aurecon

Project: **TINLEY MANOR SOUTH BANKS DEVELOPMENT, KWADUKUZA.**

Tinley Manor South Banks - Traffic Impact Assessment

Reference: 108498

Prepared for: Tongaat Hulett Developments

Report Number: 8575/108498

Revision: 3

30 August 2016

Contact Person: Rishaal Sahadew
071 6877 131
Rishaal.Sahadew@aurecongroup.com

Document Control Record

Document prepared by:

Aurecon, South Africa (Pty) Ltd
1977/003711/07

P.O. Box. 932
Pinetown
3600
South Africa

T **+27 31 714 2500**
F +27 31 702 0287
E eThekweni@aurecongroup.com
W www.aurecongroup.com

A person using Aurecon documents or data accepts the risk of:

a) Using the documents or data in electronic form without requesting and checking them for accuracy against the original hard copy version.
b) Using the documents or data for any purpose not agreed to in writing by Aurecon.

Document control						
Report Title	Tinley Manor South Banks - Traffic Impact Assessment					
Document ID	8575		**Project Number**	108498		
File Path	P:\Projects\108498 Tinley Manor Traffic Planning\Report\TIA					
Client	Tongaat Hulett Developments		**Client Contact**	Rory Wilkinson		
Rev	**Date**	**Revision Details/Status**	**Prepared by**	**Author**	**Verifier**	**Approver**
0	19 February 2014	First draft	F. Barakzai	F. Barakzai	Dave Kellock	Mike van Tonder
1	22 April 2015	Revised land use planning incorporated	F. Barakzai	F. Barakzai	Dave Kellock	Mike van Tonder
2	December 2015	New traffic counts and revised land use planning	F. Barakzai	F. Barakzai	Mike van Tonder	R Sahadew
3	30TH August 2061	DoT Comments & TRL's	F. Barakzai	F. Barakzai	Mike van Tonder	R Sahadew
Current Revision	**3**					

Approval			
Author Signature		Approver Signature	
Name	F Barakzai	Name	R Sahadew
Title	Civil Engineer	Title	Associate

Contents

Appendices

Index of Tables

Index of Figures

LIST OF ACRONYMS

THD	Tongaat Hulett Developments
SANRAL	South African National Roads Agency Limited
KZNDoT	Kwa-Zulu Natal Department of Transport
ILEMBE	Ilembe District Municipality
KWADUKUZA	KwaDukuza Municipality
TIA	Traffic Impact Assessment
Veh/h	Vehicles per hour

1. Introduction

Tongaat Hulett Developments (THD) proposes to develop a section of their land south of the Umhlali River, as shown below. This section of land is referred to as Tinley Manor South Banks. The proposed development is to consist of:

- Resorts
- Private residential units
- Mixed residential units
- Retail
- Mixed use units i.e. offices, commercial & residential.

Figure 1: Location of Tinley Manor South Banks Development.

Aurecon SA (Pty) Ltd was commissioned by THD to undertake a Traffic Impact Assessment (TIA) for the proposed South Banks development as part of the Environmental Impact Assessment for the development. The purpose of this TIA are as follows:

- Determine the existing levels of service on the surrounding road network.
- Determine and quantify the impact of the additional traffic generated by the proposed development on the surrounding road network.
- Propose mitigating recommendations and upgrades to address any safety and capacity issues that may be identified on both the internal and external road networks.
- Propose recommendations on access requirements.
- Evaluate the geometric design requirements.

- Consider all possible future planning for the study area.
- Liaise with the relevant stakeholders to ensure integrative planning for the area.

2. Locality

Tongaat Hulett Developments (THD) owns a large tract of land in the vicinity of Tinley Manor village, south east of the town of KwaDukuza (formerly Stanger) on the KwaZulu-Natal north coast. The majority of the land owned by Tongaat Hulett lies east of the N2 National Road, between the freeway and the Indian Ocean but there are also pockets of land, owned by THD, to the west of the N2.

This tract of land is adjacent to the coastline, approximately two and a half kilometres wide. The land extends from Sheffield Beach in the south to approximately one and a half kilometres north of the Tinley Manor village which is approximately six kilometres in length. The total approximate area of the site is 1500 hectares.

The Umhlali River forms a fairly wide flood plain/estuary between the N2 and the ocean, roughly bisecting the proposed land holding centrally. Figure 2 below shows the locality of the proposed site in the vicinity of Tinley Manor.

Figure 2: Locality Plan of the Proposed Tinley South Banks Development

The following points are worth noting:

- The Umhlahi River splits the Tinley Manor precinct roughly in half. The area to the north (including the existing village of Tinley Manor) has its own access road, P467, which links with the N2 at a diamond interchange.
- There has been no planning, in recent times, for the area to the north of the Umhlali River owned by THD.
- There is no intention, at this stage, to bridge the river flood plain that separates the two tracts of THD land and indeed this may never happen.
- The South Banks development will therefore be developed ahead of and isolated from, the area north of the river that is owned by THD.

3. Reference Material

This traffic impact assessment was carried out in accordance with DoT Report RR93/635, Manual for Traffic Impact Studies as well as the recommended guidelines for trip generation, Trip Generation Rates, 2nd Edition, 1995. Both documents are published by the Department of Transport, and are the accepted norms for this country. Reference was also made to "Trip Generation Manual", produced by the US Institute of Transportation Engineers (1991).

The analysis methods and procedures have been undertaken using the methods of the Highway Capacity Manual and the computer programme "SIDRA" developed by the Australian Road Research Board along with Akcelic and Associates which is recognised as one of the advanced traffic analysis tools in the world today.

4. Previous Report

A status quo traffic report was submitted to THD by Aurecon titled *"Status Quo Report on Transport in the Tinley Manor Precinct"* report number 6478/108498 in January 2013.

The report analysed:

- Existing road network.
- Existing traffic flows
- Level of service of existing road network elements
- Future developments in the area
- Planned new interchange

5. Existing Road Network

5.1 Road Descriptions

5.1.1 National Road 2 (N2)

The N2 runs from Cape Town in the south and it follows the east coast from the Cape Province to KwaZulu-Natal before terminating at the Swaziland border near Golela. In the vicinity of the proposed development. The N2 effectively forms the western boundary of the development and the Indian Ocean, some two and a half kilometres away, forms the eastern boundary.

The N2 is a dual carriageway freeway with 2 lanes in each direction in this area with a speed limit of 120km/h. It falls under the jurisdiction of the South African National Roads Agency Limited (SANRAL).

Of interest to this project are the following diamond interchanges on the N2:

- Salt Rock Road (P330) / Shakaskraal interchange in the south (existing).
- Tinley interchange (P467) in the north (existing).
- P228 interchange towards Sheffield Beach (planned).

The planned P228 Sheffield Beach diamond interchange will be located between the Salt Rock interchange and Tinley interchange, situated approximately 2.6 kilometres north of the Salt Rock

interchange where road P228 crosses over the N2. This planned interchange will be discussed and analysed later in this report.

5.1.2 Provincial Road R102

The R102, which was the old national road, generally runs parallel to and west of, the N2. It passes through villages / towns such as Tongaat, Shakaskraal and Stanger. Although an important route in itself, the R102 will not play a major role in the transport network relating to the Tinley Manor development because it is too far west to have an influence. This road falls under the jurisdiction of the KZN DOT.

5.1.3 Provincial Road P467

P467 is presently the only external link serving Tinley Manor Beach Village and it traverses from the R102 at Shakaskraal in the west, through to Tinley Beach Village in the east. There is a diamond interchange at the N2 where P467 crosses the N2. P467 is a two way two lane road from the N2 to Tinley Beach. This road falls under the jurisdiction of the KZN DOT.

5.1.4 Seaview Drive

Seaview Drive is the main north-south road through the village of Tinley Manor Beach and it runs from P467, through the village, to the Umhlali River in the south. There is no crossing over the Umhlali River except for the N2, further west.

5.1.5 Provincial Road P330 (Salt Rock Road)

P330, or the Salt Rock Road, lies at the southern end of the greater study area and it runs from the R102 in the west to the Salt Rock village in the east. There is a diamond interchange at the N2 where P330 crosses it. P330 terminates as it enters Salt Rock and it traverses eastwards to the coast where it becomes Basil Hulett Drive. It then turns south and traverses through Umhlali Beach where it becomes Ocean Drive. This road falls under the jurisdiction of the KZN DOT.

5.1.6 Provincial Road P474

P474 branches off P330 and proceeds eastwards to the southern end of Sheffield Beach. It becomes Colwyn Drive as it travels north through Sheffield Beach where it finally terminates. This road falls under the jurisdiction of the KZN DOT.

5.1.7 Provincial Road P228

P228 branches off P474 and proceeds northwards parallel to the N2 then it swings west and crosses over the N2 and proceeds westwards to an intersection with P467 at Tinley Manor railway station. P228 is a surfaced road for a few hundred metres from P467 and then it has a gravel surface as it proceeds over the N2. A new diamond interchange will be constructed at this crossing. This road falls under the jurisdiction of the KZN DOT.

5.2 Access to proposed and existing developments from the N2

This area of the North Coast is expanding rapidly and numerous upmarket residential estates have been established and/or planned in recent years, as shown below Figure 3. Clearly, this rapid expansion will have an impact on the existing road network and it is likely that internal and external infrastructure will have to be upgraded to carry future volumes of traffic.

If we consider these developments (refer to Figure 2 and Figure 3), from the south, it is clear that Simbithi and Mount Richmore will use either P339 or P330 (Salt Rock Road) to get to the N2 and will therefore not affect access to/from the proposed Tinley Manor development.

Dunkirk, Brettonwood, Croc Farm and Zululami will access the N2 via P474 and P330, again not affecting access to/from Tinley Manor but probably absorbing most of the spare capacity on P330 and its diamond interchange on the N2.

Thus, Seaton Delaval, Nkwazi and Palm Lakes, situated east and west of N2 all as major generators of traffic in the area are expected to access the N2 via the proposed new diamond interchange. Furthermore these developments are identified as critical developments surrounding the proposed Tinley Manor Southbanks development and hence will be considered as part of this study. As stated earlier, this proposed interchange will be discussed and analysed later in the report.

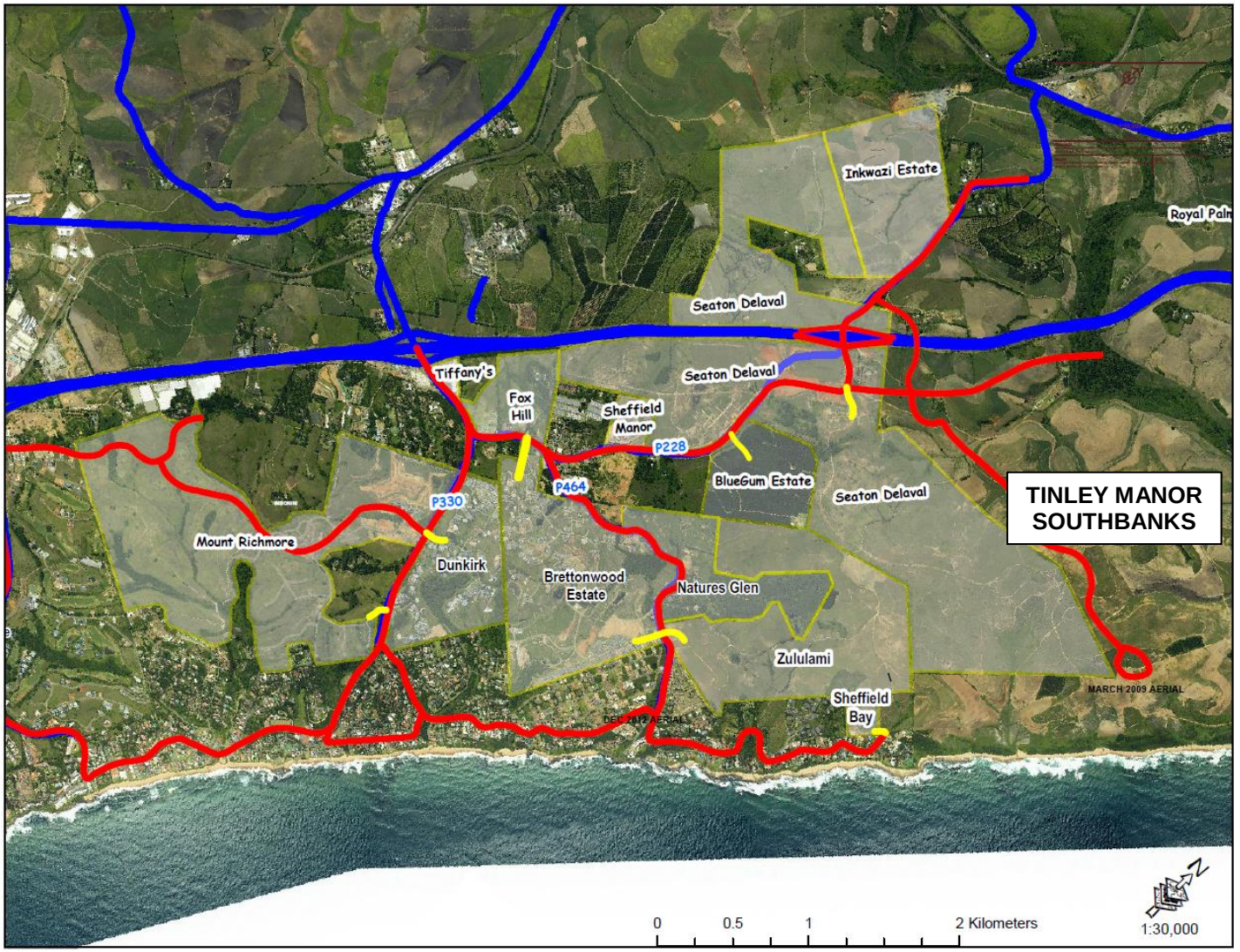


Figure 3: Adjacent and surrounding developments

5.3 Planned Changes to local Road Network

The most important planned upgrades to the existing road network in the vicinity of the site from the approved developments in the area are as follows:

- The upgrade of MR330 to a 4-lane road from the Salt Rock interchange on the N2 to MR228 which is a condition of approval for the Richmont development, the Brettenwood Estate commercial development and for the expansion of a shopping centre located at the northeast quadrant of the Salt Rock interchange on the N2.
- The upgrade of MR228 from MR330 to MR474 which is a condition of approval for the Brettenwood Estate commercial development.
- The upgrade of MR228 from MR474 to the Palermo access as part of the Seaton Delaval Development which is a condition of approval for the first 600 residential units.
- The proposed new Sheffield Beach interchange on the N2 located at the existing MR228 Bridge over the N2 which is a condition of approval for another 700 residential units of the Seaton Delaval development.

5.4 Tinley Manor Village

The existing beach village of Tinley Manor, north of the Umhlahi River, is quite small, being approximately two kilometres in length and around 300 metres in width. It consists of two primary roads that run parallel to the coastline with Seaview Drive being the closest to the ocean and providing access to sea front properties. Oceanview Drive is situated one block further inland and it serves residential properties along its length.

Both of these roads connect to provincial road P467 in the north which is the only external connector for the Tinley Manor area, running north-west from the village to a diamond interchange on the N2 and onwards towards the R102 and Shakaskraal.

6. Existing Traffic Conditions

6.1 Critical Intersections

Traffic counts were carried out by Bala Survey and Research in August 2015 at the following locations which were deemed as being the critical intersections in the study:

- N2/Salt Rock interchange (P330) (both intersections)
- N2/Tinley Manor (P467) interchange (both intersections)
- The P330/P474 intersection
- The P474/P228 intersection
- The P228/P467 intersection
- N2 Northbound and Southbound at Umhlahi River

These traffic count locations are shown in Figure 4 below.

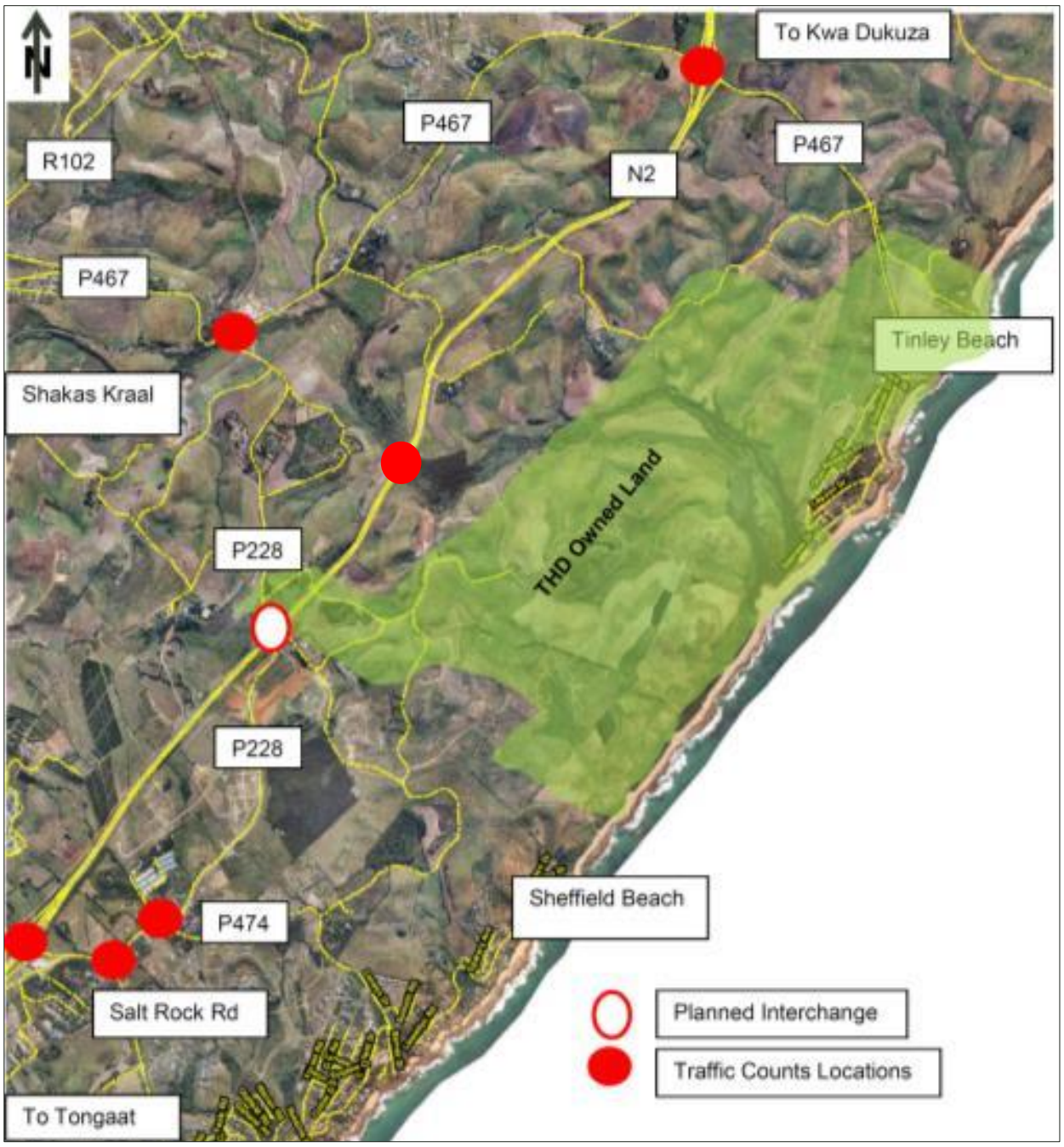
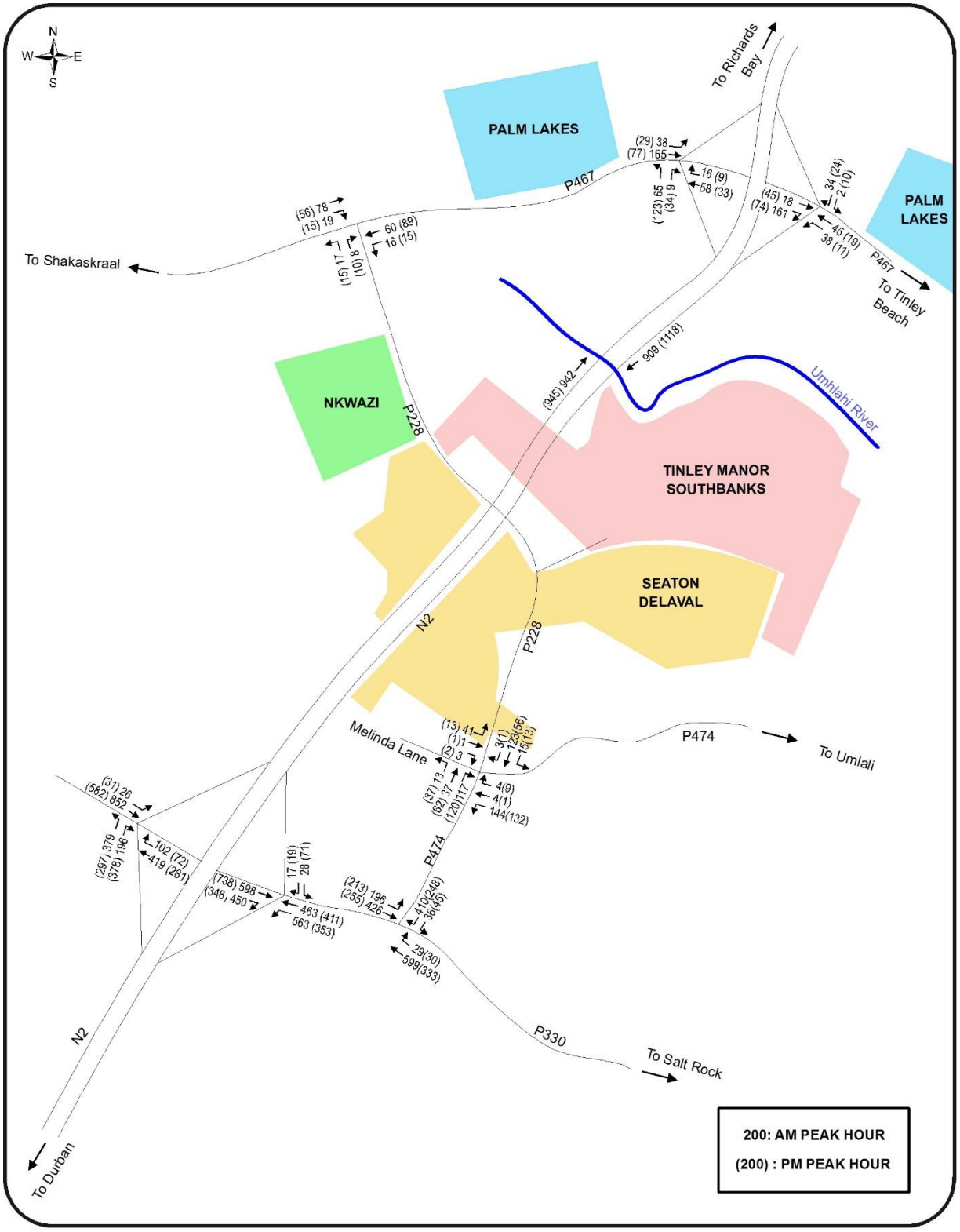


Figure 4: Traffic Count Locations

The AM and PM peak hours were found to be from 06:45 to 07:45 and from 16:15 to 17:15 and the traffic volumes on the local road network during these peak hours are as shown below in Figure 5.



aurecon Leading. Vibrant. Global.	EXISTING WEEKDAY AM & PM PEAK HOUR TRAFFIC VOLUMES Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 5
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

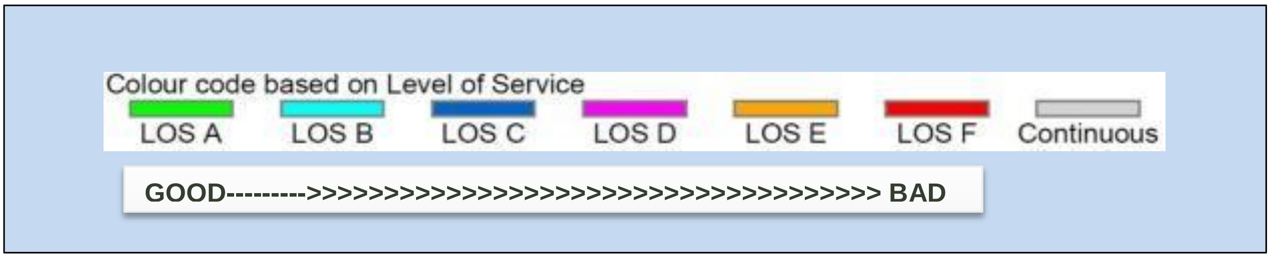
Figure 5: Existing peak hour traffic flows

6.2 Method of analysis

The existing traffic flows were analysed using the computer suite SIDRA to indicate the Level of Service (LOS) of traffic operations on the various elements of the road network.

