



Department for Housing and Urban Development

SELICKS BEACH GROWTH AREA SELICKS BEACH ROAD

STRUCTURE PLAN TRAFFIC INVESTIGATIONS

June 2025

22-0250

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1.0 INTRODUCTION

An amendment to the Planning and Design Code (Code Amendment) has been proposed for the land located in Sellicks Beach to facilitate the development of residential dwellings and associated amenities. Preliminary massing of the subject land identified a potential for approximately 1,750 residential dwellings with commercial, social and community facilities to support the forecast residential growth.

This report details investigations completed in relation to the transport matters to inform the development of a Structure Plan which will form the basis for the Code Amendment. It includes the identification of access, road hierarchy and pedestrian/cyclist linkages together with the requirements to cater for a future rail corridor on the land.

The investigations have been supported by traffic forecasting and modelling of key intersections within the study area. In undertaking the analysis, consideration has been given to the planned upgrades on the surrounding roads.

2.0 SUBJECT SITE

The subject site incorporates multiple parcels of land to the west of Main South Road, and has frontage to, and is divided by, Sellicks Beach Road, Justs Road, Country Road, and Gulf View Road. Figure 2.1 identifies the subject land.

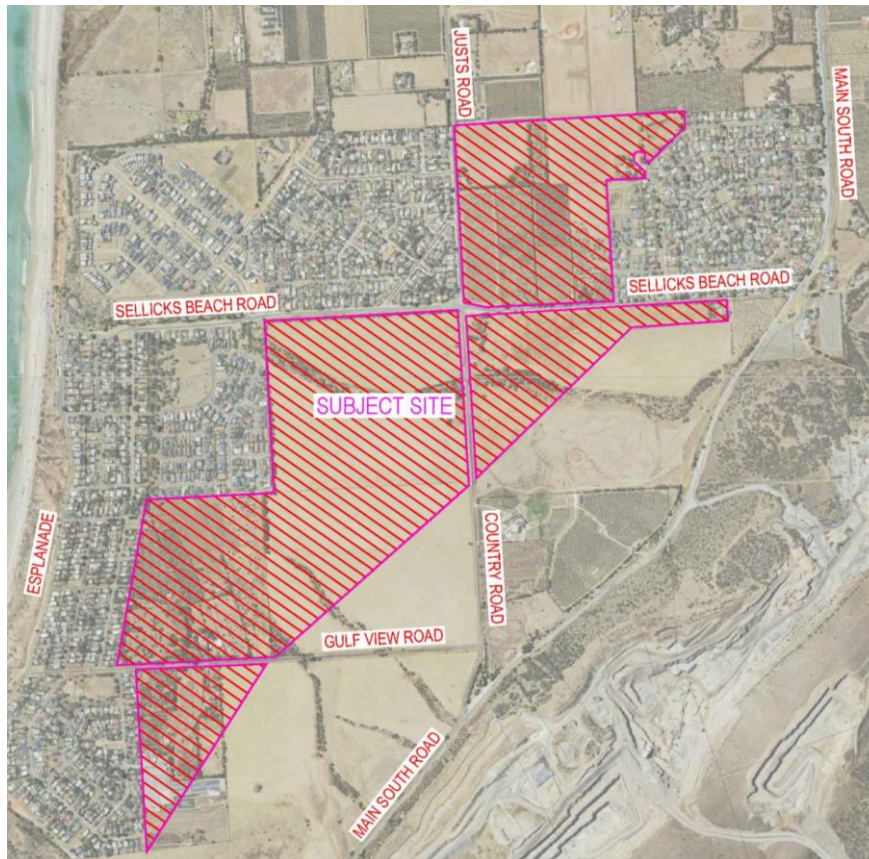


Figure 2.1: Subject land

2.1 ROAD NETWORK

Main South Road is in the care and control of the Commissioner of Highways. It has an annual average daily traffic (AADT) volume in the order of 6,200 vehicles to the south of Sellicks Beach Road and 7,800 vehicles to the north of Sellicks Beach Road. The road has a two-lane carriageway with a posted speed limit of 90 km/h.

Sellicks Beach Road, Country Road, Justs Road and Gulf View Road are within the care and control of the City of Onkaparinga. Sellicks Beach Road and Gulf View Road have an AADT in the order of 1,800 vehicles while Justs Road has an AADT of approximately 3,000 vehicles and Country Road has an AADT in the order of 1,250 vehicles. The posted speed limit on these roads is generally 60 km/h in built up areas but increases to 80 km/h where there is low density residential development.

Figure 2.2 identifies the existing daily traffic volumes on the road network in close proximity to the subject land.



Figure 2.2 Existing Traffic Volumes

Sellicks Beach Road is approximately 9m in width with adjacent unsealed shoulders (with the exception of a short section adjacent the bridge which is kerbed). The pavement is in poor condition. A footpath has been constructed along the eastern edge of the road.

Justs Road is sealed to a width of approximately 7.5m. It is kerbed and has indented parking and a footpath on the western side and a sealed shoulder on the eastern side. The pavement appears in relatively good condition.

Country Road is sealed to a width of approximately 7.5m with adjacent unsealed shoulders. There are no footpaths adjacent Country Road. The road narrows to approximately 5.0m at the bridge where it crosses Sellicks Creek.

2.1.1 MAIN SOUTH ROAD/SELICKS BEACH ROAD/OLD SELICKS HILL ROAD

Sellicks Beach Road forms a four-way intersection with Main South Road and Old Sellicks Hill Road, with give way control on Sellicks Beach Road and Old Sellicks Hill Road. Figure 2.3 identifies the existing volumes at the intersection as identified in manual turning

count data provided by the Department for Infrastructure and Transport (DIT), dated 11 May 2023.

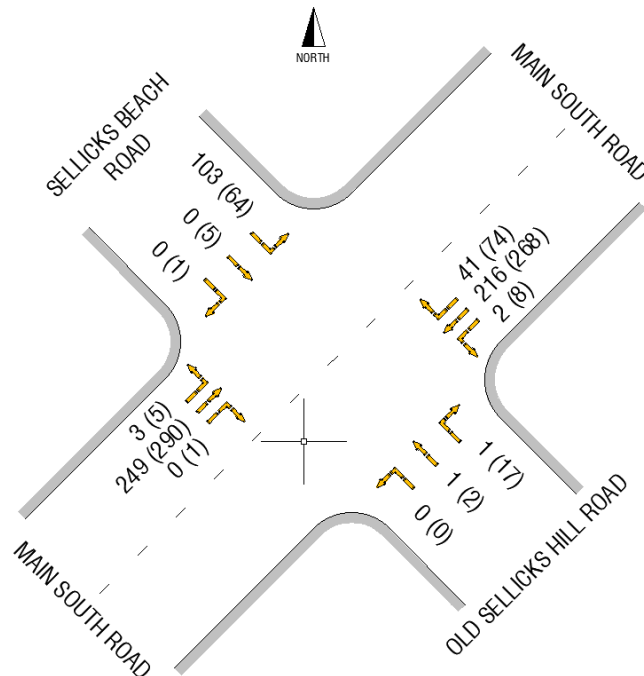


Figure 2.3: Existing volumes at Main South Road/Sellicks Beach Road/Old Sellicks Hill Road

There are sight distance constraints for drivers turning onto Main South Road due to the vertical and horizontal profile of the road. Further, the alignment of Sellicks Beach Road and Old Sellicks Hill Road creates a head-on collision risk.

DIT's Main South Road duplication project includes upgrade of the intersection which will result in a realignment of Sellicks Beach Road, creating two separate T-intersections with channelised left and right turn lanes on Main South Road, and separate left and right turn lanes on Sellicks Beach Road. Figure 2.4 identifies the upgrade.

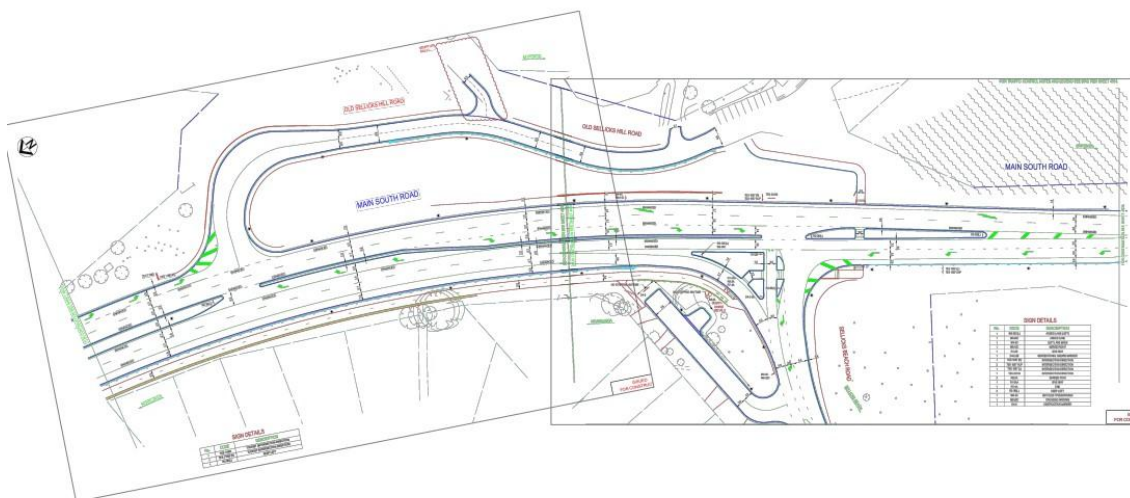


Figure 2.4: DIT concept for Sellicks Beach Road/Main South Road upgrade

2.1.2 MAIN SOUTH ROAD/COUNTRY ROAD

Country Road forms a T-intersection with Main South Road, south-east of the subject land. The approach angle of Country Road to Main South Road results in an acute intersection, albeit Country Road bends prior to the intersection to increase the intersection angle. To reinforce the priority of Main South Road a give-way treatment has been installed on Country Road. Figure 2.5 illustrates the existing configuration of the intersection.

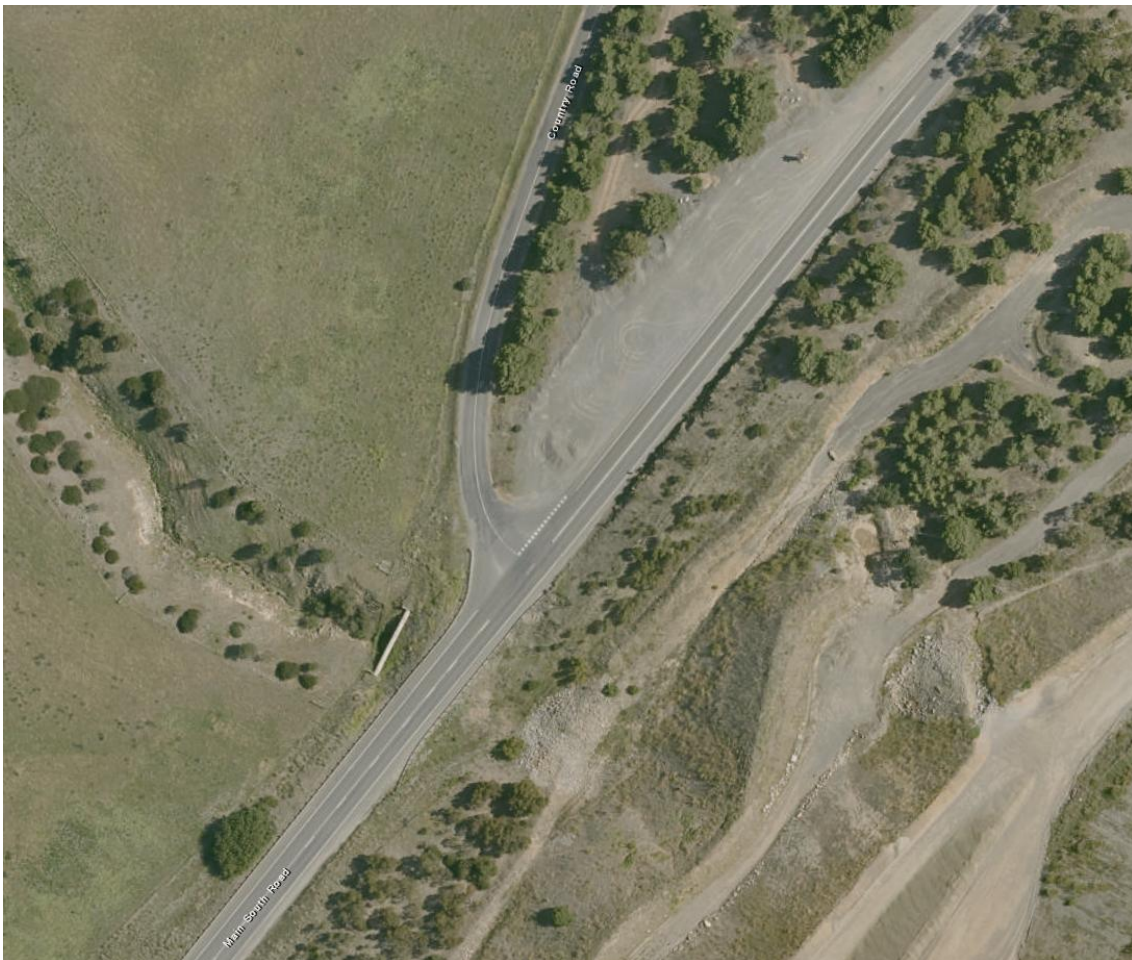


Figure 2.5: Existing layout of Main South Road/Country Road intersection (Source: Location SA MapViewer)

There are sight distance constraints for drivers exiting Country Road to the north on Main South Road due to the road's vertical and horizontal alignment. These constraints are exacerbated by the level difference between the two roads.

Figure 2.6 identifies the anticipated turning volumes at the intersection based on the AADT data.

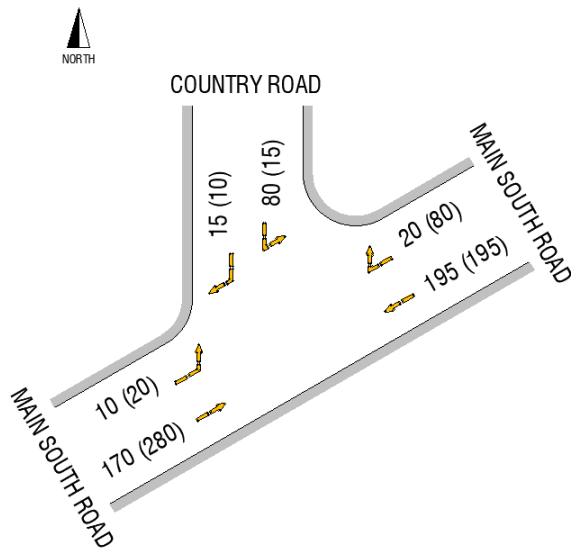


Figure 2.6: Existing turning volumes at Main South Road/Country Road intersection am (pm)

2.1.3 SELICKS BEACH ROAD/JUSTS ROAD/COUNTRY ROAD

Justs Road and Country Road form back-to-back T-intersections with Sellicks Beach Road, with channelised right turn lanes at both intersections. Figure 2.7 illustrates the configuration of the intersection.



Figure 2.7: Existing configuration at the Country Road/Sellicks Beach Road/Justs Road intersection (source: Location SA MapViewer)

The above intersection treatment has a number of existing safety issues, including:

- conflict points due to the insufficient separation of the intersections;
- Queuing within the right turn lanes obstructing intersections;
- substandard Safe Intersection Sight Distance (SISD) for drivers on Justs Road, due to the horizontal alignment of Sellicks Beach Road to the east; and
- insufficient weaving distance for drivers turning between Country Road and Justs Road.

Figure 2.8 identifies the turning volumes at the intersection based on the existing AADT data.

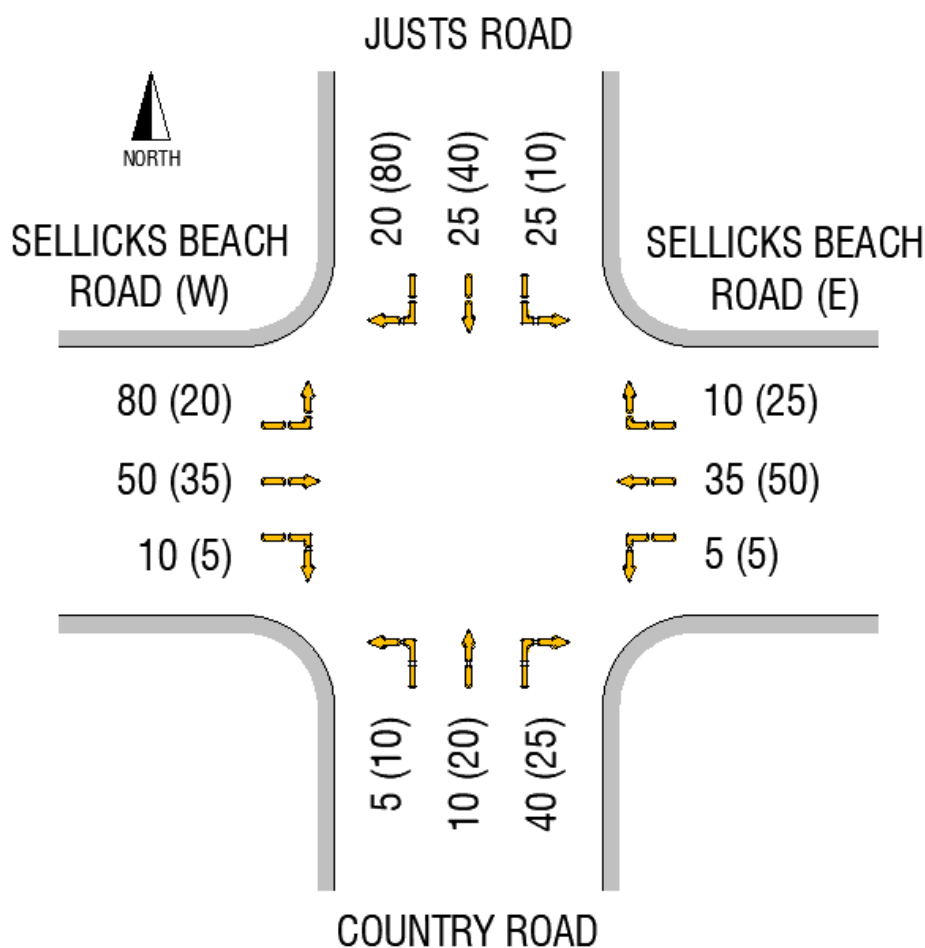


Figure 2.8: Existing turning volumes at Sellicks Beach Road/Justs Road/Country Road am (pm)

Country Road provides access across Sellicks Creek through the provision of an existing bridge. Figure 2.9 illustrates the existing bridge across Sellicks Creek on Country Road.



Figure 2.9 Existing bridge on Country Road across Sellicks Creek (source: Location SA MapViewer)

The existing bridge is only approximately 5m in width which is currently too narrow to cater for two-way traffic where volumes exceed approximately 300 vpd.

2.1.4 SELICKS BEACH ROAD/LURELINE BOULEVARD/BLEWATER BOULEVARD

Sellicks Beach Road forms intersections with both Lurine Boulevard and Bluewater Boulevard in an off-set T-intersection arrangement. There is approximately 40m separation between the intersections and both sides roads are treated with a raised central median on approach to Sellicks Beach Road.

The width of Sellicks Beach Road is constrained by the bridge where it crosses Sellicks Creek. Neither intersection is treated with a channelised turn lane on the approach to the intersection. Figure 2.10 illustrates the existing intersections and Sellicks Hill Road bridge cross Sellicks Creek.



Figure 2.10: Existing intersections of Sellicks Beach Road with Bluewater Boulevard and Lurline Boulevard adjacent bridge on Sellicks Beach Road which crosses Sellicks Creek (source: Location SA MapViewer)

Bluewater Boulevard current terminates at Oriana Drive but has frontage to the subject land. Continuation of the existing road would provide access to the land south of Sellicks Creek.

While Lurline Boulevard would not specifically provide access to the subject land, its location relative to Bluewater Boulevard is important to consider, to ensure safe and convenient access to the site is provided. Of note is that the SISD is not currently met at the Lurline Boulevard intersection with Sellicks Beach Road.

2.1.5 COUNTRY ROAD/GULF VIEW ROAD

Gulf View Road forms an uncontrolled T-intersection with Country Road. There are sight distance constraints due to the bend in Country Road to the south on approach to the Main South Road intersection and to the north due to a steep grade.

2.2 ROAD CRASHES

A review of the most recent crash statistics (previous five years) as reported by DIT is illustrated in Figure 2.11.

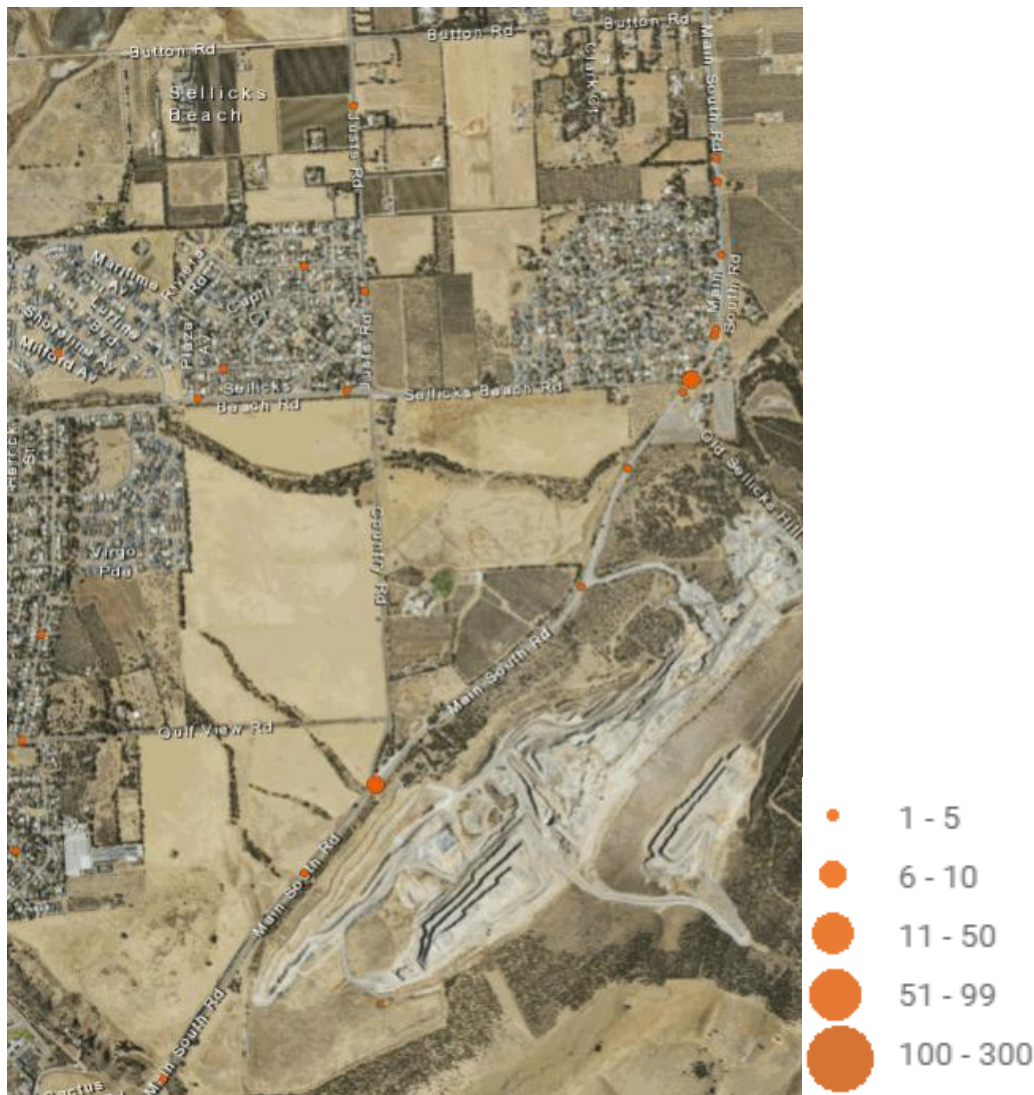


Figure 2.11: Crash statistics adjacent subject land

Figure 2.11 identifies that the majority of crashes have occurred at the Main South Road intersections with Sellicks Beach Road and Country Road, with eight crashes at each intersection in the last five years. Nine of these crashes resulted in casualties with seven at the Main South Road/Country Road and two at the Main South Road/Sellicks Beach Road intersection.

2.3 PUBLIC TRANSPORT

The subject site is serviced by several bus stops on Sellicks Beach Road, Justs Road, and Gulf View Road, with bus routes providing connectivity between Sellicks Beach and suburbs to the north as well as the Seaford and Noarlunga interchanges.

2.4 PEDESTRIAN/CYCLIST LINKS

Pedestrian and cyclist facilities within the subject area are limited to a footpath and cycle lane on the western end of Justs Road. Several off-road paths and tracks, as well as

bicycle lanes on Lurline Boulevard, are available west of the subject land providing routes throughout the coastal area and connections to the Sellicks Beach public car park.

Additionally, plans of the Main South Road duplication project identify the provision of a shared path along the western side of Main South Road, connecting Sellicks Beach to Aldinga.

Figure 2.12 illustrates the existing and proposed pedestrian and cyclist routes.



Figure 2.12: Existing and future pedestrian and cyclist links

3.0 STRUCTURE PLAN REQUIREMENTS

The Department for Housing and Urban Development's land budget and yield assumptions identify the following:

- 100 ha of urban growth areas anticipated to yield approximately 1,750 residential lots;
- 11.6 ha of public open spaces;
- 1.5 ha retail/mixed-use facilities anticipated to yield 6,470 m² of net developable area;
- 5.7 ha potential mass transit corridor investigation area; and
- 7.3 retention/detention basin and associated open spaces.

Figure 3.1 identifies the Department's Indicative Draft Sellicks Beach Growth Area Structure Plan.



Figure 3.1: Indicative Draft Sellicks Beach Growth Area Structure Plan (Source: Department for Housing and Urban Development)

3.1 TRAFFIC FORECAST

Consideration has been given to potential products within the broad uses identified in the land budget. The traffic forecast has been based on the following:

- 1,750 dwellings;
- 5,470 m² retail facilities; and
- 1,000 m² supportable non-retail facilities;
- a park and ride facility with 200 parking spaces.

Consideration was given to various types of non-retail facilities that could be realised in the precinct including a medical centre, a child care centre and an indoor recreation centre. A medical centre would represent the highest use as it relates to traffic generation and therefore, has been adopted for this assessment.

Traffic generation rates adopted for this assessment have been sourced from technical documents, including the Transport for NSW Guide to Traffic Generating Developments and supplementary data collection documentation. Where relevant, traffic survey data has also been used to inform the rate. Table 1 identifies the traffic generation rates for the am, pm and weekend peak hours.

Table 1: Anticipated uses and traffic generation rates

Use	am	Pm	Source
Residential	0.8 trips per dwelling	0.8 trips per dwelling	Endorsed rate by DIT for land divisions
Retail	2 trips per 100 m ²	9 trips per 100 m ²	MFY survey data
Medical Centre	5.1 trips per 100 m ²	6.6 trips per 100 m ²	RMS survey data
Park and Ride	0.75 trips per space	0.75 trips per space	First Principles

Table 2 identifies the anticipated traffic generation based on potential yields identified from the masterplan.

Table 2: Traffic generation

Use	Potential Yields	am	pm
Single Allotment Dwellings ^[1]	1750 dwellings	1400	1400
Retail	5,470 m ²	110	490
Medical Centre	1,000 m ²	50	65
Park and Ride	200 spaces	150	150
Total Traffic		1710	2105
Traffic at External intersections		1360	1760

[1] 25% residential trips reduced at external intersections

3.2 TRAFFIC DISTRIBUTION

Traffic distribution for the residential and commercial components will differ due to the different origins and destinations. As such, separate distribution parameters have been adopted for each component.

3.2.1 RESIDENTIAL DISTRIBUTION

The following distribution has been adopted for the residential development:

- 80% of traffic will distribute to and from the north on Main South Road, with 65% via Sellicks Beach Road, 10% via Country Road, and 5% via Justs Road
- 15% of traffic will distribute to and from the south on Main South Road, with 5% via Sellicks Beach Road, and 10% via Country Road; and
- 5% of traffic will distribute to the west via Sellicks Beach Road, Norman Road, and Gulf View Road

It is assumed that 25% of trips generated by the residential development will occur internal to the road network, which will comprise of trips to and from the retail and community precinct.

3.2.2 RETAIL DISTRIBUTION

In forecasting the distribution of the retail traffic, consideration was given to the likely catchment area for the facilities. It is anticipated that the retail precinct will predominantly service Sellicks Beach, with minimal traffic generated to/from the adjacent townships. Accordingly, the following distribution is anticipated:

- 30% of traffic will occur to/from the west on Sellicks Beach Road;
- 40% of traffic will occur to/from the south on Country Road; of which 5% will occur via its intersection with Main South Road
- 10% of traffic will occur to/from the north on Justs Road; and
- 20% of traffic will occur to/from the east on Sellicks Beach Road, of which 15% will occur via its intersection with Main South Road.

3.2.3 PARK AND RIDE DISTRIBUTION

The distribution of Park and Ride traffic has adopted the following:

- 25% of the traffic will originate external to Sellicks Beach, and will distribute to/from the south via Country Road; and
- the remaining 75% of traffic will originate internal to Sellicks Beach, with 40% to/from the south on Country Road, 25% to/from the west via Sellicks Beach Road, 5% to/from the east via Sellicks Beach Road and 5% via Justs Road.

3.2.4 TOTAL DISTRIBUTION

Based on the detailed traffic forecast and distribution, Figure 3.2 identifies the forecast daily volumes on the road network.



Figure 3.2: Forecast AADT on the road network (vehicles per day)

Table 3 is a comparison of the existing road status and the future road status as a result of the additional traffic volumes.

Table 3: Forecast daily traffic volumes

Road	Existing Volume (vpd)	Current Function	Forecast Volume(vpd)	Future Function
Main South Road	7,800	Arterial Road	15,000 vpd	Arterial Road
Sellicks Beach Road	1,800	Sub Arterial Road	10,000 vpd	Sub-Arterial Road
Justs Road	3,000	Collector Road	9,000 vpd	Collector Road
Country Road	1,250	Collector Road	9,000 vpd	Collector Road

The above assessment identifies that the development of the subject land will not change the nature and function of the road network

Figure 3.3 illustrates the forecast development turning movements at the key intersections adjacent the subject land.

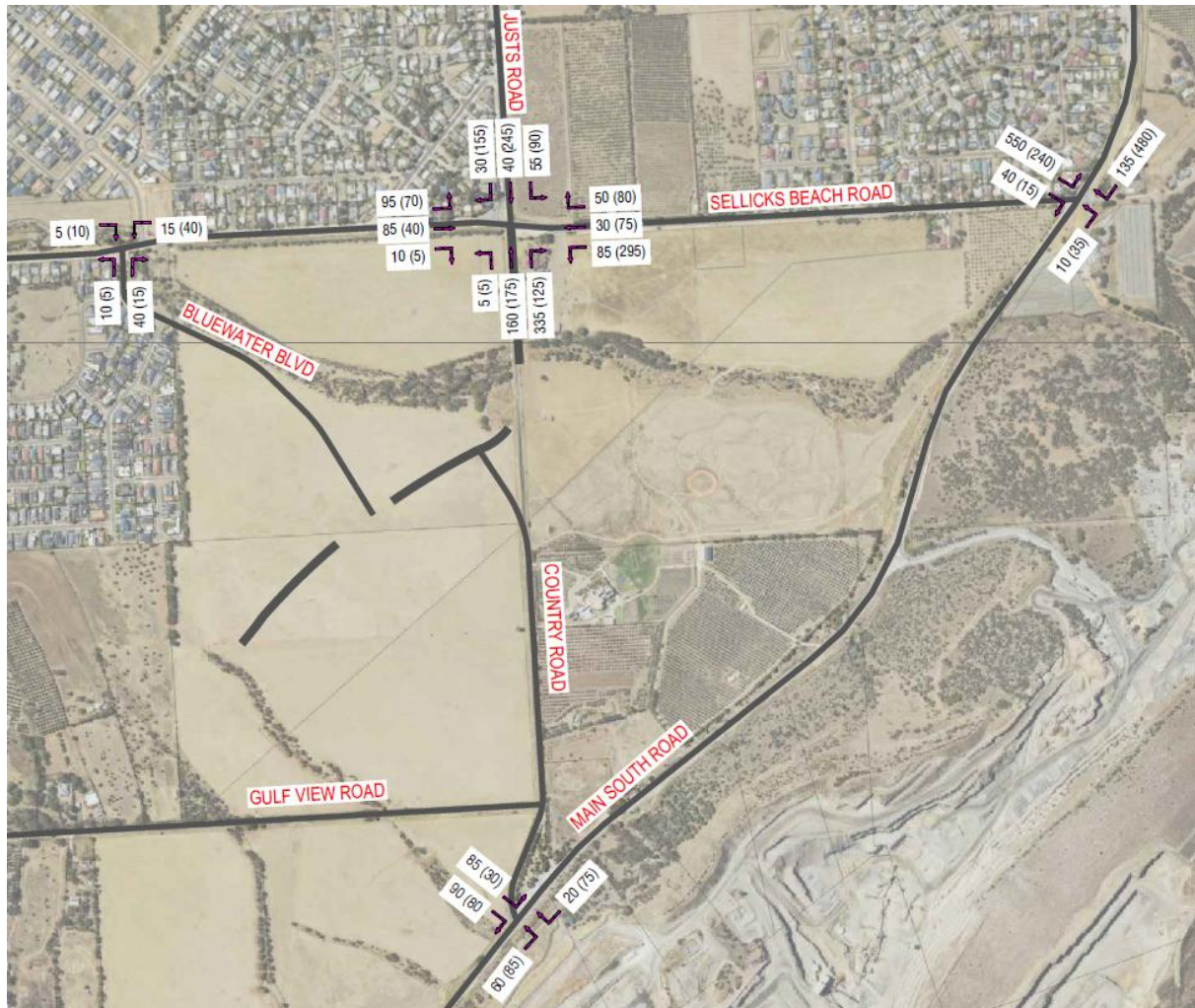


Figure 3.3 Forecast development turning movements at intersections am peak (pm peak)

4.0 TRAFFIC INVESTIGATIONS

The key transport planning aspects of the Structure Plan relate to ensuring that the future development provides for the safe and efficient movement of people and goods in all transport modes to and from the site and on the adjacent road network. This not only includes requirements for the subject land and the anticipated land uses but also consideration of linkages to the broader network.

Further, it is important that the road network provides convenient access such that a road hierarchy is developed which establishes logical route choices for drivers and a distribution of traffic volumes such that the ultimate volume of traffic reflects the status of the road.

