



**1994 St. Joseph Boulevard
Transportation Impact
Assessment**

Final Report

January 5, 2021

Prepared for:

Pulickal Holdings Inc.

Prepared by:

Stantec Consulting Ltd.

Certification

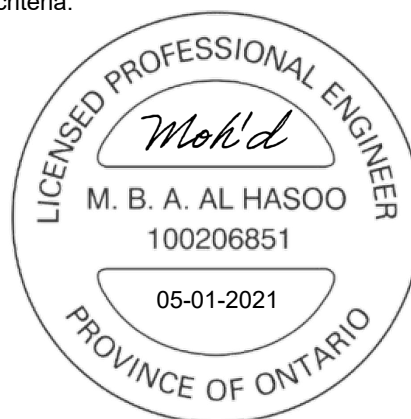
1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;
2. I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
4. I am either a licensed¹ or registered¹ professional in good standing, whose field of expertise is either transportation engineering or transportation planning.

Signature of individual certifier that s/he meets the above four criteria.



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

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1.0 SCREENING

1.1 SUMMARY OF DEVELOPMENT

Municipal Address	1994 St. Joseph Boulevard
Description of Location	Southeast quadrant of the St. Joseph Boulevard at Jeanne d'Arc Boulevard intersection
Land Use Classification	Medical-Dental Office Building (physiotherapist office)
Development Size (units)	N / A
Development Size (m ²)	718 m ²
Number of Accesses and Locations	One access proposed on St. Joseph Boulevard approximately 85m east of Jeanne d'Arc Boulevard
Phase of Development	1 Phase
Buildout Year	Assumed build-out and occupancy by 2021

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

1.2 TRIP GENERATION TRIGGER

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

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

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

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



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1.3 LOCATION TRIGGERS

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

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

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

1.4 SAFETY TRIGGERS

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

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

1.5 SUMMARY

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

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



2.0 SCOPING

2.1 EXISTING AND PLANNED CONDITIONS

2.1.1 Proposed Development

Pulickal Holdings Inc. is preparing a development application for Site Plan Control of a proposed development in the Orleans neighborhood of Ottawa, Ontario. The proposed development is located at 1994 St Joseph Boulevard. The site is bound by St Joseph Boulevard to the north, Jeanne D'Arc Boulevard to the west, existing plazas to the east, and existing residential properties to the south.

Figure 1 illustrates the location of the subject development. The subject site is currently zoned as an AM (Arterial Mainstreet) Zone, the purpose of which according to the City of Ottawa Official Plan, is to:

- *accommodate a broad range of uses including retail, service commercial, offices, residential and institutional uses in mixed-use buildings or side by side in separate buildings in areas designated Arterial Mainstreet in the Official Plan; and*
- *impose development standards that will promote intensification while ensuring that they are compatible with the surrounding uses.*

The existing property is currently an empty lot that can be accessed from St. Joseph Boulevard. The development is proposed to have one full movements access situated approximately 85m east of the roundabout at the Jeanne D'Arc Boulevard and St. Joseph Boulevard intersection, measured from the round about approach's yield line. A total of 24 vehicle parking spaces (including 1 accessible parking space) and 6 bicycle parking spaces will be provided as part of the proposed site.

The proposed site will be constructed in one phase with build-out and occupancy occurring in 2021.

Table 1 outlines the proposed land uses assumed for the analysis which were obtained from the *Institute of Transportation (ITE) Trip Generation Manual 10th Edition*.

Figure 2 illustrates the proposed site plan.



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Figure 1 - Site Location

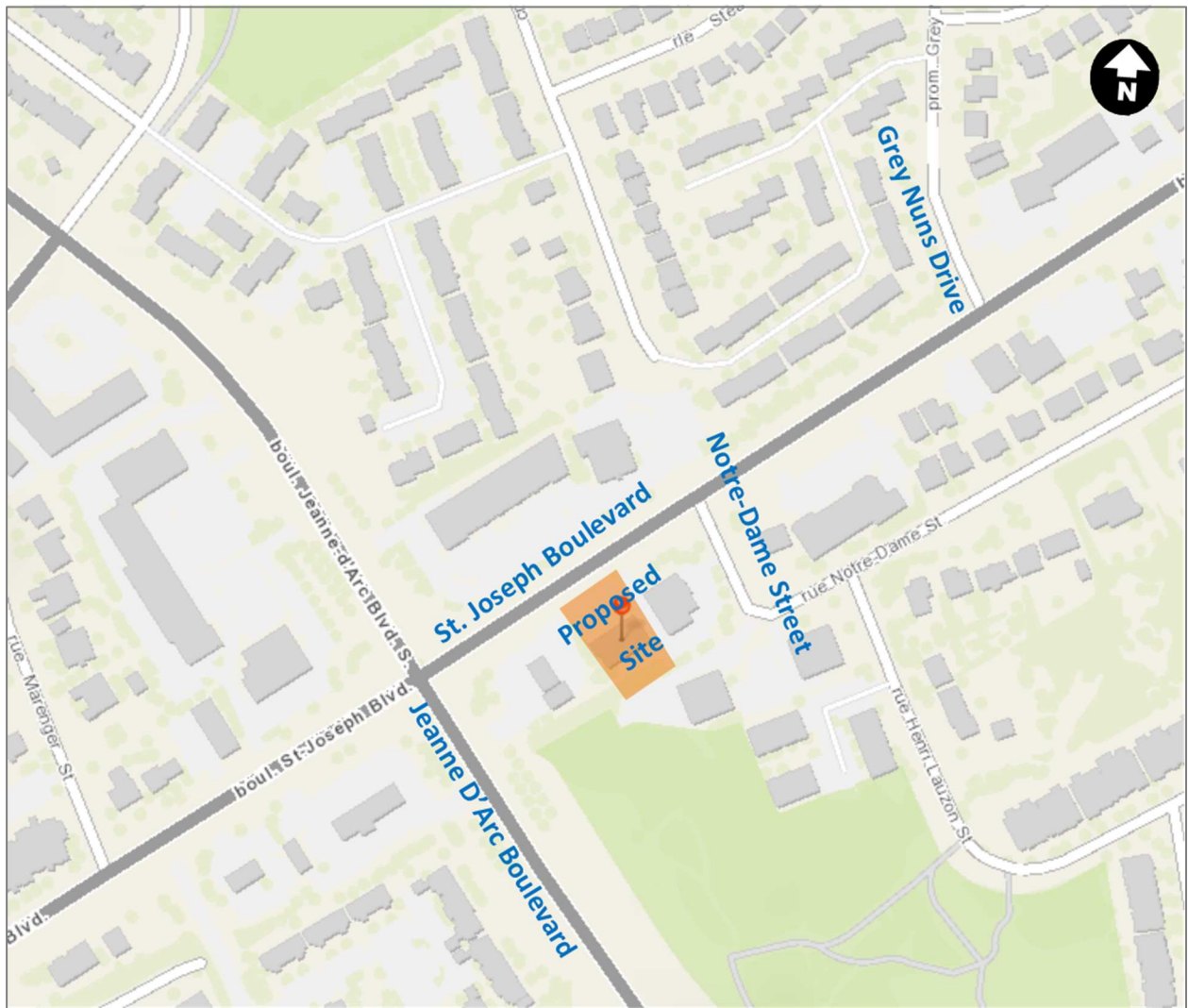


Table 1 - Proposed Land Uses / Land Use Codes

Land Use	Size	Land Use Code (LUC)
LUC 720	718 m ² GFA	Medical – Dental Office Building



2.1.2 Existing Conditions

2.1.2.1 Roads and Traffic Control

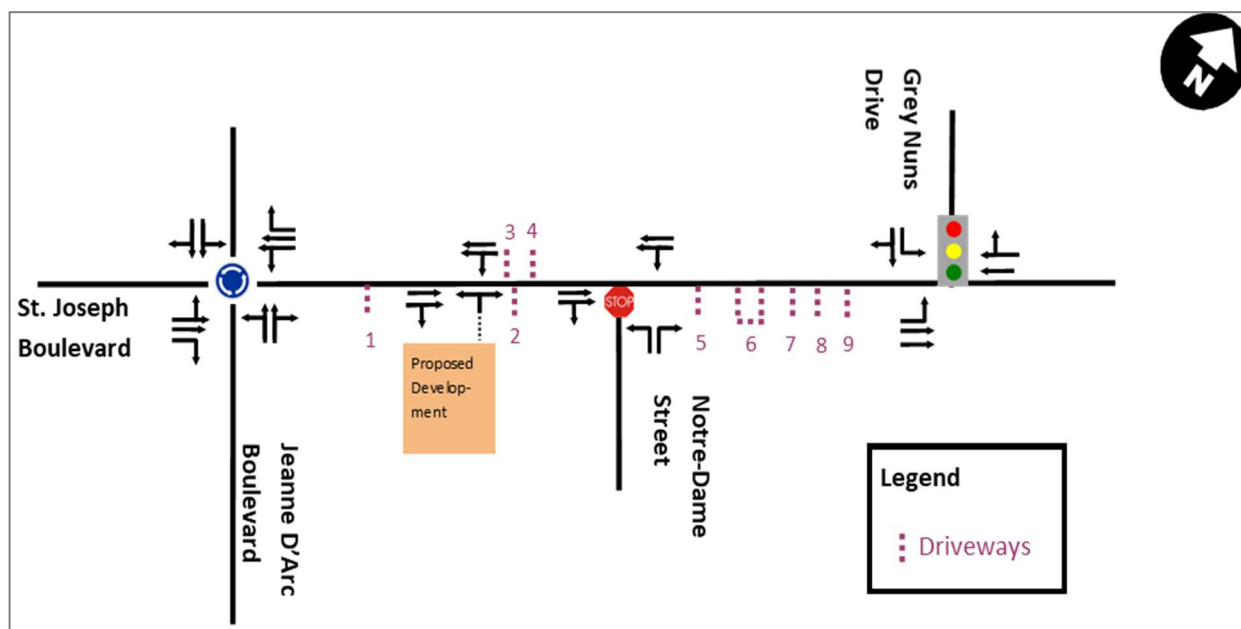
The roadways under consideration in the study area are described as follows:

St. Joseph Boulevard	Within the vicinity of the subject site, St. Joseph Boulevard is a four-lane arterial roadway with a posted speed limit of 50 km/h and an urban cross section. There are sidewalks provided along both sides of the roadway. The roadway is designated as full truck route. The intersection with Jeanne D'Arc Boulevard is controlled by a roundabout with two circulating lanes and an auxiliary right turning lane on the east and west legs. The intersection with Grey Nuns Drive is signalized with an auxiliary left turn lane in the eastbound direction. The intersection with Notre-Dame Street is stop-controlled along the minor roadway. As outlined in the City's Cycling Plan, St. Joseph Boulevard is designated as a Spine Route west of the subject site. East of the intersection with Notre-Dame Street, the roadway is classified as a Cross-town Bikeway.
Jeanne D'Arc Boulevard	Within the vicinity of the subject site, Jeanne D'Arc Boulevard is a four-lane arterial roadway with a posted speed limit of 60 km/h and an urban cross section. There are sidewalks provided along both sides of the roadway. Jeanne D'Arc Boulevard is classified as a full truck route north of the intersection with St. Joseph Boulevard. To the south of St. Joseph Boulevard, the roadway is classified as a partial truck route. As outlined in the City's Cycling Plan, Jeanne D'Arc Boulevard is designated as a Spine Route.
Grey Nuns Drive	Within the vicinity of the subject site, Grey Nuns Drive is a two-lane local roadway with an urban cross section and a posted speed limit of 40 km/h. There is a sidewalk on the east side of the roadway. Grey Nuns Drive forms a three-legged intersection with St. Joseph Boulevard and is signalized with an auxiliary left turn lane in the southbound and eastbound approaches. North of Luberman Way, Grey Nuns Drive is classified as a local cycling route.
Notre-Dame Street	Within the vicinity of the subject site, Notre-Dame Street is a two-lane local roadway with an urban cross section. In the absence of a posted speed limit, the default speed is assumed to be 50 km/h. There are no sidewalks or shoulders along either side of the roadway. The intersection with St. Joseph Boulevard is stop-controlled along the minor approach (one-way stop control).

Figure 3 illustrates the existing lane configuration and traffic control. The existing driveways within 200m of the proposed site access are labelled and numbered.



Figure 3 - Existing Lane Configuration and Traffic Control



Driveway 1: Gas Station (commercial land use). **Driveway 2:** Eatery and services (commercial land use). **Driveway 3:** Mixed use plaza (commercial, eateries). **Driveway 4:** Mixed use plaza (commercial, medical). **Driveway 5:** Tire store (commercial land use). **Driveway 6:** Mixed use plaza (office, commercial, medical, eatery). **Driveways 7 and 8:** medical offices. **Driveway 9:** retail plaza.

2.1.2.2 Walking and Cycling

Currently, there are no designated cycling facilities along Jeanne D'Arc Boulevard and St. Joseph Boulevard in the vicinity of the subject site. Within the vicinity of the site, both roadways feature asphalt / concrete boulevards along both directions which can be utilized by cyclists. The City of Ottawa's Ultimate Cycling Plan envisions both roadways as designated Spine routes. Just east of the site, the Ultimate Cycling Plan envisions St. Joseph Boulevard as a designated Cross-town Bikeway.

2.1.2.3 Transit

Transit service is currently provided in the immediate vicinity of the proposed site. Route schedules have been extracted using OC Transpo website on May 27th, 2020. It should be noted that the current schedules reflect reduced service due COVID-19 reduced schedules and are expected to increase after the currently ongoing state of emergency is lifted. Below is a summary of transit routes serving the area:

Route 30 Route 30 is a Local route that runs between Blair and Millennium all day seven days per week. During the weekday morning and afternoon peaks it runs with 30-minute headways.



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Route 31 Route 31 is a Local route that runs between Blair and Place d'Orleans Monday to Friday during select time periods only. At the time of the subject study, this route was not operating therefore the headways for this route are not known.

Route 32 Route 32 is a Local peak period route that runs between Blair and Sunview seven days a week during select time periods only. It runs at 180-min headways.

Route 131 Route 131 is a Local route that runs between Chapel Hill and Fallingbrook all day seven days per week. During the peak periods, it runs with 30-minute headways.

Route 138 Route 138 is a Local route that runs between Innes and Place d'Orleans seven days per week. During peak periods, it runs with 60-minute headways.

The closest transit stop to the proposed site is at the intersection of St. Joseph Boulevard and Notre-Dame Street.

Figure 4 illustrates the transit routes in the vicinity of the subject site.

Figure 4 - Study Area Transit Routes



(Source: OC Transpo System Map, accessed May 27th, 2020)

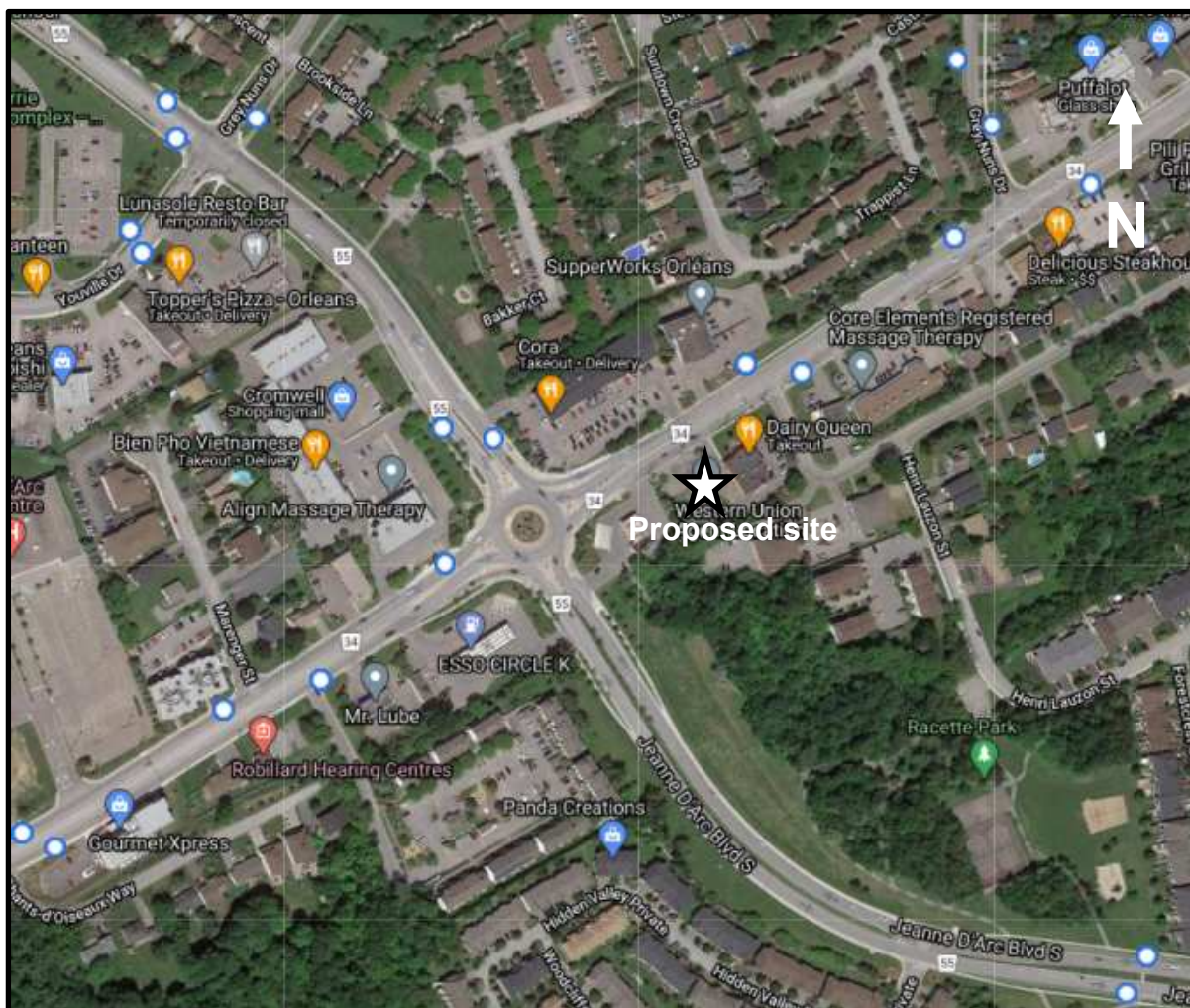


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Figure 5 - Nearby Transit Stops



Source: OC Transpo Travel Planner (Accessed Aug 26th, 2020)

2.1.2.4 Traffic Management Measures

No traffic management measures are currently provided in the vicinity of the subject site.

2.1.2.5 Traffic Volumes

Traffic volumes at the study area intersections were obtained by the City of Ottawa at the intersections of:

- St Joseph Boulevard at Jeanne D'Arc Boulevard (dated December 17, 2015); and
- St Joseph Boulevard at Grey Nuns Drive (dated January 17, 2019).

No counts were available at the intersection of St Joseph Boulevard at Notre-Dame Street. Due to the reduction in traffic volumes resulting from:



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- The currently on-going state of emergency;
- module 4.9 (Intersection Design) being exempt; and
- discussion with the City of Ottawa

the intersection of St Joseph Boulevard at Notre-Dame Street has been excluded from further analysis.

The City of Ottawa's intersection traffic growth rates, shown in **Figure 6** below indicate that the volumes at the intersection of St. Joseph Boulevard with Jeanne D'Arc Boulevard are anticipated to grow at 2% to 4% per year. Furthermore, using the City of Ottawa Transportation Master Plan (TMP) projected growth in key travel markets, Exhibit 2.11, it was identified that:

- 1- Outer Suburbs to outer suburbs trips are forecasted to grow by 1.9%;
- 2- Trips towards outer suburbs are forecasted to grow by 1.6%;
- 3- Trips from outer suburbs are forecasted to grow by 2.1%.

In line with the available data, an annual growth rate of 2% was applied to the study area traffic volumes in forecasting 2020 traffic volumes and future horizons traffic demand.

The existing volumes are shown in **Figure 7**.

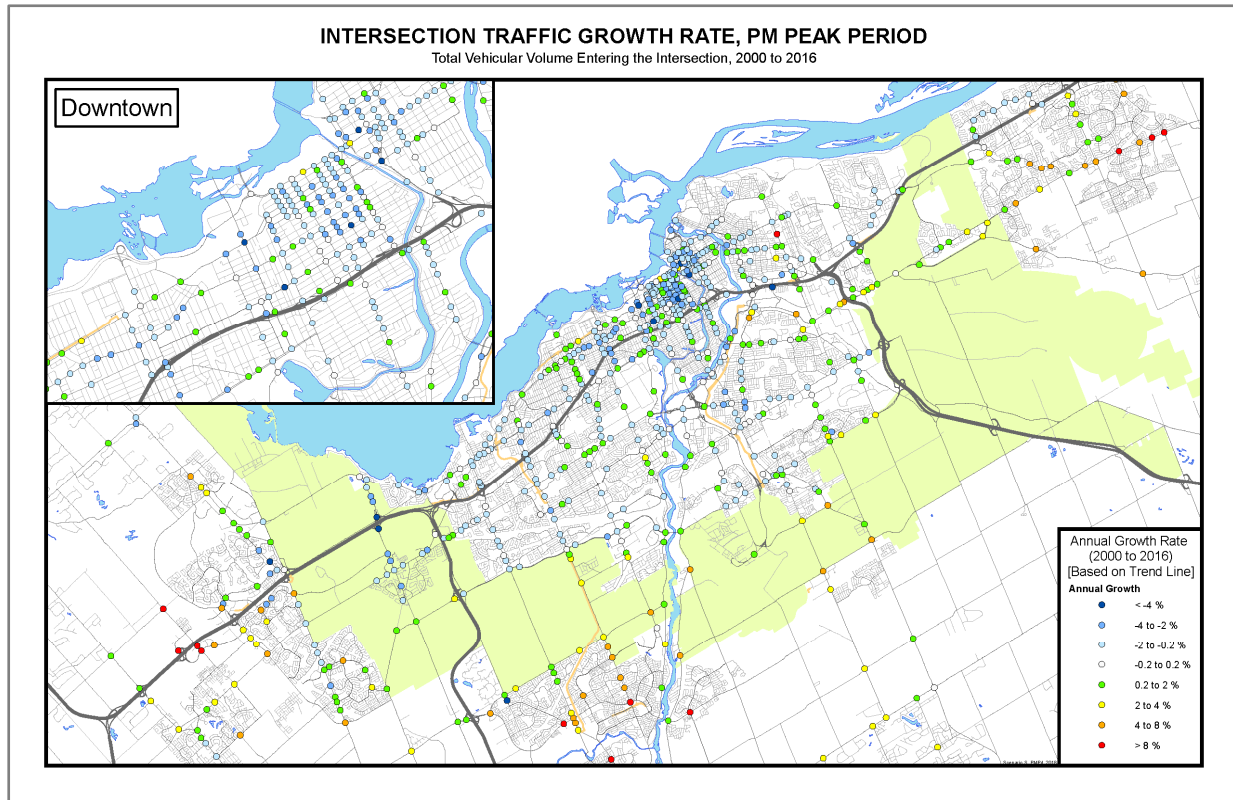


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Figure 6 - City of Ottawa Growth Rates

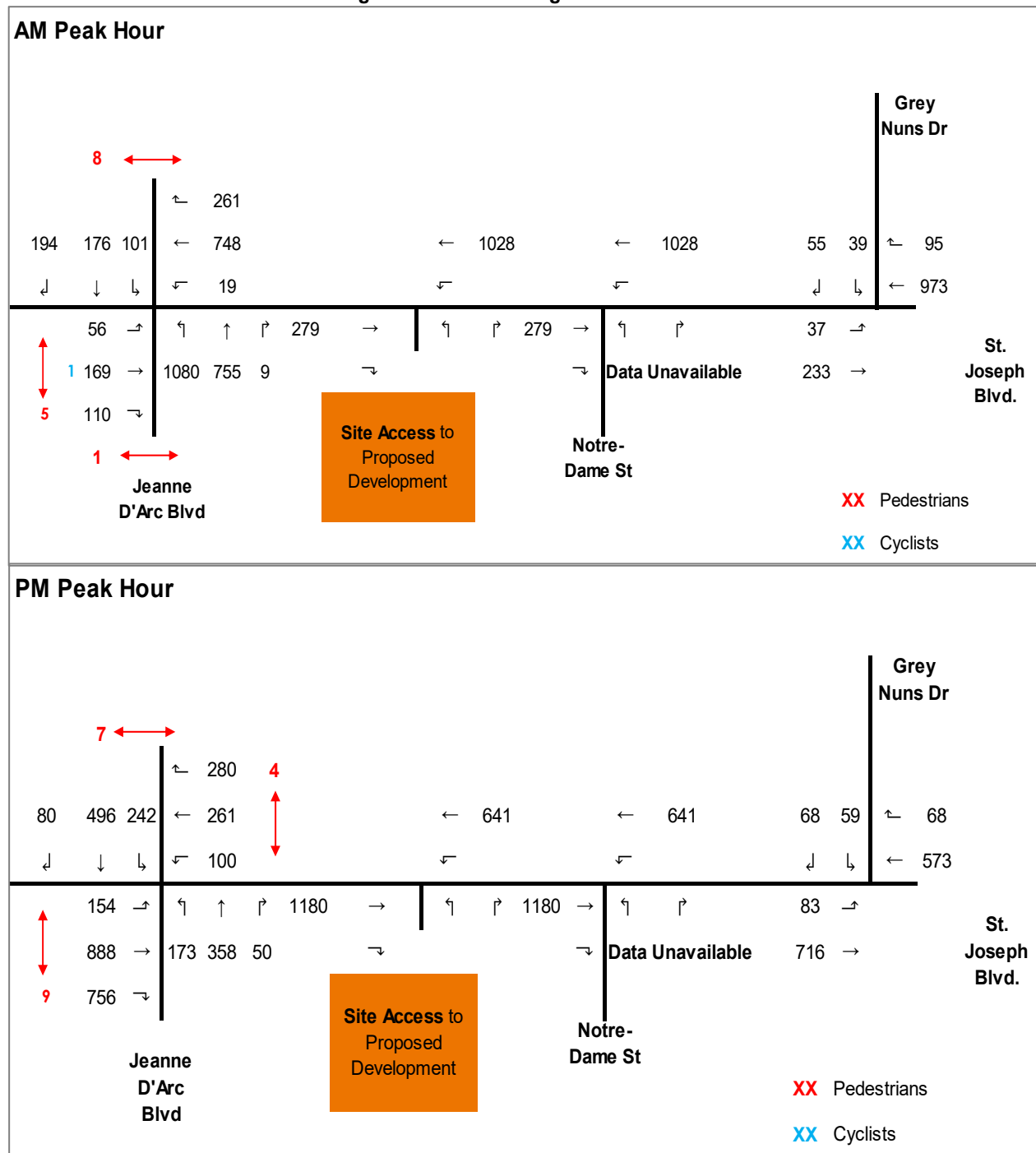


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Figure 7 - 2020 Existing Traffic Volume



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2.1.2.6 Collision History

Collision data was provided by the City of Ottawa for the period January 2014 to December 2018 in the vicinity of the subject site. The data was reviewed to determine if any intersections or road segments exhibited an identifiable collision pattern during the five (5) year period.