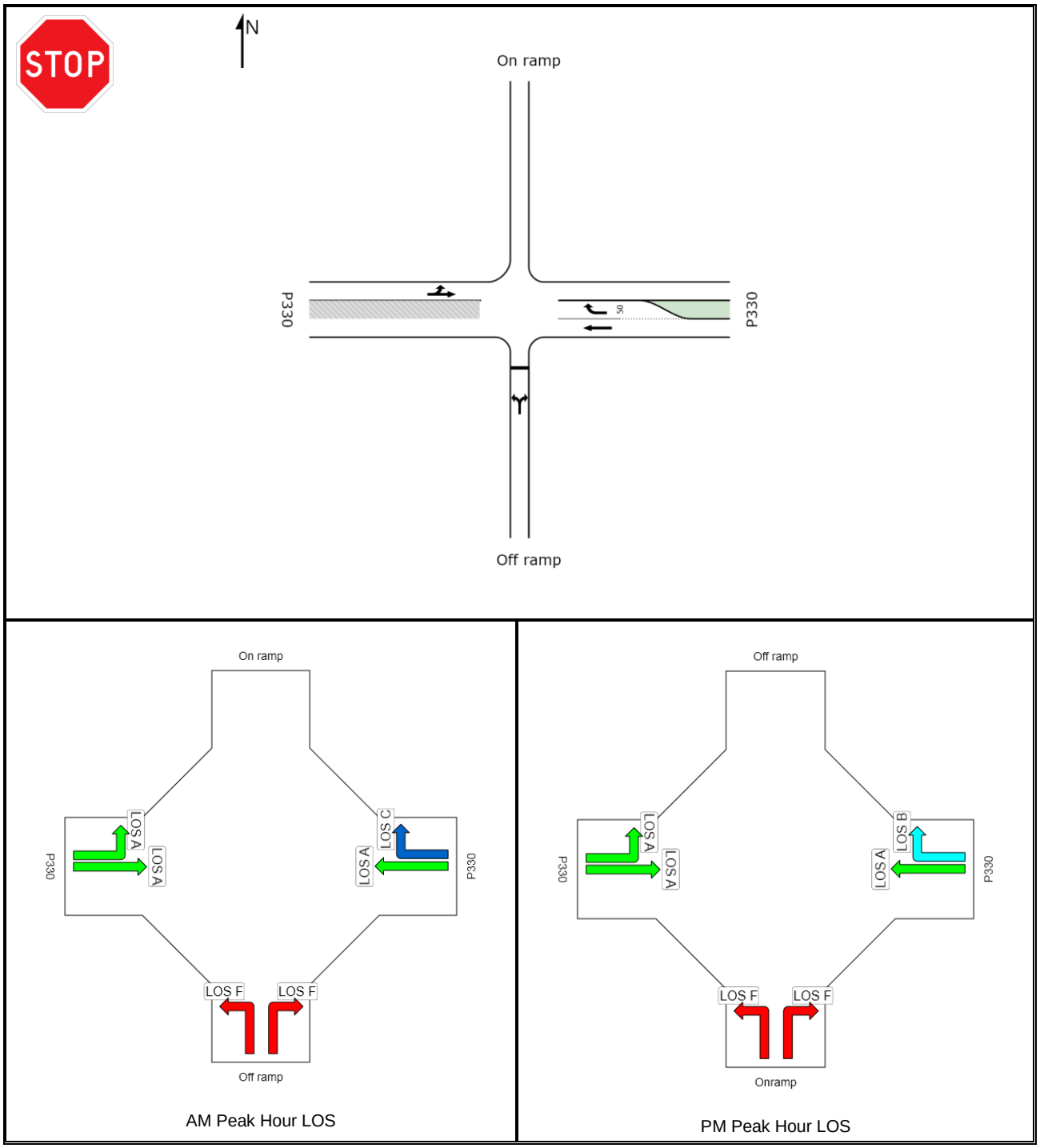
Level of Service (LOS) is defined as a qualitative measure of the operational conditions within a traffic stream as perceived by road users. This definition generally describes these traffic conditions in terms of speed, travel times, freedom to manoeuvre, traffic interruptions, comfort, convenience and safety. There are six levels of service used to describe the quality of travel on the road network. Each of these levels is given a letter designation from A to F, with LOS A representing the best (free-flow) operating conditions while LOS F represents the least desirable (severely congested) conditions.

The road network surrounding the proposed Tinley Manor Development will be analysed in detail and the current levels of service on the existing road network will be discussed. The levels of service at each intersection will be presented schematically. The following legend will be used to depict the LOS of each movement at the intersections.



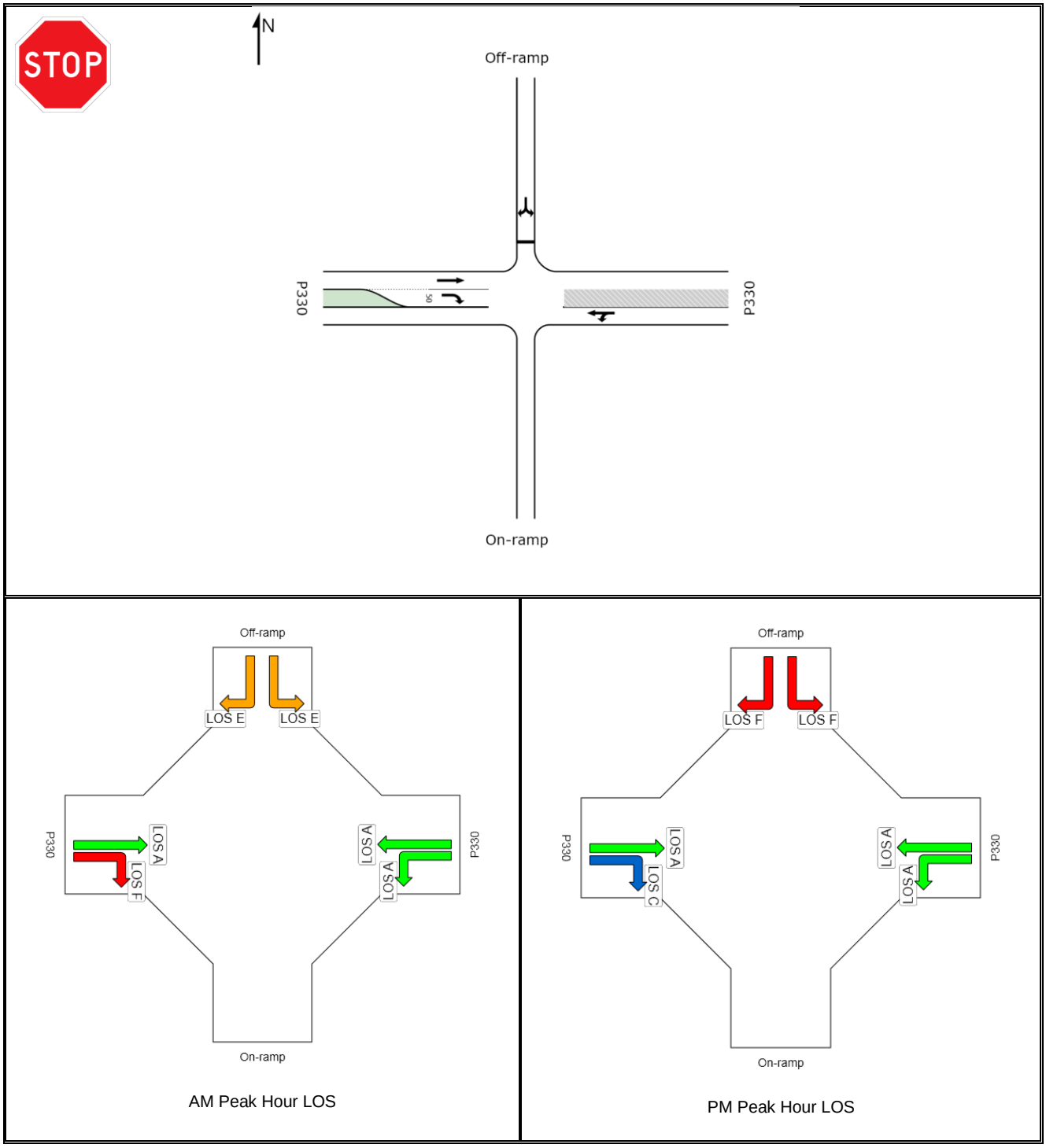
6.3 Analysis of the Existing Traffic Conditions

6.3.1 P330 (Salt Rock Road) / N2 Interchange – Western Ramp Intersection



It can be seen that, in both peak hours, the level of service on the northbound off ramp is F for both the left and right turn movements while the through movements on P330 are operating at very good levels of service. This is fairly typical of a priority junction where there are high volumes on the through road. The AM LOS F and PM LOS F exhibit long queue lengths.

6.3.2 P330/N2 Interchange – Eastern Ramp Intersection

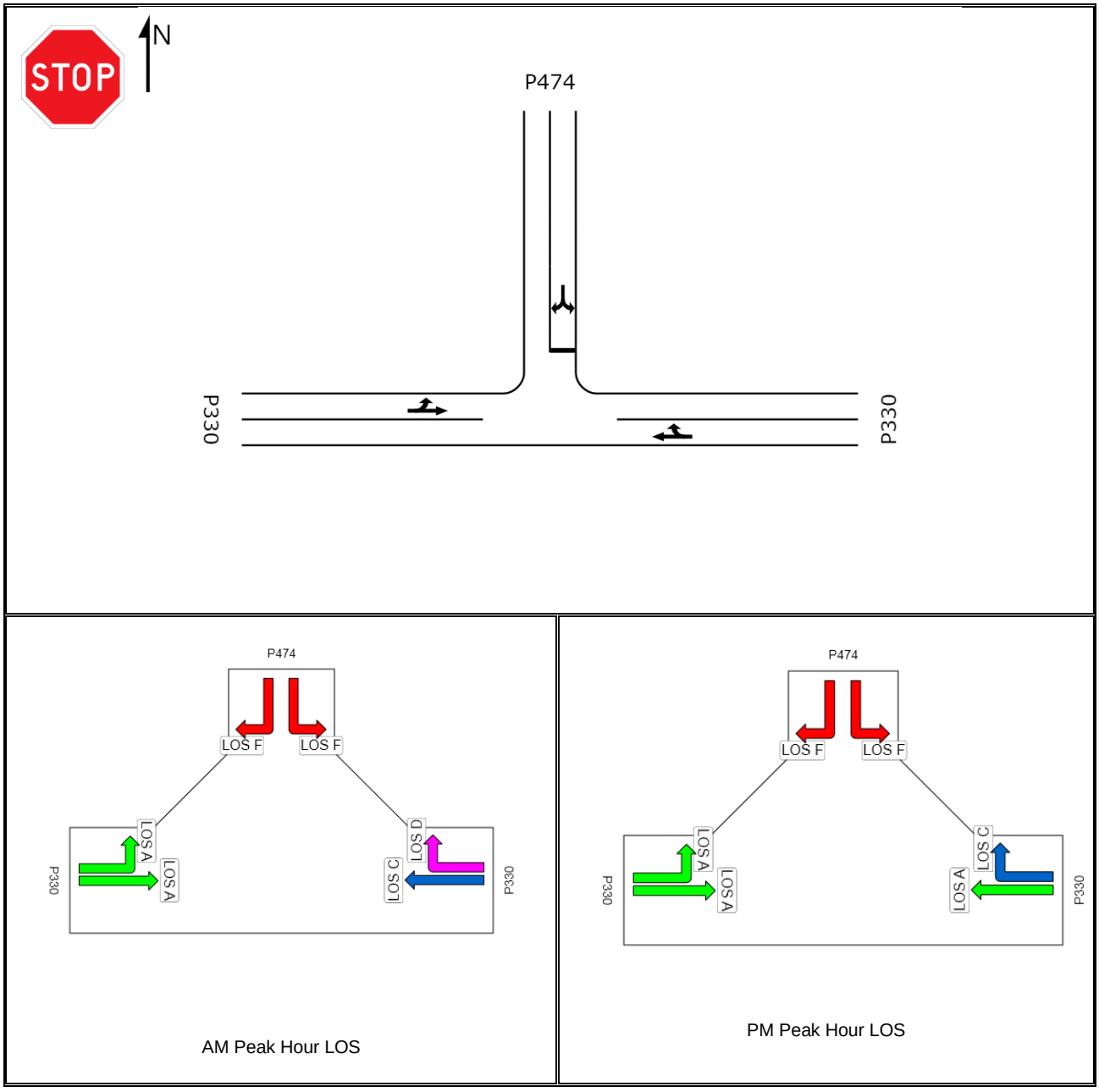


AM Peak Hour LOS

PM Peak Hour LOS

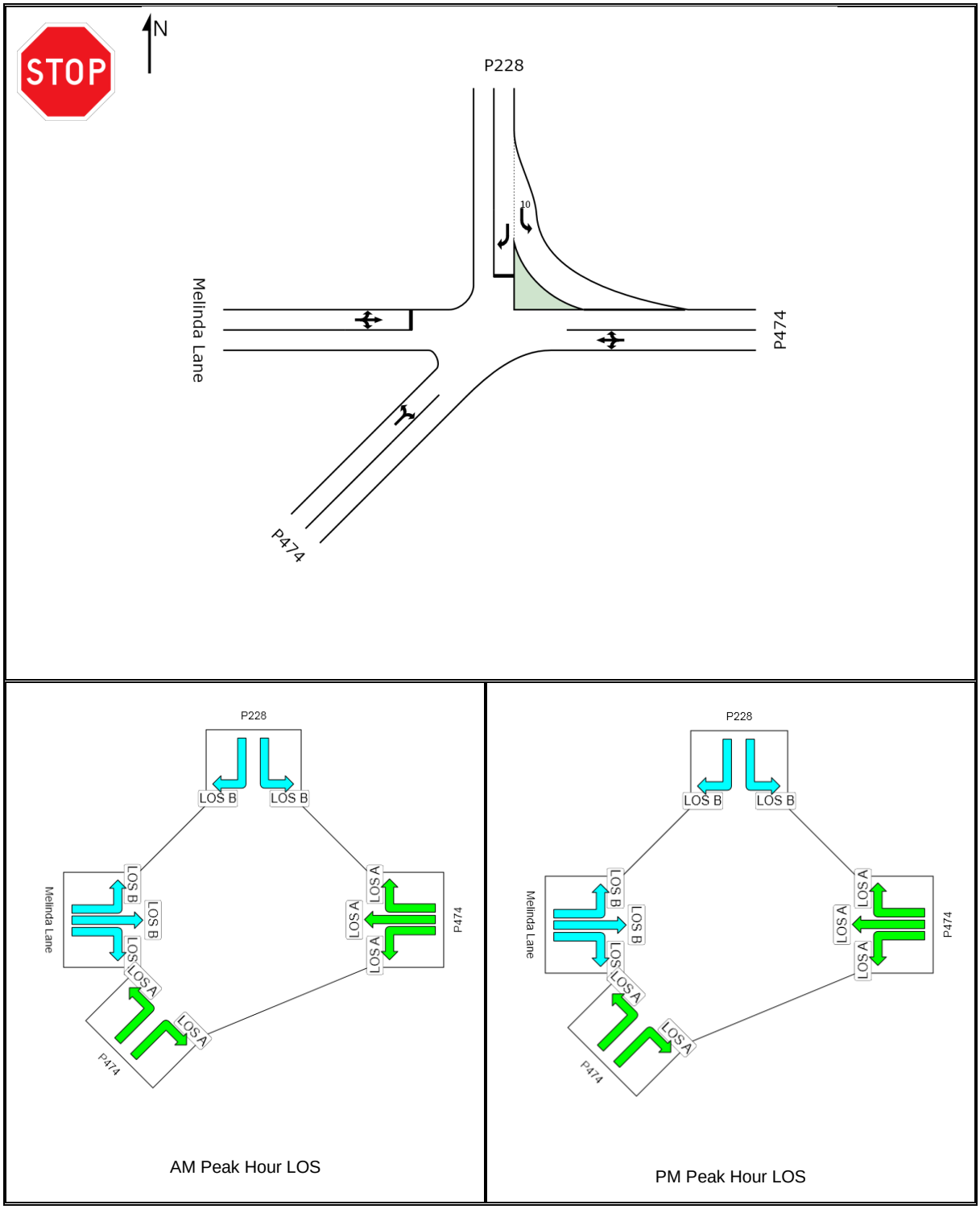
It is evident that, in both peak hours, the level of service on the southbound off ramp is unacceptable. The right turn movement onto the south bound onramp is also unacceptable. Due to the severe congestion encountered at this intersection, improvements will be required in the base year.

6.3.3 P330 / P474 Intersection



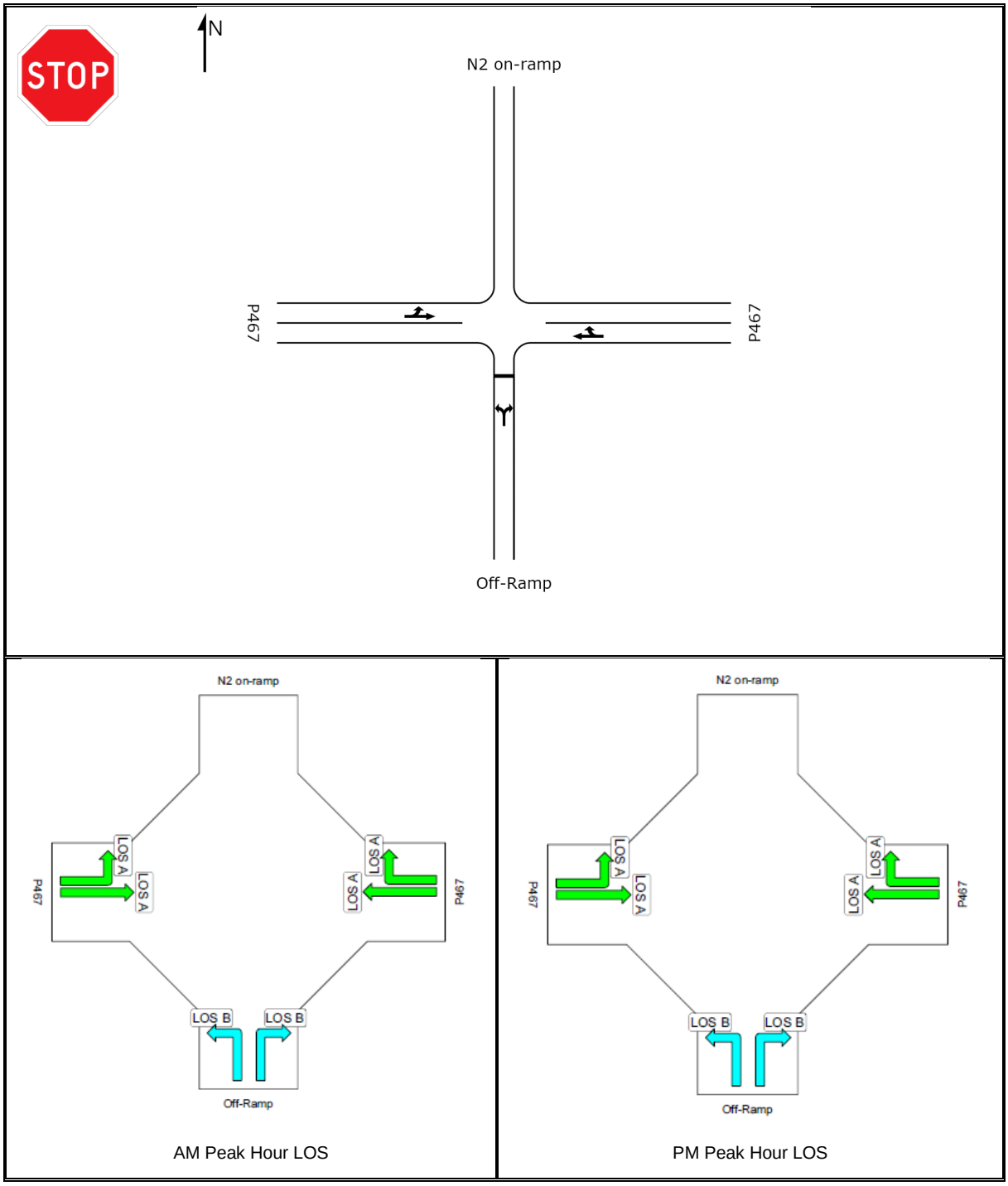
It can be seen that the P474 approach is operating at a LOS F in both the AM and PM peak hours due to the heavy and continuous through flows on P330. There is also a high right turn volume from the P474 onto the P330. The indications are that this intersection presently requires upgrading as a result of the existing congestion encountered at this intersection.

6.3.4 P474 / P228 Intersection



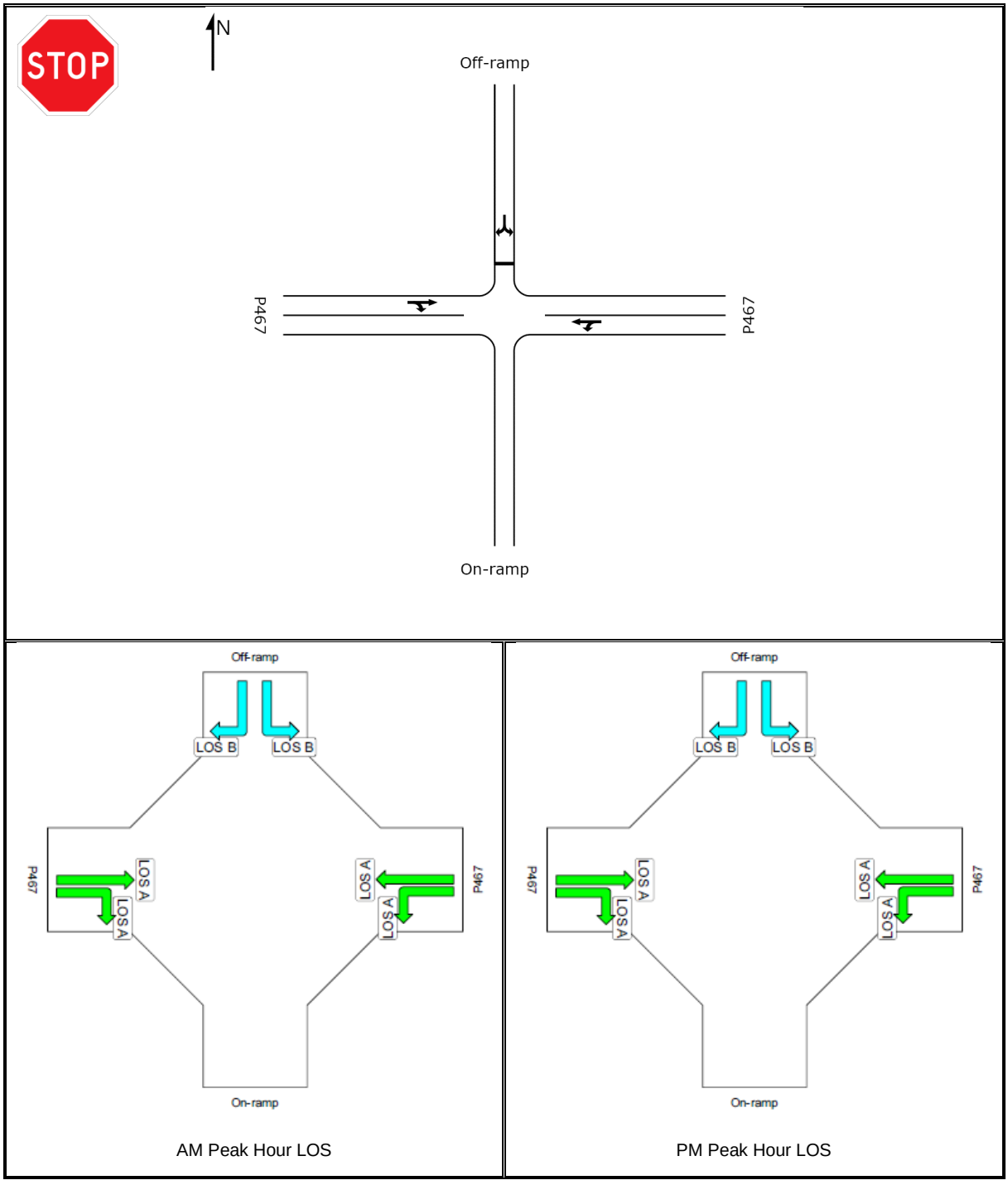
It is evident from the diagrams above, that no congestion is encountered at this intersection. Acceptable delay and queue lengths are encountered at this intersection. As such no upgrades are required for the existing volumes of traffic passing through this intersection.

