0.76</i>	<i>39</i>	<i>D</i>
	EBL	0.29	13	B	0.73	29	C
	EBTR	0.40	20	C	0.48	29	C
	WBL	0.22	13	B	0.40	16	B
	WBT	0.23	21	C	0.62	36	D
	NBL	0.46	46	D	0.43	44	D
	NBT	0.36	45	D	0.73	55	D
	NBR	0.24	7	A	0.06	6	A
	SBL	0.15	55	D	0.71	96	F
	SBT	0.73	68	E	0.76	67	E
	SBR	0.58	10	A	0.50	8	A
Hwy 407 NB Ramp Terminal & Derry Rd E	<i>Overall</i>	<i>0.41</i>	<i>3</i>	<i>A</i>	<i>0.58</i>	<i>8</i>	<i>4</i>
	EBT	0.41	3	A	0.48	5	A
	WBT	0.26	2	A	0.58	8	A
	NBL	0.04	35	C	0.08	20	C
	NBR	0.08	20	C	0.49	19	B
Derry Rd E & Hwy 407 SB Ramp Terminal	<i>Overall</i>	<i>0.49</i>	<i>3</i>	<i>A</i>	<i>0.65</i>	<i>9</i>	<i>A</i>
	EBT	0.40	3	A	0.41	7	A
	WBT	0.49	3	A	0.59	6	A
	SBL	0.11	34	C	0.24	19	B
	SBR	0.34	16	B	0.65	24	C

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
Tenth Line W & Northern Access	<i>Overall</i>	-	7	A	-	8	A
	EBLR	0.01	8	A	0.014	9	A
	NBTR	0.01	7	4	0.004	7	A
	SBTL	-	-	-	-	-	-
Tenth Line W & Southern Access	<i>Overall</i>	-	6	A	-	7	A
	EBLR	0.02	8	A	0.074	9	A
	NBTR	0.05	7	A	0.019	7	A

The 2037 Total Traffic analysis results are shown to be very similar to the 2037 background traffic analysis with the intersection of Winston Churchill Blvd & Argentia Rd where the EBL is shown to operate at an LOS of F during the am peak hour due to high delay. Additionally, the EBT movement at the intersection of Tenth Line W & Argentia Rd is shown to operate with a v/c of 0.93 during the PM peak hour, illustrating that the movement is near capacity. All proposed site accesses are anticipated to operate well below capacity with minimal delays.

The capacity analysis indicates that the proposed development will have minimal impact on the existing road network, where all study intersections and roadways are able to accommodate the site generate traffic at all horizon years. It is recommended that the City and Region continue to monitor the study intersections and movements nearing capacity and implement slight signal timing adjustments as required.

7 QUEUING ANALYSIS

Table 7-1 provides a summary of the 95th percentile queues derived from the Synchro analysis for all exclusive turning movements at the study intersection. Queueing analysis details are provided in **Appendix E**.

Table 7-1 Queuing Analysis Future Total 2032

Intersection	Movement	Storage (m)	95 th Percentile Queue (m)					
			EX 2025		FT 2032		FT 2037	
			AM	PM	AM	PM	AM	PM
Winston Churchill Blvd & Hwy 401 WB Ramp (Signalized)	EBL	35		8	-	8	-	8
	EBR	35		0	-	0	-	-
	WBL	200	57	147	60	147	60	147
	WBR	160	37	28	44	28	45	29
Winston Churchill Blvd & Hwy 401 EB Ramp	EBR	190	50	97	69	99	72	100
Winston Churchill Blvd & Argentia Rd	EBL	120	93	91	74	74	74	74
	EBR	150	12	43	6	40	6	38
	WBL	95	34	93	33	81	33	77
	WBR	75	42	82	33	72	33	69
	NBL	105	21	49	22	49	22	49
	NBR	60	11	11	1	7	1	8
	SBL	155	61	51	58	52	57	51
	SBR	125	26	57	27	67	28	68
Tenth Line W & Argentia Rd	EBR	50	0	8	0	9	0	9
	WBL	60	8	55	8	68	8	76
	EBR	125	0	0	3	0	3	0
	NBL	115	3	15	3	15	3	15
	SBL	25	2	2	9	15	9	15
Ninth Line & Argentia Rd	NBR	70	8	7	9	7	9	7
	SBL	30	13	14	14	17	15	16

Intersection	Movement	Storage (m)	95 th Percentile Queue (m)					
			EX 2025		FT 2032		FT 2037	
			AM	PM	AM	PM	AM	PM
Ninth Line & Derry Rd	EBL	100	42	69	43	85	40	73
	WBL	100	21	40	23	44	19	38
	NBL	175	37	29	34	27	38	30
	NBR	130	14	15	13	14	15	15
	SBL	100	14	25	15	42	17	37
	SBR	75	25	22	23	24	26	23
Hwy 407 NB Ramp & Derry Rd E	NBR	160	13	19	13	20	5	20
Derry Rd & Hwy 407 SB Ramp	SBR	160	10	32	10	32	10	33
Tenth Line & North Site Access	EBRL	15	-	-	0	0	0	0
	NBTL	15	-	-	0	0	0	0
Tenth Line & South Site Access	EBRL	15	-	-	1	1	1	1
	NBTL	15	-	-	1	1	1	1

The 95th percentile queues for all study intersections where reviewed where auxiliary lanes are present for turning movements. The storage lengths for each auxiliary lane took into account the deceleration, storage and effective taper length for each auxiliary lane. All queues for the 2025 existing, 2032 and 2037 total traffic scenarios are shown to be accommodate with the existing auxiliary lanes during both the AM and PM peak hours. Exceptions are the Westbound Right Turn at Winston Churchill Blvd & Argentia Rd which is shown to extend past the available storage by 7m, however there is a painted median that is directly adjacent to the left turn lane, which can be used to accommodate the queue length. Additionally the westbound left turn at the intersection Tenth Line W & Argentia Rd is shown to extend past the available storage length of 60 m by 8 m and 16 m during the PM peak hour for the 2032 and 2037 total traffic scenarios respectively. At this intersection there is ability to make changes to the cycle length as the existing cycle length is only 100s. These improvements are anticipated to be able to reduce the queueing of the westbound left and have the existing auxiliary lane able to accommodate the queues.

8 PARKING AND LOADING ASSESSMENT

8.1 Parking Requirements

The parking requirements for developments in the City of Mississauga are governed by the Zoning By-law 0225-2007. The required parking space for the site is outlined in Table 8-1

Table 8-1 Required and Proposed Parking Supply

Land Use		Minimum Parking Rate	Units/ Density	Minimum Required Parking Supply	Proposed Parking Supply
Industrial Warehouse	Building DC4	1.1 spaces / 100 m ² for up to 6,975 m ² of G.F. A	26,823 m ²	196	341
	Building DC5	0.6 spaces / 100 m ² for over 6,975 m ² of G.F. A	30,503 m ²	218	155
Data Centre			20,338 m ²	N/a	40
Total Number of Parking Spaces				414	509

The table above illustrates that the site meets and exceeds the minimum number of parking spaces required by the zoning by-law.

The City of Mississauga Zoning By-law 0225-2007 does not include a provision for parking for a data centre. However, there are provisions for a Science and Technology facility that includes a rate of 2 parking spaces for 100 m² GFA, resulting in 407 required parking spaces. Additionally, there are provisions for all other non-residential uses that are specified in Table 3.1.2.2 of the zoning bylaw, which has a rate of 5.4 parking spaces for 100 m² GFA resulting in 1,099 parking spaces. Both potential land uses and parking rates overestimate the required parking for a data centre. Based on the applicants' experience with data centres, the proposed 40 spaces is anticipated to be sufficient for the needs of the site, with potential spillover parking able to be accommodated via the surplus for the industrial warehouses.

8.2 Barrier-Free Parking

Under Zoning By-law 0225-2007 Section 3.1.3 requires accessible parking spaces to be provided on site. For a site with 13-100 required parking spaces, 4% of the total required parking spaces must be accessible. For a site with 101-200 required parking spaces, 1 + 3% of the total required parking spaces must be accessible. For a site with 201-1000 required total parking spaces, the required number of barrier-free parking spaces is 2.0 space plus 2% of the required number of parking spaces. Table 8-2 shows the proposed number of accessible parking spaces.

Table 8-2 Required Accessible Parking Spaces

Use		Barrier- free Parking Supply Rate	Minimum Barrier-free Parking Supply	Proposed Barrier-free Parking Supply
Industrial Warehouse	Building DC4	1+3% of total provided	$1+(3\%*196) = 7$	16
	Building DC5	2+2% of total provided	$2+(2\%*218) = 7$	
Data Centre		4% of required parking	$4\%*40 = 2$	4
Total Number of Accessible Parking Spaces			16	20

Accordingly, the proposed barrier-free parking supply of 20 parking spaces meets the minimum parking supply required.

8.3 Electric Vehicle Parking Spaces

In accordance with Zoning By-law 0225-2007, Table 3.1.1.12 (Line 6.0), non-residential uses identified in Table 3.1.1.12 are required to provide electric vehicle parking spaces at a rate of 10% of the total required parking spaces or 1 space, whichever is greater. Table 8-3 shows the proposed number of electric vehicle parking spaces.

Table 8-3 Required Accessible Parking Spaces

Use		Parking Supply Rate	Minimum Required EV Spaces	Proposed EV Spaces
Industrial Warehouse	Building DC4	10% of total required (min 1)	20	20
	Building DC5		22	22
Data Centre			4	4
Total Number of EV Parking Spaces			46	46

Accordingly, the proposed EV supply of 46 parking spaces meets the minimum parking supply required.

8.4 Bicycle Parking Requirements

The site is subject to the City of Mississauga Zoning By-law 0225-2007 and requires a total of 38 bicycle parking spaces. The requirements and provision of bicycle parking are summarized in Table 8-4 below.

Table 8-4 Required Bicycle Parking Spaces

Use		Bicycle Parking Supply Rate	Minimum Bicycle Parking Supply	Proposed Bicycle Parking Supply
Warehouse	Building DC4	0.05 Spaces per 100 m ² (Class A- Indoor)- Non-Residential	13	13
	Building DC5		15	15
Data Centre			10	110
Total Bicycle Parking Spaces			38	139

Accordingly, the proposed bicycle parking supply spaces meet the minimum parking supply required.

8.5 Loading Assessment

The proposed development will provide industrial buildings DC4 with 26,823 m² and DC5 with 30,503 m² of warehouse space. According to Zoning By-law 0225-2007 Section 3.1.4.3, developments with a GFA greater than 14,000 m² require 3 loading spaces plus 1 additional space for each 9,300 m² GFA. Loading space requirements are provided in Table 8-5.

Table 8-5 Loading Spaces Requirements and Proposed Supply

Buildings	Loading Spaces Rate	Minimum Required Loading Spaces Supply	Proposed Loading Space
DC4	3+1 per 9,300 m ² over 14,000 m ²	5	45
DC5		5	56
Data Centre		4	3
Total Number of Loading Spaces		14	104

The proposed supply exceeds the minimum required number of loading spaces.

The proposed loading space dimensions meet the by-law requirements of a loading space that is rectangular area with a minimum width of 3.5 m and a minimum length of 9.0 m.

9 SITE PLAN REVIEW

As part of this traffic study, TYLin reviewed the proposed site plan for the development. The proposed site is anticipated to use two site Accesses, one via the easement and road extension onto 10th Line (South Access) and the other directly onto 10th Line (North Access). The northern Access is anticipated to support the Data Centre whereas the southern access is anticipated to support the two Industrial buildings DC 4 and DC5. . The review was conducted in accordance with the applicable City of Mississauga standards and the guidelines set by the Transportation Association of Canada (TAC).

9.1 Sightline Analysis

A desktop sightline review of the site accesses has been completed by TYLin. TAC Geometric Design Guide for Canadian Roads (June 2019) was used to determine the required sight distances. Chapter 9 of the TAC guidelines provided tables to determine the minimum requirements for the design Intersection Sight Distance (ISD) while Chapter 2 provided the minimum Stopping Sight Distance (SSD). The ISD requirement is greater than that for minimum Stopping Sight Distance, thus only ISD was reviewed as an available sight distance satisfying this requirement would satisfy both requirements.

The required ISD is determined by using the time gap required by a vehicle to perform a maneuver and accelerate to the design speed of the road. The TAC Guidelines use different “Cases” to determine the Time Gap. Requirements for sight distances will therefore vary based on the type of intersection, the approach grade of the road, as well as the maneuver being performed by the vehicle. The Cases investigated for the site access are as follows:

- ▶ Case B (TAC Chapter 9) – Intersections with stop control on minor road;
- ▶ Case B1 – left turn from minor road;
- ▶ Case B2 – right turn from the minor road;

Table 99-1 summarizes the available sight distances at the site access. 10th Line has minimal horizontal or vertical curvature and assumed posted speed of 50 km/h, and design speed of 50km/h. City of Mississauga Complete Street Guide states that best practice in urban area is to design street so that operating speeds are the same as posted speed. For a major collector, with posted speed 50km/h or above, the design speed = posted speed, similar to best practices in other Canadian jurisdictions.

Table 99-1 | SD Requirements

Access	Maneuver	Design Speed	TAC ISD Passenger Car Requirement (m)	TAC ISD Combination Truck Requirement (m)	Minimum Available Sight Distance (m)	Meets Standards (Y/N)
Northern Access (10th Line)	Left Turn from Stop	50 km/h	105	170	500	Y
	Right Turn from Stop		95	150	180	Y
Southern Access (10th Line)	Left Turn from Stop	50 km/h	105	170	250	Y
	Right Turn from Stop		95	150	500	Y

The available sight distance exceeds the required ISD and will also satisfy minimum stopping sight distance requirements. The sight distance review confirms all sight distance requirements have been met and are illustrated in **Appendix F**.

9.2 Access Review

As part of the site plan review, an evaluation of the proposed site accesses along 10th Line West was conducted. This review is based on the City of Mississauga Design Standards and the Transportation Association of Canada (TAC) Geometric Design Guidelines.

9.2.1 Intersection Angle

The proposed northern and southern site access will intersect 10th Line at an angle of 88 and 90 degrees respectively. Both intersection angles fall within the recommended range of 70 to 110 degrees, as outlined by the Transportation Association of Canada (TAC), which is considered acceptable for ensuring safe and efficient access. These angles are illustrated in **Appendix F**.

9.2.2 Corner Clearance

Regarding the recommended minimum corner clearance distance between an intersection and an entranceway (driveway), the Transportation Association of Canada (TAC) outlines the suggested minimum corner clearances in Chapter 8 of the TAC Geometric Design Guide for Canadian Roads (June 2017). Figure 8.8.2 in TAC Chapter 8, Section 8.8.1, specifies the minimum corner clearance for collector roads as 55 meters for signalized intersections and 20 meters for unsignalized intersections. 10th Line Road is a collector road and an undivided roadway. The northern and southern access are not located near any adjacent intersection with the closes being over 500 m away to the south, and a private driveway access to the Hope Church located approximately 70m northerly. These corner clearance requirements have been met for both the proposed northern

and southern driveways along 10th Line, as shown in **Appendix F**.

9.2.3 Intersection Curb Radii

Based on TAC design guidelines for industrial land uses, a minimum curb radius of 6 to 15 meters is required at the proposed two-way site accesses onto 10th Line. These requirements have been met, as illustrated in **Appendix F**.

9.2.4 Clear Throat Length

Based on TAC design guidelines, the minimum clear throat length for an industrial land use between greater than 45,000m² is 15m, measured from the curb return. This requirement has been met for the proposed driveway, as illustrated in **Appendix F**.

9.3 Site Circulation Review

Site access will be provided via two full moves unsignalized intersections. The northern access will be solely for the data centre, while the southern access will be primarily for the two industrial buildings.

Vehicle maneuvering diagrams have been prepared for the proposed site. This includes a review of heavy vehicles, waste collection, passenger vehicles and fire route access. The vehicle maneuvering diagrams are provided in Appendix G.

9.4 Loading Vehicles

Loading vehicles turning movements for the site were simulated using Transportation Association of Canada (TAC) WB-20 tractor-trailer vehicles'. Truck turning movements indicate that wb-20 can egress, circulate to the loading area, and egress the site for both the data centre (north access) and the industrial buildings (south access) without conflict.

9.5 Waste Collection Vehicles

For this site, the waste collection vehicle is a Front-End Waste Truck, which can access the site and maneuver in the waste collection area without conflict. The waste collection truck was simulated using a Front-End Waste Truck model from the Peel Region.

9.6 Passenger Vehicles

Passenger vehicle turning movements were simulated using a Transportation Association of Canada (TAC) passenger vehicle. The simulations indicate that passenger vehicles can access the site and circulate within the parking areas without conflict.

9.7 Fire Route Vehicle

Emergency fire truck vehicles were simulated using a Mississauga Aerial Fire Truck design vehicle. Turning movements indicate that the selected fire truck vehicle can ingress, circulate and egress both sites.

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10 PEDESTRIAN CIRCULATION PLAN

A pedestrian Circulation Plan is proposed to guide the provisions to encourage people to walk more. When people walk more, they are more physically fit and have fewer health problems. Walking more and driving less also reduces greenhouse gas emissions and results in other environmental benefits. In addition, good pedestrian design brings economic benefits as walkable places attract consumers. Since all trips begin and end with an individual walking, providing a well-designed pedestrian network within a proposed development is crucial. Major considerations in developing walkable, connected neighbourhoods, and creating a pedestrian oriented environment include:

- ▶ Creating safe pedestrian facilities at all pathways and while crossing intersections;
- ▶ Providing adequate separation between pedestrian and vehicular facilities;
- ▶ Remaining sensitive to the needs of persons with physical challenges; and
- ▶ Completing missing pedestrian linkages within and immediately adjacent to the development to create connectivity.

Currently, there are no designated pedestrian facilities within the vicinity of the site or on boundary roads (10th Line). The current site plan includes sidewalks around the exterior of each building with the exception of the loading areas. As there are no existing pedestrian facilities leading to the site it is anticipated that any pedestrians will utilize the side of the road (10th Line) as well as the adjacent development to the south to access the site. Once on the site pedestrians will have to utilize the landscaped areas and cross the associated parking areas/travel lanes to access the proposed pedestrian facilities. Based on the proposed land use of the site as well as the location, the site is in line with adjacent properties for pedestrian connectivity. It is recommended that designated pedestrian crossings be included within farther updates to the site plan to ensure safe crossing of vehicle travel lanes.

Appendix H summarizes potential pedestrian paths as well as highlights the proposed pedestrian facilities.

11 TRANSPORTATION DEMAND MANAGEMENT

11.1 TDM Objectives

Development of site-specific Transportation Demand Management Plan (TDM) measures for the proposed development is based on a four-year planning horizon. Therefore, in the context that the primary objective is to reduce single occupancy vehicle use, the plan will review opportunities to set realistic targets for increased use of carpooling, transit, cycling, and walking trips. This plan recommends measures with a pre-and post-baseline commuter survey of all employees.

Transportation Demand Management (TDM) refers to a variety of strategies to reduce congestion, minimize the number of single-occupant vehicles, encourage non-auto modes of travel, and reduce vehicle dependency to create a sustainable transportation system. TDM strategies have multiple benefits including the following:

- Reduced auto-related emissions to improve air quality
- Decreased traffic congestion to reduce travel time
- Increased travel options for businesses and commuters
- Reduced personal transportation costs and energy consumptions

The combined benefits listed above will assist in creating a more active and liable community through improvements to overall active transportation facilities for businesses and the surrounding community. Typical TDM measures include:

1. Carpool/vanpool ride sharing
2. Bicycle and pedestrian programs
3. Promotion of public transit
4. Parking supply and management strategies

Establishment of Transportation Management Associations (TMA's) in employment areas and car sharing organizations

All recommended and proposed TDM measures are noted as the responsibility of the owner.

11.2 City and Region TDM Objectives

A Transportation Demand Management (TDM) Plan is proposed to guide the provision of viable alternative personal transportation options beyond the private, single-occupant vehicle (SOV).

Consistent with the Region of Peel and City of Mississauga Official Plan, this TDM Plan intends to support the development by outlining TDM measures and a suite of strategies under consideration

to promote the use of more active and sustainable transportation modes, respond to the mobility needs of employees and patrons of the site, and reduce dependence on the private automobile, especially SOV travel.

11.2.1 City of Mississauga Official Plan

Per the City of Mississauga Official Plan Policy 8.5 “Transportation Demand Management (TDM) measures encourage people to take fewer and shorter vehicle trips to support transit and active transportation choices, enhance public health and reduce harmful environmental impacts. TDM is most effective when supported by complementary land use planning, good urban design and transit improvements.” Typical TDM strategies reduce vehicle dependency, single occupant vehicle travel, trip distance and time and peak period congestion. Typical TDM measures highlighted in the City’s Official Plan include:

- To encourage TDM strategies that promote transit use and active transportation, and reduce vehicle dependency, single occupant vehicle travel, trip distance and time and peak period congestion.
- To manage parking in intensification area to encourage the use of alternative modes of transportation and the reduction of vehicular congestion.
- To encourage land uses permitted by this Plan that make efficient use of the transportation system and parking facilities during off-peak hours.
- In appropriate areas, to encourage a fee for parking and the separation of parking costs from other costs, such as transit fares, building occupancy and residential unit prices.

Prior to approval of development applications, particularly those that will generate significant employment opportunities, a TDM plan may be required that demonstrates, among other things, the following:

- building orientation that supports transit service.
- minimize distance between main building entrances and transit stations/stops.
- development that is integrated into the surrounding pedestrian and cycling network.
- parking facilities designed to provide safe and efficient access for pedestrians and cyclists emanating from the surrounding transit and active transportation network; and secure, conveniently located, weather protected, on-site bicycle storage facilities, and associated amenities such as showers, change rooms and clothing lockers.

11.2.2 Region of Peel Official Plan

Policy 5.9.9 of the Region of Peel Official Plan (OP) states “Growth in population and employment in Peel Region has led, and will continue to lead, to increased travel demand through the

construction of new roads and the widening of existing roads. Such “supply side” solutions, however, will not be enough in the future. Exclusive dependence on roads is neither sustainable nor desirable. It is necessary to also consider “demand side” solutions, such as Transportation Demand Management measures. While TDM alone cannot be expected to meet the future growth in demand, it is an important component of the range of solutions that will be needed to meet forecast travel demand.”

Peel Region TDM objectives include:

- To reduce auto dependency by promoting sustainable modes of transportation.
- To provide a range of transportation services to meet the diverse needs of the population.
- To maximize the capacity of the transportation system to move both people and goods.

It is the policy of Regional Council to:

Encourage area municipalities to:

- Provide land uses and site design which foster the use of sustainable modes of transportation.
- Promote infrastructure to encourage teleworking.
- Promote a balance of jobs and housing in communities to reduce the need for long distance commuting.
- For new development in designated greenfield areas, create street configurations, densities and an urban form that support walking, cycling and the early integration and sustained viability of transit services and create high quality public open spaces with site design and urban design standards that support opportunities.

Work with all levels of the public and private sectors to develop programs that place primary consideration on the reduction or elimination of trips and the increased use of sustainable modes of transportation and to develop programs for implementing these and other travel demand management strategies.

Work with the area municipalities, local Transportation Management Associations and school boards to evaluate and measure the progress of TDM programs and to develop new innovative strategies and initiatives.

Work with the public and private sectors to develop and support outreach and marketing programs that promote sustainable transportation alternatives, such as active transportation and transit, to affect changes in peoples’ travel behavior and to encourage increased use of these alternatives.

Work with the area municipalities to promote and support the development and implantation of TDM strategies and programs within the Regional and area municipal governments.

Encourage area municipalities, local Transportation Management Associations and the private sector to develop parking management strategies that make more efficient use of parking resources and that encourage the use of sustainable modes of transportation.

Encourage area municipalities to update their parking and zoning by-laws to support and facilitate transportation demand management measures.

11.2.3 Region of Peel Sustainable Transportation Strategy

The Sustainable Transportation Strategy (STS), approved by Regional Council in February 2018, sets a goal of a 50% sustainable mode share by 2041.

The Peel Region Sustainable Transportation Strategy provides a framework for how the Region will:

- Increase the current 37% share of trips by walking, cycling, transit, carpooling and telework in Peel Region, to achieve a 50% sustainable mode share by 2041.
- Accommodate growth in a way that prioritizes environmental, societal and economic sustainability.
- Contribute to a Regional transportation system that is safe, convenient, efficient, multi-modal, well- integrated and sustainable.

The Region's STS includes "ambitious mode share targets for transit, walking, cycling, carpooling and telework in 2041, aiming to maximize the role of sustainable modes in serving the Region's projected 40% growth in travel demand. Achieving these targets will require substantial improvements in major transportation infrastructure (notably facilities for rapid transit, walking and cycling) and services (notable regional and local public transit services, and maintenance of walking and cycling facilities)".

The STS has two accompanying implementation plans, one focusing on active transportation and another focusing on transportation demand management. With their 2018-2022 timelines, the implementation plans lay out the short-term priorities of the STS, such as:

- The locations of new and upgraded walking and cycling infrastructure.
- Encouraging and supporting cycling and walking to and from schools, transit hubs, and other community destinations.
- Implementation of new carpool lots and targeted carpooling promotion.
- The development of a teleworking toolkit.
- Guidance for new development.

11.3 Proposed TDM Measures

The TDM Plan provides measures as they relate to the physical site plan that will reduce reliance on the automobile at the site and in the area by providing several strategies as part of the site development and as part of their day-to-day operations.

11.3.1 Carpooling

Carpool parking is proposed as a way of encouraging the reduction of single-occupancy vehicle use. Among designated car-pool spaces, the following additional measures are recommended to encourage alternatives to SOV use:

- The provision of car-share parking spaces to accommodate a car-share service provider.
- The provision of additional bicycle parking spaces; and
- The introduction of a ride-share program.

It is recommended the subject site provide such TDM measures to meet the objectives and targets to reduce vehicular travel demand and encourage cycling and walking.

11.3.2 Local Transit Consideration

As discussed in Section 3.2 there are several transit routes operating in the vicinity of the subject area including the Go Transit, Mississauga MiWay Transit, Brampton Transit Route, and Milton Transit. The presence of these transit services should be communicated to new employees of the development as part of an information brochure on available transportation alternatives.

11.3.3 Rideshare Services

With ride hailing services like Uber, Lyft and other emerging competitors, it should be noted these platforms would provide employees with flexible alternatives to transit, cycling and driving for short, local trips. For future site employees who may not own or have access to a car, rideshare services may be used to reach a local transit station, home, or needed services. This is also an option for those who may not be able to participate in active transportation options and require a door-to-door service, at potentially lower costs than a traditional taxi service.

11.3.4 Information Brochure

The TDM opportunities would benefit from an additional measure of preparing a customized commuter options brochure for employees. This brochure would contain details on a variety of travel options such as: local/regional transit, pedestrian trails, cycling, and transit facilities and carpool options. The package may include a community map, Mississauga Transit route maps, and GO Transit route map and schedules.

People who cycle for recreational purposes are good groups to target as potential commuter cyclists. They have access to a bicycle and may already be familiar with the City's network of cycling and trail facilities. Many commuters, however, may have simply never tried cycling and could be unfamiliar with appropriate routes, techniques and advice for commuting by bike. This could be reinforced through a Bicycle Network Way-finder Map for commuters that could be included in the information package.

Short-distance commuters could be targeted with messages focusing on the convenience, cost and health benefits of walking or cycling to work. In addition, practical advice regarding route selection, bike parking, and remaining active in cold or wet weather would be useful and effective. This information could be provided to employees during regular communications throughout the year by the City.

Elderly commuters as well as people with physical limitations may be prevented from getting to their destination on their own. In these instances, carpooling, car-share, and shuttle services are important transportation options. The marketing of these opportunities and availability of the services should be provided in further detail to better inform these individuals.

11.4 TDM Monitoring and Measures of Success

Baseline Commuter Survey

The City of Mississauga, in collaboration with the future potential employers of the site, should conduct a confidential transportation survey amongst all employees in the proposed development. The comprehensive survey will provide a measure of current commuter traffic patterns, modes of transportation, behaviors and perceptions for the area. Results will also assist in identifying the demand for sustainable transportation options and opportunities to provide better site access and reduce auto trips (such as, an employer initiated car-pooling program).

Follow-Up Commuter Survey

The City of Mississauga, in collaboration with future potential employers, should conduct a follow-up TDM survey two years after the baseline commuter survey. Results will identify areas of success and improvement for sustainable options for the development and surrounding area. A revised work plan could be developed with strategies to improve sustainable transportation that meet the needs of employers and employees.

12 CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations for the analysis associated with the proposed development are as follows:

The analysis of the proposed development indicates that the existing road network generally performs well. However, certain intersections experience challenges during peak traffic periods. Specifically, the intersection of Winston Churchill Blvd & Argentia Rd where the EBL is shown to operate at an LOS of F during the am peak hour due to high delay

The expected traffic generated by the proposed development includes a total of 121 site trips, consisting of 88 inbound and 33 outbound trips, during the AM peak hour. During the PM peak hour, 34 inbound and 86 outbound net auto site trips are predicted, totaling 120 trips.

During future background and future total (2032 and 2037), the overall road network is projected to continue operating effectively, with minor revisions to signal timings able to aid in the critical operations.

TYLin recommends that the Peel Region and the City of Mississauga monitor the intersections with identified operational concerns, the intersection of Winston Churchill Blvd & Argentia Rd and the intersection of Tenth Line W & Argentia Rd. Ongoing monitoring will help assess traffic conditions and ensure that any capacity constraints are effectively addressed.

- ▶ The addition of site traffic to/from the proposed development does not appear to have significant impact on the operations of nearby intersections when compared to the future background conditions.
- ▶ There are no issues with the site's proposed access or internal layout based on the assessed design vehicle and relevant standards.
- ▶ The site meets the required number of loading spaces, parking spaces, barrier free parking spaces, City's zoning by-law.
- ▶ The evaluation of sight distance requirements at all locations have been met
- ▶ It is recommended that the TDM measures mentioned within this report are followed to ensure that the site can provide and guide the provision of viable alternative personal transportation options beyond the private, single-occupant vehicle (SOV) as per the City and Regions Policies.



Appendix A:

Pre-Consultation Correspondence

Appendix A

Certification Form

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

By submitting the attached report (and any associated documents) and signing this document, I acknowledge that:

- I have reviewed and have a sound understanding of the objectives, needs, and requirements of the City of Mississauga's Official Plan, Transportation Master Plan, and the Transportation Impact Study Guidelines as they apply to this submission;
- I have sound knowledge of industry standard practices pertaining to the preparation of development-related transportation study reports;
- I have substantial experience (more than five years) in completing development-related transportation studies and strong background knowledge of the transportation planning and engineering principles underpinning these studies; and
- I am registered as a Professional Engineer (P.Eng.), Licensed Engineering Technologist (LET), Certified Engineering Technologist (C.E.T.), or Registered Professional Planner (RPP) in good standing in the Province of Ontario with specific training in transportation planning and engineering.

Dated at _____ this _____ day of _____, 20____.
(City) (Day) (Month) (Year)

Name: _____

Professional Title: _____

Signature:  _____

Office Contact Information (Please Print)

Address: _____

City/Postal Code: _____

Telephone/Extension: _____

E-mail Address: _____

From: James Emerson <James.Emerson@mississauga.ca>
Sent: Monday, July 28, 2025 3:08 PM
To: William Sherwin
Cc: Michael Dowdall; Bruce Li; Trans Projects
Subject: RE: 7564 10th Line Industrial Development TIS - Terms of Reference
Attachments: [Appendix B Pre-Study Consultation Checklist - 7564 10th Line TIS \(003\) APPROVED.pdf](#); [Appendix A Certification Form - TEMPLATE.pdf](#)

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Hi William,

Please find attached stamped and approved ToR for the proposed development, which encompasses City comments. Other items to note:

- **Certification Form** - The Transportation Consultant must complete, sign, and seal (if appropriate) the attached Certification Form from the City's TIS Guidelines (2022) and append the document to the report to ensure compliance with qualification requirements. The TIS Guidelines can be found at <https://www.mississauga.ca/wp-content/uploads/2023/03/CMississauga-TIS-Guidelines-Version-5.1-Dec-2022.pdf>. It must be ensured that the report conforms to the City's TIS Guidelines.
- **Growth Rates/Traffic Data** - Please contact Tyler Xuereb from the City's Transportation Planning Section (tyler.xuereb@mississauga.ca, Ext. 4783) to confirm growth rates and/or obtain traffic data for the study area roadways. **Please include the correspondence with the city confirming the growth rates in the TIS appendices.**
- **Signal Timing Plans** - Signal timing plans for signalized intersections under the City's jurisdiction can be obtained from Jim Kartsomanis (Jim.Kartsomanis@mississauga.ca, Ext. 3964). **Please include the correspondence with the city confirming the timing plans in the TIS appendices.**
- **TOR Document and Correspondence** - Please include the TOR approved by the city in the TIS appendices as well as any relevant additional correspondence with Traffic Planning staff, if applicable.

Regards,



James Emerson
Traffic Planning Technologist
T 905-615-3200 ext.3043

james.emerson@mississauga.ca

[City of Mississauga](#) | Transportation and Works Department,
300 City Centre Drive | Mississauga ON | L5B 3C1

Please consider the environment before printing.

From: William Sherwin <william.sherwin@tylin.com>

Sent: Tuesday, July 22, 2025 10:52 AM

To: James Emerson <James.Emerson@mississauga.ca>

Cc: Michael Dowdall <michael.dowdall@tylin.com>; Bruce Li <bruce.li@tylin.com>; Ryan Au <Ryan.Au@mississauga.ca>

Subject: [EXTERNAL] 7564 10th Line Industrial Development TIS - Terms of Reference

[CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.]

Hi James/Ryan

We hope this email finds you well. T.Y. Lin International Canada Inc. (TYLin) is pleased to present this draft Terms of Reference to prepare a Traffic Impact Study (TIS) in support of Site Plan Approval (SPA) Application for the proposed Industrial development on the lands municipally known as 7564 Tenth Line West, Mississauga, Peel Region.

Terms of Reference

The latest iteration of the site plan includes 3 buildings; Industrial Building DC4 (26,823 m² GFA) Industrial Building DC 5 (30,503 m² GFA) and a Data Centre (20,338 m² GFA). The site plan includes two site access located off 10th Line West, the northern site access is to serve the Data Centre and southern site access will be through an easement with the property to the south of the site and extension of the existing laneway. The proposed development is anticipated to include a total of 536 parking spaces, inclusive of 20 accessible parking spaces and 45 Electric vehicle spaces.

In order to properly scope this project, we ask the City of Mississauga to confirm the proposed scope of work and provide comments as needed.

1. Study Intersections:

- Winston Churchill Boulevard / Highway 401 Eastbound Ramp Terminal;
- Winston Churchill Boulevard / Highway 401 Westbound Ramp Terminal;
- Winston Churchill Boulevard / Argentina Road;
- Tenth Line West / Argentina Road;
- Ninth Line / Argentina Road;
- Derry Road / Highway 407 Northbound Ramp Terminal;

- Derry Road/Highway 407 Southbound Ramp Terminal;
- Tenth Line West/ North site access; and
- Tenth Line West/ South site access.
- Proposed West Site Access & future Winchester Drive Extension (unsignalized)

2. Existing Traffic Data Collection

- Traffic data for the study intersections will be obtained through a sub consultant specializing in traffic data collection.
- It should be noted that we are proposing to obtain Summer Count Data. Due to the industrial location of the site and surrounding area, and location in relation to educational facilities that summer count data will be acceptable for this project.
 - Ryan I believe Michael has already spoken to you about this to confirm.

Please confirm if the proposed plan for counts is acceptable.

3. Study Horizon years – in compliance with the City of Mississauga’s TIS Guidelines and MTO, the following study horizon years are proposed.

- Existing Year (2025)
- Buildout Year (assumed 2027 to be confirmed)
- 5-Year Horizon (2032)
- 10-year horizon (2037)

Currently, the TIS assume the proposed Sites will be constructed concurrently under one phase. TYLin acknowledges that part of the site is within the MTO Area of Interest for the new proposed Hwy 413 to the north of the site. As such should the development need to be phased, an interim/ultimate scenario will be required. This will be confirmed with MTO corridor.

4. Growth rates – will be determined based on available data including travel surveys, census data and Planning documents. As such TYLin proposed the following growth rates per roadway (All MTO ramp terminals growth rates will be confirmed with MTO)

- Winston Churchill Boulevard 1% compounded annually
- Tenth Line 0.5% compounded annually
- Argentia Road 0.5% compounded annually
- Ninth Line 0.5% compounded annually
- Derry Road 1% compounded annually

5. Based on the City of Mississauga’s Planning Information Hub and Active development applications website indicated that no active development applications are within the area of impact of the proposed site – Please confirm.

6. Obtain from the City any potential/committed future road or intersection improvements, that will be on-stream within the development horizon of 7564 Tenth Line West. This information will inform the 'future background' traffic condition against which to measure site traffic impacts.
7. Derive future background traffic volumes by applying the growth rate and background traffic to existing conditions. A review of traffic operations under future background conditions will be completed to assess if any remedial measures would be required at the study intersections to support the forecasted traffic demand prior to the development implementation.
8. Trip Generation – The site trip generation estimates will be confirmed as part of the study based on the 11th Edition ITE Trip Generation Manual.
9. Trip Distribution/Assignment will be distributed and assigned to the surrounding road network using Transportation Tomorrow Survey (TTS) data and engineering judgement.
10. Create a traffic operations model (Synchro/SimTraffic) for the existing study intersections as well as proposed site accesses to evaluate the effects of the proposed development on the study area.
11. Prepare peak hour operational analyses to investigate and document the impacts of the proposed development. This will include a review of intersection turning movement delays, volume to capacity ratios, and vehicular queuing. We will report any operational deficiencies and recommend mitigating measures, if necessary, to improve traffic operations, including recommending lane configuration changes, turn lane requirements and/or traffic control alterations.
12. Conduct traffic signal warrants at all non-signalized intersections and site accesses based on the future traffic conditions.
13. Conduct a site visit to confirm the existing traffic operations and infrastructure within the study area.
14. Review Multi-Modal LOS for the study area intersections as per City of Mississauga's Guidelines.
15. Completion of a Transportation Demand Management Plan to support non-auto mode of travel in accordance with the City of Mississauga's guidelines. This will be included as a separate chapter within the TIS
16. Completion of a Pedestrian Circulation Plan to ensure it is designed to minimize pedestrian and cyclist conflict points while maintaining pedestrian connectivity. This will be included as a separate chapter within the TIS
17. Review of site circulation for the site accesses and internal driveways based on relevant applicable design criteria.

18. Conduct a Parking Study based on the in-force Zoning By-law requirements. Should a parking reduction be contemplated for the site, a Parking Justification Study will also be conducted.

Furthermore, see below a list of items and data (if available): we kindly request from the City for use in our Traffic Impact study:

1. Historic turning movement counts at study area intersections that are within City's jurisdiction (from the list above)
1. Any Average Annual Daily Traffic (AADT) volumes along road segments in the study area
2. Capital roadworks planned on study area network (and when to expect construction)
3. Future background development application details (including TIS reports) for any noted developments identified.

Thank you in advance for your attention to this matter. We look forward to your comments on the preceding scope of work. Should you have any questions about this email, please do not hesitate to contact myself.

William

William Sherwin

TRAFFIC ENGINEER - PROJECT MANAGER

T +1 289.902.0519

william.sherwin@tylin.com

TYLin

Suite 315

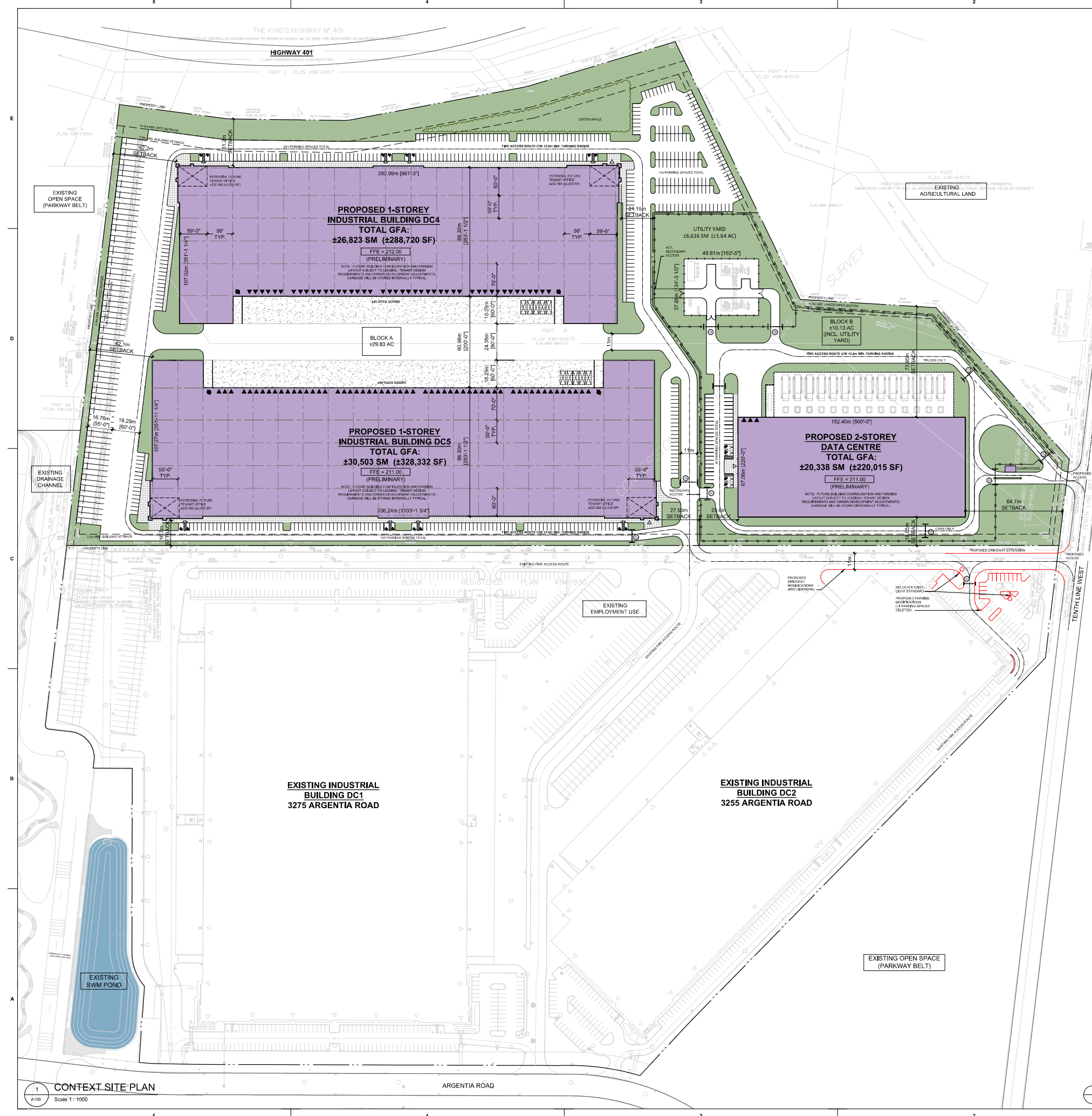
3381 Steeles Avenue East

Toronto, ON M2H 3S7, Canada

TYLin.com |    



Appendix B: **Site Plan**



PROJECT DATA				
7564 TENTH LINE WEST				
ZONING CATEGORY		EMPLOYMENT - E2 (EXISTING D-8)		
PROPOSED USE		INDUSTRIAL BUSINESS		
CITY OF MISSISSAUGA ZONING BY-LAW NO. 6225-2007 Part 8 Table 8.2.1.				
ZONING REGULATIONS	REQ'D	BLDG DC4	BLDG DC4	DATA CENTRE
	(m)	(m)	(m)	(m)
MIN. LOT FRONTAGE	30			
MIN. HEIGHT	N/A			
MIN. FRONT YARD BUILDING SETBACK	7.5			
MIN. INTERIOR SIDE YARD BUILDING SETBACK	7.5			
MIN. EXTERIOR SIDE YARD BUILDING SETBACK	7.5			
MIN. REAR YARD BUILDING SETBACK	7.5			
MIN. LANDSCAPED BUFFER MEASURED FROM				
- A LOT LINE ABUTTING A RESIDENTIAL ZONE	7.0			
- A LOT LINE THAT IS A STREET LINE	4.5			
- A LOT LINE ABUTTING AN INSTITUTIONAL, OFFICE, COMMERCIAL, DOWNTOWN CORE, PARKWAY BELT, BUFFER ZONE OR ANY COMBINATION OF ZONES THEREOF	3.0			
- A LOT LINE ABUTTING AN EMPLOYMENT, UTILITY, AIRPORT ZONE OR ANY COMBINATION OF ZONES THEREOF	9.0			
- ANY OTHER LOT LINE	4.5			
SITE AREA AND COVERAGE		PROPOSED		
		(m2)		(AC)
GROSS SITE AREA		161,717.96		36.96
BLOCK A - INDUSTRIAL LAND		120,735.87		26.83
BLOCK B - DATA CENTRE LAND		40,981.75		10.13
UTILITY YARD		27,991.00		6.99
LANDSCAPE COVERAGE		PROPOSED		
		(m2)		(RF)
INDUSTRIAL BUILDING DC4		26,823.00		288.72
INDUSTRIAL BUILDING DC5		30,503.00		328.32
DATA CENTRE - LEVEL 1		10,219.00		109.99
DATA CENTRE - LEVEL 2		10,219.00		109.99
TOTAL BUILDING FOOTPRINT		98,048.00		1,055.38
TOTAL BUILDING GFA		108,267.00		1,165.37
LOT COVERAGE		0.61		
PARKING REQUIREMENTS (6225-2007 Part 3 Table 3.1.2.2.)				
Warehouses / Distribution Facility				
- 1.1 SPACES PER 100m2 GFA UP TO 6,975 m2 GFA				
- 0.8 SPACES PER 100m2 GFA OVER 6,975 m2 GFA				
		PROPOSED	REQUIRED	
INDUSTRIAL BUILDING DC4		341	196	
INDUSTRIAL BUILDING DC5		155	218	
DATA CENTRE		40	40	
TOTAL NO. OF PARKING SPACES		536	454	
ACCESSIBLE PARKING SPACES				
INDUSTRIAL BUILDING DC4		8	7	
INDUSTRIAL BUILDING DC5		8	8	
DATA CENTRE		4	4	
TOTAL NO. OF ACCESSIBLE PARKING SPACES		20	18	
ELECTRIC VEHICLE PARKING SPACES				
INDUSTRIAL BUILDING DC4		20	20	
INDUSTRIAL BUILDING DC5		22	22	
DATA CENTRE		4	4	
TOTAL NO. OF ELECTRIC VEHICLE PARKING SPACES		45	45	
MIN. PARKING SPACE DIMENSIONS		STANDARD - 2.6m X 5.2m		
MIN. ABLE WIDTH		7.0m		
BICYCLE PARKING REQUIREMENTS (6225-2007 Part 3 Table 3.1.6.4.)				
		PROPOSED	REQUIRED	
BICYCLE PARKING SPACES				
INDUSTRIAL BUILDING DC4		13	13	
INDUSTRIAL BUILDING DC5		15	15	
DATA CENTRE		110	110	
TOTAL NO. OF BICYCLE PARKING SPACES		138	139	
MIN. BICYCLE PARKING SPACE DIMENSIONS		1.8m X 0.6m		
LOADING SPACE REQUIREMENTS (6225-2007 Part 3 Table 3.1.4.3.)				
		PROPOSED	REQUIRED	
LOADING SPACES				
INDUSTRIAL BUILDING DC4		6	6	
INDUSTRIAL BUILDING DC5		6	6	
DATA CENTRE		27	27	
TOTAL NO. OF LOADING SPACES		39	39	
MIN. LOADING SPACE DIMENSIONS		3.5m X 9.2m		

10 AVIVA WAY
SUITE 400
MARKHAM, ONTARIO
L3R 0G1
T 905.470.7000
F 905.470.2500
www.petroff.com

PETROFF
PETROFF PARTNERSHIP ARCHITECTS

LEGAL DESCRIPTION

FOR LEGAL SURVEY INFORMATION REFER TO:
PART OF LOT 14
CONFESSION 10, NEW SURVEY
GEOGRAPHIC TOWNSHIP OF TRAFALGAR
CITY OF MISSISSAUGA
REGIONAL MUNICIPALITY OF FEE
PREPARED BY GENESIS LAND SURVEYING INC.,
10 FOUR SEASONS PLACE, 10TH FLOOR,
TORONTO, ON M8B 6H7 DATED OCTOBER 16, 2024.

SITE SPECIFIC ZONING TO BE VERIFIED UPON
CONSULTATION WITH CITY OF MISSISSAUGA. LAYOUT
IS SUBJECT TO IMPLEMENTATION OF ENVIRONMENTAL,
STORM WATER MANAGEMENT, ETC. REQUIREMENTS
UPON CONSULTATION WITH AUTHORITIES HAVING
JURISDICTION

SITE LEGEND

PROPOSED BUILDING

PROPOSED LANDSCAPED AREA

EXISTING SWM POND

PROPOSED CONCRETE TRUCK ARRIVAL

FIRE ACCESS ROUTE WITH 12.5M TURNING RADIUS

TRUCK LOADING DOCK DOOR

DRIVE-IN DOOR

PRINCIPAL ENTRANCE

SECURITY GATE / FARM

NOTE:
UNLESS NOTED OTHERWISE THE INDUSTRIAL
BUILDINGS SHALL BE CONSTRUCTED WITH AN
INTERIOR CLEAR HEIGHT OF 12.8m (42'4") MIN.

THE CLEAR HEIGHT SHALL BE UNOBSTRUCTED BY ANY
STRUCTURAL ELEMENTS, BUILDING SERVICES,
FURNITURE OR FITTINGS EXCEPT IN STRUCTURAL BAYS
IMMEDIATELY ABUTTING LOADING DOORS, WHERE
FURNITURE, SERVICES AND FITTINGS MAY PROJECT
BELOW THE BOTTOM OF STRUCTURAL STEEL.

NOTE:
REFER TO DRAWINGS FROM MTE CONSULTANTS INC.
FOR GRADING AND SITE SERVING DESIGN
INFORMATION.
REFER TO DRAWINGS FROM HMMSC FOR LANDSCAPE
DESIGN AND SITE FURNITURE INFORMATION.
REFER TO DRAWINGS FROM HAMMERSCHLAG & JOFFE
FOR SITE PHOTOMETRIC AND ELECTRICAL DESIGN
INFORMATION.
REFER TO DRAWINGS FROM LEA FOR TRAFFIC DESIGN
AND SIGNAGE INFORMATION.

REV #	DATE	REVISION TITLE
2025-05-28	ISSUED FOR REVIEW	

PROJECT NO: 25026.00

DRAWN BY: TY

CHECKED BY: RCB

PROJECT TITLE:

7564 TENTH LINE WEST

7564-109 LINE W.
MISSISSAUGA, ONTARIO

Prologis Inc. (Canada)
185 The West Mall, Suite 700, Toronto
647-258-2600

https://www.prologis.com

SHEET TITLE:

CONTEXT SITE PLAN

SEAL:

SHEET NO.

A100



Appendix C:

Turning Movement Counts

Accu-Traffic Inc.

Morning Peak Diagram	Specified Period From: 7:00:00 To: 9:00:00	One Hour Peak From: 8:00:00 To: 9:00:00
Municipality: Mississauga Site #: 2512400001 Intersection: Winston Churchill Blvd & Highway TFR File #: 1 Count date: 6-Aug-25	Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **	Major Road: Winston Churchill Blvd runs N/S	

North Leg Total: 2583 North Entering: 1446 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">66</td> <td style="text-align: right;">15</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">81</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">11</td> <td style="text-align: right;">30</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">41</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">653</td> <td style="text-align: right;">671</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">1324</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">730</td> <td style="text-align: right;">716</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Heavys	66	15	0	81	Trucks	11	30	0	41	Cars	653	671	0	1324	Totals	730	716	0		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">38</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">21</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">1078</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">1137</td> </tr> </table>	Heavys	38	Trucks	21	Cars	1078	Totals	1137	East Leg Total: 723 East Entering: 0 East Peds: 0 Peds Cross:
Heavys	66	15	0	81																											
Trucks	11	30	0	41																											
Cars	653	671	0	1324																											
Totals	730	716	0																												
Heavys	38																														
Trucks	21																														
Cars	1078																														
Totals	1137																														

Heavys	Trucks	Cars	Totals
66	11	653	730

Winston Churchill Blvd

Cars	Trucks	Heavys	Totals
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Highway 401 Eastbound Ramp

Heavys	Trucks	Cars	Totals
29	13	436	478
0	0	0	0
3	2	206	211
32	15	642	

Winston Churchill Blvd

Highway 401 Eastbound Ramp

Cars	Trucks	Heavys	Totals
700	14	9	723

Peds Cross: West Peds: 0 West Entering: 689 West Leg Total: 1419	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">877</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">32</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">18</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">927</td> </tr> </table>	Cars	877	Trucks	32	Heavys	18	Totals	927	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">0</td> <td style="text-align: right;">642</td> <td style="text-align: right;">700</td> <td style="border-left: 1px solid black; text-align: right;">1342</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">8</td> <td style="text-align: right;">14</td> <td style="border-left: 1px solid black; text-align: right;">22</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> <td style="text-align: right;">9</td> <td style="text-align: right;">9</td> <td style="border-left: 1px solid black; text-align: right;">18</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">0</td> <td style="text-align: right;">659</td> <td style="text-align: right;">723</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Cars	0	642	700	1342	Trucks	0	8	14	22	Heavys	0	9	9	18	Totals	0	659	723		Peds Cross: South Peds: 0 South Entering: 1382 South Leg Total: 2309
Cars	877																														
Trucks	32																														
Heavys	18																														
Totals	927																														
Cars	0	642	700	1342																											
Trucks	0	8	14	22																											
Heavys	0	9	9	18																											
Totals	0	659	723																												

Comments

Accu-Traffic Inc.

Afternoon Peak Diagram	Specified Period From: 16:00:00 To: 18:00:00	One Hour Peak From: 16:30:00 To: 17:30:00
Municipality: Mississauga Site #: 2512400001 Intersection: Winston Churchill Blvd & Highway TFR File #: 1 Count date: 6-Aug-25	Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **	Major Road: Winston Churchill Blvd runs N/S	

North Leg Total: 3092 North Entering: 1989 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">68</td> <td style="text-align: right;">11</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">79</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">8</td> <td style="text-align: right;">9</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">17</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">496</td> <td style="text-align: right;">1397</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">1893</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">572</td> <td style="text-align: right;">1417</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Heavys	68	11	0	79	Trucks	8	9	0	17	Cars	496	1397	0	1893	Totals	572	1417	0		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">44</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">21</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">1038</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">1103</td> </tr> </table>	Heavys	44	Trucks	21	Cars	1038	Totals	1103	East Leg Total: 479 East Entering: 0 East Peds: 0 Peds Cross:
Heavys	68	11	0	79																											
Trucks	8	9	0	17																											
Cars	496	1397	0	1893																											
Totals	572	1417	0																												
Heavys	44																														
Trucks	21																														
Cars	1038																														
Totals	1103																														

Heavys	Trucks	Cars	Totals
68	8	496	572

Winston Churchill Blvd

Cars	Trucks	Heavys	Totals
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Highway 401 Eastbound Ramp

Heavys	Trucks	Cars	Totals
30	12	298	340
0	0	0	0
6	4	319	329
36	16	617	

Winston Churchill Blvd

Highway 401 Eastbound Ramp

Cars	Trucks	Heavys	Totals
454	8	17	479

Peds Cross: West Peds: 0 West Entering: 669 West Leg Total: 1241	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">1716</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">13</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">17</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">1746</td> </tr> </table>	Cars	1716	Trucks	13	Heavys	17	Totals	1746	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">0</td> <td style="text-align: right;">740</td> <td style="text-align: right;">454</td> <td style="border-left: 1px solid black; text-align: right;">1194</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">9</td> <td style="text-align: right;">8</td> <td style="border-left: 1px solid black; text-align: right;">17</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> <td style="text-align: right;">14</td> <td style="text-align: right;">17</td> <td style="border-left: 1px solid black; text-align: right;">31</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">0</td> <td style="text-align: right;">763</td> <td style="text-align: right;">479</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Cars	0	740	454	1194	Trucks	0	9	8	17	Heavys	0	14	17	31	Totals	0	763	479		Peds Cross: South Peds: 0 South Entering: 1242 South Leg Total: 2988
Cars	1716																														
Trucks	13																														
Heavys	17																														
Totals	1746																														
Cars	0	740	454	1194																											
Trucks	0	9	8	17																											
Heavys	0	14	17	31																											
Totals	0	763	479																												

Comments

Accu-Traffic Inc.

Total Count Diagram

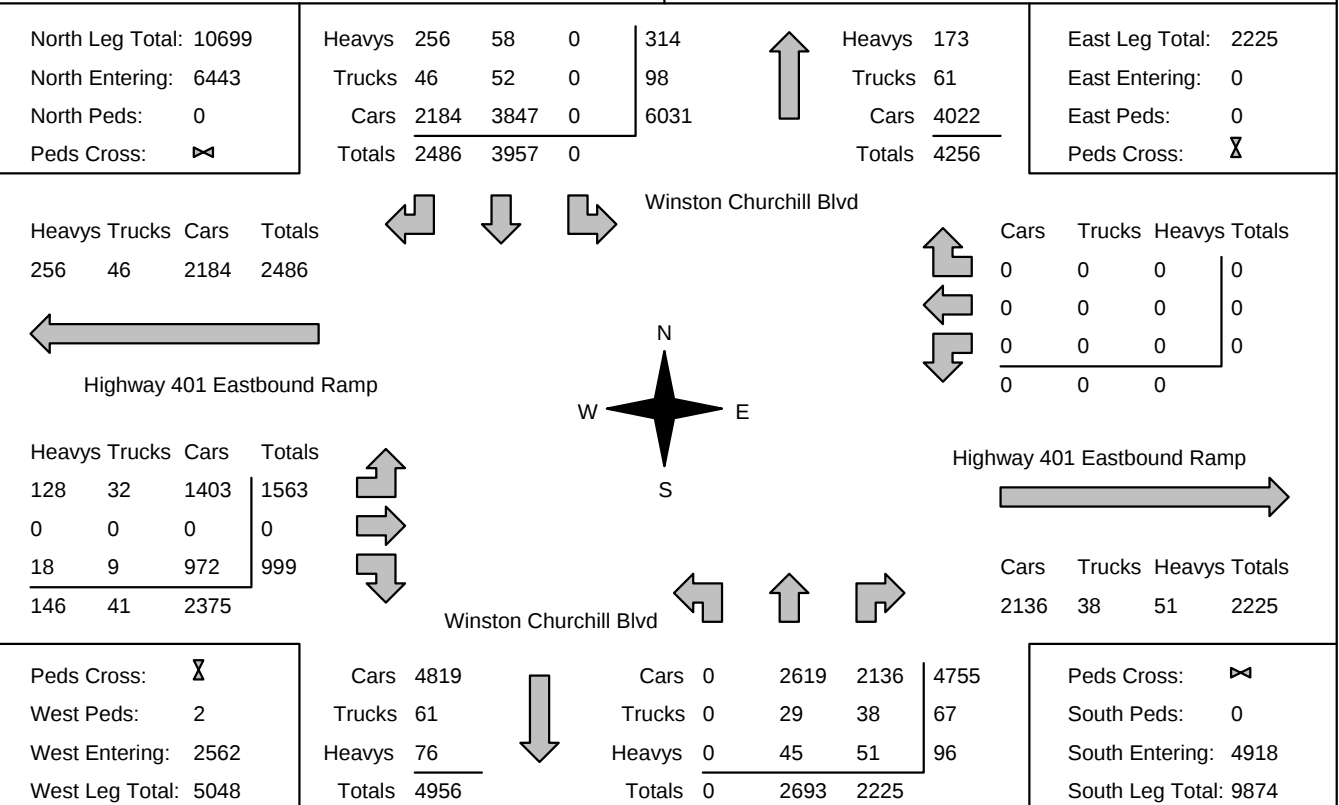
Municipality: Mississauga
Site #: 2512400001
Intersection: Winston Churchill Blvd & Highway
TFR File #: 1
Count date: 6-Aug-25

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Winston Churchill Blvd runs N/S



Comments

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Winston Churchill Blvd & Highway						Count Date: 6-Aug-25		Municipality: Mississauga					
North Approach Totals						North/South Total Approaches	South Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total		
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0	
8:00:00	0	554	720	1274	0	2384	8:00:00	0	521	589	1110	0	
9:00:00	0	716	730	1446	0	2828	9:00:00	0	659	723	1382	0	
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0	
17:00:00	0	1253	531	1784	0	2998	17:00:00	0	758	456	1214	0	
18:00:00	0	1434	505	1939	0	3151	18:00:00	0	755	457	1212	0	

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Accu-Traffic Inc.

Morning Peak Diagram		Specified Period From: 7:00:00 To: 9:00:00	One Hour Peak From: 8:00:00 To: 9:00:00
Municipality: Mississauga Site #: 2512400002 Intersection: Winston Churchill Blvd & Highway TFR File #: 1 Count date: 6-Aug-25		Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **		Major Road: Winston Churchill Blvd runs N/S	

North Leg Total: 3006 North Entering: 1605 North Peds: 1 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>46</td><td>73</td><td>0</td><td>119</td></tr> <tr><td>Trucks</td><td>14</td><td>30</td><td>0</td><td>44</td></tr> <tr><td>Cars</td><td>326</td><td>1116</td><td>0</td><td>1442</td></tr> <tr><td>Totals</td><td>386</td><td>1219</td><td>0</td><td></td></tr> </table>	Heavys	46	73	0	119	Trucks	14	30	0	44	Cars	326	1116	0	1442	Totals	386	1219	0		<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>104</td></tr> <tr><td>Trucks</td><td>38</td></tr> <tr><td>Cars</td><td>1259</td></tr> <tr><td>Totals</td><td>1401</td></tr> </table>	Heavys	104	Trucks	38	Cars	1259	Totals	1401	East Leg Total: 895 East Entering: 696 East Peds: 0 Peds Cross:
Heavys	46	73	0	119																											
Trucks	14	30	0	44																											
Cars	326	1116	0	1442																											
Totals	386	1219	0																												
Heavys	104																														
Trucks	38																														
Cars	1259																														
Totals	1401																														

Heavys	Trucks	Cars	Totals
46	14	331	391

Winston Churchill Blvd

Cars	Trucks	Heavys	Totals
375	24	71	470
3	0	0	3
204	10	9	223
582	34	80	

Hwy 401 Carpool Lot

Highway 401 Westbound Ramp

Heavys Trucks Cars Totals 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Winston Churchill Blvd 	Cars Trucks Heavys Totals 1320 40 82 1442 2 0 0 2 884 14 33 931 187 6 6 199	Peds Cross: South Peds: 0 South Entering: 1132 South Leg Total: 2574
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Comments

Accu-Traffic Inc.

Afternoon Peak Diagram	Specified Period From: 16:00:00 To: 18:00:00	One Hour Peak From: 16:45:00 To: 17:45:00
Municipality: Mississauga Site #: 2512400002 Intersection: Winston Churchill Blvd & Highway TFR File #: 1 Count date: 6-Aug-25	Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **	Major Road: Winston Churchill Blvd runs N/S	

North Leg Total: 3259 North Entering: 1595 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys 31</td> <td style="padding: 2px;">65</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">96</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks 1</td> <td style="padding: 2px;">11</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">12</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars 402</td> <td style="padding: 2px;">1085</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">1487</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals 434</td> <td style="padding: 2px;">1161</td> <td style="padding: 2px;">0</td> <td></td> </tr> </table>	Heavys 31	65	0	96	Trucks 1	11	0	12	Cars 402	1085	0	1487	Totals 434	1161	0		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys 104</td> <td style="padding: 2px;">104</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks 25</td> <td style="padding: 2px;">25</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars 1535</td> <td style="padding: 2px;">1535</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals 1664</td> <td style="padding: 2px;">1664</td> </tr> </table>	Heavys 104	104	Trucks 25	25	Cars 1535	1535	Totals 1664	1664	East Leg Total: 1786 East Entering: 1567 East Peds: 0 Peds Cross:
Heavys 31	65	0	96																								
Trucks 1	11	0	12																								
Cars 402	1085	0	1487																								
Totals 434	1161	0																									
Heavys 104	104																										
Trucks 25	25																										
Cars 1535	1535																										
Totals 1664	1664																										

Heavys	Trucks	Cars	Totals
31	1	417	449

Hwy 401 Carpool Lot

Heavys	Trucks	Cars	Totals
0	0	7	7
0	0	0	0
0	0	18	18
0	0	25	

Winston Churchill Blvd

W N E S

Winston Churchill Blvd

Cars	Trucks	Heavys	Totals
683	9	63	755
10	0	0	10
795	6	1	802
1488	15	64	

Highway 401 Westbound Ramp

Cars	Trucks	Heavys	Totals
216	0	3	219

Peds Cross: West Peds: 0 West Entering: 25 West Leg Total: 474	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars 1898</td> <td style="padding: 2px;">1898</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks 17</td> <td style="padding: 2px;">17</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys 66</td> <td style="padding: 2px;">66</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals 1981</td> <td style="padding: 2px;">1981</td> </tr> </table>	Cars 1898	1898	Trucks 17	17	Heavys 66	66	Totals 1981	1981	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars 5</td> <td style="padding: 2px;">845</td> <td style="padding: 2px;">216</td> <td style="padding: 2px;">1066</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks 0</td> <td style="padding: 2px;">16</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">16</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys 0</td> <td style="padding: 2px;">41</td> <td style="padding: 2px;">3</td> <td style="padding: 2px;">44</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals 5</td> <td style="padding: 2px;">902</td> <td style="padding: 2px;">219</td> <td></td> </tr> </table>	Cars 5	845	216	1066	Trucks 0	16	0	16	Heavys 0	41	3	44	Totals 5	902	219		Peds Cross: South Peds: 0 South Entering: 1126 South Leg Total: 3107
Cars 1898	1898																										
Trucks 17	17																										
Heavys 66	66																										
Totals 1981	1981																										
Cars 5	845	216	1066																								
Trucks 0	16	0	16																								
Heavys 0	41	3	44																								
Totals 5	902	219																									

Comments

Accu-Traffic Inc.

Total Count Diagram

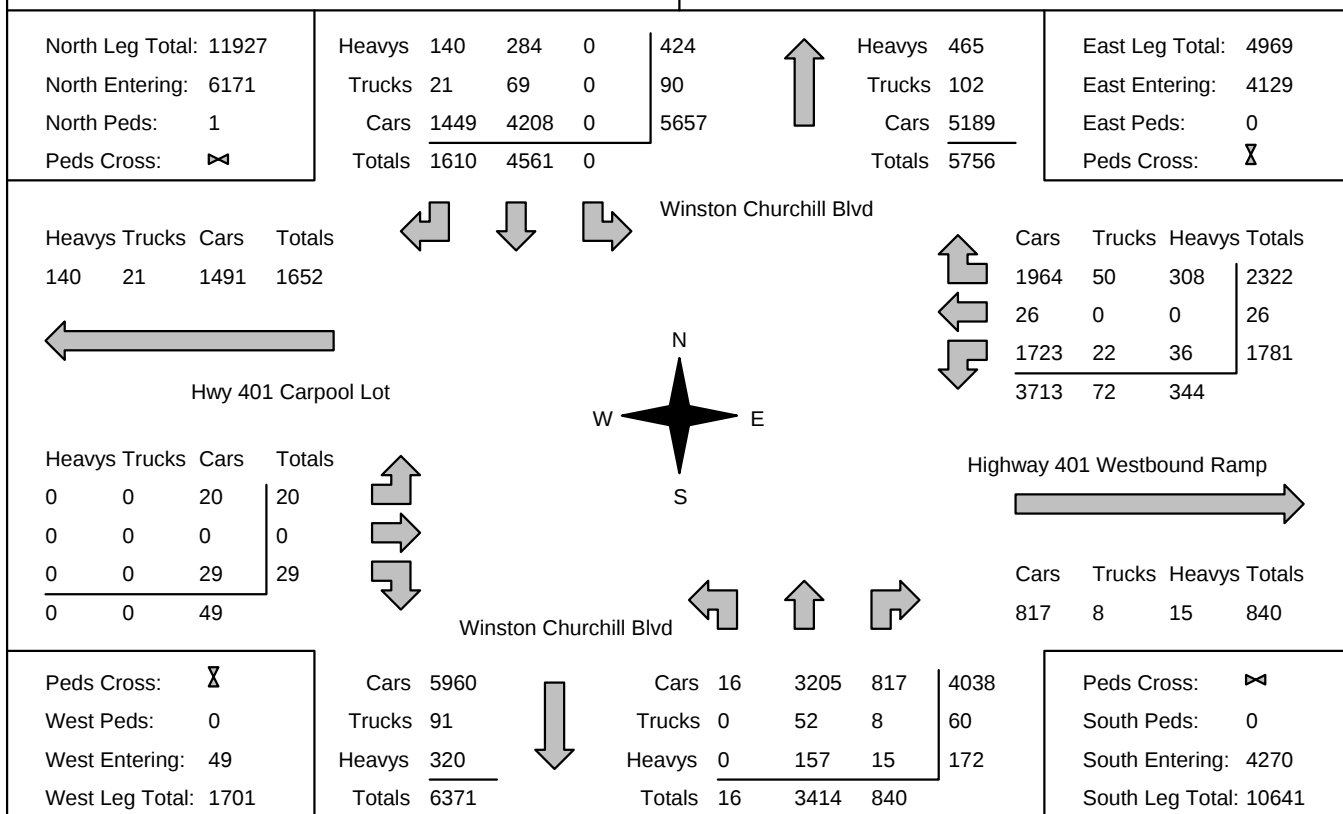
Municipality: Mississauga
Site #: 2512400002
Intersection: Winston Churchill Blvd & Highway
TFR File #: 1
Count date: 6-Aug-25

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Winston Churchill Blvd runs N/S



Comments

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Winston Churchill Blvd & Highway Count Date: 6-Aug-25 Municipality: Mississauga

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	0	1098	388	1486	0	2405	8:00:00	3	713	203	919	0
9:00:00	0	1219	386	1605	1	2737	9:00:00	2	931	199	1132	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	0	1152	416	1568	0	2660	17:00:00	8	865	219	1092	0
18:00:00	0	1092	420	1512	0	2639	18:00:00	3	905	219	1127	0
</												

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Accu-Traffic Inc.

Morning Peak Diagram	Specified Period From: 7:00:00 To: 9:00:00	One Hour Peak From: 8:00:00 To: 9:00:00
Municipality: Mississauga Site #: 2512400003 Intersection: Winston Churchill Blvd & Argentia TFR File #: 1 Count date: 6-Aug-25	Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **	Major Road: Winston Churchill Blvd runs N/S	

North Leg Total: 2273 North Entering: 863 North Peds: 23 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">7</td> <td style="text-align: right;">10</td> <td style="text-align: right;">2</td> <td style="text-align: right;">19</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">8</td> <td style="text-align: right;">17</td> <td style="text-align: right;">5</td> <td style="text-align: right;">30</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">137</td> <td style="text-align: right;">412</td> <td style="text-align: right;">265</td> <td style="text-align: right;">814</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">152</td> <td style="text-align: right;">439</td> <td style="text-align: right;">272</td> <td></td> </tr> </table>	Heavys	7	10	2	19	Trucks	8	17	5	30	Cars	137	412	265	814	Totals	152	439	272		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">18</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">23</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">1369</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">1410</td> </tr> </table>	Heavys	18	Trucks	23	Cars	1369	Totals	1410	East Leg Total: 824 East Entering: 282 East Peds: 7 Peds Cross:
Heavys	7	10	2	19																											
Trucks	8	17	5	30																											
Cars	137	412	265	814																											
Totals	152	439	272																												
Heavys	18																														
Trucks	23																														
Cars	1369																														
Totals	1410																														

Winston Churchill Blvd

<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">9</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">8</td> <td style="text-align: right;">Cars</td> <td style="text-align: right;">283</td> <td style="text-align: right;">Totals</td> <td style="text-align: right;">300</td> </tr> </table>	Heavys	9	Trucks	8	Cars	283	Totals	300								<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">125</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">6</td> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">4</td> <td style="text-align: right;">Totals</td> <td style="text-align: right;">135</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">72</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">1</td> <td style="text-align: right;">Totals</td> <td style="text-align: right;">73</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">70</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">4</td> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> <td style="text-align: right;">Totals</td> <td style="text-align: right;">74</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">267</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">10</td> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">5</td> <td colspan="2"></td> </tr> </table>	Cars	125	Trucks	6	Heavys	4	Totals	135	Cars	72	Trucks	0	Heavys	1	Totals	73	Cars	70	Trucks	4	Heavys	0	Totals	74	Totals	267	Trucks	10	Heavys	5		
Heavys	9	Trucks	8	Cars	283	Totals	300																																									
Cars	125	Trucks	6	Heavys	4	Totals	135																																									
Cars	72	Trucks	0	Heavys	1	Totals	73																																									
Cars	70	Trucks	4	Heavys	0	Totals	74																																									
Totals	267	Trucks	10	Heavys	5																																											

Argentia Rd

<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">4</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">10</td> <td style="text-align: right;">Cars</td> <td style="text-align: right;">306</td> <td style="text-align: right;">Totals</td> <td style="text-align: right;">320</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">1</td> <td style="text-align: right;">Cars</td> <td style="text-align: right;">174</td> <td style="text-align: right;">Totals</td> <td style="text-align: right;">175</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">1</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">Cars</td> <td style="text-align: right;">56</td> <td style="text-align: right;">Totals</td> <td style="text-align: right;">57</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">5</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">11</td> <td style="text-align: right;">Cars</td> <td style="text-align: right;">536</td> <td colspan="2"></td> </tr> </table>	Heavys	4	Trucks	10	Cars	306	Totals	320	Heavys	0	Trucks	1	Cars	174	Totals	175	Heavys	1	Trucks	0	Cars	56	Totals	57	Totals	5	Trucks	11	Cars	536										<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">531</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">7</td> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">4</td> <td style="text-align: right;">Totals</td> <td style="text-align: right;">542</td> </tr> </table>	Cars	531	Trucks	7	Heavys	4	Totals	542
Heavys	4	Trucks	10	Cars	306	Totals	320																																									
Heavys	0	Trucks	1	Cars	174	Totals	175																																									
Heavys	1	Trucks	0	Cars	56	Totals	57																																									
Totals	5	Trucks	11	Cars	536																																											
Cars	531	Trucks	7	Heavys	4	Totals	542																																									

Argentia Rd

Peds Cross: West Peds: 9 West Entering: 552 West Leg Total: 852	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">538</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">21</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">11</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">570</td> </tr> </table>	Cars	538	Trucks	21	Heavys	11	Totals	570	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">74</td> <td style="text-align: right;">938</td> <td style="text-align: right;">92</td> <td style="text-align: right;">1104</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">7</td> <td style="text-align: right;">1</td> <td style="text-align: right;">8</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">1</td> <td style="text-align: right;">10</td> <td style="text-align: right;">2</td> <td style="text-align: right;">13</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">75</td> <td style="text-align: right;">955</td> <td style="text-align: right;">95</td> <td></td> </tr> </table>	Cars	74	938	92	1104	Trucks	0	7	1	8	Heavys	1	10	2	13	Totals	75	955	95		Peds Cross: South Peds: 18 South Entering: 1125 South Leg Total: 1695
Cars	538																														
Trucks	21																														
Heavys	11																														
Totals	570																														
Cars	74	938	92	1104																											
Trucks	0	7	1	8																											
Heavys	1	10	2	13																											
Totals	75	955	95																												

Comments

Accu-Traffic Inc.

Afternoon Peak Diagram	Specified Period From: 16:00:00 To: 18:00:00	One Hour Peak From: 16:45:00 To: 17:45:00
Municipality: Mississauga Site #: 2512400003 Intersection: Winston Churchill Blvd & Argentia TFR File #: 1 Count date: 6-Aug-25	Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **	Major Road: Winston Churchill Blvd runs N/S	

North Leg Total: 2803 North Entering: 1578 North Peds: 40 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">5</td> <td style="text-align: right;">5</td> <td style="text-align: right;">2</td> <td style="text-align: right;">12</td> <td rowspan="5" style="text-align: center; vertical-align: middle;"> </td> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">29</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">2</td> <td style="text-align: right;">6</td> <td style="text-align: right;">7</td> <td style="text-align: right;">15</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">17</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">339</td> <td style="text-align: right;">992</td> <td style="text-align: right;">220</td> <td style="text-align: right;">1551</td> <td style="text-align: right;">Cars</td> <td style="text-align: right;">1179</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">346</td> <td style="text-align: right;">1003</td> <td style="text-align: right;">229</td> <td></td> <td style="text-align: right;">Totals</td> <td style="text-align: right;">1225</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Heavys	5	5	2	12		Heavys	29	Trucks	2	6	7	15	Trucks	17	Cars	339	992	220	1551	Cars	1179	Totals	346	1003	229		Totals	1225								East Leg Total: 1539 East Entering: 976 East Peds: 2 Peds Cross:
Heavys	5	5	2	12		Heavys		29																														
Trucks	2	6	7	15		Trucks		17																														
Cars	339	992	220	1551		Cars		1179																														
Totals	346	1003	229			Totals		1225																														

Heavys	Trucks	Cars	Totals
7	6	977	990

Winston Churchill Blvd

Argentia Rd

Cars	Trucks	Heavys	Totals
277	5	2	284
419	4	1	424
267	1	0	268
963	10	3	

Heavys	Trucks	Cars	Totals
10	3	315	328
1	2	237	240
0	1	198	199
11	6	750	

Winston Churchill Blvd

Argentia Rd

Cars	Trucks	Heavys	Totals
550	9	4	563

Peds Cross: West Peds: 6 West Entering: 767 West Leg Total: 1757	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">1457</td> <td rowspan="5" style="text-align: center; vertical-align: middle;"> </td> <td style="text-align: right;">Cars</td> <td style="text-align: right;">219</td> <td style="text-align: right;">587</td> <td style="text-align: right;">93</td> <td style="text-align: right;">899</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">8</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">9</td> <td style="text-align: right;">0</td> <td style="text-align: right;">9</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">5</td> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">1</td> <td style="text-align: right;">17</td> <td style="text-align: right;">1</td> <td style="text-align: right;">19</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">1470</td> <td style="text-align: right;">Totals</td> <td style="text-align: right;">220</td> <td style="text-align: right;">613</td> <td style="text-align: right;">94</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Cars	1457		Cars	219	587	93	899	Trucks	8	Trucks	0	9	0	9	Heavys	5	Heavys	1	17	1	19	Totals	1470	Totals	220	613	94								Peds Cross: South Peds: 32 South Entering: 927 South Leg Total: 2397
Cars	1457		Cars		219	587	93	899																													
Trucks	8		Trucks		0	9	0	9																													
Heavys	5		Heavys		1	17	1	19																													
Totals	1470		Totals		220	613	94																														

Comments

Accu-Traffic Inc.