Table 2 includes the collision summary for each road segment and intersection in the study area.

Table 2 - Study Area 2014 – 2018 Collisions Summary

		St. Joseph Boulevard at Jeanne D'Arc Boulevard	St. Joseph Boulevard at Notre-Dame Street	St. Joseph Boulevard at Grey Nuns Drive	St. Joseph Boulevard between Jeanne D'Arc Boulevard and Notre-Dame Street
Classification	Property Damage Only	268 ¹	1	6	7
	Non-Fatal Injury	13		2	1
Collision Type	Rear End	26		2	4
	Angle / Turning	116		5	4
	Sideswipe	132	1		
	Single Motor Vehicle / Other	7		1	
Event	Other Motor Vehicle	35		3	2
	Driving Properly	7			
	Lost Control	7		1	
	Disobeying Traffic Control / Not Yielding ROW	125		2	2
	Improper Turning / Passing / Lane Change	77	1	2	
	Speeding / Tailgating	25			4
Total	All Collisions	281	1	10	8

¹ one unreportable collision added to P.D. Only



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Overall, it was found that the majority of the collisions in the study area intersections and segments resulted in property damage only (95%), which suggests that the collisions occurred at speeds low enough as to not cause injury or harm to road users.

However, it was observed as per **Table 2**, that the intersection of St Joseph Boulevard at Jeanne D’Arc Boulevard (roundabout) experienced a significant number of collisions between 2014 and 2018, reflecting a total of 281 collisions, of which 13 events resulted in non-fatal injuries. Therefore, this intersection has been investigated in greater detail. At this location, 95% of collision frequencies resulted in property damage. The majority of collision events resulted in angle / turning (41%) and sideswipe (47%). Combined, they account for 88% of the total collisions at the roundabout. **Table 3** below provides a summary of the angle, turning movement, and sideswipe collisions at the roundabout intersection, classified according to the environment and the direction of vehicle travel.

Table 3 – Angle, Turning, and Sideswipe collisions at St. Joseph Boulevard / Jeanne D’Arc Boulevard

		St. Joseph Boulevard at Jeanne D’Arc Boulevard (Angle / Turning Collisions)	Vehicle Direction				St. Joseph Boulevard at Jeanne D’Arc Boulevard (Sideswipe Collisions)	Vehicle Direction			
			E	W	N	S		E	W	N	S
Environment	Clear	102	24	18	33	27	120	23	21	40	36
	Rain	10		5	2	3	11	2	3	5	1
	Snow / Freezing Rain	4	1	2		1	1			1	
Total		116	25	25	35	31	132	25	24	46	37
Share (Percentage)			21.5	21.5	30	27	Share (Percentage)	19	18	35	28

As shown in **Table 3**, the majority of collisions happened in clear conditions excluding roadway conditions as a significant contributor to collision occurrences. Most collisions occurred in the north-south direction of travel with a total of 57% for angle and turning collisions and 63% for sideswipe collisions. This finding is intuitive as most traffic’s volumes travel from the northbound and southbound approaches which reflects greater north-south exposure as compared to east-west to collision occurrences.

The high amount of angle and sideswipe collisions indicates that drivers are failing to yield the right of way and/or failing to circulate through the two-lane roundabout in a proper manner. It is noted that a brief review of driver sightlines has not found any obstructions using *Google Street View*. 2-lane roundabouts are relatively not common in north American settings and in the Ottawa region, and the high number of collisions could be attributed to driver inexperience or confusion as to how to navigate two lane roundabouts. It is worth noting that this location was part of a 2017 study presented in the Human Factors and Roadway Safety Culture session as a case study³. The case study presented showed a 5-year (2011-2015) trend of 334 collisions which reflects 19% higher frequencies as compared to the data presented in this TIA (281 collisions). Such reduction may be attributed to drivers getting more experience traversing

³ Solutions to Driver Errors At Multi-Lane Roundabouts, 2017 accessible at https://www.tac-atc.ca/sites/default/files/conf_papers/weber_p_-_solutions_to_driver_errors_at_multi-lane_roundabouts.pdf



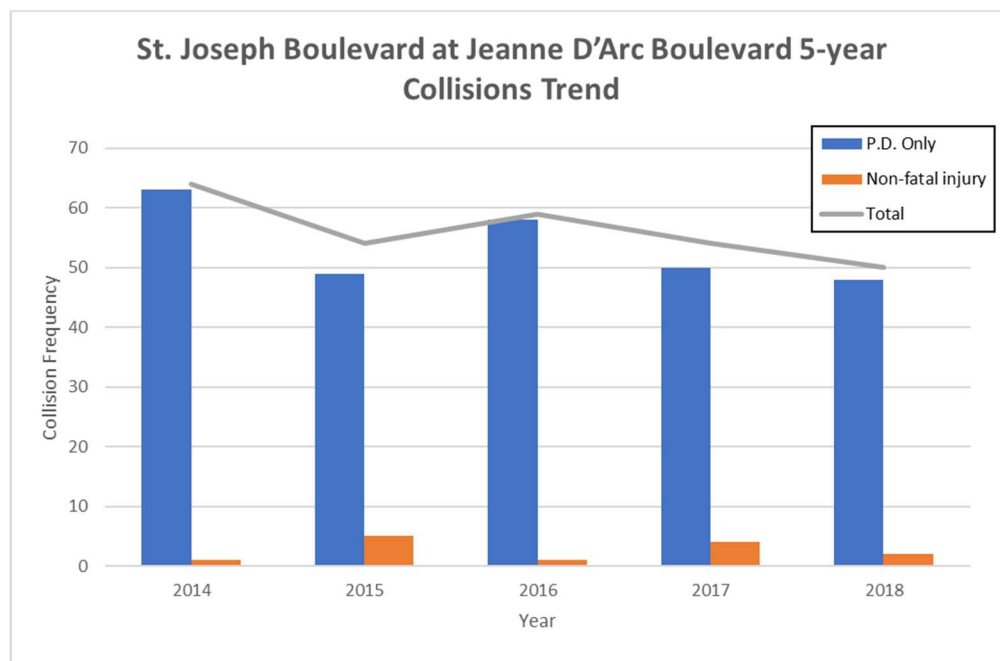
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the roundabout and may reflect a reduction revolving around Regression to the Mean (RTM) phenomena, which means that collisions could either be showing an average downward or upward trend over the years. The 5-year available data were plotted versus time as shown in **Figure 8**, showing a downward trend in collision frequencies. Although the number of years is relatively not sufficient to determine a trend, it is used as an indication confirming the comparison between TAC's 2017 case study and the data received from the City for this TIA.

Figure 8 - 2014 – 2018 collisions trend at St. Joseph Boulevard / Jeanne D'Arc Boulevard



Due to the high number of collision frequencies, the intersection of St. Joseph Boulevard at Jeanne D'Arc Boulevard could be a candidate site for a video-based conflict study.

2.1.3 Planned Conditions

2.1.3.1 Road Network Modifications

There are two improvements is scheduled to occur within the vicinity of the subject development, as outlined in the City of Ottawa's Transportation Master Plan and described in **Table 4** below.

It was assumed that the transit signal priority and queue jump lanes along Jeanne D'Arc Boulevard between Innes Road and Ottawa Road 174 (affordable network) and the transit signal priority and queue jump lanes between the Cumberland Transitway and Innes Road in addition to road widening to provide exclusive bus lanes between Innes Road and Ottawa Road 174 (concept network) will not take place prior to the ultimate horizon subject development



Table 4 - Transportation Improvements in the vicinity of the study area

Project	Description	TMP Network
Eastern Confederation Line Extension	Extension of the Confederation line from Blair Station to Place d'Orleans	2024
Jeanne D'Arc Boulevard	Transit signal priority and queue jump lanes between Innes Road and Ottawa Road 174	2031 Affordable Network
	Transit signal priority and queue jump lanes between the Cumberland Transitway and Innes Road in addition to road widening to provide exclusive bus lanes between Innes Road and Ottawa Road 174	Concept Network

2.1.3.2 Future Background Developments

There is one development scheduled to occur within the vicinity of the subject site, as illustrated in **Figure 9** and described in **Table 5**.

Table 5 - Background Developments

Key Plan Reference	Development	Location	Description	Build-Out Horizon
A	1401 Henri Lauzon St	East parcel of Henri Lauzon Street south of the intersection with Notre-Dame Street	33-unit condominium townhouse development	2021 ¹

Notes:

1. Assumed occupancy at the buildout year

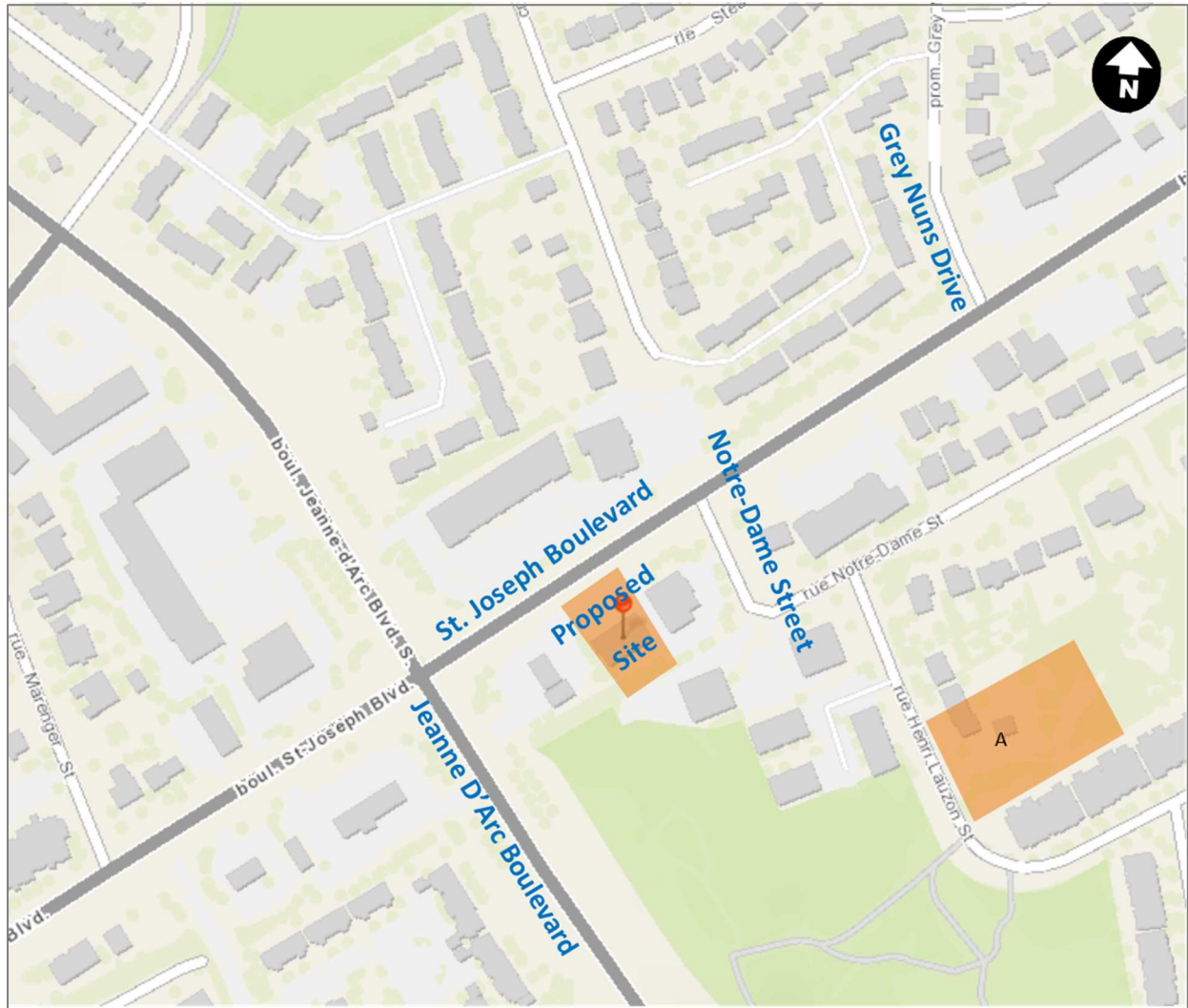


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Figure 9 - Background Developments



2.2 STUDY AREA AND TIME PERIODS

2.2.1 Study Area

Based on discussion with the City of Ottawa and due to the lack of intersection count data, the intersection of St. Joseph Boulevard at Notre-Dame Street has been excluded from further analysis.

The proposed study area is limited to the following intersections:

- St. Joseph Boulevard at Jeanne D'Arc Boulevard;
- St. Joseph Boulevard at Grey Nuns Drive; and
- St. Joseph Boulevard at Site Access

The Site Access's intersection with St. Joseph Boulevard is located approximately 85m east of the closest roundabout approach (i.e. westbound approach). This access is proposed to be an all-turns access. Although this development is exempt from **Module 4.9** (Intersection design) and since:

- This access is the primary and only access to the proposed development;
- There are safety and operational concerns due to proximity to the roundabout.

There may be a requirement for turn restrictions during the peak periods (AM and PM). Therefore, as part of Step 3, **Forecasting**, Stantec proposes performing roundabout SIDRA analysis to determine if westbound roundabout queueing may block northbound left turn movement out of the proposed site access. The results of this exercise will determine if northbound left turn restrictions could be required during the AM and PM peak periods.

2.2.2 Time Periods

The proposed scope of the transportation assessment includes the following analysis time periods:

- Weekday AM peak hour of roadway; and
- Weekday PM peak hour of roadway.

2.2.3 Horizon Years

The scope of the transportation assessment proposes the following horizon years:

- 2020 existing conditions;
- 2021 future background conditions;
- 2021 total future conditions (site build-out); and
- 2026 total future conditions (5 years beyond build-out).



2.3 EXEMPTIONS REVIEW

Table 6 summarizes the Exemptions Review table from the City of Ottawa’s 2017 *Transportation Impact Assessment Guidelines*.

Table 6 - Exemptions Review

Module	Element	Exemption Considerations	Exempted?
Design Review Component			
4.1 Development Design	4.1.2 Circulation and Access	Only required for site plans	No
	4.1.3 New Street Networks	Only required for plans of subdivision	Yes
4.2 Parking	4.2.1 Parking Supply	Only required for site plans	No
	4.2.2 Spillover Parking	Only required for site plans where parking supply is 15% below unconstrained demand	Yes
Network Impact Component			
4.5 Transportation Demand Management	All Elements	Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time	Yes
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds	Yes
4.8 Network Concept		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by established zoning	Yes
4.9 Intersection Design	All Elements	Not required if site generation trigger is not met.	Yes



3.0 FORECASTING

3.1 DEVELOPMENT GENERATED TRAVEL DEMAND

3.1.1 Trip Generation and Mode Shares

The *Institute of Transportation (ITE) Trip Generation Manual* (10th edition) was used to forecast auto trip generation for the proposed office building. Land use code 720 – Medical - Dental Office Building (ITE) was used to represent the proposed development. **Table 7** outlines the assumed land use and the trip generation rate.

As per the City of Ottawa’s *2017 TIA Guidelines*, the auto trip generation rate was converted to person trips using a conversion factor of 1.28. **Table 8** outlines development-generated person trips for the land use.

Table 7 - Land Use and Trip Generation Rates

LUC	Land Use	Size	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Rate	In	Out	Total
720	Medical - Dental Office Building	7,730 ft ² GFA (718 m ²)	78%	22%	2.78	28%	72%	3.46

Table 8 - Person Trips Generated by Land Use

LUC	Land Use	Trip Conversion	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
720	Medical - Dental Office Building	Auto Trips	17	5	22	8	19	27
		Conversion Factor	1.28	1.28	1.28	1.28	1.28	1.28
		Person Trips	22	6	28	10	25	35

To reflect local travel characteristics, the person trips were assigned to the four primary modal shares (i.e. auto, passenger, transit, and active modes) according to the TRANS Committee’s 2011 Origin-Destination (O-D) Survey for the Orleans District.

The subject site is not located within any planned transit corridors.

Table 9 outlines the anticipated trip generation potential of the proposed development by travel mode based on assumed mode share targets.

Table 9 - Trips Generated by Travel Mode

LUC	Land Use	Trip Conversion	Weekday AM Peak Hour			Weekday PM Peak Hour			
			In	Out	Total	In	Out	Total	
720	Medical - Dental Office Building	Auto	55%	12	4	16	5	15	20
		Passenger	15%	3	1	4	2	4	6
		Walk / Bike	5%	1	0	1	1	1	2
		Transit	25%	5	3	8	3	6	9



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3.1.2 Trip Distribution

The distribution of traffic to / from the proposed development was determined through examination of the Trans Committee's 2011 Origin-Destination (O-D) Survey for the Orleans District.

Table 11 provide a summary of the estimated distribution for the traffic generated by the proposed development. It is noted that during the AM peak, left turns out of the site access are assumed be banned due to the westbound traffic queues generated at the roundabout intersection of St. Joseph Boulevard and Jeanne D'Arc Boulevard. Accordingly, traffic destined west (41% via St. Joseph Boulevard and 14% via Jeanne D'Arc Boulevard) will be rerouted via Grey Nuns Drive (north), while internal traffic destined south will be rerouted via Orleans Boulevard.

Table 10 - AM Peak Traffic Distribution Assumptions

Cardinal Direction		Via (to / from)		
		St. Joseph Boulevard (East)	Grey Nuns Drive (North)	Orleans Boulevard (South)
North	0%			
East	0%			
South	0%			
West	55%		55%	
Internal (Orleans)	45%	20%		25%
Total	100%	20%	55%	25%

Table 11 – PM Peak Traffic Distribution Assumptions

Cardinal Direction		Via (to / from)			
		St. Joseph Boulevard (East)	St. Joseph Boulevard (West)	Jeanne D'Arc Boulevard (North)	Jeanne D'Arc Boulevard (South)
North	0%				
East	0%				
South	0%				
West	55%		41%	14%	
Internal (Orleans)	45%	20%			25%
Total	100%	20%	41%	14%	25%

3.1.3 Trip Assignment

Site generated trips were assigned to the study area road network based on the trip distribution assumptions outlined in **Table 10** and **Table 11** above.

Figure 11 outline the site assignment assumptions.

Figure 12 illustrates the site generated trips for the proposed site during the AM and PM peak hours



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Figure 10 - Site Traffic Distribution - AM Peak

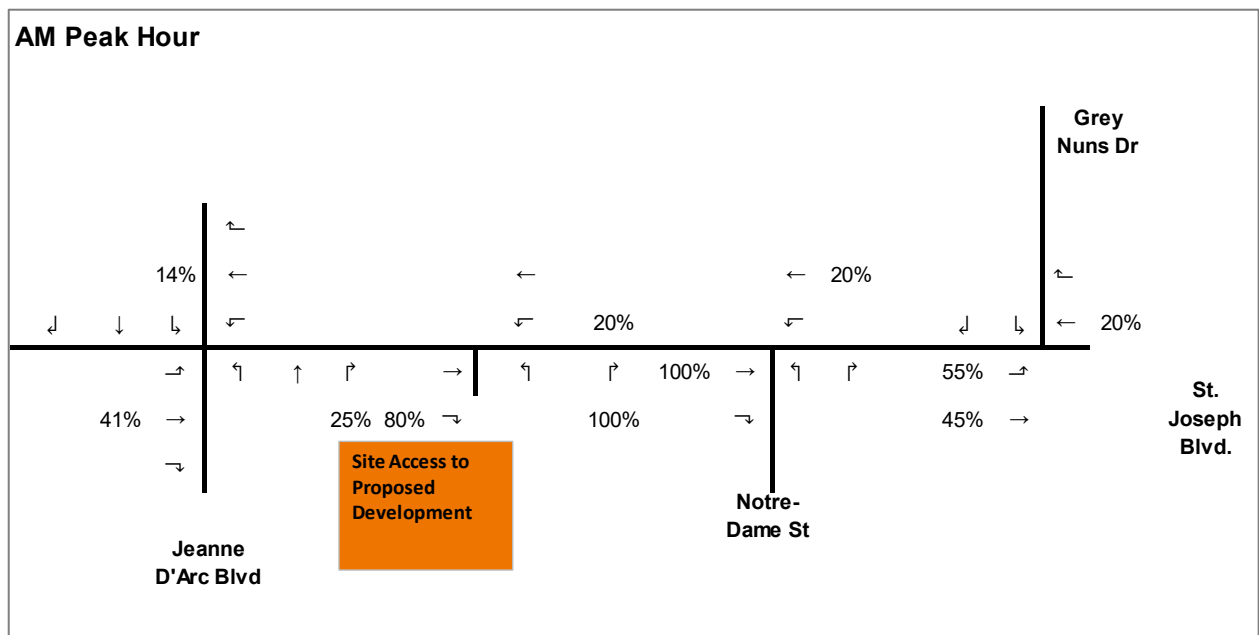
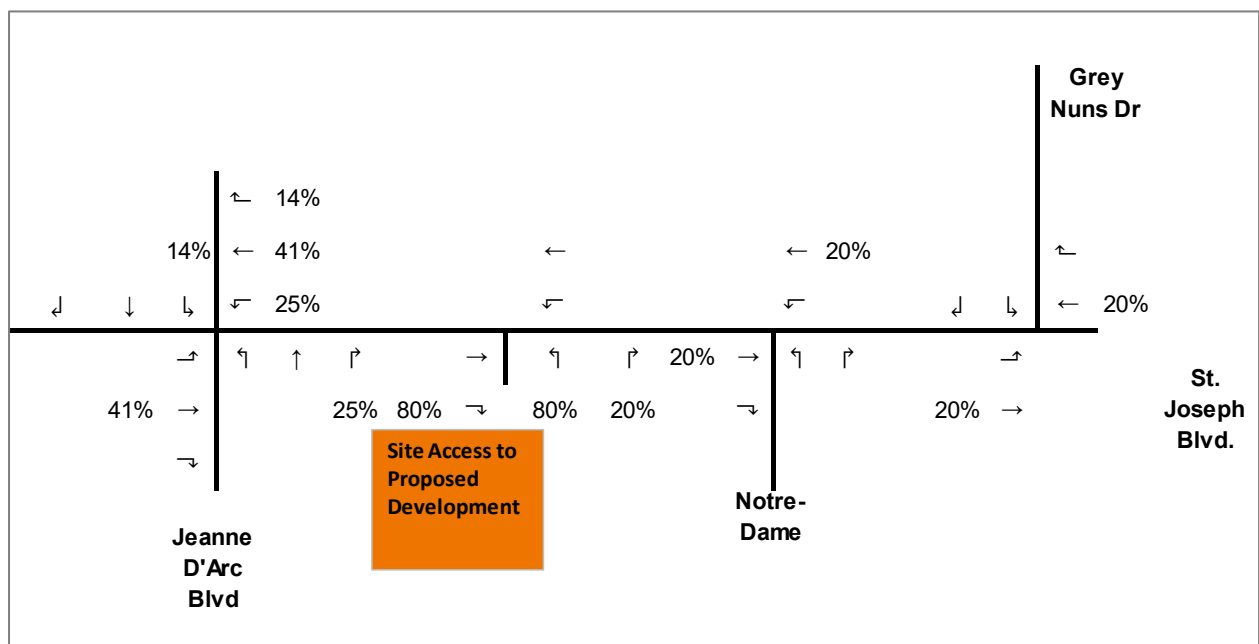


