

APPENDIX 9. INVESTIGATIONS – TRANSPORT

MLM/21-0117

23 January 2023

Mr Michael Osborn
Future Urban
Level 1
74 Pirie Street
ADELAIDE SA 5000



Traffic • Parking • Transport

Unit 6, 224 Glen Osmond Road
FULLARTON SA 5063

T: +61 8 8338 8888

F: +61 8 8338 8880

E: mfya@mfy.com.au

W: mfy.com.au

MFY Pty Ltd

ABN 79 102 630 759

Dear Michael,

PROPOSED BULKY GOODS DEVELOPMENT, 550 MAIN NORTH ROAD, EVANSTON

We refer to your request to provide traffic engineering advice in relation to safe and convenient access requirements which should be provided for a site at 550 Main North Road, Evanston (“the subject site”). The site is the subject of a Code Amendment assessment which considers rezoning the land to Employment.

The subject site has frontages to Main North Road and Sheriff Street, with access currently provided via two crossovers on Main North Road and one crossover on Sheriff Street. In considering the potential access for the site, we have liaised with the Department for Infrastructure and Transport (DIT) and reviewed the potential highest and best use of the land, namely a bulky goods development.

Main North Road is an arterial road within the care and control of the Commissioner of Highways. It has an annual average daily traffic volume (AADT) in the order of 24,100 vehicles. Sheriff Street is within the care and control of Council and primarily services residential dwellings.

Main North Road and Sheriff Street form an intersection with First Street adjacent the site. This intersection is partially closed and has a number of significant conflict points as a result of its design. The intersection does not meet appropriate Australian Standard or Austroads design criteria but nonetheless has been constructed to permit southbound traffic movements to Main North Road from Sheriff Street and First Street.

When considering any development, it is important to identify how safe and convenient access can be provided for the particular land use. The key to providing a safe and convenient access solution for a development relies on the following:

- sufficient capacity to accommodate the forecast traffic volumes;
- adequate distribution to the road network;



- the adjacent environment as it relates to traffic impact and road safety; and
- consideration as to the type of traffic and where it is desirable to limit the interaction between commercial and domestic traffic movements.

In relation to the subject site, a review of the existing situation identified the following constraints:

- the road network north of Sheriff Street consists of residential streets. There is a risk that drivers generated by the site could use this network to access Fifth Street which intersects with Horrocks Highway at a roundabout;
- the intersection of Main North Road and Sheriff Street is substandard and would not support a substantial increase in traffic movements. There would be a requirement to upgrade this intersection should additional traffic be generated on Sheriff Street;
- there is inadequate capacity at the existing Main North Road access to provide for right turn movements from the site. There would therefore be considerable delays should drivers wish to turn right from the site (and an increased crash risk); and
- the difficulty of the right turn exit would result in the majority of drivers turning left from the site and either execute a U-turn or navigate through residential streets if they wish to travel north as there is no convenient arterial road route.

The following advice was previously provided following preliminary investigations associated with access for a bulky goods development on the site:

- access should not be provided to Sheriff Street. While there could potentially be an upgrade to the Sheriff Street/Main North Road intersection, there would be an increase in traffic movements on this residential street (and potentially on streets to the north albeit that would depend on the proposed intersection treatment);
- access should be provided to and from Main North Road. Such an access should have adequate capacity and be designed to provide for right turn movements from the site and therefore enable traffic associated with the development to use the arterial road en-route to and from the site and not circulate on residential streets or execute undesirable traffic movements on Main North Road; and
- commercial vehicle access should be to and from Main North Road to remove the potential for such vehicles to impact on residential amenity to the north. The access for commercial vehicles may be limited to left-in/left-out movements.

Further to the above, detailed investigations have been completed to assess the requirements to support access for the development of a multi-tenancy bulky goods facility with a floor area of approximately 18,000 m².

In developing the model, the following traffic generation rates identified in the *Guide for Traffic Generating Developments Technical Direction (TDT 2013/04a)* have been adopted:

- larger tenancy: two trips per 100 m² in the am peak hour, 2.85 trips per 100 m² in the pm peak hour and 5.6 trips per 100 m² on a Saturday; and
- smaller tenancies: one trip per 100 m² in the am peak hour, 1.5 trips per 100 m² in the pm peak hour and 3.9 trips per 100 m² on a Saturday.

Based on the above rates, it is anticipated that the development could generate 340 trips in the am peak hour, 495 trips in the pm peak hour and 975 trips on a Saturday.

Given the anticipated catchment for the development, the following distribution has been adopted for the assessment:

- 50% of traffic will originate to and from the north;
- 50% of traffic will originate to and from the south;
- 60% of traffic will enter and 40% of traffic will leave the site in the am peak hour;
- 45% of traffic will enter and 55% of traffic will leave the site in the pm peak hour; and
- 50% of traffic will enter and 50% of traffic will leave the site in the Saturday peak hour.

The analysis identified that access for the site will need to be controlled to safely and effectively cater for the forecast volumes associated with a bulky goods development. In order to establish the ability for an additional traffic signal to be accommodated on Main North Road, detailed traffic analysis to confirm the potential impact and how the additional traffic can be managed is required. This analysis includes the development of a verified base case to establish the modelled scenario at intersections on the existing road network plus models of the forecast situation when the development is progressed.

Models of the verified base were accepted by DIT in June 2022 and are attached. Subsequent project case models have been accepted by DIT which are also attached. The attached modelling report was prepared which summarises the modelled performance output.

In parallel with the impact assessment enabled by the development of the models, DIT provided the following advice in respect to the design and location of the signals.

- *The Department has a strong preference for signals to be located at Sheriff Street rather than as shown. This would provide better signal spacing and improved connectivity to the local network. It would relieve pressure at the Main North Road/Ames Drive intersection and also enable the Main North Road/Sheriff Street/First Street intersection to be redesigned to address the existing design issues. It is understood that Council has reservations about signals at Sheriff Street however from a network operation perspective, this is a better location and has a broader community benefit.*
- *It should be noted that this section of Main North Road has been identified for future widening, including possible duplication. This planning is only in its initial stages, but any planning for works will need to consider this.*

- *In the event that the signals cannot be provided at Sheriff Street, the location of traffic signal will need to be visible for traffic arriving around the bend on Main North Road and traffic exiting from Sheriff Street. It is recommended that the proposed traffic signals be located further south. The proposed traffic signals will need to achieve the recommended warning sight distant (aiming distant) as per DIT Operational Instruction for Traffic Signal Faces.*

It will be a requirement that both DIT and Council support a proposed access solution for the site. The preferred solution for these agencies can differ in that the priority for DIT is to limit access to its roads whereas Council may be concerned that its residents are not significantly impacted by a development.

While DIT has identified its preference based on an improved traffic engineering outcome, the commentary clearly recognises that there may be other factors to consider when confirming the signal location. The potential (or perceived) impact on adjacent residents was anticipated to be of concern to Council. This was reinforced at a meeting with Council officers who confirmed that the signalisation of Sheriff Street and Main North Road was not supported.

In my view, the most important aspect when considering access is safety, and when reviewing access for the site either outcome can deliver a safe solution. Given the concern from Council and the community in respect to the location of a traffic signal, the analysis has been progressed on the basis that a signalised access will be developed to provide direct access for the site and there will be no access to Sheriff Street. This will not impact the analysis of the potential impact on the broader road network as the forecast increase in volumes will be equitable regardless of the signal location.

A review of the earlier concept design solution for the site has therefore been completed such that it responds to the requirements of DIT for the scenario where access is provided directly to the site. In particular, consideration has been given to providing adequate separation to Sheriff Street and ensuring approach sight distance criteria are met.

Figure 1 illustrates a concept plan showing a revised location for the signalised access.



Figure 1: Potential signalised intersection

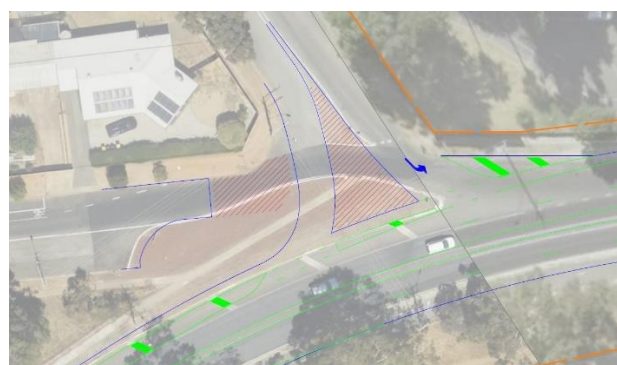
The above concept identifies widening of Main North Road to provide for the additional lanes on approach to the signal. In order to minimise any impact on the trees, the proposed pavement will not extend beyond the existing sealed area (inclusive of the existing shared path). There will be a need to relocate to shared path as a result of the widening and it is anticipated that this is best achieved by diverting the path to the southern side of the trees. This section of land is within the existing road reserve albeit a portion of the road reserve would appear to be south of the racecourse fence.

The signalised access will be located to meet approach safety criteria identified in Austroads, including adequate sight distance, appropriate separation to Sherriff Street and to facilitate merging of dual lanes to match to the existing carriageway. Further, it would provide for the future duplication of Main North Road as required by DIT.

The concept plan also demonstrates that the installation of the signal would not compromise the existing operation or design of the Sherriff Street/Main North Road intersection. Further, the development of the subject land so that it does not have any access to Sherriff Street will ensure that there is no increase in turning movements at the intersection. While there will be some growth in traffic on Main North Road, this would be consistent with current growth forecasts and not specific to development on the subject land. In reality, the closure of the existing access to Sherriff Street will result in a reduction in turning movements and therefore an increase in the capacity of the road at this location. Accordingly, the proposed Code Amendment will not result in the requirement for any modification to the existing intersection configuration.

Notwithstanding that the proposal would not impact the existing Sherriff Street/Main North Road intersection, Council has indicated a potential desire for this intersection to be modified to respond to existing concerns raised by the community. The existing configuration was adopted in response a design review which occurred following a fatal crash at this location but DIT has indicated that while not related to this CA assessment, it would consider design options if they were to be developed by Council.

Accordingly, consideration has been given to options which could be considered to ensure that the signalised intersection would not compromise the ability for Council to complete such works. Figure 2 illustrates five options for the intersection which could be considered by Council and the community.



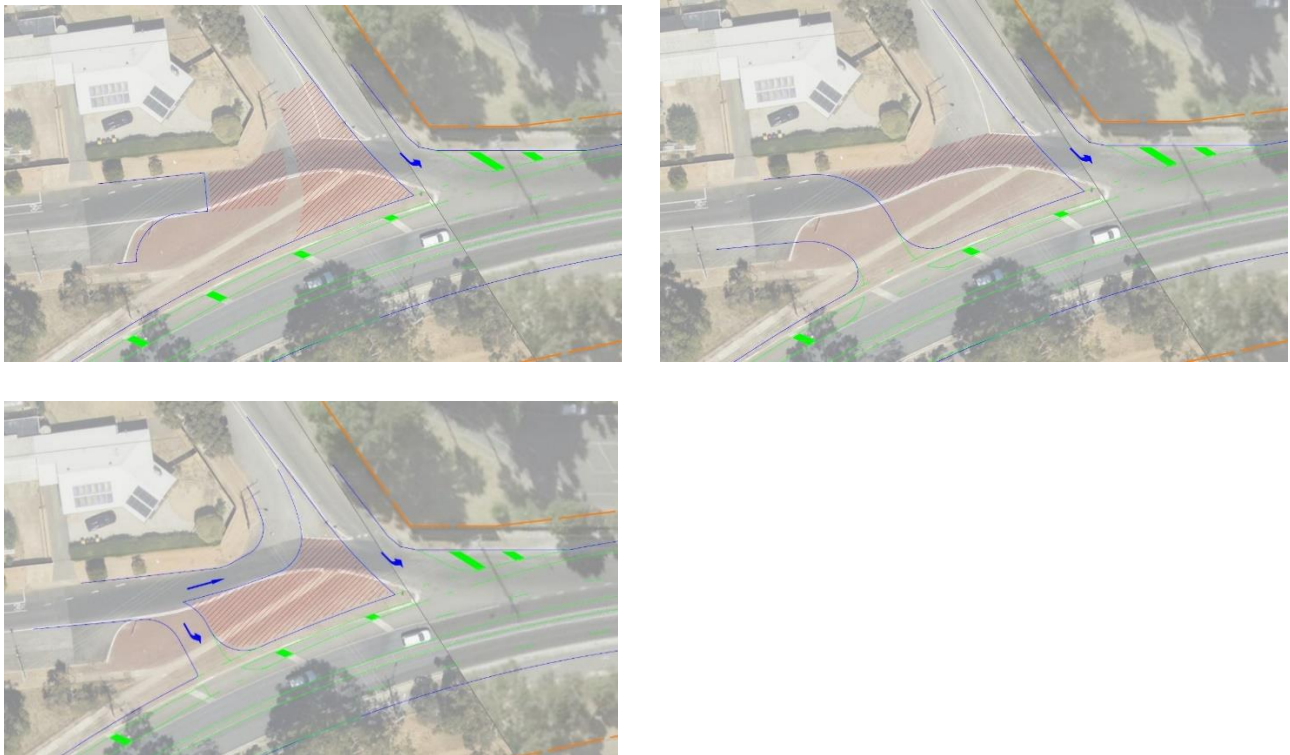


Figure 2: Potential Sherriff Street/Main North Road upgrade options

The key considerations for the access solution which has been developed are traffic safety both on the site and on the adjacent road network and ensuring negligible impact on the adjacent residential area as a result of the development. The proposed solution is not preferred by DIT but this agency has provided design criteria for the direct access solution should it be progressed. Given the anticipated concern of the community and the preference identified by Council, it is anticipated this will be the case. The modelling associated with the introduction of an additional signal on Main North Road has been accepted by DIT. Further, the current concept design responds to the DIT design criteria for this option and confirms that a safe and convenient solution can be achieved.

Potential options for an upgrade to the Sherriff Street/Main North Road intersection which have been included in this report are not related to the Code Amendment assessment and are a matter for review by Council.

Yours sincerely,
MFY PTY LTD



MELISSA MELLE
Director



EMMETT PROPERTY

**EVANSTON CODE AMENDMENT
550 – 560 MAIN NORTH ROAD, EVANSTON**

MODELLING REPORT

December 2022

21-0117

Traffic • Parking • Transport

Unit 6, 224 Glen Osmond Road
FULLARTON SA 5063

T: +61 8 8338 8888

F: +61 8 8338 8880

E: mfya@mfy.com.au

W: mfy.com.au

MFY Pty Ltd

ABN 79 102 630 759



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1.0 INTRODUCTION

550 – 560 Main North Road is the subject of a Code Amendment assessment which considers rezoning the land to Employment. The rezoning will enable the development of a bulky goods facility.

SIDRA modelling has been undertaken to inform the traffic implications associated with the proposed rezoning. Modelling has been completed for the am, pm and weekend peak hours with consideration to two distribution scenarios.

This report details the traffic modelling and consolidates the modelling summaries prepared with the submission of the models. It includes a summary of the forecast traffic generation, which has considered the traffic generated by the existing development on the site and the potential relocation of the Bunnings facility on the corner of Tulloch Road and Main North Road to this site.

The modelling has been undertaken in accordance with the Department for Infrastructure and Transport's (DIT) Traffic Modelling Guidelines: SIDRA Intersection Version 2.0.



2.0 SUBJECT SITE

The subject site is 550 – 560 Main North Road. It includes a plant nursery with an approximate site area of 10,000 m², a residential dwelling to the north east of the nursery and Focus Day development to the south of the plant nursery.

The subject site fronts Main North Road and Sheriff Street.

Main North Road is a major arterial road in the care and control of the Commissioner of Highways. Sheriff Street is in the care and control of Gawler Council.

Main North Road and Sheriff Street form an intersection adjacent to the subject site. This intersection permits only left turn movements from Sheriff Street to Main North Road.

3.0 PROPOSED CODE AMENDMENT

The proposed Code Amendment is to rezone the land to Employment to enable the development of a bulky goods facility with multiple tenancies. It is envisaged that the developments on the site could include the following:

- a hardware style development with a total floor area of 16,000 m²; and
- smaller bulky goods tenancies totalling 2,000 m².

The rezoned land will be facilitated with a single access point on Main North Road. Preliminary investigations have identified that signalisation of the access will be the safest and most efficient treatment. The proposal will close the existing access points on Sheriff Street.

Key changes to adjacent developments will include the following:

- removal of existing development on-site; and
- relocation of Bunnings facility on the corner of Main North Road and Tulloch Road to the subject site. The existing Bunnings development will be repurposed to a bulky goods tenancy.

4.0 TRAFFIC ASSESSMENT

The traffic assessment undertaken to inform the Code Amendment includes a review of the following intersections:

- proposed access on Main North Road;
- Main North Road/Tulloch Road/Morrow Road intersection; and
- Main North Road/Potts Road/Para Road intersection.

Figure 1 identifies the study area.



Figure 1: Study Area

4.1 BASE CASE CONDITIONS

The existing conditions (i.e. Base Case) for the road network has been determined with the following data:

- Manual Turning Count (MTC) dated 03 March 2021; and
- SCATS data for TS569 from 03 May 2021 to 09 May 2021.

4.2 TRAFFIC GENERATION

Table 1 identifies the traffic generation rate adopted for each land use for the am, pm and weekend peak hour. The pm and weekend peak hour rates are based on traffic generation rates identified in the *Guide for Traffic Generating Developments Technical Direction (TDT 2013/04a)*.

Table 3: Traffic generation rates

Use	am peak hour	pm peak hour	Saturday peak hour
Large tenancy	2.0 trips per 100 m ²	2.85 trips per 100 m ²	5.6 trips per 100 m ²
Smaller tenancies	1.0 trips per 100 m ²	1.5 trips per 100 m ²	3.9 trips per 100 m ²

Further to the traffic generation rates, the following trip sharing is anticipated for a development of this nature:

- 10% of the traffic generated by the smaller tenancies will be shared trips with the larger tenancy; and
- 10% of the traffic generated by the development will be passing trade (i.e. traffic already on the road network). This is based on the traffic data presented in *TDT 2013/04a*.

Accordingly, the proposal is forecast to generate the following traffic during the peak hours:

- 340 trips during the am peak hour;
- 485 trips during the pm peak hour; and
- 965 trips during the Saturday peak hour.

4.3 OTHER DEVELOPMENTS

Based on the traffic generation rate in the *Guide for Traffic Generating Developments*, the plant nursery is forecast to generate approximately 135 trips in the weekend peak hour. The removal of this facility will result in a reduction of 135 trips during the Saturday peak hour. It will generate minimal traffic in the am and pm peak hours.

Other developments on-site are not considered to generate any appreciable traffic on the road network during the peak hours.

Additionally, the proposed repurposing of the Bunnings facility to a bulky goods facility will result in the following reductions in traffic volume on the road network:

- 65 trips in the am peak hour;
- 85 trips in the pm peak hour; and

- 110 trips in the weekend peak hour.

4.4 TRAFFIC DISTRIBUTION

A review of the Saturday peak hour volumes turning into Morrow Avenue which provides access to a Bunnings facility and a Coles facility, identify a distribution of 45% to/from the north and 55% to/from the south. This would be more reflective of the development conditions rather than the commuter peak hour turning movements.

Having regard for future adjacent residential developments in Gawler East, Evanston Gardens and Evanston Park a distribution of 50% to/from the north and south has been adopted for the analysis.

In addition, consideration has been given to a sensitivity analysis of 70% to/from the north and 30% to/from the south as requested by the Department for Infrastructure and Transport.

Accordingly, the following distribution scenarios have been adopted:

- Project Case: 50% to/from the north and 50% to/from the south; and
- Sensitivity Analysis: 70% to/from the north and 30% to/from the south.

Traffic occurring to and from the south will occur via the Main North Road/Potts Road/Para Road and Main North Road/Morrow Avenue/Tulloch Road intersections. All traffic at the Main North Road/Morrow Avenue/Tulloch Road intersection will occur via the Main North Road/Potts Road/Parra Road intersection and at this intersection the traffic is anticipated to be distributed at these signals as identified below:

- 70% will be to and from the south;
- 10% will be to and from the east on Potts Road; and
- 30% will be to and from the west on Para Road.

5.0 SIDRA MODELLING

SIDRA modelling was undertaken for the three signalised intersections. The following sections summarise the modelling process and the key results. Detailed results of the modelling are provided in Appendix A.

5.1 PROPOSED MAIN NORTH ROAD ACCESS

5.1.1 LAYOUT

The layout has been determined by the modelling exercise to ensure that the proposed intersection will operate within capacity and will accommodate the forecast 95th-percentile queues. Figure 2 identifies a concept design of the proposed access.

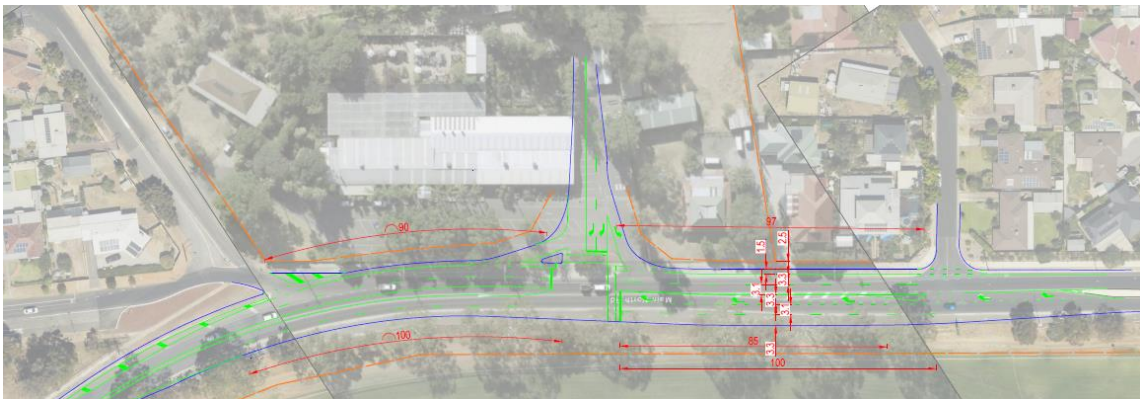


Figure 2: Concept design of the proposed access

5.1.2 VOLUMES

Through volumes have been based on the base case traffic volumes identified in the Main North Road/Tulloch Road/Morrow Avenue intersection and have accounted for the reduction due to changes to existing developments.

5.1.3 HEAVY VEHICLE CALIBRATION

The following heavy vehicle calibration has been adopted in accordance with the base case models for the downstream intersection:

- heavy vehicles: 14 m queue space and 12 m vehicle length;
- articulated vehicles: 21 m queue space and 19 m vehicle length.

5.1.4 PHASING

A trailing phasing operation has been adopted for the proposed signal as shown in Figure 3.

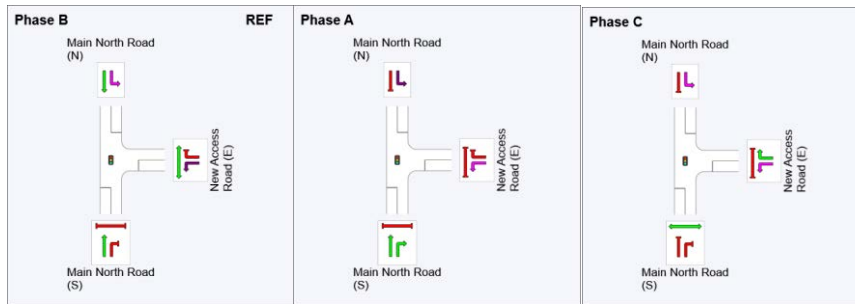


Figure 3: Phasing cycle

The following User Given Cycle Time based on the development scenario in the Main North Road/Tulloch Road/Morrow Avenue intersection model has been selected for each peak period:

- Am peak hour: 100 seconds for both scenarios;
- Pm peak hour: 100 seconds for both scenarios; and
- Saturday peak hour: 92 seconds for both scenarios.

The preliminary access design identified that the phasing operation would require four seconds of amber time and two seconds of all red time in accordance with the Amber-Red template as identified in the table below.

Table 1: Amber-Red template for the new signal

Approach		Amb (sec)	WIDTH (Mtrs)	Min Grn (sec)	ECO (sec)	Red (sec)	Intergreen (sec)		Transport Class	Minimum Required Green + Intergreen
Phase	Design Speed (km/h)									
A	60	4	22	6		2.0	6.0	AT = 6	1	12
B	60	4	17	2		1.5	5.5	BT = 5	1	7.5
C	60	4	26	7		2.0	6.0	CT = 6	1	12.5

5.1.5 BASIC SATURATION FLOW

Basic saturation flow for each through lane on Main North Road is based on the values applied in the modelling of the downstream intersections. Basic saturation flow for the access lanes have been nominated as 1650 tcu/h based on modelling of signalised access for similar developments.

5.1.6 LANE DISTRIBUTION

It is anticipated that the lane distribution within the site will be equal between the two right turn lanes.

5.1.7 RESULTS

The modelling identifies the following key performance outcomes:

- Project Case Saturday peak hour presents the worst-case scenario. The intersection will operate at a DOS of 0.76 during this period
- the 95th-percentile queue in the right turn lane will be 82 m which will be accommodated within the available storage;
- the 95th-percentile southbound through queue on Main North Road will be 174 m. The queue will not block any access points on Main North Road; and
- the intersection will operate at a Level of Service B.

5.2 MAIN NORTH ROAD/TULLOCH ROAD/POTTS ROAD

5.2.1 SITE OBSERVATION

Site assessment was undertaken on Thursday, 02 September 2021 during the am and pm peak hours. The following points summarise the key observations at the intersection:

- Main North Road (N)
 - maximum through queue was six vehicles in the am peak and nine vehicles in the pm peak; and
 - the right turn queue was within storage at all times.
- Morrow Avenue (E)
 - the left turn queue was one vehicle in the am and pm peak hours.
- Main North Road (S)
 - maximum through queue was four vehicles in the am peak and three vehicles in the pm peak; and
 - the left turn queue was within storage at all times.
- Tulloch Road (W)
 - maximum through/right turn queue extended to approximately 70 m in the am peak hour and 55 m in the pm peak.

5.2.2 BASE CASE MODEL

Base Case models were developed in accordance with the SCATS information including the following:

- phasing operation;
- pedestrian timings and actuations; and
- basic saturation flows for each lane.

The model identifies that the intersection operates at a DOS of 0.53 in the am, 0.6 pm peak, and 0.76 in the Saturday peak hours.

The reported 95th-percentile queues have been used to validate the models and the queues generally match the on-site observations with the exception of the southern approach of Main North Road where the observed through queue was significantly shorter than the reported 95th-percentile through queue in the model for the am and pm peak hours. This is likely due to the linking with the upstream signal and/or the platooning effect.

5.2.3 DEVELOPMENT SCENARIOS

No modifications have been done to the phasing operation and these are consistent with the base case models.

Modelling of the Main North Road/Para Road/Potts Road intersection has identified that the queue from the Main North Road northern approach will extend into the kerbside lane in the pm and Saturday peak hours. To account for this, the following Probability Blockage % has been adopted as capacity reduction for the respective scenarios:

- Project Case capacity reduction: -16.5% in the pm peak hour and 19.0% in the Saturday peak hour; and
- Sensitivity Analysis capacity reduction: -8.6% capacity reduction in the pm peak hour and -10.8% in the Saturday peak hour.

The modelling of the intersection identifies the following key outcomes:

- the Project Case Saturday peak hour presents the worst-case scenario for the intersection. The intersection will have a DOS of 0.82 during this period;
- the right turn queue on the Main North Road northern approach will be within the right turn lane; and
- the intersection will operate with a Level of Service (LOS) B.

5.3 MAIN NORTH ROAD/POTTS ROAD/PARA ROAD

5.3.1 SITE OBSERVATION

Site assessment was undertaken on Thursday, 02 September 2021 during the am and pm peak hours. The following points summarise the key observations at the intersection:

- Main North Road (N)
 - a significant portion of vehicles arrive during green phase in the am peak;

- through queue extended to approximately 60 m in the am peak and 125 m in the pm peak; and
- right turn queue was within the available storage at all times.
- Potts Road (E)
 - the left turn queue exceeded storage on a number of occasions in the am peak hour with a maximum queue of ten vehicles observed;
 - the maximum left turn queue in the pm peak hour was six vehicles; and
 - maximum queue in the through/right lane was seven vehicles in the am peak hour and five vehicles in the pm peak hour.
- Main North Road (S)
 - through queue extended to approximately 120 m in the am peak and 150 m in the pm peak; and
 - the right turn queue was within storage at all times.
- Para Road (W)

the left turn queue exceeded storage on a number of occasions in the am and pm peak hours. Maximum queue of 11 vehicles in the am peak and ten vehicles in the pm peak.

5.3.2 BASE CASE MODEL

Base Case models were developed in accordance with the SCATS information including the following:

- phasing operation;
- pedestrian timings and actuations;
- lane utilisation; and
- basic saturation flows for each lane.

The phasing for the am and pm peak hours was set to User Given Cycle Time. The phasing for Saturday was retained as User Given Phase Times.

The model identifies that the intersection operates at a DOS of 0.78 in the am, 0.75 pm and 0.83 for the Saturday peak hours.

The reported 95th-percentile queues have been used to validate the models and the queues generally match the on-site observations.

It is noted that the 95th-percentile queues on the northern approach of Main North Road is greater in the model than that observed. This is likely due to the platooning effect from the upstream intersection.

5.3.3 DEVELOPMENT SCENARIOS

The Development Scenario does not include any changes to parameters in the Base Case model.

The modelling of the intersection identifies the following key outcomes:

- the project case pm and Saturday peak hours are the worst-case scenario. The degree of saturation (DOS) of the intersection in this scenario is 0.89;
- the southbound queue in the kerbside lane on Main North Road will extend to the Tulloch Road intersection during the pm peak hour and Saturday peak hour. It is noted that this queue was greater by approximately 60 m when compared to site observations in the base case modelling exercise, and therefore, it is anticipated that the forecast queue will not exceed the available storage. Notwithstanding, the forecast probability of blockage has been translated to the Main North Road/Tulloch Road intersection; and
- the intersection will operate with a Level of Service (LOS) C.

6.0 SUMMARY

The assessment has identified that a signalised access to the proposed bulky goods development on Main North Road will not compromise the existing operation of the road network. In particular, it will be accommodated without impacting on adjacent intersections.

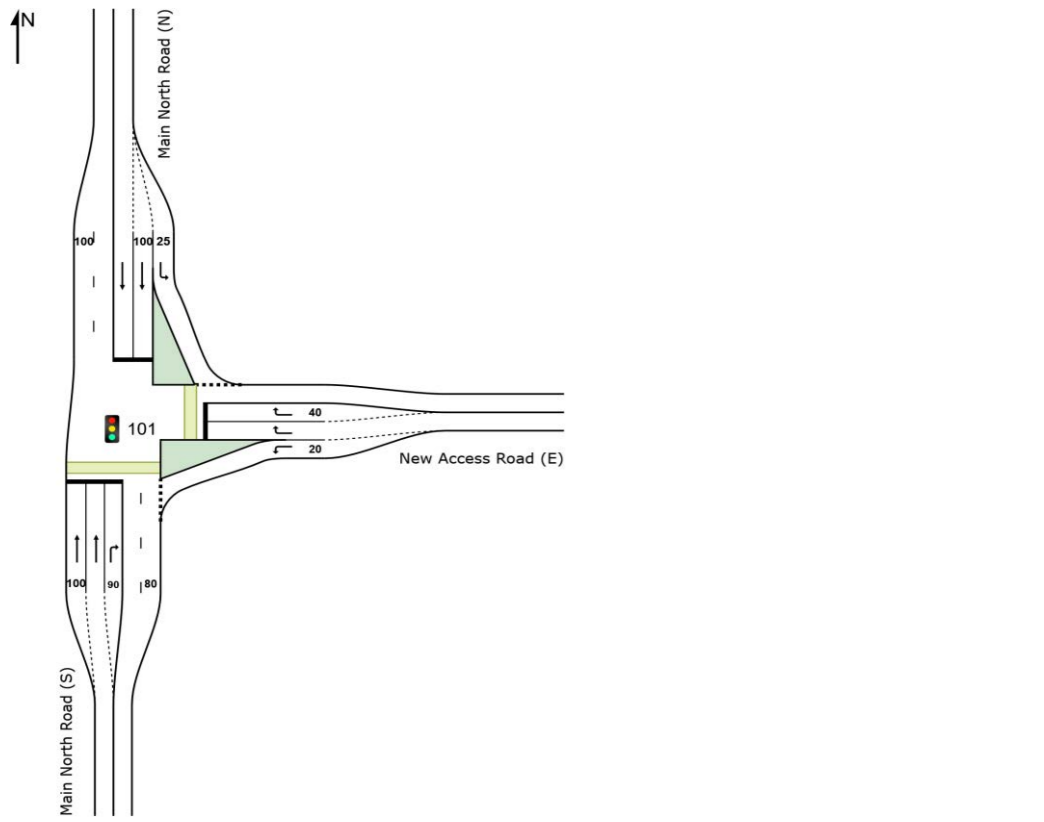
Further, the road network will have sufficient capacity to accommodate the forecast increase in traffic volume on the road network. There will be minimal changes to the performance of the downstream signalised intersection on Main North Road and there will be no requirement for any physical changes to these intersections to accommodate the forecast traffic volumes.



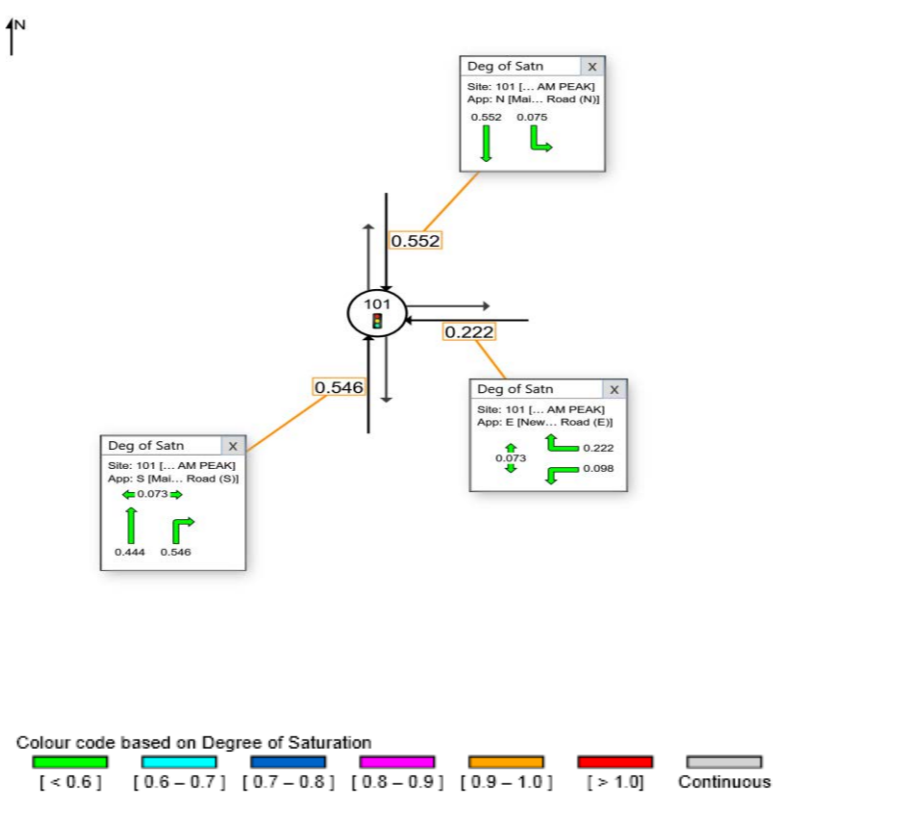
APPENDIX A

SIDRA OUTPUTS

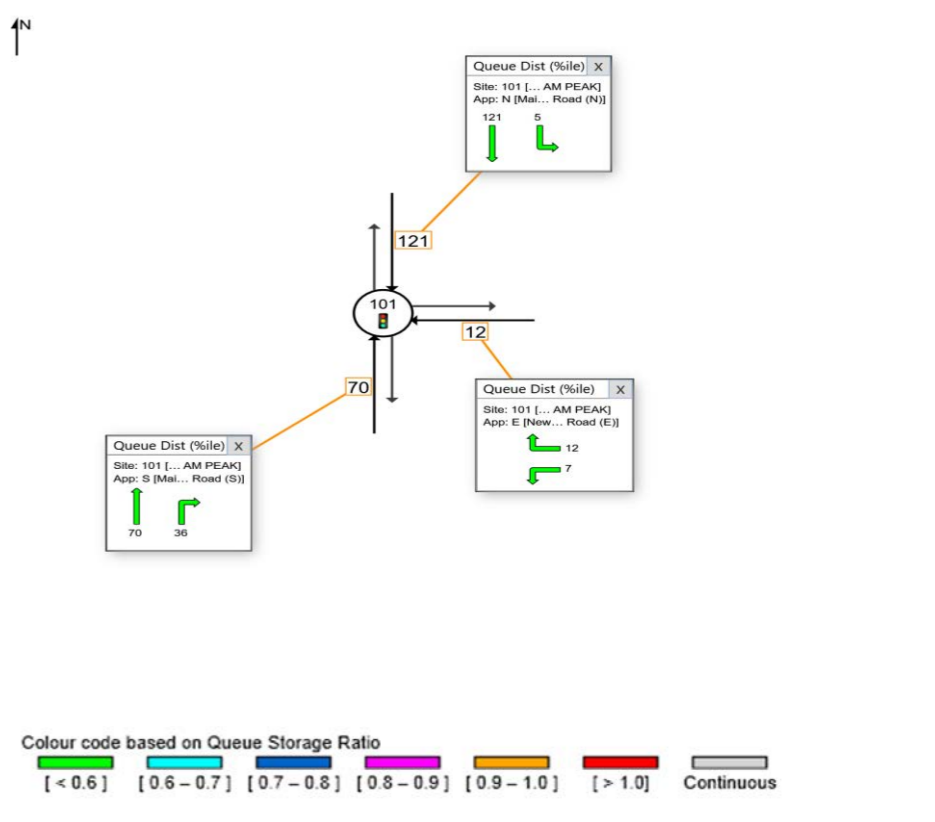
INTERSECTION LAYOUT



DEGREE OF SATURATION



95%ile QUEUE DISTANCE (metres)



PHASING SUMMARY

Phase Timing Summary

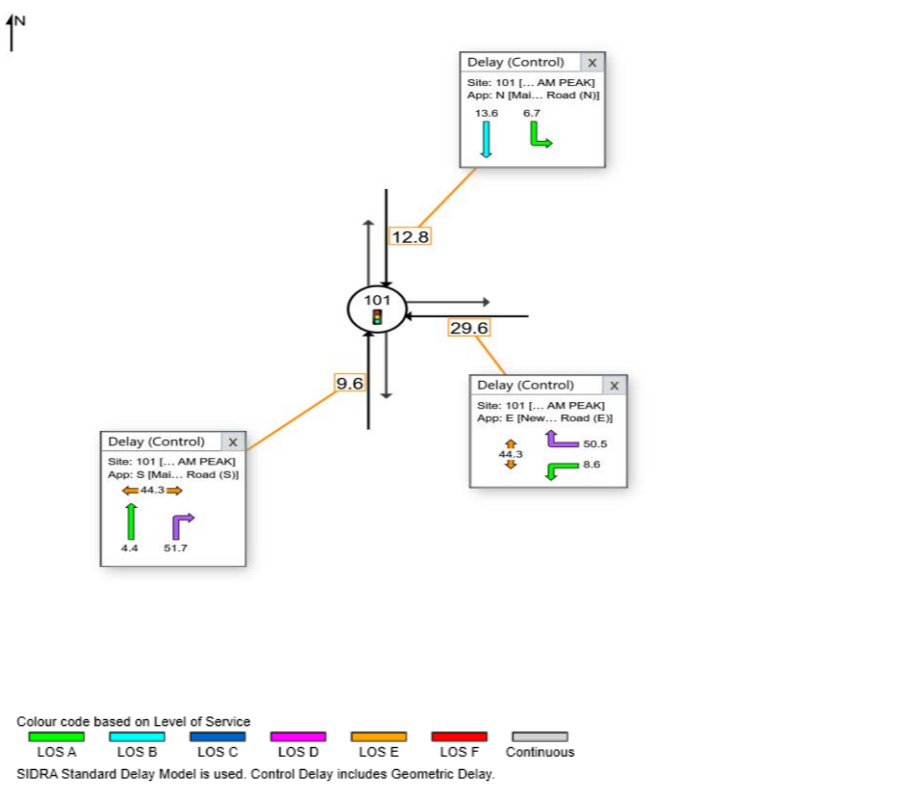
Phase	B	A	C
Phase Change Time (sec)	0	63	82
Green Time (sec)	57	13	11
Phase Time (sec)	63	20	17
Phase Split	63%	20%	17%