4.1 MAIN SOUTH ROAD

Main South Road is the primary arterial road that will service the development. Access to the subject land will be available via the Main South Road/Sellicks Beach Road and the Main South Road/Country Road intersections. The intersections will be designed to cater for the forecast traffic and provide a safe facility for the road users.

4.1.1 MAIN SOUTH ROAD/SELICKS BEACH ROAD INTERSECTION

The Main South Road/Sellicks Beach Road intersection will be upgraded by DIT. It is understood that works are due for completion in 2026.

The design will result in improved safety at the intersection as it will modify an existing four-way intersection to create two off-set T-intersections with channelised right turn lanes.

DIT did raise the concern relating to pedestrians crossing Main South Road to access the Victory Hotel. Pedestrian refuge treatments are proposed to be installed adjacent Sellicks Beach Road which will provide for an opportunity for a staged crossing of the road. While there would potentially be more pedestrians crossing to access the Victory Hotel, it is anticipated that any increase in pedestrian movements would not be significant.

4.1.2 MAIN SOUTH ROAD/COUNTRY ROAD INTERSECTION

Austrroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections provides guidance in respect to the requirement for channelised turn lanes at intersections. Consideration of the existing volumes at the intersection has identified that there is an existing warrant for a basic left turn lane treatment and a channelised right turn lane, as illustrated in Figure 4.1.

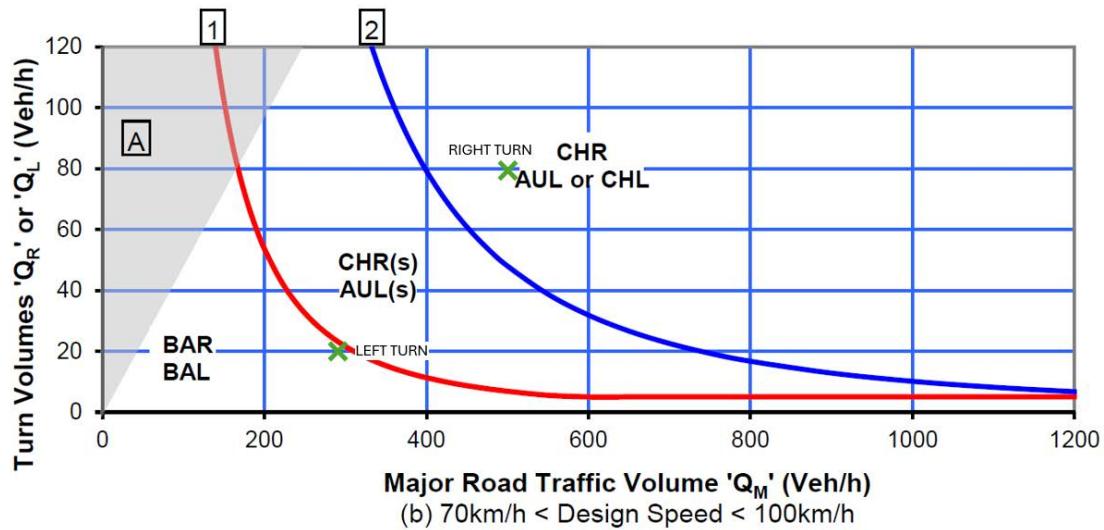


Figure 4.1 Warrant assessment of turn lane treatments based on existing volumes

The above assessment is reinforced by a review of the crash statistics which identified that there were eight crashes at the Main South Road/Country Road intersection of which five were rear-end collisions. This indicates that safety improvements which provide for separation of through and turning traffic movements are already justified to provide for the safe operation of the intersection.

Development of the subject land will result in an increase in the left turn treatment required to a short auxiliary left turn lane, as illustrated in Figure 4.2

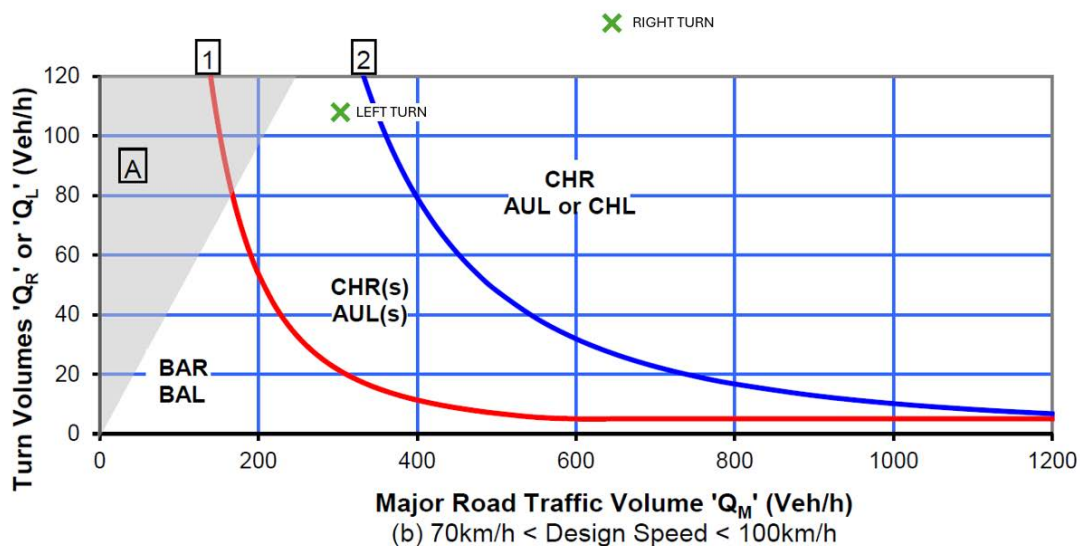


Figure 4.2: Warrant assessment of turn lane treatments based on forecast volumes

There are a number of constraints at the Country Road/Main South Road intersection, including a large culvert which provides for the tributary under Main South Road, the angle of the intersection, level differences between Country Road and Main South Road and an embankment on the eastern side of Main South Road.

Nonetheless, the further development of Sellicks Beach will warrant improved safety at the intersection. Figure 4.3 identifies a concept for a channelised right turn lane and auxiliary left turn lane at the intersection.



Figure 4.3: Potential upgrade to the Main South Road/Country Road intersection

The concept design of the intersection treatment has been based on the requirements in AGRD04A. The proposed upgrade design of this intersection has received in-principle support from DIT. The intersection will cater for the movements of a 12.5 m heavy rigid vehicle as shown in Figure 4.4.

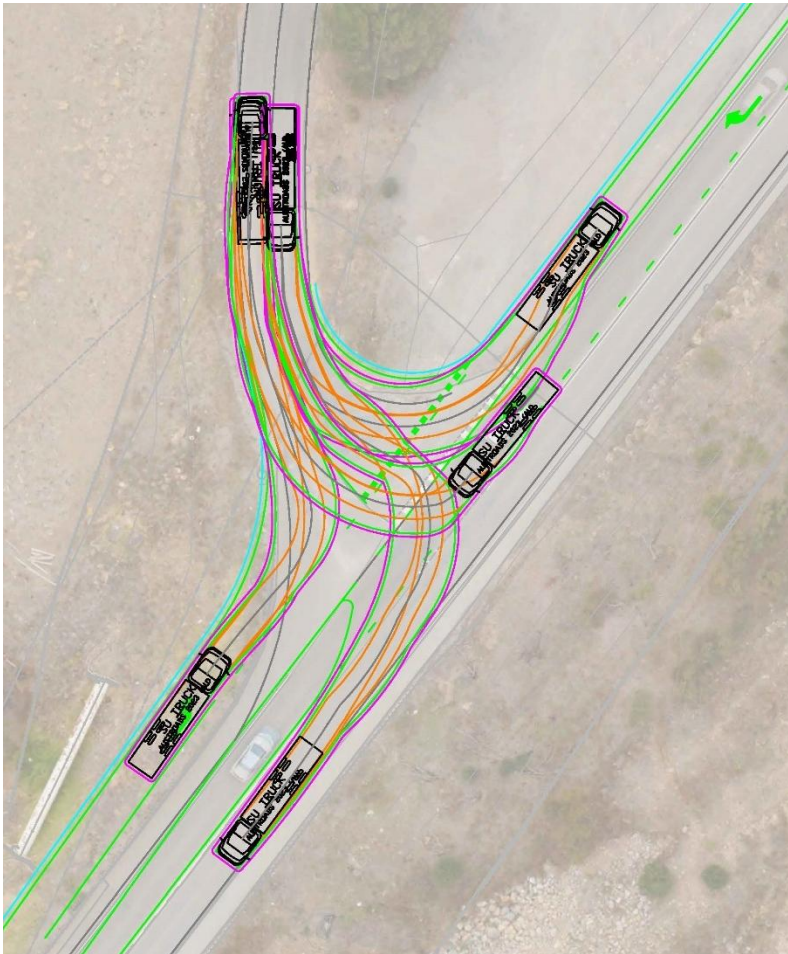


Figure 4.4 Movements of a 12.5 m HRV at the intersection

4.2 SELICKS BEACH ROAD HIERARCHY

A road network to service the potential development should be established such that it complements the road hierarchy of Sellicks Beach and provides for convenient access in an orderly network for residents. In developing the hierarchy, key collector roads will form the primary access routes to service residential streets with the design providing for future volumes which are consistent with the expectations of the nature and function of the road.

Equally, it is important to not segregate existing townships and hence connection to roads already established in Sellicks Beach should be identified to ensure integration of the proposed residential development with the existing community. Further, the design has considered vulnerable road users with the view to enabling an innovative design solution which provides for low speeds to foster a high amenity and improved road safety.

The limited access across Sellicks Creek provides a constraint for vehicular and pedestrian access which will inform the ability to provide road connections and hence the road hierarchy. In order to ensure orderly transport planning for Sellicks Beach, it

will therefore be important to ensure that the collector road servicing the subject land is aligned to provide for priority movements to Sellicks Beach Road and provide for opportunities for intersections to develop residential precincts within the subject land.

Secondary to this, there will be an opportunity for the following connections:

- a minor collector road link between the intersection of the primary collector road and Country Road to Main South Road;
- a minor collector road link between the primary collector road and Bluewater Boulevard;
- retention of a connection between Country Road and Gulf View Road; and
- potential connections between the subject land and existing residential development to the west.

Figure 4.5 illustrates the recommended major road hierarchy for the proposed development area.

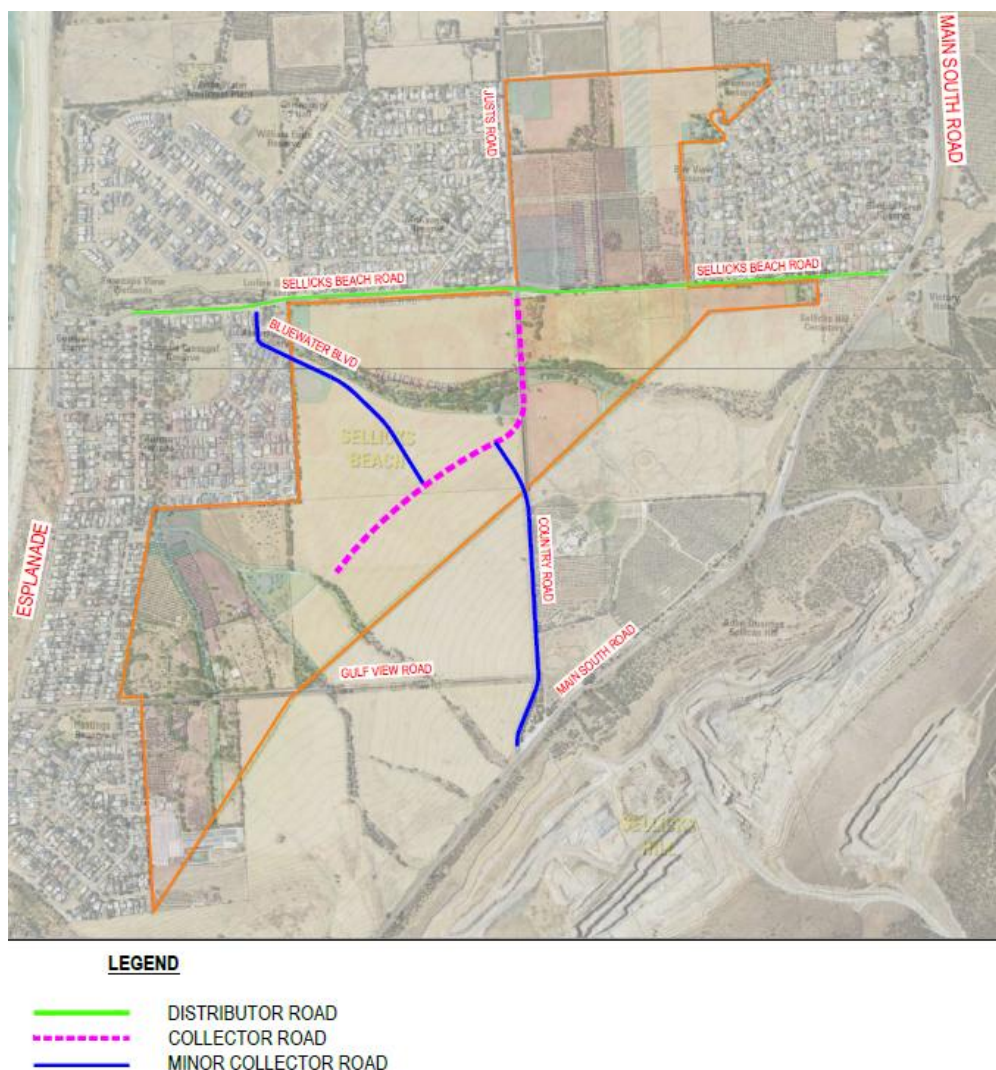


Figure 4.5 recommended road hierarchy

4.3 SELICKS BEACH ROAD

Sellicks Beach Road is the existing connection between Sellicks Beach and Main South Road and the primary access for the township. The majority of drivers currently access Sellicks Beach via Sellicks Beach Road and will continue to do so when the subject land is developed.

Sellicks Beach Road will require upgrading to safely cater for increased volumes on the road and to ensure that the pavement reflects the requirements for the primary township access. It has been identified that there are deficiencies with existing intersections treatments, including obstructed sight lines, which should be ameliorated. The upgrade of Sellicks Beach Road provides an opportunity for Council to consider these existing deficiencies with a view to resolving risks associated with road safety in the design.

Having regard to this, the following matters warrant further consideration during the design:

- existing deficiencies created by substandard sight distance should be addressed to ensure the road is safe and convenient for all users;
- accessibility requirements for existing properties that abut the road; and
- pedestrian/cyclist requirements.

Of particular note is the alignment of Sellicks Beach Road adjacent Lurline Boulevard and Bluewater Boulevard, particularly in respect to the lack of intersection treatments and substandard sight distance. These issues warrant consideration irrespective of the proposed Code Amendment.

4.4 SELICKS BEACH ROAD INTERSECTIONS

Intersections on Sellicks Beach Road will be required to facilitate access to the potential development area. In identifying potential locations for the intersections, consideration has been given to the following:

- sight distance constraints due to the horizontal profile of the road;
- sufficient separation to existing intersections on the road to ensure that the safety and capacity of these intersections are not compromised;
- the ability to provide channelised turn lanes where the warrant for such facilities would be met; and
- the presence of existing trees and SAPN poles along the road.

Based on the above, the following potential intersections have been identified:

- the amalgamation of the Sellicks Beach Road/Country Road and the Sellicks Beach Road/Justs Road to provide a four-way intersection. The intersection will provide accessibility for potential developments on both sides of Sellicks Beach Road. The proposed intersection will require the realignment of Justs Road and a roundabout treatment to ameliorate the existing sight distance constraint. Additionally, the proposed roundabout treatment would also provide speed control on the road. Figure 4.6 identifies a concept of a roundabout at the intersection.

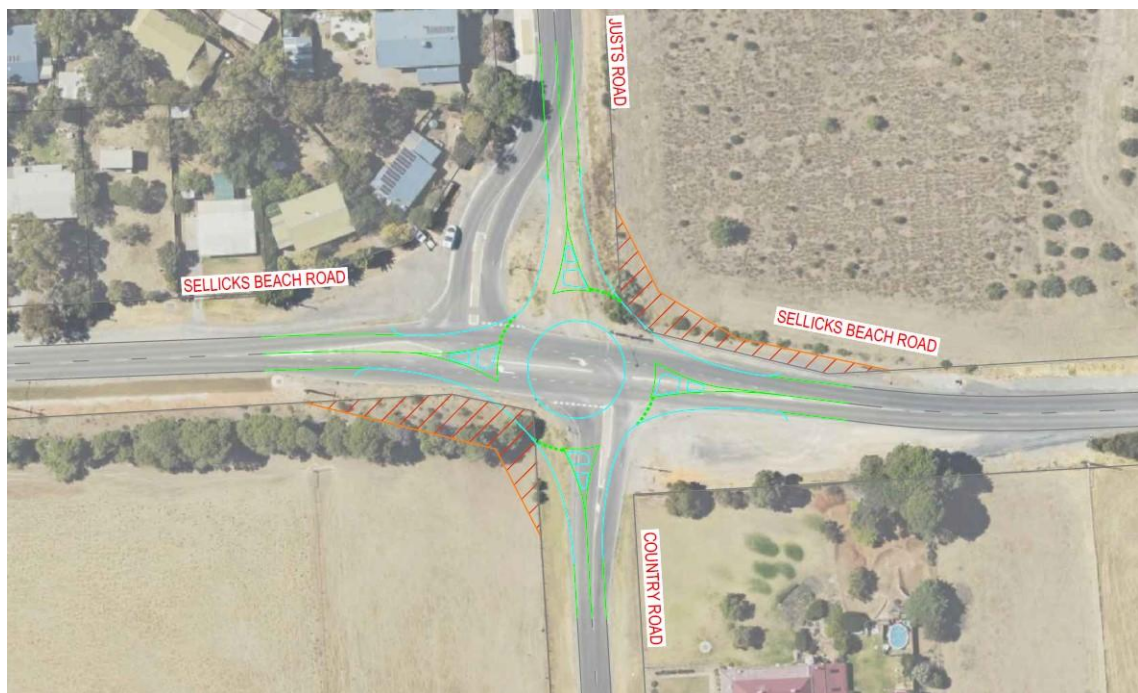


Figure 4.6: Potential roundabout treatment at the Sellicks Beach Road/Country Road/Justs Road intersection

The proposed roundabout will be located adjacent to the potential retail precinct and in close proximity to the pedestrian crossing and therefore will have the additional benefit of effecting speed control. It is not envisaged that the roundabout will be designed in accordance with Austroads criteria for large vehicles as this will not complement the design of the road or the adjacent precinct but rather would meet the criteria for a local street roundabout in accordance with the Code of Technical Requirements which will promote a low speed environment on Sellicks Beach Road.

- an intersection to facilitate access to the potential activity centre on Sellicks Beach Road. This intersection will require sufficient separation to the potential Sellicks Beach Road/Country Road/Justs Road intersection. It is anticipated that the intersection would require a short channelised (CHR (s)) turn lane to provide a safe storage facility for vehicles turning right into the site. Figure 4.7 identifies a sketch concept of a right turn lane to the activity centre;



Figure 4.7 Concept channelised right turn lane on Sellicks Beach Road to the activity centre

- the extension of Bluewater Boulevard to create an additional connection between Sellicks Beach Road and the southern portion of the development area. The increase of traffic at this intersection will increase the demand for a short channelised (CHR (s)) turn lane to be provided to mitigate the risk of rear end collisions.

In upgrading the Bluewater Boulevard intersection, investigations in respect to resolving the substandard sight distance at the Lurline Boulevard intersection are warranted, as this existing safety issue is a crash risk. In addition, a CHR (s) treatment is currently warranted and should be considered in conjunction with the upgrade of Sellicks Beach Road.

Figure 4.8 illustrates a potential short channelised right turn lanes at the Sellicks Beach Road/Bluewater Boulevard and Sellicks Beach Road/Lurline Boulevard intersection.



Figure 4.8 Concept channelised right turn lane at the Sellicks Beach Road/Bluewater Boulevard intersection

- potential creation of a new intersection to provide an access to the residential developments on the southern side of Sellicks Beach Road. While not essential to the success of a land division, the intersection would provide an flexibility with the design and relieve pressure on a single access to Country Road.

The intersection would need to meet the SISD criteria and be located with adequate separation to the Sellicks Beach Road/Monaco Boulevard and Sellicks Beach Road/Casablanca Place intersections. Figure 4.9 identifies a potential location and treatment for the intersection.



Figure 4.9: Potential intersection to cater for an alternative access for the residential development on the southern side of Sellicks Beach Road

4.5 JUSTS ROAD

There will be a requirement for one intersection on Justs Road to cater for access to the commercial and residential precincts on the northern side of Sellicks Beach Road. The intersection will provide access for the mixed use development and a future park and ride facility.

The existing traffic volume on Justs Road is low and hence the requirement for a channelised right turn lane will not be triggered in the short term. Further, the design of the future development area should encourage traffic volumes to use major collector and arterial routes to minimise though traffic using Justs Road.

Notwithstanding this, should there be a high demand for a park and ride facility with circa 200 spaces or higher in the longer term, it would be desirable for provision to have been made to enable a channelised right turn facility to be constructed.

Even in the short term, the location of the intersection will require consideration to adjacent intersections and the existing bus stop. Figure 4.10 identifies a potential intersection location and illustrates how a channelised right turn lane could be developed in the future if required.



Figure 4.10: Concept intersection on Justs Road with potential future channelised right turn lane

4.6 COUNTRY ROAD

Country Road will be realigned and widened to suit the major traffic movements which will be to and from the proposed growth areas. This will create a new major collector road as shown in Figure 4.11.



Figure 4.11: Major collector road into the urban growth areas

The widening envisaged will include modifications to the existing bridge and will cater for a separate pedestrian path. Figure 4.12

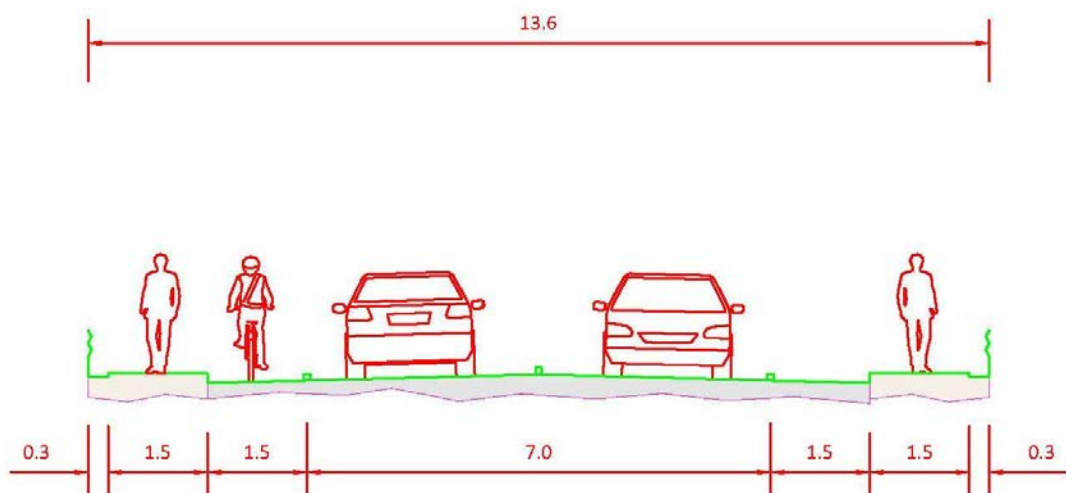


Figure 4.12: Potential cross section across bridge

The southern section of Country Road will be realigned to connect with the proposed major collector road as shown in Figure 4.13.



Figure 4.13: Realignment of Country Road

The traffic volume on this section of Country Road will be less than 2,000 vehicles per day and therefore, a standard T-intersection treatment will be sufficient to safely cater for the forecast traffic at this intersection.

4.7 CONNECTION TO RESIDENTIAL ESTATE

Consideration has also been given to potential connections to the existing residential development to the west of the subject site. This will enable the integration of the residential communities and ensure connectivity to adjacent reserves and other community facilities. Figure 4.14 identifies potential locations where these connections could be established.



Figure 4.14: Potential access to existing residential area to the west of the site

Equally, consideration has been given to the potential connections to the existing residential development to the east of the subject site. The connections will provide direct access to the potential activity centre and mass transit facility. Figure 4.15 identifies potential locations where these connections could be established.

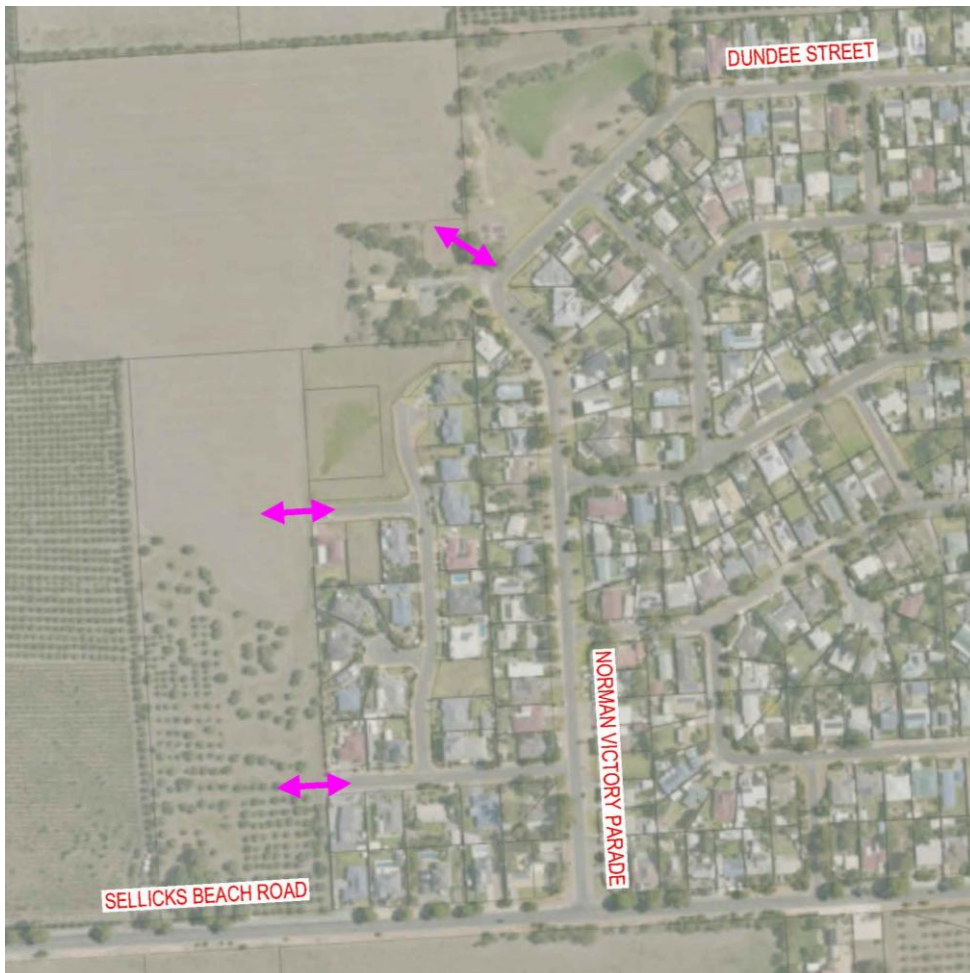
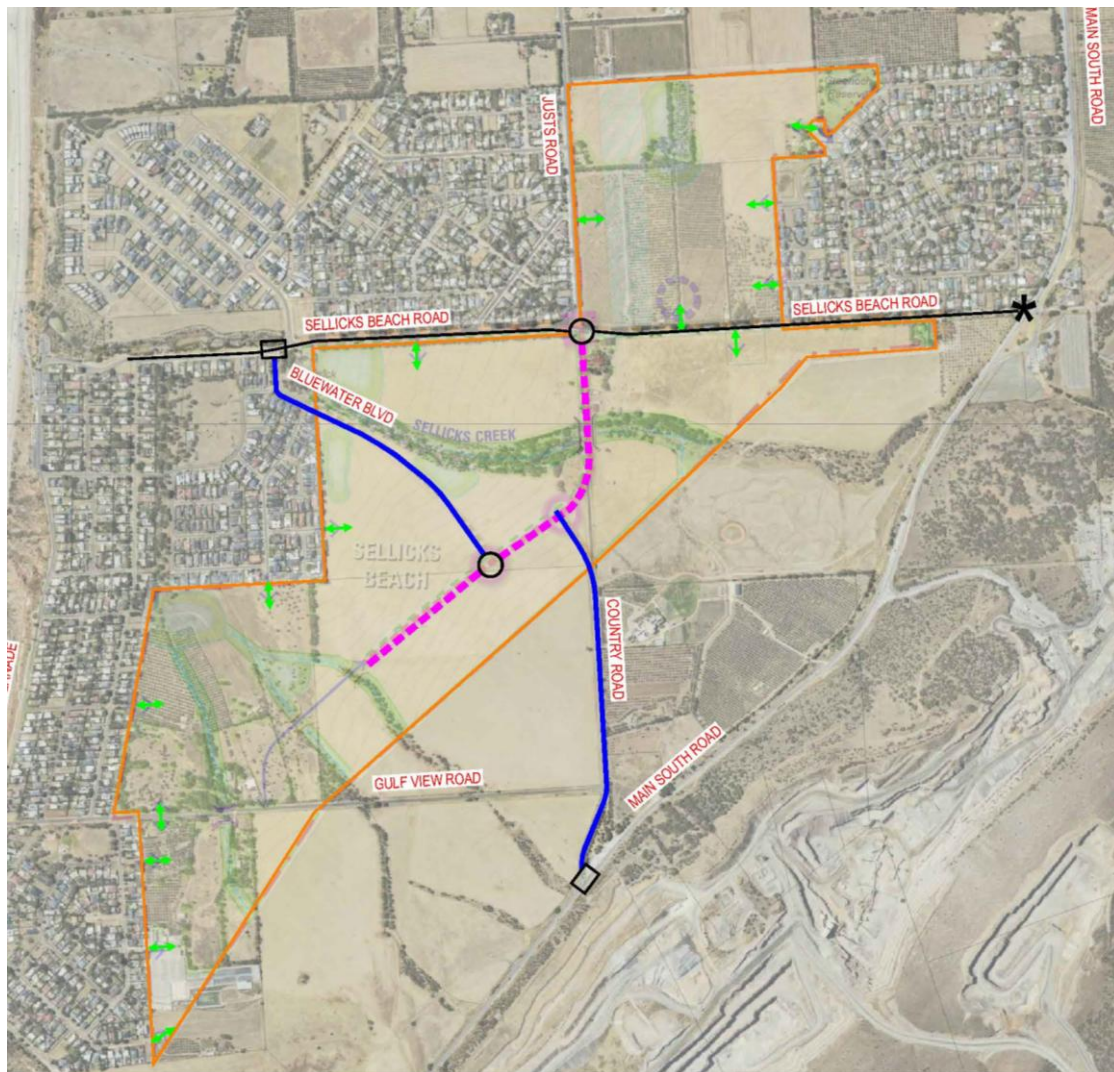


Figure 4.15: Potential access to existing residential area to the east of the site

4.8 ROAD HIERARCHY FOR STRUCTURE PLAN

The above investigations have informed recommendations in relation to road and access requirements for a Structure Plan over the subject area. Figure 4.16 identifies the road hierarchy and access recommendations for the proposed Structure Plan for this development.



LEGEND

-  ROUNDABOUT
-  ROAD UPGRADE
-  DIT INTERSECTION UPGRADE (FUNDED)
-  INTERSECTION UPGRADE
-  COLLECTOR ROAD
-  MINOR COLLECTOR ROAD
-  POSSIBLE CONNECTION

Figure 4.16: Proposed Road Hierarchy for Structure Plan

4.9 PUBLIC TRANSPORT

Sellicks Beach is currently serviced by Bus Routes 750 which operates between Sellicks Beach and Seaford interchange. The route operates daily. Variations of Route 750 include the following:

- 750A which services Cardijn College. This service operates once in the am peak hour on school days;
- 750B which services Aldinga Shopping Centre and operates daily; and
- 750X which operates as an express service between Port Road and Seaford Interchange during the am and pm peak hours on weekdays.

Figure 4.17 identifies the 500 m walking isochrones for the current network.

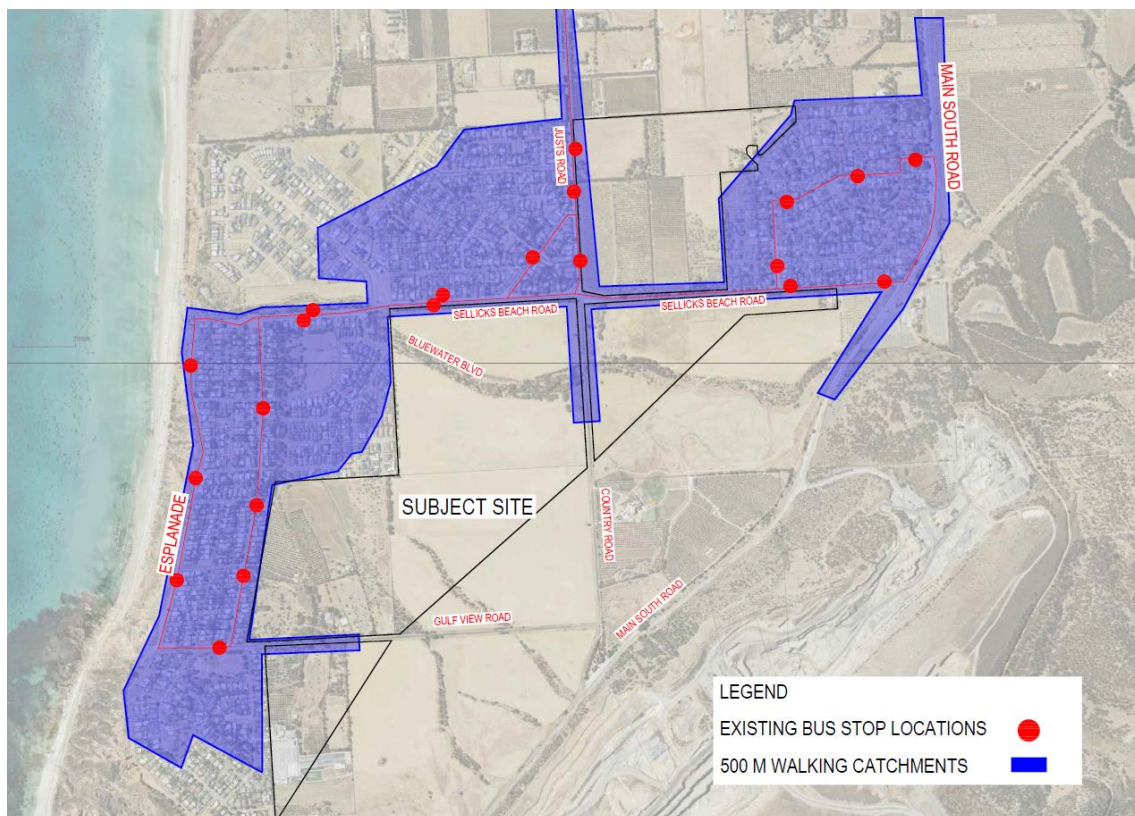


Figure 4.17: 500 m walking isochrones for the current network

The road network should be designed for flexibility for a bus route (either an extension of an existing route or a new route) to be routed through the subject land via the collector roads. Subject to infrastructure requirements, bus stops could be located such that the 500 m walking distances are maintained throughout the land division and provide connectivity to key facilities and services.