Figure 11 - Site Traffic Distribution - PM Peak

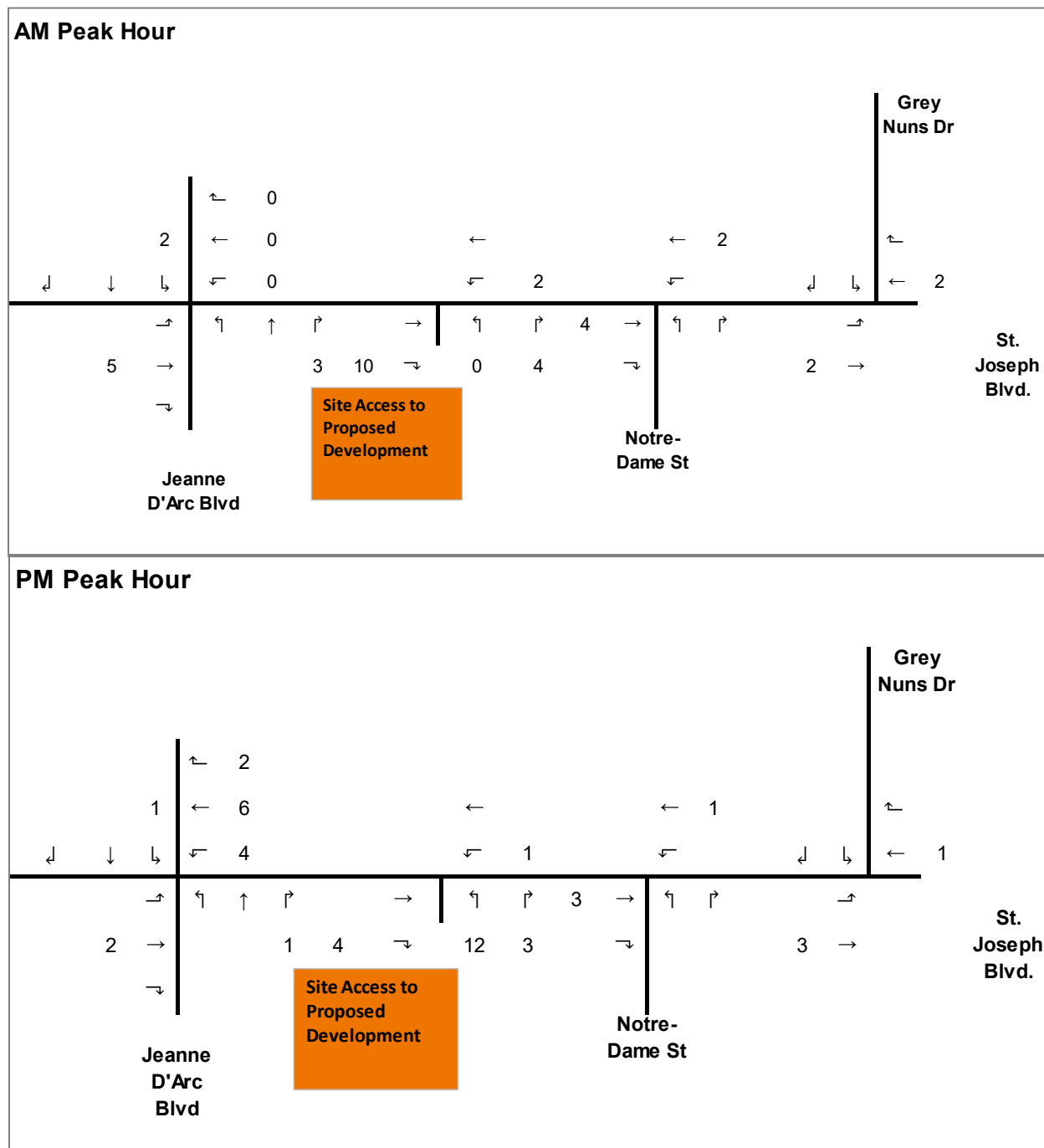


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Figure 12 - Site Generated Traffic Volumes



3.2 BACKGROUND NETWORK TRAVEL DEMAND

3.2.1 Transportation Network Plans

As outlined in **Table 4**, there are three scheduled transportation improvement projects in the vicinity of the subject site. The Eastern Confederation Line Extension has a forecast completion date by the year 2025. Jeanne D'Arc Boulevard is planned to undergo improvements by way of transit signal priority and queue jump lanes between Innes Road and Ottawa Road 174 as part of the 2031 Affordable network. As part of the concept network, the roadway would see road widening to provide exclusive bus lanes between Innes Road and Ottawa Road 174 to improving transit service along the corridor.

The affordable network project along Jeanne D'Arc Boulevard is not anticipated to be completed before the build-out year for the project.

3.2.2 Background Growth

The City of Ottawa provided **Figure 6** above, which outlines the average annual growth rates based on trend lines. In addition, Figure 2.11 of the 2013 City of Ottawa TMP was referred to in calculating the forecast trips between 2011 and 2031 to/from the City's districts. In line with **Figure 6** and the TMP forecast, 2% annual growth rate was used for the purpose of this study.

3.2.3 Other Developments

In addition to the background growth rate outlined in **Section 3.2.2** above, there is one background development assumed to be built by 2021 located at 1401 Henri Lauzon Street just east of the proposed site, per **Table 5**. The site trips were obtained from the respective traffic study and explicitly added to the transportation network as background traffic.

3.3 DEMAND RATIONALIZATION

Due to the low volumes associated with the proposed development, the effect on the immediate transportation network is anticipated to be negligible. Given the minute trip generation associated with the proposed development, Module 4.9 Intersection Analysis was exempt from the study, thus precluding traffic analysis at the nearby intersections. No travel patterns or demand rationalization measures were investigated for the purpose of this study.

3.3.1 2021 Future Background Traffic

Figure 13 illustrates the 2021 future background traffic volumes during the AM and PM peak hours.

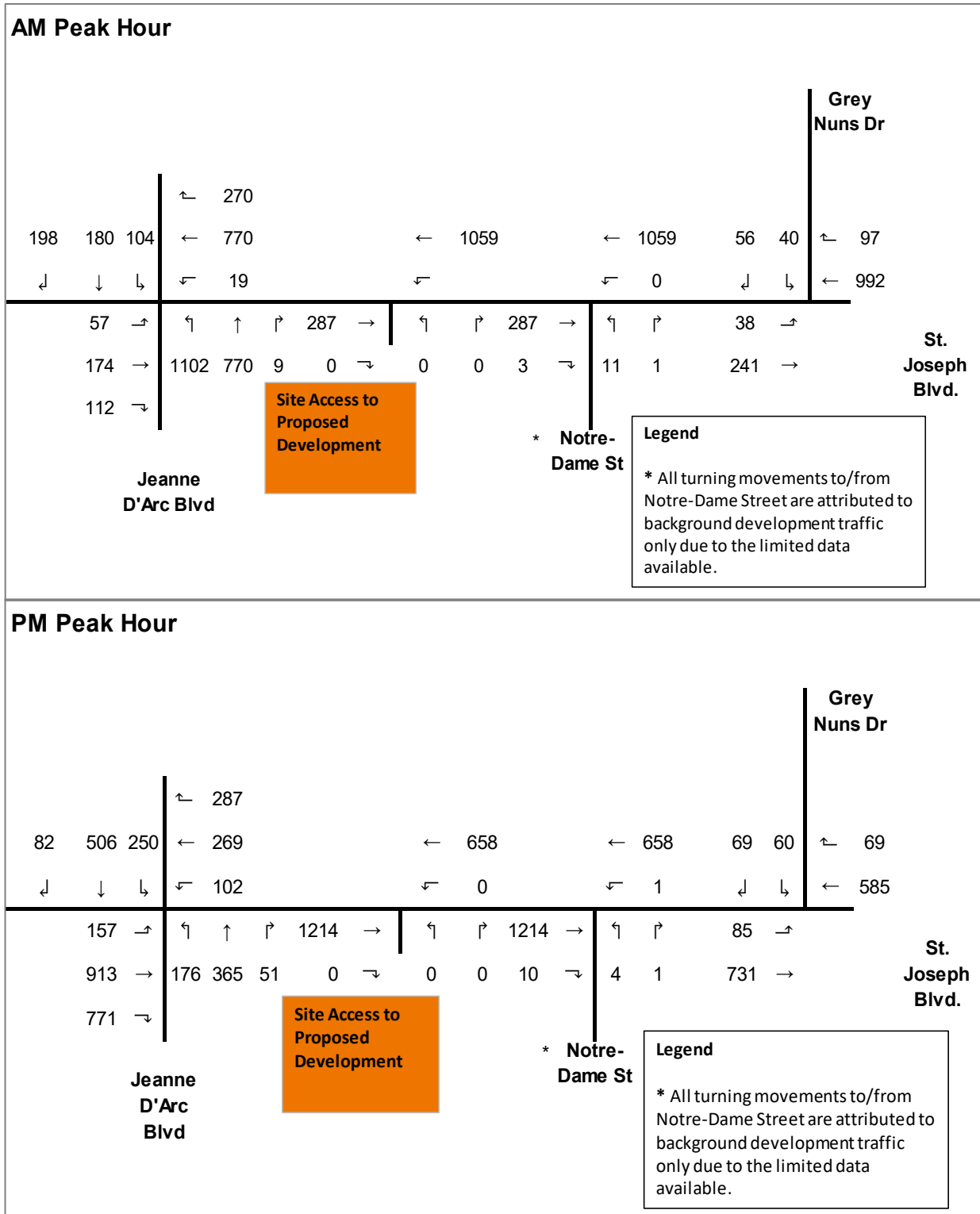


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Figure 13 - 2021 Future Background Traffic



1994 ST. JOSEPH BOULEVARD TRANSPORTATION IMPACT ASSESSMENT

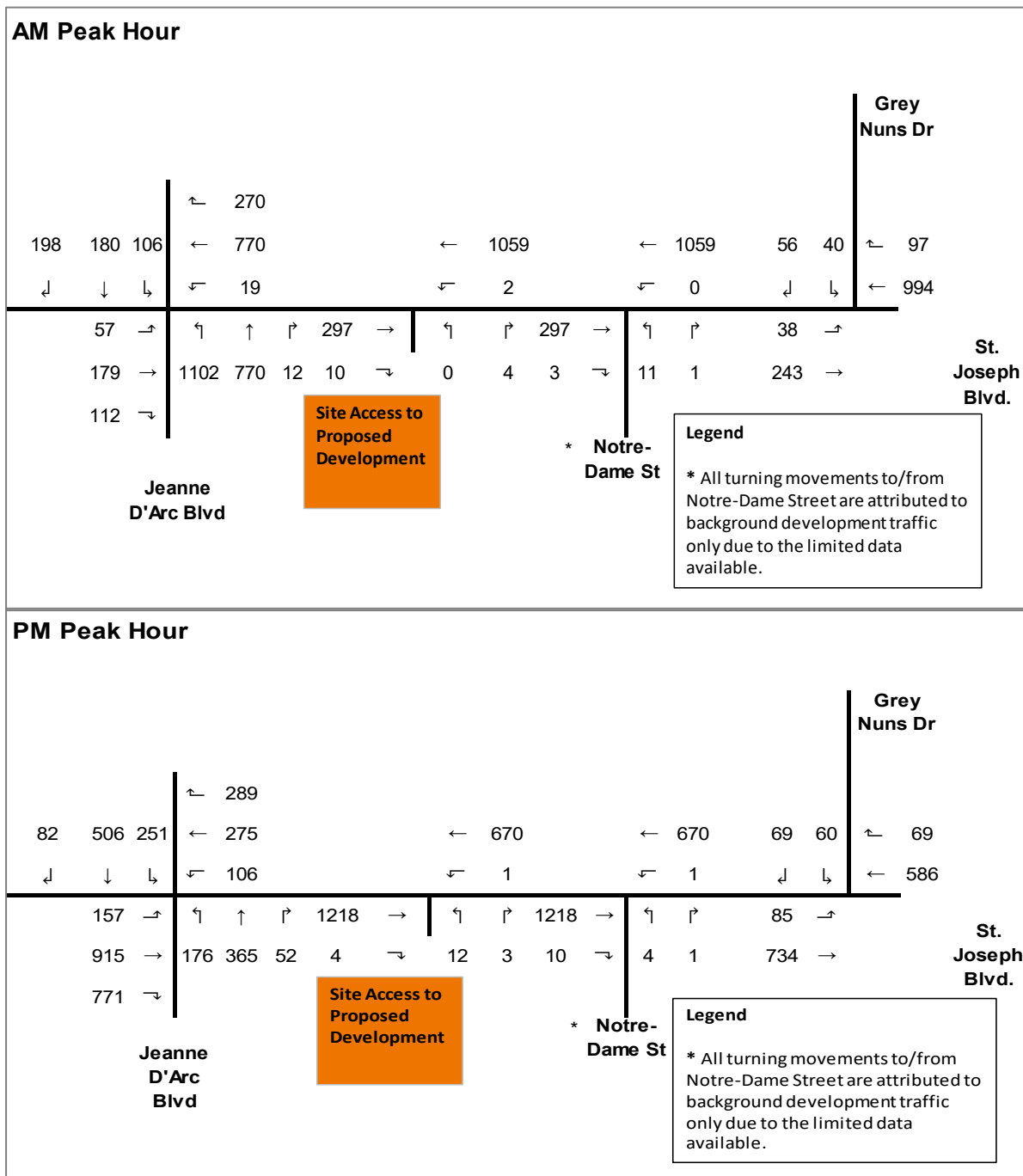
Forecasting

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3.3.2 2021 Total Future Traffic

Figure 14 illustrates the 2021 total future traffic volumes during the AM and PM peak hours.

Figure 14 - 2021 Total Traffic Volumes



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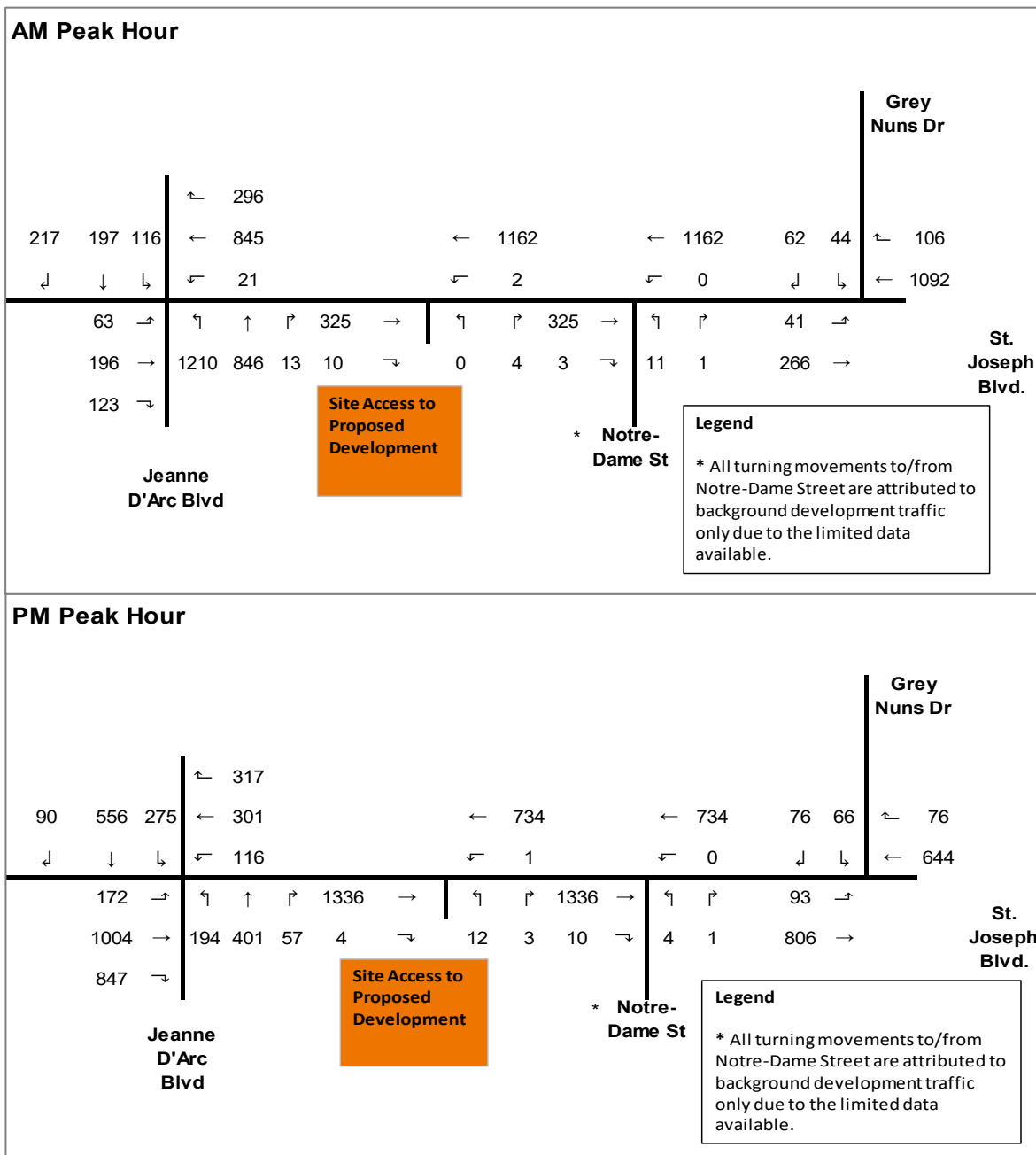
Forecasting

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3.3.3 2026 Ultimate Traffic

Figure 15 illustrates the 2026 ultimate traffic volumes during the AM and PM peak hours.

Figure 15 - 2026 Ultimate Traffic Volumes



4.0 STRATEGY

4.1 DEVELOPMENT DESIGN

4.1.1 Design for Sustainable Modes

Bicycle facilities: A total of 6 bicycle parking spaces are provided for the proposed development. The bicycle parking ring and post rack is provided by the main entrance on the proposed building's east façade.

Pedestrian facilities: Pedestrians are directly connected to the proposed development via a new concrete sidewalk around the perimeter of the building that ties into the existing curb along St Joseph Boulevard.

Parking areas: A total of 24 vehicle parking spaces are provided including one accessible parking space. Parking spaces are provided just east and south of the proposed building within the lot area.

Transit facilities: Transit stops for OC Transpo routes 30, 31, 32, 131, and 138 are currently located in the vicinity of the proposed development. The nearest OC Transpo stop is east of the development and supports routes 31, 131, and 138. The transit stop locations are illustrated in **Figure 5**. There are sidewalks and boulevards along both sides of St. Joseph Boulevard and marked pedestrian crossing areas at each leg of the roundabout intersection at St. Joseph Boulevard and Jeanne D'Arc Boulevard.

The TDM Supportive Development Design and Infrastructure Checklist can be found in **Appendix E**.

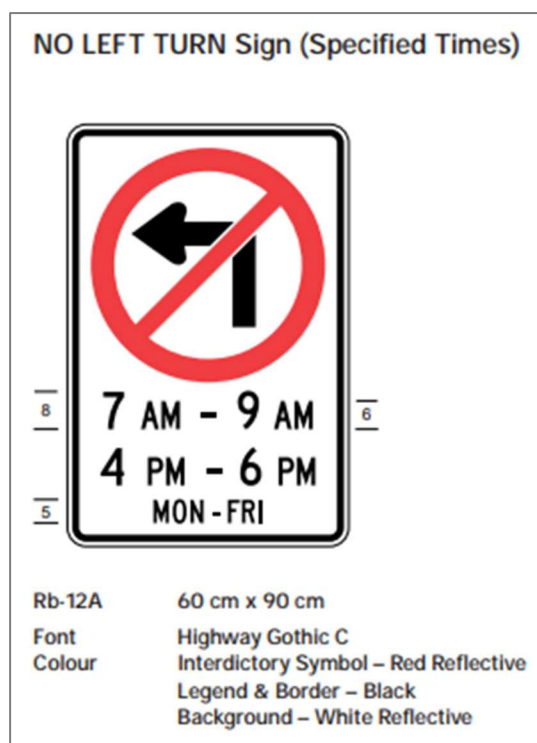
4.1.2 Circulation and Access

One site access is proposed on the northeast corner of the lot (off St. Joseph Boulevard), which connects the proposed development's parking lot to St. Joseph Boulevard via a driveway. The proposed driveway is envisioned to be located approximately 80m east of the roundabout at the intersection of St. Joseph Boulevard and Jeanne D'Arc Boulevard. Due to the proximity of the proposed access to the roundabout, a SIDRA analysis of the 2026 total future conditions was carried out, and it was found that the westbound queues will extend approximately 400m from the east leg of the roundabout (westbound approach) during the AM peak hour. The traffic queues would lead to difficulties performing northbound left turns out of the site due to the slow-moving queued traffic and lack of gaps. Therefore, a left turn restriction/ban out of the site access is recommended during the AM peak period (i.e., between 7 am and 9 AM). During all other times including the PM peak hour, the site access is envisioned to be a full movements access with no turning restrictions. The access control is stop-controlled at the driveway's approach.

During the AM peak hour, the access is envisioned to restrict left-out movements with a permanent regulatory sign (no left turn at specified times). As per the Ontario Traffic Manual (Book 5), an Rb-12A sign (60 cm x 90 cm) may be installed in the direction of traffic exiting from the proposed site. According to OTM Book1 Appendix B, for urban areas with raised curbs, the sign may be placed 0.3m to 2m from the curb line and mounted on a pole of height 1.5m - 2.5m.

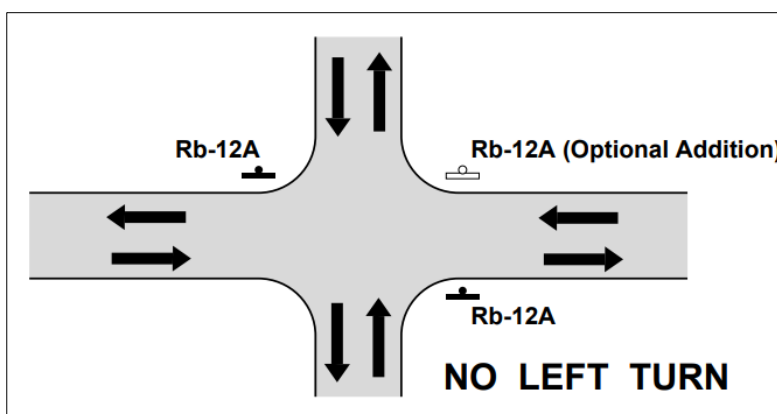


Figure 16 - Regulatory No Left Turn Sign at Specified Times (Source: OTM Book 5)



The proposed driveway is 6.7m wide, thereby meeting the City of Ottawa’s minimum street level width for a two-way driveway as set out in By-law 2003-447. The signs will be placed based on the Ontario Traffic Manual (OTM) typical locations of Turn Control Signs at unsignalized intersections with mandatory signage in the northwest and southeast corners of the intersection and optional signage in the northeast corner of the intersection, as shown in Figure 17 below.

Figure 17 – Typical Locations of Turn Control Signs - At Unsignalized Intersections (Source: OTM Book 5)



The SIDRA outputs can be found in **Appendix D**.



4.1.3 New Street Networks

Not applicable; exempted during screening and scoping.

4.2 PARKING

4.2.1 Parking Supply

Auto Parking - As per Schedule 1A of the city's zoning by-law No. 2008-250, the development lies in Area C (Suburban). Based Section 101 of the by-law, the minimum vehicle parking space requirement is 3.4 spaces per 100m² of floor area for a Personal Service Business which equates to 24 parking spaces for a 718m² development. As per O.Reg 413/12: Integrated Accessibility Standards, 4% of the provided parking spaces must be reserved for people with disabilities when the required spaces is less than 100, which equates to 1 accessible parking space.