6.3.5 P467/N2 Interchange Western Ramp Intersection



This intersection operates at good Levels of Service in both peak hours, primarily due to the low traffic volumes experienced at present. Acceptable delay and queue lengths are encountered at this intersection. As such no upgrades are required in the base year.

6.3.6 P467/N2 Interchange Eastern Ramp Intersection

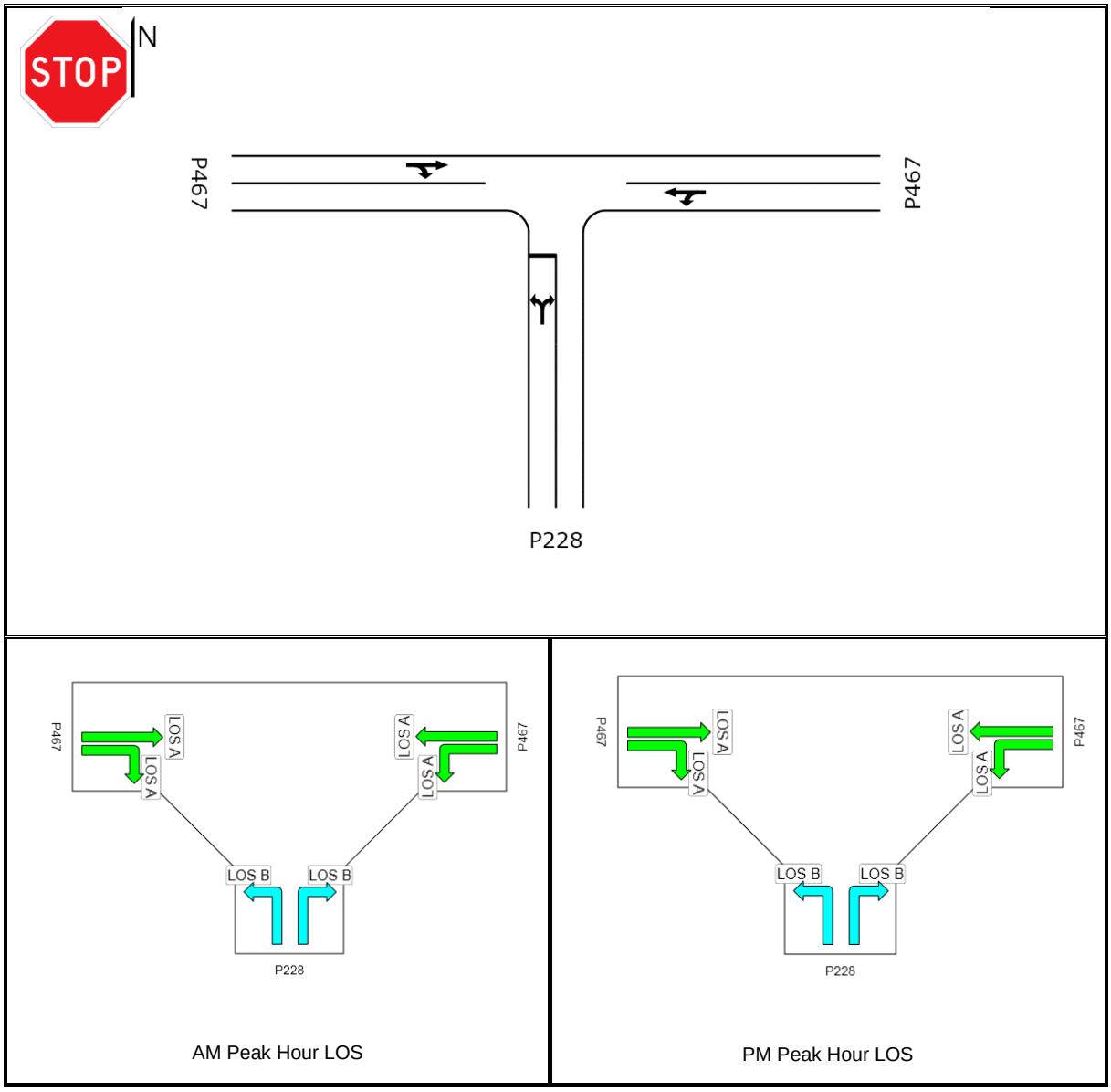


AM Peak Hour LOS

PM Peak Hour LOS

It is evident from the diagrams above, that no congestion is encountered at this intersection. Acceptable delay and queue lengths are encountered at this intersection. As such no upgrades are required for the existing volumes of traffic passing through this intersection.

6.3.7 P228/P467 Intersection



This intersection operates at good Levels of Service in both peak hours, primarily due to the low traffic volumes experienced at present. Acceptable delays and queue lengths are encountered at this intersection. As such, no upgrades are required in the base year.

7. Proposed Tinley Manor South Banks Development – (Mixed Use)

7.1 Development Potential

As mentioned earlier, THD proposes to develop a large tract of their land known as Tinley Manor South Banks. Tinley Manor South Banks will be a new residential, resort and commercial estate with a mix of lifestyle options including food production zones, integrated through a well-designed, high quality, safe and secure network of public spaces and commercial and social facilities. It will have a human scaled settlement form that promotes the use of non-motorised transport, social engagement and community cohesion as well as care for the environment and the sustainable use of natural resources.

The site structure is predetermined largely by the geographic elements of the site i.e. Ecology, topography, geology and hydrology. These have been integrated into an open space network which along with existing and proposed movement corridors creates developable pockets of land. The ocean, Umhlahi River, the adjacent proposed development Seaton Delaval and the N2 are the main boundaries of the site, whilst the internal wetland systems and associated geophysical attributes of the locality into development blocks. Table 1 below shows the summarised land use schedule for the proposed Tinley manor South Banks Development.

LANDUSE TABLE FOR TINLEY MANOR

Landuse	Residential Units	Offices (m^2)	Retail (m^2)	Rooms	Students
Single Residential - 1500m2	156	-	-	-	-
Single Residential - 1000m2	264	-	-	-	-
Single Residential -	247	-	-	-	-
Planned Unit Development	1077	-	-	-	-
High Density Residential	1357	-	6785	-	-
Mixed Use	1208	2416	21743	-	-
Low Impact Mixed Use	-	-	9255	-	-
Resort	-	-	-	200	-
Education	-	-	-	-	1000
Total	4309	2416	37783	200	1000

Table 1: Land Use Schedule for the Proposed Tinley Manor Development

Definition of Land Use Types:

- Single Residential Units: Residential units be built on plots ranging from 600m^2 to 1500m^2.
- Planned Unit Development: Cluster housing.
- High density residential: Cluster housing along with convenience and retail outlets only for the residents of the development.
- Mixed Use: Cluster housing, with retail outlets and offices.
- Low impact mixed use: Retail outlets and entertainment facilities.
- Resort: Luxury units.
- Education: 1000 student technical college/university.

7.2 Levels of Completion

COMPLETION LEVELS FOR TINLEY MANOR		
Landuse	Units/GLA(m^2)/Rooms/Students	
	50% completion - 2026 (10 year)	**100% completion - 2036 (20 year)**
Single Residential - 1500m2		
Residential Units	0	156
Single Residential - 1000m2		
Residential Units	209	264
Single Residential - 600/800m2		
Residential Units	247	247
Planned Unit Development		
Residential Units	789	1077
High Density Residential		
Residential Units	1251	1357
Retail (m2)	5768	5768
Mixed Use		
Residential Units	154	1208
Retail (m2)	0	18482
Offices	0	2416
Low Impact Mixed Use		
Retail (m2)	0	9255
Resort		
Rooms	0	200
Education		
Students	0	1000

Table 2: Summary of Completion of Tinley Manor South Banks Development

7.3 Schematic Layout

A schematic layout of the proposed development is shown hereafter.

Figure 6: Layout of Proposed Tinley Manor Southbanks Development

7.4 Trip Distribution

7.4.1 Vehicular Access

The majority of the Tinley Manor South Banks Development lies to the east of the N2. Using the existing road network in its current form, most of the traffic generated by the development is expected to arrive and depart via the N2 south. Entrance to the development will be on the north end of P228.

A small proportion of the trips generated by the development are also expected to arrive from Umhlahi and Salt Rock in the south. This traffic will use the P330 and P474 traversing eastbound from these towns and then north, parallel to the N2 on the P228.

A minor number of trips are also expected to arrive from further inland in the west. This traffic will use the P467 and traverse eastbound over the N2 on the P228 and into the development.

A portion of the residential component of the Tinley Manor South Banks Development is located west of the N2.

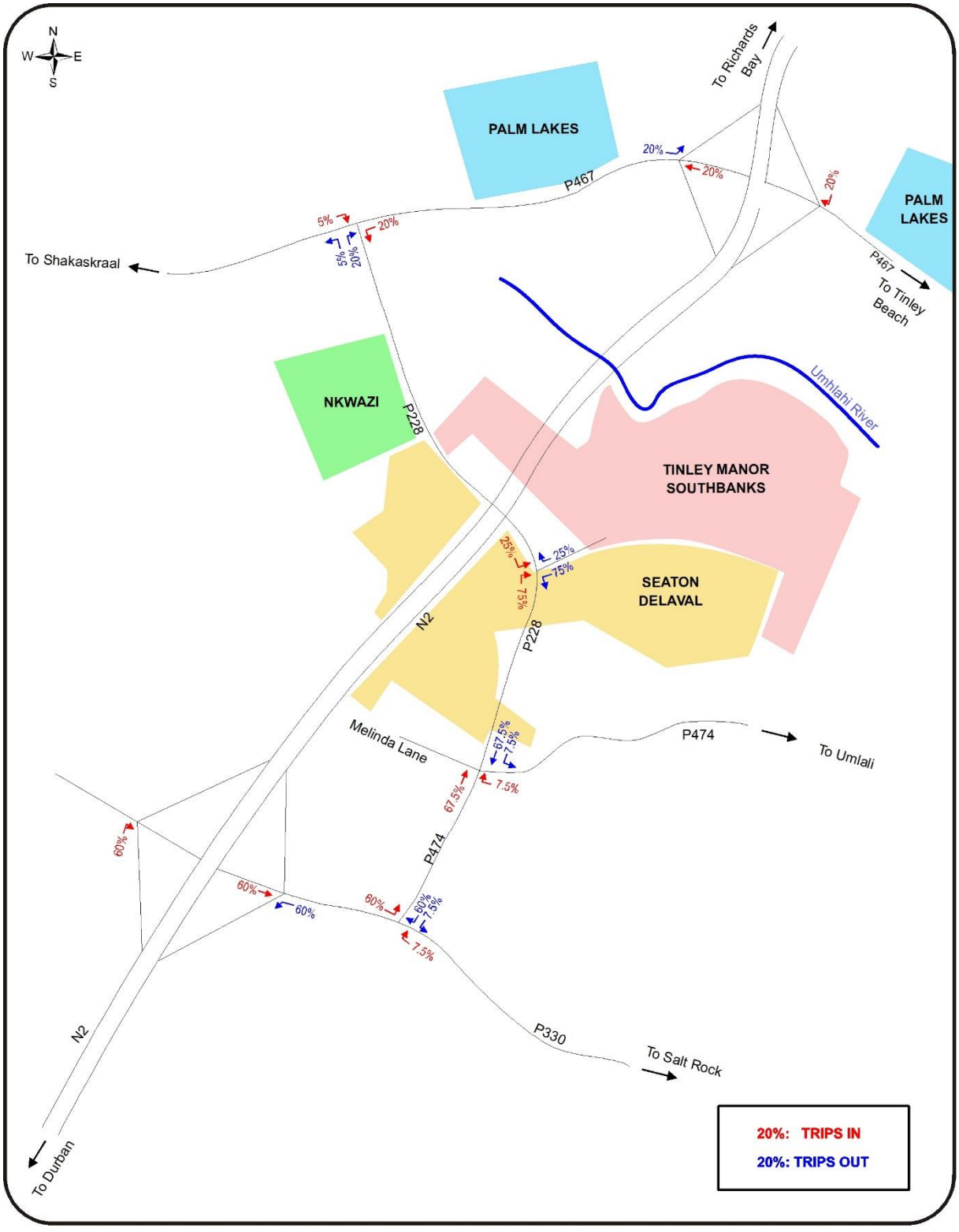
The distribution of the generated trips is tabulated below and shown on Figure 7 hereafter:

TRIP ORIGIN / END	Percent (%)
To / from South via N2	60 %
To / from Umhlali via P474	7.5 %
To / from Salt Rock via P330	7.5 %
To / from North via N2	20 %
To / from west via P228	5 %
Total	100 %

Table 3: Trip Distribution for the Tinley Manor South Banks Development

7.4.2 Technical College

A proposed technical college will form part of the Tinley Manor South Banks Development. The traffic generated by this technical college will also follow the above trip distribution. The access to this college will however be on the P228 west of the N2.



aurecon Leading. Vibrant. Global.	TRIP DISTRIBUTION OF TRAFFIC GENERATED BY TINLEY MANOR SOUTHBANKS Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 7
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

Figure 7: Trip Distribution of traffic generated by Tinley Manor Southbanks

7.5 Design Peak Hours

In order to obtain the worst case scenario based on the largest volume of traffic generated onto the road network in the AM and PM peak hours, the following scenarios were considered. The retail portion of the development generates the largest volumes of traffic on a typical Friday PM peak hour and Saturday AM peak hour.

ASSESSMENT HOURS		
Assessment Day	Two-way Trips	
Friday	AM	PM
	5702	8103
Saturday	AM	PM
	4062	-

Table 4: Assessment Hours

The volumes of trips generated shown above indicate that the majority of the traffic will be generated in the Friday PM Peak hour (a result of the large residential and retail components of the development). Thus, the peak hours that will be the design peak hours of analysis in this TIA are the Friday morning AM peak and Friday afternoon PM peak. The volume of traffic generated by the proposed development on Saturday AM is lower than the Friday AM peak hour. Therefore, the Saturday AM peak hour will not be analysed.

7.6 Assessment Years

The Tinley Manor South Banks Development will be fully developed in 20 years from the base year. According to the South African Trip generation manual, an analysis of the base year and the 10 year horizon year will be required for a development the size of Tinley Manor South Banks Development. However, because the development will be fully operational in the 20 year horizon, the 20 year horizon will also be analysed in this study.

Development	**Percentage Completion of included Developments**		
	Horizon year		
	2016 (Base year)	2026 (10 year)	2036 (20 year)
Tinley Manor	0%	50%	100%
Palm Lakes	20%	56%	100%
Seaton Delaval	0%	24%	200%
Nkwazi	0%	34%	100%

Table 5: Development Phasing

7.8 Trip Generation Rates

The analysis of the impact of the development generated traffic on the external road network requires a comprehensive understanding and integration of the existing and planned future major developments that generate large volumes of traffic. It is obvious that these large developments will have a significant impact on the local and surrounding road network.

Seaton Delaval is a proposed development that is planned on the east side of the N2 adjacent to Tinley Manor South Banks. West of the N2 are the planned developments of Nkwazi and Palm Lakes. The Traffic Impact Assessments Reports for these developments were used to extract the trip generation and trip distribution for other approved developments, which are summarised later in this chapter. The traffic generated from these developments was then added to the traffic generated by Tinley Manor South Banks Development and the road network analysed (to follow further in the report).

7.8.1 Discounts in Trip Generation

The “mini town” nature of these developments shows a similar traffic movement pattern. The following can be noted:

- The residential portion of the development will consist of high income households.
- A high percentage of external trips are daily commuter trips southbound on the N2 towards Ballito and eThekwini, hence tidal flow out in the AM peak hour and back in the PM peak hour.
- A high percentage of all trips are internal trips, possibly not by vehicle, for people who live and work in the development. This is an increasing phenomenon, especially found in the upper income households which this development targets. Furthermore, the presence of retail and office space within the development means an increased number of people will occupy this space without having to commute long distances to work.
- Different people will also opt to purchase holiday homes or holiday flats. These holidays homes will traditionally only be occupied for few weeks in a year. This means for the remaining time a negligible number of trips are generated by these households.
- Homes occupied by retired people will not generate traditional peak hour external trips. The majority of trips will be made during the off peak hour. Furthermore, with a large number of convenience and retail facilities within the development, these retired persons will often not leave the development for a few days at a time.

These large residential developments show a distinct trend of large volumes of traffic commuting daily to and from eThekwini that motivates a substantial upgrade to the public transport network in the area. It is likely that the Ilembe Municipality will develop something along the lines of the Integrated Rapid Public Transport Network (IRPTN) in this region to cater for these large “mini-town” developments.

It is hence predicted that the traffic generated by these developments will decrease as an increased number of middle to upper income households use public transport for daily commuter trips. This reduction can also be applied to local trips generated by these developments.

The tables below shows a summary of the trip generation and associated reduction factors that will be applied to each landuse within the development. These reduction factors have been extracted from the eThekwini Transport Authority “Manual for Traffic Impact Assessments and Site Traffic Assessments” 2015 as no reduction factors can be found for the nature of this development in South African Trip Generation Manual.

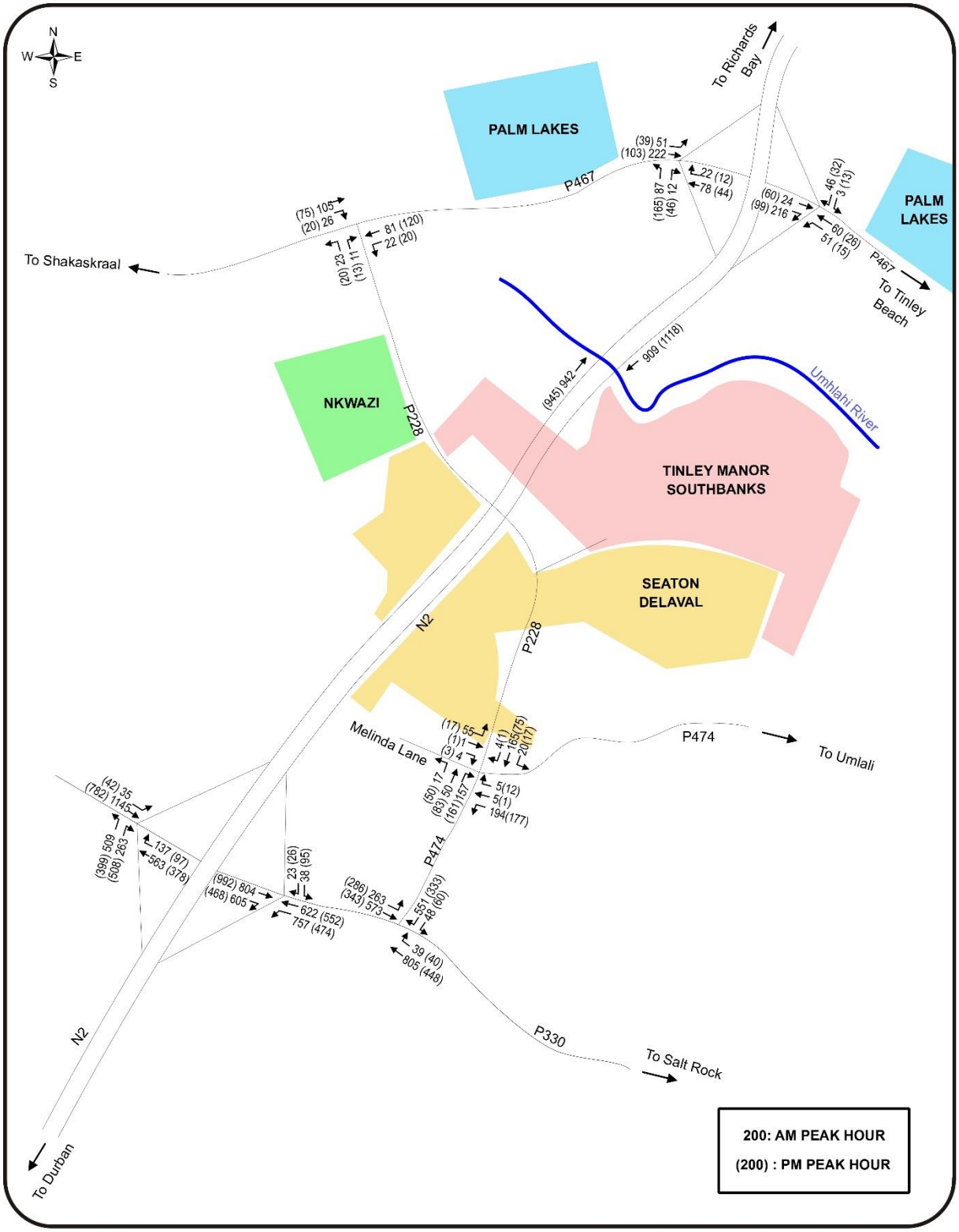
8. 10 Year Horizon Traffic Analysis – 2026

The purpose of this Chapter is to analyse the impact of the traffic that will be generated by the proposed Tinley Manor Southbanks Development onto the external road network in the 10 year horizon (2026). It is envisaged that by 2026, only a portion of the residential component of this proposed development will be built. Therefore, the volume of trips that will be generated by this portion of the residential component is shown in Section 8.2 hereafter.

As part of this analysis in this Chapter of the study, the traffic generated in the 10 year horizon by all other major developments in the area i.e. Seaton Delaval, Palm Lakes and Nkwazi will also be included in the analysis of the 10 year horizon.