Phase B

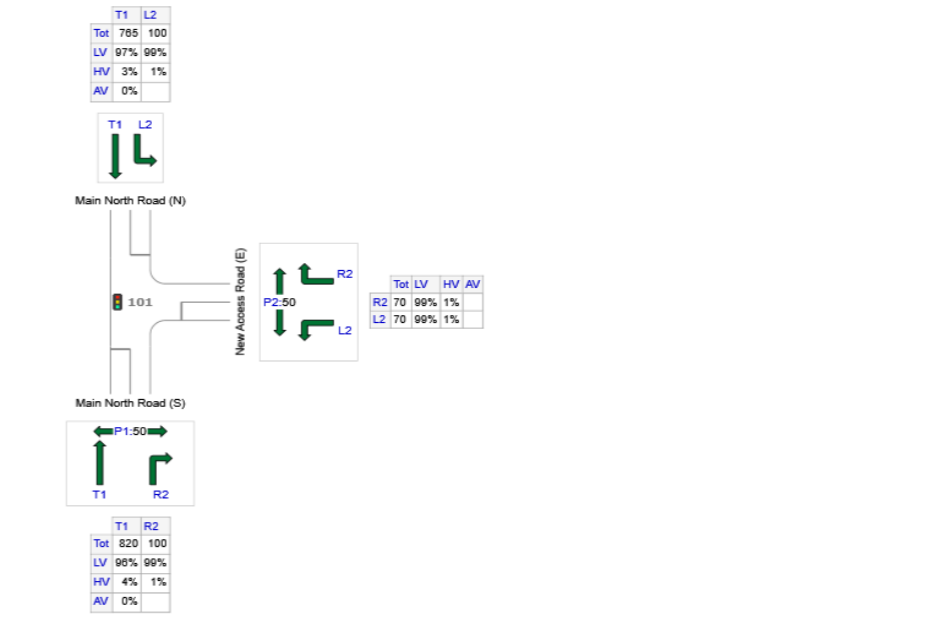
Phase A

Phase C

DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES



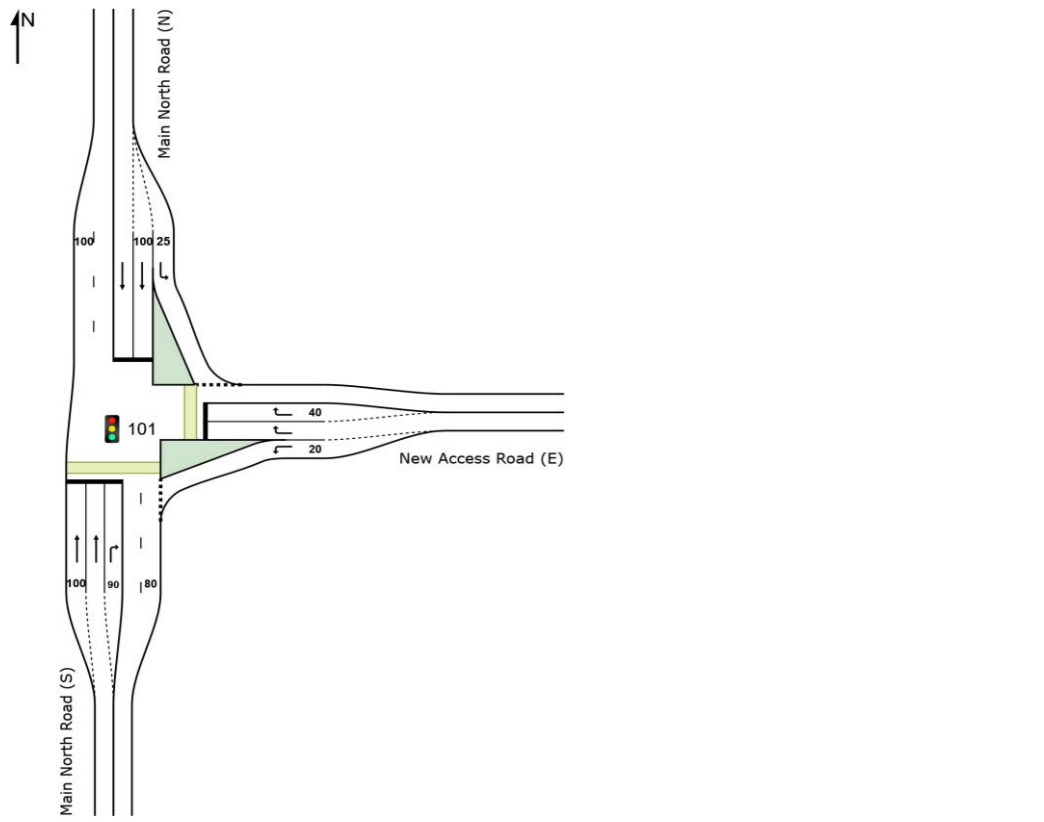
- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

JOB NUMBER:	21-0117
PROJECT NAME:	EVANSTON CODE AMENDMENT 550 - 560 MAIN NORTH ROAD, EVANSTON

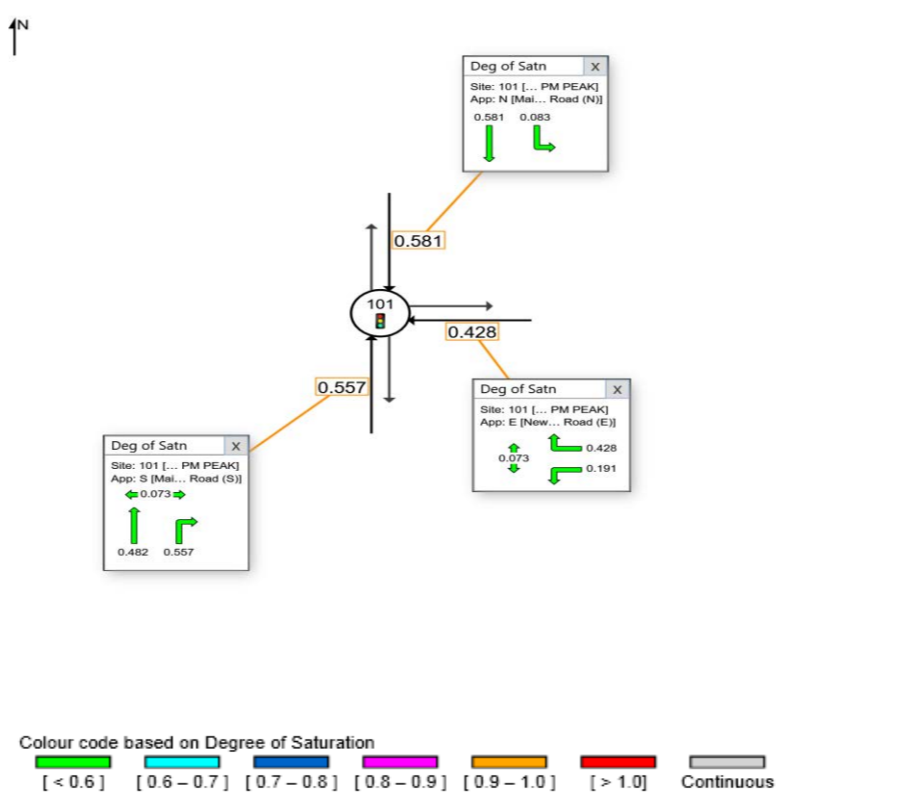
INTERSECTION:	PROPOSED ACCESS
SCENARIO:	AM PEAK HOUR PROJECT SCENARIO



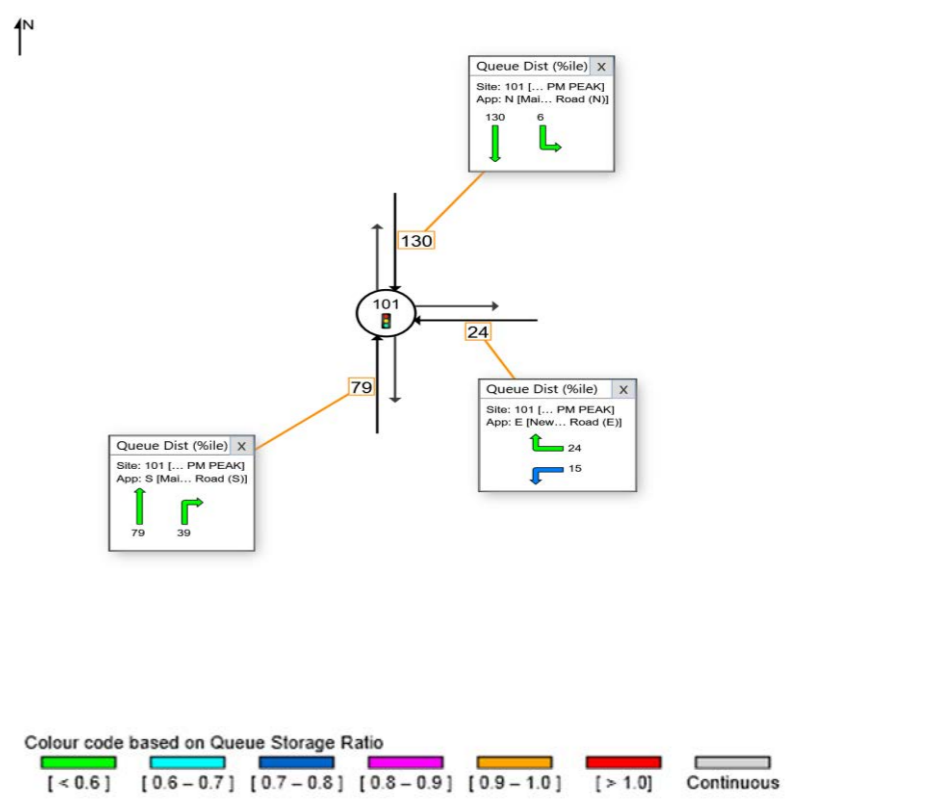
INTERSECTION LAYOUT



DEGREE OF SATURATION



95%ile QUEUE DISTANCE (metres)



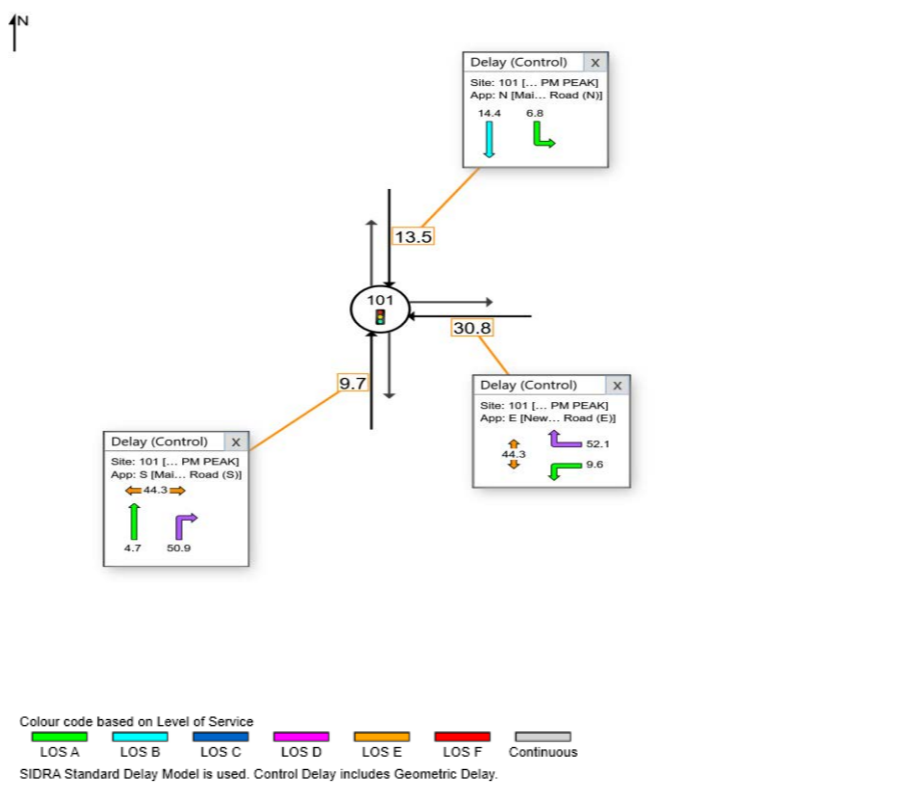
PHASING SUMMARY

Phase Timing Summary

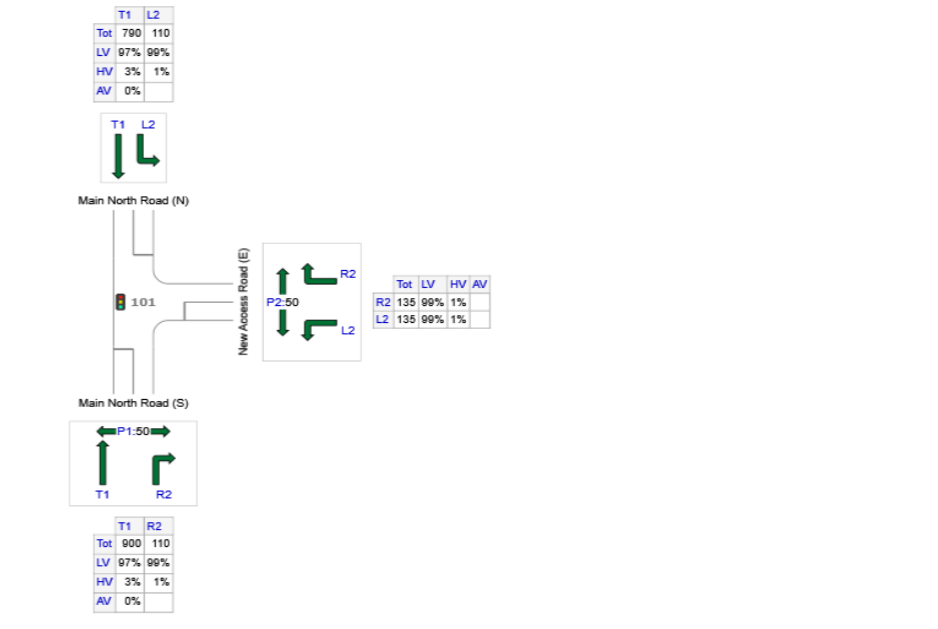
Phase	B	A	C
Phase Change Time (sec)	0	62	82
Green Time (sec)	56	14	11
Phase Time (sec)	62	21	17
Phase Split	62%	21%	17%

Phase B Main North Road (N) Left, Main North Road (S) Right
Phase A Main North Road (N) Left, Main North Road (S) Right
Phase C Main North Road (N) Left, Main North Road (S) Right

DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES



- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

JOB NUMBER: 21-0117

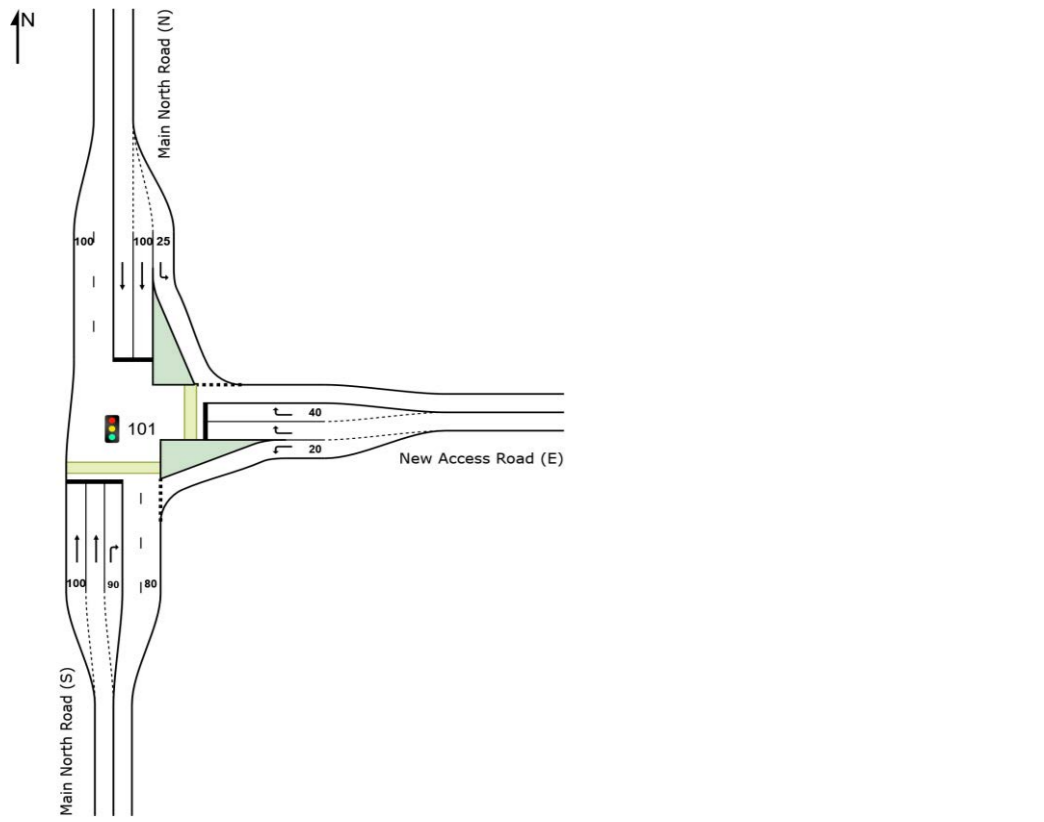
PROJECT NAME: EVANSTON CODE AMENDMENT
550 - 560 MAIN NORTH ROAD, EVANSTON

INTERSECTION: PROPOSED ACCESS

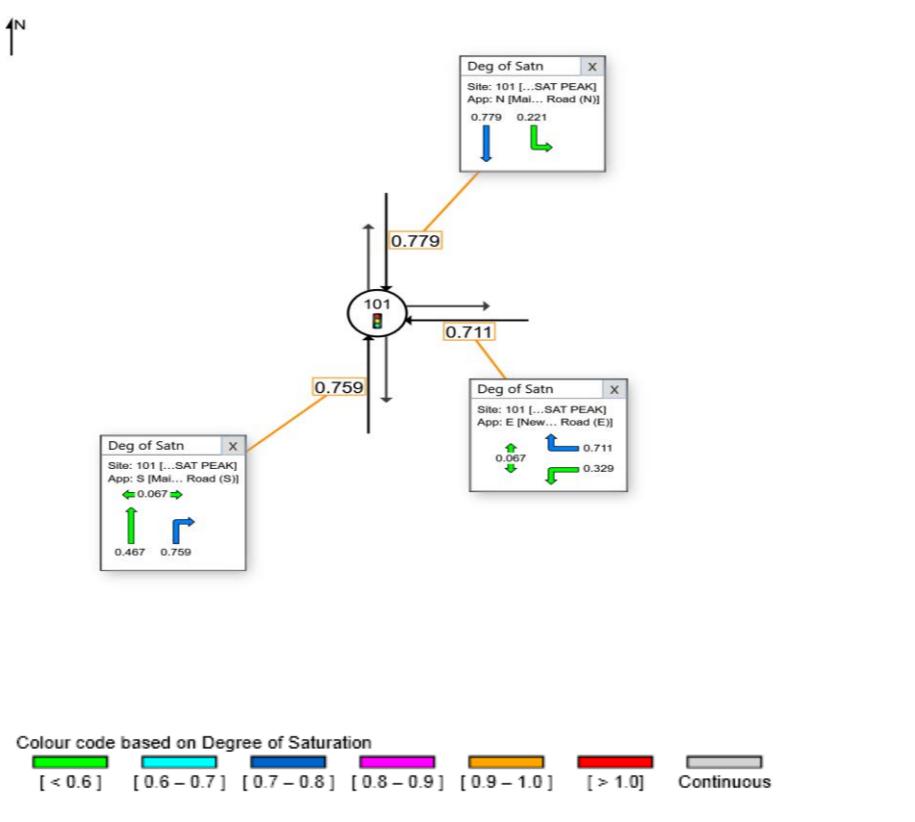
SCENARIO: PM PEAK HOUR
PROJECT SCENARIO



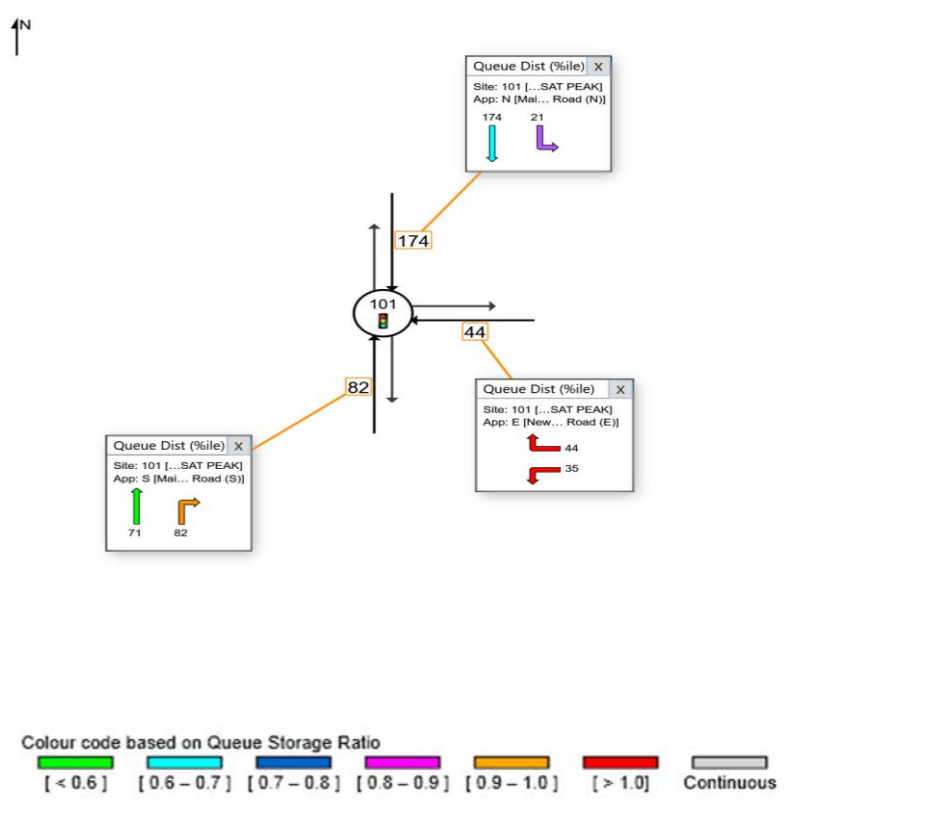
INTERSECTION LAYOUT



DEGREE OF SATURATION



95%ile QUEUE DISTANCE (metres)



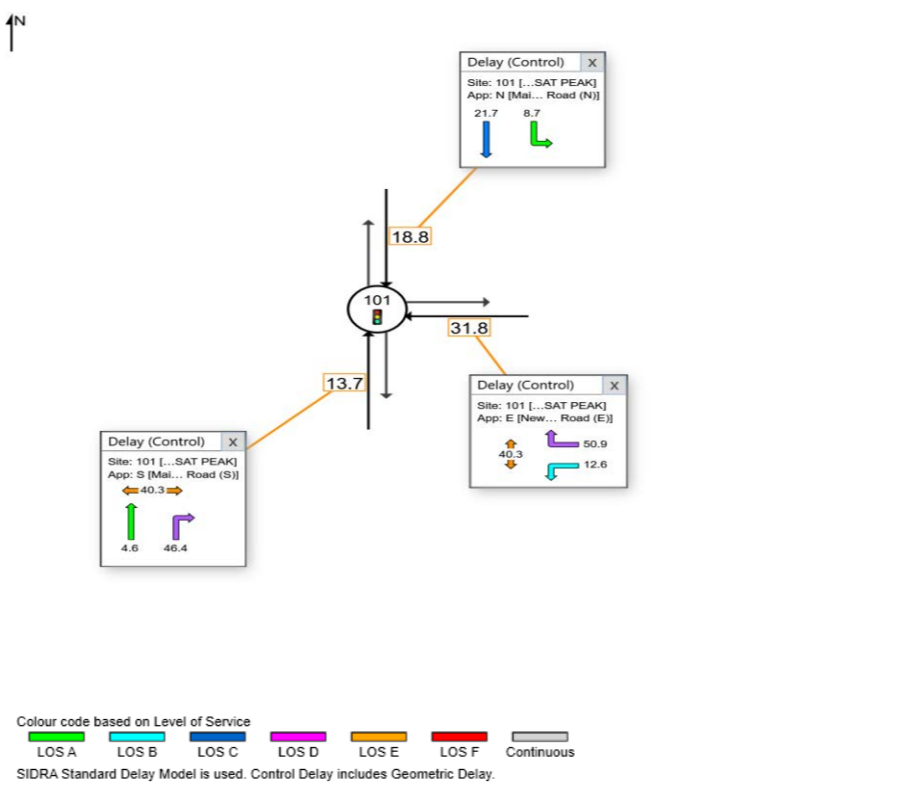
PHASING SUMMARY

Phase Timing Summary

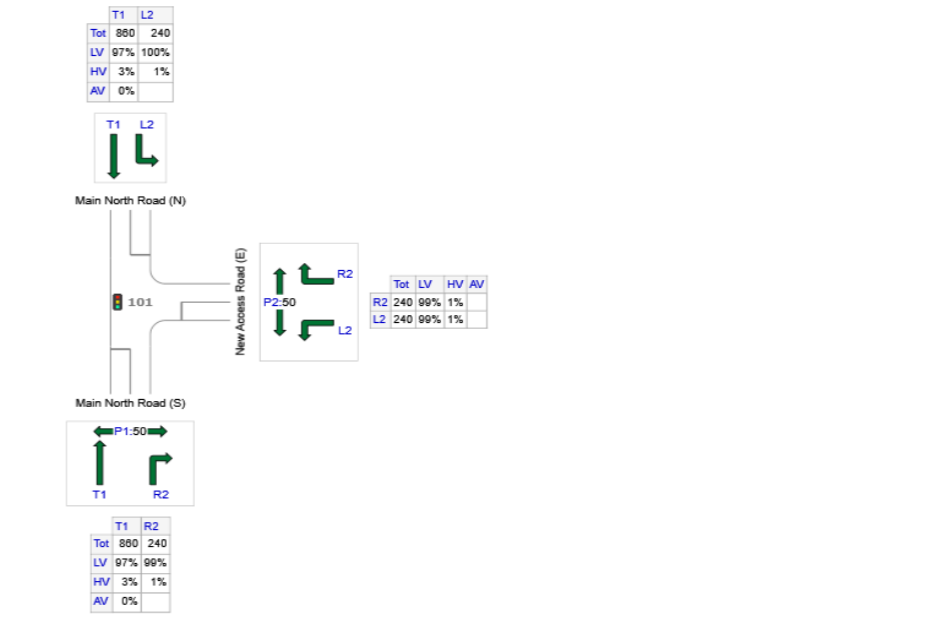
Phase	B	A	C
Phase Change Time (sec)	0	49	75
Green Time (sec)	43	20	11
Phase Time (sec)	49	26	17
Phase Split	53%	28%	18%

Phase	MOVEMENTS
Phase B	Main North Road (N) Left, Main North Road (S) Right
Phase A	Main North Road (N) Left, Main North Road (S) Right, New Access Road (E) Right
Phase C	Main North Road (N) Left, Main North Road (S) Right, New Access Road (E) Right

DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES



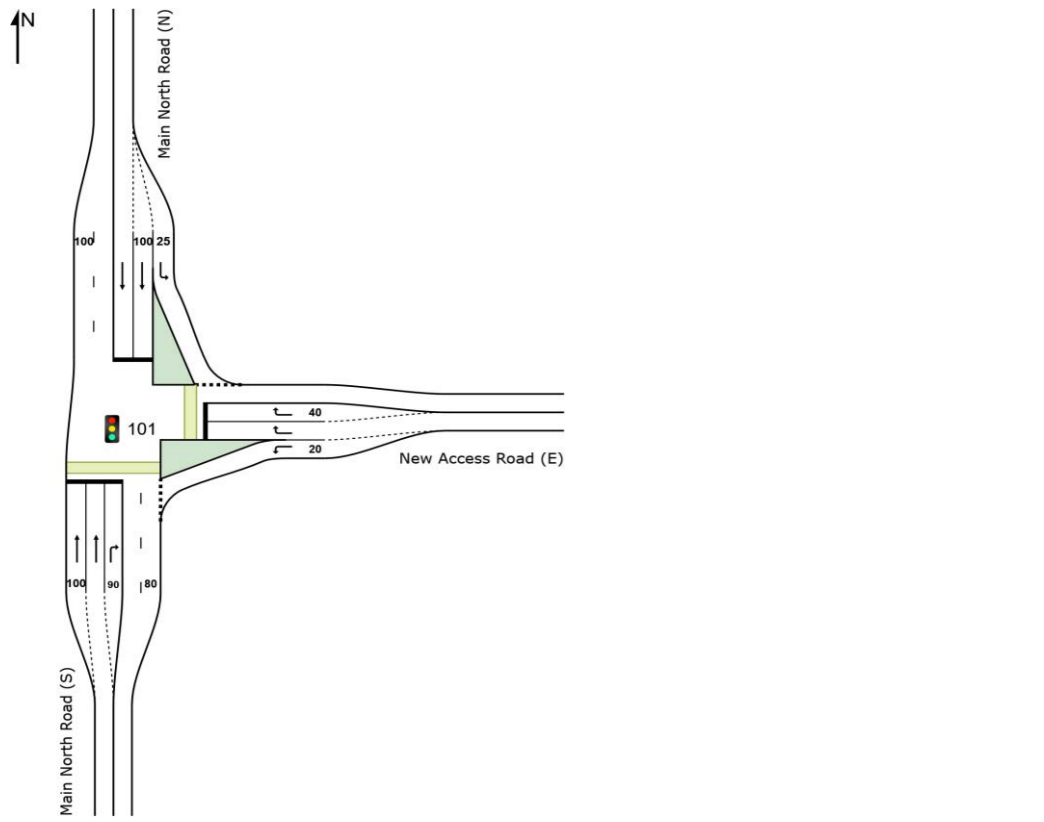
- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

JOB NUMBER:	21-0117
PROJECT NAME:	EVANSTON CODE AMENDMENT 550 - 560 MAIN NORTH ROAD, EVANSTON

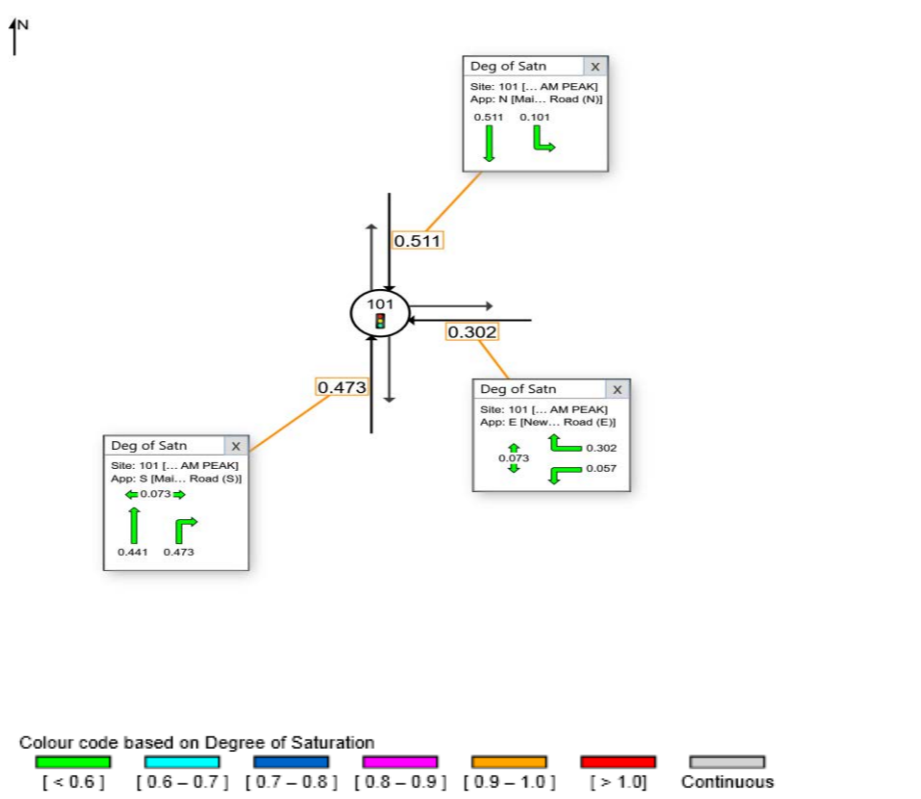
INTERSECTION:	PROPOSED ACCESS
SCENARIO:	SAT PEAK HOUR PROJECT SCENARIO



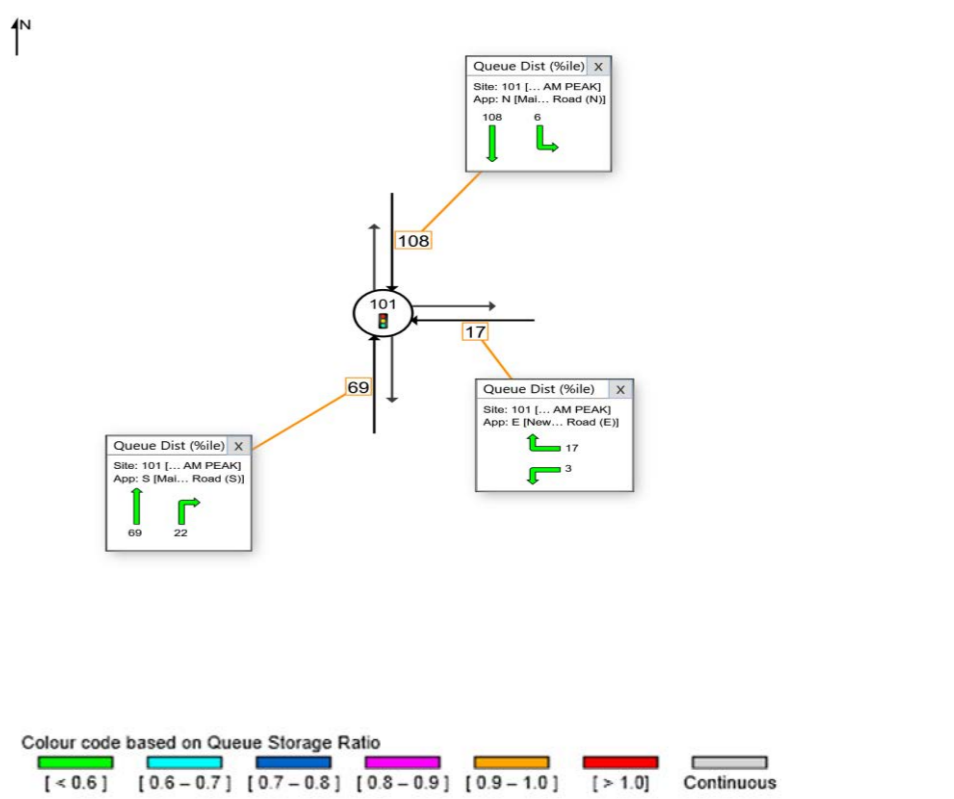
INTERSECTION LAYOUT



DEGREE OF SATURATION



95%ile QUEUE DISTANCE (metres)



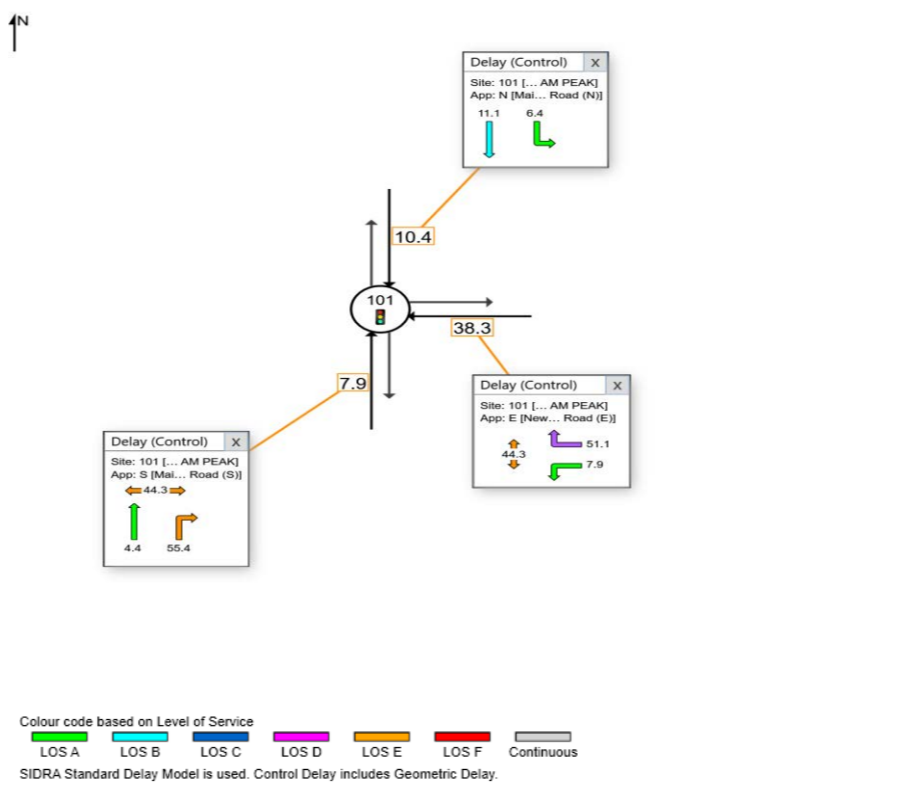
PHASING SUMMARY

Phase Timing Summary

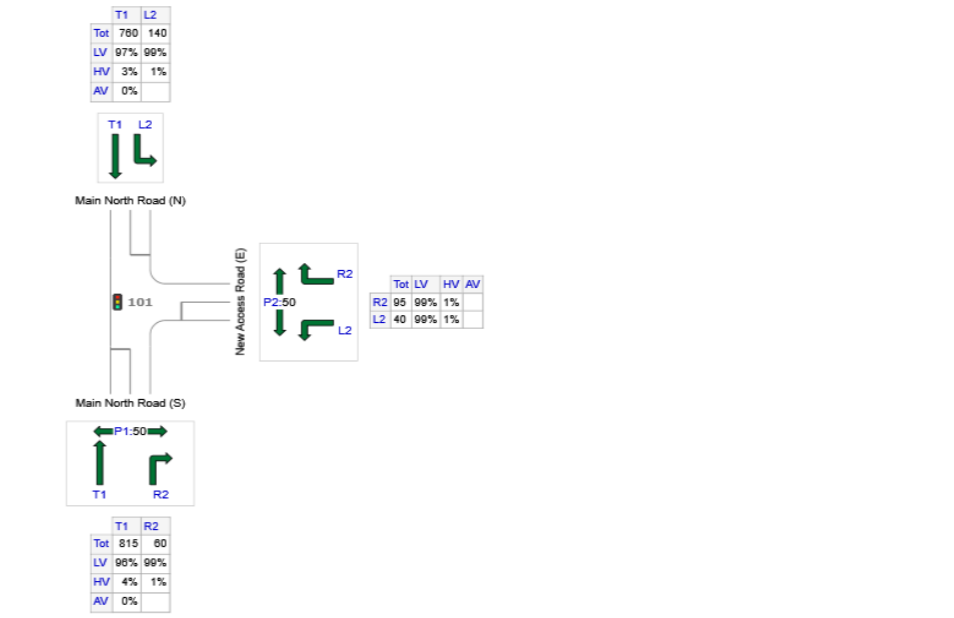
Phase	B	A	C
Phase Change Time (sec)	0	67	82
Green Time (sec)	61	9	11
Phase Time (sec)	67	16	17
Phase Split	67%	16%	17%

Phase	REF	Phase A	Phase C
Main North Road (N)	Left, Through, Right	Left, Through, Right	Left, Through, Right
Main North Road (S)	Left, Through, Right	Left, Through, Right	Left, Through, Right
New Access Road (E)	Through, Right	Through, Right	Through, Right

DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES



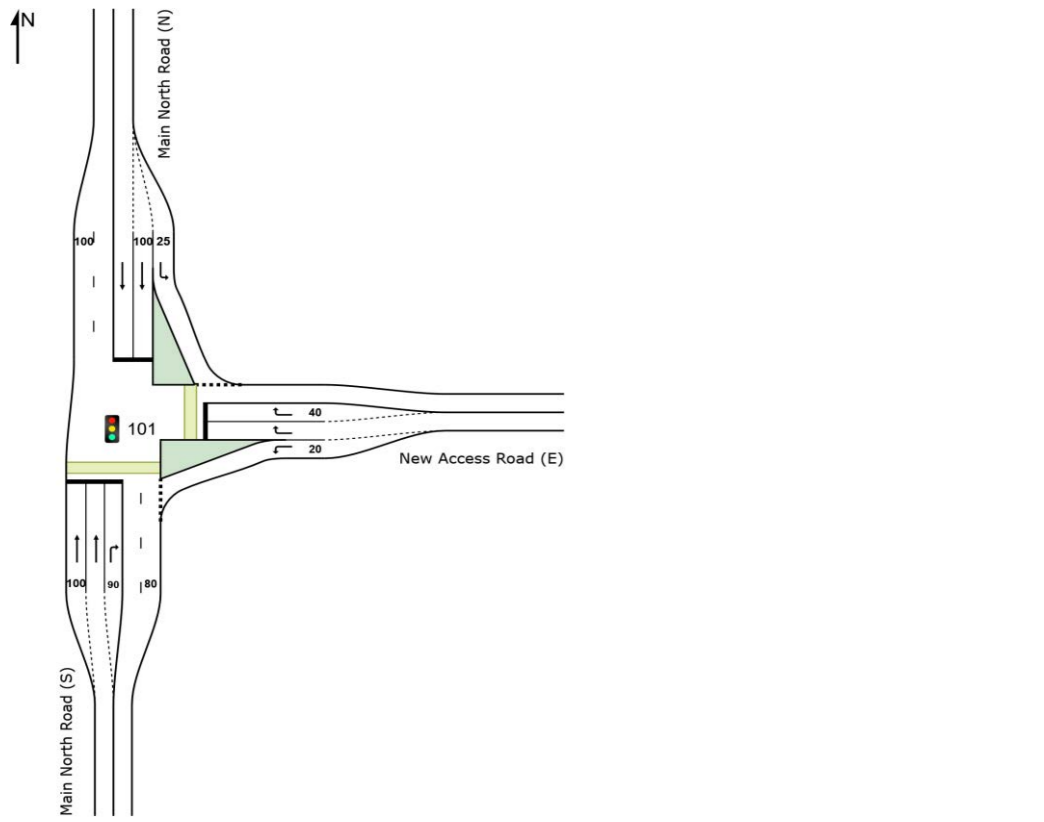
- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