Total Count Diagram

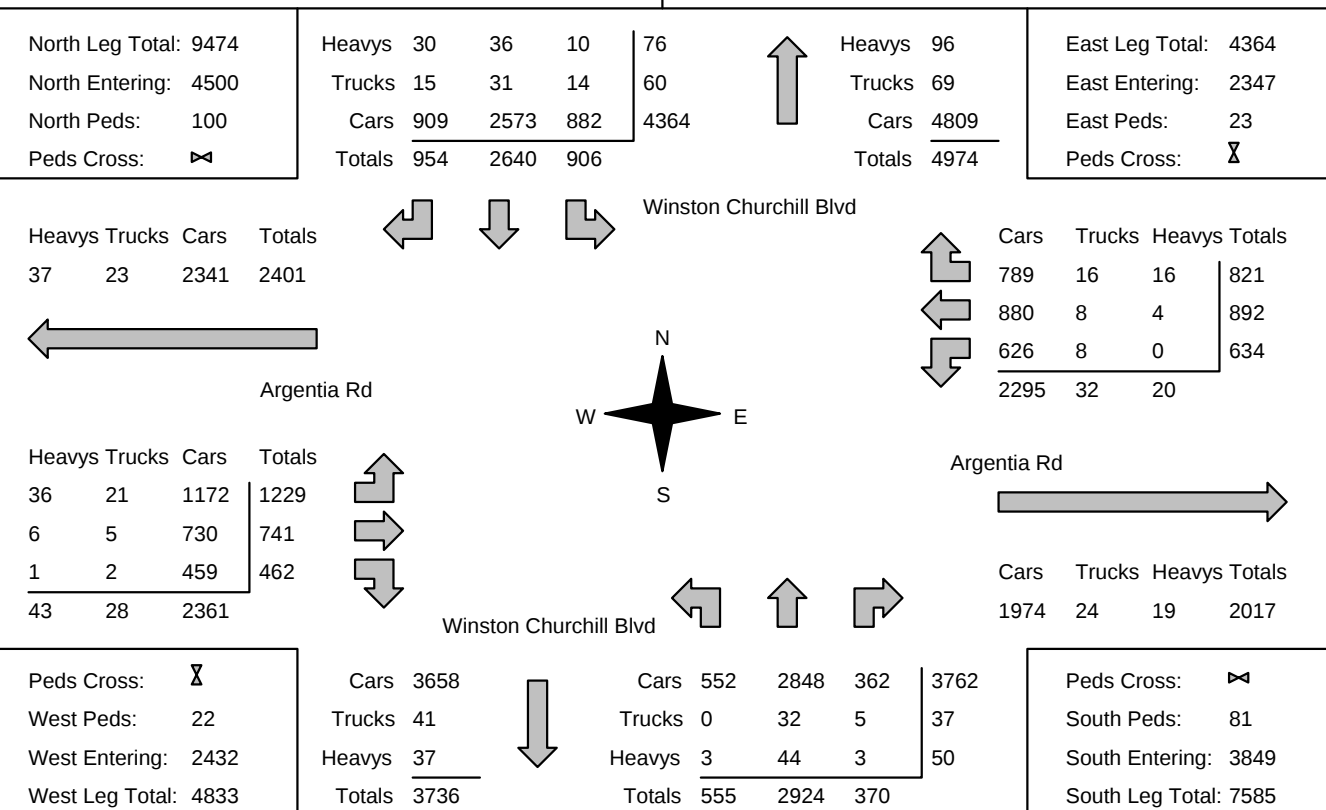
Municipality: Mississauga
Site #: 2512400003
Intersection: Winston Churchill Blvd & Argentinia
TFR File #: 1
Count date: 6-Aug-25

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Winston Churchill Blvd runs N/S



Comments

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Winston Churchill Blvd & Argentina					Count Date: 6-Aug-25		Municipality: Mississauga					
North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	205	337	138	680	19	1541	8:00:00	41	742	78	861	13
9:00:00	272	439	152	863	23	1988	9:00:00	75	955	95	1125	18
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	225	847	307	1379	34	2303	17:00:00	223	603	98	924	24
18:00:00	204	1017	357	1578	24	2517	18:00:00	216	624	99	939	26

[illegible]

[illegible]

[illegible]

[illegible]

Accu-Traffic Inc.

Morning Peak Diagram	Specified Period From: 7:00:00 To: 9:00:00	One Hour Peak From: 7:30:00 To: 8:30:00
Municipality: Mississauga Site #: 2512400004 Intersection: Argentia Rd & Tenth Line W TFR File #: 1 Count date: 6-Aug-25	Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **		Major Road: Argentia Rd runs W/E

North Leg Total: 18 North Entering: 4 North Peds: 3 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">1</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">3</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">2</td> <td style="padding: 2px;"></td> </tr> </table>	Heavys	0	0	1	1	Trucks	0	0	0	0	Cars	1	1	1	3	Totals	1	1	2		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">14</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">14</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">14</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">14</td> </tr> </table>	Heavys	0	0	0	0	Trucks	0	0	0	0	Cars	14	0	0	14	Totals	14	0	0	14	East Leg Total: 680 East Entering: 201 East Peds: 1 Peds Cross:
Heavys	0	0	1	1																																							
Trucks	0	0	0	0																																							
Cars	1	1	1	3																																							
Totals	1	1	2																																								
Heavys	0	0	0	0																																							
Trucks	0	0	0	0																																							
Cars	14	0	0	14																																							
Totals	14	0	0	14																																							

Heavys	Trucks	Cars	Totals
3	3	190	196

Argentia Rd

Heavys	Trucks	Cars	Totals
0	0	3	3
7	3	253	263
0	0	36	36
7	3	292	

N
 W — S — E

Tenth Line W

Cars	Trucks	Heavys	Totals
10	0	0	10
116	3	3	122
66	2	1	69
192	5	4	

Argentia Rd

Cars	Trucks	Heavys	Totals
466	5	8	479

Peds Cross: West Peds: 2 West Entering: 302 West Leg Total: 498	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">103</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">103</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">2</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">2</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">1</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">106</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">106</td> </tr> </table>	Cars	103	0	0	0	103	Trucks	2	0	0	0	2	Heavys	1	0	0	0	1	Totals	106	0	0	0	106	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">73</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">212</td> <td style="padding: 2px;">286</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">2</td> <td style="padding: 2px;">2</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">73</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">214</td> <td style="padding: 2px;">286</td> </tr> </table>	Cars	73	1	212	286	Trucks	0	0	2	2	Heavys	0	0	0	0	Totals	73	1	214	286	Peds Cross: South Peds: 5 South Entering: 288 South Leg Total: 394
Cars	103	0	0	0	103																																										
Trucks	2	0	0	0	2																																										
Heavys	1	0	0	0	1																																										
Totals	106	0	0	0	106																																										
Cars	73	1	212	286																																											
Trucks	0	0	2	2																																											
Heavys	0	0	0	0																																											
Totals	73	1	214	286																																											

Comments

Accu-Traffic Inc.

Afternoon Peak Diagram		Specified Period From: 16:00:00 To: 18:00:00	One Hour Peak From: 17:00:00 To: 18:00:00
Municipality: Mississauga Site #: 2512400004 Intersection: Argentia Rd & Tenth Line W TFR File #: 1 Count date: 6-Aug-25		Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **		Major Road: Argentia Rd runs W/E	

North Leg Total: 12 North Entering: 6 North Peds: 8 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Cars</td><td>2</td><td>2</td><td>2</td><td>6</td></tr> <tr style="border-top: 1px solid black;"><td>Totals</td><td>2</td><td>2</td><td>2</td><td></td></tr> </table>	Heavys	0	0	0	0	Trucks	0	0	0	0	Cars	2	2	2	6	Totals	2	2	2			<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>2</td></tr> <tr><td>Trucks</td><td>0</td></tr> <tr><td>Cars</td><td>4</td></tr> <tr style="border-top: 1px solid black;"><td>Totals</td><td>6</td></tr> </table>	Heavys	2	Trucks	0	Cars	4	Totals	6	East Leg Total: 1372 East Entering: 839 East Peds: 7 Peds Cross:
Heavys	0	0	0	0																												
Trucks	0	0	0	0																												
Cars	2	2	2	6																												
Totals	2	2	2																													
Heavys	2																															
Trucks	0																															
Cars	4																															
Totals	6																															

Heavys	Trucks	Cars	Totals
4	4	438	446

Argentia Rd

Tenth Line W

Argentia Rd

N
S
E
W

Heavys	Trucks	Cars	Totals
1	0	0	1
8	4	238	250
1	0	95	96
10	4	333	

Argentia Rd

Cars	Trucks	Heavys	Totals
4	0	1	5
375	4	4	383
451	0	0	451
830	4	5	

Tenth Line W

Argentia Rd

Cars	Trucks	Heavys	Totals
521	4	8	533

Tenth Line W

Peds Cross: West Peds: 8 West Entering: 347 West Leg Total: 793	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>548</td></tr> <tr><td>Trucks</td><td>0</td></tr> <tr><td>Heavys</td><td>1</td></tr> <tr style="border-top: 1px solid black;"><td>Totals</td><td>549</td></tr> </table>	Cars	548	Trucks	0	Heavys	1	Totals	549	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>61</td><td>0</td><td>281</td><td>342</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Heavys</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr style="border-top: 1px solid black;"><td>Totals</td><td>61</td><td>0</td><td>281</td><td></td></tr> </table>	Cars	61	0	281	342	Trucks	0	0	0	0	Heavys	0	0	0	0	Totals	61	0	281		Peds Cross: South Peds: 12 South Entering: 342 South Leg Total: 891
Cars	548																														
Trucks	0																														
Heavys	1																														
Totals	549																														
Cars	61	0	281	342																											
Trucks	0	0	0	0																											
Heavys	0	0	0	0																											
Totals	61	0	281																												

Comments

Accu-Traffic Inc.

Total Count Diagram

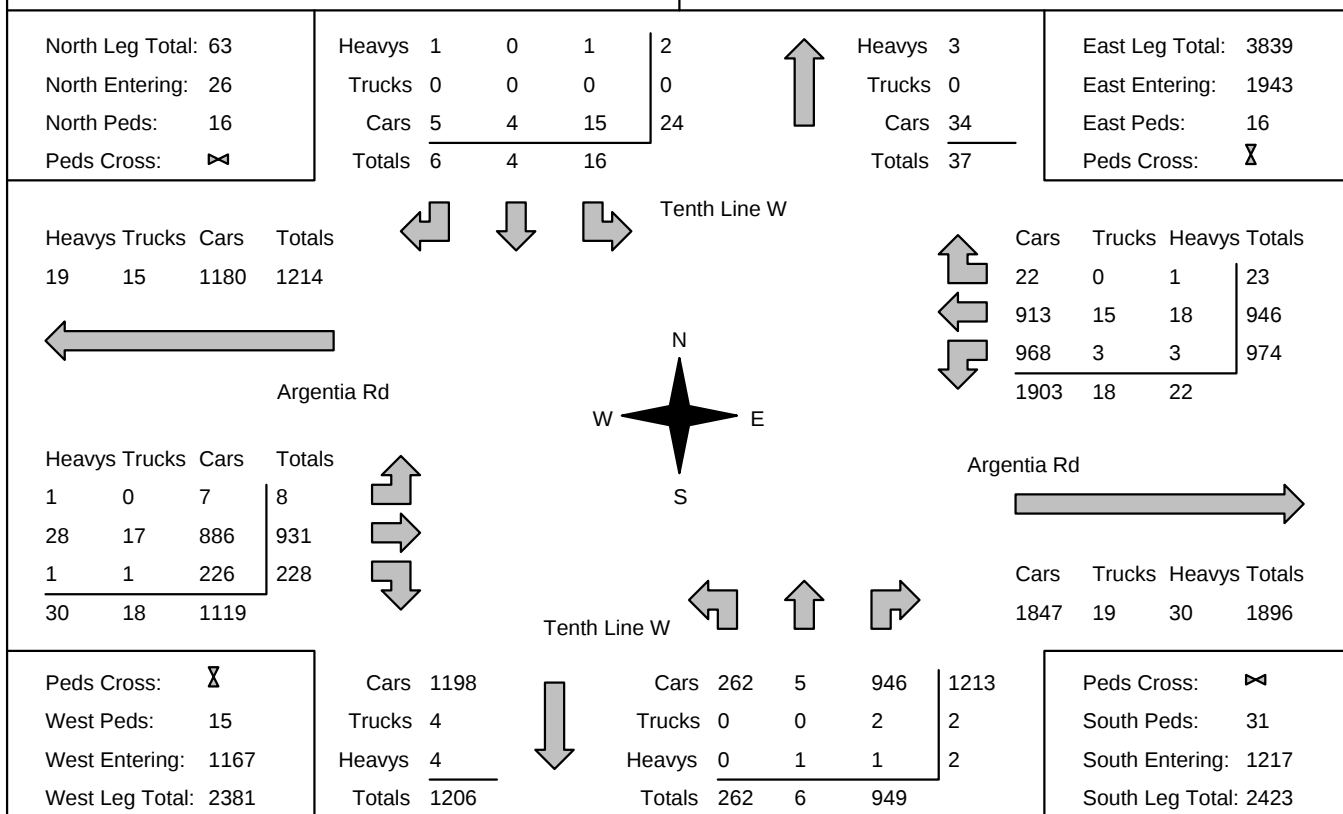
Municipality: Mississauga
Site #: 2512400004
Intersection: Argentia Rd & Tenth Line W
TFR File #: 1
Count date: 6-Aug-25

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Argentia Rd runs W/E



Comments

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Argentia Rd & Tenth Line W					Count Date: 6-Aug-25			Municipality: Mississauga				
North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	2	0	1	3	1	306	8:00:00	123	1	179	303	4
9:00:00	2	1	1	4	5	287	9:00:00	43	4	236	283	9
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	10	1	2	13	2	302	17:00:00	35	1	253	289	6
18:00:00	2	2	2	6	8	348	18:00:00	61	0	281	342	12

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Accu-Traffic Inc.

Morning Peak Diagram		Specified Period From: 7:00:00 To: 9:00:00	One Hour Peak From: 8:00:00 To: 9:00:00																																																																																																						
Municipality: Mississauga Site #: 2512400005 Intersection: Ninth Line & Argentia Rd TFR File #: 1 Count date: 6-Aug-25		Weather conditions: Person counted: Person prepared: Person checked:																																																																																																							
** Signalized Intersection **		Major Road: Ninth Line runs N/S																																																																																																							
North Leg Total: 858 North Entering: 567 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; vertical-align: top;"> <table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td style="text-align: right;">3</td><td style="text-align: right;">0</td><td style="border-left: 1px solid black; text-align: right;">3</td></tr> <tr><td>Trucks</td><td style="text-align: right;">9</td><td style="text-align: right;">1</td><td style="border-left: 1px solid black; text-align: right;">10</td></tr> <tr><td>Cars</td><td style="text-align: right; border-bottom: 1px solid black;">463</td><td style="text-align: right; border-bottom: 1px solid black;">91</td><td style="border-left: 1px solid black; text-align: right; border-bottom: 1px solid black;">554</td></tr> <tr><td>Totals</td><td style="text-align: right;">475</td><td style="text-align: right;">92</td><td style="border-left: 1px solid black;"></td></tr> </table> </td> <td style="width: 10%; text-align: center; vertical-align: middle;"> </td> <td style="width: 30%; vertical-align: top;"> <table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td style="text-align: right;">4</td></tr> <tr><td>Trucks</td><td style="text-align: right;">3</td></tr> <tr><td>Cars</td><td style="text-align: right; border-bottom: 1px solid black;">284</td></tr> <tr><td>Totals</td><td style="text-align: right; border-bottom: 1px solid black;">291</td></tr> </table> </td> <td style="width: 20%; vertical-align: top; padding-left: 10px;"> <table style="width: 100%; border-collapse: collapse;"> <tr><td colspan="4">East Leg Total: 368</td></tr> <tr><td colspan="4">East Entering: 72</td></tr> <tr><td colspan="4">East Peds: 0</td></tr> <tr><td colspan="4">Peds Cross: </td></tr> </table> </td> </tr> </table> Ninth Line <table style="margin-left: 10px;"> <tr><td>Cars</td><td>Trucks</td><td>Heavys</td><td style="border-left: 1px solid black;">Totals</td></tr> <tr><td>27</td><td>0</td><td>2</td><td style="border-left: 1px solid black;">29</td></tr> <tr><td>40</td><td>1</td><td>2</td><td style="border-left: 1px solid black;">43</td></tr> <tr><td>67</td><td>1</td><td>4</td><td style="border-left: 1px solid black;"></td></tr> </table> Argentia Rd <table style="width: 100%;"> <tr><td>Cars</td><td>Trucks</td><td>Heavys</td><td style="border-left: 1px solid black;">Totals</td></tr> <tr><td>291</td><td>2</td><td>3</td><td style="border-left: 1px solid black;">296</td></tr> </table>			<table style="width: 100%; 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border-collapse: collapse;"> <tr><td>Cars</td><td style="text-align: right;">257</td><td style="text-align: right;">200</td><td style="border-left: 1px solid black; text-align: right;">457</td></tr> <tr><td>Trucks</td><td style="text-align: right;">3</td><td style="text-align: right;">1</td><td style="border-left: 1px solid black; text-align: right;">4</td></tr> <tr><td>Heavys</td><td style="text-align: right; border-bottom: 1px solid black;">2</td><td style="text-align: right; border-bottom: 1px solid black;">3</td><td style="border-left: 1px solid black; text-align: right; border-bottom: 1px solid black;">5</td></tr> <tr><td>Totals</td><td style="text-align: right;">262</td><td style="text-align: right;">204</td><td style="border-left: 1px solid black;"></td></tr> </table>	Cars	503	Trucks	10	Heavys	5	Totals	518	Cars	257	200	457	Trucks	3	1	4	Heavys	2	3	5	Totals	262	204		<table style="width: 100%; border-collapse: collapse;"> <tr><td colspan="2">Peds Cross: </td></tr> <tr><td colspan="2">South Peds: 0</td></tr> <tr><td colspan="2">South Entering: 466</td></tr> <tr><td colspan="2">South Leg Total: 984</td></tr> </table>	Peds Cross:		South Peds: 0		South Entering: 466		South Leg Total: 984	
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Accu-Traffic Inc.

Afternoon Peak Diagram	Specified Period From: 16:00:00 To: 18:00:00	One Hour Peak From: 16:45:00 To: 17:45:00
Municipality: Mississauga Site #: 2512400005 Intersection: Ninth Line & Argentia Rd TFR File #: 1 Count date: 6-Aug-25	Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **	Major Road: Ninth Line runs N/S	

North Leg Total: 1335 North Entering: 526 North Peds: 0 Peds Cross:	<table style="margin: auto;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td rowspan="5" style="width: 50px; text-align: center; vertical-align: middle;"> </td> <td style="text-align: right;">Heavys</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: center;">7</td> <td style="text-align: center;">2</td> <td style="text-align: center;">9</td> <td style="text-align: right;">Trucks</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: center;">445</td> <td style="text-align: center;">69</td> <td style="text-align: center;">514</td> <td style="text-align: right;">Cars</td> <td style="text-align: center;">804</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: center;">453</td> <td style="text-align: center;">73</td> <td></td> <td style="text-align: right;">Totals</td> <td style="text-align: center;">809</td> </tr> <tr> <td colspan="3"></td> <td colspan="3"></td> </tr> </table> Ninth Line N S E W <table style="width: 30%;"> <tr><td style="text-align: right;">Cars</td><td style="text-align: center;">693</td></tr> <tr><td style="text-align: right;">Trucks</td><td style="text-align: center;">8</td></tr> <tr><td style="text-align: right;">Heavys</td><td style="text-align: center;">2</td></tr> <tr><td style="text-align: right;">Totals</td><td style="text-align: center;">703</td></tr> </table> <table style="width: 30%;"> <tr><td style="text-align: right;">Cars</td><td style="text-align: center;">607</td><td style="text-align: center;">123</td><td style="text-align: center;">730</td></tr> <tr><td style="text-align: right;">Trucks</td><td style="text-align: center;">2</td><td style="text-align: center;">1</td><td style="text-align: center;">3</td></tr> <tr><td style="text-align: right;">Heavys</td><td style="text-align: center;">2</td><td style="text-align: center;">2</td><td style="text-align: center;">4</td></tr> <tr><td style="text-align: right;">Totals</td><td style="text-align: center;">611</td><td style="text-align: center;">126</td><td></td></tr> </table>	Heavys	1	2	3		Heavys	2	Trucks	7	2	9	Trucks	3	Cars	445	69	514	Cars	804	Totals	453	73		Totals	809							Cars	693	Trucks	8	Heavys	2	Totals	703	Cars	607	123	730	Trucks	2	1	3	Heavys	2	2	4	Totals	611	126		<table style="margin: auto;"> <tr><td colspan="4" style="text-align: right;">East Leg Total: 647</td></tr> <tr><td colspan="4" style="text-align: right;">East Entering: 448</td></tr> <tr><td colspan="4" style="text-align: right;">East Peds: 0</td></tr> <tr><td colspan="4" style="text-align: right;">Peds Cross: </td></tr> </table> <table style="margin: auto;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: center;">197</td> <td style="text-align: center;">1</td> <td style="text-align: center;">0</td> <td style="text-align: center;">198</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: center;">248</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> <td style="text-align: center;">250</td> </tr> <tr> <td></td> <td style="text-align: center;">445</td> <td style="text-align: center;">2</td> <td style="text-align: center;">1</td> <td></td> </tr> </table> Argentia Rd <table style="margin: auto; margin-top: 10px;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: center;">192</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">199</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">Totals</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	East Leg Total: 647				East Entering: 448				East Peds: 0				Peds Cross:				Cars	197	1	0	198	Trucks					Heavys					Totals	248	1	1	250		445	2	1		Cars	192	3	4	199	Trucks					Heavys					Totals				
Heavys	1	2	3		Heavys		2																																																																																																															
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Comments

Accu-Traffic Inc.

Total Count Diagram

Municipality: Mississauga
Site #: 2512400005
Intersection: Ninth Line & Argentia Rd
TFR File #: 1
Count date: 6-Aug-25

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

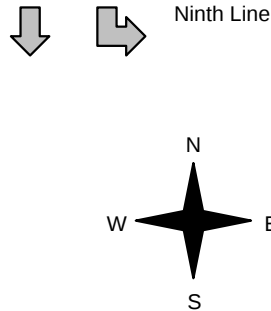
Major Road: Ninth Line runs N/S

North Leg Total: 4094
 North Entering: 2068
 North Peds: 0
 Peds Cross: 

Heavys	13	2	15
Trucks	28	4	32
Cars	1709	312	2021
Totals	1750	318	

Heavys	12
Trucks	14
Cars	2000
Totals	2026

East Leg Total: 1905
 East Entering: 943
 East Peds: 0
 Peds Cross: 



Cars	Trucks	Heavys	Totals
410	2	4	416
516	4	7	527
926	6	11	

Argentia Rd



Ninth Line

Cars	2225	Cars	1590	628	2218
Trucks	32	Trucks	12	4	16
Heavys	20	Heavys	8	12	20
Totals	2277	Totals	1610	644	

Peds Cross: 
 South Peds: 0
 South Entering: 2254
 South Leg Total: 4531

Comments

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Ninth Line & Argentia Rd					Count Date: 6-Aug-25			Municipality: Mississauga				
North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	91	417	0	508	0	924	8:00:00	0	217	199	416	0
9:00:00	92	475	0	567	0	1033	9:00:00	0	262	204	466	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	70	422	0	492	0	1152	17:00:00	0	552	108	660	0
18:00:00	65	436	0	501	0	1213	18:00:00	0	579	133	712	0

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Accu-Traffic Inc.

Morning Peak Diagram	Specified Period From: 7:00:00 To: 9:00:00	One Hour Peak From: 8:00:00 To: 9:00:00
Municipality: Mississauga Site #: 2512400006 Intersection: Derry Rd & Highway 407 Northbou TFR File #: 1 Count date: 6-Aug-25	Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **		Major Road: Derry Rd runs W/E

North Leg Total: 144 North Entering: 0 North Peds: 0 Peds Cross:	<table style="margin: auto;"> <tr><td>Heavys</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Cars</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Totals</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> </table>	Heavys	0	0	0	0	Trucks	0	0	0	0	Cars	0	0	0	0	Totals	0	0	0	0	<table style="margin: auto;"> <tr><td>Heavys</td><td>3</td></tr> <tr><td>Trucks</td><td>0</td></tr> <tr><td>Cars</td><td>141</td></tr> <tr><td>Totals</td><td>144</td></tr> </table>	Heavys	3	Trucks	0	Cars	141	Totals	144	East Leg Total: 1698 East Entering: 788 East Peds: 0 Peds Cross:
Heavys	0	0	0	0																											
Trucks	0	0	0	0																											
Cars	0	0	0	0																											
Totals	0	0	0	0																											
Heavys	3																														
Trucks	0																														
Cars	141																														
Totals	144																														

Heavys	Trucks	Cars	Totals
8	8	637	653

Derry Rd

Highway 407 Northbound Ramp

Cars	Trucks	Heavys	Totals
141	0	3	144
630	6	8	644
0	0	0	0
771	6	11	

N
S
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Heavys	Trucks	Cars	Totals
0	0	0	0
3	7	791	801
2	2	196	200
5	9	987	

Highway 407 Northbound Ramp

Derry Rd

Cars	Trucks	Heavys	Totals
897	8	5	910

Peds Cross: West Peds: 0 West Entering: 1001 West Leg Total: 1654	<table style="margin: auto;"> <tr><td>Cars</td><td>196</td></tr> <tr><td>Trucks</td><td>2</td></tr> <tr><td>Heavys</td><td>2</td></tr> <tr><td>Totals</td><td>200</td></tr> </table>	Cars	196	Trucks	2	Heavys	2	Totals	200	<table style="margin: auto;"> <tr><td>Cars</td><td>7</td><td>0</td><td>106</td><td>113</td></tr> <tr><td>Trucks</td><td>2</td><td>0</td><td>1</td><td>3</td></tr> <tr><td>Heavys</td><td>0</td><td>0</td><td>2</td><td>2</td></tr> <tr><td>Totals</td><td>9</td><td>0</td><td>109</td><td></td></tr> </table>	Cars	7	0	106	113	Trucks	2	0	1	3	Heavys	0	0	2	2	Totals	9	0	109		Peds Cross: South Peds: 0 South Entering: 118 South Leg Total: 318
Cars	196																														
Trucks	2																														
Heavys	2																														
Totals	200																														
Cars	7	0	106	113																											
Trucks	2	0	1	3																											
Heavys	0	0	2	2																											
Totals	9	0	109																												

Comments

Accu-Traffic Inc.

Afternoon Peak Diagram	Specified Period From: 16:00:00 To: 18:00:00	One Hour Peak From: 16:45:00 To: 17:45:00
Municipality: Mississauga Site #: 2512400006 Intersection: Derry Rd & Highway 407 Northbou TFR File #: 1 Count date: 6-Aug-25	Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **		Major Road: Derry Rd runs W/E

North Leg Total: 55 North Entering: 0 North Peds: 0 Peds Cross:	<table style="margin: auto;"> <tr><td>Heavys</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Cars</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Totals</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> </table>	Heavys	0	0	0	0	Trucks	0	0	0	0	Cars	0	0	0	0	Totals	0	0	0	0	<table style="margin: auto;"> <tr><td>Heavys</td><td>1</td></tr> <tr><td>Trucks</td><td>2</td></tr> <tr><td>Cars</td><td>52</td></tr> <tr><td>Totals</td><td>55</td></tr> </table>	Heavys	1	Trucks	2	Cars	52	Totals	55	East Leg Total: 2250 East Entering: 1214 East Peds: 0 Peds Cross:
Heavys	0	0	0	0																											
Trucks	0	0	0	0																											
Cars	0	0	0	0																											
Totals	0	0	0	0																											
Heavys	1																														
Trucks	2																														
Cars	52																														
Totals	55																														

Heavys	Trucks	Cars	Totals
5	7	1187	1199

Derry Rd

Highway 407 Northbound Ramp

Cars	Trucks	Heavys	Totals
52	2	1	55
1150	6	3	1159
0	0	0	0
1202	8	4	

Heavys	Trucks	Cars	Totals
0	0	0	0
1	4	886	891
2	3	65	70
3	7	951	

Highway 407 Northbound Ramp

Derry Rd

Cars	Trucks	Heavys	Totals
1029	5	2	1036

Peds Cross: West Peds: 0 West Entering: 961 West Leg Total: 2160	<table style="margin: auto;"> <tr><td>Cars</td><td>65</td></tr> <tr><td>Trucks</td><td>3</td></tr> <tr><td>Heavys</td><td>2</td></tr> <tr><td>Totals</td><td>70</td></tr> </table>	Cars	65	Trucks	3	Heavys	2	Totals	70	<table style="margin: auto;"> <tr><td>Cars</td><td>37</td><td>0</td><td>143</td><td>180</td></tr> <tr><td>Trucks</td><td>1</td><td>0</td><td>1</td><td>2</td></tr> <tr><td>Heavys</td><td>2</td><td>0</td><td>1</td><td>3</td></tr> <tr><td>Totals</td><td>40</td><td>0</td><td>145</td><td></td></tr> </table>	Cars	37	0	143	180	Trucks	1	0	1	2	Heavys	2	0	1	3	Totals	40	0	145		Peds Cross: South Peds: 0 South Entering: 185 South Leg Total: 255
Cars	65																														
Trucks	3																														
Heavys	2																														
Totals	70																														
Cars	37	0	143	180																											
Trucks	1	0	1	2																											
Heavys	2	0	1	3																											
Totals	40	0	145																												

Comments

Accu-Traffic Inc.

Total Count Diagram

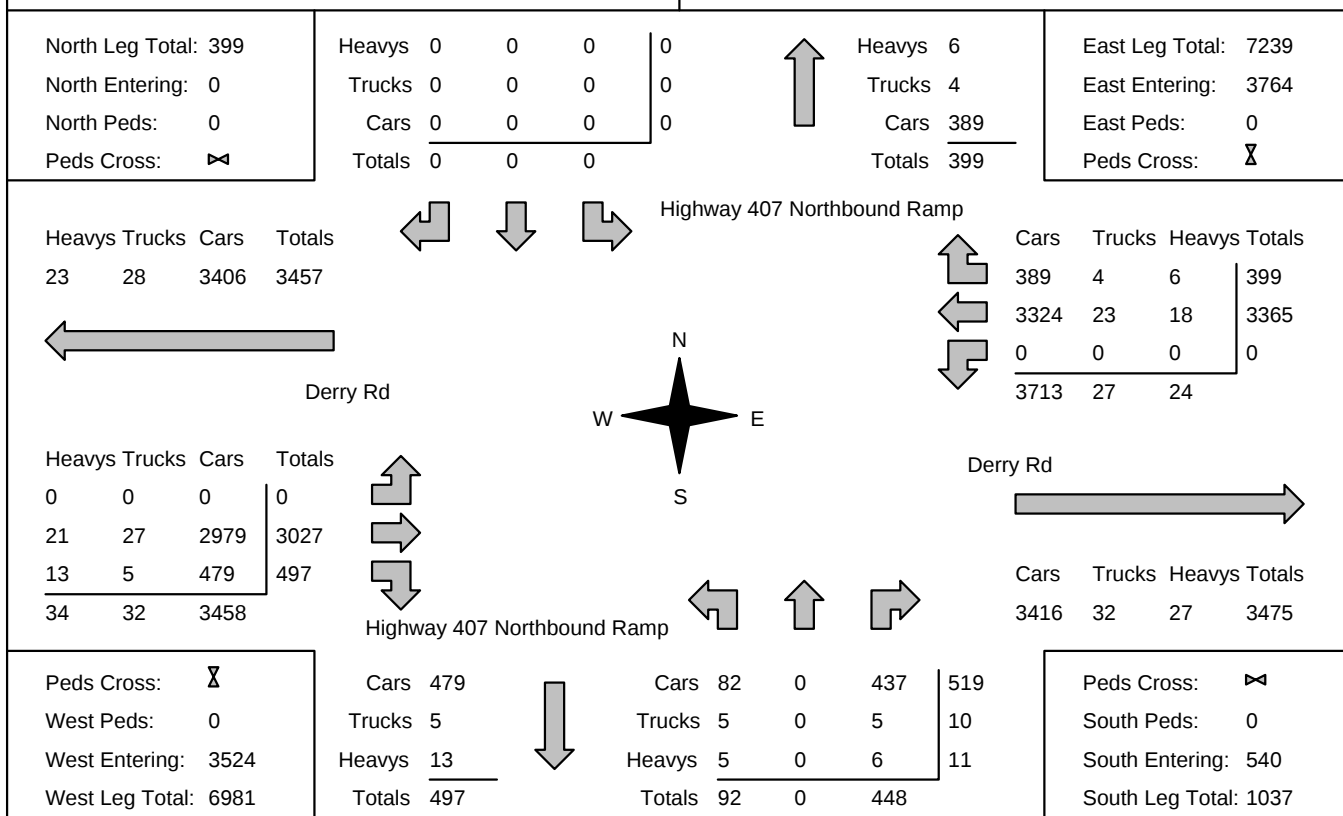
Municipality: Mississauga
Site #: 2512400006
Intersection: Derry Rd & Highway 407 Northbou
TFR File #: 1
Count date: 6-Aug-25

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Derry Rd runs W/E



Comments

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Derry Rd & Highway 407 Northbou Count Date: 6-Aug-25 Municipality: Mississauga

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	0	0	0	0	0	91	8:00:00	13	0	78	91	0
9:00:00	0	0	0	0	0	118	9:00:00	9	0	109	118	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	0	0	0	0	0	162	17:00:00	37	0	125	162	0
18:00:00	0	0	0	0	0	169	18:00:00	33	0	136	169	0

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Accu-Traffic Inc.

Morning Peak Diagram	Specified Period From: 7:00:00 To: 9:00:00	One Hour Peak From: 8:00:00 To: 9:00:00
Municipality: Mississauga Site #: 2512400007 Intersection: Derry Rd & Highway 407 Southbou TFR File #: 1 Count date: 6-Aug-25	Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **		Major Road: Derry Rd runs W/E

North Leg Total: 223 North Entering: 78 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>5</td><td>0</td><td>1</td><td>6</td></tr> <tr><td>Trucks</td><td>3</td><td>0</td><td>1</td><td>4</td></tr> <tr><td>Cars</td><td>44</td><td>0</td><td>24</td><td>68</td></tr> <tr><td>Totals</td><td>52</td><td>0</td><td>26</td><td></td></tr> </table>	Heavys	5	0	1	6	Trucks	3	0	1	4	Cars	44	0	24	68	Totals	52	0	26		<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>1</td></tr> <tr><td>Trucks</td><td>2</td></tr> <tr><td>Cars</td><td>142</td></tr> <tr><td>Totals</td><td>145</td></tr> </table>	Heavys	1	Trucks	2	Cars	142	Totals	145	East Leg Total: 1655 East Entering: 654 East Peds: 0 Peds Cross:
Heavys	5	0	1	6																											
Trucks	3	0	1	4																											
Cars	44	0	24	68																											
Totals	52	0	26																												
Heavys	1																														
Trucks	2																														
Cars	142																														
Totals	145																														

Heavys	Trucks	Cars	Totals
13	7	541	561

Highway 407 Southbound Ramp

Cars	Trucks	Heavys	Totals
142	2	1	145
497	4	8	509
0	0	0	0
639	6	9	

Heavys	Trucks	Cars	Totals
0	0	0	0
4	8	963	975
1	0	43	44
5	8	1006	

Derry Rd

Cars	Trucks	Heavys	Totals
987	9	5	1001

Peds Cross: West Peds: 0 West Entering: 1019 West Leg Total: 1580	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>43</td></tr> <tr><td>Trucks</td><td>0</td></tr> <tr><td>Heavys</td><td>1</td></tr> <tr><td>Totals</td><td>44</td></tr> </table>	Cars	43	Trucks	0	Heavys	1	Totals	44	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Heavys</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Totals</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> </table>	Cars	0	0	0	0	Trucks	0	0	0	0	Heavys	0	0	0	0	Totals	0	0	0	0	Peds Cross: South Peds: 0 South Entering: 0 South Leg Total: 44
Cars	43																														
Trucks	0																														
Heavys	1																														
Totals	44																														
Cars	0	0	0	0																											
Trucks	0	0	0	0																											
Heavys	0	0	0	0																											
Totals	0	0	0	0																											

Comments

Accu-Traffic Inc.

Afternoon Peak Diagram		Specified Period From: 16:00:00 To: 18:00:00	One Hour Peak From: 16:45:00 To: 17:45:00
Municipality: Mississauga Site #: 2512400007 Intersection: Derry Rd & Highway 407 Southbou TFR File #: 1 Count date: 6-Aug-25		Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **		Major Road: Derry Rd runs W/E	

North Leg Total: 548 North Entering: 401 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>1</td><td>0</td><td>0</td><td>1</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>2</td><td>2</td></tr> <tr><td>Cars</td><td>234</td><td>0</td><td>164</td><td>398</td></tr> <tr><td>Totals</td><td>235</td><td>0</td><td>166</td><td></td></tr> </table>	Heavys	1	0	0	1	Trucks	0	0	2	2	Cars	234	0	164	398	Totals	235	0	166		<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>1</td></tr> <tr><td>Trucks</td><td>1</td></tr> <tr><td>Cars</td><td>145</td></tr> <tr><td>Totals</td><td>147</td></tr> </table>	Heavys	1	Trucks	1	Cars	145	Totals	147	East Leg Total: 2162 East Entering: 1185 East Peds: 0 Peds Cross:
Heavys	1	0	0	1																											
Trucks	0	0	2	2																											
Cars	234	0	164	398																											
Totals	235	0	166																												
Heavys	1																														
Trucks	1																														
Cars	145																														
Totals	147																														

Heavys	Trucks	Cars	Totals
5	6	1262	1273

Derry Rd

Heavys	Trucks	Cars	Totals
0	0	0	0
6	6	799	811
0	1	27	28
6	7	826	

Highway 407 Southbound Ramp

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Highway 407 Southbound Ramp

Cars	Trucks	Heavys	Totals
145	1	1	147
1028	6	4	1038
0	0	0	0
1173	7	5	

Derry Rd

Cars	Trucks	Heavys	Totals
963	8	6	977

Peds Cross: West Peds: 0 West Entering: 839 West Leg Total: 2112	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>27</td></tr> <tr><td>Trucks</td><td>1</td></tr> <tr><td>Heavys</td><td>0</td></tr> <tr><td>Totals</td><td>28</td></tr> </table>	Cars	27	Trucks	1	Heavys	0	Totals	28	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Heavys</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Totals</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> </table>	Cars	0	0	0	0	Trucks	0	0	0	0	Heavys	0	0	0	0	Totals	0	0	0	0	Peds Cross: South Peds: 0 South Entering: 0 South Leg Total: 28
Cars	27																														
Trucks	1																														
Heavys	0																														
Totals	28																														
Cars	0	0	0	0																											
Trucks	0	0	0	0																											
Heavys	0	0	0	0																											
Totals	0	0	0	0																											

Comments

Accu-Traffic Inc.

Total Count Diagram

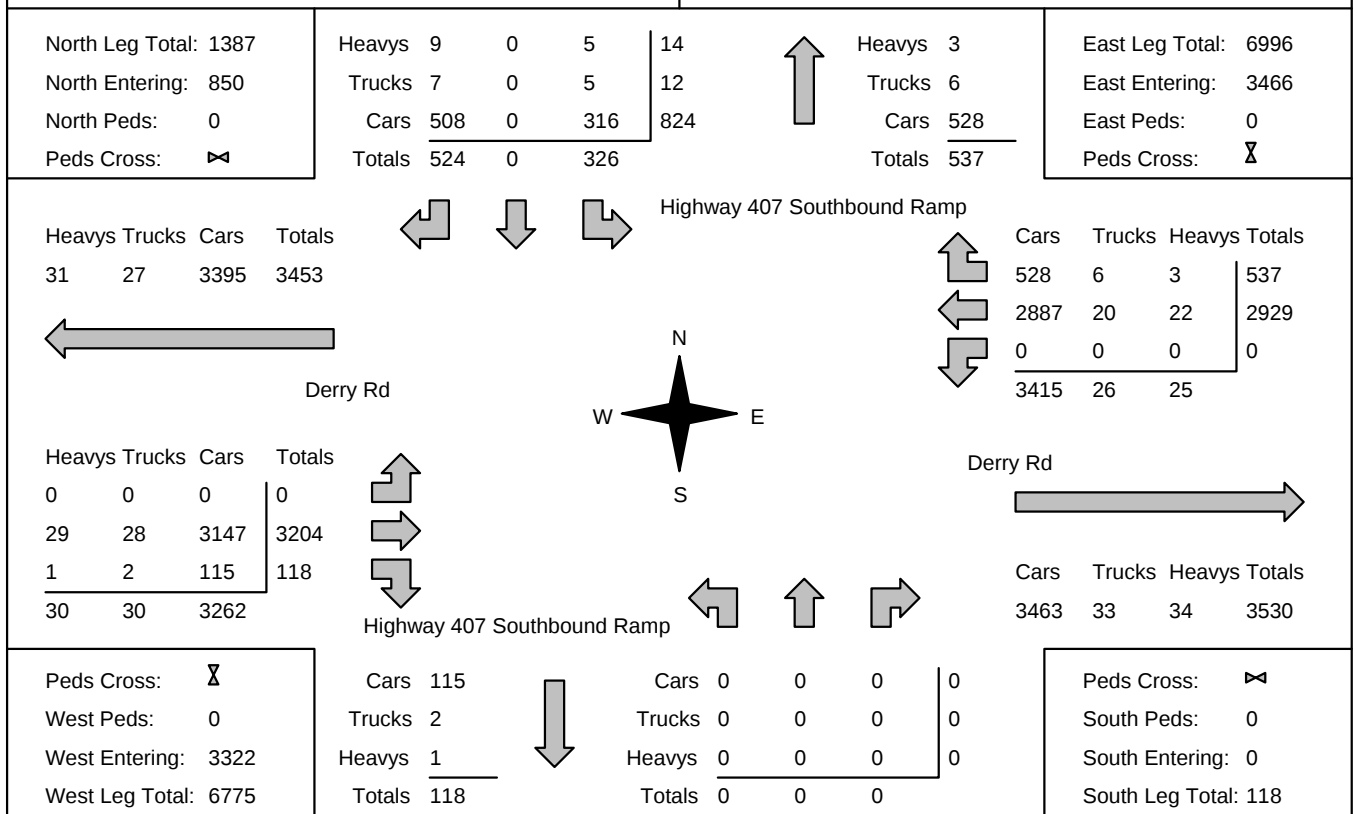
Municipality: Mississauga
Site #: 2512400007
Intersection: Derry Rd & Highway 407 Southbou
TFR File #: 1
Count date: 6-Aug-25

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Derry Rd runs W/E



Comments

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Derry Rd & Highway 407 Southbo Count Date: 6-Aug-25 Municipality: Mississauga

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	30	0	33	63	0	63	8:00:00	0	0	0	0	0
9:00:00	26	0	52	78	0	78	9:00:00	0	0	0	0	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	124	0	215	339	0	339	17:00:00	0	0	0	0	0
18:00:00	146	0	224	370	0	370	18:00:00	0	0	0	0	0

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Accu-Traffic Inc.

Morning Peak Diagram	Specified Period From: 7:00:00 To: 9:00:00	One Hour Peak From: 8:00:00 To: 9:00:00
Municipality: Mississauga Site #: 2512400008 Intersection: Derry Rd W & Ninth Line TFR File #: 1 Count date: 6-Aug-25	Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **	Major Road: Derry Rd W runs W/E	

North Leg Total: 992 North Entering: 593 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">5</td> <td style="text-align: right;">1</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">6</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">5</td> <td style="text-align: right;">5</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">10</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">291</td> <td style="text-align: right;">264</td> <td style="text-align: right;">22</td> <td style="border-left: 1px solid black; text-align: right;">577</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">301</td> <td style="text-align: right;">270</td> <td style="text-align: right;">22</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Heavys	5	1	0	6	Trucks	5	5	0	10	Cars	291	264	22	577	Totals	301	270	22		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">6</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">6</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">387</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">399</td> </tr> </table>	Heavys	6	Trucks	6	Cars	387	Totals	399	East Leg Total: 1318 East Entering: 477 East Peds: 0 Peds Cross:
Heavys	5	1	0	6																											
Trucks	5	5	0	10																											
Cars	291	264	22	577																											
Totals	301	270	22																												
Heavys	6																														
Trucks	6																														
Cars	387																														
Totals	399																														

Heavys	Trucks	Cars	Totals
11	6	770	787

N
 W ——— E
 S

Cars	Trucks	Heavys	Totals
16	0	0	16
374	1	2	377
79	4	1	84
469	5	3	

Heavys	Trucks	Cars	Totals
4	1	166	171
2	5	682	689
0	2	36	38
6	8	884	

Derry Rd W

Cars	Trucks	Heavys	Totals
831	7	3	841

Peds Cross: West Peds: 0 West Entering: 898 West Leg Total: 1685	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">379</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">11</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">2</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">392</td> </tr> </table>	Cars	379	Trucks	11	Heavys	2	Totals	392	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">105</td> <td style="text-align: right;">205</td> <td style="text-align: right;">127</td> <td style="border-left: 1px solid black; text-align: right;">437</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">5</td> <td style="text-align: right;">2</td> <td style="border-left: 1px solid black; text-align: right;">7</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">4</td> <td style="text-align: right;">2</td> <td style="text-align: right;">1</td> <td style="border-left: 1px solid black; text-align: right;">7</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">109</td> <td style="text-align: right;">212</td> <td style="text-align: right;">130</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Cars	105	205	127	437	Trucks	0	5	2	7	Heavys	4	2	1	7	Totals	109	212	130		Peds Cross: South Peds: 0 South Entering: 451 South Leg Total: 843
Cars	379																														
Trucks	11																														
Heavys	2																														
Totals	392																														
Cars	105	205	127	437																											
Trucks	0	5	2	7																											
Heavys	4	2	1	7																											
Totals	109	212	130																												

Comments

Accu-Traffic Inc.

Afternoon Peak Diagram		Specified Period From: 16:00:00 To: 18:00:00	One Hour Peak From: 16:45:00 To: 17:45:00
Municipality: Mississauga Site #: 2512400008 Intersection: Derry Rd W & Ninth Line TFR File #: 1 Count date: 6-Aug-25		Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **		Major Road: Derry Rd W runs W/E	

North Leg Total: 1368 North Entering: 625 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">3</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">3</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">1</td> <td style="text-align: right;">3</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">4</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">253</td> <td style="text-align: right;">322</td> <td style="text-align: right;">43</td> <td style="border-left: 1px solid black; text-align: right;">618</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">257</td> <td style="text-align: right;">325</td> <td style="text-align: right;">43</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Heavys	3	0	0	3	Trucks	1	3	0	4	Cars	253	322	43	618	Totals	257	325	43		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">3</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">1</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">739</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">743</td> </tr> </table>	Heavys	3	Trucks	1	Cars	739	Totals	743	East Leg Total: 1914 East Entering: 1101 East Peds: 1 Peds Cross:
Heavys	3	0	0	3																											
Trucks	1	3	0	4																											
Cars	253	322	43	618																											
Totals	257	325	43																												
Heavys	3																														
Trucks	1																														
Cars	739																														
Totals	743																														

Heavys	Trucks	Cars	Totals
5	5	1212	1222

Derry Rd W

Ninth Line

Derry Rd W

Cars	Trucks	Heavys	Totals
51	0	1	52
882	2	1	885
163	1	0	164
1096	3	2	

Heavys	Trucks	Cars	Totals
0	1	256	257
2	3	621	626
0	0	130	130
2	4	1007	

Ninth Line

Ninth Line

Cars	Trucks	Heavys	Totals
806	3	4	813

Peds Cross: West Peds: 0 West Entering: 1013 West Leg Total: 2235	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">615</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">4</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">619</td> </tr> </table>	Cars	615	Trucks	4	Heavys	0	Totals	619	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">77</td> <td style="text-align: right;">432</td> <td style="text-align: right;">142</td> <td style="border-left: 1px solid black; text-align: right;">651</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">2</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">2</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">1</td> <td style="text-align: right;">2</td> <td style="text-align: right;">2</td> <td style="border-left: 1px solid black; text-align: right;">5</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">80</td> <td style="text-align: right;">434</td> <td style="text-align: right;">144</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Cars	77	432	142	651	Trucks	2	0	0	2	Heavys	1	2	2	5	Totals	80	434	144		Peds Cross: South Peds: 1 South Entering: 658 South Leg Total: 1277
Cars	615																														
Trucks	4																														
Heavys	0																														
Totals	619																														
Cars	77	432	142	651																											
Trucks	2	0	0	2																											
Heavys	1	2	2	5																											
Totals	80	434	144																												

Comments

Accu-Traffic Inc.

Total Count Diagram

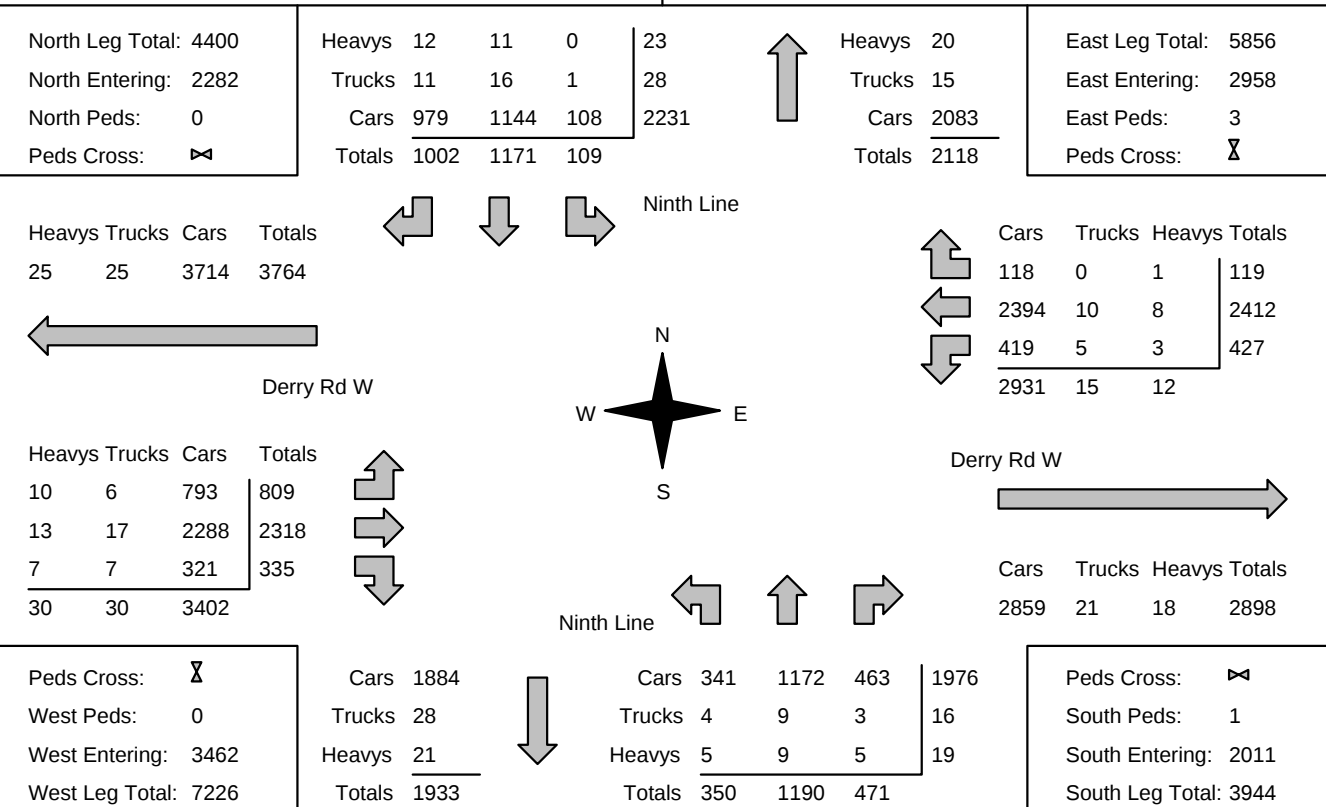
Municipality: Mississauga
Site #: 2512400008
Intersection: Derry Rd W & Ninth Line
TFR File #: 1
Count date: 6-Aug-25

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Derry Rd W runs W/E



Comments

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Derry Rd W & Ninth Line					Count Date: 6-Aug-25		Municipality: Mississauga					
North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	13	250	242	505	0	822	8:00:00	86	164	67	317	0
9:00:00	22	270	301	593	0	1044	9:00:00	109	212	130	451	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	38	313	215	566	0	1159	17:00:00	80	381	132	593	0
18:00:00	36	338	244	618	0	1268	18:00:00	75	433	142	650	1

[illegible]

[illegible]

[illegible]

[illegible]



Appendix D:

Signal Timing Plan



File: CA.13.SIG
Signal Timing Request
RT.07. 5401
RT.07. 5402
RT.07. 5403
RT.07. 5409
RT.07. 5512

August 14, 2025

To Baharak Hosseini:

Re: Traffic Signal Timing

WCB N @ Highway 401/ Off-Ramp- North Terminal
WCB N @ Highway 401/ Off-Ramp- South Terminal
WCB N @ Argentia Road
TENTH LINE N @ Argentia Road
NINTH LINE N @ Argentia

The side street phases (4,8) are actuated, unless noted in the timing plan, this means a vehicle or pedestrian must be present on the side street before the side street is given a green indication. Vehicle presence on the side street would result in a possible green time of between the minimum and maximum time noted, depending on demand. Also phases 1 and 5 are also actuated. Pedestrian “Walk” and flashing “Don’t Walk” time on the side street, as noted, would be used in the event that the pedestrian push button is activated. During the side street pedestrian indications, the side street vehicle green is concurrently displayed. Should there be no demand on the actuated phase, the signals would result in a green indication on the major street (2,6).

Note: All times recorded in seconds, based on full demand.

The time of day plan is used for system control operation. In the event that the coordination pattern has a cycle length, offset and split value identified, the cycle length, split and offset values, as noted, would be used. However, when the time of day plan is programmed using ‘Action’ 8, the mode is ‘Free’, meaning no cycle length, split and offset values are given and the intersection operates using the phase timings provided in the report.

The phases for each intersection are included in the “Phasing Info” tab of the attached spreadsheet. If the Leading Pedestrian Interval (LPI) is programmed at the intersection for phase 2 and/or 6, the pedestrian ‘Walk’ indication will be displayed 5 seconds in advance

To Baharak Hosseini
Re: Traffic Signal Timing
August 14, 2025

2

of the green signal indication. However, in order for the Leading Pedestrian Interval to be displayed 5 seconds in advance of the green signal indication for phase 4 or 8, the pedestrian push button must be pressed, unless noted in the timing plan. Should an LPI be programmed at the intersection, it will be noted in the "Phasing Info" tab on the attached spreadsheet.

Should you require further information, please contact Amir Koda, at (905) 615-3200 ext. 3468.

Thank you,

Amir Koda
ITS Technologist
Traffic Systems and ITS
Transportation and Works Department
City of Mississauga
(905) 615-3200 ext. 3468
amir.koda@mississauga.ca

Location	WINSTON CHURCHILL BOULEVARD N @ Highway 401/ Off-
Phase 1	
Phase 2	WCB - SB
Phase 3	EBL/EBR Split Phase
Phase 4	401 N. Term (WB)
Phase 5	
Phase 6	WCB - NB
Phase 7	
Phase 8	Computer Phase

Controller Type: Intelight		ID: 5401			Location: WINSTON CHURCHILL BOULEVARD N @ Highway 401/ Off-				
Phase -									
Parameter 1-16	Units	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Phase Description*	String								
Walk	Sec	0	10	0	10	0	10	0	10
Ped Clear	Sec	0	24	0	33	0	24	0	33
Min Green	Sec	7	20	10	10	0	20	0	10
Passage	Sec	2	9	3	3	0	9	0	3
Maximum 1	Sec	10	45	15	40	0	45	0	40
Maximum 2	Sec	10	45	15	40	0	45	0	40
Yellow Change	Sec	3	5	4.5	5	3	5	3	5
Red Clearance	Sec	1	2.5	2.8	2.6	0	2.5	0	2.6
Red Revert	Sec	0	0	0	0	0	0	0	0
Added Initial	Sec	0	0	0	0	0	0	0	0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before Reduction	Sec	0	0	0	0	0	0	0	0
Cars Before Reduction	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0	0	0	0	0	0	0	0
Min Gap	Sec	0	0	0	0	0	0	0	0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0	0	0	0	0	0	0	0
[P2] Start Up	Enum	phaseNotOn	redClear 0:Enabled Phase 1:Automatic Flash Entry Phase	phaseNotOn	phaseNotOn	other	redClear 0:Enabled Phase 1:Automatic Flash Entry Phase	other	other
		0:Enabled Phase 5:Non Lock Detector Memory	3:Non-Actuated 1 5:Non Lock Detector Memory 7:Max Vehicle Recall 8:Ped. Recall 10:Dual Entry Phase	0:Enabled Phase 5:Non Lock Detector Memory	0:Enabled Phase 5:Non Lock Detector Memory 10:Dual Entry Phase		2:Automatic Flash Exit Phase 3:Non-Actuated 1 5:Non Lock Detector Memory 7:Max Vehicle Recall 8:Ped. Recall 10:Dual Entry Phase		10:Dual Entry Phase
[P2] Options	Bit								
[P2] Ring	Ring		1	1	1	0	2	0	0
[P2] Concurrency	Phase (,)	-6	-6	(,)	(,)	(,)	(1,2)	(,)	(,)
Coordination -									
Pattern 1-32	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	160	160	160	0	0	0	0	0
Offset	Sec	147	138	56	0	0	0	0	0
Split	Split	1	2	3	4	5	6	7	8
Sequence	Sequence	1	1	1	1	1	1	1	1
Phase Parameter Table*	Number	1	1	1	1	1	1	1	1
Coord Phase Reference Point*	Enum	green	green	green	green	green	green	green	green
Coord Mode*	Enum	singlePermissive	singlePermissive	singlePermissive	singlePermissive	singlePermissive	singlePermissive	singlePermissive	singlePermissive
Coordination -									
Splits	Units	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Split 1 - Mode	Enum	none	other	none	none	none	other	none	none
Split 1 - Time	Sec	11	77	21	51	0	88	0	0
Split 1 - Coord	Enum	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE
Split 1 - Coord Phase Options*	Bit		0: Reference Point						
Split 2 - Mode	Enum	none	other	none	none	none	other	none	none
Split 2 - Time	Sec	11	65	18	66	0	76	0	0
Split 2 - Coord	Enum	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE
Split 2 - Coord Phase Options*	Bit		0: Reference Point						
Split 3 - Mode	Enum	none	other	none	none	none	other	none	none
Split 3 - Time	Sec	11	77	18	54	0	88	0	0
Split 3 - Coord	Enum	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE
Split 3 - Coord Phase Options*	Bit		0: Reference Point						
Time Base -									
Schedule 1-16	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J-----	-F-----	--A-----	---M-----	-----J----
Day of Week	Bit	-MTWTF-	S-----	-----S	----T--	-M----	----F-	-M-----	--T----
Day of Month	Bit	1.23457E+30	1.23457E+30	1.23457E+30	1-----	-----7-----	-----8-----	-----9-----	1-----
Day Plan	Number	1	3	2	3	3	3	3	3
Time Base -									
Schedule 1-16	Units	9	10	11	12	13	14	15	16
Month	Bit	-----A----	-----S---	-----O--	-----D	-----D	-----D	-----S---	-----
Day of Week	Bit	-M-----	-M-----	-M-----	---T--	----F-	---W---	--T----	SMTWTFS
Day of Month	Bit	--4-----	1-----	-----3-----	-----5-----	-----6-----	-----4-----	-----0-----	-----
Day Plan	Number	3	3	3	3	3	3	3	0
Time Base -									
Day Plans	Units	Evt 1	Evt 2	Evt 3	Evt 4	Evt 5	Evt 6		
Plan 1 Hour	Hour	0	6	9	15	19	3		
Plan 1 Minute	Min	0	0	30	0	30	0		
Plan 1 Action	Number	8	1	2	3	2	7		
Plan 2 Hour	Hour	0	7	3	0	0	0		
Plan 2 Minute	Min	0	0	0	0	0	0		
Plan 2 Action	Number	8	2	7	0	0	0		
Plan 3 Hour	Hour	0	8	23	3	0	0		
Plan 3 Minute	Min	0	0	0	0	0	0		
Plan 3 Action	Number	8	2	8	7	0	0		
Time Base -									
Action 1-32	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit								

Location	Winston Churchill Boulevard @ Highway 401_Off-Ramp- South Terminal
Phase 1	
Phase 2	Winston Churchill Boulevard (N/S)
Phase 3	
Phase 4	Highway 401/ Off-Ramp- South Terminal (EB)

Controller Type: Intelligent		ID: 5402			Location: Winston Churchill Boulevard @ Highway 401 Off-Ramp- South Terminal				
Phase -		Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Parameter 1-16	Units								
Phase Description*	String								
Walk	Sec	0	7	0	0	0	0	0	0
Ped Clear	Sec	0	17	0	0	0	0	0	0
Min Green	Sec	0	20	0	10	0	0	0	0
Passage	Sec	0	4	0	2	0	0	0	0
Maximum 1	Sec	0	82	0	61	0	0	0	0
Maximum 2	Sec	0	0	0	0	0	0	0	0
Yellow Change	Sec	3	5	3	5	3	4	3	4
Red Clearance	Sec	0	2.5	0	3.5	0	0	0	0
Red Revert	Sec	0	0	0	0	0	0	0	0
Added Initial	Sec	0	0	0	0	0	0	0	0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before Reduction	Sec	0	0	0	0	0	0	0	0
Cars Before Reduction	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0	0	0	0	0	0	0	0
Min Gap	Sec	0	4	0	2	0	0	0	0
Dynamic Max Limit	Sec	0	0	0	20	0	0	0	0
Dynamic Max Step	Sec	0	0	0	0	0	0	0	0
[P2] Start Up	Enum	other	redClear 0:Enabled Phase 1:Automatic Flash Entry Phase 2:Automatic Flash Exit Phase 3:Non-Actuated 1 6:Min. Vehicle Recall	other	phaseNotOn 0:Enabled Phase 5:Non Lock Detector Memory	other	other	other	other
[P2] Options	Bit								
[P2] Ring	Ring	0	1	0	1	0	0	0	0
[P2] Concurrency	Phase (,)	(,)	(,)	(,)	(,)	(,)	(,)	(,)	(,)
Coordination - Pattern 1-32	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	160	160	160	0	0	0	0	0
Offset	Sec	149	13	48	0	0	0	0	0
Split	Split	1	2	3	4	5	6	7	8
Sequence	Sequence	1	1	1	1	1	1	1	1
Phase Parameter Table*	Number	1	1	1	1	1	1	1	1
Coord Phase Reference Point*	Enum	green	green	green	green	green	green	green	green
Coord Mode*	Enum	singlePermissive	singlePermissive	singlePermissive	singlePermissive	singlePermissive	singlePermissive	singlePermissive	singlePermissive
Coordination - Splits	Units	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Split 1 - Mode	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	0	92	0	68	0	0	0	0
Split 1 - Coord	Enum	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Split 1 - Coord Phase Options*	Bit		0: Reference Point						
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	0	104	0	56	0	0	0	0
Split 2 - Coord	Enum	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Split 2 - Coord Phase Options*	Bit		0: Reference Point						
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	0	115	0	45	0	0	0	0
Split 3 - Coord	Enum	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Split 3 - Coord Phase Options*	Bit		0: Reference Point						
Time Base - Schedule 1-16	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J-----	-F-----	--A-----	---M-----	----J----
Day of Week	Bit	SMTWTFS	-MTWTF-	S-----	---T--	-M----	----F-	--M----	--T----
Day of Month	Bit	-----3-----	1.23457E+30	1.23457E+30	1-----	-----7-----	-----8-----	-----9-----	1-----
Day Plan	Number	3	1	3	3	3	3	3	3
Time Base - Schedule 1-16	Units	9	10	11	12	13	14	15	16
Month	Bit	-----A----	-----S----	-----O----	-----D-----	-----D-----	-----D-----	-----S----	-----
Day of Week	Bit	-M----	-M----	-M----	---T--	---F-	--W--	--T----	SMTWTFS
Day of Month	Bit	--4-----	1-----	-----3-----	-----5-----	-----6-----	-----4-----	-----0-----	-----
Day Plan	Number	3	3	3	3	3	3	3	0
Time Base - Day Plans	Units	Evt 1	Evt 2	Evt 3	Evt 4	Evt 5	Evt 6		
Plan 1 Hour	Hour	0	3	6	9	15	19		
Plan 1 Minute	Min	0	0	0	30	0	30		
Plan 1 Action	Number	8	2	1	7	3	2		
Plan 2 Hour	Hour	0	3	7	0	0	0		
Plan 2 Minute	Min	0	0	0	0	0	0		
Plan 2 Action	Number	8	7	2	0	0	0		
Plan 3 Hour	Hour	0	8	23	3	0	0		
Plan 3 Minute	Min	0	0	0	0	0	0		
Plan 3 Action	Number	8	2	8	7	0	0		
Time Base - Action 1-32	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit								

Location	WINSTON CHURCHILL BOULEVARD N @ Argentia Road	LPI	Bike Phase
Phase 1	WCB - NBL Protected + EBRT		
Phase 2	WCB - SB	5 Sec	
Phase 3	Argentia Road - EBL Protected + SBRT		
Phase 4	Argentia Road - WB	5 Sec	✓
Phase 5	WCB - SBL Protected + WBRT		
Phase 6	WCB - NB	5 Sec	✓
Phase 7	Argentia Road - WBL		
Phase 8	Argentia Road - EB	5 Sec	✓

Location	TENTH LINE N @ Argentia Road	LPI	Bike Phase
Phase 1	WBLT - Argentia Rd		
Phase 2	EB - Argentia Rd	5 Sec	✓
Phase 3			
Phase 4	NB - Tenth Line	5 Sec	
Phase 5			
Phase 6	WB - Argentia Rd	5 Sec	✓
Phase 7	NBLT - Tenth Line		
Phase 8	SB - Tenth Line	5 Sec	

Controller Type: Intelight		ID: 5509			Location: TENTH LINE N @ Argentia Road				
Phase -									
Parameter 1-16	Units	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Phase Description*	String	"P.P. WBL"	"EB"		"NB"		"WB"	"P.P. NBL"	"SB"
Walk	Sec	0	10	0	10	0	10	0	10
Ped Clear	Sec	0	18	0	23	0	18	0	23
Min Green	Sec	7	10	0	10	0	10	7	10
Passage	Sec	2	3	0	3	0	3	2	3
Maximum 1	Sec	20	30	0	30	0	30	10	30
Maximum 2	Sec	20	30	0	30	0	30	10	30
Yellow Change	Sec	3	4	3	3.5	3	4	3	3.5
Red Clearance	Sec	0	3.5	0	3	0	3.5	0	3
Red Revert	Sec	0	0	0	0	0	0	0	0
Added Initial	Sec	0	0	0	0	0	0	0	0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before Reduction	Sec	0	0	0	0	0	0	0	0
Cars Before Reduction	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0	0	0	0	0	0	0	0
Min Gap	Sec	0	0	0	0	0	0	0	0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0	0	0	0	0	0	0	0
[P2] Start Up	Enum	phaseNotOn	redClear	other	phaseNotOn	other	redClear	phaseNotOn	phaseNotOn
			0:Enabled Phase				0:Enabled Phase		
			1:Automatic Flash Entry Phase				1:Automatic Flash Entry Phase		
			2:Automatic Flash Exit Phase				2:Automatic Flash Exit Phase		
		0:Enabled Phase	3:Non-Actuated 1	Non Lock Detector Memo	0:Enabled Phase	Non Lock Detector Memo	3:Non-Actuated 1	0:Enabled Phase	0:Enabled Phase
		5:Non Lock Detector Memory	7:Max Vehicle Recall		5:Non Lock Detector Memory		7:Max Vehicle Recall	5:Non Lock Detector Memory	5:Non Lock Detector Memory
			8:Ped. Recall		10:Dual Entry Phase		8:Ped. Recall		10:Dual Entry Phase
			10:Dual Entry Phase				10:Dual Entry Phase		
			13:Actuated Rest In Walk				13:Actuated Rest In Walk		
[P2] Options	Bit								
[P2] Ring	Ring	1	1	0	1	0	2	2	2
[P2] Concurrency	Phase (,)	(6,13,15,11)	(6,13,9,15,11)	(,)	(7,8)	(,)	(1,2,13,9,15,11)	-4	-4
Coordination -									
Pattern 1-32	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	100	125	100	0	0	0	0	0
Offset	Sec	0	0	0	0	0	0	0	0
Split	Split	1	2	3	0	0	0	0	0
Sequence	Sequence	1	1	1	0	0	0	0	0
Phase Parameter Table*	Number	1	1	1	1	1	1	1	1
Coord Phase Reference Point*	Enum	green	green	green	green	green	green	green	green
Coord Mode*	Enum	singlePermissive	singlePermissive	singlePermissive	standard	standard	standard	standard	standard
Coordination -									
Splits	Units	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Split 1 - Mode	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	17	36	0	47	0	53	15	32
Split 1 - Coord	Enum	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE
Split 1 - Coord Phase Options*	Bit	0: Reference Point	0: Reference Point				0: Reference Point		
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	14	36	0	75	0	50	0	75
Split 2 - Coord	Enum	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE
Split 2 - Coord Phase Options*	Bit	0: Reference Point	0: Reference Point				0: Reference Point		
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	33	36	0	31	0	69	0	31
Split 3 - Coord	Enum	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE
Split 3 - Coord Phase Options*	Bit	0: Reference Point	0: Reference Point				0: Reference Point		
Time Base -									
Schedule 1-16	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J-----	-F-----	--A-----	---M-----	-----J----
Day of Week	Bit	-MTWTF-	S-----	-----S	----T--	-M----	----F-	-M-----	--T----
Day of Month	Bit	1.23457E+30	1.23457E+30	1.23457E+30	1-----	-----7-----	-----8-----	-----9-----	1-----
Day Plan	Number	1	3	2	3	3	3	3	3
Time Base -									
Schedule 1-16	Units	9	10	11	12	13	14	15	16
Month	Bit	-----A----	-----S---	-----O--	-----D	-----D	-----D	-----S---	-----
Day of Week	Bit	-M-----	-M-----	-M-----	---T--	----F-	---W--	--T----	SMTWTFS
Day of Month	Bit	--4-----	1-----	-----3-----	-----5-----	-----6-----	-----4-----	-----0-----	-----
Day Plan	Number	3	3	3	3	3	3	3	0
Time Base -									
Day Plans	Units	Evt 1	Evt 2	Evt 3	Evt 4	Evt 5	Evt 6		
Plan 1 Hour	Hour	0	3	6	9	15	19		
Plan 1 Minute	Min	0	0	0	30	0	30		
Plan 1 Action	Number	8	7	1	8	3	8		
Plan 2 Hour	Hour	0	3	0	0	0	0		
Plan 2 Minute	Min	0	0	0	0	0	0		
Plan 2 Action	Number	8	7	0	0	0	0		
Plan 3 Hour	Hour	0	3	10	13	0	0		
Plan 3 Minute	Min	0	0	0	30	0	0		
Plan 3 Action	Number	8	7	2	8	0	0		
Time Base -									
Action 1-32	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit								

Location	NINTH LINE N @ Argentia Road	LPI
Phase 1		
Phase 2	Ninth Line - SB	5 Sec
Phase 3		
Phase 4	Argentia Road - WB	5 Sec
Phase 5		
Phase 6	Ninth Line - NB	5 Sec
Phase 7		
Phase 8	Computer Phase	5 Sec

Controller Type: Intelight		ID: 5512			Location: NINTH LINE N @ Argentia Road				
Phase -									
Parameter 1-16	Units	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Phase Description*	String	" "	" SB"	" "	"WB"	" "	"NB"	" "	"dummy"
Walk	Sec	0	10	0	10	0	10	0	10
Ped Clear	Sec	0	27	0	14	0	27	0	14
Min Green	Sec	0	10	0	20	0	10	0	10
Passage	Sec	0	3	0	3	0	3	0	3
Maximum 1	Sec	0	20	0	25	0	20	0	25
Maximum 2	Sec	0	20	0	25	0	20	0	25
Yellow Change	Sec	3	4	3	4	3	4	3	4
Red Clearance	Sec	0	2.5	0	2	0	2.5	0	2
Red Revert	Sec	0	0	0	0	0	0	0	0
Added Initial	Sec	0	0	0	0	0	0	0	0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before Reduction	Sec	0	0	0	0	0	0	0	0
Cars Before Reduction	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0	0	0	0	0	0	0	0
Min Gap	Sec	0	0	0	0	0	0	0	0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0	0	0	0	0	0	0	0
[P2] Start Up	Enum	other	redClear	other	phaseNotOn	other	redClear	other	phaseNotOn
			0:Enabled Phase				0:Enabled Phase		
			1:Automatic Flash Entry Phase				1:Automatic Flash Entry Phase		
			2:Automatic Flash Exit Phase		0:Enabled Phase		2:Automatic Flash Exit Phase		0:Enabled Phase
			3:Non-Actuated 1		5:Non Lock Detector Memory		3:Non-Actuated 1		5:Non Lock Detector Memory
			7:Max Vehicle Recall		6:Min. Vehicle Recall		7:Max Vehicle Recall		10:Non Lock Detector Memory
			8:Ped. Recall		10:Dual Entry Phase		8:Ped. Recall		10:Dual Entry Phase
			10:Dual Entry Phase				10:Dual Entry Phase		
			13:Actuated Rest In				13:Actuated Rest In		
[P2] Options	Bit		Walk				Walk		
[P2] Ring	Ring	0	1	0	1	0	2	0	2
[P2] Concurrency	Phase (,)	()	-6	()	-8	()	-2	()	-4
Coordination -									
Pattern 1-32	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	0	0	0	0	0	0	0	0
Offset	Sec	0	0	0	0	0	0	0	0
Split	Split	1	2	3	4	5	6	7	8
Sequence	Sequence	1	1	1	1	1	1	1	1
Phase Parameter Table*	Number	1	1	1	1	1	1	1	1
Coord Phase Reference Point*	Enum	green	green	green	green	green	green	green	green
Coord Mode*	Enum	standard	standard	standard	standard	standard	standard	standard	standard
Coordination -									
Splits	Units	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Split 1 - Mode	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	0	0	0	0	0	0	0	0
Split 1 - Coord	Enum	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE
Split 1 - Coord Phase Options*	Bit						0: Reference Point		
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	0	0	0	0	0	0	0	0
Split 2 - Coord	Enum	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE
Split 2 - Coord Phase Options*	Bit						0: Reference Point		
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	0	0	0	0	0	0	0	0
Split 3 - Coord	Enum	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE
Split 3 - Coord Phase Options*	Bit		0: Reference Point						
Time Base -									
Schedule 1-16	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J-----	-F-----	--A-----	---M-----	-----J----
Day of Week	Bit	-MTWTF-	S-----	-----S	----T--	-M----	----F-	-M-----	--T----
Day of Month	Bit	1.23457E+30	1.23457E+30	1.23457E+30	1-----	-----7-----	-----8-----	-----9-----	1-----
Day Plan	Number	1	3	2	3	3	3	3	3
Time Base -									
Schedule 1-16	Units	9	10	11	12	13	14	15	16
Month	Bit	-----A----	-----S---	-----O--	-----D	-----D	-----D	-----S---	-----
Day of Week	Bit	-M-----	-M-----	-M-----	---T--	----F-	---W--	--T----	SMTWTFS
Day of Month	Bit	--4-----	1-----	-----3-----	-----5-----	-----6-----	-----4-----	-----0-----	-----
Day Plan	Number	3	3	3	3	3	3	3	0
Time Base -									
Day Plans	Units	Evt 1	Evt 2						
Plan 1 Hour	Hour	0	3						
Plan 1 Minute	Min	0	0						
Plan 1 Action	Number	8	7						
Plan 2 Hour	Hour	0	3						
Plan 2 Minute	Min	0	0						
Plan 2 Action	Number	8	7						
Plan 3 Hour	Hour	0	3						
Plan 3 Minute	Min	0	0						
Plan 3 Action	Number	8	7						
Time Base -									
Action 1-32	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit								

REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date	July 30, 2025		Prepared Date	July 30, 2025
Database Rev	iNet		Completed By	A.P
Timing Card / Field rev	N/A		Checked By	N.M

Location	Derry Road E. @ Ninth Line Road West								
----------	--------------------------------------	--	--	--	--	--	--	--	--

Phase #	Street Name - Direction	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	TIME PERIOD (s)		
			WALK	FDWALK			AM SPLITS	OFF SPLITS	PM SPLITS
1	Derry Road E. - WB P.P. LT	7.0	0.0	0.0	3.0	0.0	13.0	13.0	15.0
2	Derry Road E. - EB	10.0	10.0	26.0	4.0	2.5	62.0	48.0	68.0
3	Not in Use	-	-	-	-	-	-	-	-
4	Ninth Line - NB	10.0	10.0	24.0	4.0	2.5	85.0	49.0	77.0
5	Derry Road E. - EB P.P. LT	7.0	0.0	0.0	3.0	0.0	13.0	13.0	16.0
6	Derry Road E. - WB	10.0	10.0	26.0	4.0	2.5	62.0	48.0	67.0
7	Ninth Line - NB P.P. LT	7.0	0.0	0.0	3.0	0.0	18.0	10.0	16.0
8	Ninth Line - SB	10.0	10.0	24.0	4.0	2.5	67.0	39.0	61.0

System Control

Yes

Semi-Actuated Mode

Yes

TIME (M-F)	PEAK	CYCLE LENGTH (s)	OFFSET (s)
06:00 - 09:30	AM	160	115
09:30 - 15:00 19:30 - 00:00	OFF	110	43
15:00 - 19:30	PM	160	154



Appendix E:

Synchro Output Reports

Lanes, Volumes, Timings

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

Baseline

08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	223	2	470	2	931	199	0	1219	386
Future Volume (vph)	0	0	0	223	2	470	2	931	199	0	1219	386
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.88	1.00	0.95	0.95	1.00	0.91	1.00
Ped Bike Factor						0.98						
Frt						0.850		0.974				0.850
Flt Protected				0.950	0.953		0.950					
Satd. Flow (prot)	1784	0	1784	1507	1514	2250	1729	3172	0	0	4558	1334
Flt Permitted				0.950	0.953		0.196					
Satd. Flow (perm)	1784	0	1784	1507	1514	2201	357	3172	0	0	4558	1334
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						404		20				373
Link Speed (k/h)		30			60			60			60	
Link Distance (m)		149.8			217.3			393.8			859.9	
Travel Time (s)		18.0			13.0			23.6			51.6	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	9%	0%	21%	0%	6%	7%	2%	9%	16%
Adj. Flow (vph)	0	0	0	235	2	495	2	980	209	0	1283	406
Shared Lane Traffic (%)				50%								
Lane Group Flow (vph)	0	0	0	117	120	495	2	1189	0	0	1283	406
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1		1	1	2	1	1	2			2	1
Detector Template	Left		Right	Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (m)	6.1		6.1	6.1	30.5	6.1	6.1	30.5			30.5	6.1
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Size(m)	6.1		6.1	6.1	1.8	6.1	6.1	1.8			1.8	6.1
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(m)					28.7			28.7			28.7	
Detector 2 Size(m)					1.8			1.8			1.8	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		Prot	Split	NA	Perm	Perm	NA			NA	Perm
Protected Phases	3		3	4	4			6			2	
Permitted Phases						4	6					2

Baseline

TYLin

Synchro 11 Report

Page 1

Lanes, Volumes, Timings

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

Baseline

08/15/2025

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Detector Phase	3		3	4	4	4	6	6			2	2
Switch Phase												
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0	20.0	20.0			20.0	20.0
Minimum Split (s)	17.3		17.3	50.6	50.6	50.6	41.5	41.5			41.5	41.5
Total Split (s)	21.5		21.5	62.6	62.6	62.6	75.9	75.9			54.4	54.4
Total Split (%)	13.4%		13.4%	39.1%	39.1%	39.1%	47.4%	47.4%			34.0%	34.0%
Maximum Green (s)	14.2		14.2	55.0	55.0	55.0	68.4	68.4			46.9	46.9
Yellow Time (s)	4.5		4.5	5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)	2.8		2.8	2.6	2.6	2.6	2.5	2.5			2.5	2.5
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	7.3		7.3	7.6	7.6	7.6	7.5	7.5			7.5	7.5
Lead/Lag	Lead		Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	None		None	None	None	None	C-Max	C-Max			C-Max	C-Max
Walk Time (s)				10.0	10.0	10.0	10.0	10.0			10.0	10.0
Flash Dont Walk (s)				33.0	33.0	33.0	24.0	24.0			24.0	24.0
Pedestrian Calls (#/hr)				0	0	0	0	0			0	0
Act Effect Green (s)				19.9	19.9	19.9	125.0	125.0			125.0	125.0
Actuated g/C Ratio				0.12	0.12	0.12	0.78	0.78			0.78	0.78
v/c Ratio				0.63	0.64	0.79	0.01	0.48			0.36	0.36
Control Delay				80.0	80.8	22.5	4.0	10.0			6.1	1.7
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				80.0	80.8	22.5	4.0	10.0			6.1	1.7
LOS				E	F	C	A	B			A	A
Approach Delay					41.2			10.0			5.1	
Approach LOS					D			B			A	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 147 (92%), Referenced to phase 2:SBT and 6:NBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 14.0

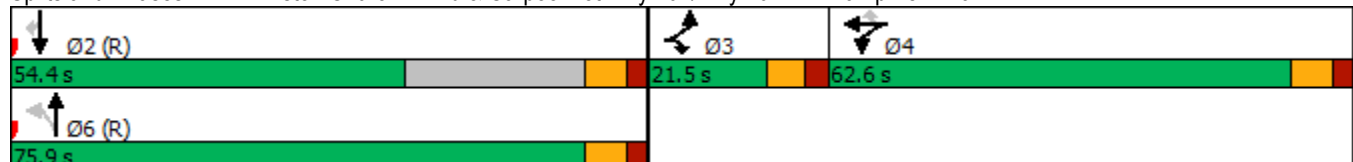
Intersection LOS: B

Intersection Capacity Utilization 70.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal



Queues

Baseline

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/15/2025



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	117	120	495	2	1189	1283	406
v/c Ratio	0.63	0.64	0.79	0.01	0.48	0.36	0.36
Control Delay	80.0	80.8	22.5	4.0	10.0	6.1	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.0	80.8	22.5	4.0	10.0	6.1	1.7
Queue Length 50th (m)	37.7	38.8	15.2	0.1	53.2	40.2	2.1
Queue Length 95th (m)	57.0	58.5	36.8	m0.4	124.3	60.2	12.0
Internal Link Dist (m)		193.3			369.8	835.9	
Turn Bay Length (m)							
Base Capacity (vph)	518	520	1021	279	2483	3562	1124
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.23	0.48	0.01	0.48	0.36	0.36

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

Baseline

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/15/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	223	2	470	2	931	199	0	1219	386
Future Volume (vph)	0	0	0	223	2	470	2	931	199	0	1219	386
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)				7.6	7.6	7.6	7.5	7.5			7.5	7.5
Lane Util. Factor				0.95	0.95	0.88	1.00	0.95			0.91	1.00
Frpb, ped/bikes				1.00	1.00	0.98	1.00	1.00			1.00	1.00
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt				1.00	1.00	0.85	1.00	0.97			1.00	0.85
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1507	1514	2201	1729	3171			4558	1334
Flt Permitted				0.95	0.95	1.00	0.20	1.00			1.00	1.00
Satd. Flow (perm)				1507	1514	2201	357	3171			4558	1334
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	235	2	495	2	980	209	0	1283	406
RTOR Reduction (vph)	0	0	0	0	0	354	0	4	0	0	0	82
Lane Group Flow (vph)	0	0	0	117	120	141	2	1185	0	0	1283	324
Confl. Peds. (#/hr)	1					1						
Heavy Vehicles (%)	2%	2%	2%	9%	0%	21%	0%	6%	7%	2%	9%	16%
Turn Type	Prot		Prot	Split	NA	Perm	Perm	NA			NA	Perm
Protected Phases	3		3	4	4			6			2	
Permitted Phases						4	6					2
Actuated Green, G (s)				19.9	19.9	19.9	125.0	125.0			125.0	125.0
Effective Green, g (s)				19.9	19.9	19.9	125.0	125.0			125.0	125.0
Actuated g/C Ratio				0.12	0.12	0.12	0.78	0.78			0.78	0.78
Clearance Time (s)				7.6	7.6	7.6	7.5	7.5			7.5	7.5
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				187	188	273	278	2477			3560	1042
v/s Ratio Prot				0.08	c0.08			c0.37			0.28	
v/s Ratio Perm						0.06	0.01					0.24
v/c Ratio				0.63	0.64	0.52	0.01	0.48			0.36	0.31
Uniform Delay, d1				66.5	66.6	65.6	3.8	6.1			5.3	5.1
Progression Factor				1.00	1.00	1.00	0.74	1.41			1.00	1.00
Incremental Delay, d2				6.4	6.9	1.7	0.0	0.6			0.3	0.8
Delay (s)				72.9	73.6	67.2	2.9	9.3			5.6	5.8
Level of Service				E	E	E	A	A			A	A
Approach Delay (s)		0.0			69.2			9.2			5.7	
Approach LOS		A			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			19.7									
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			160.0									
Intersection Capacity Utilization			70.0%									
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	←←←	→		↑↑↑	↑↑↑	
Traffic Volume (vph)	478	211	0	659	716	730
Future Volume (vph)	478	211	0	659	716	730
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	0.91
Frt	0.994	0.850			0.924	
Flt Protected	0.954					
Satd. Flow (prot)	3079	1367	0	4824	4211	0
Flt Permitted	0.954					
Satd. Flow (perm)	3079	1367	0	4824	4211	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4	119			209	
Link Speed (k/h)	50			60	60	
Link Distance (m)	280.6			247.8	393.8	
Travel Time (s)	20.2			14.9	23.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	3%	2%	3%	7%	11%
Adj. Flow (vph)	503	222	0	694	754	768
Shared Lane Traffic (%)		10%				
Lane Group Flow (vph)	525	200	0	694	1522	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.4			7.4	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	6.1	6.1		30.5	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	6.1		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				28.7	28.7	
Detector 2 Size(m)				1.8	1.8	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Detector Phase	4	4		2	2	
Switch Phase						

Lanes, Volumes, Timings
2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal

Baseline
08/15/2025



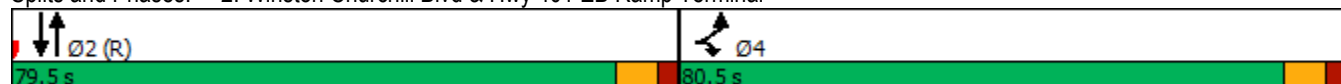
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		20.0	20.0	
Minimum Split (s)	22.5	22.5		31.5	31.5	
Total Split (s)	80.5	80.5		79.5	79.5	
Total Split (%)	50.3%	50.3%		49.7%	49.7%	
Maximum Green (s)	72.0	72.0		72.0	72.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	8.5	8.5		7.5	7.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				17.0	17.0	
Pedestrian Calls (#/hr)				0	0	
Act Effect Green (s)	34.0	34.0		110.0	110.0	
Actuated g/C Ratio	0.21	0.21		0.69	0.69	
v/c Ratio	0.80	0.52		0.21	0.51	
Control Delay	68.5	26.1		9.3	10.7	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	68.5	26.1		9.3	10.7	
LOS	E	C		A	B	
Approach Delay	56.8			9.3	10.7	
Approach LOS	E			A	B	

Intersection Summary

Area Type: Other
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 149 (93%), Referenced to phase 2:NBSB and 6:, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 21.7
Intersection Capacity Utilization 62.0%
Analysis Period (min) 15

Intersection LOS: C
ICU Level of Service B

Splits and Phases: 2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal



2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal

08/15/2025



Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	525	200	694	1522
v/c Ratio	0.80	0.52	0.21	0.51
Control Delay	68.5	26.1	9.3	10.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	68.5	26.1	9.3	10.7
Queue Length 50th (m)	82.2	24.5	18.5	39.8
Queue Length 95th (m)	96.4	50.1	m42.8	42.0
Internal Link Dist (m)	256.6		223.8	369.8
Turn Bay Length (m)				
Base Capacity (vph)	1387	680	3315	2959
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	0.38	0.29	0.21	0.51

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal

Baseline
08/15/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	478	211	0	659	716	730
Future Volume (vph)	478	211	0	659	716	730
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	8.5	8.5		7.5	7.5	
Lane Util. Factor	0.97	0.91		0.91	0.91	
Frt	0.99	0.85		1.00	0.92	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3079	1367		4824	4213	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3079	1367		4824	4213	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	503	222	0	694	754	768
RTOR Reduction (vph)	3	94	0	0	65	0
Lane Group Flow (vph)	522	106	0	694	1457	0
Heavy Vehicles (%)	9%	3%	2%	3%	7%	11%
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	34.0	34.0		110.0	110.0	
Effective Green, g (s)	34.0	34.0		110.0	110.0	
Actuated g/C Ratio	0.21	0.21		0.69	0.69	
Clearance Time (s)	8.5	8.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	654	290		3316	2896	
v/s Ratio Prot	c0.17	0.08		0.14	c0.35	
v/s Ratio Perm						
v/c Ratio	0.80	0.37		0.21	0.50	
Uniform Delay, d1	59.7	53.8		9.1	11.9	
Progression Factor	1.00	1.00		0.95	0.94	
Incremental Delay, d2	6.7	0.8		0.1	0.6	
Delay (s)	66.5	54.6		8.8	11.8	
Level of Service	E	D		A	B	
Approach Delay (s)	63.2			8.8	11.8	
Approach LOS	E			A	B	
Intersection Summary						
HCM 2000 Control Delay			23.8		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.57			
Actuated Cycle Length (s)			160.0		Sum of lost time (s)	16.0
Intersection Capacity Utilization			62.0%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentia Rd

Baseline
08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	320	175	57	74	73	135	75	955	95	272	439	152
Future Volume (vph)	320	175	57	74	73	135	75	955	95	272	439	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (m)	7.6			2.5			7.6			7.6		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	0.98		0.97	0.99		0.96	0.99		0.98	1.00		0.98
Fr't			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3372	3614	1601	1722	3579	1512	3471	5142	1570	3437	4902	1484
Flt Permitted	0.950			0.636			0.950			0.950		
Satd. Flow (perm)	3301	3614	1553	1136	3579	1459	3453	5142	1540	3427	4902	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			60			51			91			160
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		633.5			370.2			729.2			247.8	
Travel Time (s)		38.0			22.2			43.8			14.9	
Confl. Peds. (#/hr)	23		18	18		23	9		7	7		9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	2%	6%	2%	8%	2%	2%	4%	3%	7%	10%
Adj. Flow (vph)	337	184	60	78	77	142	79	1005	100	286	462	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	337	184	60	78	77	142	79	1005	100	286	462	160
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings

3: Winston Churchill Blvd & Argentinia Rd

Baseline
08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6		5	2	3
Permitted Phases			8	4		4			6			2
Detector Phase	3	8	1	7	4	5	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0	7.0	7.0	10.0	10.0	7.0	10.0	7.0
Minimum Split (s)	12.0	54.5	12.0	11.5	54.5	12.0	12.0	51.5	51.5	12.0	51.5	12.0
Total Split (s)	20.0	63.0	20.0	19.5	62.5	20.0	20.0	57.5	57.5	20.0	57.5	20.0
Total Split (%)	12.5%	39.4%	12.5%	12.2%	39.1%	12.5%	12.5%	35.9%	35.9%	12.5%	35.9%	12.5%
Maximum Green (s)	15.0	55.5	15.0	16.5	55.0	15.0	15.0	50.0	50.0	15.0	50.0	15.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	2.0	3.5	2.0	0.0	3.5	2.0	2.0	3.5	3.5	2.0	3.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.5	5.0	3.0	7.5	5.0	5.0	7.5	7.5	5.0	7.5	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	Min	None	None	C-Max	C-Max	None	C-Max	None
Walk Time (s)		10.0			10.0			10.0	10.0		10.0	
Flash Dont Walk (s)		37.0			37.0			34.0	34.0		34.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effect Green (s)	15.0	16.9	28.5	27.4	11.4	33.2	9.1	89.3	89.3	19.3	99.5	117.0
Actuated g/C Ratio	0.09	0.11	0.18	0.17	0.07	0.21	0.06	0.56	0.56	0.12	0.62	0.73
v/c Ratio	1.07	0.48	0.18	0.33	0.30	0.41	0.40	0.35	0.11	0.69	0.15	0.14
Control Delay	135.4	72.3	12.3	54.1	73.1	34.6	78.5	20.4	4.5	63.8	19.2	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	135.4	72.3	12.3	54.1	73.1	34.6	78.5	20.4	4.5	63.8	19.2	5.6
LOS	F	E	B	D	E	C	E	C	A	E	B	A
Approach Delay		102.7			49.7			22.9			30.8	
Approach LOS		F			D			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 65 (41%), Referenced to phase 2:SBT and 6:NBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 43.6

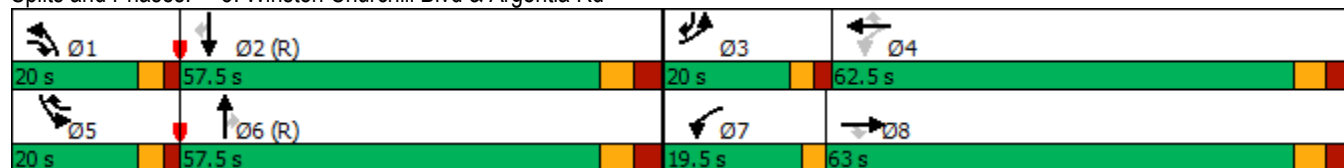
Intersection LOS: D

Intersection Capacity Utilization 99.2%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Winston Churchill Blvd & Argentinia Rd



Queues
3: Winston Churchill Blvd & Argentia Rd

Baseline
08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	337	184	60	78	77	142	79	1005	100	286	462	160
v/c Ratio	1.07	0.48	0.18	0.33	0.30	0.41	0.40	0.35	0.11	0.69	0.15	0.14
Control Delay	135.4	72.3	12.3	54.1	73.1	34.6	78.5	20.4	4.5	63.8	19.2	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	135.4	72.3	12.3	54.1	73.1	34.6	78.5	20.4	4.5	63.8	19.2	5.6
Queue Length 50th (m)	~60.7	29.8	0.0	20.6	12.5	24.1	12.7	61.5	1.2	46.6	31.5	6.6
Queue Length 95th (m)	#93.0	42.7	12.3	34.3	20.8	41.7	21.4	81.6	11.2	60.7	42.2	25.5
Internal Link Dist (m)	609.5			346.2			705.2			223.8		
Turn Bay Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Base Capacity (vph)	316	1253	385	290	1230	349	325	2870	899	414	3048	1107
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.07	0.15	0.16	0.27	0.06	0.41	0.24	0.35	0.11	0.69	0.15	0.14

Intersection Summary

- ~ 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.

HCM Signalized Intersection Capacity Analysis

3: Winston Churchill Blvd & Argentia Rd

Baseline
08/15/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	320	175	57	74	73	135	75	955	95	272	439	152
Future Volume (vph)	320	175	57	74	73	135	75	955	95	272	439	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.5	5.0	3.0	7.5	5.0	5.0	7.5	7.5	5.0	7.5	5.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3372	3614	1570	1707	3579	1492	3471	5142	1540	3437	4902	1457
Flt Permitted	0.95	1.00	1.00	0.64	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3372	3614	1570	1142	3579	1492	3471	5142	1540	3437	4902	1457
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	337	184	60	78	77	142	79	1005	100	286	462	160
RTOR Reduction (vph)	0	0	50	0	0	41	0	0	40	0	0	46
Lane Group Flow (vph)	337	184	10	78	77	101	79	1005	60	286	462	115
Confl. Peds. (#/hr)	23		18	18		23	9		7	7		9
Heavy Vehicles (%)	5%	1%	2%	6%	2%	8%	2%	2%	4%	3%	7%	10%
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6		5	2	3
Permitted Phases			8	4		4			6			2
Actuated Green, G (s)	15.0	16.9	26.0	22.9	11.4	30.7	9.1	89.3	89.3	19.3	99.5	114.5
Effective Green, g (s)	15.0	16.9	26.0	22.9	11.4	30.7	9.1	89.3	89.3	19.3	99.5	114.5
Actuated g/C Ratio	0.09	0.11	0.16	0.14	0.07	0.19	0.06	0.56	0.56	0.12	0.62	0.72
Clearance Time (s)	5.0	7.5	5.0	3.0	7.5	5.0	5.0	7.5	7.5	5.0	7.5	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	316	381	255	204	255	286	197	2869	859	414	3048	1042
v/s Ratio Prot	c0.10	c0.05	0.00	0.03	0.02	0.04	0.02	c0.20		c0.08	0.09	0.01
v/s Ratio Perm			0.00	0.03		0.03			0.04			0.07
v/c Ratio	1.07	0.48	0.04	0.38	0.30	0.35	0.40	0.35	0.07	0.69	0.15	0.11
Uniform Delay, d1	72.5	67.4	56.5	61.6	70.5	56.0	72.8	19.4	16.3	67.5	12.6	7.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.83	1.46	6.35
Incremental Delay, d2	69.3	1.0	0.1	1.2	0.7	0.8	1.3	0.3	0.2	4.4	0.1	0.0
Delay (s)	141.8	68.4	56.5	62.7	71.2	56.8	74.2	19.8	16.4	60.2	18.6	44.6
Level of Service	F	E	E	E	E	E	E	B	B	E	B	D
Approach Delay (s)		109.8			62.1			23.1			36.3	
Approach LOS		F			E			C			D	
Intersection Summary												
HCM 2000 Control Delay			48.0									
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			160.0									
Intersection Capacity Utilization			99.2%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
4: Tenth Line W & Argentinia Rd

Baseline
08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	263	36	69	122	10	7	1	214	2	1	1
Future Volume (vph)	3	263	36	69	122	10	7	1	214	2	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	0.0		0.0	130.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
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
Ped Bike Factor	1.00		0.97	0.99		0.97	1.00	0.99		1.00	0.99	
Frt			0.850			0.850		0.851			0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1847	1633	1738	1830	1633	1825	1598	0	1217	1765	0
Flt Permitted	0.676			0.542			0.582			0.619		
Satd. Flow (perm)	1293	1847	1586	986	1830	1592	1116	1598	0	792	1765	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			71		223			1	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		1323.5			633.5			748.2			676.6	
Travel Time (s)		79.4			38.0			53.9			48.7	
Confl. Peds. (#/hr)	3		5	5		3	2		1	1		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	4%	0%	5%	5%	0%	0%	0%	1%	50%	0%	0%
Adj. Flow (vph)	3	274	38	72	127	10	7	1	223	2	1	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	274	38	72	127	10	7	224	0	2	2	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)		11.1			11.1			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
4: Tenth Line W & Argentia Rd

Baseline
08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		7	4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	2	2	2	1	6	6	7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0	10.0	7.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5	35.5	11.5	35.5	35.5	11.5	39.5		39.5	39.5	
Total Split (s)	37.5	37.5	37.5	11.5	49.0	49.0	11.5	51.0		39.5	39.5	
Total Split (%)	37.5%	37.5%	37.5%	11.5%	49.0%	49.0%	11.5%	51.0%		39.5%	39.5%	
Maximum Green (s)	30.0	30.0	30.0	8.5	41.5	41.5	8.5	44.5		33.0	33.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	3.5		3.5	3.5	
All-Red Time (s)	3.5	3.5	3.5	0.0	3.5	3.5	0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	3.0	7.5	7.5	3.0	6.5		6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	None	Max	Max	None	Min		Min	Min	
Walk Time (s)	10.0	10.0	10.0		10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)	18.0	18.0	18.0		18.0	18.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0		0	0	
Act Effct Green (s)	33.5	33.5	33.5	46.1	41.6	41.6	15.3	11.8		10.0	10.0	
Actuated g/C Ratio	0.50	0.50	0.50	0.68	0.62	0.62	0.23	0.17		0.15	0.15	
v/c Ratio	0.00	0.30	0.05	0.10	0.11	0.01	0.02	0.48		0.02	0.01	
Control Delay	11.7	12.9	0.1	4.6	6.4	0.0	19.4	7.6		27.0	23.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	11.7	12.9	0.1	4.6	6.4	0.0	19.4	7.6		27.0	23.5	
LOS	B	B	A	A	A	A	B	A		C	C	
Approach Delay		11.4			5.5			8.0			25.3	
Approach LOS		B			A			A			C	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 67.5

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 8.8

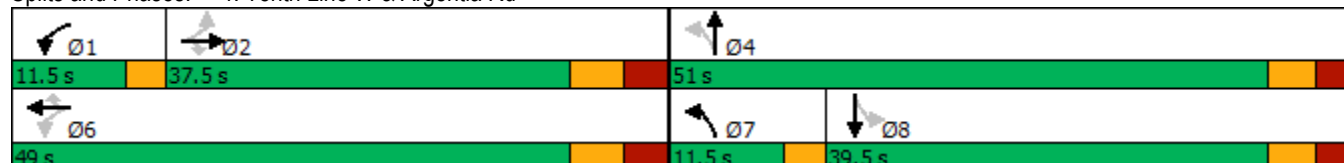
Intersection LOS: A

Intersection Capacity Utilization 63.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Tenth Line W & Argentia Rd



Queues
4: Tenth Line W & Argentia Rd

Baseline
08/15/2025

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	3	274	38	72	127	10	7	224	2	2
v/c Ratio	0.00	0.30	0.05	0.10	0.11	0.01	0.02	0.48	0.02	0.01
Control Delay	11.7	12.9	0.1	4.6	6.4	0.0	19.4	7.6	27.0	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.7	12.9	0.1	4.6	6.4	0.0	19.4	7.6	27.0	23.5
Queue Length 50th (m)	0.2	19.1	0.0	2.2	5.2	0.0	0.7	0.1	0.2	0.1
Queue Length 95th (m)	1.8	44.2	0.0	8.2	15.6	0.0	3.3	15.0	2.1	1.9
Internal Link Dist (m)	1299.5			609.5			724.2			652.6
Turn Bay Length (m)	20.0						130.0			45.0
Base Capacity (vph)	641	916	838	769	1128	1009	343	1132	388	866
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.30	0.05	0.09	0.11	0.01	0.02	0.20	0.01	0.00
Intersection Summary										

HCM Signalized Intersection Capacity Analysis

4: Tenth Line W & Argentia Rd

Baseline
08/15/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	263	36	69	122	10	7	1	214	2	1	1
Future Volume (vph)	3	263	36	69	122	10	7	1	214	2	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5	7.5	3.0	7.5	7.5	3.0	6.5		6.5	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.98	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1819	1847	1590	1734	1830	1594	1824	1598		1216	1765	
Flt Permitted	0.68	1.00	1.00	0.54	1.00	1.00	0.58	1.00		0.62	1.00	
Satd. Flow (perm)	1294	1847	1590	990	1830	1594	1117	1598		792	1765	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	3	274	38	72	127	10	7	1	223	2	1	1
RTOR Reduction (vph)	0	0	20	0	0	4	0	178	0	0	1	0
Lane Group Flow (vph)	3	274	18	72	127	6	7	46	0	2	1	0
Confl. Peds. (#/hr)	3		5	5		3	2		1	1		2
Heavy Vehicles (%)	0%	4%	0%	5%	5%	0%	0%	0%	1%	50%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		7	4			8	
Permitted Phases	2		2	6		6	4			8		
Actuated Green, G (s)	33.5	33.5	33.5	42.3	42.3	42.3	14.3	14.3		10.0	10.0	
Effective Green, g (s)	33.5	33.5	33.5	42.3	42.3	42.3	14.3	14.3		10.0	10.0	
Actuated g/C Ratio	0.47	0.47	0.47	0.60	0.60	0.60	0.20	0.20		0.14	0.14	
Clearance Time (s)	7.5	7.5	7.5	3.0	7.5	7.5	3.0	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	614	876	754	654	1096	955	239	323		112	250	
v/s Ratio Prot		c0.15		0.01	c0.07		0.00	c0.03			0.00	
v/s Ratio Perm	0.00		0.01	0.06		0.00	0.01			0.00		
v/c Ratio	0.00	0.31	0.02	0.11	0.12	0.01	0.03	0.14		0.02	0.00	
Uniform Delay, d1	9.8	11.4	9.9	6.0	6.1	5.7	22.6	23.1		26.1	26.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.9	0.1	0.1	0.2	0.0	0.0	0.2		0.1	0.0	
Delay (s)	9.8	12.4	9.9	6.1	6.3	5.7	22.6	23.3		26.1	26.0	
Level of Service	A	B	A	A	A	A	C	C		C	C	
Approach Delay (s)		12.1			6.2			23.3			26.1	
Approach LOS		B			A			C			C	
Intersection Summary												
HCM 2000 Control Delay			13.9				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.26									
Actuated Cycle Length (s)			70.6				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			63.5%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
5: Ninth Line & Argentinia Rd

Baseline
08/15/2025

										
Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Traffic Volume (vph)	43	29	0	262	204	92	475	0	0	0
Future Volume (vph)	43	29	0	262	204	92	475	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	0.0		100.0	45.0		0.0	0.0	0.0
Storage Lanes	1	1	0		1	1		0	0	0
Taper Length (m)	7.6		7.6			7.6			7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.850					
Flt Protected	0.950					0.950				
Satd. Flow (prot)	1706	1526	0	1883	1601	1789	1865	0	0	0
Flt Permitted	0.950					0.587				
Satd. Flow (perm)	1706	1526	0	1883	1601	1106	1865	0	0	0
Right Turn on Red		Yes			Yes			Yes		
Satd. Flow (RTOR)		52			219					
Link Speed (k/h)	60			60			60		48	
Link Distance (m)	1323.5			1616.5			667.9		25.4	
Travel Time (s)	79.4			97.0			40.1		1.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	7%	7%	2%	2%	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	46	31	0	282	219	99	511	0	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	46	31	0	282	219	99	511	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(m)	7.4			3.7			3.7		0.0	
Link Offset(m)	0.0			0.0			0.0		0.0	
Crosswalk Width(m)	4.9			4.9			4.9		4.9	
Two way Left Turn Lane										
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24		14	24		14	24	14
Number of Detectors	1	1		2	1	1	2			
Detector Template	Left	Right		Thru	Right	Left	Thru			
Leading Detector (m)	6.1	6.1		30.5	6.1	6.1	30.5			
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0			
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0			
Detector 1 Size(m)	6.1	6.1		1.8	6.1	6.1	1.8			
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(m)				28.7			28.7			
Detector 2 Size(m)				1.8			1.8			
Detector 2 Type				Cl+Ex			Cl+Ex			
Detector 2 Channel										
Detector 2 Extend (s)				0.0			0.0			
Turn Type	Prot	Perm		NA	Perm	Perm	NA			
Protected Phases	4			6			2			

Lanes, Volumes, Timings
5: Ninth Line & Argentia Rd

Baseline
08/15/2025

										
Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Permitted Phases		4			6	2				
Detector Phase	4	4		6	6	2	2			
Switch Phase										
Minimum Initial (s)	20.0	20.0		10.0	10.0	10.0	10.0			
Minimum Split (s)	30.0	30.0		43.5	43.5	43.5	43.5			
Total Split (s)	30.0	30.0		43.5	43.5	43.5	43.5			
Total Split (%)	40.8%	40.8%		59.2%	59.2%	59.2%	59.2%			
Maximum Green (s)	24.0	24.0		37.0	37.0	37.0	37.0			
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0			
All-Red Time (s)	2.0	2.0		2.5	2.5	2.5	2.5			
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	6.0	6.0		6.5	6.5	6.5	6.5			
Lead/Lag										
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0			
Recall Mode	None	None		Max	Max	Max	Max			
Walk Time (s)	10.0	10.0		10.0	10.0	10.0	10.0			
Flash Dont Walk (s)	14.0	14.0		27.0	27.0	27.0	27.0			
Pedestrian Calls (#/hr)	0	0		0	0	0	0			
Act Effect Green (s)	20.4	20.4		51.1	51.1	51.1	51.1			
Actuated g/C Ratio	0.30	0.30		0.74	0.74	0.74	0.74			
v/c Ratio	0.09	0.06		0.20	0.18	0.12	0.37			
Control Delay	20.4	3.4		7.1	1.8	7.6	8.5			
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0			
Total Delay	20.4	3.4		7.1	1.8	7.6	8.5			
LOS	C	A		A	A	A	A			
Approach Delay	13.5			4.8			8.4			
Approach LOS	B			A			A			

Intersection Summary

Area Type: Other

Cycle Length: 73.5

Actuated Cycle Length: 68.9

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.37

Intersection Signal Delay: 7.2

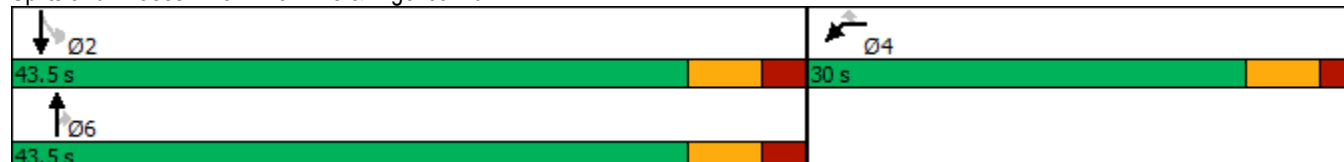
Intersection LOS: A

Intersection Capacity Utilization 54.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: Ninth Line & Argentia Rd



Queues
5: Ninth Line & Argentia Rd

Baseline
08/15/2025



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	46	31	282	219	99	511
v/c Ratio	0.09	0.06	0.20	0.18	0.12	0.37
Control Delay	20.4	3.4	7.1	1.8	7.6	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.4	3.4	7.1	1.8	7.6	8.5
Queue Length 50th (m)	5.8	0.0	18.6	0.0	6.1	39.4
Queue Length 95th (m)	11.1	3.3	31.5	8.3	13.2	62.8
Internal Link Dist (m)	1299.5		1592.5			643.9
Turn Bay Length (m)				100.0	45.0	
Base Capacity (vph)	606	575	1395	1243	819	1382
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.05	0.20	0.18	0.12	0.37
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

5: Ninth Line & Argentia Rd

Baseline
08/15/2025

										
Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Traffic Volume (vph)	43	29	0	262	204	92	475	0	0	0
Future Volume (vph)	43	29	0	262	204	92	475	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.5	6.5	6.5	6.5			
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00			
Frt	1.00	0.85		1.00	0.85	1.00	1.00			
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (prot)	1706	1526		1883	1601	1789	1865			
Flt Permitted	0.95	1.00		1.00	1.00	0.59	1.00			
Satd. Flow (perm)	1706	1526		1883	1601	1105	1865			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	46	31	0	282	219	99	511	0	0	0
RTOR Reduction (vph)	0	26	0	0	72	0	0	0	0	0
Lane Group Flow (vph)	46	5	0	282	147	99	511	0	0	0
Heavy Vehicles (%)	7%	7%	2%	2%	2%	2%	3%	2%	2%	2%
Turn Type	Prot	Perm		NA	Perm	Perm	NA			
Protected Phases	4			6			2			
Permitted Phases		4			6	2				
Actuated Green, G (s)	11.0	11.0		48.0	48.0	48.0	48.0			
Effective Green, g (s)	11.0	11.0		48.0	48.0	48.0	48.0			
Actuated g/C Ratio	0.15	0.15		0.67	0.67	0.67	0.67			
Clearance Time (s)	6.0	6.0		6.5	6.5	6.5	6.5			
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	262	234		1264	1074	741	1252			
v/s Ratio Prot	c0.03			0.15			c0.27			
v/s Ratio Perm		0.00			0.09	0.09				
v/c Ratio	0.18	0.02		0.22	0.14	0.13	0.41			
Uniform Delay, d1	26.3	25.7		4.5	4.3	4.2	5.3			
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.3	0.0		0.4	0.3	0.4	1.0			
Delay (s)	26.6	25.7		5.0	4.5	4.6	6.3			
Level of Service	C	C		A	A	A	A			
Approach Delay (s)	26.3			4.8			6.0		0.0	
Approach LOS	C			A			A		A	
Intersection Summary										
HCM 2000 Control Delay			6.8							
HCM 2000 Volume to Capacity ratio			0.36							
Actuated Cycle Length (s)			71.5						12.5	
Intersection Capacity Utilization			54.6%							
Analysis Period (min)			15							
c Critical Lane Group										

Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Baseline
08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	689	38	84	377	16	105	205	127	22	270	301
Future Volume (vph)	171	689	38	84	377	16	105	205	127	22	270	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	100.0		0.0	185.0		135.0	105.0		95.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.994				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	3543	0	1722	3594	0	1755	1847	1585	1825	1865	1570
Flt Permitted	0.476			0.323			0.242			0.626		
Satd. Flow (perm)	888	3543	0	585	3594	0	447	1847	1585	1203	1865	1570
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			3				131			310
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		242.0			667.9			1508.4			1616.5	
Travel Time (s)		14.5			40.1			90.5			97.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	2%	6%	6%	1%	0%	4%	4%	3%	0%	3%	4%
Adj. Flow (vph)	176	710	39	87	389	16	108	211	131	23	278	310
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	749	0	87	405	0	108	211	131	23	278	310
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	

Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Baseline
08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		1	6		7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	42.5		11.5	42.5		11.5	40.0	40.0	40.5	40.5	40.5
Total Split (s)	13.0	62.0		13.0	62.0		18.0	85.0	85.0	67.0	67.0	67.0
Total Split (%)	8.1%	38.8%		8.1%	38.8%		11.3%	53.1%	53.1%	41.9%	41.9%	41.9%
Maximum Green (s)	10.0	55.5		10.0	55.5		15.0	79.0	79.0	60.5	60.5	60.5
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.5		0.0	2.5		0.0	2.0	2.0	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.5		3.0	6.5		3.0	6.0	6.0	6.5	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?		Yes		Yes			Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	Max		None	Min	Min	Min	Min	Min
Walk Time (s)		10.0			10.0			10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)		26.0			26.0			24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0			0			0	0	0	0	0
Act Effct Green (s)	103.2	88.4		97.5	85.1		50.3	47.3	47.3	30.6	30.6	30.6
Actuated g/C Ratio	0.64	0.55		0.61	0.53		0.31	0.30	0.30	0.19	0.19	0.19
v/c Ratio	0.28	0.38		0.21	0.21		0.44	0.39	0.23	0.10	0.78	0.56
Control Delay	14.0	21.1		13.6	21.9		43.5	45.4	6.2	50.7	75.9	8.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	21.1		13.6	21.9		43.5	45.4	6.2	50.7	75.9	8.9
LOS	B	C		B	C		D	D	A	D	E	A
Approach Delay		19.8			20.4			33.5			41.0	
Approach LOS		B			C			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 115 (72%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 27.6

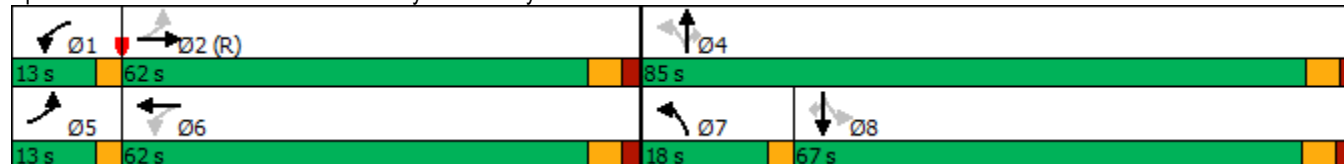
Intersection LOS: C

Intersection Capacity Utilization 64.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Derry Rd E/Derry Rd W



Queues
6: Ninth Line & Derry Rd E/Derry Rd W

Baseline
08/15/2025

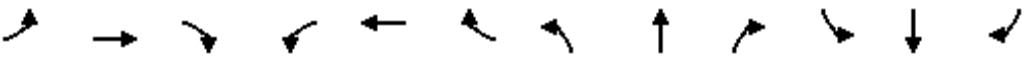


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	176	749	87	405	108	211	131	23	278	310
v/c Ratio	0.28	0.38	0.21	0.21	0.44	0.39	0.23	0.10	0.78	0.56
Control Delay	14.0	21.1	13.6	21.9	43.5	45.4	6.2	50.7	75.9	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	21.1	13.6	21.9	43.5	45.4	6.2	50.7	75.9	8.9
Queue Length 50th (m)	23.3	66.7	10.0	35.1	24.9	53.0	0.0	6.1	85.1	0.0
Queue Length 95th (m)	41.6	92.6	20.6	55.5	36.6	69.6	14.0	13.6	109.7	24.5
Internal Link Dist (m)	218.0		643.9		1484.4		1592.5			
Turn Bay Length (m)	90.0		100.0		185.0		135.0	105.0		95.0
Base Capacity (vph)	644	1958	435	1913	263	911	848	454	705	786
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.38	0.20	0.21	0.41	0.23	0.15	0.05	0.39	0.39
Intersection Summary										

HCM Signalized Intersection Capacity Analysis

6: Ninth Line & Derry Rd E/Derry Rd W

Baseline
08/15/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	689	38	84	377	16	105	205	127	22	270	301
Future Volume (vph)	171	689	38	84	377	16	105	205	127	22	270	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.5		3.0	6.5		3.0	6.0	6.0	6.5	6.5	6.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1772	3543		1722	3594		1755	1847	1585	1825	1865	1570
Flt Permitted	0.48	1.00		0.32	1.00		0.24	1.00	1.00	0.63	1.00	1.00
Satd. Flow (perm)	887	3543		585	3594		448	1847	1585	1202	1865	1570
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	176	710	39	87	389	16	108	211	131	23	278	310
RTOR Reduction (vph)	0	2	0	0	1	0	0	0	92	0	0	251
Lane Group Flow (vph)	176	747	0	87	404	0	108	211	39	23	278	59
Heavy Vehicles (%)	3%	2%	6%	6%	1%	0%	4%	4%	3%	0%	3%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases	2			6			4		4	8		8
Actuated Green, G (s)	100.2	88.4		93.9	85.1		47.3	47.3	47.3	30.7	30.7	30.7
Effective Green, g (s)	100.2	88.4		93.9	85.1		47.3	47.3	47.3	30.7	30.7	30.7
Actuated g/C Ratio	0.63	0.55		0.59	0.53		0.30	0.30	0.30	0.19	0.19	0.19
Clearance Time (s)	3.0	6.5		3.0	6.5		3.0	6.0	6.0	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	622	1957		405	1911		239	546	468	230	357	301
v/s Ratio Prot	c0.02	c0.21		0.01	0.11		c0.04	0.11			c0.15	
v/s Ratio Perm	0.16			0.11			0.10		0.02	0.02		0.04
v/c Ratio	0.28	0.38		0.21	0.21		0.45	0.39	0.08	0.10	0.78	0.20
Uniform Delay, d1	12.6	20.3		14.8	19.7		43.7	44.8	40.7	53.3	61.4	54.3
Progression Factor	1.03	0.94		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.5		0.3	0.3		1.4	0.5	0.1	0.2	10.3	0.3
Delay (s)	13.2	19.6		15.0	20.0		45.1	45.3	40.8	53.5	71.7	54.6
Level of Service	B	B		B	C		D	D	D	D	E	D
Approach Delay (s)		18.4			19.1			43.9			62.3	
Approach LOS		B			B			D			E	
Intersection Summary												
HCM 2000 Control Delay			34.0			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.47									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)			19.0			
Intersection Capacity Utilization			64.4%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

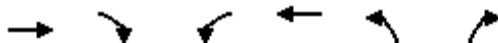
Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Baseline
08/15/2025

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘↘	↗
Traffic Volume (vph)	801	200	0	644	9	109
Future Volume (vph)	801	200	0	644	9	109
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	1.00	0.95	0.97	1.00
Frt	0.970					0.850
Flt Protected					0.950	
Satd. Flow (prot)	3288	0	0	3357	2727	1502
Flt Permitted					0.950	
Satd. Flow (perm)	3288	0	0	3357	2727	1502
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	61					112
Link Speed (k/h)	80			60	60	
Link Distance (m)	358.0			242.0	515.1	
Travel Time (s)	16.1			14.5	30.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	23%	3%
Adj. Flow (vph)	826	206	0	664	9	112
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1032	0	0	664	9	112
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	1.8			1.8	6.1	6.1
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Prot
Protected Phases	4			8	2	2
Permitted Phases						
Detector Phase	4			8	2	2
Switch Phase						

Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Baseline
08/15/2025



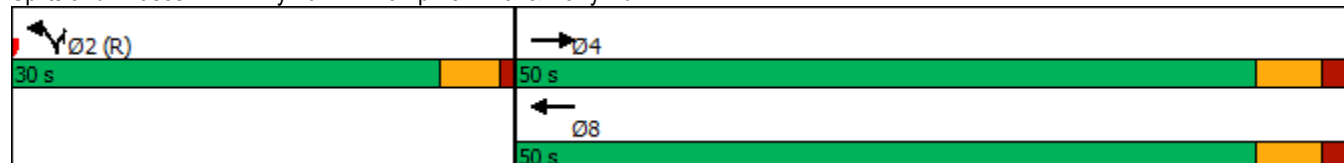
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	8.0			8.0	5.0	5.0
Minimum Split (s)	26.0			26.0	24.5	24.5
Total Split (s)	50.0			50.0	30.0	30.0
Total Split (%)	62.5%			62.5%	37.5%	37.5%
Maximum Green (s)	44.0			44.0	25.5	25.5
Yellow Time (s)	4.0			4.0	3.5	3.5
All-Red Time (s)	2.0			2.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	C-Min	C-Min
Walk Time (s)	8.0			8.0	8.0	8.0
Flash Dont Walk (s)	12.0			12.0	12.0	12.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	62.5			62.5	7.0	7.0
Actuated g/C Ratio	0.78			0.78	0.09	0.09
v/c Ratio	0.40			0.25	0.04	0.48
Control Delay	2.8			2.0	32.2	14.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	2.8			2.0	32.2	14.4
LOS	A			A	C	B
Approach Delay	2.8			2.0	15.8	
Approach LOS	A			A	B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 3.4
Intersection Capacity Utilization 46.0%
Analysis Period (min) 15

Intersection LOS: A
ICU Level of Service A

Splits and Phases: 7: Hwy 407 NB Ramp Terminal & Derry Rd E



Queues
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Baseline
08/15/2025



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1032	664	9	112
v/c Ratio	0.40	0.25	0.04	0.48
Control Delay	2.8	2.0	32.2	14.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.8	2.0	32.2	14.4
Queue Length 50th (m)	15.0	7.9	0.6	0.0
Queue Length 95th (m)	22.6	12.2	2.6	13.4
Internal Link Dist (m)	334.0	218.0	491.1	
Turn Bay Length (m)				
Base Capacity (vph)	2583	2624	869	555
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	0.40	0.25	0.01	0.20
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

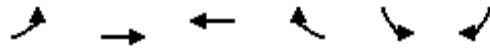
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Baseline
08/15/2025

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↔	↔
Traffic Volume (vph)	801	200	0	644	9	109
Future Volume (vph)	801	200	0	644	9	109
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.0			6.0	4.5	4.5
Lane Util. Factor	0.95			0.95	0.97	1.00
Frt	0.97			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3289			3357	2727	1502
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3289			3357	2727	1502
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	826	206	0	664	9	112
RTOR Reduction (vph)	13	0	0	0	0	102
Lane Group Flow (vph)	1019	0	0	664	9	10
Heavy Vehicles (%)	2%	2%	2%	3%	23%	3%
Turn Type	NA			NA	Prot	Prot
Protected Phases	4			8	2	2
Permitted Phases						
Actuated Green, G (s)	62.5			62.5	7.0	7.0
Effective Green, g (s)	62.5			62.5	7.0	7.0
Actuated g/C Ratio	0.78			0.78	0.09	0.09
Clearance Time (s)	6.0			6.0	4.5	4.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	2569			2622	238	131
v/s Ratio Prot	c0.31			0.20	0.00	c0.01
v/s Ratio Perm						
v/c Ratio	0.40			0.25	0.04	0.07
Uniform Delay, d1	2.8			2.4	33.4	33.5
Progression Factor	0.86			0.71	1.00	1.00
Incremental Delay, d2	0.4			0.2	0.3	1.1
Delay (s)	2.8			1.9	33.7	34.6
Level of Service	A			A	C	C
Approach Delay (s)	2.8			1.9	34.6	
Approach LOS	A			A	C	
Intersection Summary						
HCM 2000 Control Delay			4.6		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.36			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	10.5
Intersection Capacity Utilization			46.0%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

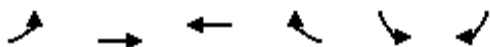
Baseline
08/15/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	975	509	145	26	52
Future Volume (vph)	0	975	509	145	26	52
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Fr t			0.967			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3390	3246	0	3106	1334
Flt Permitted					0.950	
Satd. Flow (perm)	0	3390	3246	0	3106	1334
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			83			55
Link Speed (k/h)		80	80		60	
Link Distance (m)		1052.5	358.0		426.8	
Travel Time (s)		47.4	16.1		25.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	3%	3%	8%	16%
Adj. Flow (vph)	0	1026	536	153	27	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1026	689	0	27	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.4	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Detector Phase		4	8		6	6
Switch Phase						

Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

Baseline
08/15/2025

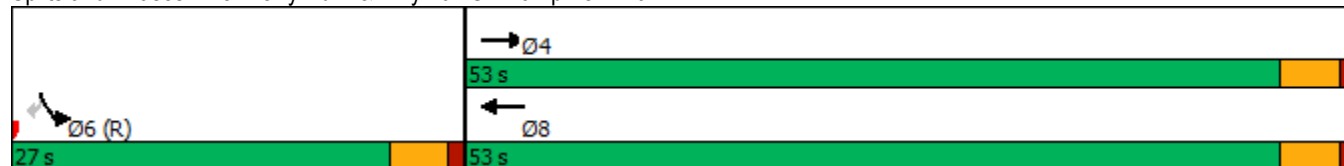


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)		5.0	5.0		5.0	5.0
Minimum Split (s)		22.5	22.5		22.5	22.5
Total Split (s)		53.0	53.0		27.0	27.0
Total Split (%)		66.3%	66.3%		33.8%	33.8%
Maximum Green (s)		48.5	48.5		22.5	22.5
Yellow Time (s)		3.5	3.5		3.5	3.5
All-Red Time (s)		1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		64.3	64.3		6.7	6.7
Actuated g/C Ratio		0.80	0.80		0.08	0.08
v/c Ratio		0.38	0.26		0.10	0.34
Control Delay		2.8	1.3		33.8	16.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		2.8	1.3		33.8	16.1
LOS		A	A		C	B
Approach Delay		2.8	1.3		22.0	
Approach LOS		A	A		C	

Intersection Summary

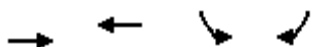
Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.38
Intersection Signal Delay: 3.1
Intersection Capacity Utilization 40.1%
Analysis Period (min) 15
Intersection LOS: A
ICU Level of Service A

Splits and Phases: 8: Derry Rd E & Hwy 407 SB Ramp Terminal



Queues
8: Derry Rd E & Hwy 407 SB Ramp Terminal

Baseline
08/15/2025

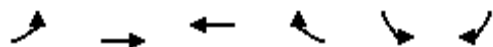


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1026	689	27	55
v/c Ratio	0.38	0.26	0.10	0.34
Control Delay	2.8	1.3	33.8	16.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.8	1.3	33.8	16.1
Queue Length 50th (m)	14.8	5.7	2.0	0.0
Queue Length 95th (m)	26.8	6.1	5.5	9.8
Internal Link Dist (m)	1028.5	334.0	402.8	
Turn Bay Length (m)				
Base Capacity (vph)	2724	2624	873	414
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	0.38	0.26	0.03	0.13
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

8: Derry Rd E & Hwy 407 SB Ramp Terminal

Baseline
08/15/2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	975	509	145	26	52
Future Volume (vph)	0	975	509	145	26	52
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.5	4.5		4.5	4.5
Lane Util. Factor		0.95	0.95		0.97	1.00
Frt		1.00	0.97		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3390	3245		3106	1334
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3390	3245		3106	1334
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1026	536	153	27	55
RTOR Reduction (vph)	0	0	16	0	0	50
Lane Group Flow (vph)	0	1026	673	0	27	5
Heavy Vehicles (%)	2%	2%	3%	3%	8%	16%
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		64.3	64.3		6.7	6.7
Effective Green, g (s)		64.3	64.3		6.7	6.7
Actuated g/C Ratio		0.80	0.80		0.08	0.08
Clearance Time (s)		4.5	4.5		4.5	4.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		2724	2608		260	111
v/s Ratio Prot		c0.30	0.21		c0.01	
v/s Ratio Perm						0.00
v/c Ratio		0.38	0.26		0.10	0.04
Uniform Delay, d1		2.2	1.9		33.9	33.7
Progression Factor		1.00	0.58		1.00	1.00
Incremental Delay, d2		0.4	0.2		0.8	0.7
Delay (s)		2.6	1.4		34.7	34.4
Level of Service		A	A		C	C
Approach Delay (s)		2.6	1.4		34.5	
Approach LOS		A	A		C	
Intersection Summary						
HCM 2000 Control Delay			3.6		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.35			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			40.1%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

Baseline

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	0	18	802	10	755	5	902	219	0	1161	434
Future Volume (vph)	7	0	18	802	10	755	5	902	219	0	1161	434
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.88	1.00	0.95	0.95	1.00	0.91	1.00
Frt			0.850			0.850		0.971				0.850
Flt Protected	0.950			0.950	0.953		0.950					
Satd. Flow (prot)	1729	0	1547	1626	1632	2475	1729	3167	0	0	4644	1432
Flt Permitted	0.950			0.950	0.953		0.164					
Satd. Flow (perm)	1729	0	1547	1626	1632	2475	298	3167	0	0	4644	1432
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			680		19				363
Link Speed (k/h)		30			60			60			60	
Link Distance (m)		149.8			217.3			393.8			859.9	
Travel Time (s)		18.0			13.0			23.6			51.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	1%	0%	10%	0%	7%	2%	2%	7%	8%
Adj. Flow (vph)	7	0	19	835	10	786	5	940	228	0	1209	452
Shared Lane Traffic (%)				49%								
Lane Group Flow (vph)	7	0	19	426	419	786	5	1168	0	0	1209	452
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	24		14	97		14	24		97
Number of Detectors	1		1	1	2	1	1	2			2	1
Detector Template	Left		Right	Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (m)	6.1		6.1	6.1	30.5	6.1	6.1	30.5			30.5	6.1
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Size(m)	6.1		6.1	6.1	1.8	6.1	6.1	1.8			1.8	6.1
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(m)					28.7			28.7			28.7	
Detector 2 Size(m)					1.8			1.8			1.8	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		Prot	Split	NA	Perm	Perm	NA			NA	Perm
Protected Phases	3		3	4	4			6			2	
Permitted Phases						4	6					2
Detector Phase	3		3	4	4	4	6	6			2	2
Switch Phase												

Lanes, Volumes, Timings

Baseline

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0	20.0	20.0			20.0	20.0
Minimum Split (s)	17.3		17.3	50.6	50.6	50.6	41.5	41.5			41.5	41.5
Total Split (s)	45.4		45.4	58.4	58.4	58.4	56.2	56.2			56.2	56.2
Total Split (%)	28.4%		28.4%	36.5%	36.5%	36.5%	35.1%	35.1%			35.1%	35.1%
Maximum Green (s)	38.1		38.1	50.8	50.8	50.8	48.7	48.7			48.7	48.7
Yellow Time (s)	4.5		4.5	5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)	2.8		2.8	2.6	2.6	2.6	2.5	2.5			2.5	2.5
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	7.3		7.3	7.6	7.6	7.6	7.5	7.5			7.5	7.5
Lead/Lag	Lead		Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	None		None	None	None	None	C-Max	C-Max			C-Max	C-Max
Walk Time (s)				10.0	10.0	10.0	10.0	10.0			10.0	10.0
Flash Dont Walk (s)				33.0	33.0	33.0	24.0	24.0			24.0	24.0
Pedestrian Calls (#/hr)				0	0	0	0	0			0	0
Act Effect Green (s)	10.0		10.0	55.0	55.0	55.0	79.5	79.5			79.5	79.5
Actuated g/C Ratio	0.06		0.06	0.34	0.34	0.34	0.50	0.50			0.50	0.50
v/c Ratio	0.06		0.11	0.76	0.75	0.61	0.03	0.74			0.52	0.51
Control Delay	72.1		1.3	55.1	54.1	7.1	30.2	37.6			31.5	9.2
Queue Delay	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	72.1		1.3	55.1	54.1	7.1	30.2	37.6			31.5	9.2
LOS	E		A	E	D	A	C	D			C	A
Approach Delay		20.4			31.7			37.6			25.5	
Approach LOS		C			C			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 56 (35%), Referenced to phase 2:SBT and 6:NBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 30.9

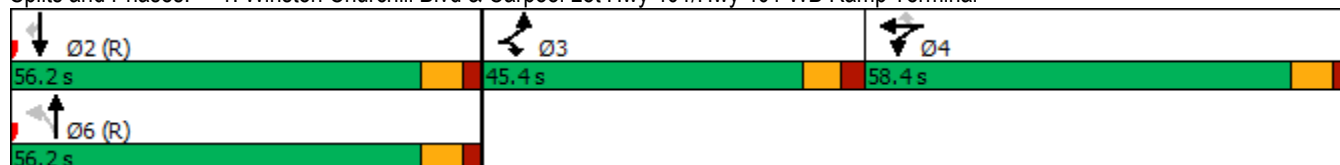
Intersection LOS: C

Intersection Capacity Utilization 87.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal



Queues

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

Baseline

08/15/2025



Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	7	19	426	419	786	5	1168	1209	452
v/c Ratio	0.06	0.11	0.76	0.75	0.61	0.03	0.74	0.52	0.51
Control Delay	72.1	1.3	55.1	54.1	7.1	30.2	37.6	31.5	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.1	1.3	55.1	54.1	7.1	30.2	37.6	31.5	9.2
Queue Length 50th (m)	2.1	0.0	127.0	124.1	13.1	0.8	171.5	102.8	16.3
Queue Length 95th (m)	7.7	0.0	146.9	143.8	28.2	m3.2	#225.6	138.3	56.3
Internal Link Dist (m)				193.3			369.8	835.9	
Turn Bay Length (m)									
Base Capacity (vph)	411	430	583	585	1323	148	1584	2308	894
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.04	0.73	0.72	0.59	0.03	0.74	0.52	0.51

Intersection Summary

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.

HCM Signalized Intersection Capacity Analysis

Baseline

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/15/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	0	18	802	10	755	5	902	219	0	1161	434
Future Volume (vph)	7	0	18	802	10	755	5	902	219	0	1161	434
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	7.3		7.3	7.6	7.6	7.6	7.5	7.5			7.5	7.5
Lane Util. Factor	1.00		1.00	0.95	0.95	0.88	1.00	0.95			0.91	1.00
Frt	1.00		0.85	1.00	1.00	0.85	1.00	0.97			1.00	0.85
Flt Protected	0.95		1.00	0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)	1729		1547	1626	1633	2475	1729	3166			4644	1432
Flt Permitted	0.95		1.00	0.95	0.95	1.00	0.16	1.00			1.00	1.00
Satd. Flow (perm)	1729		1547	1626	1633	2475	298	3166			4644	1432
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	7	0	19	835	10	786	5	940	228	0	1209	452
RTOR Reduction (vph)	0	0	18	0	0	446	0	10	0	0	0	189
Lane Group Flow (vph)	7	0	1	426	419	340	5	1158	0	0	1209	263
Heavy Vehicles (%)	0%	2%	0%	1%	0%	10%	0%	7%	2%	2%	7%	8%
Turn Type	Prot		Prot	Split	NA	Perm	Perm	NA			NA	Perm
Protected Phases	3		3	4	4			6			2	
Permitted Phases						4	6					2
Actuated Green, G (s)	6.0		6.0	55.0	55.0	55.0	76.6	76.6			76.6	76.6
Effective Green, g (s)	6.0		6.0	55.0	55.0	55.0	76.6	76.6			76.6	76.6
Actuated g/C Ratio	0.04		0.04	0.34	0.34	0.34	0.48	0.48			0.48	0.48
Clearance Time (s)	7.3		7.3	7.6	7.6	7.6	7.5	7.5			7.5	7.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	64		58	558	561	850	142	1515			2223	685
v/s Ratio Prot	c0.00		0.00	c0.26	0.26			c0.37			0.26	
v/s Ratio Perm						0.14	0.02					0.18
v/c Ratio	0.11		0.01	0.76	0.75	0.40	0.04	0.76			0.54	0.38
Uniform Delay, d1	74.4		74.1	46.7	46.4	39.9	22.1	34.3			29.4	26.6
Progression Factor	1.00		1.00	1.00	1.00	1.00	0.96	0.99			1.00	1.00
Incremental Delay, d2	0.8		0.1	6.1	5.4	0.3	0.4	3.6			1.0	1.6
Delay (s)	75.2		74.2	52.9	51.7	40.3	21.7	37.7			30.3	28.3
Level of Service	E		E	D	D	D	C	D			C	C
Approach Delay (s)		74.5			46.5			37.6			29.8	
Approach LOS		E			D			D			C	
Intersection Summary												
HCM 2000 Control Delay			38.2									
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			160.0									
Intersection Capacity Utilization			87.6%									
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	340	329	0	763	1417	572
Future Volume (vph)	340	329	0	763	1417	572
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	0.91
Fr't	0.961	0.850			0.957	
Flt Protected	0.964					
Satd. Flow (prot)	2955	1354	0	4777	4509	0
Flt Permitted	0.964					
Satd. Flow (perm)	2955	1354	0	4777	4509	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	11	11			83	
Link Speed (k/h)	50			60	60	
Link Distance (m)	280.6			247.8	393.8	
Travel Time (s)	20.2			14.9	23.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	13%	4%	2%	4%	2%	14%
Adj. Flow (vph)	362	350	0	812	1507	609
Shared Lane Traffic (%)		36%				
Lane Group Flow (vph)	488	224	0	812	2116	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.4			7.4	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	6.1	6.1		30.5	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	6.1		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				28.7	28.7	
Detector 2 Size(m)				1.8	1.8	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Detector Phase	4	4		2	2	
Switch Phase						

Lanes, Volumes, Timings
2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal

Baseline
08/15/2025



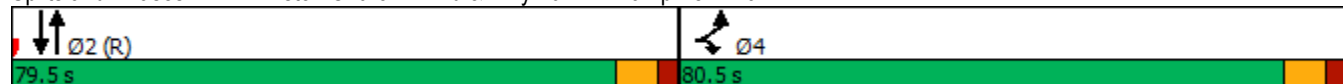
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		20.0	20.0	
Minimum Split (s)	22.5	22.5		31.5	31.5	
Total Split (s)	80.5	80.5		79.5	79.5	
Total Split (%)	50.3%	50.3%		49.7%	49.7%	
Maximum Green (s)	72.0	72.0		72.0	72.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	8.5	8.5		7.5	7.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				17.0	17.0	
Pedestrian Calls (#/hr)				0	0	
Act Effect Green (s)	33.6	33.6		110.4	110.4	
Actuated g/C Ratio	0.21	0.21		0.69	0.69	
v/c Ratio	0.78	0.77		0.25	0.67	
Control Delay	66.6	72.9		9.2	10.4	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	66.6	72.9		9.2	10.4	
LOS	E	E		A	B	
Approach Delay	68.5			9.2	10.4	
Approach LOS	E			A	B	

Intersection Summary

Area Type: Other
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 48 (30%), Referenced to phase 2:NBSB and 6:, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 21.5
Intersection Capacity Utilization 70.1%
Analysis Period (min) 15

Intersection LOS: C
ICU Level of Service C

Splits and Phases: 2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal



2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal

08/15/2025



Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	488	224	812	2116
v/c Ratio	0.78	0.77	0.25	0.67
Control Delay	66.6	72.9	9.2	10.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	66.6	72.9	9.2	10.4
Queue Length 50th (m)	75.5	71.7	37.8	101.3
Queue Length 95th (m)	86.9	97.1	m49.3	106.1
Internal Link Dist (m)	256.6		223.8	369.8
Turn Bay Length (m)				
Base Capacity (vph)	1335	615	3295	3136
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	0.37	0.36	0.25	0.67

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal

Baseline
08/15/2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	WY	Y		↑↑↑	↑↑↑	
Traffic Volume (vph)	340	329	0	763	1417	572
Future Volume (vph)	340	329	0	763	1417	572
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	8.5	8.5		7.5	7.5	
Lane Util. Factor	0.97	0.91		0.91	0.91	
Frt	0.96	0.85		1.00	0.96	
Flt Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	2957	1354		4778	4508	
Flt Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	2957	1354		4778	4508	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	362	350	0	812	1507	609
RTOR Reduction (vph)	9	9	0	0	26	0
Lane Group Flow (vph)	479	215	0	812	2090	0
Heavy Vehicles (%)	13%	4%	2%	4%	2%	14%
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	33.6	33.6		110.4	110.4	
Effective Green, g (s)	33.6	33.6		110.4	110.4	
Actuated g/C Ratio	0.21	0.21		0.69	0.69	
Clearance Time (s)	8.5	8.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	620	284		3296	3110	
v/s Ratio Prot	c0.16	0.16		0.17	c0.46	
v/s Ratio Perm						
v/c Ratio	0.77	0.76		0.25	0.67	
Uniform Delay, d1	59.6	59.4		9.3	14.3	
Progression Factor	1.00	1.00		0.91	0.64	
Incremental Delay, d2	6.0	11.0		0.2	1.0	
Delay (s)	65.6	70.4		8.6	10.1	
Level of Service	E	E		A	B	
Approach Delay (s)	67.1			8.6	10.1	
Approach LOS	E			A	B	
Intersection Summary						
HCM 2000 Control Delay			20.9		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.70			
Actuated Cycle Length (s)			160.0		Sum of lost time (s)	16.0
Intersection Capacity Utilization			70.1%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentia Rd

Baseline
08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	328	240	199	268	424	284	220	613	94	229	1003	346
Future Volume (vph)	328	240	199	268	424	284	220	613	94	229	1003	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (m)	7.6			2.5			7.6			7.6		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	0.98		0.96	0.98		0.95	1.00		0.99	1.00		0.98
Fr't			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3404	3579	1617	1807	3579	1585	3506	4995	1601	3404	5142	1585
Flt Permitted	0.950			0.547			0.950			0.950		
Satd. Flow (perm)	3328	3579	1546	1016	3579	1503	3500	4995	1578	3399	5142	1556
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97			60			95			133
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		633.5			370.2			729.2			247.8	
Travel Time (s)		38.0			22.2			43.8			14.9	
Confl. Peds. (#/hr)	40		32	32		40	6		2	2		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
Heavy Vehicles (%)	4%	2%	1%	1%	2%	3%	1%	5%	2%	4%	2%	3%
Adj. Flow (vph)	331	242	201	271	428	287	222	619	95	231	1013	349
Shared Lane Traffic (%)												
Lane Group Flow (vph)	331	242	201	271	428	287	222	619	95	231	1013	349
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	97		97	24		97	97		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentinia Rd

Baseline
08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6		5	2	3
Permitted Phases			8	4		4			6			2
Detector Phase	3	8	1	7	4	5	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0	7.0	7.0	10.0	10.0	7.0	10.0	7.0
Minimum Split (s)	12.0	54.5	12.0	11.5	54.5	12.0	12.0	51.5	51.5	12.0	51.5	12.0
Total Split (s)	20.0	63.0	20.0	19.5	62.5	20.0	20.0	57.5	57.5	20.0	57.5	20.0
Total Split (%)	12.5%	39.4%	12.5%	12.2%	39.1%	12.5%	12.5%	35.9%	35.9%	12.5%	35.9%	12.5%
Maximum Green (s)	15.0	55.5	15.0	16.5	55.0	15.0	15.0	50.0	50.0	15.0	50.0	15.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	2.0	3.5	2.0	0.0	3.5	2.0	2.0	3.5	3.5	2.0	3.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.5	5.0	3.0	7.5	5.0	5.0	7.5	7.5	5.0	7.5	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	None
Walk Time (s)		10.0			10.0			10.0	10.0		10.0	
Flash Dont Walk (s)		37.0			37.0			34.0	34.0		34.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effect Green (s)	15.0	25.5	43.3	46.0	25.0	43.6	15.4	78.9	78.9	16.1	79.7	97.2
Actuated g/C Ratio	0.09	0.16	0.27	0.29	0.16	0.27	0.10	0.49	0.49	0.10	0.50	0.61
v/c Ratio	1.04	0.43	0.41	0.73	0.77	0.62	0.66	0.25	0.12	0.67	0.40	0.35
Control Delay	128.5	62.3	23.2	57.6	74.0	41.9	79.2	24.8	4.8	71.4	29.6	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	128.5	62.3	23.2	57.6	74.0	41.9	79.2	24.8	4.8	71.4	29.6	11.1
LOS	F	E	C	E	E	D	E	C	A	E	C	B
Approach Delay		80.5			60.1			35.6			31.6	
Approach LOS		F			E			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

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

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 47.9

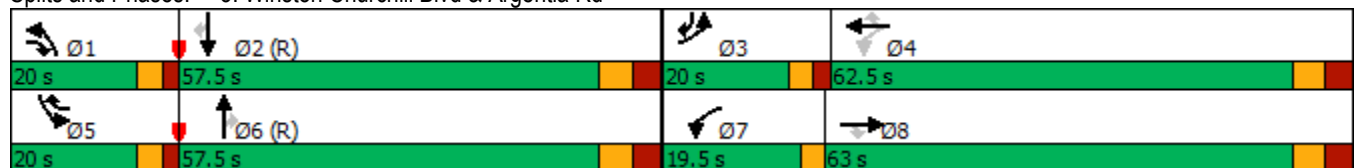
Intersection LOS: D

Intersection Capacity Utilization 106.6%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 3: Winston Churchill Blvd & Argentinia Rd



Queues
3: Winston Churchill Blvd & Argentinia Rd

Baseline
08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	331	242	201	271	428	287	222	619	95	231	1013	349
v/c Ratio	1.04	0.43	0.41	0.73	0.77	0.62	0.66	0.25	0.12	0.67	0.40	0.35
Control Delay	128.5	62.3	23.2	57.6	74.0	41.9	79.2	24.8	4.8	71.4	29.6	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	128.5	62.3	23.2	57.6	74.0	41.9	79.2	24.8	4.8	71.4	29.6	11.1
Queue Length 50th (m)	~58.2	37.1	25.2	70.5	69.7	60.8	35.7	40.9	0.0	38.6	65.0	34.8
Queue Length 95th (m)	#90.5	48.7	43.3	92.8	84.7	82.2	48.7	56.8	11.1	50.7	108.3	57.0
Internal Link Dist (m)	609.5			346.2			705.2			223.8		
Turn Bay Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Base Capacity (vph)	319	1241	505	373	1230	468	358	2463	826	359	2560	1000
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.20	0.40	0.73	0.35	0.61	0.62	0.25	0.12	0.64	0.40	0.35

Intersection Summary

- ~ 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.

HCM Signalized Intersection Capacity Analysis

3: Winston Churchill Blvd & Argentia Rd

Baseline
08/15/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	328	240	199	268	424	284	220	613	94	229	1003	346
Future Volume (vph)	328	240	199	268	424	284	220	613	94	229	1003	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.5	5.0	3.0	7.5	5.0	5.0	7.5	7.5	5.0	7.5	5.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3404	3579	1572	1785	3579	1535	3506	4995	1578	3404	5142	1561
Flt Permitted	0.95	1.00	1.00	0.55	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3404	3579	1572	1029	3579	1535	3506	4995	1578	3404	5142	1561
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	331	242	201	271	428	287	222	619	95	231	1013	349
RTOR Reduction (vph)	0	0	72	0	0	45	0	0	48	0	0	54
Lane Group Flow (vph)	331	242	129	271	428	242	222	619	47	231	1013	295
Confl. Peds. (#/hr)	40		32	32		40	6		2	2		6
Heavy Vehicles (%)	4%	2%	1%	1%	2%	3%	1%	5%	2%	4%	2%	3%
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6		5	2	3
Permitted Phases			8	4		4			6			2
Actuated Green, G (s)	15.0	25.5	40.9	41.5	25.0	41.1	15.4	78.9	78.9	16.1	79.6	94.6
Effective Green, g (s)	15.0	25.5	40.9	41.5	25.0	41.1	15.4	78.9	78.9	16.1	79.6	94.6
Actuated g/C Ratio	0.09	0.16	0.26	0.26	0.16	0.26	0.10	0.49	0.49	0.10	0.50	0.59
Clearance Time (s)	5.0	7.5	5.0	3.0	7.5	5.0	5.0	7.5	7.5	5.0	7.5	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	319	570	401	344	559	394	337	2463	778	342	2558	922
v/s Ratio Prot	c0.10	0.07	0.03	0.08	0.12	0.06	0.06	0.12		c0.07	c0.20	0.03
v/s Ratio Perm			0.05	c0.12		0.10			0.03			0.16
v/c Ratio	1.04	0.42	0.32	0.79	0.77	0.62	0.66	0.25	0.06	0.68	0.40	0.32
Uniform Delay, d1	72.5	60.6	48.3	52.5	64.7	52.5	69.8	23.5	21.2	69.4	25.2	16.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.12	1.18
Incremental Delay, d2	60.5	0.5	0.5	11.3	6.2	2.8	4.6	0.2	0.1	4.1	0.4	0.2
Delay (s)	133.0	61.1	48.8	63.9	70.9	55.3	74.4	23.7	21.3	67.8	28.5	19.5
Level of Service	F	E	D	E	E	E	E	C	C	E	C	B
Approach Delay (s)		88.7			64.4			35.5			32.2	
Approach LOS		F			E			D			C	
Intersection Summary												
HCM 2000 Control Delay			50.5									
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			160.0									
Intersection Capacity Utilization			106.6%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
4: Tenth Line W & Argentinia Rd

Baseline
08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	250	96	451	383	5	61	0	281	2	2	2
Future Volume (vph)	1	250	96	451	383	5	61	0	281	2	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	0.0		0.0	130.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
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
Ped Bike Factor	0.99		0.96	0.99		0.97	0.99	0.98		1.00	0.99	
Fr _t			0.850			0.850		0.850			0.925	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	913	1830	1601	1825	1865	1361	1825	1603	0	1825	1760	0
Fl _t Permitted	0.521			0.534			0.581			0.576		
Satd. Flow (perm)	496	1830	1535	1013	1865	1315	1108	1603	0	1102	1760	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			71		480			2	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		1323.5			633.5			748.2			676.6	
Travel Time (s)		79.4			38.0			53.9			48.7	
Confl. Peds. (#/hr)	8		12	12		8	8		7	7		8
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	100%	5%	2%	0%	3%	20%	0%	2%	0%	0%	0%	0%
Adj. Flow (vph)	1	269	103	485	412	5	66	0	302	2	2	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	269	103	485	412	5	66	302	0	2	4	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)		11.1			11.1			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
4: Tenth Line W & Argentia Rd

Baseline
08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		7	4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	2	2	2	1	6	6	7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0	10.0	7.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5	35.5	11.5	35.5	35.5	11.5	39.5		39.5	39.5	
Total Split (s)	37.5	37.5	37.5	11.5	49.0	49.0	11.5	51.0		39.5	39.5	
Total Split (%)	37.5%	37.5%	37.5%	11.5%	49.0%	49.0%	11.5%	51.0%		39.5%	39.5%	
Maximum Green (s)	30.0	30.0	30.0	8.5	41.5	41.5	8.5	44.5		33.0	33.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	3.5		3.5	3.5	
All-Red Time (s)	3.5	3.5	3.5	0.0	3.5	3.5	0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	3.0	7.5	7.5	3.0	6.5		6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	None	Max	Max	None	Min		Min	Min	
Walk Time (s)	10.0	10.0	10.0		10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)	18.0	18.0	18.0		18.0	18.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0		0	0	
Act Effct Green (s)	30.1	30.1	30.1	46.2	41.7	41.7	22.1	18.6		10.0	10.0	
Actuated g/C Ratio	0.41	0.41	0.41	0.62	0.56	0.56	0.30	0.25		0.13	0.13	
v/c Ratio	0.00	0.36	0.15	0.67	0.39	0.01	0.16	0.40		0.01	0.02	
Control Delay	15.0	18.0	4.1	14.1	11.3	0.0	19.5	1.6		29.5	24.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	15.0	18.0	4.1	14.1	11.3	0.0	19.5	1.6		29.5	24.8	
LOS	B	B	A	B	B	A	B	A		C	C	
Approach Delay		14.2			12.7			4.8			26.3	
Approach LOS		B			B			A			C	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 74.3

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 11.3

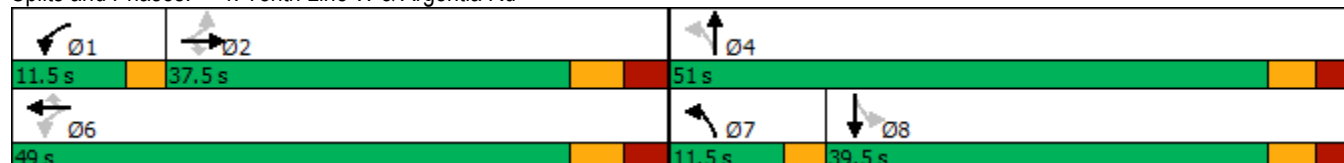
Intersection LOS: B

Intersection Capacity Utilization 83.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 4: Tenth Line W & Argentia Rd



Queues
4: Tenth Line W & Argentia Rd

Baseline
08/15/2025

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	1	269	103	485	412	5	66	302	2	4
v/c Ratio	0.00	0.36	0.15	0.67	0.39	0.01	0.16	0.40	0.01	0.02
Control Delay	15.0	18.0	4.1	14.1	11.3	0.0	19.5	1.6	29.5	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	18.0	4.1	14.1	11.3	0.0	19.5	1.6	29.5	24.8
Queue Length 50th (m)	0.1	26.9	0.0	33.9	32.1	0.0	6.7	0.0	0.3	0.3
Queue Length 95th (m)	1.0	45.4	8.4	54.6	52.0	0.0	14.9	0.0	2.1	2.8
Internal Link Dist (m)	1299.5			609.5			724.2			652.6
Turn Bay Length (m)	20.0						130.0			45.0
Base Capacity (vph)	201	742	684	723	1046	768	411	1155	491	786
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.36	0.15	0.67	0.39	0.01	0.16	0.26	0.00	0.01
Intersection Summary										

HCM Signalized Intersection Capacity Analysis

4: Tenth Line W & Argentia Rd

Baseline
08/15/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	250	96	451	383	5	61	0	281	2	2	2
Future Volume (vph)	1	250	96	451	383	5	61	0	281	2	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5	7.5	3.0	7.5	7.5	3.0	6.5		6.5	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.97	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	0.99	1.00	1.00	0.99	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	907	1830	1544	1815	1865	1319	1820	1606		1819	1762	
Flt Permitted	0.52	1.00	1.00	0.53	1.00	1.00	0.58	1.00		0.58	1.00	
Satd. Flow (perm)	497	1830	1544	1020	1865	1319	1113	1606		1103	1762	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1	269	103	485	412	5	66	0	302	2	2	2
RTOR Reduction (vph)	0	0	61	0	0	2	0	225	0	0	2	0
Lane Group Flow (vph)	1	269	42	485	412	3	66	77	0	2	2	0
Confl. Peds. (#/hr)	8		12	12		8	8		7	7		8
Heavy Vehicles (%)	100%	5%	2%	0%	3%	20%	0%	2%	0%	0%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		7	4			8	
Permitted Phases	2		2	6		6	4			8		
Actuated Green, G (s)	30.2	30.2	30.2	41.7	41.7	41.7	19.2	19.2		10.0	10.0	
Effective Green, g (s)	30.2	30.2	30.2	41.7	41.7	41.7	19.2	19.2		10.0	10.0	
Actuated g/C Ratio	0.40	0.40	0.40	0.56	0.56	0.56	0.26	0.26		0.13	0.13	
Clearance Time (s)	7.5	7.5	7.5	3.0	7.5	7.5	3.0	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	200	737	622	658	1038	734	343	411		147	235	
v/s Ratio Prot		0.15		c0.08	0.22		0.02	c0.05			0.00	
v/s Ratio Perm	0.00		0.03	c0.33		0.00	c0.03			0.00		
v/c Ratio	0.01	0.36	0.07	0.74	0.40	0.00	0.19	0.19		0.01	0.01	
Uniform Delay, d1	13.4	15.6	13.7	11.2	9.4	7.4	21.6	21.8		28.2	28.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	1.4	0.2	4.3	1.1	0.0	0.3	0.2		0.0	0.0	
Delay (s)	13.4	17.0	13.9	15.5	10.6	7.4	21.8	22.0		28.2	28.2	
Level of Service	B	B	B	B	B	A	C	C		C	C	
Approach Delay (s)		16.2			13.2			22.0			28.2	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			15.9									
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			74.9									
Intersection Capacity Utilization			83.4%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
5: Ninth Line & Argentinia Rd

Baseline
08/15/2025

										
Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations										
Traffic Volume (vph)	250	198	0	611	126	73	453	0	0	0
Future Volume (vph)	250	198	0	611	126	73	453	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	0.0		100.0	45.0		0.0	0.0	0.0
Storage Lanes	1	1	0		1	1		0	0	0
Taper Length (m)	7.6		7.6			7.6			7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.850					
Flt Protected	0.950					0.950				
Satd. Flow (prot)	1807	1617	0	1902	1585	1722	1883	0	0	0
Flt Permitted	0.950					0.293				
Satd. Flow (perm)	1807	1617	0	1902	1585	531	1883	0	0	0
Right Turn on Red		Yes			Yes			Yes		
Satd. Flow (RTOR)		206			131					
Link Speed (k/h)	60			60			60		48	
Link Distance (m)	1323.5			1616.5			667.9		25.4	
Travel Time (s)	79.4			97.0			40.1		1.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	2%	1%	3%	6%	2%	2%	2%	2%
Adj. Flow (vph)	260	206	0	636	131	76	472	0	0	0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	260	206	0	636	131	76	472	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(m)	7.4			3.7			3.7		0.0	
Link Offset(m)	0.0			0.0			0.0		0.0	
Crosswalk Width(m)	4.9			4.9			4.9		4.9	
Two way Left Turn Lane										
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	97	14	24		14	24		14	24	97
Number of Detectors	1	1		2	1	1	2			
Detector Template	Left	Right		Thru	Right	Left	Thru			
Leading Detector (m)	6.1	6.1		30.5	6.1	6.1	30.5			
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0			
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0			
Detector 1 Size(m)	6.1	6.1		1.8	6.1	6.1	1.8			
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0			
Detector 2 Position(m)				28.7			28.7			
Detector 2 Size(m)				1.8			1.8			
Detector 2 Type				Cl+Ex			Cl+Ex			
Detector 2 Channel										
Detector 2 Extend (s)				0.0			0.0			
Turn Type	Prot	Perm		NA	Perm	Perm	NA			
Protected Phases	4			6			2			

Lanes, Volumes, Timings
5: Ninth Line & Argentia Rd

Baseline
08/15/2025

										
Lane Group	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Permitted Phases		4			6	2				
Detector Phase	4	4		6	6	2	2			
Switch Phase										
Minimum Initial (s)	20.0	20.0		10.0	10.0	10.0	10.0			
Minimum Split (s)	30.0	30.0		43.5	43.5	43.5	43.5			
Total Split (s)	30.0	30.0		43.5	43.5	43.5	43.5			
Total Split (%)	40.8%	40.8%		59.2%	59.2%	59.2%	59.2%			
Maximum Green (s)	24.0	24.0		37.0	37.0	37.0	37.0			
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0			
All-Red Time (s)	2.0	2.0		2.5	2.5	2.5	2.5			
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)	6.0	6.0		6.5	6.5	6.5	6.5			
Lead/Lag										
Lead-Lag Optimize?										
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0			
Recall Mode	None	None		Max	Max	Max	Max			
Walk Time (s)	10.0	10.0		10.0	10.0	10.0	10.0			
Flash Dont Walk (s)	14.0	14.0		27.0	27.0	27.0	27.0			
Pedestrian Calls (#/hr)	0	0		0	0	0	0			
Act Effct Green (s)	20.3	20.3		37.0	37.0	37.0	37.0			
Actuated g/C Ratio	0.29	0.29		0.53	0.53	0.53	0.53			
v/c Ratio	0.50	0.33		0.63	0.15	0.27	0.47			
Control Delay	24.3	4.8		15.2	2.2	12.4	12.4			
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0			
Total Delay	24.3	4.8		15.2	2.2	12.4	12.4			
LOS	C	A		B	A	B	B			
Approach Delay	15.7			13.0			12.4			
Approach LOS	B			B			B			

Intersection Summary

Area Type: Other

Cycle Length: 73.5

Actuated Cycle Length: 69.8

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 13.5

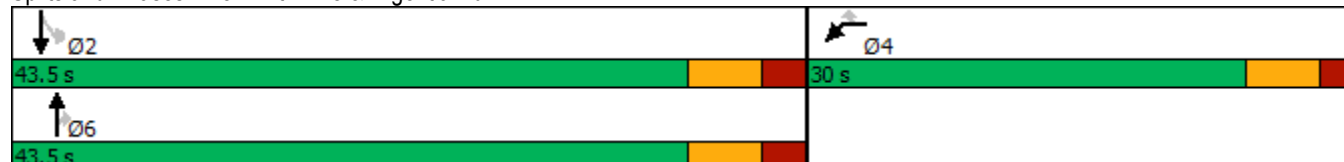
Intersection LOS: B

Intersection Capacity Utilization 73.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Ninth Line & Argentia Rd



Queues
5: Ninth Line & Argentia Rd

Baseline
08/15/2025



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	260	206	636	131	76	472
v/c Ratio	0.50	0.33	0.63	0.15	0.27	0.47
Control Delay	24.3	4.8	15.2	2.2	12.4	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	4.8	15.2	2.2	12.4	12.4
Queue Length 50th (m)	27.9	0.0	53.5	0.0	5.0	35.2
Queue Length 95th (m)	47.8	13.1	88.7	6.9	13.5	59.1
Internal Link Dist (m)	1299.5		1592.5			643.9
Turn Bay Length (m)				100.0	45.0	
Base Capacity (vph)	621	691	1008	902	281	998
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.30	0.63	0.15	0.27	0.47
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