8.1 Forecast on Background Traffic

The background traffic volumes were forecasted using a growth rate of 3% per year compounded annually for a 20 year period to determine their equivalent 2036 values. These forecasted traffic volumes are shown on Figure A hereafter.



aurecon Leading. Vibrant. Global.	10 YEAR BACKGROUND FORECAST TRAFFIC VOLUMES Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: A
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

8.2 Trip Generation

8.2.1 High Income Single Residential Units

No. of Units	Trip gen rate / du	AM two-way trips	PM two-way trips
456	1.5	684	684
		Comment	
Reduction Factor	20%	Holiday & Retirement Homes	
	10%	Public transport	
	Adjusted Total	**700**	**700**

8.2.2 Cluster Housing

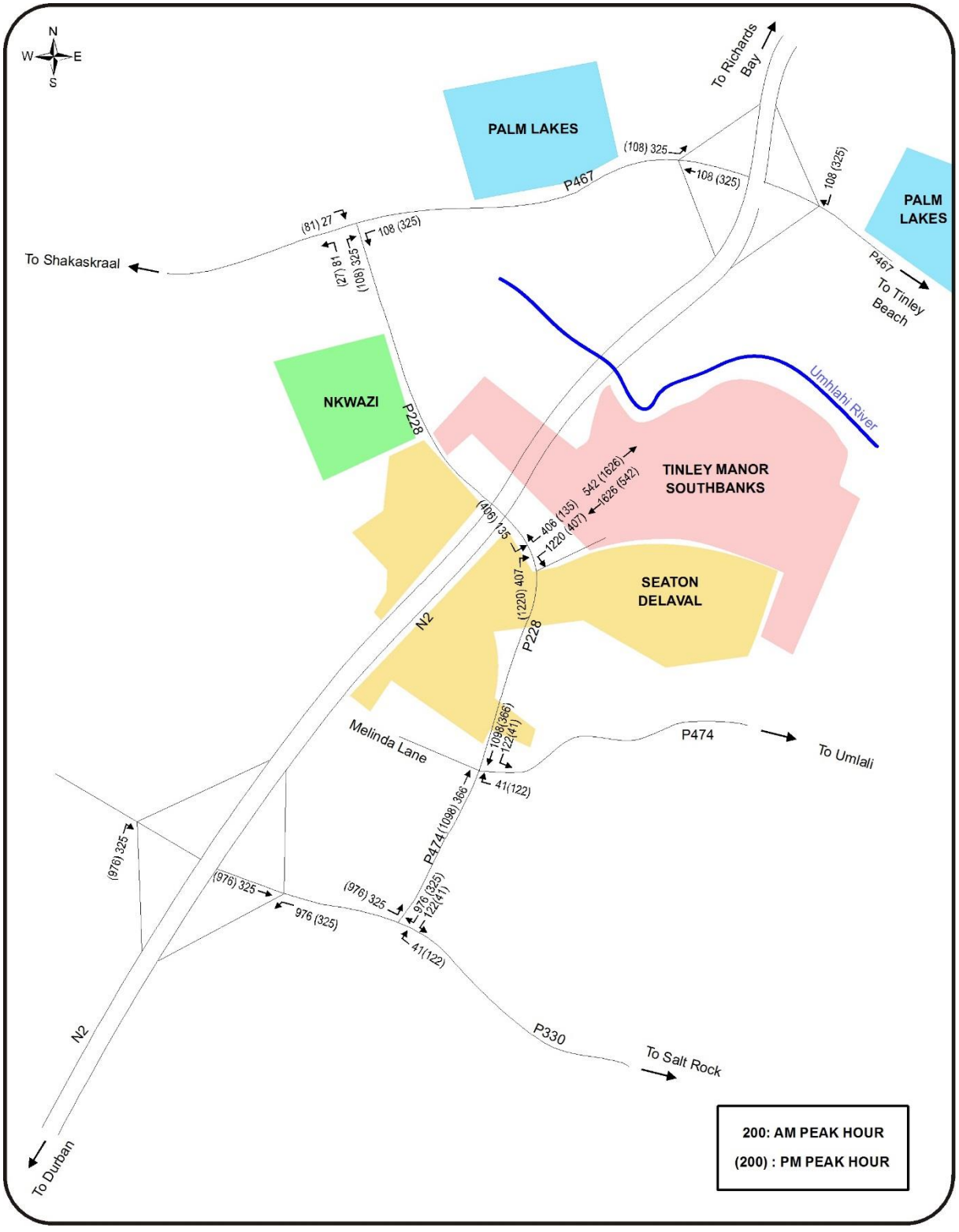
No. of Units	Trip gen rate / du	AM two-way trips	PM two-way trips
2194	1.1	2413	2413
		Comment	
Reduction Factor	20%	Holiday & Retirement Homes	
	10%	Public transport	
	Adjusted Total	**2168**	**2168**

Table 6 hereafter summarises the trips that will be generated by Tinley Manor Southbanks during the design peak hour (weekday AM and PM) in the 10 year horizon (2026).

TRIPS GENERATED BY TINLEY MANOR in 2026 (10 year)		
Landuse	Total Two-way trips	
	AM	PM
Single Residential - 1500m^2		
Residential Units	-	-
Single Residential - 1000m^2		
Residential Units	219	219
Single Residential - 600/800m^2		
Residential Units	259	259
Planned Unit Development		
Residential Units	608	608
High Density Residential		
Residential Units	963	963
Retail (m^2)	Int	Int
Mixed Use		
Residential Units	119	119
Retail (m^2)	-	-
Offices	-	-
Low Impact Mixed Use		
Retail (m^2)	-	-
Resort		
Rooms	-	-
Education		
Students	-	-
Total Trips	**2168**	**2168**

Table 6: Trips generated by Tinley Manor Southbanks in 2026 (10 year horizon)

The traffic volumes shown above are illustrated in Figure 8 hereafter. These traffic volumes will be added to the traffic generated by the adjacent developments of Seaton Delaval, Palm Lakes and Nkwazi and analysed in the 10 year horizon (2026).



aurecon Leading. Vibrant. Global.	TRAFFIC GENERATED BY TINLEY MANOR SOUTHBANKS IN 2026 (10 YEAR HORIZON) Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 8
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

Figure 8: Traffic generated by Tinley Manor Southbanks in 2026 (10 year horizon)

8.3 Traffic Generated by Seaton Delaval

The traffic volumes for the "Proposed Seaton Delaval development near Sheffield beach, KZN" traffic impact assessment report produced by BCP Engineers in October 2007 were extracted and summarised as shown below. These traffic volumes will be included in the analysis that will be undertaken in this chapter. A 10 % reduction was applied on all trips generated due to the envisaged public transport improvements. The following table shows the total traffic volumes generated by Seaton Delaval onto the external road network.

TRIP ORIGIN / END	AM		PM	
	IN	OUT	IN	OUT
To / from South via N2	48	97	97	48
To / from Umhlali via P474	3	7	7	4
To / from Salt Rock via P330	7	13	14	7
To / from North via N2	7	14	15	8

Table 7: Seaton Delaval Traffic in 2026 (10 year)

The traffic volumes shown above are illustrated in Figure 9 below.

8.4 Traffic Generated by Palm Lakes

The traffic volumes for the Palm Lakes development as extracted and summarised from the "Proposed Multi–Node Commercial and Residential Development – Palm Lakes" traffic impact assessment report, produced by MMC Engineers in 2005, is shown below. A 10 % reduction factor was applied on all trips generated due to the envisaged public transport improvements. The following table show the total traffic volumes generated by Palm Lakes onto the external road network.

	DIRECTION	ROUTE	AM PEAK HOUR		PM PEAK	
			In	Out	In	Out
Palm Lakes Residential Estate and Corporate Park	NORTH	MR467 - P228 - N2	10	10	10	10
	SOUTH	MR467 - P228 - N2	12	8	9	12
	WEST	MR467 - MR2	296	249	249	296

Table 8: Palm Lakes Residential Estate & Corporate Park Traffic Volumes in 2026 – 10 year horizon (56% completion)

	DIRECTION	ROUTE	AM PEAK HOUR		PM PEAK HOUR	
			IN	OUT	IN	OUT
Forest Lakes Office park	WEST	MR467 through the N2 interchange	235	61	61	235

Table 9: Palm Lakes Forest Office Park Traffic Volumes in 2026 – 10 year horizon

The traffic volumes shown above are illustrated in Figure 10 hereafter.

8.5 Traffic Generated by Nkwazi

Data extracted and summarised from the "Traffic Impact Assessment for the Proposed Nkwazi Estate Mixed Use Development" produced by Africon in January 2009 is shown below. These traffic volumes will be included in the analysis that will be undertaken in this chapter. A 10 % reduction factor was applied on all trips generated due to the envisaged public transport improvements. The following table shows the total traffic volumes generated by Nkwazi onto the external road network.

DIRECTION	ROUTE	AM PEAK HOUR		PM PEAK HOUR	
		In	Out	In	Out
NORTH	MR228 – MR467	8	19	20	8
	MR228 – MR467 – MR2	32	77	78	33
	MR228 – P330 - N2	24	58	59	25
SOUTH	MR228 – P330 - N2	48	116	118	50
	MR228 – MR467 – MR2	24	58	59	25
EAST	MR228 – MR330	16	39	39	17
WEST	MR228 – MR330	8	19	20	8

Table 10: Nkwazi traffic volumes in 2026 (34%)

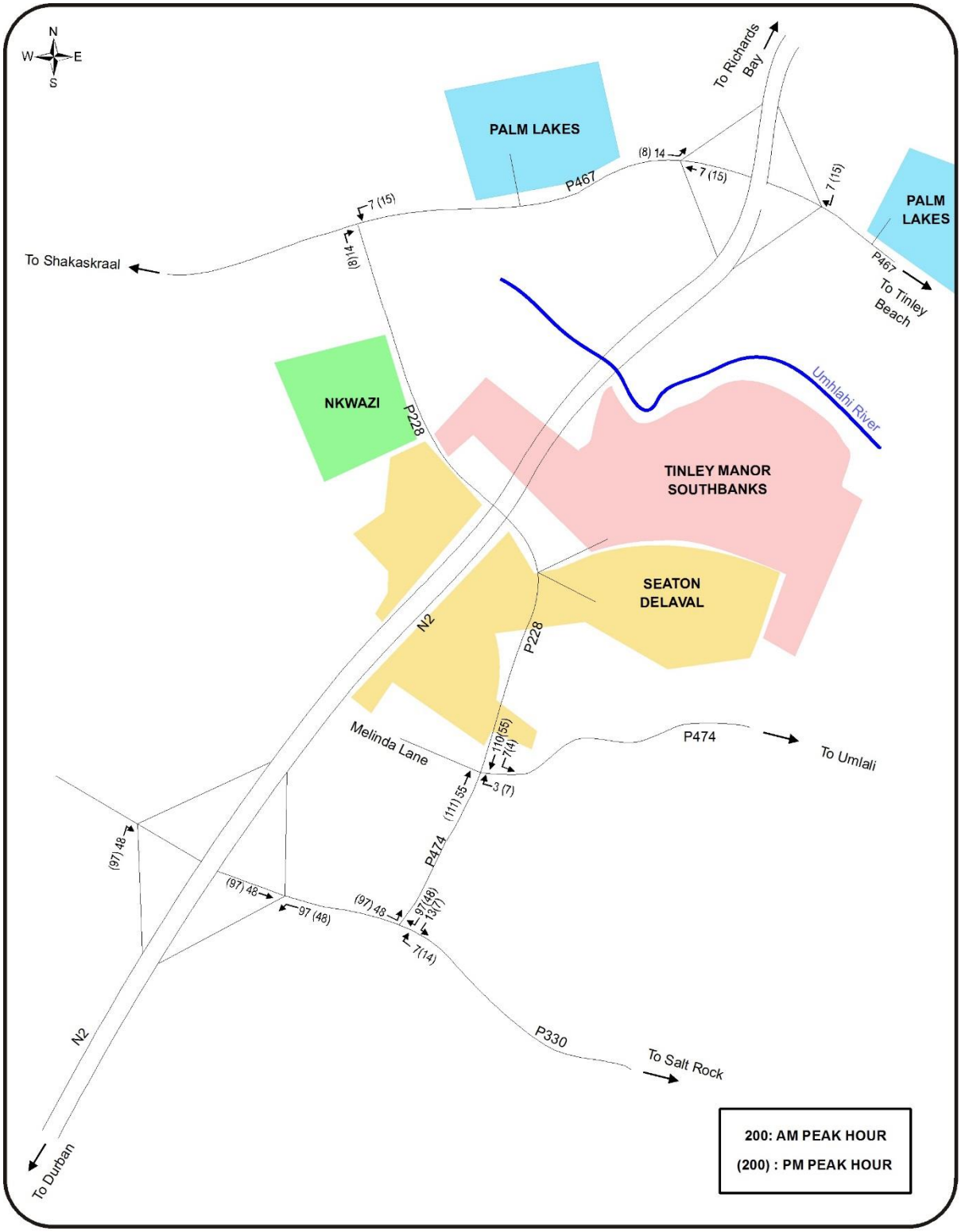
The traffic volumes shown above are illustrated in Figure 11 hereafter.

8.6 Link Upgrades in 2026 (10 year)

As mentioned earlier, it has been established from the TIA reports for the other developments in the area that road network will need to be improved as follows due to the envisaged increase in traffic volumes on the road network:

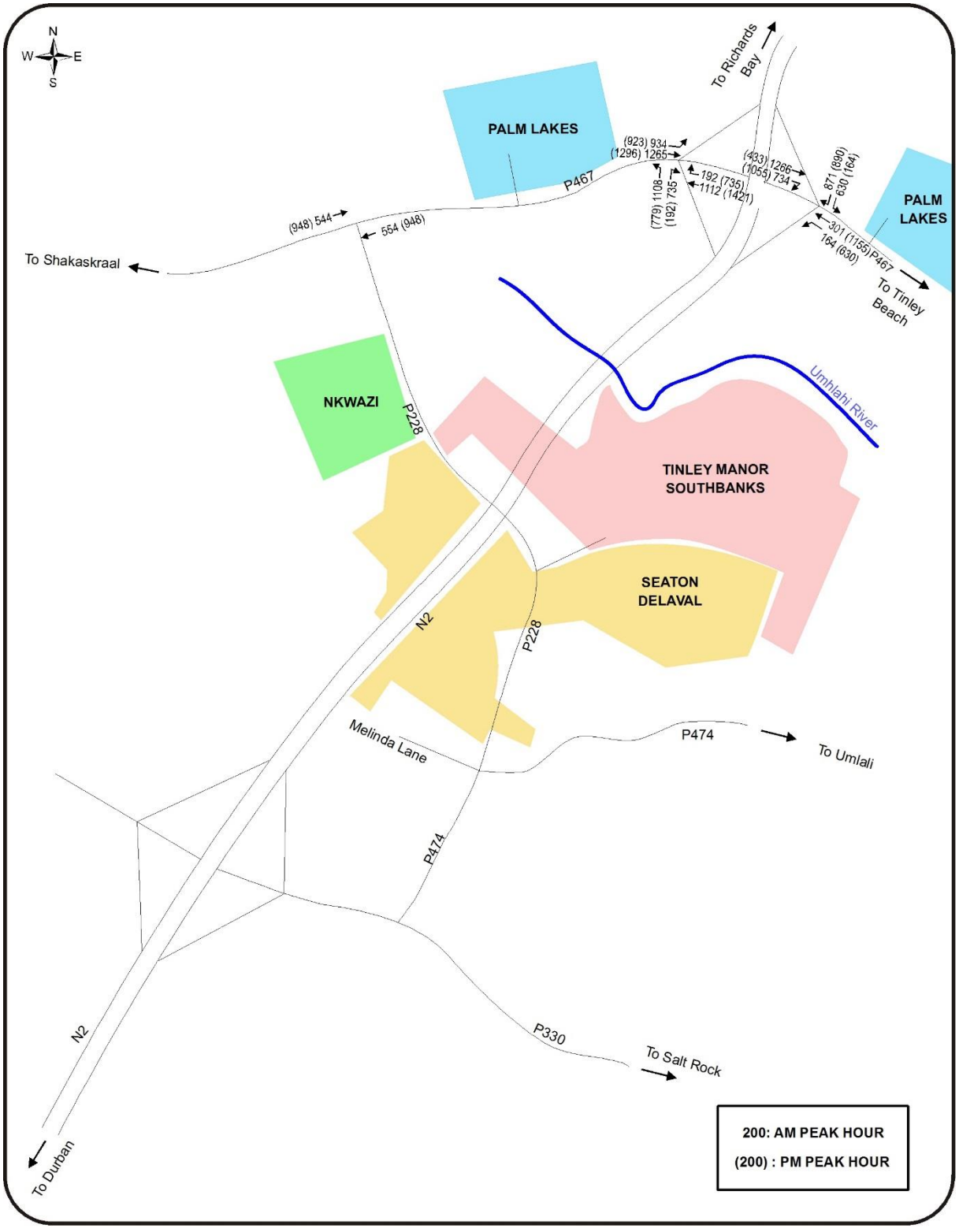
- P330 from the Salt Rock Interchange to the intersection of P330 will be upgraded from a two lane two way road to a 4 lane two way road.

The analysis of the 10 year horizon that was undertaken in this Chapter of the study was carried out on the basis that the above mentioned link would have been upgraded by 2026.



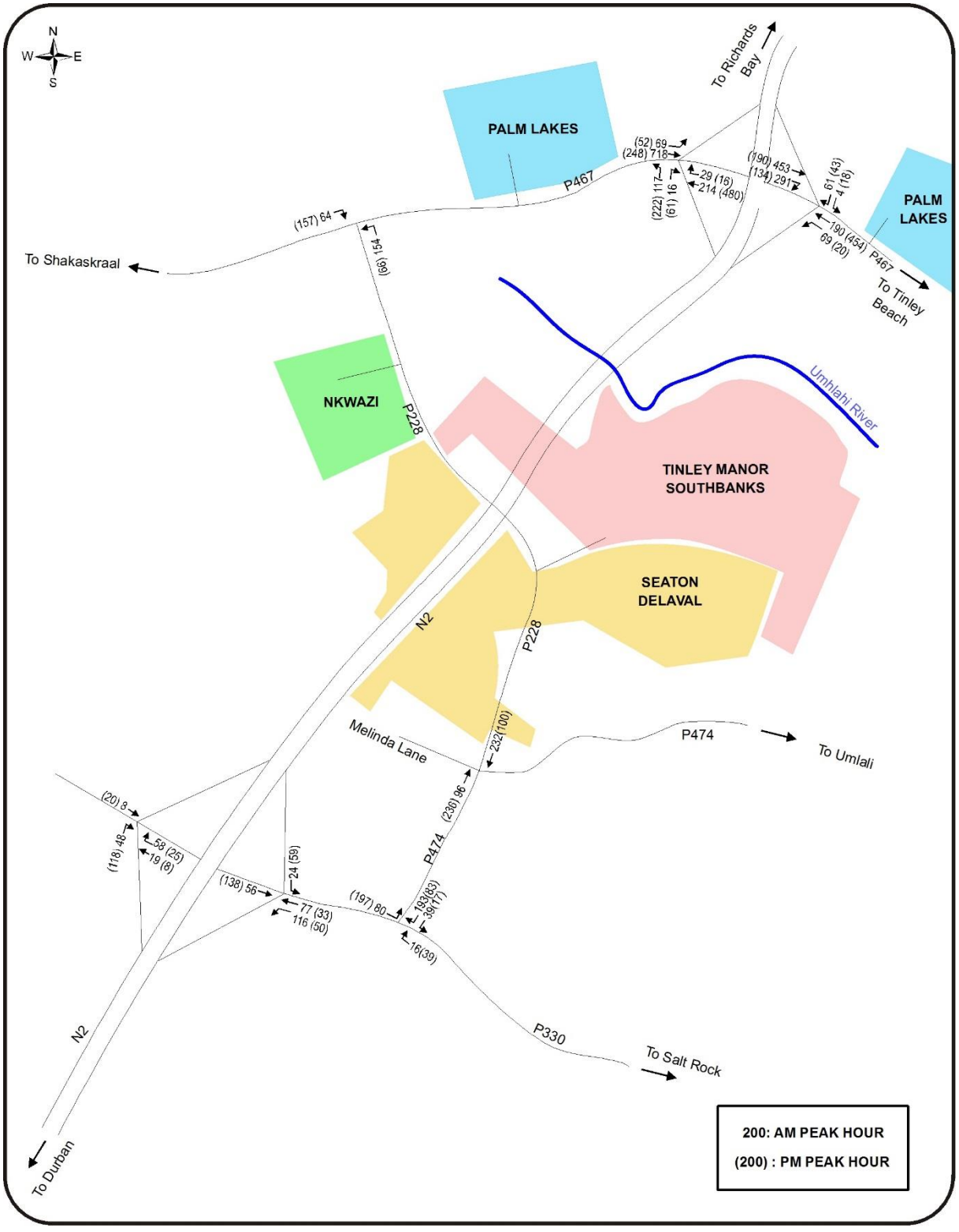
aurecon Leading. Vibrant. Global.	TRAFFIC GENERATED BY SEATON DELAVAL IN 2026 (10 YEAR HORIZON) Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 9
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

Figure 9: Traffic generated by Seaton Delaval in 2026 (10 year horizon)



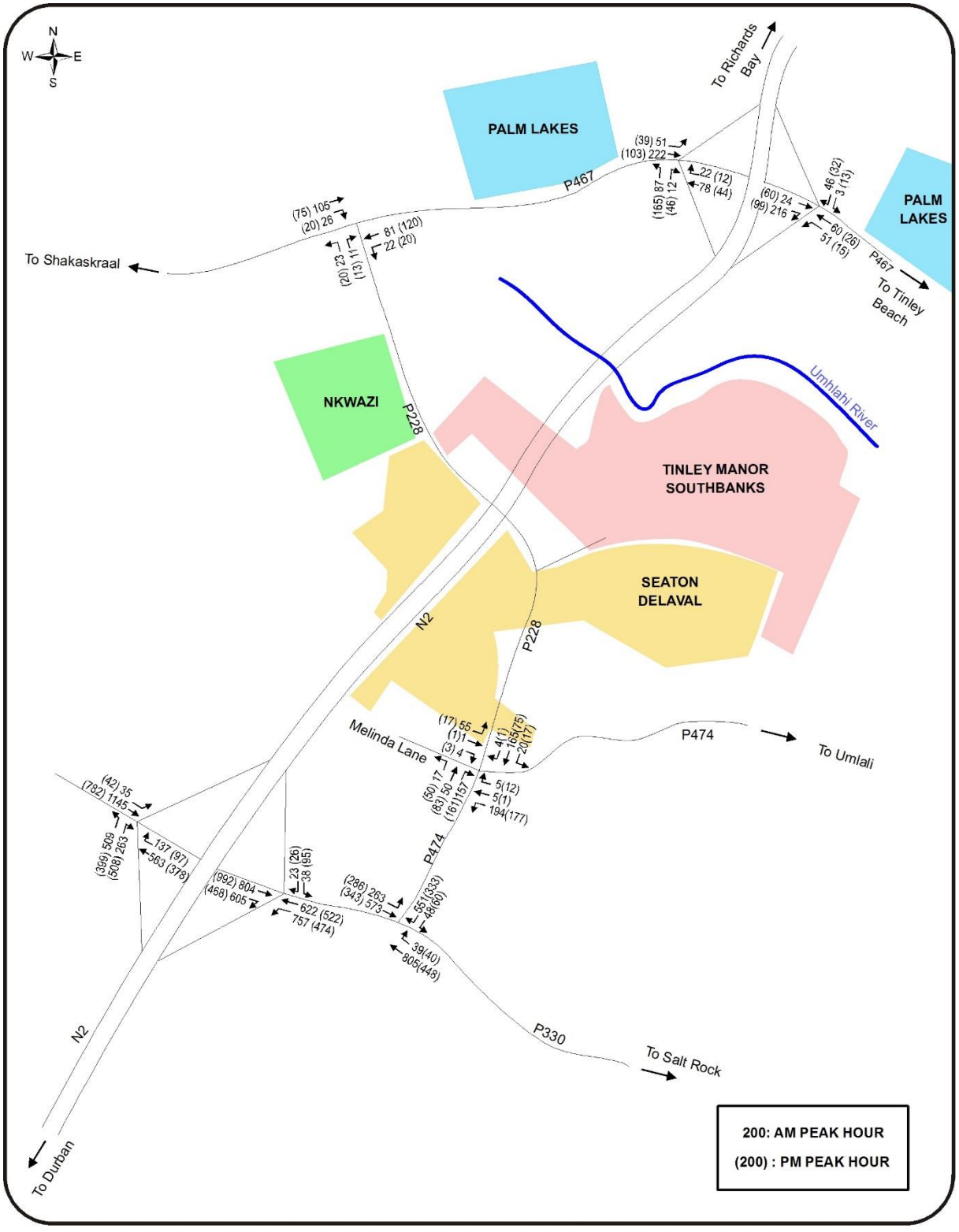
aurecon Leading. Vibrant. Global.	TRAFFIC GENERATED BY PALM LAKES IN 2026 (10 YEAR HORIZON) Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 10
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