JOB NUMBER:	21-0117
PROJECT NAME:	EVANSTON CODE AMENDMENT 550 - 560 MAIN NORTH ROAD, EVANSTON

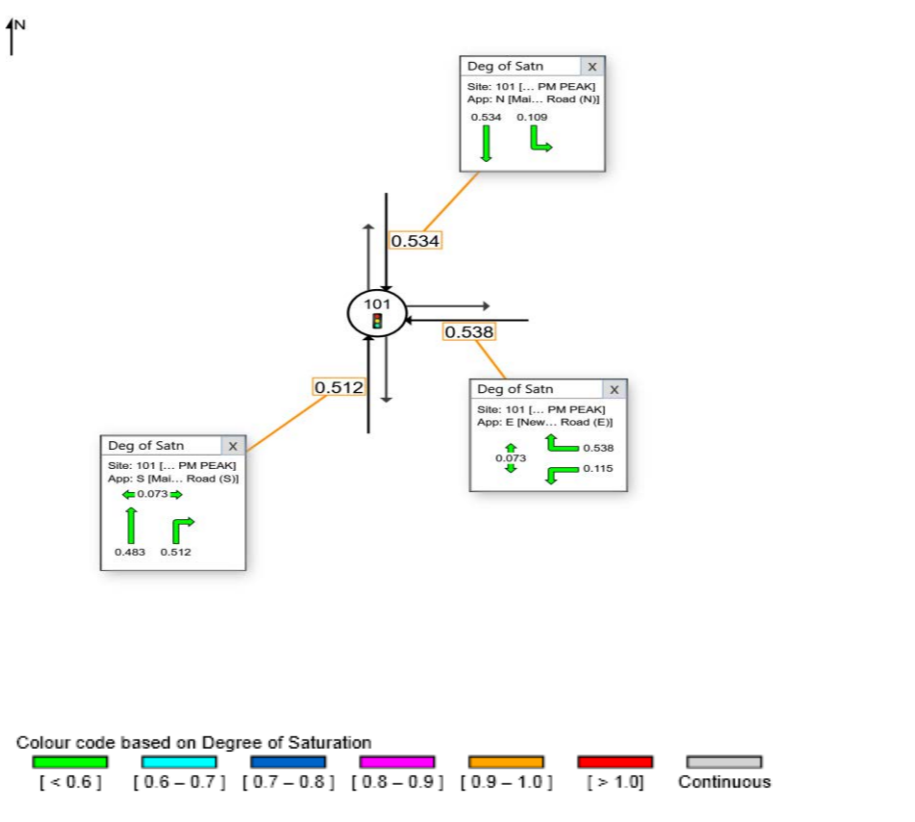
INTERSECTION:	PROPOSED ACCESS
SCENARIO:	AM PEAK HOUR SENSITIVITY ANALYSIS



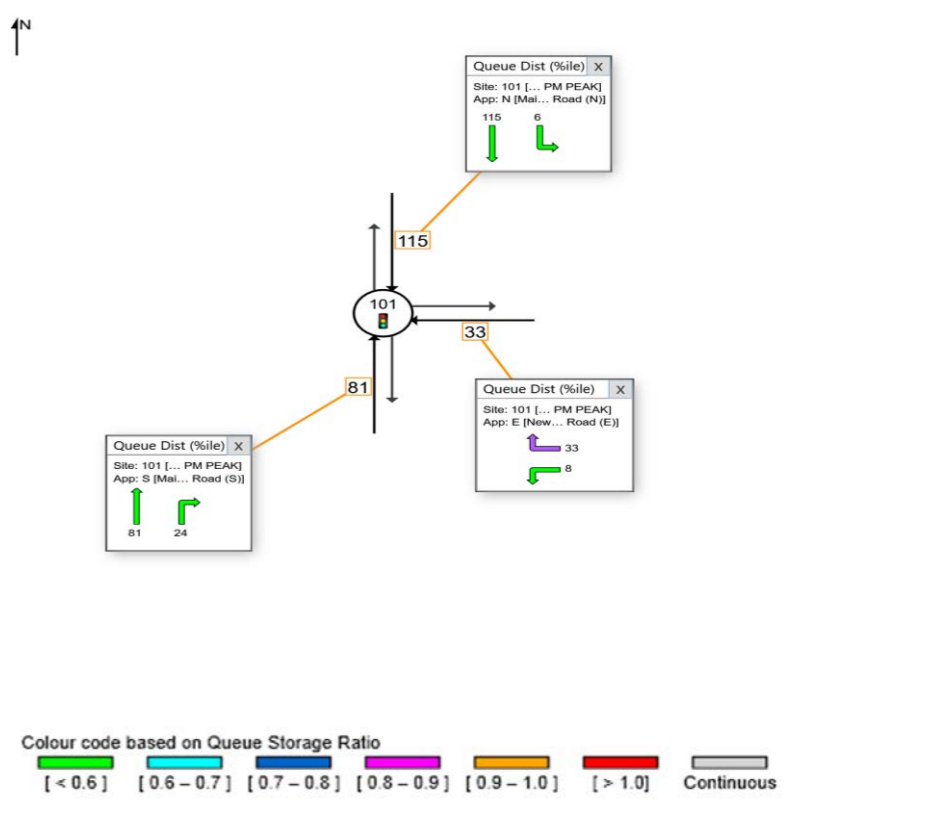
INTERSECTION LAYOUT



DEGREE OF SATURATION



95%ile QUEUE DISTANCE (metres)



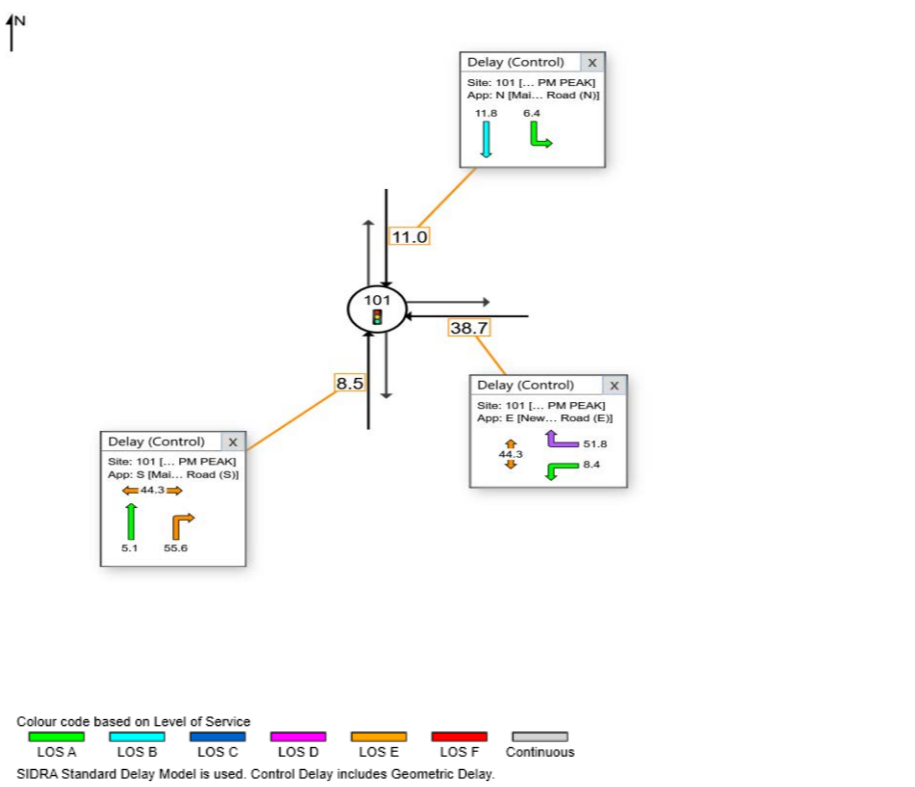
PHASING SUMMARY

Phase Timing Summary

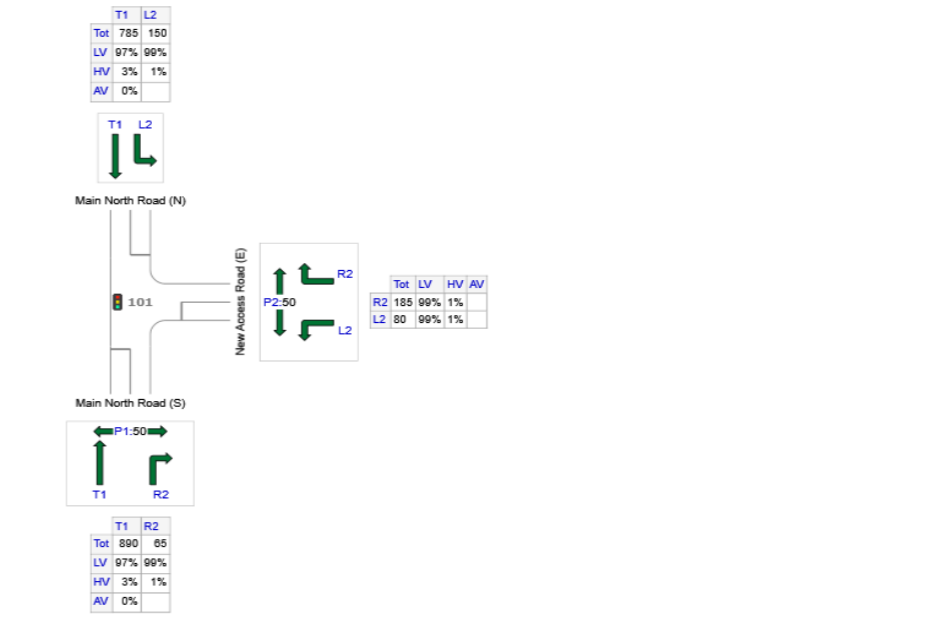
Phase	B	A	C
Phase Change Time (sec)	0	66	81
Green Time (sec)	60	9	12
Phase Time (sec)	66	16	18
Phase Split	66%	16%	18%

Phase	Diagram
Phase B	[Diagram showing Main North Road (N) and New Access Road (E) movements]
Phase A	[Diagram showing Main North Road (S) and New Access Road (E) movements]
Phase C	[Diagram showing Main North Road (S) and New Access Road (E) movements]

DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES



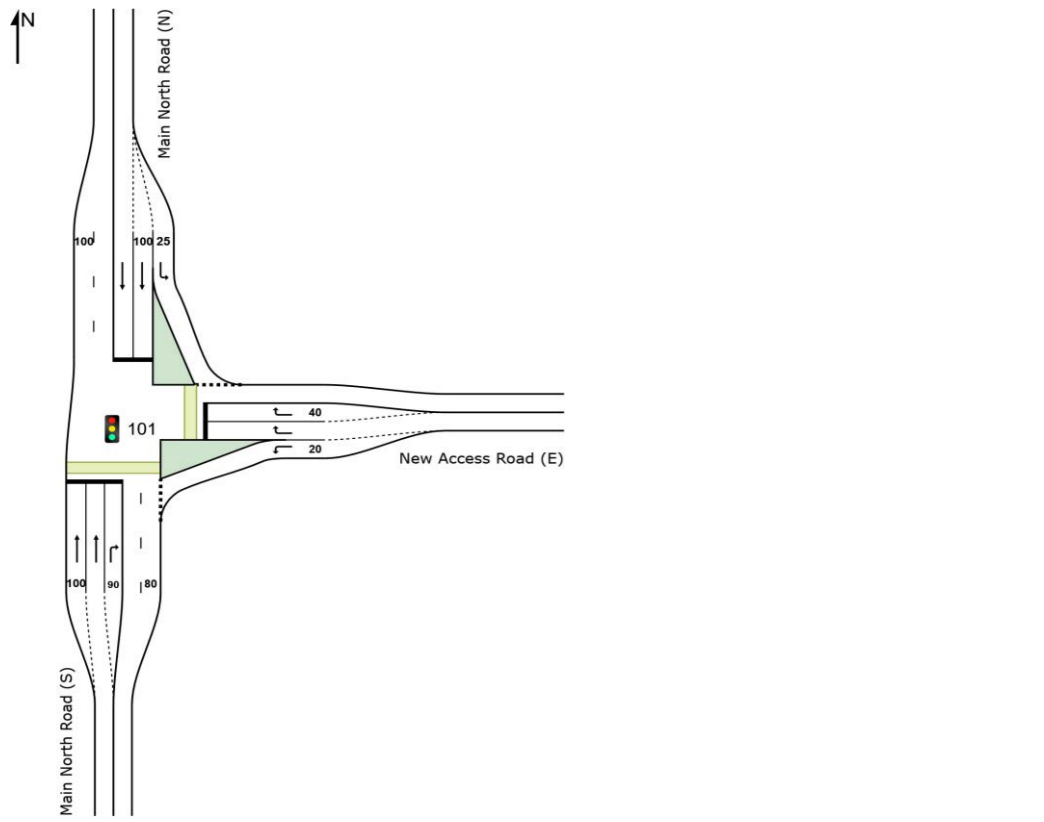
- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

JOB NUMBER:	21-0117
PROJECT NAME:	EVANSTON CODE AMENDMENT 550 - 560 MAIN NORTH ROAD, EVANSTON

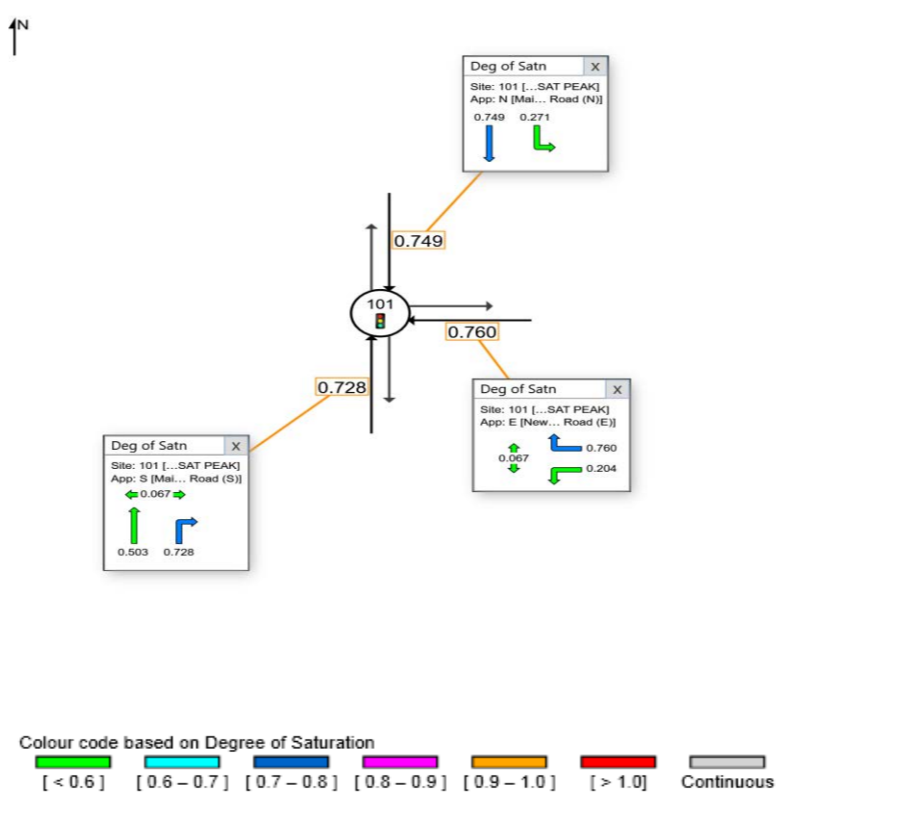
INTERSECTION:	PROPOSED ACCESS
SCENARIO:	PM PEAK HOUR SENSITIVITY ANALYSIS



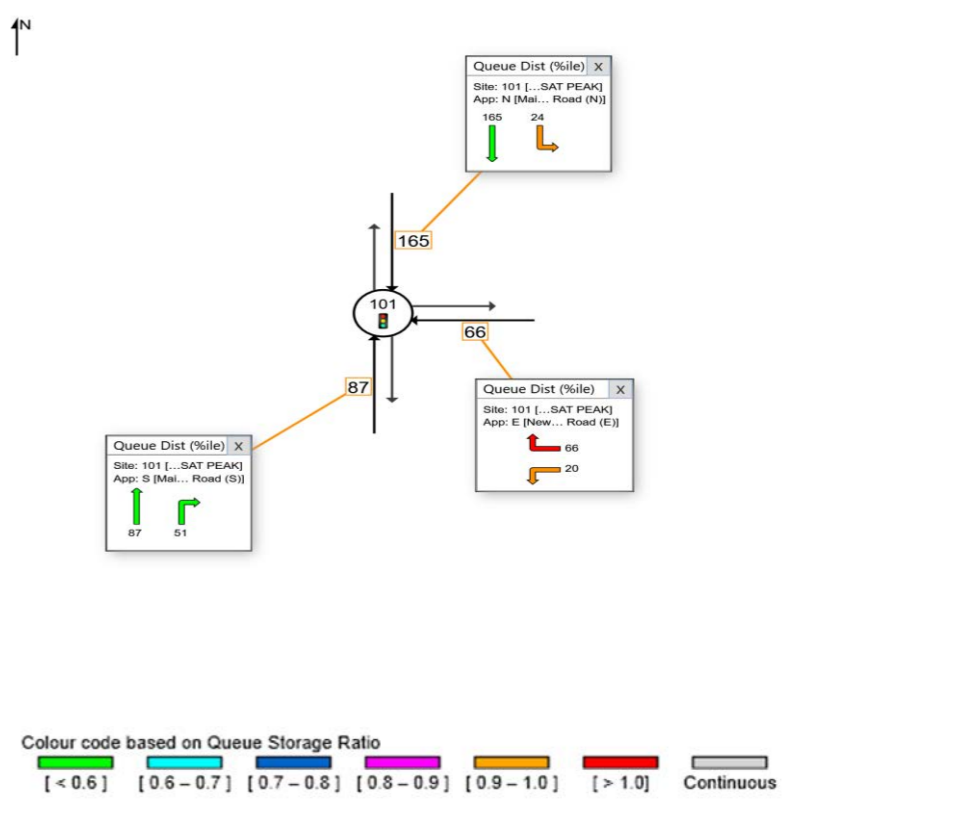
INTERSECTION LAYOUT



DEGREE OF SATURATION



95%ile QUEUE DISTANCE (metres)



PHASING SUMMARY

Phase Timing Summary

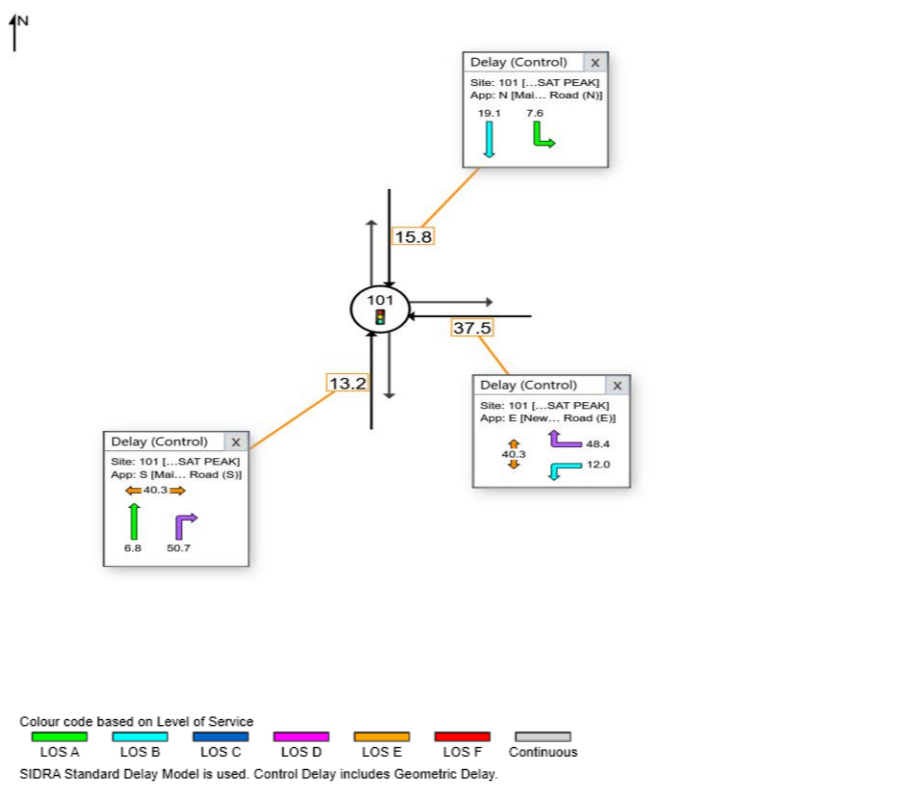
Phase	B	A	C
Phase Change Time (sec)	0	51	70
Green Time (sec)	45	13	16
Phase Time (sec)	51	19	22
Phase Split	55%	21%	24%

Phase B Main North Road (N) Left, Main North Road (S) Right, New Access Road (E) Through

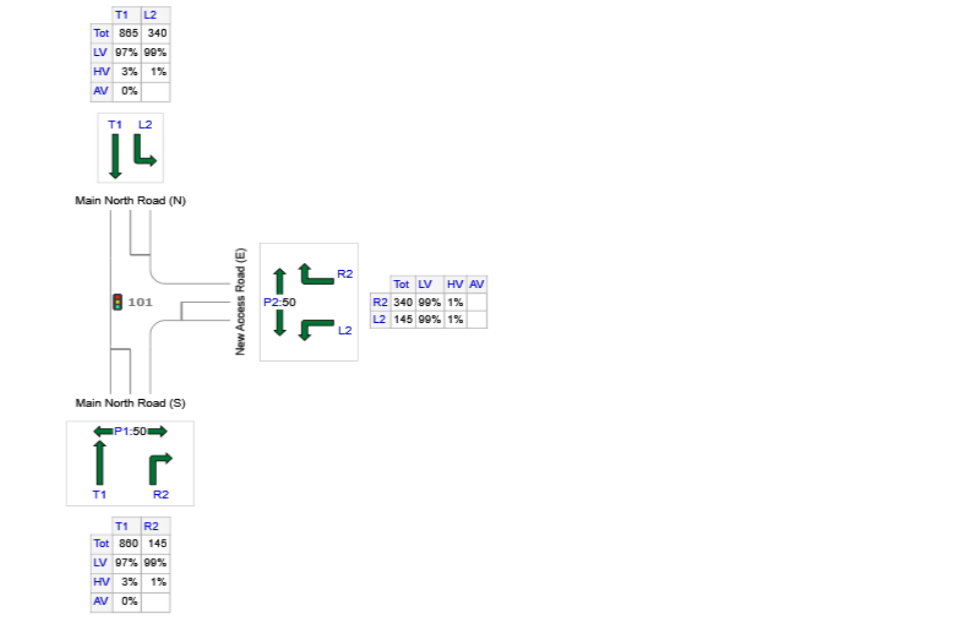
Phase A Main North Road (N) Left, Main North Road (S) Right, New Access Road (E) Through

Phase C Main North Road (N) Left, Main North Road (S) Right, New Access Road (E) Through

DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES



- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

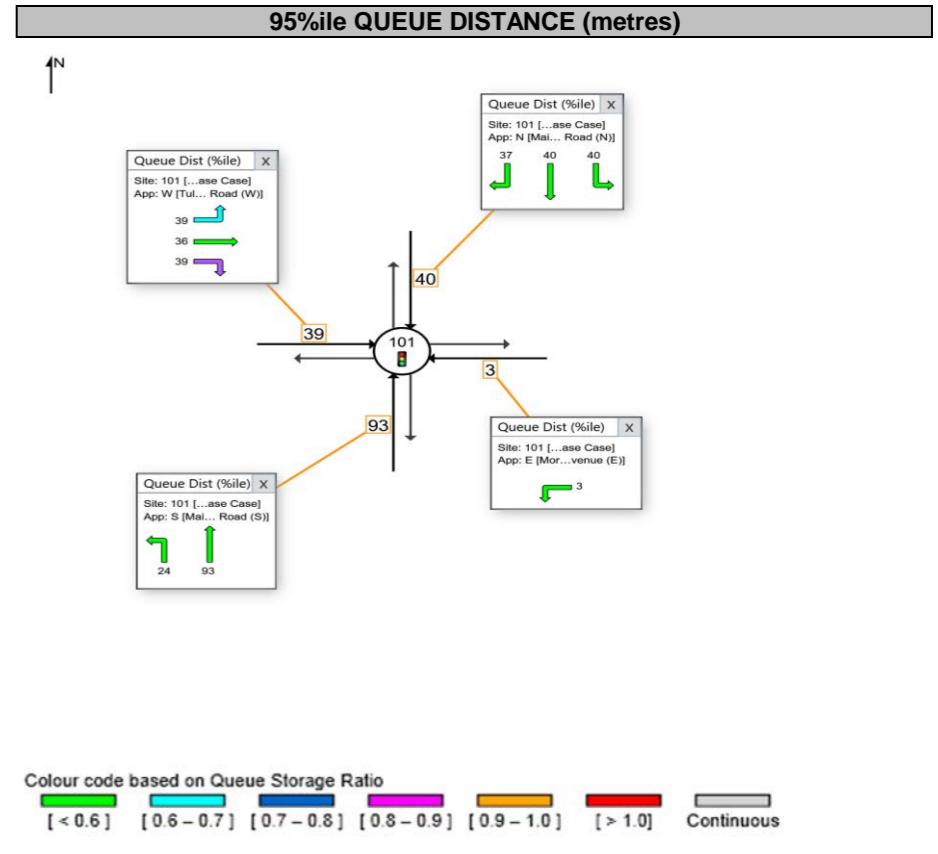
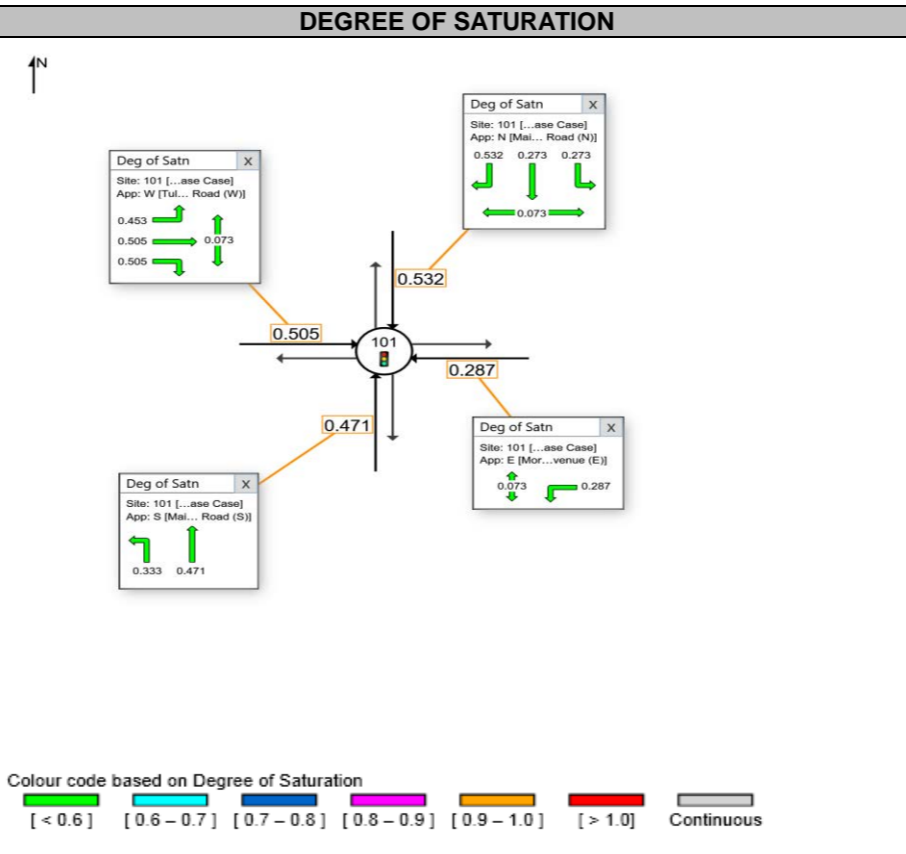
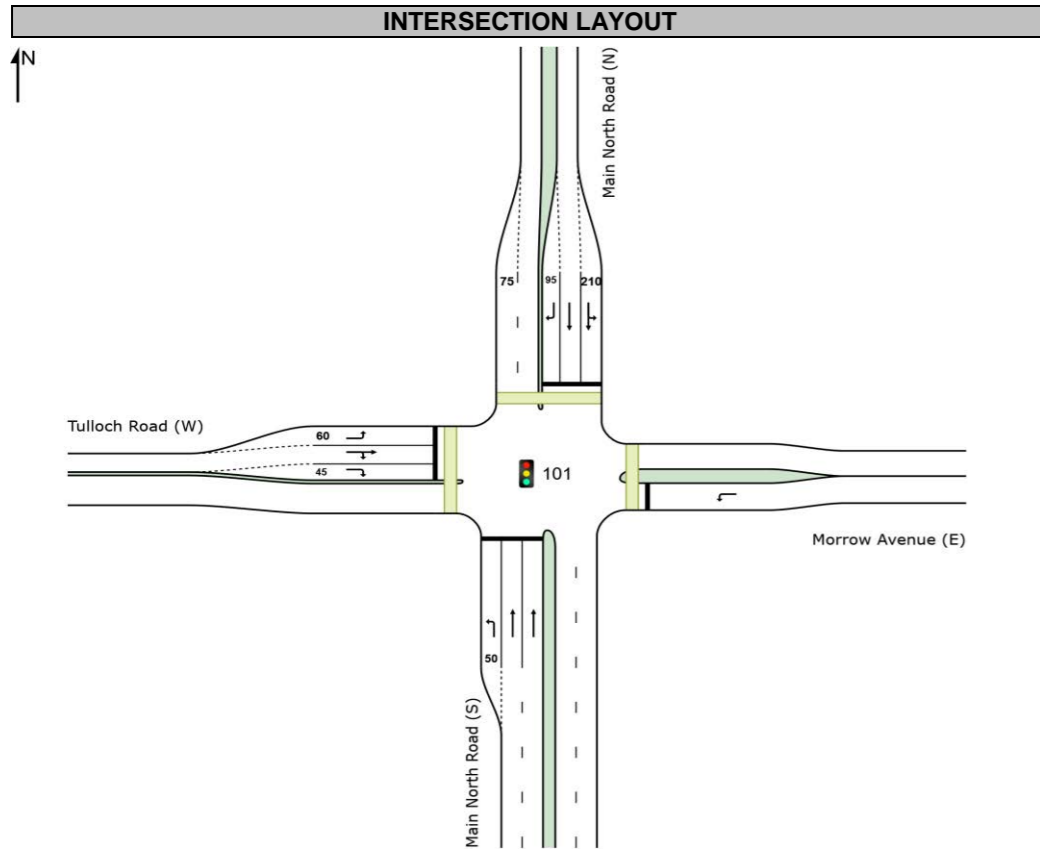
JOB NUMBER: 21-0117

PROJECT NAME: EVANSTON CODE AMENDMENT
550 - 560 MAIN NORTH ROAD, EVANSTON

INTERSECTION: PROPOSED ACCESS

SCENARIO: SAT PEAK HOUR
SENSITIVITY ANALYSIS

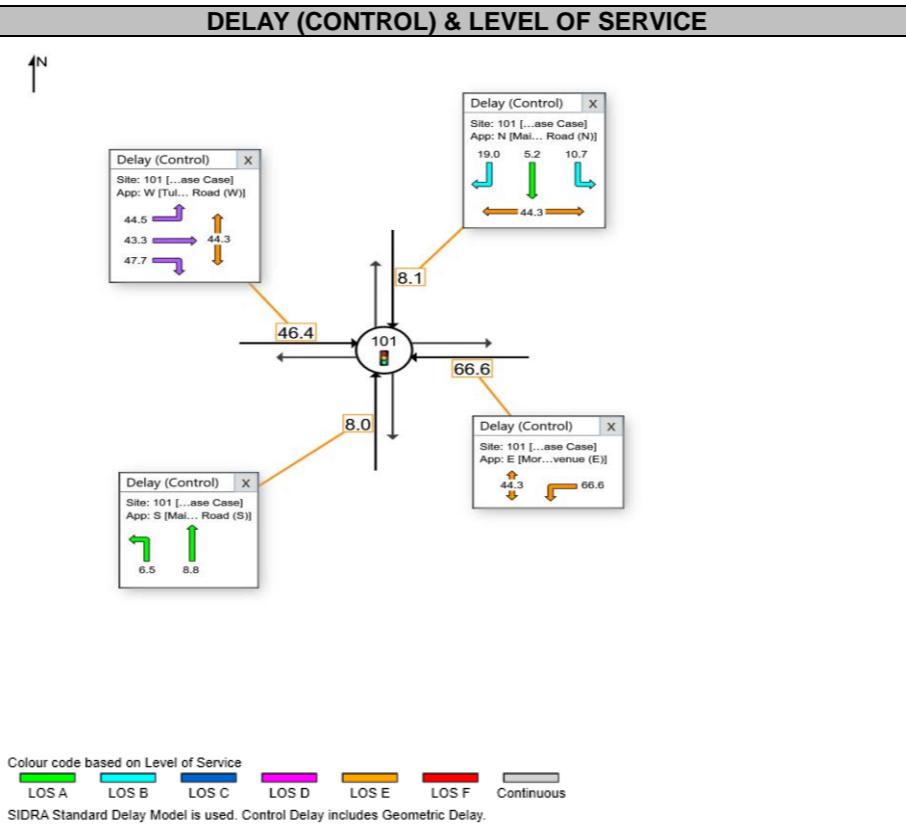




PHASING SUMMARY

Phase Timing Summary

Phase	A	B	C	E
Phase Change Time (sec)	0	64	73	91
Green Time (sec)	63	3	16	2
Phase Time (sec)	69	5	23	3
Phase Split	69%	5%	23%	3%



INPUT VOLUMES

	R2	T1	L2
Tot	188	814	5
LV	98%	98%	100%
HV	1%	4%	0%
AV	0%	0%	0%

- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

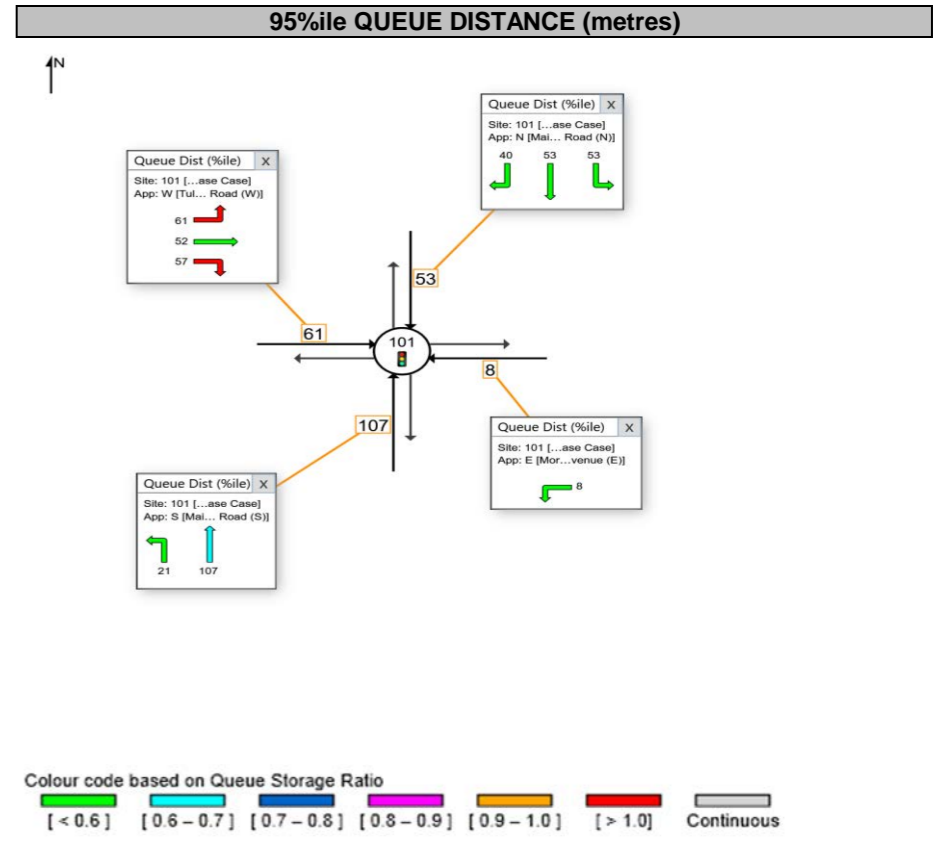
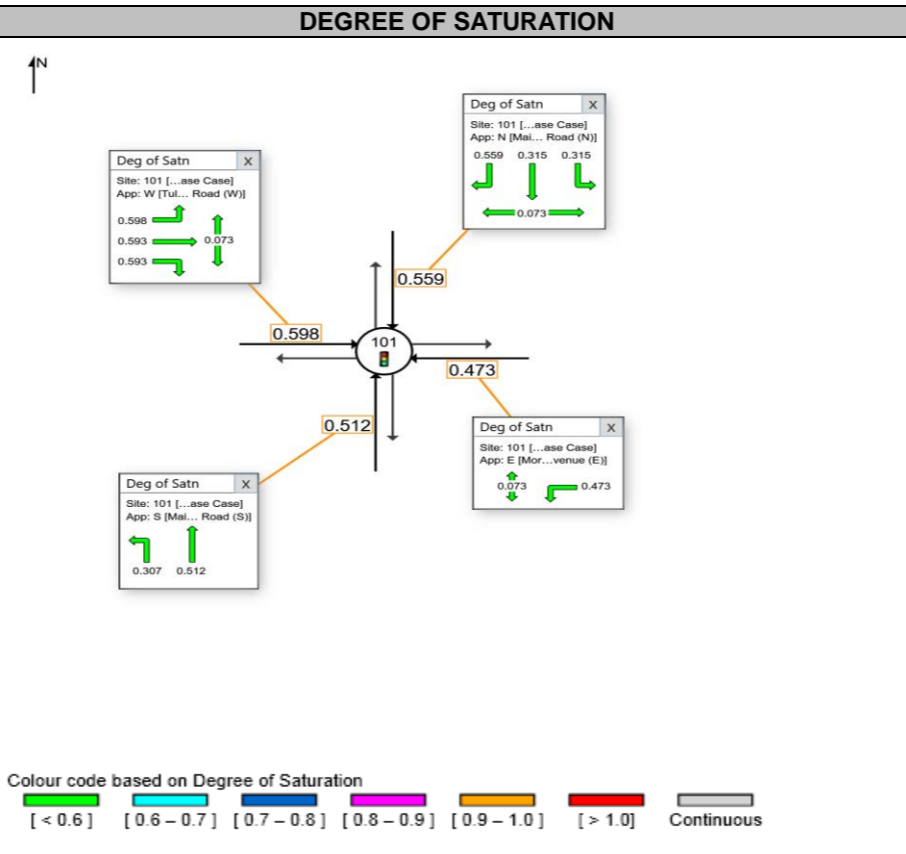
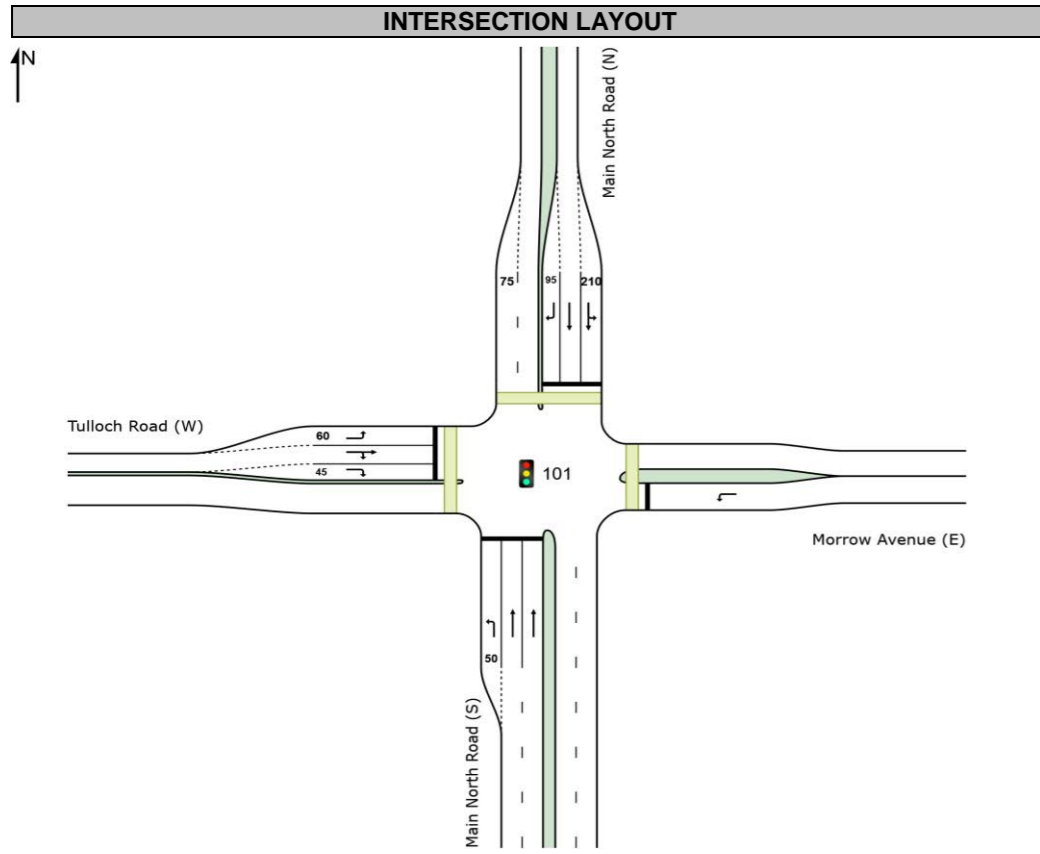
JOB NUMBER: 21-0117

PROJECT NAME: EVANSTON CODE AMENDMENT
550 - 560 MAIN NORTH ROAD, EVANSTON

INTERSECTION: MAIN NORTH ROAD/TULLOCH ROAD/MORROW AVENUE

SCENARIO: AM PEAK HOUR
BASE CASE

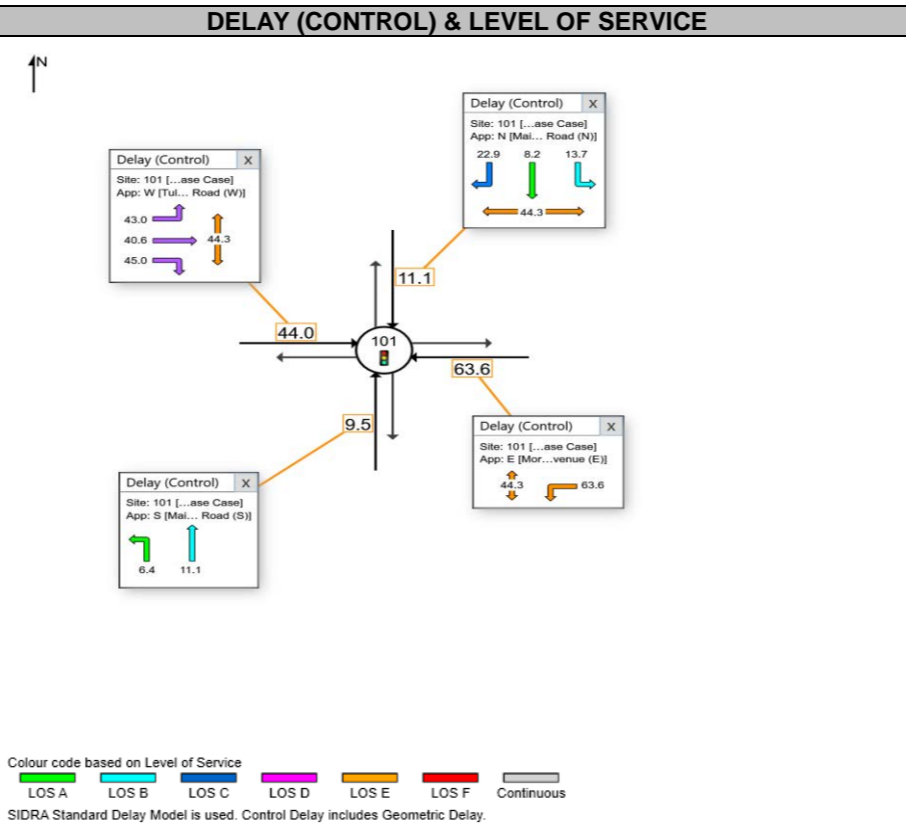




PHASING SUMMARY

Phase Timing Summary

Phase	A	B	C	E
Phase Change Time (sec)	0	59	68	90
Green Time (sec)	56	3	20	3
Phase Time (sec)	62	5	27	6
Phase Split	62%	5%	27%	6%