The development of the public transport network is dependent primarily on the design of the roads which will be determined in the following design stages. Figure 4.18 identifies a conceptual public transport route based on a potential road network.

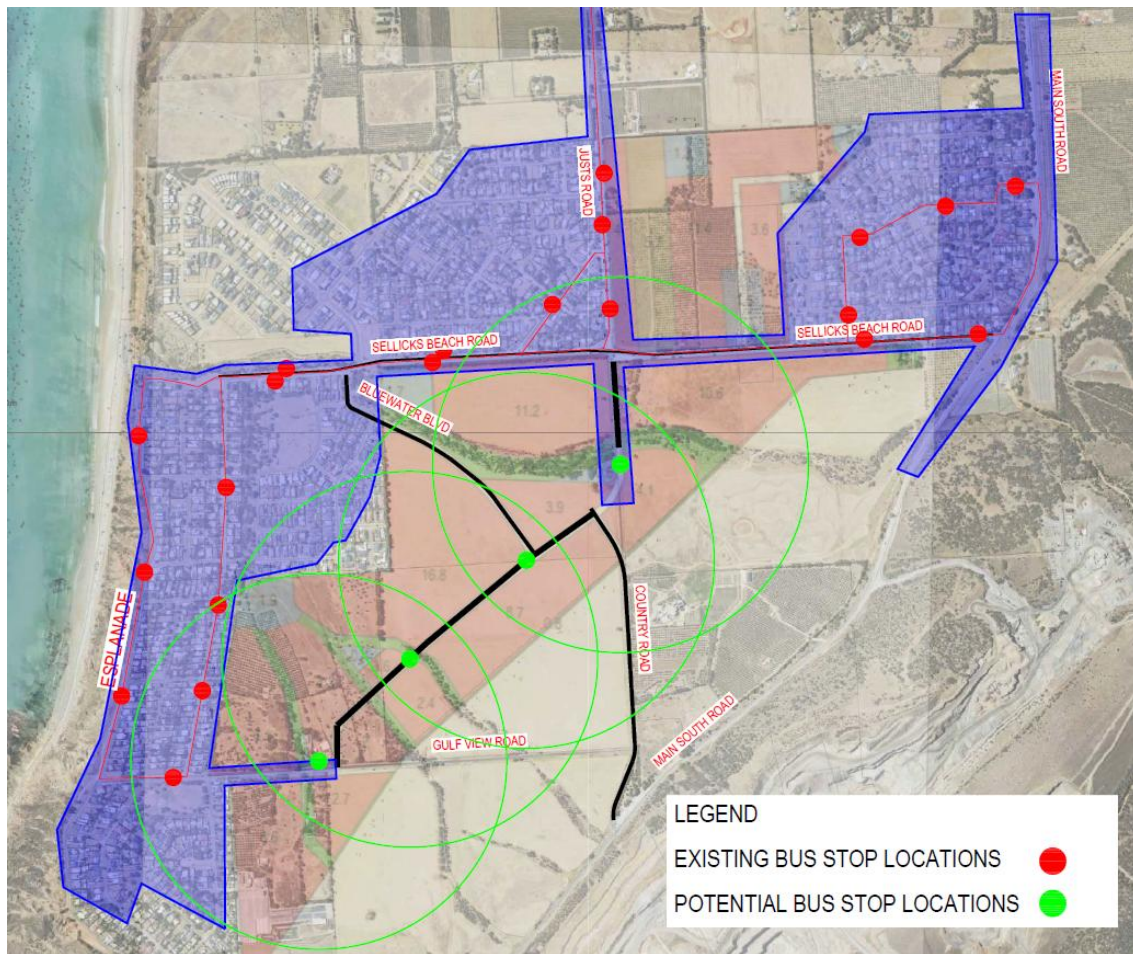


Figure 4.18: Conceptual public transport network and 500 m catchments based on an assumed road layout

The development of bus routes and bus stops will be undertaken in conjunction with Public Transport South Australia (PTSA) and in line with the requirements in DIT's Bus Infrastructure Design Master Specification (Part RD-PT-D1) dated September 2024. Specifically, the following principles will be considered:

- bus routes will include roads with appropriate widths to cater bus movements. The roads will be harmoniously delivered across individual stages of the land division;
- appropriate turning radii at intersections;
- the road network will cater for continuous bus routes or provide an appropriate turning area;
- bus stops will be located, on average, every 400 m to 500 m within the 500 m walking isochrones.

Provision has also been made for the extension of the Seaford train line and a park and ride facility. The extension of the train line would be beneficial for the community and will alter the use of public transport in Sellicks Beach. Should the extension be realised, consideration will need to be given to specific bus routes that provide connectivity to the train station.

4.10 PEDESTRIAN AND CYCLIST LINKAGES

Strong linkages should be provided for pedestrians and cyclists throughout the subject land and to the adjacent facilities. This will promote the use of alternative transport modes which will reduce the reliance on the use of private vehicles.

The Main South Road upgrade will effect a significant shared path adjacent this arterial route. To provide access to this facility, a shared path should be developed between Sellicks Beach and Main South Road, along the northern side of Sellicks Beach Road. The creation of such a facility is desirable irrespective of the development to provide for cyclist access for existing residents in Sellicks Beach.

Consideration should be given to the provision of pedestrian and cyclist routes along the proposed collector road network. In particular, connections to the existing cyclist facilities to the west and the proposed shared path adjacent Main South Road should be provided via Sellicks Beach Road, creating convenient links to the broader network.

Figure 4.19 identifies the potential pedestrian and cyclist links to/from the site.

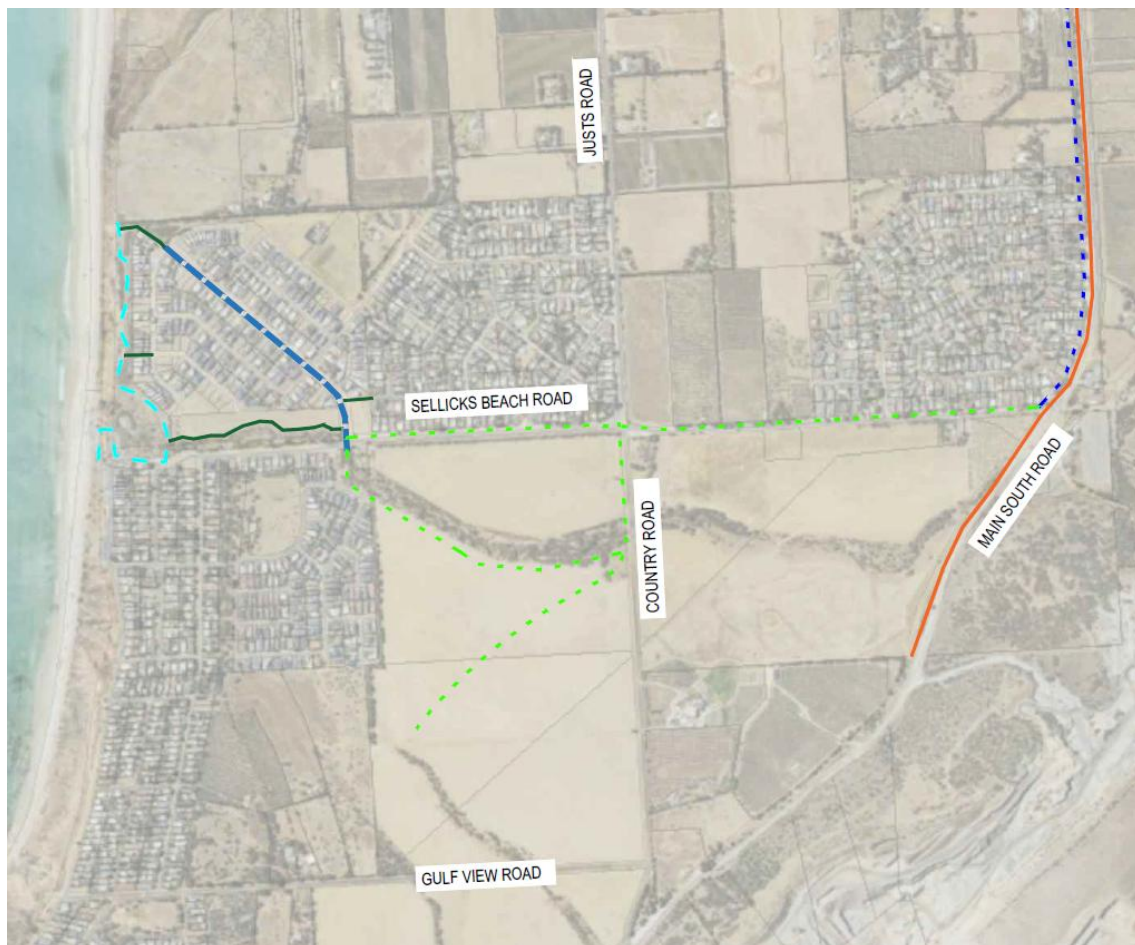


Figure 4.19: Potential pedestrian and cyclist links

The concept plan identifies potential for a retail/community precinct on the north-eastern corner of the Justs Road/Sellicks Beach Road intersection. These facilities will necessitate pedestrian movements across Sellicks Beach Road. While pedestrians can find roundabouts difficult to navigate, such treatments provide speed control and there is an opportunity to develop a slow speed environment adjacent the mixed-use development to assist with the provision of a safe pedestrian environment.

Australian Standards and Austroads Guidelines provide various treatment options for safe pedestrian crossing and the warrant requirements for these treatments. It is envisaged that a traffic control treatment could be developed adjacent the retail facility which will provide high amenity, slow speeds and safe crossing opportunities for pedestrians. This section of Sellicks Beach Road would have a different traffic environment to foster safety where higher volumes of pedestrians could be expected. Figure 4.20 illustrates a potential treatment adjacent the retail facility on Sellicks Beach Road.

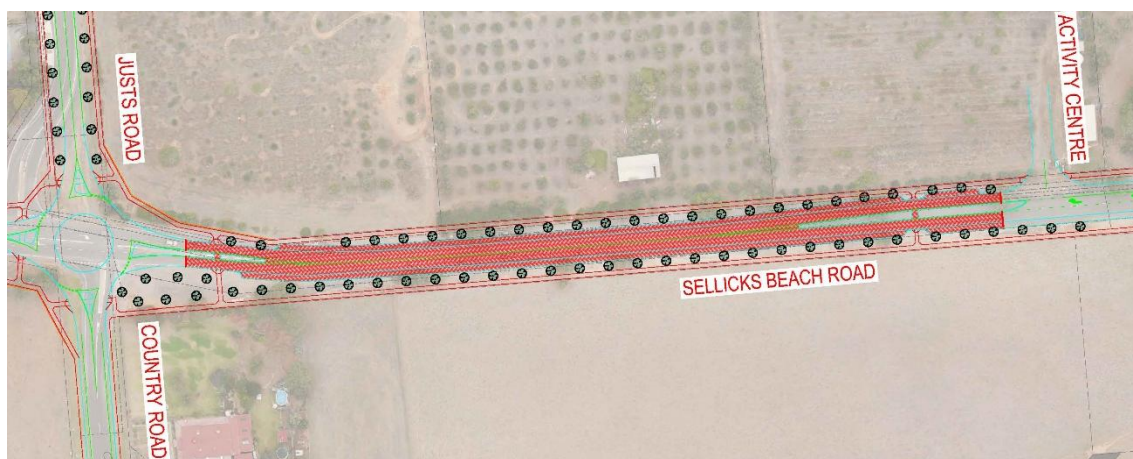


Figure 4.20 Potential traffic control treatment on Sellicks Beach Road

4.11 CROSS SECTIONS

The above investigations have identified various requirements in the road network such as channelised turn lanes, pedestrian/cyclist facilities and bus routes. The cross sections of the road will differ based on these requirements. In each instance, multiple options could be considered which will yield a similar outcome and which would be informed by preferred outcomes for road users.

Accordingly, cross section options for the road network have been provided in Appendix A to facilitate discussion in community consultation with a view to understanding the preferred outcome. The ultimate cross section will be a matter for Council and will need to achieve consistent outcomes throughout neighbouring development precincts.



4.12 RESIDENTIAL ROAD NETWORK

The residential road network will be designed to provide a safe traffic environment for all users including drivers and pedestrians and safe and convenient access to allotments. The roads will have sufficient widths to provide on-street parking where appropriate and the design would desirably foster a low speed environment to encourage safety for all road users.

5.0 TRAFFIC ANALYSIS

The traffic analysis relates to the performance of the existing and proposed intersections on Sellicks Beach Road and Main South Road to cater for the forecast traffic. The assessment includes SIDRA analysis at these intersections which has been completed for the am and pm peak hours.

Forecast traffic volumes identified within the development area and on Justs Road are relatively low and will be accommodated at the proposed intersections.

5.1 MAIN SOUTH ROAD/SELICKS BEACH ROAD

Figure 5.1 identifies the forecast total turning volumes at the Main South Road/Sellicks Beach Road intersection.

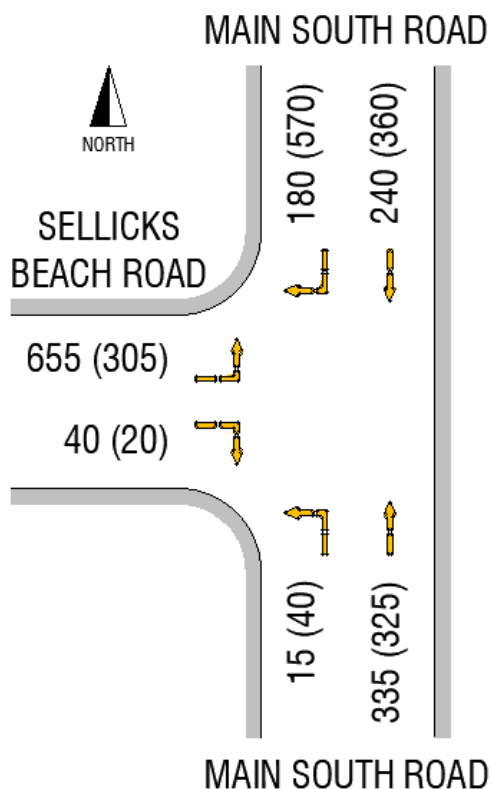


Figure 5.1: Forecast total turning volumes at the Main South Road/Sellicks Beach Road intersection

The modelling of the intersection has considered the proposed layout as this will likely to be delivered before the full development of the land is realised. The key measure for this intersection is the performance of the right turn movements. Table 3 identifies the results.

Table 3: SIDRA modelling results for the proposed Main South Road/Sellicks Beach Road intersection am (pm)

Movement	Degree of Saturation	95 th -percentile Queue Length (m)
Right turn from Main South Road	0.21 (0.64)	6 (44)
Right turn to Main South Road	0.16 (0.24)	4 (5)

The above results identify that the intersection would operate satisfactorily. Further the forecast queue at the intersection will be less than one vehicle.

5.2 MAIN SOUTH ROAD/COUNTRY ROAD INTERSECTION

Figure 5.2 identifies the forecast total turning volumes at the Main South Road/Country Road intersection.

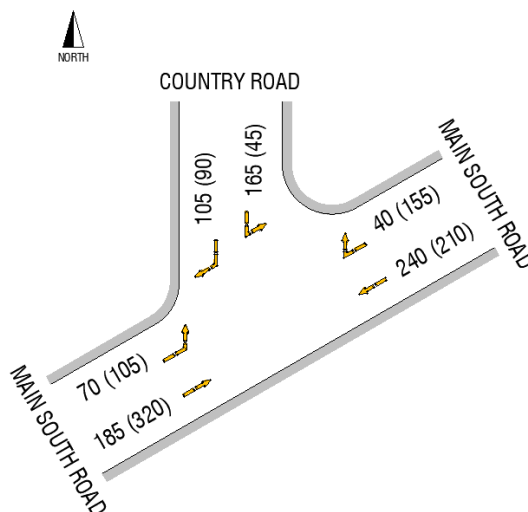


Figure 5.2: Forecast total turning volumes at the Main South Road/Country Road intersection

The modelling of the intersection has considered the proposed layout as this will be delivered before the full development of the land is realised. The key measure for this intersection is the performance of the right turn movements. Table 4 identifies the results.

Table 4: SIDRA modelling results for the proposed Main South Road/Country Road intersection am (pm)

Movement	Degree of Saturation	95 th -percentile Queue Length (m)
Right turn from Main South Road	0.04 (0.19)	1 (5)
Right turn to Main South Road	0.39 (0.33)	15 (10)

The above results identify that the intersection would operate satisfactorily. Further the forecast queue at the intersection will be less than three vehicles which is acceptable at an intersection with a major arterial road.

5.3 SELICKS BEACH ROAD/JUSTS ROAD/COUNTRY ROAD

Figure 5.3 identifies the forecast total turning volumes at the Sellicks Beach Road/Justs Road/Country Road intersection.

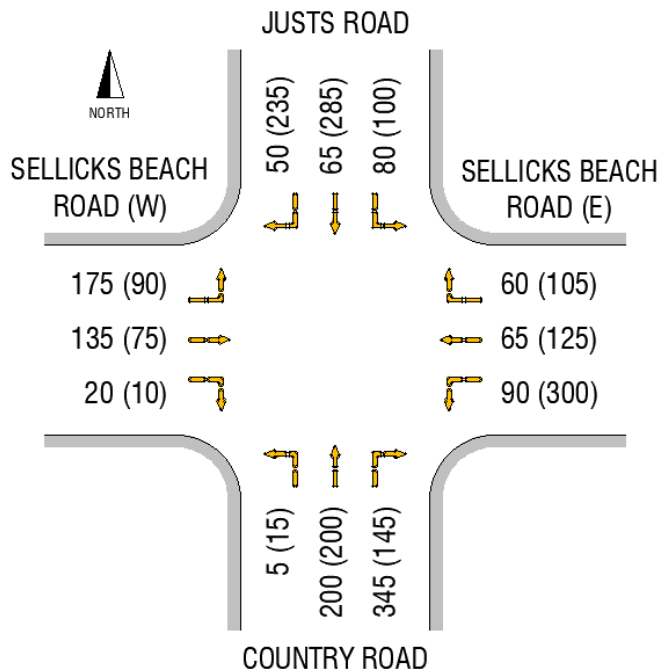


Figure 5.3: Forecast turning volumes at the Main South Road/Sellicks Beach Road intersection

The modelling of the intersection has considered the proposed layout of the intersection. Table 5 identifies the results.

Table 5: SIDRA modelling results for the proposed Sellicks Beach Road/Justs Road/Country Road intersection am (pm)

Approach	Degree of Saturation	Average Delay (s)	95 th -percentile Queue Length (m)
Sellicks Beach Road (W)	0.49 (0.22)	11.3 (7.6)	30 (11)
Justs Road	0.26 (0.59)	9.1 (8.2)	12 (40)
Sellicks Beach Road (E)	0.19 (0.74)	6.2 (17.2)	9 (74)
Country Road	0.49 (0.46)	8.6 (10.3)	30 (26)

The above results identify that the intersection will operate within capacity. The forecast queues will not impact on adjacent intersections. Importantly, the average delay for drivers will be low.

5.4 BLUEWATER BOULEVARD/SELICKS BEACH ROAD INTERSECTION

Figure 5.4 identifies the forecast total turning volumes at the Bluewater Boulevard/Sellicks Beach Road intersection.

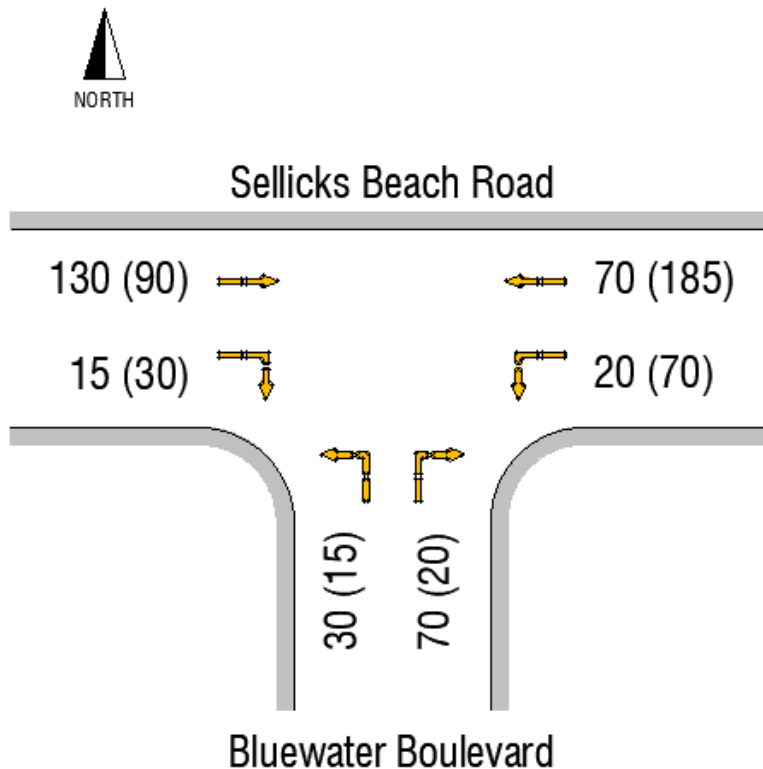


Figure 5.4: Forecast turning volumes at the Bluewater Boulevard/Sellicks Beach Road intersection

The modelling of the intersection has considered the proposed layout as this will be delivered before the full development of the land is realised. The key measure for this intersection is the performance of the right turn movements. Table 6 identifies the results.

Table 6: SIDRA modelling results for the proposed Sellicks Beach Road/Bluewater Boulevard intersection am (pm)

Movement	Degree of Saturation	95th-percentile Queue Length (m)
Right turn from Sellicks Beach Road	0.01 (0.02)	0 (1)
Right turn to Sellicks Beach Road	0.10 (0.04)	1 (1)

The above results identify that the intersection would operate satisfactorily.

5.5 NEW INTERSECTION ON SELICKS BEACH ROAD

Figure 5.5 identifies the forecast turning volumes at the proposed residential access on Sellicks Beach Road.

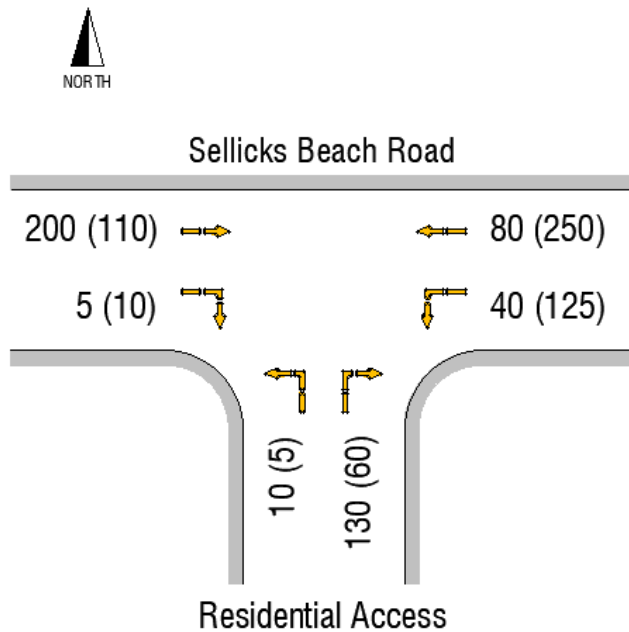


Figure 5.5: Forecast turning volumes at the residential access on Sellicks Beach Road

An assessment of the potential requirement for a channelised right-turn lane treatment on Sellicks Beach Road at this access point has been undertaken in accordance with the Austroads Guide to Traffic Management Part 6 – Intersection, Interchanges and Crossings. Figure 5.6 identifies the assessment.

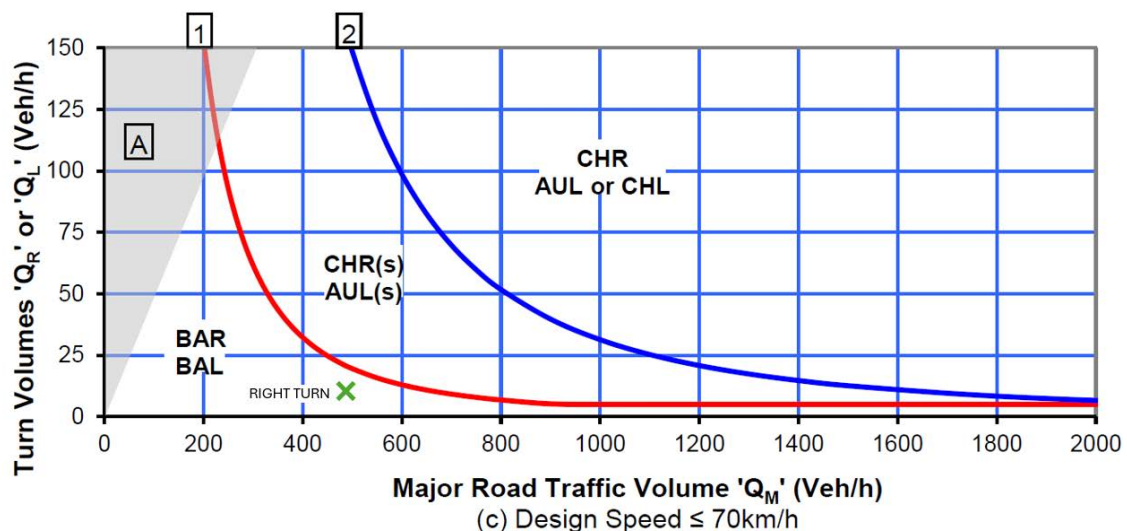


Figure 5.6: Warrant assessment at proposed residential access intersection

The analysis identifies that the forecast volumes will not require channelised turn treatments on Sellicks Beach Road. Notwithstanding, such a treatment would provide increased safety for right-turning vehicles and would also provide an opportunity to create a pedestrian refuge to facilitate crossing movements. There would also be consistency in treatments along Sellick Beach Road if a short channelised right turn lanes was to be adopted, albeit such treatments could be limited to locations where the warrant is identified.

5.6 TRAFFIC CAPACITY

The above assessment identifies that all intersections will operate within capacity based on the traffic generation and distribution adopted in this assessment. The distribution is based on anticipated movements considering the existing situation on the road network.

Should Council consider implementation of traffic control to limit movements on a particular route, there will potentially be alterations to the distribution. This situation is consistent with any road network where Council may consider traffic calming and the distribution of traffic will be determined by the traffic treatments that Council adopts in its road network. Notwithstanding, the analysis has identified that there is sufficient capacity to accommodate fluctuations in traffic volumes should such a situation be realised.

6.0 SUMMARY

The development envisioned for this site will require logical and convenient connections to be created for all road users. An upgrade to the encompassing roads to facilitate safe and convenient access has been identified and will facilitate connectivity to residential development. This will include the creation of new roads and intersections which will include provision for pedestrians, cyclists and bus routes. Allowance for the extension of the Seaford Rail Line has also been incorporated into the concept plan.

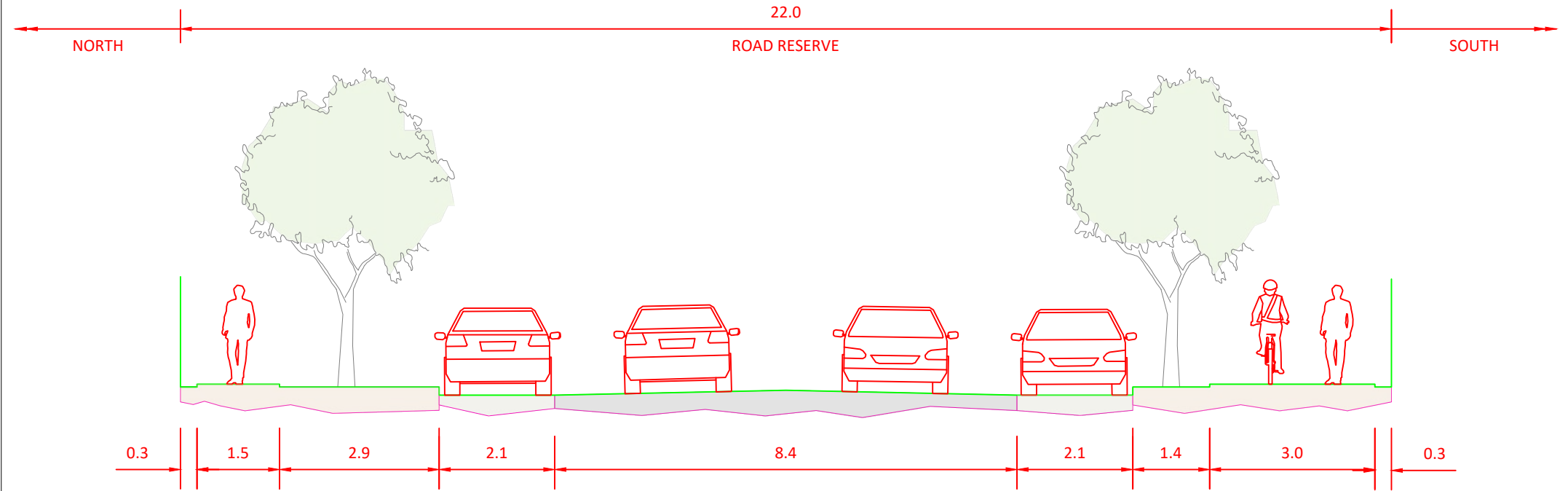
The plan utilises both crossing of Sellicks Creek to enable distribution of traffic and therefore limit impact at any single location. Importantly, the additional traffic will not change the nature and function of the road network as it relates to the existing road hierarchy.

The traffic analysis confirms that the potential treatments identified for future intersections will adequately cater for the forecast traffic volumes. These upgrades also provide an opportunity to facilitate treatments with high amenity and safety for pedestrians and cyclists which will also benefit the entrance to Sellicks Beach.