5: Ninth Line & Argentia Rd

Baseline
08/15/2025

											
Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER	
Lane Configurations											
Traffic Volume (vph)	250	198	0	611	126	73	453	0	0	0	
Future Volume (vph)	250	198	0	611	126	73	453	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0		6.5	6.5	6.5	6.5				
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00				
Frt	1.00	0.85		1.00	0.85	1.00	1.00				
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1807	1617		1902	1585	1722	1883				
Flt Permitted	0.95	1.00		1.00	1.00	0.29	1.00				
Satd. Flow (perm)	1807	1617		1902	1585	530	1883				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Adj. Flow (vph)	260	206	0	636	131	76	472	0	0	0	
RTOR Reduction (vph)	0	146	0	0	62	0	0	0	0	0	
Lane Group Flow (vph)	260	60	0	636	69	76	472	0	0	0	
Heavy Vehicles (%)	1%	1%	2%	1%	3%	6%	2%	2%	2%	2%	
Turn Type	Prot	Perm		NA	Perm	Perm	NA				
Protected Phases	4			6			2				
Permitted Phases		4			6	2					
Actuated Green, G (s)	20.3	20.3		37.0	37.0	37.0	37.0				
Effective Green, g (s)	20.3	20.3		37.0	37.0	37.0	37.0				
Actuated g/C Ratio	0.29	0.29		0.53	0.53	0.53	0.53				
Clearance Time (s)	6.0	6.0		6.5	6.5	6.5	6.5				
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)	525	470		1008	840	280	998				
v/s Ratio Prot	c0.14			c0.33			0.25				
v/s Ratio Perm		0.04			0.04	0.14					
v/c Ratio	0.50	0.13		0.63	0.08	0.27	0.47				
Uniform Delay, d1	20.5	18.2		11.6	8.1	9.0	10.3				
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00				
Incremental Delay, d2	0.7	0.1		3.0	0.2	2.4	1.6				
Delay (s)	21.2	18.4		14.6	8.3	11.4	11.9				
Level of Service	C	B		B	A	B	B				
Approach Delay (s)	20.0			13.5			11.8		0.0		
Approach LOS	B			B			B		A		
Intersection Summary											
HCM 2000 Control Delay			14.7							HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.58								
Actuated Cycle Length (s)			69.8							Sum of lost time (s)	12.5
Intersection Capacity Utilization			73.0%							ICU Level of Service	C
Analysis Period (min)			15								
c Critical Lane Group											

Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Baseline
08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	257	626	130	164	885	52	80	434	144	43	325	257
Future Volume (vph)	257	626	130	164	885	52	80	434	144	43	325	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	100.0		0.0	185.0		135.0	105.0		95.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00					0.99	1.00		
Frt		0.974			0.992				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1807	3513	0	1807	3583	0	1755	1902	1601	1825	1902	1601
Flt Permitted	0.169			0.281			0.174			0.248		
Satd. Flow (perm)	321	3513	0	534	3583	0	321	1902	1579	476	1902	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			4				153			273
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		242.0			667.9			1508.4			1616.5	
Travel Time (s)		14.5			40.1			90.5			97.0	
Confl. Peds. (#/hr)			1	1					1	1		
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
Heavy Vehicles (%)	1%	1%	0%	1%	1%	2%	4%	1%	2%	0%	1%	2%
Adj. Flow (vph)	273	666	138	174	941	55	85	462	153	46	346	273
Shared Lane Traffic (%)												
Lane Group Flow (vph)	273	804	0	174	996	0	85	462	153	46	346	273
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Baseline
08/15/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		1	6		7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	42.5		11.5	42.5		11.5	40.5	40.5	40.5	40.5	40.5
Total Split (s)	33.5	46.5		33.5	46.5		33.5	80.0	80.0	46.5	46.5	46.5
Total Split (%)	20.9%	29.1%		20.9%	29.1%		20.9%	50.0%	50.0%	29.1%	29.1%	29.1%
Maximum Green (s)	30.5	40.0		30.5	40.0		30.5	73.5	73.5	40.0	40.0	40.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.5		0.0	2.5		0.0	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.5		3.0	6.5		3.0	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Walk Time (s)		10.0			10.0			10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)		26.0			26.0			24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0			0			0	0	0	0	0
Act Effct Green (s)	100.7	78.5		93.9	74.2		52.8	49.3	49.3	35.2	35.2	35.2
Actuated g/C Ratio	0.63	0.49		0.59	0.46		0.33	0.31	0.31	0.22	0.22	0.22
v/c Ratio	0.70	0.46		0.39	0.60		0.41	0.79	0.26	0.44	0.83	0.48
Control Delay	25.9	29.9		16.7	36.7		41.4	59.9	5.5	65.3	75.6	7.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	29.9		16.7	36.7		41.4	59.9	5.5	65.3	75.6	7.6
LOS	C	C		B	D		D	E	A	E	E	A
Approach Delay		28.9			33.7			45.8			47.0	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 154 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 37.1

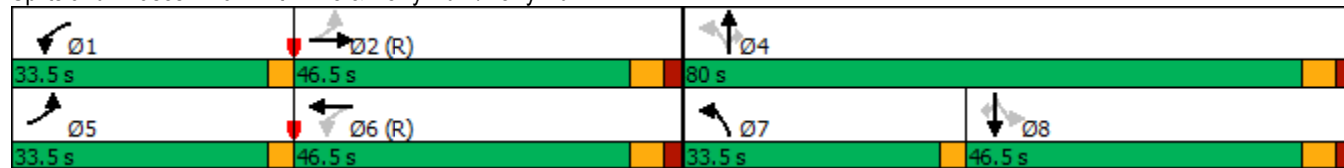
Intersection LOS: D

Intersection Capacity Utilization 91.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Derry Rd E/Derry Rd W



Queues
6: Ninth Line & Derry Rd E/Derry Rd W

Baseline
08/15/2025

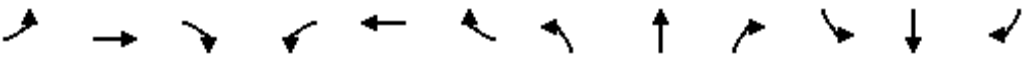


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	273	804	174	996	85	462	153	46	346	273
v/c Ratio	0.70	0.46	0.39	0.60	0.41	0.79	0.26	0.44	0.83	0.48
Control Delay	25.9	29.9	16.7	36.7	41.4	59.9	5.5	65.3	75.6	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	29.9	16.7	36.7	41.4	59.9	5.5	65.3	75.6	7.6
Queue Length 50th (m)	35.9	85.6	21.5	121.3	19.1	135.0	0.0	12.8	106.2	0.0
Queue Length 95th (m)	69.3	130.9	40.4	187.1	28.5	155.9	14.6	25.2	132.4	22.0
Internal Link Dist (m)		218.0		643.9		1484.4			1592.5	
Turn Bay Length (m)	90.0		100.0		185.0		135.0	105.0		95.0
Base Capacity (vph)	487	1731	577	1664	379	873	808	122	487	613
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.46	0.30	0.60	0.22	0.53	0.19	0.38	0.71	0.45
Intersection Summary										

HCM Signalized Intersection Capacity Analysis

6: Ninth Line & Derry Rd E/Derry Rd W

Baseline
08/15/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	257	626	130	164	885	52	80	434	144	43	325	257
Future Volume (vph)	257	626	130	164	885	52	80	434	144	43	325	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.5		3.0	6.5		3.0	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1807	3513		1807	3582		1755	1902	1579	1824	1902	1601
Flt Permitted	0.17	1.00		0.28	1.00		0.17	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)	322	3513		535	3582		321	1902	1579	477	1902	1601
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	273	666	138	174	941	55	85	462	153	46	346	273
RTOR Reduction (vph)	0	8	0	0	2	0	0	0	106	0	0	213
Lane Group Flow (vph)	273	796	0	174	994	0	85	462	47	46	346	60
Confl. Peds. (#/hr)			1	1					1	1		
Heavy Vehicles (%)	1%	1%	0%	1%	1%	2%	4%	1%	2%	0%	1%	2%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases	2			6			4		4	8		8
Actuated Green, G (s)	97.7	78.5		90.4	74.2		49.3	49.3	49.3	35.2	35.2	35.2
Effective Green, g (s)	97.7	78.5		90.4	74.2		49.3	49.3	49.3	35.2	35.2	35.2
Actuated g/C Ratio	0.61	0.49		0.57	0.46		0.31	0.31	0.31	0.22	0.22	0.22
Clearance Time (s)	3.0	6.5		3.0	6.5		3.0	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	386	1723		431	1661		198	586	486	104	418	352
v/s Ratio Prot	c0.09	0.23		0.04	0.28		0.03	c0.24			0.18	
v/s Ratio Perm	c0.34			0.19			0.10		0.03	0.10		0.04
v/c Ratio	0.71	0.46		0.40	0.60		0.43	0.79	0.10	0.44	0.83	0.17
Uniform Delay, d1	20.6	26.8		17.6	31.8		42.6	50.6	39.5	53.9	59.5	50.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	0.9		0.6	1.6		1.5	7.0	0.1	3.0	12.7	0.2
Delay (s)	26.4	27.7		18.2	33.4		44.1	57.5	39.6	56.9	72.2	50.8
Level of Service	C	C		B	C		D	E	D	E	E	D
Approach Delay (s)		27.4			31.2			52.0			62.3	
Approach LOS		C			C			D			E	
Intersection Summary												
HCM 2000 Control Delay			39.8			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)			19.0			
Intersection Capacity Utilization			91.3%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

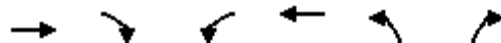
Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Baseline
08/15/2025

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘↙	↗
Traffic Volume (vph)	891	70	0	1159	40	145
Future Volume (vph)	891	70	0	1159	40	145
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	1.00	0.95	0.97	1.00
Frt	0.989					0.850
Flt Protected					0.950	
Satd. Flow (prot)	3369	0	0	3424	3106	1517
Flt Permitted					0.950	
Satd. Flow (perm)	3369	0	0	3424	3106	1517
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	18					82
Link Speed (k/h)	80			48	60	
Link Distance (m)	358.0			242.0	515.1	
Travel Time (s)	16.1			18.2	30.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	8%	2%	1%	8%	2%
Adj. Flow (vph)	909	71	0	1183	41	148
Shared Lane Traffic (%)						
Lane Group Flow (vph)	980	0	0	1183	41	148
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	1.8			1.8	6.1	6.1
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Prot
Protected Phases	4			8	2	2
Permitted Phases						
Detector Phase	4			8	2	2
Switch Phase						

Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Baseline
08/15/2025



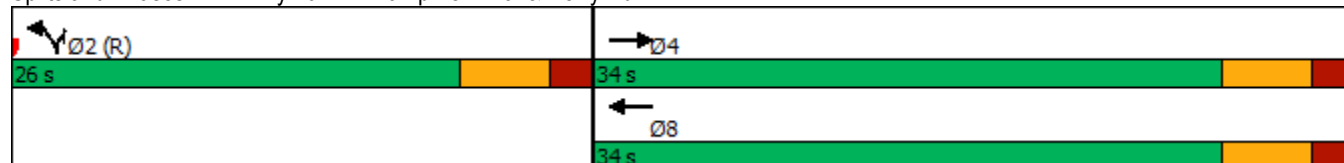
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	8.0			8.0	8.0	8.0
Minimum Split (s)	26.0			26.0	26.0	26.0
Total Split (s)	34.0			34.0	26.0	26.0
Total Split (%)	56.7%			56.7%	43.3%	43.3%
Maximum Green (s)	28.0			28.0	20.0	20.0
Yellow Time (s)	4.0			4.0	4.0	4.0
All-Red Time (s)	2.0			2.0	2.0	2.0
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 Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	C-Min	C-Min
Walk Time (s)	8.0			8.0	8.0	8.0
Flash Dont Walk (s)	12.0			12.0	12.0	12.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	38.6			38.6	9.4	9.4
Actuated g/C Ratio	0.64			0.64	0.16	0.16
v/c Ratio	0.45			0.54	0.08	0.48
Control Delay	4.8			7.3	20.9	16.8
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	4.8			7.3	20.9	16.8
LOS	A			A	C	B
Approach Delay	4.8			7.3	17.7	
Approach LOS	A			A	B	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 7.1
Intersection Capacity Utilization 50.5%
Analysis Period (min) 15

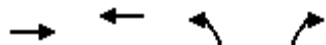
Intersection LOS: A
ICU Level of Service A

Splits and Phases: 7: Hwy 407 NB Ramp Terminal & Derry Rd E



Queues
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Baseline
08/15/2025



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	980	1183	41	148
v/c Ratio	0.45	0.54	0.08	0.48
Control Delay	4.8	7.3	20.9	16.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.8	7.3	20.9	16.8
Queue Length 50th (m)	13.5	28.3	2.0	6.7
Queue Length 95th (m)	30.6	53.7	5.1	18.9
Internal Link Dist (m)	334.0	218.0	491.1	
Turn Bay Length (m)				
Base Capacity (vph)	2171	2200	1035	560
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	0.45	0.54	0.04	0.26
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

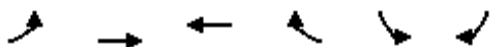
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Baseline
08/15/2025

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘↘	↗
Traffic Volume (vph)	891	70	0	1159	40	145
Future Volume (vph)	891	70	0	1159	40	145
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.0			6.0	6.0	6.0
Lane Util. Factor	0.95			0.95	0.97	1.00
Frt	0.99			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3370			3424	3106	1517
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3370			3424	3106	1517
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	909	71	0	1183	41	148
RTOR Reduction (vph)	6	0	0	0	0	69
Lane Group Flow (vph)	974	0	0	1183	41	79
Heavy Vehicles (%)	1%	8%	2%	1%	8%	2%
Turn Type	NA			NA	Prot	Prot
Protected Phases	4			8	2	2
Permitted Phases						
Actuated Green, G (s)	38.6			38.6	9.4	9.4
Effective Green, g (s)	38.6			38.6	9.4	9.4
Actuated g/C Ratio	0.64			0.64	0.16	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)	2168			2202	486	237
v/s Ratio Prot	0.29			c0.35	0.01	c0.05
v/s Ratio Perm						
v/c Ratio	0.45			0.54	0.08	0.33
Uniform Delay, d1	5.4			5.8	21.6	22.5
Progression Factor	0.73			1.00	1.00	1.00
Incremental Delay, d2	0.6			0.9	0.3	3.7
Delay (s)	4.6			6.8	22.0	26.2
Level of Service	A			A	C	C
Approach Delay (s)	4.6			6.8	25.3	
Approach LOS	A			A	C	
Intersection Summary						
HCM 2000 Control Delay			7.3		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.50			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			50.5%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

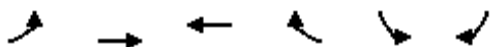
Baseline
08/15/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	811	1038	147	166	235
Future Volume (vph)	0	811	1038	147	166	235
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Fr t			0.981			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3390	3355	0	3288	1532
Flt Permitted					0.950	
Satd. Flow (perm)	0	3390	3355	0	3288	1532
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			38			68
Link Speed (k/h)		80	80		60	
Link Distance (m)		1052.5	358.0		426.8	
Travel Time (s)		47.4	16.1		25.6	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	1%	2%	2%	1%
Adj. Flow (vph)	0	828	1059	150	169	240
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	828	1209	0	169	240
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.4	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Detector Phase		4	8		6	6
Switch Phase						

Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

Baseline
08/15/2025

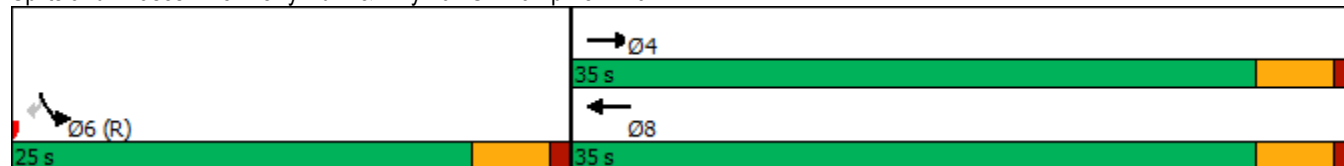


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)		5.0	5.0		5.0	5.0
Minimum Split (s)		22.5	22.5		22.5	22.5
Total Split (s)		35.0	35.0		25.0	25.0
Total Split (%)		58.3%	58.3%		41.7%	41.7%
Maximum Green (s)		30.5	30.5		20.5	20.5
Yellow Time (s)		3.5	3.5		3.5	3.5
All-Red Time (s)		1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effect Green (s)		38.7	38.7		12.3	12.3
Actuated g/C Ratio		0.64	0.64		0.20	0.20
v/c Ratio		0.38	0.56		0.25	0.65
Control Delay		6.4	5.1		19.4	23.3
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		6.4	5.1		19.4	23.3
LOS		A	A		B	C
Approach Delay		6.4	5.1		21.7	
Approach LOS		A	A		C	

Intersection Summary

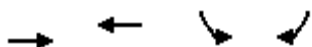
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 8.3
Intersection Capacity Utilization 58.1%
Analysis Period (min) 15
Intersection LOS: A
ICU Level of Service B

Splits and Phases: 8: Derry Rd E & Hwy 407 SB Ramp Terminal



Queues
8: Derry Rd E & Hwy 407 SB Ramp Terminal

Baseline
08/15/2025

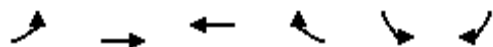


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	828	1209	169	240
v/c Ratio	0.38	0.56	0.25	0.65
Control Delay	6.4	5.1	19.4	23.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.4	5.1	19.4	23.3
Queue Length 50th (m)	18.6	16.4	8.0	17.0
Queue Length 95th (m)	37.2	25.2	12.9	31.8
Internal Link Dist (m)	1028.5	334.0	402.8	
Turn Bay Length (m)				
Base Capacity (vph)	2187	2178	1123	568
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	0.38	0.56	0.15	0.42
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

8: Derry Rd E & Hwy 407 SB Ramp Terminal

Baseline
08/15/2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	811	1038	147	166	235
Future Volume (vph)	0	811	1038	147	166	235
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)		4.5	4.5		4.5	4.5
Lane Util. Factor		0.95	0.95		0.97	1.00
Frt		1.00	0.98		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3390	3356		3288	1532
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3390	3356		3288	1532
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	828	1059	150	169	240
RTOR Reduction (vph)	0	0	13	0	0	54
Lane Group Flow (vph)	0	828	1196	0	169	186
Heavy Vehicles (%)	2%	2%	1%	2%	2%	1%
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		38.7	38.7		12.3	12.3
Effective Green, g (s)		38.7	38.7		12.3	12.3
Actuated g/C Ratio		0.65	0.65		0.21	0.21
Clearance Time (s)		4.5	4.5		4.5	4.5
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		2186	2164		674	314
v/s Ratio Prot		0.24	c0.36		0.05	
v/s Ratio Perm						c0.12
v/c Ratio		0.38	0.55		0.25	0.59
Uniform Delay, d1		5.0	5.9		20.0	21.6
Progression Factor		1.00	0.62		1.00	1.00
Incremental Delay, d2		0.5	0.9		0.9	8.0
Delay (s)		5.5	4.5		20.9	29.6
Level of Service		A	A		C	C
Approach Delay (s)		5.5	4.5		26.0	
Approach LOS		A	A		C	
Intersection Summary						
HCM 2000 Control Delay			8.4		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.56			
Actuated Cycle Length (s)			60.0		Sum of lost time (s)	9.0
Intersection Capacity Utilization			58.1%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

Future Background 2032

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	223	4	470	2	1124	199	0	1471	386
Future Volume (vph)	0	0	0	223	4	470	2	1124	199	0	1471	386
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.88	1.00	0.95	0.95	1.00	0.91	1.00
Ped Bike Factor						0.98						
Frt						0.850		0.977				0.850
Flt Protected				0.950	0.954		0.950					
Satd. Flow (prot)	1784	0	1784	1507	1517	2250	1729	3183	0	0	4558	1334
Flt Permitted				0.950	0.954		0.143					
Satd. Flow (perm)	1784	0	1784	1507	1517	2201	260	3183	0	0	4558	1334
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						367		16				310
Link Speed (k/h)		30			60			60			60	
Link Distance (m)		149.8			217.3			393.8			859.9	
Travel Time (s)		18.0			13.0			23.6			51.6	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	9%	0%	21%	0%	6%	7%	2%	9%	16%
Adj. Flow (vph)	0	0	0	235	4	495	2	1183	209	0	1548	406
Shared Lane Traffic (%)				49%								
Lane Group Flow (vph)	0	0	0	120	119	495	2	1392	0	0	1548	406
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1		1	1	2	1	1	2			2	1
Detector Template	Left		Right	Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (m)	6.1		6.1	6.1	30.5	6.1	6.1	30.5			30.5	6.1
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Size(m)	6.1		6.1	6.1	1.8	6.1	6.1	1.8			1.8	6.1
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(m)					28.7			28.7			28.7	
Detector 2 Size(m)					1.8			1.8			1.8	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		Prot	Split	NA	Perm	Perm	NA			NA	Perm
Protected Phases	3		3	4	4			6			2	
Permitted Phases						4	6					2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3		3	4	4	4	6	6			2	2
Switch Phase												
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0	20.0	20.0			20.0	20.0
Minimum Split (s)	17.3		17.3	50.6	50.6	50.6	41.5	41.5			41.5	41.5
Total Split (s)	21.5		21.5	62.6	62.6	62.6	75.9	75.9			54.4	54.4
Total Split (%)	13.4%		13.4%	39.1%	39.1%	39.1%	47.4%	47.4%			34.0%	34.0%
Maximum Green (s)	14.2		14.2	55.0	55.0	55.0	68.4	68.4			46.9	46.9
Yellow Time (s)	4.5		4.5	5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)	2.8		2.8	2.6	2.6	2.6	2.5	2.5			2.5	2.5
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	7.3		7.3	7.6	7.6	7.6	7.5	7.5			7.5	7.5
Lead/Lag	Lead		Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	None		None	None	None	None	C-Max	C-Max			C-Max	C-Max
Walk Time (s)				10.0	10.0	10.0	10.0	10.0			10.0	10.0
Flash Dont Walk (s)				33.0	33.0	33.0	24.0	24.0			24.0	24.0
Pedestrian Calls (#/hr)				0	0	0	0	0			0	0
Act Effect Green (s)				20.5	20.5	20.5	124.4	124.4			124.4	124.4
Actuated g/C Ratio				0.13	0.13	0.13	0.78	0.78			0.78	0.78
v/c Ratio				0.62	0.61	0.82	0.01	0.56			0.44	0.37
Control Delay				78.5	77.8	28.5	4.5	11.9			7.1	2.6
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				78.5	77.8	28.5	4.5	11.9			7.1	2.6
LOS				E	E	C	A	B			A	A
Approach Delay					44.7			11.9			6.1	
Approach LOS					D			B			A	
Queue Length 50th (m)				38.8	38.4	23.1	0.2	149.1			52.9	6.4
Queue Length 95th (m)				57.1	56.7	43.6	m0.4	133.7			83.9	21.4
Internal Link Dist (m)		125.8			193.3			369.8			835.9	
Turn Bay Length (m)												
Base Capacity (vph)				518	521	997	202	2477			3542	1105
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.23	0.23	0.50	0.01	0.56			0.44	0.37

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 147 (92%), Referenced to phase 2:SBT and 6:NBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 15.1

Intersection LOS: B

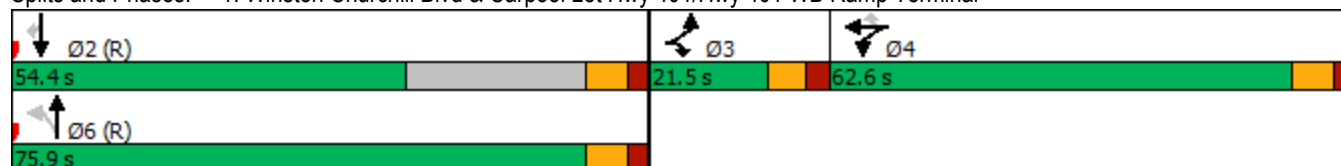
Intersection Capacity Utilization 70.1%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	478	211	0	795	864	730
Future Volume (vph)	478	211	0	795	864	730
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	0.91
Frt	0.994	0.850			0.931	
Flt Protected	0.954					
Satd. Flow (prot)	3079	1367	0	4824	4250	0
Flt Permitted	0.954					
Satd. Flow (perm)	3079	1367	0	4824	4250	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4	74			174	
Link Speed (k/h)	50			60	60	
Link Distance (m)	280.6			247.8	393.8	
Travel Time (s)	20.2			14.9	23.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	3%	2%	3%	7%	11%
Adj. Flow (vph)	503	222	0	837	909	768
Shared Lane Traffic (%)		10%				
Lane Group Flow (vph)	525	200	0	837	1677	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.4			7.4	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	6.1	6.1		30.5	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	6.1		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				28.7	28.7	
Detector 2 Size(m)				1.8	1.8	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Detector Phase	4	4		2	2	
Switch Phase						

Lanes, Volumes, Timings
2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal

Future Background 2032

08/17/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		20.0	20.0	
Minimum Split (s)	22.5	22.5		31.5	31.5	
Total Split (s)	80.5	80.5		79.5	79.5	
Total Split (%)	50.3%	50.3%		49.7%	49.7%	
Maximum Green (s)	72.0	72.0		72.0	72.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	8.5	8.5		7.5	7.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				17.0	17.0	
Pedestrian Calls (#/hr)				0	0	
Act Effect Green (s)	34.0	34.0		110.0	110.0	
Actuated g/C Ratio	0.21	0.21		0.69	0.69	
v/c Ratio	0.80	0.57		0.25	0.56	
Control Delay	68.5	40.7		13.3	10.7	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	68.5	40.7		13.3	10.7	
LOS	E	D		B	B	
Approach Delay	60.8			13.3	10.7	
Approach LOS	E			B	B	
Queue Length 50th (m)	82.2	40.0		31.3	41.7	
Queue Length 95th (m)	96.4	65.4		64.2	43.4	
Internal Link Dist (m)	256.6			223.8	369.8	
Turn Bay Length (m)						
Base Capacity (vph)	1387	655		3315	2975	
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	0.38	0.31		0.25	0.56	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 149 (93%), Referenced to phase 2:NBSB and 6:, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 22.6

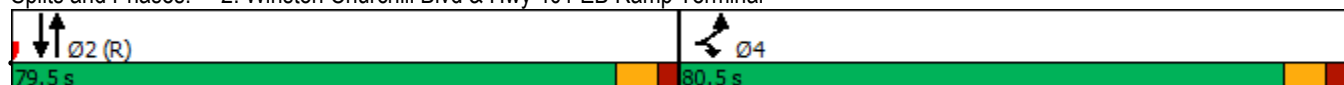
Intersection LOS: C

Intersection Capacity Utilization 65.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal



Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentia Rd

Future Background 2032

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	320	209	57	74	88	135	75	1153	95	272	531	152
Future Volume (vph)	320	209	57	74	88	135	75	1153	95	272	531	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (m)	7.6			2.5			7.6			7.6		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	0.98		0.97	0.99		0.96	1.00		0.98	1.00		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3372	3614	1601	1722	3579	1512	3471	5142	1570	3437	4902	1484
Flt Permitted	0.950			0.614			0.950			0.950		
Satd. Flow (perm)	3302	3614	1553	1098	3579	1459	3456	5142	1540	3429	4902	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85			85			153			160
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		633.5			370.2			729.2			247.8	
Travel Time (s)		38.0			22.2			43.8			14.9	
Confl. Peds. (#/hr)	23		18	18		23	9		7	7		9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	2%	6%	2%	8%	2%	2%	4%	3%	7%	10%
Adj. Flow (vph)	337	220	60	78	93	142	79	1214	100	286	559	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	337	220	60	78	93	142	79	1214	100	286	559	160
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentia Rd

Future Background 2032

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6		5	2	3
Permitted Phases			8	4		4			6			2
Detector Phase	3	8	1	7	4	5	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0	7.0	7.0	10.0	10.0	7.0	10.0	7.0
Minimum Split (s)	12.0	54.5	12.0	11.5	54.5	12.0	12.0	51.5	51.5	12.0	51.5	12.0
Total Split (s)	27.0	69.9	13.0	11.6	54.5	24.0	13.0	54.5	54.5	24.0	65.5	27.0
Total Split (%)	16.9%	43.7%	8.1%	7.3%	34.1%	15.0%	8.1%	34.1%	34.1%	15.0%	40.9%	16.9%
Maximum Green (s)	22.0	62.4	8.0	8.6	47.0	19.0	8.0	47.0	47.0	19.0	58.0	22.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	2.0	3.5	2.0	0.0	3.5	2.0	2.0	3.5	3.5	2.0	3.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.5	5.0	3.0	7.5	5.0	5.0	7.5	7.5	5.0	7.5	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	Min	None	None	C-Max	C-Max	None	C-Max	None
Walk Time (s)		10.0			10.0			10.0	10.0		10.0	
Flash Dont Walk (s)		37.0			37.0			34.0	34.0		34.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	20.0	24.3	35.9	23.4	10.6	31.6	9.1	85.9	85.9	18.5	95.3	117.8
Actuated g/C Ratio	0.12	0.15	0.22	0.15	0.07	0.20	0.06	0.54	0.54	0.12	0.60	0.74
v/c Ratio	0.80	0.40	0.14	0.40	0.39	0.39	0.40	0.44	0.11	0.72	0.19	0.14
Control Delay	82.5	63.2	3.7	54.3	76.6	23.8	78.5	23.8	0.6	64.8	20.2	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.5	63.2	3.7	54.3	76.6	23.8	78.5	23.8	0.6	64.8	20.2	4.8
LOS	F	E	A	D	E	C	E	C	A	E	C	A
Approach Delay		68.0			47.1			25.2			30.4	
Approach LOS		E			D			C			C	
Queue Length 50th (m)	54.1	33.6	0.0	19.6	15.2	14.8	12.7	84.4	0.0	47.0	40.2	6.1
Queue Length 95th (m)	71.1	46.3	5.3	33.3	24.8	33.4	21.4	106.7	1.1	57.4	51.7	24.2
Internal Link Dist (m)		609.5			346.2			705.2			223.8	
Turn Bay Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Base Capacity (vph)	463	1409	418	196	1051	376	201	2760	897	432	2919	1131
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.16	0.14	0.40	0.09	0.38	0.39	0.44	0.11	0.66	0.19	0.14

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 65 (41%), Referenced to phase 2:SBT and 6:NBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 36.8

Intersection LOS: D

Lanes, Volumes, Timings
 3: Winston Churchill Blvd & Argentinia Rd

Future Background 2032

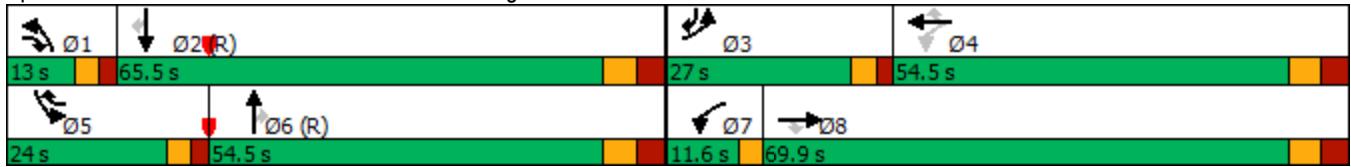
08/17/2025

Intersection Capacity Utilization 99.2%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Winston Churchill Blvd & Argentinia Rd



Lanes, Volumes, Timings
4: Tenth Line W & Argentinia Rd

Future Background 2032

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	313	36	69	146	10	7	3	214	2	3	1
Future Volume (vph)	3	313	36	69	146	10	7	3	214	2	3	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	0.0		0.0	130.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
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
Ped Bike Factor	1.00		0.97	1.00		0.97	1.00	0.99		1.00	1.00	
Frt			0.850			0.850		0.852			0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1847	1633	1738	1830	1633	1825	1600	0	1217	1842	0
Flt Permitted	0.660			0.506			0.581			0.617		
Satd. Flow (perm)	1262	1847	1586	922	1830	1592	1114	1600	0	790	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			71			223		1	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		1323.5			633.5			748.2			676.6	
Travel Time (s)		79.4			38.0			53.9			48.7	
Confl. Peds. (#/hr)	3		5	5		3	2		1	1		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	4%	0%	5%	5%	0%	0%	0%	1%	50%	0%	0%
Adj. Flow (vph)	3	326	38	72	152	10	7	3	223	2	3	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	326	38	72	152	10	7	226	0	2	4	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)		11.1			11.1			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
4: Tenth Line W & Argentia Rd

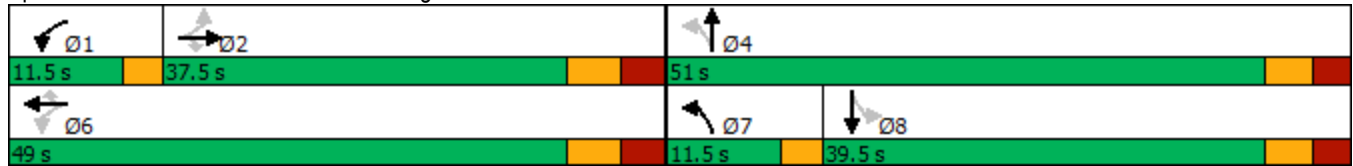
Future Background 2032

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		7	4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	2	2	2	1	6	6	7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0	10.0	7.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5	35.5	11.5	35.5	35.5	11.5	39.5		39.5	39.5	
Total Split (s)	37.5	37.5	37.5	11.5	49.0	49.0	11.5	51.0		39.5	39.5	
Total Split (%)	37.5%	37.5%	37.5%	11.5%	49.0%	49.0%	11.5%	51.0%		39.5%	39.5%	
Maximum Green (s)	30.0	30.0	30.0	8.5	41.5	41.5	8.5	44.5		33.0	33.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	3.5		3.5	3.5	
All-Red Time (s)	3.5	3.5	3.5	0.0	3.5	3.5	0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	3.0	7.5	7.5	3.0	6.5		6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	None	Max	Max	None	Min		Min	Min	
Walk Time (s)	10.0	10.0	10.0		10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)	18.0	18.0	18.0		18.0	18.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0		0	0	
Act Effct Green (s)	33.5	33.5	33.5	46.1	41.6	41.6	15.3	11.8		10.0	10.0	
Actuated g/C Ratio	0.50	0.50	0.50	0.68	0.62	0.62	0.23	0.17		0.15	0.15	
v/c Ratio	0.00	0.36	0.05	0.10	0.13	0.01	0.02	0.49		0.02	0.01	
Control Delay	11.7	13.5	0.1	4.6	6.5	0.0	19.4	7.8		27.0	24.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	11.7	13.5	0.1	4.6	6.5	0.0	19.4	7.8		27.0	24.8	
LOS	B	B	A	A	A	A	B	A		C	C	
Approach Delay		12.1			5.6			8.2			25.5	
Approach LOS		B			A			A			C	
Queue Length 50th (m)	0.2	23.4	0.0	2.2	6.3	0.0	0.7	0.3		0.2	0.4	
Queue Length 95th (m)	1.8	53.1	0.0	8.2	18.2	0.0	3.3	15.3		2.1	2.9	
Internal Link Dist (m)		1299.5			609.5			724.2			652.6	
Turn Bay Length (m)	20.0						130.0			45.0		
Base Capacity (vph)	625	916	838	733	1128	1009	342	1133		387	903	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.00	0.36	0.05	0.10	0.13	0.01	0.02	0.20		0.01	0.00	
Intersection Summary												
Area Type:	Other											
Cycle Length: 100												
Actuated Cycle Length: 67.5												
Natural Cycle: 100												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.49												
Intersection Signal Delay: 9.3							Intersection LOS: A					
Intersection Capacity Utilization 63.6%							ICU Level of Service B					

Analysis Period (min) 15

Splits and Phases: 4: Tenth Line W & Argentia Rd



Lanes, Volumes, Timings
5: Ninth Line & Argentinia Rd

Future Background 2032

08/17/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	43	29	324	204	92	587
Future Volume (vph)	43	29	324	204	92	587
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		100.0	45.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1526	1883	1601	1789	1865
Flt Permitted	0.950				0.552	
Satd. Flow (perm)	1789	1526	1883	1601	1040	1865
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		31		219		
Link Speed (k/h)	60		60			60
Link Distance (m)	1323.5		1616.5			667.9
Travel Time (s)	79.4		97.0			40.1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	7%	2%	2%	2%	3%
Adj. Flow (vph)	46	31	348	219	99	631
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	31	348	219	99	631
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.4		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (m)	6.1	6.1	30.5	6.1	6.1	30.5
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	6.1	1.8	6.1	6.1	1.8
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		6			2

Lanes, Volumes, Timings
5: Ninth Line & Argentinia Rd

Future Background 2032

08/17/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		4		6	2	
Detector Phase	8	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	22.5	30.0	43.5	43.5	43.5	43.5
Total Split (s)	22.5	30.0	43.5	43.5	43.5	43.5
Total Split (%)	30.6%	40.8%	59.2%	59.2%	59.2%	59.2%
Maximum Green (s)	18.0	24.0	37.0	37.0	37.0	37.0
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.5	6.5	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)	7.0	10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)	11.0	14.0	27.0	27.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	14.5	20.4	51.3	51.3	51.3	51.3
Actuated g/C Ratio	0.21	0.30	0.74	0.74	0.74	0.74
v/c Ratio	0.12	0.07	0.25	0.18	0.13	0.46
Control Delay	20.5	8.0	7.4	1.8	7.7	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	8.0	7.4	1.8	7.7	9.6
LOS	C	A	A	A	A	A
Approach Delay	15.5		5.2			9.3
Approach LOS	B		A			A
Queue Length 50th (m)	5.7	0.0	23.9	0.0	6.1	53.5
Queue Length 95th (m)	10.7	5.4	39.4	8.3	13.4	84.7
Internal Link Dist (m)	1299.5		1592.5			643.9
Turn Bay Length (m)				100.0	45.0	
Base Capacity (vph)	673	561	1397	1244	772	1384
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.06	0.25	0.18	0.13	0.46
Intersection Summary						
Area Type:	Other					
Cycle Length: 73.5						
Actuated Cycle Length: 69.1						
Natural Cycle: 75						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.46						
Intersection Signal Delay: 8.0				Intersection LOS: A		
Intersection Capacity Utilization 44.2%				ICU Level of Service A		
Analysis Period (min) 15						

Splits and Phases: 5: Ninth Line & Argentia Rd



Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Future Background 2032

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	714	38	84	391	16	105	254	127	22	335	301
Future Volume (vph)	171	714	38	84	391	16	105	254	127	22	335	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	100.0		0.0	185.0		135.0	105.0		95.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.994				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	3543	0	1722	3594	0	1755	1847	1585	1825	1865	1570
Flt Permitted	0.458			0.300			0.200			0.597		
Satd. Flow (perm)	854	3543	0	544	3594	0	369	1847	1585	1147	1865	1570
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			3				131			310
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		242.0			667.9			1508.4			1616.5	
Travel Time (s)		14.5			40.1			90.5			97.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	2%	6%	6%	1%	0%	4%	4%	3%	0%	3%	4%
Adj. Flow (vph)	176	736	39	87	403	16	108	262	131	23	345	310
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	775	0	87	419	0	108	262	131	23	345	310
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	

Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Future Background 2032

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		1	6		7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	42.5		11.5	42.5		11.5	40.0	40.0	40.5	40.5	40.5
Total Split (s)	13.0	62.0		13.0	62.0		18.0	85.0	85.0	67.0	67.0	67.0
Total Split (%)	8.1%	38.8%		8.1%	38.8%		11.3%	53.1%	53.1%	41.9%	41.9%	41.9%
Maximum Green (s)	10.0	55.5		10.0	55.5		15.0	79.0	79.0	60.5	60.5	60.5
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.5		0.0	2.5		0.0	2.0	2.0	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.5		3.0	6.5		3.0	6.0	6.0	6.5	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?		Yes		Yes			Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	Max		None	Min	Min	Min	Min	Min
Walk Time (s)		10.0			10.0			10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)		26.0			26.0			24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0			0			0	0	0	0	0
Act Effct Green (s)	97.2	82.0		91.1	78.4		56.3	53.3	53.3	36.8	36.8	36.8
Actuated g/C Ratio	0.61	0.51		0.57	0.49		0.35	0.33	0.33	0.23	0.23	0.23
v/c Ratio	0.30	0.43		0.23	0.24		0.44	0.43	0.21	0.09	0.81	0.52
Control Delay	17.1	25.4		16.7	26.1		39.5	42.2	5.3	45.4	72.1	7.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.1	25.4		16.7	26.1		39.5	42.2	5.3	45.4	72.1	7.4
LOS	B	C		B	C		D	D	A	D	E	A
Approach Delay		23.8			24.5			32.0			41.6	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	25.5	70.0		11.1	39.7		23.5	64.3	0.0	5.8	105.0	0.0
Queue Length 95th (m)	42.8	102.8		23.0	63.2		33.7	79.7	13.0	12.7	129.6	22.5
Internal Link Dist (m)		218.0			643.9			1484.4			1592.5	
Turn Bay Length (m)	90.0			100.0			185.0		135.0	105.0		95.0
Base Capacity (vph)	596	1816		391	1762		259	911	848	433	705	786
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.43		0.22	0.24		0.42	0.29	0.15	0.05	0.49	0.39

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 115 (72%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 30.1

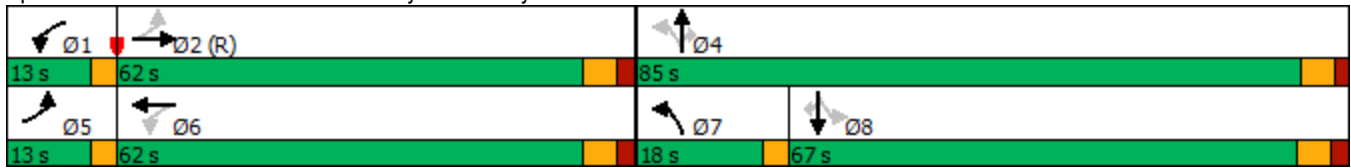
Intersection LOS: C

Intersection Capacity Utilization 67.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Derry Rd E/Derry Rd W



Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Future Background 2032

08/17/2025

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↖↗	↗
Traffic Volume (vph)	831	200	0	668	9	109
Future Volume (vph)	831	200	0	668	9	109
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	1.00	0.95	0.97	1.00
Frt	0.971					0.850
Flt Protected					0.950	
Satd. Flow (prot)	3292	0	0	3357	2727	1502
Flt Permitted					0.950	
Satd. Flow (perm)	3292	0	0	3357	2727	1502
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	58					112
Link Speed (k/h)	80			60	60	
Link Distance (m)	358.0			242.0	515.1	
Travel Time (s)	16.1			14.5	30.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	23%	3%
Adj. Flow (vph)	857	206	0	689	9	112
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1063	0	0	689	9	112
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	1.8			1.8	6.1	6.1
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Prot
Protected Phases	4			8	2	2
Permitted Phases						
Detector Phase	4			8	2	2
Switch Phase						

Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Future Background 2032

08/17/2025



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	8.0			8.0	5.0	5.0
Minimum Split (s)	26.0			26.0	24.5	24.5
Total Split (s)	50.0			50.0	30.0	30.0
Total Split (%)	62.5%			62.5%	37.5%	37.5%
Maximum Green (s)	44.0			44.0	25.5	25.5
Yellow Time (s)	4.0			4.0	3.5	3.5
All-Red Time (s)	2.0			2.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	C-Min	C-Min
Walk Time (s)	8.0			8.0	8.0	8.0
Flash Dont Walk (s)	12.0			12.0	12.0	12.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	62.5			62.5	7.0	7.0
Actuated g/C Ratio	0.78			0.78	0.09	0.09
v/c Ratio	0.41			0.26	0.04	0.48
Control Delay	2.9			1.9	32.2	14.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	2.9			1.9	32.2	14.4
LOS	A			A	C	B
Approach Delay	2.9			1.9	15.8	
Approach LOS	A			A	B	
Queue Length 50th (m)	15.8			8.3	0.6	0.0
Queue Length 95th (m)	23.3			12.8	2.6	13.4
Internal Link Dist (m)	334.0			218.0	491.1	
Turn Bay Length (m)						
Base Capacity (vph)	2586			2624	869	555
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	0.41			0.26	0.01	0.20

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

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

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 3.4

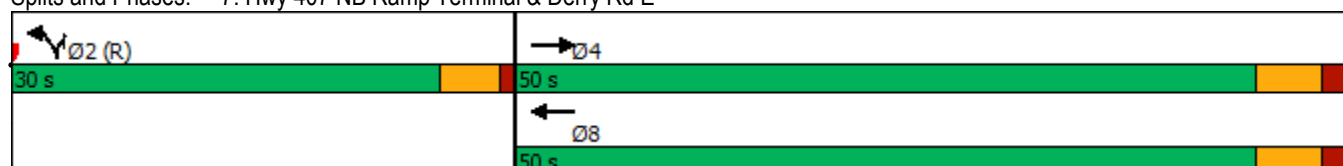
Intersection LOS: A

Intersection Capacity Utilization 46.9%

ICU Level of Service A

Analysis Period (min) 15

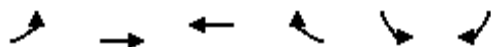
Splits and Phases: 7: Hwy 407 NB Ramp Terminal & Derry Rd E



Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

Future Background 2032

08/17/2025

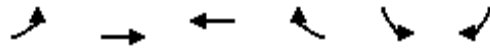


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	1011	528	145	26	52
Future Volume (vph)	0	1011	528	145	26	52
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Fr t			0.968			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3390	3250	0	3106	1334
Flt Permitted					0.950	
Satd. Flow (perm)	0	3390	3250	0	3106	1334
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			79			55
Link Speed (k/h)		80	80		60	
Link Distance (m)		1052.5	358.0		426.8	
Travel Time (s)		47.4	16.1		25.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	3%	3%	8%	16%
Adj. Flow (vph)	0	1064	556	153	27	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1064	709	0	27	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.4	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Detector Phase		4	8		6	6
Switch Phase						

Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

Future Background 2032

08/17/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)		5.0	5.0		5.0	5.0
Minimum Split (s)		22.5	22.5		22.5	22.5
Total Split (s)		53.0	53.0		27.0	27.0
Total Split (%)		66.3%	66.3%		33.8%	33.8%
Maximum Green (s)		48.5	48.5		22.5	22.5
Yellow Time (s)		3.5	3.5		3.5	3.5
All-Red Time (s)		1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		64.3	64.3		6.7	6.7
Actuated g/C Ratio		0.80	0.80		0.08	0.08
v/c Ratio		0.39	0.27		0.10	0.34
Control Delay		2.8	1.6		33.8	16.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		2.8	1.6		33.8	16.1
LOS		A	A		C	B
Approach Delay		2.8	1.6		22.0	
Approach LOS		A	A		C	
Queue Length 50th (m)		15.7	6.0		2.0	0.0
Queue Length 95th (m)		28.2	16.0		5.5	9.8
Internal Link Dist (m)		1028.5	334.0		402.8	
Turn Bay Length (m)						
Base Capacity (vph)		2724	2626		873	414
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		0.39	0.27		0.03	0.13

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

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

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.39

Intersection Signal Delay: 3.2

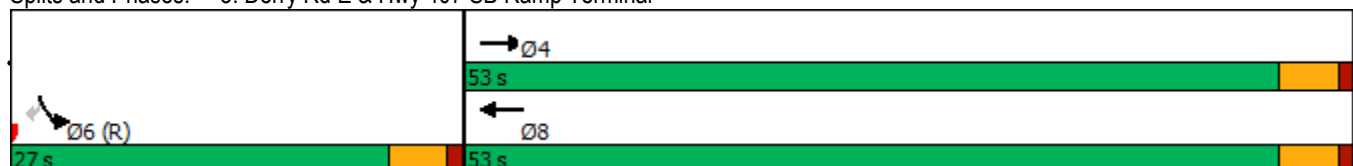
Intersection LOS: A

Intersection Capacity Utilization 41.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Derry Rd E & Hwy 407 SB Ramp Terminal



Lanes, Volumes, Timings

Future Background 2032

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	0	18	802	12	755	5	1084	219	0	1394	434
Future Volume (vph)	7	0	18	802	12	755	5	1084	219	0	1394	434
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.88	1.00	0.95	0.95	1.00	0.91	1.00
Frt			0.850			0.850		0.975				0.850
Flt Protected	0.950			0.950	0.954		0.950					
Satd. Flow (prot)	1601	0	1547	1643	1649	2723	1712	3332	0	0	4644	1446
Flt Permitted	0.950			0.950	0.954		0.110					
Satd. Flow (perm)	1601	0	1547	1643	1649	2723	198	3332	0	0	4644	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			675		15				302
Link Speed (k/h)		30			60			60			60	
Link Distance (m)		149.8			217.3			393.8			859.9	
Travel Time (s)		18.0			13.0			23.6			51.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	8%	0%	0%	0%	1%	0%	1%	0%	7%	2%	7%	7%
Adj. Flow (vph)	7	0	19	835	13	786	5	1129	228	0	1452	452
Shared Lane Traffic (%)				49%								
Lane Group Flow (vph)	7	0	19	426	422	786	5	1357	0	0	1452	452
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	24		14	97		14	24		97
Number of Detectors	1		1	1	2	1	1	2			2	1
Detector Template	Left		Right	Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (m)	6.1		6.1	6.1	30.5	6.1	6.1	30.5			30.5	6.1
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Size(m)	6.1		6.1	6.1	1.8	6.1	6.1	1.8			1.8	6.1
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(m)					28.7			28.7			28.7	
Detector 2 Size(m)					1.8			1.8			1.8	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		Prot	Split	NA	Perm	Perm	NA			NA	Perm
Protected Phases	3		3	4	4			6			2	
Permitted Phases						4	6					2
Detector Phase	3		3	4	4	4	6	6			2	2
Switch Phase												

Lanes, Volumes, Timings

Future Background 2032

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/17/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0	20.0	20.0			20.0	20.0
Minimum Split (s)	17.3		17.3	50.6	50.6	50.6	41.5	41.5			41.5	41.5
Total Split (s)	45.4		45.4	58.4	58.4	58.4	56.2	56.2			56.2	56.2
Total Split (%)	28.4%		28.4%	36.5%	36.5%	36.5%	35.1%	35.1%			35.1%	35.1%
Maximum Green (s)	38.1		38.1	50.8	50.8	50.8	48.7	48.7			48.7	48.7
Yellow Time (s)	4.5		4.5	5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)	2.8		2.8	2.6	2.6	2.6	2.5	2.5			2.5	2.5
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	7.3		7.3	7.6	7.6	7.6	7.5	7.5			7.5	7.5
Lead/Lag	Lead		Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	None		None	None	None	None	C-Max	C-Max			C-Max	C-Max
Walk Time (s)				10.0	10.0	10.0	10.0	10.0			10.0	10.0
Flash Dont Walk (s)				33.0	33.0	33.0	24.0	24.0			24.0	24.0
Pedestrian Calls (#/hr)				0	0	0	0	0			0	0
Act Effct Green (s)	10.0		10.0	54.8	54.8	54.8	79.7	79.7			79.7	79.7
Actuated g/C Ratio	0.06		0.06	0.34	0.34	0.34	0.50	0.50			0.50	0.50
v/c Ratio	0.07		0.11	0.76	0.75	0.57	0.05	0.81			0.63	0.52
Control Delay	72.4		1.3	54.8	54.1	6.8	27.2	35.6			34.2	13.0
Queue Delay	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	72.4		1.3	54.8	54.1	6.8	27.2	35.6			34.2	13.0
LOS	E		A	D	D	A	C	D			C	B
Approach Delay		20.4			31.5			35.6			29.2	
Approach LOS		C			C			D			C	
Queue Length 50th (m)	2.1		0.0	127.1	125.4	13.8	0.7	205.0			132.2	31.8
Queue Length 95th (m)	7.7		0.0	145.7	143.8	27.5	m2.5	#299.7			176.9	77.6
Internal Link Dist (m)		125.8			193.3			369.8			835.9	
Turn Bay Length (m)												
Base Capacity (vph)	381		430	587	590	1408	98	1667			2313	871
Starvation Cap Reductn	0		0	0	0	0	0	0			0	0
Spillback Cap Reductn	0		0	0	0	0	0	0			0	0
Storage Cap Reductn	0		0	0	0	0	0	0			0	0
Reduced v/c Ratio	0.02		0.04	0.73	0.72	0.56	0.05	0.81			0.63	0.52

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 56 (35%), Referenced to phase 2:SBT and 6:NBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 31.7

Intersection LOS: C

Intersection Capacity Utilization 87.6%

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: 1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

 Ø2 (R)	 Ø3	 Ø4
56.2 s	45.4 s	58.4 s
 Ø6 (R)		
56.2 s		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	340	329	0	917	1701	572
Future Volume (vph)	340	329	0	917	1701	572
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	0.91
Frt	0.961	0.850			0.962	
Flt Protected	0.964					
Satd. Flow (prot)	2936	1354	0	4777	4686	0
Flt Permitted	0.964					
Satd. Flow (perm)	2936	1354	0	4777	4686	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4	4			69	
Link Speed (k/h)	50			60	60	
Link Distance (m)	280.6			247.8	393.8	
Travel Time (s)	20.2			14.9	23.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	14%	4%	2%	4%	2%	2%
Adj. Flow (vph)	362	350	0	976	1810	609
Shared Lane Traffic (%)		36%				
Lane Group Flow (vph)	488	224	0	976	2419	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.4			7.4	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	6.1	6.1		30.5	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	6.1		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				28.7	28.7	
Detector 2 Size(m)				1.8	1.8	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Detector Phase	4	4		2	2	
Switch Phase						

Lanes, Volumes, Timings
2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal

Future Background 2032

08/17/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		20.0	20.0	
Minimum Split (s)	22.5	22.5		31.5	31.5	
Total Split (s)	80.5	80.5		79.5	79.5	
Total Split (%)	50.3%	50.3%		49.7%	49.7%	
Maximum Green (s)	72.0	72.0		72.0	72.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	8.5	8.5		7.5	7.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				17.0	17.0	
Pedestrian Calls (#/hr)				0	0	
Act Effect Green (s)	34.2	34.2		109.8	109.8	
Actuated g/C Ratio	0.21	0.21		0.69	0.69	
v/c Ratio	0.77	0.77		0.30	0.75	
Control Delay	67.0	74.5		8.8	12.0	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	67.0	74.5		8.8	12.0	
LOS	E	E		A	B	
Approach Delay	69.3			8.8	12.0	
Approach LOS	E			A	B	
Queue Length 50th (m)	76.4	73.9		52.8	108.0	
Queue Length 95th (m)	87.6	99.0		72.1	134.1	
Internal Link Dist (m)	256.6			223.8	369.8	
Turn Bay Length (m)						
Base Capacity (vph)	1323	611		3278	3237	
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	0.37	0.37		0.30	0.75	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 48 (30%), Referenced to phase 2:NBSB and 6:, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 21.2

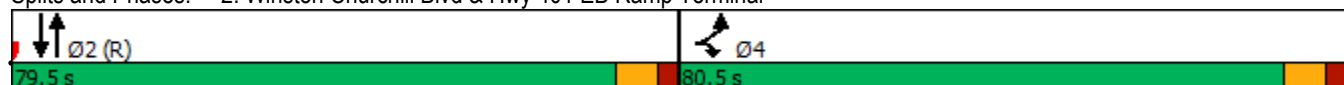
Intersection LOS: C

Intersection Capacity Utilization 75.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal



Prologis 10th Line Meadowdale Traffic Study

Synchro 11 Report

TYLin

Page 5

Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentia Rd

Future Background 2032

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	328	286	199	268	505	284	220	736	94	229	1204	346
Future Volume (vph)	328	286	199	268	505	284	220	736	94	229	1204	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (m)	7.6			2.5			7.6			7.6		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	0.98		0.96	0.98		0.95	1.00		0.99	1.00		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3437	3510	1601	1807	3614	1601	3437	5193	1555	3471	5043	1601
Flt Permitted	0.950			0.575			0.950			0.950		
Satd. Flow (perm)	3368	3510	1530	1070	3614	1518	3433	5193	1533	3467	5043	1571
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			88			85			119			68
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		633.5			370.2			729.2			247.8	
Travel Time (s)		38.0			22.2			43.8			14.9	
Confl. Peds. (#/hr)	40		32	32		40	6		2	2		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
Heavy Vehicles (%)	3%	4%	2%	1%	1%	2%	3%	1%	5%	2%	4%	2%
Adj. Flow (vph)	331	289	201	271	510	287	222	743	95	231	1216	349
Shared Lane Traffic (%)												
Lane Group Flow (vph)	331	289	201	271	510	287	222	743	95	231	1216	349
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	97		97	24		97	97		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentia Rd

Future Background 2032

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6		5	2	3
Permitted Phases			8	4		4			6			2
Detector Phase	3	8	1	7	4	5	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0	7.0	7.0	10.0	10.0	7.0	10.0	7.0
Minimum Split (s)	12.0	54.5	12.0	11.5	54.5	12.0	12.0	51.5	51.5	12.0	51.5	12.0
Total Split (s)	28.0	62.9	20.0	19.6	54.5	22.0	20.0	55.5	55.5	22.0	57.5	28.0
Total Split (%)	17.5%	39.3%	12.5%	12.3%	34.1%	13.8%	12.5%	34.7%	34.7%	13.8%	35.9%	17.5%
Maximum Green (s)	23.0	55.4	15.0	16.6	47.0	17.0	15.0	48.0	48.0	17.0	50.0	23.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	2.0	3.5	2.0	0.0	3.5	2.0	2.0	3.5	3.5	2.0	3.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.5	5.0	3.0	7.5	5.0	5.0	7.5	7.5	5.0	7.5	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	None
Walk Time (s)		10.0			10.0			10.0	10.0		10.0	
Flash Dont Walk (s)		37.0			37.0			34.0	34.0		34.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	20.1	34.0	52.0	49.5	28.4	46.8	15.6	70.6	70.6	15.9	70.9	93.5
Actuated g/C Ratio	0.13	0.21	0.32	0.31	0.18	0.29	0.10	0.44	0.44	0.10	0.44	0.58
v/c Ratio	0.77	0.39	0.36	0.67	0.80	0.56	0.66	0.32	0.13	0.67	0.54	0.37
Control Delay	79.6	54.4	20.5	47.6	72.4	33.6	79.3	31.2	2.9	71.5	41.6	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.6	54.4	20.5	47.6	72.4	33.6	79.3	31.2	2.9	71.5	41.6	16.5
LOS	E	D	C	D	E	C	E	C	A	E	D	B
Approach Delay		56.3			55.7			38.7			40.6	
Approach LOS		E			E			D			D	
Queue Length 50th (m)	53.1	41.9	25.2	64.5	83.0	51.9	35.7	56.0	0.0	38.5	103.0	43.0
Queue Length 95th (m)	69.3	52.3	39.9	81.8	98.4	72.4	48.7	77.3	7.4	m52.5	146.6	64.2
Internal Link Dist (m)		609.5			346.2			705.2			223.8	
Turn Bay Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Base Capacity (vph)	494	1215	572	407	1061	529	355	2290	742	384	2233	977
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.24	0.35	0.67	0.48	0.54	0.63	0.32	0.13	0.60	0.54	0.36

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

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

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 46.3

Intersection LOS: D

Lanes, Volumes, Timings 3: Winston Churchill Blvd & Argentinia Rd

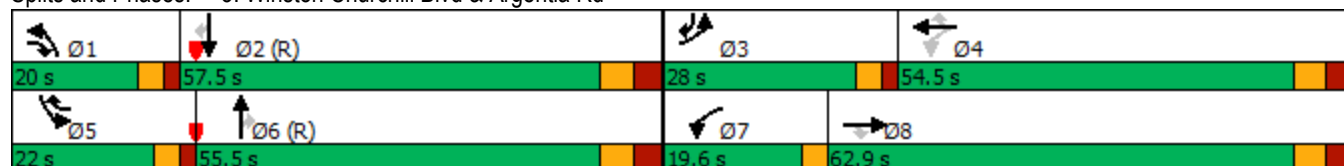
Future Background 2032
08/17/2025

Intersection Capacity Utilization 106.6% ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 3: Winston Churchill Blvd & Argentinia Rd



Lanes, Volumes, Timings
4: Tenth Line W & Argentinia Rd

Future Background 2032

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	298	96	451	457	5	61	0	281	2	4	2
Future Volume (vph)	1	298	96	451	457	5	61	0	281	2	4	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	0.0		0.0	130.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
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
Ped Bike Factor	0.99		0.96	0.99		0.97	0.99	0.98		1.00	0.99	
Frt			0.850			0.850		0.850			0.950	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	961	1555	1789	1921	1585	1755	1603	0	1825	1813	0
Flt Permitted	0.484			0.478			0.580			0.576		
Satd. Flow (perm)	923	961	1491	890	1921	1531	1064	1603	0	1102	1813	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			71		431			2	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		1323.5			633.5			748.2			676.6	
Travel Time (s)		79.4			38.0			53.9			48.7	
Confl. Peds. (#/hr)	8		12	12		8	8		7	7		8
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	100%	5%	2%	0%	3%	4%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	320	103	485	491	5	66	0	302	2	4	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	320	103	485	491	5	66	302	0	2	6	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)		11.1			11.1			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
4: Tenth Line W & Argentia Rd

Future Background 2032

08/17/2025

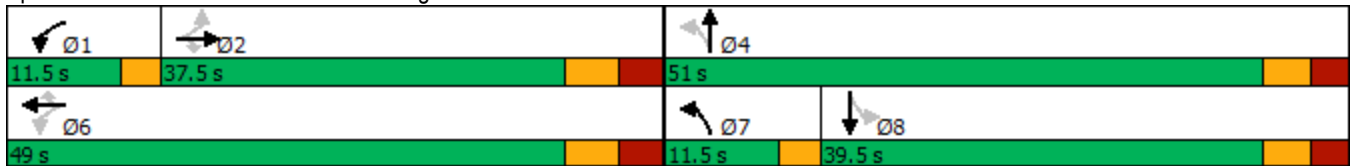
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		7	4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	2	2	2	1	6	6	7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0	10.0	7.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5	35.5	11.5	35.5	35.5	11.5	39.5		39.5	39.5	
Total Split (s)	37.5	37.5	37.5	11.5	49.0	49.0	11.5	51.0		39.5	39.5	
Total Split (%)	37.5%	37.5%	37.5%	11.5%	49.0%	49.0%	11.5%	51.0%		39.5%	39.5%	
Maximum Green (s)	30.0	30.0	30.0	8.5	41.5	41.5	8.5	44.5		33.0	33.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	3.5		3.5	3.5	
All-Red Time (s)	3.5	3.5	3.5	0.0	3.5	3.5	0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	3.0	7.5	7.5	3.0	6.5		6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	None	Max	Max	None	Min		Min	Min	
Walk Time (s)	10.0	10.0	10.0		10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)	18.0	18.0	18.0		18.0	18.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0		0	0	
Act Effct Green (s)	30.1	30.1	30.1	46.2	41.7	41.7	22.1	18.6		10.0	10.0	
Actuated g/C Ratio	0.41	0.41	0.41	0.62	0.56	0.56	0.30	0.25		0.13	0.13	
v/c Ratio	0.00	0.82	0.15	0.74	0.46	0.01	0.17	0.42		0.01	0.02	
Control Delay	14.0	41.2	4.2	17.6	12.1	0.0	19.6	2.1		29.5	26.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	14.0	41.2	4.2	17.6	12.1	0.0	19.6	2.1		29.5	26.0	
LOS	B	D	A	B	B	A	B	A		C	C	
Approach Delay		32.2			14.8			5.2			26.9	
Approach LOS		C			B			A			C	
Queue Length 50th (m)	0.1	40.9	0.0	34.4	40.3	0.0	6.7	0.0		0.3	0.5	
Queue Length 95th (m)	1.0	#86.9	8.4	#61.3	63.6	0.0	14.9	1.7		2.1	3.8	
Internal Link Dist (m)		1299.5			609.5			724.2			652.6	
Turn Bay Length (m)	20.0						130.0			45.0		
Base Capacity (vph)	374	389	666	656	1077	889	395	1135		491	809	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.00	0.82	0.15	0.74	0.46	0.01	0.17	0.27		0.00	0.01	
Intersection Summary												
Area Type:	Other											
Cycle Length: 100												
Actuated Cycle Length: 74.3												
Natural Cycle: 110												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.82												
Intersection Signal Delay: 17.0							Intersection LOS: B					
Intersection Capacity Utilization 83.4%							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: 4: Tenth Line W & Argentia Rd



Lanes, Volumes, Timings
5: Ninth Line & Argentinia Rd

Future Background 2032

08/17/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	250	198	734	126	73	545
Future Volume (vph)	250	198	734	126	73	545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		100.0	45.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1617	1902	1617	1772	1812
Flt Permitted	0.950				0.198	
Satd. Flow (perm)	1789	1617	1902	1617	369	1812
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		148		131		
Link Speed (k/h)	60		60			60
Link Distance (m)	1323.5		1616.5			667.9
Travel Time (s)	79.4		97.0			40.1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	1%	1%	3%	6%
Adj. Flow (vph)	260	206	765	131	76	568
Shared Lane Traffic (%)						
Lane Group Flow (vph)	260	206	765	131	76	568
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.4		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (m)	6.1	6.1	30.5	6.1	6.1	30.5
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	6.1	1.8	6.1	6.1	1.8
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		6			2

Lanes, Volumes, Timings
5: Ninth Line & Argentinia Rd

Future Background 2032

08/17/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		4		6	2	
Detector Phase	8	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	22.5	30.0	43.5	43.5	43.5	43.5
Total Split (s)	22.5	30.0	43.5	43.5	43.5	43.5
Total Split (%)	30.6%	40.8%	59.2%	59.2%	59.2%	59.2%
Maximum Green (s)	18.0	24.0	37.0	37.0	37.0	37.0
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.5	6.5	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)	7.0	10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)	11.0	14.0	27.0	27.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	21.5	20.0	37.0	37.0	37.0	37.0
Actuated g/C Ratio	0.31	0.29	0.53	0.53	0.53	0.53
v/c Ratio	0.47	0.36	0.76	0.14	0.39	0.59
Control Delay	22.8	8.7	18.8	2.2	17.0	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.8	8.7	18.8	2.2	17.0	14.2
LOS	C	A	B	A	B	B
Approach Delay	16.6		16.4			14.6
Approach LOS	B		B			B
Queue Length 50th (m)	27.0	5.5	71.6	0.0	5.4	46.4
Queue Length 95th (m)	46.6	19.8	114.0	6.5	16.0	74.2
Internal Link Dist (m)	1299.5		1592.5			643.9
Turn Bay Length (m)				100.0	45.0	
Base Capacity (vph)	656	655	1012	922	196	964
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.31	0.76	0.14	0.39	0.59
Intersection Summary						
Area Type:	Other					
Cycle Length:	73.5					
Actuated Cycle Length:	69.5					
Natural Cycle:	75					
Control Type:	Semi Act-Uncoord					
Maximum v/c Ratio:	0.76					
Intersection Signal Delay:	15.8			Intersection LOS: B		
Intersection Capacity Utilization	75.4%			ICU Level of Service D		
Analysis Period (min)	15					

Splits and Phases: 5: Ninth Line & Argentia Rd



Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Future Background 2032

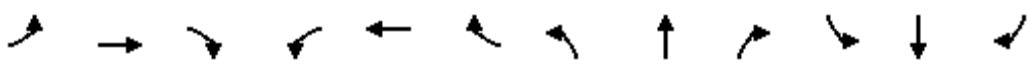
08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	257	650	130	164	917	52	80	521	144	43	391	257
Future Volume (vph)	257	650	130	164	917	52	80	521	144	43	391	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	100.0		0.0	185.0		135.0	105.0		95.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00					0.99	1.00		
Frt		0.975			0.992				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3511	0	1825	3585	0	1722	1847	1617	1789	1921	1617
Flt Permitted	0.134			0.260			0.143			0.165		
Satd. Flow (perm)	252	3511	0	499	3585	0	259	1847	1595	311	1921	1617
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			3				153			266
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		242.0			667.9			1508.4			1616.5	
Travel Time (s)		14.5			40.1			90.5			97.0	
Confl. Peds. (#/hr)			1	1					1	1		
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
Heavy Vehicles (%)	2%	1%	1%	0%	1%	1%	6%	4%	1%	2%	0%	1%
Adj. Flow (vph)	273	691	138	174	976	55	85	554	153	46	416	273
Shared Lane Traffic (%)												
Lane Group Flow (vph)	273	829	0	174	1031	0	85	554	153	46	416	273
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Future Background 2032

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		1	6		7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	42.5		11.5	42.5		11.5	40.5	40.5	40.5	40.5	40.5
Total Split (s)	33.5	46.5		33.5	46.5		33.5	80.0	80.0	46.5	46.5	46.5
Total Split (%)	20.9%	29.1%		20.9%	29.1%		20.9%	50.0%	50.0%	29.1%	29.1%	29.1%
Maximum Green (s)	30.5	40.0		30.5	40.0		30.5	73.5	73.5	40.0	40.0	40.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.5		0.0	2.5		0.0	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.5		3.0	6.5		3.0	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Walk Time (s)		10.0			10.0			10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)		26.0			26.0			24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0			0			0	0	0	0	0
Act Effct Green (s)	95.2	73.0		86.9	67.4		58.6	55.1	55.1	41.3	41.3	41.3
Actuated g/C Ratio	0.60	0.46		0.54	0.42		0.37	0.34	0.34	0.26	0.26	0.26
v/c Ratio	0.77	0.52		0.43	0.68		0.44	0.87	0.24	0.57	0.84	0.44
Control Delay	38.1	34.4		20.1	42.6		38.9	63.6	4.9	78.5	71.1	7.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	34.4		20.1	42.6		38.9	63.6	4.9	78.5	71.1	7.2
LOS	D	C		C	D		D	E	A	E	E	A
Approach Delay		35.3			39.4			49.6			47.8	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	44.2	97.0		24.1	139.8		17.9	164.0	0.0	12.8	125.5	1.7
Queue Length 95th (m)	82.5	142.5		43.1	#230.0		27.0	189.7	13.8	27.2	155.0	22.7
Internal Link Dist (m)		218.0			643.9			1484.4			1592.5	
Turn Bay Length (m)	90.0			100.0			185.0		135.0	105.0		95.0
Base Capacity (vph)	447	1608		547	1511		373	848	815	84	524	634
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.52		0.32	0.68		0.23	0.65	0.19	0.55	0.79	0.43

Intersection Summary

Area Type: Other
 Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 154 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 41.9

Intersection LOS: D

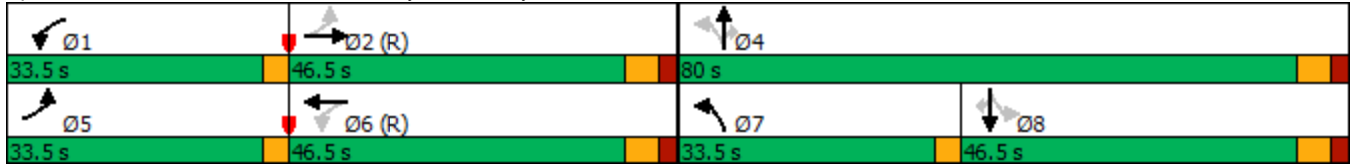
Intersection Capacity Utilization 96.6% ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: Ninth Line & Derry Rd E/Derry Rd W



Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Future Background 2032

08/17/2025

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘↙	↗
Traffic Volume (vph)	924	70	0	1201	40	145
Future Volume (vph)	924	70	0	1201	40	145
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	1.00	0.95	0.97	1.00
Frt	0.989					0.850
Flt Protected					0.950	
Satd. Flow (prot)	3386	0	0	3424	3135	1517
Flt Permitted					0.950	
Satd. Flow (perm)	3386	0	0	3424	3135	1517
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	17					74
Link Speed (k/h)	80			48	60	
Link Distance (m)	358.0			242.0	515.1	
Travel Time (s)	16.1			18.2	30.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	1%	8%	1%	7%	2%
Adj. Flow (vph)	943	71	0	1226	41	148
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1014	0	0	1226	41	148
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	1.8			1.8	6.1	6.1
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Prot
Protected Phases	4			8	2	2
Permitted Phases						
Detector Phase	4			8	2	2
Switch Phase						

Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Future Background 2032

08/17/2025



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	8.0			8.0	8.0	8.0
Minimum Split (s)	26.0			26.0	26.0	26.0
Total Split (s)	34.0			34.0	26.0	26.0
Total Split (%)	56.7%			56.7%	43.3%	43.3%
Maximum Green (s)	28.0			28.0	20.0	20.0
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 Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	C-Min	C-Min
Walk Time (s)	8.0			8.0	8.0	8.0
Flash Dont Walk (s)	12.0			12.0	12.0	12.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	38.4			38.4	9.6	9.6
Actuated g/C Ratio	0.64			0.64	0.16	0.16
v/c Ratio	0.47			0.56	0.08	0.49
Control Delay	5.0			7.7	20.6	17.8
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	5.0			7.7	20.6	17.8
LOS	A			A	C	B
Approach Delay	5.0			7.7	18.4	
Approach LOS	A			A	B	
Queue Length 50th (m)	14.3			30.5	2.0	7.5
Queue Length 95th (m)	31.4			57.6	5.1	19.7
Internal Link Dist (m)	334.0			218.0	491.1	
Turn Bay Length (m)						
Base Capacity (vph)	2172			2190	1045	555
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	0.47			0.56	0.04	0.27

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

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

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 7.4

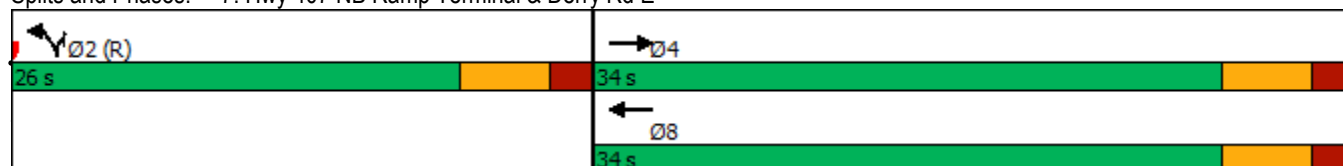
Intersection LOS: A

Intersection Capacity Utilization 51.7%

ICU Level of Service A

Analysis Period (min) 15

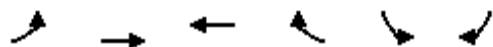
Splits and Phases: 7: Hwy 407 NB Ramp Terminal & Derry Rd E



Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

Future Background 2032

08/17/2025

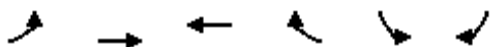


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	841	1076	147	166	235
Future Volume (vph)	0	841	1076	147	166	235
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Fr t			0.982			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3390	3362	0	3288	1532
Flt Permitted					0.950	
Satd. Flow (perm)	0	3390	3362	0	3288	1532
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			36			61
Link Speed (k/h)		80	80		60	
Link Distance (m)		1052.5	358.0		426.8	
Travel Time (s)		47.4	16.1		25.6	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	2%	1%	1%	2%	1%
Adj. Flow (vph)	0	858	1098	150	169	240
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	858	1248	0	169	240
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.4	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Detector Phase		4	8		6	6
Switch Phase						

Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

Future Background 2032

08/17/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)		5.0	5.0		5.0	5.0
Minimum Split (s)		22.5	22.5		22.5	22.5
Total Split (s)		35.0	35.0		25.0	25.0
Total Split (%)		58.3%	58.3%		41.7%	41.7%
Maximum Green (s)		30.5	30.5		20.5	20.5
Yellow Time (s)		3.5	3.5		3.5	3.5
All-Red Time (s)		1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effect Green (s)		38.5	38.5		12.5	12.5
Actuated g/C Ratio		0.64	0.64		0.21	0.21
v/c Ratio		0.39	0.58		0.25	0.65
Control Delay		6.7	5.4		19.2	23.8
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		6.7	5.4		19.2	23.8
LOS		A	A		B	C
Approach Delay		6.7	5.4		21.9	
Approach LOS		A	A		C	
Queue Length 50th (m)		19.7	17.4		8.0	17.8
Queue Length 95th (m)		39.5	28.6		12.7	32.4
Internal Link Dist (m)		1028.5	334.0		402.8	
Turn Bay Length (m)						
Base Capacity (vph)		2174	2169		1123	563
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		0.39	0.58		0.15	0.43

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

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

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 8.5

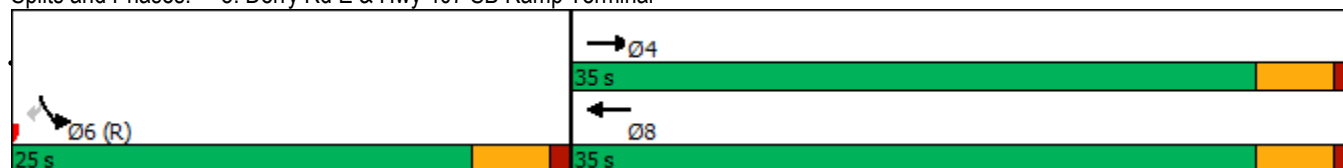
Intersection LOS: A

Intersection Capacity Utilization 59.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Derry Rd E & Hwy 407 SB Ramp Terminal



Lanes, Volumes, Timings

Future Background 2037

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	223	5	470	2	1182	199	0	1547	386
Future Volume (vph)	0	0	0	223	5	470	2	1182	199	0	1547	386
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.88	1.00	0.95	0.95	1.00	0.91	1.00
Ped Bike Factor						0.98						
Frt						0.850		0.978				0.850
Flt Protected				0.950	0.954		0.950					
Satd. Flow (prot)	1784	0	1784	1507	1518	2250	1729	3186	0	0	4558	1334
Flt Permitted				0.950	0.954		0.130					
Satd. Flow (perm)	1784	0	1784	1507	1518	2201	237	3186	0	0	4558	1334
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						360		15				294
Link Speed (k/h)		30			60			60			60	
Link Distance (m)		149.8			217.3			393.8			859.9	
Travel Time (s)		18.0			13.0			23.6			51.6	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	9%	0%	21%	0%	6%	7%	2%	9%	16%
Adj. Flow (vph)	0	0	0	235	5	495	2	1244	209	0	1628	406
Shared Lane Traffic (%)				49%								
Lane Group Flow (vph)	0	0	0	120	120	495	2	1453	0	0	1628	406
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1		1	1	2	1	1	2			2	1
Detector Template	Left		Right	Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (m)	6.1		6.1	6.1	30.5	6.1	6.1	30.5			30.5	6.1
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Size(m)	6.1		6.1	6.1	1.8	6.1	6.1	1.8			1.8	6.1
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(m)					28.7			28.7			28.7	
Detector 2 Size(m)					1.8			1.8			1.8	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		Prot	Split	NA	Perm	Perm	NA			NA	Perm
Protected Phases	3		3	4	4			6			2	
Permitted Phases						4	6					2

Lanes, Volumes, Timings

Future Background 2037

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/17/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3		3	4	4	4	6	6			2	2
Switch Phase												
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0	20.0	20.0			20.0	20.0
Minimum Split (s)	17.3		17.3	50.6	50.6	50.6	41.5	41.5			41.5	41.5
Total Split (s)	21.5		21.5	62.6	62.6	62.6	75.9	75.9			54.4	54.4
Total Split (%)	13.4%		13.4%	39.1%	39.1%	39.1%	47.4%	47.4%			34.0%	34.0%
Maximum Green (s)	14.2		14.2	55.0	55.0	55.0	68.4	68.4			46.9	46.9
Yellow Time (s)	4.5		4.5	5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)	2.8		2.8	2.6	2.6	2.6	2.5	2.5			2.5	2.5
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	7.3		7.3	7.6	7.6	7.6	7.5	7.5			7.5	7.5
Lead/Lag	Lead		Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	None		None	None	None	None	C-Max	C-Max			C-Max	C-Max
Walk Time (s)				10.0	10.0	10.0	10.0	10.0			10.0	10.0
Flash Dont Walk (s)				33.0	33.0	33.0	24.0	24.0			24.0	24.0
Pedestrian Calls (#/hr)				0	0	0	0	0			0	0
Act Effect Green (s)				20.8	20.8	20.8	124.1	124.1			124.1	124.1
Actuated g/C Ratio				0.13	0.13	0.13	0.78	0.78			0.78	0.78
v/c Ratio				0.62	0.61	0.83	0.01	0.59			0.46	0.37
Control Delay				77.7	77.4	29.6	4.0	11.6			7.4	2.8
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				77.7	77.4	29.6	4.0	11.6			7.4	2.8
LOS				E	E	C	A	B			A	A
Approach Delay					45.3			11.6			6.5	
Approach LOS					D			B			A	
Queue Length 50th (m)				38.8	38.8	24.6	0.1	145.8			57.2	7.6
Queue Length 95th (m)				56.9	56.8	44.9	m0.4	131.0			91.5	24.3
Internal Link Dist (m)		125.8			193.3			369.8			835.9	
Turn Bay Length (m)												
Base Capacity (vph)				518	521	992	183	2475			3536	1100
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.23	0.23	0.50	0.01	0.59			0.46	0.37