INPUT VOLUMES

	R2	T1	L2
Tot	157	636	16
LV	98%	97%	100%
HV	4%	3%	0%
AV	0%	0%	0%



JOB NUMBER: 21-0117

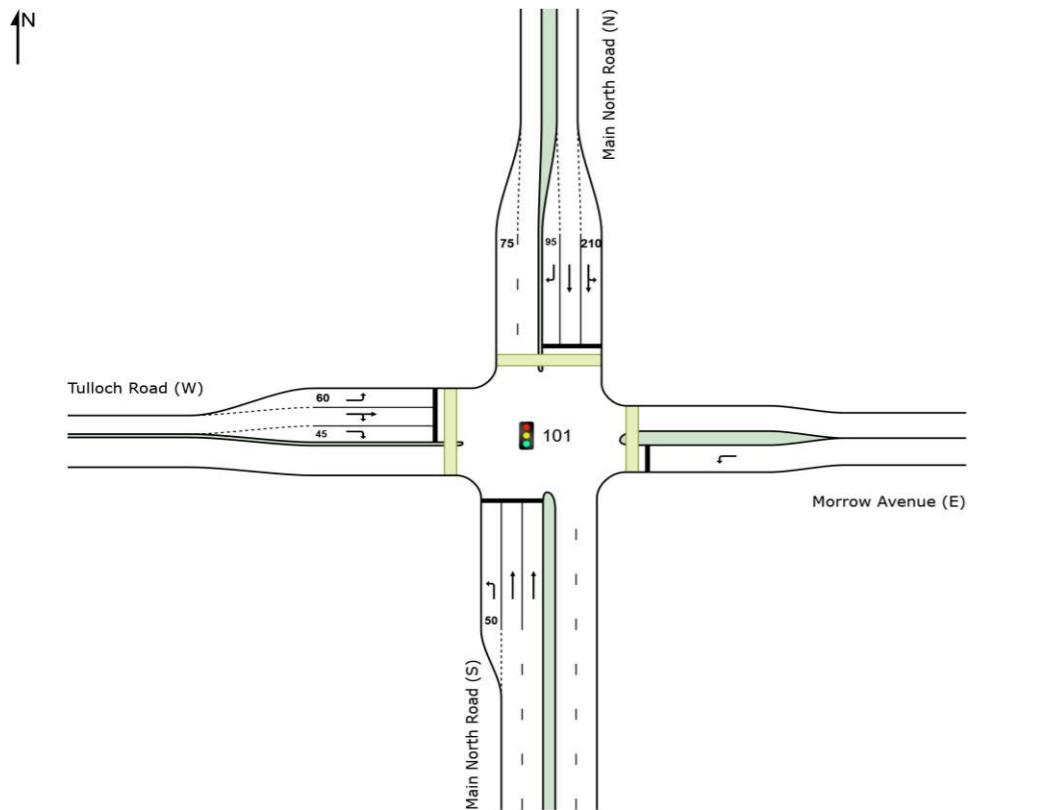
PROJECT NAME: EVANSTON CODE AMENDMENT
550 - 560 MAIN NORTH ROAD, EVANSTON

INTERSECTION: MAIN NORTH ROAD/TULLOCH ROAD/MORROW AVENUE

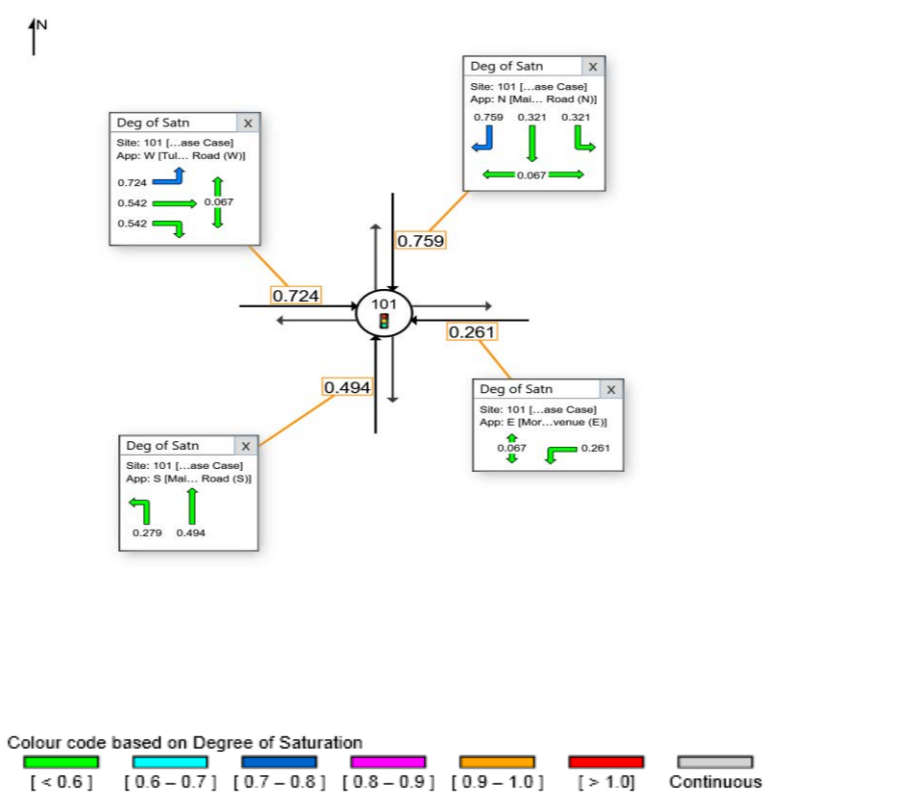
SCENARIO: PM PEAK HOUR
BASE CASE



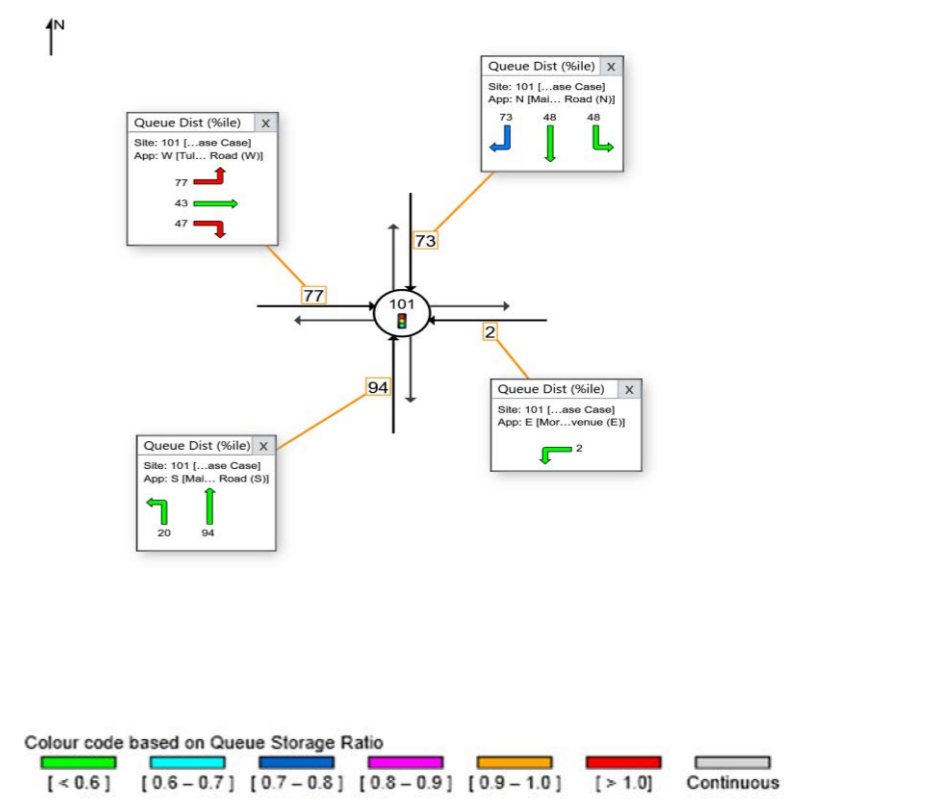
INTERSECTION LAYOUT



DEGREE OF SATURATION



95%ile QUEUE DISTANCE (metres)



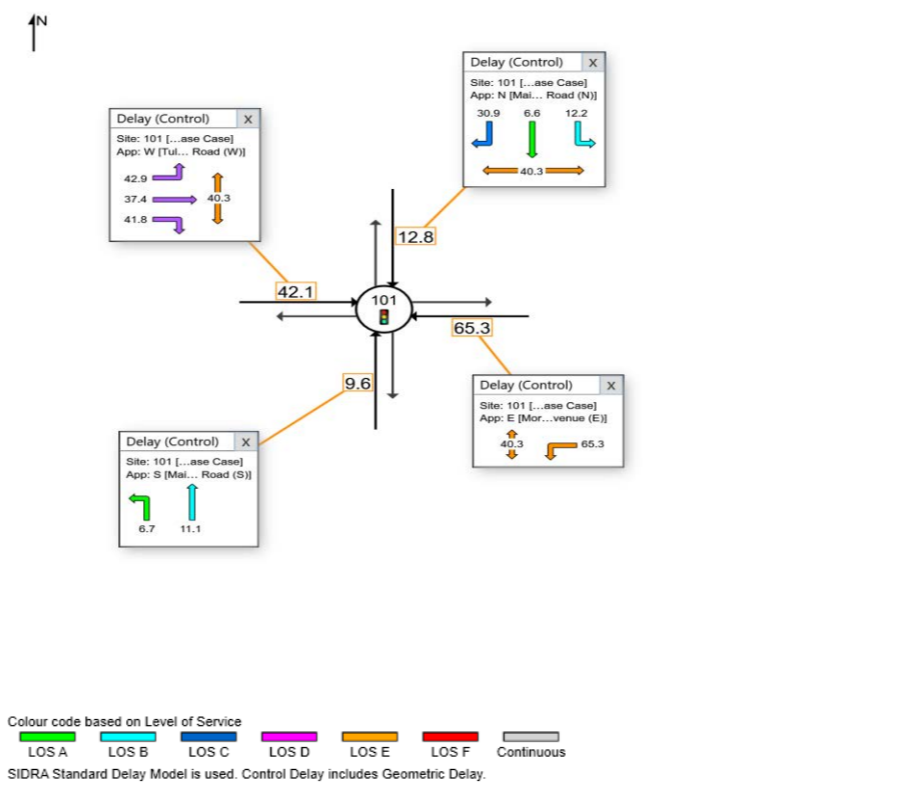
PHASING SUMMARY

Phase Timing Summary

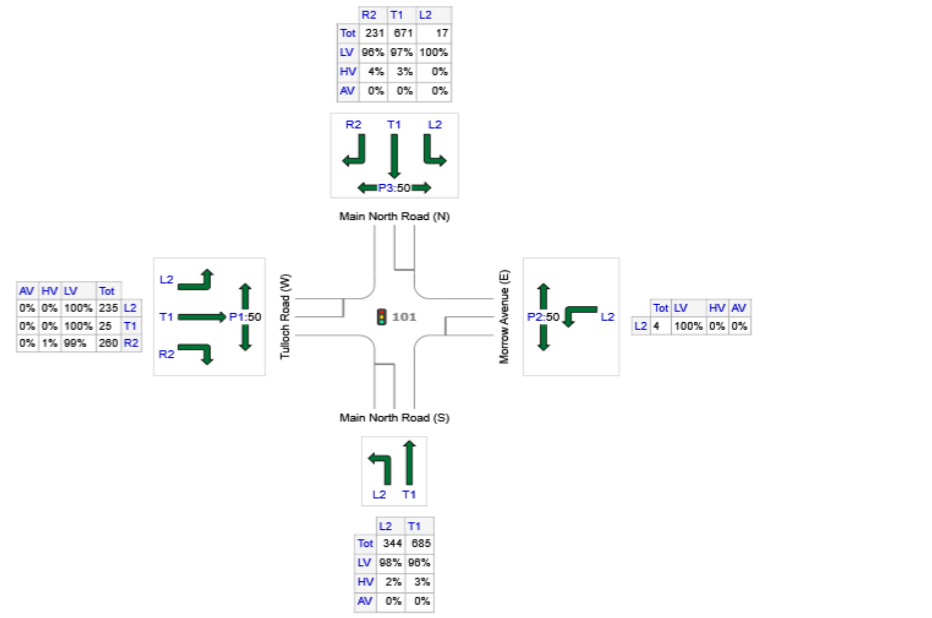
Phase	A	B	C	E
Phase Change Time (sec)	0	54	63	84
Green Time (sec)	53	3	18	1
Phase Time (sec)	59	6	25	2
Phase Split	64%	7%	27%	2%

Phase	Diagram Description
Phase A	Main North Road (N) and Morrow Avenue (E) movements.
Phase B	Main North Road (S) movement.
Phase C	Tulloch Road (W) and Morrow Avenue (E) movements.
Phase E	Main North Road (N) and Morrow Avenue (E) movements.

DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES



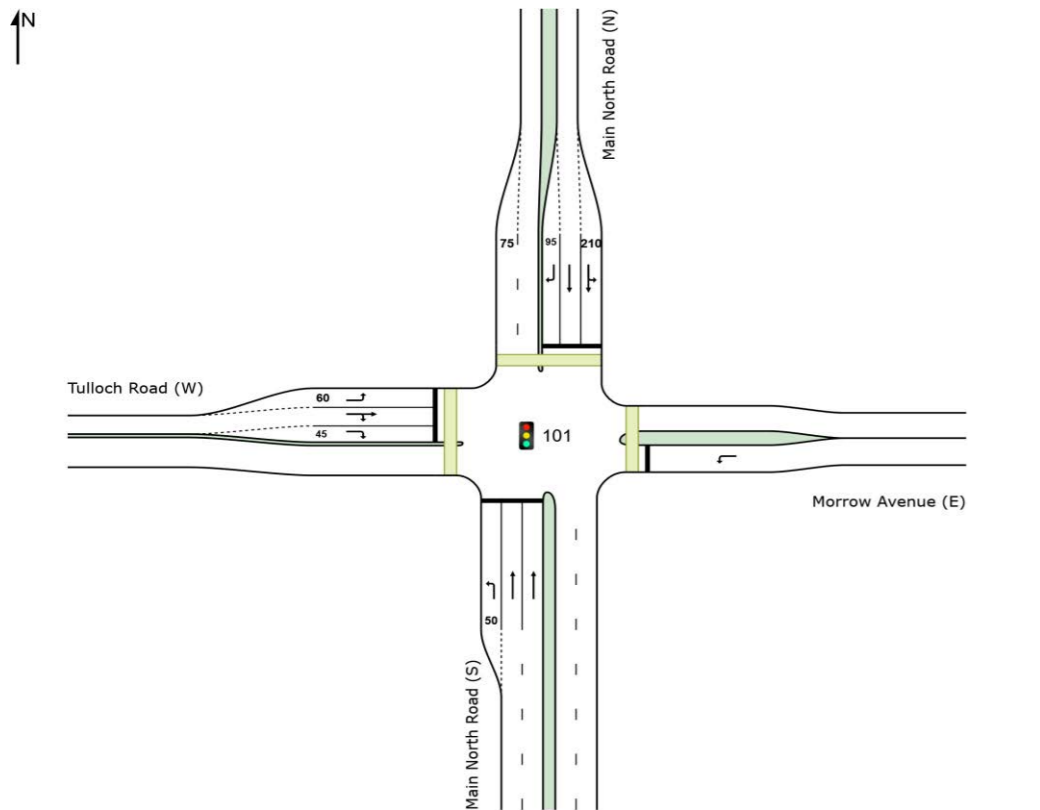
- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

JOB NUMBER:	21-0117
PROJECT NAME:	EVANSTON CODE AMENDMENT 550 - 560 MAIN NORTH ROAD, EVANSTON

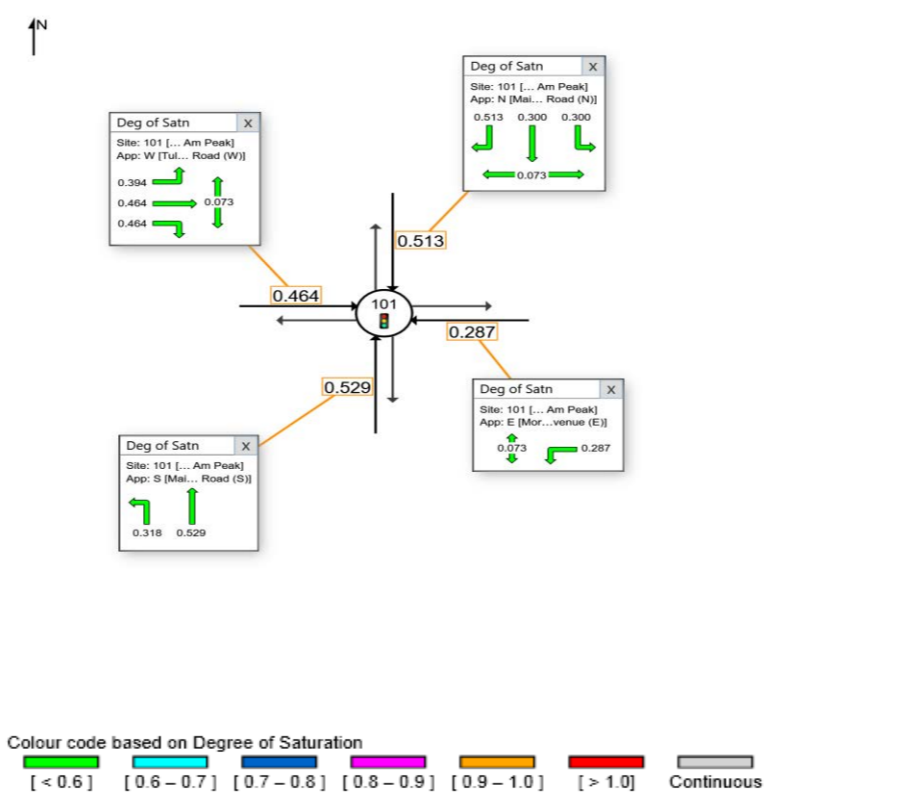
INTERSECTION:	MAIN NORTH ROAD/TULLOCH ROAD/MORROW AVENUE
SCENARIO:	SAT PEAK HOUR BASE CASE



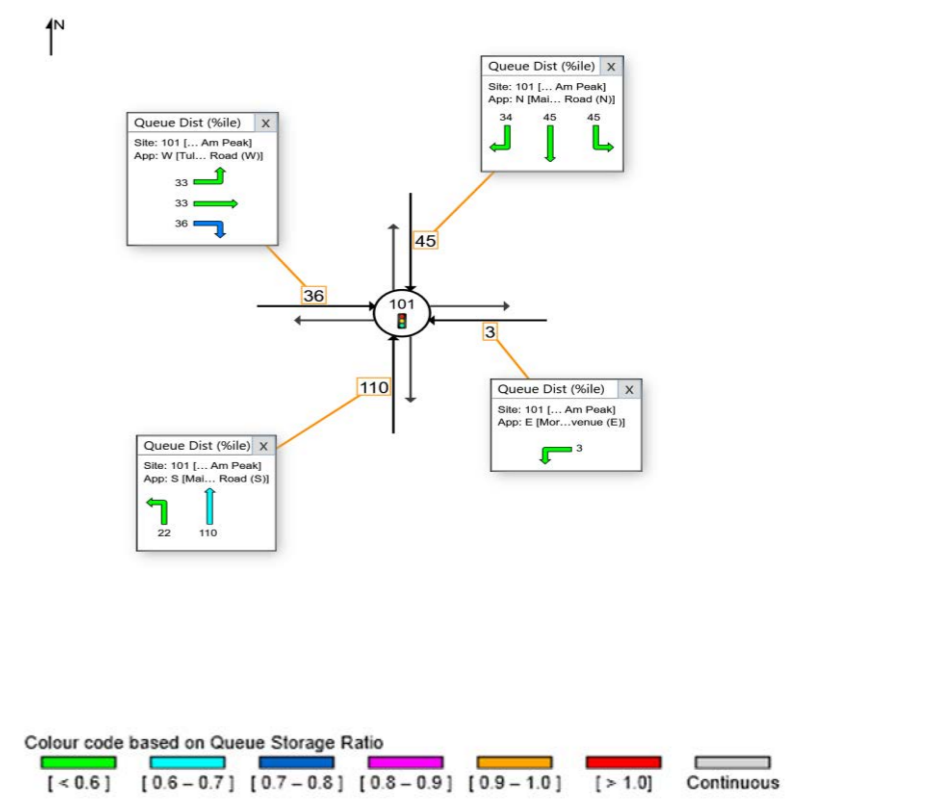
INTERSECTION LAYOUT



DEGREE OF SATURATION



95%ile QUEUE DISTANCE (metres)



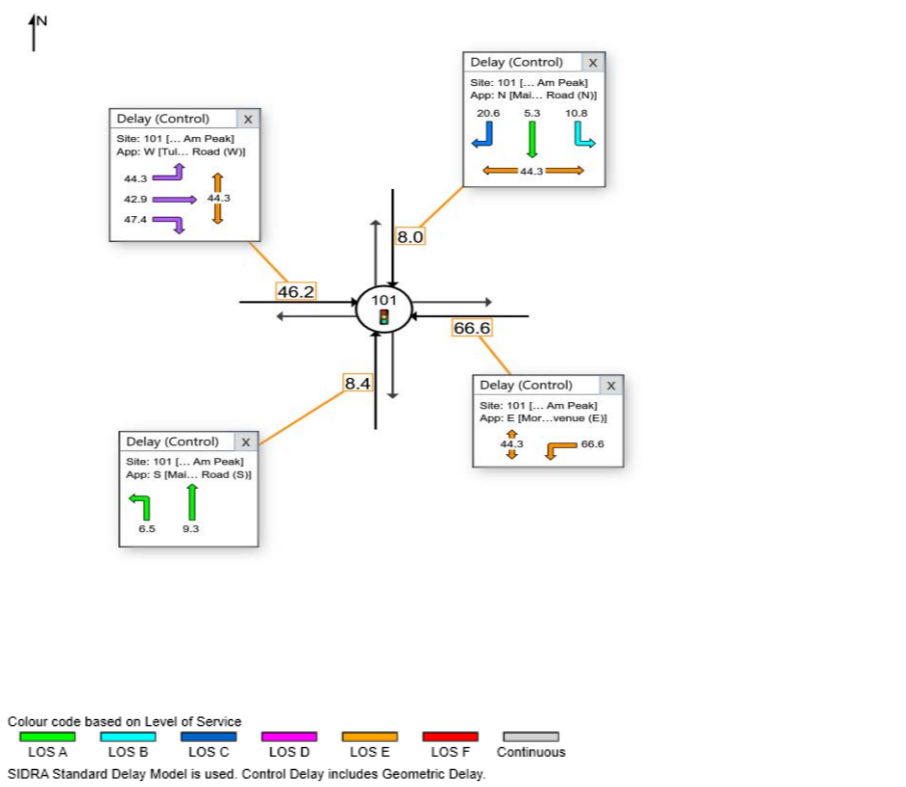
PHASING SUMMARY

Phase Timing Summary

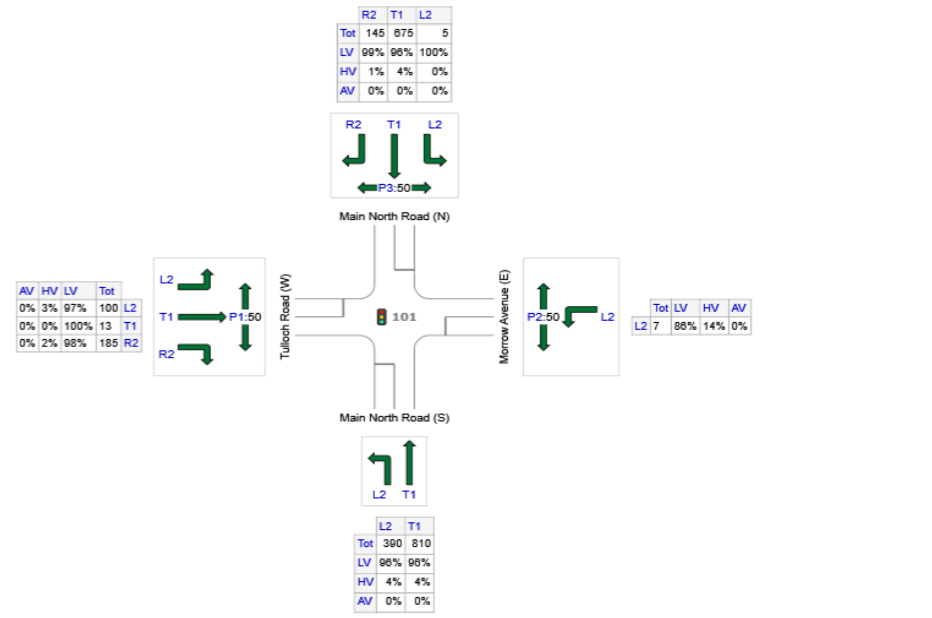
Phase	A	B	C	E
Phase Change Time (sec)	0	64	73	91
Green Time (sec)	63	3	16	2
Phase Time (sec)	69	5	23	3
Phase Split	69%	5%	23%	3%

Phase	Diagram
Phase A	[Diagram showing Main North Road (N) and Morrow Avenue (E) movements]
Phase B	[Diagram showing Main North Road (S) and Morrow Avenue (E) movements]
Phase C	[Diagram showing Tulloch Road (W) and Morrow Avenue (E) movements]
Phase E	[Diagram showing Main North Road (N) and Morrow Avenue (E) movements]

DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES



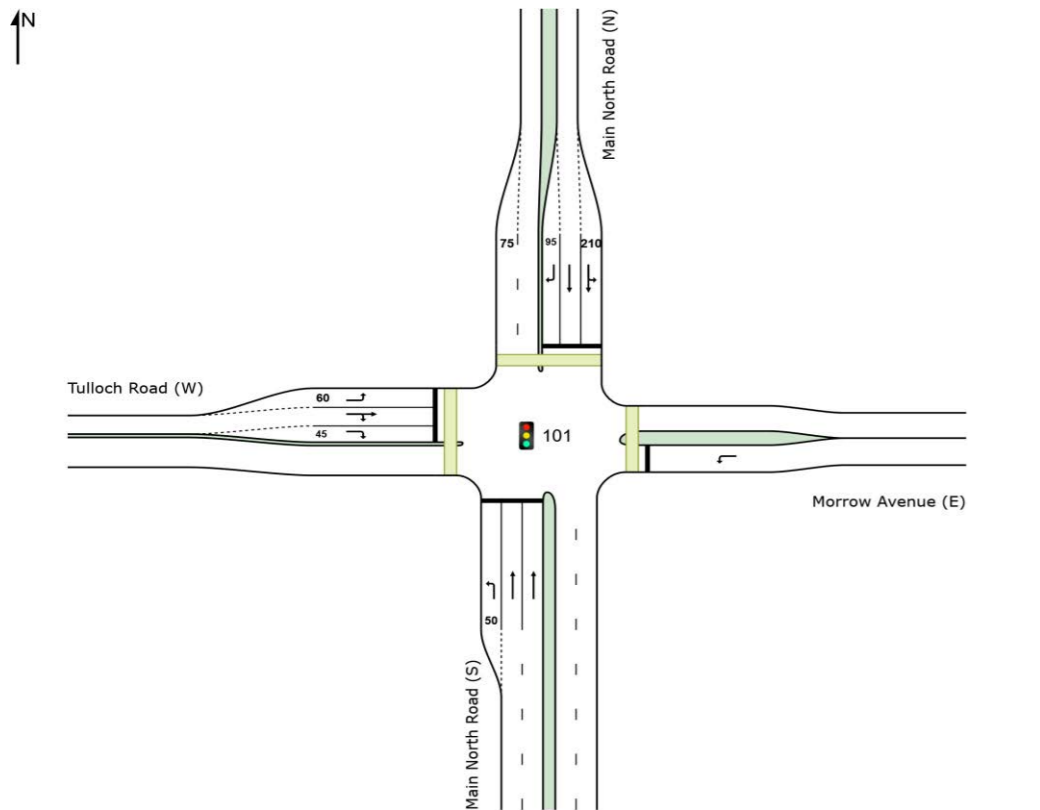
- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

JOB NUMBER:	21-0117
PROJECT NAME:	EVANSTON CODE AMENDMENT 550 - 560 MAIN NORTH ROAD, EVANSTON

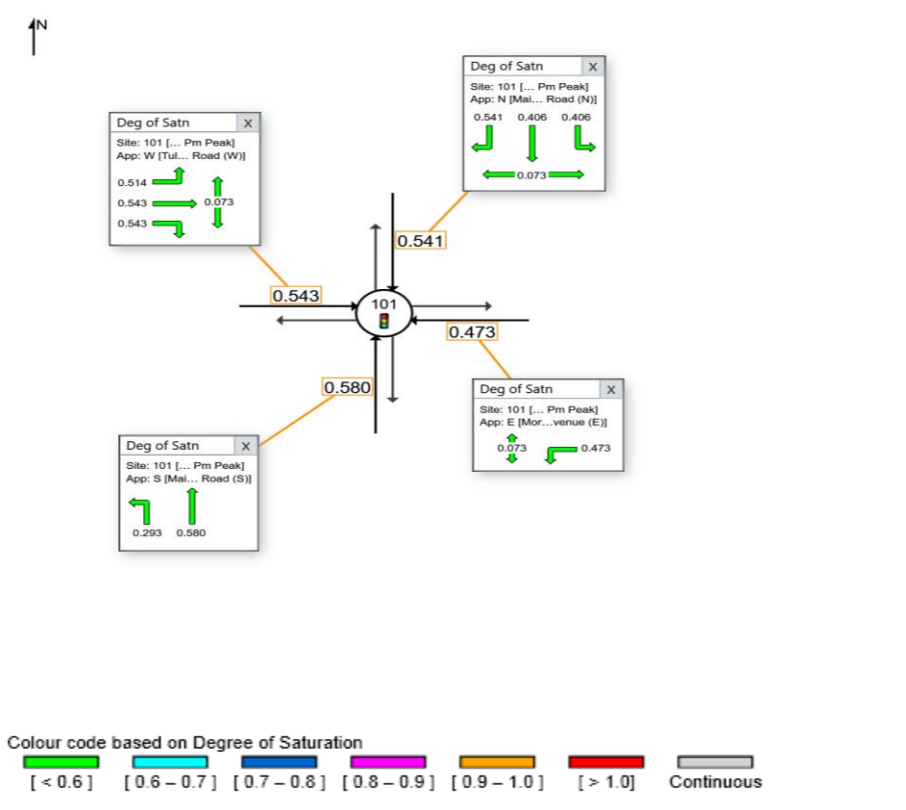
INTERSECTION:	MAIN NORTH ROAD/TULLOCH ROAD/MORROW AVENUE
SCENARIO:	AM PEAK HOUR PROJECT SCENARIO



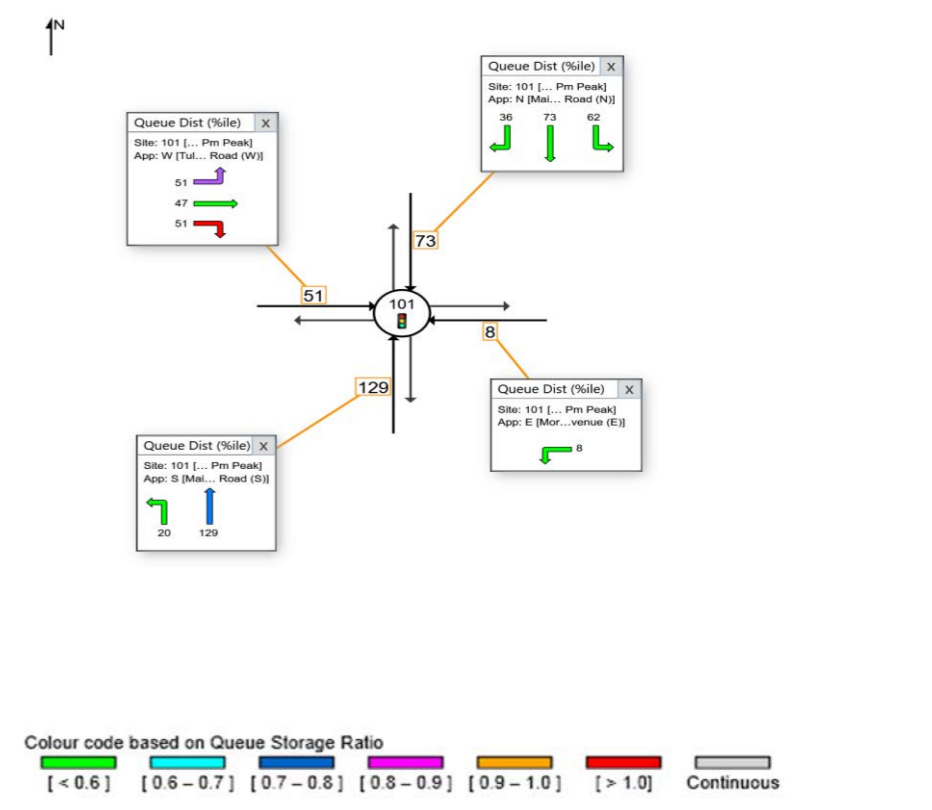
INTERSECTION LAYOUT



DEGREE OF SATURATION



95%ile QUEUE DISTANCE (metres)



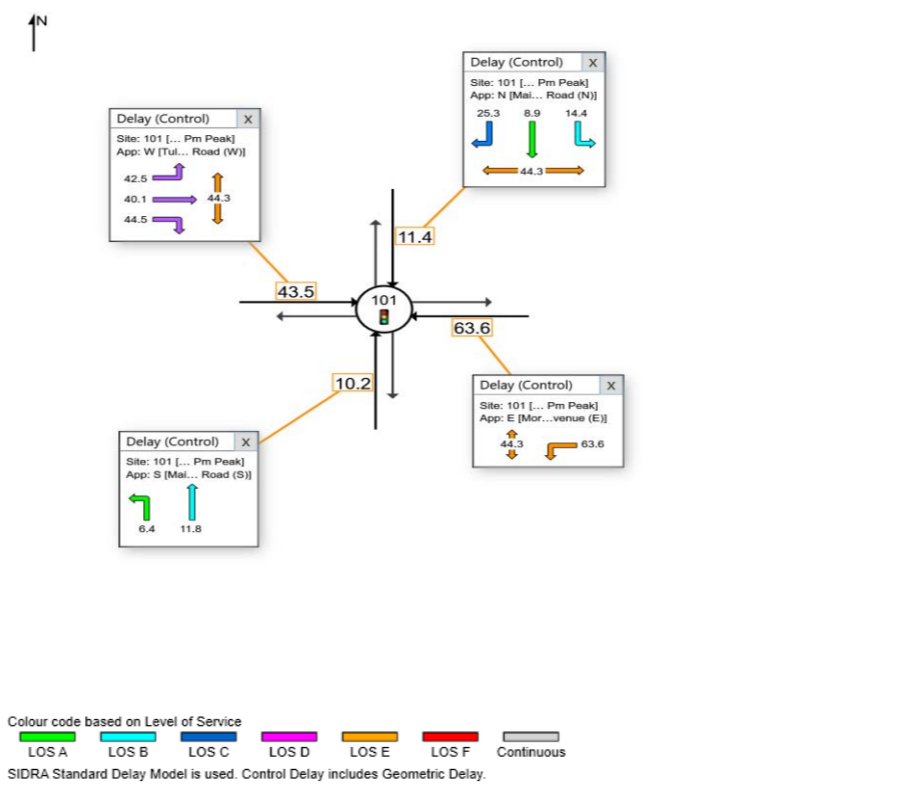
PHASING SUMMARY

Phase Timing Summary

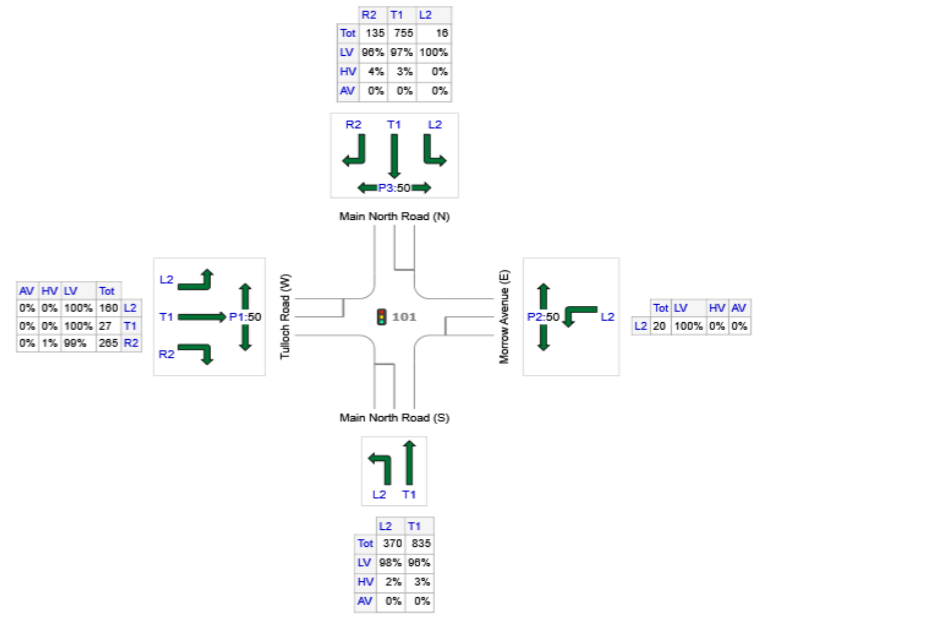
Phase	A	B	C	E
Phase Change Time (sec)	0	59	68	90
Green Time (sec)	56	3	20	3
Phase Time (sec)	62	5	27	6
Phase Split	62%	5%	27%	6%

Phase	Diagram
Phase A	[Diagram showing Main North Road (N) and Morrow Avenue (E) movements]
Phase B	[Diagram showing Main North Road (S) and Morrow Avenue (E) movements]
Phase C	[Diagram showing Tulloch Road (W) and Morrow Avenue (E) movements]
Phase E	[Diagram showing Main North Road (N) and Morrow Avenue (E) movements]

DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES



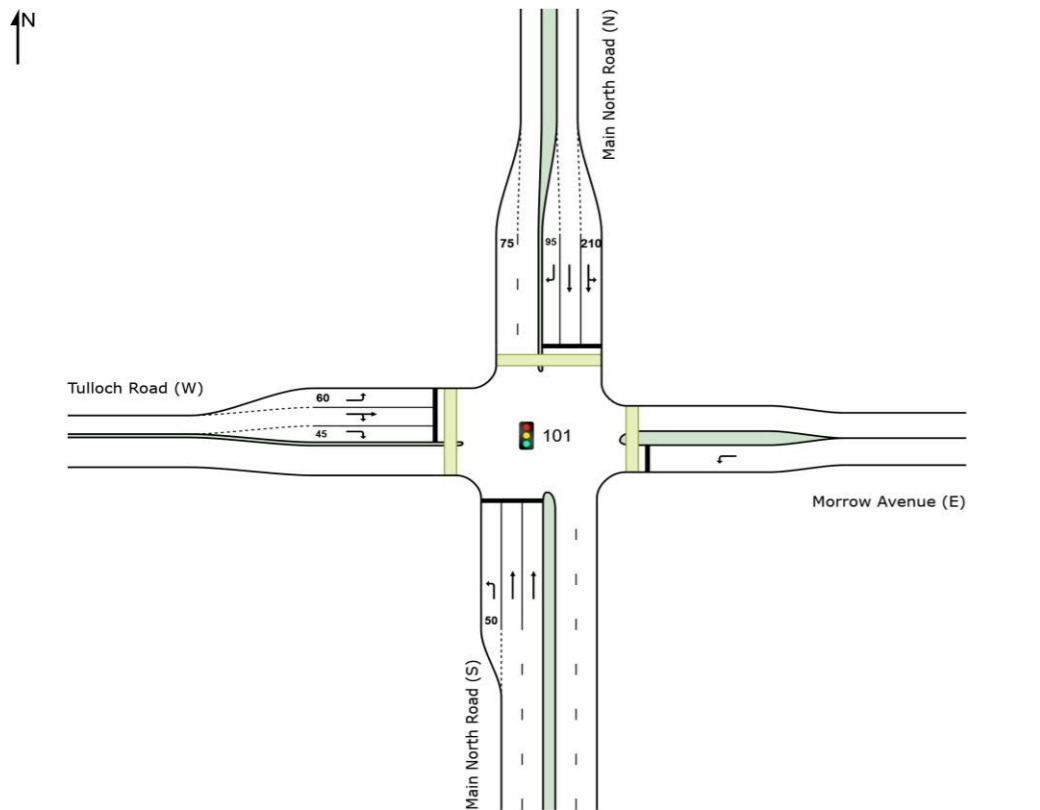
- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