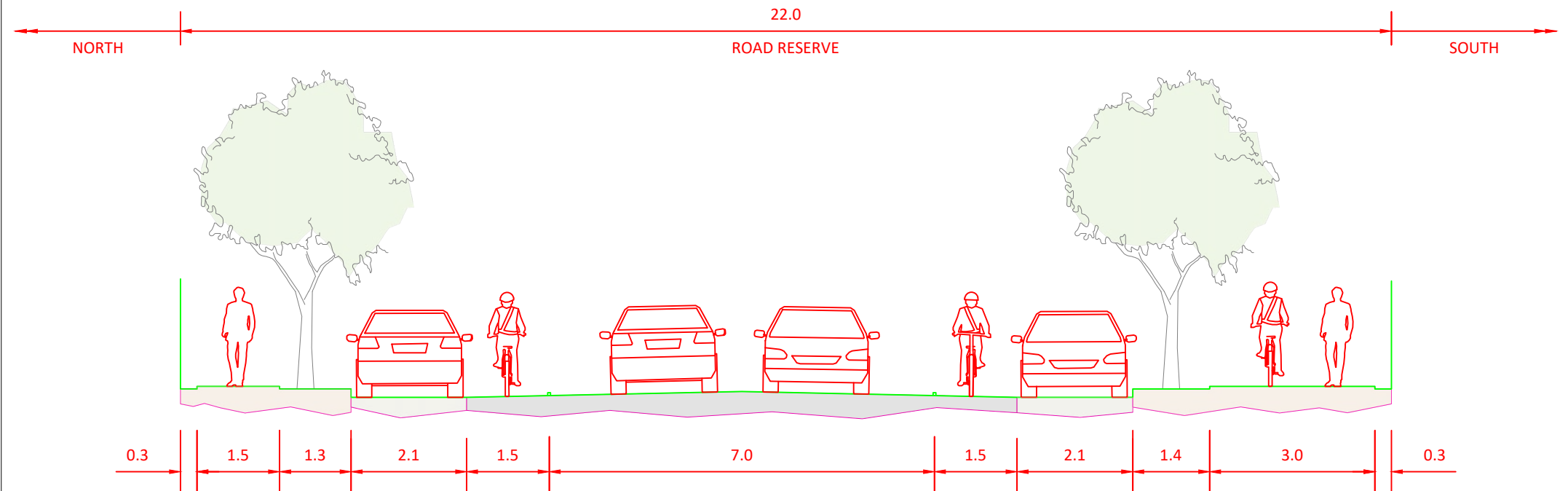


APPENDIX A

CROSS-SECTION OPTIONS

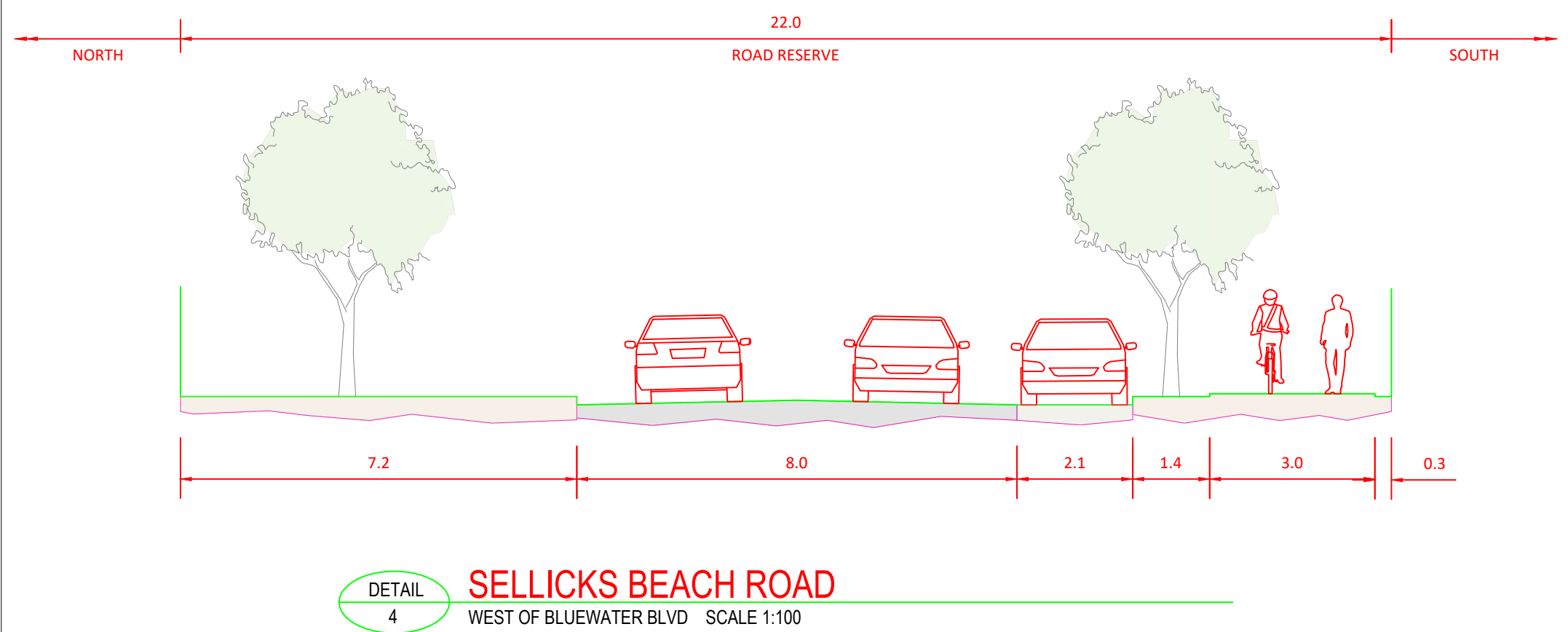
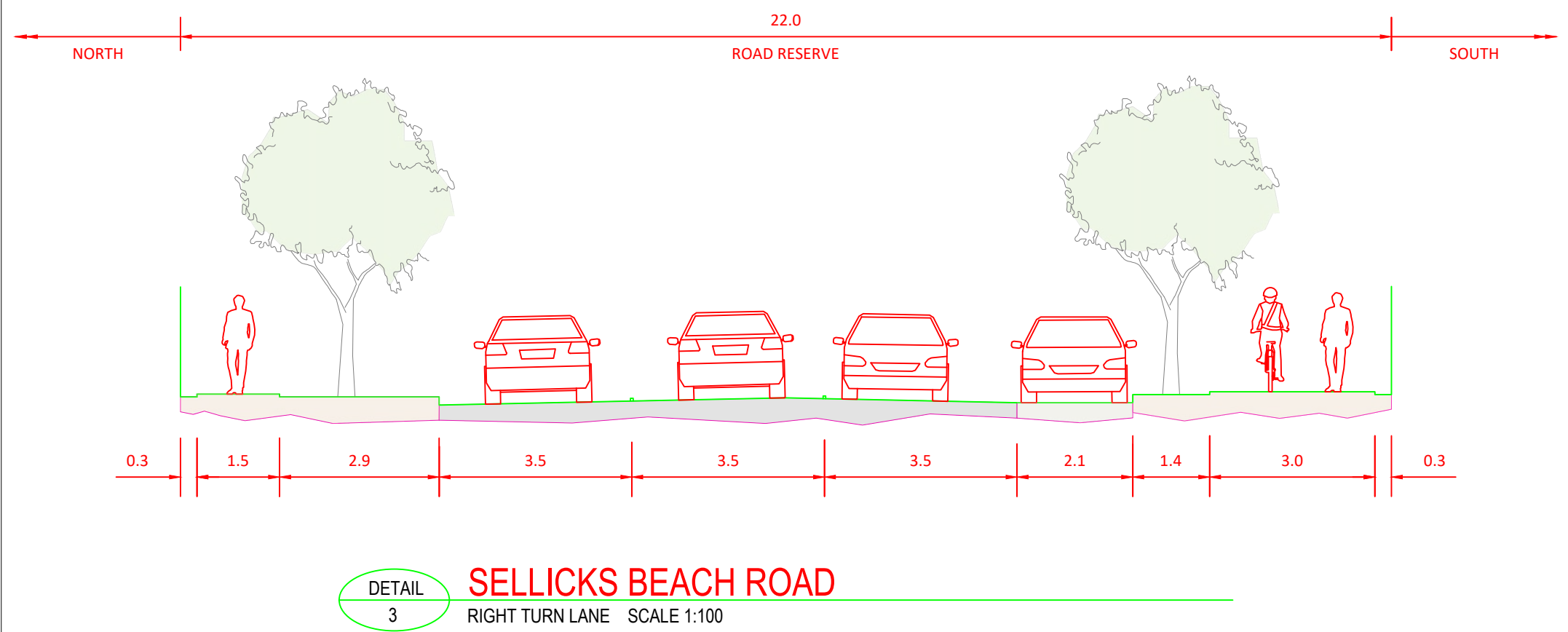


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INDENTED PARKING SCALE 1:100

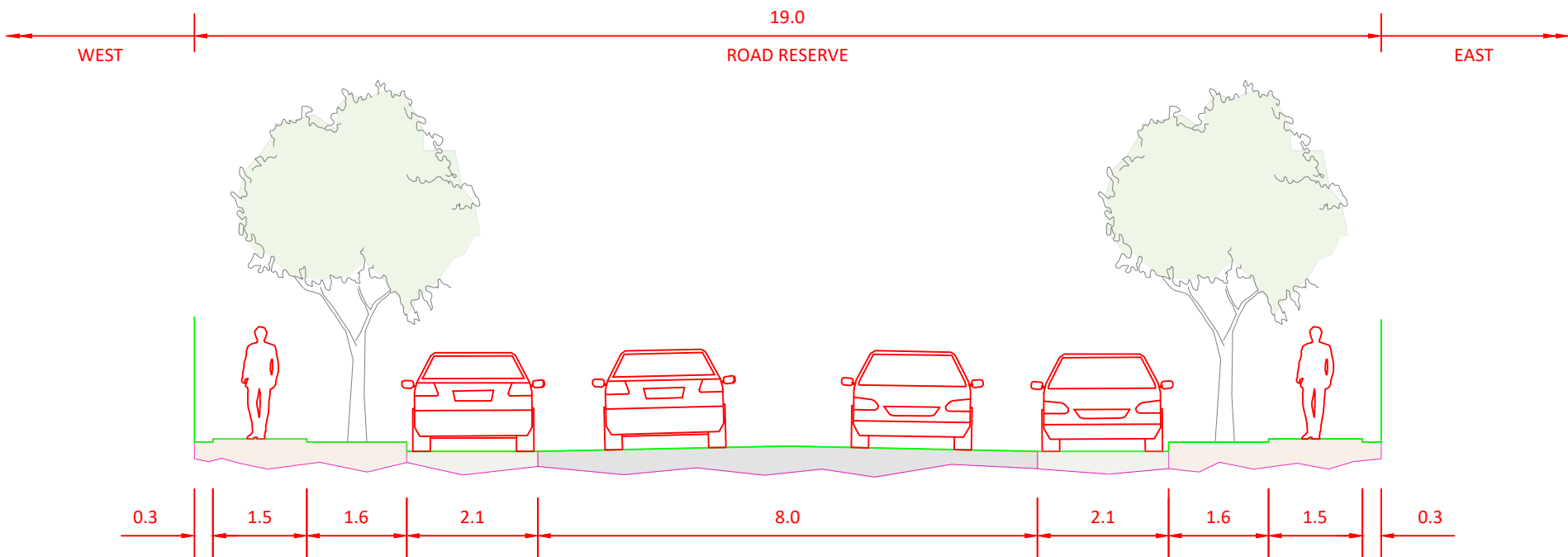


DETAIL 2 **SELICKS BEACH ROAD**
BICYCLE LANES SCALE 1:100

DISCLAIMER
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DETAIL
5

COUNTRY ROAD

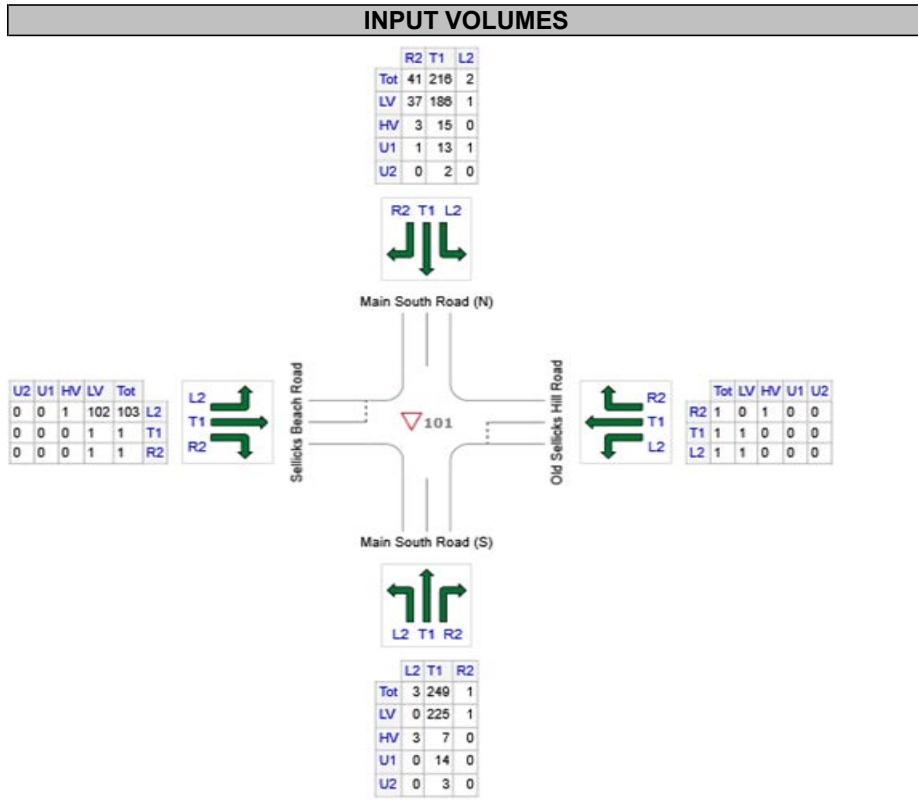
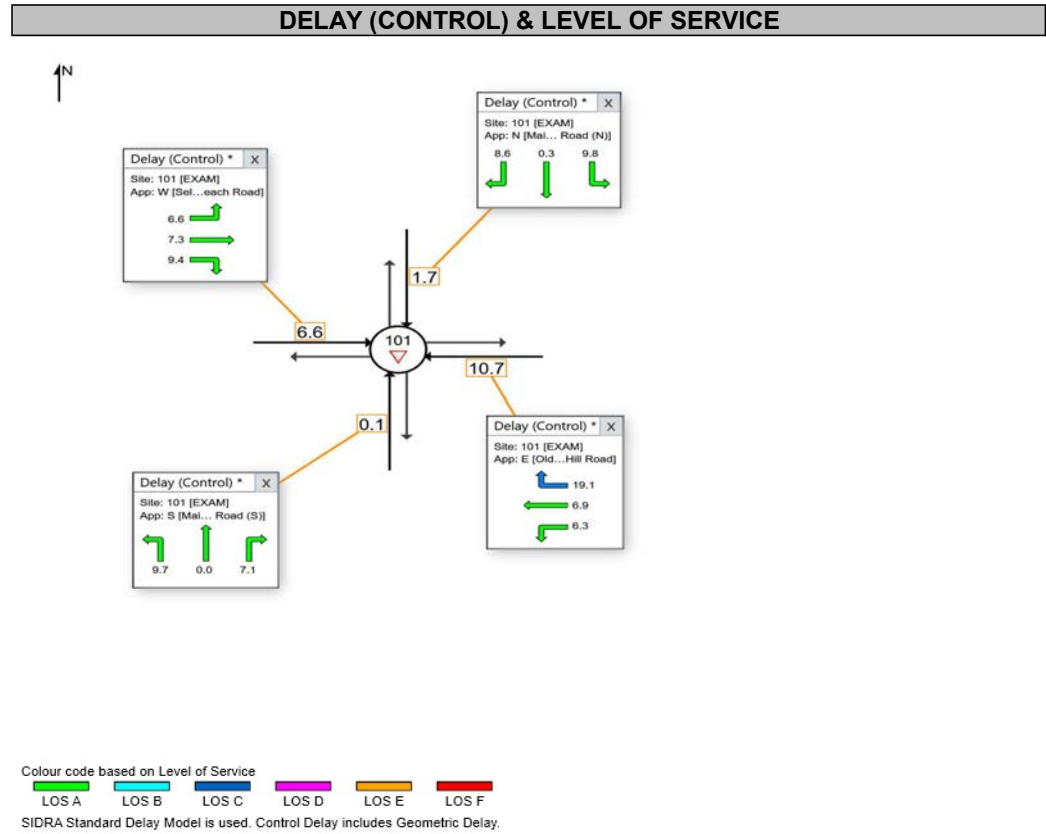
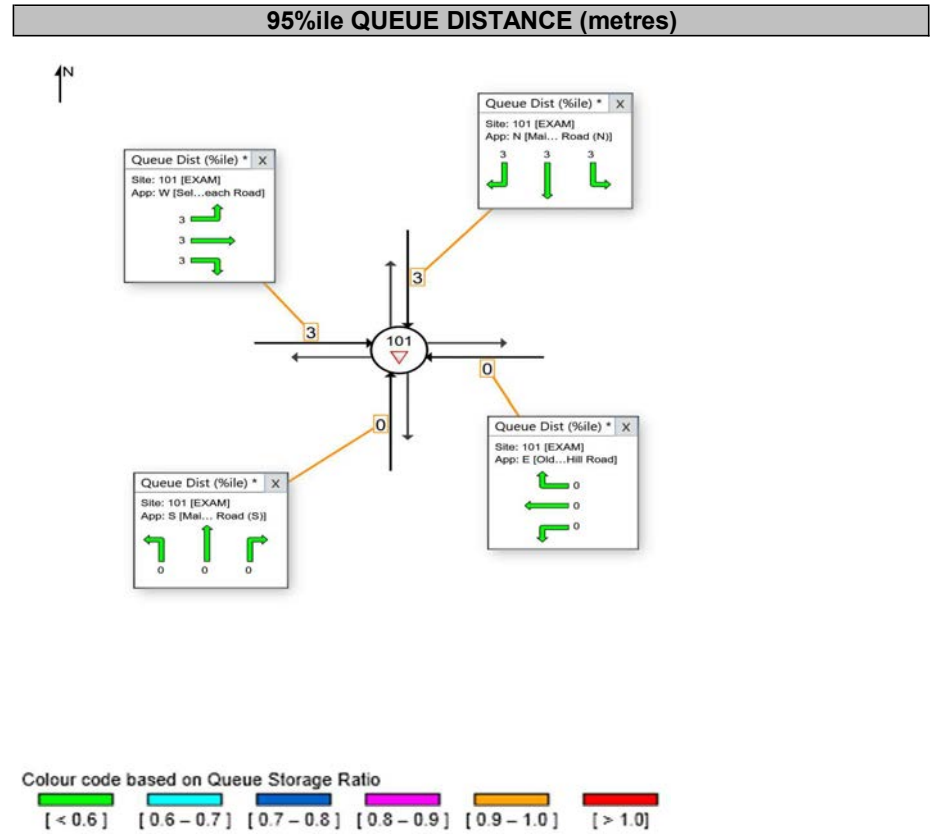
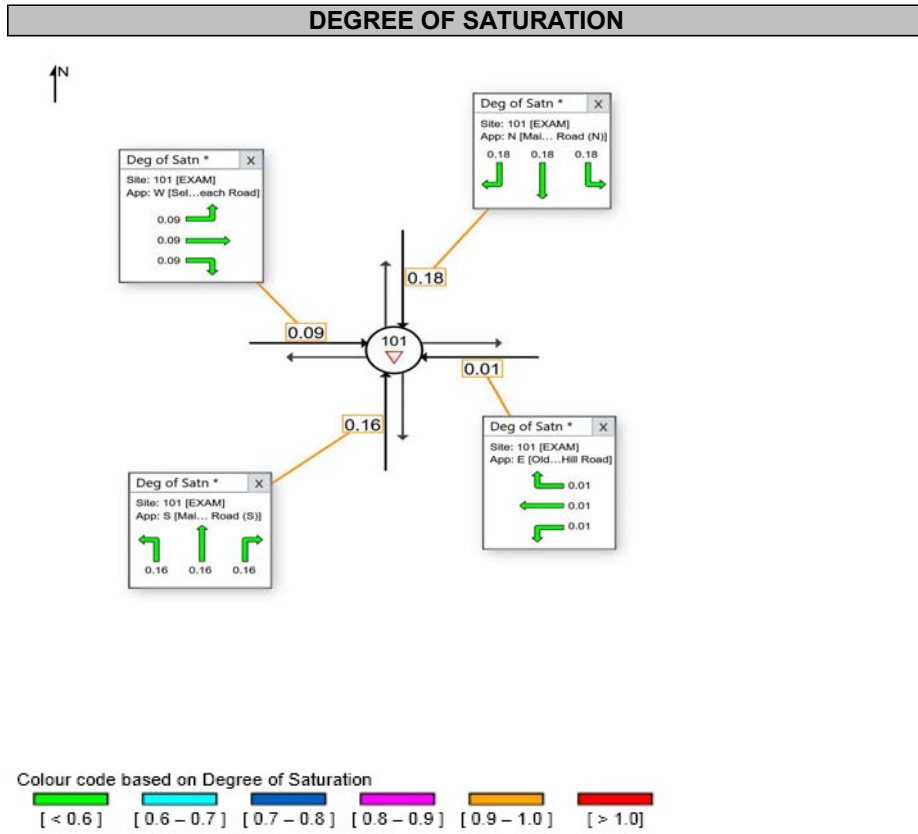
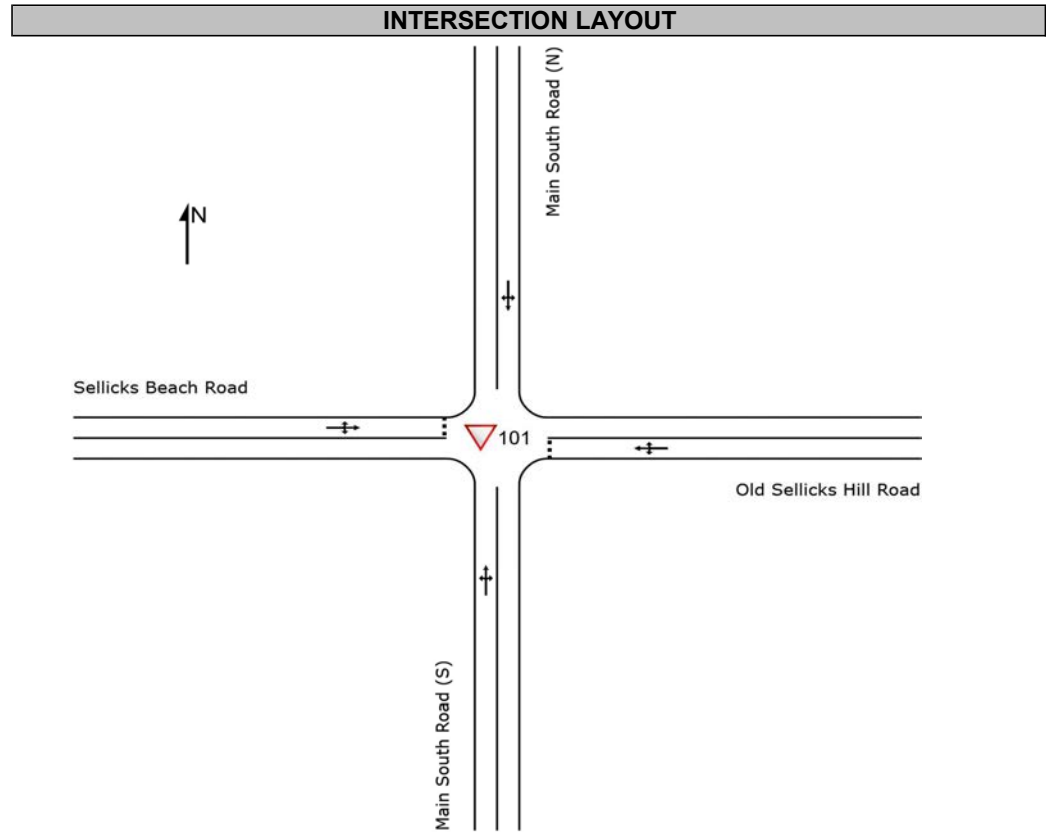
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APPENDIX B

SIDRA ANALYSIS



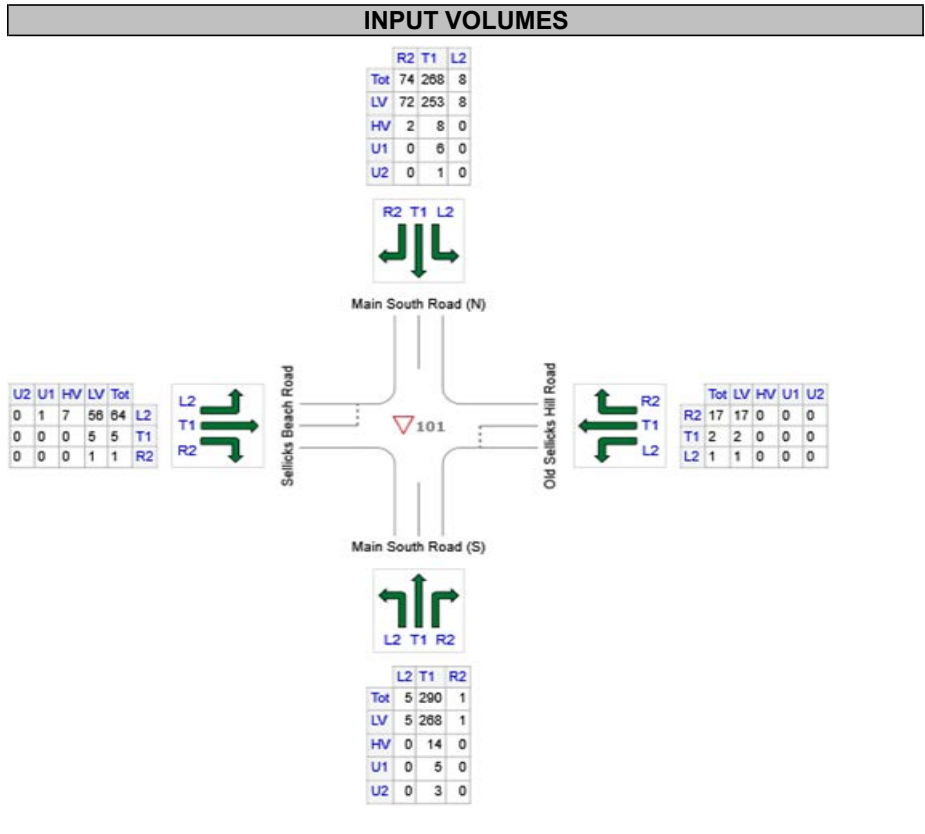
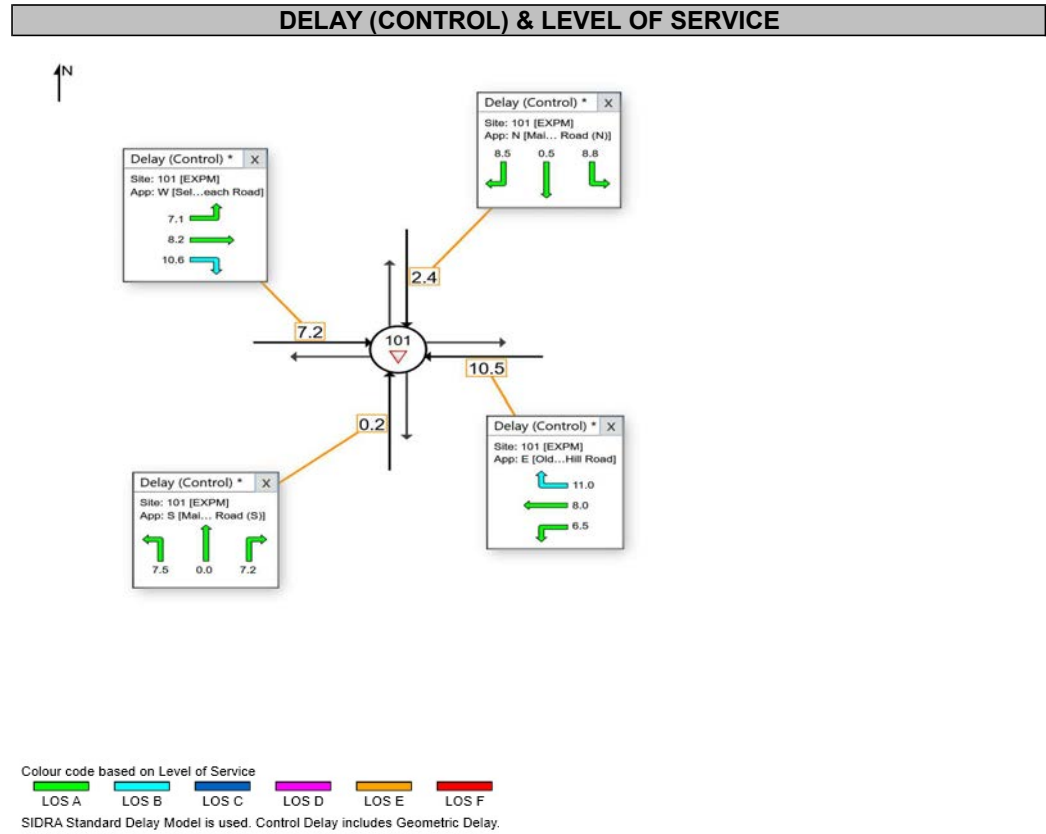
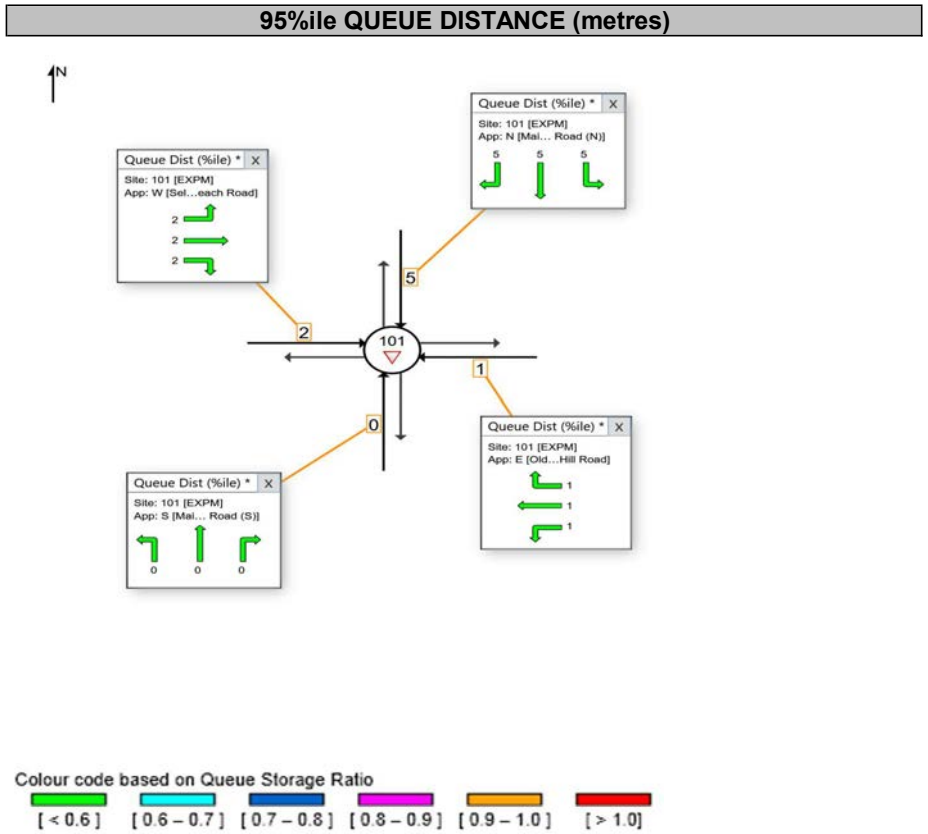
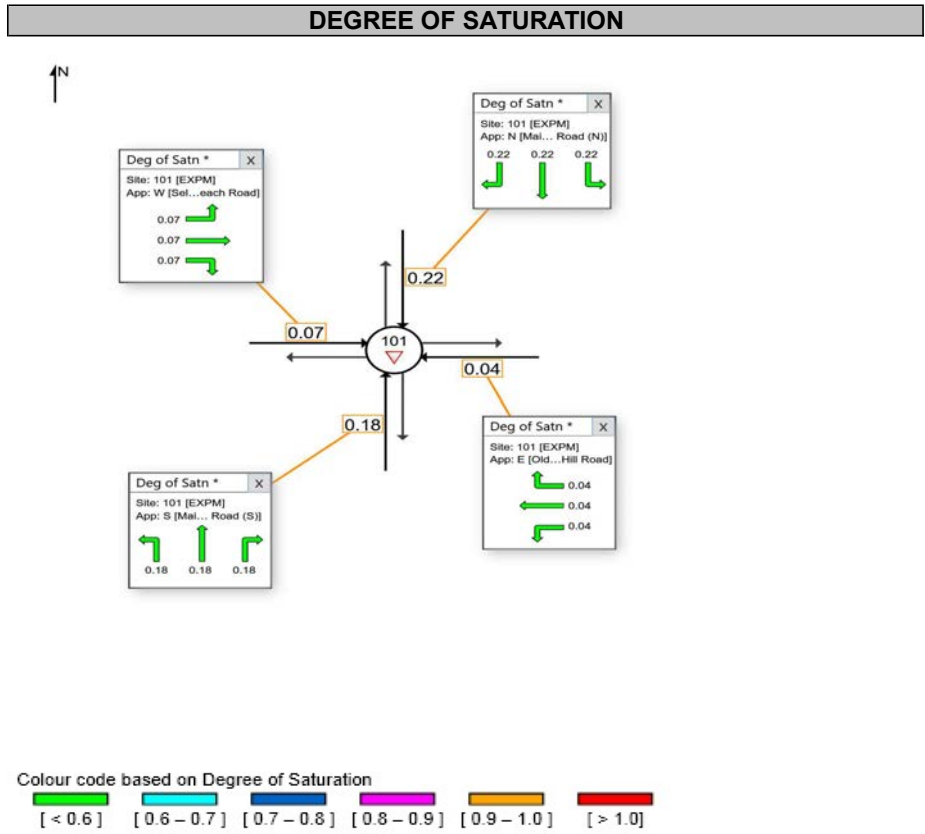
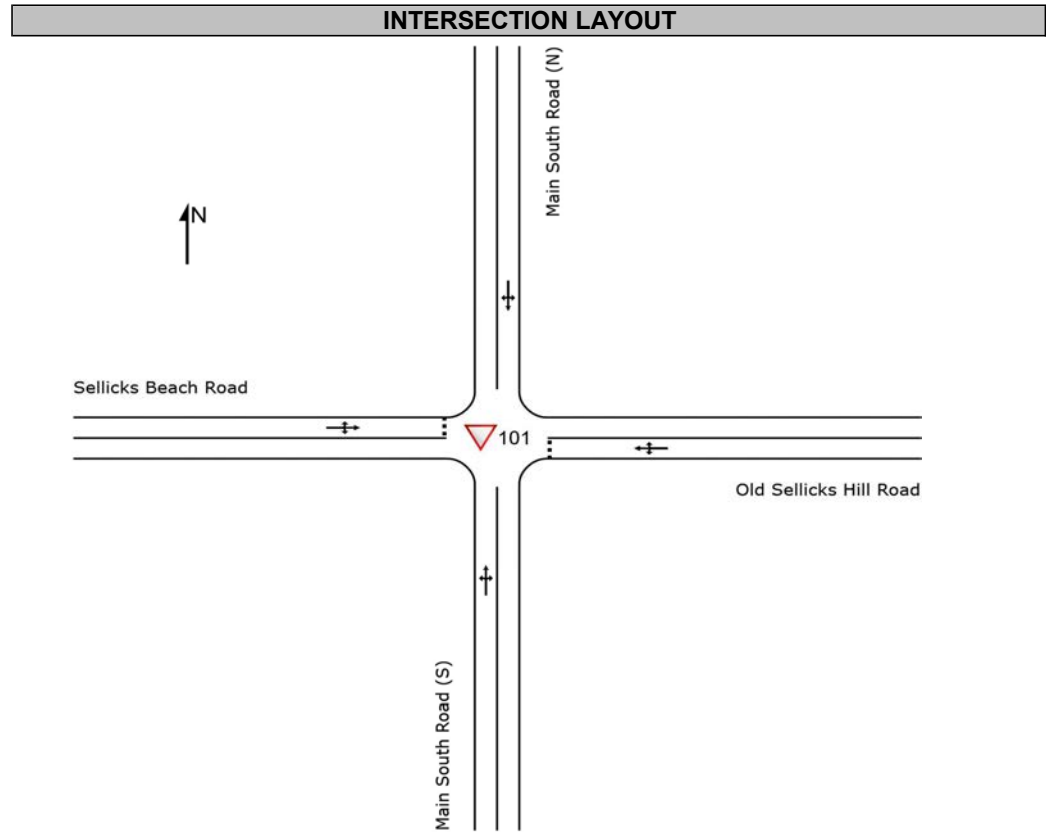
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PROJECT NAME: Sellicks Beach
Code Amendment

INTERSECTION: Sellicks Beach Road-Main South Road-Old Sellicks Hill Road

SCENARIO: Existing AM Peak





JOB NUMBER: 22-0250

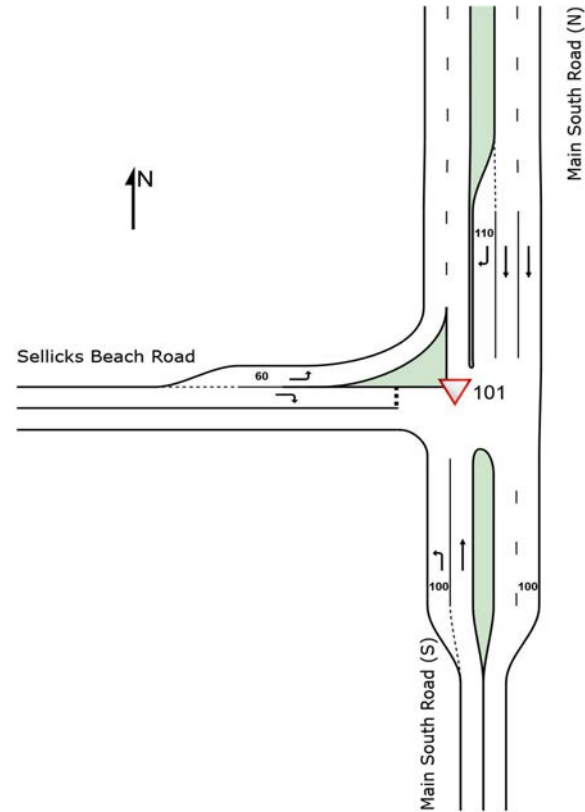
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Code Amendment