Figure 10: Traffic generated by Palm Lakes in 2026 (10 year horizon)



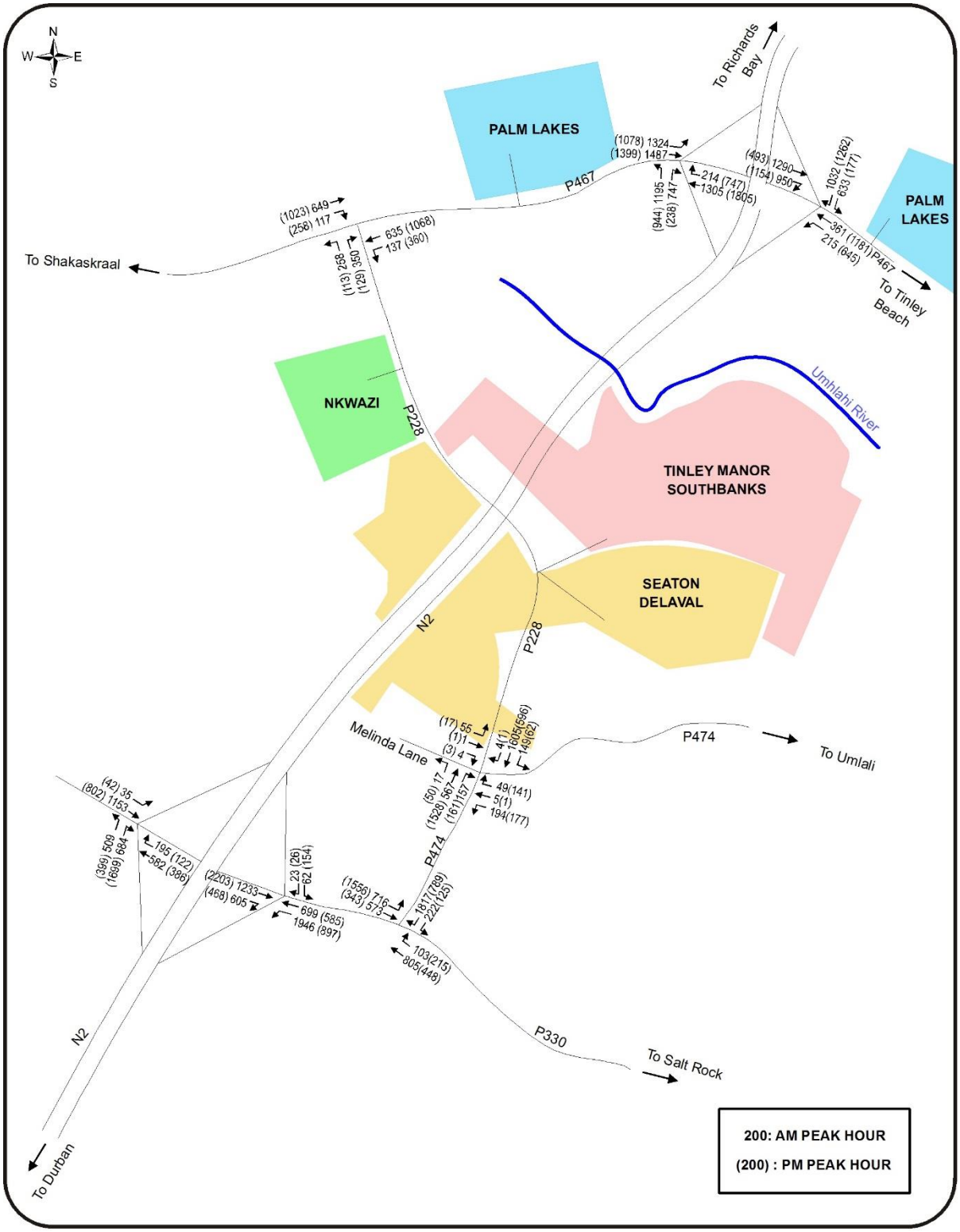
aurecon Leading. Vibrant. Global.	TRAFFIC GENERATED BY NKWAZI IN 2026 (10 YEAR HORIZON) Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 11
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

Figure 11: Traffic generated by Nkwazi in 2026 (10 year horizon)



aurecon Leading. Vibrant. Global.	10 YEAR FORECAST ON THE EXISTING AM & PM PEAK HOUR TRAFFIC VOLUMES Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 12
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

Figure 12: 10 year forecast on the existing traffic volumes

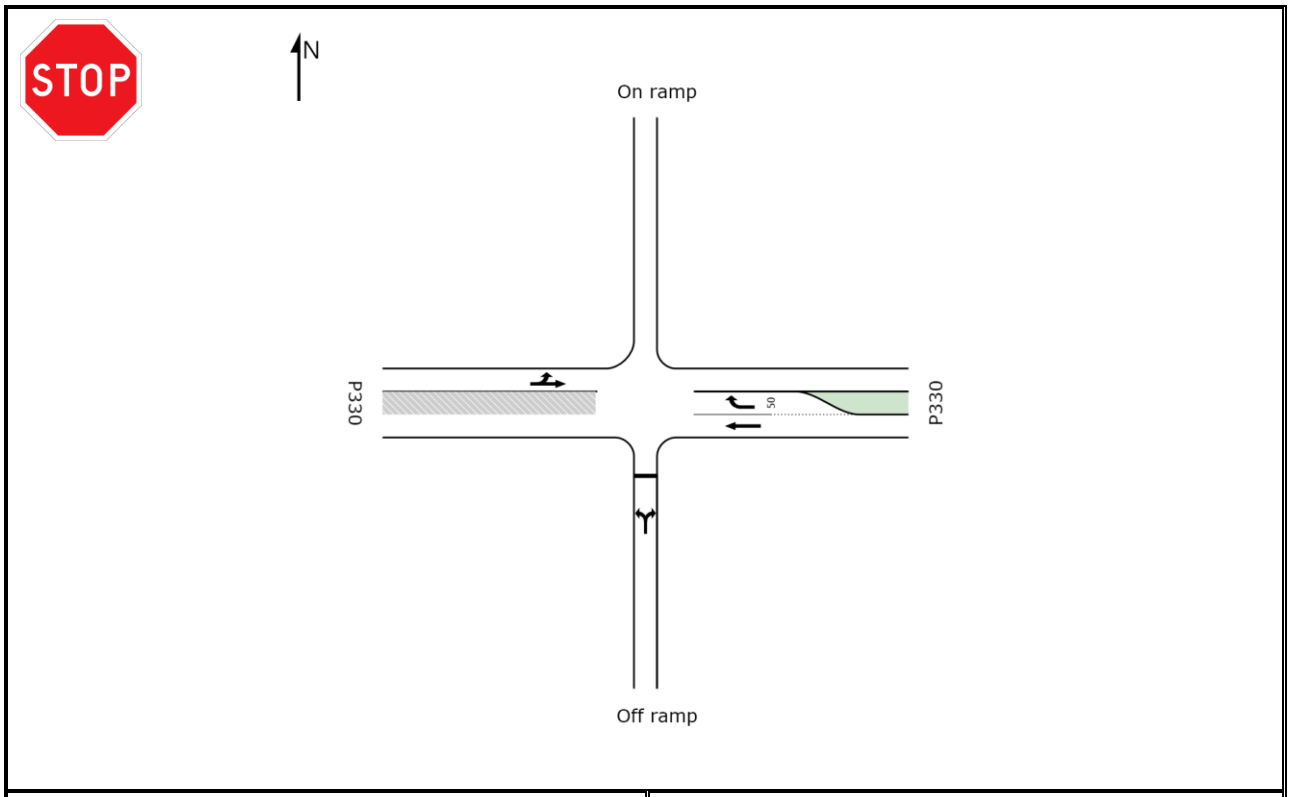


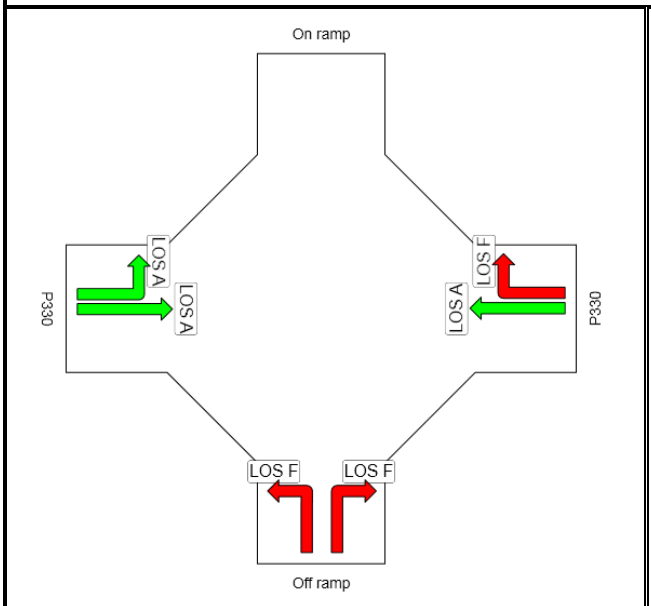
aurecon Leading. Vibrant. Global.	10 YEAR BACKGROUND PLUS ALL DEVELOPMENTS GENERATED TRAFFIC Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 13
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

Figure 13: Traffic generated by all major developments in 2026 (10 year horizon) plus background traffic

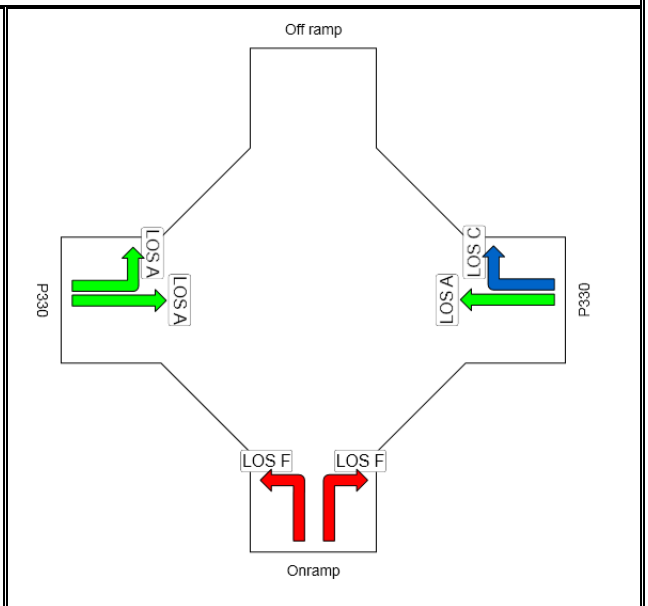
8.7 SIDRA Intersection Analysis

8.7.1 P330 (Salt Rock Road) / N2 Interchange – Western Ramp Intersection





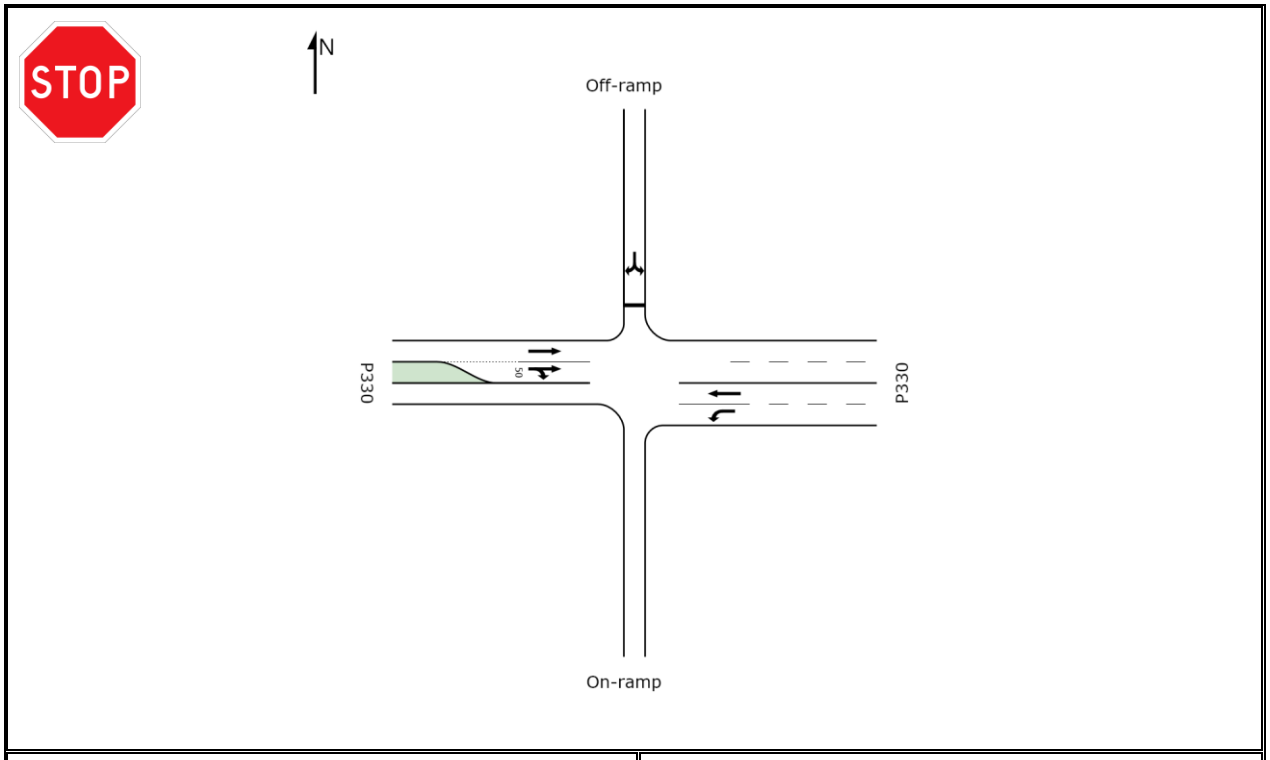
AM Peak Hour LOS

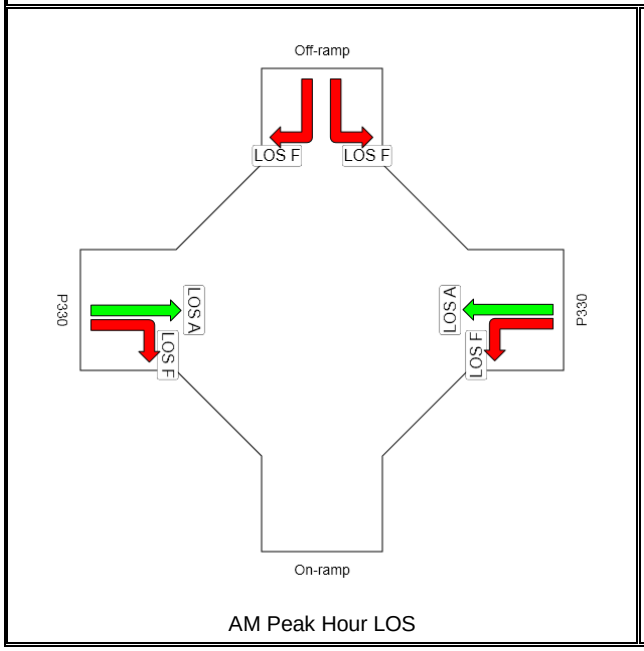


PM Peak Hour LOS

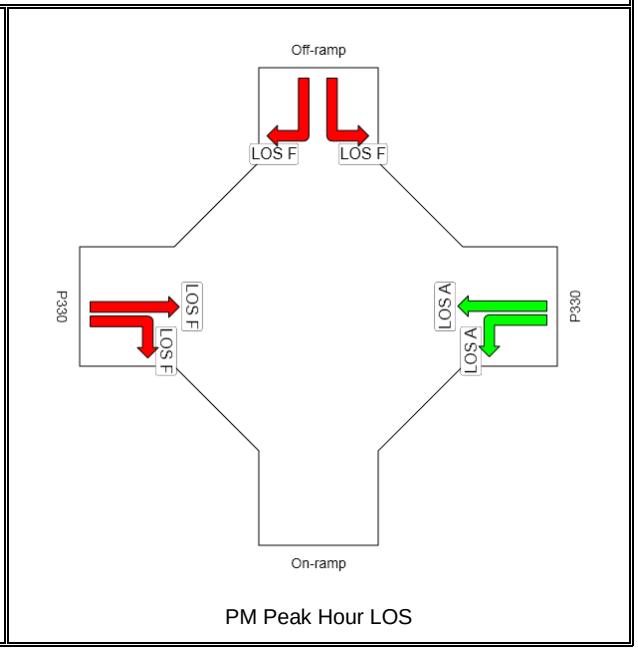
It is evident both peak hours, the level of service on the northbound off ramp is F for both the left and right turn movements while the through movements on P330 are operating at very good levels of service. This is fairly typical of a priority junction where there are high volumes on the through road. The AM LOS F and PM LOS F exhibit long queue lengths and indicates that this intersection will not have the capacity to handle the development generated traffic in the 10 year horizon.

8.7.2 P330/N2 Interchange – Eastern Ramp Intersection





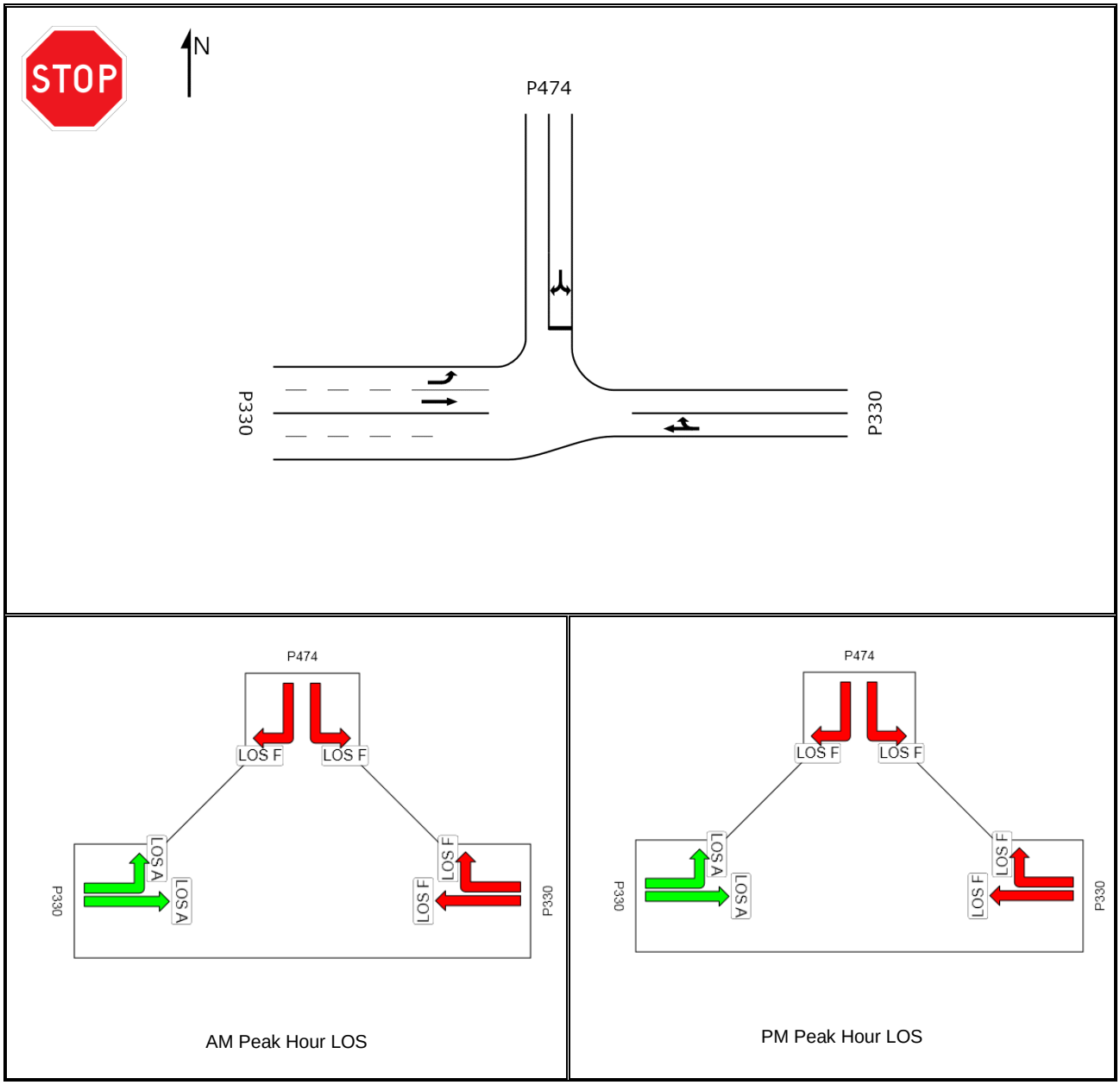
AM Peak Hour LOS



PM Peak Hour LOS

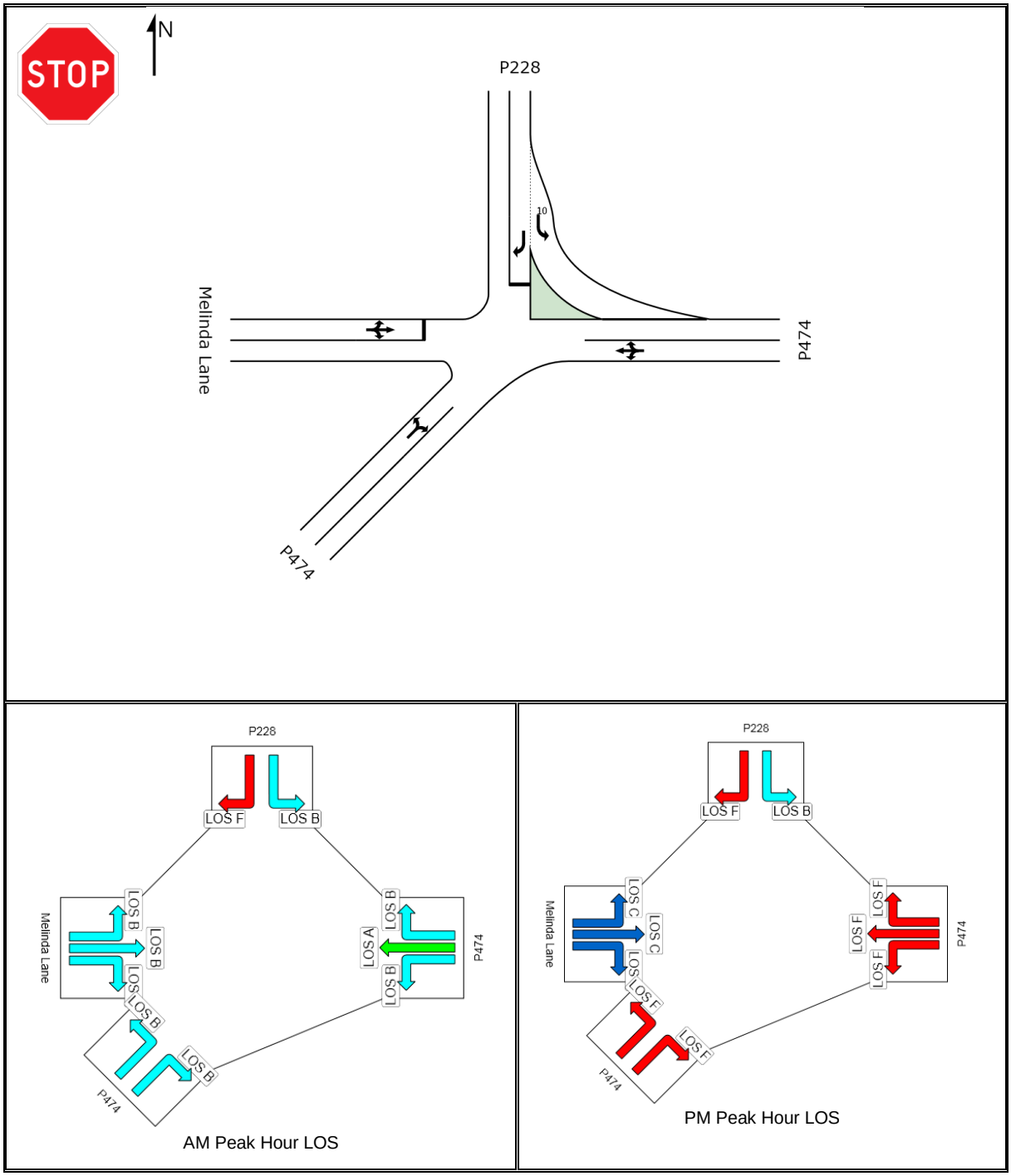
It is evident that this intersection will encounter severe congestion in the AM and PM peak hours. Unacceptable delays and queue lengths will be encountered. This intersection will not accommodate the development generated in 2026 horizon.