JOB NUMBER:	21-0117
PROJECT NAME:	EVANSTON CODE AMENDMENT 550 - 560 MAIN NORTH ROAD, EVANSTON

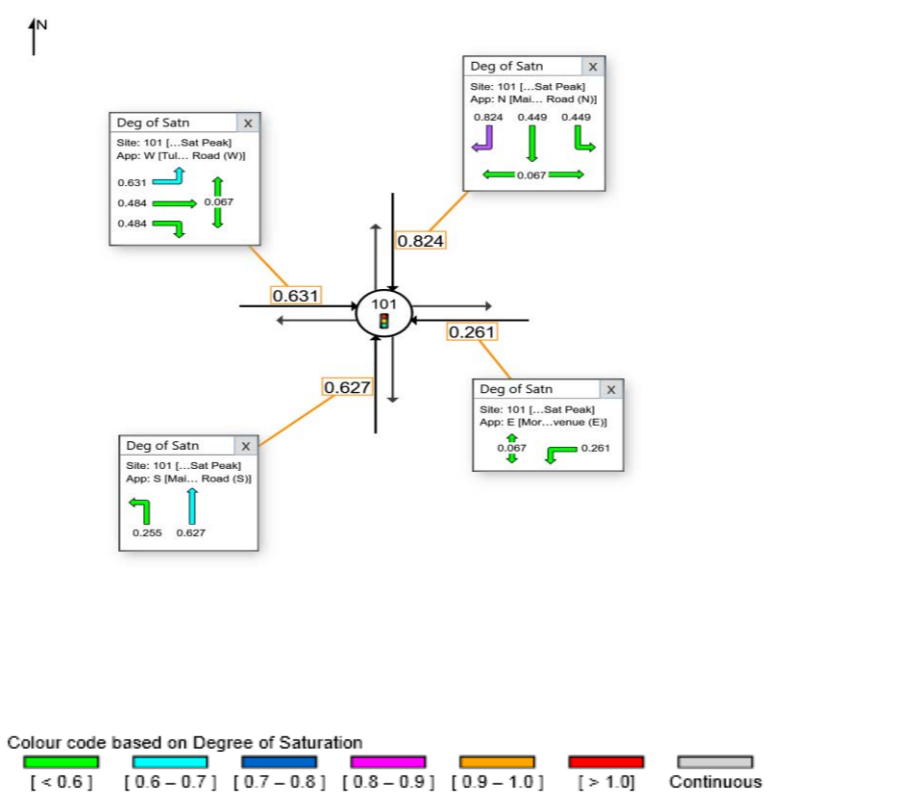
INTERSECTION:	MAIN NORTH ROAD/TULLOCH ROAD/MORROW AVENUE
SCENARIO:	PM PEAK HOUR PROJECT SCENARIO



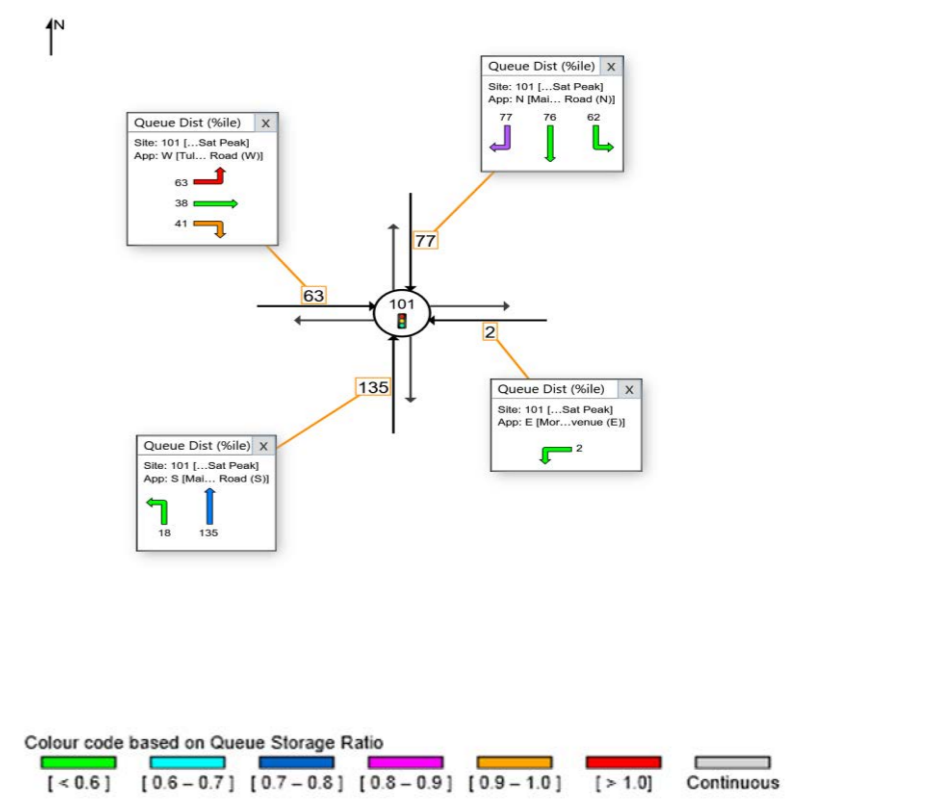
INTERSECTION LAYOUT



DEGREE OF SATURATION



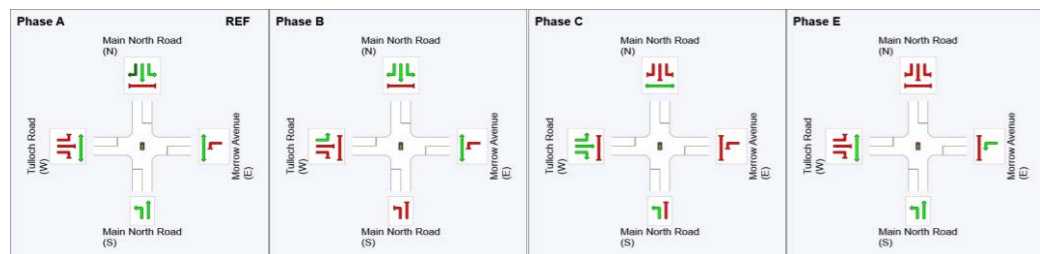
95%ile QUEUE DISTANCE (metres)



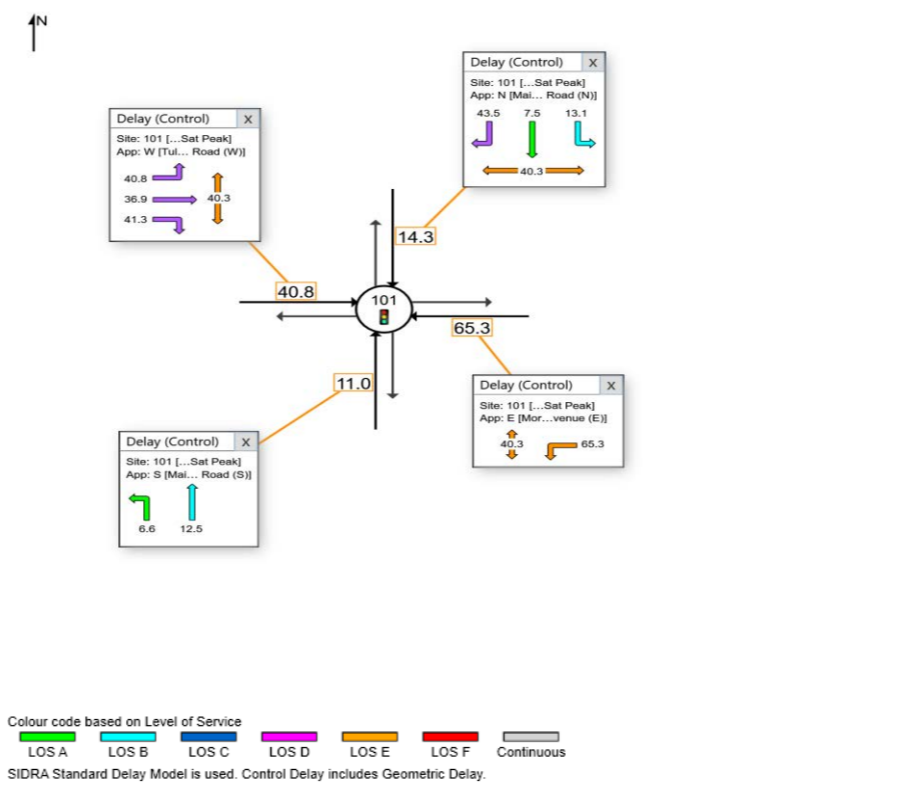
PHASING SUMMARY

Phase Timing Summary

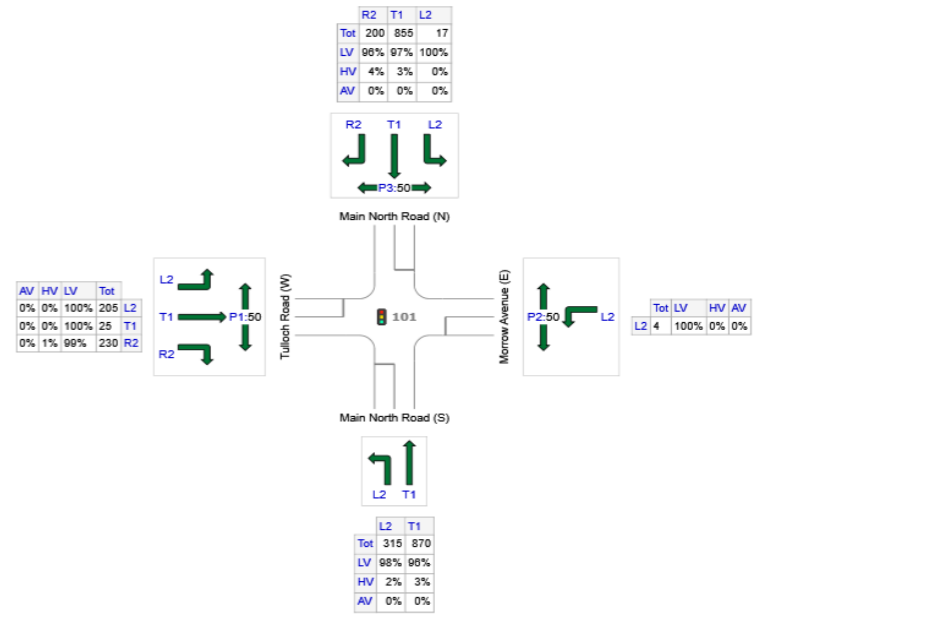
Phase	A	B	C	E
Phase Change Time (sec)	0	54	63	84
Green Time (sec)	53	3	18	1
Phase Time (sec)	59	6	25	2
Phase Split	64%	7%	27%	2%



DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES



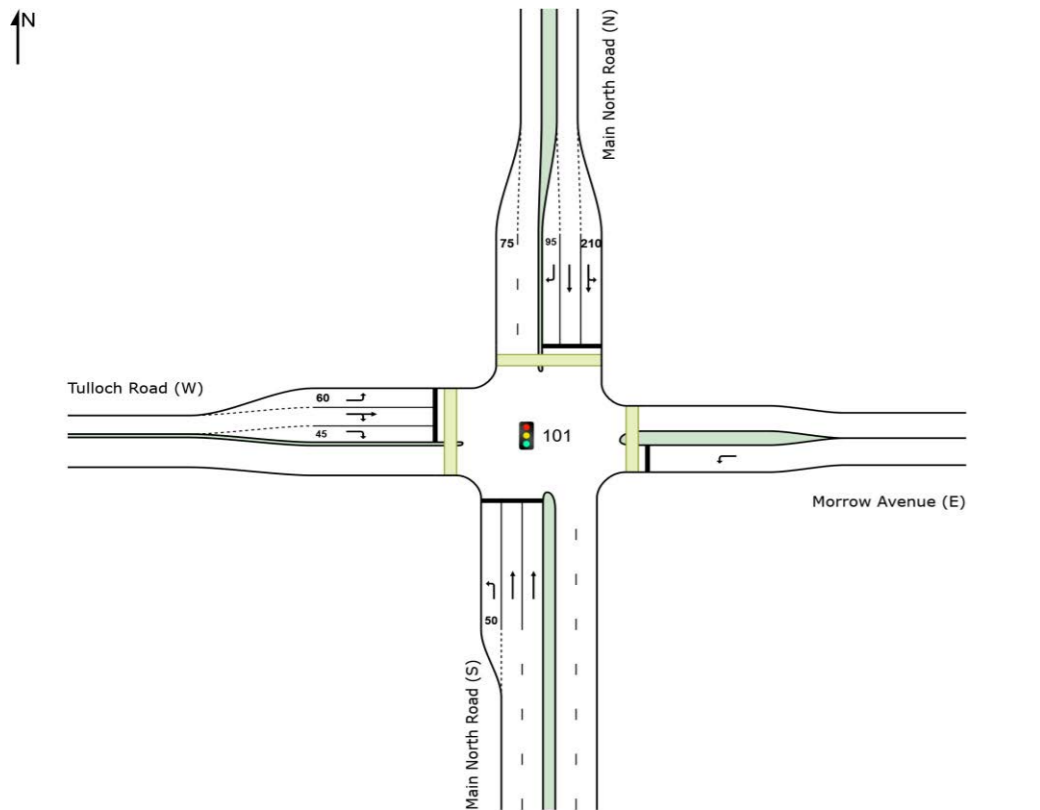
- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

JOB NUMBER:	21-0117
PROJECT NAME:	EVANSTON CODE AMENDMENT 550 - 560 MAIN NORTH ROAD, EVANSTON

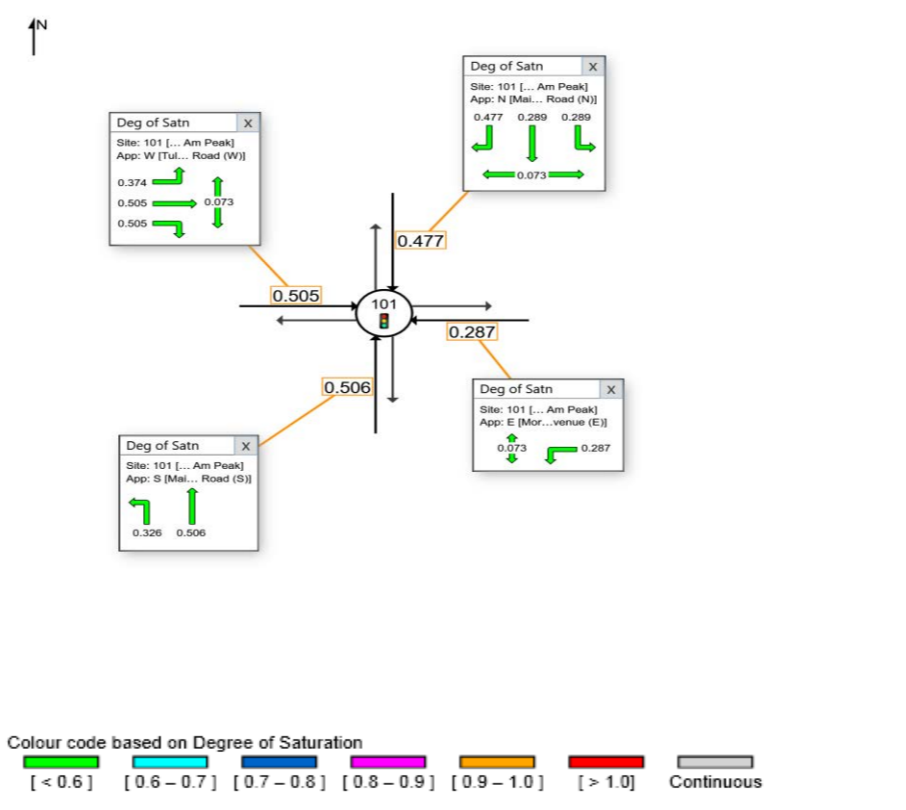
INTERSECTION:	MAIN NORTH ROAD/TULLOCH ROAD/MORROW AVENUE
SCENARIO:	SAT PEAK HOUR PROJECT SCENARIO



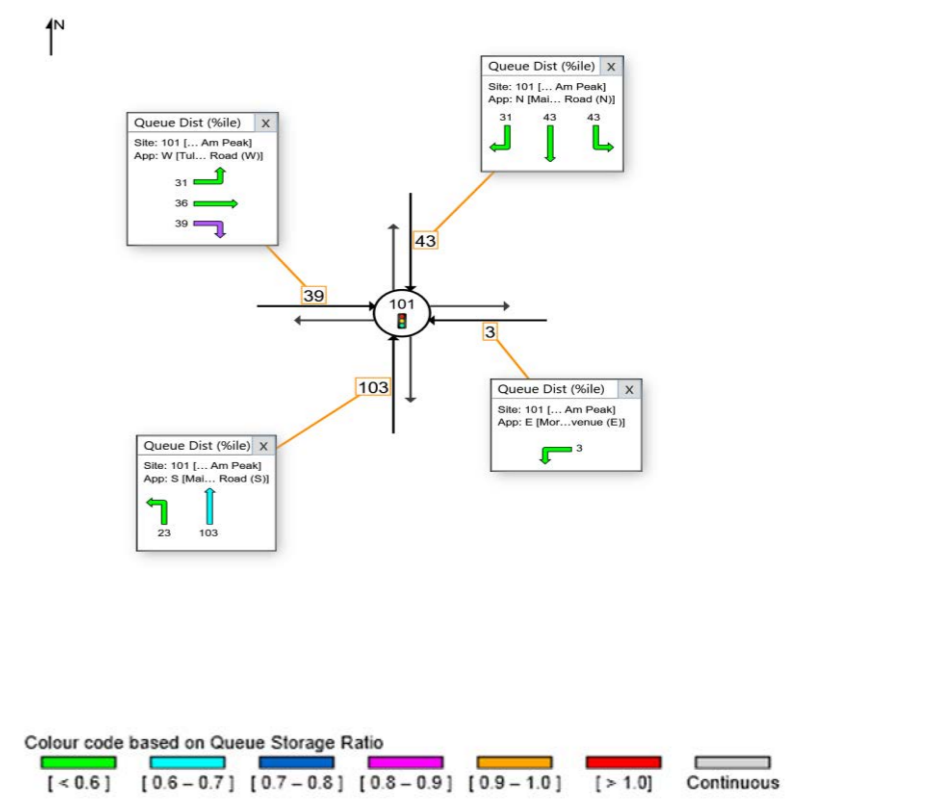
INTERSECTION LAYOUT



DEGREE OF SATURATION



95%ile QUEUE DISTANCE (metres)



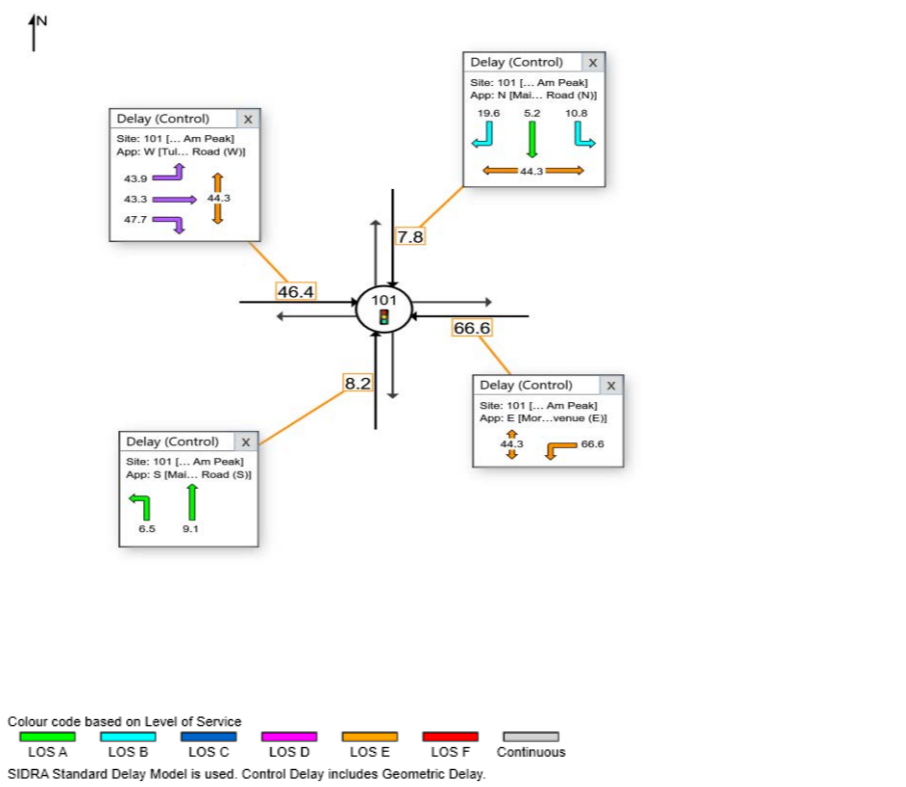
PHASING SUMMARY

Phase Timing Summary

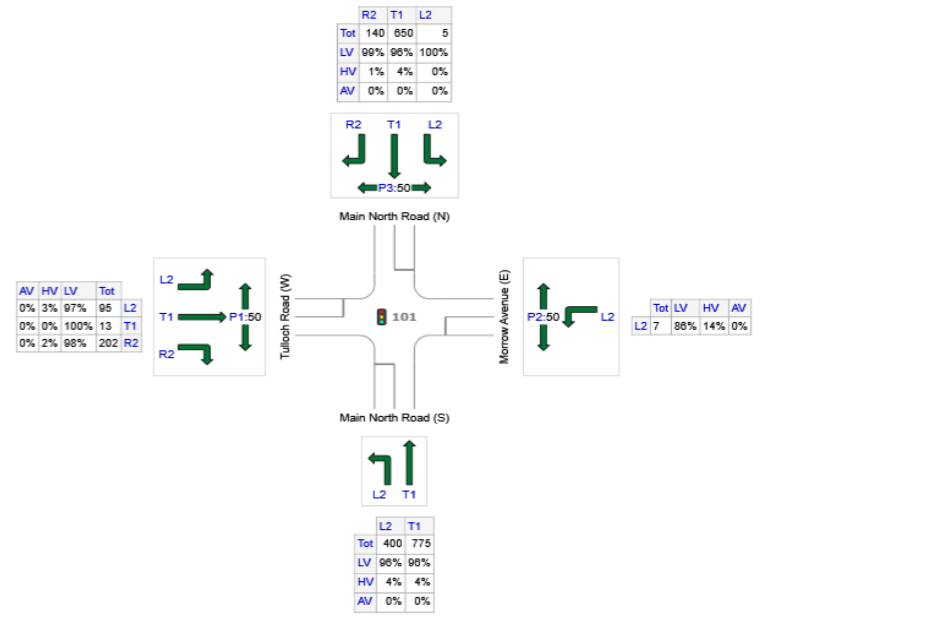
Phase	A	B	C	E
Phase Change Time (sec)	0	64	73	91
Green Time (sec)	63	3	16	2
Phase Time (sec)	69	5	23	3
Phase Split	69%	5%	23%	3%

Phase	Diagram
Phase A	[Diagram showing Main North Road (N) and Morrow Avenue (E) movements]
Phase B	[Diagram showing Main North Road (S) and Morrow Avenue (E) movements]
Phase C	[Diagram showing Tulloch Road (W) and Main North Road (S) movements]
Phase E	[Diagram showing Main North Road (N) and Morrow Avenue (E) movements]

DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES



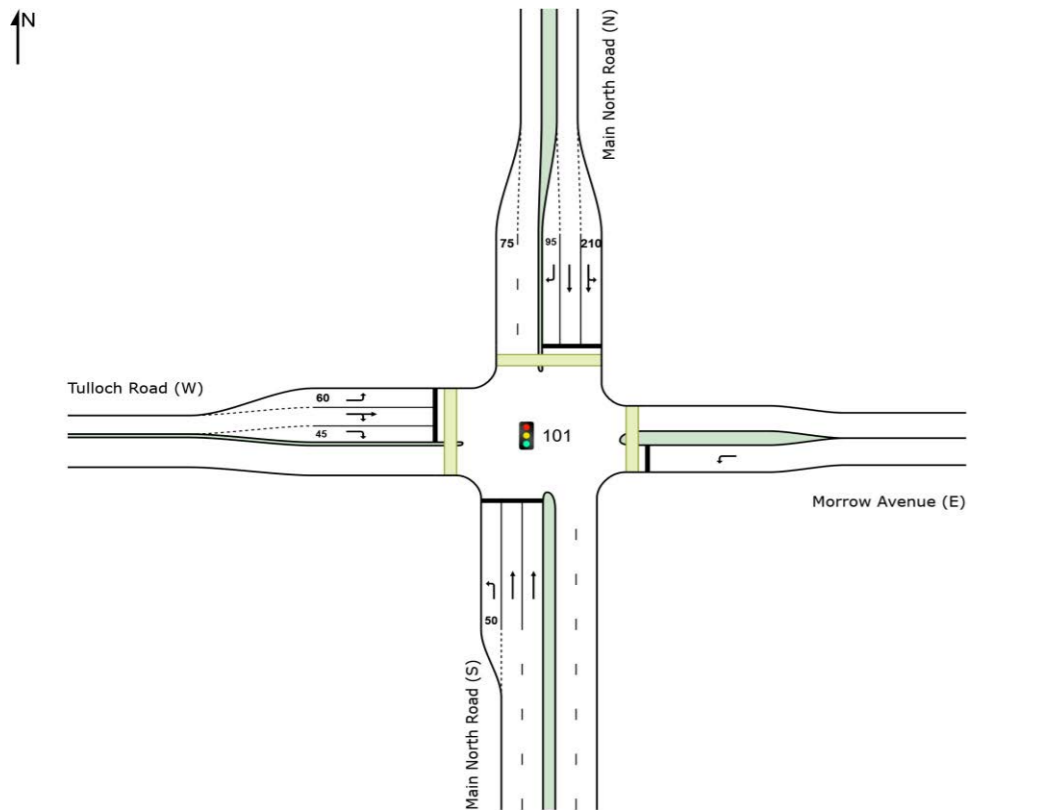
- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

JOB NUMBER:	21-0117
PROJECT NAME:	EVANSTON CODE AMENDMENT 550 - 560 MAIN NORTH ROAD, EVANSTON

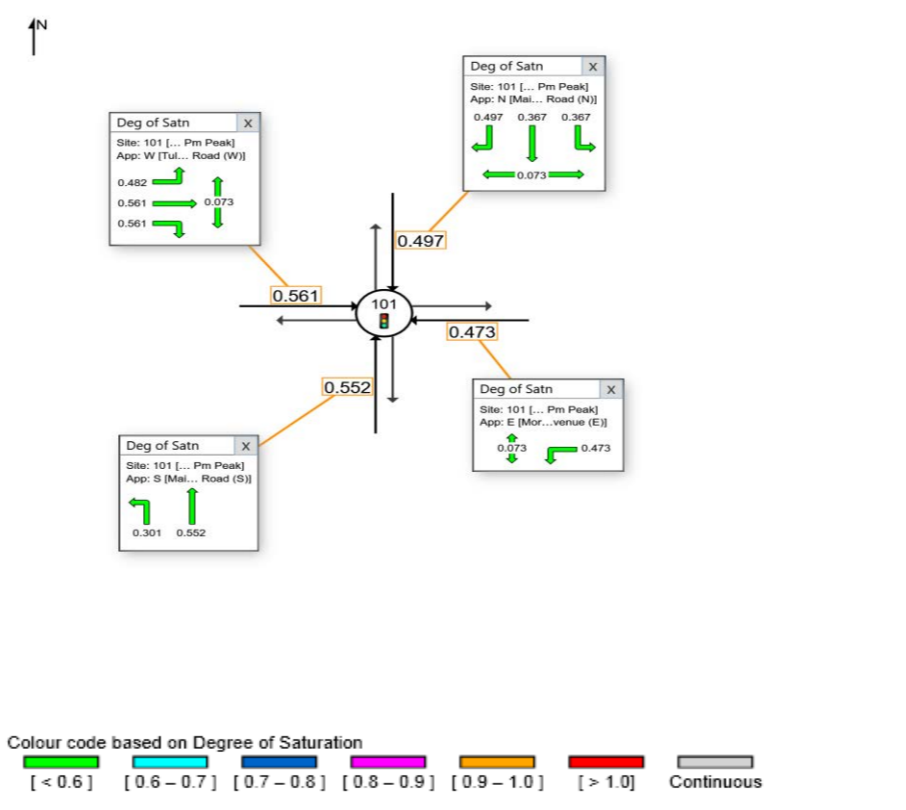
INTERSECTION:	MAIN NORTH ROAD/TULLOCH ROAD/MORROW AVENUE
SCENARIO:	AM PEAK HOUR SENSITIVITY ANALYSIS



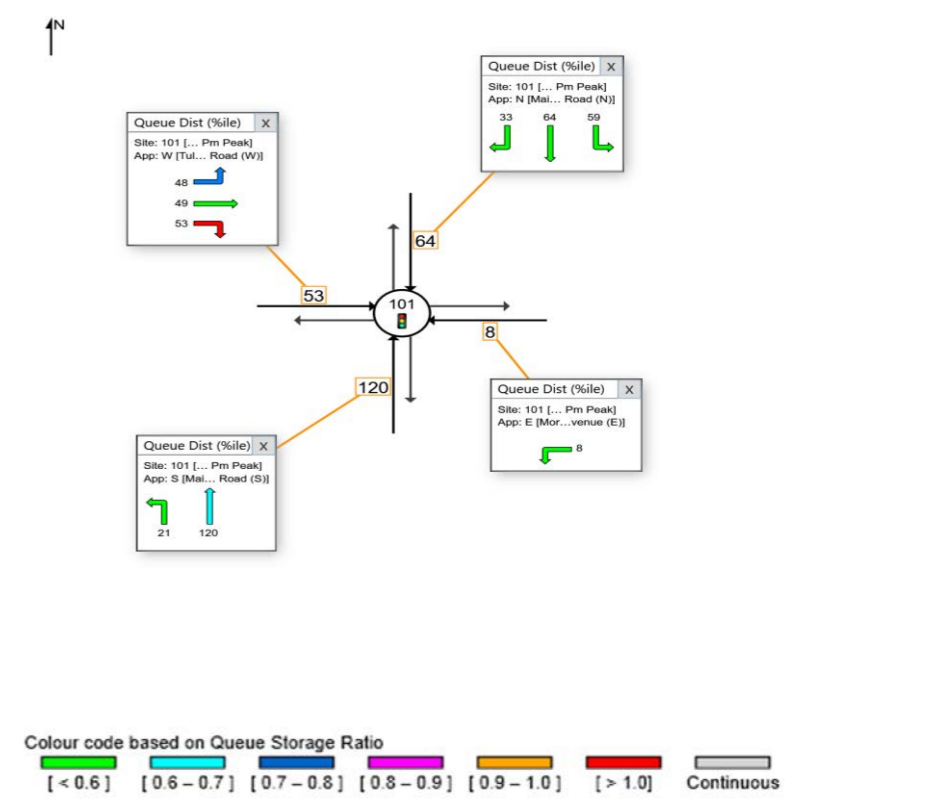
INTERSECTION LAYOUT



DEGREE OF SATURATION



95%ile QUEUE DISTANCE (metres)



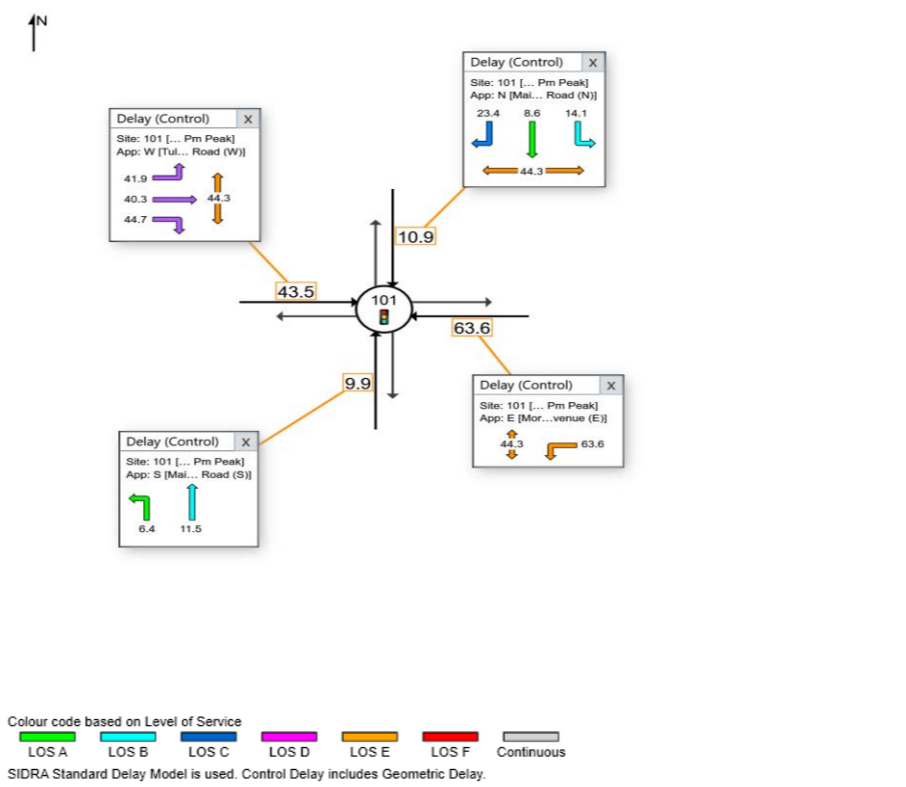
PHASING SUMMARY

Phase Timing Summary

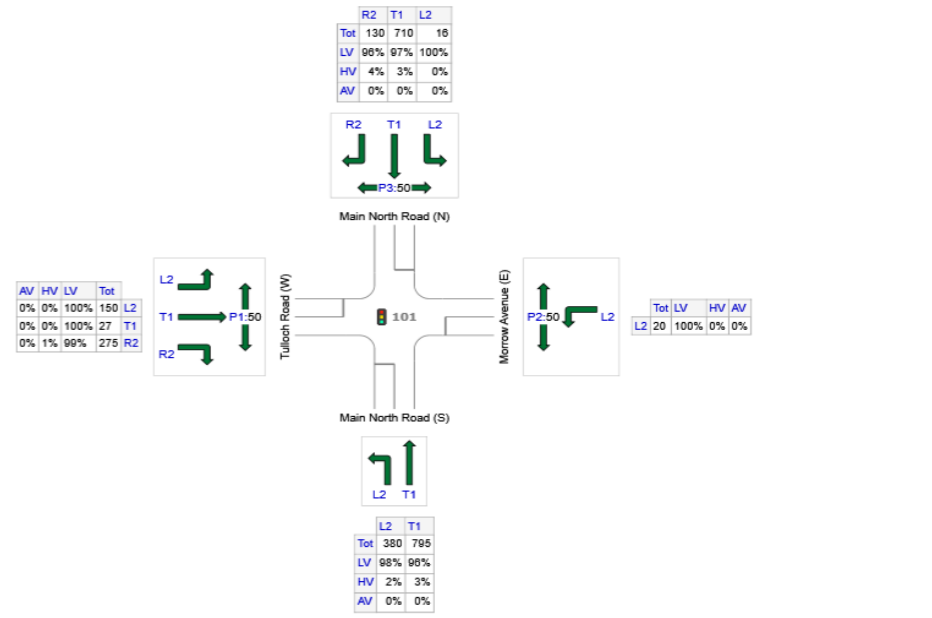
Phase	A	B	C	E
Phase Change Time (sec)	0	59	68	90
Green Time (sec)	56	3	20	3
Phase Time (sec)	62	5	27	6
Phase Split	62%	5%	27%	6%

Phase	Diagram
Phase A	[Diagram showing Main North Road (N) and Morrow Avenue (E) movements]
Phase B	[Diagram showing Main North Road (S) and Morrow Avenue (E) movements]
Phase C	[Diagram showing Tulloch Road (W) and Morrow Avenue (E) movements]
Phase E	[Diagram showing Main North Road (N) and Morrow Avenue (E) movements]

DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES



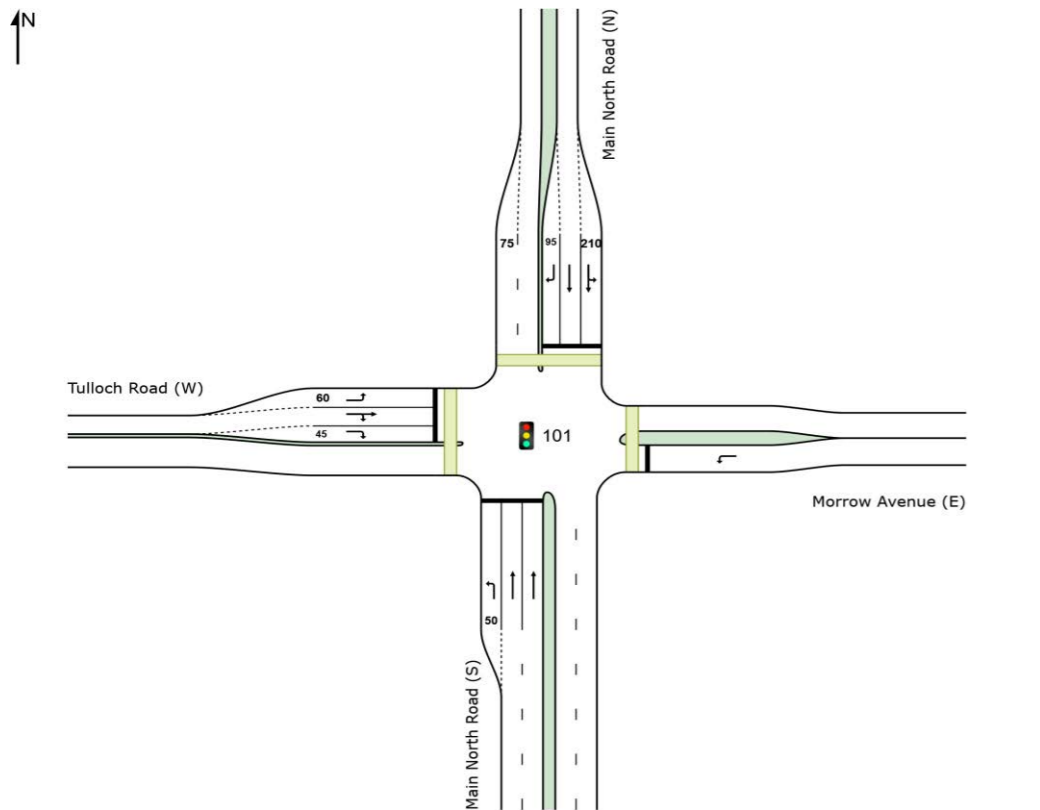
- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

JOB NUMBER:	21-0117
PROJECT NAME:	EVANSTON CODE AMENDMENT 550 - 560 MAIN NORTH ROAD, EVANSTON

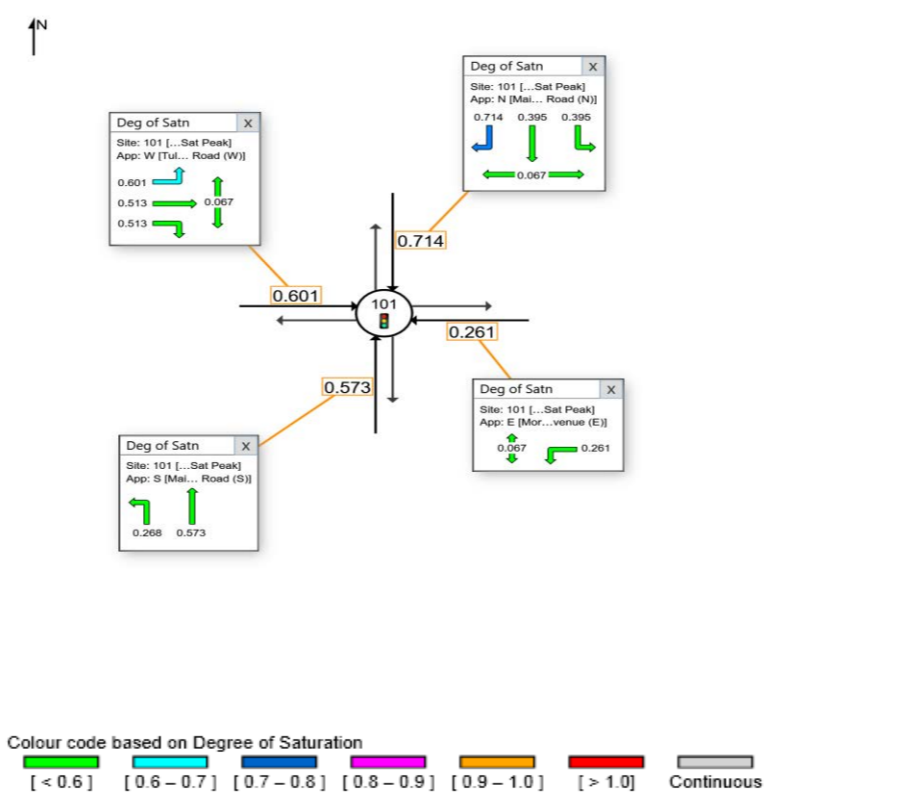
INTERSECTION:	MAIN NORTH ROAD/TULLOCH ROAD/MORROW AVENUE
SCENARIO:	PM PEAK HOUR SENSITIVITY ANALYSIS



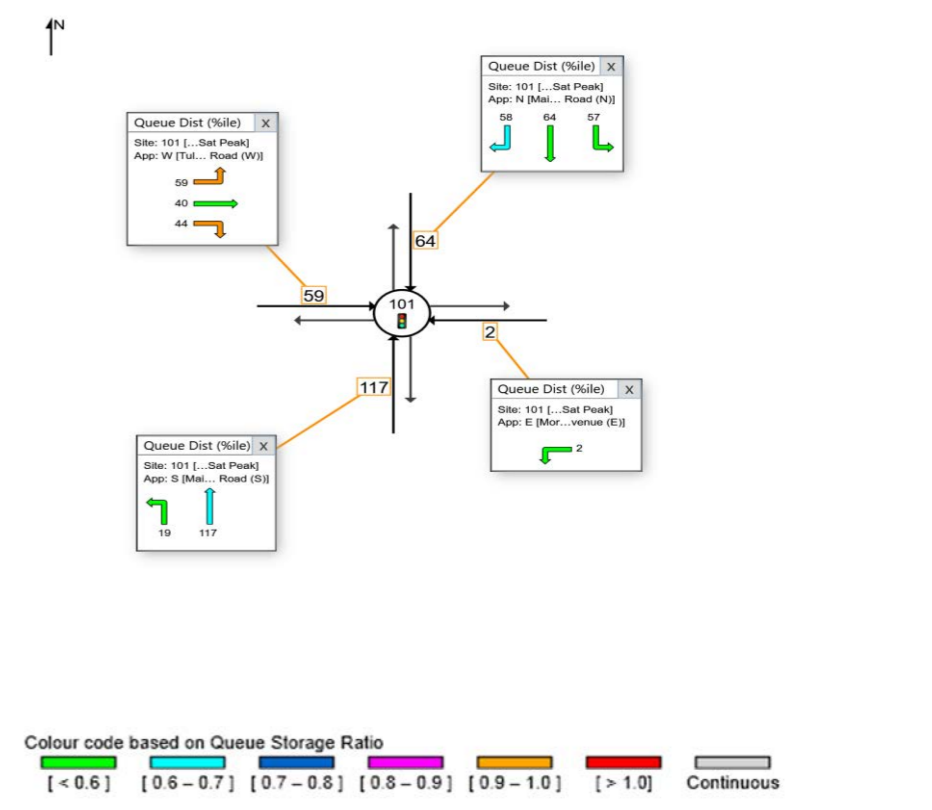
INTERSECTION LAYOUT



DEGREE OF SATURATION



95%ile QUEUE DISTANCE (metres)