INTERSECTION: Sellicks Beach Road-Main South Road-Old Sellicks Hill Road

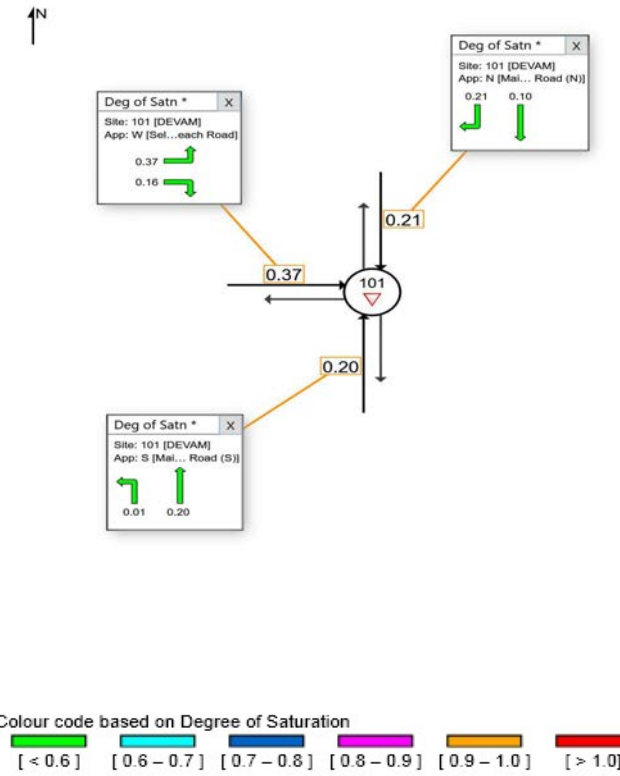
SCENARIO: Existing PM Peak



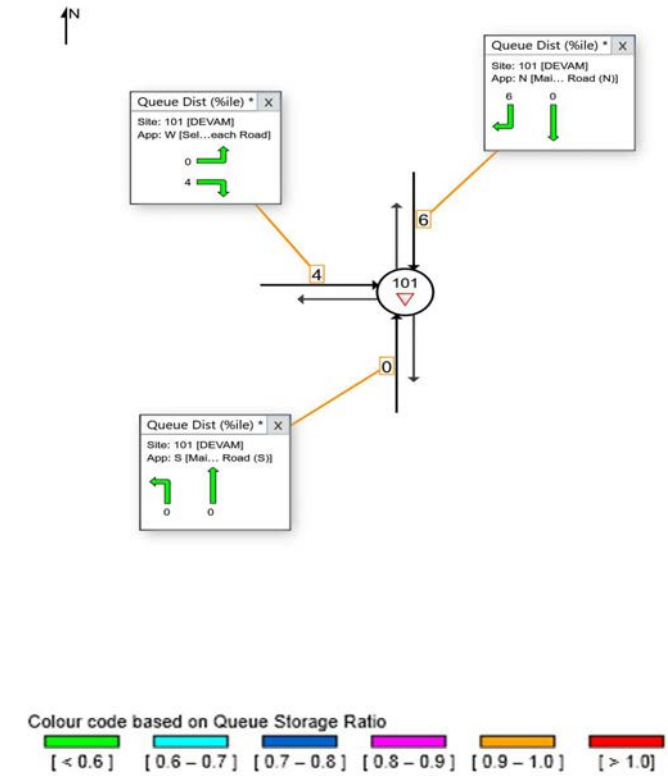
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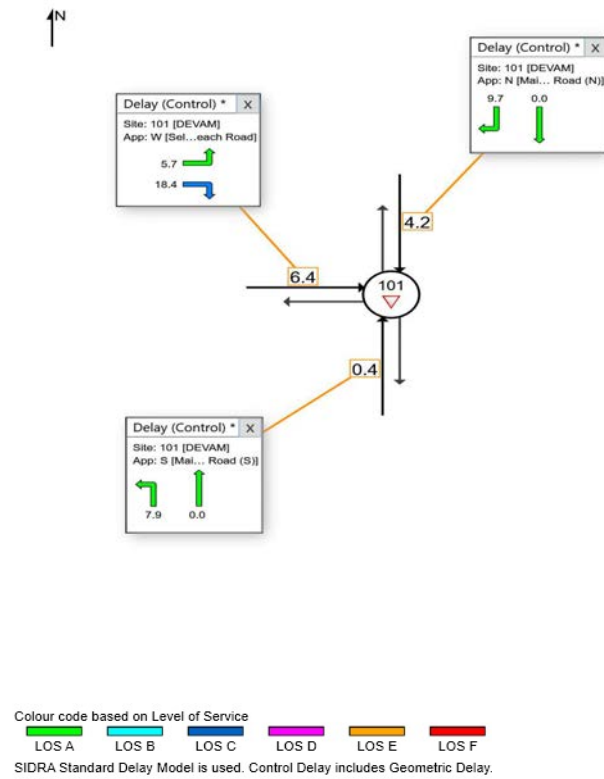
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95%ile QUEUE DISTANCE (metres)

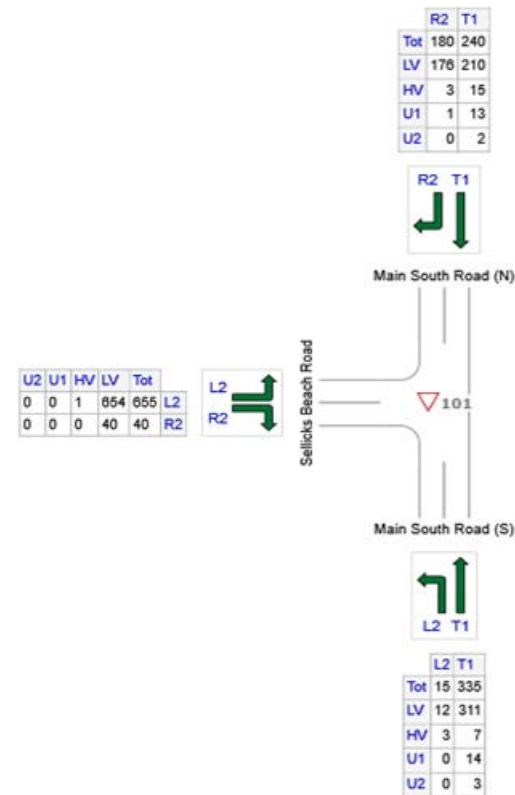


DELAY (CONTROL) & LEVEL OF SERVICE



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PROJECT NAME:	Sellicks Beach Code Amendment

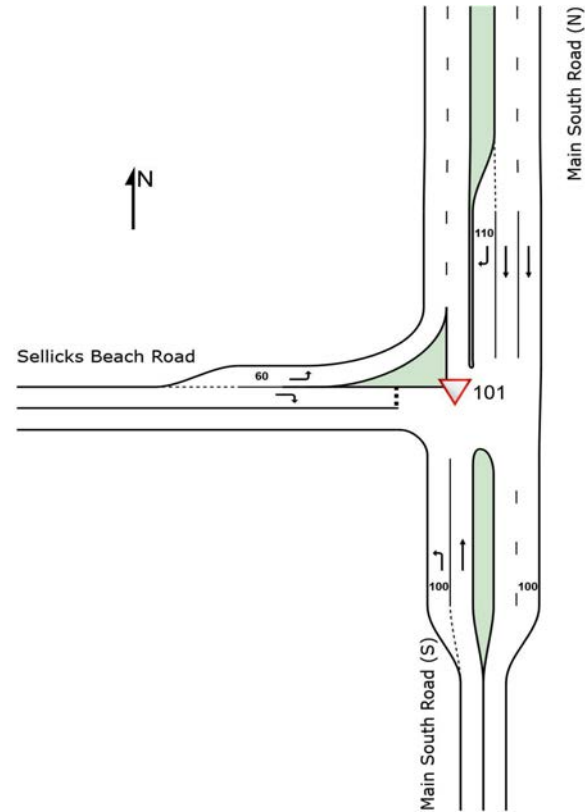
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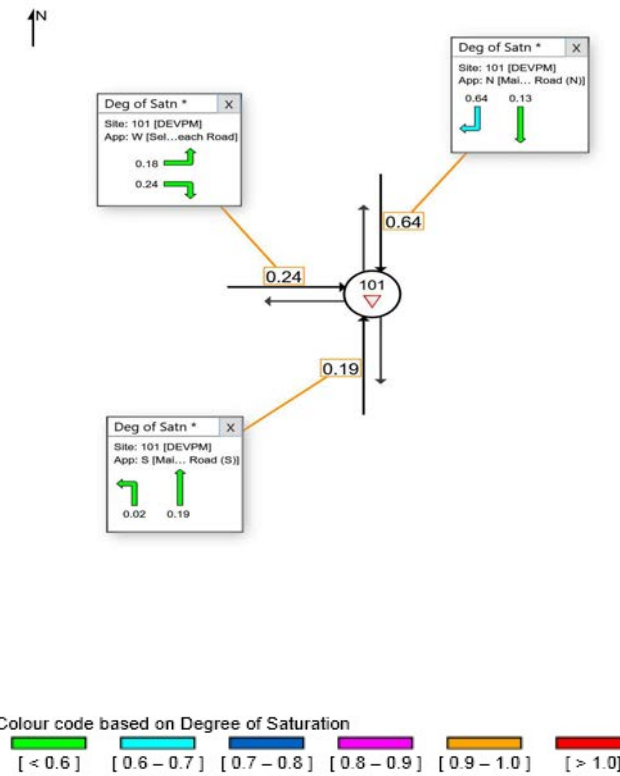
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SCENARIO:	Development AM Peak



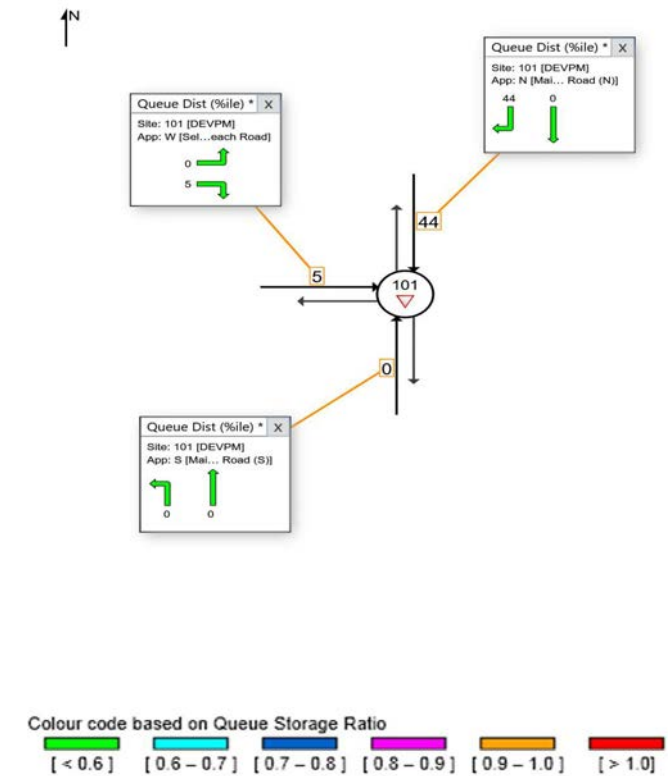
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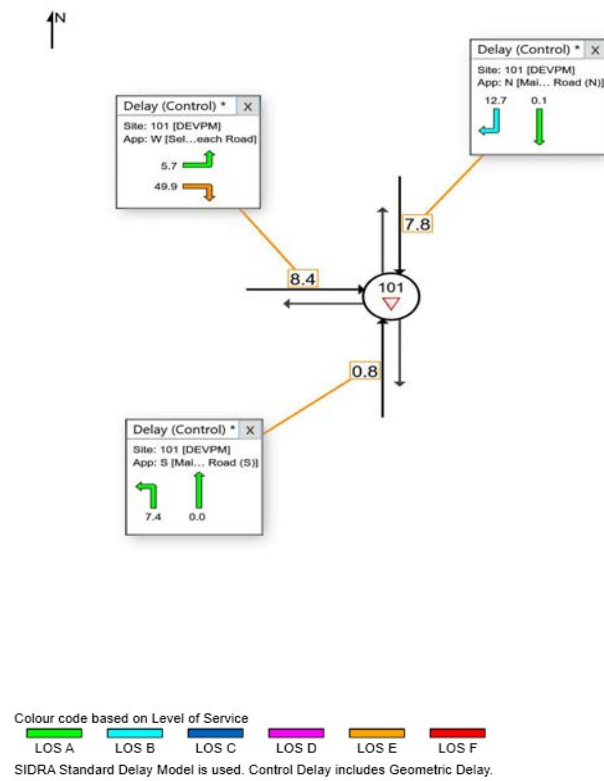
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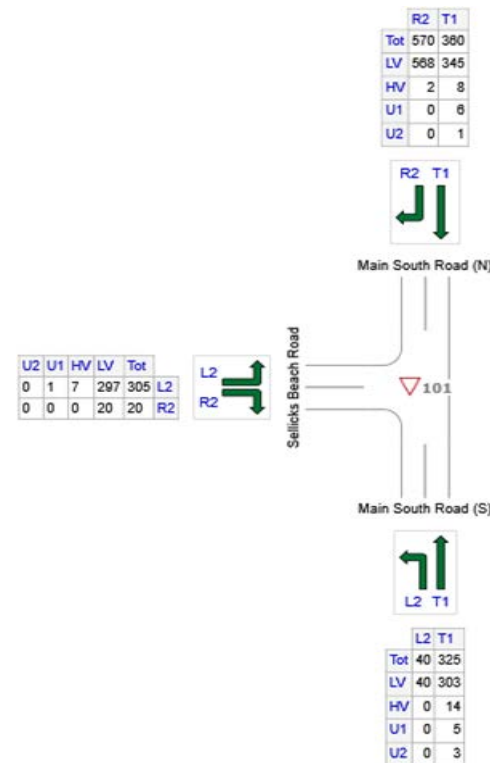
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DELAY (CONTROL) & LEVEL OF SERVICE



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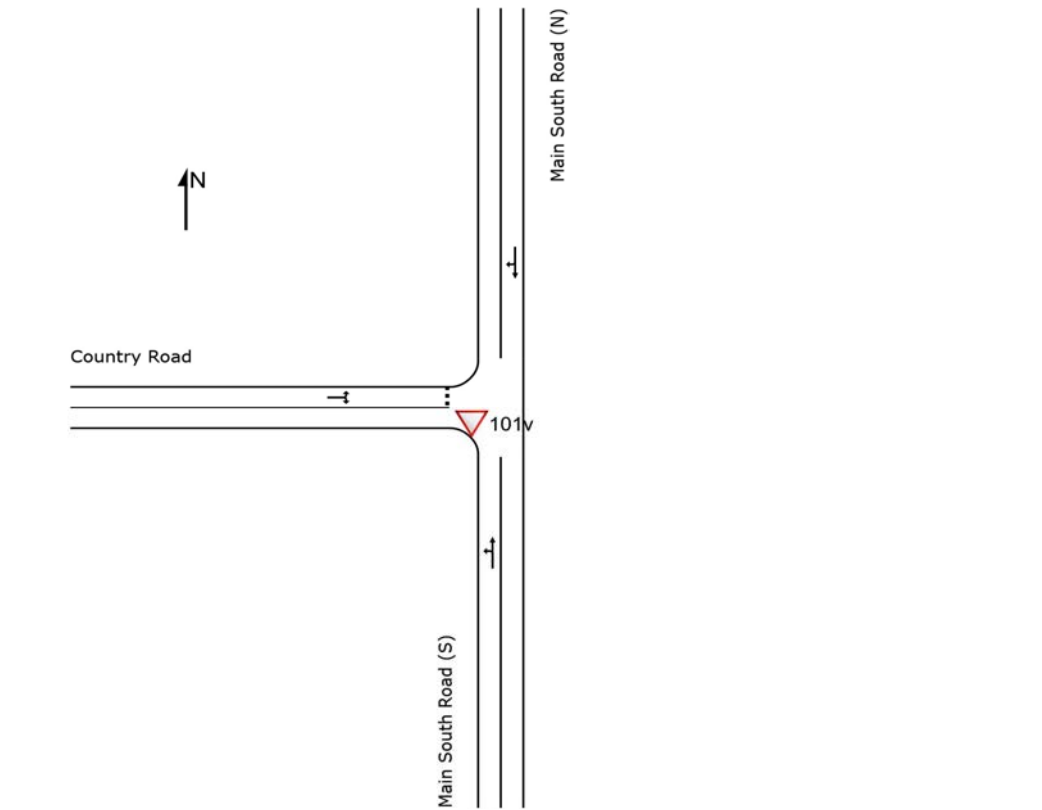


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PROJECT NAME:	Sellicks Beach Code Amendment

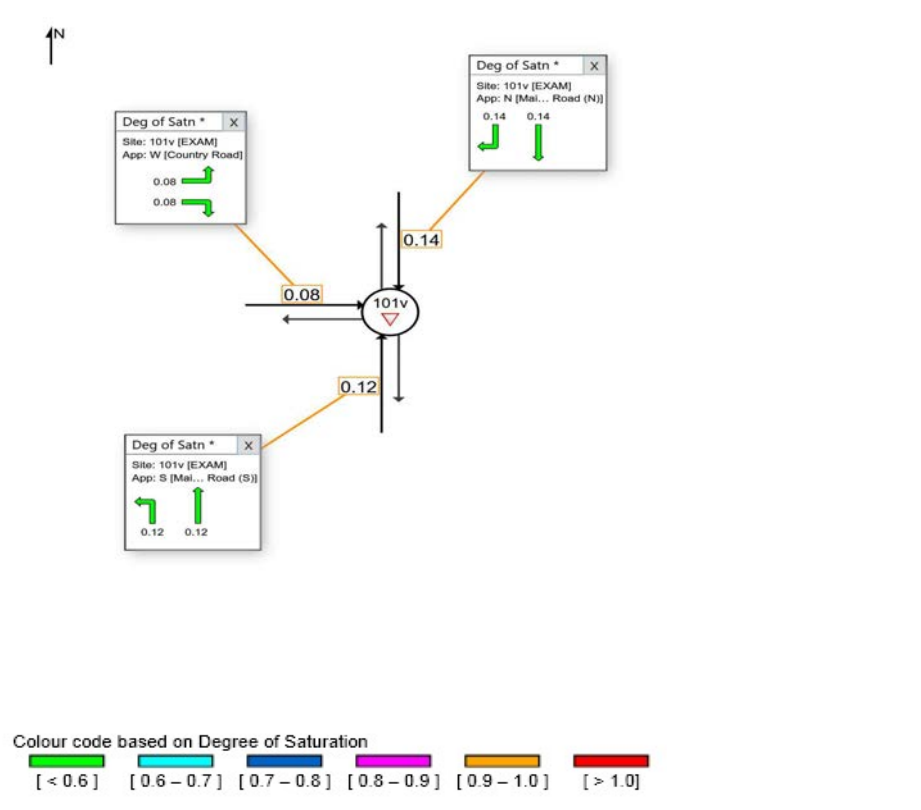
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SCENARIO:	Development PM Peak



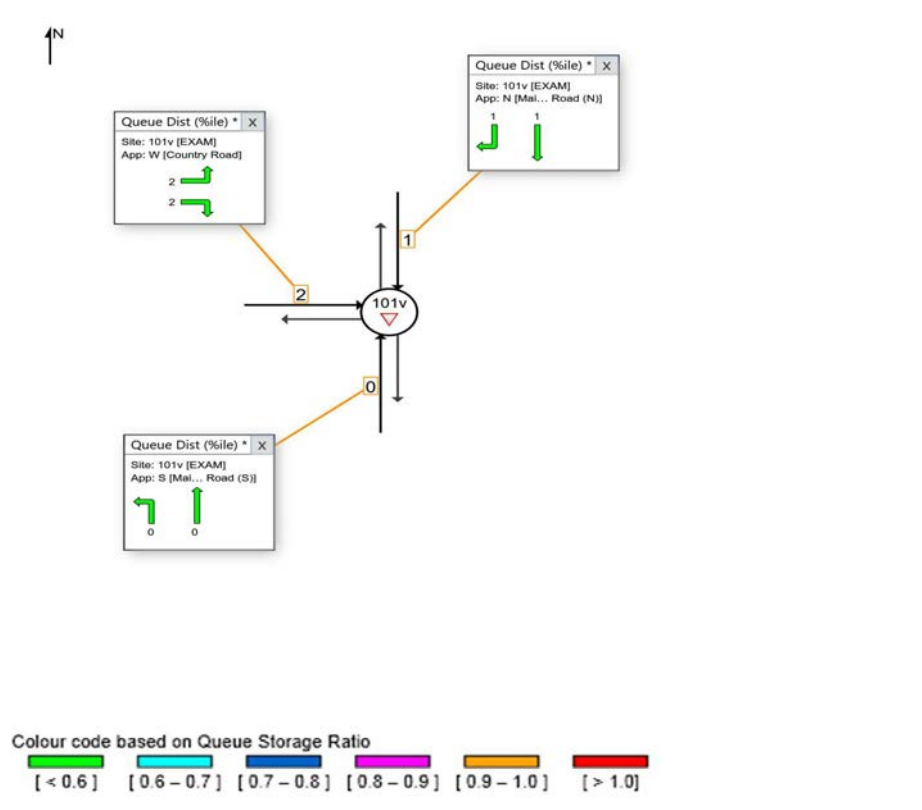
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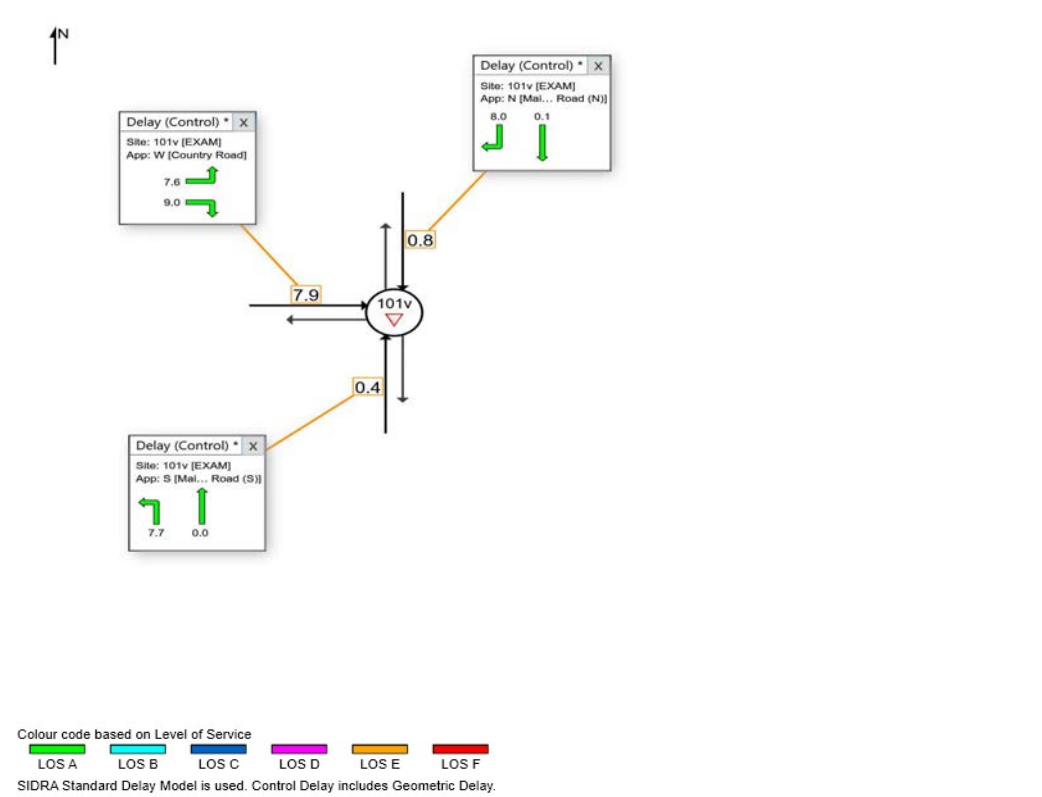
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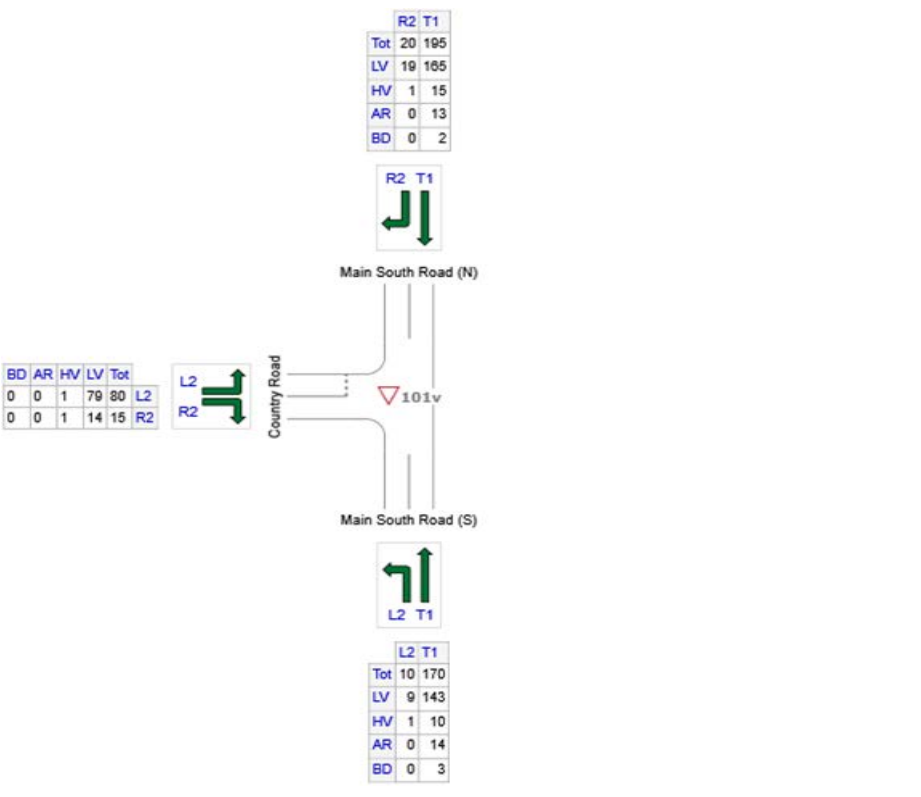
95%ile QUEUE DISTANCE (metres)



DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES



JOB NUMBER: 22-0250

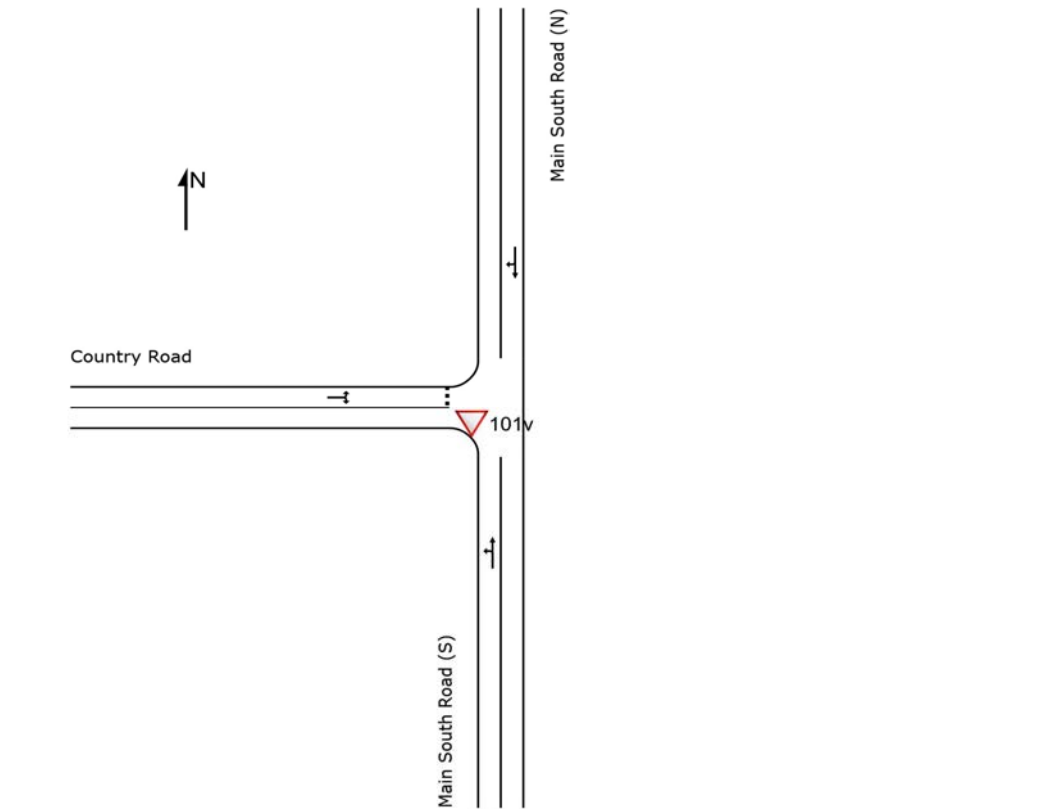
PROJECT NAME: Sellicks Beach
Code Amendment

INTERSECTION: Main South Road-Country Road

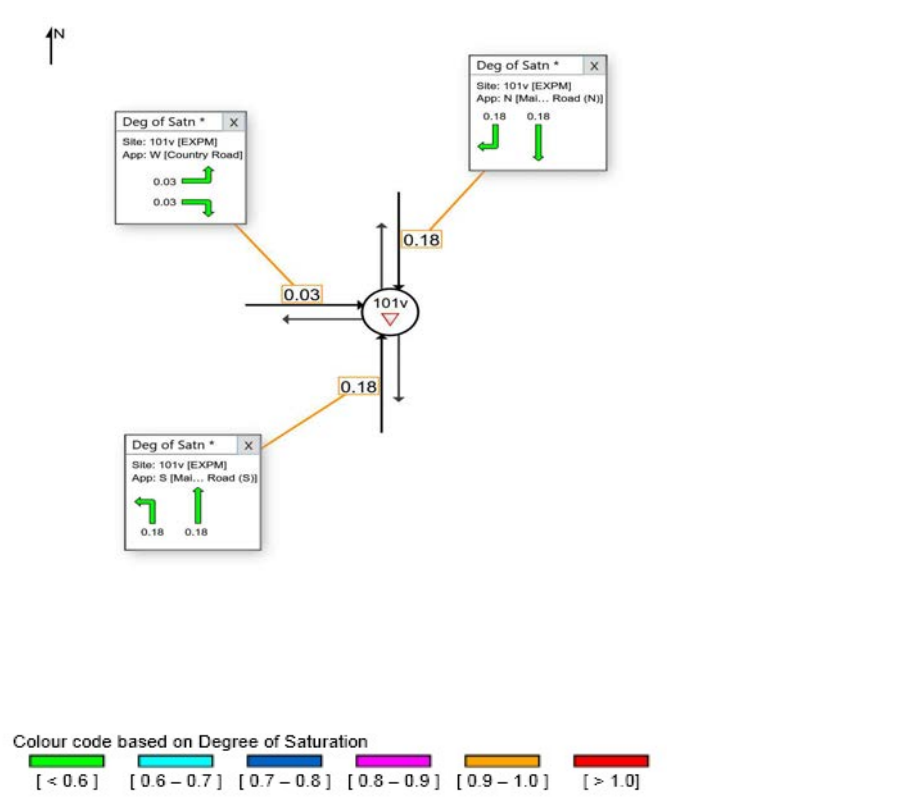
SCENARIO: Existing AM Peak



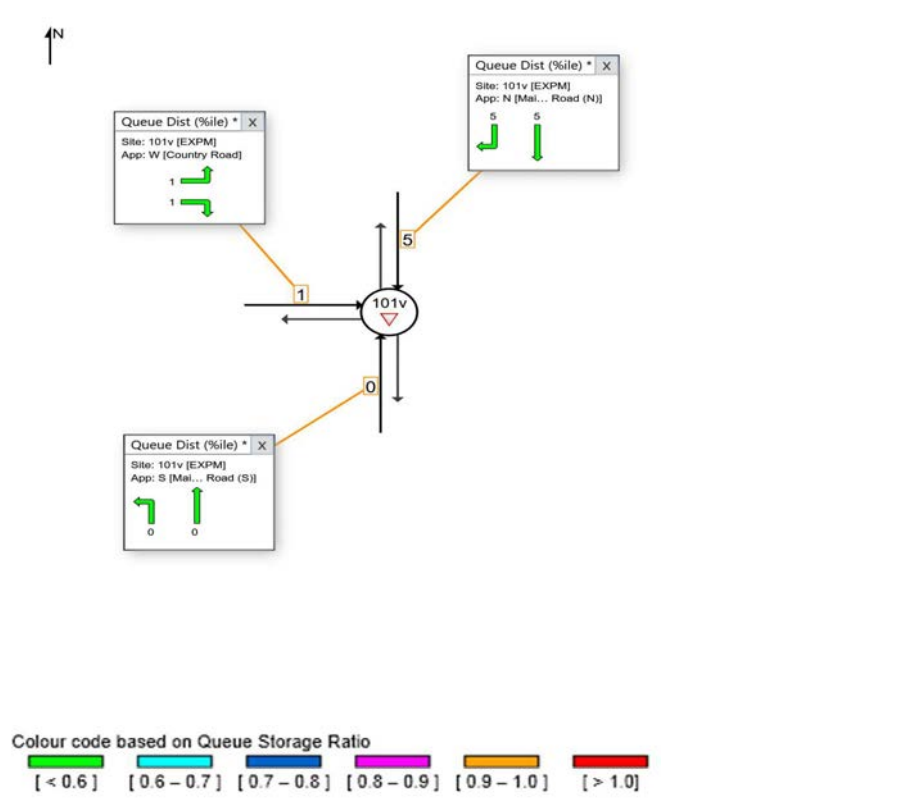
INTERSECTION LAYOUT



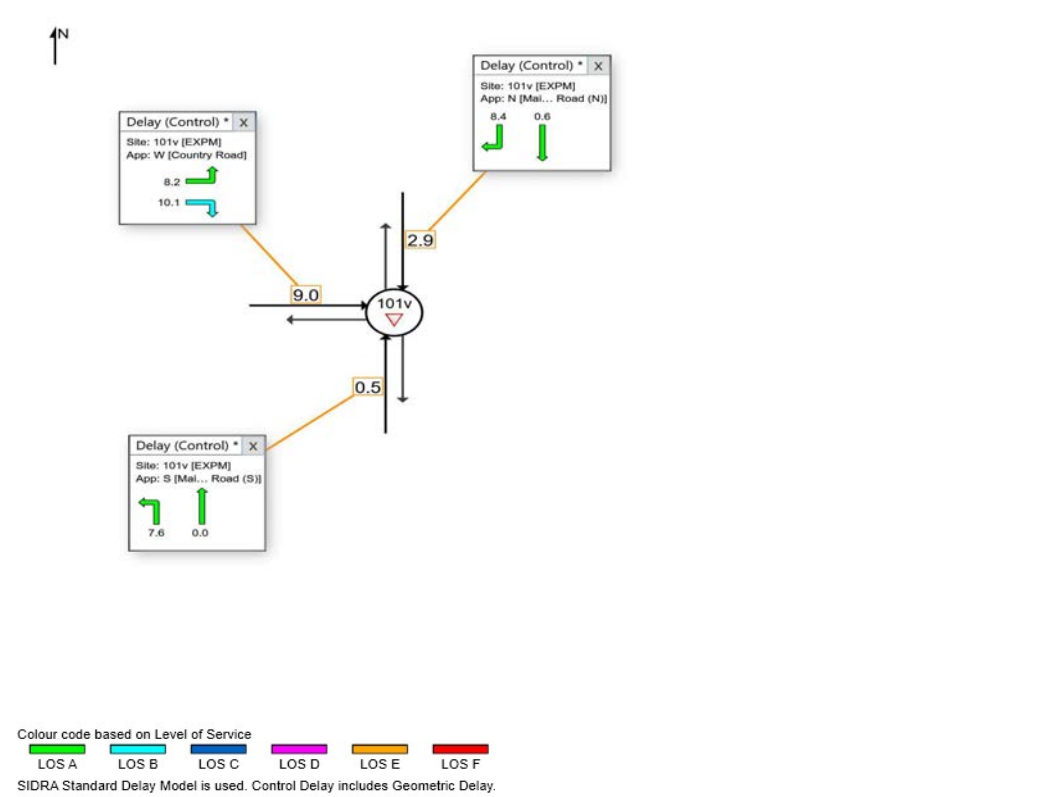
DEGREE OF SATURATION



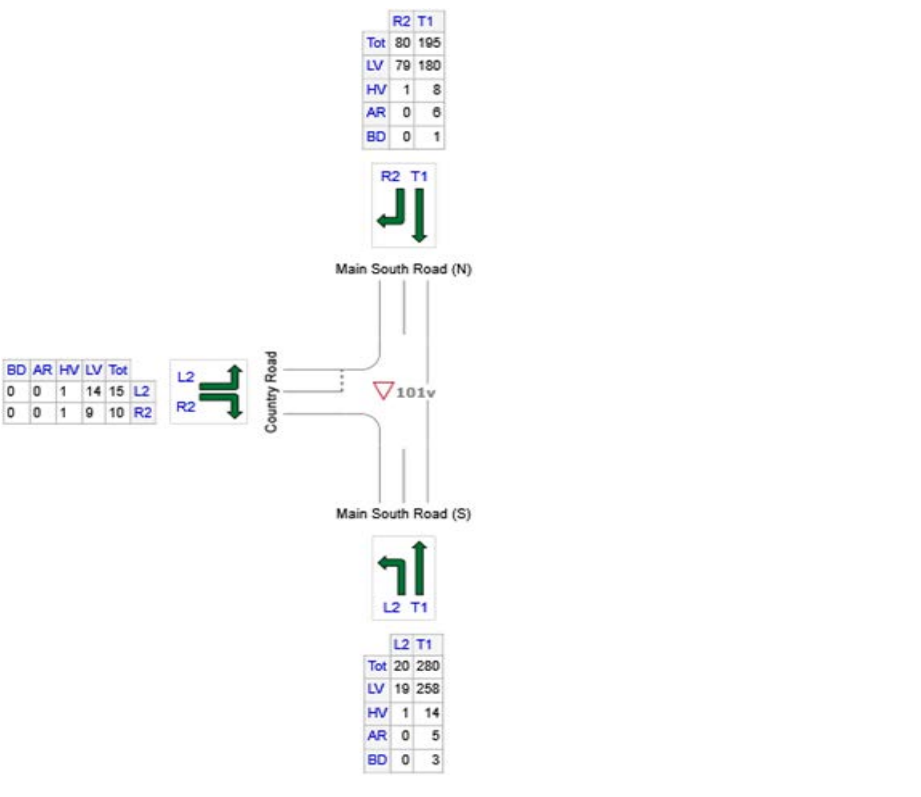
95%ile QUEUE DISTANCE (metres)



DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES

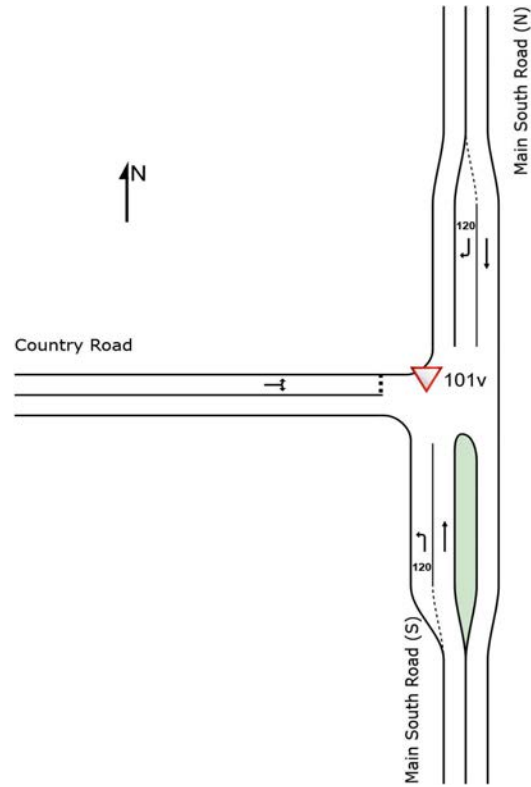


JOB NUMBER:	22-0250
PROJECT NAME:	Sellicks Beach Code Amendment

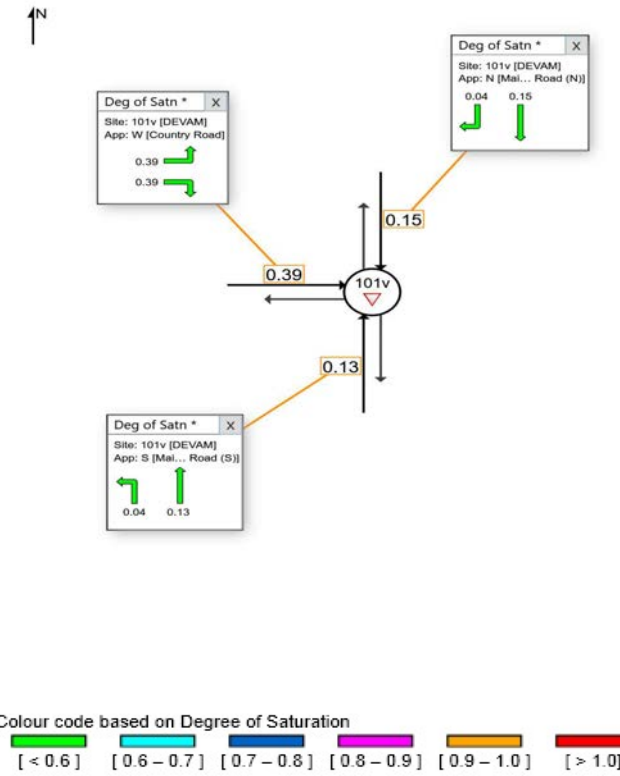
INTERSECTION:	Main South Road-Country Road
SCENARIO:	Existing PM Peak



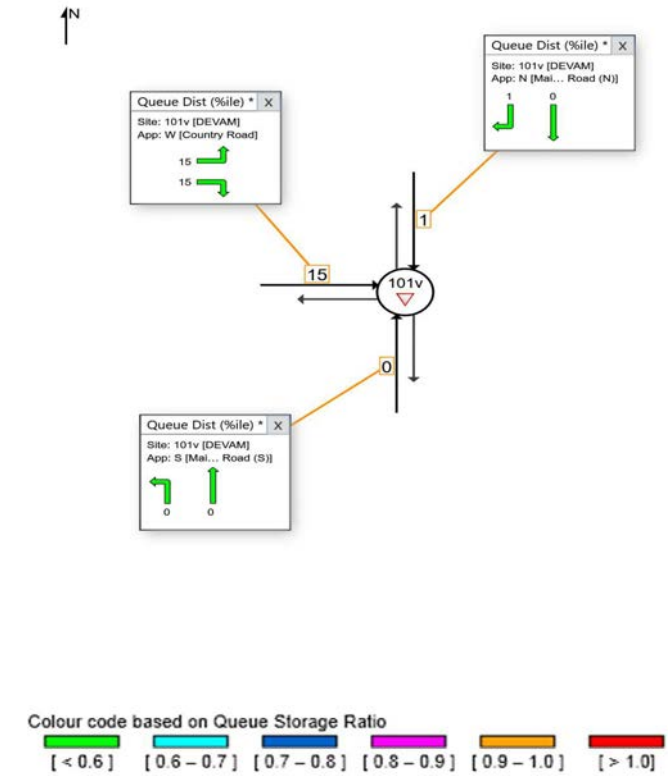
INTERSECTION LAYOUT



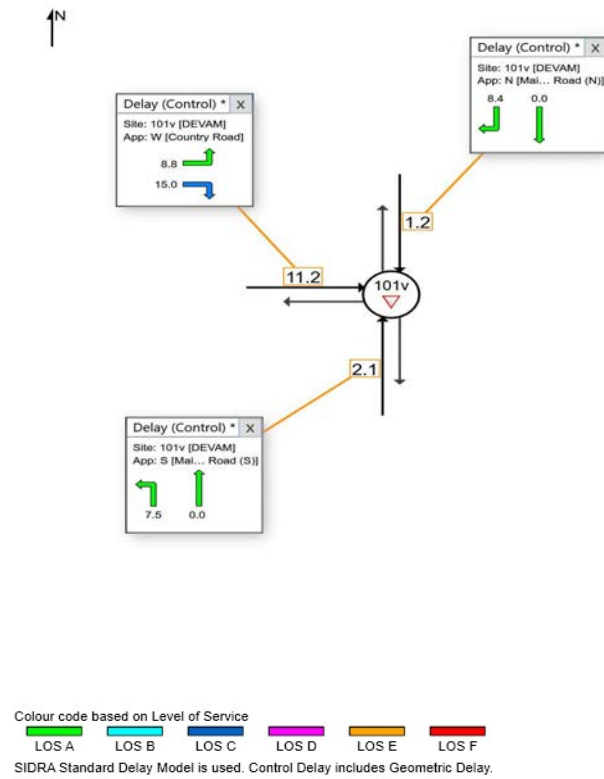
DEGREE OF SATURATION



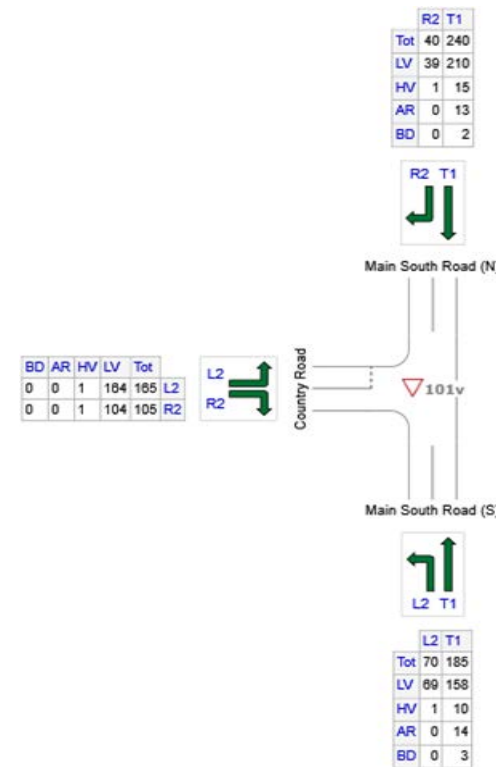
95%ile QUEUE DISTANCE (metres)



DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES

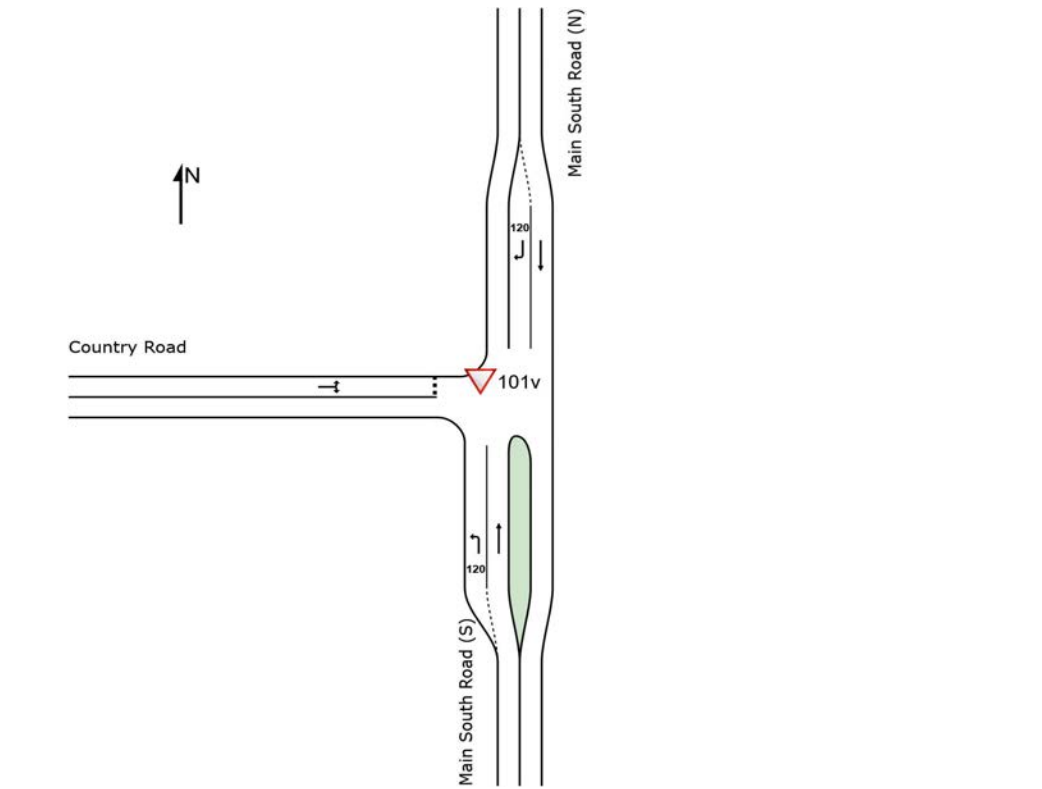


JOB NUMBER:	22-0250
PROJECT NAME:	Sellicks Beach Code Amendment

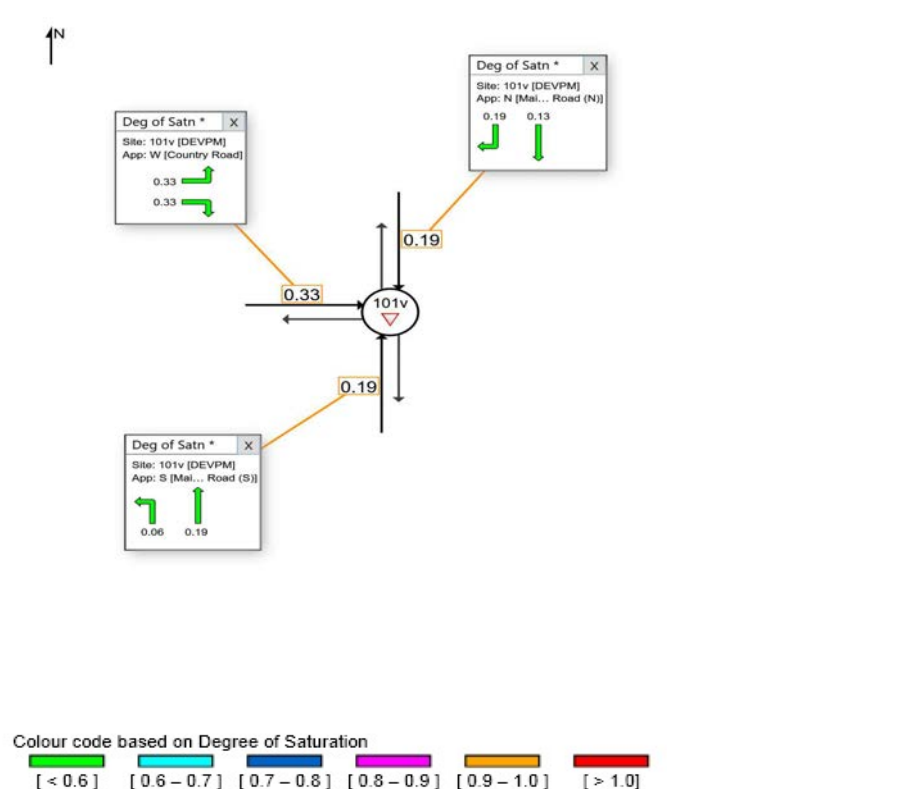
INTERSECTION:	Main South Road-Country Road
SCENARIO:	Development AM Peak



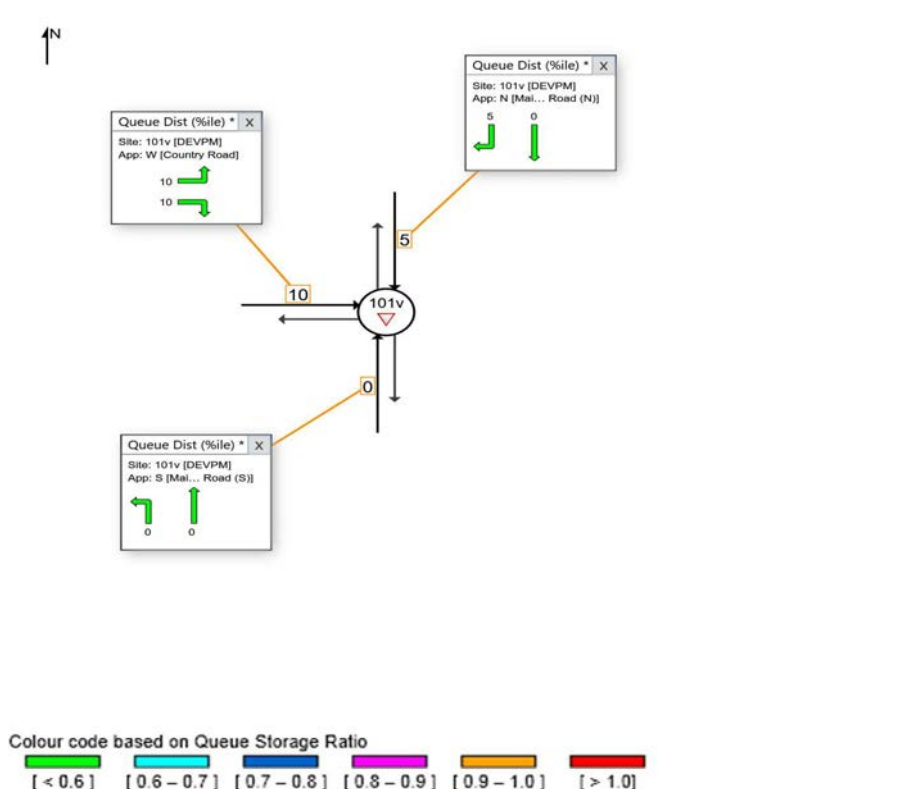
INTERSECTION LAYOUT



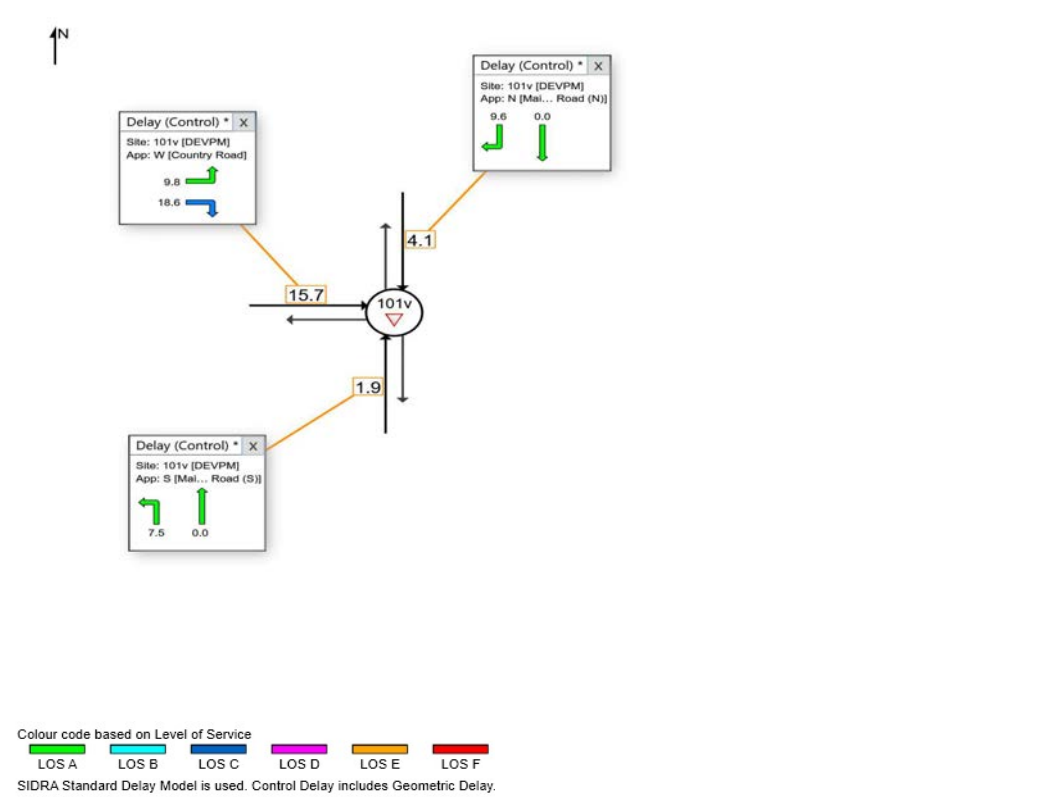
DEGREE OF SATURATION



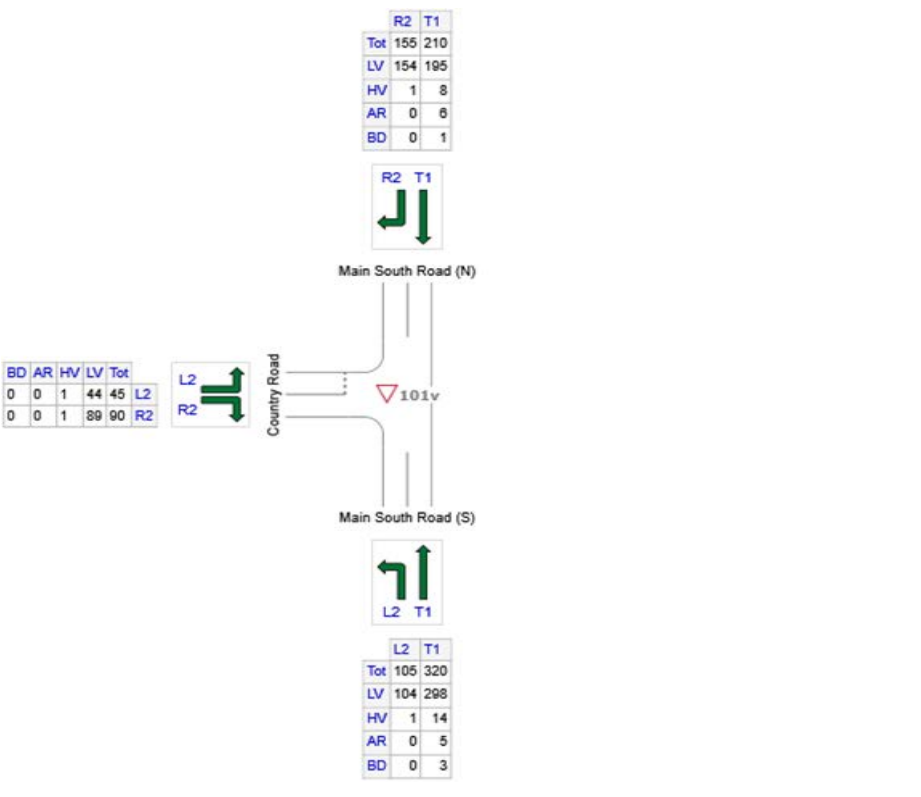
95%ile QUEUE DISTANCE (metres)



DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES

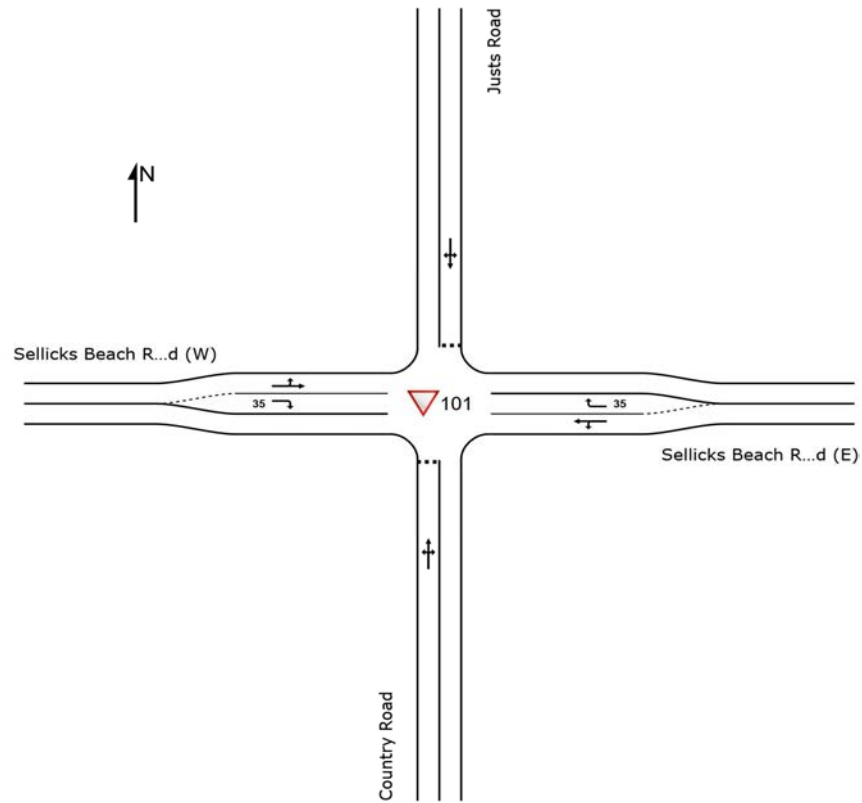


JOB NUMBER:	22-0250
PROJECT NAME:	Sellicks Beach
	Code Amendment Review

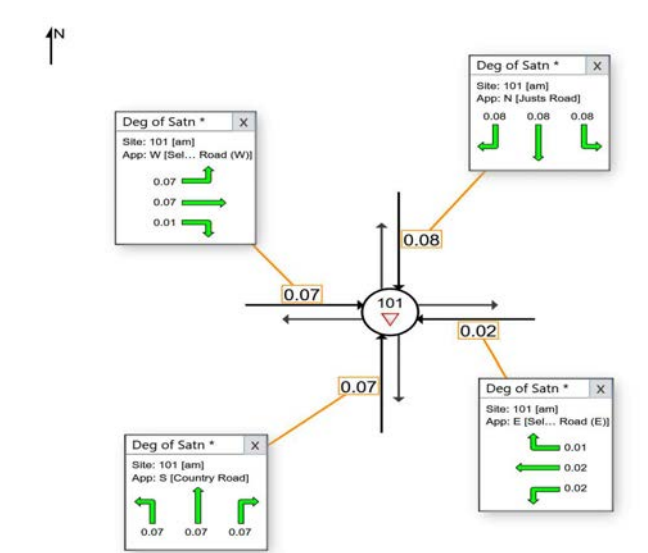
INTERSECTION:	Main South Road-Country Road
SCENARIO:	Development PM Peak



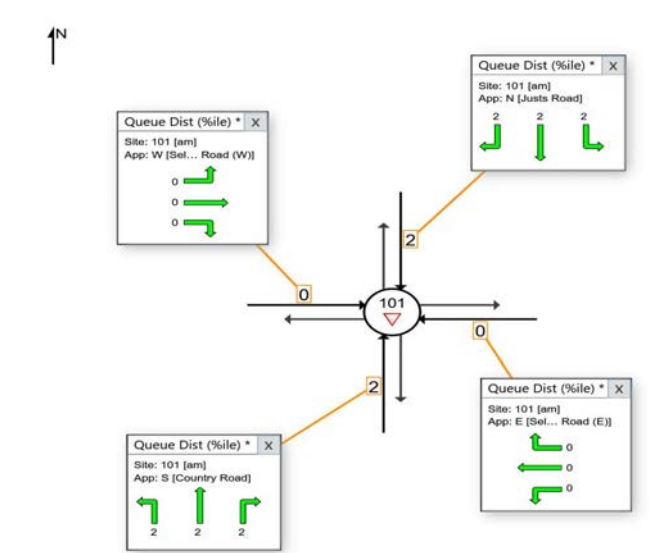
INTERSECTION LAYOUT



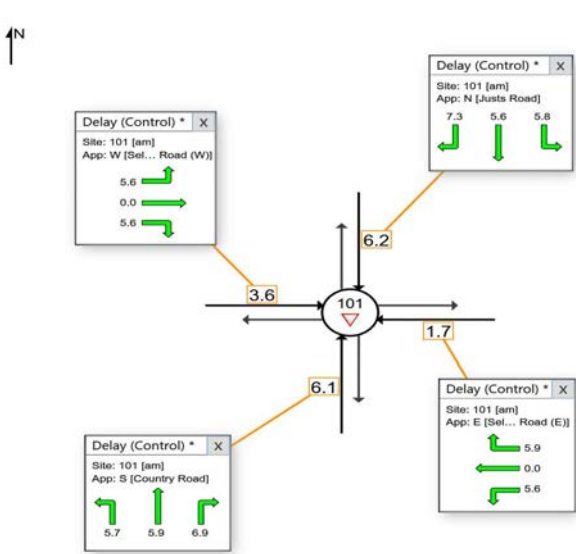
DEGREE OF SATURATION



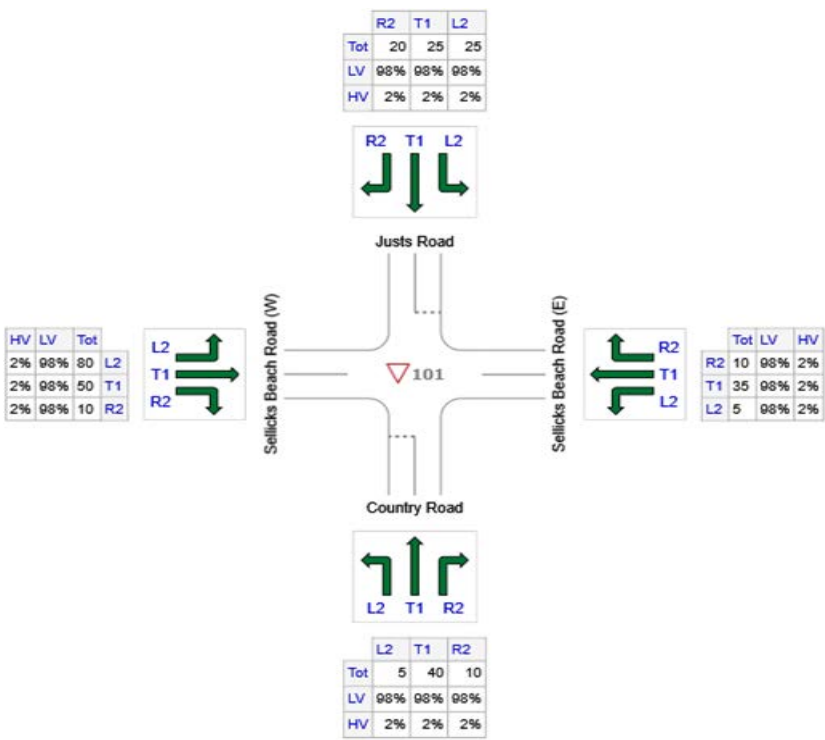
95%ile QUEUE DISTANCE (metres)



DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES



JOB NUMBER: 22-0250

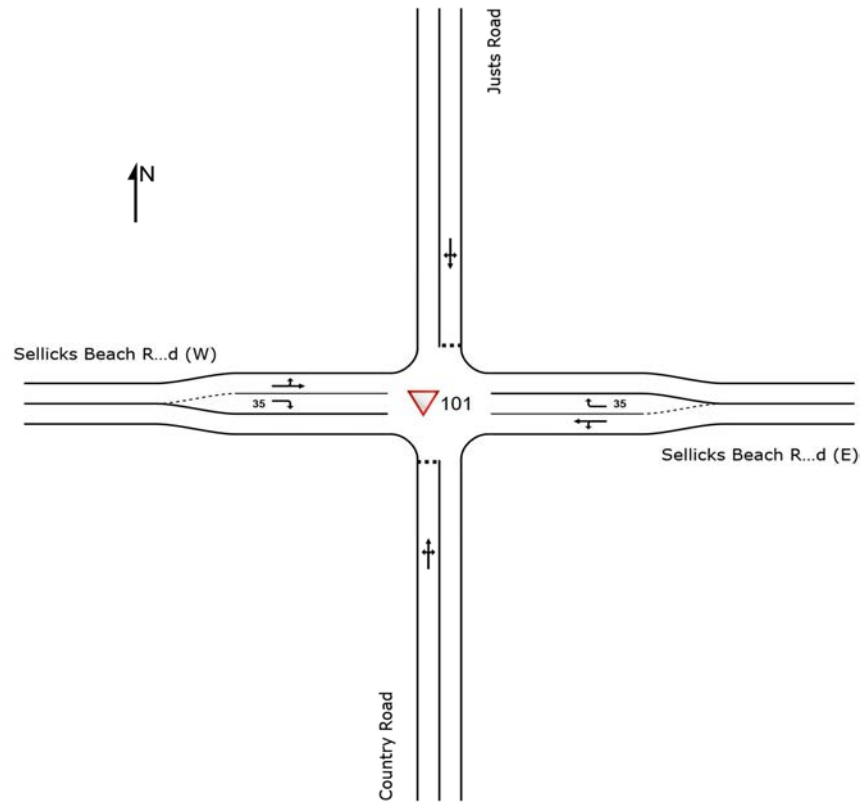
PROJECT NAME: Sellicks Beach
Code Amendment