The proposed site plan indicates there will be a total of 24 vehicle parking spaces provided (including 1 accessible parking space) which meets the minimum space requirements set out in the by-law.

Bicycle Parking – As per City of Ottawa Zoning By-law 2008-250 (Section 111), a minimum of 1 parking space is required per 500m² of floor area for a Personal Service Business. This equates to 1 bicycle space. As pe the site plan, there are 6 dedicated bicycle parking spaces, which satisfies the minimum requirements in the by-law.

4.2.2 Spillover Parking

Not applicable; exempted during screening and scoping.

4.3 BOUNDARY STREET DESIGN

4.3.1 Design Concept

The subject development is situated in an area that is anticipated to see changes to the road network as per the City of Ottawa's affordable and network concept plans. Queue jump lanes and transit priority signaling are envisioned along Jeanne D'Arc Boulevard between Innes Road and Regional Road 174 as per the City of Ottawa's 2031 Affordable Road Network plan. The City of Ottawa's Concept Road Network plan would see the addition of exclusive bus lanes between Innes Road and Regional Road 174 by way of road widening. Additionally, the extension of the Confederation Line (east) from Blair Station to Place D'Orleans has a forecast completion date of 2024.

Appendix C contains the detailed MMLoS analysis and is provided for reference.

4.3.1.1 Existing Conditions

As outlined in the City of Ottawa's *Official Plan* Schedule B, the development is situated in a "General Urban Area":

- St. Joseph Boulevard and Jeanne D'Arc Boulevard are classified as arterial roadways;
- St. Joseph Boulevard and Jeanne D'Arc Boulevard are classified as a Spine Routes as per the City of Ottawa Cycling Master Plan;



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- Just east of the intersection with Notre-Dame Street, St. Joseph Boulevard is classified as a Cross-Town Bikeway. This section of the roadway is not located along the property line of the subject development;
- St. Joseph Boulevard and Jeanne D'Arc Boulevard are classified as Truck Routes; and
- St. Joseph Boulevard and Jeanne D'Arc Boulevard employ isolated transit measures.

Based on the information above, the Pedestrian Level of Service (PLOS) target for both St. Joseph Boulevard and Jeanne D'Arc Boulevard is C. The Bicycle Level of Service (BLOS) target is C for St. Joseph Boulevard and Jeanne D'Arc Boulevard. The Transit Level of Service (TLOS) target is D for St. Joseph Boulevard and Jeanne D'Arc Boulevard. The Truck Level of Service (TkLOS) target is D for St. Joseph Boulevard and Jeanne D'Arc Boulevard.

St. Joseph Boulevard

The PLOS target of C along St. Joseph Boulevard is currently not being met as the roadway segment operates with PLOS E. This is attributed to the heavy traffic volumes in excess of 3,000 vehicles per day that utilize the roadway segment in combination with the operating speeds exceeding 50 km/h. The PLOS target of C can be met by increasing the sidewalk width to 2m, which, in combination with the existing asphalt boulevard, should provide 4m separation between pedestrians and vehicles. This improvement is subject to the future City plans along the roadway as well as the availability of Right-of-Way. Alternatively, the PLOS target can be met either by reducing the average daily curb lane traffic volume or by reducing the operating speed along the roadway to 30 km/h. However, reducing average daily traffic or operating speeds is not anticipated to be feasible given that St. Joseph Boulevard is an arterial roadway.

The BLOS target of C along St. Joseph Boulevard is currently not being met as the roadway does not feature cycling facilities and thus operates with BLOS E. The BLOS target of C can be met by adding a curbside bike lane along the target segment while maintaining the existing operating speed.

The TLOS target of D along St. Joseph Boulevard is currently being met. The TkLOS target of D is also being met as the roadway segment operates with TkLOS A due to the availability of multiple travel lanes per direction.

Jeanne D'Arc Boulevard (for information)

The PLOS target of C along Jeanne D'Arc Boulevard is currently not being met as the roadway segment operates with PLOS D. This is attributed to the heavy traffic volumes in excess of 3,000 vehicles per day that utilize the roadway segment in combination with the operating speeds exceeding 60 km/h. The PLOS target can be met either by reducing the average daily curb lane traffic volume or by reducing the operating speed along the roadway to 50 km/h.

The BLOS target of C along Jeanne D'Arc Boulevard is currently not being met as the roadway does not feature cycling facilities and thus operates with BLOS F. The BLOS target of C can be met by adding a curbside bike lane along the target segment while maintaining the existing operating speed.

The TLOS target of D along Jeanne D'Arc Boulevard is currently being met. The TkLOS target of D is also being met as the roadway segment operates with TkLOS A due to the availability of multiple travel lanes per direction.



4.3.1.2 Site Buildout Horizon (2021)

At the buildout year (2021), the cross sections along the target segments are not forecast to see any changes. As such, the segment MMLOS will not see any changes from 2020 existing conditions

The MMLOS is summarized in **Table 12** below.

Table 12 - MMLOS Summary

Roadway Segment/ Level of Service	St. Joseph Boulevard (between the intersection with Jeanne D'Arc Boulevard and the Site Access)			Jeanne D'Arc Boulevard (just south of the roundabout intersection with St. Joseph Boulevard)		
	2020 Existing	2021 Build-Out	Target	2020 Existing	2021 Build-Out	Target
PLOS	E	**	C	D	**	C
BLOS	E	**	C	F	**	C
TLOS	D	**	D	D	**	D
TkLOS	A	**	D	A	**	D

4.4 ACCESS INTERSECTIONS DESIGN

4.4.1 Location and Design of Access

The access will be located in the northeast portion of the lot and is designed to be 6.7m wide to accommodate two-way traffic. The access is envisioned to feature a depressed curb along St. Joseph Boulevard. The access clear throat length as measured and indicated on the site plan is 14.2m. It is noted that the TAC Guidelines recommend a 15m clear throat length for accesses on arterial roadways as per table 8.9.3. The existing 14.2m clear throat length was found to be sufficient for site traffic operations as Synchro queueing analysis has found that under the 2026 Ultimate Future Conditions, the maximum 95th percentile queue on the access (northbound) is estimated to be 4.0m.

The results can be found in **Appendix D**.

4.4.2 Intersection Control

The site access is a low-volume driveway and is anticipated to be a One Way Stop Control (OWSC) access at the driveway's approach.

4.4.3 Intersection Design

Not applicable; exempted during screening and scoping.

4.5 TRANSPORTATION DEMAND MANAGEMENT

Not applicable; exempted during screening and scoping.



4.6 NEIGHBOURHOOD TRAFFIC MANAGEMENT

Not applicable; exempted during screening and scoping.

4.7 TRANSIT

Not applicable; exempted during screening and scoping.

4.8 REVIEW OF NETWORK CONCEPT

Not applicable; exempted during screening and scoping.

4.9 INTERSECTION DESIGN

Not applicable; exempted during screening and scoping.



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5.0 CONCLUSION

The subject Transportation Impact Assessment (TIA) was prepared in support of a Site Plan application for a proposed development located at 1994 St. Joseph Boulevard in the Orleans neighborhood of Ottawa, Ontario. The proposed development is located approximately 80m east of the roundabout intersection of St. Joseph Boulevard and Jeanne D'Arc Boulevard.

The proposed development includes a two storey 718 square meter building functioning as a physiotherapist office. The development includes 24 vehicle parking spaces (including one accessible space) and 6 bicycle parking spaces, thereby meeting the minimum parking requirements set out in By-law 2008-250. The development will be accessed via one full movements site access from St. Joseph Boulevard. The access is proposed to have a left turn restriction out of the site during the AM peak period between 7am and 9 AM due to the queues generated at the roundabout's east leg.

The Multi-Modal Level of Service (MMLOS) assessment for existing roadway segments concluded that:

- The roadway segments along St. Joseph Boulevard and Jeanne D'Arc Boulevard in the vicinity of the proposed development do not meet the PLOS and BLOS targets of C. It was found that the PLOS target for St. Joseph Boulevard can be met by increasing the existing sidewalk width to 2m or more. However, this improvement is subject to the City's future plans along the corridor. Along Jeanne D'Arc Boulevard, the PLOS target can be met by reducing the roadway speed to 50 km/h.
- The BLOS target of C can be met for both segments by adding a curbside bike lane.
- St. Joseph Boulevard and Jeanne D'Arc Boulevard meet the TLOS target of D.
- St. Joseph Boulevard and Jeanne D'Arc Boulevard meet the TkLOS target of D.

Based on the transportation evaluation presented in this transportation study, the proposed development at 1994 St. Joseph Boulevard can be supported from a transportation impacts perspective.



APPENDICES

Appendix A **TRAFFIC DATA**





City Operations - Transportation Services

Collision Details Report - Public Version

From: January 1, 2014 **To:** December 31, 2018

Location: GREY NUNS DR @ ST. JOSEPH BLVD

Traffic Control: Traffic signal

Total Collisions: 8

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Sep-22, Tue,09:45	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Feb-25, Thu,16:40	Snow	Angle	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Jan-14, Thu,09:20	Snow	Other	Non-fatal injury	Loose snow	North	Reversing	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-May-09, Mon,09:18	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Pick-up truck	Other motor vehicle	
2015-Sep-14, Mon,12:30	Clear	Turning movement	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Jan-22, Fri,13:41	Clear	Angle	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	

					South	Turning left	Pick-up truck	Other motor vehicle
2016-Mar-24, Thu,09:19	Snow	Turning movement	P.D. only	Loose snow	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2018-May-08, Tue,15:22	Clear	Turning movement	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle

Location: NOTRE DAME ST E @ ST. JOSEPH BLVD

Traffic Control: Stop sign

Total Collisions: 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Aug-19, Fri,13:26	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Pick-up truck	Other motor vehicle	
					East	Going ahead	Pick-up truck	Other motor vehicle	

Location: ST. JOSEPH BLVD @ JEANNE D'ARC BLVD

Traffic Control: Roundabout

Total Collisions: 281

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Jan-05, Sun,12:30	Snow	Other	P.D. only	Slush	North	Slowing or stopping	Automobile, station wagon	Snowbank/drift	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2014-Jan-09, Thu,11:12	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

2014-Feb-19, Wed,07:31	Clear	Angle	P.D. only	Wet	West	Going ahead	Pick-up truck	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Feb-17, Mon,12:15	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Mar-05, Wed,15:50	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2014-Feb-07, Fri,15:08	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Municipal transit bus	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Mar-21, Fri,07:47	Clear	Sideswipe	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2014-Jul-17, Thu,11:00	Clear	Angle	P.D. only	Dry	South	Merging	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Jul-17, Thu,14:45	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle

2014-Jul-12, Sat,14:30	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Jul-16, Wed,19:35	Clear	Angle	P.D. only	Dry	North	Going ahead	Passenger van	Other motor vehicle
					East	Going ahead	Motorcycle	Other motor vehicle
2014-Jul-24, Thu,09:50	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Passenger van	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Jul-03, Thu,15:45	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2014-Jul-09, Wed,17:25	Clear	Angle	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle
2014-Jul-29, Tue,13:35	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle
					East	Stopped	Pick-up truck	Other motor vehicle
2014-Jul-31, Thu,14:37	Clear	Angle	P.D. only	Dry	West	Going ahead	Truck - dump	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle

2014-Apr-01, Tue, 17:21	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle
2014-Apr-16, Wed, 12:34	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Jan-19, Mon, 18:51	Clear	Angle	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle
2014-Apr-16, Wed, 15:53	Clear	Angle	P.D. only	Dry	South	Going ahead	Municipal transit bus	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Apr-19, Sat, 12:20	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Mar-31, Mon, 12:59	Clear	Sideswipe	P.D. only	Wet	West	Overtaking	Unknown	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2014-May-08, Thu, 18:56	Clear	Angle	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle

2014-May-10, Sat,11:00	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle

2014-May-21, Wed,07:41	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle

2014-May-16, Fri,07:30	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Pick-up truck	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle

2014-May-24, Sat,15:26	Clear	Angle	P.D. only	Dry	East	Merging	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle

2014-Jun-04, Wed,16:30	Clear	Angle	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle

2014-Jun-10, Tue,12:37	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Truck and trailer	Other motor vehicle

2014-Jun-09, Mon,09:55	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle

2014-Jun-13, Fri,08:35	Rain	Angle	P.D. only	Wet	West	Going ahead	Pick-up truck	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Jun-10, Tue,15:00	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Passenger van	Other motor vehicle
					West	Going ahead	Passenger van	Other motor vehicle
2014-Apr-10, Thu,15:39	Clear	Angle	P.D. only	Dry	East	Merging	Pick-up truck	Other motor vehicle
					South	Going ahead	Municipal transit bus	Other motor vehicle
2014-Jun-23, Mon,10:30	Clear	Sideswipe	Non-reportable	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Jun-27, Fri,08:10	Clear	Angle	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle
2014-Jun-12, Thu,20:17	Clear	Angle	P.D. only	Dry	South	Merging	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2015-Jan-22, Thu,16:24	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle

2014-Sep-06, Sat,09:47	Rain	Sideswipe	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle

2014-Nov-09, Sun,15:06	Clear	Angle	P.D. only	Dry	East	Merging	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle

2014-Sep-15, Mon,07:28	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle

2014-Nov-05, Wed,08:00	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle

2014-Sep-24, Wed,14:05	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Truck and trailer	Other motor vehicle
					South	Going ahead	Passenger van	Other motor vehicle

2014-Nov-17, Mon,07:00	Snow	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle

2014-Nov-01, Sat,14:22	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Municipal transit bus	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle

2014-Nov-29, Sat, 13:00	Clear	Angle	P.D. only	Dry	South	Merging	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Oct-03, Fri, 16:00	Clear	Angle	P.D. only	Dry	East	Merging	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Oct-06, Mon, 16:30	Clear	Angle	P.D. only	Dry	North	Merging	Pick-up truck	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle
2014-Oct-14, Tue, 16:20	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Oct-17, Fri, 11:10	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2014-May-12, Mon, 16:15	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Dec-18, Thu, 15:29	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Bus (other)	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle

2014-Oct-19, Sun,16:45	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Passenger van	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Jul-24, Thu,16:15	Clear	Sideswipe	P.D. only	Dry	East	Unknown	Automobile, station wagon	Other motor vehicle
					East	Unknown	Automobile, station wagon	Other motor vehicle
2014-Sep-16, Tue,16:35	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Municipal transit bus	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Dec-08, Mon,16:45	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Passenger van	Other motor vehicle
2014-Aug-25, Mon,18:50	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Passenger van	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Apr-30, Thu,19:23	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2015-May-04, Mon,09:59	Clear	Angle	P.D. only	Dry	South	Merging	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle

2015-May-18, Mon,12:40	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle

2015-May-27, Wed,08:07	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Passenger van	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle

2015-May-27, Wed,21:10	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle

2015-Jun-11, Thu,13:46	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle

2015-Jun-05, Fri,11:50	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle

2015-Apr-28, Tue,15:27	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Passenger van	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle

2015-Apr-27, Mon,07:55	Clear	Angle	P.D. only	Dry	West	Merging	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle

2015-Jun-08, Mon,09:30	Rain	Sideswipe	P.D. only	Wet	North	Going ahead	Pick-up truck	Other motor vehicle
					North	Going ahead	Passenger van	Other motor vehicle
2015-Jan-17, Sat,13:17	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2015-Mar-12, Thu,08:20	Clear	Sideswipe	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2015-Mar-02, Mon,07:55	Clear	Sideswipe	P.D. only	Slush	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Feb-27, Fri,10:03	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Unknown	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Apr-11, Sat,23:10	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle
					West	Going ahead	Passenger van	Other motor vehicle
2015-Feb-08, Sun,01:41	Snow	SMV other	Non-fatal injury	Ice	East	Going ahead	Police vehicle	Ran off road
2015-Mar-19, Thu,17:04	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle

					East	Stopped	Automobile, station wagon	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
2015-Apr-13, Mon,19:18	Clear	Sideswipe	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2015-May-06, Wed,18:11	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Passenger van	Other motor vehicle
2014-Sep-09, Tue,16:00	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2014-Dec-22, Mon,14:50	Clear	Angle	P.D. only	Dry	South	Merging	Unknown	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Nov-02, Sun,15:18	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2014-Dec-10, Wed,21:00	Snow	Angle	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle

2015-Apr-13, Mon,07:50	Clear	SMV other	Non-fatal injury	Dry	Unknown	Going ahead	Unknown	Pedestrian	1
2015-Jun-19, Fri,07:45	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Pick-up truck	Other motor vehicle	
2014-Oct-15, Wed,08:39	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Aug-07, Thu,21:49	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Nov-20, Thu,09:53	Clear	Sideswipe	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Passenger van	Other motor vehicle	
2016-Jan-20, Wed,16:23	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Pick-up truck	Other motor vehicle	
2016-Feb-04, Thu,12:28	Clear	Angle	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jan-30, Sat,19:03	Clear	Angle	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle	

					North	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Jan-15, Fri,18:01	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Oct-26, Sun,16:20	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Passenger van	Other motor vehicle
2014-Sep-30, Tue,17:37	Clear	Angle	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Nov-11, Tue,07:30	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Truck and trailer	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Nov-27, Fri,20:19	Rain	Sideswipe	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Delivery van	Other motor vehicle
2015-May-30, Sat,08:54	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle
					North	Stopped	Pick-up truck	Other motor vehicle
2015-Jun-11, Thu,17:10	Clear	Angle	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle

					East	Going ahead	Pick-up truck	Other motor vehicle
2015-Jun-12, Fri, 15:34	Rain	Sideswipe	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Jul-13, Mon, 16:54	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Passenger van	Other motor vehicle
					West	Stopped	Passenger van	Other motor vehicle
2015-Dec-24, Thu, 12:29	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Nov-16, Mon, 16:45	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Nov-02, Mon, 15:20	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Oct-30, Fri, 12:50	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Passenger van	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle

2015-Oct-26, Mon,17:35	Clear	Angle	P.D. only	Dry	East	Going ahead	Unknown	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Oct-20, Tue,13:00	Clear	Sideswipe	Non-fatal injury	Dry	North	Going ahead	Pick-up truck	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2015-Sep-30, Wed,09:48	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Sep-16, Wed,07:31	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Passenger van	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
2015-Aug-26, Wed,17:02	Clear	Angle	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Aug-12, Wed,10:36	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Truck - closed	Other motor vehicle
2015-Aug-01, Sat,13:37	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle

2015-Jul-30, Thu,19:30	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Jul-10, Fri,14:31	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Jun-23, Tue,15:10	Clear	Angle	P.D. only	Dry	East	Merging	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2015-Apr-28, Tue,16:33	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Passenger van	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2015-May-21, Thu,14:10	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2015-May-26, Tue,07:17	Rain	Sideswipe	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2015-Jun-12, Fri,18:18	Rain	Sideswipe	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle

2015-May-21, Thu,09:51	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Oct-17, Sat,16:12	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2016-May-26, Thu,08:14	Clear	Angle	P.D. only	Dry	East	Merging	Pick-up truck	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2016-May-26, Thu,08:17	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle
					North	Stopped	Pick-up truck	Other motor vehicle
2016-May-24, Tue,10:40	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2016-May-24, Tue,17:57	Clear	Angle	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Jul-24, Sun,16:25	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle

2016-Jul-04, Mon,17:03	Clear	Sideswipe	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle

2016-Jun-04, Sat,17:31	Clear	Angle	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle

2016-May-30, Mon,14:45	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle

2016-Jul-26, Tue,07:47	Clear	Angle	P.D. only	Dry	South	Merging	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle

2016-Aug-02, Tue,13:35	Clear	Angle	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle

2016-Aug-05, Fri,15:28	Clear	Angle	P.D. only	Dry	South	Merging	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle

2016-Apr-18, Mon,17:00	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle
					East	Stopped	Pick-up truck	Other motor vehicle

2016-Apr-21, Thu, 12:35	Clear	Angle	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Aug-09, Tue, 21:30	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Stopped	Pick-up truck	Other motor vehicle
2016-Apr-03, Sun, 10:45	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2016-Apr-16, Sat, 15:50	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Mar-23, Wed, 15:50	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Pick-up truck	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Feb-06, Sat, 14:11	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Passenger van	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
2016-Feb-06, Sat, 12:01	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Passenger van	Other motor vehicle

2016-Aug-16, Tue,09:03	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Nov-27, Fri,18:10	Rain	Sideswipe	P.D. only	Wet	East	Unknown	Unknown	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Aug-26, Fri,10:30	Clear	Angle	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Apr-20, Wed,14:15	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Apr-21, Thu,11:40	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2016-Sep-11, Sun,04:00	Rain	Angle	P.D. only	Wet	West	Merging	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2016-May-05, Thu,16:46	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle
					South	Going ahead	Passenger van	Other motor vehicle

2016-Jun-21, Tue,12:40	Clear	Angle	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Passenger van	Other motor vehicle
2016-May-01, Sun,13:20	Rain	Angle	P.D. only	Wet	North	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Apr-30, Sat,14:43	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2016-Oct-18, Tue,08:40	Clear	Angle	P.D. only	Dry	South	Merging	Delivery van	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Oct-07, Fri,17:07	Clear	Angle	P.D. only	Dry	South	Merging	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Oct-25, Tue,19:21	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2016-Oct-27, Thu,08:15	Clear	Angle	P.D. only	Dry	West	Merging	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle

2016-Oct-20, Thu, 17:02	Rain	Angle	P.D. only	Wet	North	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Passenger van	Other motor vehicle
2016-Feb-26, Fri, 16:48	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2016-Jan-29, Fri, 14:40	Clear	Angle	P.D. only	Wet	West	Unknown	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Mar-17, Thu, 15:37	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Jun-14, Tue, 19:06	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Jun-14, Tue, 12:26	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Jun-27, Mon, 06:18	Rain	Angle	P.D. only	Wet	South	Merging	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle

2016-Jun-29, Wed,08:17	Clear	Angle	P.D. only	Dry	South	Merging	Pick-up truck	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2015-Dec-16, Wed,17:17	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2015-Aug-27, Thu,15:07	Clear	Angle	P.D. only	Dry	East	Merging	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Nov-13, Fri,17:50	Rain	Angle	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Dec-30, Wed,21:07	Snow	Angle	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Nov-19, Thu,07:50	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Skidding/sliding
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2016-Oct-01, Sat,14:50	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle

2016-Apr-14, Thu,11:25	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Sep-24, Sat,15:38	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Sep-17, Sat,20:44	Rain	Angle	P.D. only	Wet	West	Merging	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2016-Sep-26, Mon,10:20	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle
2016-Nov-15, Tue,18:50	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Passenger van	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2016-Nov-07, Mon,17:25	Clear	Sideswipe	P.D. only	Wet	South	Unknown	Pick-up truck	Other motor vehicle
					South	Unknown	Automobile, station wagon	Other motor vehicle
2016-Nov-09, Wed,21:08	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle

2016-Nov-16, Wed,07:52	Rain	Sideswipe	P.D. only	Wet	East	Changing lanes	Passenger van	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Aug-20, Sat,18:59	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Oct-10, Mon,16:21	Clear	Angle	P.D. only	Dry	East	Merging	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2017-Oct-28, Sat,14:30	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Sep-14, Thu,15:27	Clear	Rear end	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2017-Oct-02, Mon,15:20	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Sep-09, Sat,17:21	Clear	Sideswipe	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle
					West	Going ahead	Passenger van	Other motor vehicle

2017-Sep-06, Wed,15:05	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Aug-09, Wed,11:46	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Aug-31, Thu,17:24	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Aug-10, Thu,07:47	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Delivery van	Other motor vehicle
2017-Aug-26, Sat,12:07	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Oct-25, Wed,08:45	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Feb-09, Thu,19:08	Clear	Angle	P.D. only	Dry	South	Going ahead	Unknown	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle

2017-Jan-25, Wed,11:10	Clear	Angle	P.D. only	Wet	North	Merging	Pick-up truck	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Jan-13, Fri,15:36	Clear	Angle	P.D. only	Dry	West	Turning right	Passenger van	Other motor vehicle
					North	Going ahead	Passenger van	Other motor vehicle
2016-Dec-21, Wed,16:43	Clear	Sideswipe	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Dec-29, Thu,10:30	Snow	SMV other	P.D. only	Loose snow	North	Slowing or stopping	Passenger van	Ran off road
2017-Mar-02, Thu,15:55	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Feb-06, Mon,14:25	Clear	Sideswipe	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Nov-04, Fri,08:10	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					North	Stopped	Pick-up truck	Other motor vehicle
2017-Mar-08, Wed,10:59	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle

					West	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Dec-07, Wed, 15:02	Clear	Sideswipe	P.D. only	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2017-Mar-25, Sat, 17:37	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2017-Mar-26, Sun, 18:43	Rain	Sideswipe	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Apr-12, Wed, 17:30	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
2017-Apr-26, Wed, 12:30	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Apr-16, Sun, 23:30	Rain	Sideswipe	P.D. only	Wet	North	Going ahead	Unknown	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Feb-25, Sat, 12:15	Rain	Angle	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle

					West	Going ahead	Automobile, station wagon	Other motor vehicle
2017-May-04, Thu,21:50	Rain	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2017-May-06, Sat,10:42	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-May-26, Fri,15:50	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Curb
2017-May-17, Wed,15:53	Clear	Angle	P.D. only	Dry	South	Merging	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Jun-09, Fri,09:20	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-May-20, Sat,09:52	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Truck - closed	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Jun-02, Fri,14:19	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Slowing or stopping	Pick-up truck	Other motor vehicle

2017-Jun-24, Sat,13:40	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2017-Jun-23, Fri,07:46	Rain	Rear end	P.D. only	Wet	North	Changing lanes	Pick-up truck	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Jun-14, Wed,15:34	Clear	Sideswipe	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle
2017-Jun-30, Fri,18:01	Clear	Rear end	P.D. only	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
2017-Jul-05, Wed,15:26	Clear	Angle	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Jul-11, Tue,23:36	Clear	Angle	P.D. only	Dry	North	Merging	Unknown	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Jun-11, Sun,10:40	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle

2017-Nov-06, Mon,18:10	Clear	Angle	P.D. only	Dry	East	Going ahead	Passenger van	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Sep-13, Wed,08:01	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Sep-13, Wed,12:26	Clear	Sideswipe	P.D. only	Dry	East	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Sep-13, Wed,18:06	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Sep-12, Tue,11:51	Clear	Angle	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Oct-10, Tue,09:00	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Aug-28, Mon,15:40	Clear	Angle	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle

2017-Oct-19, Thu,11:30	Clear	Rear end	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle
					North	Turning right	Automobile, station wagon	Other motor vehicle
2017-Oct-17, Tue,11:25	Clear	Angle	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2017-Nov-23, Thu,02:09	Clear	SMV other	Non-fatal injury	Dry	West	Unknown	Automobile, station wagon	Ran off road
2017-Jul-15, Sat,12:08	Clear	Angle	Non-fatal injury	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Nov-24, Fri,09:45	Clear	Angle	P.D. only	Dry	West	Merging	Pick-up truck	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Sep-30, Sat,12:45	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Unknown	Other motor vehicle
2017-Sep-17, Sun,16:16	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Sep-26, Tue,07:46	Clear	Angle	P.D. only	Dry	South	Merging	Automobile, station wagon	Other motor vehicle

					West	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Dec-06, Wed,08:48	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Nov-25, Sat,09:20	Rain	Angle	P.D. only	Wet	West	Going ahead	Pick-up truck	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2017-Dec-18, Mon,07:33	Snow	Sideswipe	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2018-Jan-05, Fri,14:14	Clear	Angle	P.D. only	Dry	East	Merging	Truck - open	Other motor vehicle
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2018-Jan-29, Mon,06:46	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Jan-29, Mon,16:18	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Jan-28, Sun,01:46	Clear	Angle	P.D. only	Dry	West	Merging	Automobile, station wagon	Other motor vehicle

					North	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Jan-24, Wed,18:20	Clear	Angle	P.D. only	Wet	South	Going ahead	Unknown	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Jan-10, Wed,19:35	Freezing Rain	Angle	Non-fatal injury	Ice	West	Slowing or stopping	Truck - dump	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Mar-12, Mon,08:56	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Feb-20, Tue,17:46	Rain	Turning movement	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Passenger van	Other motor vehicle
2018-Jan-17, Wed,17:19	Clear	Angle	P.D. only	Slush	North	Going ahead	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Jan-20, Sat,17:33	Clear	Sideswipe	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle
					East	Changing lanes	Automobile, station wagon	Other motor vehicle
2018-Jan-26, Fri,19:46	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle

					West	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Feb-07, Wed,13:40	Rain	SMV other	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Snowbank/drift
2018-Feb-15, Thu,00:21	Clear	Angle	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Tow truck	Other motor vehicle
2018-Mar-03, Sat,16:37	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2018-Apr-22, Sun,16:08	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Passenger van	Other motor vehicle
2018-Mar-07, Wed,07:43	Snow	Rear end	P.D. only	Packed snow	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Slowing or stopping	Pick-up truck	Other motor vehicle
2018-Apr-30, Mon,20:38	Clear	Angle	P.D. only	Dry	East	Merging	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2018-May-30, Wed,16:45	Clear	Angle	P.D. only	Dry	North	Going ahead	Truck - closed	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle

2018-May-17, Thu,12:21	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Passenger van	Other motor vehicle
2018-May-11, Fri,15:40	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Jul-11, Wed,21:41	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Truck - tractor	Other motor vehicle
2018-Jul-13, Fri,10:25	Clear	Rear end	P.D. only	Dry	East	Going ahead	Truck - dump	Other motor vehicle
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2018-Jun-08, Fri,17:41	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Jun-18, Mon,16:00	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Pick-up truck	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Jun-04, Mon,17:15	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle

2018-Jun-29, Fri,15:00	Clear	Angle	P.D. only	Dry	East	Merging	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Jul-01, Sun,13:51	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Oct-16, Tue,18:00	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Oct-15, Mon,12:00	Rain	Sideswipe	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Oct-22, Mon,15:57	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Municipal transit bus	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Nov-26, Mon,08:48	Clear	Sideswipe	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Dec-10, Mon,12:17	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle

2018-Dec-08, Sat,22:40	Snow	Angle	P.D. only	Loose snow	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Sep-18, Tue,20:15	Clear	Sideswipe	P.D. only	Dry	North	Unknown	Automobile, station wagon	Other motor vehicle
					North	Unknown	Automobile, station wagon	Other motor vehicle
2018-Sep-12, Wed,13:11	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Bus (other)	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Sep-11, Tue,15:35	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Construction equipment	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Sep-19, Wed,15:20	Clear	Turning movement	Non-fatal injury	Dry	North	Turning right	Pick-up truck	Other motor vehicle
					North	Turning right	Automobile, station wagon	Other motor vehicle
2018-Sep-27, Thu,15:00	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Sep-18, Tue,20:00	Clear	Turning movement	P.D. only	Dry	North	Turning left	Unknown	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle

2018-Aug-30, Thu,15:30	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Dec-19, Wed,07:04	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Dec-19, Wed,07:25	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2018-Sep-17, Mon,16:57	Clear	Angle	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Oct-02, Tue,19:34	Clear	Angle	P.D. only	Dry	East	Merging	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Oct-30, Tue,10:15	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Aug-23, Thu,17:58	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle

2018-Aug-25, Sat,13:15	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Nov-12, Mon,17:09	Clear	Angle	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle
2018-Jul-12, Thu,07:45	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2018-Jul-18, Wed,17:34	Clear	Angle	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle

Location: ST. JOSEPH BLVD btwn JEANNE D'ARC BLVD S & NOTRE DAME ST

Traffic Control: No control

Total Collisions: 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Mar-08, Sat,15:05	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Jan-25, Sun,14:19	Clear	Angle	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Oct-24, Fri,09:30	Rain	Angle	P.D. only	Wet	North	Turning left	Unknown	Other motor vehicle	

					West	Going ahead	Passenger van	Other motor vehicle
2014-Nov-29, Sat, 17:15	Clear	Rear end	Non-reportable	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Passenger van	Other motor vehicle
2016-Mar-04, Fri, 11:35	Clear	Rear end	P.D. only	Slush	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Turning right	Pick-up truck	Other motor vehicle
2016-Mar-17, Thu, 15:02	Clear	Rear end	P.D. only	Wet	East	Going ahead	Pick-up truck	Other motor vehicle
					East	Turning left	Delivery van	Other motor vehicle
2017-Aug-18, Fri, 14:21	Clear	Angle	P.D. only	Dry	South	Merging	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Feb-02, Thu, 13:30	Clear	Rear end	Non-fatal injury	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					East	Stopped	Passenger van	Other motor vehicle
2017-Jul-06, Thu, 12:15	Clear	Angle	P.D. only	Dry	South	Pulling away from shoulder or curb	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle

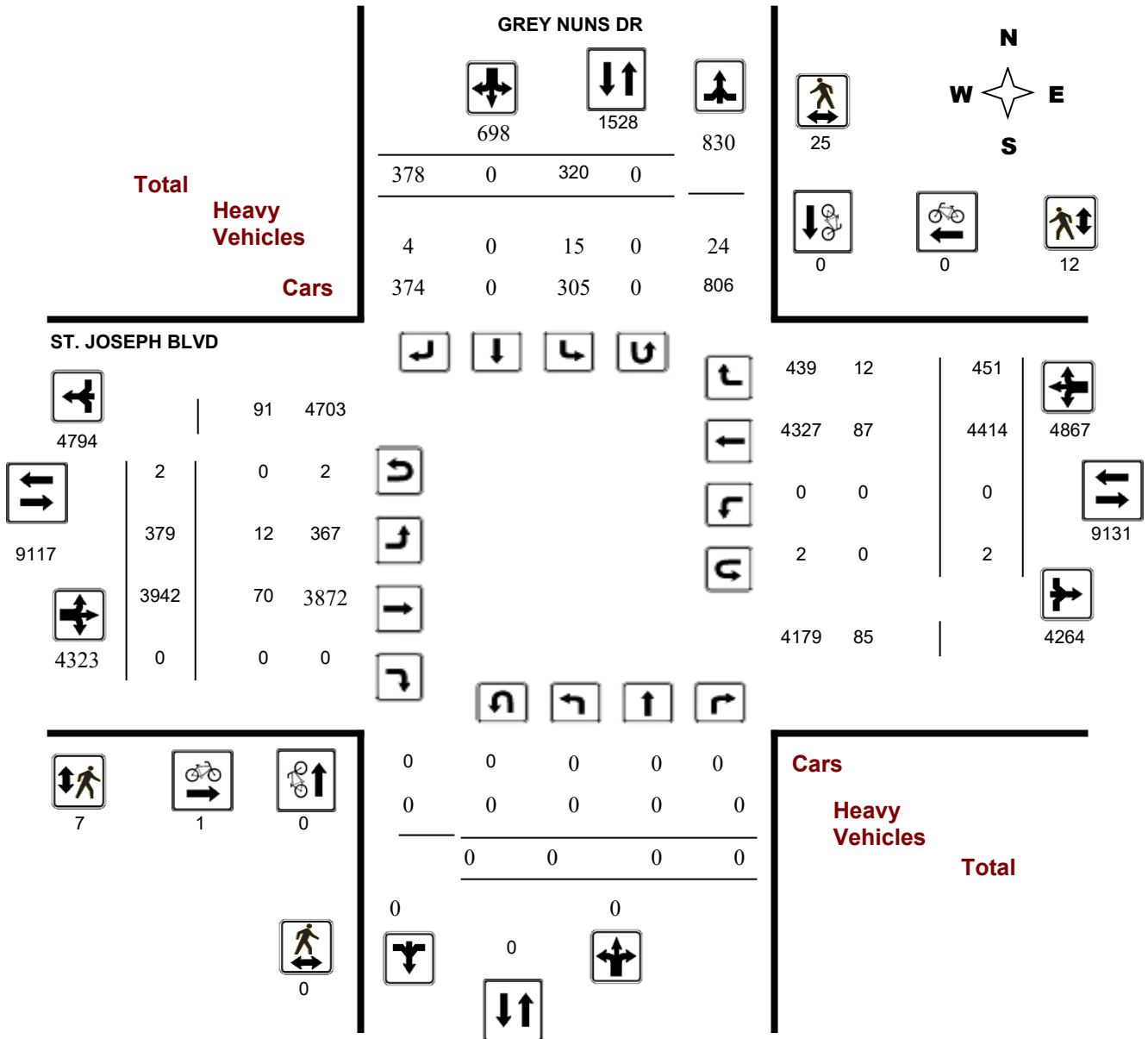
Survey Date: Thursday, January 17, 2019

WO No: 38290

Start Time: 07:00

Device: Miovision

Full Study Diagram



Turning Movement Count - Study Results

GREY NUNS DR @ ST. JOSEPH BLVD

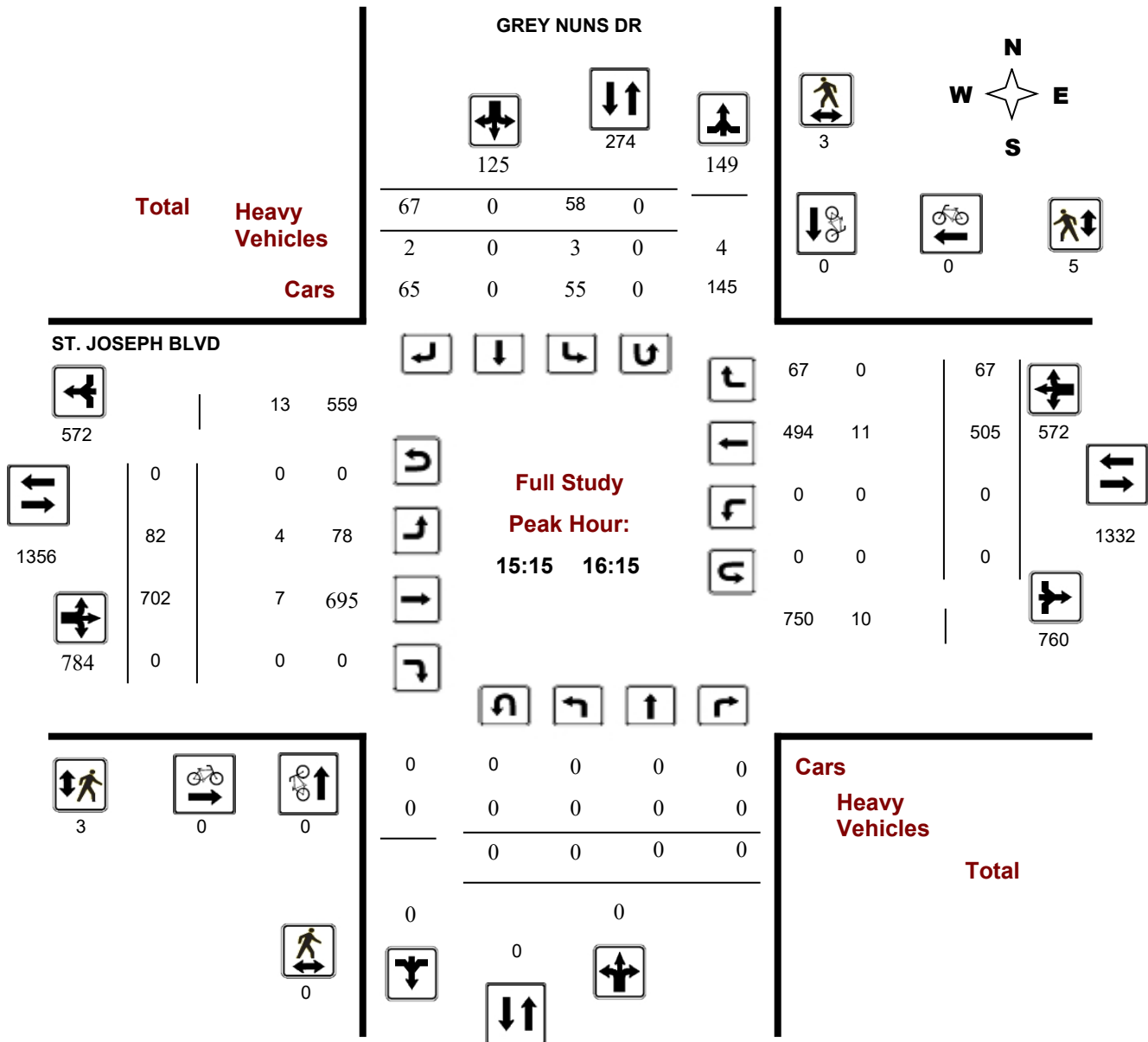
Survey Date: Thursday, January 17, 2019

WO No: 38290

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram





Transportation Services - Traffic Services

Turning Movement Count - Study Results

GREY NUNS DR @ ST. JOSEPH BLVD

Survey Date: Thursday, January 17, 2019

WO No: 38290

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Thursday, January 17, 2019

Total Observed U-Turns

AADT Factor

Northbound: 0 Southbound: 0
 Eastbound: 2 Westbound: 2

1.00

GREY NUNS DR

ST. JOSEPH BLVD

Period	Northbound					Southbound					Eastbound					Westbound					Grand Total
	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT			
07:00 08:00	0	0	0	0	32	0	47	79	79	26	168	0	194	0	778	71	849	1043	1122		
08:00 09:00	0	0	0	0	37	0	53	90	90	63	302	0	365	0	647	96	743	1108	1198		
09:00 10:00	0	0	0	0	36	0	67	103	103	35	359	0	394	0	536	43	579	973	1076		
11:30 12:30	0	0	0	0	22	0	21	43	43	17	434	0	451	0	536	39	575	1026	1069		
12:30 13:30	0	0	0	0	28	0	21	49	49	21	471	0	492	0	550	29	579	1071	1120		
15:00 16:00	0	0	0	0	69	0	57	126	126	70	694	0	764	0	501	72	573	1337	1463		
16:00 17:00	0	0	0	0	46	0	60	106	106	69	766	0	835	0	440	53	493	1328	1434		
17:00 18:00	0	0	0	0	50	0	52	102	102	78	748	0	826	0	426	48	474	1300	1402		
Sub Total	0	0	0	0	320	0	378	698	698	379	3942	0	4321	0	4414	451	4865	9186	9884		
U Turns				0				0	0				2				2	4	4		
Total	0	0	0	0	320	0	378	698	698	379	3942	0	4323	0	4414	451	4867	9190	9888		
EQ 12Hr	0	0	0	0	445	0	525	970	970	527	5479	0	6009	0	6135	627	6765	12774	13744		
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.																	1.39				
AVG 12Hr	0	0	0	0	419	0	495	914	970	496	5164	0	5663	0	5782	591	6376	12774	13744		
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.																	1				
AVG 24Hr	0	0	0	0	549	0	649	1198	1198	650	6765	0	7419	0	7575	774	8352	15771	16969		

Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. **1.31**

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.



Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

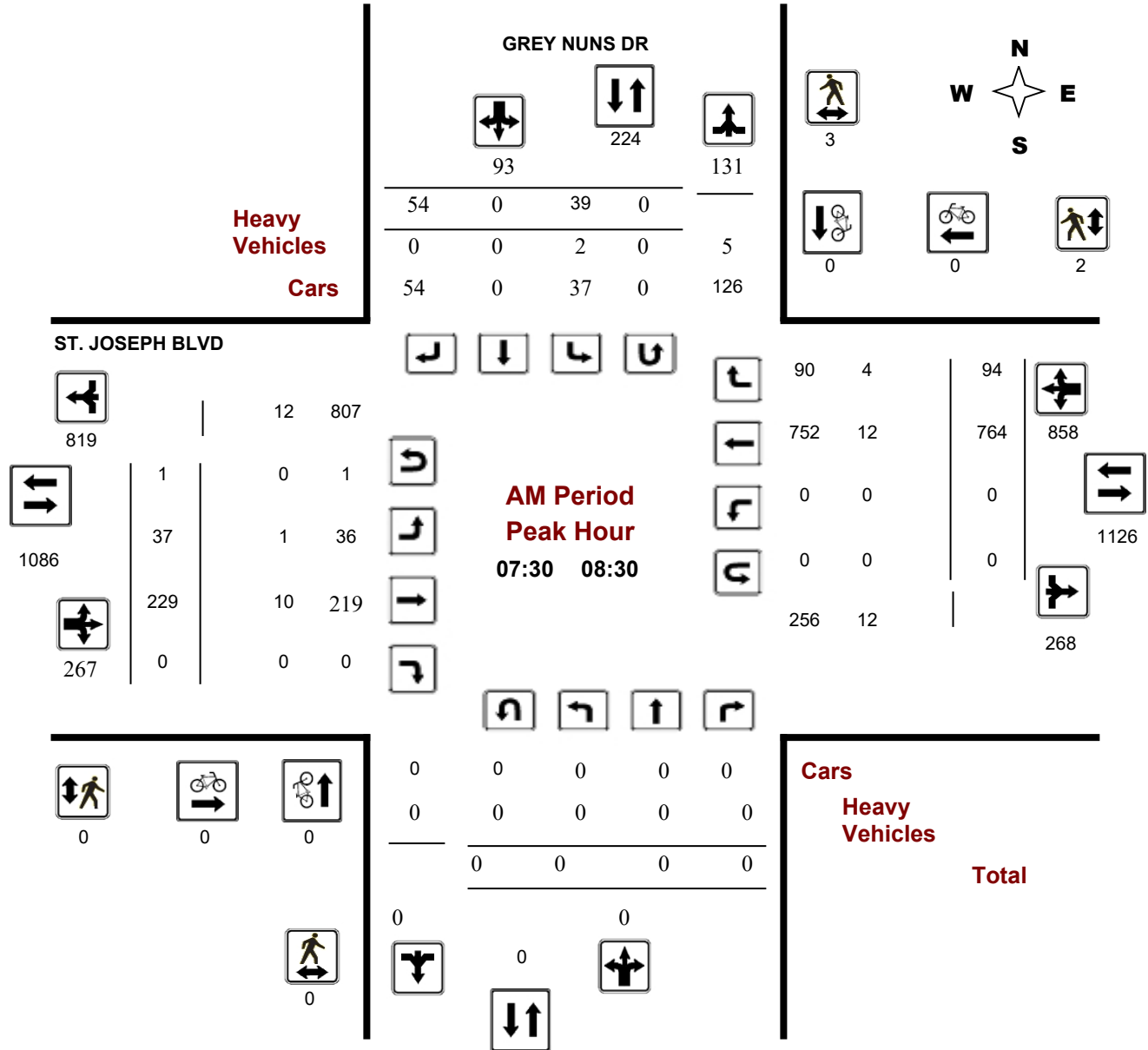
GREY NUNS DR @ ST. JOSEPH BLVD

Survey Date: Thursday, January 17, 2019

Start Time: 07:00

WO No: 38290

Device: Miovision



Turning Movement Count - Peak Hour Diagram

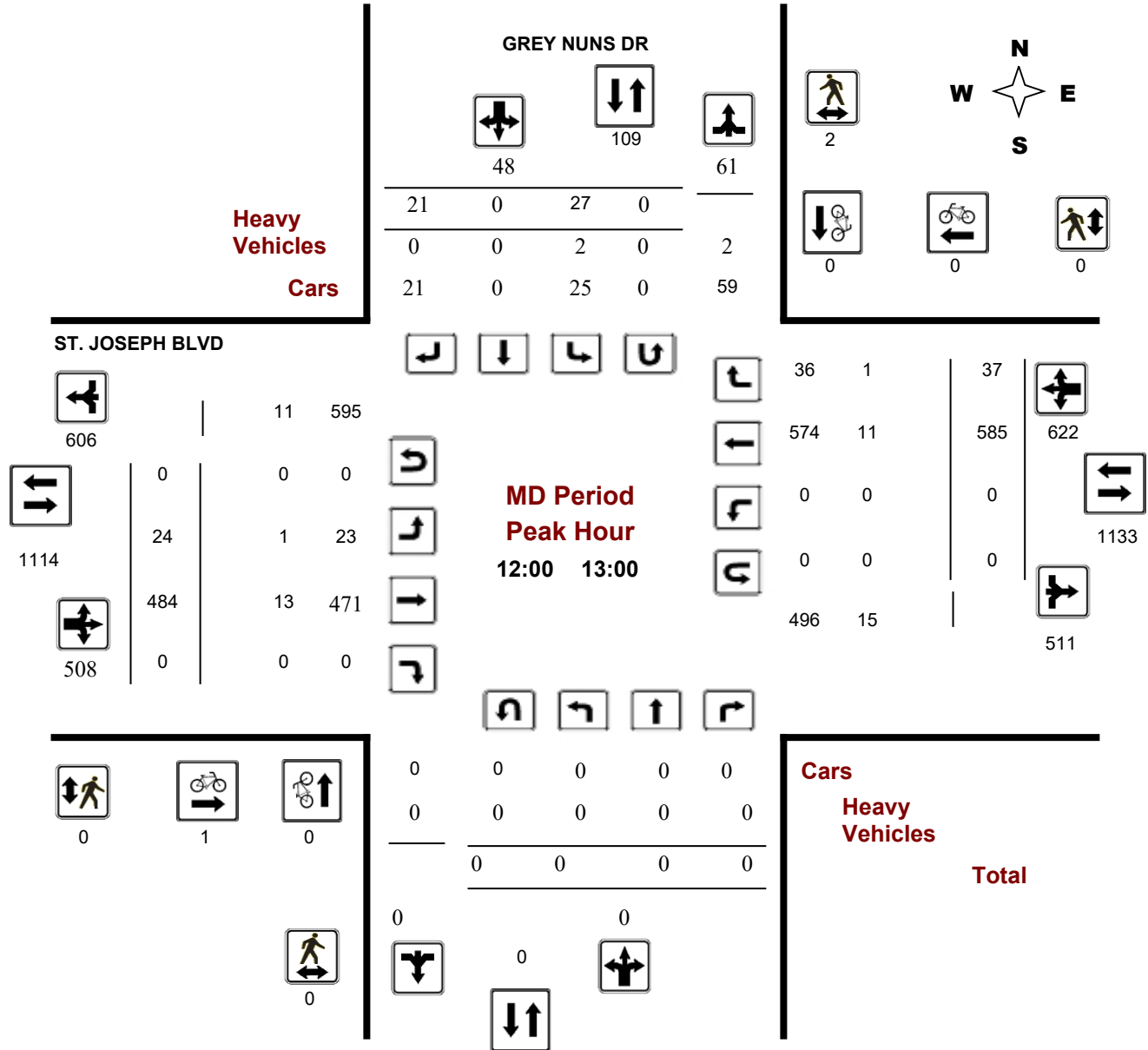
GREY NUNS DR @ ST. JOSEPH BLVD

Survey Date: Thursday, January 17, 2019

Start Time: 07:00

WO No: 38290

Device: Miovision



Comments

Turning Movement Count - Peak Hour Diagram

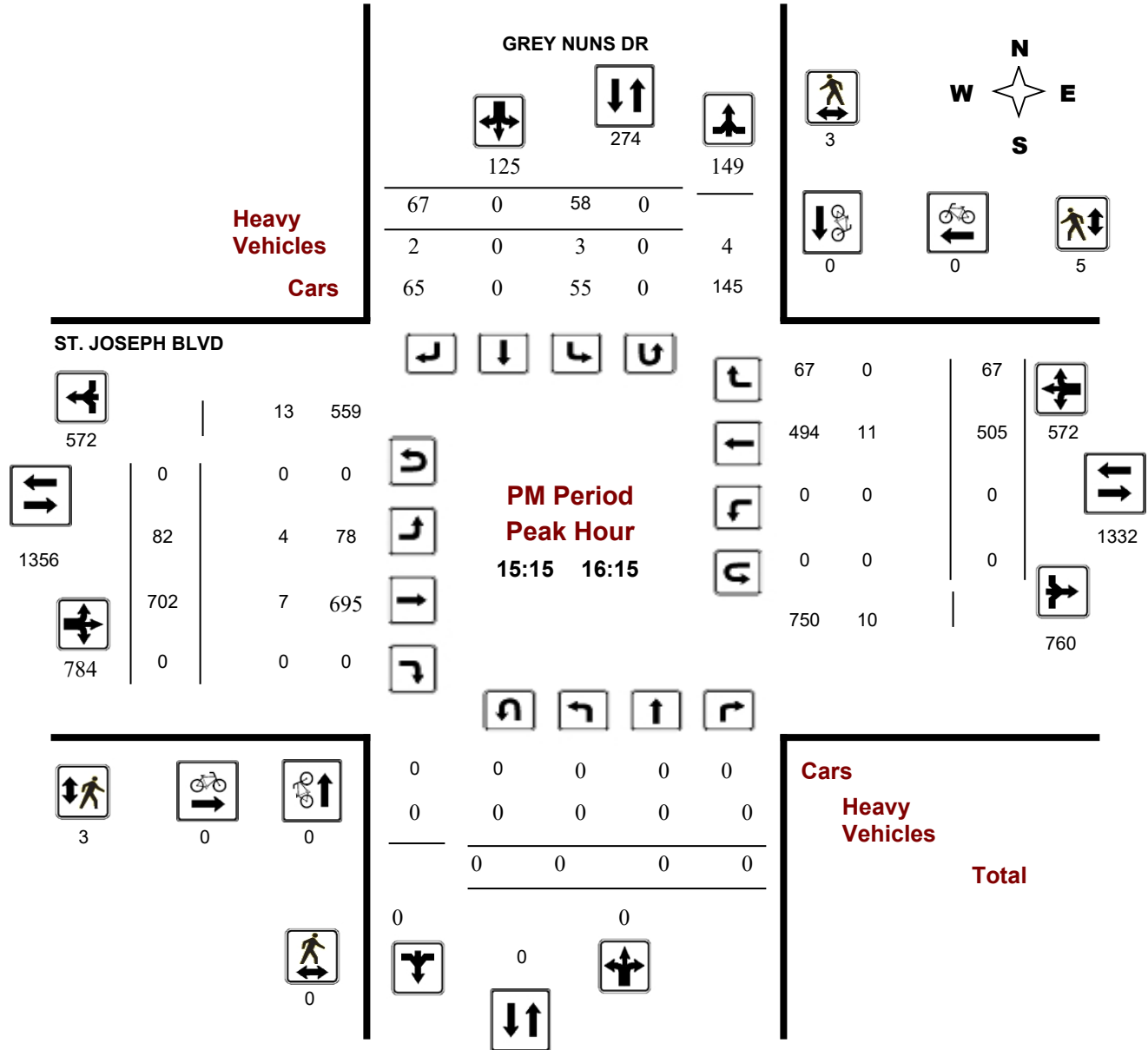
GREY NUNS DR @ ST. JOSEPH BLVD

Survey Date: Thursday, January 17, 2019

Start Time: 07:00

WO No: 38290

Device: Miovision



Comments



Transportation Services - Traffic Services

Turning Movement Count - Study Results

GREY NUNS DR @ ST. JOSEPH BLVD

Survey Date: Thursday, January 17, 2019

WO No: 38290

Start Time: 07:00

Device: Miovision

Full Study 15 Minute Increments

GREY NUNS DR

ST. JOSEPH BLVD

Northbound

Southbound

Eastbound

Westbound

Time Period	LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00 07:15	0	0	0	0	5	0	12	17	0	7	38	0	45	0	212	16	228	0	290
07:15 07:30	0	0	0	0	7	0	9	16	0	11	28	0	39	0	176	16	192	0	247
07:30 07:45	0	0	0	0	13	0	12	25	1	1	52	0	53	0	196	14	210	1	288
07:45 08:00	0	0	0	0	7	0	14	21	0	7	50	0	57	0	194	25	219	0	297
08:00 08:15	0	0	0	0	8	0	11	19	0	11	62	0	73	0	184	29	213	0	305
08:15 08:30	0	0	0	0	11	0	17	28	1	18	65	0	84	0	190	26	216	1	328
08:30 08:45	0	0	0	0	7	0	13	20	0	11	87	0	98	0	146	16	162	0	280
08:45 09:00	0	0	0	0	11	0	12	23	1	23	88	0	111	0	127	25	152	1	286
09:00 09:15	0	0	0	0	16	0	37	53	3	20	82	0	102	0	123	25	148	3	303
09:15 09:30	0	0	0	0	12	0	17	29	0	5	83	0	88	0	95	7	102	0	219
09:30 09:45	0	0	0	0	6	0	6	12	1	4	88	0	92	0	136	2	138	1	242
09:45 10:00	0	0	0	0	2	0	7	9	0	6	106	0	112	0	182	9	191	0	312
11:30 11:45	0	0	0	0	4	0	6	10	0	4	89	0	93	0	127	7	134	0	237
11:45 12:00	0	0	0	0	7	0	3	10	1	4	118	0	122	0	117	11	128	1	260
12:00 12:15	0	0	0	0	7	0	4	11	0	4	110	0	114	0	146	9	155	0	280
12:15 12:30	0	0	0	0	4	0	8	12	0	5	117	0	122	0	146	12	158	0	292
12:30 12:45	0	0	0	0	10	0	2	12	2	4	133	0	137	0	147	10	157	2	306
12:45 13:00	0	0	0	0	6	0	7	13	0	11	124	0	135	0	146	6	152	0	300
13:00 13:15	0	0	0	0	4	0	7	11	0	5	116	0	121	0	134	4	138	0	270
13:15 13:30	0	0	0	0	8	0	5	13	0	1	98	0	99	0	123	9	133	0	245
15:00 15:15	0	0	0	0	20	0	7	27	1	7	168	0	175	0	122	16	138	1	340
15:15 15:30	0	0	0	0	6	0	12	18	0	22	169	0	191	0	145	18	163	0	372
15:30 15:45	0	0	0	0	12	0	10	22	1	19	173	0	192	0	129	27	156	1	370
15:45 16:00	0	0	0	0	31	0	28	59	3	22	184	0	206	0	105	11	116	3	381
16:00 16:15	0	0	0	0	9	0	17	26	1	19	176	0	195	0	126	11	137	1	358
16:15 16:30	0	0	0	0	13	0	18	31	0	16	199	0	215	0	105	8	114	0	360
16:30 16:45	0	0	0	0	10	0	12	22	1	11	196	0	207	0	109	15	124	1	353
16:45 17:00	0	0	0	0	14	0	13	27	0	23	195	0	218	0	100	19	119	0	364
17:00 17:15	0	0	0	0	12	0	14	26	1	16	195	0	211	0	104	9	113	1	350
17:15 17:30	0	0	0	0	10	0	16	26	0	22	199	0	221	0	102	11	113	0	360
17:30 17:45	0	0	0	0	13	0	8	21	1	22	181	0	204	0	108	13	121	1	346
17:45 18:00	0	0	0	0	15	0	14	29	0	18	173	0	191	0	112	15	127	0	347
Total:	0	0	0	0	320	0	378	698	19	379	3942	0	4323	0	4414	451	4867	19	9,888

Note: U-Turns are included in Totals.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

GREY NUNS DR @ ST. JOSEPH BLVD

Survey Date: Thursday, January 17, 2019

WO No: 38290

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

GREY NUNS DR

ST. JOSEPH BLVD

Time Period	Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00 07:15	0	0	0	0	0	0	0
07:15 07:30	0	0	0	0	0	0	0
07:30 07:45	0	0	0	0	0	0	0
07:45 08:00	0	0	0	0	0	0	0
08:00 08:15	0	0	0	0	0	0	0
08:15 08:30	0	0	0	0	0	0	0
08:30 08:45	0	0	0	0	0	0	0
08:45 09:00	0	0	0	0	0	0	0
09:00 09:15	0	0	0	0	0	0	0
09:15 09:30	0	0	0	0	0	0	0
09:30 09:45	0	0	0	0	0	0	0
09:45 10:00	0	0	0	0	0	0	0
11:30 11:45	0	0	0	0	0	0	0
11:45 12:00	0	0	0	0	0	0	0
12:00 12:15	0	0	0	0	0	0	0
12:15 12:30	0	0	0	0	0	0	0
12:30 12:45	0	0	0	1	0	1	1
12:45 13:00	0	0	0	0	0	0	0
13:00 13:15	0	0	0	0	0	0	0
13:15 13:30	0	0	0	0	0	0	0
15:00 15:15	0	0	0	0	0	0	0
15:15 15:30	0	0	0	0	0	0	0
15:30 15:45	0	0	0	0	0	0	0
15:45 16:00	0	0	0	0	0	0	0
16:00 16:15	0	0	0	0	0	0	0
16:15 16:30	0	0	0	0	0	0	0
16:30 16:45	0	0	0	0	0	0	0
16:45 17:00	0	0	0	0	0	0	0
17:00 17:15	0	0	0	0	0	0	0
17:15 17:30	0	0	0	0	0	0	0
17:30 17:45	0	0	0	0	0	0	0
17:45 18:00	0	0	0	0	0	0	0
Total	0	0	0	1	0	1	1



Transportation Services - Traffic Services

Turning Movement Count - Study Results

GREY NUNS DR @ ST. JOSEPH BLVD

Survey Date: Thursday, January 17, 2019

WO No: 38290

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

GREY NUNS DR

ST. JOSEPH BLVD

Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	0	2	2	0	0	0	2
07:15 07:30	0	0	0	0	0	0	0
07:30 07:45	0	0	0	0	1	1	1
07:45 08:00	0	3	3	0	1	1	4
08:00 08:15	0	0	0	0	0	0	0
08:15 08:30	0	0	0	0	0	0	0
08:30 08:45	0	1	1	1	0	1	2
08:45 09:00	0	1	1	0	1	1	2
09:00 09:15	0	1	1	0	0	0	1
09:15 09:30	0	2	2	0	1	1	3
09:30 09:45	0	0	0	1	0	1	1
09:45 10:00	0	1	1	0	1	1	2
11:30 11:45	0	0	0	0	0	0	0
11:45 12:00	0	0	0	0	1	1	1
12:00 12:15	0	0	0	0	0	0	0
12:15 12:30	0	1	1	0	0	0	1
12:30 12:45	0	1	1	0	0	0	1
12:45 13:00	0	0	0	0	0	0	0
13:00 13:15	0	1	1	1	0	1	2
13:15 13:30	0	0	0	0	0	0	0
15:00 15:15	0	2	2	0	0	0	2
15:15 15:30	0	0	0	1	1	2	2
15:30 15:45	0	0	0	1	2	3	3
15:45 16:00	0	2	2	1	2	3	5
16:00 16:15	0	1	1	0	0	0	1
16:15 16:30	0	0	0	0	0	0	0
16:30 16:45	0	0	0	1	0	1	1
16:45 17:00	0	0	0	0	0	0	0
17:00 17:15	0	2	2	0	0	0	2
17:15 17:30	0	4	4	0	0	0	4
17:30 17:45	0	0	0	0	1	1	1
17:45 18:00	0	0	0	0	0	0	0
Total	0	25	25	7	12	19	44



Transportation Services - Traffic Services

Turning Movement Count - Study Results

GREY NUNS DR @ ST. JOSEPH BLVD

Survey Date: Thursday, January 17, 2019

WO No: 38290

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

GREY NUNS DR

ST. JOSEPH BLVD

Northbound Southbound Eastbound Westbound

Time Period	Northbound			N TOT	Southbound			S TOT	STR TOT	Eastbound			E TOT	Westbound			W TOT	STR TOT	Grand Total
	LT	ST	RT		LT	ST	RT			LT	ST	RT		LT	ST	RT			
07:00 07:15	0	0	0	0	0	0	0	0	0	0	1	0	1	0	3	1	4	5	5
07:15 07:30	0	0	0	0	0	0	0	0	0	1	0	0	1	0	3	0	3	4	4
07:30 07:45	0	0	0	0	1	0	0	1	1	0	3	0	3	0	3	1	4	7	8
07:45 08:00	0	0	0	0	0	0	0	0	0	0	1	0	1	0	6	0	6	7	7
08:00 08:15	0	0	0	0	0	0	0	0	0	0	5	0	5	0	1	1	2	7	7
08:15 08:30	0	0	0	0	1	0	0	1	1	1	1	0	2	0	2	2	4	6	7
08:30 08:45	0	0	0	0	0	0	0	0	0	0	3	0	3	0	2	1	3	6	6
08:45 09:00	0	0	0	0	0	0	1	1	1	2	3	0	5	0	3	0	3	8	9
09:00 09:15	0	0	0	0	2	0	1	3	3	0	4	0	4	0	8	3	11	15	18
09:15 09:30	0	0	0	0	0	0	0	0	0	1	6	0	7	0	2	0	2	9	9
09:30 09:45	0	0	0	0	1	0	0	1	1	0	3	0	3	0	2	0	2	5	6
09:45 10:00	0	0	0	0	0	0	0	0	0	1	1	0	2	0	3	1	4	6	6
11:30 11:45	0	0	0	0	0	0	0	0	0	0	3	0	3	0	3	0	3	6	6
11:45 12:00	0	0	0	0	1	0	0	1	1	0	2	0	2	0	1	1	2	4	5
12:00 12:15	0	0	0	0	0	0	0	0	0	0	5	0	5	0	4	0	4	9	9
12:15 12:30	0	0	0	0	0	0	0	0	0	0	4	0	4	0	2	1	3	7	7
12:30 12:45	0	0	0	0	2	0	0	2	2	0	4	0	4	0	4	0	4	8	10
12:45 13:00	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	2	2
13:00 13:15	0	0	0	0	0	0	0	0	0	0	1	0	1	0	4	0	4	5	5
13:15 13:30	0	0	0	0	0	0	0	0	0	0	3	0	3	0	4	0	4	7	7
15:00 15:15	0	0	0	0	1	0	0	1	1	0	4	0	4	0	2	0	2	6	7
15:15 15:30	0	0	0	0	0	0	0	0	0	3	1	0	4	0	2	0	2	6	6
15:30 15:45	0	0	0	0	1	0	0	1	1	1	2	0	3	0	3	0	3	6	7
15:45 16:00	0	0	0	0	1	0	2	3	3	0	0	0	0	0	2	0	2	2	5
16:00 16:15	0	0	0	0	1	0	0	1	1	0	4	0	4	0	4	0	4	8	9
16:15 16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30 16:45	0	0	0	0	1	0	0	1	1	0	2	0	2	0	5	0	5	7	8
16:45 17:00	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3	3
17:00 17:15	0	0	0	0	1	0	0	1	1	0	1	0	1	0	2	0	2	3	4
17:15 17:30	0	0	0	0	0	0	0	0	0	1	1	0	2	0	1	0	1	3	3
17:30 17:45	0	0	0	0	1	0	0	1	1	0	1	0	1	0	2	0	2	3	4
17:45 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
Total: None	0	0	0	0	15	0	4	19	19	12	70	0	82	0	87	12	99	181	200



Transportation Services - Traffic Services

Turning Movement Count - Study Results

GREY NUNS DR @ ST. JOSEPH BLVD

Survey Date: Thursday, January 17, 2019

WO No: 38290

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total

GREY NUNS DR

ST. JOSEPH BLVD

Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	1	0	1
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	1	1
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	1	1
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	1	0	1
17:45	18:00	0	0	0	0	0
Total		0	0	2	2	4

Turning Movement Count - Study Results

ST. JOSEPH BLVD @ JEANNE D'ARC BLVD

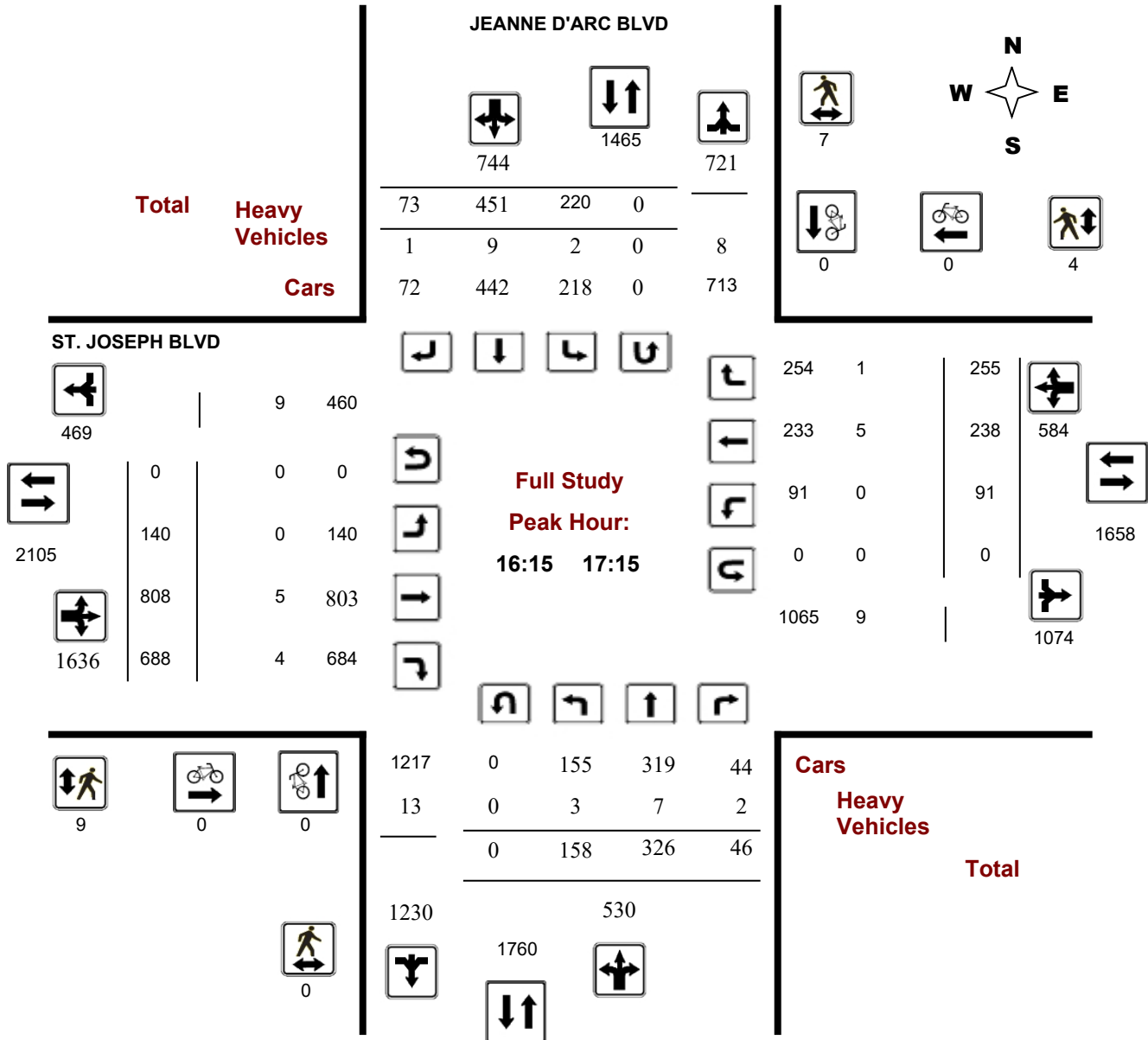
Survey Date: Thursday, December 17, 2015

WO No: 35617

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram





Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. JOSEPH BLVD @ JEANNE D'ARC BLVD

Survey Date: Thursday, December 17, 2015

WO No: 35617

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Thursday, December 17, 2015

Total Observed U-Turns

AADT Factor

Northbound: 0 Southbound: 1
 Eastbound: 0 Westbound: 0

1.00

JEANNE D'ARC BLVD

ST. JOSEPH BLVD

Period	JEANNE D'ARC BLVD Northbound					JEANNE D'ARC BLVD Southbound					ST. JOSEPH BLVD Eastbound					ST. JOSEPH BLVD Westbound					Grand Total
	LT	ST	RT	NB TOT	STR TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	STR TOT	LT	ST	RT	WB TOT	STR TOT	
07:00 08:00	991	658	9	1658	2063	83	151	171	405	2063	49	145	97	291	1202	10	647	254	911	1202	3265
08:00 09:00	648	611	40	1299	1833	123	206	205	534	1833	63	168	106	337	1211	42	589	243	874	1211	3044
09:00 10:00	200	364	29	593	1120	198	226	103	527	1120	54	243	134	431	1032	58	295	248	601	1032	2152
11:30 12:30	166	315	35	516	1232	271	358	87	716	1232	65	376	207	648	1308	62	324	274	660	1308	2540
12:30 13:30	153	330	48	531	1244	253	364	96	713	1244	70	349	180	599	1257	58	325	275	658	1257	2501
15:00 16:00	192	300	43	535	1303	242	461	65	768	1303	127	593	553	1273	1835	80	259	223	562	1835	3138
16:00 17:00	166	320	47	533	1231	195	436	67	698	1231	131	802	697	1630	2217	79	253	255	587	2217	3448
17:00 18:00	155	351	54	560	1413	281	506	66	853	1413	121	698	621	1440	1959	85	191	243	519	1959	3372
Sub Total	2671	3249	305	6225	11439	1646	2708	860	5214	11439	680	3374	2595	6649	12021	474	2883	2015	5372	12021	23460
U Turns				0	1				1	1				0	0				0	0	1
Total	2671	3249	305	6225	11440	1646	2708	860	5215	11440	680	3374	2595	6649	12021	474	2883	2015	5372	12021	23461
EQ 12Hr	3713	4516	424	8653	15902	2288	3764	1195	7249	15902	945	4690	3607	9242	16709	659	4007	2801	7467	16709	32611
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.																	1.39				
AVG 12Hr	3499	4256	400	8155	15902	2156	3547	1127	6832	15902	891	4420	3399	8710	16709	621	3777	2640	7037	16709	32611
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.																	1				
AVG 24Hr	4584	5576	523	10683	19632	2825	4647	1476	8949	19632	1167	5790	4453	11410	20629	813	4948	3458	9219	20629	40261
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.																	1.31				
Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.																					