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 147 (92%), Referenced to phase 2:SBT and 6:NBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 15.0

Intersection LOS: B

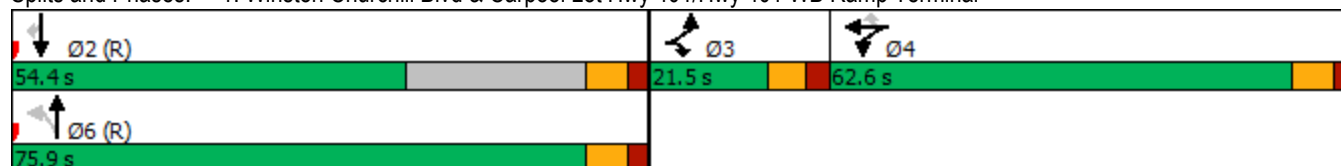
Intersection Capacity Utilization 71.8%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	←←←	→		↑↑↑	↑↑↑	
Traffic Volume (vph)	478	211	0	836	909	730
Future Volume (vph)	478	211	0	836	909	730
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	0.91
Frt	0.994	0.850			0.933	
Flt Protected	0.954					
Satd. Flow (prot)	3079	1367	0	4824	4262	0
Flt Permitted	0.954					
Satd. Flow (perm)	3079	1367	0	4824	4262	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4	64			164	
Link Speed (k/h)	50			60	60	
Link Distance (m)	280.6			247.8	393.8	
Travel Time (s)	20.2			14.9	23.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	3%	2%	3%	7%	11%
Adj. Flow (vph)	503	222	0	880	957	768
Shared Lane Traffic (%)		10%				
Lane Group Flow (vph)	525	200	0	880	1725	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.4			7.4	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	6.1	6.1		30.5	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	6.1		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				28.7	28.7	
Detector 2 Size(m)				1.8	1.8	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Detector Phase	4	4		2	2	
Switch Phase						

Lanes, Volumes, Timings
2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal

Future Background 2037

08/17/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		20.0	20.0	
Minimum Split (s)	22.5	22.5		31.5	31.5	
Total Split (s)	80.5	80.5		79.5	79.5	
Total Split (%)	50.3%	50.3%		49.7%	49.7%	
Maximum Green (s)	72.0	72.0		72.0	72.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	8.5	8.5		7.5	7.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				17.0	17.0	
Pedestrian Calls (#/hr)				0	0	
Act Effect Green (s)	34.0	34.0		110.0	110.0	
Actuated g/C Ratio	0.21	0.21		0.69	0.69	
v/c Ratio	0.80	0.59		0.27	0.58	
Control Delay	68.5	44.2		14.8	10.7	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	68.5	44.2		14.8	10.7	
LOS	E	D		B	B	
Approach Delay	61.8			14.8	10.7	
Approach LOS	E			B	B	
Queue Length 50th (m)	82.2	43.4		39.3	42.3	
Queue Length 95th (m)	96.4	68.9		72.1	43.9	
Internal Link Dist (m)	256.6			223.8	369.8	
Turn Bay Length (m)						
Base Capacity (vph)	1387	650		3315	2980	
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	0.38	0.31		0.27	0.58	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 149 (93%), Referenced to phase 2:NBSB and 6:, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 22.9

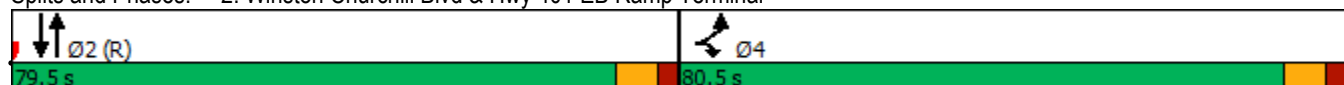
Intersection LOS: C

Intersection Capacity Utilization 65.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal



Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentia Rd

Future Background 2037

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	320	237	57	74	100	135	75	1212	95	272	559	152
Future Volume (vph)	320	237	57	74	100	135	75	1212	95	272	559	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (m)	7.6			2.5			7.6			7.6		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	0.98		0.97	0.99		0.96	1.00		0.98	1.00		0.98
Fr _t			0.850			0.850			0.850			0.850
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3372	3614	1601	1722	3579	1512	3471	5142	1570	3437	4902	1484
Fl _t Permitted	0.950			0.597			0.950			0.950		
Satd. Flow (perm)	3304	3614	1553	1068	3579	1459	3456	5142	1540	3430	4902	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85			85			153			160
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		633.5			370.2			729.2			247.8	
Travel Time (s)		38.0			22.2			43.8			14.9	
Confl. Peds. (#/hr)	23		18	18		23	9		7	7		9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	2%	6%	2%	8%	2%	2%	4%	3%	7%	10%
Adj. Flow (vph)	337	249	60	78	105	142	79	1276	100	286	588	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	337	249	60	78	105	142	79	1276	100	286	588	160
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentia Rd

Future Background 2037

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6		5	2	3
Permitted Phases			8	4		4			6			2
Detector Phase	3	8	1	7	4	5	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0	7.0	7.0	10.0	10.0	7.0	10.0	7.0
Minimum Split (s)	12.0	54.5	12.0	11.5	54.5	12.0	12.0	51.5	51.5	12.0	51.5	12.0
Total Split (s)	26.0	68.9	13.0	11.6	54.5	23.0	13.0	56.5	56.5	23.0	66.5	26.0
Total Split (%)	16.3%	43.1%	8.1%	7.3%	34.1%	14.4%	8.1%	35.3%	35.3%	14.4%	41.6%	16.3%
Maximum Green (s)	21.0	61.4	8.0	8.6	47.0	18.0	8.0	49.0	49.0	18.0	59.0	21.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	2.0	3.5	2.0	0.0	3.5	2.0	2.0	3.5	3.5	2.0	3.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.5	5.0	3.0	7.5	5.0	5.0	7.5	7.5	5.0	7.5	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	Min	None	None	C-Max	C-Max	None	C-Max	None
Walk Time (s)		10.0			10.0			10.0	10.0		10.0	
Flash Dont Walk (s)		37.0			37.0			34.0	34.0		34.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	19.6	24.1	35.7	23.7	10.8	31.8	9.1	86.0	86.0	18.5	95.4	117.6
Actuated g/C Ratio	0.12	0.15	0.22	0.15	0.07	0.20	0.06	0.54	0.54	0.12	0.60	0.74
v/c Ratio	0.82	0.46	0.14	0.41	0.43	0.39	0.40	0.46	0.11	0.72	0.20	0.14
Control Delay	84.5	64.5	3.7	54.5	77.2	23.6	78.5	24.1	0.6	64.8	21.0	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.5	64.5	3.7	54.5	77.2	23.6	78.5	24.1	0.6	64.8	21.0	4.7
LOS	F	E	A	D	E	C	E	C	A	E	C	A
Approach Delay		69.3			48.3			25.4			30.6	
Approach LOS		E			D			C			C	
Queue Length 50th (m)	54.1	38.4	0.0	19.6	17.3	14.7	12.7	90.0	0.0	47.0	43.0	5.7
Queue Length 95th (m)	71.7	52.0	5.3	33.4	27.4	33.2	21.4	113.0	1.1	57.5	54.9	24.1
Internal Link Dist (m)		609.5			346.2			705.2			223.8	
Turn Bay Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Base Capacity (vph)	442	1386	417	195	1051	374	201	2765	899	421	2924	1124
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.18	0.14	0.40	0.10	0.38	0.39	0.46	0.11	0.68	0.20	0.14

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 65 (41%), Referenced to phase 2:SBT and 6:NBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 37.3

Intersection LOS: D

Lanes, Volumes, Timings
 3: Winston Churchill Blvd & Argentinia Rd

Future Background 2037

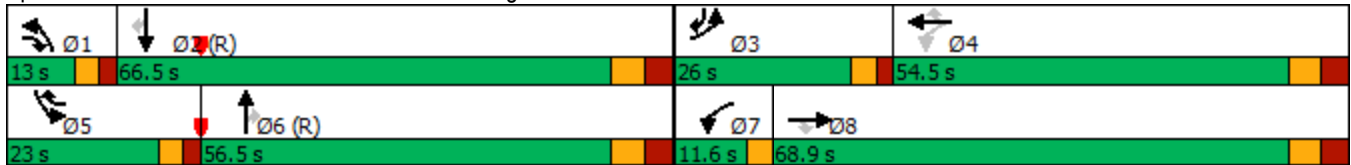
08/17/2025

Intersection Capacity Utilization 99.2%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Winston Churchill Blvd & Argentinia Rd



Lanes, Volumes, Timings
4: Tenth Line W & Argentinia Rd

Future Background 2037

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	355	36	69	166	10	7	4	214	2	4	1
Future Volume (vph)	3	355	36	69	166	10	7	4	214	2	4	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	0.0		0.0	130.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
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
Ped Bike Factor	1.00		0.97	1.00		0.97	1.00	0.99		1.00	1.00	
Frt			0.850			0.850		0.853			0.970	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1847	1633	1738	1830	1633	1825	1602	0	1217	1858	0
Flt Permitted	0.648			0.466			0.580			0.617		
Satd. Flow (perm)	1240	1847	1586	849	1830	1592	1112	1602	0	790	1858	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			71			223			1
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		1323.5			633.5			748.2			676.6	
Travel Time (s)		79.4			38.0			53.9			48.7	
Confl. Peds. (#/hr)	3		5	5		3	2		1	1		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	4%	0%	5%	5%	0%	0%	0%	1%	50%	0%	0%
Adj. Flow (vph)	3	370	38	72	173	10	7	4	223	2	4	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	370	38	72	173	10	7	227	0	2	5	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)		11.1			11.1			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
4: Tenth Line W & Argentia Rd

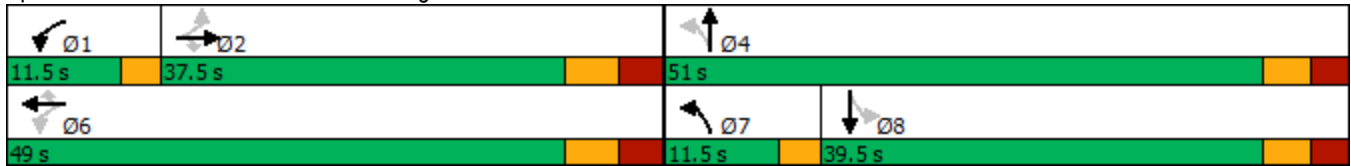
Future Background 2037

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		7	4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	2	2	2	1	6	6	7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0	10.0	7.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5	35.5	11.5	35.5	35.5	11.5	39.5		39.5	39.5	
Total Split (s)	37.5	37.5	37.5	11.5	49.0	49.0	11.5	51.0		39.5	39.5	
Total Split (%)	37.5%	37.5%	37.5%	11.5%	49.0%	49.0%	11.5%	51.0%		39.5%	39.5%	
Maximum Green (s)	30.0	30.0	30.0	8.5	41.5	41.5	8.5	44.5		33.0	33.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	3.5		3.5	3.5	
All-Red Time (s)	3.5	3.5	3.5	0.0	3.5	3.5	0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	3.0	7.5	7.5	3.0	6.5		6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	None	Max	Max	None	Min		Min	Min	
Walk Time (s)	10.0	10.0	10.0		10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)	18.0	18.0	18.0		18.0	18.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0		0	0	
Act Effct Green (s)	33.5	33.5	33.5	46.1	41.6	41.6	15.3	11.8		10.0	10.0	
Actuated g/C Ratio	0.50	0.50	0.50	0.68	0.62	0.62	0.23	0.17		0.15	0.15	
v/c Ratio	0.00	0.40	0.05	0.11	0.15	0.01	0.02	0.49		0.02	0.02	
Control Delay	11.7	14.1	0.1	4.7	6.6	0.0	19.4	7.9		27.0	25.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	11.7	14.1	0.1	4.7	6.6	0.0	19.4	7.9		27.0	25.0	
LOS	B	B	A	A	A	A	B	A		C	C	
Approach Delay		12.8			5.8			8.2			25.6	
Approach LOS		B			A			A			C	
Queue Length 50th (m)	0.2	27.4	0.0	2.2	7.3	0.0	0.7	0.4		0.2	0.4	
Queue Length 95th (m)	1.8	61.0	0.0	8.2	20.4	0.0	3.3	15.4		2.1	3.3	
Internal Link Dist (m)		1299.5			609.5			724.2			652.6	
Turn Bay Length (m)	20.0						130.0			45.0		
Base Capacity (vph)	615	916	838	692	1128	1009	342	1134		387	911	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.00	0.40	0.05	0.10	0.15	0.01	0.02	0.20		0.01	0.01	
Intersection Summary												
Area Type:	Other											
Cycle Length: 100												
Actuated Cycle Length: 67.5												
Natural Cycle: 100												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.49												
Intersection Signal Delay: 9.7							Intersection LOS: A					
Intersection Capacity Utilization 63.6%							ICU Level of Service B					

Analysis Period (min) 15

Splits and Phases: 4: Tenth Line W & Argentia Rd



Lanes, Volumes, Timings
5: Ninth Line & Argentinia Rd

Future Background 2037

08/17/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	43	29	444	204	92	805
Future Volume (vph)	43	29	444	204	92	805
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		100.0	45.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1526	3579	1601	1789	3544
Flt Permitted	0.950				0.479	
Satd. Flow (perm)	1789	1526	3579	1601	902	3544
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		31		219		
Link Speed (k/h)	60		60			60
Link Distance (m)	1323.5		1616.5			667.9
Travel Time (s)	79.4		97.0			40.1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	7%	2%	2%	2%	3%
Adj. Flow (vph)	46	31	477	219	99	866
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	31	477	219	99	866
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.4		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (m)	6.1	6.1	30.5	6.1	6.1	30.5
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	6.1	1.8	6.1	6.1	1.8
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		6			2

Lanes, Volumes, Timings
5: Ninth Line & Argentinia Rd

Future Background 2037
08/17/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		4		6	2	
Detector Phase	8	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	22.5	30.0	43.5	43.5	43.5	43.5
Total Split (s)	22.5	30.0	43.5	43.5	43.5	43.5
Total Split (%)	30.6%	40.8%	59.2%	59.2%	59.2%	59.2%
Maximum Green (s)	18.0	24.0	37.0	37.0	37.0	37.0
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.5	6.5	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)	7.0	10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)	11.0	14.0	27.0	27.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	14.5	20.4	51.3	51.3	51.3	51.3
Actuated g/C Ratio	0.21	0.30	0.74	0.74	0.74	0.74
v/c Ratio	0.12	0.07	0.18	0.18	0.15	0.33
Control Delay	20.5	8.0	6.3	1.8	8.1	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	8.0	6.3	1.8	8.1	7.2
LOS	C	A	A	A	A	A
Approach Delay	15.5		4.9			7.3
Approach LOS	B		A			A
Queue Length 50th (m)	5.7	0.0	16.2	0.0	6.3	33.8
Queue Length 95th (m)	10.7	5.4	23.9	8.3	13.9	46.5
Internal Link Dist (m)	1299.5		1592.5			643.9
Turn Bay Length (m)				100.0	45.0	
Base Capacity (vph)	673	561	2656	1244	669	2629
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.06	0.18	0.18	0.15	0.33
Intersection Summary						
Area Type:	Other					
Cycle Length: 73.5						
Actuated Cycle Length: 69.1						
Natural Cycle: 75						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.33						
Intersection Signal Delay: 6.7				Intersection LOS: A		
Intersection Capacity Utilization 39.4%				ICU Level of Service A		
Analysis Period (min) 15						

Splits and Phases: 5: Ninth Line & Argentia Rd



Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Future Background 2037

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	733	38	84	401	16	105	349	127	22	459	301
Future Volume (vph)	171	733	38	84	401	16	105	349	127	22	459	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	100.0		0.0	185.0		135.0	105.0		95.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.993			0.994				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	3547	0	1722	3594	0	1755	3510	1585	1825	3544	1570
Flt Permitted	0.463			0.304			0.222			0.537		
Satd. Flow (perm)	864	3547	0	551	3594	0	410	3510	1585	1032	3544	1570
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			3				131			310
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		242.0			667.9			1508.4			1616.5	
Travel Time (s)		14.5			40.1			90.5			97.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	2%	6%	6%	1%	0%	4%	4%	3%	0%	3%	4%
Adj. Flow (vph)	176	756	39	87	413	16	108	360	131	23	473	310
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	795	0	87	429	0	108	360	131	23	473	310
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	

Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Future Background 2037

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		1	6		7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	42.5		11.5	42.5		11.5	40.0	40.0	40.5	40.5	40.5
Total Split (s)	13.0	62.0		13.0	62.0		18.0	85.0	85.0	67.0	67.0	67.0
Total Split (%)	8.1%	38.8%		8.1%	38.8%		11.3%	53.1%	53.1%	41.9%	41.9%	41.9%
Maximum Green (s)	10.0	55.5		10.0	55.5		15.0	79.0	79.0	60.5	60.5	60.5
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.5		0.0	2.5		0.0	2.0	2.0	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.5		3.0	6.5		3.0	6.0	6.0	6.5	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?		Yes		Yes			Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	Max		None	Min	Min	Min	Min	Min
Walk Time (s)		10.0			10.0			10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)		26.0			26.0			24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0			0			0	0	0	0	0
Act Effct Green (s)	104.8	90.1		99.2	87.0		48.7	45.7	45.7	29.0	29.0	29.0
Actuated g/C Ratio	0.66	0.56		0.62	0.54		0.30	0.29	0.29	0.18	0.18	0.18
v/c Ratio	0.28	0.40		0.21	0.22		0.46	0.36	0.24	0.12	0.74	0.58
Control Delay	12.9	20.1		12.7	20.7		46.0	45.6	6.6	53.8	68.7	9.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	20.1		12.7	20.7		46.0	45.6	6.6	53.8	68.7	9.5
LOS	B	C		B	C		D	D	A	D	E	A
Approach Delay		18.8			19.3			37.1			45.5	
Approach LOS		B			B			D			D	
Queue Length 50th (m)	22.6	70.7		9.6	36.4		25.3	47.7	0.0	6.2	75.8	0.0
Queue Length 95th (m)	39.5	86.8		19.3	55.8		38.1	57.7	14.6	14.1	90.2	25.5
Internal Link Dist (m)		218.0			643.9			1484.4			1592.5	
Turn Bay Length (m)	90.0			100.0			185.0		135.0	105.0		95.0
Base Capacity (vph)	637	1998		421	1955		250	1733	848	390	1340	786
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.40		0.21	0.22		0.43	0.21	0.15	0.06	0.35	0.39

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 115 (72%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 30.1

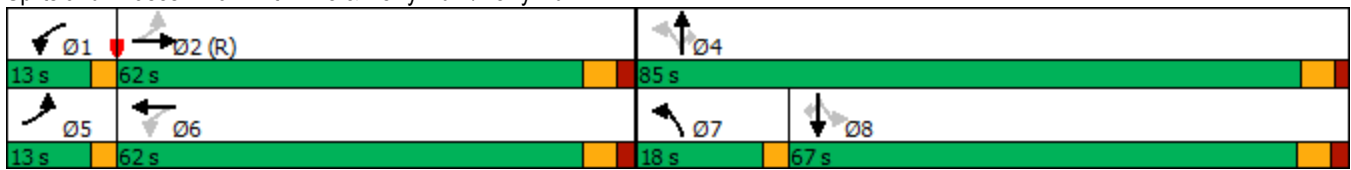
Intersection LOS: C

Intersection Capacity Utilization 64.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Derry Rd E/Derry Rd W



Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Future Background 2037

08/17/2025

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	↑
Traffic Volume (vph)	852	200	0	685	9	109
Future Volume (vph)	852	200	0	685	9	109
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	1.00	0.95	0.97	1.00
Frt	0.971					0.850
Flt Protected					0.950	
Satd. Flow (prot)	3292	0	0	3357	2727	1502
Flt Permitted					0.950	
Satd. Flow (perm)	3292	0	0	3357	2727	1502
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	56					112
Link Speed (k/h)	80			60	60	
Link Distance (m)	358.0			242.0	515.1	
Travel Time (s)	16.1			14.5	30.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	23%	3%
Adj. Flow (vph)	878	206	0	706	9	112
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1084	0	0	706	9	112
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	1.8			1.8	6.1	6.1
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Prot
Protected Phases	4			8	2	2
Permitted Phases						
Detector Phase	4			8	2	2
Switch Phase						

Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Future Background 2037
08/17/2025



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	8.0			8.0	5.0	5.0
Minimum Split (s)	26.0			26.0	24.5	24.5
Total Split (s)	50.0			50.0	30.0	30.0
Total Split (%)	62.5%			62.5%	37.5%	37.5%
Maximum Green (s)	44.0			44.0	25.5	25.5
Yellow Time (s)	4.0			4.0	3.5	3.5
All-Red Time (s)	2.0			2.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	C-Min	C-Min
Walk Time (s)	8.0			8.0	8.0	8.0
Flash Dont Walk (s)	12.0			12.0	12.0	12.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	62.5			62.5	7.0	7.0
Actuated g/C Ratio	0.78			0.78	0.09	0.09
v/c Ratio	0.42			0.27	0.04	0.48
Control Delay	2.9			2.0	32.2	14.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	2.9			2.0	32.2	14.4
LOS	A			A	C	B
Approach Delay	2.9			2.0	15.8	
Approach LOS	A			A	B	
Queue Length 50th (m)	16.3			8.5	0.6	0.0
Queue Length 95th (m)	23.7			13.2	2.6	13.4
Internal Link Dist (m)	334.0			218.0	491.1	
Turn Bay Length (m)						
Base Capacity (vph)	2585			2624	869	555
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			0.27	0.01	0.20

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

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

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 3.4

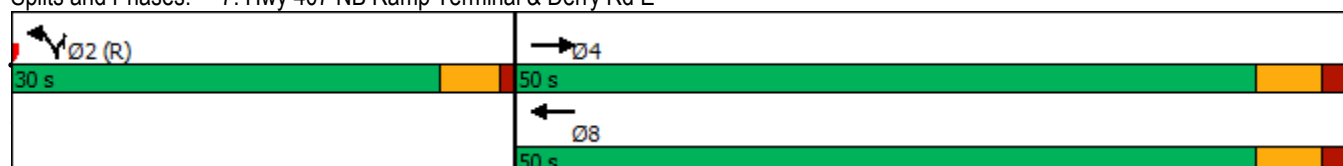
Intersection LOS: A

Intersection Capacity Utilization 47.5%

ICU Level of Service A

Analysis Period (min) 15

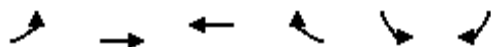
Splits and Phases: 7: Hwy 407 NB Ramp Terminal & Derry Rd E



Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

Future Background 2037

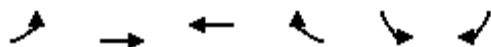
08/17/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	1037	542	145	26	52
Future Volume (vph)	0	1037	542	145	26	52
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Fr t			0.968			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3390	3250	0	3106	1334
Flt Permitted					0.950	
Satd. Flow (perm)	0	3390	3250	0	3106	1334
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			77			55
Link Speed (k/h)		80	80		60	
Link Distance (m)		1052.5	358.0		426.8	
Travel Time (s)		47.4	16.1		25.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	3%	3%	8%	16%
Adj. Flow (vph)	0	1092	571	153	27	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1092	724	0	27	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.4	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Detector Phase		4	8		6	6
Switch Phase						

Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

Future Background 2037
08/17/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)		5.0	5.0		5.0	5.0
Minimum Split (s)		22.5	22.5		22.5	22.5
Total Split (s)		53.0	53.0		27.0	27.0
Total Split (%)		66.3%	66.3%		33.8%	33.8%
Maximum Green (s)		48.5	48.5		22.5	22.5
Yellow Time (s)		3.5	3.5		3.5	3.5
All-Red Time (s)		1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		64.3	64.3		6.7	6.7
Actuated g/C Ratio		0.80	0.80		0.08	0.08
v/c Ratio		0.40	0.28		0.10	0.34
Control Delay		2.9	1.3		33.8	16.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		2.9	1.3		33.8	16.1
LOS		A	A		C	B
Approach Delay		2.9	1.3		22.0	
Approach LOS		A	A		C	
Queue Length 50th (m)		16.3	6.3		2.0	0.0
Queue Length 95th (m)		29.3	6.6		5.5	9.8
Internal Link Dist (m)		1028.5	334.0		402.8	
Turn Bay Length (m)						
Base Capacity (vph)		2724	2626		873	414
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		0.40	0.28		0.03	0.13

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

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

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.40

Intersection Signal Delay: 3.1

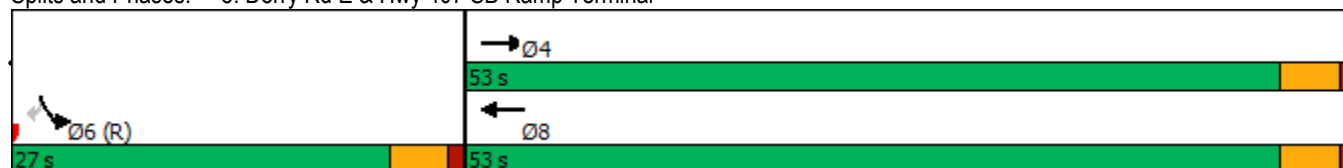
Intersection LOS: A

Intersection Capacity Utilization 41.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Derry Rd E & Hwy 407 SB Ramp Terminal



Lanes, Volumes, Timings

Future Background 2037

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	0	18	802	13	755	5	1112	219	0	1430	434
Future Volume (vph)	7	0	18	802	13	755	5	1112	219	0	1430	434
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.88	1.00	0.95	0.95	1.00	0.91	1.00
Frt			0.850			0.850		0.975				0.850
Flt Protected	0.950			0.950	0.954		0.950					
Satd. Flow (prot)	1601	0	1547	1643	1649	2723	1712	3333	0	0	4644	1446
Flt Permitted	0.950			0.950	0.954		0.103					
Satd. Flow (perm)	1601	0	1547	1643	1649	2723	186	3333	0	0	4644	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			674		15				295
Link Speed (k/h)		30			60			60			60	
Link Distance (m)		149.8			217.3			393.8			859.9	
Travel Time (s)		18.0			13.0			23.6			51.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	8%	0%	0%	0%	1%	0%	1%	0%	7%	2%	7%	7%
Adj. Flow (vph)	7	0	19	835	14	786	5	1158	228	0	1490	452
Shared Lane Traffic (%)				49%								
Lane Group Flow (vph)	7	0	19	426	423	786	5	1386	0	0	1490	452
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	24		14	97		14	24		97
Number of Detectors	1		1	1	2	1	1	2			2	1
Detector Template	Left		Right	Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (m)	6.1		6.1	6.1	30.5	6.1	6.1	30.5			30.5	6.1
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Size(m)	6.1		6.1	6.1	1.8	6.1	6.1	1.8			1.8	6.1
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(m)					28.7			28.7			28.7	
Detector 2 Size(m)					1.8			1.8			1.8	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		Prot	Split	NA	Perm	Perm	NA			NA	Perm
Protected Phases	3		3	4	4			6			2	
Permitted Phases						4	6					2
Detector Phase	3		3	4	4	4	6	6			2	2
Switch Phase												

Lanes, Volumes, Timings

Future Background 2037

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/17/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0	20.0	20.0			20.0	20.0
Minimum Split (s)	17.3		17.3	50.6	50.6	50.6	41.5	41.5			41.5	41.5
Total Split (s)	45.4		45.4	58.4	58.4	58.4	56.2	56.2			56.2	56.2
Total Split (%)	28.4%		28.4%	36.5%	36.5%	36.5%	35.1%	35.1%			35.1%	35.1%
Maximum Green (s)	38.1		38.1	50.8	50.8	50.8	48.7	48.7			48.7	48.7
Yellow Time (s)	4.5		4.5	5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)	2.8		2.8	2.6	2.6	2.6	2.5	2.5			2.5	2.5
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	7.3		7.3	7.6	7.6	7.6	7.5	7.5			7.5	7.5
Lead/Lag	Lead		Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	None		None	None	None	None	C-Max	C-Max			C-Max	C-Max
Walk Time (s)				10.0	10.0	10.0	10.0	10.0			10.0	10.0
Flash Dont Walk (s)				33.0	33.0	33.0	24.0	24.0			24.0	24.0
Pedestrian Calls (#/hr)				0	0	0	0	0			0	0
Act Effct Green (s)	10.0		10.0	54.8	54.8	54.8	79.7	79.7			79.7	79.7
Actuated g/C Ratio	0.06		0.06	0.34	0.34	0.34	0.50	0.50			0.50	0.50
v/c Ratio	0.07		0.11	0.76	0.75	0.57	0.05	0.83			0.64	0.52
Control Delay	72.4		1.3	54.8	54.2	6.9	27.0	36.0			34.6	13.4
Queue Delay	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	72.4		1.3	54.8	54.2	6.9	27.0	36.0			34.6	13.4
LOS	E		A	D	D	A	C	D			C	B
Approach Delay		20.4			31.6			35.9			29.7	
Approach LOS		C			C			D			C	
Queue Length 50th (m)	2.1		0.0	127.1	125.6	13.9	0.7	210.6			137.2	33.6
Queue Length 95th (m)	7.7		0.0	145.7	144.3	27.7	m2.5	#309.2			183.5	80.0
Internal Link Dist (m)		125.8			193.3			369.8			835.9	
Turn Bay Length (m)												
Base Capacity (vph)	381		430	587	590	1407	92	1667			2313	868
Starvation Cap Reductn	0		0	0	0	0	0	0			0	0
Spillback Cap Reductn	0		0	0	0	0	0	0			0	0
Storage Cap Reductn	0		0	0	0	0	0	0			0	0
Reduced v/c Ratio	0.02		0.04	0.73	0.72	0.56	0.05	0.83			0.64	0.52

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 56 (35%), Referenced to phase 2:SBT and 6:NBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 32.0

Intersection LOS: C

Intersection Capacity Utilization 87.7%

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: 1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

 Ø2 (R)	 Ø3	 Ø4
56.2 s	45.4 s	58.4 s
 Ø6 (R)		
56.2 s		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	340	329	0	941	1744	572
Future Volume (vph)	340	329	0	941	1744	572
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	0.91
Frt	0.961	0.850			0.963	
Flt Protected	0.964					
Satd. Flow (prot)	2936	1354	0	4777	4691	0
Flt Permitted	0.964					
Satd. Flow (perm)	2936	1354	0	4777	4691	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	3	3			67	
Link Speed (k/h)	50			60	60	
Link Distance (m)	280.6			247.8	393.8	
Travel Time (s)	20.2			14.9	23.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	14%	4%	2%	4%	2%	2%
Adj. Flow (vph)	362	350	0	1001	1855	609
Shared Lane Traffic (%)		36%				
Lane Group Flow (vph)	488	224	0	1001	2464	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.4			7.4	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	6.1	6.1		30.5	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	6.1		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				28.7	28.7	
Detector 2 Size(m)				1.8	1.8	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Detector Phase	4	4		2	2	
Switch Phase						

Lanes, Volumes, Timings
2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal

Future Background 2037

08/17/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		20.0	20.0	
Minimum Split (s)	22.5	22.5		31.5	31.5	
Total Split (s)	80.5	80.5		79.5	79.5	
Total Split (%)	50.3%	50.3%		49.7%	49.7%	
Maximum Green (s)	72.0	72.0		72.0	72.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	8.5	8.5		7.5	7.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				17.0	17.0	
Pedestrian Calls (#/hr)				0	0	
Act Effect Green (s)	34.3	34.3		109.7	109.7	
Actuated g/C Ratio	0.21	0.21		0.69	0.69	
v/c Ratio	0.77	0.77		0.31	0.76	
Control Delay	67.0	74.9		7.6	12.4	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	67.0	74.9		7.6	12.4	
LOS	E	E		A	B	
Approach Delay	69.5			7.6	12.4	
Approach LOS	E			A	B	
Queue Length 50th (m)	76.5	74.2		55.6	109.0	
Queue Length 95th (m)	87.6	99.2		74.6	135.6	
Internal Link Dist (m)	256.6			223.8	369.8	
Turn Bay Length (m)						
Base Capacity (vph)	1322	610		3276	3238	
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	0.37	0.37		0.31	0.76	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 48 (30%), Referenced to phase 2:NBSB and 6:, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 21.0

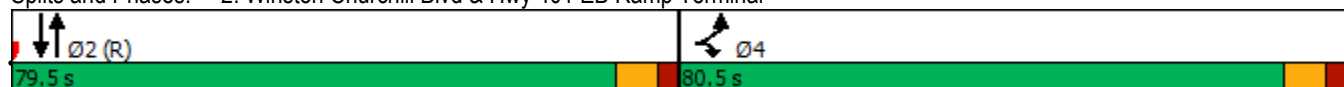
Intersection LOS: C

Intersection Capacity Utilization 76.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal



Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentia Rd

Future Background 2037

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	328	324	199	268	572	284	220	755	94	229	1235	346
Future Volume (vph)	328	324	199	268	572	284	220	755	94	229	1235	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (m)	7.6			2.5			7.6			7.6		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	0.98		0.96	0.98		0.95	1.00		0.99	1.00		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3437	3510	1601	1807	3614	1601	3437	5193	1555	3471	5043	1601
Flt Permitted	0.950			0.541			0.950			0.950		
Satd. Flow (perm)	3375	3510	1530	1008	3614	1518	3434	5193	1533	3467	5043	1571
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			88			85			119			65
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		633.5			370.2			729.2			247.8	
Travel Time (s)		38.0			22.2			43.8			14.9	
Confl. Peds. (#/hr)	40		32	32		40	6		2	2		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
Heavy Vehicles (%)	3%	4%	2%	1%	1%	2%	3%	1%	5%	2%	4%	2%
Adj. Flow (vph)	331	327	201	271	578	287	222	763	95	231	1247	349
Shared Lane Traffic (%)												
Lane Group Flow (vph)	331	327	201	271	578	287	222	763	95	231	1247	349
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	97		97	24		97	97		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentia Rd

Future Background 2037

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6		5	2	3
Permitted Phases			8	4		4			6			2
Detector Phase	3	8	1	7	4	5	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0	7.0	7.0	10.0	10.0	7.0	10.0	7.0
Minimum Split (s)	12.0	54.5	12.0	11.5	54.5	12.0	12.0	51.5	51.5	12.0	51.5	12.0
Total Split (s)	28.0	62.1	20.0	20.4	54.5	22.0	20.0	55.5	55.5	22.0	57.5	28.0
Total Split (%)	17.5%	38.8%	12.5%	12.8%	34.1%	13.8%	12.5%	34.7%	34.7%	13.8%	35.9%	17.5%
Maximum Green (s)	23.0	54.6	15.0	17.4	47.0	17.0	15.0	48.0	48.0	17.0	50.0	23.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	2.0	3.5	2.0	0.0	3.5	2.0	2.0	3.5	3.5	2.0	3.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.5	5.0	3.0	7.5	5.0	5.0	7.5	7.5	5.0	7.5	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	None
Walk Time (s)		10.0			10.0			10.0	10.0		10.0	
Flash Dont Walk (s)		37.0			37.0			34.0	34.0		34.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	20.1	36.7	54.8	53.7	31.9	50.3	15.6	67.1	67.1	15.9	67.4	90.0
Actuated g/C Ratio	0.13	0.23	0.34	0.34	0.20	0.31	0.10	0.42	0.42	0.10	0.42	0.56
v/c Ratio	0.77	0.41	0.34	0.64	0.80	0.53	0.66	0.35	0.13	0.67	0.59	0.38
Control Delay	79.6	52.8	19.2	43.2	69.8	30.9	79.3	33.9	3.1	72.5	45.0	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.6	52.8	19.2	43.2	69.8	30.9	79.3	33.9	3.1	72.5	45.0	18.4
LOS	E	D	B	D	E	C	E	C	A	E	D	B
Approach Delay		55.3			53.6			40.5			43.4	
Approach LOS		E			D			D			D	
Queue Length 50th (m)	53.1	46.8	24.3	61.9	93.2	49.9	35.7	60.5	0.0	38.8	112.3	44.1
Queue Length 95th (m)	69.3	57.1	38.3	78.0	108.8	69.2	48.7	82.8	7.6	m51.1	151.3	64.8
Internal Link Dist (m)		609.5			346.2			705.2			223.8	
Turn Bay Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Base Capacity (vph)	494	1197	597	425	1061	561	355	2177	711	384	2123	943
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.27	0.34	0.64	0.54	0.51	0.63	0.35	0.13	0.60	0.59	0.37

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

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

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 47.2

Intersection LOS: D

Lanes, Volumes, Timings 3: Winston Churchill Blvd & Argentinia Rd

Future Background 2037

08/17/2025

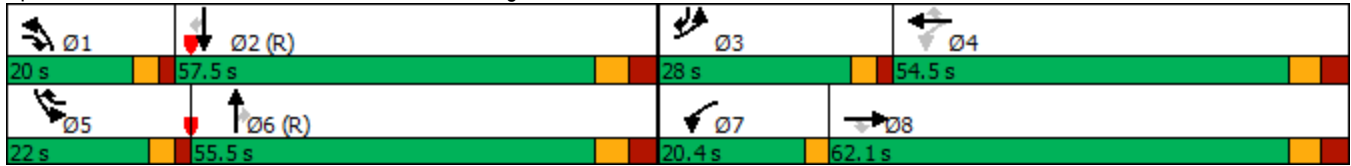
Intersection Capacity Utilization 106.8%

ICU Level of Service G

Analysis Period (min) 15

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

Splits and Phases: 3: Winston Churchill Blvd & Argentinia Rd



Lanes, Volumes, Timings
4: Tenth Line W & Argentinia Rd

Future Background 2037

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	338	96	451	518	5	61	0	281	2	5	2
Future Volume (vph)	1	338	96	451	518	5	61	0	281	2	5	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	0.0		0.0	130.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
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
Ped Bike Factor	0.99		0.96	0.99		0.97	0.99	0.98		1.00	0.99	
Frt			0.850			0.850		0.850			0.957	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	961	1555	1789	1921	1585	1755	1603	0	1825	1828	0
Flt Permitted	0.456			0.433			0.579			0.576		
Satd. Flow (perm)	871	961	1491	807	1921	1531	1062	1603	0	1102	1828	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			71			398			2
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		1323.5			633.5			748.2			676.6	
Travel Time (s)		79.4			38.0			53.9			48.7	
Confl. Peds. (#/hr)	8		12	12		8	8		7	7		8
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	100%	5%	2%	0%	3%	4%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	363	103	485	557	5	66	0	302	2	5	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	363	103	485	557	5	66	302	0	2	7	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)		11.1			11.1			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
4: Tenth Line W & Argentia Rd

Future Background 2037

08/17/2025

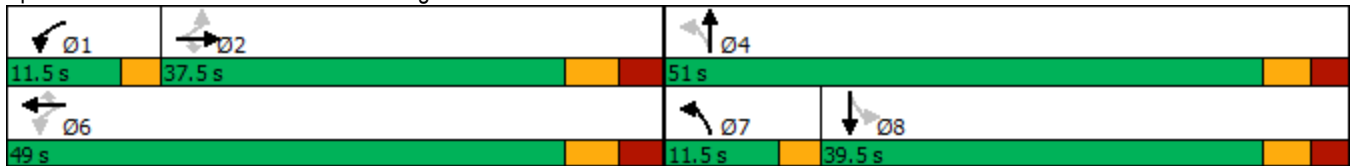
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		7	4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	2	2	2	1	6	6	7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0	10.0	7.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5	35.5	11.5	35.5	35.5	11.5	39.5		39.5	39.5	
Total Split (s)	37.5	37.5	37.5	11.5	49.0	49.0	11.5	51.0		39.5	39.5	
Total Split (%)	37.5%	37.5%	37.5%	11.5%	49.0%	49.0%	11.5%	51.0%		39.5%	39.5%	
Maximum Green (s)	30.0	30.0	30.0	8.5	41.5	41.5	8.5	44.5		33.0	33.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	3.5		3.5	3.5	
All-Red Time (s)	3.5	3.5	3.5	0.0	3.5	3.5	0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	3.0	7.5	7.5	3.0	6.5		6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	None	Max	Max	None	Min		Min	Min	
Walk Time (s)	10.0	10.0	10.0		10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)	18.0	18.0	18.0		18.0	18.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0		0	0	
Act Effct Green (s)	30.1	30.1	30.1	46.2	41.7	41.7	22.1	18.6		10.0	10.0	
Actuated g/C Ratio	0.41	0.41	0.41	0.62	0.56	0.56	0.30	0.25		0.13	0.13	
v/c Ratio	0.00	0.93	0.15	0.79	0.52	0.01	0.17	0.43		0.01	0.03	
Control Delay	14.0	57.3	4.2	21.1	13.0	0.0	19.6	2.7		29.5	26.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	14.0	57.3	4.2	21.1	13.0	0.0	19.6	2.7		29.5	26.3	
LOS	B	E	A	C	B	A	B	A		C	C	
Approach Delay		45.5			16.7			5.8			27.0	
Approach LOS		D			B			A			C	
Queue Length 50th (m)	0.1	49.8	0.0	34.4	47.9	0.0	6.7	0.0		0.3	0.7	
Queue Length 95th (m)	1.0	#102.3	8.4	#69.8	75.1	0.0	14.9	5.3		2.1	4.1	
Internal Link Dist (m)		1299.5			609.5			724.2			652.6	
Turn Bay Length (m)	20.0						130.0			45.0		
Base Capacity (vph)	353	389	666	614	1077	889	395	1122		491	816	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.00	0.93	0.15	0.79	0.52	0.01	0.17	0.27		0.00	0.01	
Intersection Summary												
Area Type:	Other											
Cycle Length: 100												
Actuated Cycle Length: 74.3												
Natural Cycle: 120												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.93												
Intersection Signal Delay: 21.7							Intersection LOS: C					
Intersection Capacity Utilization 83.4%							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: 4: Tenth Line W & Argentia Rd



Lanes, Volumes, Timings
5: Ninth Line & Argentinia Rd

Future Background 2037

08/17/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	250	198	1006	126	73	805
Future Volume (vph)	250	198	1006	126	73	805
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		100.0	45.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1617	3614	1617	1772	3444
Flt Permitted	0.950				0.215	
Satd. Flow (perm)	1789	1617	3614	1617	401	3444
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		68		131		
Link Speed (k/h)	60		60			60
Link Distance (m)	1323.5		1616.5			667.9
Travel Time (s)	79.4		97.0			40.1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	1%	1%	3%	6%
Adj. Flow (vph)	260	206	1048	131	76	839
Shared Lane Traffic (%)						
Lane Group Flow (vph)	260	206	1048	131	76	839
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.4		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (m)	6.1	6.1	30.5	6.1	6.1	30.5
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	6.1	1.8	6.1	6.1	1.8
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		6			2

Lanes, Volumes, Timings
5: Ninth Line & Argentinia Rd

Future Background 2037
08/17/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		4		6	2	
Detector Phase	8	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	22.5	30.0	43.5	43.5	43.5	43.5
Total Split (s)	22.5	30.0	43.5	43.5	43.5	43.5
Total Split (%)	30.6%	40.8%	59.2%	59.2%	59.2%	59.2%
Maximum Green (s)	18.0	24.0	37.0	37.0	37.0	37.0
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.5	6.5	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)	7.0	10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)	11.0	14.0	27.0	27.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	21.5	20.0	37.0	37.0	37.0	37.0
Actuated g/C Ratio	0.31	0.29	0.53	0.53	0.53	0.53
v/c Ratio	0.47	0.40	0.54	0.14	0.36	0.46
Control Delay	22.8	15.9	12.0	2.2	15.4	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.8	15.9	12.0	2.2	15.4	11.1
LOS	C	B	B	A	B	B
Approach Delay	19.8		10.9			11.4
Approach LOS	B		B			B
Queue Length 50th (m)	27.0	13.9	43.4	0.0	5.3	32.6
Queue Length 95th (m)	46.6	30.3	58.8	6.5	15.1	45.3
Internal Link Dist (m)	1299.5		1592.5			643.9
Turn Bay Length (m)				100.0	45.0	
Base Capacity (vph)	656	602	1924	922	213	1833
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.34	0.54	0.14	0.36	0.46
Intersection Summary						
Area Type:	Other					
Cycle Length: 73.5						
Actuated Cycle Length: 69.5						
Natural Cycle: 75						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.54						
Intersection Signal Delay: 12.7				Intersection LOS: B		
Intersection Capacity Utilization 64.6%				ICU Level of Service C		
Analysis Period (min) 15						

Splits and Phases: 5: Ninth Line & Argentinia Rd



Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Future Background 2037

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	257	667	130	164	941	52	80	714	144	43	536	257
Future Volume (vph)	257	667	130	164	941	52	80	714	144	43	536	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	100.0		0.0	185.0		135.0	105.0		95.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00		1.00					0.99	1.00		
Frt		0.976			0.992				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3520	0	1825	3585	0	1722	3510	1617	1789	3650	1617
Flt Permitted	0.156			0.267			0.168			0.237		
Satd. Flow (perm)	294	3520	0	513	3585	0	304	3510	1595	446	3650	1617
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			3				153			273
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		242.0			667.9			1508.4			1616.5	
Travel Time (s)		14.5			40.1			90.5			97.0	
Confl. Peds. (#/hr)			1	1					1	1		
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
Heavy Vehicles (%)	2%	1%	1%	0%	1%	1%	6%	4%	1%	2%	0%	1%
Adj. Flow (vph)	273	710	138	174	1001	55	85	760	153	46	570	273
Shared Lane Traffic (%)												
Lane Group Flow (vph)	273	848	0	174	1056	0	85	760	153	46	570	273
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Future Background 2037

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		1	6		7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	42.5		11.5	42.5		11.5	40.5	40.5	40.5	40.5	40.5
Total Split (s)	33.5	46.5		33.5	46.5		33.5	80.0	80.0	46.5	46.5	46.5
Total Split (%)	20.9%	29.1%		20.9%	29.1%		20.9%	50.0%	50.0%	29.1%	29.1%	29.1%
Maximum Green (s)	30.5	40.0		30.5	40.0		30.5	73.5	73.5	40.0	40.0	40.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.5		0.0	2.5		0.0	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.5		3.0	6.5		3.0	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Walk Time (s)		10.0			10.0			10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)		26.0			26.0			24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0			0			0	0	0	0	0
Act Effct Green (s)	103.0	81.0		96.0	76.5		50.5	47.0	47.0	32.7	32.7	32.7
Actuated g/C Ratio	0.64	0.51		0.60	0.48		0.32	0.29	0.29	0.20	0.20	0.20
v/c Ratio	0.72	0.47		0.40	0.62		0.43	0.74	0.27	0.51	0.77	0.50
Control Delay	27.6	28.5		15.5	35.6		44.1	54.9	6.0	75.0	66.9	8.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	28.5		15.5	35.6		44.1	54.9	6.0	75.0	66.9	8.3
LOS	C	C		B	D		D	D	A	E	E	A
Approach Delay		28.3			32.8			46.5			49.3	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	34.5	89.3		20.6	128.4		19.5	115.1	0.0	13.1	91.0	0.0
Queue Length 95th (m)	70.3	133.4		37.7	193.7		29.9	124.5	15.3	26.7	105.6	23.1
Internal Link Dist (m)		218.0			643.9			1484.4			1592.5	
Turn Bay Length (m)	90.0			100.0			185.0		135.0	105.0		95.0
Base Capacity (vph)	476	1788		579	1715		366	1612	815	111	913	609
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.47		0.30	0.62		0.23	0.47	0.19	0.41	0.62	0.45

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 154 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 38.3

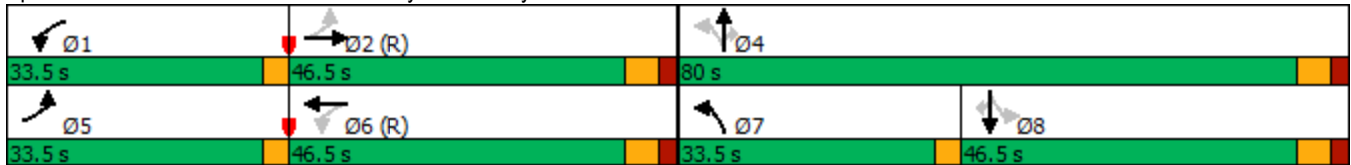
Intersection LOS: D

Intersection Capacity Utilization 89.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Derry Rd E/Derry Rd W



Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Future Background 2037

08/17/2025

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↖↗	↗
Traffic Volume (vph)	948	70	0	1232	40	145
Future Volume (vph)	948	70	0	1232	40	145
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	1.00	0.95	0.97	1.00
Frt	0.990					0.850
Flt Protected					0.950	
Satd. Flow (prot)	3390	0	0	3424	3135	1517
Flt Permitted					0.950	
Satd. Flow (perm)	3390	0	0	3424	3135	1517
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	17					69
Link Speed (k/h)	80			48	60	
Link Distance (m)	358.0			242.0	515.1	
Travel Time (s)	16.1			18.2	30.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	1%	8%	1%	7%	2%
Adj. Flow (vph)	967	71	0	1257	41	148
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1038	0	0	1257	41	148
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	1.8			1.8	6.1	6.1
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Prot
Protected Phases	4			8	2	2
Permitted Phases						
Detector Phase	4			8	2	2
Switch Phase						

Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Future Background 2037
08/17/2025



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	8.0			8.0	8.0	8.0
Minimum Split (s)	26.0			26.0	26.0	26.0
Total Split (s)	34.0			34.0	26.0	26.0
Total Split (%)	56.7%			56.7%	43.3%	43.3%
Maximum Green (s)	28.0			28.0	20.0	20.0
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 Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	C-Min	C-Min
Walk Time (s)	8.0			8.0	8.0	8.0
Flash Dont Walk (s)	12.0			12.0	12.0	12.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	38.3			38.3	9.7	9.7
Actuated g/C Ratio	0.64			0.64	0.16	0.16
v/c Ratio	0.48			0.58	0.08	0.49
Control Delay	5.1			8.0	20.5	18.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	5.1			8.0	20.5	18.4
LOS	A			A	C	B
Approach Delay	5.1			8.0	18.9	
Approach LOS	A			A	B	
Queue Length 50th (m)	14.7			32.3	2.0	8.0
Queue Length 95th (m)	20.4			60.5	5.1	20.2
Internal Link Dist (m)	334.0			218.0	491.1	
Turn Bay Length (m)						
Base Capacity (vph)	2167			2183	1045	551
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	0.48			0.58	0.04	0.27

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

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

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 7.6

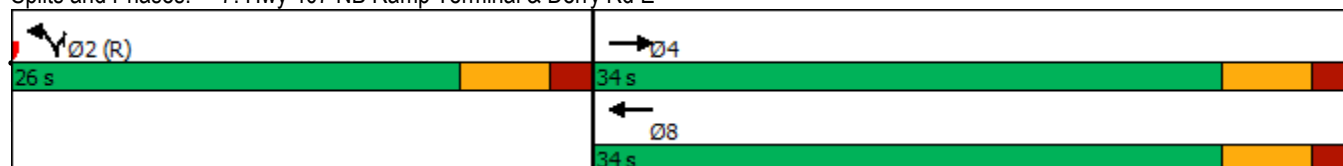
Intersection LOS: A

Intersection Capacity Utilization 52.6%

ICU Level of Service A

Analysis Period (min) 15

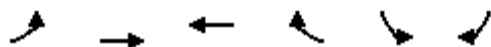
Splits and Phases: 7: Hwy 407 NB Ramp Terminal & Derry Rd E



Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

Future Background 2037

08/17/2025

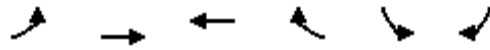


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	863	1104	147	166	235
Future Volume (vph)	0	863	1104	147	166	235
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Fr t			0.982			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3390	3362	0	3288	1532
Flt Permitted					0.950	
Satd. Flow (perm)	0	3390	3362	0	3288	1532
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			35			56
Link Speed (k/h)		80	80		60	
Link Distance (m)		1052.5	358.0		426.8	
Travel Time (s)		47.4	16.1		25.6	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	2%	1%	1%	2%	1%
Adj. Flow (vph)	0	881	1127	150	169	240
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	881	1277	0	169	240
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.4	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Detector Phase		4	8		6	6
Switch Phase						

Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

Future Background 2037

08/17/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)		5.0	5.0		5.0	5.0
Minimum Split (s)		22.5	22.5		22.5	22.5
Total Split (s)		35.0	35.0		25.0	25.0
Total Split (%)		58.3%	58.3%		41.7%	41.7%
Maximum Green (s)		30.5	30.5		20.5	20.5
Yellow Time (s)		3.5	3.5		3.5	3.5
All-Red Time (s)		1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effect Green (s)		38.3	38.3		12.7	12.7
Actuated g/C Ratio		0.64	0.64		0.21	0.21
v/c Ratio		0.41	0.59		0.24	0.65
Control Delay		6.8	5.7		19.1	24.2
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		6.8	5.7		19.1	24.2
LOS		A	A		B	C
Approach Delay		6.8	5.7		22.1	
Approach LOS		A	A		C	
Queue Length 50th (m)		20.7	21.6		7.9	18.2
Queue Length 95th (m)		41.1	31.6		12.7	32.8
Internal Link Dist (m)		1028.5	334.0		402.8	
Turn Bay Length (m)						
Base Capacity (vph)		2164	2159		1123	560
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		0.41	0.59		0.15	0.43

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

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

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 8.7

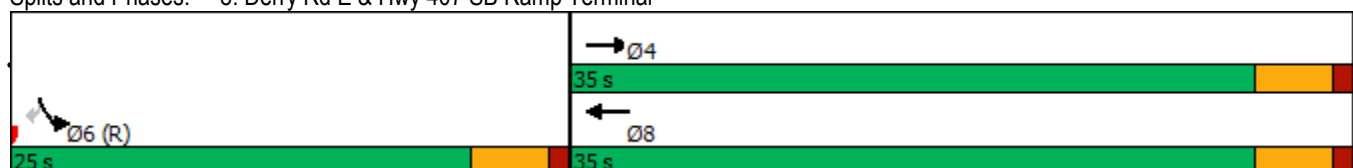
Intersection LOS: A

Intersection Capacity Utilization 60.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Derry Rd E & Hwy 407 SB Ramp Terminal



Lanes, Volumes, Timings

Future Total 2032

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/17/2025

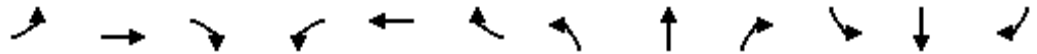
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	237	4	470	2	1126	208	0	1477	386
Future Volume (vph)	0	0	0	237	4	470	2	1126	208	0	1477	386
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.88	1.00	0.95	0.95	1.00	0.91	1.00
Ped Bike Factor						0.98						
Frt						0.850		0.977				0.850
Flt Protected				0.950	0.954		0.950					
Satd. Flow (prot)	1784	0	1784	1507	1517	2250	1729	3183	0	0	4558	1334
Flt Permitted				0.950	0.954		0.142					
Satd. Flow (perm)	1784	0	1784	1507	1517	2201	258	3183	0	0	4558	1334
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						367		17				308
Link Speed (k/h)		30			60			60			60	
Link Distance (m)		149.8			217.3			393.8			859.9	
Travel Time (s)		18.0			13.0			23.6			51.6	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	9%	0%	21%	0%	6%	7%	2%	9%	16%
Adj. Flow (vph)	0	0	0	249	4	495	2	1185	219	0	1555	406
Shared Lane Traffic (%)				49%								
Lane Group Flow (vph)	0	0	0	127	126	495	2	1404	0	0	1555	406
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1		1	1	2	1	1	2			2	1
Detector Template	Left		Right	Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (m)	6.1		6.1	6.1	30.5	6.1	6.1	30.5			30.5	6.1
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Size(m)	6.1		6.1	6.1	1.8	6.1	6.1	1.8			1.8	6.1
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(m)					28.7			28.7			28.7	
Detector 2 Size(m)					1.8			1.8			1.8	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		Prot	Split	NA	Perm	Perm	NA			NA	Perm
Protected Phases	3		3	4	4			6			2	
Permitted Phases						4	6					2

Lanes, Volumes, Timings

Future Total 2032

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/17/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3		3	4	4	4	6	6			2	2
Switch Phase												
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0	20.0	20.0			20.0	20.0
Minimum Split (s)	17.3		17.3	50.6	50.6	50.6	41.5	41.5			41.5	41.5
Total Split (s)	21.5		21.5	62.6	62.6	62.6	75.9	75.9			54.4	54.4
Total Split (%)	13.4%		13.4%	39.1%	39.1%	39.1%	47.4%	47.4%			34.0%	34.0%
Maximum Green (s)	14.2		14.2	55.0	55.0	55.0	68.4	68.4			46.9	46.9
Yellow Time (s)	4.5		4.5	5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)	2.8		2.8	2.6	2.6	2.6	2.5	2.5			2.5	2.5
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	7.3		7.3	7.6	7.6	7.6	7.5	7.5			7.5	7.5
Lead/Lag	Lead		Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	None		None	None	None	None	C-Max	C-Max			C-Max	C-Max
Walk Time (s)				10.0	10.0	10.0	10.0	10.0			10.0	10.0
Flash Dont Walk (s)				33.0	33.0	33.0	24.0	24.0			24.0	24.0
Pedestrian Calls (#/hr)				0	0	0	0	0			0	0
Act Effect Green (s)				21.0	21.0	21.0	123.9	123.9			123.9	123.9
Actuated g/C Ratio				0.13	0.13	0.13	0.77	0.77			0.77	0.77
v/c Ratio				0.64	0.63	0.82	0.01	0.57			0.44	0.37
Control Delay				79.3	78.6	27.9	4.0	11.5			7.3	2.6
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				79.3	78.6	27.9	4.0	11.5			7.3	2.6
LOS				E	E	C	A	B			A	A
Approach Delay					45.2			11.5			6.3	
Approach LOS					D			B			A	
Queue Length 50th (m)				41.0	40.7	23.0	0.1	145.0			54.5	6.7
Queue Length 95th (m)				60.3	59.8	43.6	m0.4	129.4			84.5	21.7
Internal Link Dist (m)		125.8			193.3			369.8			835.9	
Turn Bay Length (m)												
Base Capacity (vph)				518	521	997	199	2467			3528	1102
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.25	0.24	0.50	0.01	0.57			0.44	0.37

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 147 (92%), Referenced to phase 2:SBT and 6:NBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 15.1

Intersection LOS: B

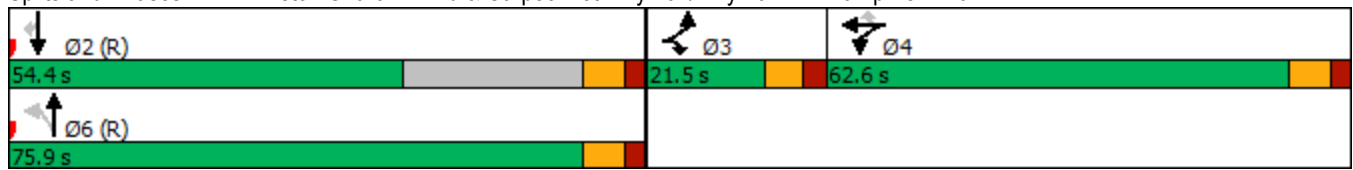
Intersection Capacity Utilization 70.5%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	478	216	0	806	884	730
Future Volume (vph)	478	216	0	806	884	730
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	0.91
Fr't	0.993	0.850			0.932	
Flt Protected	0.954					
Satd. Flow (prot)	3076	1367	0	4824	4256	0
Flt Permitted	0.954					
Satd. Flow (perm)	3076	1367	0	4824	4256	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4	69			169	
Link Speed (k/h)	50			60	60	
Link Distance (m)	280.6			247.8	393.8	
Travel Time (s)	20.2			14.9	23.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	3%	2%	3%	7%	11%
Adj. Flow (vph)	503	227	0	848	931	768
Shared Lane Traffic (%)		10%				
Lane Group Flow (vph)	526	204	0	848	1699	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.4			7.4	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	6.1	6.1		30.5	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	6.1		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				28.7	28.7	
Detector 2 Size(m)				1.8	1.8	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Detector Phase	4	4		2	2	
Switch Phase						

Lanes, Volumes, Timings
2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal

Future Total 2032
08/17/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		20.0	20.0	
Minimum Split (s)	22.5	22.5		31.5	31.5	
Total Split (s)	80.5	80.5		79.5	79.5	
Total Split (%)	50.3%	50.3%		49.7%	49.7%	
Maximum Green (s)	72.0	72.0		72.0	72.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	8.5	8.5		7.5	7.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				17.0	17.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	34.1	34.1		109.9	109.9	
Actuated g/C Ratio	0.21	0.21		0.69	0.69	
v/c Ratio	0.80	0.59		0.26	0.57	
Control Delay	68.4	43.2		14.0	11.0	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	68.4	43.2		14.0	11.0	
LOS	E	D		B	B	
Approach Delay	61.4			14.0	11.0	
Approach LOS	E			B	B	
Queue Length 50th (m)	82.3	43.1		34.6	43.5	
Queue Length 95th (m)	96.5	69.1		67.0	59.8	
Internal Link Dist (m)	256.6			223.8	369.8	
Turn Bay Length (m)						
Base Capacity (vph)	1386	653		3312	2975	
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	0.38	0.31		0.26	0.57	

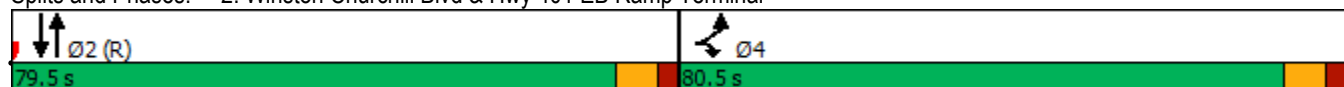
Intersection Summary

Area Type: Other
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 149 (93%), Referenced to phase 2:NBSB and 6:, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 23.0
Intersection Capacity Utilization 65.4%
Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service C

Splits and Phases: 2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal



Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentia Rd

Future Total 2032

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	332	213	58	74	96	135	79	1153	95	272	531	177
Future Volume (vph)	332	213	58	74	96	135	79	1153	95	272	531	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (m)	7.6			2.5			7.6			7.6		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	0.98		0.97	0.99		0.96	1.00		0.98	1.00		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3372	3614	1601	1722	3579	1512	3471	5142	1570	3437	4902	1484
Flt Permitted	0.950			0.612			0.950			0.950		
Satd. Flow (perm)	3303	3614	1553	1094	3579	1459	3456	5142	1540	3429	4902	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85			85			153			186
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		633.5			370.2			729.2			247.8	
Travel Time (s)		38.0			22.2			43.8			14.9	
Confl. Peds. (#/hr)	23		18	18		23	9		7	7		9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	2%	6%	2%	8%	2%	2%	4%	3%	7%	10%
Adj. Flow (vph)	349	224	61	78	101	142	83	1214	100	286	559	186
Shared Lane Traffic (%)												
Lane Group Flow (vph)	349	224	61	78	101	142	83	1214	100	286	559	186
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentinia Rd

Future Total 2032
08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6		5	2	3
Permitted Phases			8	4		4			6			2
Detector Phase	3	8	1	7	4	5	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0	7.0	7.0	10.0	10.0	7.0	10.0	7.0
Minimum Split (s)	12.0	54.5	12.0	11.5	54.5	12.0	12.0	51.5	51.5	12.0	51.5	12.0
Total Split (s)	27.0	69.9	13.0	11.6	54.5	23.0	13.0	55.5	55.5	23.0	65.5	27.0
Total Split (%)	16.9%	43.7%	8.1%	7.3%	34.1%	14.4%	8.1%	34.7%	34.7%	14.4%	40.9%	16.9%
Maximum Green (s)	22.0	62.4	8.0	8.6	47.0	18.0	8.0	48.0	48.0	18.0	58.0	22.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	2.0	3.5	2.0	0.0	3.5	2.0	2.0	3.5	3.5	2.0	3.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.5	5.0	3.0	7.5	5.0	5.0	7.5	7.5	5.0	7.5	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	Min	None	None	C-Max	C-Max	None	C-Max	None
Walk Time (s)		10.0			10.0			10.0	10.0		10.0	
Flash Dont Walk (s)		37.0			37.0			34.0	34.0		34.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	20.3	24.7	36.5	23.5	10.7	31.7	9.3	85.5	85.5	18.5	94.7	117.5
Actuated g/C Ratio	0.13	0.15	0.23	0.15	0.07	0.20	0.06	0.53	0.53	0.12	0.59	0.73
v/c Ratio	0.82	0.40	0.14	0.40	0.42	0.39	0.41	0.44	0.11	0.72	0.19	0.17
Control Delay	83.7	62.8	3.8	54.0	77.0	23.7	78.6	24.1	0.6	64.7	20.9	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.7	62.8	3.8	54.0	77.0	23.7	78.6	24.1	0.6	64.7	20.9	4.8
LOS	F	E	A	D	E	C	E	C	A	E	C	A
Approach Delay		68.6			47.8			25.6			30.1	
Approach LOS		E			D			C			C	
Queue Length 50th (m)	56.0	34.2	0.0	19.5	16.6	14.8	13.4	85.0	0.0	47.0	40.7	6.8
Queue Length 95th (m)	73.8	46.9	5.7	33.2	26.4	33.3	22.4	107.1	1.1	57.6	52.3	26.8
Internal Link Dist (m)		609.5			346.2			705.2			223.8	
Turn Bay Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Base Capacity (vph)	463	1409	424	196	1051	373	205	2746	893	421	2901	1133
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.16	0.14	0.40	0.10	0.38	0.40	0.44	0.11	0.68	0.19	0.16

Intersection Summary

Area Type: Other
 Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 65 (41%), Referenced to phase 2:SBT and 6:NBT, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 37.2
 Intersection LOS: D

Lanes, Volumes, Timings
 3: Winston Churchill Blvd & Argentia Rd

Future Total 2032

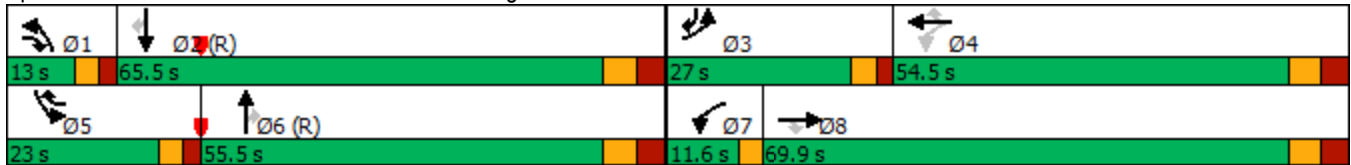
08/17/2025

Intersection Capacity Utilization 99.6%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Winston Churchill Blvd & Argentia Rd



Lanes, Volumes, Timings
4: Tenth Line W & Argentinia Rd

Future Total 2032

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	313	36	69	146	47	7	29	214	19	9	11
Future Volume (vph)	28	313	36	69	146	47	7	29	214	19	9	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	0.0		0.0	130.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
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
Ped Bike Factor	1.00		0.97	1.00		0.97	1.00	0.99		1.00	0.99	
Frt			0.850			0.850		0.868			0.917	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1847	1633	1738	1830	1633	1825	1634	0	1217	1748	0
Flt Permitted	0.660			0.506			0.574			0.602		
Satd. Flow (perm)	1262	1847	1586	922	1830	1592	1101	1634	0	771	1748	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			71		223			11	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		1323.5			633.5			748.2			479.8	
Travel Time (s)		79.4			38.0			53.9			34.5	
Confl. Peds. (#/hr)	3		5	5		3	2		1	1		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	4%	0%	5%	5%	0%	0%	0%	1%	50%	0%	0%
Adj. Flow (vph)	29	326	38	72	152	49	7	30	223	20	9	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	326	38	72	152	49	7	253	0	20	20	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)		11.1			11.1			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

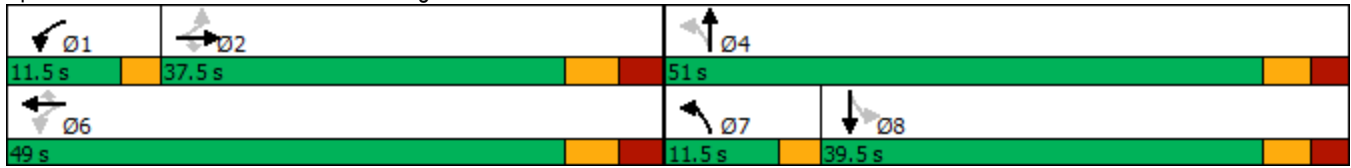
Lanes, Volumes, Timings
4: Tenth Line W & Argentia Rd

Future Total 2032
08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		7	4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	2	2	2	1	6	6	7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0	10.0	7.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5	35.5	11.5	35.5	35.5	11.5	39.5		39.5	39.5	
Total Split (s)	37.5	37.5	37.5	11.5	49.0	49.0	11.5	51.0		39.5	39.5	
Total Split (%)	37.5%	37.5%	37.5%	11.5%	49.0%	49.0%	11.5%	51.0%		39.5%	39.5%	
Maximum Green (s)	30.0	30.0	30.0	8.5	41.5	41.5	8.5	44.5		33.0	33.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	3.5		3.5	3.5	
All-Red Time (s)	3.5	3.5	3.5	0.0	3.5	3.5	0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	3.0	7.5	7.5	3.0	6.5		6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	None	Max	Max	None	Min		Min	Min	
Walk Time (s)	10.0	10.0	10.0		10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)	18.0	18.0	18.0		18.0	18.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0		0	0	
Act Effct Green (s)	33.5	33.5	33.5	46.2	41.6	41.6	15.4	11.9		10.1	10.1	
Actuated g/C Ratio	0.50	0.50	0.50	0.68	0.62	0.62	0.23	0.18		0.15	0.15	
v/c Ratio	0.05	0.36	0.05	0.10	0.13	0.05	0.02	0.54		0.17	0.07	
Control Delay	11.8	13.6	0.1	4.7	6.6	1.4	19.4	9.9		30.7	19.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	11.8	13.6	0.1	4.7	6.6	1.4	19.4	9.9		30.7	19.2	
LOS	B	B	A	A	A	A	B	A		C	B	
Approach Delay		12.2			5.2			10.1			24.9	
Approach LOS		B			A			B			C	
Queue Length 50th (m)	1.8	23.4	0.0	2.2	6.3	0.0	0.7	3.2		2.1	1.0	
Queue Length 95th (m)	7.2	53.7	0.0	8.4	18.4	2.7	3.3	19.5		8.8	6.9	
Internal Link Dist (m)		1299.5			609.5			724.2			455.8	
Turn Bay Length (m)	20.0						130.0			45.0		
Base Capacity (vph)	624	915	837	732	1127	1007	342	1154		377	862	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.05	0.36	0.05	0.10	0.13	0.05	0.02	0.22		0.05	0.02	
Intersection Summary												
Area Type:	Other											
Cycle Length: 100												
Actuated Cycle Length: 67.6												
Natural Cycle: 100												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.54												
Intersection Signal Delay: 10.2							Intersection LOS: B					
Intersection Capacity Utilization 66.1%							ICU Level of Service C					

Analysis Period (min) 15

Splits and Phases: 4: Tenth Line W & Argentia Rd



Lanes, Volumes, Timings
5: Ninth Line & Argentinia Rd

Future Total 2032
08/17/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	52	30	324	224	97	587
Future Volume (vph)	52	30	324	224	97	587
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		100.0	45.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1526	1883	1601	1789	1865
Flt Permitted	0.950				0.552	
Satd. Flow (perm)	1789	1526	1883	1601	1040	1865
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		32		241		
Link Speed (k/h)	60		60			60
Link Distance (m)	1323.5		1616.5			667.9
Travel Time (s)	79.4		97.0			40.1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	7%	2%	2%	2%	3%
Adj. Flow (vph)	56	32	348	241	104	631
Shared Lane Traffic (%)						
Lane Group Flow (vph)	56	32	348	241	104	631
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.4		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (m)	6.1	6.1	30.5	6.1	6.1	30.5
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	6.1	1.8	6.1	6.1	1.8
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		6			2

Lanes, Volumes, Timings
5: Ninth Line & Argentia Rd

Future Total 2032
08/17/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		4		6	2	
Detector Phase	8	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	22.5	30.0	43.5	43.5	43.5	43.5
Total Split (s)	22.5	30.0	43.5	43.5	43.5	43.5
Total Split (%)	30.6%	40.8%	59.2%	59.2%	59.2%	59.2%
Maximum Green (s)	18.0	24.0	37.0	37.0	37.0	37.0
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.5	6.5	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)	7.0	10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)	11.0	14.0	27.0	27.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	14.6	20.3	50.3	50.3	50.3	50.3
Actuated g/C Ratio	0.21	0.30	0.74	0.74	0.74	0.74
v/c Ratio	0.15	0.07	0.25	0.19	0.14	0.46
Control Delay	20.4	7.9	7.5	1.7	7.9	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.4	7.9	7.5	1.7	7.9	9.7
LOS	C	A	A	A	A	A
Approach Delay	15.8		5.1			9.5
Approach LOS	B		A			A
Queue Length 50th (m)	6.7	0.0	23.9	0.0	6.5	53.5
Queue Length 95th (m)	12.5	5.4	39.4	8.7	14.1	84.7
Internal Link Dist (m)	1299.5		1592.5			643.9
Turn Bay Length (m)				100.0	45.0	
Base Capacity (vph)	680	566	1388	1244	766	1375
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.06	0.25	0.19	0.14	0.46
Intersection Summary						
Area Type:	Other					
Cycle Length: 73.5						
Actuated Cycle Length: 68.2						
Natural Cycle: 75						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.46						
Intersection Signal Delay: 8.1				Intersection LOS: A		
Intersection Capacity Utilization 44.2%				ICU Level of Service A		
Analysis Period (min) 15						

Splits and Phases: 5: Ninth Line & Argentia Rd



Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Future Total 2032
08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	714	38	84	391	84	105	257	127	28	336	303
Future Volume (vph)	173	714	38	84	391	84	105	257	127	28	336	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	100.0		0.0	185.0		135.0	105.0		95.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.973				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	3543	0	1722	3523	0	1755	1847	1585	1825	1865	1570
Flt Permitted	0.414			0.300			0.200			0.596		
Satd. Flow (perm)	772	3543	0	544	3523	0	369	1847	1585	1145	1865	1570
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			18				131			312
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		242.0			667.9			1508.4			1616.5	
Travel Time (s)		14.5			40.1			90.5			97.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	2%	6%	6%	1%	0%	4%	4%	3%	0%	3%	4%
Adj. Flow (vph)	178	736	39	87	403	87	108	265	131	29	346	312
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	775	0	87	490	0	108	265	131	29	346	312
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	

Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Future Total 2032
08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		1	6		7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	42.5		11.5	42.5		11.5	40.0	40.0	40.5	40.5	40.5
Total Split (s)	13.0	62.0		13.0	62.0		18.0	85.0	85.0	67.0	67.0	67.0
Total Split (%)	8.1%	38.8%		8.1%	38.8%		11.3%	53.1%	53.1%	41.9%	41.9%	41.9%
Maximum Green (s)	10.0	55.5		10.0	55.5		15.0	79.0	79.0	60.5	60.5	60.5
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.5		0.0	2.5		0.0	2.0	2.0	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.5		3.0	6.5		3.0	6.0	6.0	6.5	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?		Yes		Yes			Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	Max		None	Min	Min	Min	Min	Min
Walk Time (s)		10.0			10.0			10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)		26.0			26.0			24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0			0			0	0	0	0	0
Act Effct Green (s)	97.2	81.9		90.9	78.2		56.4	53.4	53.4	36.9	36.9	36.9
Actuated g/C Ratio	0.61	0.51		0.57	0.49		0.35	0.33	0.33	0.23	0.23	0.23
v/c Ratio	0.32	0.43		0.23	0.28		0.44	0.43	0.21	0.11	0.81	0.52
Control Delay	17.4	25.4		16.8	26.1		39.4	42.2	5.3	46.0	72.1	7.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	25.4		16.8	26.1		39.4	42.2	5.3	46.0	72.1	7.4
LOS	B	C		B	C		D	D	A	D	E	A
Approach Delay		23.9			24.7			32.0			41.6	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	26.0	70.0		11.1	46.3		23.5	65.1	0.0	7.4	105.2	0.0
Queue Length 95th (m)	43.3	103.0		23.0	72.9		33.7	80.8	13.0	15.2	129.9	22.8
Internal Link Dist (m)		218.0			643.9			1484.4			1592.5	
Turn Bay Length (m)	90.0			100.0			185.0		135.0	105.0		95.0
Base Capacity (vph)	553	1814		390	1730		260	911	848	432	705	787
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.43		0.22	0.28		0.42	0.29	0.15	0.07	0.49	0.40

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 115 (72%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 30.1

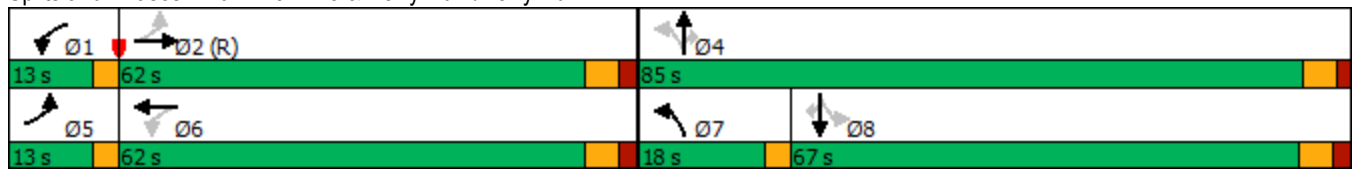
Intersection LOS: C

Intersection Capacity Utilization 67.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Derry Rd E/Derry Rd W



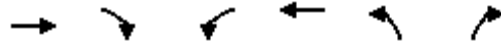
Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Future Total 2032
08/17/2025

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↔	↔
Traffic Volume (vph)	832	200	0	668	9	110
Future Volume (vph)	832	200	0	668	9	110
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	1.00	0.95	0.97	1.00
Frt	0.971					0.850
Flt Protected					0.950	
Satd. Flow (prot)	3292	0	0	3357	2727	1502
Flt Permitted					0.950	
Satd. Flow (perm)	3292	0	0	3357	2727	1502
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	58					113
Link Speed (k/h)	80			60	60	
Link Distance (m)	358.0			242.0	515.1	
Travel Time (s)	16.1			14.5	30.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	23%	3%
Adj. Flow (vph)	858	206	0	689	9	113
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1064	0	0	689	9	113
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	1.8			1.8	6.1	6.1
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Prot
Protected Phases	4			8	2	2
Permitted Phases						
Detector Phase	4			8	2	2
Switch Phase						

Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Future Total 2032
08/17/2025



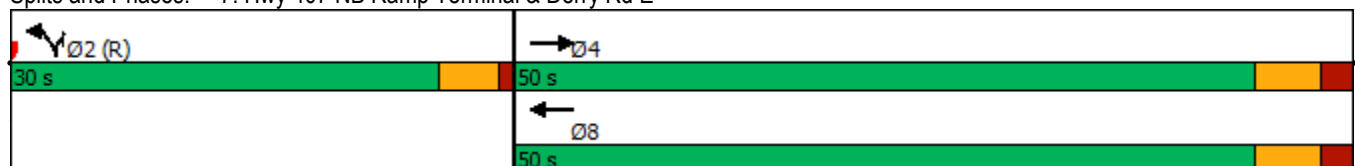
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	8.0			8.0	5.0	5.0
Minimum Split (s)	26.0			26.0	24.5	24.5
Total Split (s)	50.0			50.0	30.0	30.0
Total Split (%)	62.5%			62.5%	37.5%	37.5%
Maximum Green (s)	44.0			44.0	25.5	25.5
Yellow Time (s)	4.0			4.0	3.5	3.5
All-Red Time (s)	2.0			2.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	C-Min	C-Min
Walk Time (s)	8.0			8.0	8.0	8.0
Flash Dont Walk (s)	12.0			12.0	12.0	12.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	62.5			62.5	7.0	7.0
Actuated g/C Ratio	0.78			0.78	0.09	0.09
v/c Ratio	0.41			0.26	0.04	0.48
Control Delay	2.9			1.9	32.2	14.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	2.9			1.9	32.2	14.4
LOS	A			A	C	B
Approach Delay	2.9			1.9	15.7	
Approach LOS	A			A	B	
Queue Length 50th (m)	15.8			8.2	0.6	0.0
Queue Length 95th (m)	23.3			12.8	2.6	13.4
Internal Link Dist (m)	334.0			218.0	491.1	
Turn Bay Length (m)						
Base Capacity (vph)	2586			2624	869	555
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	0.41			0.26	0.01	0.20