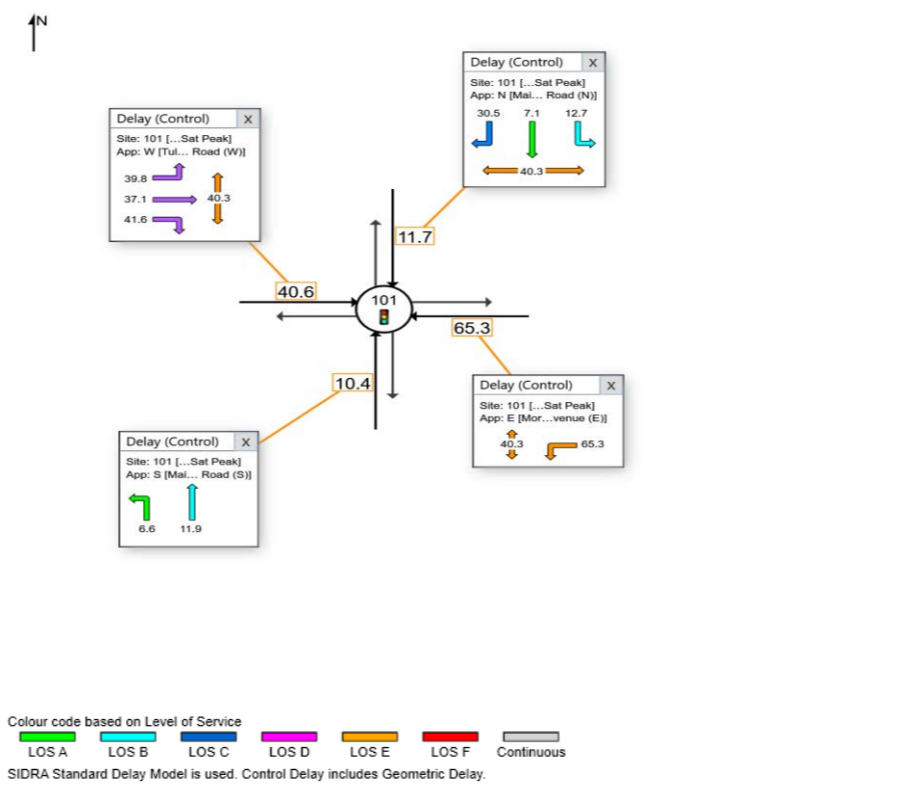
PHASING SUMMARY

Phase Timing Summary

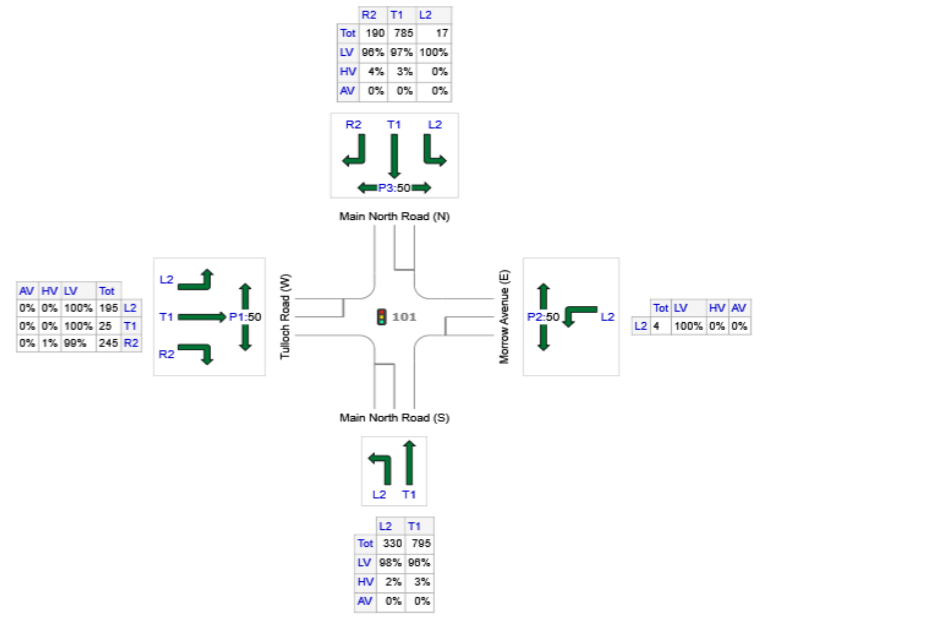
Phase	A	B	C	E
Phase Change Time (sec)	0	54	63	84
Green Time (sec)	53	3	18	1
Phase Time (sec)	59	6	25	2
Phase Split	64%	7%	27%	2%

Phase	Diagram
Phase A	[Diagram showing Main North Road (N) and Morrow Avenue (E) movements]
Phase B	[Diagram showing Main North Road (S) and Morrow Avenue (E) movements]
Phase C	[Diagram showing Tulloch Road (W) and Morrow Avenue (E) movements]
Phase E	[Diagram showing Main North Road (N) and Main North Road (S) movements]

DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES

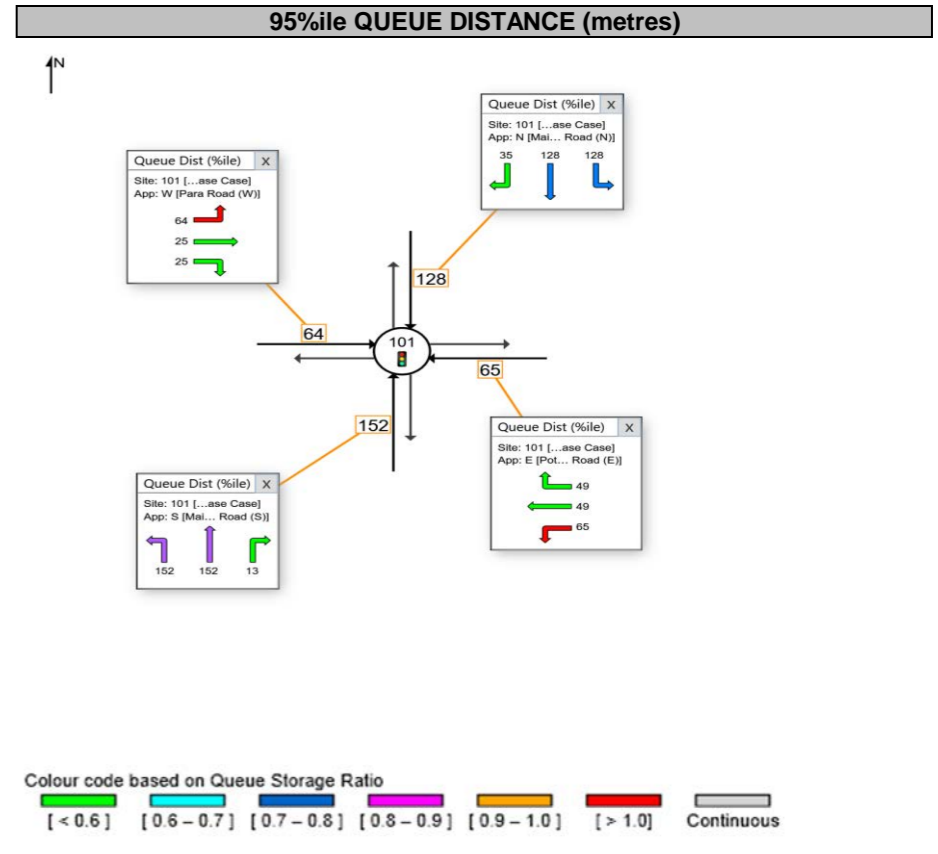
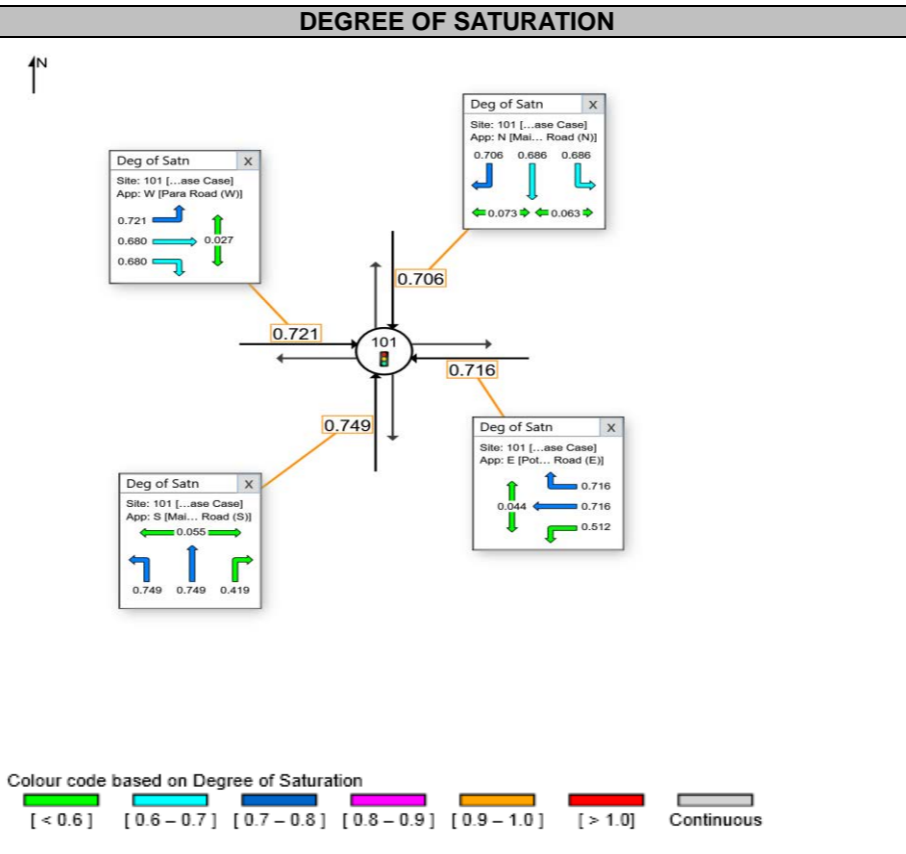
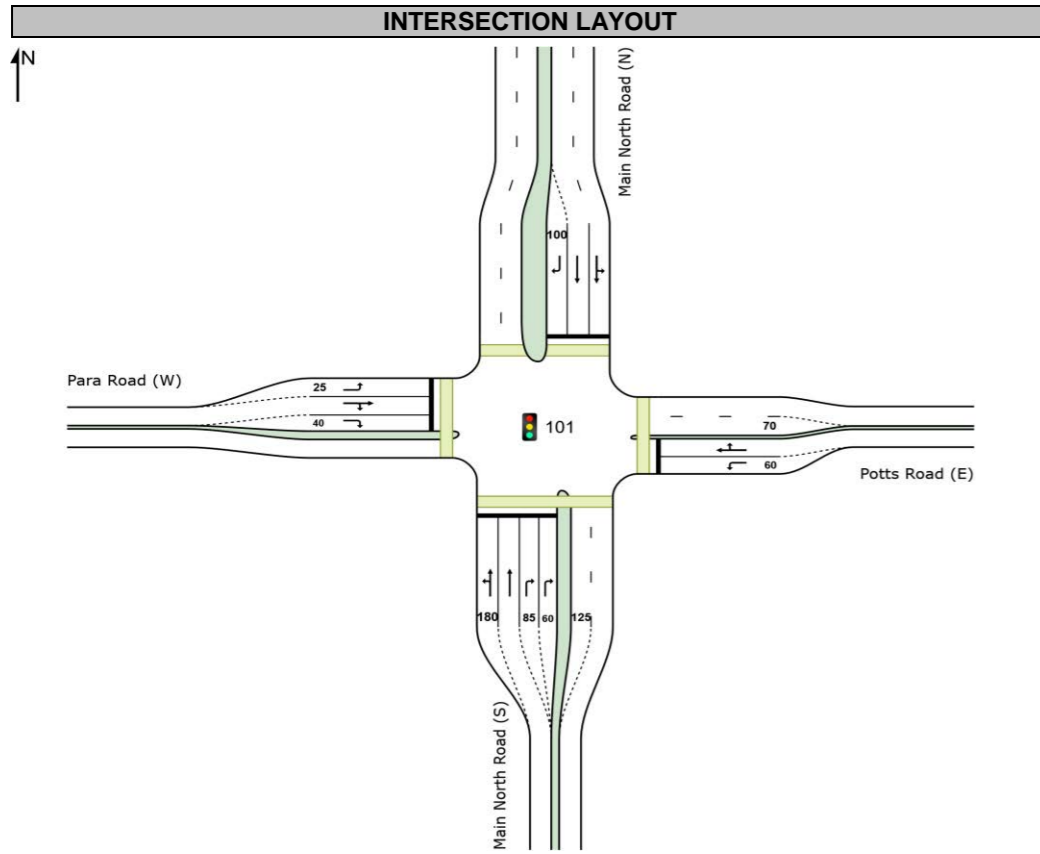


- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

JOB NUMBER:	21-0117
PROJECT NAME:	EVANSTON CODE AMENDMENT 550 - 560 MAIN NORTH ROAD, EVANSTON

INTERSECTION:	MAIN NORTH ROAD/TULLOCH ROAD/MORROW AVENUE
SCENARIO:	SAT PEAK HOUR SENSITIVITY ANALYSIS



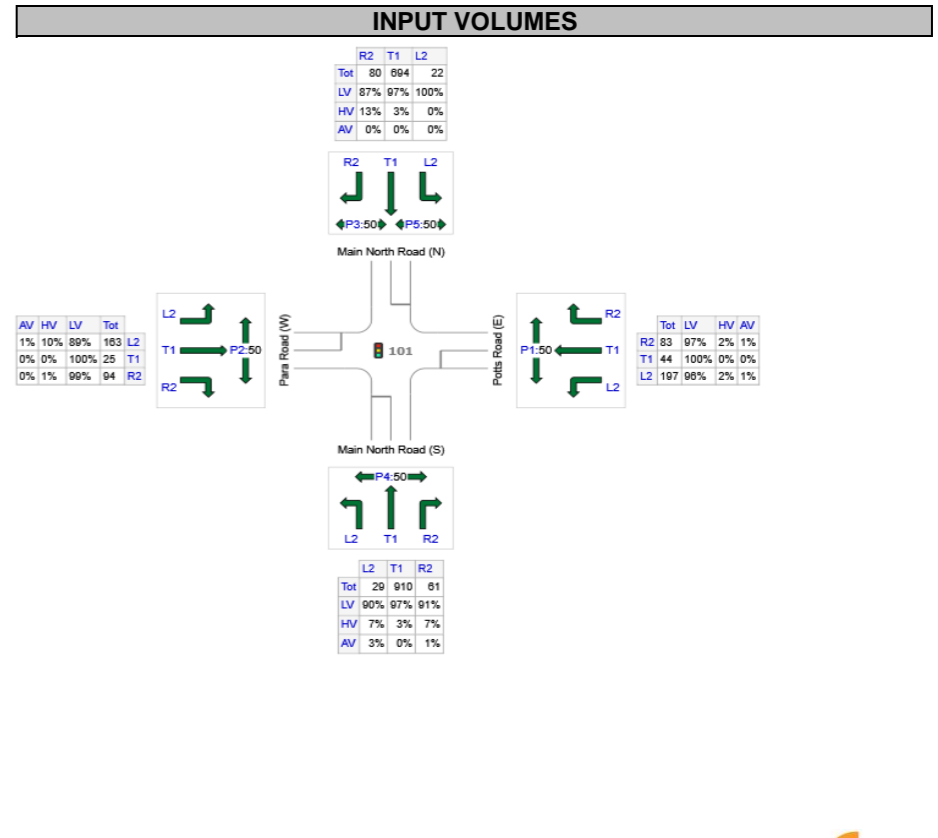
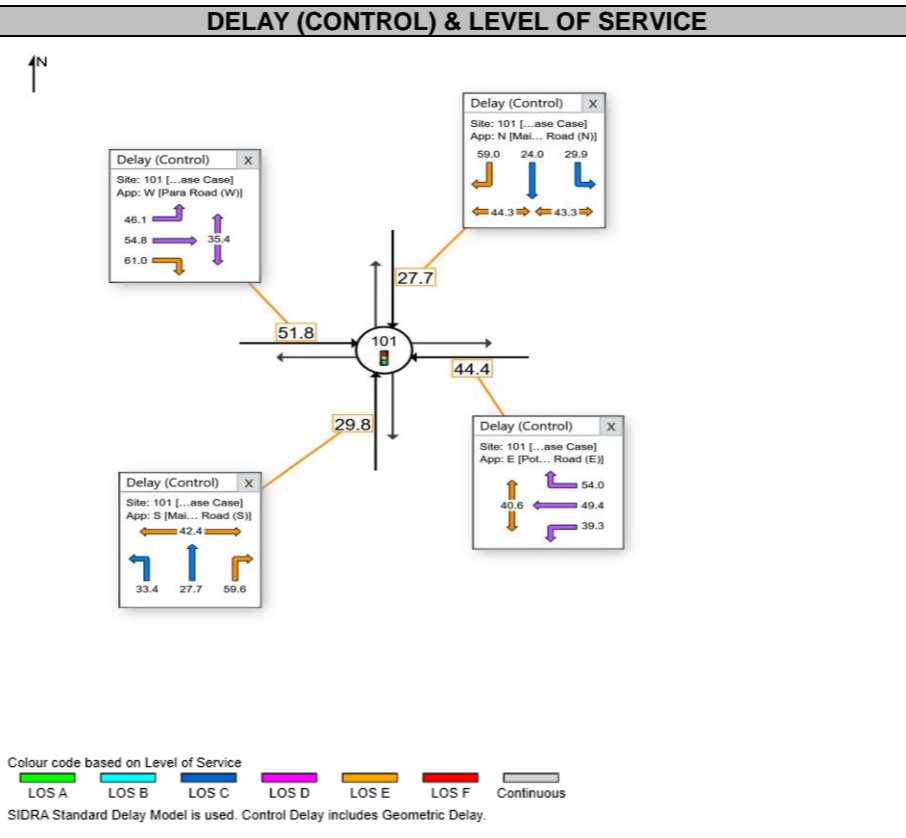


PHASING SUMMARY

Phase Timing Summary

Phase	A	B	D	E	C
Phase Change Time (sec)	0	36	52	66	87
Green Time (sec)	28	9	7	13	6
Phase Time (sec)	35	16	15	20	14
Phase Split	35%	16%	15%	20%	14%

- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied



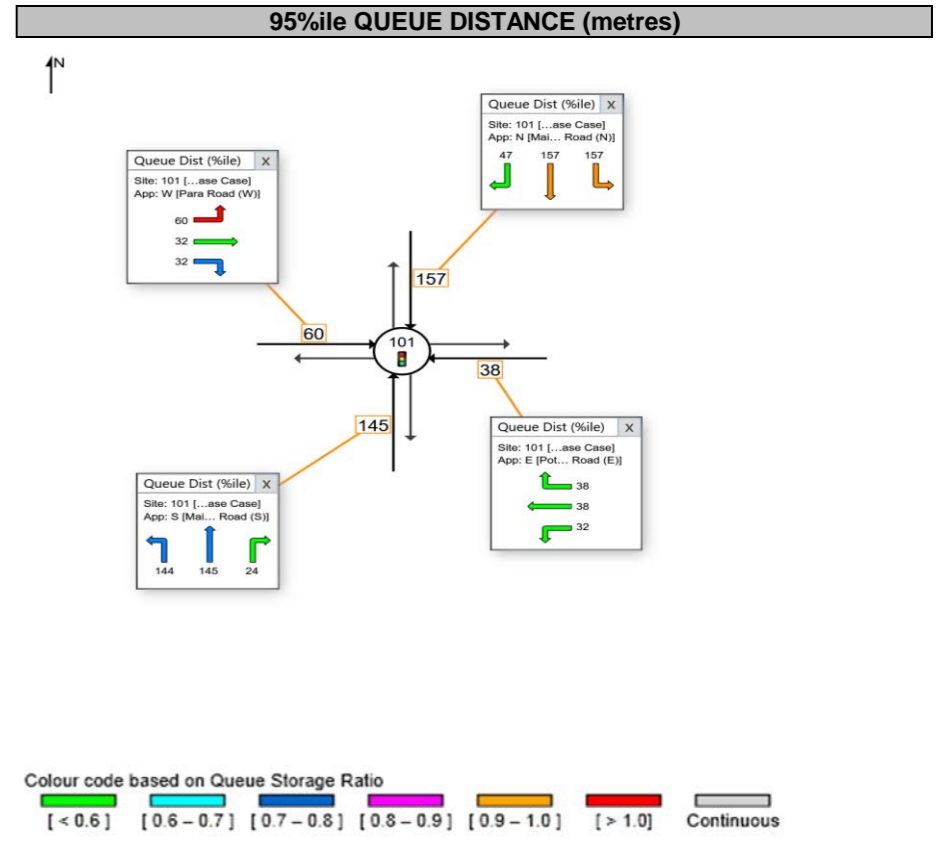
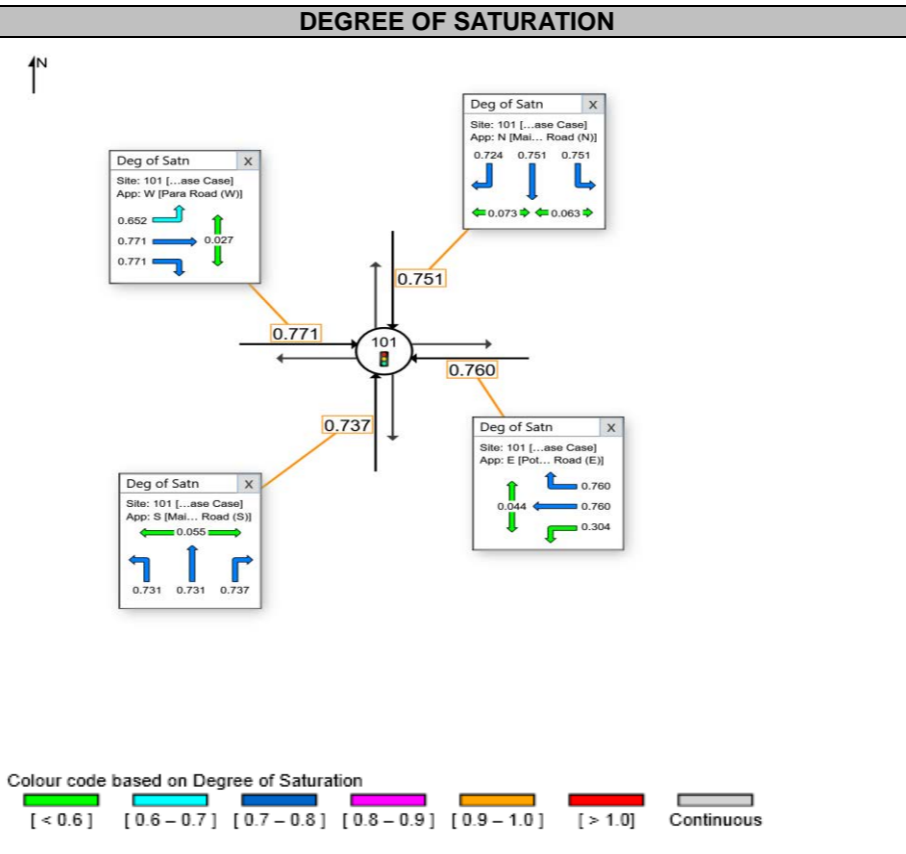
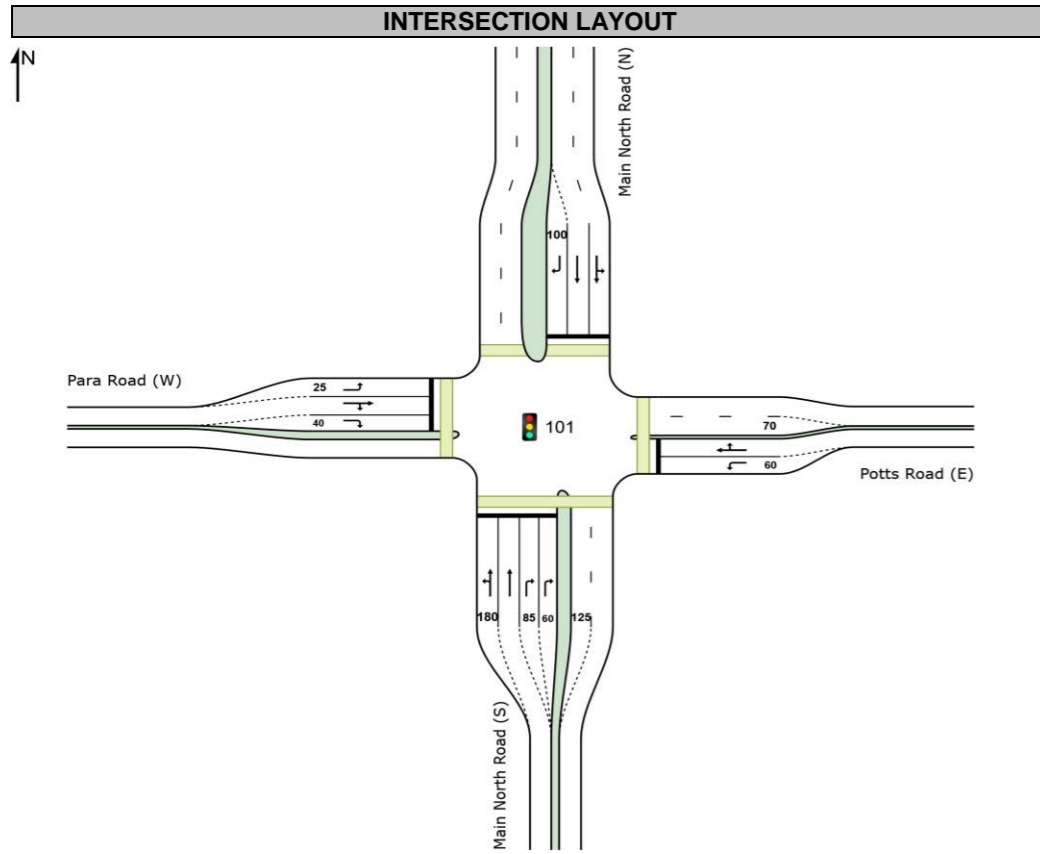
JOB NUMBER: 21-0117

PROJECT NAME: EVANSTON CODE AMENDMENT
550 - 560 MAIN NORTH ROAD, EVANSTON

INTERSECTION: MAIN NORTH ROAD/POTTS ROAD/PARA ROAD

SCENARIO: AM PEAK HOUR
BASE CASE





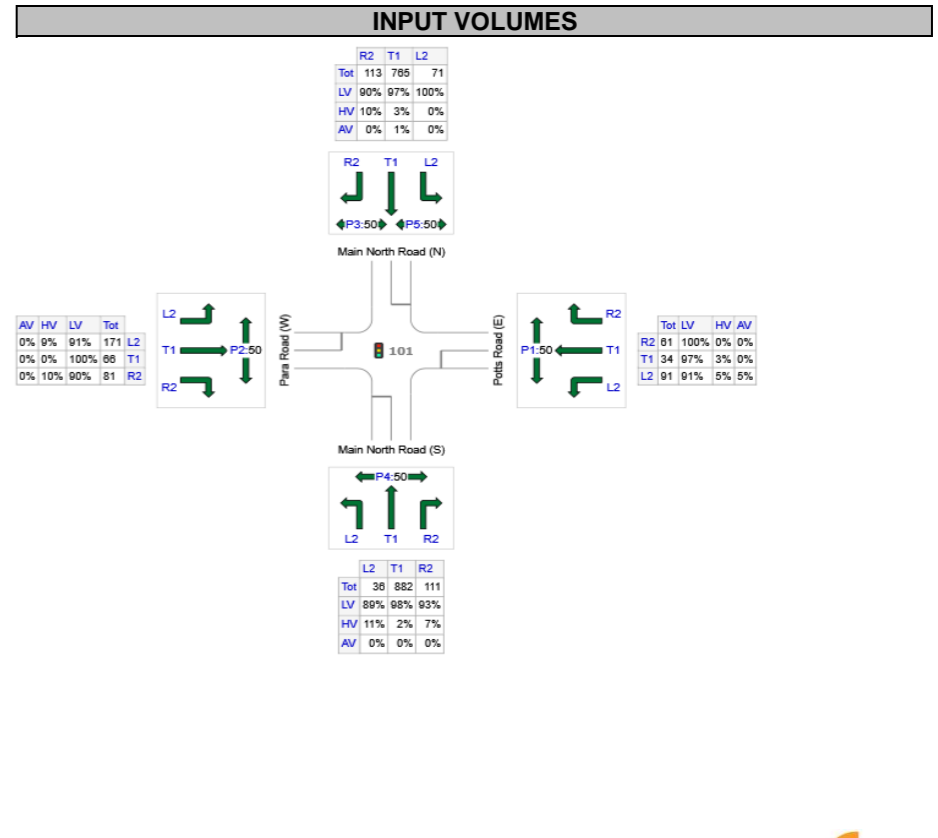
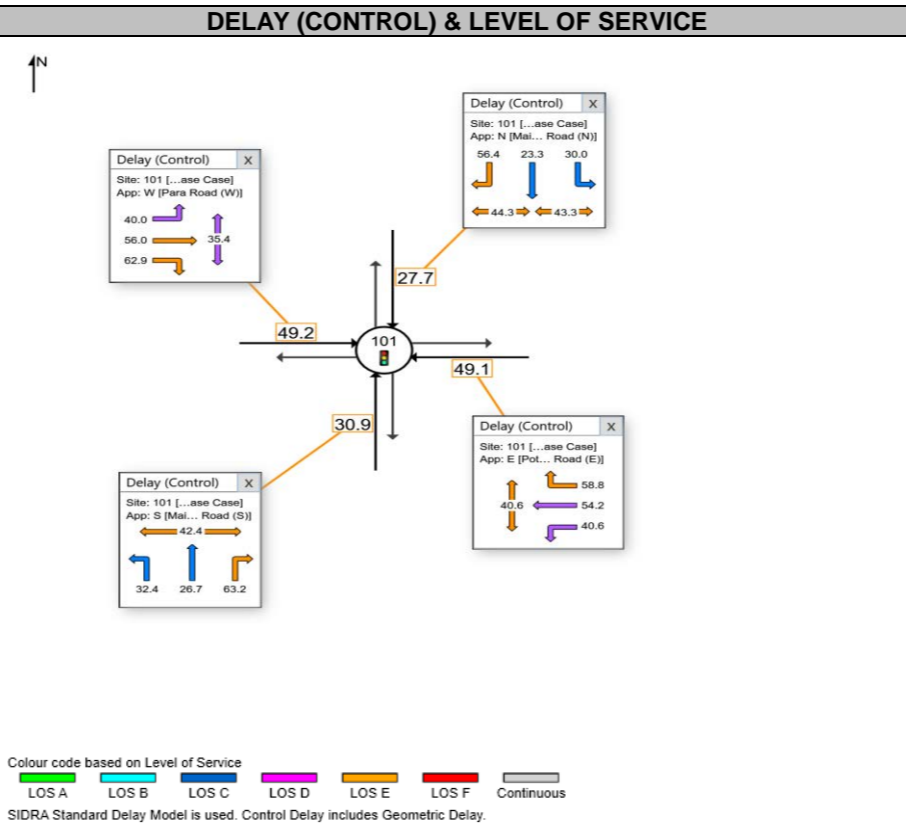
PHASING SUMMARY

Phase Timing Summary

Phase	A	B	D	E	C
Phase Change Time (sec)	0	36	55	70	87
Green Time (sec)	28	12	8	9	6
Phase Time (sec)	35	19	16	16	14
Phase Split	35%	19%	16%	16%	14%

Phase A Main North Road (N), Para Road (W), Potts Road (E)
Phase B Main North Road (N), Para Road (W), Potts Road (E)
Phase D Main North Road (N), Para Road (W), Potts Road (E)
Phase E Main North Road (N), Para Road (W), Potts Road (E)
Phase C Main North Road (N), Para Road (W), Potts Road (E)

- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied



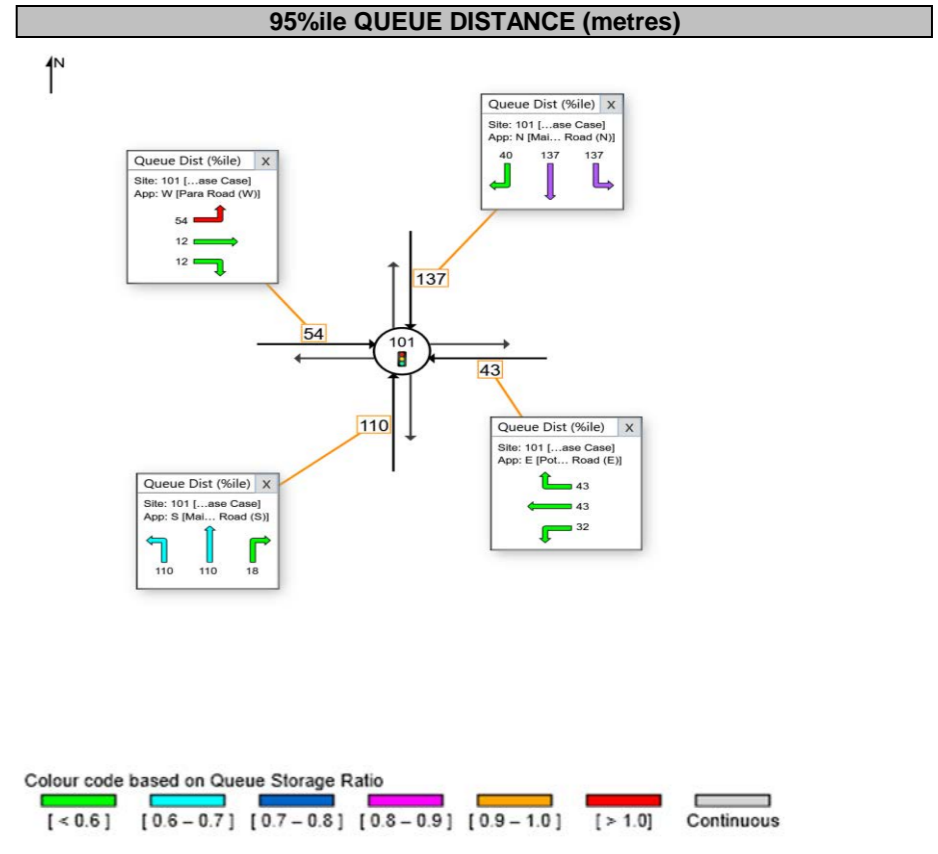
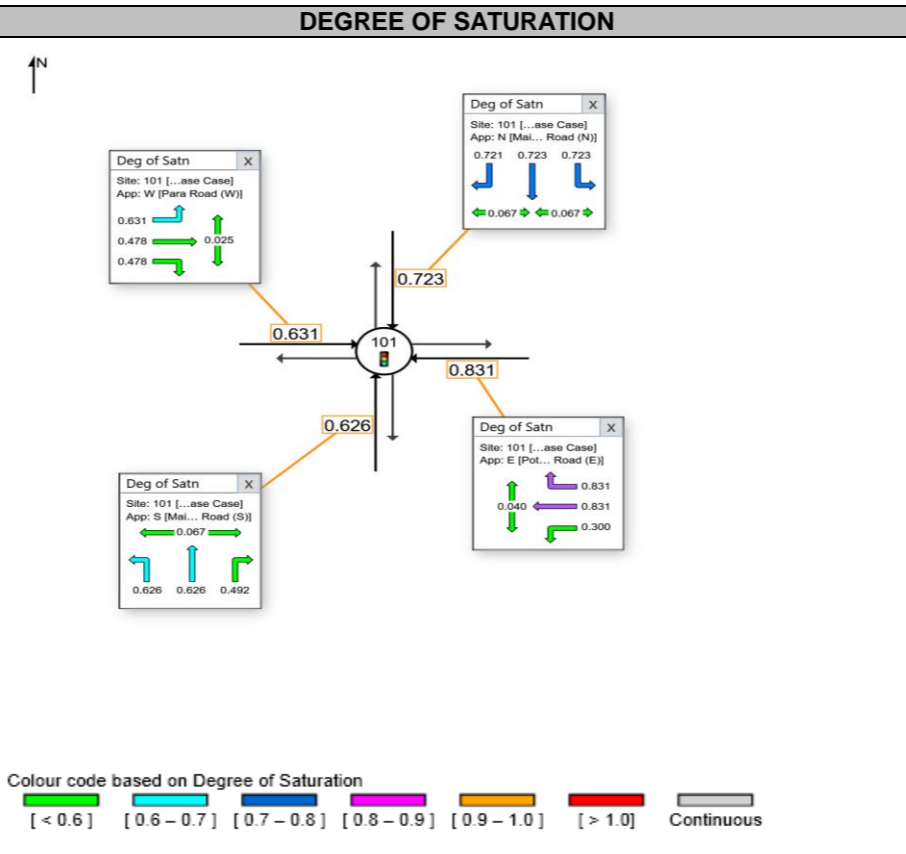
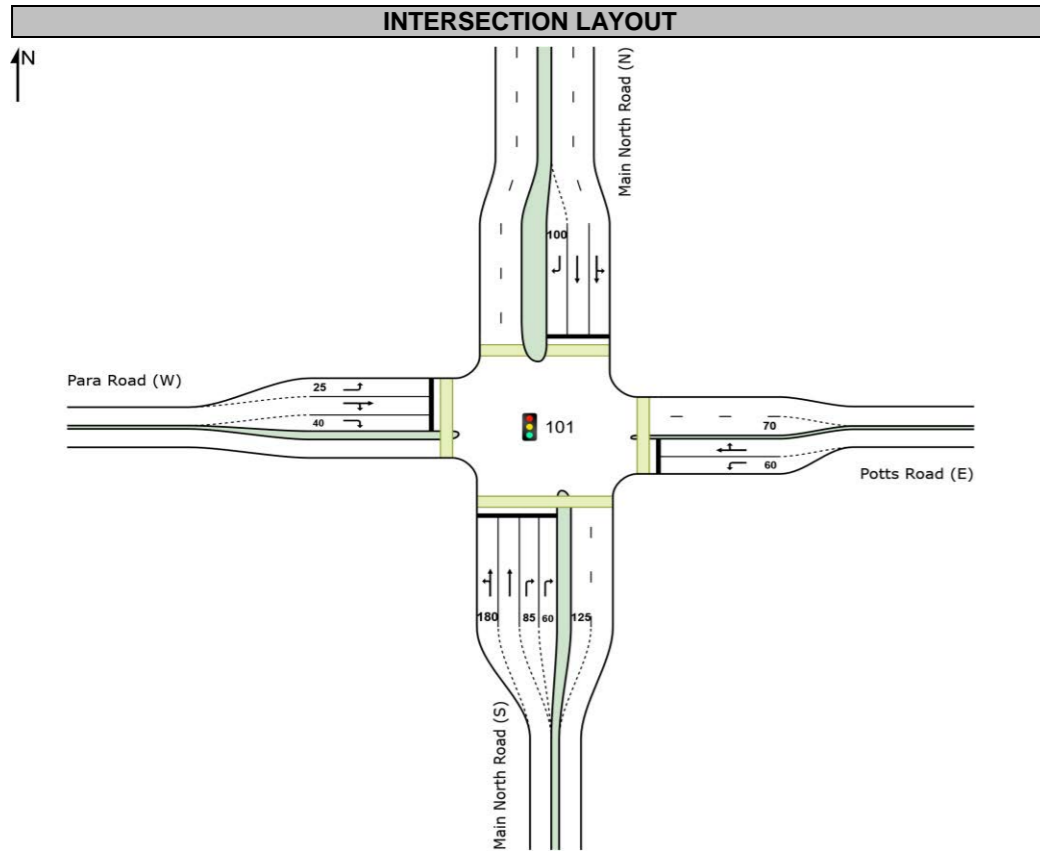
JOB NUMBER: 21-0117