Turning Movement Count - Peak Hour Diagram

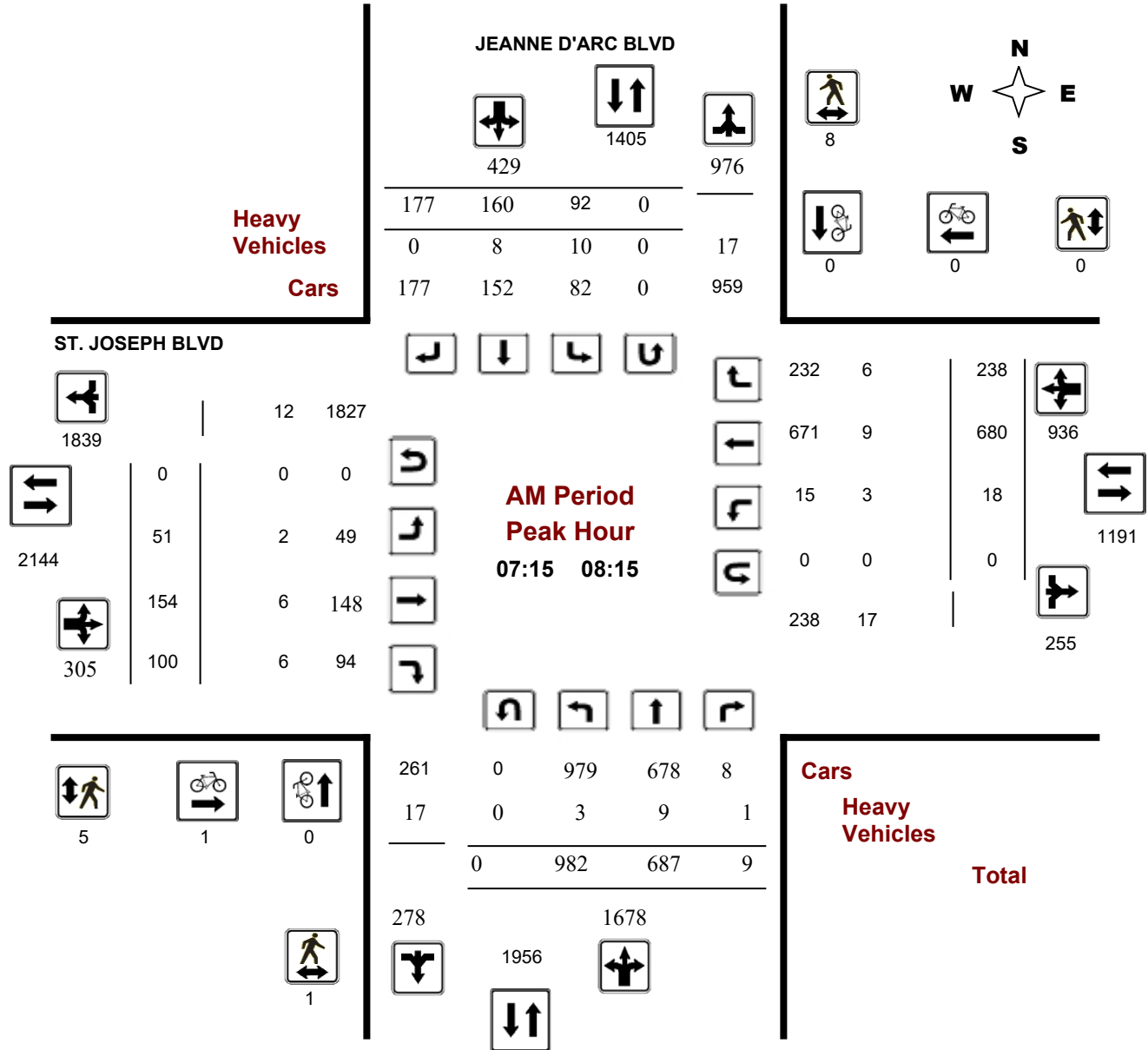
ST. JOSEPH BLVD @ JEANNE D'ARC BLVD

Survey Date: Thursday, December 17, 2015

Start Time: 07:00

WO No: 35617

Device: Miovision



Turning Movement Count - Peak Hour Diagram

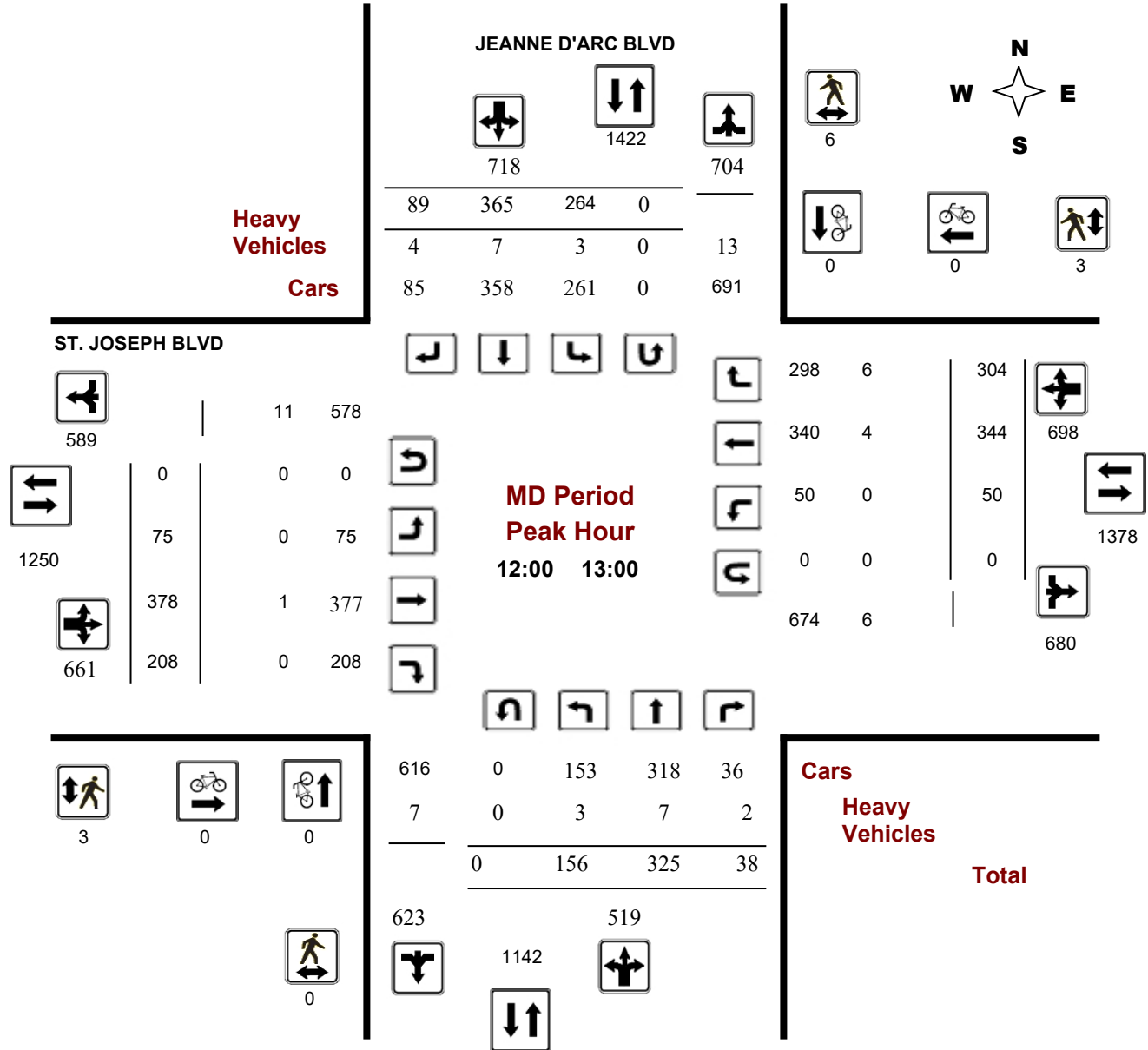
ST. JOSEPH BLVD @ JEANNE D'ARC BLVD

Survey Date: Thursday, December 17, 2015

Start Time: 07:00

WO No: 35617

Device: Miovision



Comments

Turning Movement Count - Peak Hour Diagram

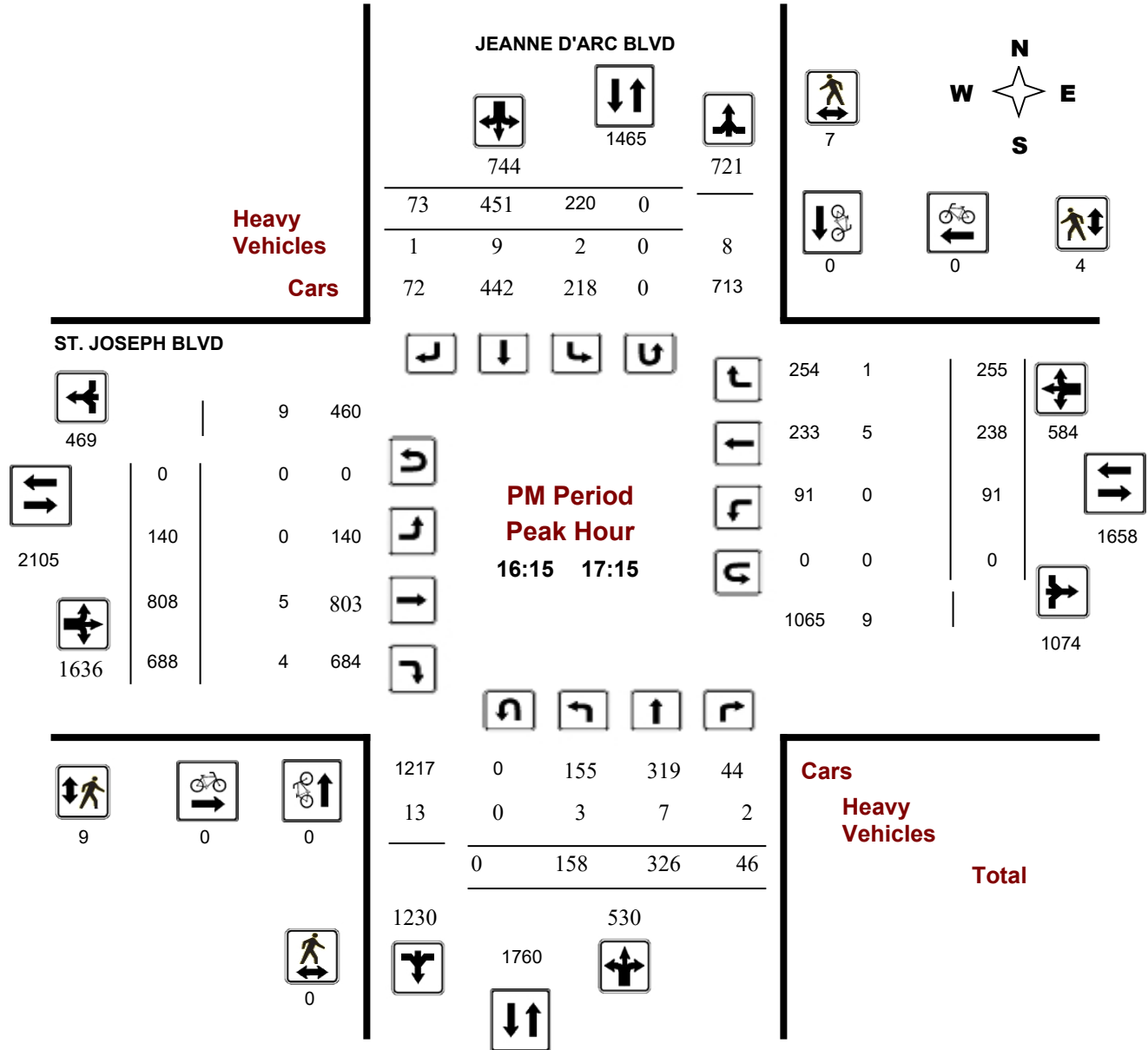
ST. JOSEPH BLVD @ JEANNE D'ARC BLVD

Survey Date: Thursday, December 17, 2015

Start Time: 07:00

WO No: 35617

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. JOSEPH BLVD @ JEANNE D'ARC BLVD

Survey Date: Thursday, December 17, 2015

WO No: 35617

Start Time: 07:00

Device: Miovision

Full Study 15 Minute Increments

JEANNE D'ARC BLVD

ST. JOSEPH BLVD

Northbound

Southbound

Eastbound

Westbound

Time Period	LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00 07:15	222	134	3	359	15	31	37	83	9	10	17	21	48	0	159	73	232	9	722
07:15 07:30	256	167	0	423	16	32	43	91	5	16	39	24	79	6	154	68	228	5	821
07:30 07:45	236	177	5	418	34	38	43	115	10	8	45	20	73	2	195	56	253	10	859
07:45 08:00	277	180	1	458	18	50	48	116	10	15	44	32	91	2	139	57	198	10	863
08:00 08:15	213	163	3	379	24	40	43	107	6	12	26	24	62	8	192	57	257	6	805
08:15 08:30	187	156	10	353	33	53	54	140	11	19	39	23	81	15	158	67	240	11	814
08:30 08:45	139	157	16	312	35	66	54	155	9	21	47	29	97	8	135	62	205	9	769
08:45 09:00	109	135	11	255	31	47	54	132	7	11	56	30	97	11	104	57	172	7	656
09:00 09:15	68	91	9	168	45	54	30	129	11	11	64	29	104	15	100	64	179	11	580
09:15 09:30	60	92	3	155	57	59	27	143	7	12	62	29	103	11	65	56	132	7	533
09:30 09:45	45	101	8	154	44	54	16	114	10	10	74	39	123	16	60	64	140	10	531
09:45 10:00	27	80	9	116	52	59	30	141	7	21	43	37	101	16	70	64	150	7	508
11:30 11:45	48	74	11	133	66	94	16	176	7	17	90	42	149	13	80	56	149	7	607
11:45 12:00	46	83	8	137	66	93	26	185	7	15	83	41	139	19	77	62	158	7	619
12:00 12:15	34	85	8	127	74	81	29	184	4	20	104	56	180	20	89	75	184	4	675
12:15 12:30	38	73	8	119	65	90	16	171	4	13	99	68	180	10	78	81	169	4	639
12:30 12:45	36	86	9	131	64	103	20	187	8	25	87	43	155	8	87	86	181	8	654
15:00 15:15	41	67	12	120	62	136	19	217	6	31	106	111	248	17	75	52	144	6	729
12:45 13:00	48	81	13	142	61	91	24	176	10	17	88	41	146	12	90	62	164	10	628
13:00 13:15	35	86	9	130	64	83	24	172	8	19	83	50	152	18	71	68	157	8	611
13:15 13:30	34	77	17	128	64	87	28	179	4	9	91	46	146	20	77	59	156	4	609
15:15 15:30	61	95	12	168	63	109	14	186	6	33	139	115	287	18	60	47	125	6	766
15:30 15:45	40	70	10	120	60	109	13	182	7	35	158	166	359	19	65	70	154	7	815
15:45 16:00	50	68	9	127	57	107	19	183	9	28	190	161	379	26	59	54	139	9	828
16:00 16:15	41	70	13	124	48	110	14	172	7	28	185	182	395	14	60	77	151	7	842
16:15 16:30	37	85	12	134	54	111	17	182	5	33	220	168	421	17	82	55	154	5	891
16:30 16:45	49	78	9	136	50	108	18	176	5	34	197	178	409	23	58	65	146	5	867
16:45 17:00	39	87	13	139	43	107	18	168	9	36	200	169	405	25	53	58	136	9	848
17:00 17:15	33	76	12	121	73	125	20	218	5	37	191	173	401	26	45	77	148	5	888
17:15 17:30	32	83	13	128	68	117	18	203	2	23	181	158	362	20	52	47	119	2	812
17:30 17:45	40	71	12	123	71	135	10	216	8	36	179	148	363	21	50	60	131	8	833
17:45 18:00	50	121	17	188	69	129	18	216	4	25	147	142	314	18	44	59	121	4	839
Total:	2671	3249	305	6225	1646	2708	860	5215	227	680	3374	2595	6649	474	2883	2015	5372	227	23,461

Note: U-Turns are included in Totals.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. JOSEPH BLVD @ JEANNE D'ARC BLVD

Survey Date: Thursday, December 17, 2015

WO No: 35617

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

JEANNE D'ARC BLVD

ST. JOSEPH BLVD

Time Period	Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00 07:15	0	0	0	0	0	0	0
07:15 07:30	0	0	0	0	0	0	0
07:30 07:45	0	0	0	1	0	1	1
07:45 08:00	0	0	0	0	0	0	0
08:00 08:15	0	0	0	0	0	0	0
08:15 08:30	0	0	0	0	0	0	0
08:30 08:45	0	0	0	0	0	0	0
08:45 09:00	0	0	0	0	0	0	0
09:00 09:15	0	0	0	0	0	0	0
09:15 09:30	0	0	0	0	0	0	0
09:30 09:45	0	0	0	0	0	0	0
09:45 10:00	0	0	0	0	0	0	0
11:30 11:45	0	0	0	0	0	0	0
11:45 12:00	0	0	0	0	0	0	0
12:00 12:15	0	0	0	0	0	0	0
12:15 12:30	0	0	0	0	0	0	0
12:30 12:45	0	0	0	0	0	0	0
15:00 15:15	0	0	0	0	0	0	0
12:45 13:00	0	0	0	0	0	0	0
13:00 13:15	0	0	0	0	0	0	0
13:15 13:30	0	0	0	0	0	0	0
15:15 15:30	0	0	0	0	0	0	0
15:30 15:45	0	0	0	0	0	0	0
15:45 16:00	0	0	0	0	0	0	0
16:00 16:15	1	0	1	0	0	0	1
16:15 16:30	0	0	0	0	0	0	0
16:30 16:45	0	0	0	0	0	0	0
16:45 17:00	0	0	0	0	0	0	0
17:00 17:15	0	0	0	0	0	0	0
17:15 17:30	0	0	0	0	0	0	0
17:30 17:45	0	0	0	0	0	0	0
17:45 18:00	0	0	0	0	0	0	0
Total	1	0	1	1	0	1	2



Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. JOSEPH BLVD @ JEANNE D'ARC BLVD

Survey Date: Thursday, December 17, 2015

WO No: 35617

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

JEANNE D'ARC BLVD

ST. JOSEPH BLVD

Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	0	0	0	1	0	1	1
07:15 07:30	0	0	0	0	0	0	0
07:30 07:45	1	0	1	1	0	1	2
07:45 08:00	0	1	1	2	0	2	3
08:00 08:15	0	7	7	2	0	2	9
08:15 08:30	0	5	5	7	0	7	12
08:30 08:45	0	3	3	1	0	1	4
08:45 09:00	0	0	0	3	0	3	3
09:00 09:15	0	2	2	0	0	0	2
09:15 09:30	0	1	1	1	0	1	2
09:30 09:45	0	0	0	1	0	1	1
09:45 10:00	0	0	0	2	2	4	4
11:30 11:45	0	0	0	2	0	2	2
11:45 12:00	0	0	0	2	0	2	2
12:00 12:15	0	1	1	1	0	1	2
12:15 12:30	0	0	0	2	0	2	2
12:30 12:45	0	5	5	0	3	3	8
15:00 15:15	2	1	3	0	1	1	4
12:45 13:00	0	0	0	0	0	0	0
13:00 13:15	0	2	2	0	0	0	2
13:15 13:30	0	1	1	1	0	1	2
15:15 15:30	0	2	2	0	4	4	6
15:30 15:45	2	4	6	0	7	7	13
15:45 16:00	1	0	1	0	1	1	2
16:00 16:15	0	5	5	5	2	7	12
16:15 16:30	0	3	3	4	2	6	9
16:30 16:45	0	2	2	3	2	5	7
16:45 17:00	0	2	2	2	0	2	4
17:00 17:15	0	0	0	0	0	0	0
17:15 17:30	0	0	0	0	0	0	0
17:30 17:45	0	0	0	3	0	3	3
17:45 18:00	0	0	0	1	0	1	1
Total	6	47	53	47	24	71	124



Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. JOSEPH BLVD @ JEANNE D'ARC BLVD

Survey Date: Thursday, December 17, 2015

WO No: 35617

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

JEANNE D'ARC BLVD

ST. JOSEPH BLVD

Northbound

Southbound

Eastbound

Westbound

Time Period	Northbound			N TOT	Southbound			S TOT	STR TOT	Eastbound			E TOT	Westbound			W TOT	STR TOT	Grand Total
	LT	ST	RT		LT	ST	RT			LT	ST	RT		LT	ST	RT			
07:00 07:15	0	5	0	5	1	3	0	4	9	0	1	2	3	0	1	0	1	4	13
07:15 07:30	0	2	0	2	1	2	0	3	5	0	2	0	2	1	2	2	5	7	12
07:30 07:45	0	2	1	3	5	2	0	7	10	1	2	3	6	2	1	1	4	10	20
07:45 08:00	2	4	0	6	1	3	0	4	10	0	2	1	3	0	5	1	6	9	19
08:00 08:15	1	1	0	2	3	1	0	4	6	1	0	2	3	0	1	2	3	6	12
08:15 08:30	1	2	0	3	3	4	1	8	11	0	1	1	2	0	2	0	2	4	15
08:30 08:45	1	4	0	5	0	3	1	4	9	0	2	3	5	0	3	0	3	8	17
08:45 09:00	0	2	0	2	1	3	1	5	7	0	0	1	1	0	1	2	3	4	11
09:00 09:15	1	0	0	1	2	7	1	10	11	0	3	1	4	1	1	3	5	9	20
09:15 09:30	1	1	0	2	1	3	1	5	7	1	3	0	4	0	2	0	2	6	13
09:30 09:45	3	2	0	5	3	2	0	5	10	1	2	0	3	0	1	2	3	6	16
09:45 10:00	0	2	0	2	2	3	0	5	7	1	2	0	3	0	1	1	2	5	12
11:30 11:45	0	3	0	3	1	2	1	4	7	1	1	1	3	0	0	1	1	4	11
11:45 12:00	0	2	1	3	1	0	3	4	7	3	0	1	4	0	2	3	5	9	16
12:00 12:15	1	1	0	2	0	1	1	2	4	0	1	0	1	0	1	1	2	3	7
12:15 12:30	0	0	1	1	2	1	0	3	4	0	0	0	0	0	2	1	3	3	7
12:30 12:45	1	3	0	4	1	2	1	4	8	0	0	0	0	0	0	1	1	1	9
15:00 15:15	1	1	0	2	2	2	0	4	6	0	2	2	4	0	1	3	4	8	14
12:45 13:00	1	3	1	5	0	3	2	5	10	0	0	0	0	0	1	3	4	4	14
13:00 13:15	0	1	0	1	3	3	0	7	8	0	0	0	0	0	2	0	2	2	10
13:15 13:30	0	0	0	0	3	1	0	4	4	0	0	0	0	1	3	2	6	6	10
15:15 15:30	2	2	0	4	1	1	0	2	6	0	1	1	2	1	0	2	3	5	11
15:30 15:45	1	3	0	4	0	2	1	3	7	1	1	2	4	0	0	1	1	5	12
15:45 16:00	1	3	0	4	1	3	1	5	9	0	1	2	3	0	0	1	1	4	13
16:00 16:15	0	4	0	4	0	3	0	3	7	1	2	2	5	0	2	1	3	8	15
16:15 16:30	0	3	0	3	0	1	1	2	5	0	2	1	3	0	1	1	2	5	10
16:30 16:45	0	0	1	1	0	4	0	4	5	0	2	2	4	0	1	0	1	5	10
16:45 17:00	2	4	0	6	2	1	0	3	9	0	1	0	1	0	2	0	2	3	12
17:00 17:15	1	0	1	2	0	3	0	3	5	0	0	1	1	0	1	0	1	2	7
17:15 17:30	0	2	0	2	0	0	0	0	2	0	3	0	3	0	2	0	2	5	7
17:30 17:45	0	0	2	2	2	4	0	6	8	0	1	0	1	0	0	0	0	1	9
17:45 18:00	0	2	0	2	1	1	0	2	4	0	1	0	1	0	0	0	0	1	5
Total: None	21	64	8	93	43	74	16	134	227	11	39	29	79	6	42	35	83	162	389



Transportation Services - Traffic Services

Turning Movement Count - Study Results

ST. JOSEPH BLVD @ JEANNE D'ARC BLVD

Survey Date: Thursday, December 17, 2015

WO No: 35617

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total

JEANNE D'ARC BLVD

ST. JOSEPH BLVD

Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	0	0
15:00	15:15	0	0	0	0	0
12:45	13:00	0	0	0	0	0
13:00	13:15	0	1	0	0	1
13:15	13:30	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		0	1	0	0	1

Appendix B **CORRESPONDANCE**



Al Hasoo, Mohammed

From: Gervais, Josiane <josiane.gervais@ottawa.ca>
Sent: Monday, June 15, 2020 10:55 AM
To: Abdelnaby, Ahmed
Cc: Al Hasoo, Mohammed
Subject: RE: New Transportation Impact Assessment - 1994 St. Joseph Blvd

Hi Ahmed,

Due to the extraordinary circumstances because of Covid-19, it is OK to exclude the Notre-Dame St/St-Joseph intersection from the study scope, as well as apply growth to the Jeanne d'Arc roundabout to achieve an estimate of 2020 traffic volumes. Please ensure all assumptions and justifications are clearly stated within the Scoping report. The existing conditions however should still include the Notre-Dame St corridor and intersection.