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 3.4
Intersection Capacity Utilization 47.0%
Analysis Period (min) 15

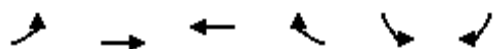
Intersection LOS: A
ICU Level of Service A

Splits and Phases: 7: Hwy 407 NB Ramp Terminal & Derry Rd E



Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

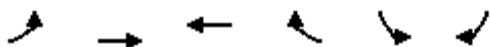
Future Total 2032
08/17/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	1011	528	145	27	52
Future Volume (vph)	0	1011	528	145	27	52
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Fr t			0.968			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3390	3250	0	3106	1334
Flt Permitted					0.950	
Satd. Flow (perm)	0	3390	3250	0	3106	1334
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			79			55
Link Speed (k/h)		80	80		60	
Link Distance (m)		1052.5	358.0		426.8	
Travel Time (s)		47.4	16.1		25.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	3%	3%	8%	16%
Adj. Flow (vph)	0	1064	556	153	28	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1064	709	0	28	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.4	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Detector Phase		4	8		6	6
Switch Phase						

Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

Future Total 2032
08/17/2025



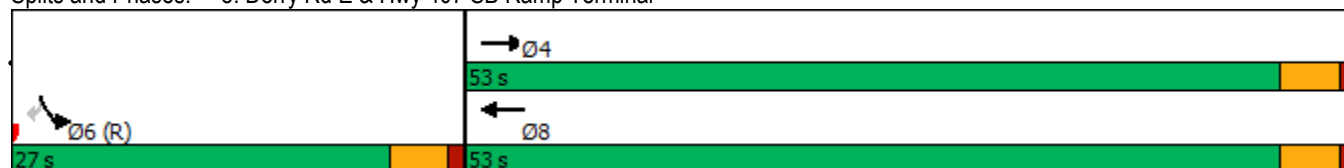
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)		5.0	5.0		5.0	5.0
Minimum Split (s)		22.5	22.5		22.5	22.5
Total Split (s)		53.0	53.0		27.0	27.0
Total Split (%)		66.3%	66.3%		33.8%	33.8%
Maximum Green (s)		48.5	48.5		22.5	22.5
Yellow Time (s)		3.5	3.5		3.5	3.5
All-Red Time (s)		1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effect Green (s)		64.3	64.3		6.7	6.7
Actuated g/C Ratio		0.80	0.80		0.08	0.08
v/c Ratio		0.39	0.27		0.11	0.34
Control Delay		2.8	1.7		33.9	16.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		2.8	1.7		33.9	16.1
LOS		A	A		C	B
Approach Delay		2.8	1.7		22.1	
Approach LOS		A	A		C	
Queue Length 50th (m)		15.7	6.1		2.1	0.0
Queue Length 95th (m)		28.2	22.9		5.5	9.8
Internal Link Dist (m)		1028.5	334.0		402.8	
Turn Bay Length (m)						
Base Capacity (vph)		2724	2626		873	414
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		0.39	0.27		0.03	0.13

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.39
Intersection Signal Delay: 3.3
Intersection Capacity Utilization 41.2%
Analysis Period (min) 15

Intersection LOS: A
ICU Level of Service A

Splits and Phases: 8: Derry Rd E & Hwy 407 SB Ramp Terminal



Lanes, Volumes, Timings
9: Tenth Line W & Southern Site Access

Future Total 2032
08/17/2025

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	23	75	13	10	0
Future Volume (vph)	0	23	75	13	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.959		
Satd. Flow (prot)	1629	0	0	1806	1883	0
Flt Permitted				0.959		
Satd. Flow (perm)	1629	0	0	1806	1883	0
Link Speed (k/h)	48			50	50	
Link Distance (m)	234.3			479.8	76.5	
Travel Time (s)	17.6			34.5	5.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	25	82	14	11	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	0	0	96	11	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	21.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	6.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	23	75	13	10	0
Future Vol, veh/h	0	23	75	13	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	25	82	14	11	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	189	11	11	0	-	0
Stage 1	11	-	-	-	-	-
Stage 2	178	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	800	1070	1608	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	853	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	759	1070	1608	-	-	-
Mov Cap-2 Maneuver	759	-	-	-	-	-
Stage 1	960	-	-	-	-	-
Stage 2	853	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.4	6.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1608	-	1070	-	-	
HCM Lane V/C Ratio	0.051	-	0.023	-	-	
HCM Control Delay (s)	7.4	0	8.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-	

Lanes, Volumes, Timings
18: Tenth Line W & Northern Site Access

Future Total 2032
08/17/2025

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	10	13	0	0	0
Future Volume (vph)	0	10	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.950		
Satd. Flow (prot)	1629	0	0	1789	1883	0
Flt Permitted				0.950		
Satd. Flow (perm)	1629	0	0	1789	1883	0
Link Speed (k/h)	48			50	50	
Link Distance (m)	208.4			76.5	195.2	
Travel Time (s)	15.6			5.5	14.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	11	14	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	14	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	7.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	13	0	0	0
Future Vol, veh/h	0	10	13	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	14	0	0	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	29	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	28	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	986	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	995	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	977	1084	1622	-	-	-
Mov Cap-2 Maneuver	977	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	995	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.4	7.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1622	-	1084	-	-	
HCM Lane V/C Ratio	0.009	-	0.01	-	-	
HCM Control Delay (s)	7.2	0	8.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Lanes, Volumes, Timings

Future Total 2032

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	0	18	809	12	755	5	1093	231	0	1398	434
Future Volume (vph)	7	0	18	809	12	755	5	1093	231	0	1398	434
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.88	1.00	0.95	0.95	1.00	0.91	1.00
Frt			0.850			0.850		0.974				0.850
Flt Protected	0.950			0.950	0.954		0.950					
Satd. Flow (prot)	1601	0	1547	1643	1649	2723	1712	3327	0	0	4644	1446
Flt Permitted	0.950			0.950	0.954		0.108					
Satd. Flow (perm)	1601	0	1547	1643	1649	2723	195	3327	0	0	4644	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			669		16				302
Link Speed (k/h)		30			60			60			60	
Link Distance (m)		149.8			217.3			393.8			859.9	
Travel Time (s)		18.0			13.0			23.6			51.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	8%	0%	0%	0%	1%	0%	1%	0%	7%	2%	7%	7%
Adj. Flow (vph)	7	0	19	843	13	786	5	1139	241	0	1456	452
Shared Lane Traffic (%)				49%								
Lane Group Flow (vph)	7	0	19	430	426	786	5	1380	0	0	1456	452
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	24		14	97		14	24		97
Number of Detectors	1		1	1	2	1	1	2			2	1
Detector Template	Left		Right	Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (m)	6.1		6.1	6.1	30.5	6.1	6.1	30.5			30.5	6.1
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Size(m)	6.1		6.1	6.1	1.8	6.1	6.1	1.8			1.8	6.1
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(m)					28.7			28.7			28.7	
Detector 2 Size(m)					1.8			1.8			1.8	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		Prot	Split	NA	Perm	Perm	NA			NA	Perm
Protected Phases	3		3	4	4			6			2	
Permitted Phases						4	6					2
Detector Phase	3		3	4	4	4	6	6			2	2
Switch Phase												

Lanes, Volumes, Timings

Future Total 2032

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/17/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0	20.0	20.0			20.0	20.0
Minimum Split (s)	17.3		17.3	50.6	50.6	50.6	41.5	41.5			41.5	41.5
Total Split (s)	45.4		45.4	58.4	58.4	58.4	56.2	56.2			56.2	56.2
Total Split (%)	28.4%		28.4%	36.5%	36.5%	36.5%	35.1%	35.1%			35.1%	35.1%
Maximum Green (s)	38.1		38.1	50.8	50.8	50.8	48.7	48.7			48.7	48.7
Yellow Time (s)	4.5		4.5	5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)	2.8		2.8	2.6	2.6	2.6	2.5	2.5			2.5	2.5
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	7.3		7.3	7.6	7.6	7.6	7.5	7.5			7.5	7.5
Lead/Lag	Lead		Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	None		None	None	None	None	C-Max	C-Max			C-Max	C-Max
Walk Time (s)				10.0	10.0	10.0	10.0	10.0			10.0	10.0
Flash Dont Walk (s)				33.0	33.0	33.0	24.0	24.0			24.0	24.0
Pedestrian Calls (#/hr)				0	0	0	0	0			0	0
Act Effct Green (s)	10.0		10.0	55.4	55.4	55.4	79.1	79.1			79.1	79.1
Actuated g/C Ratio	0.06		0.06	0.35	0.35	0.35	0.49	0.49			0.49	0.49
v/c Ratio	0.07		0.11	0.76	0.75	0.57	0.05	0.83			0.63	0.52
Control Delay	72.4		1.3	54.3	53.6	7.0	27.6	36.6			34.7	13.1
Queue Delay	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	72.4		1.3	54.3	53.6	7.0	27.6	36.6			34.7	13.1
LOS	E		A	D	D	A	C	D			C	B
Approach Delay		20.4			31.5			36.6			29.6	
Approach LOS		C			C			D			C	
Queue Length 50th (m)	2.1		0.0	127.4	125.5	14.4	0.7	208.0			134.5	32.2
Queue Length 95th (m)	7.7		0.0	146.9	144.6	28.4	m2.6	#309.6			178.7	78.0
Internal Link Dist (m)		125.8			193.3			369.8			835.9	
Turn Bay Length (m)												
Base Capacity (vph)	381		430	591	594	1409	96	1653			2296	867
Starvation Cap Reductn	0		0	0	0	0	0	0			0	0
Spillback Cap Reductn	0		0	0	0	0	0	0			0	0
Storage Cap Reductn	0		0	0	0	0	0	0			0	0
Reduced v/c Ratio	0.02		0.04	0.73	0.72	0.56	0.05	0.83			0.63	0.52

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 56 (35%), Referenced to phase 2:SBT and 6:NBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 32.1

Intersection LOS: C

Intersection Capacity Utilization 87.9%

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: 1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

 Ø2 (R)	 Ø3	 Ø4
56.2 s	45.4 s	58.4 s
 Ø6 (R)		
56.2 s		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	340	330	0	938	1712	572
Future Volume (vph)	340	330	0	938	1712	572
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	0.91
Frt	0.961	0.850			0.962	
Flt Protected	0.964					
Satd. Flow (prot)	2936	1354	0	4777	4686	0
Flt Permitted	0.964					
Satd. Flow (perm)	2936	1354	0	4777	4686	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4	4			68	
Link Speed (k/h)	50			60	60	
Link Distance (m)	280.6			247.8	393.8	
Travel Time (s)	20.2			14.9	23.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	14%	4%	2%	4%	2%	2%
Adj. Flow (vph)	362	351	0	998	1821	609
Shared Lane Traffic (%)		36%				
Lane Group Flow (vph)	488	225	0	998	2430	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.4			7.4	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	6.1	6.1		30.5	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	6.1		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				28.7	28.7	
Detector 2 Size(m)				1.8	1.8	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Detector Phase	4	4		2	2	
Switch Phase						

Lanes, Volumes, Timings
2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal

Future Total 2032

08/17/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		20.0	20.0	
Minimum Split (s)	22.5	22.5		31.5	31.5	
Total Split (s)	80.5	80.5		79.5	79.5	
Total Split (%)	50.3%	50.3%		49.7%	49.7%	
Maximum Green (s)	72.0	72.0		72.0	72.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	8.5	8.5		7.5	7.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				17.0	17.0	
Pedestrian Calls (#/hr)				0	0	
Act Effect Green (s)	34.3	34.3		109.7	109.7	
Actuated g/C Ratio	0.21	0.21		0.69	0.69	
v/c Ratio	0.77	0.77		0.30	0.75	
Control Delay	66.8	74.6		8.6	12.1	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	66.8	74.6		8.6	12.1	
LOS	E	E		A	B	
Approach Delay	69.3			8.6	12.1	
Approach LOS	E			A	B	
Queue Length 50th (m)	76.4	74.3		53.5	108.2	
Queue Length 95th (m)	87.5	99.3		72.9	135.1	
Internal Link Dist (m)	256.6			223.8	369.8	
Turn Bay Length (m)						
Base Capacity (vph)	1323	611		3276	3235	
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	0.37	0.37		0.30	0.75	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 48 (30%), Referenced to phase 2:NBSB and 6:, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 21.1

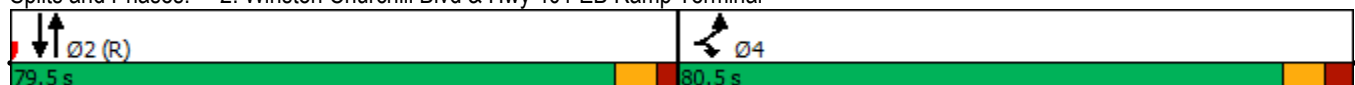
Intersection LOS: C

Intersection Capacity Utilization 76.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal



Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentia Rd

Future Total 2032

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	354	294	202	268	509	284	221	736	94	229	1204	358
Future Volume (vph)	354	294	202	268	509	284	221	736	94	229	1204	358
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (m)	7.6			2.5			7.6			7.6		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	0.98		0.96	0.98		0.95	1.00		0.99	1.00		0.98
Fr't			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3437	3510	1601	1807	3614	1601	3437	5193	1555	3471	5043	1601
Flt Permitted	0.950			0.570			0.950			0.950		
Satd. Flow (perm)	3369	3510	1530	1061	3614	1518	3433	5193	1533	3467	5043	1571
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			89			85			119			67
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		633.5			370.2			729.2			247.8	
Travel Time (s)		38.0			22.2			43.8			14.9	
Confl. Peds. (#/hr)	40		32	32		40	6		2	2		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
Heavy Vehicles (%)	3%	4%	2%	1%	1%	2%	3%	1%	5%	2%	4%	2%
Adj. Flow (vph)	358	297	204	271	514	287	223	743	95	231	1216	362
Shared Lane Traffic (%)												
Lane Group Flow (vph)	358	297	204	271	514	287	223	743	95	231	1216	362
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	97		97	24		97	97		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentinia Rd

Future Total 2032
08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6		5	2	3
Permitted Phases			8	4		4			6			2
Detector Phase	3	8	1	7	4	5	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0	7.0	7.0	10.0	10.0	7.0	10.0	7.0
Minimum Split (s)	12.0	54.5	12.0	11.5	54.5	12.0	12.0	51.5	51.5	12.0	51.5	12.0
Total Split (s)	29.0	63.9	20.0	19.6	54.5	22.0	20.0	54.5	54.5	22.0	56.5	29.0
Total Split (%)	18.1%	39.9%	12.5%	12.3%	34.1%	13.8%	12.5%	34.1%	34.1%	13.8%	35.3%	18.1%
Maximum Green (s)	24.0	56.4	15.0	16.6	47.0	17.0	15.0	47.0	47.0	17.0	49.0	24.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	2.0	3.5	2.0	0.0	3.5	2.0	2.0	3.5	3.5	2.0	3.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.5	5.0	3.0	7.5	5.0	5.0	7.5	7.5	5.0	7.5	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	None
Walk Time (s)		10.0			10.0			10.0	10.0		10.0	
Flash Dont Walk (s)		37.0			37.0			34.0	34.0		34.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	21.2	35.2	53.3	49.7	28.6	47.0	15.6	69.3	69.3	15.9	69.6	93.3
Actuated g/C Ratio	0.13	0.22	0.33	0.31	0.18	0.29	0.10	0.43	0.43	0.10	0.44	0.58
v/c Ratio	0.79	0.38	0.35	0.67	0.80	0.56	0.67	0.33	0.13	0.67	0.55	0.38
Control Delay	79.8	53.5	20.0	46.9	72.3	33.4	79.3	32.1	2.9	71.3	43.1	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.8	53.5	20.0	46.9	72.3	33.4	79.3	32.1	2.9	71.3	43.1	16.9
LOS	E	D	C	D	E	C	E	C	A	E	D	B
Approach Delay		56.5			55.5			39.4			41.5	
Approach LOS		E			E			D			D	
Queue Length 50th (m)	57.4	42.7	25.3	63.6	83.6	51.8	35.9	56.9	0.0	38.5	105.7	46.4
Queue Length 95th (m)	74.2	53.0	39.8	80.7	99.2	72.3	49.1	78.2	7.4	m52.3	148.5	66.6
Internal Link Dist (m)		609.5			346.2			705.2			223.8	
Turn Bay Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Base Capacity (vph)	515	1237	584	406	1061	531	355	2249	731	384	2192	974
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.24	0.35	0.67	0.48	0.54	0.63	0.33	0.13	0.60	0.55	0.37

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

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

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 46.8

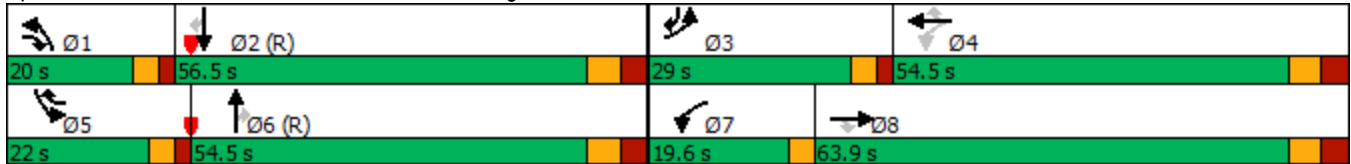
Intersection LOS: D

Lanes, Volumes, Timings
 3: Winston Churchill Blvd & Argentia Rd

Future Total 2032
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Intersection Capacity Utilization 106.7% ICU Level of Service G
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Winston Churchill Blvd & Argentia Rd



Lanes, Volumes, Timings
4: Tenth Line W & Argentinia Rd

Future Total 2032
08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	298	96	451	457	22	61	7	281	39	21	34
Future Volume (vph)	11	298	96	451	457	22	61	7	281	39	21	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	0.0		0.0	130.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
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
Ped Bike Factor	0.99		0.96	0.99		0.97	0.99	0.98		1.00	0.99	
Frt			0.850			0.850		0.854			0.907	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	961	1555	1789	1921	1585	1755	1611	0	1825	1722	0
Flt Permitted	0.484			0.477			0.557			0.572		
Satd. Flow (perm)	923	961	1491	888	1921	1531	1022	1611	0	1094	1722	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			71		302			37	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		1323.5			633.5			748.2			479.8	
Travel Time (s)		79.4			38.0			53.9			34.5	
Confl. Peds. (#/hr)	8		12	12		8	8		7	7		8
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	100%	5%	2%	0%	3%	4%	0%	0%	0%	0%	0%
Adj. Flow (vph)	12	320	103	485	491	24	66	8	302	42	23	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	320	103	485	491	24	66	310	0	42	60	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)		11.1			11.1			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
4: Tenth Line W & Argentia Rd

Future Total 2032
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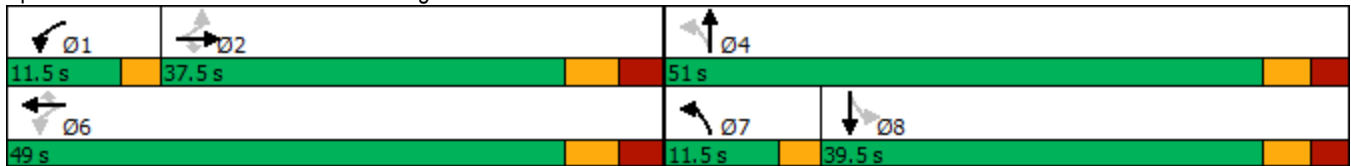
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		7	4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	2	2	2	1	6	6	7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0	10.0	7.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5	35.5	11.5	35.5	35.5	11.5	39.5		39.5	39.5	
Total Split (s)	37.5	37.5	37.5	11.5	49.0	49.0	11.5	51.0		39.5	39.5	
Total Split (%)	37.5%	37.5%	37.5%	11.5%	49.0%	49.0%	11.5%	51.0%		39.5%	39.5%	
Maximum Green (s)	30.0	30.0	30.0	8.5	41.5	41.5	8.5	44.5		33.0	33.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	3.5		3.5	3.5	
All-Red Time (s)	3.5	3.5	3.5	0.0	3.5	3.5	0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	3.0	7.5	7.5	3.0	6.5		6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	None	Max	Max	None	Min		Min	Min	
Walk Time (s)	10.0	10.0	10.0		10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)	18.0	18.0	18.0		18.0	18.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0		0	0	
Act Effct Green (s)	30.1	30.1	30.1	46.2	41.7	41.7	22.4	18.9		10.4	10.4	
Actuated g/C Ratio	0.40	0.40	0.40	0.62	0.56	0.56	0.30	0.25		0.14	0.14	
v/c Ratio	0.03	0.83	0.16	0.74	0.46	0.03	0.17	0.49		0.28	0.22	
Control Delay	15.4	42.0	4.3	18.3	12.4	0.0	19.5	6.1		35.2	17.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	15.4	42.0	4.3	18.3	12.4	0.0	19.5	6.1		35.2	17.9	
LOS	B	D	A	B	B	A	B	A		D	B	
Approach Delay		32.3			14.9			8.5			25.0	
Approach LOS		C			B			A			C	
Queue Length 50th (m)	1.0	40.9	0.0	34.4	40.3	0.0	6.7	0.9		5.6	3.0	
Queue Length 95th (m)	4.4	#89.8	8.7	#67.7	67.0	0.0	14.8	17.7		14.7	12.8	
Internal Link Dist (m)		1299.5			609.5			724.2			455.8	
Turn Bay Length (m)	20.0						130.0			45.0		
Base Capacity (vph)	372	387	664	652	1072	886	390	1085		485	785	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.03	0.83	0.16	0.74	0.46	0.03	0.17	0.29		0.09	0.08	
Intersection Summary												
Area Type:	Other											
Cycle Length: 100												
Actuated Cycle Length: 74.6												
Natural Cycle: 110												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.83												
Intersection Signal Delay: 18.2							Intersection LOS: B					
Intersection Capacity Utilization 95.7%							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: 4: Tenth Line W & Argentia Rd



Lanes, Volumes, Timings
5: Ninth Line & Argentinia Rd

Future Total 2032
08/17/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	275	205	734	134	75	545
Future Volume (vph)	275	205	734	134	75	545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		100.0	45.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1617	1902	1617	1772	1812
Flt Permitted	0.950				0.198	
Satd. Flow (perm)	1789	1617	1902	1617	369	1812
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		148		140		
Link Speed (k/h)	60		60			60
Link Distance (m)	1323.5		1616.5			667.9
Travel Time (s)	79.4		97.0			40.1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	1%	1%	3%	6%
Adj. Flow (vph)	286	214	765	140	78	568
Shared Lane Traffic (%)						
Lane Group Flow (vph)	286	214	765	140	78	568
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.4		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (m)	6.1	6.1	30.5	6.1	6.1	30.5
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	6.1	1.8	6.1	6.1	1.8
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		6			2

Lanes, Volumes, Timings
5: Ninth Line & Argentia Rd

Future Total 2032
08/17/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		4		6	2	
Detector Phase	8	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	22.5	30.0	43.5	43.5	43.5	43.5
Total Split (s)	22.5	30.0	43.5	43.5	43.5	43.5
Total Split (%)	30.6%	40.8%	59.2%	59.2%	59.2%	59.2%
Maximum Green (s)	18.0	24.0	37.0	37.0	37.0	37.0
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.5	6.5	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)	7.0	10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)	11.0	14.0	27.0	27.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	21.5	20.0	37.0	37.0	37.0	37.0
Actuated g/C Ratio	0.31	0.29	0.53	0.53	0.53	0.53
v/c Ratio	0.52	0.38	0.76	0.15	0.40	0.59
Control Delay	23.8	9.2	18.8	2.1	17.3	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	9.2	18.8	2.1	17.3	14.2
LOS	C	A	B	A	B	B
Approach Delay	17.5		16.2			14.6
Approach LOS	B		B			B
Queue Length 50th (m)	30.2	6.3	71.6	0.0	5.6	46.4
Queue Length 95th (m)	51.3	21.1	114.0	6.7	16.7	74.2
Internal Link Dist (m)	1299.5		1592.5			643.9
Turn Bay Length (m)				100.0	45.0	
Base Capacity (vph)	656	655	1012	926	196	964
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.33	0.76	0.15	0.40	0.59
Intersection Summary						
Area Type:	Other					
Cycle Length: 73.5						
Actuated Cycle Length: 69.5						
Natural Cycle: 75						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.76						
Intersection Signal Delay: 16.0				Intersection LOS: B		
Intersection Capacity Utilization 76.8%				ICU Level of Service D		
Analysis Period (min) 15						

Splits and Phases: 5: Ninth Line & Argentia Rd



Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Future Total 2032

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	650	130	164	917	57	80	522	144	61	395	260
Future Volume (vph)	259	650	130	164	917	57	80	522	144	61	395	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	100.0		0.0	185.0		135.0	105.0		95.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00					0.99	1.00		
Frt		0.975			0.991				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3511	0	1825	3581	0	1722	1847	1617	1789	1921	1617
Flt Permitted	0.128			0.259			0.145			0.171		
Satd. Flow (perm)	241	3511	0	497	3581	0	263	1847	1595	322	1921	1617
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			4				153			267
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		242.0			667.9			1508.4			1616.5	
Travel Time (s)		14.5			40.1			90.5			97.0	
Confl. Peds. (#/hr)			1	1					1	1		
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
Heavy Vehicles (%)	2%	1%	1%	0%	1%	1%	6%	4%	1%	2%	0%	1%
Adj. Flow (vph)	276	691	138	174	976	61	85	555	153	65	420	277
Shared Lane Traffic (%)												
Lane Group Flow (vph)	276	829	0	174	1037	0	85	555	153	65	420	277
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Future Total 2032
08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		1	6		7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	42.5		11.5	42.5		11.5	40.5	40.5	40.5	40.5	40.5
Total Split (s)	33.5	46.5		33.5	46.5		33.5	80.0	80.0	46.5	46.5	46.5
Total Split (%)	20.9%	29.1%		20.9%	29.1%		20.9%	50.0%	50.0%	29.1%	29.1%	29.1%
Maximum Green (s)	30.5	40.0		30.5	40.0		30.5	73.5	73.5	40.0	40.0	40.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.5		0.0	2.5		0.0	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.5		3.0	6.5		3.0	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Walk Time (s)		10.0			10.0			10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)		26.0			26.0			24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0			0			0	0	0	0	0
Act Effct Green (s)	94.6	72.3		85.9	66.4		59.2	55.7	55.7	42.0	42.0	42.0
Actuated g/C Ratio	0.59	0.45		0.54	0.42		0.37	0.35	0.35	0.26	0.26	0.26
v/c Ratio	0.78	0.52		0.44	0.70		0.44	0.86	0.23	0.77	0.83	0.45
Control Delay	40.8	34.9		20.6	43.6		38.2	62.1	4.8	103.8	70.0	7.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	34.9		20.6	43.6		38.2	62.1	4.8	103.8	70.0	7.4
LOS	D	C		C	D		D	E	A	F	E	A
Approach Delay		36.4			40.3			48.5			50.1	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	47.7	97.6		24.4	142.5		17.7	163.4	0.0	19.1	126.3	2.4
Queue Length 95th (m)	85.3	143.2		43.5	#235.6		26.9	189.0	13.7	#42.0	155.9	23.5
Internal Link Dist (m)		218.0			643.9			1484.4			1592.5	
Turn Bay Length (m)	90.0			100.0			185.0		135.0	105.0		95.0
Base Capacity (vph)	443	1594		543	1488		375	848	815	88	529	639
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.52		0.32	0.70		0.23	0.65	0.19	0.74	0.79	0.43

Intersection Summary

Area Type: Other
 Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 154 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 42.8

Intersection LOS: D

Lanes, Volumes, Timings 6: Ninth Line & Derry Rd E/Derry Rd W

Future Total 2032
08/17/2025

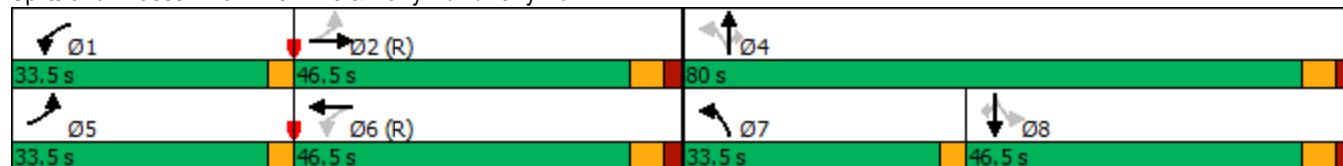
Intersection Capacity Utilization 96.9% ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: Ninth Line & Derry Rd E/Derry Rd W



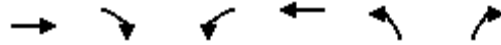
Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Future Total 2032
08/17/2025

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↖↗	↗
Traffic Volume (vph)	924	70	0	1202	40	147
Future Volume (vph)	924	70	0	1202	40	147
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	1.00	0.95	0.97	1.00
Frt	0.989					0.850
Flt Protected					0.950	
Satd. Flow (prot)	3386	0	0	3424	3135	1517
Flt Permitted					0.950	
Satd. Flow (perm)	3386	0	0	3424	3135	1517
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	17					74
Link Speed (k/h)	80			48	60	
Link Distance (m)	358.0			242.0	515.1	
Travel Time (s)	16.1			18.2	30.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	1%	8%	1%	7%	2%
Adj. Flow (vph)	943	71	0	1227	41	150
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1014	0	0	1227	41	150
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	1.8			1.8	6.1	6.1
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Prot
Protected Phases	4			8	2	2
Permitted Phases						
Detector Phase	4			8	2	2
Switch Phase						

Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Future Total 2032
08/17/2025



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	8.0			8.0	8.0	8.0
Minimum Split (s)	26.0			26.0	26.0	26.0
Total Split (s)	34.0			34.0	26.0	26.0
Total Split (%)	56.7%			56.7%	43.3%	43.3%
Maximum Green (s)	28.0			28.0	20.0	20.0
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 Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	C-Min	C-Min
Walk Time (s)	8.0			8.0	8.0	8.0
Flash Dont Walk (s)	12.0			12.0	12.0	12.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	38.3			38.3	9.7	9.7
Actuated g/C Ratio	0.64			0.64	0.16	0.16
v/c Ratio	0.47			0.56	0.08	0.49
Control Delay	5.0			7.8	20.6	18.0
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	5.0			7.8	20.6	18.0
LOS	A			A	C	B
Approach Delay	5.0			7.8	18.5	
Approach LOS	A			A	B	
Queue Length 50th (m)	14.3			30.8	2.0	7.7
Queue Length 95th (m)	31.4			58.0	5.1	19.9
Internal Link Dist (m)	334.0			218.0	491.1	
Turn Bay Length (m)						
Base Capacity (vph)	2168			2186	1045	555
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	0.47			0.56	0.04	0.27

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

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

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 7.5

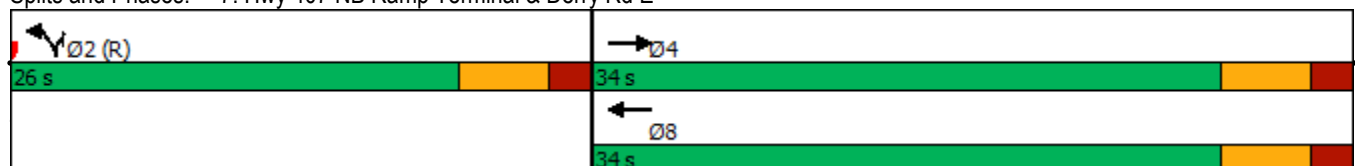
Intersection LOS: A

Intersection Capacity Utilization 51.7%

ICU Level of Service A

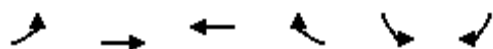
Analysis Period (min) 15

Splits and Phases: 7: Hwy 407 NB Ramp Terminal & Derry Rd E



Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

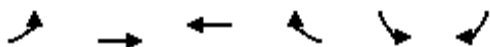
Future Total 2032
08/17/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	841	1076	148	166	235
Future Volume (vph)	0	841	1076	148	166	235
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Fr t			0.982			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3390	3362	0	3288	1532
Flt Permitted					0.950	
Satd. Flow (perm)	0	3390	3362	0	3288	1532
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			36			61
Link Speed (k/h)		80	80		60	
Link Distance (m)		1052.5	358.0		426.8	
Travel Time (s)		47.4	16.1		25.6	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	2%	1%	1%	2%	1%
Adj. Flow (vph)	0	858	1098	151	169	240
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	858	1249	0	169	240
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.4	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Detector Phase		4	8		6	6
Switch Phase						

Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

Future Total 2032
08/17/2025



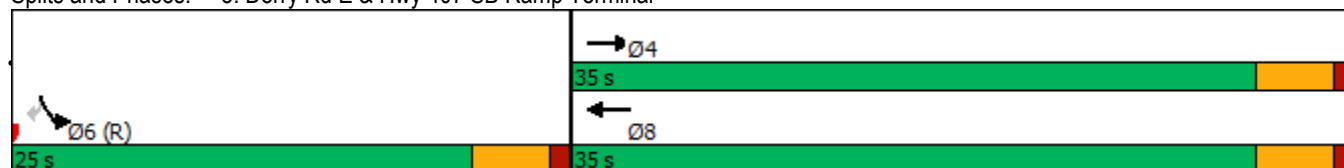
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)		5.0	5.0		5.0	5.0
Minimum Split (s)		22.5	22.5		22.5	22.5
Total Split (s)		35.0	35.0		25.0	25.0
Total Split (%)		58.3%	58.3%		41.7%	41.7%
Maximum Green (s)		30.5	30.5		20.5	20.5
Yellow Time (s)		3.5	3.5		3.5	3.5
All-Red Time (s)		1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effect Green (s)		38.5	38.5		12.5	12.5
Actuated g/C Ratio		0.64	0.64		0.21	0.21
v/c Ratio		0.39	0.58		0.25	0.65
Control Delay		6.7	5.5		19.2	23.8
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		6.7	5.5		19.2	23.8
LOS		A	A		B	C
Approach Delay		6.7	5.5		21.9	
Approach LOS		A	A		C	
Queue Length 50th (m)		19.7	17.4		8.0	17.8
Queue Length 95th (m)		39.5	29.0		12.7	32.4
Internal Link Dist (m)		1028.5	334.0		402.8	
Turn Bay Length (m)						
Base Capacity (vph)		2174	2169		1123	563
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		0.39	0.58		0.15	0.43

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 8.5
Intersection Capacity Utilization 59.2%
Analysis Period (min) 15

Intersection LOS: A
ICU Level of Service B

Splits and Phases: 8: Derry Rd E & Hwy 407 SB Ramp Terminal



Lanes, Volumes, Timings
9: Tenth Line W & Southern Site Access

Future Total 2032
08/17/2025

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	73	28	6	13	0
Future Volume (vph)	0	73	28	6	13	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.961		
Satd. Flow (prot)	1629	0	0	1810	1883	0
Flt Permitted				0.961		
Satd. Flow (perm)	1629	0	0	1810	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	234.3			479.8	76.5	
Travel Time (s)	17.6			36.0	5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	79	30	7	14	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	79	0	0	37	14	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	97	97	97			97
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.7%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	6.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	73	28	6	13	0
Future Vol, veh/h	0	73	28	6	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	79	30	7	14	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	81	14	14	0	-	0
Stage 1	14	-	-	-	-	-
Stage 2	67	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	921	1066	1604	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	956	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	904	1066	1604	-	-	-
Mov Cap-2 Maneuver	904	-	-	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	956	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	6		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1604	-	1066	-	-	
HCM Lane V/C Ratio	0.019	-	0.074	-	-	
HCM Control Delay (s)	7.3	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-	

Lanes, Volumes, Timings
18: Tenth Line W & Northern Site Access

Future Total 2032
08/17/2025

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	0	6	0	0	0
Future Volume (vph)	13	0	6	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected	0.950			0.950		
Satd. Flow (prot)	1789	0	0	1789	1883	0
Flt Permitted	0.950			0.950		
Satd. Flow (perm)	1789	0	0	1789	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	208.4			76.5	195.2	
Travel Time (s)	15.6			5.7	14.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	0	7	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	0	7	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	97	97	97			97
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	7.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	0	6	0	0	0
Future Vol, veh/h	13	0	6	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	0	7	0	0	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	15	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	14	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1004	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	1009	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1000	1084	1622	-	-	-
Mov Cap-2 Maneuver	1000	-	-	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	1009	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	7.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1622	-	1000	-	-	
HCM Lane V/C Ratio	0.004	-	0.014	-	-	
HCM Control Delay (s)	7.2	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Lanes, Volumes, Timings

Future Total 2037

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	237	5	470	2	1184	208	0	1553	386
Future Volume (vph)	0	0	0	237	5	470	2	1184	208	0	1553	386
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.88	1.00	0.95	0.95	1.00	0.91	1.00
Ped Bike Factor						0.98						
Frt						0.850		0.978				0.850
Flt Protected				0.950	0.954		0.950					
Satd. Flow (prot)	1784	0	1784	1507	1518	2250	1729	3186	0	0	4558	1334
Flt Permitted				0.950	0.954		0.128					
Satd. Flow (perm)	1784	0	1784	1507	1518	2201	233	3186	0	0	4558	1334
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						360		16				293
Link Speed (k/h)		30			60			60			60	
Link Distance (m)		149.8			217.3			393.8			859.9	
Travel Time (s)		18.0			13.0			23.6			51.6	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	9%	0%	21%	0%	6%	7%	2%	9%	16%
Adj. Flow (vph)	0	0	0	249	5	495	2	1246	219	0	1635	406
Shared Lane Traffic (%)				49%								
Lane Group Flow (vph)	0	0	0	127	127	495	2	1465	0	0	1635	406
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1		1	1	2	1	1	2			2	1
Detector Template	Left		Right	Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (m)	6.1		6.1	6.1	30.5	6.1	6.1	30.5			30.5	6.1
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Size(m)	6.1		6.1	6.1	1.8	6.1	6.1	1.8			1.8	6.1
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(m)					28.7			28.7			28.7	
Detector 2 Size(m)					1.8			1.8			1.8	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		Prot	Split	NA	Perm	Perm	NA			NA	Perm
Protected Phases	3		3	4	4			6			2	
Permitted Phases						4	6					2

Lanes, Volumes, Timings

Future Total 2037

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/17/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3		3	4	4	4	6	6			2	2
Switch Phase												
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0	20.0	20.0			20.0	20.0
Minimum Split (s)	17.3		17.3	50.6	50.6	50.6	41.5	41.5			41.5	41.5
Total Split (s)	21.5		21.5	62.6	62.6	62.6	75.9	75.9			54.4	54.4
Total Split (%)	13.4%		13.4%	39.1%	39.1%	39.1%	47.4%	47.4%			34.0%	34.0%
Maximum Green (s)	14.2		14.2	55.0	55.0	55.0	68.4	68.4			46.9	46.9
Yellow Time (s)	4.5		4.5	5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)	2.8		2.8	2.6	2.6	2.6	2.5	2.5			2.5	2.5
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	7.3		7.3	7.6	7.6	7.6	7.5	7.5			7.5	7.5
Lead/Lag	Lead		Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	None		None	None	None	None	C-Max	C-Max			C-Max	C-Max
Walk Time (s)				10.0	10.0	10.0	10.0	10.0			10.0	10.0
Flash Dont Walk (s)				33.0	33.0	33.0	24.0	24.0			24.0	24.0
Pedestrian Calls (#/hr)				0	0	0	0	0			0	0
Act Effct Green (s)				21.2	21.2	21.2	123.7	123.7			123.7	123.7
Actuated g/C Ratio				0.13	0.13	0.13	0.77	0.77			0.77	0.77
v/c Ratio				0.64	0.64	0.82	0.01	0.59			0.46	0.37
Control Delay				78.8	78.4	29.1	4.0	11.8			7.6	2.8
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				78.8	78.4	29.1	4.0	11.8			7.6	2.8
LOS				E	E	C	A	B			A	A
Approach Delay					45.9			11.8			6.6	
Approach LOS					D			B			A	
Queue Length 50th (m)				41.0	41.0	24.5	0.1	145.9			58.9	7.8
Queue Length 95th (m)				60.1	60.0	44.9	m0.4	129.4			92.1	24.5
Internal Link Dist (m)		125.8			193.3			369.8			835.9	
Turn Bay Length (m)												
Base Capacity (vph)				518	521	992	180	2467			3525	1098
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.25	0.24	0.50	0.01	0.59			0.46	0.37

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 147 (92%), Referenced to phase 2:SBT and 6:NBTL, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 15.3

Intersection LOS: B

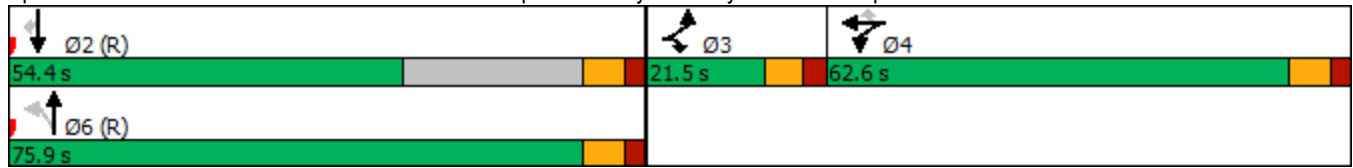
Intersection Capacity Utilization 72.2%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	←←←	→		↑↑↑	↑↑↑	
Traffic Volume (vph)	478	216	0	847	929	730
Future Volume (vph)	478	216	0	847	929	730
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	0.91
Fr't	0.993	0.850			0.934	
Flt Protected	0.954					
Satd. Flow (prot)	3076	1367	0	4824	4267	0
Flt Permitted	0.954					
Satd. Flow (perm)	3076	1367	0	4824	4267	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4	60			161	
Link Speed (k/h)	50			60	60	
Link Distance (m)	280.6			247.8	393.8	
Travel Time (s)	20.2			14.9	23.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	3%	2%	3%	7%	11%
Adj. Flow (vph)	503	227	0	892	978	768
Shared Lane Traffic (%)		10%				
Lane Group Flow (vph)	526	204	0	892	1746	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.4			7.4	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	6.1	6.1		30.5	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	6.1		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				28.7	28.7	
Detector 2 Size(m)				1.8	1.8	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Detector Phase	4	4		2	2	
Switch Phase						

Lanes, Volumes, Timings
2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal

Future Total 2037
08/17/2025



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		20.0	20.0	
Minimum Split (s)	22.5	22.5		31.5	31.5	
Total Split (s)	80.5	80.5		79.5	79.5	
Total Split (%)	50.3%	50.3%		49.7%	49.7%	
Maximum Green (s)	72.0	72.0		72.0	72.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	8.5	8.5		7.5	7.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				17.0	17.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	34.1	34.1		109.9	109.9	
Actuated g/C Ratio	0.21	0.21		0.69	0.69	
v/c Ratio	0.80	0.60		0.27	0.59	
Control Delay	68.4	46.4		15.2	11.0	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	68.4	46.4		15.2	11.0	
LOS	E	D		B	B	
Approach Delay	62.2			15.2	11.0	
Approach LOS	E			B	B	
Queue Length 50th (m)	82.3	46.2		40.4	44.1	
Queue Length 95th (m)	96.5	72.1		73.5	59.9	
Internal Link Dist (m)	256.6			223.8	369.8	
Turn Bay Length (m)						
Base Capacity (vph)	1386	648		3312	2981	
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	0.38	0.31		0.27	0.59	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 149 (93%), Referenced to phase 2:NBSB and 6:, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 23.2

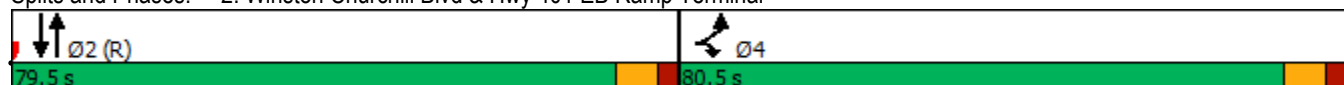
Intersection LOS: C

Intersection Capacity Utilization 66.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal



Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentia Rd

Future Total 2037

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	332	241	58	74	108	135	79	1212	95	272	559	177
Future Volume (vph)	332	241	58	74	108	135	79	1212	95	272	559	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (m)	7.6			2.5			7.6			7.6		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	0.98		0.97	0.99		0.96	1.00		0.98	1.00		0.98
Fr _t			0.850			0.850			0.850			0.850
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3372	3614	1601	1722	3579	1512	3471	5142	1570	3437	4902	1484
Fl _t Permitted	0.950			0.595			0.950			0.950		
Satd. Flow (perm)	3304	3614	1553	1064	3579	1459	3456	5142	1540	3430	4902	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85			85			153			186
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		633.5			370.2			729.2			247.8	
Travel Time (s)		38.0			22.2			43.8			14.9	
Confl. Peds. (#/hr)	23		18	18		23	9		7	7		9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	1%	2%	6%	2%	8%	2%	2%	4%	3%	7%	10%
Adj. Flow (vph)	349	254	61	78	114	142	83	1276	100	286	588	186
Shared Lane Traffic (%)												
Lane Group Flow (vph)	349	254	61	78	114	142	83	1276	100	286	588	186
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentinia Rd

Future Total 2037

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6		5	2	3
Permitted Phases			8	4		4			6			2
Detector Phase	3	8	1	7	4	5	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0	7.0	7.0	10.0	10.0	7.0	10.0	7.0
Minimum Split (s)	12.0	54.5	12.0	11.5	54.5	12.0	12.0	51.5	51.5	12.0	51.5	12.0
Total Split (s)	27.0	69.9	13.0	11.6	54.5	23.0	13.0	55.5	55.5	23.0	65.5	27.0
Total Split (%)	16.9%	43.7%	8.1%	7.3%	34.1%	14.4%	8.1%	34.7%	34.7%	14.4%	40.9%	16.9%
Maximum Green (s)	22.0	62.4	8.0	8.6	47.0	18.0	8.0	48.0	48.0	18.0	58.0	22.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	2.0	3.5	2.0	0.0	3.5	2.0	2.0	3.5	3.5	2.0	3.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.5	5.0	3.0	7.5	5.0	5.0	7.5	7.5	5.0	7.5	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	Min	None	None	C-Max	C-Max	None	C-Max	None
Walk Time (s)		10.0			10.0			10.0	10.0		10.0	
Flash Dont Walk (s)		37.0			37.0			34.0	34.0		34.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	20.3	25.1	36.9	23.9	11.1	32.1	9.3	85.1	85.1	18.5	94.3	117.1
Actuated g/C Ratio	0.13	0.16	0.23	0.15	0.07	0.20	0.06	0.53	0.53	0.12	0.59	0.73
v/c Ratio	0.82	0.45	0.14	0.40	0.46	0.39	0.41	0.47	0.11	0.72	0.20	0.17
Control Delay	83.7	63.4	3.7	53.5	77.5	23.4	78.6	24.8	0.6	64.3	21.1	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.7	63.4	3.7	53.5	77.5	23.4	78.6	24.8	0.6	64.3	21.1	4.9
LOS	F	E	A	D	E	C	E	C	A	E	C	A
Approach Delay		68.6			48.9			26.2			29.9	
Approach LOS		E			D			C			C	
Queue Length 50th (m)	56.0	39.0	0.0	19.4	18.7	14.7	13.4	91.5	0.0	46.9	43.3	7.2
Queue Length 95th (m)	73.8	52.2	5.7	32.9	29.1	33.1	22.4	115.3	1.2	57.3	55.4	27.5
Internal Link Dist (m)		609.5			346.2			705.2			223.8	
Turn Bay Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Base Capacity (vph)	463	1409	428	196	1051	376	205	2733	890	421	2889	1130
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.18	0.14	0.40	0.11	0.38	0.40	0.47	0.11	0.68	0.20	0.16

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 65 (41%), Referenced to phase 2:SBT and 6:NBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 37.5

Intersection LOS: D

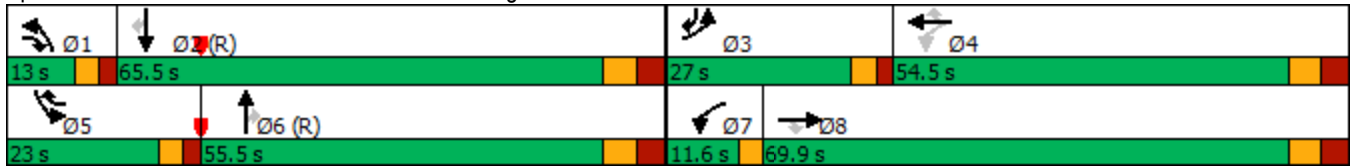
Lanes, Volumes, Timings
 3: Winston Churchill Blvd & Argentia Rd

Future Total 2037
 08/17/2025

Intersection Capacity Utilization 99.6%
 Analysis Period (min) 15

ICU Level of Service F

Splits and Phases: 3: Winston Churchill Blvd & Argentia Rd



Lanes, Volumes, Timings
4: Tenth Line W & Argentinia Rd

Future Total 2037
08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	355	36	69	166	47	7	30	214	19	10	11
Future Volume (vph)	28	355	36	69	166	47	7	30	214	19	10	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	0.0		0.0	130.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
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
Ped Bike Factor	1.00		0.97	1.00		0.97	1.00	0.99		1.00	0.99	
Frt			0.850			0.850		0.868			0.921	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1847	1633	1738	1830	1633	1825	1634	0	1217	1757	0
Flt Permitted	0.648			0.466			0.573			0.602		
Satd. Flow (perm)	1240	1847	1586	849	1830	1592	1099	1634	0	771	1757	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			71		223			11	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		1323.5			633.5			748.2			479.2	
Travel Time (s)		79.4			38.0			53.9			34.5	
Confl. Peds. (#/hr)	3		5	5		3	2		1	1		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	4%	0%	5%	5%	0%	0%	0%	1%	50%	0%	0%
Adj. Flow (vph)	29	370	38	72	173	49	7	31	223	20	10	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	370	38	72	173	49	7	254	0	20	21	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)		11.1			11.1			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

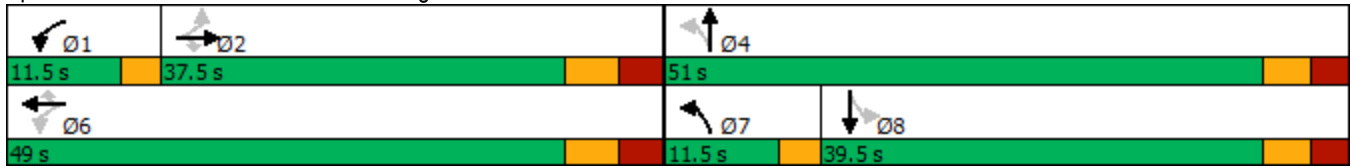
Lanes, Volumes, Timings
4: Tenth Line W & Argentia Rd

Future Total 2037
08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		7	4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	2	2	2	1	6	6	7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0	10.0	7.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5	35.5	11.5	35.5	35.5	11.5	39.5		39.5	39.5	
Total Split (s)	37.5	37.5	37.5	11.5	49.0	49.0	11.5	51.0		39.5	39.5	
Total Split (%)	37.5%	37.5%	37.5%	11.5%	49.0%	49.0%	11.5%	51.0%		39.5%	39.5%	
Maximum Green (s)	30.0	30.0	30.0	8.5	41.5	41.5	8.5	44.5		33.0	33.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	3.5		3.5	3.5	
All-Red Time (s)	3.5	3.5	3.5	0.0	3.5	3.5	0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	3.0	7.5	7.5	3.0	6.5		6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	None	Max	Max	None	Min		Min	Min	
Walk Time (s)	10.0	10.0	10.0		10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)	18.0	18.0	18.0		18.0	18.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0		0	0	
Act Effct Green (s)	33.5	33.5	33.5	46.2	41.6	41.6	15.4	11.9		10.1	10.1	
Actuated g/C Ratio	0.50	0.50	0.50	0.68	0.62	0.62	0.23	0.18		0.15	0.15	
v/c Ratio	0.05	0.40	0.05	0.11	0.15	0.05	0.02	0.54		0.17	0.08	
Control Delay	11.8	14.2	0.1	4.8	6.7	1.4	19.4	10.0		30.7	19.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	11.8	14.2	0.1	4.8	6.7	1.4	19.4	10.0		30.7	19.6	
LOS	B	B	A	A	A	A	B	A		C	B	
Approach Delay		12.8			5.3			10.2			25.0	
Approach LOS		B			A			B			C	
Queue Length 50th (m)	1.8	27.4	0.0	2.2	7.3	0.0	0.7	3.3		2.1	1.1	
Queue Length 95th (m)	7.2	62.0	0.0	8.4	20.9	2.7	3.3	19.6		8.8	7.1	
Internal Link Dist (m)		1299.5			609.5			724.2			455.2	
Turn Bay Length (m)	20.0						130.0			45.0		
Base Capacity (vph)	614	915	837	691	1127	1007	342	1154		377	866	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.05	0.40	0.05	0.10	0.15	0.05	0.02	0.22		0.05	0.02	
Intersection Summary												
Area Type:	Other											
Cycle Length: 100												
Actuated Cycle Length: 67.6												
Natural Cycle: 100												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.54												
Intersection Signal Delay: 10.5							Intersection LOS: B					
Intersection Capacity Utilization 66.1%							ICU Level of Service C					

Analysis Period (min) 15

Splits and Phases: 4: Tenth Line W & Argentia Rd



Lanes, Volumes, Timings
5: Ninth Line & Argentia Rd

Future Total 2037
08/17/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	52	30	444	224	97	805
Future Volume (vph)	52	30	444	224	97	805
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		100.0	45.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1526	3579	1601	1789	3544
Flt Permitted	0.950				0.479	
Satd. Flow (perm)	1789	1526	3579	1601	902	3544
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		32		241		
Link Speed (k/h)	60		60			60
Link Distance (m)	1323.5		1616.5			667.9
Travel Time (s)	79.4		97.0			40.1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	7%	2%	2%	2%	3%
Adj. Flow (vph)	56	32	477	241	104	866
Shared Lane Traffic (%)						
Lane Group Flow (vph)	56	32	477	241	104	866
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.4		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (m)	6.1	6.1	30.5	6.1	6.1	30.5
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	6.1	1.8	6.1	6.1	1.8
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		6			2

Lanes, Volumes, Timings
5: Ninth Line & Argentia Rd

Future Total 2037
08/17/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		4		6	2	
Detector Phase	8	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	22.5	30.0	43.5	43.5	43.5	43.5
Total Split (s)	22.5	30.0	43.5	43.5	43.5	43.5
Total Split (%)	30.6%	40.8%	59.2%	59.2%	59.2%	59.2%
Maximum Green (s)	18.0	24.0	37.0	37.0	37.0	37.0
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.5	6.5	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)	7.0	10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)	11.0	14.0	27.0	27.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	14.6	20.3	50.3	50.3	50.3	50.3
Actuated g/C Ratio	0.21	0.30	0.74	0.74	0.74	0.74
v/c Ratio	0.15	0.07	0.18	0.19	0.16	0.33
Control Delay	20.4	7.9	6.4	1.7	8.2	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.4	7.9	6.4	1.7	8.2	7.3
LOS	C	A	A	A	A	A
Approach Delay	15.8		4.8			7.4
Approach LOS	B		A			A
Queue Length 50th (m)	6.7	0.0	16.2	0.0	6.6	33.8
Queue Length 95th (m)	12.5	5.4	23.9	8.7	14.7	46.5
Internal Link Dist (m)	1299.5		1592.5			643.9
Turn Bay Length (m)				100.0	45.0	
Base Capacity (vph)	680	566	2639	1244	665	2613
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.06	0.18	0.19	0.16	0.33
Intersection Summary						
Area Type:	Other					
Cycle Length: 73.5						
Actuated Cycle Length: 68.2						
Natural Cycle: 75						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.33						
Intersection Signal Delay: 6.8				Intersection LOS: A		
Intersection Capacity Utilization 39.4%				ICU Level of Service A		
Analysis Period (min) 15						

Splits and Phases: 5: Ninth Line & Argentia Rd



Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Future Total 2037

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	733	38	84	401	31	105	352	127	28	460	303
Future Volume (vph)	173	733	38	84	401	31	105	352	127	28	460	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	100.0		0.0	185.0		135.0	105.0		95.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.993			0.989				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1772	3547	0	1722	3577	0	1755	3510	1585	1825	3544	1570
Flt Permitted	0.453			0.304			0.224			0.535		
Satd. Flow (perm)	845	3547	0	551	3577	0	414	3510	1585	1028	3544	1570
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			5				131			312
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		242.0			667.9			1508.4			1616.5	
Travel Time (s)		14.5			40.1			90.5			97.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	2%	6%	6%	1%	0%	4%	4%	3%	0%	3%	4%
Adj. Flow (vph)	178	756	39	87	413	32	108	363	131	29	474	312
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	795	0	87	445	0	108	363	131	29	474	312
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	

Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Future Total 2037
08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		1	6		7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	42.5		11.5	42.5		11.5	40.0	40.0	40.5	40.5	40.5
Total Split (s)	13.0	62.0		13.0	62.0		18.0	85.0	85.0	67.0	67.0	67.0
Total Split (%)	8.1%	38.8%		8.1%	38.8%		11.3%	53.1%	53.1%	41.9%	41.9%	41.9%
Maximum Green (s)	10.0	55.5		10.0	55.5		15.0	79.0	79.0	60.5	60.5	60.5
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.5		0.0	2.5		0.0	2.0	2.0	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.5		3.0	6.5		3.0	6.0	6.0	6.5	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?		Yes		Yes			Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	Max		None	Min	Min	Min	Min	Min
Walk Time (s)		10.0			10.0			10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)		26.0			26.0			24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0			0			0	0	0	0	0
Act Effct Green (s)	104.6	89.8		98.8	86.6		49.0	46.0	46.0	29.3	29.3	29.3
Actuated g/C Ratio	0.65	0.56		0.62	0.54		0.31	0.29	0.29	0.18	0.18	0.18
v/c Ratio	0.29	0.40		0.22	0.23		0.46	0.36	0.24	0.15	0.73	0.58
Control Delay	12.9	20.1		12.8	20.9		45.7	45.4	6.6	54.6	68.2	9.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	20.1		12.8	20.9		45.7	45.4	6.6	54.6	68.2	9.5
LOS	B	C		B	C		D	D	A	D	E	A
Approach Delay		18.8			19.5			37.0			45.2	
Approach LOS		B			B			D			D	
Queue Length 50th (m)	22.9	70.7		9.7	38.0		25.3	48.1	0.0	7.9	76.0	0.0
Queue Length 95th (m)	39.6	93.5		19.3	57.8		38.1	58.2	14.6	16.9	90.3	25.7
Internal Link Dist (m)		218.0			643.9			1484.4			1592.5	
Turn Bay Length (m)	90.0			100.0			185.0		135.0	105.0		95.0
Base Capacity (vph)	625	1993		420	1938		252	1733	848	388	1340	787
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.40		0.21	0.23		0.43	0.21	0.15	0.07	0.35	0.40

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 115 (72%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 30.1

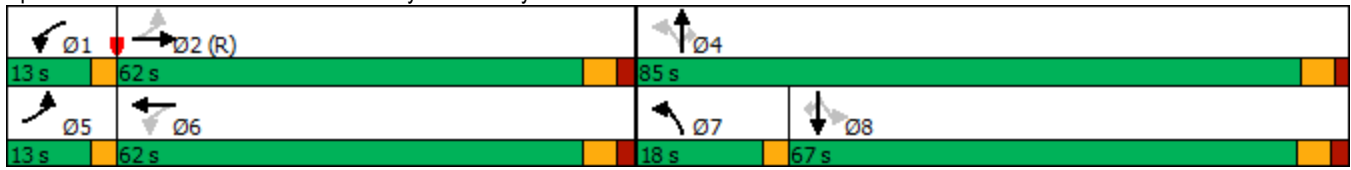
Intersection LOS: C

Intersection Capacity Utilization 64.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Derry Rd E/Derry Rd W



Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Future Total 2037
08/17/2025

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘↗	↗
Traffic Volume (vph)	853	200	0	685	9	10
Future Volume (vph)	853	200	0	685	9	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	1.00	0.95	0.97	1.00
Frt	0.972					0.850
Flt Protected					0.950	
Satd. Flow (prot)	3295	0	0	3357	2727	1502
Flt Permitted					0.950	
Satd. Flow (perm)	3295	0	0	3357	2727	1502
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	56					10
Link Speed (k/h)	80			60	60	
Link Distance (m)	358.0			242.0	515.1	
Travel Time (s)	16.1			14.5	30.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	23%	3%
Adj. Flow (vph)	879	206	0	706	9	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1085	0	0	706	9	10
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	1.8			1.8	6.1	6.1
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Prot
Protected Phases	4			8	2	2
Permitted Phases						
Detector Phase	4			8	2	2
Switch Phase						

Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Future Total 2037
08/17/2025



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	8.0			8.0	5.0	5.0
Minimum Split (s)	26.0			26.0	24.5	24.5
Total Split (s)	50.0			50.0	30.0	30.0
Total Split (%)	62.5%			62.5%	37.5%	37.5%
Maximum Green (s)	44.0			44.0	25.5	25.5
Yellow Time (s)	4.0			4.0	3.5	3.5
All-Red Time (s)	2.0			2.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	C-Min	C-Min
Walk Time (s)	8.0			8.0	8.0	8.0
Flash Dont Walk (s)	12.0			12.0	12.0	12.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	63.6			63.6	5.9	5.9
Actuated g/C Ratio	0.80			0.80	0.07	0.07
v/c Ratio	0.41			0.26	0.04	0.08
Control Delay	2.6			1.8	34.6	20.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	2.6			1.8	34.6	20.4
LOS	A			A	C	C
Approach Delay	2.6			1.8	27.1	
Approach LOS	A			A	C	
Queue Length 50th (m)	16.3			8.5	0.6	0.0
Queue Length 95th (m)	23.7			10.0	2.8	4.5
Internal Link Dist (m)	334.0			218.0	491.1	
Turn Bay Length (m)						
Base Capacity (vph)	2630			2667	869	485
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	0.41			0.26	0.01	0.02

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

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

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.41

Intersection Signal Delay: 2.5

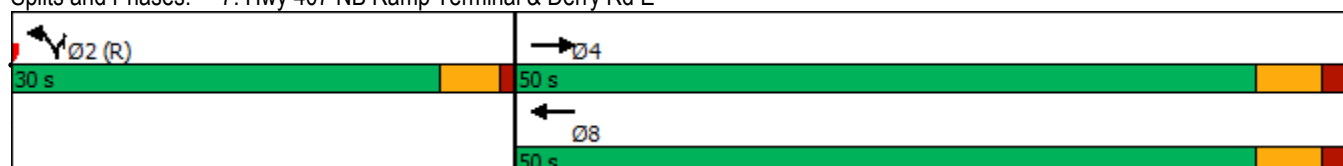
Intersection LOS: A

Intersection Capacity Utilization 44.5%

ICU Level of Service A

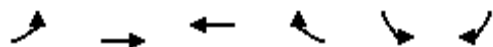
Analysis Period (min) 15

Splits and Phases: 7: Hwy 407 NB Ramp Terminal & Derry Rd E



Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

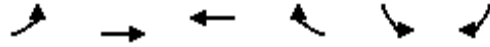
Future Total 2037
08/17/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	1037	1104	145	27	52
Future Volume (vph)	0	1037	1104	145	27	52
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Fr t			0.983			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3390	3300	0	3106	1334
Flt Permitted					0.950	
Satd. Flow (perm)	0	3390	3300	0	3106	1334
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			32			55
Link Speed (k/h)		80	80		60	
Link Distance (m)		1052.5	358.0		426.8	
Travel Time (s)		47.4	16.1		25.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	3%	3%	8%	16%
Adj. Flow (vph)	0	1092	1162	153	28	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1092	1315	0	28	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.4	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Detector Phase		4	8		6	6
Switch Phase						

Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

Future Total 2037
08/17/2025



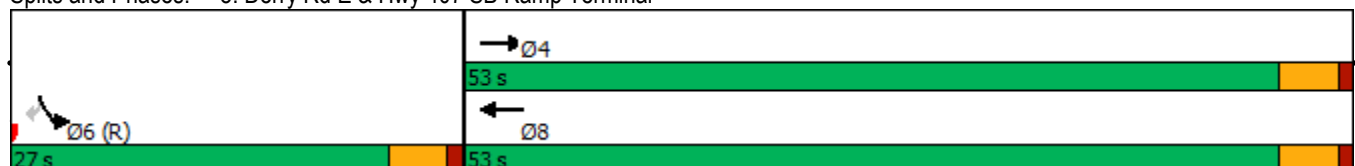
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)		5.0	5.0		5.0	5.0
Minimum Split (s)		22.5	22.5		22.5	22.5
Total Split (s)		53.0	53.0		27.0	27.0
Total Split (%)		66.3%	66.3%		33.8%	33.8%
Maximum Green (s)		48.5	48.5		22.5	22.5
Yellow Time (s)		3.5	3.5		3.5	3.5
All-Red Time (s)		1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)		64.3	64.3		6.7	6.7
Actuated g/C Ratio		0.80	0.80		0.08	0.08
v/c Ratio		0.40	0.49		0.11	0.34
Control Delay		2.9	2.6		33.9	16.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		2.9	2.6		33.9	16.1
LOS		A	A		C	B
Approach Delay		2.9	2.6		22.1	
Approach LOS		A	A		C	
Queue Length 50th (m)		16.3	18.8		2.1	0.0
Queue Length 95th (m)		29.3	22.7		5.5	9.8
Internal Link Dist (m)		1028.5	334.0		402.8	
Turn Bay Length (m)						
Base Capacity (vph)		2724	2657		873	414
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		0.40	0.49		0.03	0.13

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 3.4
Intersection Capacity Utilization 48.8%
Analysis Period (min) 15

Intersection LOS: A
ICU Level of Service A

Splits and Phases: 8: Derry Rd E & Hwy 407 SB Ramp Terminal



Lanes, Volumes, Timings
9: Tenth Line W & Southern Site Access

Future Total 2037
08/17/2025

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	23	75	13	10	0
Future Volume (vph)	0	23	75	13	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.959		
Satd. Flow (prot)	1629	0	0	1806	1883	0
Flt Permitted				0.959		
Satd. Flow (perm)	1629	0	0	1806	1883	0
Link Speed (k/h)	48			50	50	
Link Distance (m)	117.6			479.2	92.6	
Travel Time (s)	8.8			34.5	6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	25	82	14	11	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	0	0	96	11	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	21.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	6.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	23	75	13	10	0
Future Vol, veh/h	0	23	75	13	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	25	82	14	11	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	189	11	11	0	-	0
Stage 1	11	-	-	-	-	-
Stage 2	178	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	800	1070	1608	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	853	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	759	1070	1608	-	-	-
Mov Cap-2 Maneuver	759	-	-	-	-	-
Stage 1	960	-	-	-	-	-
Stage 2	853	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.4	6.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1608	-	1070	-	-	
HCM Lane V/C Ratio	0.051	-	0.023	-	-	
HCM Control Delay (s)	7.4	0	8.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-	

Lanes, Volumes, Timings
18: Tenth Line W & Northern Site Access

Future Total 2037
08/17/2025

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	10	13	0	0	0
Future Volume (vph)	0	10	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.950		
Satd. Flow (prot)	1629	0	0	1789	1883	0
Flt Permitted				0.950		
Satd. Flow (perm)	1629	0	0	1789	1883	0
Link Speed (k/h)	48			50 50		
Link Distance (m)	124.9			92.6 104.9		
Travel Time (s)	9.4			6.7 7.6		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	11	14	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	14	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0 0.0		
Link Offset(m)	0.0			0.0 0.0		
Crosswalk Width(m)	1.6			1.6 1.6		
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 13.3%				ICU Level of Service A		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	7.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	13	0	0	0
Future Vol, veh/h	0	10	13	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	14	0	0	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	29	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	28	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	986	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	995	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	977	1084	1622	-	-	-
Mov Cap-2 Maneuver	977	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	995	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.4	7.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1622	-	1084	-	-	
HCM Lane V/C Ratio	0.009	-	0.01	-	-	
HCM Control Delay (s)	7.2	0	8.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Lanes, Volumes, Timings

Future Total 2037

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	0	18	809	13	755	5	1121	231	0	1434	434
Future Volume (vph)	7	0	18	809	13	755	5	1121	231	0	1434	434
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.88	1.00	0.95	0.95	1.00	0.91	1.00
Frt			0.850			0.850		0.974				0.850
Flt Protected	0.950			0.950	0.954		0.950					
Satd. Flow (prot)	1601	0	1547	1643	1649	2723	1712	3328	0	0	4644	1446
Flt Permitted	0.950			0.950	0.954		0.101					
Satd. Flow (perm)	1601	0	1547	1643	1649	2723	182	3328	0	0	4644	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			668		16				294
Link Speed (k/h)		30			60			60			60	
Link Distance (m)		149.8			217.3			393.8			859.9	
Travel Time (s)		18.0			13.0			23.6			51.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	8%	0%	0%	0%	1%	0%	1%	0%	7%	2%	7%	7%
Adj. Flow (vph)	7	0	19	843	14	786	5	1168	241	0	1494	452
Shared Lane Traffic (%)				49%								
Lane Group Flow (vph)	7	0	19	430	427	786	5	1409	0	0	1494	452
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	24		14	97		14	24		97
Number of Detectors	1		1	1	2	1	1	2			2	1
Detector Template	Left		Right	Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (m)	6.1		6.1	6.1	30.5	6.1	6.1	30.5			30.5	6.1
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Size(m)	6.1		6.1	6.1	1.8	6.1	6.1	1.8			1.8	6.1
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(m)					28.7			28.7			28.7	
Detector 2 Size(m)					1.8			1.8			1.8	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type	Prot		Prot	Split	NA	Perm	Perm	NA			NA	Perm
Protected Phases	3		3	4	4			6			2	
Permitted Phases						4	6					2
Detector Phase	3		3	4	4	4	6	6			2	2
Switch Phase												

Lanes, Volumes, Timings

Future Total 2037

1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

08/17/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0		10.0	10.0	10.0	10.0	20.0	20.0			20.0	20.0
Minimum Split (s)	17.3		17.3	50.6	50.6	50.6	41.5	41.5			41.5	41.5
Total Split (s)	45.4		45.4	58.4	58.4	58.4	56.2	56.2			56.2	56.2
Total Split (%)	28.4%		28.4%	36.5%	36.5%	36.5%	35.1%	35.1%			35.1%	35.1%
Maximum Green (s)	38.1		38.1	50.8	50.8	50.8	48.7	48.7			48.7	48.7
Yellow Time (s)	4.5		4.5	5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)	2.8		2.8	2.6	2.6	2.6	2.5	2.5			2.5	2.5
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	7.3		7.3	7.6	7.6	7.6	7.5	7.5			7.5	7.5
Lead/Lag	Lead		Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	None		None	None	None	None	C-Max	C-Max			C-Max	C-Max
Walk Time (s)				10.0	10.0	10.0	10.0	10.0			10.0	10.0
Flash Dont Walk (s)				33.0	33.0	33.0	24.0	24.0			24.0	24.0
Pedestrian Calls (#/hr)				0	0	0	0	0			0	0
Act Effct Green (s)	10.0		10.0	55.4	55.4	55.4	79.1	79.1			79.1	79.1
Actuated g/C Ratio	0.06		0.06	0.35	0.35	0.35	0.49	0.49			0.49	0.49
v/c Ratio	0.07		0.11	0.76	0.75	0.57	0.06	0.85			0.65	0.52
Control Delay	72.4		1.3	54.3	53.7	7.0	27.6	37.1			35.1	13.7
Queue Delay	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	72.4		1.3	54.3	53.7	7.0	27.6	37.1			35.1	13.7
LOS	E		A	D	D	A	C	D			D	B
Approach Delay		20.4			31.6			37.1			30.1	
Approach LOS		C			C			D			C	
Queue Length 50th (m)	2.1		0.0	127.4	126.0	14.5	0.7	213.8			139.7	34.4
Queue Length 95th (m)	7.7		0.0	146.9	145.1	28.5	m2.4	#319.4			185.1	80.9
Internal Link Dist (m)		125.8			193.3			369.8			835.9	
Turn Bay Length (m)												
Base Capacity (vph)	381		430	591	594	1408	89	1653			2296	863
Starvation Cap Reductn	0		0	0	0	0	0	0			0	0
Spillback Cap Reductn	0		0	0	0	0	0	0			0	0
Storage Cap Reductn	0		0	0	0	0	0	0			0	0
Reduced v/c Ratio	0.02		0.04	0.73	0.72	0.56	0.06	0.85			0.65	0.52

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 56 (35%), Referenced to phase 2:SBT and 6:NBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 32.5

Intersection LOS: C

Intersection Capacity Utilization 87.9%

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: 1: Winston Churchill Blvd & Carpool Lot Hwy 401/Hwy 401 WB Ramp Terminal

 56.2 s	 45.4 s	 58.4 s
 56.2 s		

Lanes, Volumes, Timings
2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal

Future Total 2037
08/17/2025

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	 			  	  	
Traffic Volume (vph)	340	330	0	962	1755	572
Future Volume (vph)	340	330	0	962	1755	572
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.97	0.91	1.00	0.91	0.91	0.91
Fr't	0.961	0.850			0.963	
Flt Protected	0.964					
Satd. Flow (prot)	2936	1354	0	4777	4691	0
Flt Permitted	0.964					
Satd. Flow (perm)	2936	1354	0	4777	4691	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	3	3			67	
Link Speed (k/h)	50			60	60	
Link Distance (m)	280.6			247.8	393.8	
Travel Time (s)	20.2			14.9	23.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	14%	4%	2%	4%	2%	2%
Adj. Flow (vph)	362	351	0	1023	1867	609
Shared Lane Traffic (%)		36%				
Lane Group Flow (vph)	488	225	0	1023	2476	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.4			7.4	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	6.1	6.1		30.5	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	6.1		1.8	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				28.7	28.7	
Detector 2 Size(m)				1.8	1.8	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Detector Phase	4	4		2	2	
Switch Phase						

Lanes, Volumes, Timings
2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal

Future Total 2037
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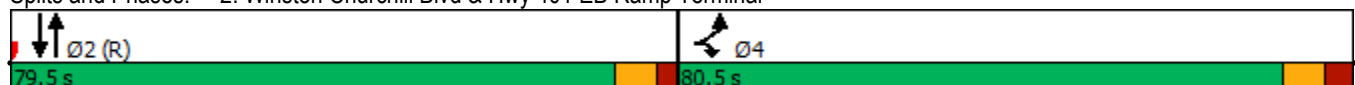
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0		20.0	20.0	
Minimum Split (s)	22.5	22.5		31.5	31.5	
Total Split (s)	80.5	80.5		79.5	79.5	
Total Split (%)	50.3%	50.3%		49.7%	49.7%	
Maximum Green (s)	72.0	72.0		72.0	72.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	3.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	8.5	8.5		7.5	7.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				17.0	17.0	
Pedestrian Calls (#/hr)				0	0	
Act Effect Green (s)	34.3	34.3		109.7	109.7	
Actuated g/C Ratio	0.21	0.21		0.69	0.69	
v/c Ratio	0.77	0.77		0.31	0.77	
Control Delay	66.9	75.0		7.5	12.6	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	66.9	75.0		7.5	12.6	
LOS	E	E		A	B	
Approach Delay	69.4			7.5	12.6	
Approach LOS	E			A	B	
Queue Length 50th (m)	76.5	74.7		56.2	109.1	
Queue Length 95th (m)	87.6	99.5		75.5	136.6	
Internal Link Dist (m)	256.6			223.8	369.8	
Turn Bay Length (m)						
Base Capacity (vph)	1322	610		3274	3236	
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	0.37	0.37		0.31	0.77	

Intersection Summary

Area Type: Other
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 48 (30%), Referenced to phase 2:NBSB and 6:, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 21.0
Intersection Capacity Utilization 77.0%
Analysis Period (min) 15

Intersection LOS: C
ICU Level of Service D

Splits and Phases: 2: Winston Churchill Blvd & Hwy 401 EB Ramp Terminal



Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentia Rd

Future Total 2037
08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 		 	  		 	  	
Traffic Volume (vph)	354	332	202	268	576	284	221	755	94	229	1235	358
Future Volume (vph)	354	332	202	268	576	284	221	755	94	229	1235	358
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (m)	7.6			2.5			7.6			7.6		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	0.98		0.96	0.98		0.95	1.00		0.99	1.00		0.98
Fr't			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3437	3510	1601	1807	3614	1601	3437	5193	1555	3471	5043	1601
Flt Permitted	0.950			0.550			0.950			0.950		
Satd. Flow (perm)	3375	3510	1530	1025	3614	1518	3434	5193	1533	3467	5043	1571
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			91			85			119			65
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		633.5			370.2			729.2			247.8	
Travel Time (s)		38.0			22.2			43.8			14.9	
Confl. Peds. (#/hr)	40		32	32		40	6		2	2		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
Heavy Vehicles (%)	3%	4%	2%	1%	1%	2%	3%	1%	5%	2%	4%	2%
Adj. Flow (vph)	358	335	204	271	582	287	223	763	95	231	1247	362
Shared Lane Traffic (%)												
Lane Group Flow (vph)	358	335	204	271	582	287	223	763	95	231	1247	362
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			1.6			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	97		97	24		97	97		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
3: Winston Churchill Blvd & Argentinia Rd

Future Total 2037

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6		5	2	3
Permitted Phases			8	4		4			6			2
Detector Phase	3	8	1	7	4	5	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0	7.0	7.0	10.0	10.0	7.0	10.0	7.0
Minimum Split (s)	12.0	54.5	12.0	11.5	54.5	12.0	12.0	51.5	51.5	12.0	51.5	12.0
Total Split (s)	29.0	63.1	20.0	20.4	54.5	22.0	20.0	54.5	54.5	22.0	56.5	29.0
Total Split (%)	18.1%	39.4%	12.5%	12.8%	34.1%	13.8%	12.5%	34.1%	34.1%	13.8%	35.3%	18.1%
Maximum Green (s)	24.0	55.6	15.0	17.4	47.0	17.0	15.0	47.0	47.0	17.0	49.0	24.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	2.0	3.5	2.0	0.0	3.5	2.0	2.0	3.5	3.5	2.0	3.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.5	5.0	3.0	7.5	5.0	5.0	7.5	7.5	5.0	7.5	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	None
Walk Time (s)		10.0			10.0			10.0	10.0		10.0	
Flash Dont Walk (s)		37.0			37.0			34.0	34.0		34.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	21.2	38.0	56.2	53.9	32.1	50.5	15.6	65.8	65.8	15.9	66.0	89.8
Actuated g/C Ratio	0.13	0.24	0.35	0.34	0.20	0.32	0.10	0.41	0.41	0.10	0.41	0.56
v/c Ratio	0.79	0.40	0.34	0.63	0.80	0.53	0.67	0.36	0.14	0.67	0.60	0.40
Control Delay	79.8	51.7	18.4	42.0	69.6	30.8	79.3	34.8	3.2	72.5	46.6	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.8	51.7	18.4	42.0	69.6	30.8	79.3	34.8	3.2	72.5	46.6	19.0
LOS	E	D	B	D	E	C	E	C	A	E	D	B
Approach Delay		55.4			53.3			41.2			44.4	
Approach LOS		E			D			D			D	
Queue Length 50th (m)	57.4	47.5	23.9	60.9	93.9	49.8	35.9	61.5	0.0	38.8	114.9	47.5
Queue Length 95th (m)	74.2	57.7	37.7	76.8	109.3	69.0	49.1	83.9	7.8	m51.0	153.1	68.3
Internal Link Dist (m)		609.5			346.2			705.2			223.8	
Turn Bay Length (m)	185.0		100.0	85.0		85.0	150.0		70.0	145.0		185.0
Base Capacity (vph)	515	1219	611	431	1061	562	355	2134	700	384	2081	940
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.27	0.33	0.63	0.55	0.51	0.63	0.36	0.14	0.60	0.60	0.39