INTERSECTION: Sellicks Beach Road-Country Road-Justs Road

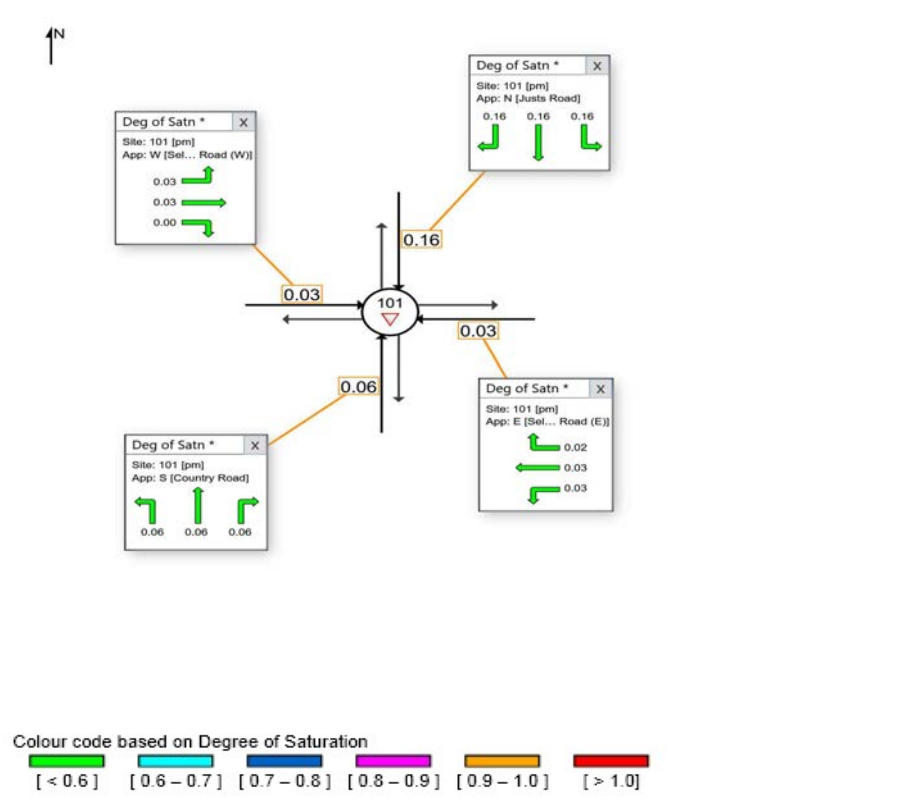
SCENARIO: Existing AM Peak



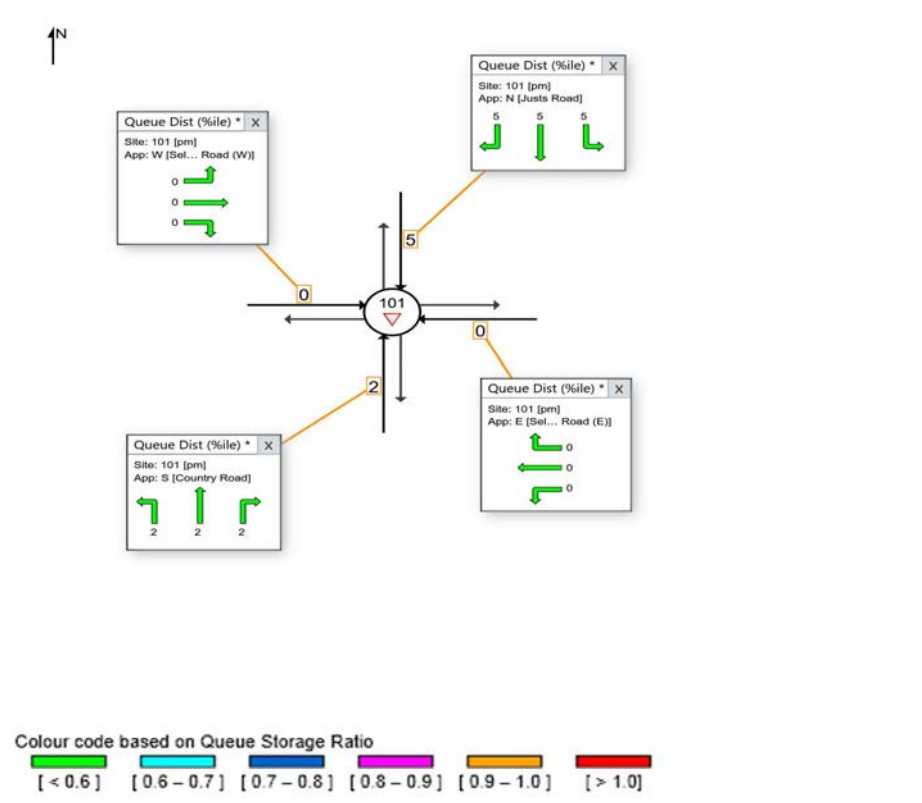
INTERSECTION LAYOUT



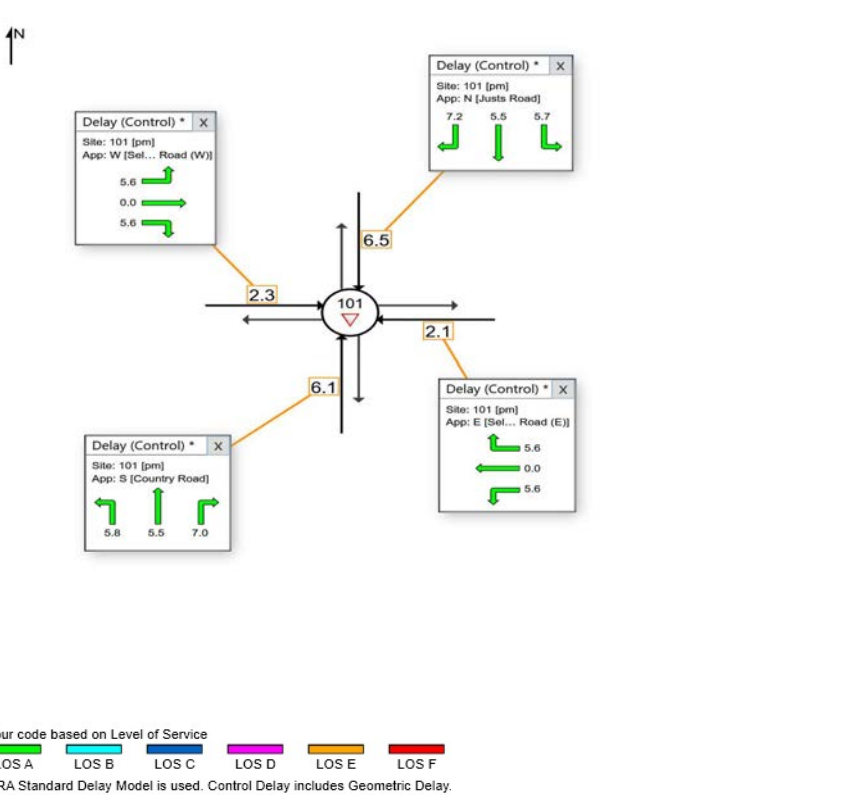
DEGREE OF SATURATION



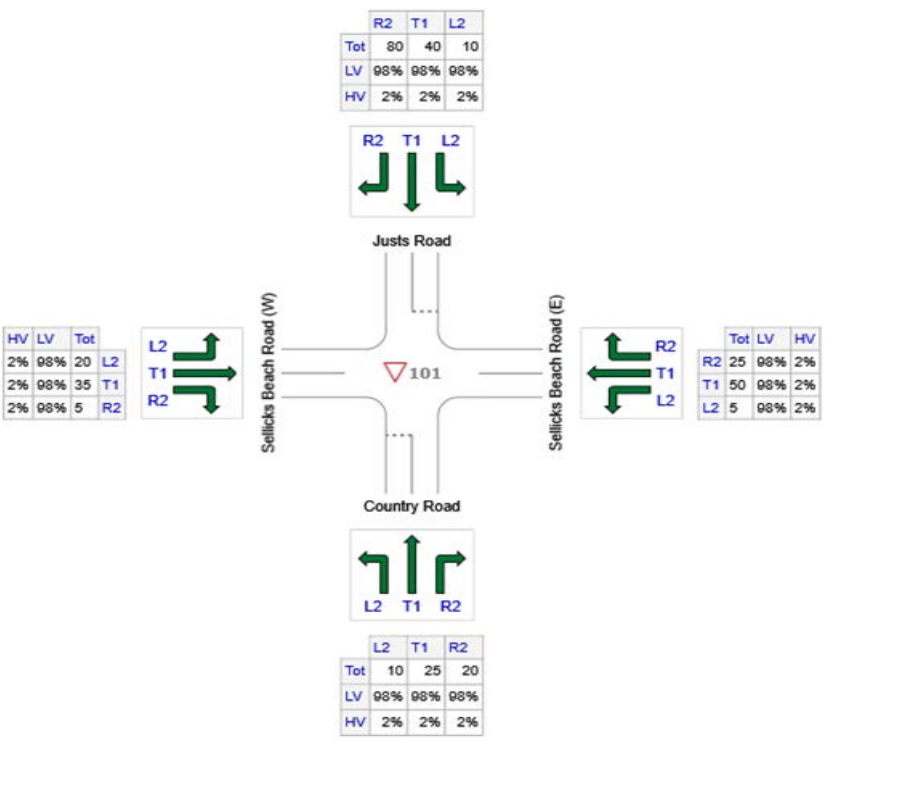
95%ile QUEUE DISTANCE (metres)



DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES



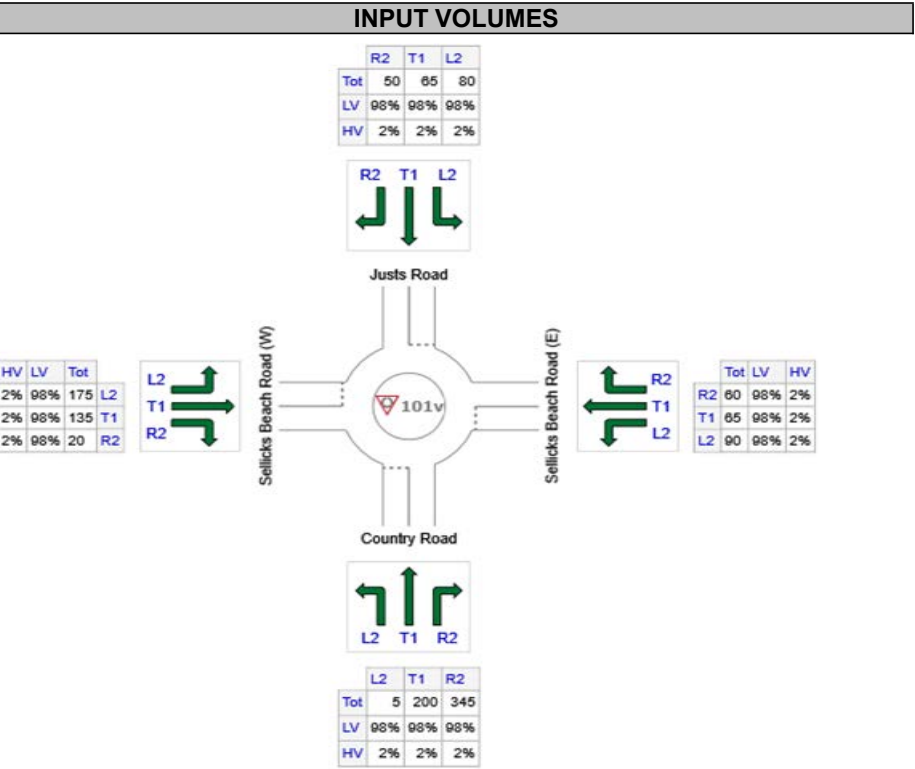
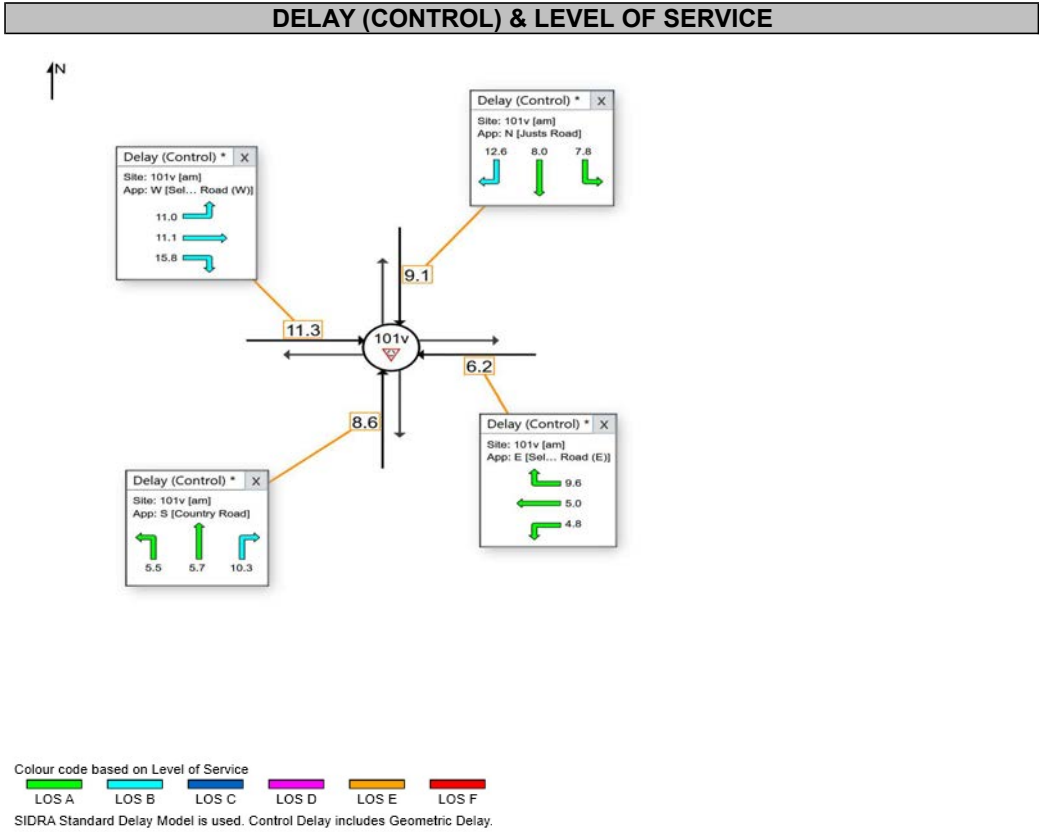
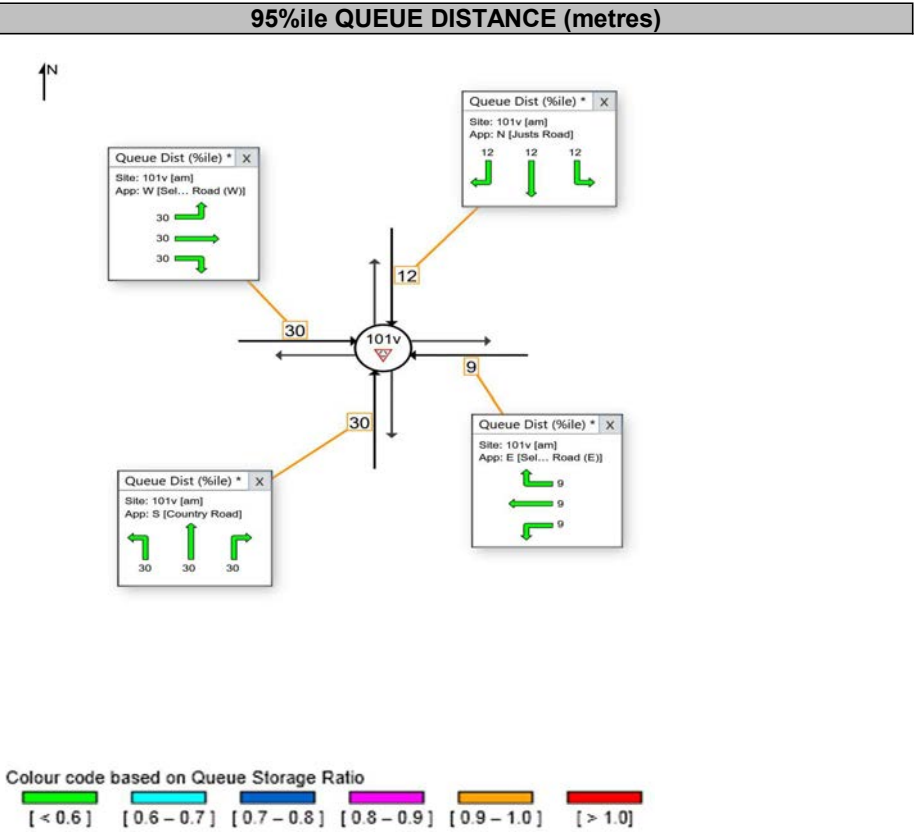
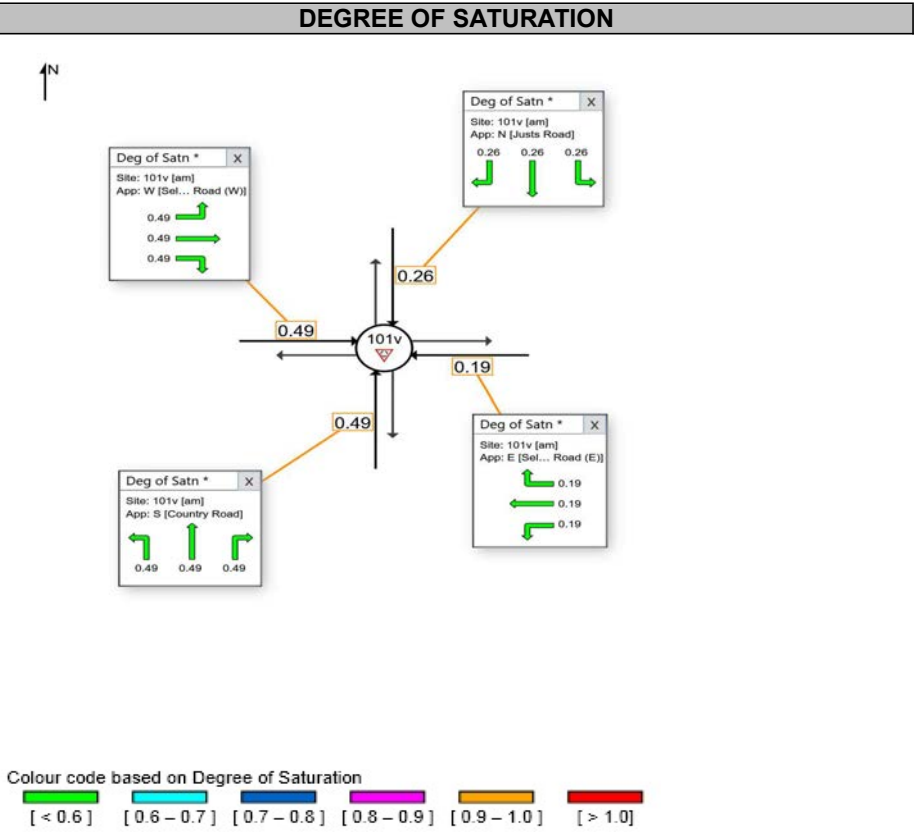
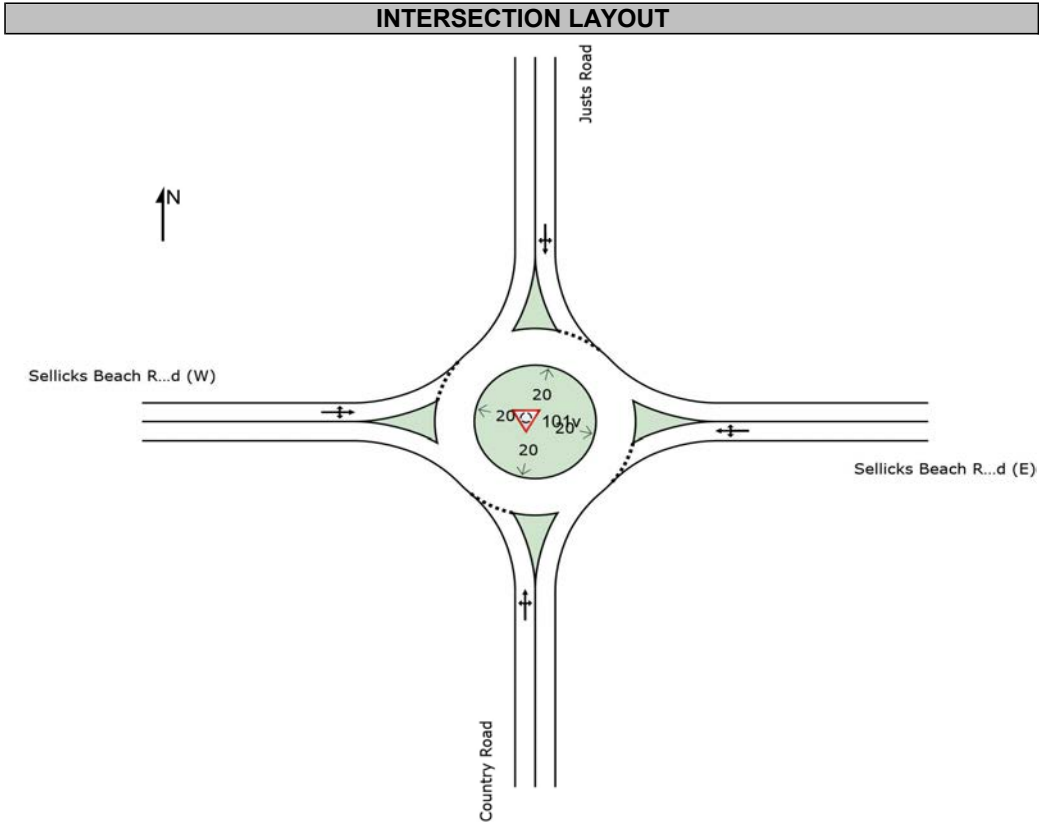
JOB NUMBER: 22-0250

PROJECT NAME: Sellicks Beach
Code Amendment

INTERSECTION: Sellicks Beach Road-Country Road-Justs Road

SCENARIO: Existing PM Peak





JOB NUMBER: 22-0250

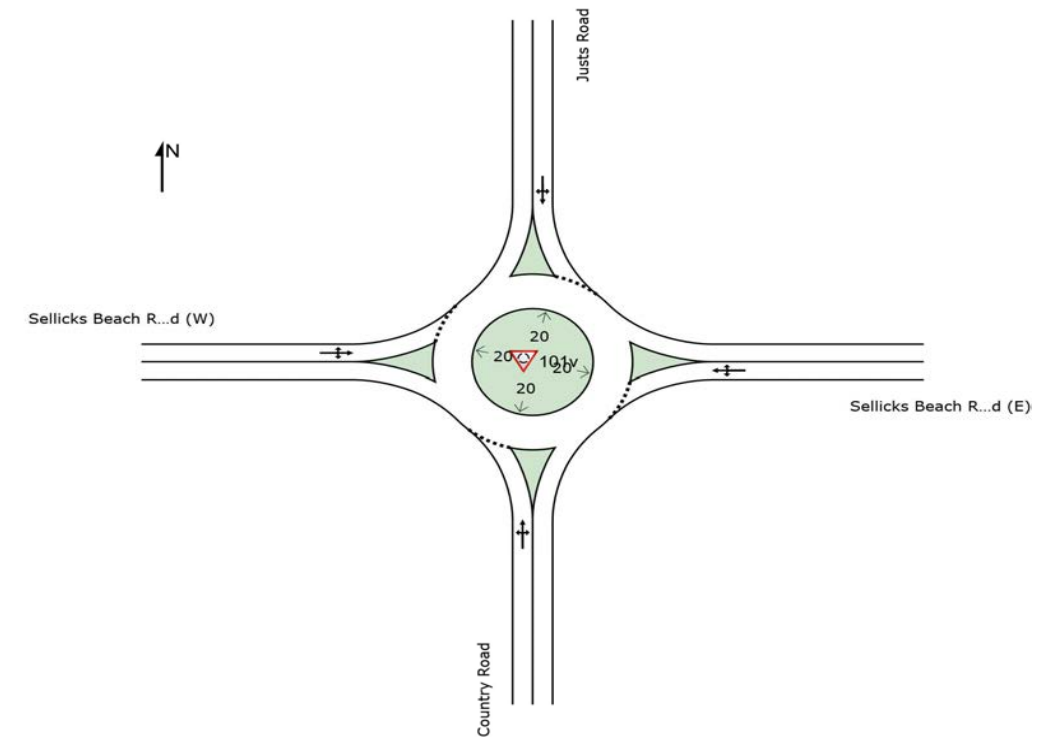
PROJECT NAME: Sellicks Beach
Code Amendment

INTERSECTION: Sellicks Beach Road-Country Road-Justs Road

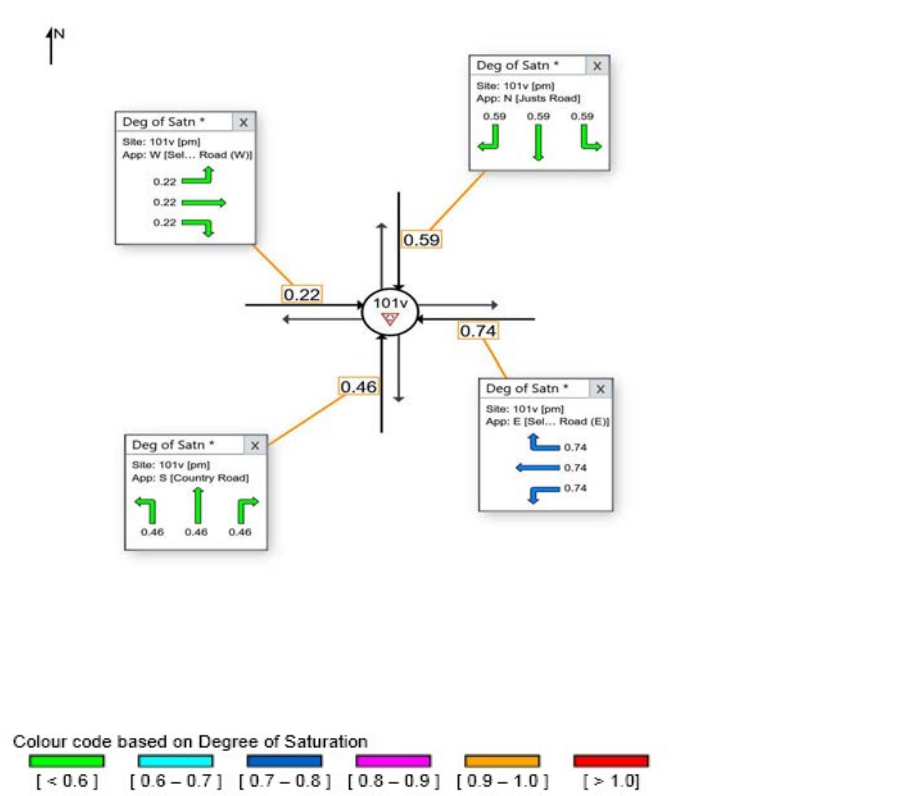
SCENARIO: Development AM Peak
Roundabout Treatment



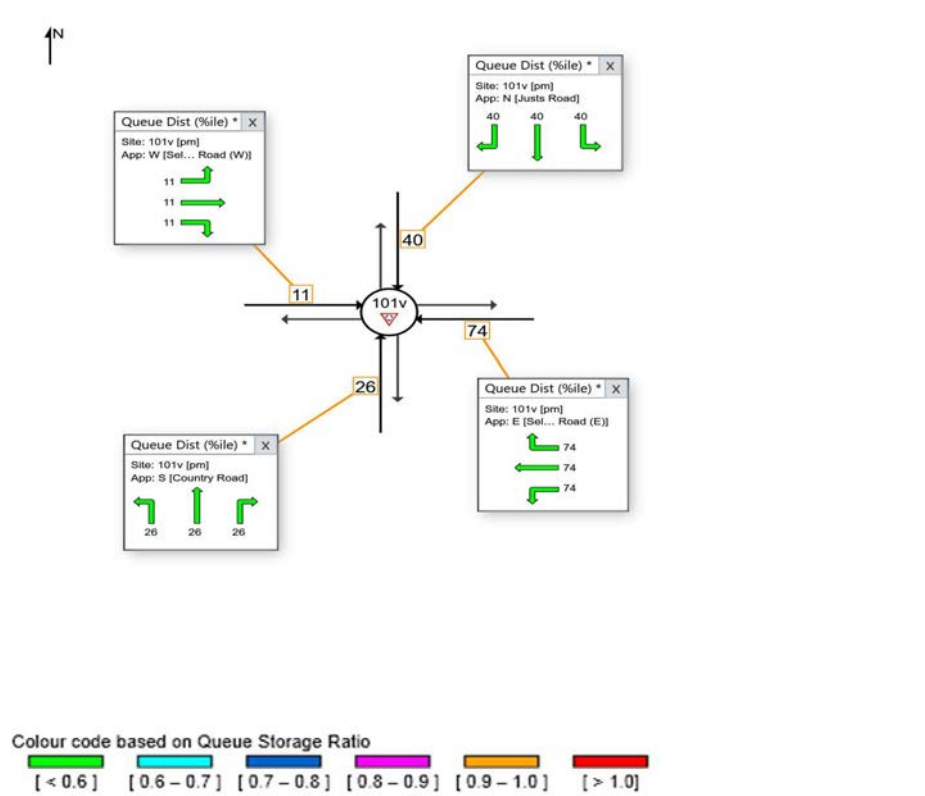
INTERSECTION LAYOUT



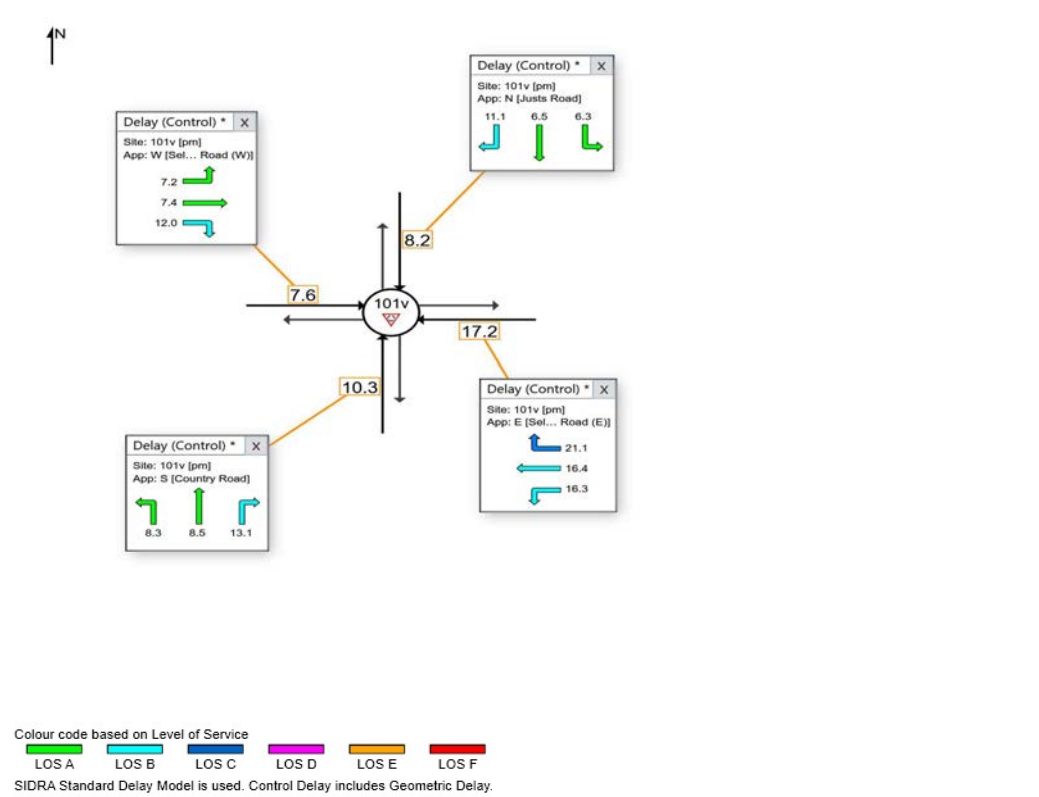
DEGREE OF SATURATION



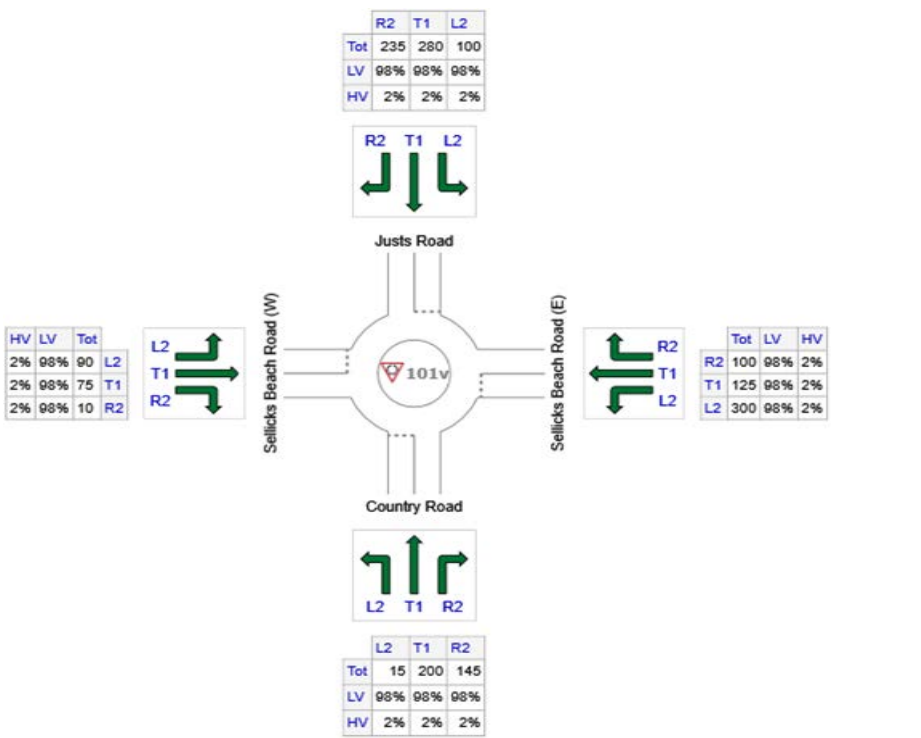
95%ile QUEUE DISTANCE (metres)