For future reference, this type of discussion should take place within the TIA process as part of the Scoping report. This ensures there is proper documentation of comments and responses.

Regards,

Josiane Gervais, P.Eng.

Project Manager, Infrastructure Approvals | GPRJ Approbation des demandes d'infrastructure
Development Review Branch | Dir Examen des projets d'aménagement
City of Ottawa | Ville d'Ottawa
Tel | Tél. : 613-580- 2424 ext. | poste 21765
web | Site Web : www.ottawa.ca

From: Abdelnaby, Ahmed <Ahmed.Abdelnaby@stantec.com>
Sent: June 15, 2020 9:40 AM
To: Gervais, Josiane <josiane.gervais@ottawa.ca>
Cc: Al Hasoo, Mohammed <Mohammed.AlHasoo@stantec.com>
Subject: RE: New Transportation Impact Assessment - 1994 St. Joseph Blvd

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Hi Josiane,

Thank you for your quick reply. Yes, due to data limitations we are proposing:

- Removing Notre-Dame St/St-Joseph; and
- Growing the 2015 counts (outdated) at JEANNE D'ARC BLVD/ St-Joseph.

Would the above be acceptable?

Thanks!

Ahmed Abdelnaby M.Sc., P.Eng, RSP1.
Project Engineer, Transportation

Direct: 613-724-4405
Cell: 343-999-9252
ahmed.abdelnaby@stantec.com
Stantec
400 - 1331 Clyde Avenue
Ottawa ON K2C 3G4



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From: Gervais, Josiane <josiane.gervais@ottawa.ca>
Sent: Monday, June 15, 2020 8:36 AM
To: Abdelnaby, Ahmed <Ahmed.Abdelnaby@stantec.com>
Cc: Al Hasoo, Mohammed <Mohammed.AlHasoo@stantec.com>
Subject: RE: New Transportation Impact Assessment - 1994 St. Joseph Blvd

Good morning Ahmed,

Can you please confirm that what you are requesting is the following: Can the Notre-Dame St/St-Joseph St intersection be removed from the TIA study scope?

Regarding the transit signal priority and queue jump lanes along Jeanne d'Arc, I've sent out an e-mail to my contact internally and will let you know as soon as I hear back.

Josiane Gervais, P.Eng.

Project Manager, Infrastructure Approvals | GPRJ Approbation des demandes d'infrastructure
Development Review Branch | Dir Examen des projets d'aménagement
City of Ottawa | Ville d'Ottawa
Tel | Tél. : 613-580- 2424 ext. | poste 21765
web | Site Web : www.ottawa.ca

From: Abdelnaby, Ahmed <Ahmed.Abdelnaby@stantec.com>
Sent: June 12, 2020 1:52 PM
To: Giampa, Mike <Mike.Giampa@ottawa.ca>; Gervais, Josiane <josiane.gervais@ottawa.ca>
Cc: Al Hasoo, Mohammed <Mohammed.AlHasoo@stantec.com>
Subject: RE: New Transportation Impact Assessment - 1994 St. Joseph Blvd

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Thank you for the quick response.

Sounds great, have a wonderful weekend!

Ahmed Abdelnaby M.Sc., P.Eng, RSP1.
Project Engineer, Transportation

Direct: 613-724-4405
Cell: 343-999-9252
ahmed.abdelnaby@stantec.com
Stantec
400 - 1331 Clyde Avenue
Ottawa ON K2C 3G4



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From: Giampa, Mike <Mike.Giampa@ottawa.ca>
Sent: Friday, June 12, 2020 1:49 PM
To: Abdelnaby, Ahmed <Ahmed.Abdelnaby@stantec.com>; Gervais, Josiane <josiane.gervais@ottawa.ca>
Cc: Al Hasoo, Mohammed <Mohammed.AlHasoo@stantec.com>
Subject: RE: New Transportation Impact Assessment - 1994 St. Joseph Blvd

Hi Ahmed, this is Josiane's file and she will respond to your inquiry.

Regards,
Mike

From: Abdelnaby, Ahmed <Ahmed.Abdelnaby@stantec.com>
Sent: June 12, 2020 1:47 PM
To: Giampa, Mike <Mike.Giampa@ottawa.ca>
Cc: Al Hasoo, Mohammed <Mohammed.AlHasoo@stantec.com>
Subject: New Transportation Impact Assessment - 1994 St. Joseph Blvd

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Hi Mike,

Hope this email finds you well and safe!

My name is Ahmed Abdelnaby, a transportation engineer with Stantec working on a transportation impact assessment at 1994 St. Joseph Blvd.

I am reaching out to inquire and propose our work approach regarding counts and data collection.

The development is located at 1994 St. Joseph Boulevard nearby one of the busiest roundabouts in the City (St. Joseph Blvd / Jeanne D'Arc Blvd). The development is small in nature (small medical-dental office 735 sq.m) and is not anticipated to generate more than 60 person trips during the peak; but the safety trigger is triggered due to proximity to the roundabout and collision history. Below is a quick figure for context.

Since Module 4.9 is excluded, and following up with traffic volumes, we are able to request available data at Jeanne D'arc Blvd and Grey Nuns intersections at St Joseph Blvd for the purpose of the Forecasting report as shown in the table below.



Intersection	Study Date	Month	Day Of Week	Dur
ST. JOSEPH BLVD @ JEANNE D'ARC BLVD	2015-Dec-17	December	Thursday	
GREY NUNS DR @ ST. JOSEPH BLVD	2019-Jan-17	January	Thursday	

Due to the lack of data on Notre-Dame St and that Module 4.9 is exempt, we are proposing removing the one-way stop controlled intersection at St Joseph Blvd / Notre-Dame St. Furthermore, grow the count data to 2020 volumes (including the 2015 roundabout count). Our intent is to have this data visible in the report for the benefit the study's content related to the safety section and to facilitate data extraction for others who may use this report. Would the removal of Notre-Dame St be acceptable?

Furthermore, we wanted to confirm the timing of the following network improvements. Are any going to be implemented before the years 2026/2027

Project	Description	TMP Network
Jeanne D'Arc Boulevard	Transit signal priority and queue jump lanes between Innes Road and Ottawa Road 174	Affordable
	Transit signal priority and queue jump lanes between the Cumberland Transitway and Innes Road in addition to road widening to provide exclusive bus lanes between Innes Road and Ottawa Road 174	Concept

Looking forward to hearing back,
Thank you.

Ahmed Abdelnaby M.Sc., P.Eng, RSP1.
Project Engineer, Transportation

Direct: 613-724-4405
Cell: 343-999-9252
ahmed.abdelnaby@stantec.com
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Al Hasoo, Mohammed

From: Gervais, Josiane <josiane.gervais@ottawa.ca>
Sent: Monday, June 29, 2020 2:36 PM
To: Al Hasoo, Mohammed
Cc: Abdelnaby, Ahmed
Subject: RE: 1994 St. Joseph Boulevard - Screening and Scoping Report
Attachments: AODA Checklist.docx

Hi Mohammed,

Please find comments below regarding the Scoping report for 1994 St Joseph Blvd.

- Element 2.1.2 - Existing Conditions
 - Differentiate what is existing cycling infrastructure versus what is in the City's Ultimate Cycling Plan.
 - The intersection of Notre Dame St and St-Joseph is stop-controlled on the minor approach. Adjust text and Figure 3.
 - Adjust arrows in Figure 6.
 - Although the data analysis is excluded for the site, please show the turning movements possible at Notre-Dame St in Figure 6, similar to what is shown for the site access, with a simple note saying "data unavailable".
 - Include existing driveways to adjacent developments (both sides of all roads bordering the site) within 200 m of proposed site driveway, indicating the land use associated with the driveway.
- Additional notes:
 - Accessible parking stall should be close to main entrance. Follow AODA legislation for site plan preparation.

Please address the above comments within the next submission and proceed to Step 3: Forecasting.
If you have any questions, please do not hesitate to get in touch with me.

Regards,

Josiane Gervais, P.Eng.

Project Manager, Infrastructure Approvals | GPRJ Approbation des demandes d'infrastructure
Development Review Branch | Dir Examen des projets d'aménagement
City of Ottawa | Ville d'Ottawa
Tel | Tél. : 613-580- 2424 ext. | poste 21765
web | Site Web : www.ottawa.ca

From: Al Hasoo, Mohammed <Mohammed.AlHasoo@stantec.com>
Sent: June 24, 2020 9:19 PM
To: Gervais, Josiane <josiane.gervais@ottawa.ca>
Cc: Abdelnaby, Ahmed <Ahmed.Abdelnaby@stantec.com>
Subject: 1994 St. Joseph Boulevard - Screening and Scoping Report

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Hello Josiane,

Hope this finds you and your family well.

Enclosed is the screening and scoping report for the proposed development at 1994 St. Joseph Boulevard.

As the site has only one access off of St. Joseph Boulevard (85m east of the roundabout at St. Joseph / Jeanne D'Arc), we will be conducting traffic analysis using SIDRA to determine if any turning restrictions should be put in place (due to potential operational issues at the roundabout such as queueing). This will be performed at later stages and discussed in the TIA report.

Please advise us if we can proceed to the Forecasting section of the report, or if you have any comments.

Thank you very much for your review.

Regards,

Mohammed Al Hasoo

Transportation Planning EIT

Direct: 613-725-5566

Fax: 613-722-2799

Mohammed.AHHasoo@stantec.com

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Al Hasoo, Mohammed

From: Gervais, Josiane <josiane.gervais@ottawa.ca>
Sent: Monday, August 10, 2020 2:31 PM
To: Al Hasoo, Mohammed
Cc: Abdelnaby, Ahmed
Subject: RE: Forecasting Report - 1994 St. Joseph Boulevard

Hello Mohammed,

Thank you for your patience due to the delay in getting back to you. Please find comments below regarding the Forecasting Report for 1994 St-Joseph Blvd.

Transportation Engineering Services

- Section 2.1.2.1 Roads and Traffic Control - Grey Nuns Drive is a local cycling route north of Lumberman Way.
- Section 2.1.2.3 Transit - Provide a figure depicting the nearby transit stops.
- Section 2.1.2.5 Traffic Volumes - In the future, contact Jennifer Armstrong to obtain a snapshot of the Long-Range Transportation Model to inform the development of the background growth rate.
- General Comments:
 - Since the trip generation trigger is not met, Modules 4.5-4.9 are not required as part of the TIA Strategy report. The Sidra analysis, however, on the Jeanne d'Arc/St. Joseph roundabout to determine peak time turning restrictions at the site access is supported.
 - In addition, when the trip generation trigger is not met, Module 3.1 is not required and only Modules 3.2 and 3.3 must be completed as part of the Forecasting Report.
 - Ensure that the sidewalk confirms to SC7.1 and is depressed/continuous through the access on St. Joseph.

Traffic Signal Operations

- No comments.

Development Review – Transportation

- No comments.

If the above comments can be incorporated within the next submission, please proceed to Step 4: Strategy. Please submit a digital copy of the Strategy Report and digital files of ICA outputs (Synchro/Sidra/Rodel, if applicable) for circulation.

Regards,

Josiane Gervais, P.Eng.

Project Manager, Infrastructure Approvals | GPRJ Approbation des demandes d'infrastructure
Development Review Branch | Dir Examen des projets d'aménagement
City of Ottawa | Ville d'Ottawa
Tel | Tél. : 613-580- 2424 ext. | poste 21765
web | Site Web : www.ottawa.ca

Please note that I am currently working from home. E-mail is the preferred method to communicate with me. Thank you for your patience and understanding.

From: Al Hasoo, Mohammed <Mohammed.AlHasoo@stantec.com>
Sent: July 22, 2020 9:45 AM
To: Gervais, Josiane <josiane.gervais@ottawa.ca>
Cc: Abdelnaby, Ahmed <Ahmed.Abdelnaby@stantec.com>
Subject: Forecasting Report - 1994 St. Joseph Boulevard

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Good Morning Josiane,

Trust all is well on your end!

Enclosed is the Step 3 TIA – Forecasting report for the development at 1994 St. Joseph Boulevard for your kind review. Please inform us if we can move on ahead to Step 4 – Strategy Report.

On a related note, in determining the site access configuration, we have conducted a SIDRA analysis of the roundabout at the intersection of St. Joseph Boulevard and Jeanne D'Arc Boulevard assuming 2026 Total Future conditions, and have subsequently found that the westbound queues at the roundabout's east leg will extend approximately 400m back during the AM peak period. Since our access will be located approximately 79m east of the roundabout, we are assuming that left turns from the site access will be banned during the AM peak as a result of the long queues. The left turns should not pose any problems during the PM peak though. This is reflected in the traffic distribution section, and it will be discussed in greater detail in the following Strategy Report.

Thank you very much.

Regards,

Mohammed Al Hasoo

Transportation Planning EIT

Direct: 613-725-5566

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Mohammed.AlHasoo@stantec.com

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Appendix C **MULTI-MODAL LEVEL OF SERVICE ASSESSMENTS**



Multi-Modal Level of Service - Segments Form

Consultant	Stantec
Scenario	2020 Existing Conditions
Comments	

Project	1994 St. Joseph Boulevard
Date	26-Aug-20

SEGMENTS		Street A	St. Joseph Boulevard (between the intersection with Jeanne D'Arc Boulevard and the Site Access)		Jeanne D'Arc Boulevard (just south of the roundabout intersection with St. Joseph Boulevard)			
			1	2	3	4	5	
Pedestrian	Sidewalk Width	E	1.5 m	≥ 2 m				
	Boulevard Width		> 2 m	> 2 m				
	Avg Daily Curb Lane Traffic Volume		> 3000	> 3000				
	Operating Speed		> 50 to 60 km/h	> 60 km/h				
	On-Street Parking		no	no				
	Exposure to Traffic PLoS		E	D	-	-	-	
	Level of Service		E	D	-	-	-	
Bicycle	Type of Cycling Facility	F	Mixed Traffic	Mixed Traffic				
	Number of Travel Lanes		4-5 lanes total	4-5 lanes total				
	Operating Speed		≥ 50 to 60 km/h	≥ 60 km/h				
			# of Lanes & Operating Speed LoS	E	F	-	-	-
	Bike Lane (+ Parking Lane) Width							
			Bike Lane Width LoS	-	-	-	-	-
	Bike Lane Blockages							
			Blockage LoS	-	-	-	-	-
	Level of Service		E	F	-	-	-	
Transit	Facility Type	D	Mixed Traffic	Mixed Traffic				
	Friction or Ratio Transit:Posted Speed		Vt/Vp ≥ 0.8	Vt/Vp ≥ 0.8				
			Level of Service	D	D	-	-	-
Truck	Truck Lane Width	A	≤ 3.5 m	> 3.7 m				
	Travel Lanes per Direction		> 1	> 1				
			Level of Service	A	A	-	-	-

Appendix D **SIDRA ANALYSIS & SYNCHRO SITE ACCESS ANALYSIS**



MOVEMENT SUMMARY

 Site: 101 [St. Joseph Blvd @ Jeanne D'Arc Blvd - AM]

St. Joseph Blvd @ Jeanne D'Arc Blvd - 2026 AM

Site Category: (None)

Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Jeanne D'Arc Boulevard												
1	L2	1315	0.3	1.454	219.3	LOS F	144.9	1017.2	1.00	4.93	10.88	13.6
2	T1	920	1.3	1.170	91.7	LOS F	58.9	417.5	1.00	2.87	5.83	24.4
3	R2	14	12.5	1.170	92.4	LOS F	58.9	417.5	1.00	2.87	5.83	24.1
Approach		2249	0.8	1.454	166.3	LOS F	144.9	1017.2	1.00	4.08	8.78	16.6
East: St. Joseph Boulevard												
4	L2	24	20.0	1.361	194.7	LOS F	41.7	298.3	1.00	2.63	6.28	14.9
5	T1	921	1.3	1.361	186.0	LOS F	57.6	407.8	1.00	2.90	6.87	15.1
6	R2	323	2.5	0.495	8.8	LOS A	3.6	25.9	0.89	0.98	1.01	52.1
Approach		1267	2.0	1.361	141.0	LOS F	57.6	407.8	0.97	2.40	5.37	18.3
North: Jeanne D'Arc Boulevard												
7	L2	126	11.0	0.855	43.8	LOS D	7.6	56.8	0.96	1.31	2.01	37.0
8	T1	214	5.0	0.855	36.8	LOS D	8.5	60.2	0.97	1.32	2.03	37.8
9	R2	236	0.0	0.855	34.5	LOS C	8.5	60.2	0.98	1.33	2.06	38.2
Approach		576	4.3	0.855	37.4	LOS D	8.5	60.2	0.97	1.32	2.04	37.8
West: St. Joseph Boulevard												
10	L2	177	3.9	0.187	10.4	LOS B	0.9	6.8	0.50	0.70	0.50	52.3
11	T1	213	3.9	0.187	5.0	LOS A	1.0	7.0	0.49	0.50	0.49	55.1
12	R2	134	6.0	0.114	4.5	LOS A	0.5	4.0	0.38	0.52	0.38	54.5
Approach		524	4.4	0.187	6.7	LOS A	1.0	7.0	0.47	0.57	0.47	54.0
All Vehicles		4616	2.0	1.454	125.2	LOS F	144.9	1017.2	0.93	2.88	6.06	20.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: C:\Users\malhasoo\Desktop\St. Joseph Roundabout Analysis.sip8

MOVEMENT SUMMARY

 Site: 101 [St. Joseph Blvd @ Jeanne D'Arc Blvd - PM]

St. Joseph Blvd @ Jeanne D'Arc Blvd - 2026 PM

Site Category: (None)

Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Jeanne D'Arc Boulevard												
1	L2	211	2.0	0.963	45.6	LOS D	10.5	75.1	0.99	1.45	2.47	36.1
2	T1	436	2.1	0.963	38.5	LOS D	11.4	81.2	0.99	1.46	2.49	37.4
3	R2	62	4.3	0.963	38.0	LOS D	11.4	81.2	0.99	1.46	2.50	37.1
Approach		709	2.3	0.963	40.6	LOS D	11.4	81.2	0.99	1.45	2.48	37.0
East: St. Joseph Boulevard												
4	L2	126	0.0	0.289	11.9	LOS B	1.4	10.2	0.69	0.81	0.69	52.8
5	T1	327	2.0	0.289	6.3	LOS A	1.5	10.9	0.69	0.65	0.69	53.8
6	R2	345	0.4	0.348	5.6	LOS A	1.8	12.6	0.62	0.67	0.62	53.8
Approach		798	1.0	0.348	6.9	LOS A	1.8	12.6	0.66	0.69	0.66	53.7
North: Jeanne D'Arc Boulevard												
7	L2	299	0.9	0.649	14.7	LOS B	4.8	34.2	0.78	0.99	1.01	51.3
8	T1	604	2.0	0.649	9.4	LOS A	4.8	34.2	0.78	0.96	1.01	52.5
9	R2	98	1.4	0.649	9.5	LOS A	4.8	34.4	0.78	0.95	1.01	51.7
Approach		1001	1.6	0.649	11.0	LOS B	4.8	34.4	0.78	0.97	1.01	52.1
West: St. Joseph Boulevard												
10	L2	187	0.0	0.890	24.3	LOS C	10.5	73.5	0.97	1.30	1.90	46.1
11	T1	1091	0.6	0.890	17.6	LOS B	11.5	80.7	0.98	1.30	1.87	47.5
12	R2	921	0.6	0.973	22.2	LOS C	20.0	141.0	1.00	1.54	2.40	43.8
Approach		2199	0.6	0.973	20.1	LOS C	20.0	141.0	0.99	1.40	2.10	45.8
All Vehicles		4707	1.1	0.973	19.0	LOS B	20.0	141.0	0.89	1.20	1.68	46.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: C:\Users\malhasoo\Desktop\St. Joseph Roundabout Analysis.sip8

HCM Unsignalized Intersection Capacity Analysis
 3: Site Access (2026 AM) & St. Joseph Blvd (2026 AM)

12/17/2020



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	325	10	2	1162	0	4
Future Volume (Veh/h)	325	10	2	1162	0	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	325	10	2	1162	0	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			335		915	168
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			335		915	168
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1221		272	847
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	217	118	389	775	4	
Volume Left	0	0	2	0	0	
Volume Right	0	10	0	0	4	
cSH	1700	1700	1221	1700	847	
Volume to Capacity	0.13	0.07	0.00	0.46	0.00	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.1	
Control Delay (s)	0.0	0.0	0.1	0.0	9.3	
Lane LOS			A			A
Approach Delay (s)	0.0		0.0		9.3	
Approach LOS						A
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			43.5%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 7: Site Access (2026 PM) & St. Joseph Blvd (2026 PM)

12/17/2020



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	1336	4	1	734	12	3
Future Volume (Veh/h)	1336	4	1	734	12	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1336	4	1	734	12	3
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			1340		1707	670
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1340		1707	670
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		86	99
cM capacity (veh/h)			510		84	404
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	891	449	246	489	15	
Volume Left	0	0	1	0	12	
Volume Right	0	4	0	0	3	
cSH	1700	1700	510	1700	99	
Volume to Capacity	0.52	0.26	0.00	0.29	0.15	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	3.9	
Control Delay (s)	0.0	0.0	0.1	0.0	47.5	
Lane LOS			A			E
Approach Delay (s)	0.0	0.0				47.5
Approach LOS					E	
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			47.1%	ICU Level of Service	A	
Analysis Period (min)			15			

Appendix E **TDM SUPPORTIVE DEVELOPMENT DESIGN AND INFRASTRUCTURE CHECKLIST**



TDM-Supportive Development Design and Infrastructure Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

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

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

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

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
2. WALKING & CYCLING: END-OF-TRIP FACILITIES		
2.1 Bicycle parking		
REQUIRED	2.1.1 Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (see <i>Official Plan policy 4.3.6</i>)	<input checked="" type="checkbox"/>
REQUIRED	2.1.2 Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas (see <i>Zoning By-law Section 111</i>)	<input checked="" type="checkbox"/>
REQUIRED	2.1.3 Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored (see <i>Zoning By-law Section 111</i>)	<input checked="" type="checkbox"/>
BASIC	2.1.4 Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	<input type="checkbox"/>
BETTER	2.1.5 Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	<input type="checkbox"/>
2.2 Secure bicycle parking		
REQUIRED	2.2.1 Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers (see <i>Zoning By-law Section 111</i>)	<input type="checkbox"/> N/A
BETTER	2.2.2 Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	<input type="checkbox"/>
2.3 Shower & change facilities		
BASIC	2.3.1 Provide shower and change facilities for the use of active commuters	<input type="checkbox"/>
BETTER	2.3.2 In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	<input type="checkbox"/>
2.4 Bicycle repair station		
BETTER	2.4.1 Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
3. TRANSIT		
3.1 Customer amenities		
BASIC	3.1.1 Provide shelters, lighting and benches at any on-site transit stops	<input type="checkbox"/>
BASIC	3.1.2 Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	<input type="checkbox"/>
BETTER	3.1.3 Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	<input type="checkbox"/>
4. RIDESHARING		
4.1 Pick-up & drop-off facilities		
BASIC	4.1.1 Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	<input type="checkbox"/>
4.2 Carpool parking		
BASIC	4.2.1 Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	<input type="checkbox"/>
BETTER	4.2.2 At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	<input type="checkbox"/>
5. CARSHARING & BIKESHARING		
5.1 Carshare parking spaces		
BETTER	5.1.1 Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces (<i>see Zoning By-law Section 94</i>)	<input type="checkbox"/>
5.2 Bikeshare station location		
BETTER	5.2.1 Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
6. PARKING		
6.1 Number of parking spaces		
REQUIRED	6.1.1 Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	<input checked="" type="checkbox"/>
BASIC	6.1.2 Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	<input type="checkbox"/>
BASIC	6.1.3 Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly (<i>see Zoning By-law Section 104</i>)	<input type="checkbox"/>
BETTER	6.1.4 Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking (<i>see Zoning By-law Section 111</i>)	<input type="checkbox"/>
6.2 Separate long-term & short-term parking areas		
BETTER	6.2.1 Separate short-term and long-term parking areas using signage or physical barriers, to permit access controls and simplify enforcement (i.e. to discourage employees from parking in visitor spaces, and vice versa)	<input type="checkbox"/>
7. OTHER		
7.1 On-site amenities to minimize off-site trips		
BETTER	7.1.1 Provide on-site amenities to minimize mid-day or mid-commute errands	<input type="checkbox"/>