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

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

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 47.7

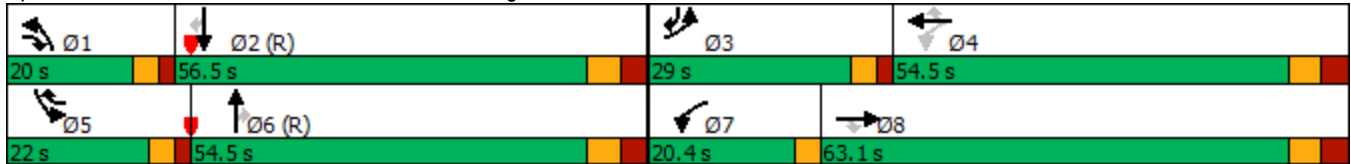
Intersection LOS: D

Lanes, Volumes, Timings
 3: Winston Churchill Blvd & Argentinia Rd

Future Total 2037
 08/17/2025

Intersection Capacity Utilization 107.2% ICU Level of Service G
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Winston Churchill Blvd & Argentinia Rd



Lanes, Volumes, Timings
4: Tenth Line W & Argentinia Rd

Future Total 2037
08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	338	96	451	518	22	61	7	281	39	22	34
Future Volume (vph)	11	338	96	451	518	22	61	7	281	39	22	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	0.0		0.0	130.0		0.0	45.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			7.6		
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
Ped Bike Factor	0.99		0.96	0.99		0.97	0.99	0.98		1.00	0.99	
Frt			0.850			0.850		0.854			0.909	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	961	1555	1789	1921	1585	1755	1611	0	1825	1726	0
Flt Permitted	0.456			0.432			0.557			0.572		
Satd. Flow (perm)	871	961	1491	806	1921	1531	1022	1611	0	1094	1726	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			71		302			37	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		1323.5			633.5			748.2			479.2	
Travel Time (s)		79.4			38.0			53.9			34.5	
Confl. Peds. (#/hr)	8		12	12		8	8		7	7		8
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	100%	5%	2%	0%	3%	4%	0%	0%	0%	0%	0%
Adj. Flow (vph)	12	363	103	485	557	24	66	8	302	42	24	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	363	103	485	557	24	66	310	0	42	61	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)		11.1			11.1			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
4: Tenth Line W & Argentia Rd

Future Total 2037
08/17/2025

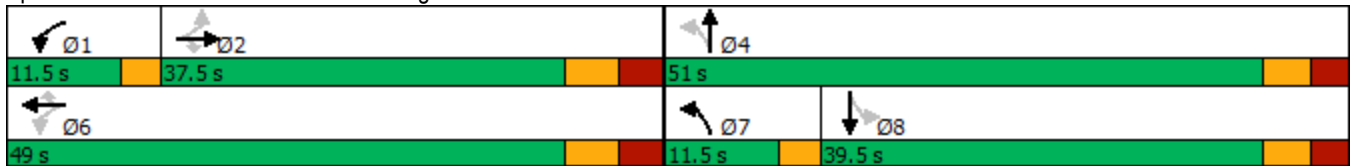
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		2		1	6		7	4			8	
Permitted Phases	2		2	6		6	4			8		
Detector Phase	2	2	2	1	6	6	7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0	10.0	7.0	10.0		10.0	10.0	
Minimum Split (s)	35.5	35.5	35.5	11.5	35.5	35.5	11.5	39.5		39.5	39.5	
Total Split (s)	37.5	37.5	37.5	11.5	49.0	49.0	11.5	51.0		39.5	39.5	
Total Split (%)	37.5%	37.5%	37.5%	11.5%	49.0%	49.0%	11.5%	51.0%		39.5%	39.5%	
Maximum Green (s)	30.0	30.0	30.0	8.5	41.5	41.5	8.5	44.5		33.0	33.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	3.0	3.5		3.5	3.5	
All-Red Time (s)	3.5	3.5	3.5	0.0	3.5	3.5	0.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	3.0	7.5	7.5	3.0	6.5		6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Max	Max	Max	None	Max	Max	None	Min		Min	Min	
Walk Time (s)	10.0	10.0	10.0		10.0	10.0		10.0		10.0	10.0	
Flash Dont Walk (s)	18.0	18.0	18.0		18.0	18.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0		0	0	
Act Effct Green (s)	30.1	30.1	30.1	46.2	41.7	41.7	22.4	18.9		10.4	10.4	
Actuated g/C Ratio	0.40	0.40	0.40	0.62	0.56	0.56	0.30	0.25		0.14	0.14	
v/c Ratio	0.03	0.94	0.16	0.79	0.52	0.03	0.17	0.49		0.28	0.23	
Control Delay	15.5	58.5	4.3	21.8	13.3	0.0	19.5	6.1		35.2	18.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	15.5	58.5	4.3	21.8	13.3	0.0	19.5	6.1		35.2	18.1	
LOS	B	E	A	C	B	A	B	A		D	B	
Approach Delay		45.7			16.9			8.5			25.0	
Approach LOS		D			B			A			C	
Queue Length 50th (m)	1.0	49.8	0.0	34.4	47.9	0.0	6.7	0.9		5.6	3.1	
Queue Length 95th (m)	4.4	#105.9	8.7	#76.1	79.1	0.0	14.8	17.7		14.7	13.1	
Internal Link Dist (m)		1299.5			609.5			724.2			455.2	
Turn Bay Length (m)	20.0						130.0			45.0		
Base Capacity (vph)	351	387	664	611	1072	886	390	1085		485	786	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.03	0.94	0.16	0.79	0.52	0.03	0.17	0.29		0.09	0.08	
Intersection Summary												
Area Type:	Other											
Cycle Length: 100												
Actuated Cycle Length: 74.6												
Natural Cycle: 120												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.94												
Intersection Signal Delay: 22.5							Intersection LOS: C					
Intersection Capacity Utilization 95.7%							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: 4: Tenth Line W & Argentia Rd



Lanes, Volumes, Timings
5: Ninth Line & Argentinia Rd

Future Total 2037
08/17/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	275	205	1006	134	75	747
Future Volume (vph)	275	205	1006	134	75	747
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		100.0	45.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	1617	3614	1617	1772	3444
Flt Permitted	0.950				0.215	
Satd. Flow (perm)	1789	1617	3614	1617	401	3444
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		68		140		
Link Speed (k/h)	60		60			60
Link Distance (m)	1323.5		1616.5			667.9
Travel Time (s)	79.4		97.0			40.1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	1%	1%	3%	6%
Adj. Flow (vph)	286	214	1048	140	78	778
Shared Lane Traffic (%)						
Lane Group Flow (vph)	286	214	1048	140	78	778
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.4		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.9		4.9			4.9
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (m)	6.1	6.1	30.5	6.1	6.1	30.5
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	6.1	1.8	6.1	6.1	1.8
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)			28.7			28.7
Detector 2 Size(m)			1.8			1.8
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		6			2

Lanes, Volumes, Timings
5: Ninth Line & Argentia Rd

Future Total 2037
08/17/2025

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		4		6	2	
Detector Phase	8	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	20.0	10.0	10.0	10.0	10.0
Minimum Split (s)	22.5	30.0	43.5	43.5	43.5	43.5
Total Split (s)	22.5	30.0	43.5	43.5	43.5	43.5
Total Split (%)	30.6%	40.8%	59.2%	59.2%	59.2%	59.2%
Maximum Green (s)	18.0	24.0	37.0	37.0	37.0	37.0
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.5	6.5	6.5	6.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)	7.0	10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)	11.0	14.0	27.0	27.0	27.0	27.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	21.5	20.0	37.0	37.0	37.0	37.0
Actuated g/C Ratio	0.31	0.29	0.53	0.53	0.53	0.53
v/c Ratio	0.52	0.42	0.54	0.15	0.37	0.42
Control Delay	23.8	16.4	12.0	2.1	15.7	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	16.4	12.0	2.1	15.7	10.7
LOS	C	B	B	A	B	B
Approach Delay	20.6		10.9			11.2
Approach LOS	C		B			B
Queue Length 50th (m)	30.2	14.8	43.4	0.0	5.4	29.6
Queue Length 95th (m)	51.3	31.7	58.8	6.7	15.7	41.3
Internal Link Dist (m)	1299.5		1592.5			643.9
Turn Bay Length (m)				100.0	45.0	
Base Capacity (vph)	656	602	1924	926	213	1833
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.36	0.54	0.15	0.37	0.42
Intersection Summary						
Area Type:	Other					
Cycle Length: 73.5						
Actuated Cycle Length: 69.5						
Natural Cycle: 75						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.54						
Intersection Signal Delay: 12.9				Intersection LOS: B		
Intersection Capacity Utilization 66.0%				ICU Level of Service C		
Analysis Period (min) 15						

Splits and Phases: 5: Ninth Line & Argentia Rd



Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Future Total 2037

08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	667	130	164	941	57	80	715	144	61	540	260
Future Volume (vph)	259	667	130	164	941	57	80	715	144	61	540	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	90.0		0.0	100.0		0.0	185.0		135.0	105.0		95.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor		1.00		1.00					0.99	1.00		
Frt		0.976			0.991				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3520	0	1825	3581	0	1722	3510	1617	1789	3650	1617
Flt Permitted	0.152			0.267			0.168			0.238		
Satd. Flow (perm)	286	3520	0	513	3581	0	304	3510	1595	448	3650	1617
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			4				153			277
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		242.0			667.9			1508.4			1616.5	
Travel Time (s)		14.5			40.1			90.5			97.0	
Confl. Peds. (#/hr)			1	1					1	1		
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
Heavy Vehicles (%)	2%	1%	1%	0%	1%	1%	6%	4%	1%	2%	0%	1%
Adj. Flow (vph)	276	710	138	174	1001	61	85	761	153	65	574	277
Shared Lane Traffic (%)												
Lane Group Flow (vph)	276	848	0	174	1062	0	85	761	153	65	574	277
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)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway 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
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings
6: Ninth Line & Derry Rd E/Derry Rd W

Future Total 2037
08/17/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		7	4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		1	6		7	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	7.0	10.0		7.0	10.0		7.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.5	42.5		11.5	42.5		11.5	40.5	40.5	40.5	40.5	40.5
Total Split (s)	33.5	46.5		33.5	46.5		33.5	80.0	80.0	46.5	46.5	46.5
Total Split (%)	20.9%	29.1%		20.9%	29.1%		20.9%	50.0%	50.0%	29.1%	29.1%	29.1%
Maximum Green (s)	30.5	40.0		30.5	40.0		30.5	73.5	73.5	40.0	40.0	40.0
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.5		0.0	2.5		0.0	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.5		3.0	6.5		3.0	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None
Walk Time (s)		10.0			10.0			10.0	10.0	10.0	10.0	10.0
Flash Dont Walk (s)		26.0			26.0			24.0	24.0	24.0	24.0	24.0
Pedestrian Calls (#/hr)		0			0			0	0	0	0	0
Act Effct Green (s)	102.8	80.7		95.4	75.9		50.9	47.4	47.4	33.0	33.0	33.0
Actuated g/C Ratio	0.64	0.50		0.60	0.47		0.32	0.30	0.30	0.21	0.21	0.21
v/c Ratio	0.73	0.48		0.40	0.62		0.43	0.73	0.26	0.71	0.76	0.50
Control Delay	29.2	28.8		15.8	36.2		43.8	54.5	5.9	95.9	66.5	8.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	28.8		15.8	36.2		43.8	54.5	5.9	95.9	66.5	8.2
LOS	C	C		B	D		D	D	A	F	E	A
Approach Delay		28.9			33.3			46.1			50.9	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	35.0	89.4		20.6	130.2		19.5	115.2	0.0	19.4	91.6	0.0
Queue Length 95th (m)	73.3	134.8		38.3	197.8		29.6	123.1	15.1	36.9	105.6	22.9
Internal Link Dist (m)		218.0			643.9			1484.4			1592.5	
Turn Bay Length (m)	90.0			100.0			185.0		135.0	105.0		95.0
Base Capacity (vph)	472	1780		578	1700		366	1612	815	113	917	614
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.48		0.30	0.62		0.23	0.47	0.19	0.58	0.63	0.45

Intersection Summary

Area Type: Other
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 154 (96%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 38.9

Intersection LOS: D

Lanes, Volumes, Timings
 6: Ninth Line & Derry Rd E/Derry Rd W

Future Total 2037

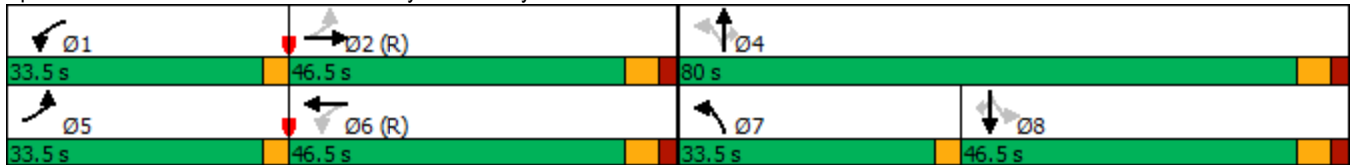
08/17/2025

Intersection Capacity Utilization 90.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 6: Ninth Line & Derry Rd E/Derry Rd W



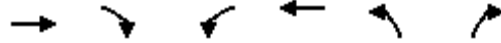
Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Future Total 2037
08/17/2025

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘↗	↗
Traffic Volume (vph)	948	70	0	1233	40	147
Future Volume (vph)	948	70	0	1233	40	147
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	1.00	0.95	0.97	1.00
Frt	0.990					0.850
Flt Protected					0.950	
Satd. Flow (prot)	3390	0	0	3424	3135	1517
Flt Permitted					0.950	
Satd. Flow (perm)	3390	0	0	3424	3135	1517
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	17					69
Link Speed (k/h)	80			48	60	
Link Distance (m)	358.0			242.0	515.1	
Travel Time (s)	16.1			18.2	30.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	1%	8%	1%	7%	2%
Adj. Flow (vph)	967	71	0	1258	41	150
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1038	0	0	1258	41	150
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2			2	1	1
Detector Template	Thru			Thru	Left	Right
Leading Detector (m)	30.5			30.5	6.1	6.1
Trailing Detector (m)	0.0			0.0	0.0	0.0
Detector 1 Position(m)	0.0			0.0	0.0	0.0
Detector 1 Size(m)	1.8			1.8	6.1	6.1
Detector 1 Type	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0	0.0	0.0
Detector 1 Queue (s)	0.0			0.0	0.0	0.0
Detector 1 Delay (s)	0.0			0.0	0.0	0.0
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA			NA	Prot	Prot
Protected Phases	4			8	2	2
Permitted Phases						
Detector Phase	4			8	2	2
Switch Phase						

Lanes, Volumes, Timings
7: Hwy 407 NB Ramp Terminal & Derry Rd E

Future Total 2037
08/17/2025



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	8.0			8.0	8.0	8.0
Minimum Split (s)	26.0			26.0	26.0	26.0
Total Split (s)	34.0			34.0	26.0	26.0
Total Split (%)	56.7%			56.7%	43.3%	43.3%
Maximum Green (s)	28.0			28.0	20.0	20.0
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 Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Recall Mode	Max			Max	C-Min	C-Min
Walk Time (s)	8.0			8.0	8.0	8.0
Flash Dont Walk (s)	12.0			12.0	12.0	12.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effect Green (s)	38.2			38.2	9.8	9.8
Actuated g/C Ratio	0.64			0.64	0.16	0.16
v/c Ratio	0.48			0.58	0.08	0.49
Control Delay	5.1			8.0	20.4	18.6
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	5.1			8.0	20.4	18.6
LOS	A			A	C	B
Approach Delay	5.1			8.0	18.9	
Approach LOS	A			A	B	
Queue Length 50th (m)	14.7			32.6	2.0	8.2
Queue Length 95th (m)	31.9			61.1	5.0	20.4
Internal Link Dist (m)	334.0			218.0	491.1	
Turn Bay Length (m)						
Base Capacity (vph)	2164			2179	1045	551
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	0.48			0.58	0.04	0.27

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

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

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 7.7

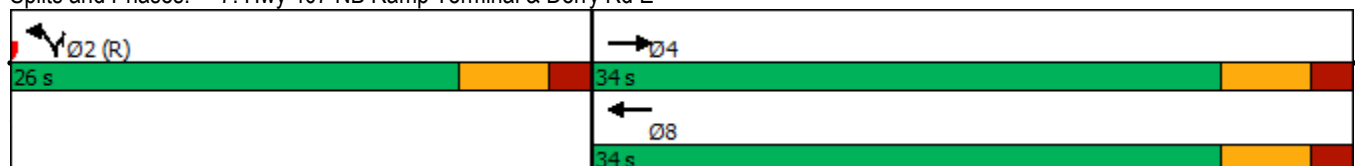
Intersection LOS: A

Intersection Capacity Utilization 52.6%

ICU Level of Service A

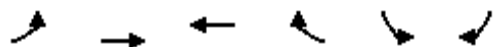
Analysis Period (min) 15

Splits and Phases: 7: Hwy 407 NB Ramp Terminal & Derry Rd E



Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

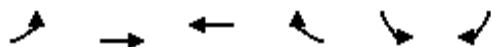
Future Total 2037
08/17/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	863	1104	148	166	235
Future Volume (vph)	0	863	1104	148	166	235
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Fr t			0.982			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	3390	3362	0	3288	1532
Flt Permitted					0.950	
Satd. Flow (perm)	0	3390	3362	0	3288	1532
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			35			56
Link Speed (k/h)		80	80		60	
Link Distance (m)		1052.5	358.0		426.8	
Travel Time (s)		47.4	16.1		25.6	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	2%	1%	1%	2%	1%
Adj. Flow (vph)	0	881	1127	151	169	240
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	881	1278	0	169	240
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		7.4	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Detector Phase		4	8		6	6
Switch Phase						

Lanes, Volumes, Timings
8: Derry Rd E & Hwy 407 SB Ramp Terminal

Future Total 2037
08/17/2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Initial (s)		5.0	5.0		5.0	5.0
Minimum Split (s)		22.5	22.5		22.5	22.5
Total Split (s)		35.0	35.0		25.0	25.0
Total Split (%)		58.3%	58.3%		41.7%	41.7%
Maximum Green (s)		30.5	30.5		20.5	20.5
Yellow Time (s)		3.5	3.5		3.5	3.5
All-Red Time (s)		1.0	1.0		1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Recall Mode		Max	Max		C-Min	C-Min
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effect Green (s)		38.3	38.3		12.7	12.7
Actuated g/C Ratio		0.64	0.64		0.21	0.21
v/c Ratio		0.41	0.59		0.24	0.65
Control Delay		6.8	5.8		19.1	24.2
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		6.8	5.8		19.1	24.2
LOS		A	A		B	C
Approach Delay		6.8	5.8		22.1	
Approach LOS		A	A		C	
Queue Length 50th (m)		20.7	21.6		7.9	18.2
Queue Length 95th (m)		41.1	32.0		12.7	32.8
Internal Link Dist (m)		1028.5	334.0		402.8	
Turn Bay Length (m)						
Base Capacity (vph)		2164	2159		1123	560
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		0.41	0.59		0.15	0.43

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

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

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 8.7

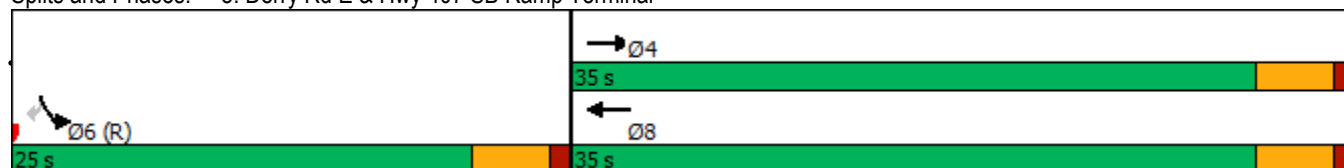
Intersection LOS: A

Intersection Capacity Utilization 60.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Derry Rd E & Hwy 407 SB Ramp Terminal



Lanes, Volumes, Timings
9: Tenth Line W & Southern Site Access

Future Total 2037
08/17/2025

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	73	28	6	13	0
Future Volume (vph)	0	73	28	6	13	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.961		
Satd. Flow (prot)	1629	0	0	1810	1883	0
Flt Permitted				0.961		
Satd. Flow (perm)	1629	0	0	1810	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	117.6			479.2	92.6	
Travel Time (s)	8.8			35.9	6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	79	30	7	14	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	79	0	0	37	14	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	97	97	97			97
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.7%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	6.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	73	28	6	13	0
Future Vol, veh/h	0	73	28	6	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	79	30	7	14	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	81	14	14	0	-	0
Stage 1	14	-	-	-	-	-
Stage 2	67	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	921	1066	1604	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	956	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	904	1066	1604	-	-	-
Mov Cap-2 Maneuver	904	-	-	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	956	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	6		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1604	-	1066	-	-	
HCM Lane V/C Ratio	0.019	-	0.074	-	-	
HCM Control Delay (s)	7.3	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-	

Lanes, Volumes, Timings
18: Tenth Line W & Northern Site Access

Future Total 2037
08/17/2025

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	13	6	0	0	0
Future Volume (vph)	0	13	6	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.950		
Satd. Flow (prot)	1629	0	0	1789	1883	0
Flt Permitted				0.950		
Satd. Flow (perm)	1629	0	0	1789	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	124.9			92.6	104.9	
Travel Time (s)	9.4			6.9	7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	14	7	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	0	7	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	97	97	97	97		
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 13.3%				ICU Level of Service A		
Analysis Period (min) 15						

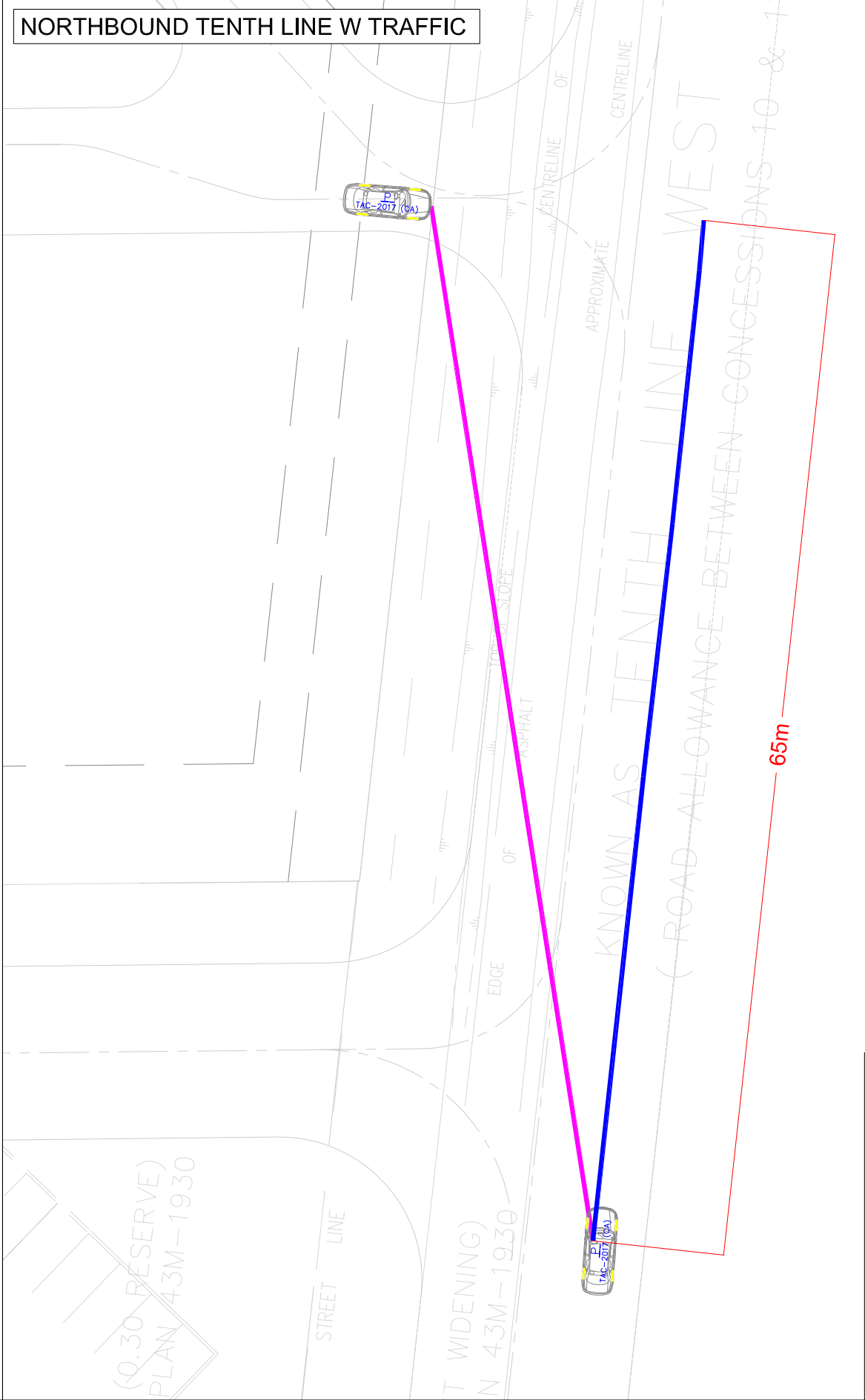
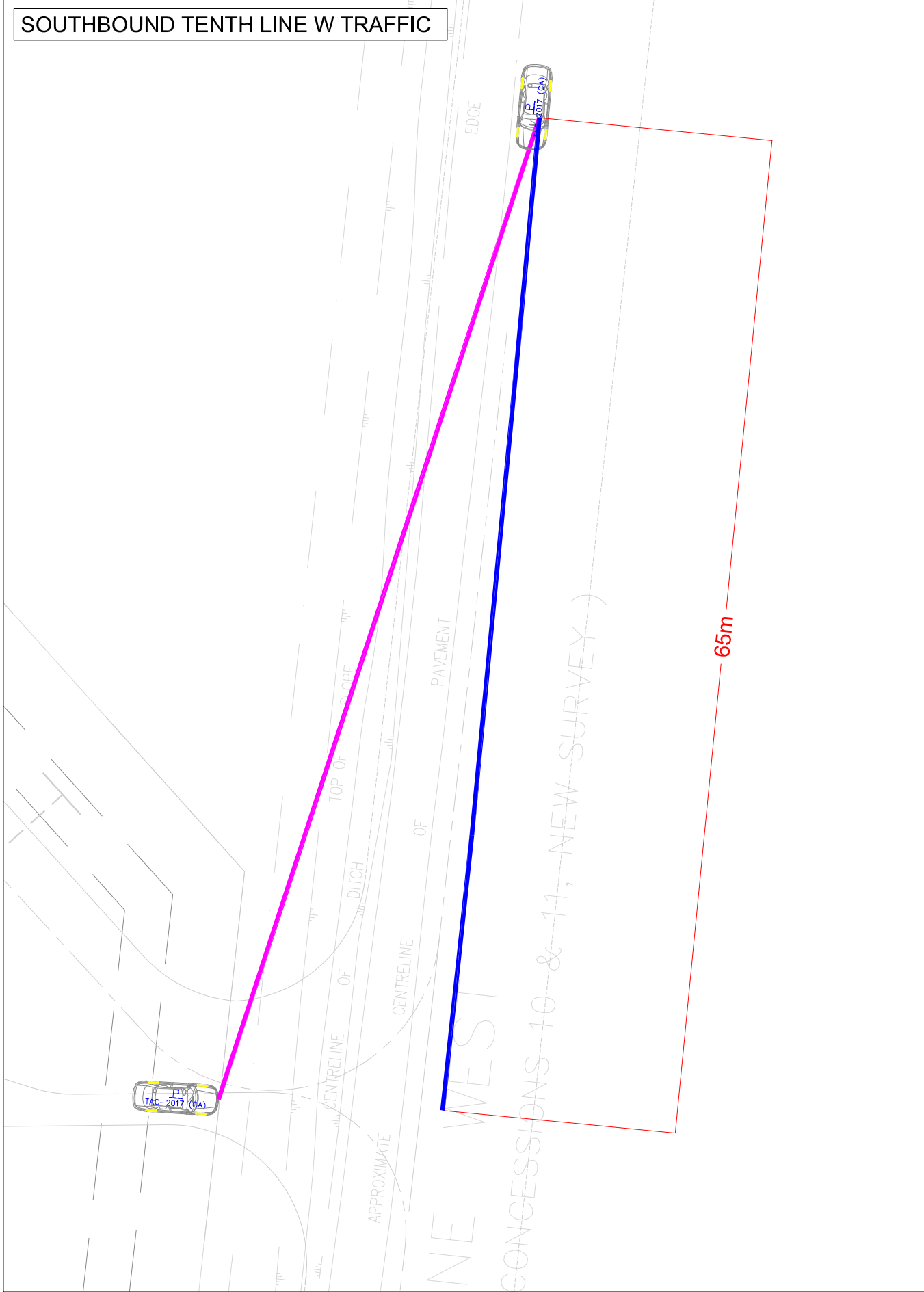
Intersection						
Int Delay, s/veh	7.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	13	6	0	0	0
Future Vol, veh/h	0	13	6	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	7	0	0	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	15	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	14	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1004	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	1009	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1000	1084	1622	-	-	-
Mov Cap-2 Maneuver	1000	-	-	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	1009	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.4	7.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1622	-	1084	-	-	
HCM Lane V/C Ratio	0.004	-	0.013	-	-	
HCM Control Delay (s)	7.2	0	8.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	



Appendix F:

Site Access Review

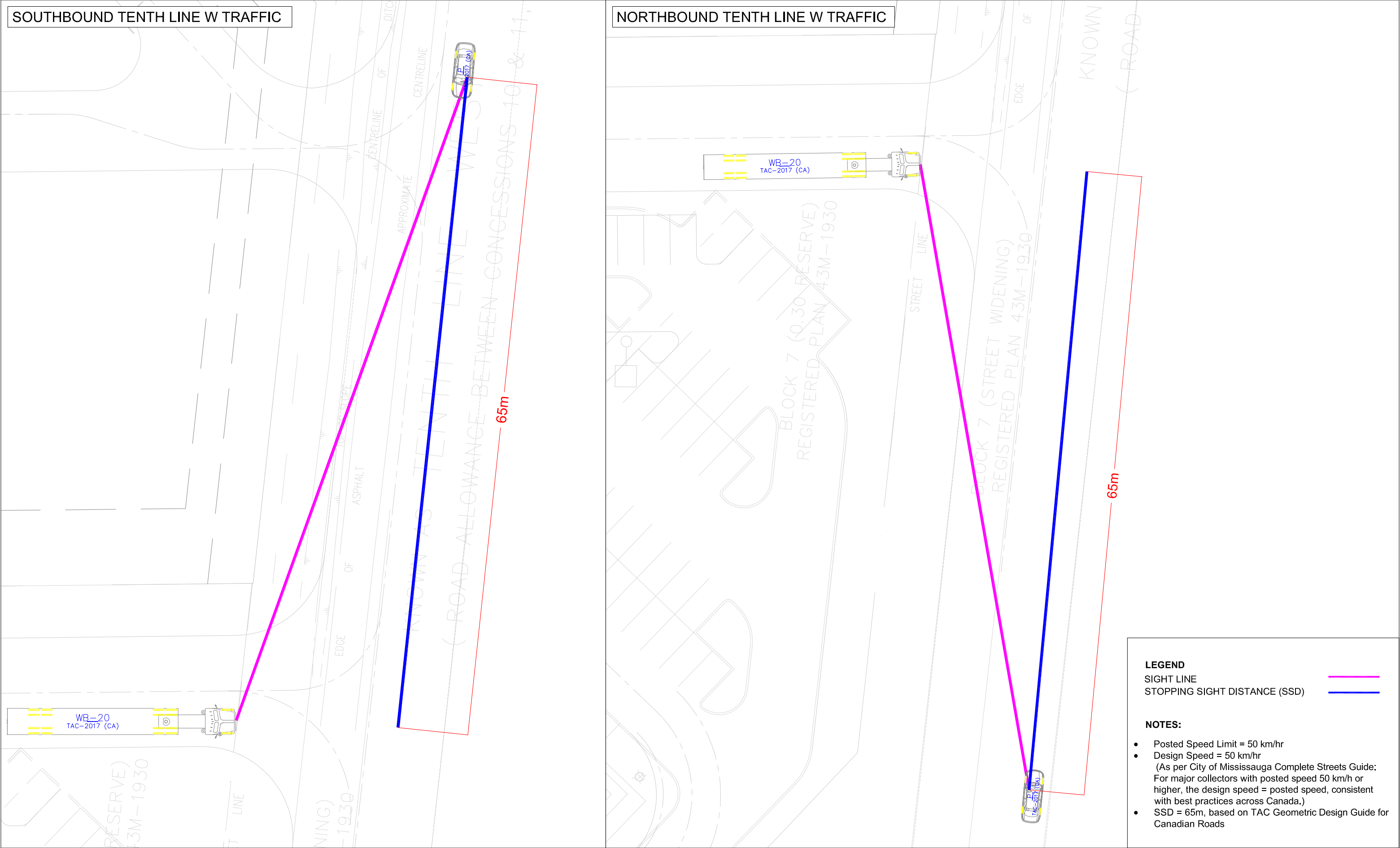
G:\Projects\2025\100658- 7564 10th Line West-Industrial-Prologis\03 Analysis\03 Site review & Circulation\03 Intersection Sight Distance



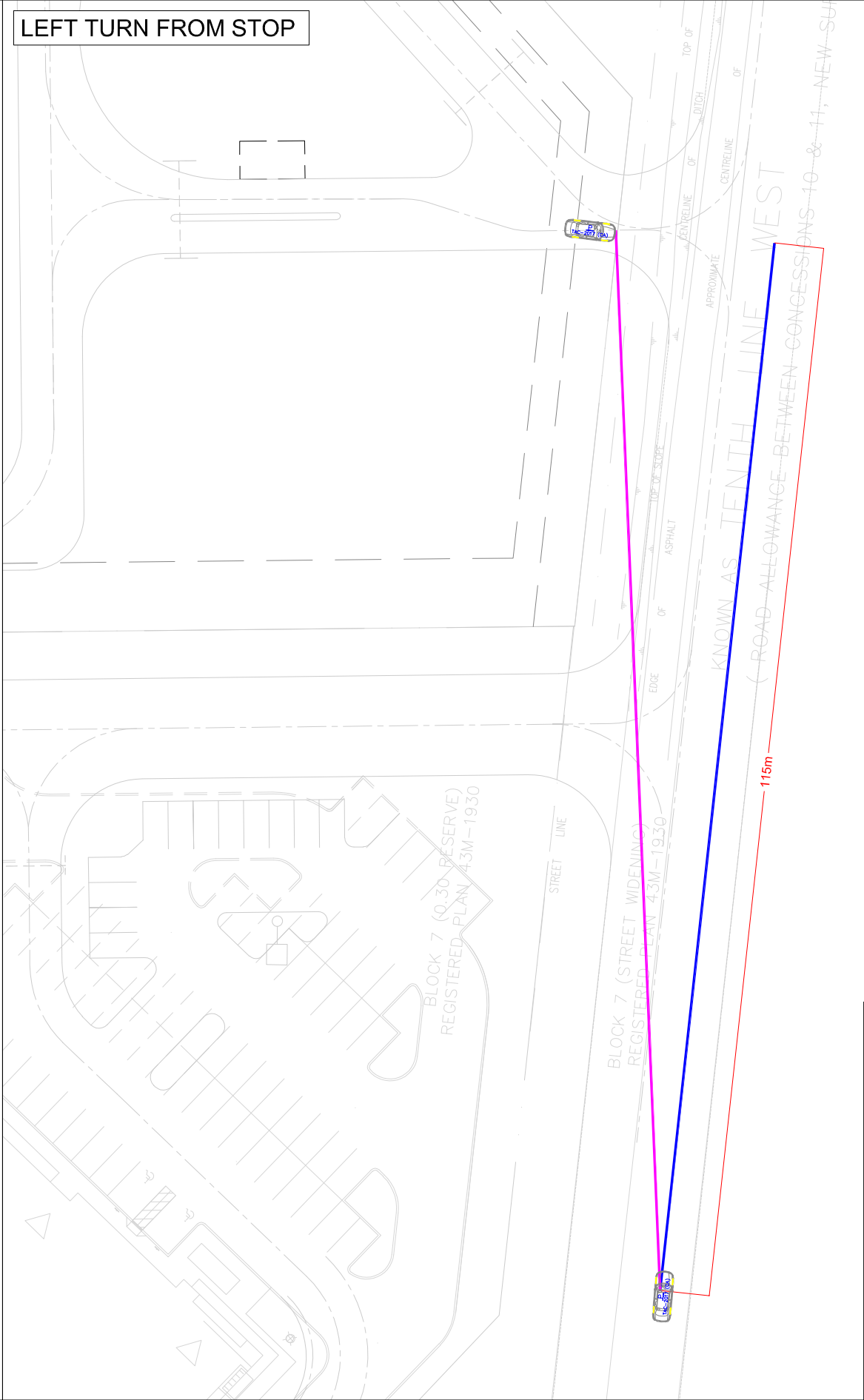
LEGEND
SIGHT LINE
STOPPING SIGHT DISTANCE (SSD)

- NOTES:**
- Posted Speed Limit = 50 km/hr
 - Design Speed = 50 km/hr
(As per City of Mississauga Complete Streets Guide: For major collectors with posted speed 50 km/h or higher, the design speed = posted speed, consistent with best practices across Canada.)
 - SSD = 65m, based on TAC Geometric Design Guide for Canadian Roads

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LEGEND

SIGHT LINE —

INTERSECTION SIGHT DISTANCE (ISD) —

NOTES:

- Posted Speed Limit = 50 km/hr
- Design Speed = 50 km/hr
(As per City of Mississauga Complete Streets Guide: For major collectors with posted speed 50 km/h or higher, the design speed = posted speed, consistent with best practices across Canada.)
- ISD- Passenger Car (from stop):
 - Right Turn= 95m
 - Left Turn= 115m
- ISD- Combination Truck (from stop):
 - Right Turn= 150m
 - Left Turn= 170m



3381 STEELES AVE E.
Suite 315
Toronto, ON
M2H 3S8
P: 905.738.5700

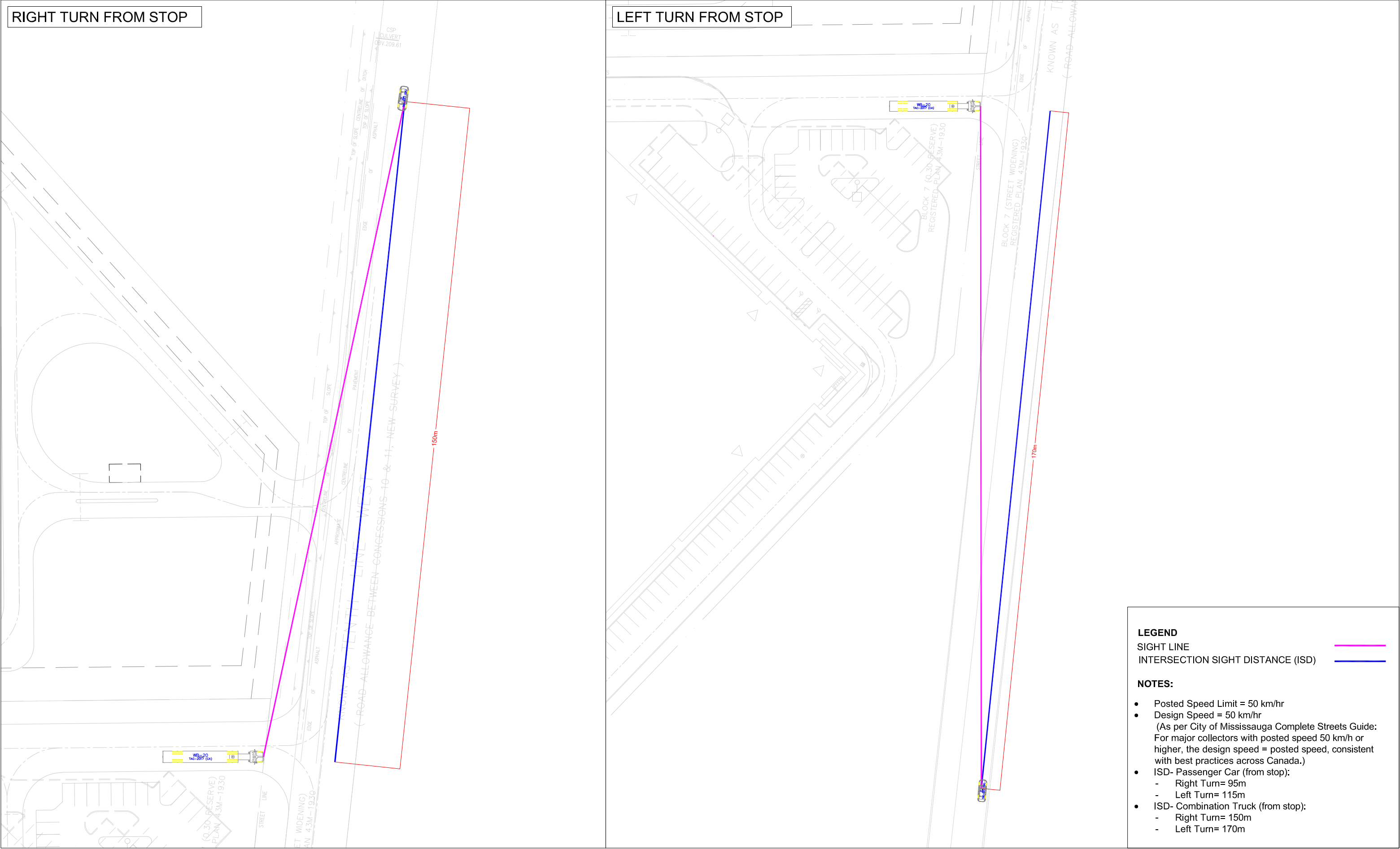
7564 TENTH LINE WEST
INTERSECTION SIGHT DISTANCE- NORTH ACCESS



N.T.S

DRAWING No.	03
DATE	AUG 2025

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LEGEND

SIGHT LINE

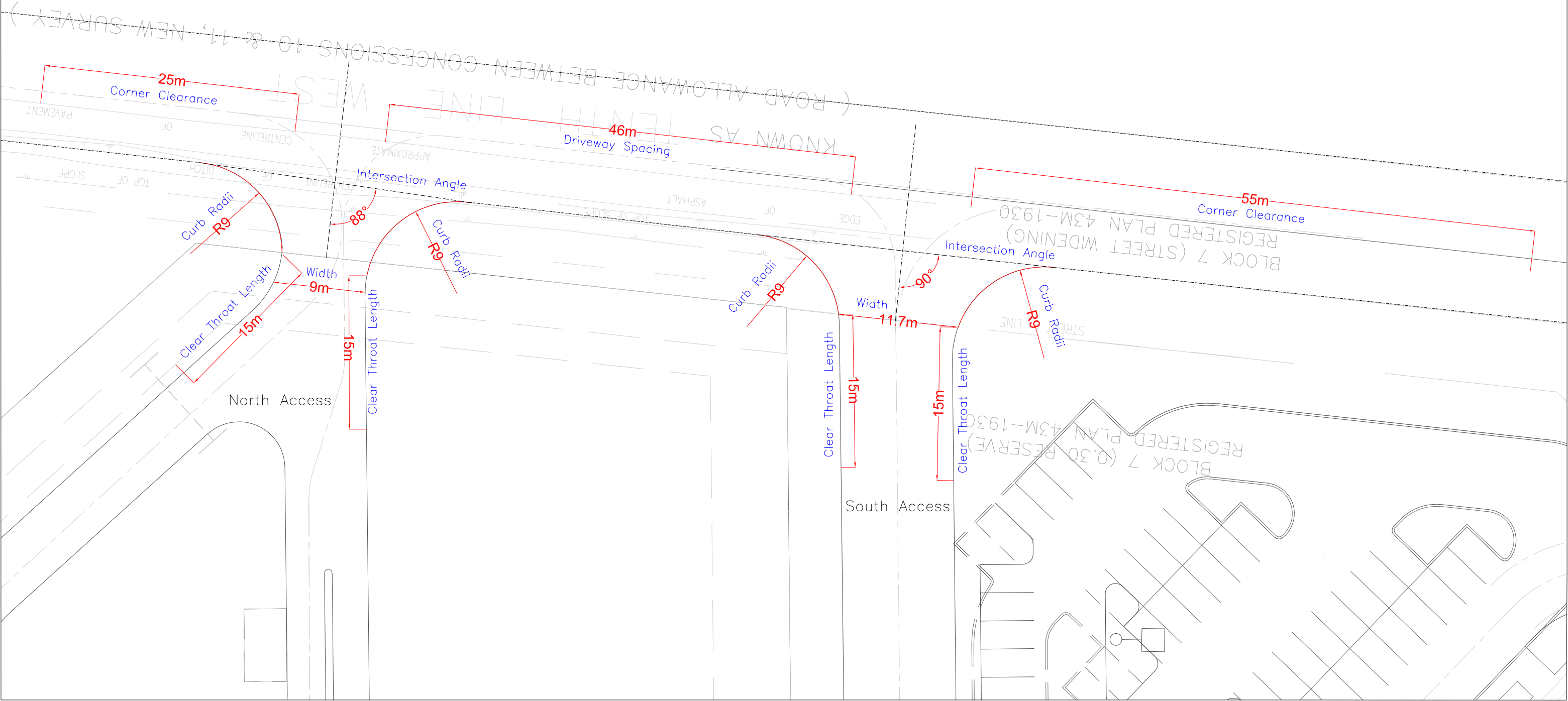
INTERSECTION SIGHT DISTANCE (ISD)

NOTES:

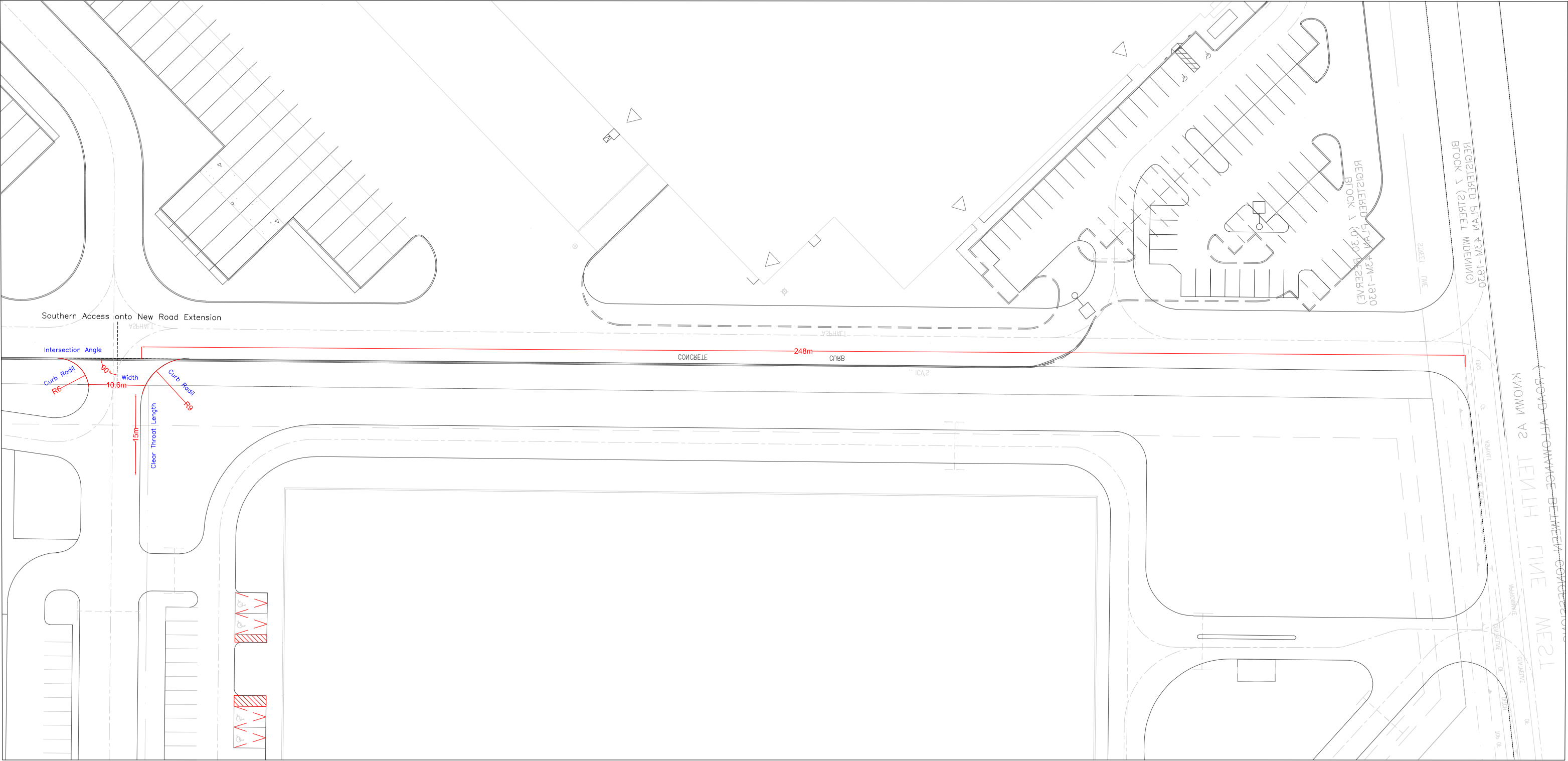
- Posted Speed Limit = 50 km/hr
- Design Speed = 50 km/hr
- (As per City of Mississauga Complete Streets Guide: For major collectors with posted speed 50 km/h or higher, the design speed = posted speed, consistent with best practices across Canada.)
- ISD- Passenger Car (from stop):
 - Right Turn= 95m
 - Left Turn= 115m
- ISD- Combination Truck (from stop):
 - Right Turn= 150m
 - Left Turn= 170m

G:\Projects\2025\100658- 7564 10th Line West-Industrial-Prologis\03 Analysis\03 Site review & Circulation\01 Access Review

- **Intersection Angle:** The intersection angle meets TAC guidelines, which recommend an angle between 70° and 110°.
- **Access Width:** The north access (9 m) and south access (11.7 m) are both within TAC's recommended 9–15 m range for two-way industrial driveways and are acceptable.
- **Curb Return Radii:** The curb radius of 9 m meets TAC guidance for two-way industrial accesses, which recommends 6–15 m depending on the design vehicle. A larger radius is appropriate for truck movements.
- **Clear Throat Length:** For industrial developments with GFA over 45,000 m², TAC recommends a minimum throat length of 15 m, measured from the curb return. This requirement has been met for the proposed accesses.
- **Corner Clearance:** The south access is located adjacent to a signalized intersection, and the north access is adjacent to a stop-controlled church driveway. As per TAC guidelines, the minimum corner clearance for collector roads is 55 m from signalized intersections and 25 m from stop-controlled intersections. Both accesses meet the applicable minimum corner clearance requirements.
- **Driveway Spacing:** The proposed 46 m spacing between the two site accesses on Tenth Line West (collector road, 50 km/h) exceeds the TAC minimum requirements for industrial driveways on collectors, and is therefore considered acceptable.



- **Intersection Angle:** The intersection angle of 90° meets TAC guidelines, which recommend an angle between 70° and 110°.
- **Access Width:** Southern access (10.6 m) is within TAC's recommended 9–15 m range for two-way industrial driveways and is considered acceptable.
- **Curb Return Radii:** The curb return radii of 6 m and 9 m meet TAC guidance for two-way industrial accesses, which typically recommends 6–15 m depending on the design vehicle. Larger radii are appropriate for accommodating truck movements.
- **Clear Throat Length:** For industrial developments with GFA over 45,000 m², TAC recommends a minimum throat length of 15 m, measured from the curb return. This requirement has been met for the proposed accesses.
- **Driveway Spacing:** Proposed 248 m spacing exceeds TAC and Peel Region minimum requirements for industrial driveways on local roads; acceptable.



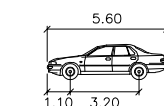
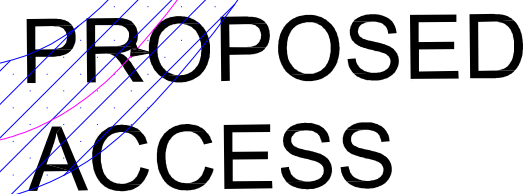
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Appendix G:

Vehicle Maneuvering Diagrams

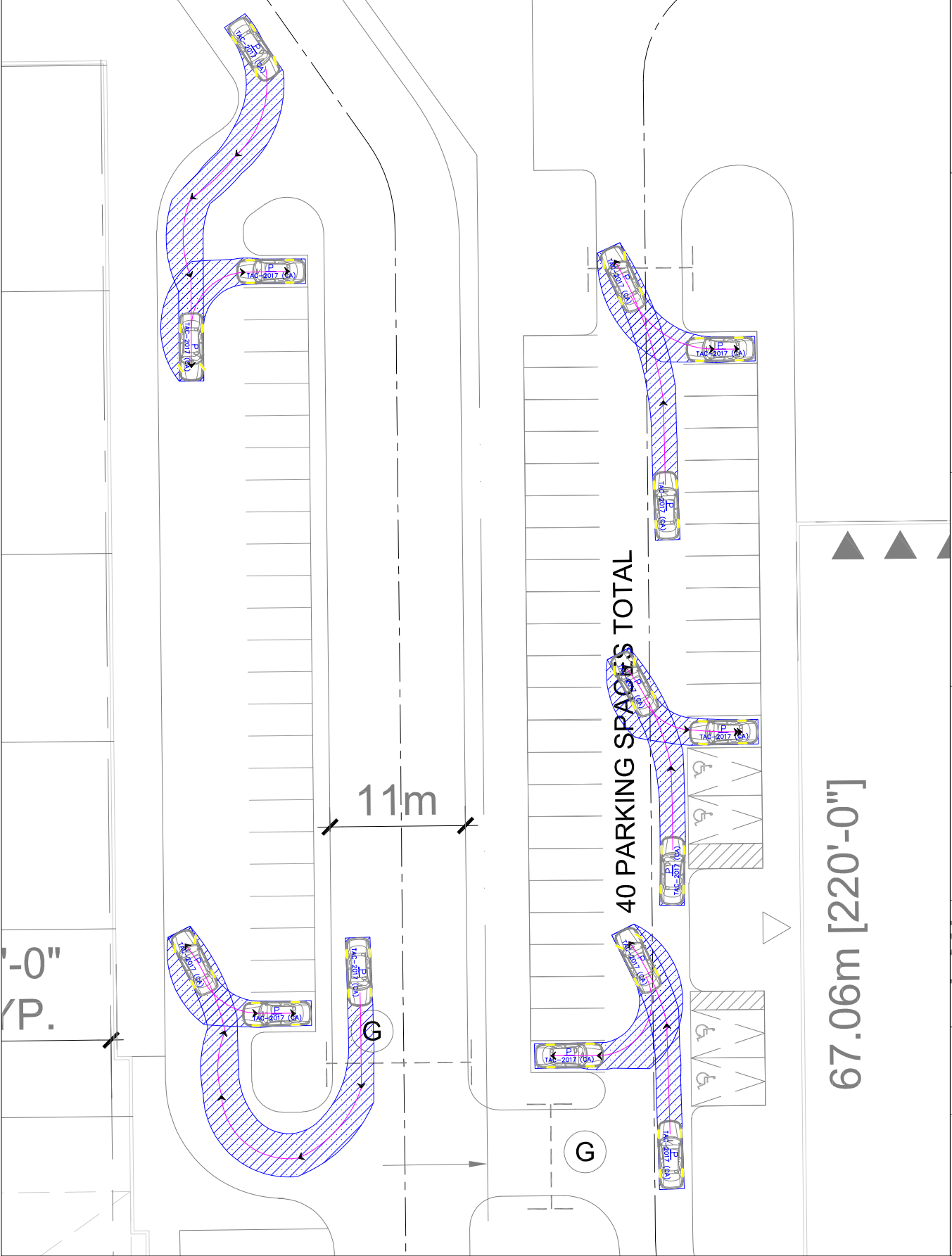


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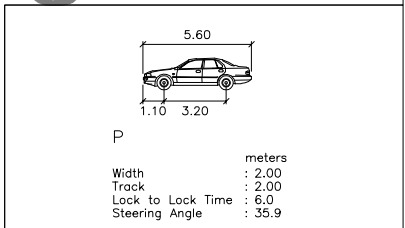
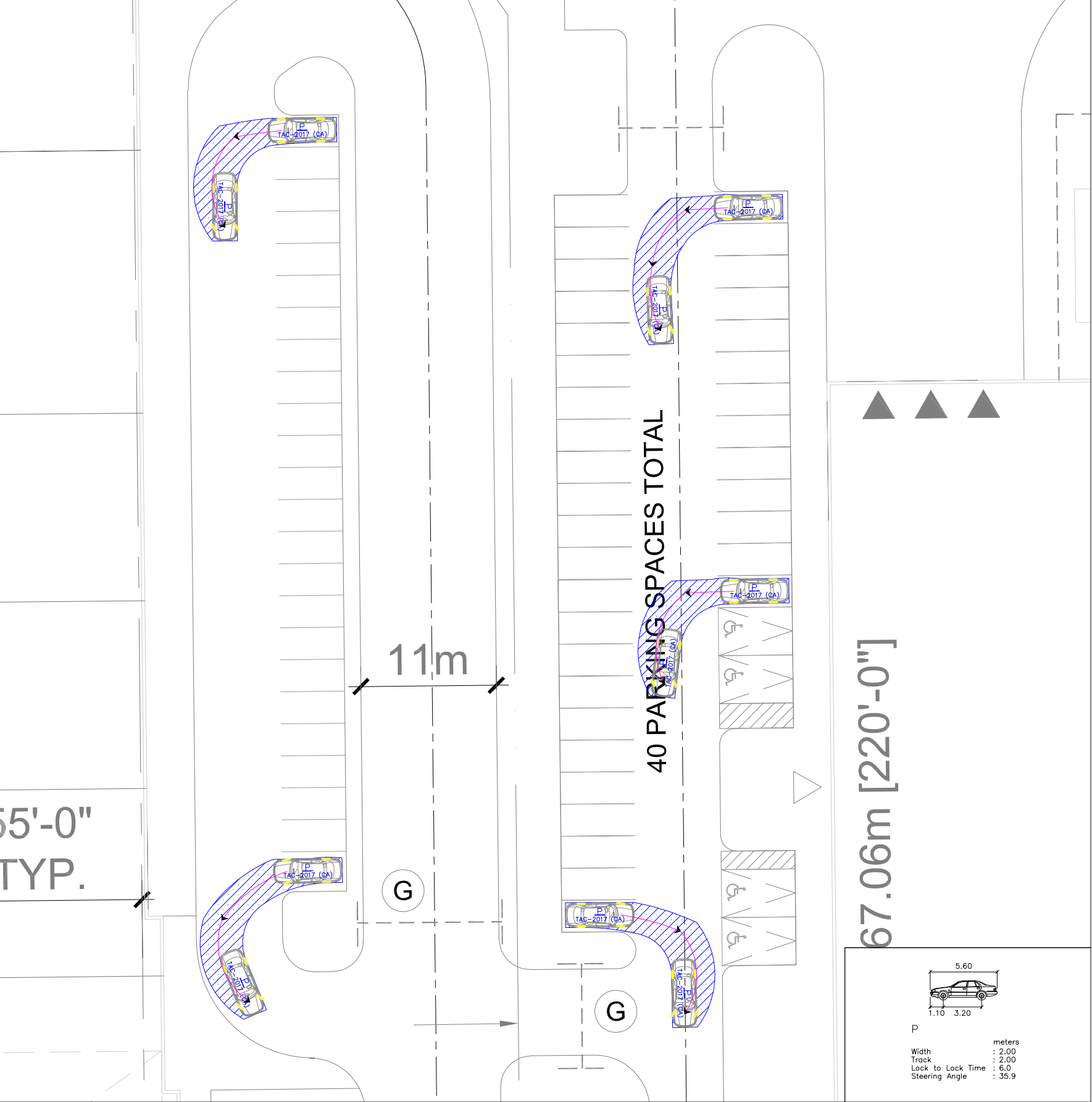
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

G:\Projects\2025\100658- 7564 10th Line West-Industrial-Prologis\03 Analysis\03 Site review & Circulation\02 Vehicle Swept Path\20250730

ENTRY MANEUVER- PASSENGER PARKING – WEST OF DATA CENTRE & RIGHT OF INDUSTRIAL BUILDING DC 5



EXIT MANEUVER- PASSENGER PARKING – WEST OF DATA CENTRE & RIGHT OF INDUSTRIAL BUILDING DC 5



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ENTRY MANEUVER – PASSENGER PARKING – ABOVE UTILITY YARD

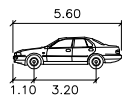
EXIT MANEUVER – PASSENGER PARKING – ABOVE UTILITY YARD

140 PARKING

140 PARKING

21.15m
SETBACK

21.15m
SETBACK



P
Width : 2.00 meters
Track : 2.00
Lock to Lock Time : 6.0
Steering Angle : 35.9

TYLin

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7564 TENTH LINE WEST
VEHICLE MANEUVERING DIAGRAM
PASSENGER VEHICLE CIRCULATION



N.T.S

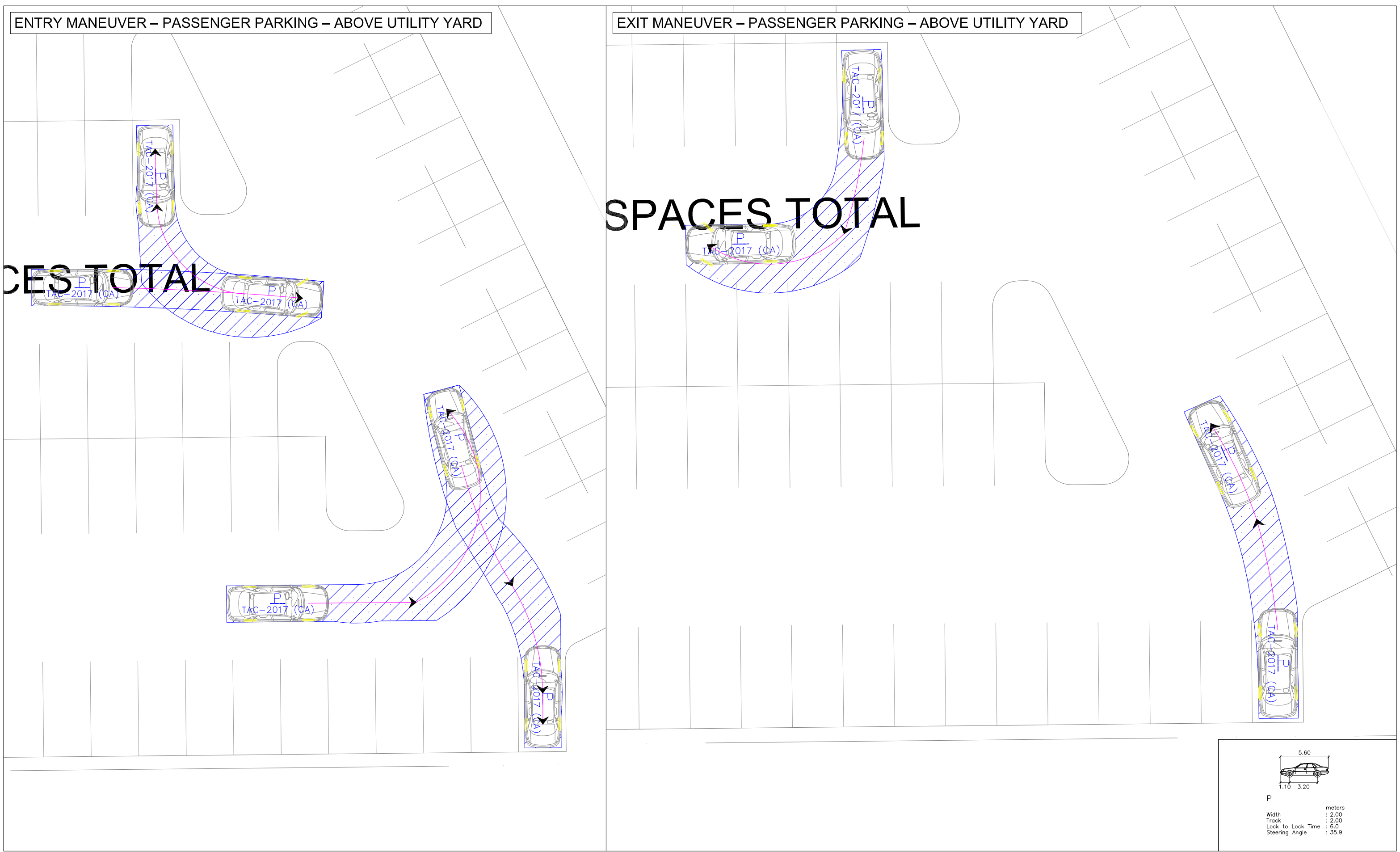
DRAWING No.

03

DATE

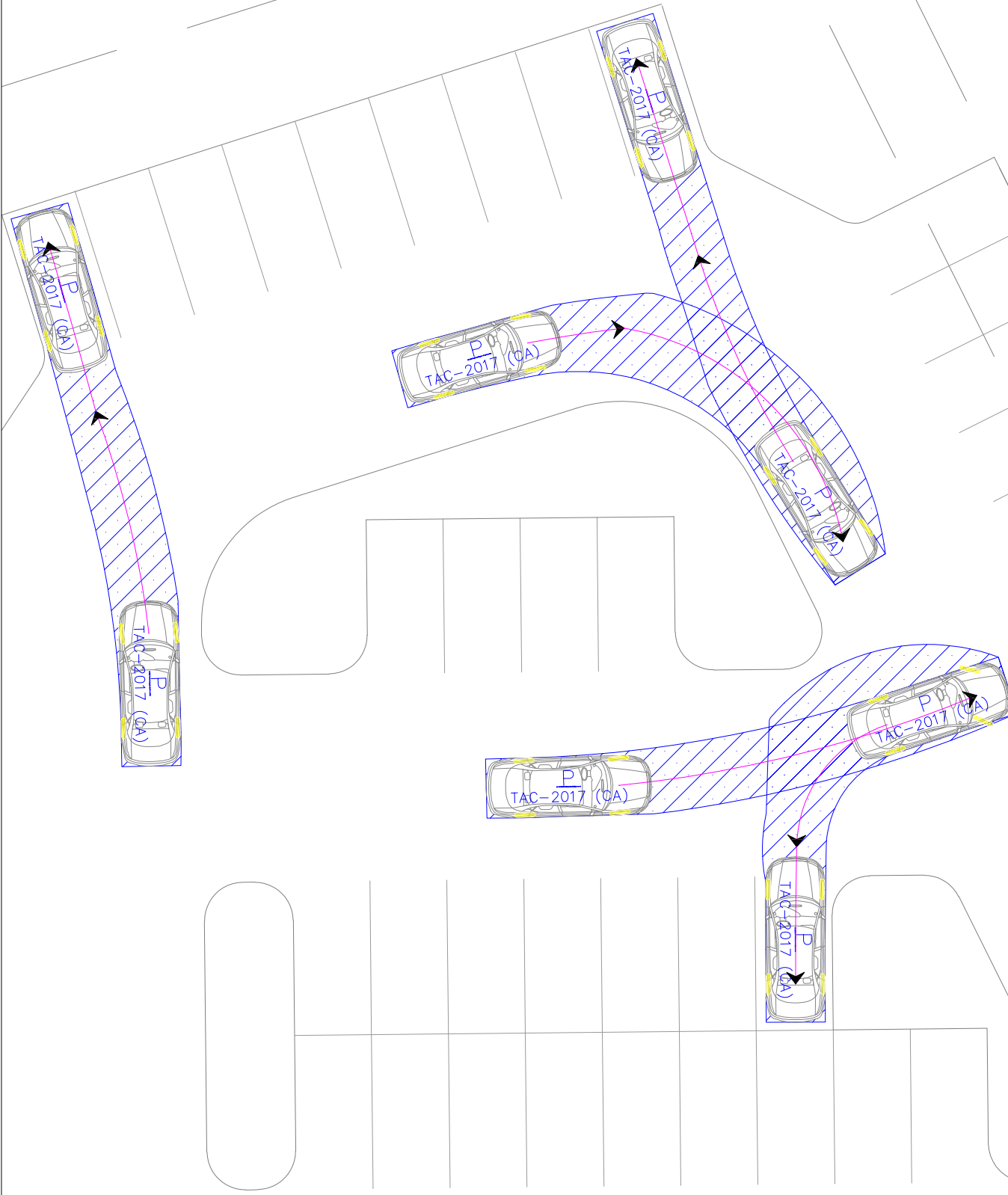
AUG 2025

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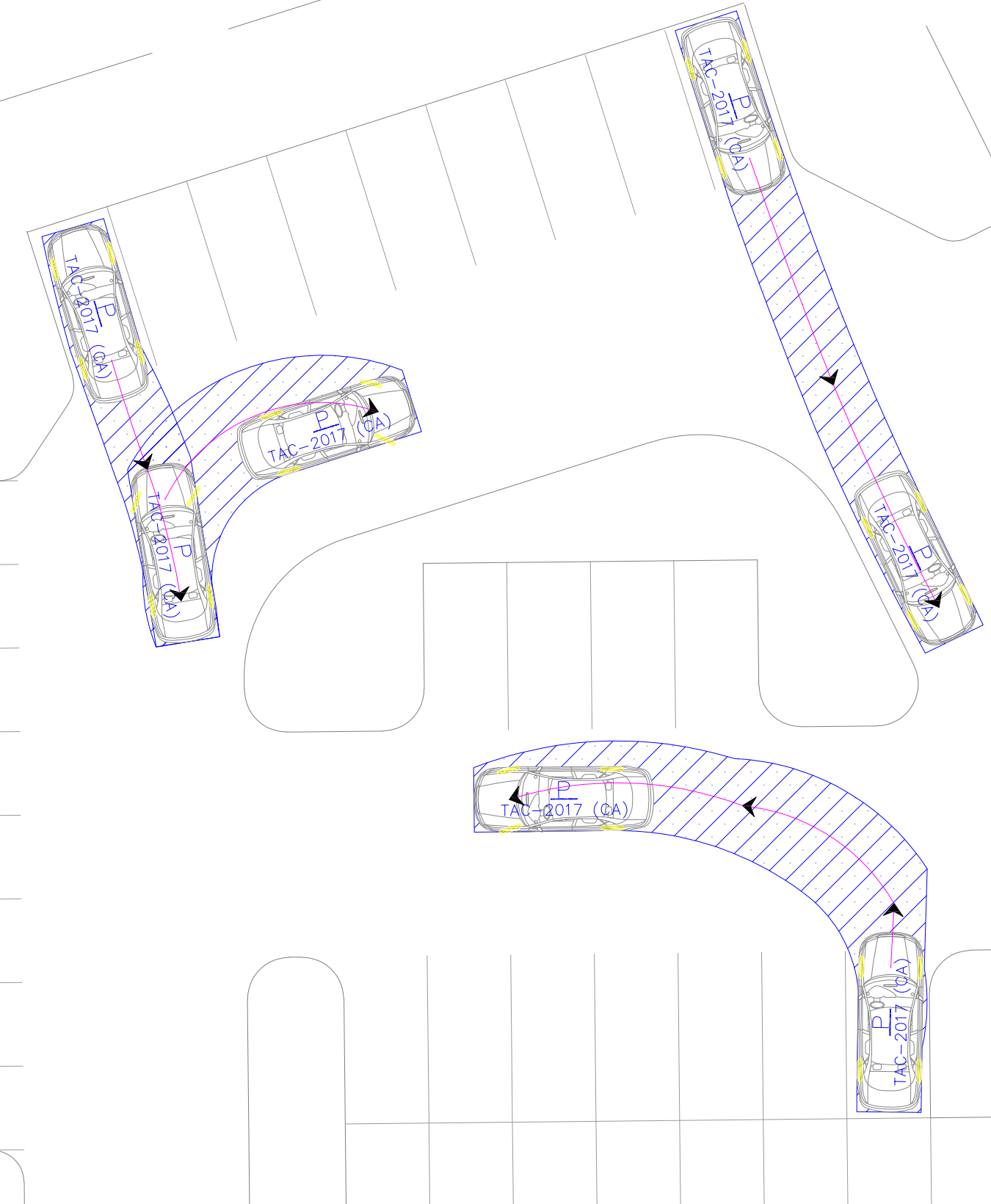


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ENTRY MANEUVER – PASSENGER PARKING – ABOVE UTILITY YARD

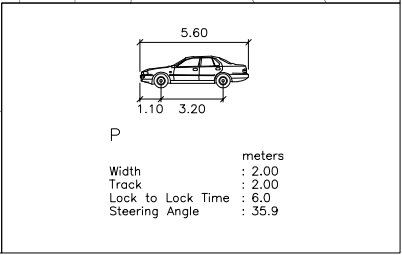
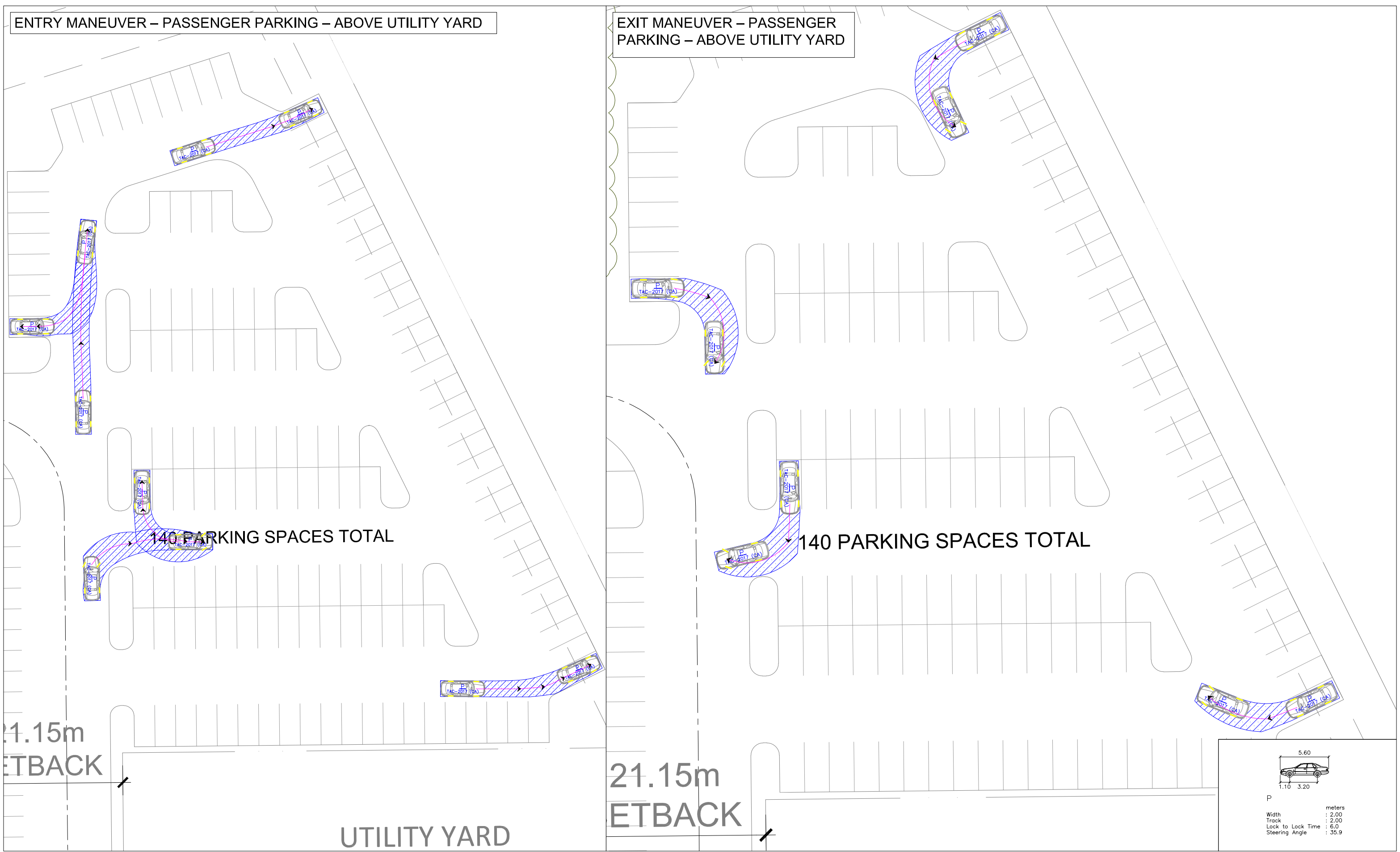


EXIT MANEUVER – PASSENGER PARKING – ABOVE UTILITY YARD



Vehicle dimensions diagram showing a car with dimensions: 5.60 (length), 1.10 (width), and 3.20 (height). Below the diagram, the text reads: P, meters, Width : 2.00, Track : 2.00, Lock to Lock Time : 6.0, Steering Angle : 35.9.