8.7.3 P330 / P474 Intersection



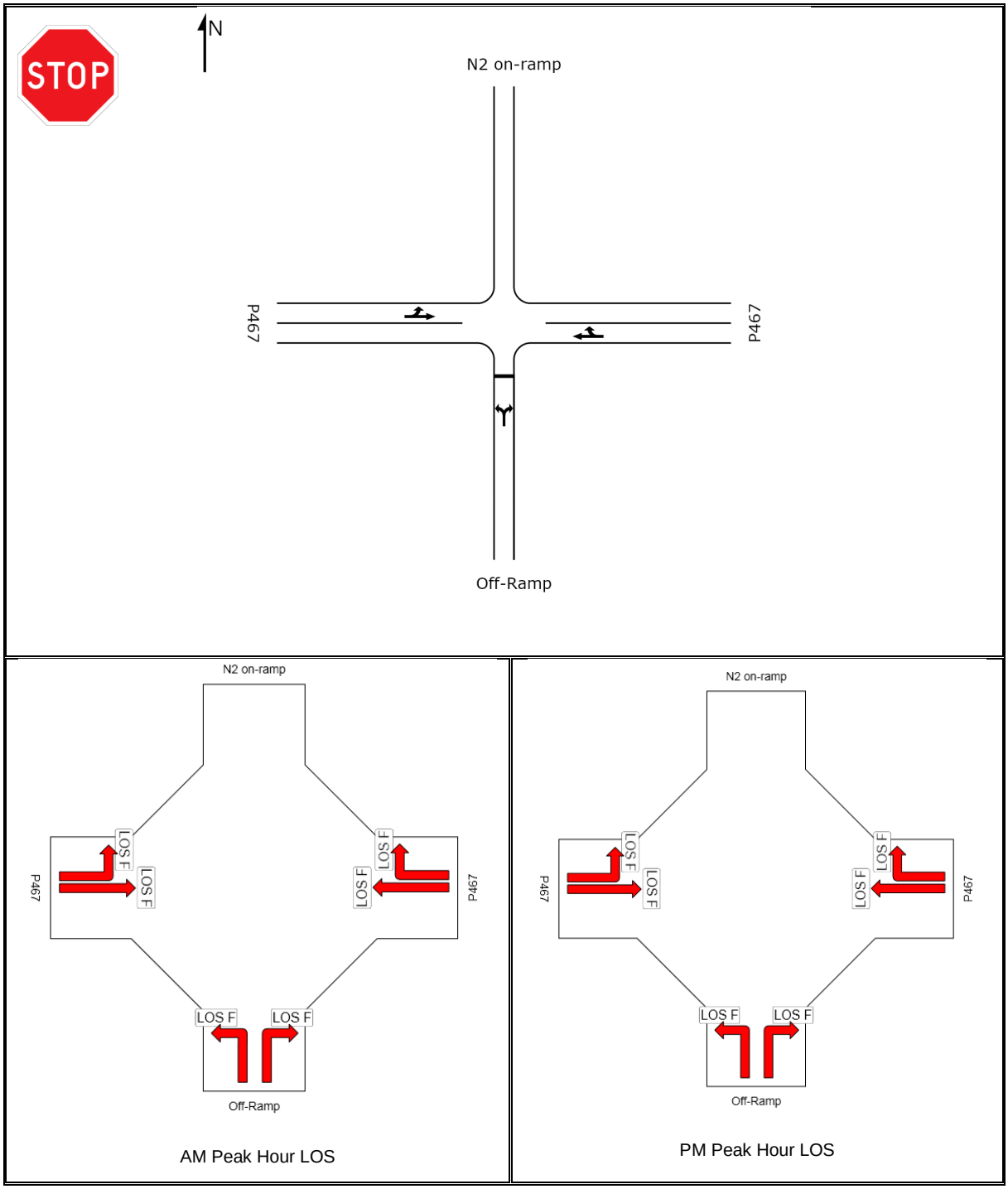
It is evident that this intersection will encounter severe congestion in the AM and PM peak hours. Unacceptable delays and queue lengths will be encountered. This intersection will not accommodate the development generated in 2026 horizon.

8.7.4 P474 / P228 Intersection



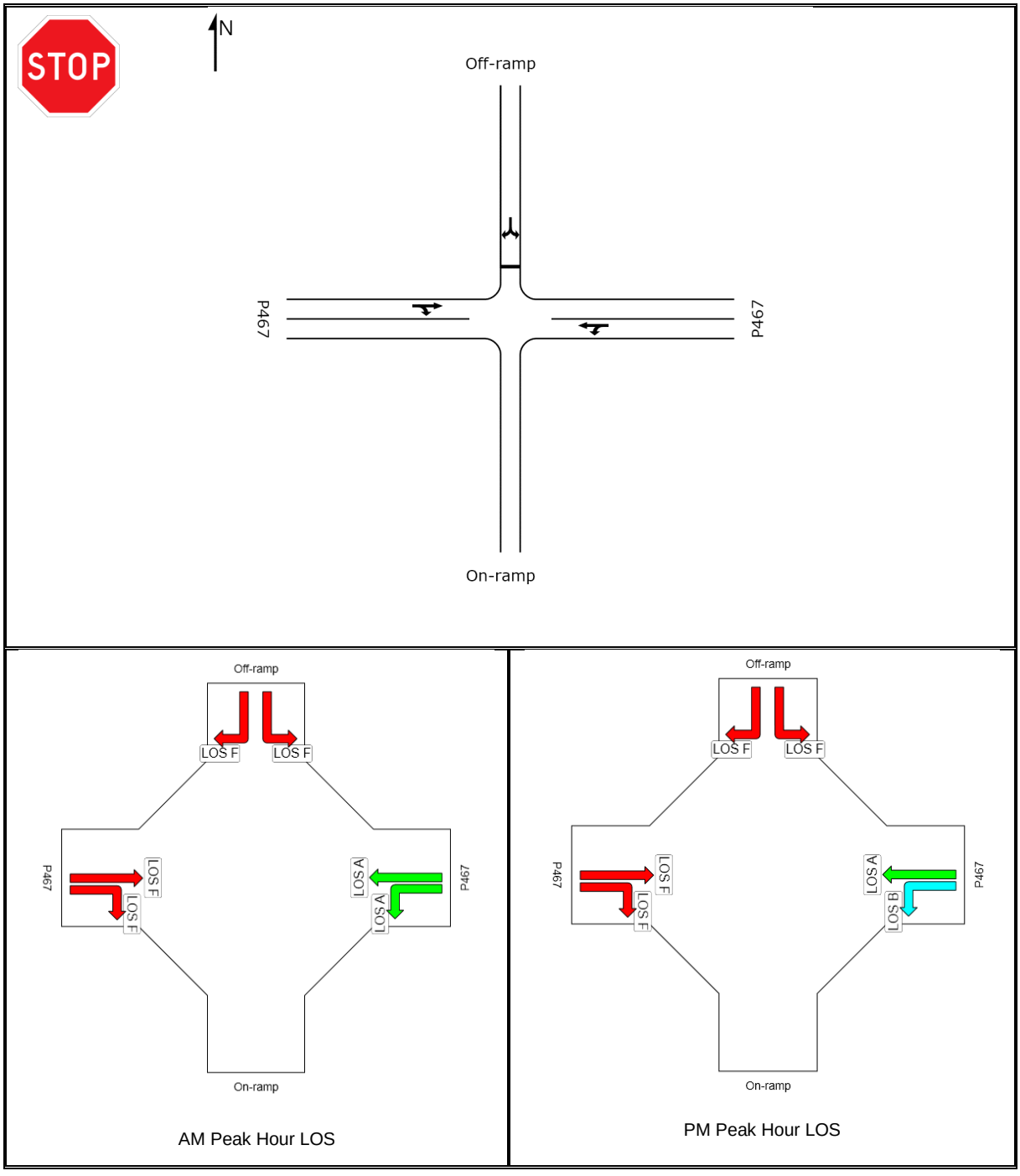
It can be seen that the right turning movement on the north leg of the intersection is operating at a LOS F in the AM and PM peak hours. All the other levels of service in the AM peak hour are good at this intersection. In the PM peak hour it can be seen that the south and east leg of the intersection are also operating at a LOS F. Therefore, this intersection will require upgrading in the 10 year horizon.

8.7.5 P467/N2 Interchange Western Ramp Intersection



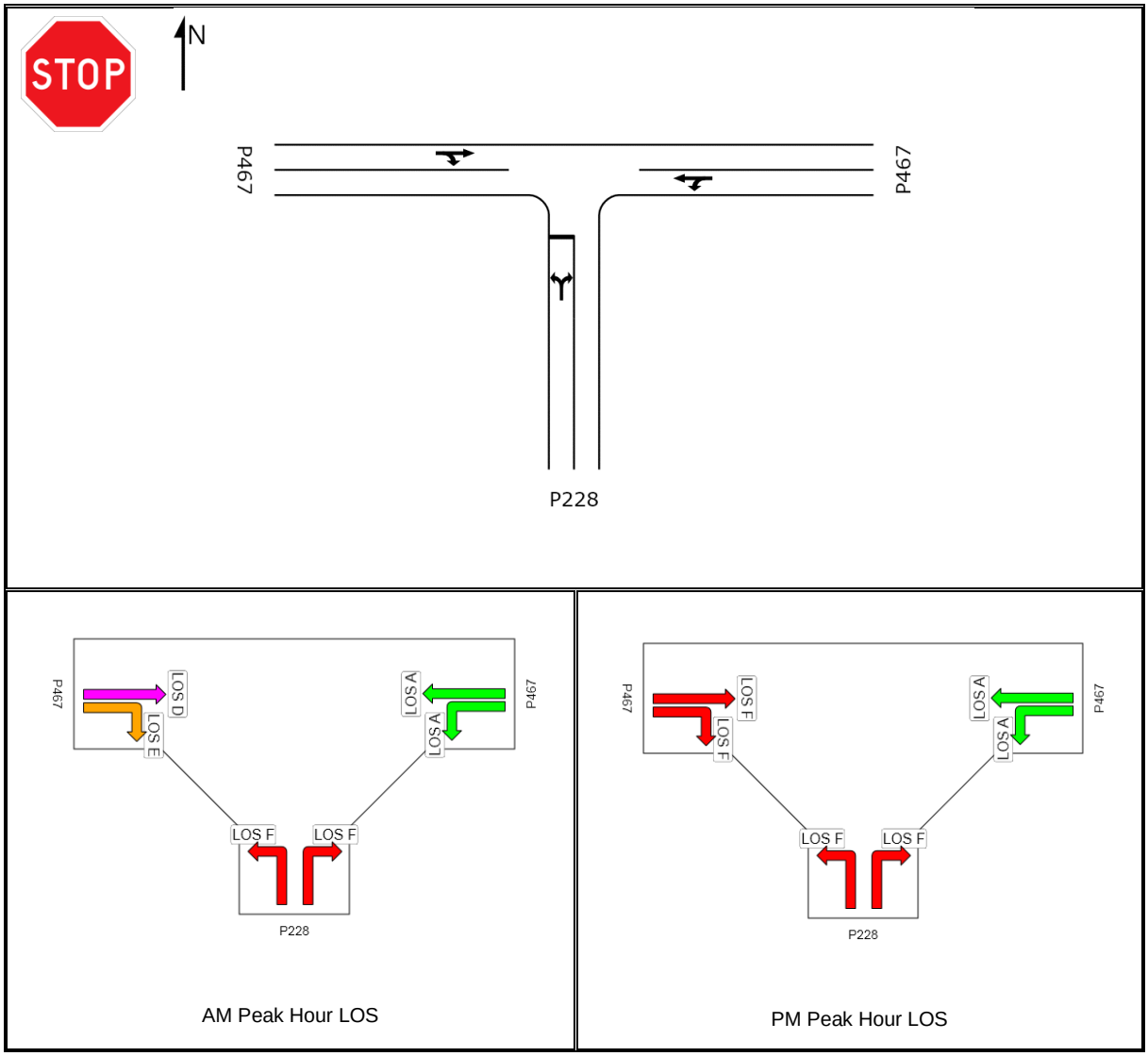
It can be seen that all the movements in both the AM and PM peak hours are operating at a LOS F. Therefore, this intersection will require major upgrading in the 10 year horizon.

8.7.6 P467/N2 Interchange Eastern Ramp Intersection



It can be seen that the north and west legs of the intersection are operating at LOS F for both the AM and PM peak hours. The east leg however shows good levels of service for both the AM and PM peak hours. Therefore, this intersection will require major upgrading in the 10 year horizon.

8.7.7 P228/P467 Intersection



AM Peak Hour LOS

PM Peak Hour LOS

It is evident that this intersection will encounter severe congestion in the AM and PM peak hours. Unacceptable delays and queue lengths will be encountered. This intersection will not accommodate the development generated in 2026 horizon.

9. Road Improvements Required in the 10 year Horizon (2026)

It is evident from the results of the analyses presented in Chapter 8 that the road network in its current form will not have the capacity to handle the additional trips that will be generated by the proposed developments within the sub region in the 2026 horizon. In mitigation of the envisaged congestion, Aurecon initially tested the introduction of minor road improvements but to no avail. Therefore, Aurecon introduced major road upgrades in the 2026 horizon in an effort to mitigate the envisaged congestion. The most notable major upgrade is the introduction of a new interchange on the N2 in the vicinity of Sheffield Beach. The need for this new interchange has already been confirmed by other studies in the area, as discussed hereafter.

As part of the DFA process for the development of Seaton Delaval, a Traffic Impact Assessment was carried out by Iliso Consulting in July 2004. The initial assessment recommended that an additional interchange on the N2 was required to service the anticipated traffic generated from Seaton Delaval and the other future developments in the area. As part of SANRAL's "Process for new interchange application" Iliso Consulting prepared a preliminary planning report which was included in the DFA report for the Seaton Delaval Development and approved in principal by SANRAL.

The principle of an additional interchange at km 14 on the N2 has been firmly established and this will clearly be to the benefit of all the developments within the sub region. The analysis undertaken in Chapter 8, show that in the 10 year horizon (2026), the local road network will be severely congested by the traffic generated by the proposed developments and due to the increase in background traffic volumes as well. Major upgrades will be required at all the intersections in the 10 year horizon if this proposed interchange is not constructed.

Shown hereafter is the Diamond Interchange that was proposed by UWP for Seaton Delaval as a short to medium term solution. Hence, the purpose of the chapter is to test the efficacy of the major upgrades on the road network which include the introduction of the new N2 interchange in the vicinity of Sheffield Beach.

The introduction of this new proposed interchange will mean the majority of the traffic generated by Tinley Manor will use this interchange to access the N2. The analysis of the Salt Rock interchange and the Tinley Manor interchange will hence be excluded from the study as they experience negligible traffic generated by Tinley Manor Southbank's. The analysis of these interchanges need to be carried out as a separate exercise from affected parties.

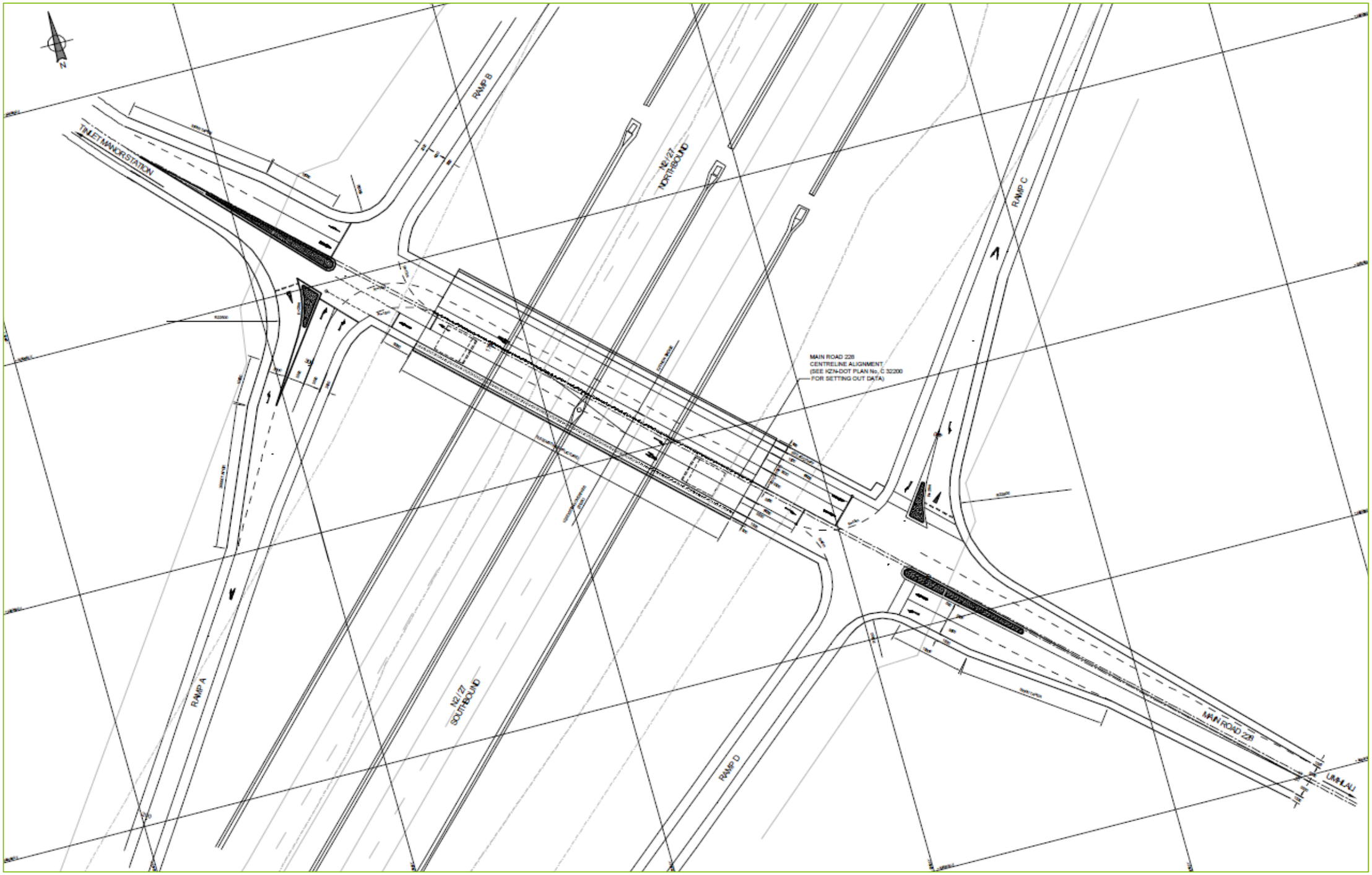


Figure 14: Layout of planned diamond interchange at km 14 on N2/27

9.1 Revised Trip Distribution with planned Sheffield Interchange

The introduction of the proposed Sheffield Interchange will bring about a change in local traffic patterns. Traffic from the four proposed developments Tinley Manor, Seaton Delaval and some traffic from Palm Lakes and Nkwazi will opt to use the new proposed interchange to access the N2 both for northbound and southbound travel. Furthermore, the traffic generated by Sheffield Manor has already been accounted for as the development was fully operational at the time the traffic counts were carried out. Hence the traffic generated by Sheffield Manor is already accounted for in the existing traffic counts carried out.

The “mini town” nature of these developments shows a similar traffic movement pattern. The following can be noted:

- The residential portion of the development will consist of high income households.
- A high percentage of external trips are daily commuter trips southbound on the N2 towards Ballito, King Shaka International and eThekwini, hence tidal flow out in the AM peak hour and back in the PM peak hour.
- A high percentage of all trips are internal trips, possibly not by vehicle, for people who live and work in the development. This is an increasing phenomenon, especially found in the upper income households which these developments target. Furthermore, the presence of retail and office space within the developments means an increased number of people will occupy this space without having to commute long distances to work.
- Different people will also opt to purchase holiday homes or holiday flats. These holidays homes will traditionally only be occupied for few weeks in a year. This means for the remaining time a negligible number of trips are generated by these households.
- Homes occupied by retired people will not generate traditional peak hour external trips. The majority of trips will be made during the off peak hour. Furthermore, with a large number of convenience and retail facilities within the development, these retired persons will often not leave the development for a few days at a time.

The above travel and trip generation patterns mean that access to and from the N2 will be priority for the traffic generated by these developments. The introduction of the proposed interchange and its close proximity to these developments as compared to the Salt Rock interchange and Tinley Interchange will mean that a negligible volume of traffic generated by these developments will use the existing Salt Rock interchange and Tinley Manor Interchange to access the N2 and will prefer to use the proposed new interchange to access the N2.

A small proportion of the trips generated by the developments are also expected to arrive from Umhlali and Salt Rock in the south. This traffic will use the P330 and P474 traversing eastbound from these towns and then north, parallel to the N2 on the P228. A minor number of trips are also expected to arrive from further inland in the west. This traffic will use the P467 and traverse eastbound over the N2 on the P228 and into the development.

Table 11 and Figure 15 hereafter shows the revised trip distribution for traffic generated by Tinley Manor Southbanks upon the introduction of the new proposed Sheffield diamond interchange.