DELAY (CONTROL) & LEVEL OF SERVICE



INPUT VOLUMES

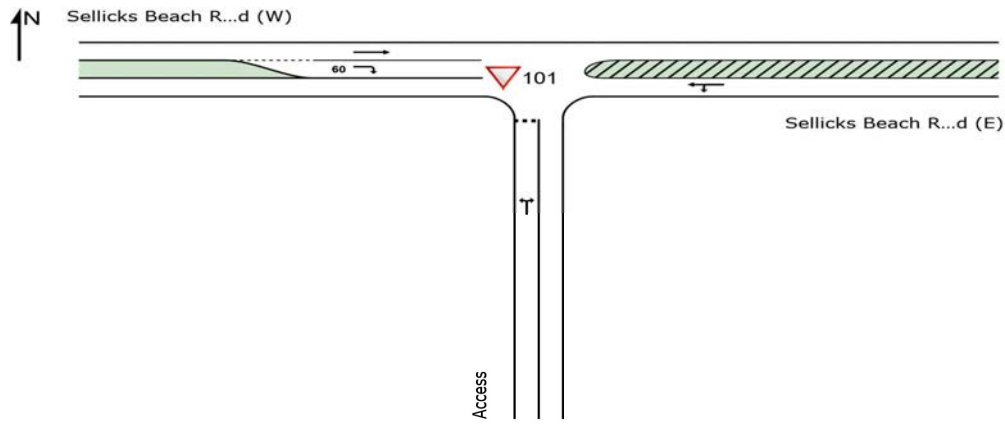


JOB NUMBER:	22-0250
PROJECT NAME:	Sellicks Beach Code Amendment

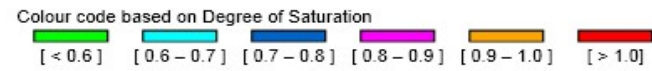
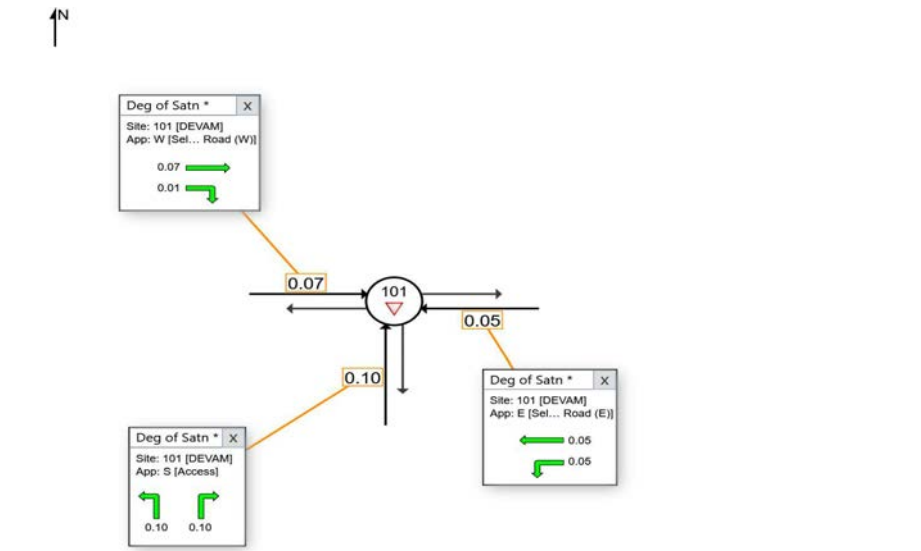
INTERSECTION:	Sellicks Beach Road-Country Road-Justs Road
SCENARIO:	Development PM Peak Roundabout Treatment



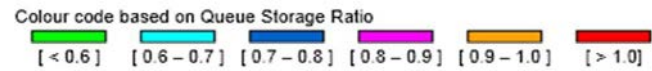
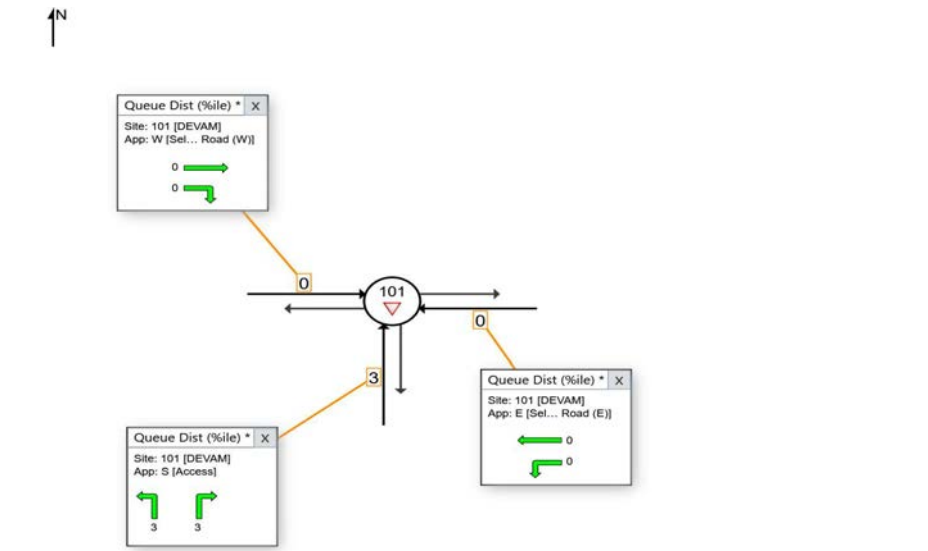
INTERSECTION LAYOUT



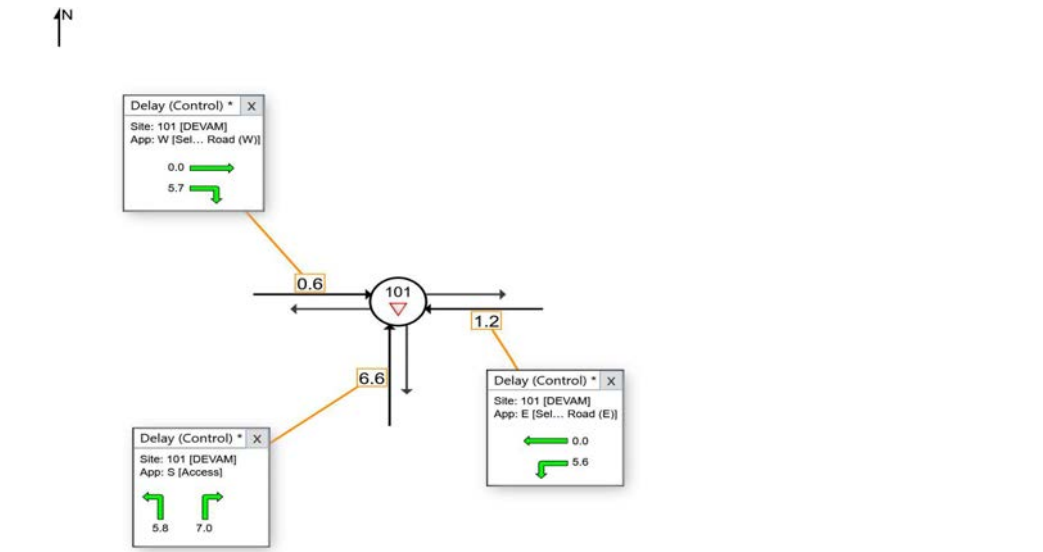
DEGREE OF SATURATION



95%ile QUEUE DISTANCE (metres)

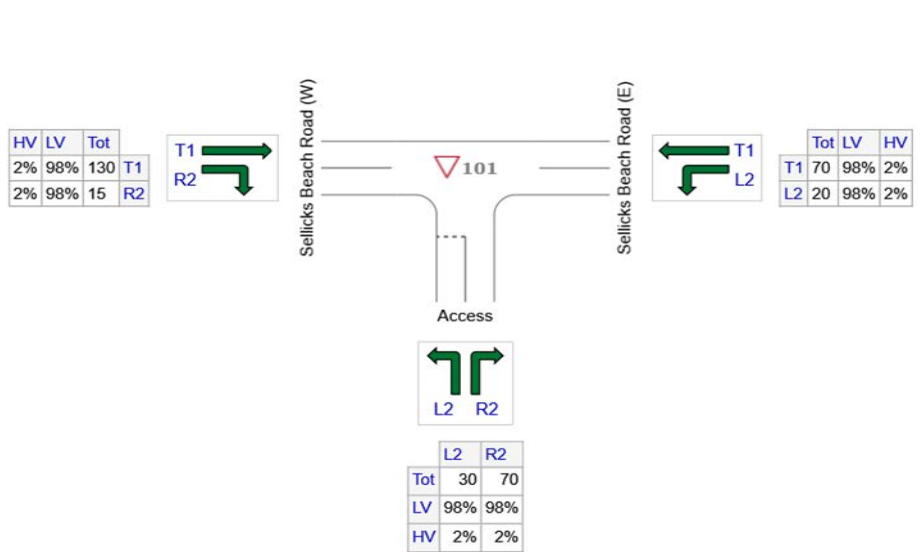


DELAY (CONTROL) & LEVEL OF SERVICE



JOB NUMBER:	22-0250
PROJECT NAME:	Sellicks Beach Code Amendment

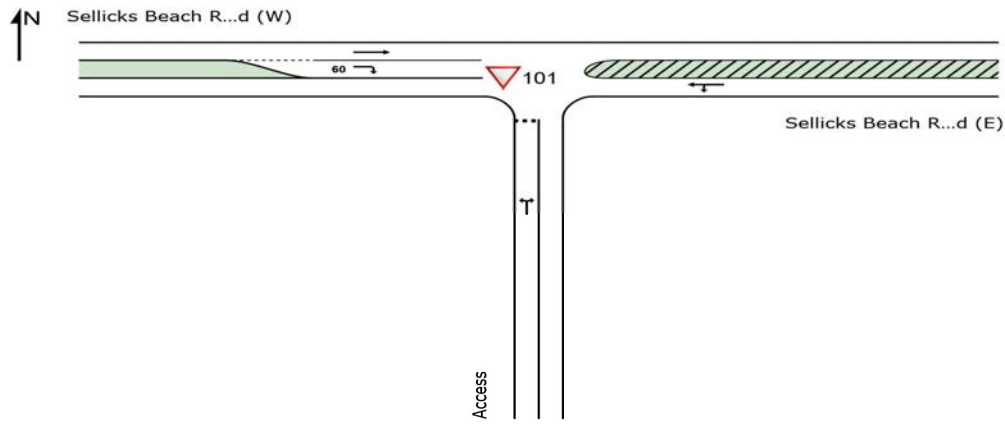
INPUT VOLUMES



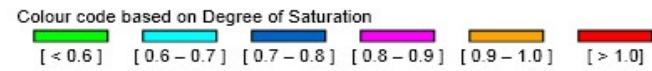
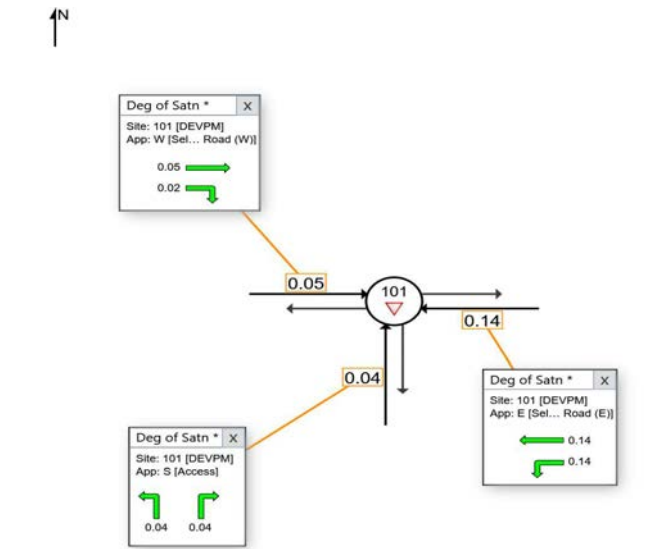
INTERSECTION:	Sellicka Beach Road-Bluewater Boulevard
SCENARIO:	Development AM Peak



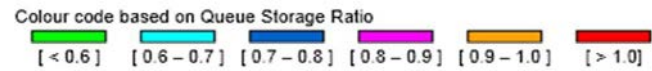
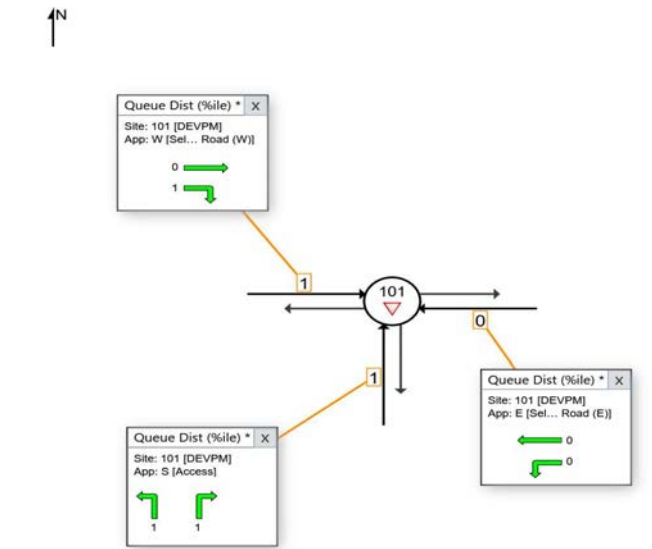
INTERSECTION LAYOUT



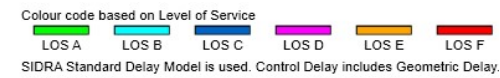
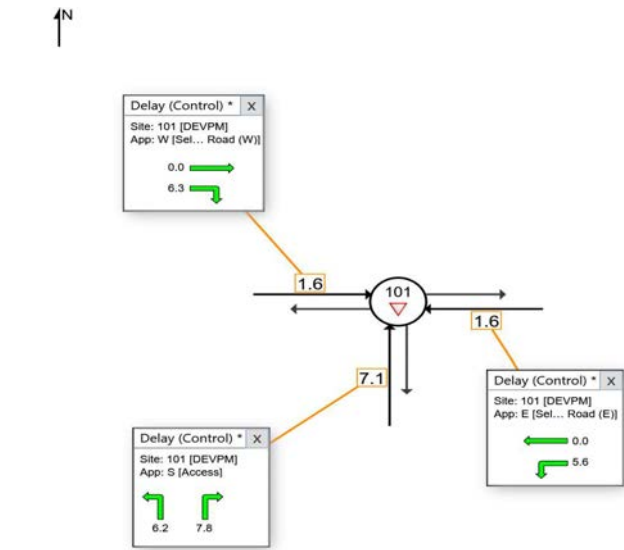
DEGREE OF SATURATION



95%ile QUEUE DISTANCE (metres)

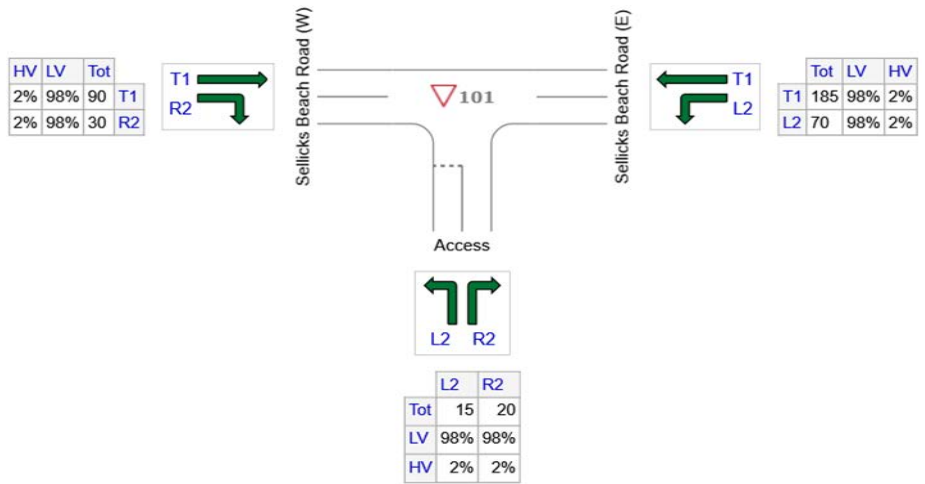


DELAY (CONTROL) & LEVEL OF SERVICE



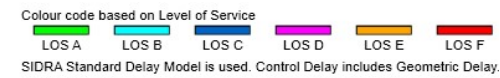
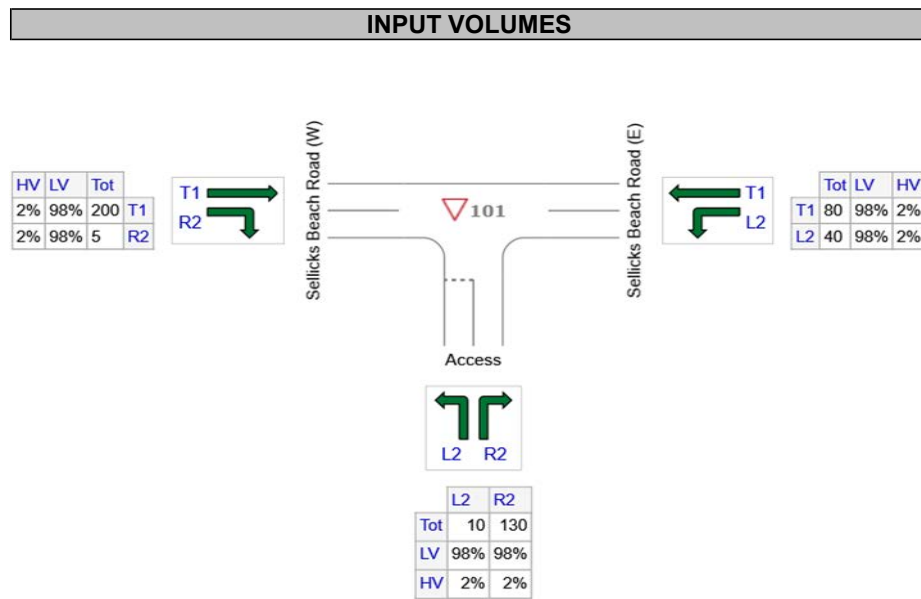
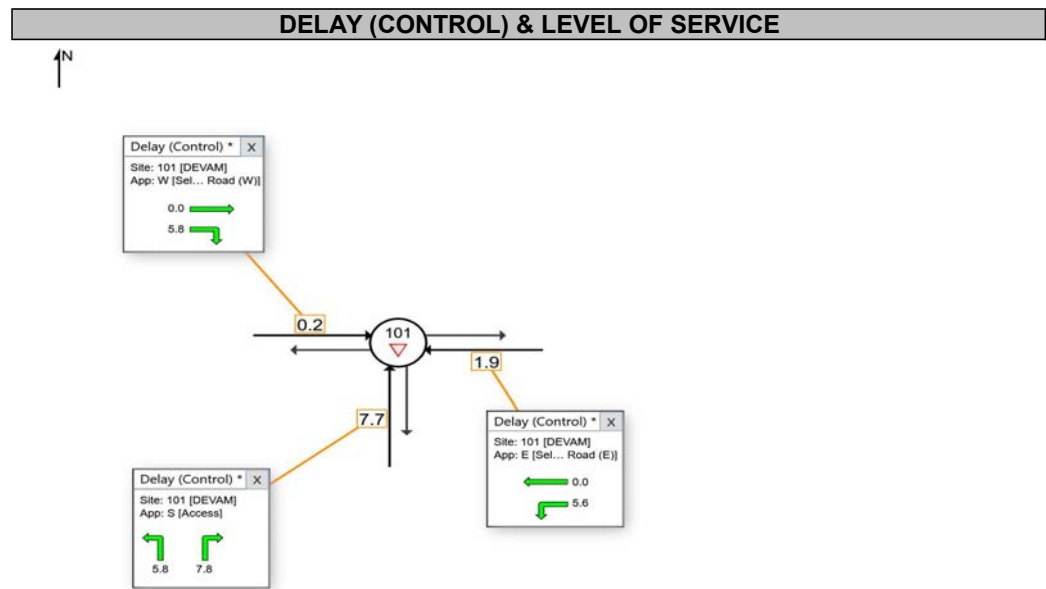
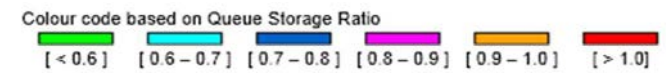
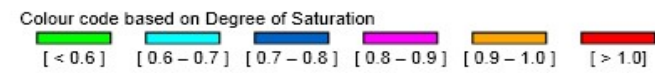
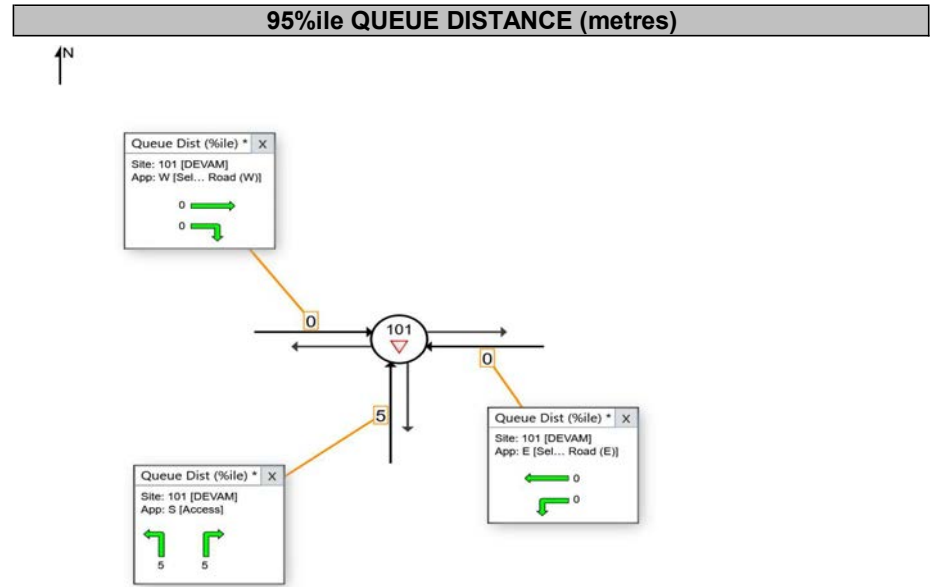
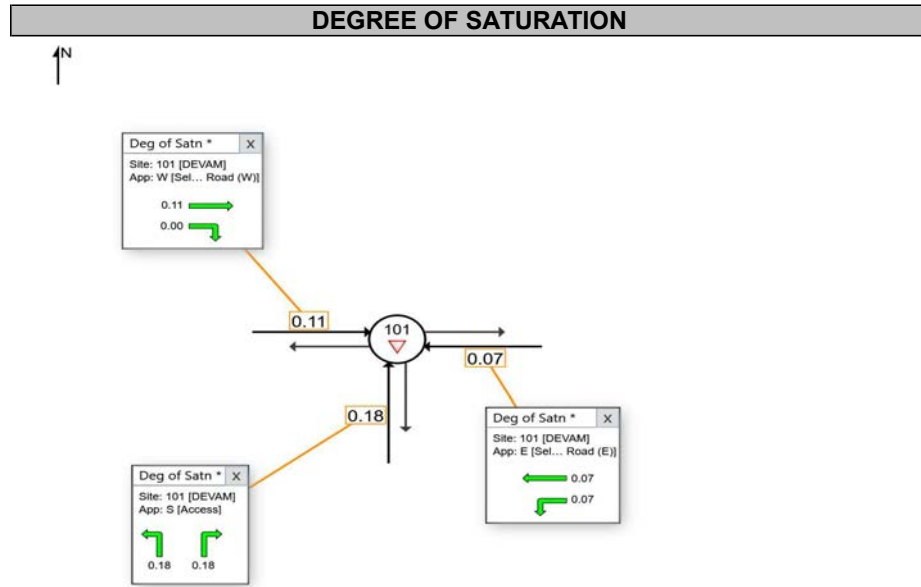
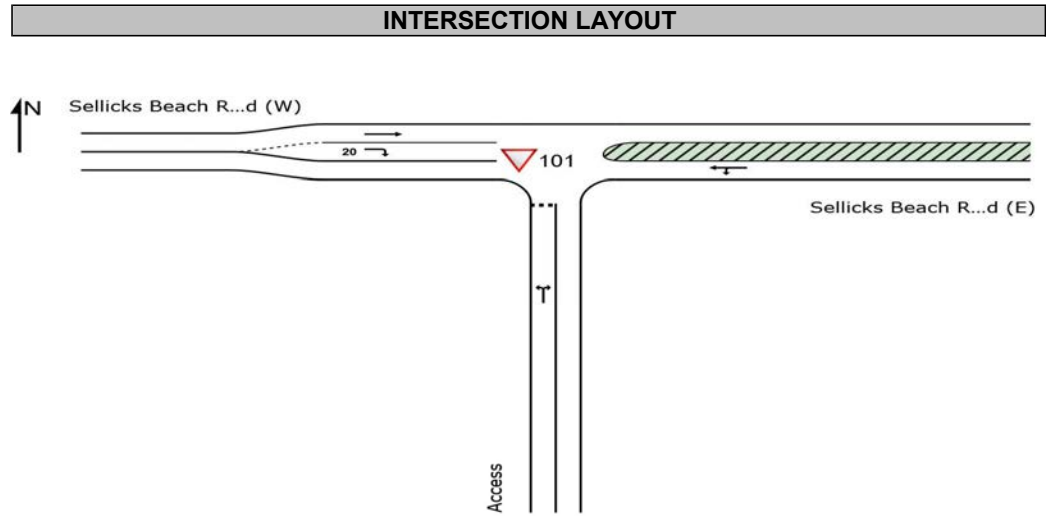
JOB NUMBER:	22-0250
PROJECT NAME:	Sellicks Beach Code Amendment

INPUT VOLUMES



INTERSECTION:	Sellicka Beach Road-Bluewater Boulevard
SCENARIO:	Development PM Peak

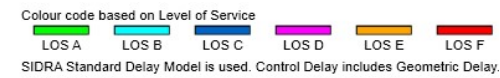
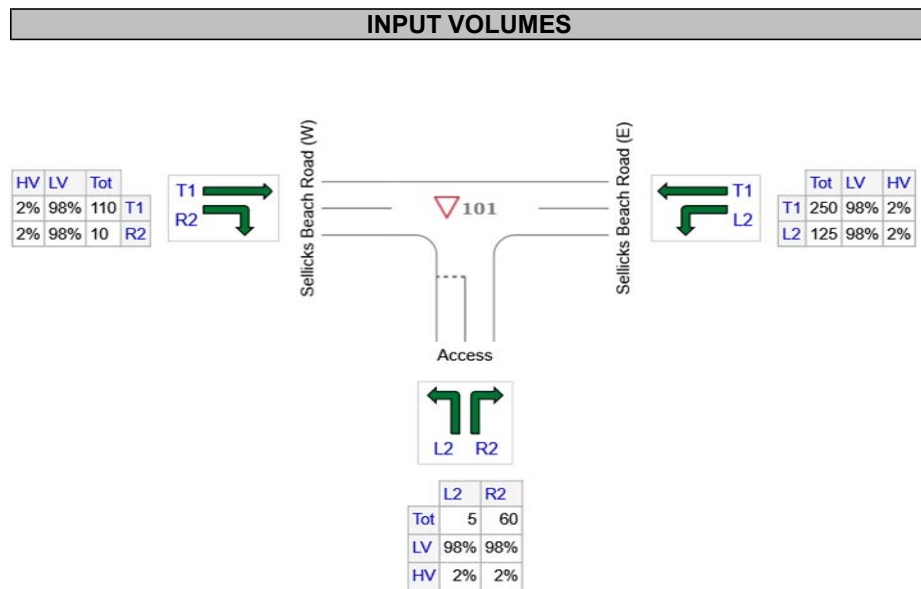
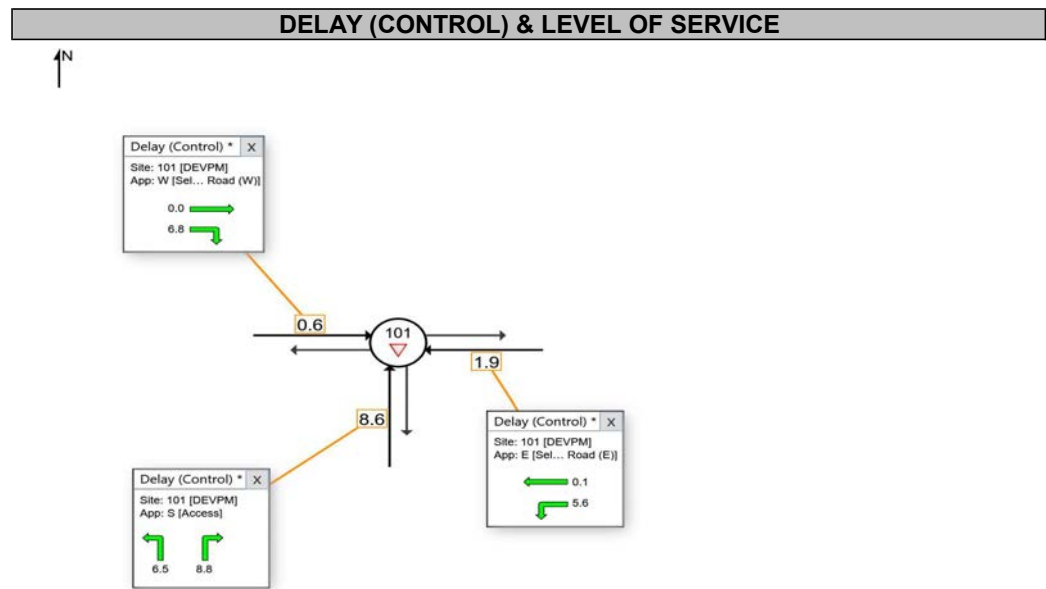
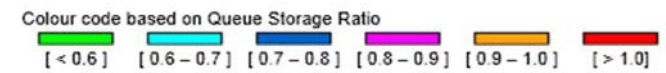
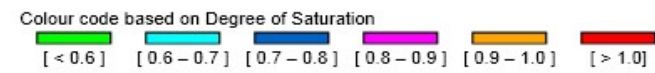
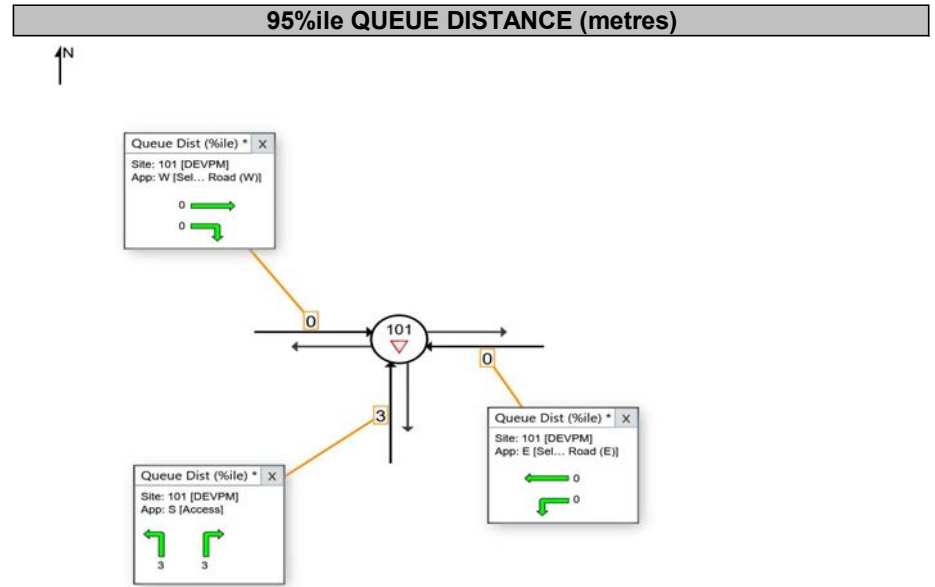
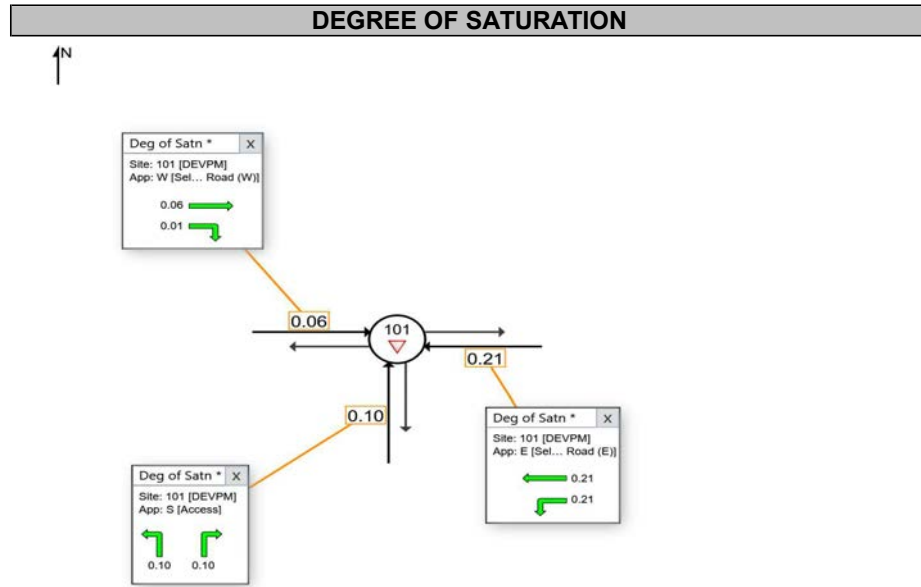
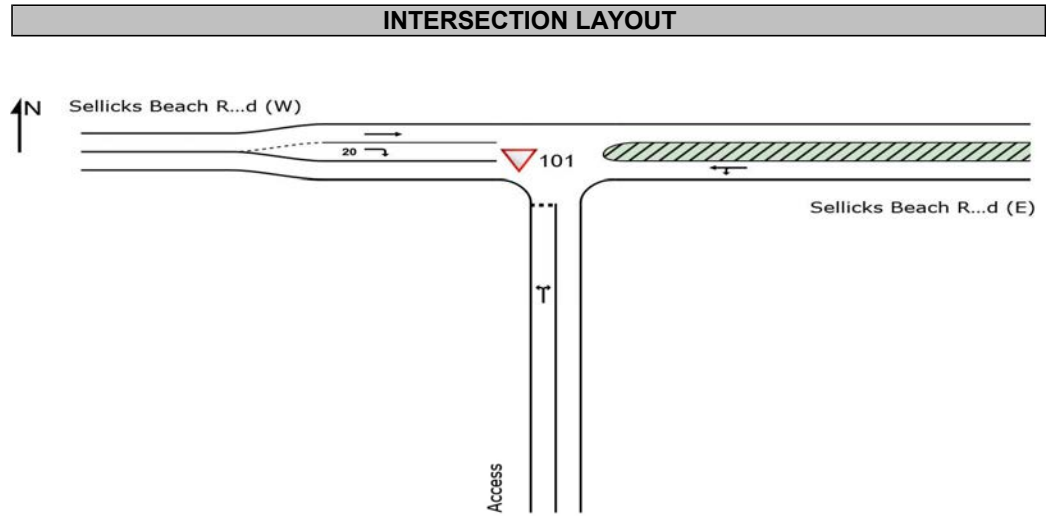




JOB NUMBER:	22-0250
PROJECT NAME:	Sellicks Beach Code Amendment

INTERSECTION:	Sellicka Beach Road-Residential Street
SCENARIO:	Development AM Peak





JOB NUMBER:	22-0250
PROJECT NAME:	Sellicks Beach Code Amendment

INTERSECTION:	Sellicks Beach Road-Residential Street
SCENARIO:	Development PM Peak