PROJECT NAME: EVANSTON CODE AMENDMENT
550 - 560 MAIN NORTH ROAD, EVANSTON

INTERSECTION: MAIN NORTH ROAD/POTTS ROAD/PARA ROAD

SCENARIO: PM PEAK HOUR
BASE CASE



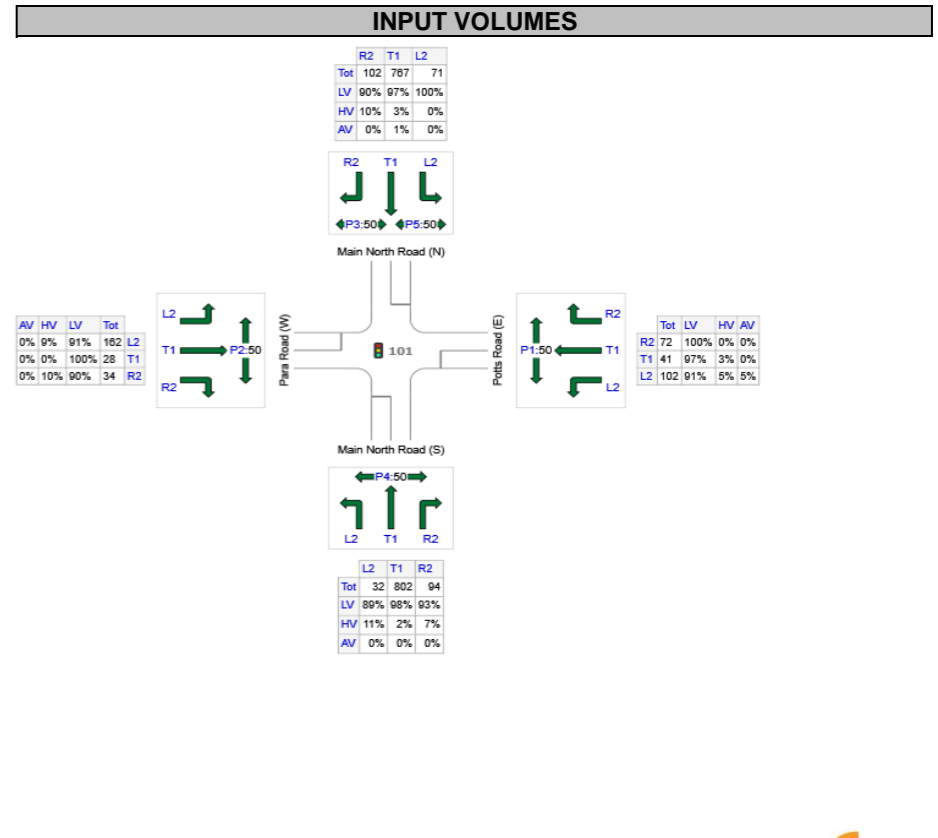
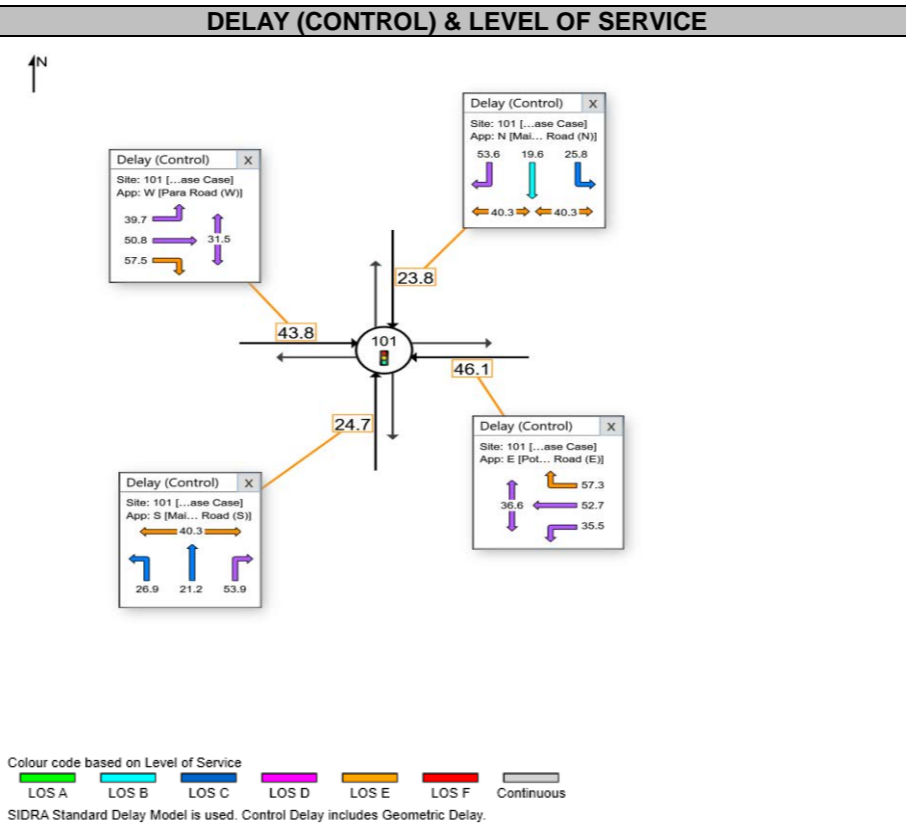


PHASING SUMMARY

Phase Timing Summary

Phase	A	B	D	E	C
Phase Change Time (sec)	0	34	51	63	78
Green Time (sec)	28	10	5	9	7
Phase Time (sec)	35	17	11	16	13
Phase Split	38%	18%	12%	17%	14%

- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied



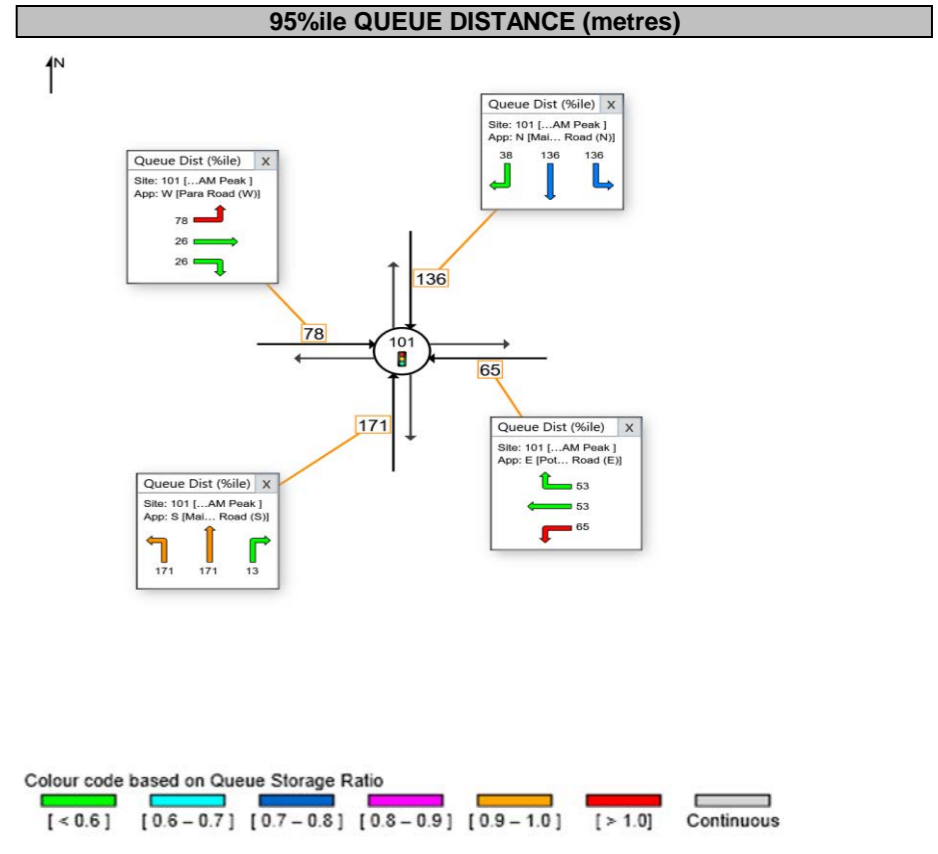
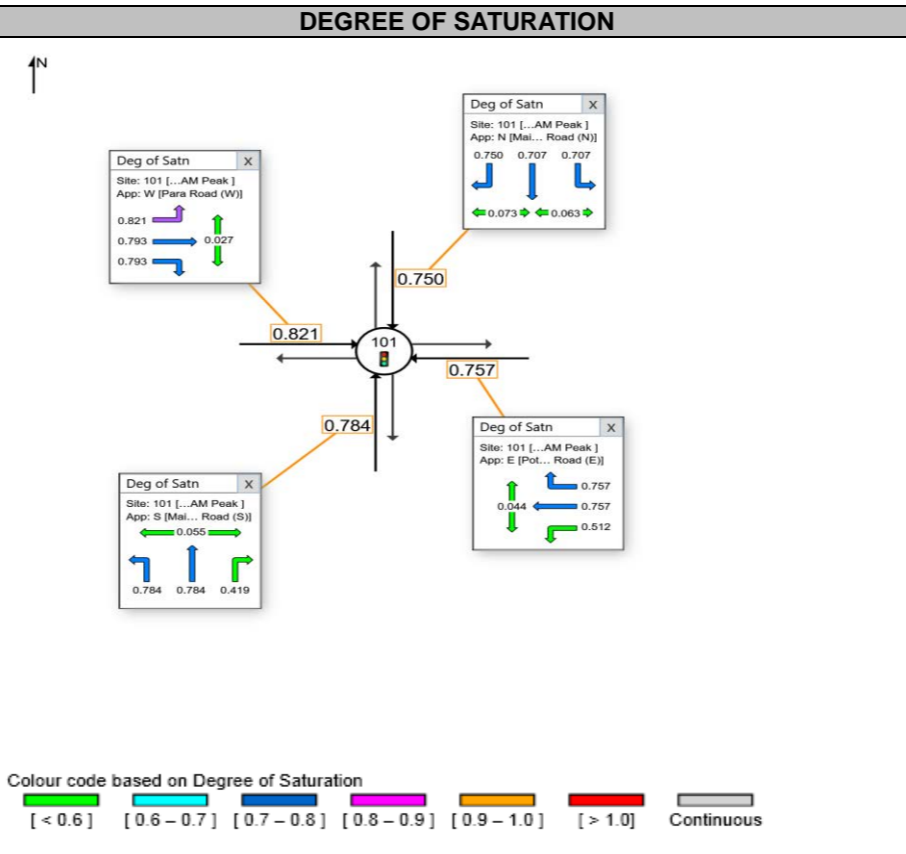
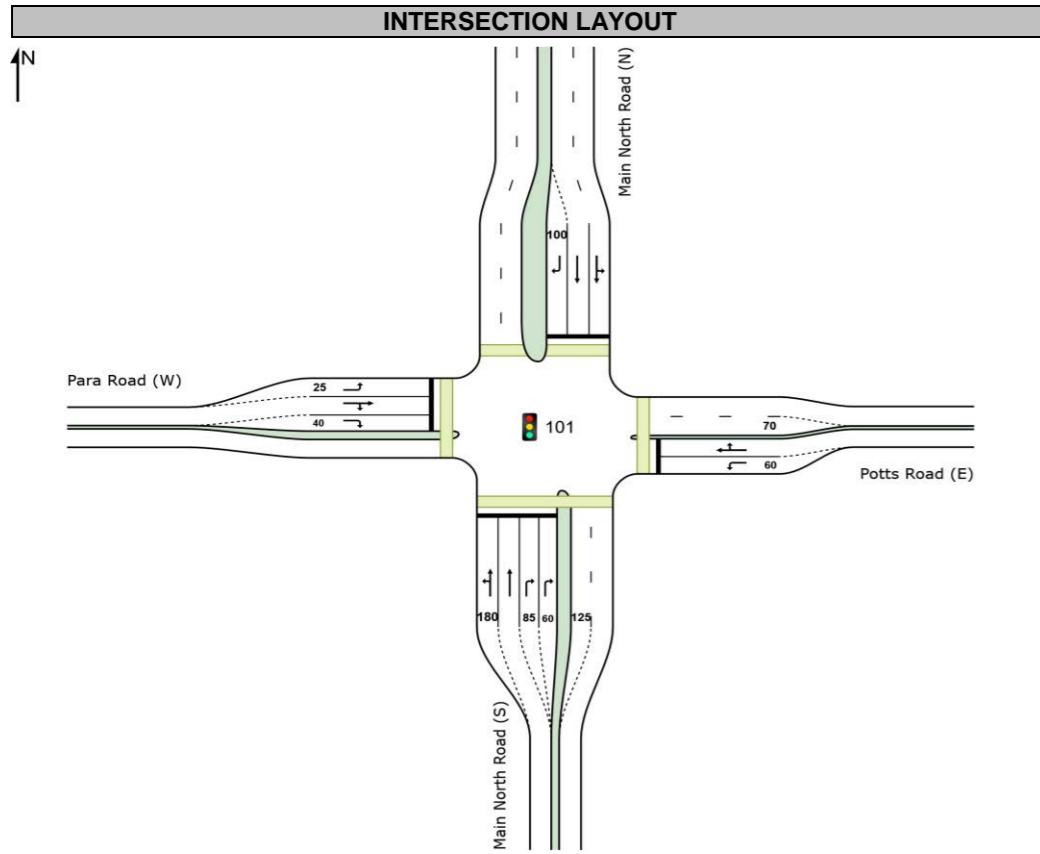
JOB NUMBER: 21-0117

PROJECT NAME: EVANSTON CODE AMENDMENT
550 - 560 MAIN NORTH ROAD, EVANSTON

INTERSECTION: MAIN NORTH ROAD/POTTS ROAD/PARA ROAD

SCENARIO: PM PEAK HOUR
BASE CASE





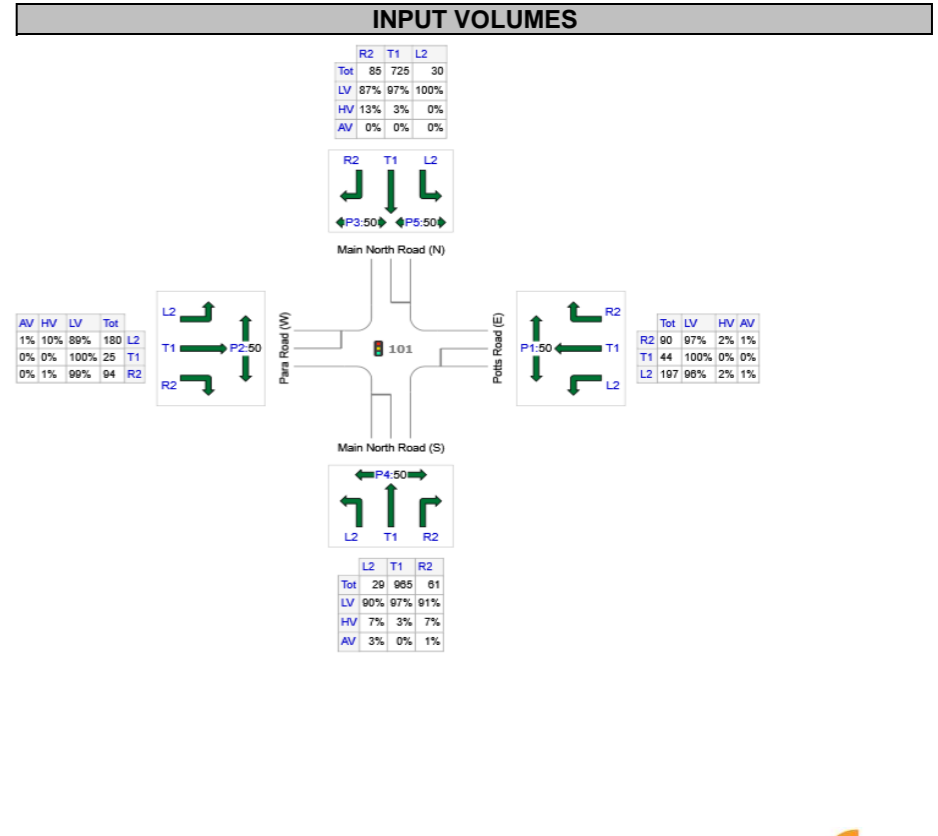
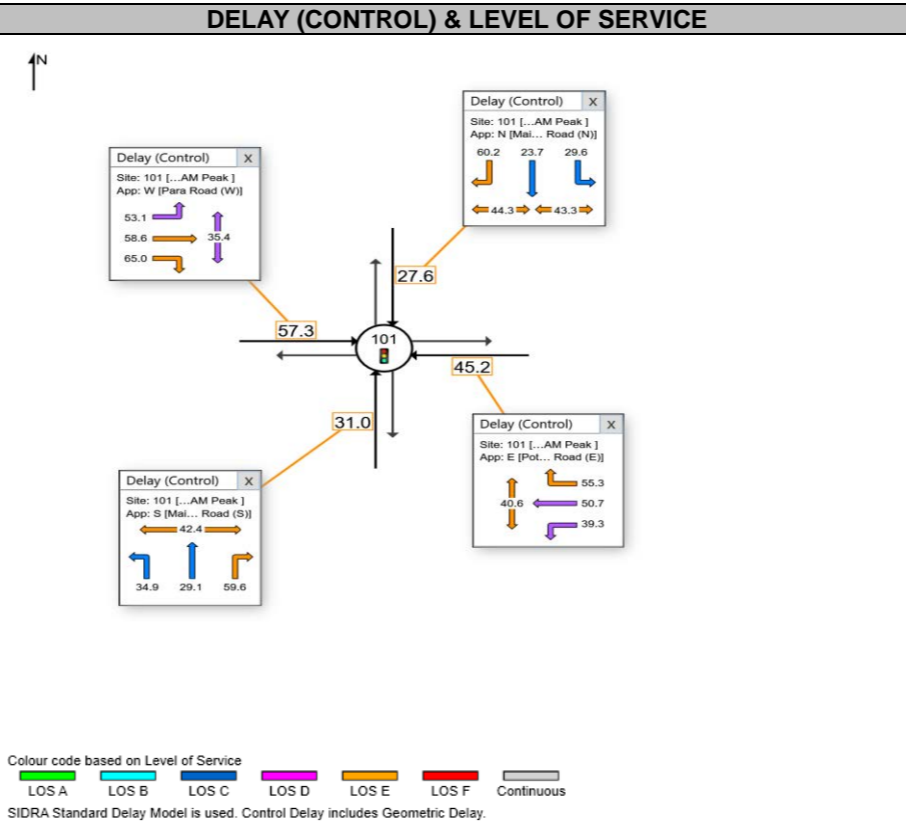
PHASING SUMMARY

Phase Timing Summary

Phase	A	B	D	E	C
Phase Change Time (sec)	0	37	53	66	87
Green Time (sec)	29	9	6	13	6
Phase Time (sec)	36	16	14	20	14
Phase Split	36%	16%	14%	20%	14%

Phase A: Main North Road (N), Para Road (W), Potts Road (E)
Phase B: Main North Road (N), Para Road (W), Potts Road (E)
Phase C: Main North Road (N), Para Road (W), Potts Road (E)
Phase D: Main North Road (N), Para Road (W), Potts Road (E)
Phase E: Main North Road (N), Para Road (W), Potts Road (E)

- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied



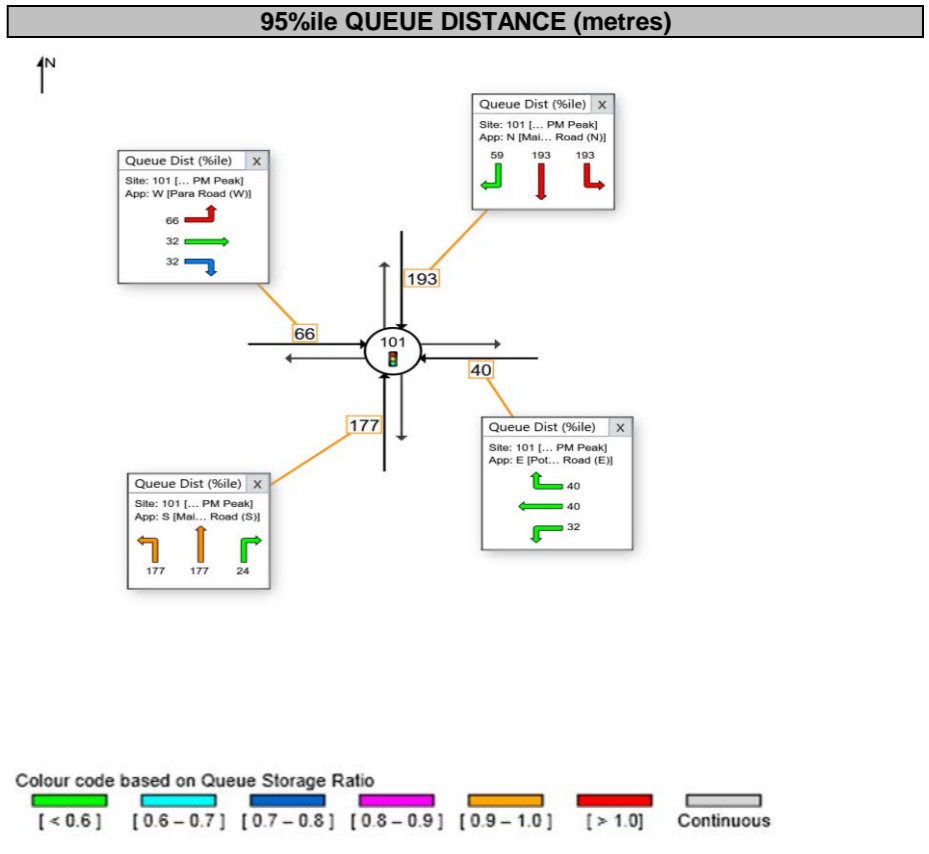
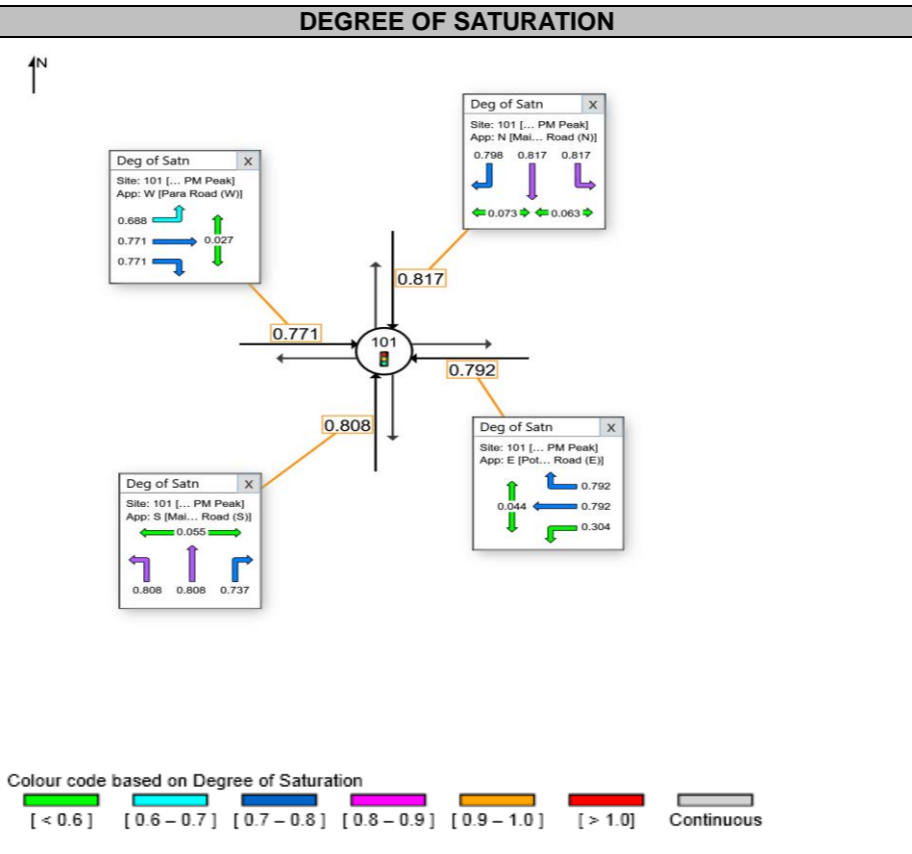
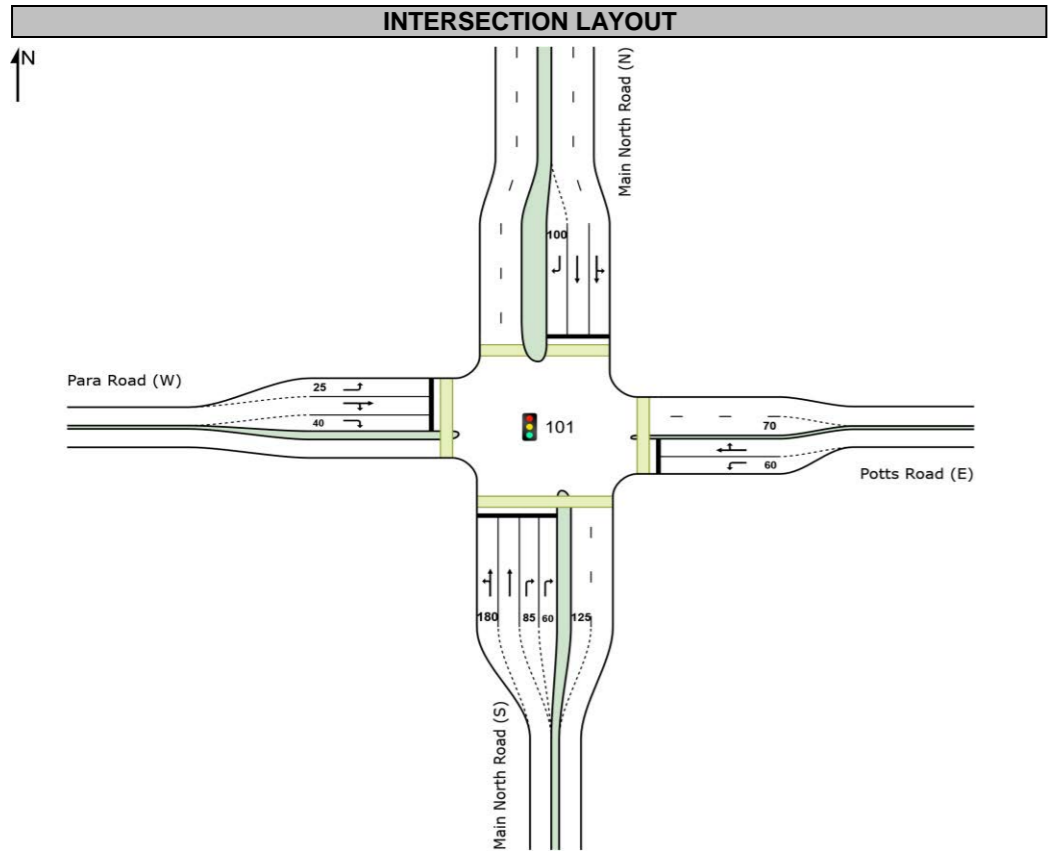
JOB NUMBER: 21-0117

PROJECT NAME: EVANSTON CODE AMENDMENT
550 - 560 MAIN NORTH ROAD, EVANSTON

INTERSECTION: MAIN NORTH ROAD/POTTS ROAD/PARA ROAD

SCENARIO: AM PEAK HOUR
PROJECT SCENARIO





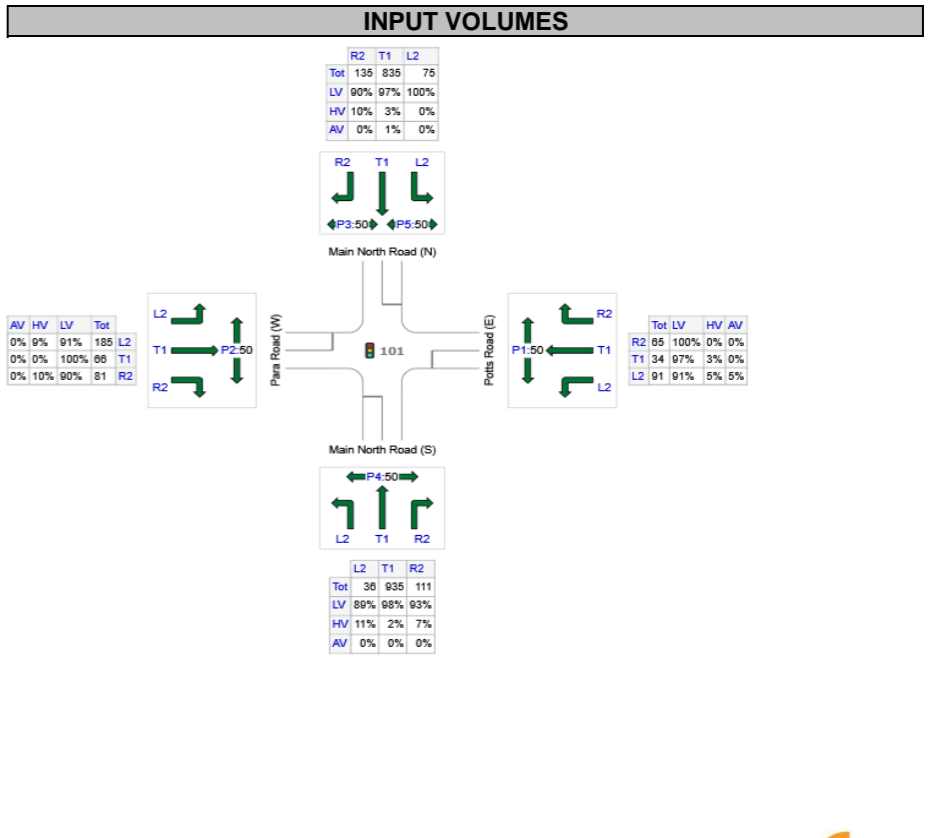
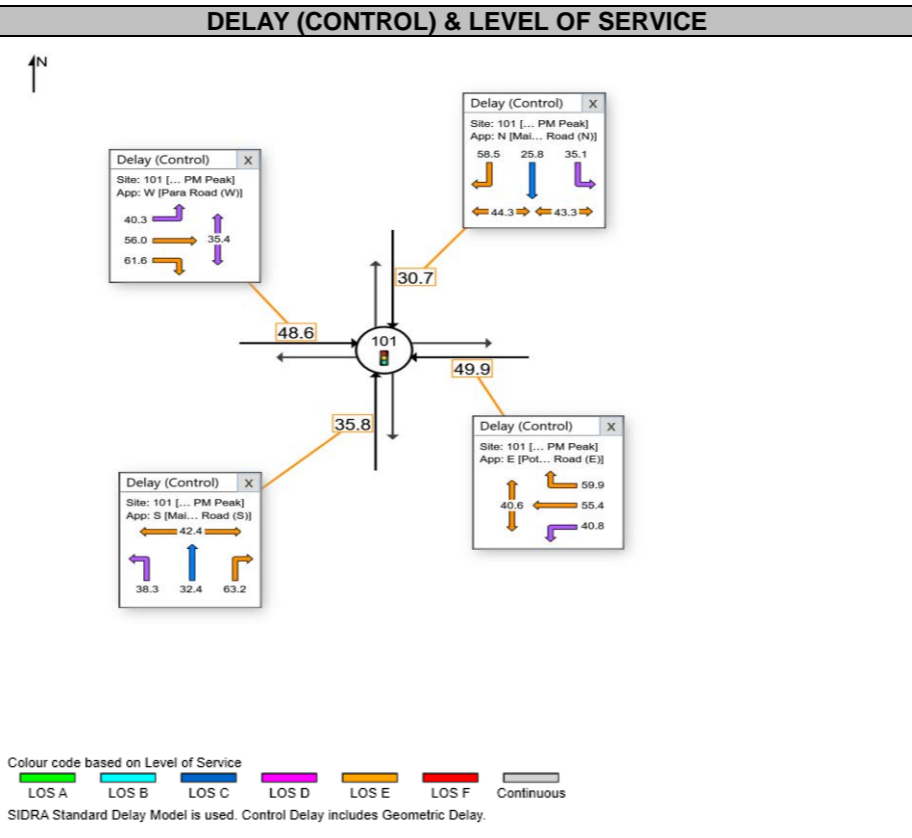
PHASING SUMMARY

Phase Timing Summary

Phase	A	B	D	E	C
Phase Change Time (sec)	0	35	55	70	87
Green Time (sec)	27	13	8	9	6
Phase Time (sec)	34	20	16	16	14
Phase Split	34%	20%	16%	16%	14%

Phase A, **Phase B**, **Phase C**, **Phase D**, **Phase E**

- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied



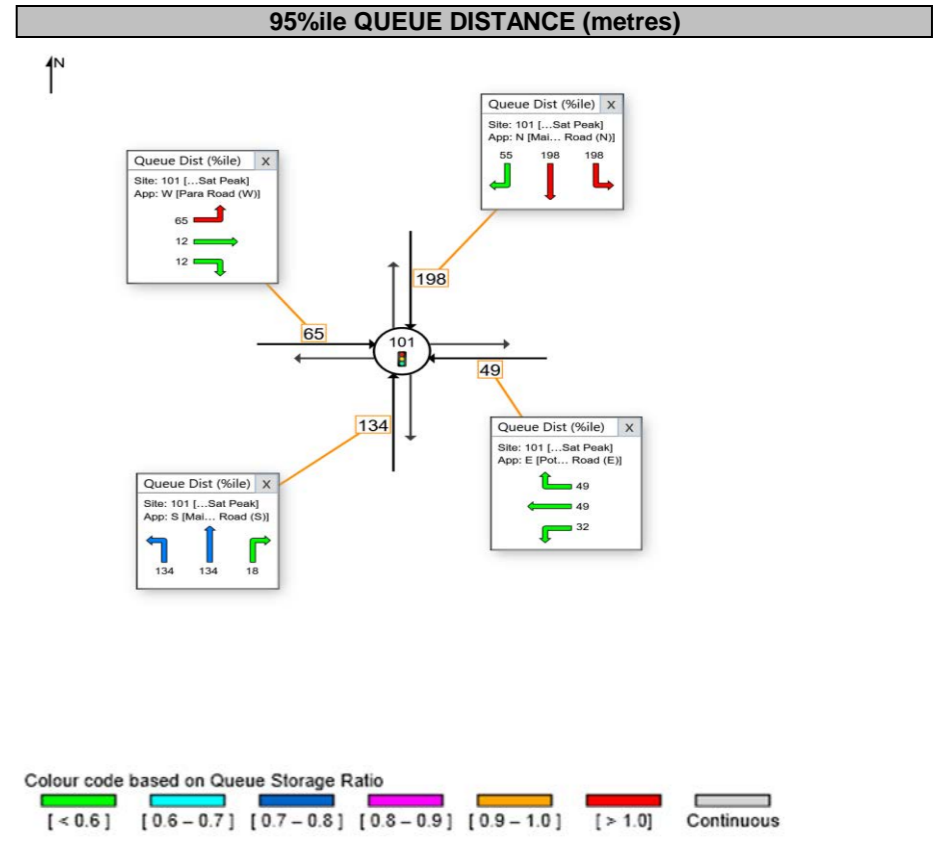
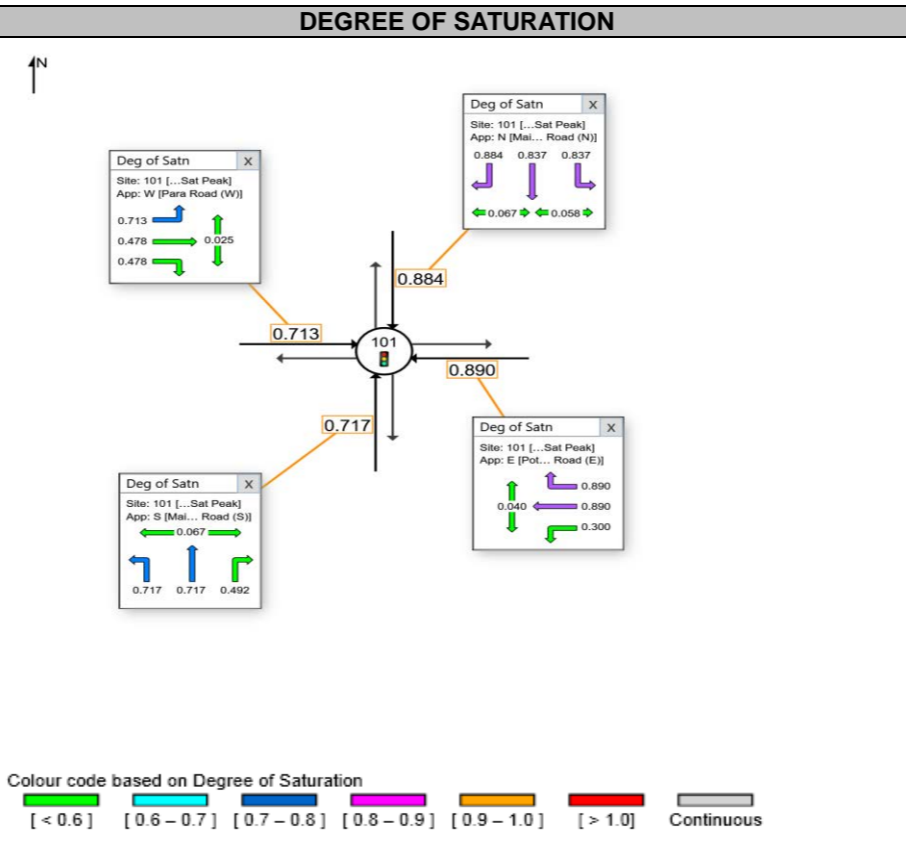
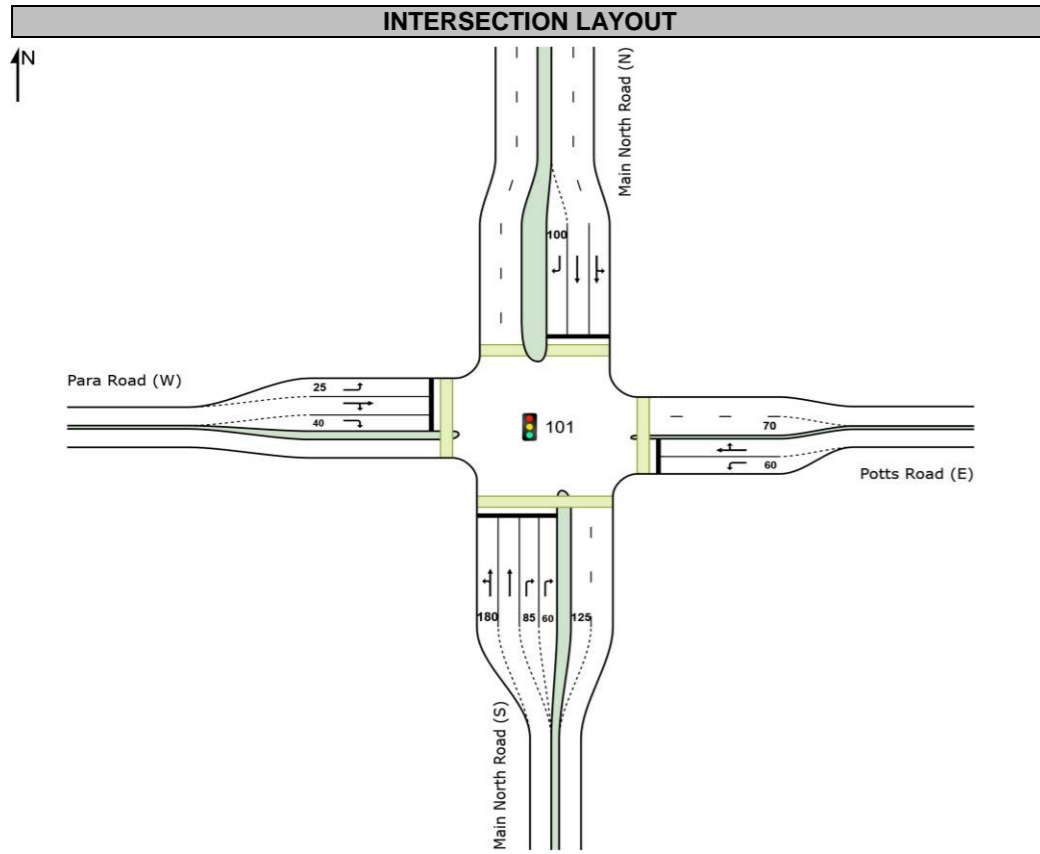
JOB NUMBER: 21-0117

PROJECT NAME: EVANSTON CODE AMENDMENT
550 - 560 MAIN NORTH ROAD, EVANSTON

INTERSECTION: MAIN NORTH ROAD/POTTS ROAD/PARA ROAD

SCENARIO: PM PEAK HOUR
PROJECT SCENARIO



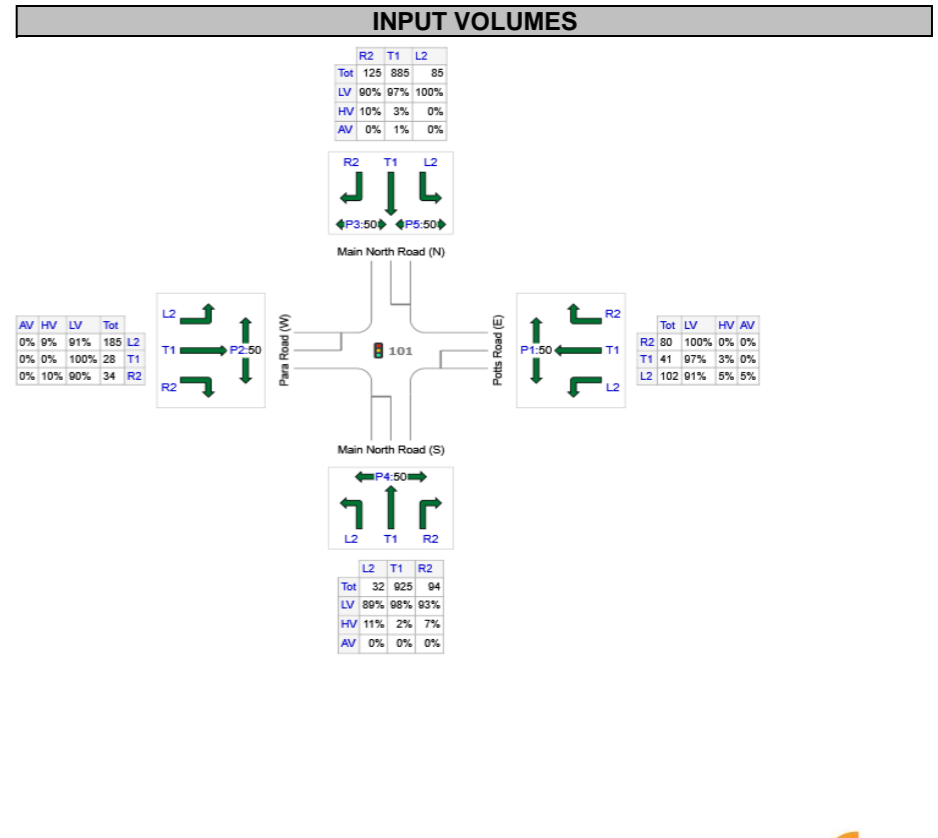
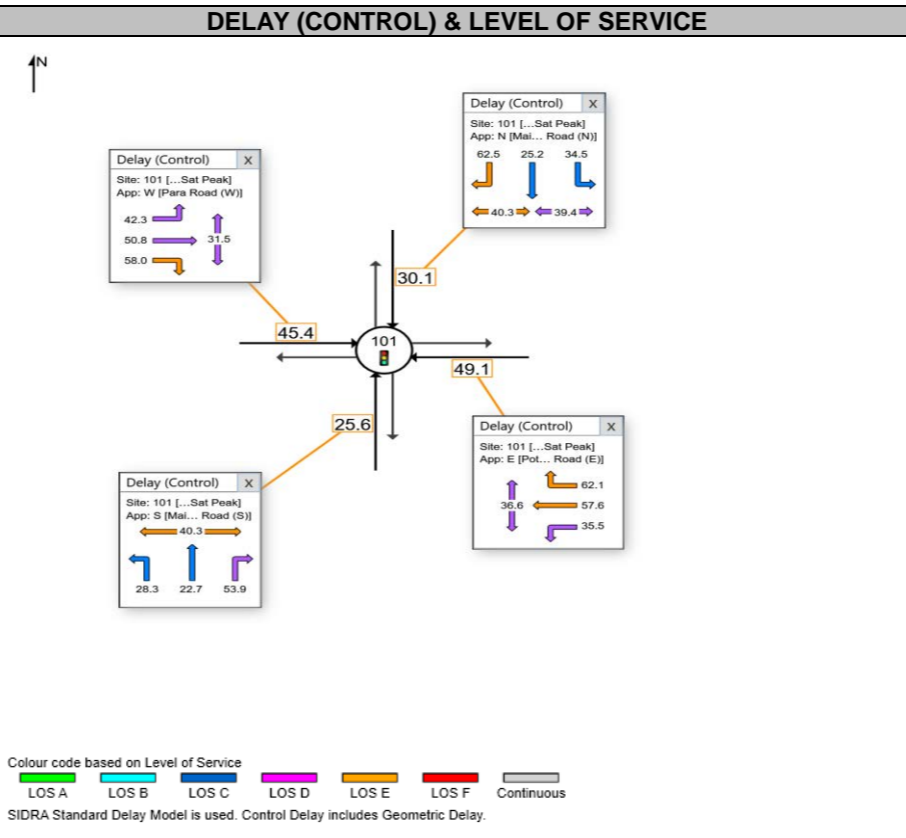