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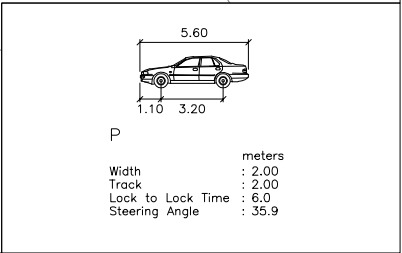
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ENTRY MANEUVER – PASSENGER PARKING – ABOVE INDUSTRIAL BUILDING DC4

FIRE ACCESS ROUTE C/W 12.0m MIN. TURNING RADIUS

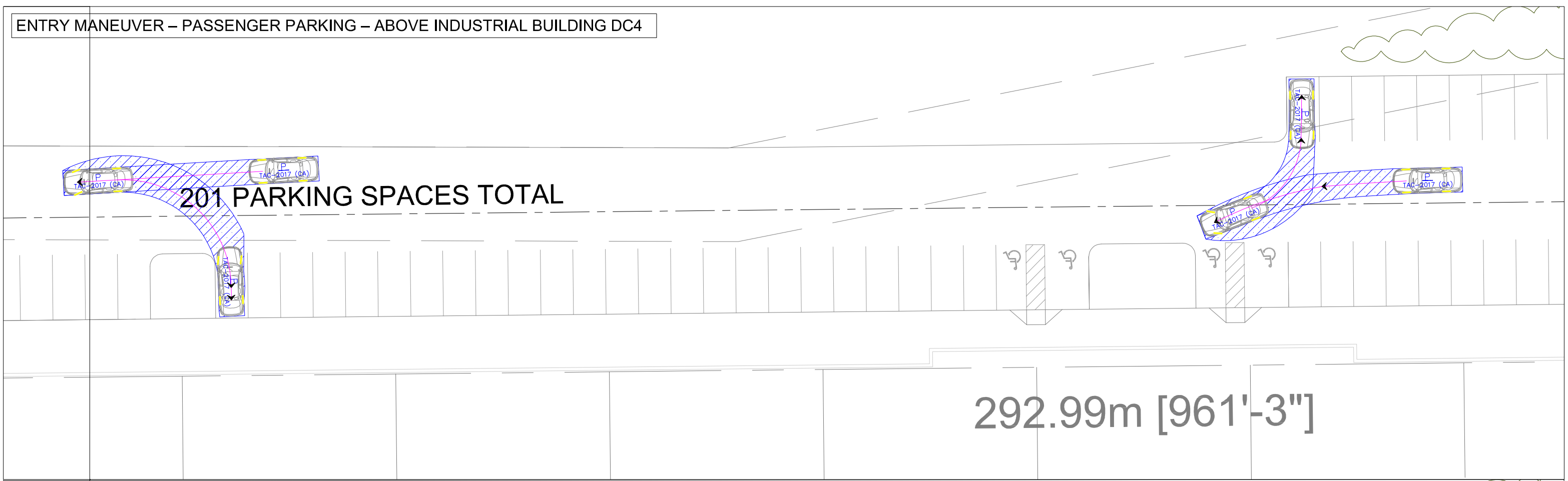
EXIT MANEUVER – PASSENGER PARKING – ABOVE INDUSTRIAL BUILDING DC4

RE ACCESS ROUTE C/W 12.0m MIN. TURNING RADIUS

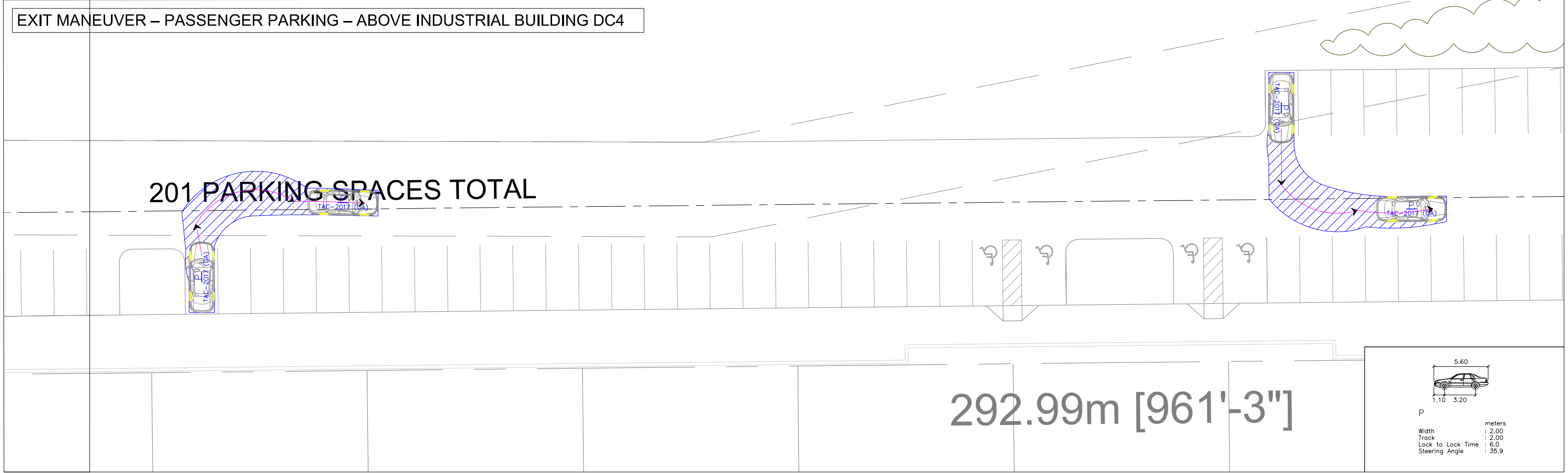


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ENTRY MANEUVER – PASSENGER PARKING – ABOVE INDUSTRIAL BUILDING DC4



EXIT MANEUVER – PASSENGER PARKING – ABOVE INDUSTRIAL BUILDING DC4



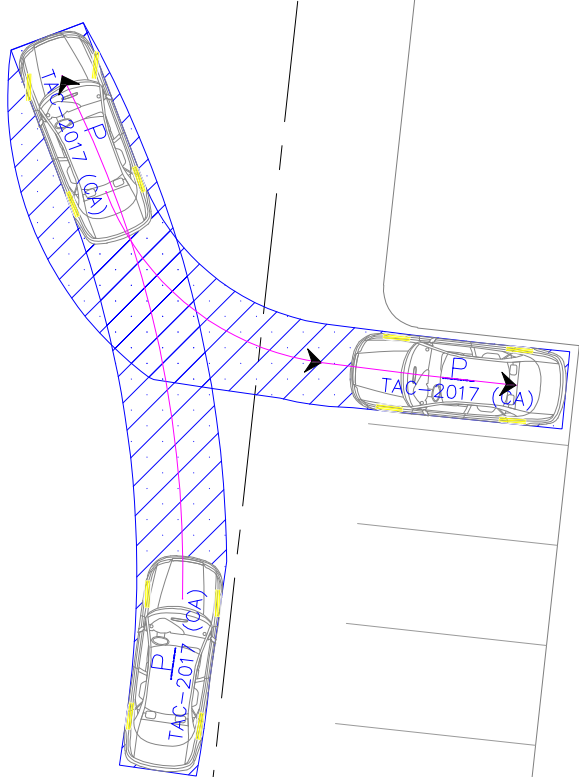
P

Width	: 2.00	meters
Track	: 2.00	
Lock to Lock Time	: 6.0	
Steering Angle	: 35.9	

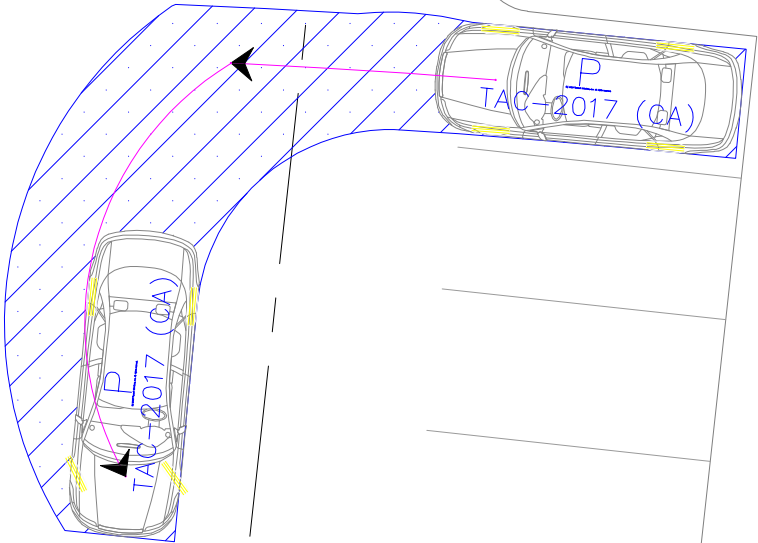


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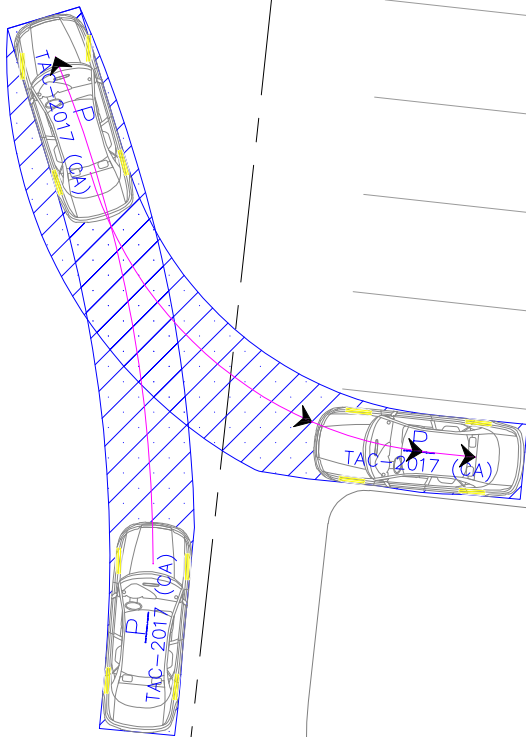
ENTRY MANEUVER – PASSENGER PARKING – LEFT SIDE OF INDUSTRIAL BUILDING DC4



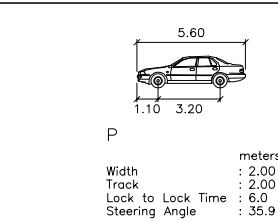
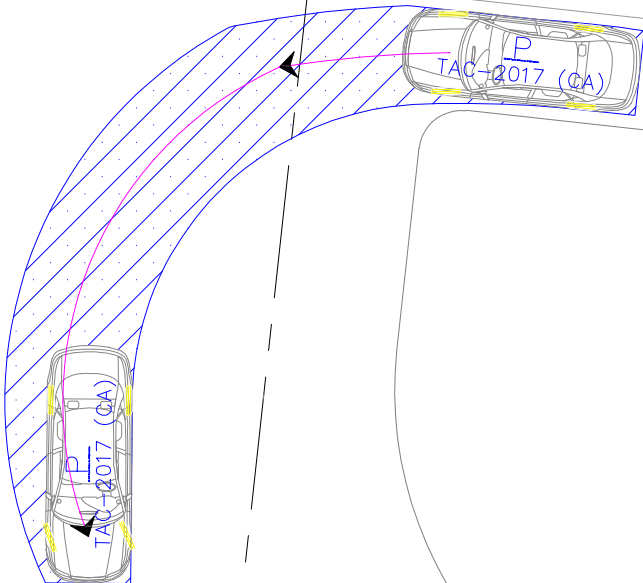
EXIT MANEUVER – PASSENGER PARKING – LEFT SIDE OF INDUSTRIAL BUILDING DC4



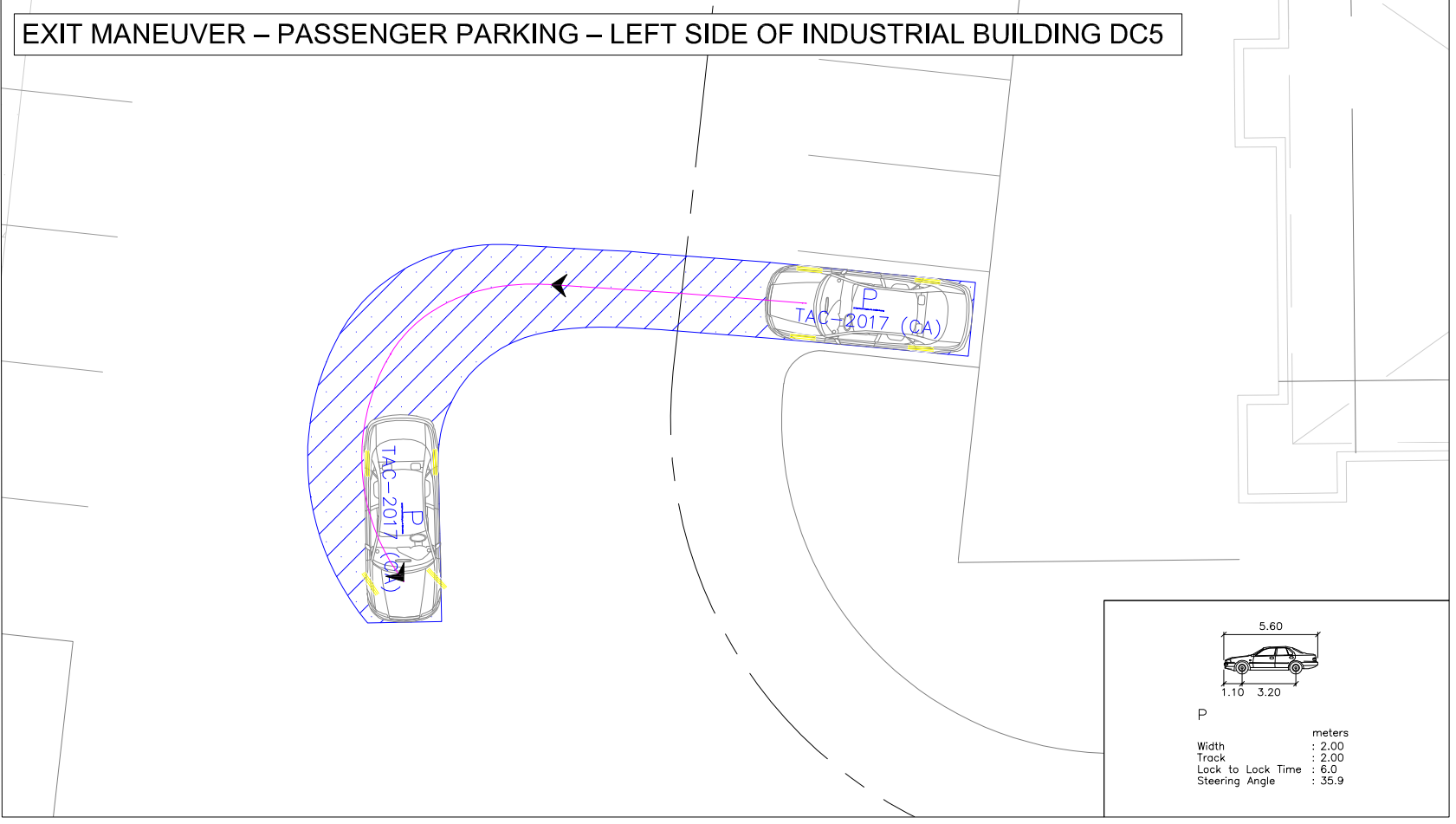
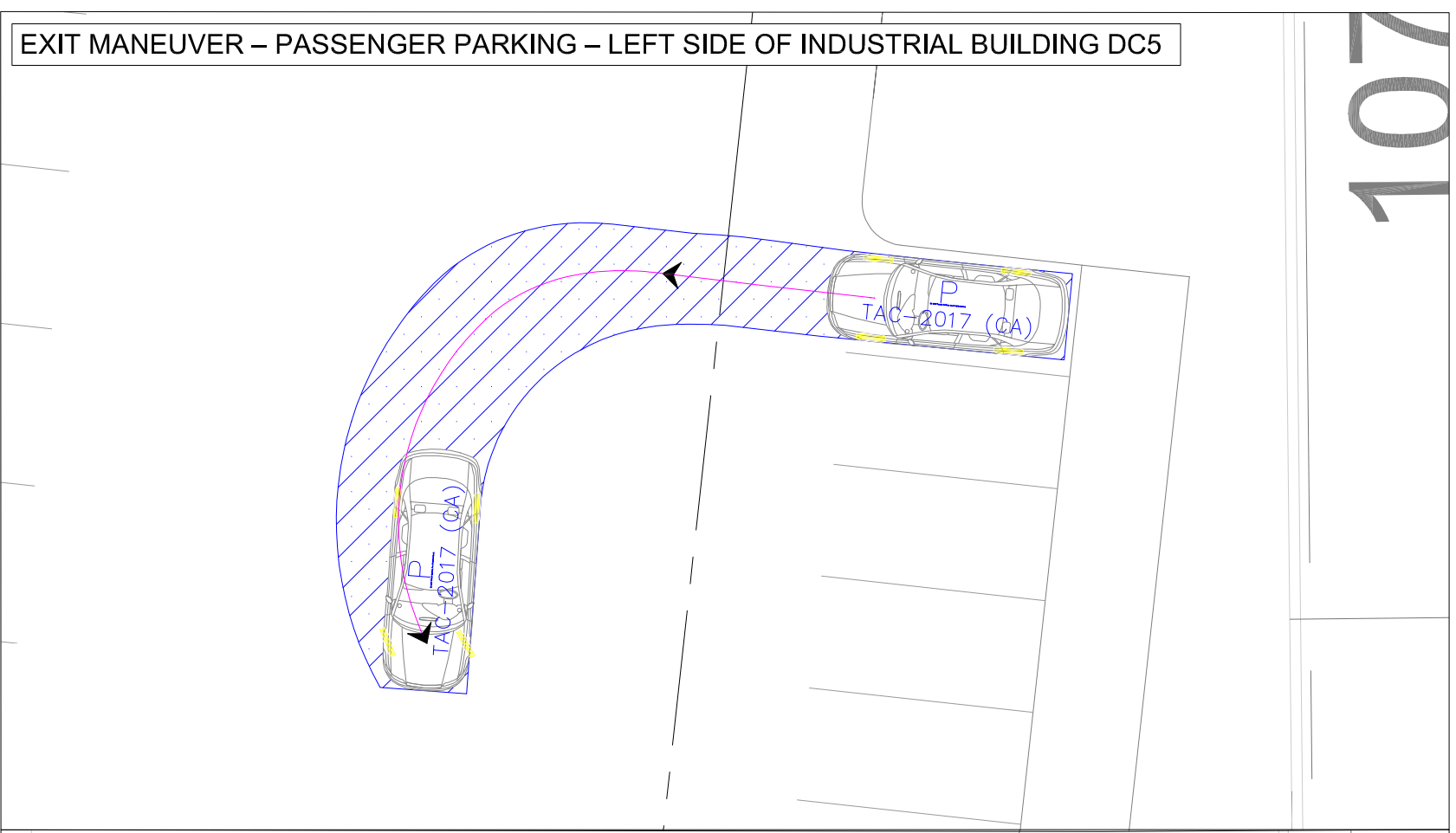
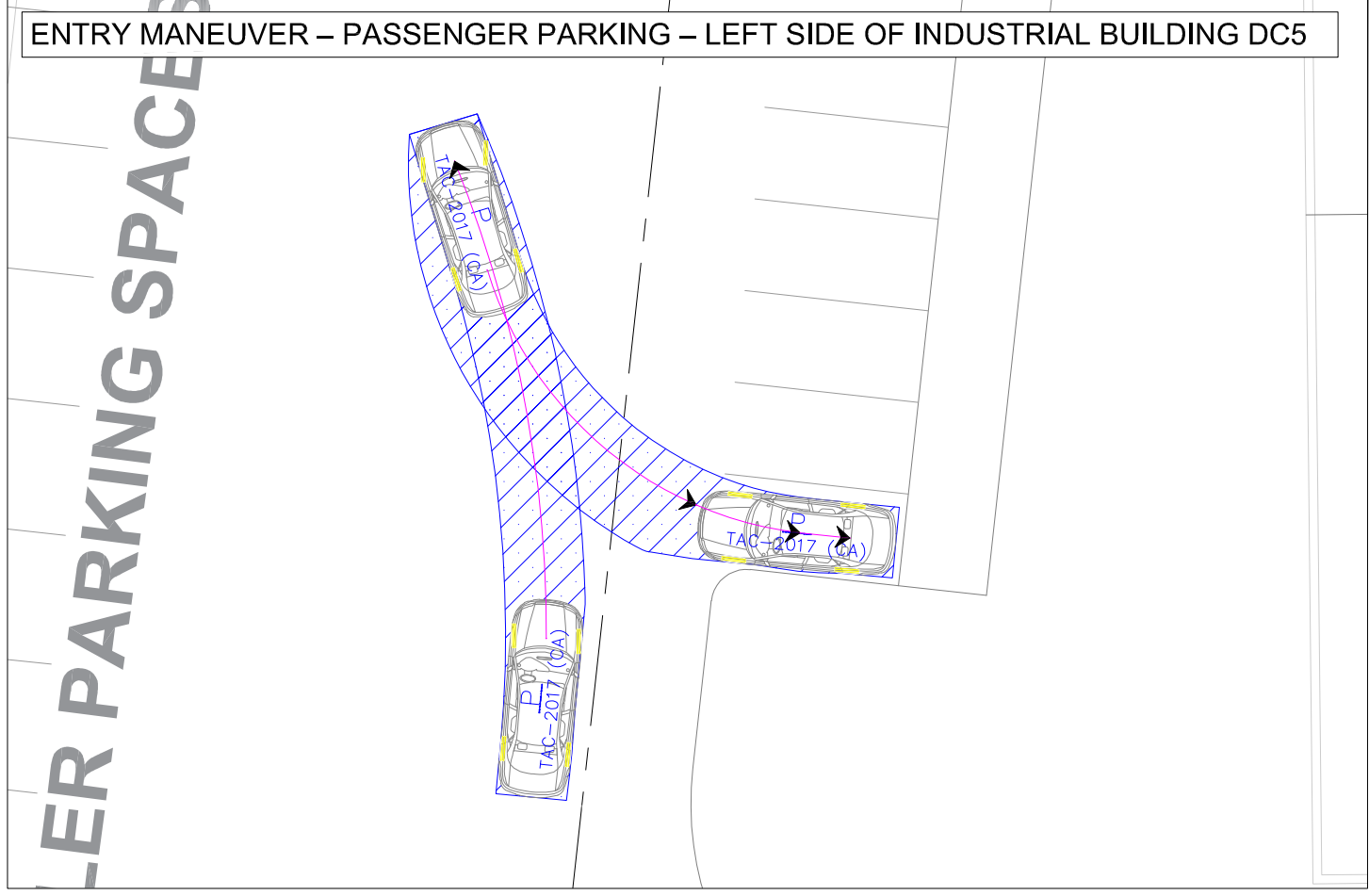
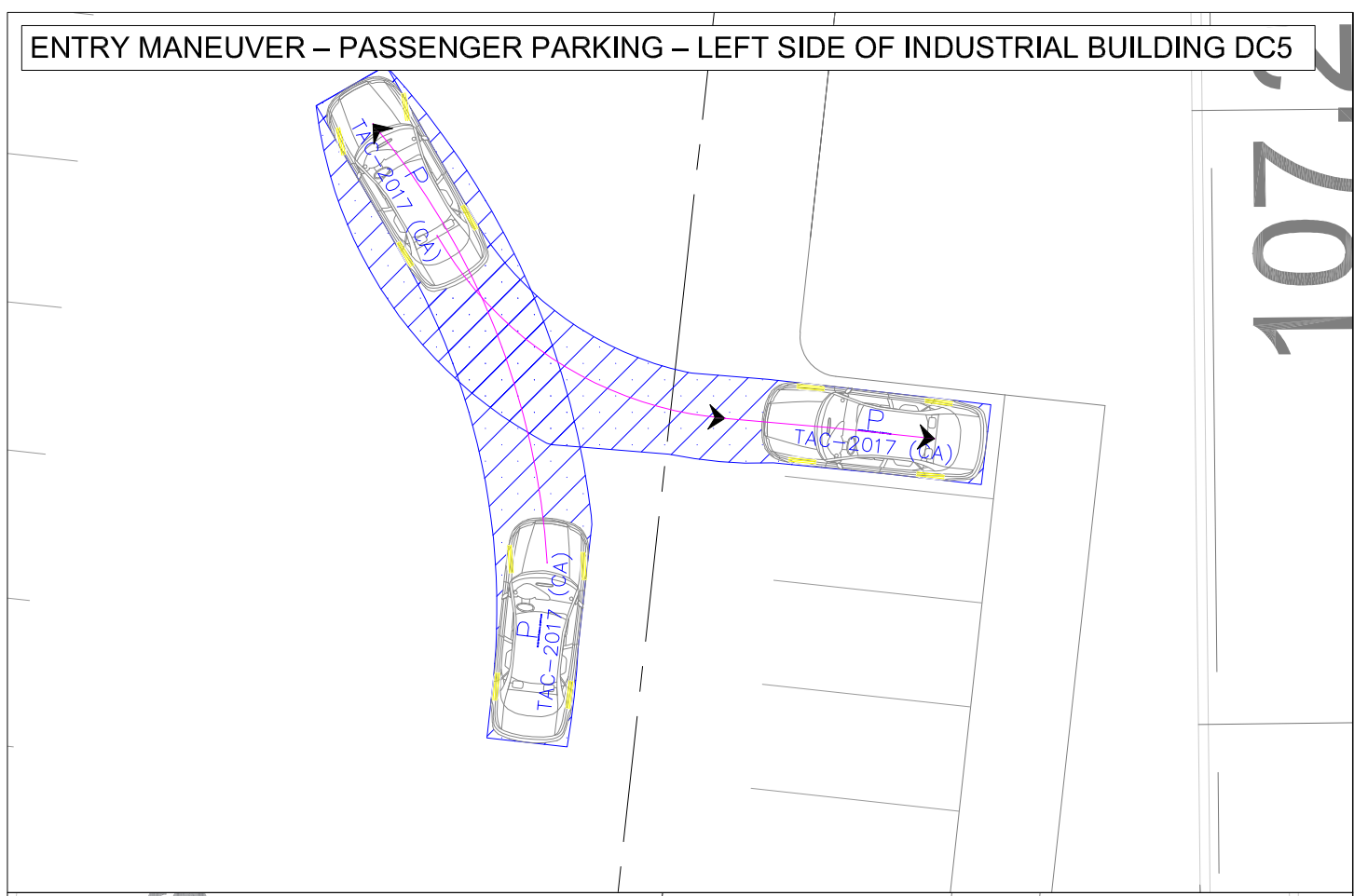
ENTRY MANEUVER – PASSENGER PARKING – LEFT SIDE OF INDUSTRIAL BUILDING DC4



EXIT MANEUVER – PASSENGER PARKING – LEFT SIDE OF INDUSTRIAL BUILDING DC4



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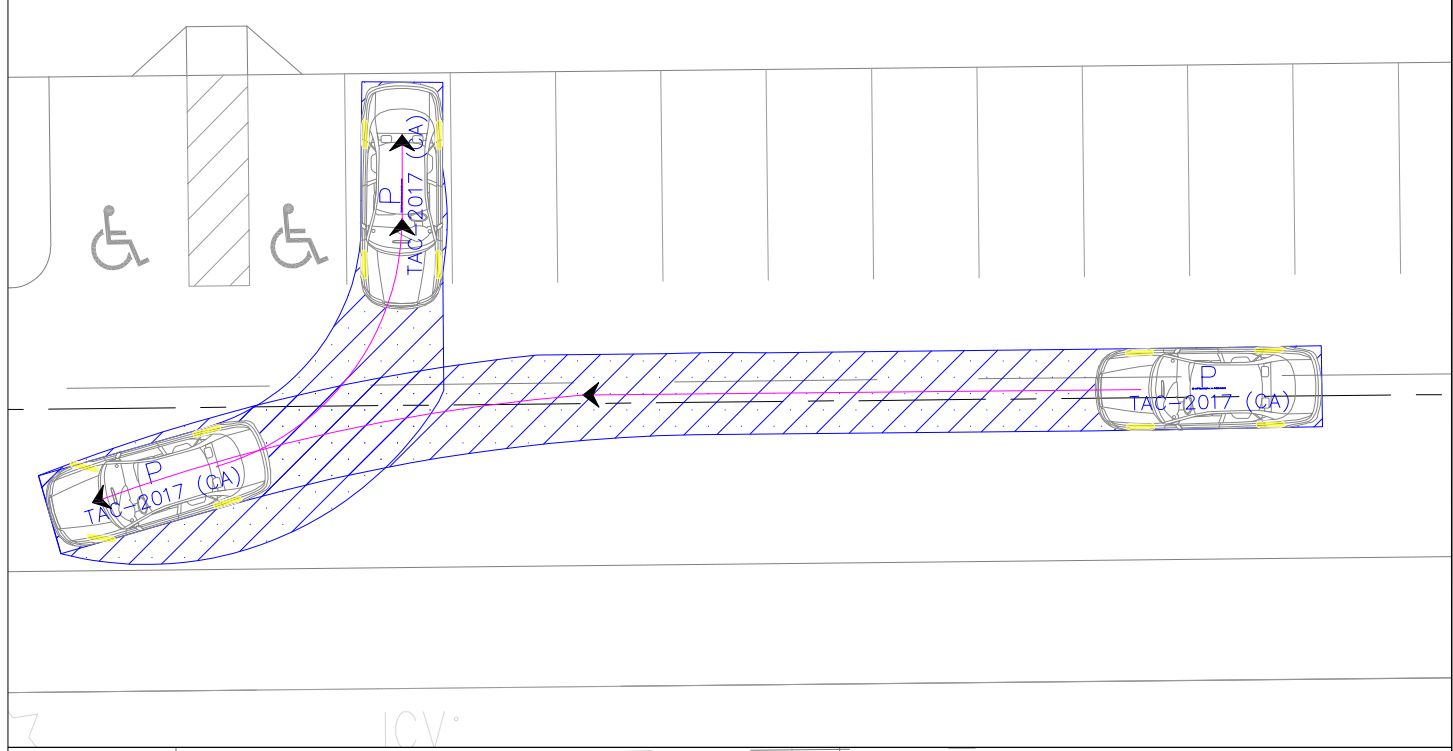


P

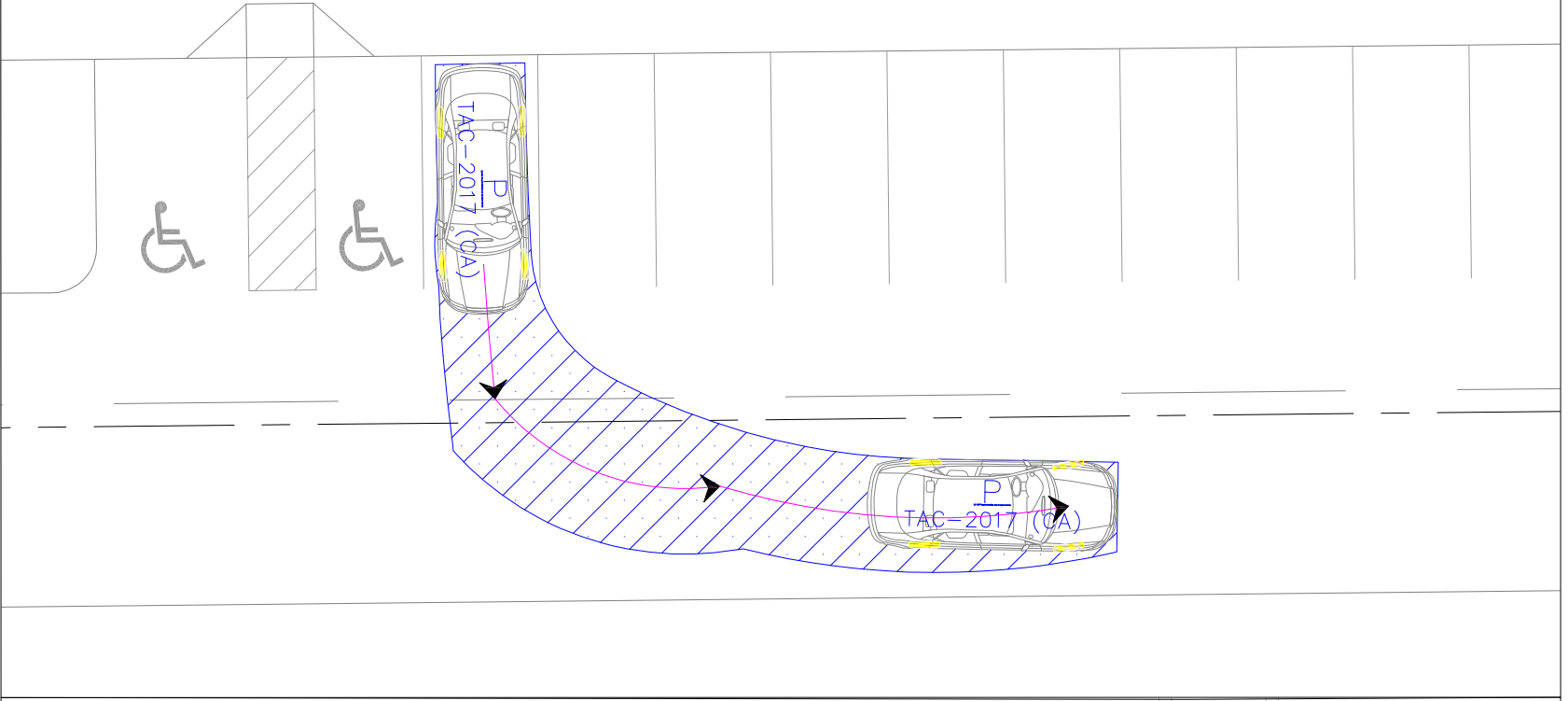
Width	: 5.60	meters
Track	: 1.10	
Lock to Lock Time	: 3.20	
Steering Angle	: 35.9	

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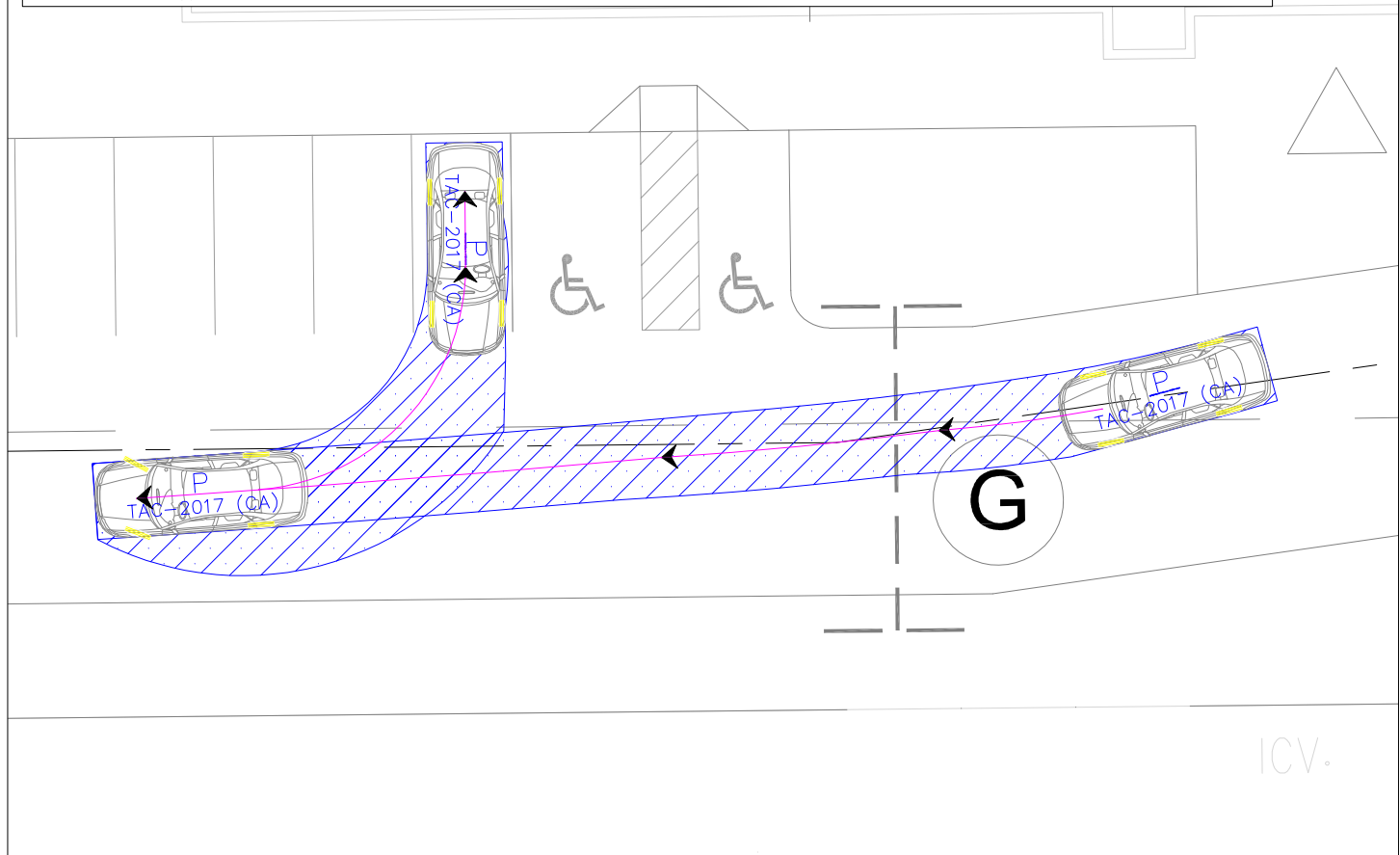
ENTRY MANEUVER – PASSENGER PARKING – BELOW INDUSTRIAL BUILDING DC5



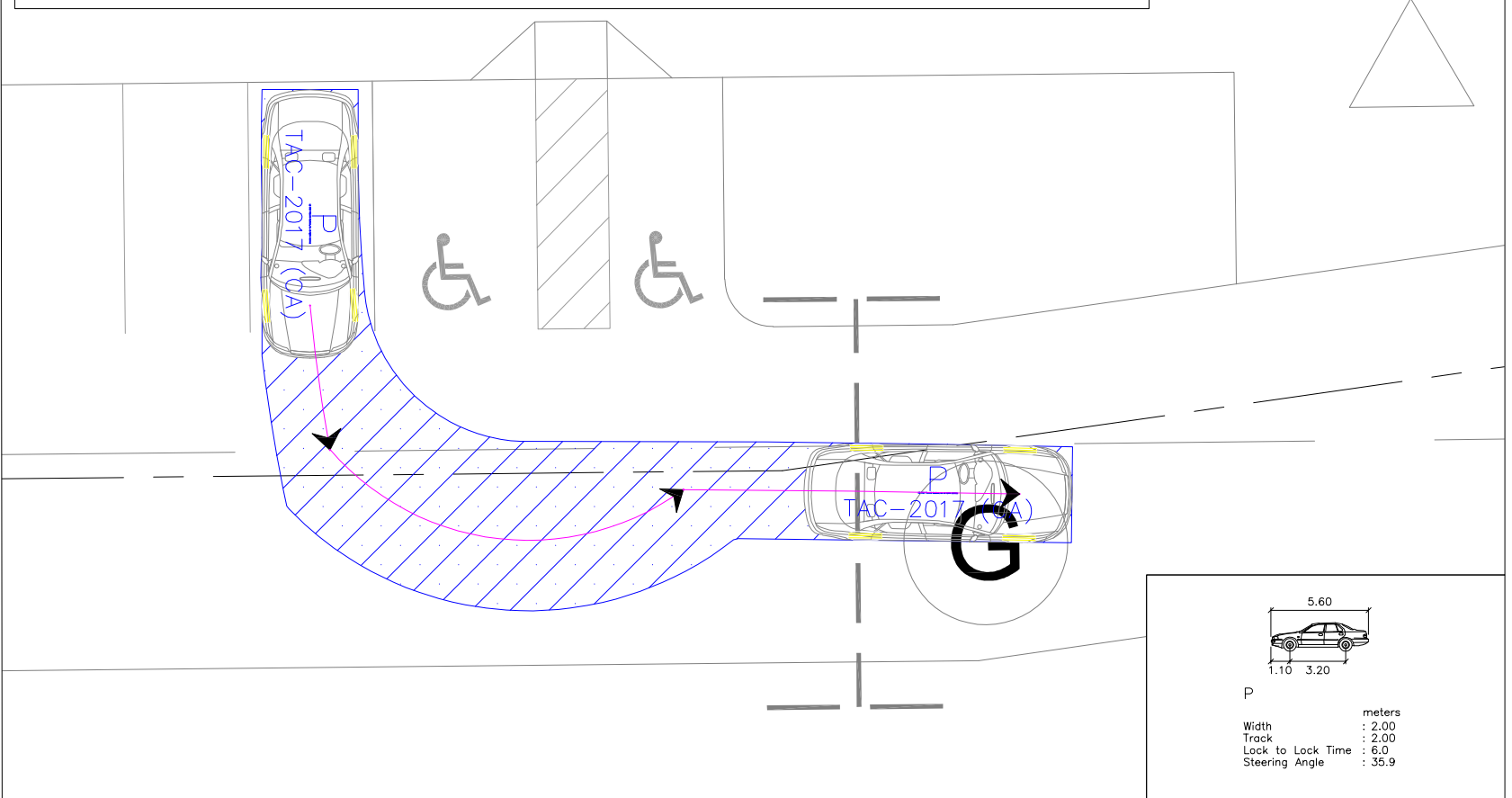
EXIT MANEUVER – PASSENGER PARKING – BELOW INDUSTRIAL BUILDING DC5



ENTRY MANEUVER – PASSENGER PARKING – BELOW INDUSTRIAL BUILDING DC5



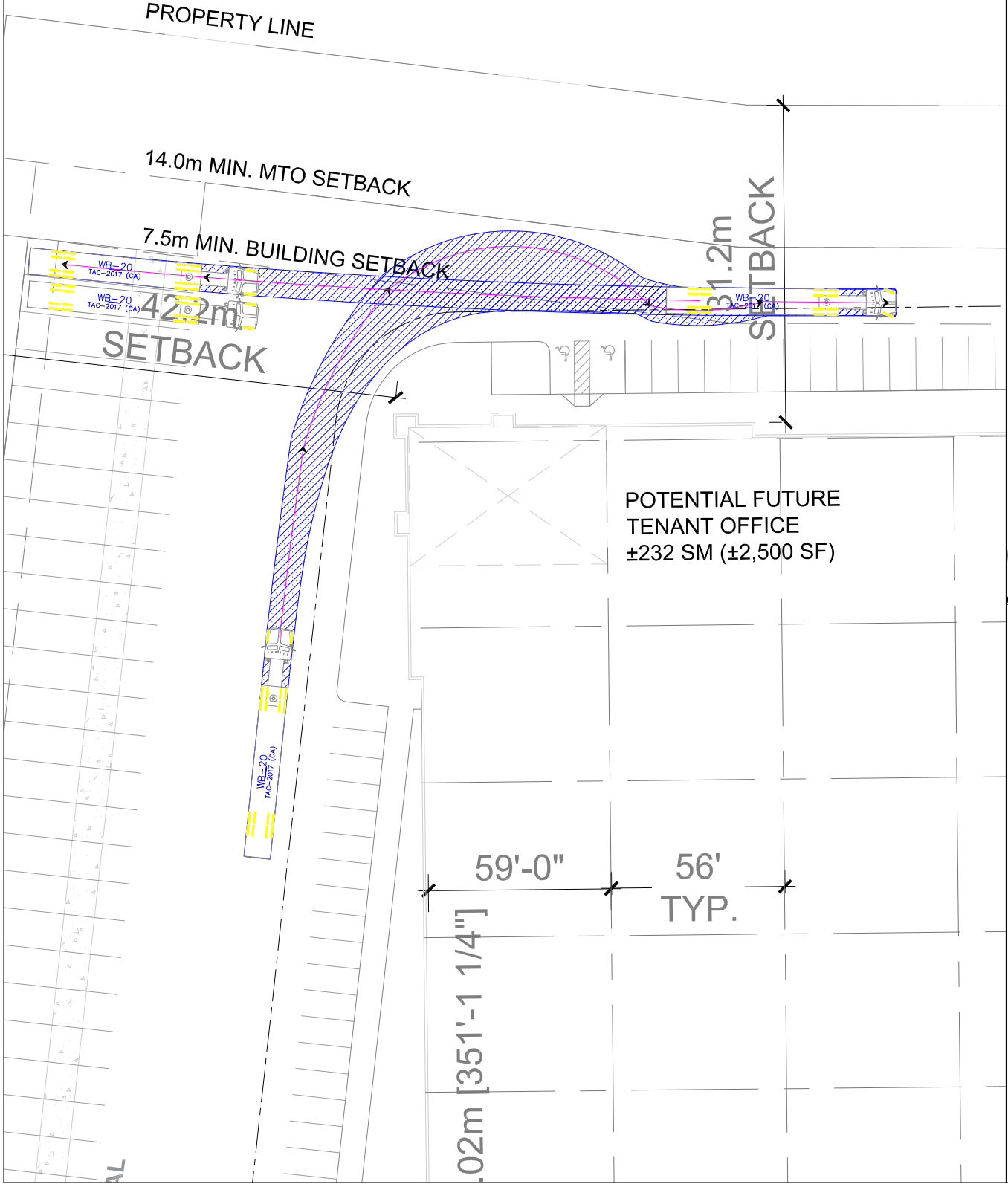
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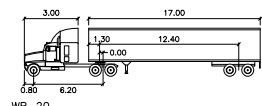
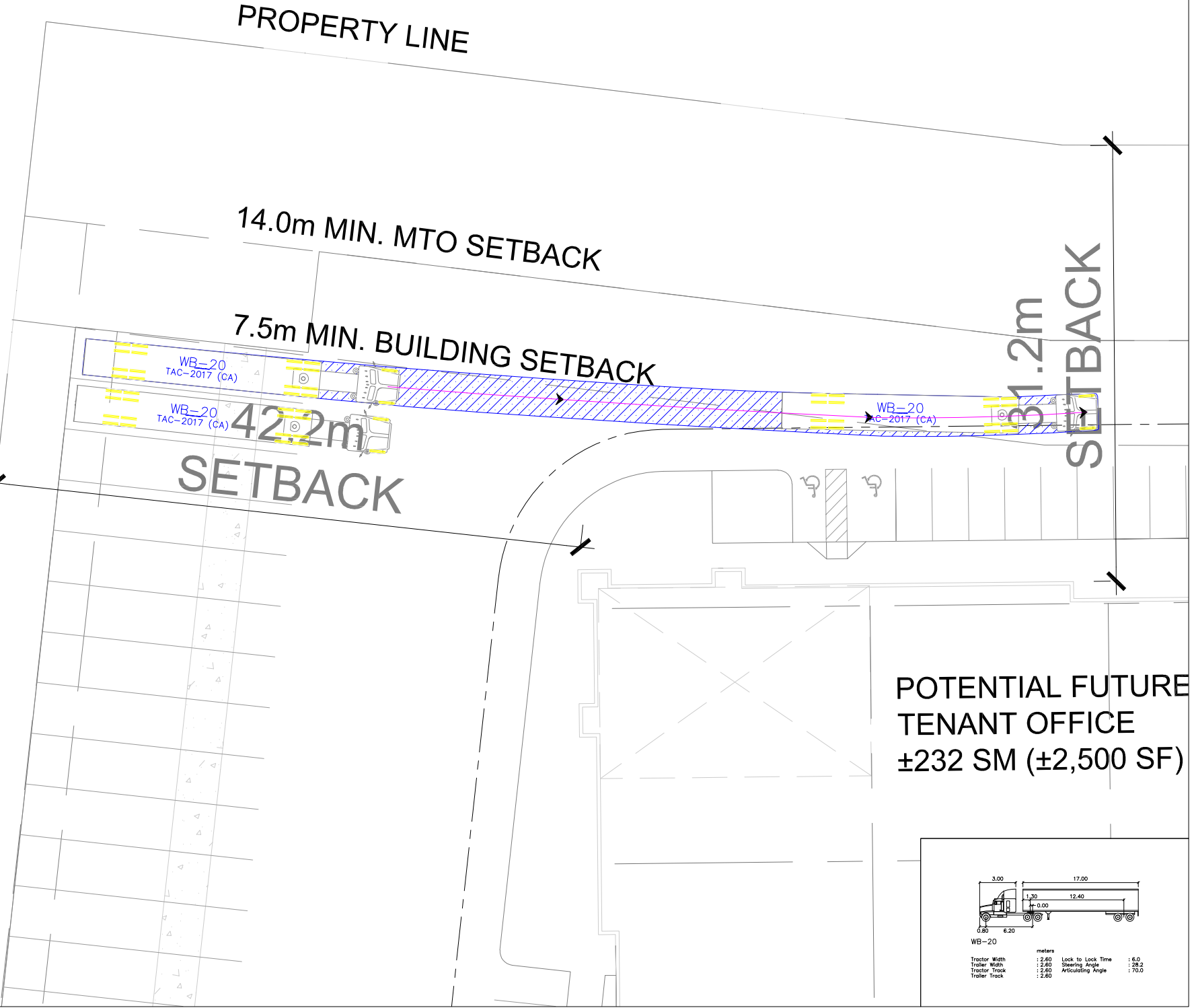
5.60
1.10 3.20
P
Width : 2.00 meters
Track : 2.00
Lock to Lock Time : 6.0
Steering Angle : 35.9

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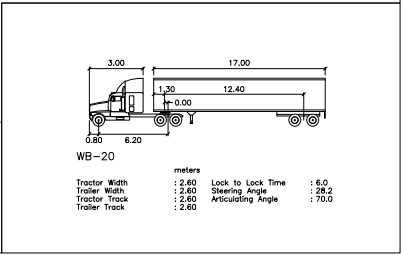
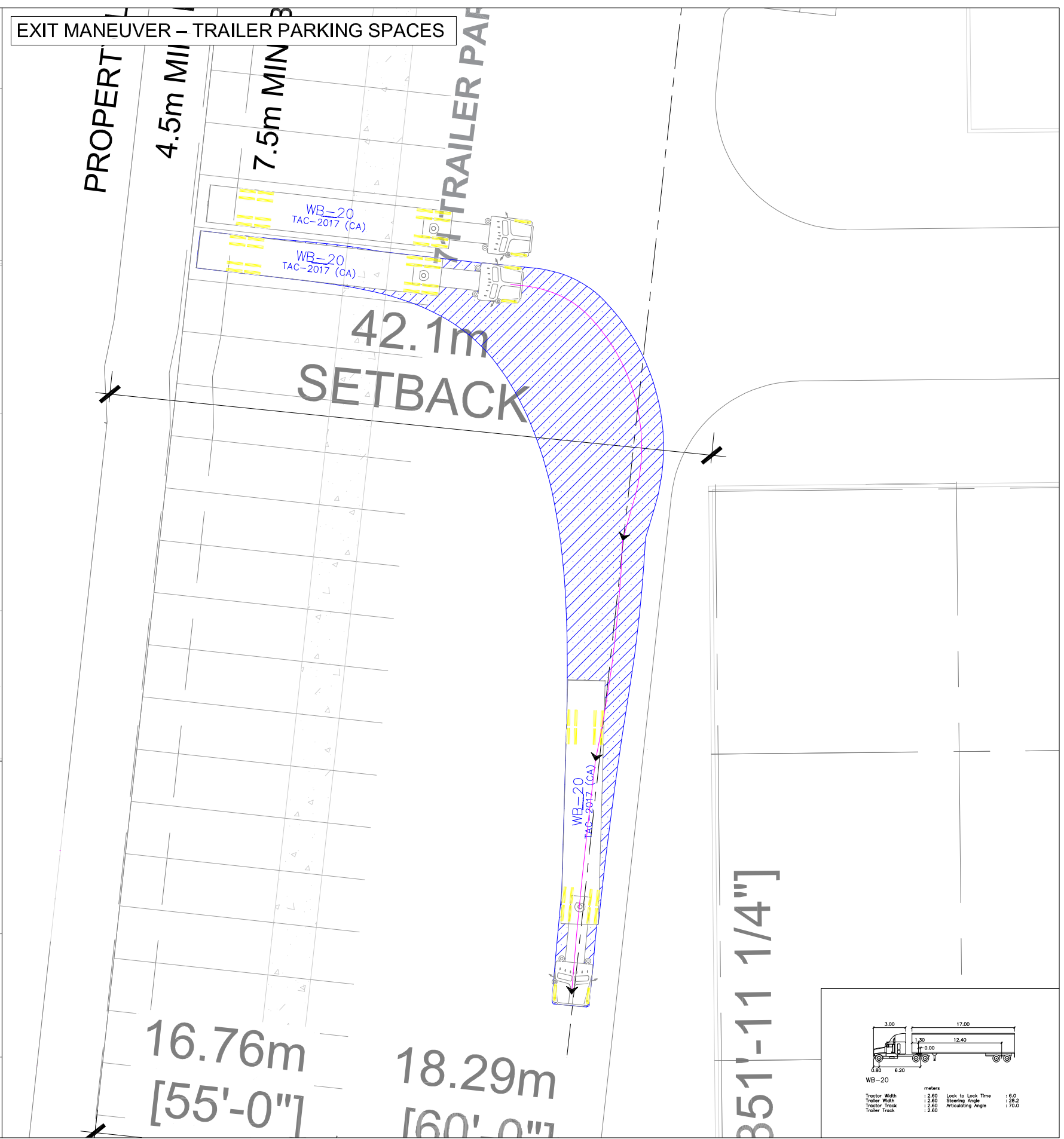
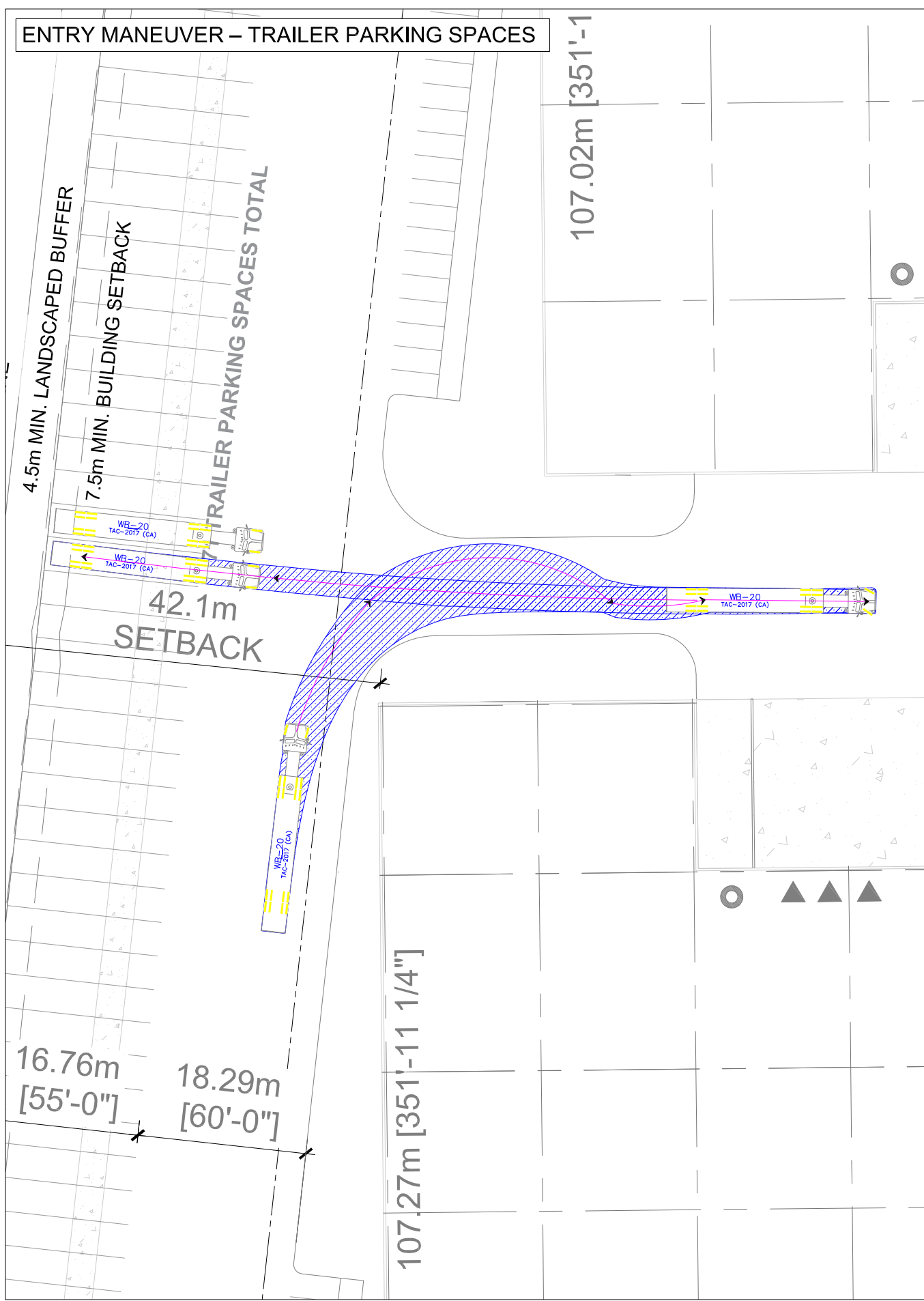
ENTRY MANEUVER – TRAILER PARKING SPACES



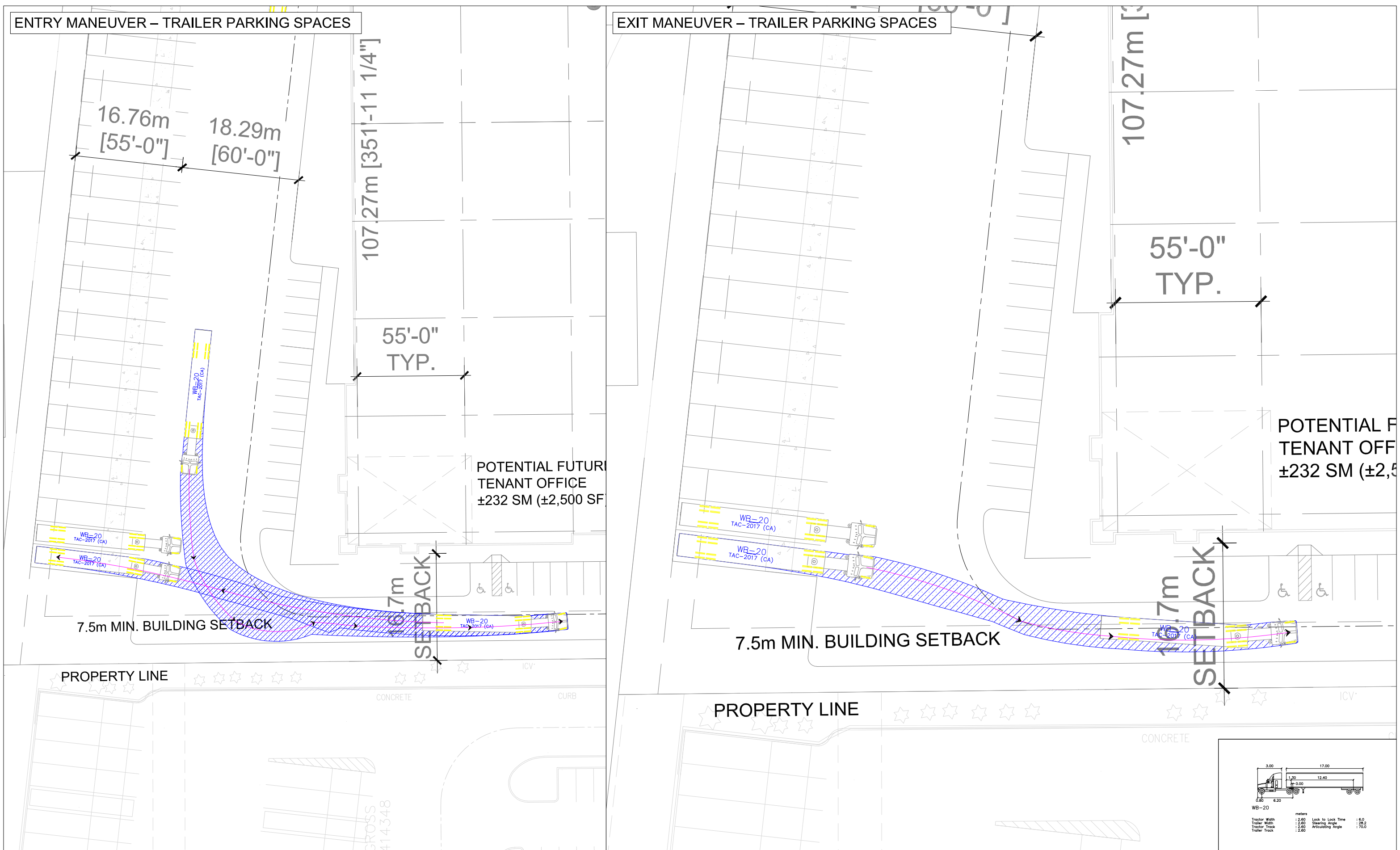
EXIT MANEUVER – TRAILER PARKING SPACES



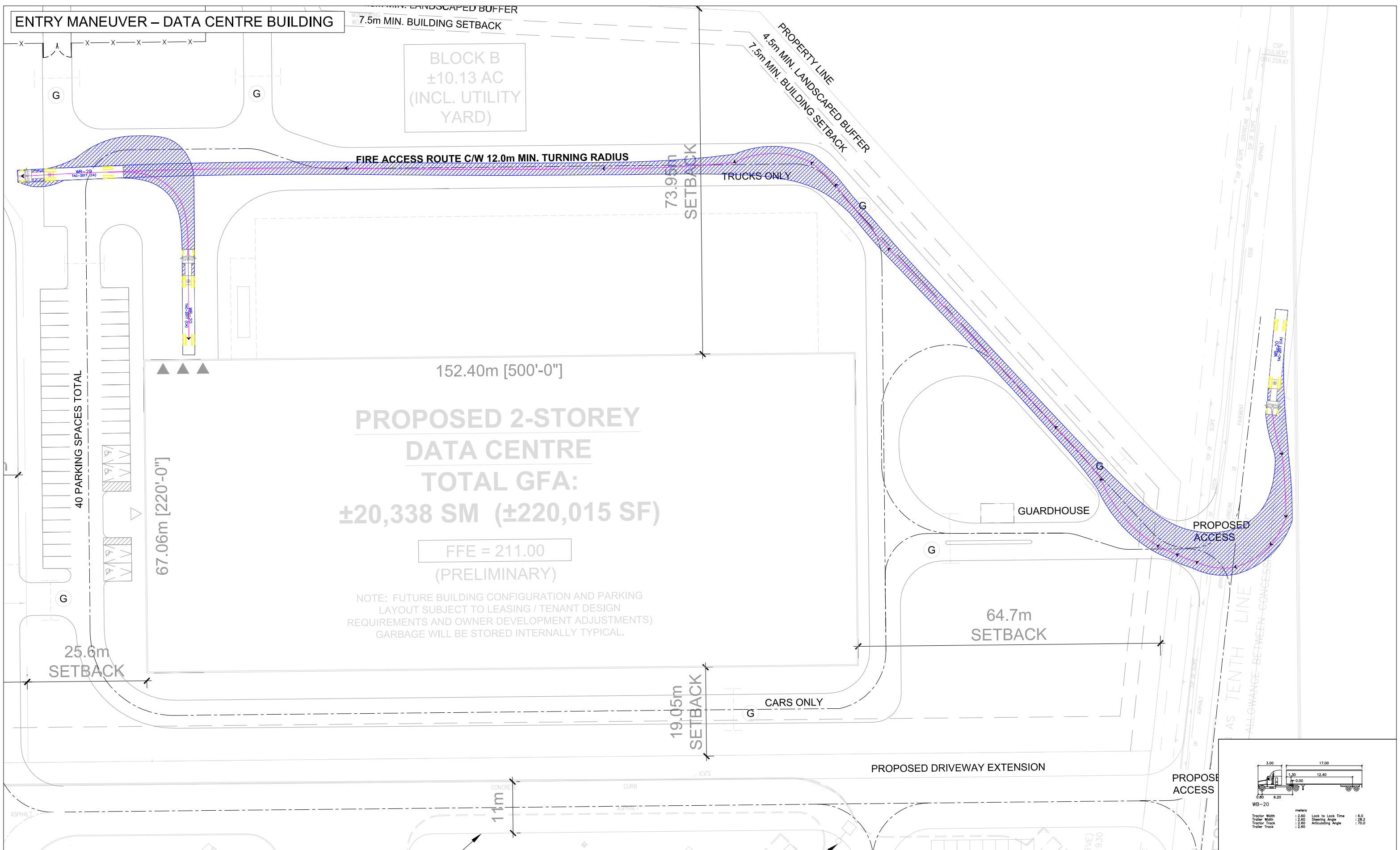
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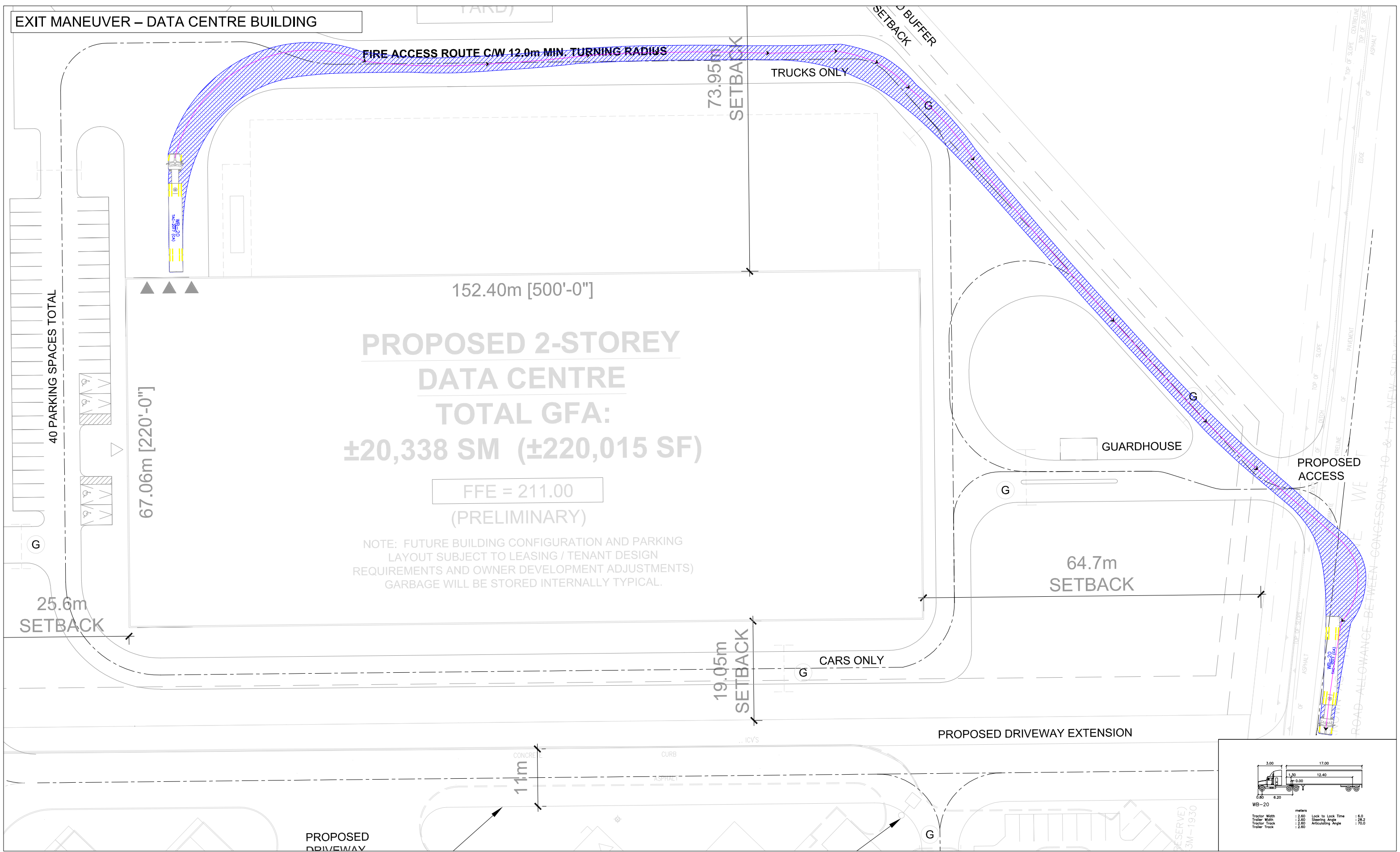
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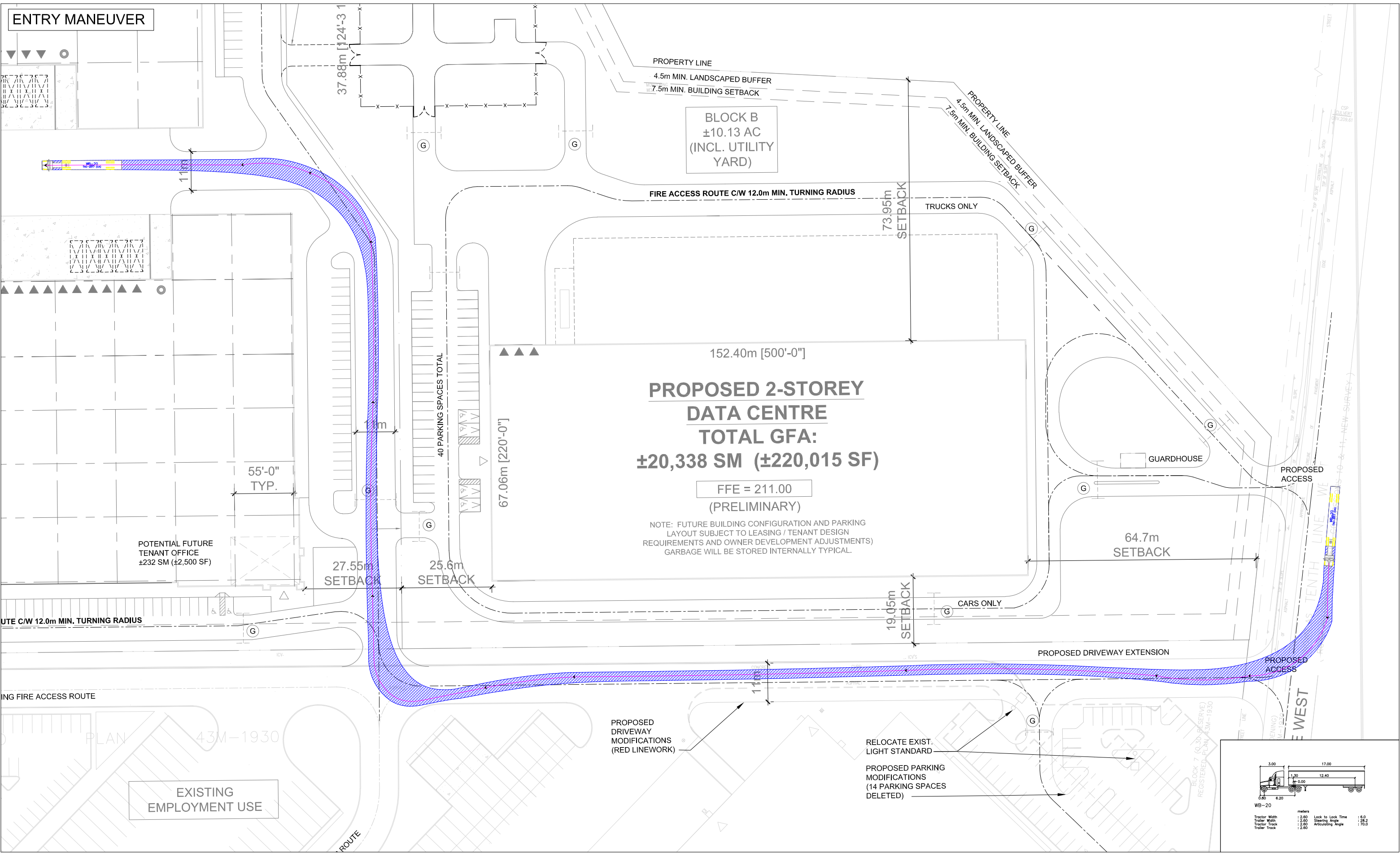
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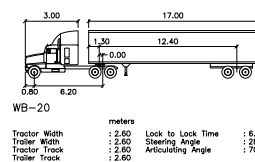


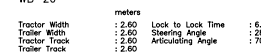
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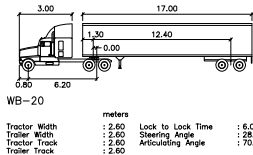


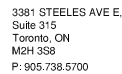
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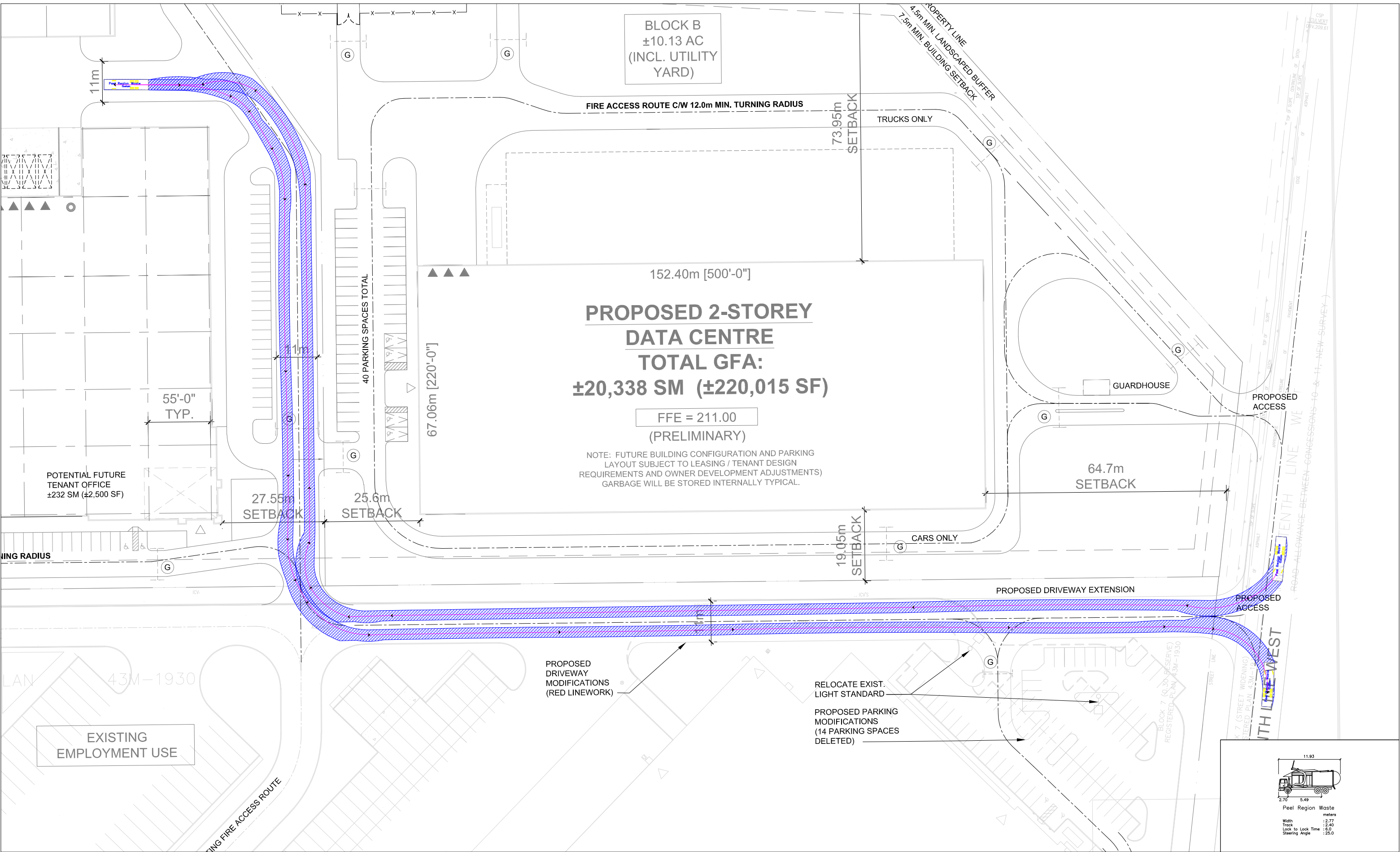


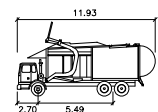






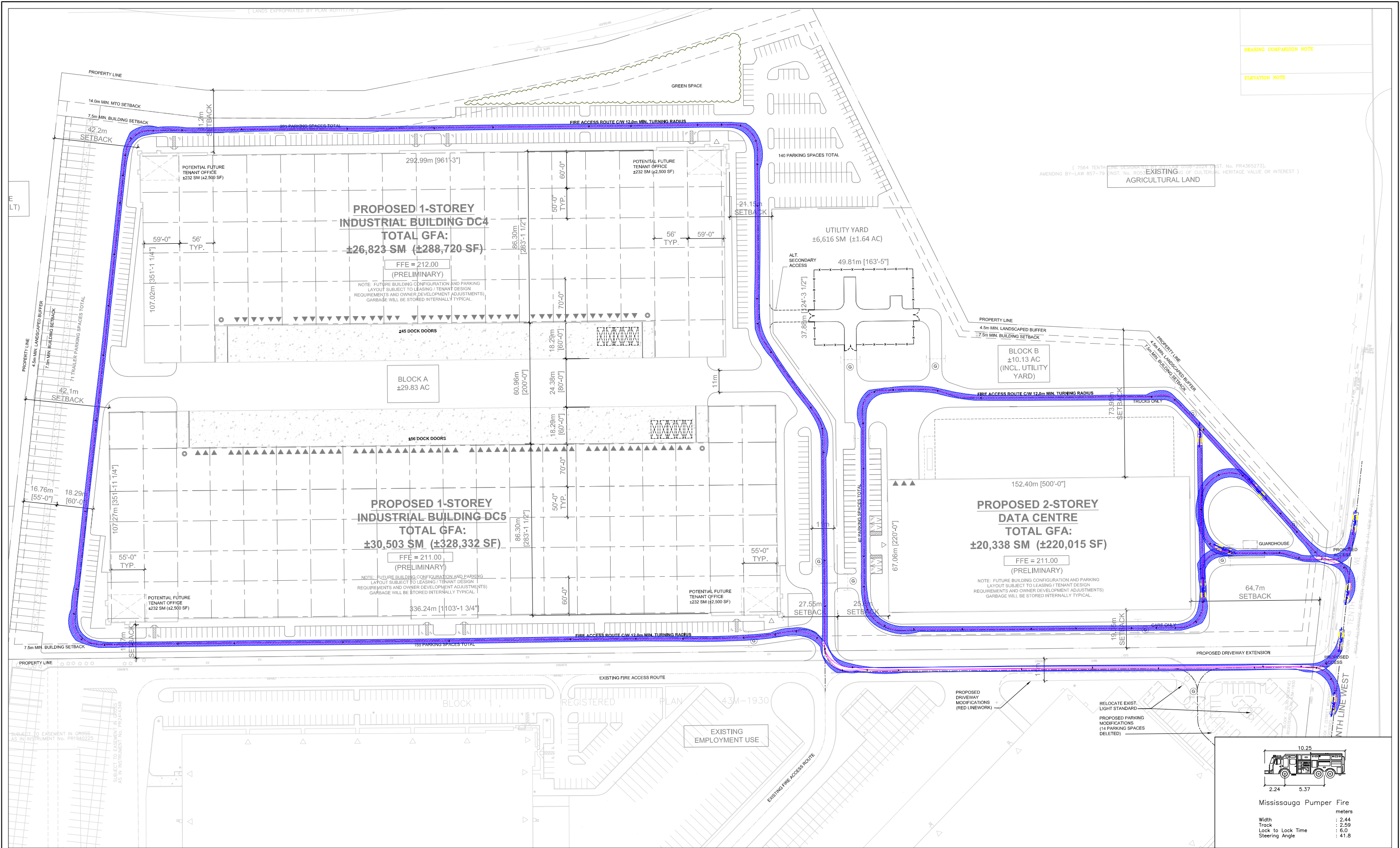
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Peel Region Waste	
	meters
Width	: 2.77
Track	: 2.40
Lock to Lock Time	: 6.0
Steering Angle	: 25.0

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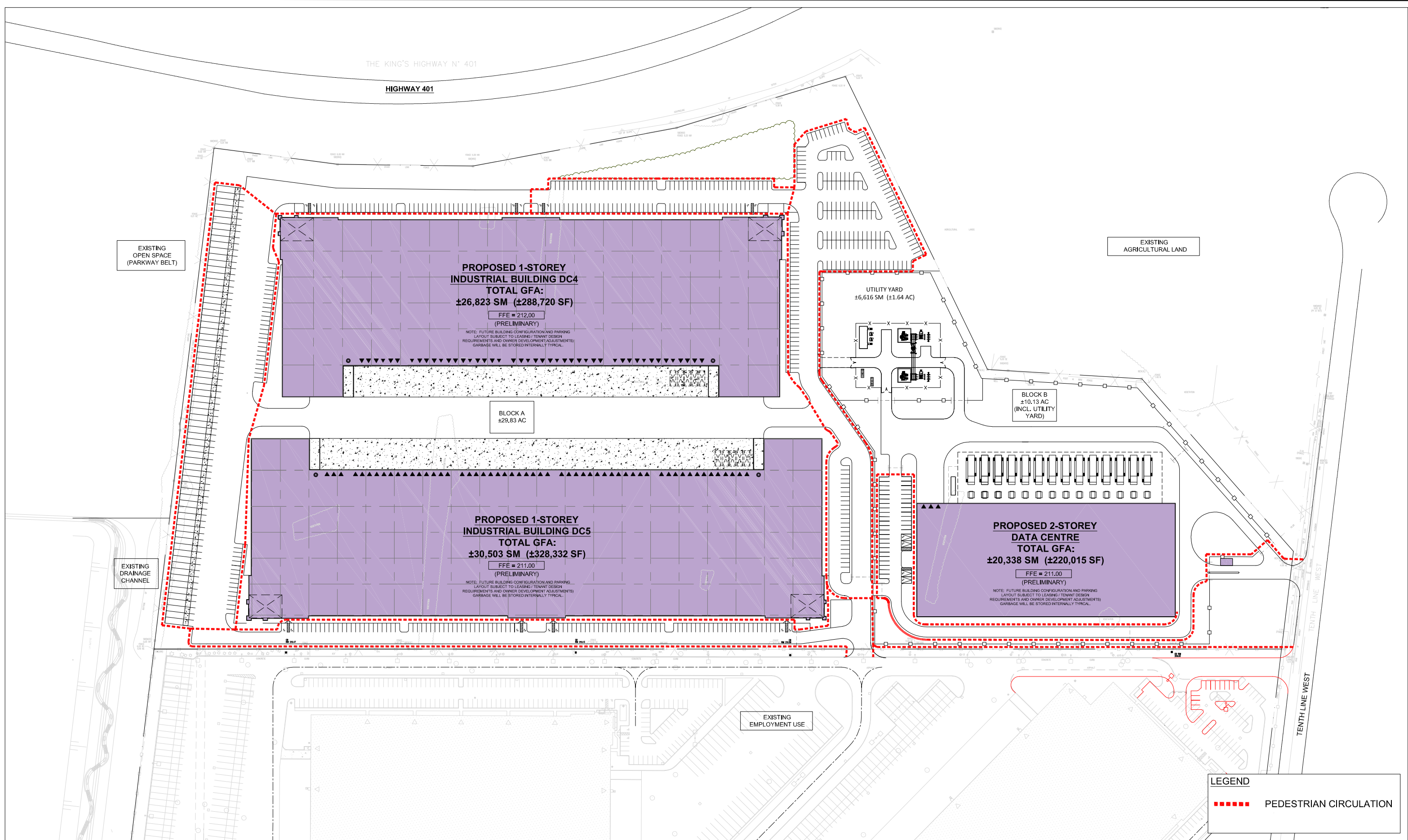




Appendix H:

Pedestrian Circulation Plan

G:\Projects\2025\100658- 7564 10th Line West-Industrial-Prologis\02 Input Data\04 Site Plan\20250528\A100_7564-TENTH-LINE_ SITE PLAN_ 2025-05-28



G:\Projects\2025\100658- 7564 10th Line West-Industrial-Prologis\02 Input Data\04 Site Plan\20250528\A100_7564-TENTH-LINE_ SITE PLAN_ 2025-05-28