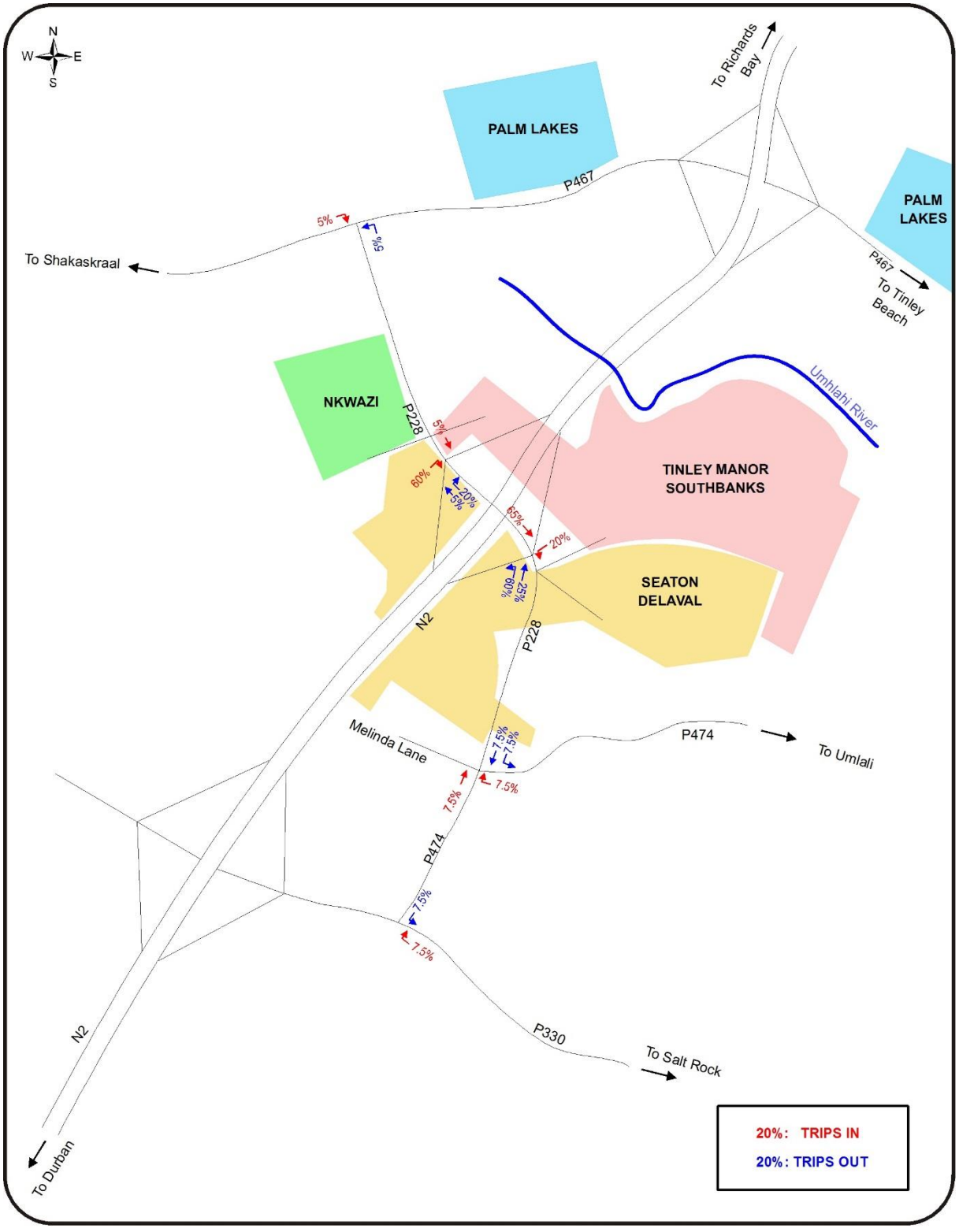
TRIP ORIGIN / END	Percent (%)
To / from South via N2	60 %
To / from Umhlali via P474	7.5 %
To / from Salt Rock via P330	7.5 %
To / from North via N2	20 %
To / from west via P228	5 %
Total	100 %

Table 11: Trip Distribution for the Tinley Manor South Banks Development

The introduction of this new proposed interchange will mean the majority of the traffic generated by Tinley Manor will use this interchange to access the N2. The analysis of the Salt Rock interchange and the Tinley Manor interchange will hence be excluded from the study as they experience negligible traffic generated by Tinley Manor Southbank's. The analysis of these interchanges need to be carried out as a separate exercise from affected parties.

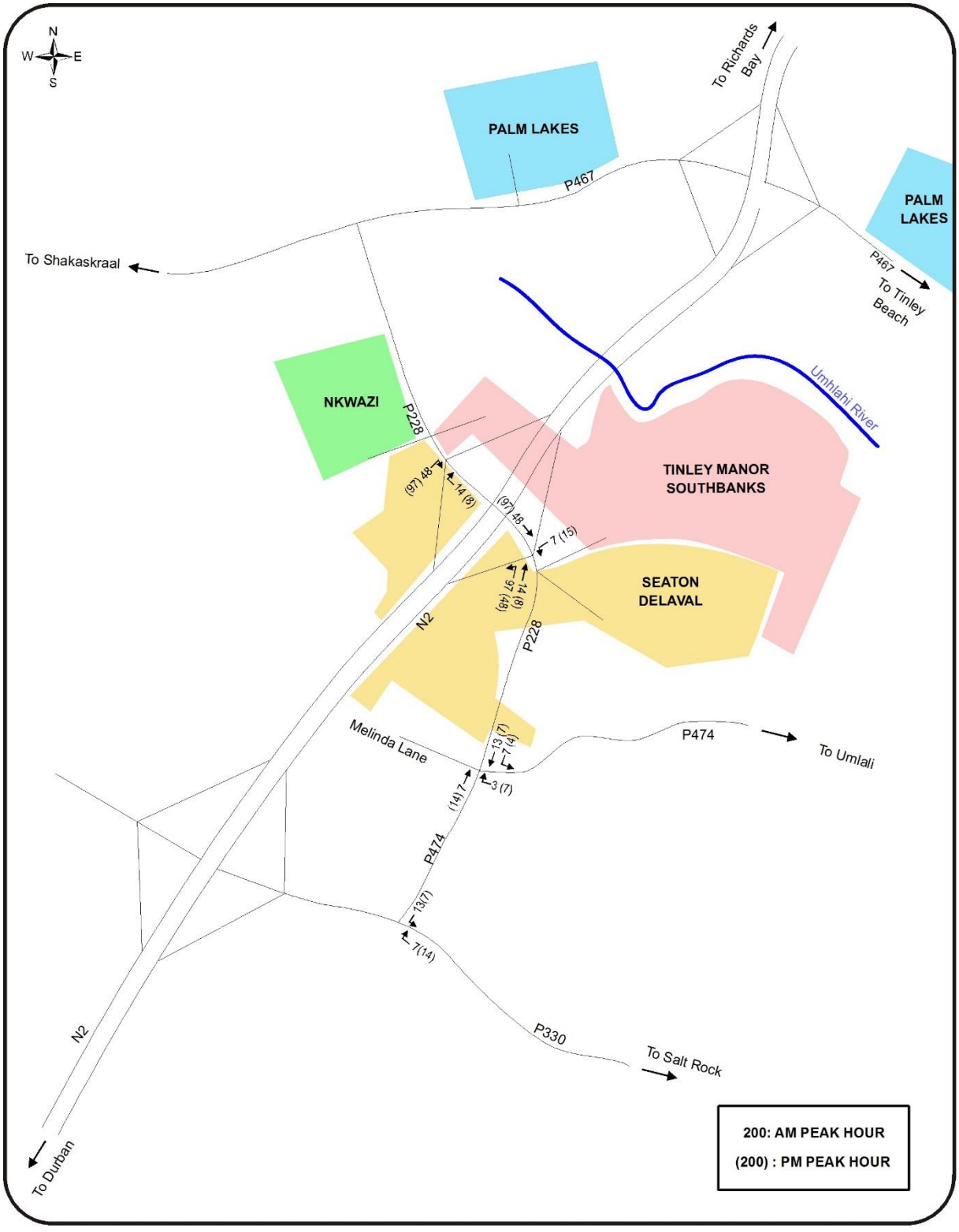
9.2 Traffic Analysis in 2026 (10 year horizon) with planned Interchange

The traffic generated by all major developments i.e. Tinley Manor South Banks, Seaton Delaval, Palm Lakes and Nkwazi in the 10 year horizon will be analysed following the introduction of the proposed Sheffield diamond interchange. Figures 16, 17 and 18 shows the revised trip assignment, as a result of the new interchange, for the Seaton Delaval, Palm Lakes and Nkwazi developments. Figure 19 shows the traffic generated by Tinley Manor Southbanks with the revised trip distribution.



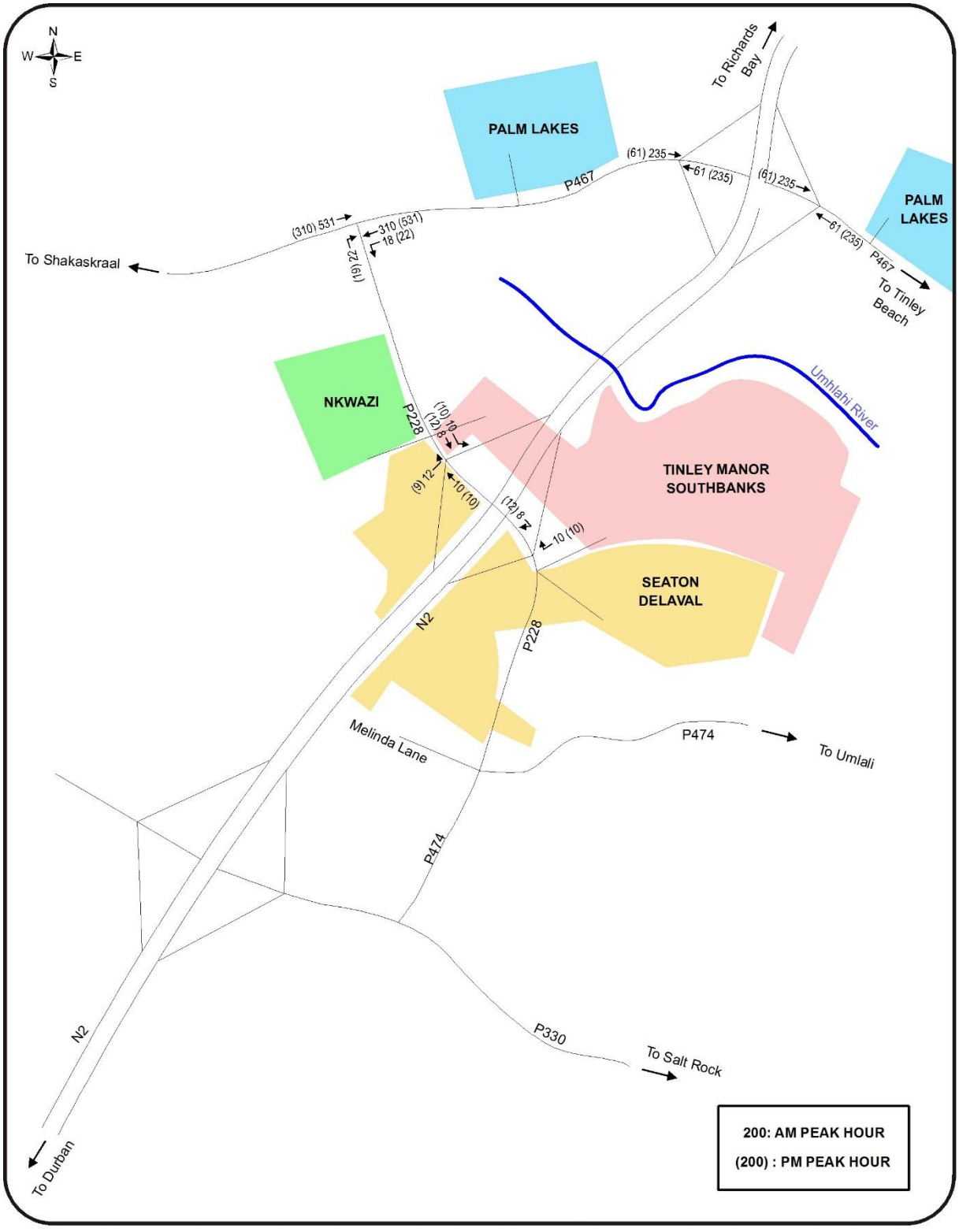
aurecon Leading. Vibrant. Global.	TRIP DISTRIBUTION OF TRAFFIC GENERATED BY TINLEY MANOR SOUTHBANKS WITH THE NEW INTERCHANGE Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 15
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

Figure 15: Revised Trip Distribution upon introduction of proposed Sheffield Interchange



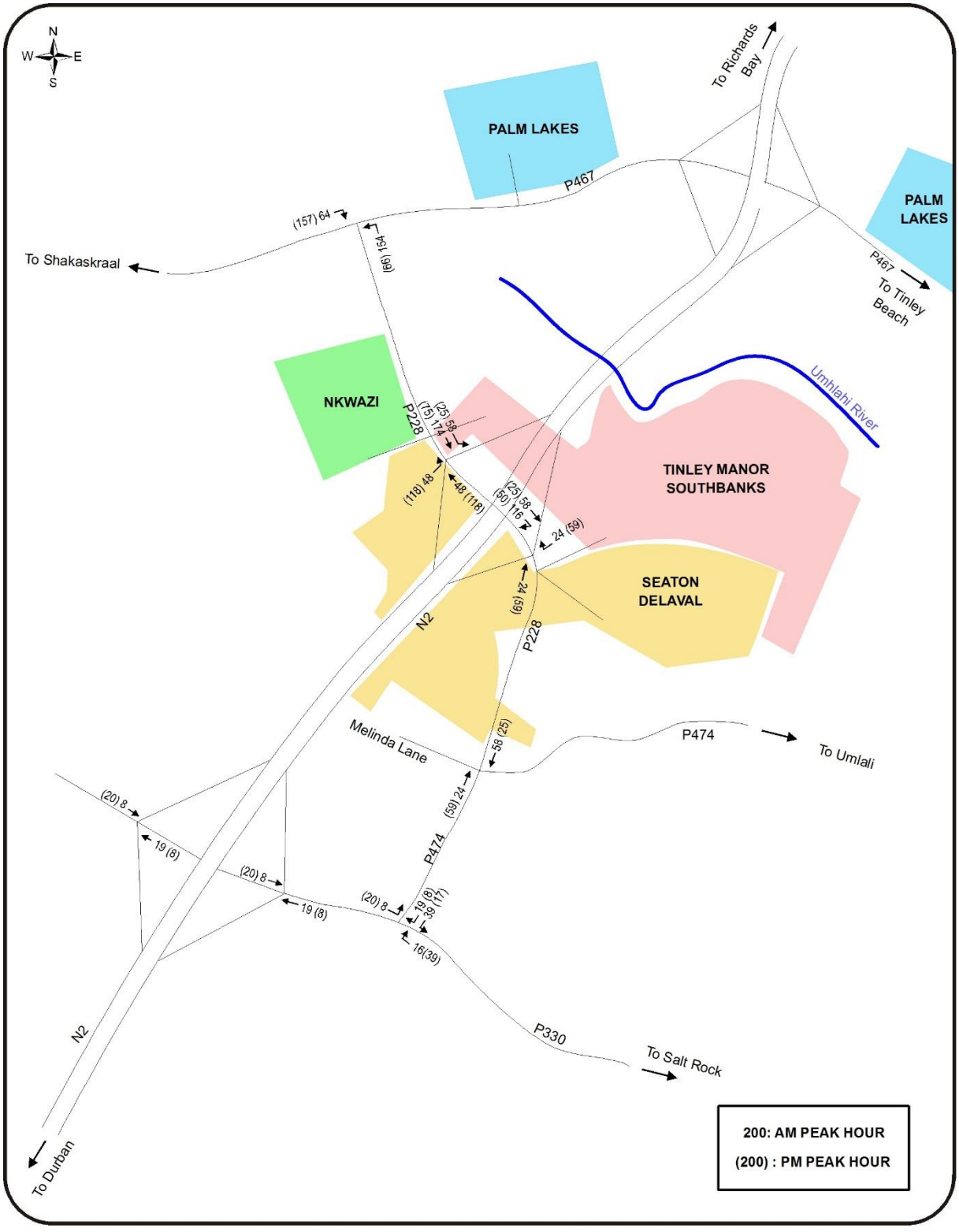
aurecon Leading. Vibrant. Global.	TRAFFIC GENERATED BY SEATON DELAVAL WITH THE PROPOSED INTERCHANGE IN 2026 (10 YEAR HORIZON) Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 16
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

Figure 16: Traffic generated by Seaton Delaval with proposed Sheffield interchange



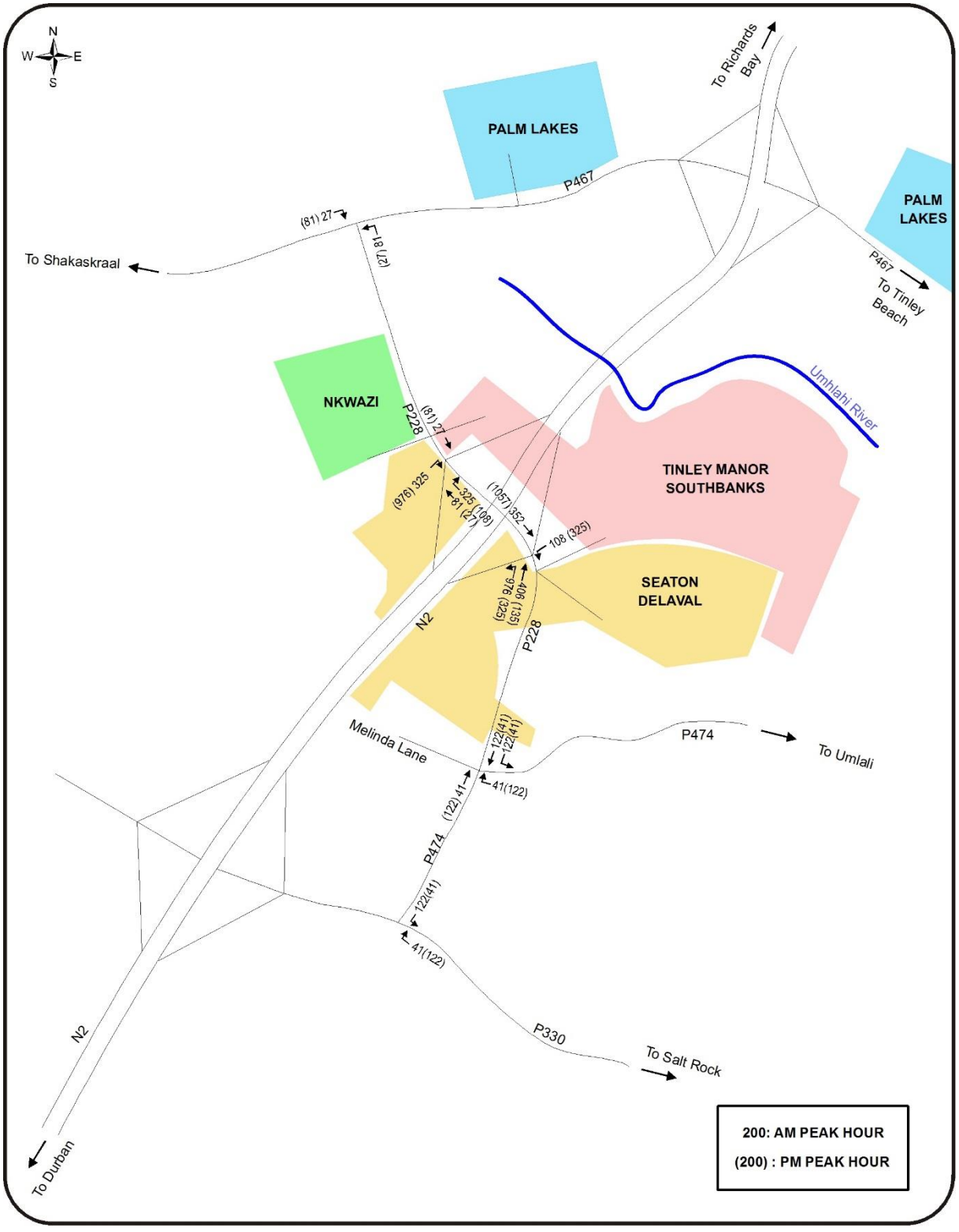
aurecon Leading. Vibrant. Global.	TRAFFIC GENERATED BY PALM LAKES WITH THE PROPOSED INTERCHANGE IN 2026 (10 YEAR HORIZON) Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 17
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

Figure 17: Traffic generated by Palm Lakes with proposed Sheffield interchange



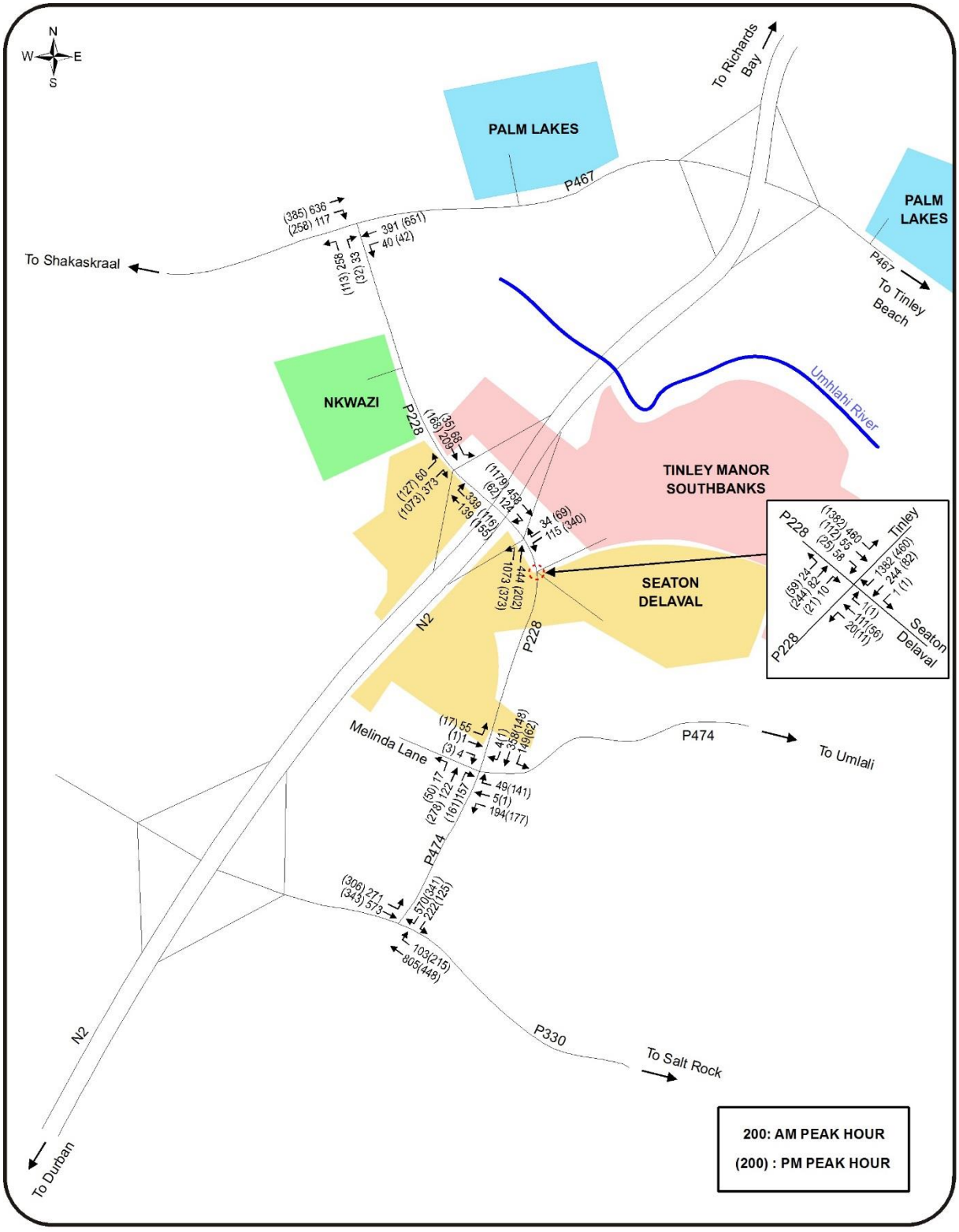
aurecon Leading. Vibrant. Global.	TRAFFIC GENERATED BY NKWAZI WITH THE PROPOSED INTERCHANGE IN 2026 (10 YEAR HORIZON) Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 18
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

Figure 18; Traffic generated by Nkwazi with proposed Sheffield interchange



aurecon Leading. Vibrant. Global.	TRAFFIC GENERATED BY TINLEY MANOR WITH THE PROPOSED INTERCHANGE IN 2026 (10 YEAR HORIZON) Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 19
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