PHASING SUMMARY

Phase Timing Summary

Phase	A	B	D	E	C
Phase Change Time (sec)	0	34	51	63	78
Green Time (sec)	28	10	5	9	7
Phase Time (sec)	35	17	11	16	13
Phase Split	38%	18%	12%	17%	14%

- Normal Movement
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- Stopped Movement
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- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied



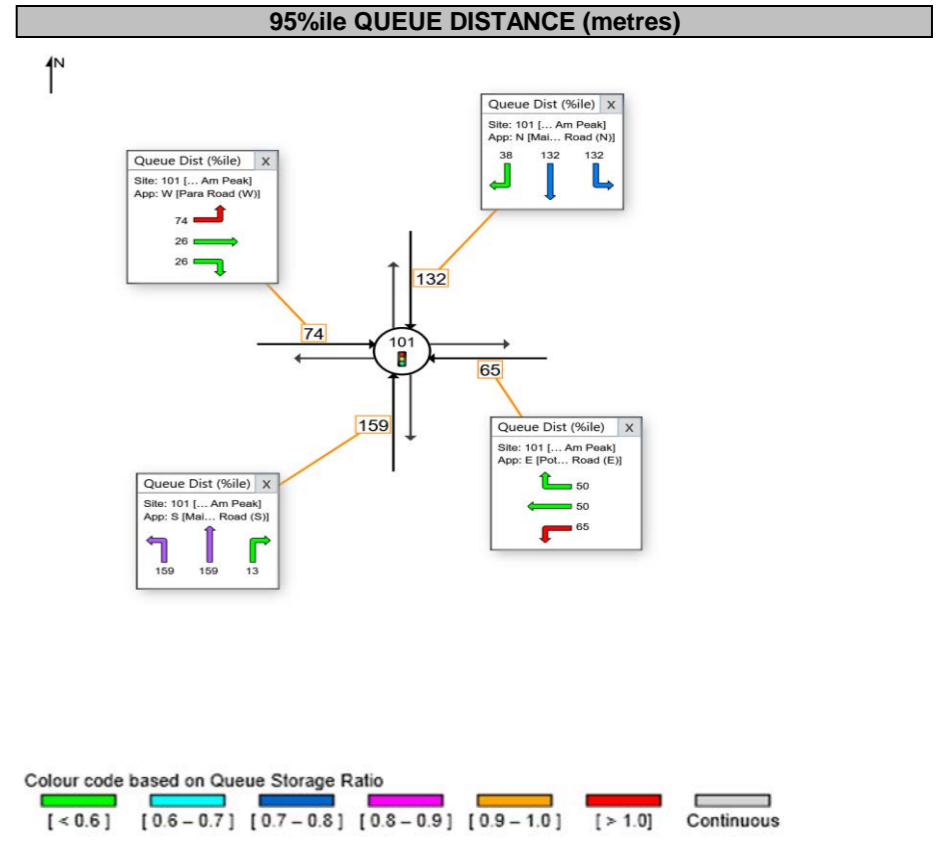
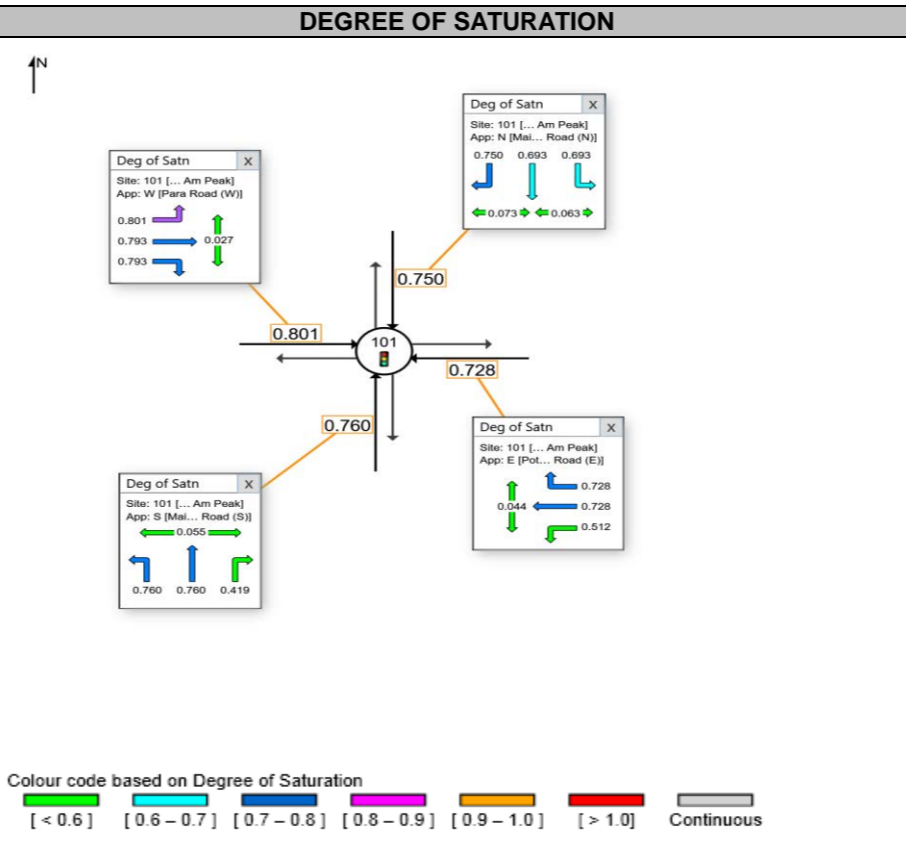
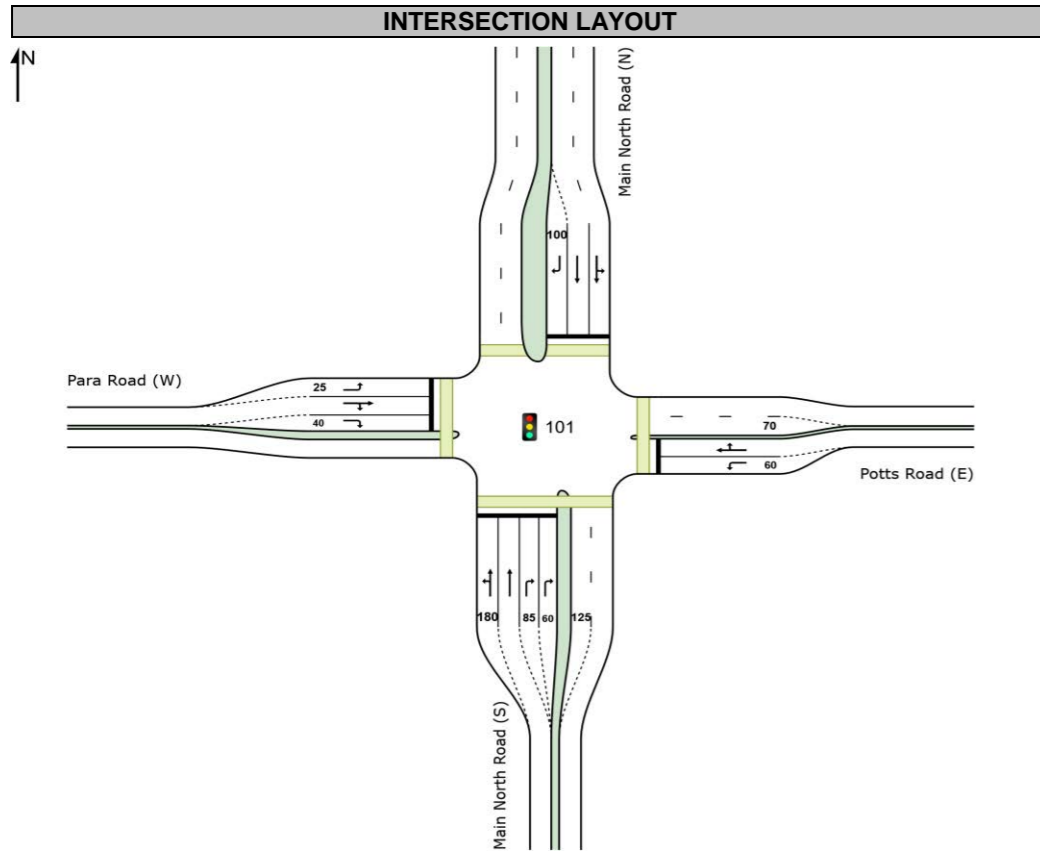
JOB NUMBER: 21-0117

PROJECT NAME: EVANSTON CODE AMENDMENT
550 - 560 MAIN NORTH ROAD, EVANSTON

INTERSECTION: MAIN NORTH ROAD/POTTS ROAD/PARA ROAD

SCENARIO: PM PEAK HOUR
PROJECT SCENARIO





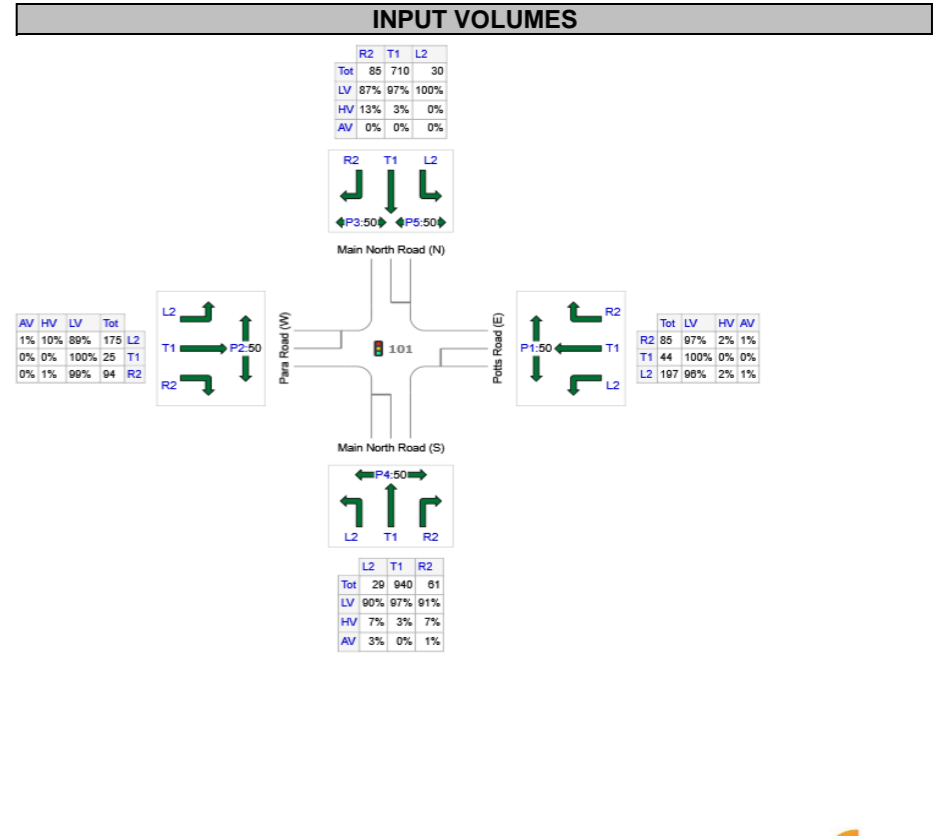
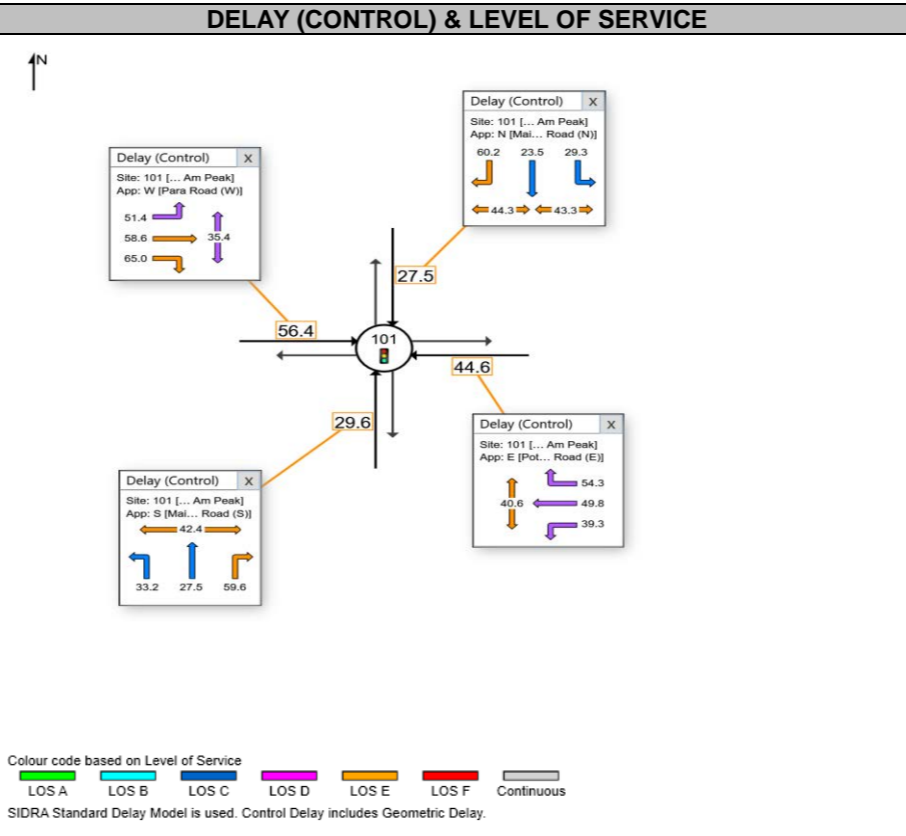
PHASING SUMMARY

Phase Timing Summary

Phase	A	B	D	E	C
Phase Change Time (sec)	0	37	53	66	87
Green Time (sec)	29	9	6	13	6
Phase Time (sec)	36	16	14	20	14
Phase Split	36%	16%	14%	20%	14%

Legend for Movement Types:

- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied



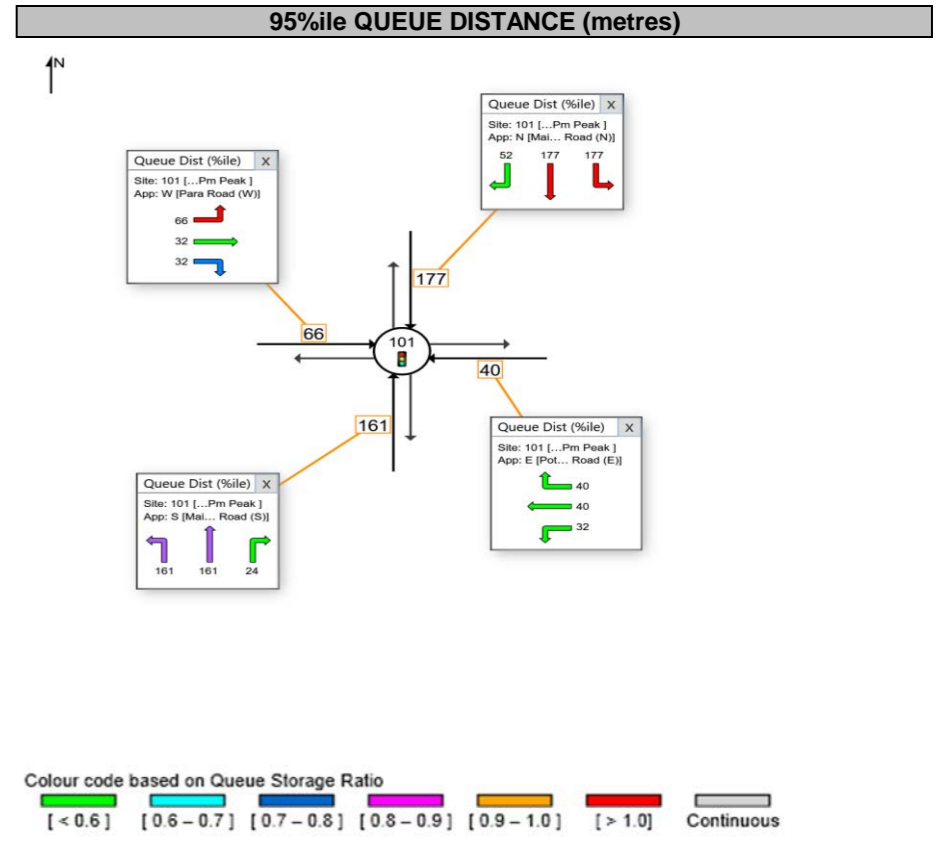
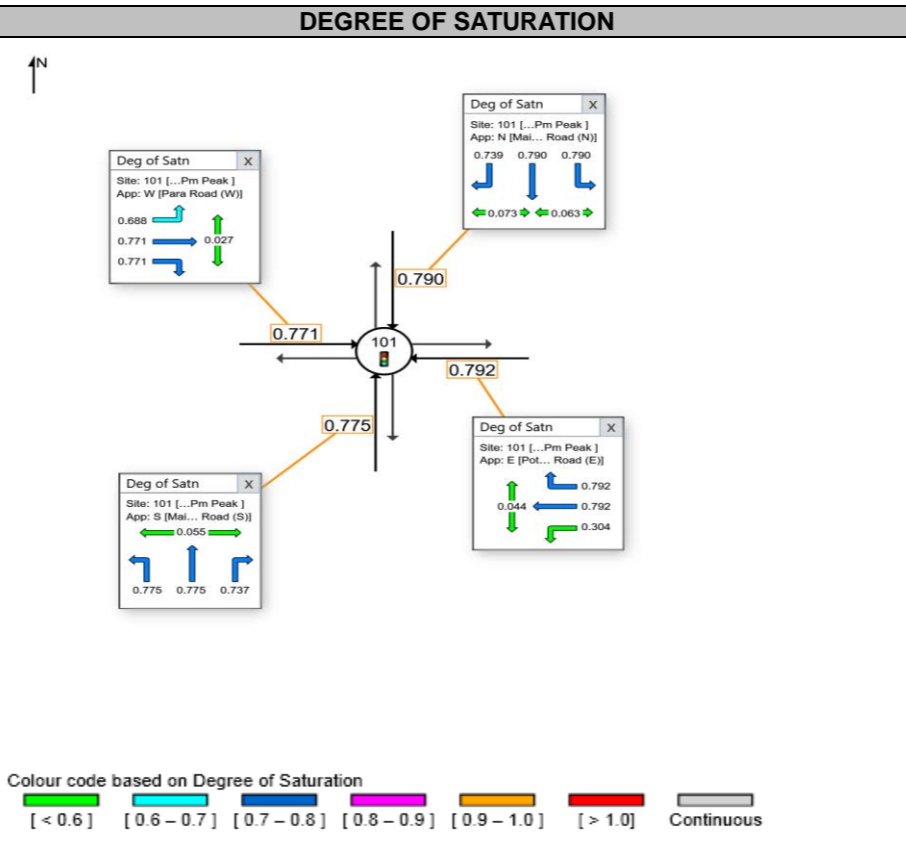
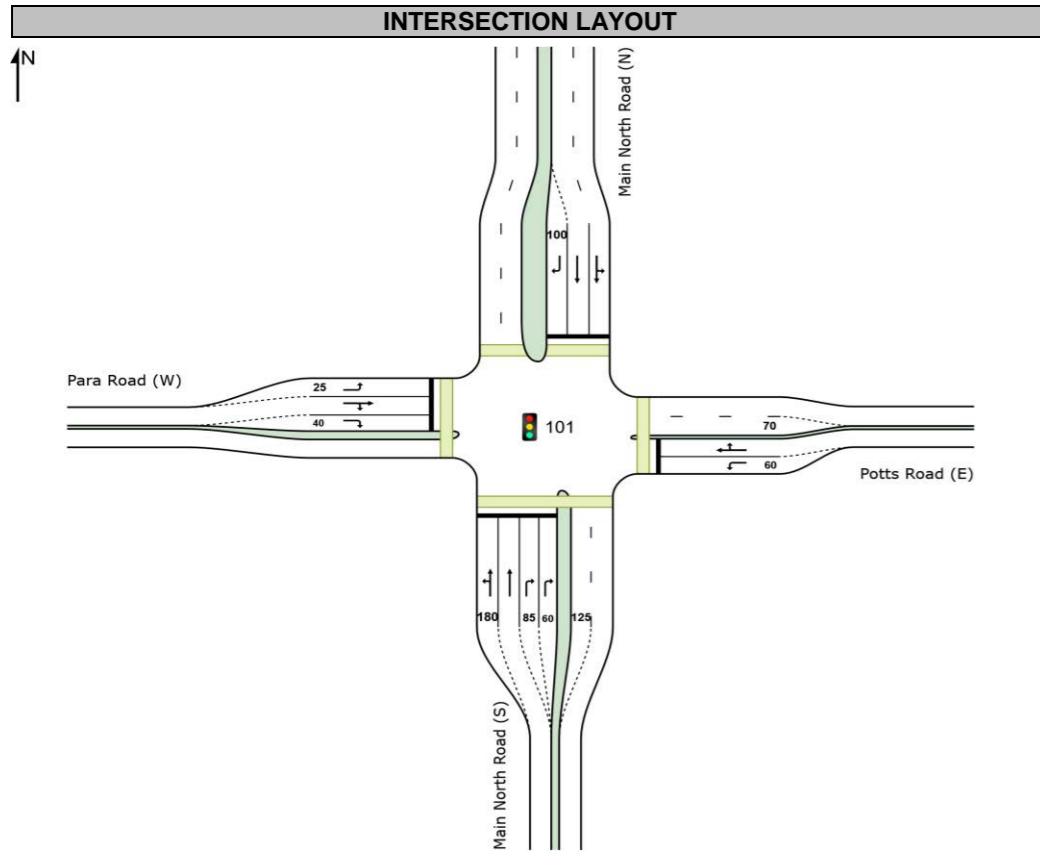
JOB NUMBER: 21-0117

PROJECT NAME: EVANSTON CODE AMENDMENT
550 - 560 MAIN NORTH ROAD, EVANSTON

INTERSECTION: MAIN NORTH ROAD/POTTS ROAD/PARA ROAD

SCENARIO: AM PEAK HOUR
SENSITIVITY ANALYSIS



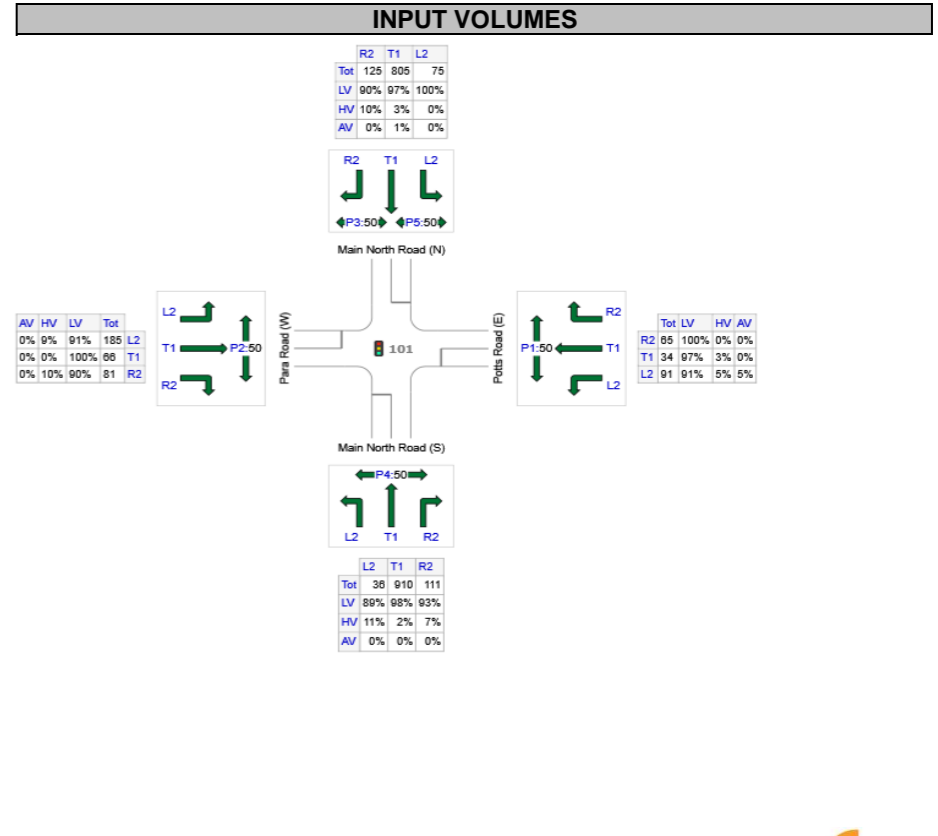
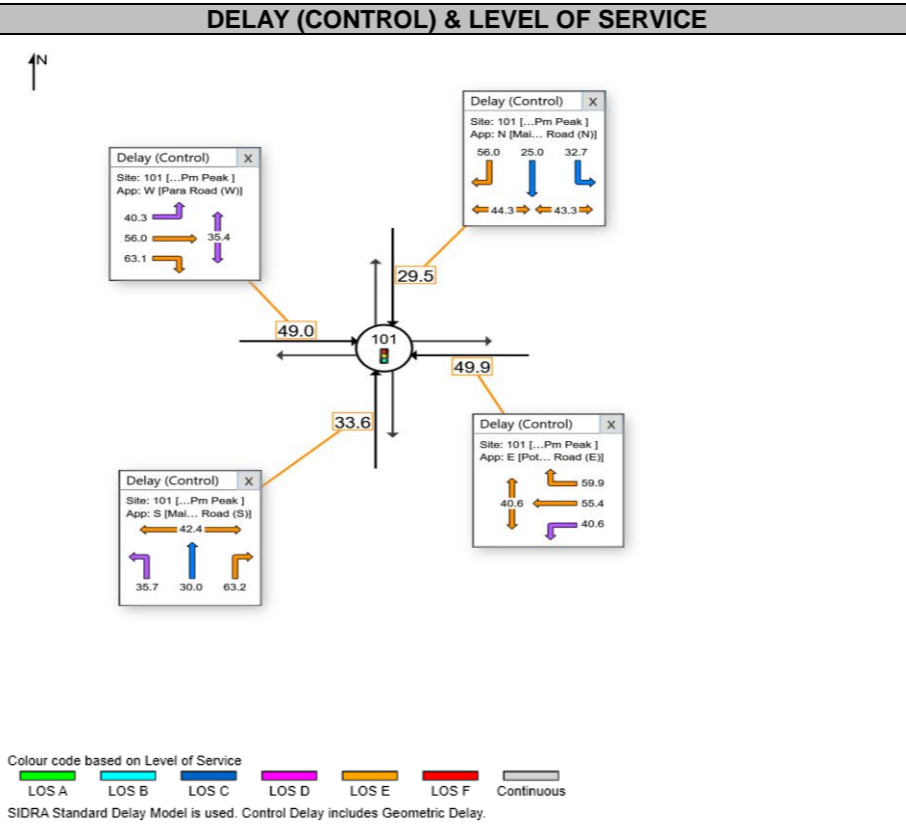


PHASING SUMMARY

Phase Timing Summary

Phase	A	B	D	E	C
Phase Change Time (sec)	0	35	55	70	87
Green Time (sec)	27	13	8	9	6
Phase Time (sec)	34	20	16	16	14
Phase Split	34%	20%	16%	16%	14%

- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied



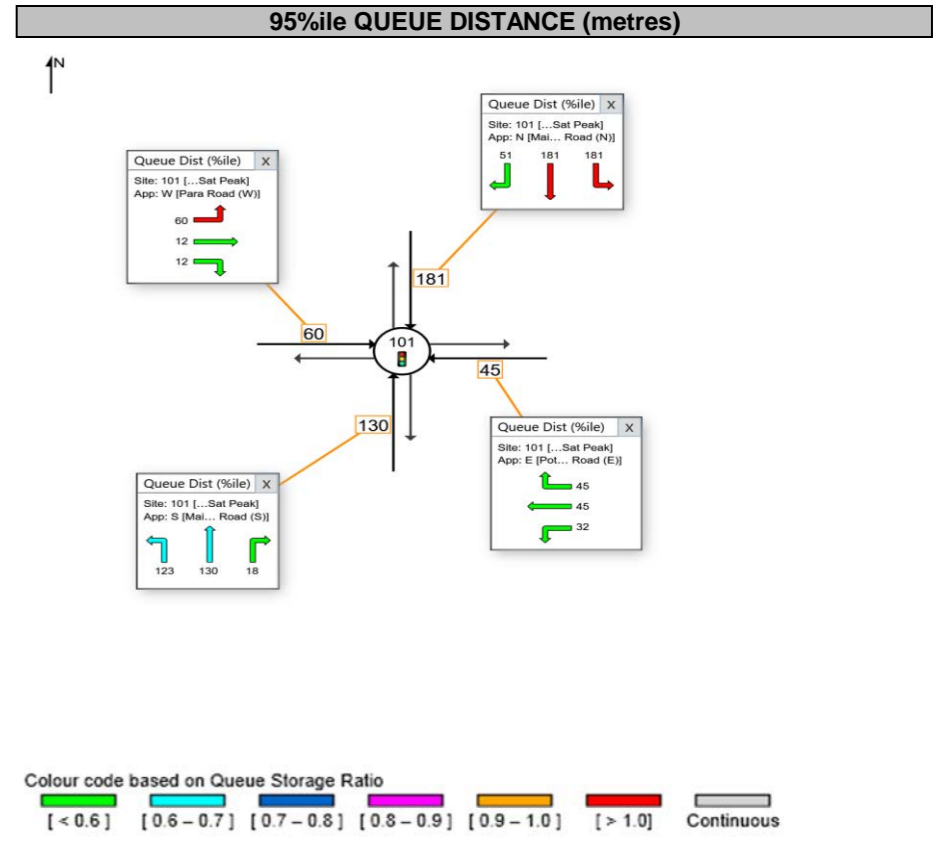
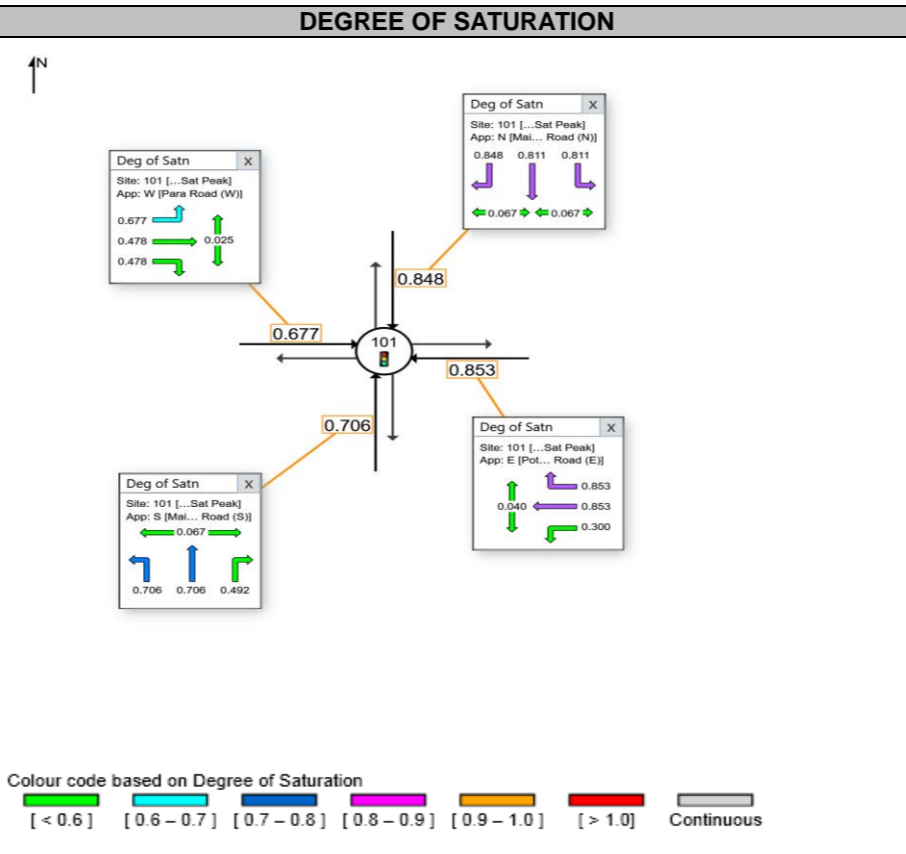
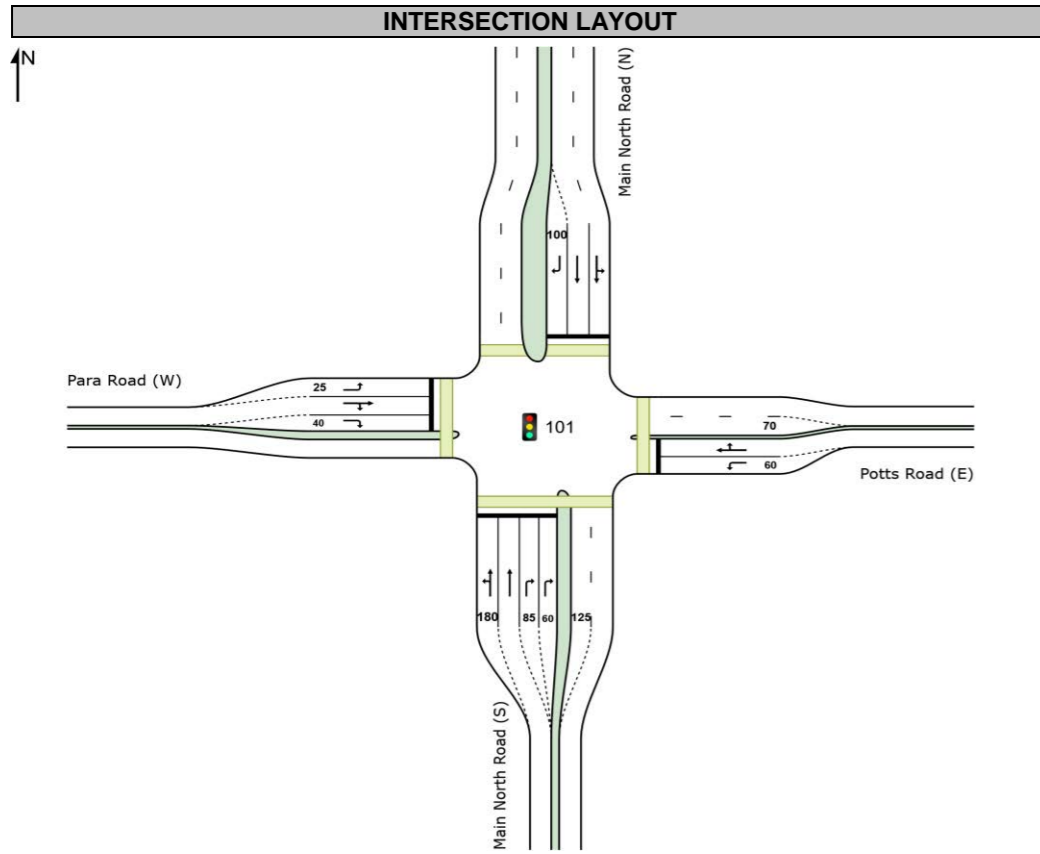
JOB NUMBER: 21-0117

PROJECT NAME: EVANSTON CODE AMENDMENT
550 - 560 MAIN NORTH ROAD, EVANSTON

INTERSECTION: MAIN NORTH ROAD/POTTS ROAD/PARA ROAD

SCENARIO: PM PEAK HOUR
SENSITIVITY ANALYSIS



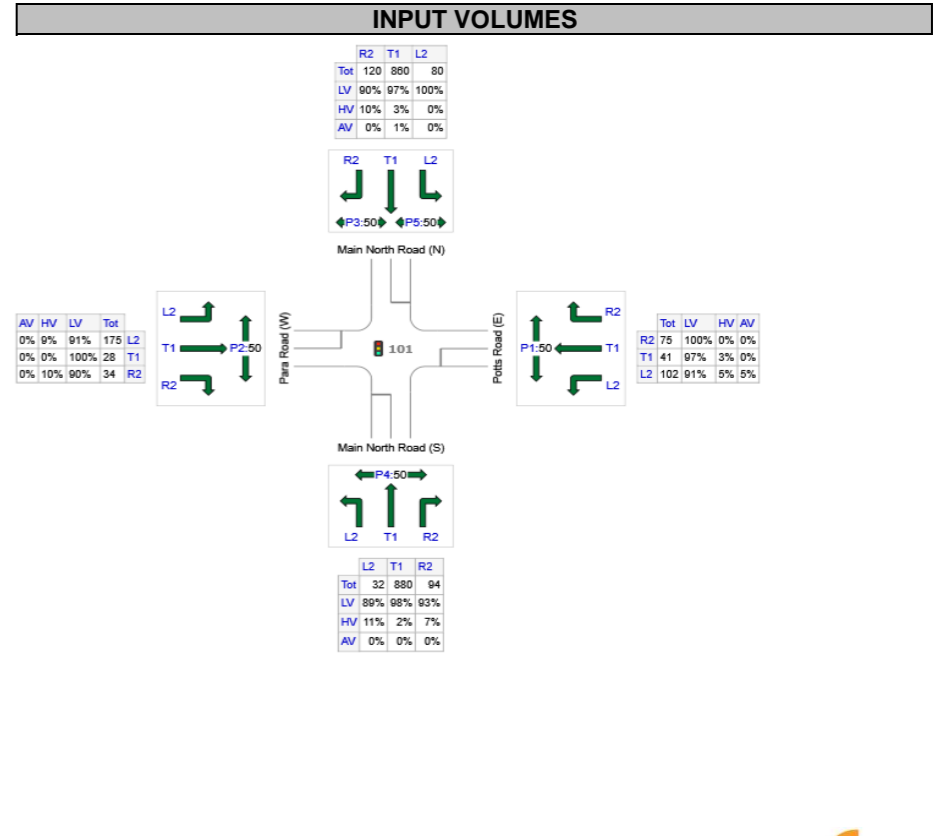
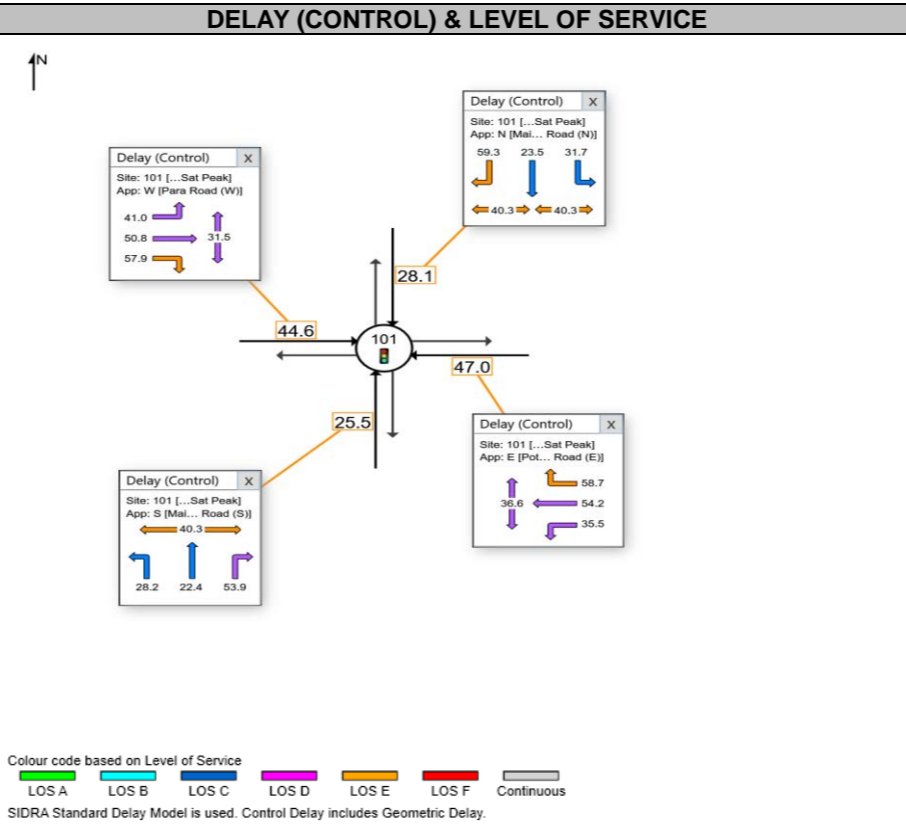


PHASING SUMMARY

Phase Timing Summary

Phase	A	B	D	E	C
Phase Change Time (sec)	0	34	51	63	78
Green Time (sec)	28	10	5	9	7
Phase Time (sec)	35	17	11	16	13
Phase Split	38%	18%	12%	17%	14%

- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied



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550 - 560 MAIN NORTH ROAD, EVANSTON

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