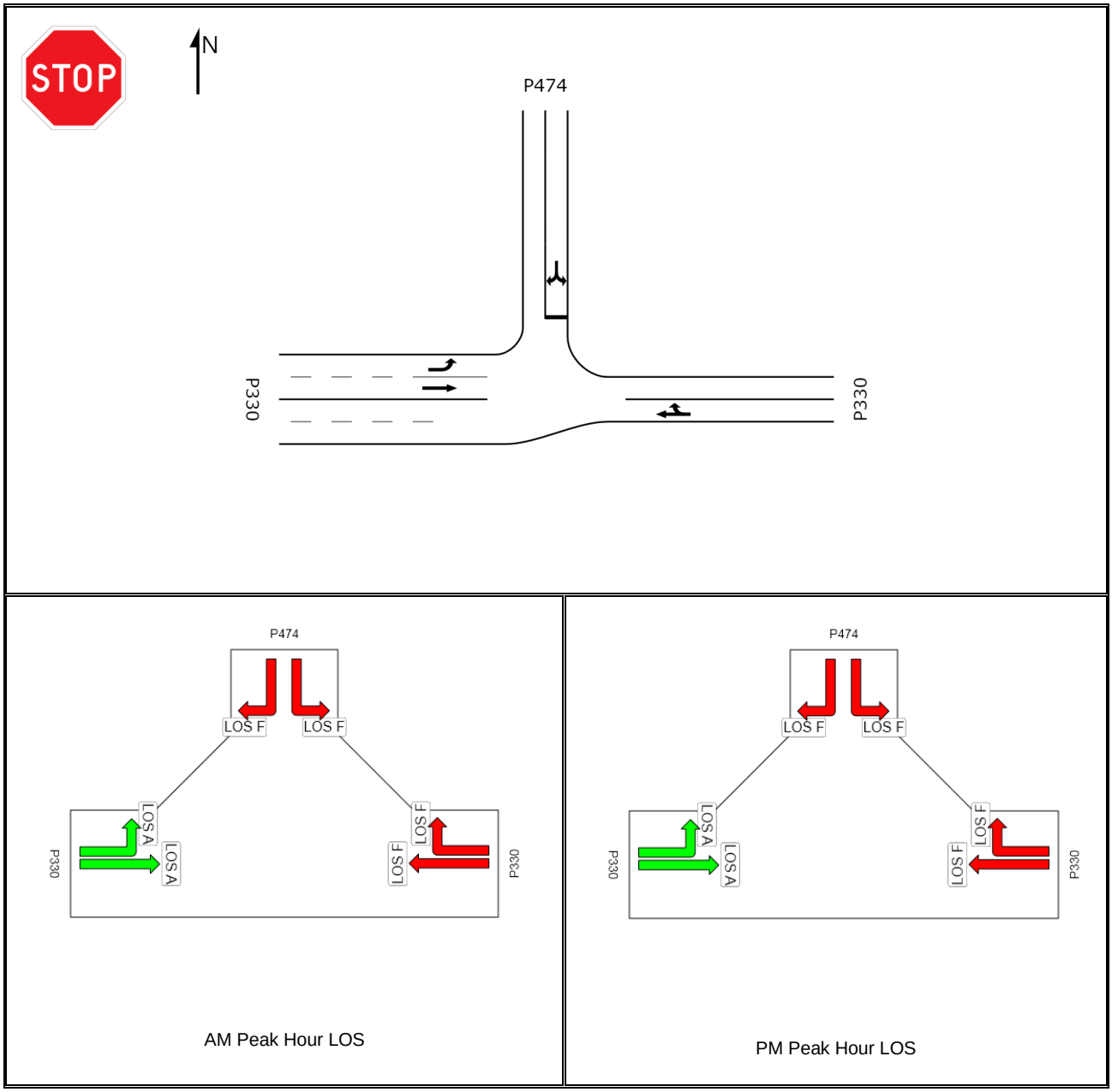
Figure 19: Trips generated by Tinley Manor Southbanks with proposed Sheffield Interchange



aurecon Leading. Vibrant. Global.	10 YEAR BACKGROUND PLUS ALL DEVELOPMENTS GENERATED TRAFFIC WITH PROPOSED INTERCHANGE Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 20
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

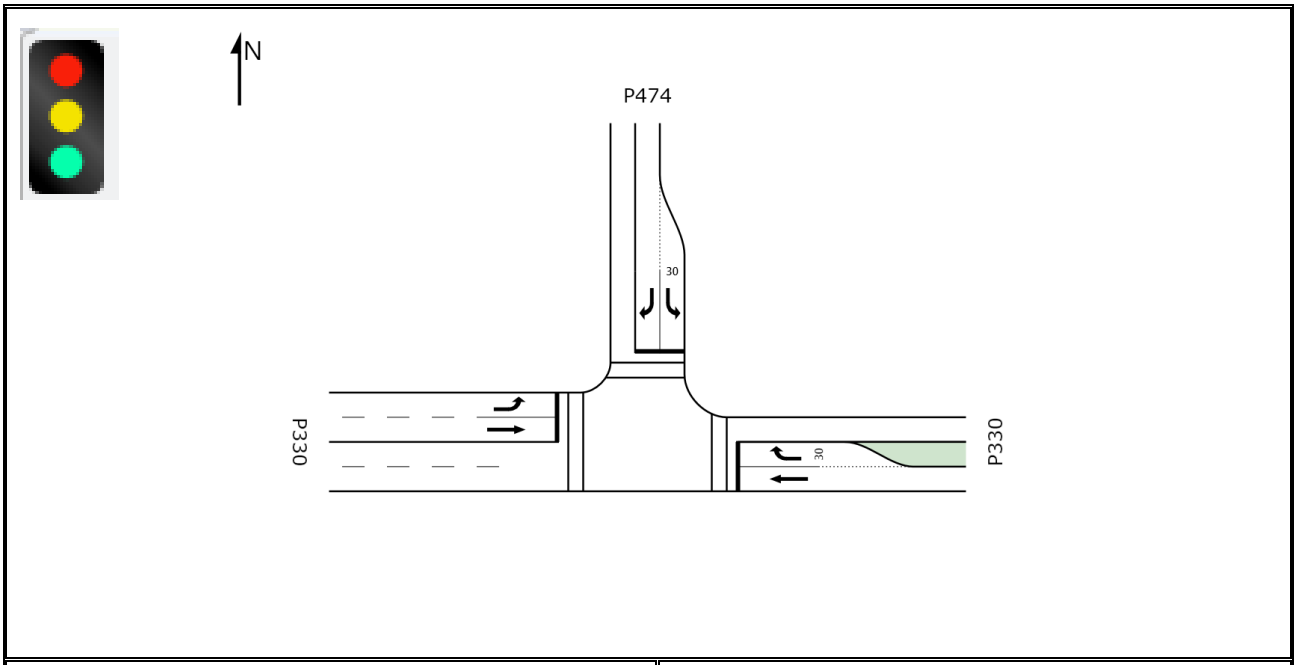
Figure 20: 10 year background traffic plus all developments generated traffic with new interchange

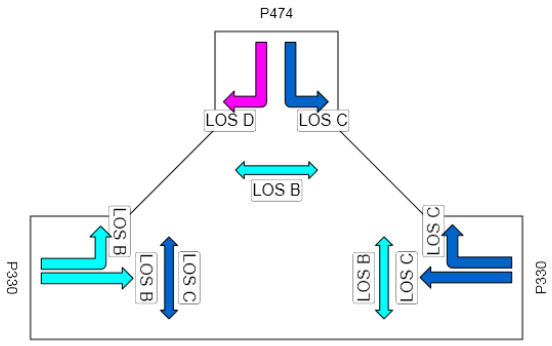
9.2.1 P330 / P474 Intersection



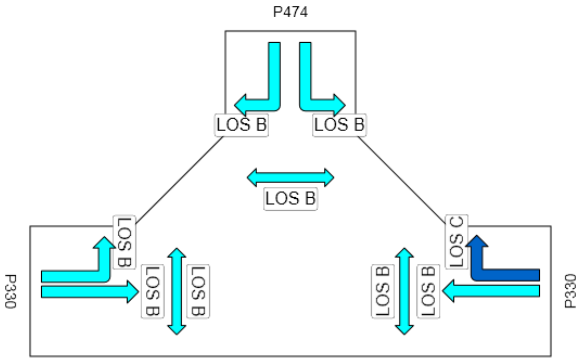
It is evident that several movements in both the AM and PM peak hours are operating at a LOS F. This intersection will require upgrading in the 10 year horizon. The upgrade required at this intersection are shown hereafter.

P330 / P474 Intersection - Upgrade





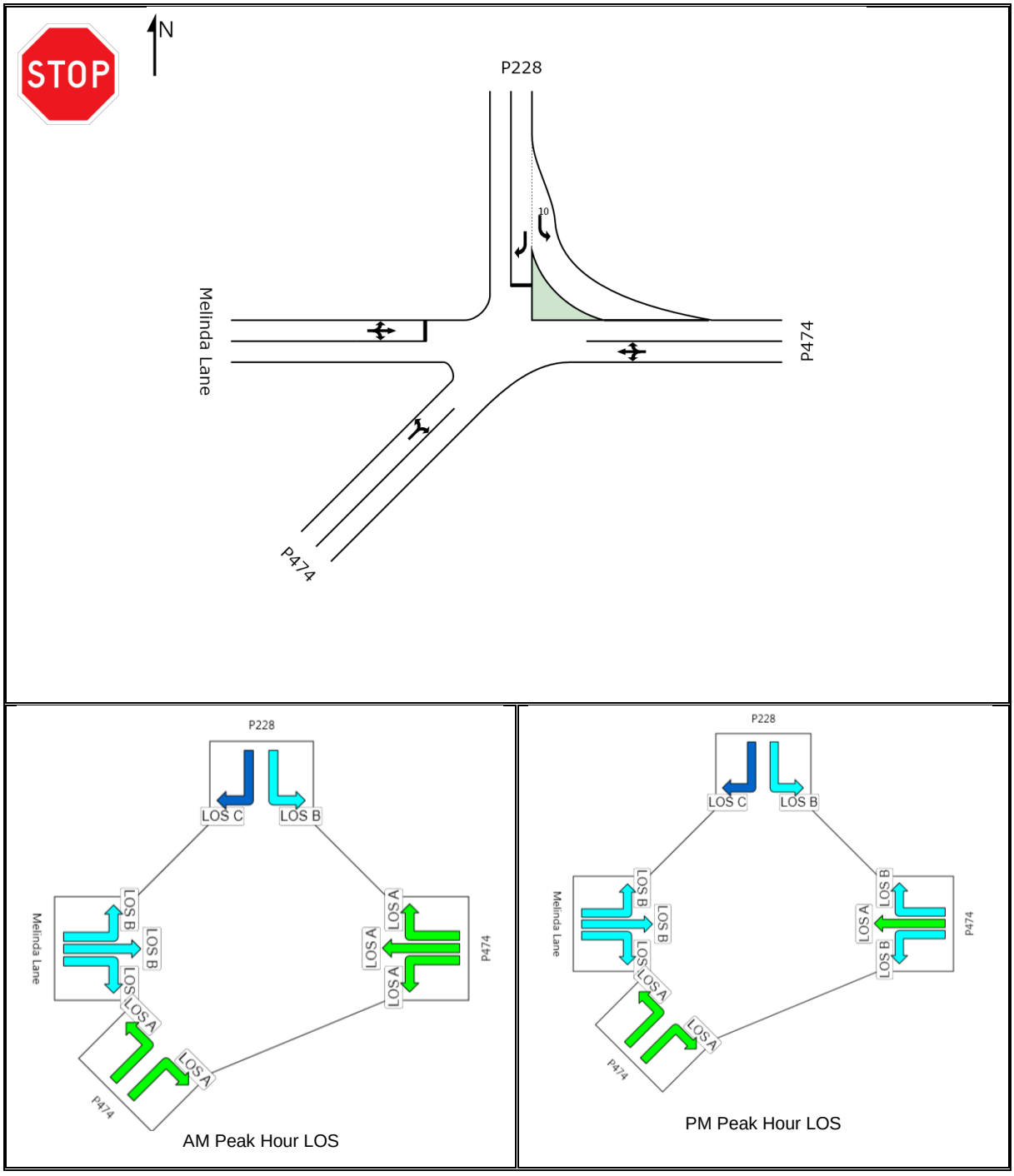
AM Peak Hour LOS



PM Peak Hour LOS

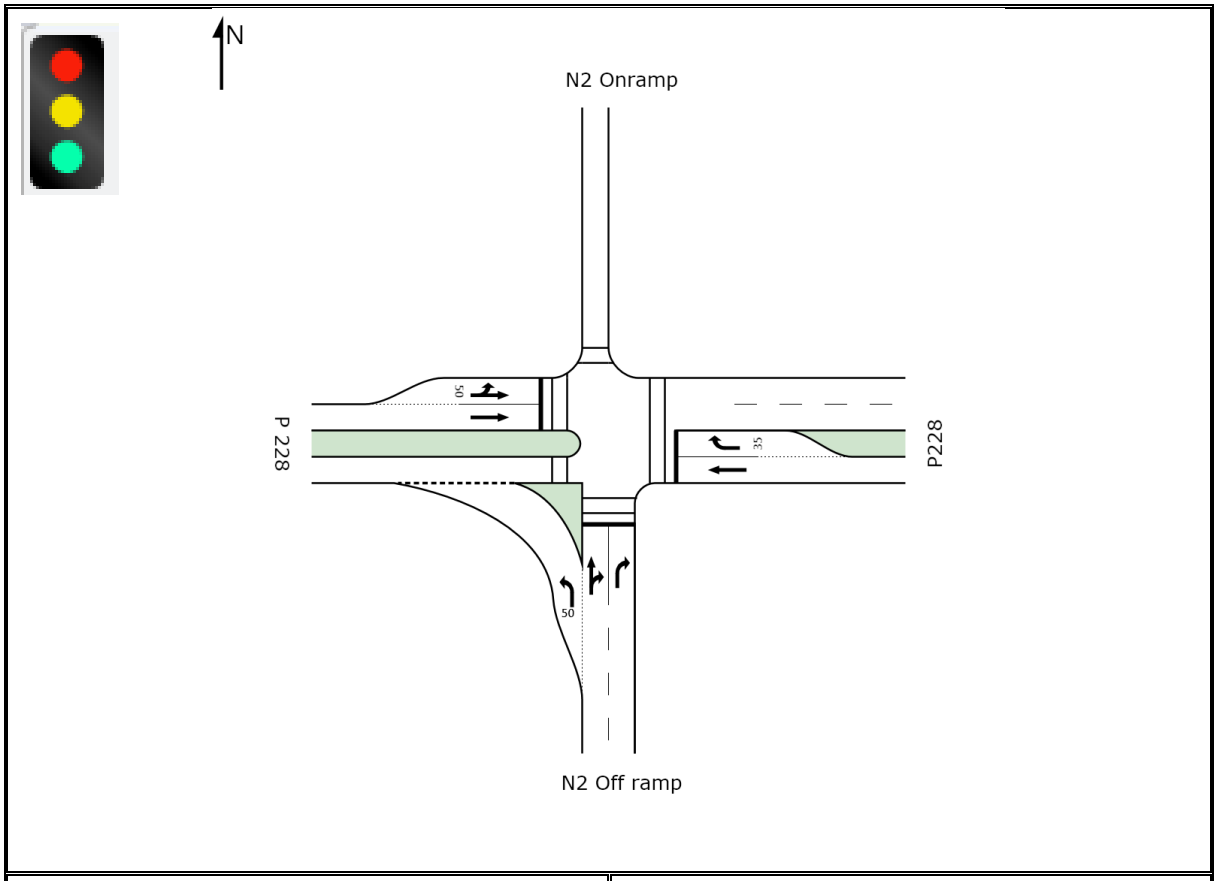
It can be seen that upon upgrading of this intersection to traffic signals along with short turning lanes at the north and east approach, all the movements in both the AM and PM peak hours will operate at acceptable levels of service in the 10 year horizon.

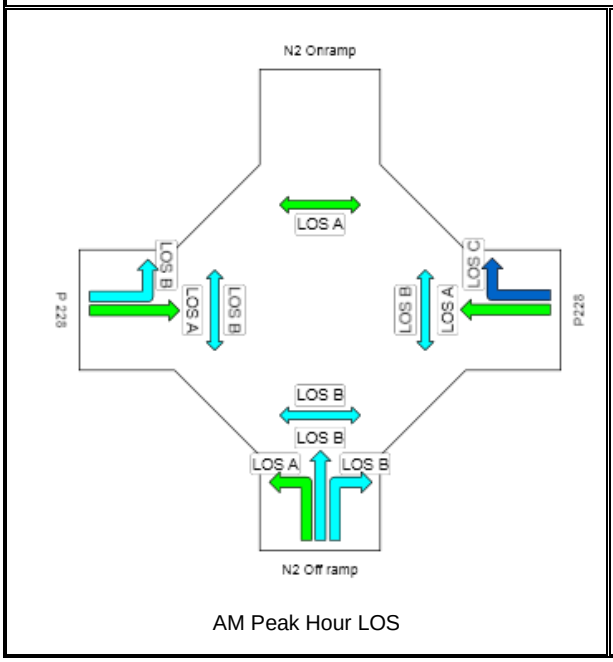
9.2.2 P474 / P228 Intersection



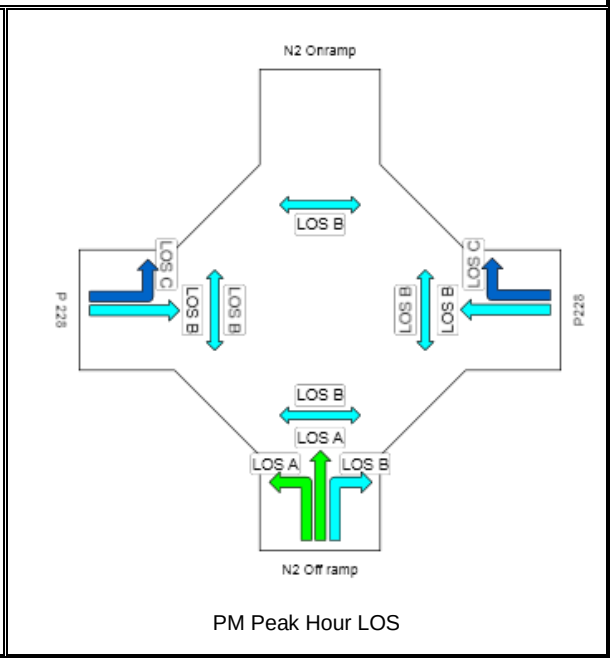
The results of the SIDRA analysis reveal that this intersection will operate efficiently in the 10 year horizon as good levels of service will be encountered. Therefore, no upgrades will be required in 2026.

9.2.3 P288/N2 Interchange Western Ramp Intersection (New Interchange)





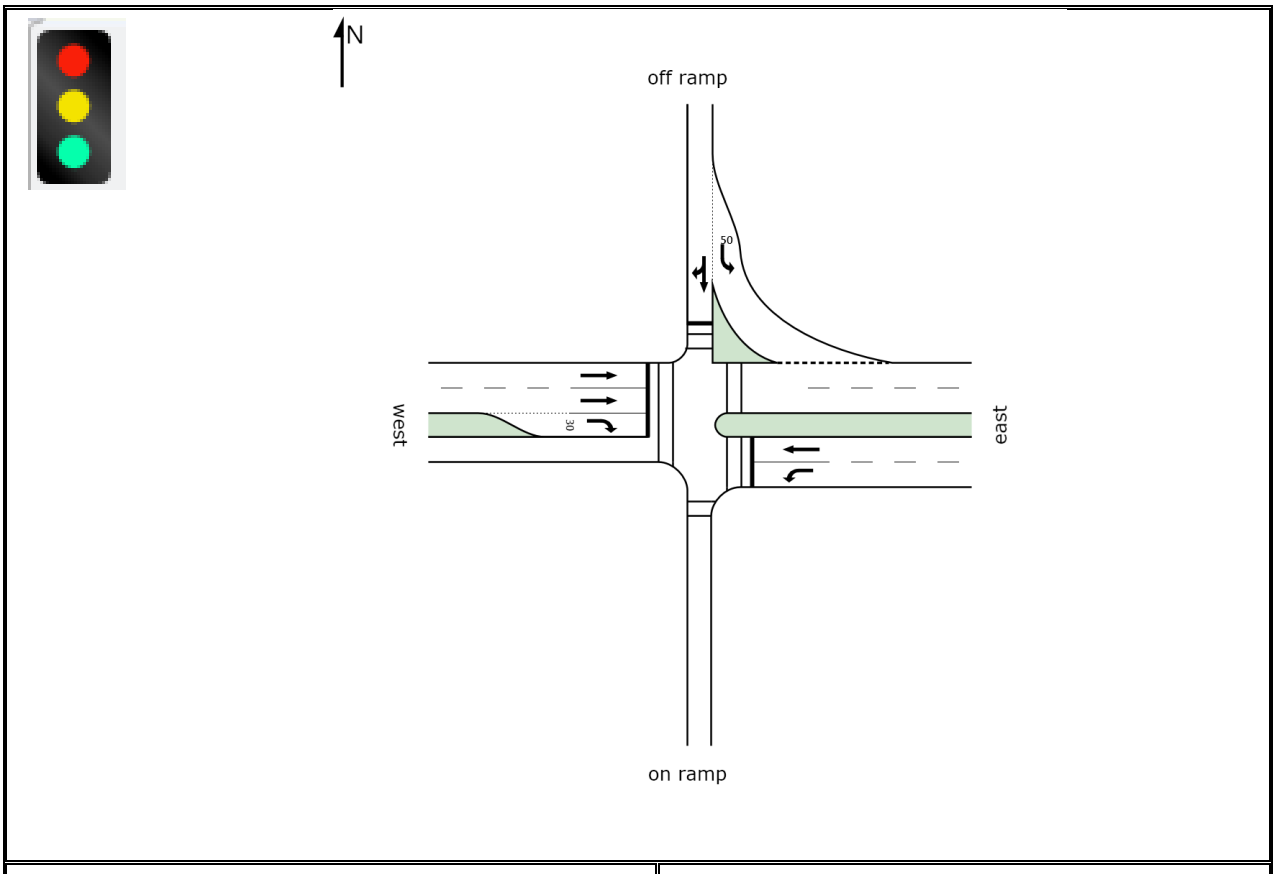
AM Peak Hour LOS

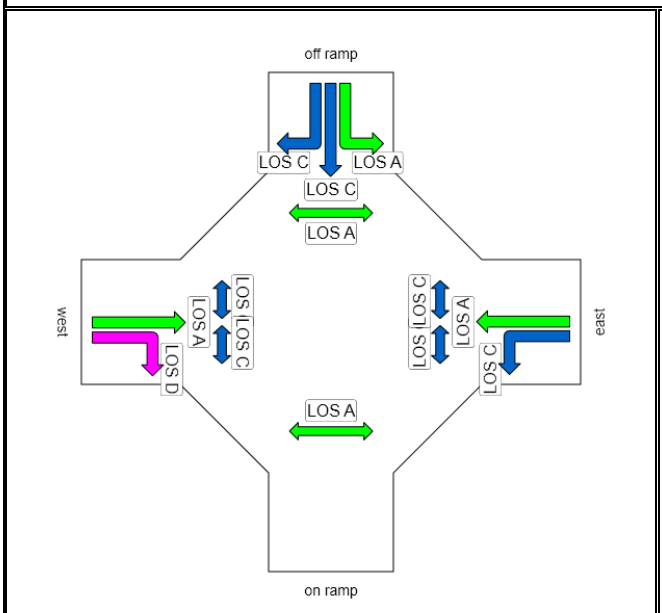


PM Peak Hour LOS

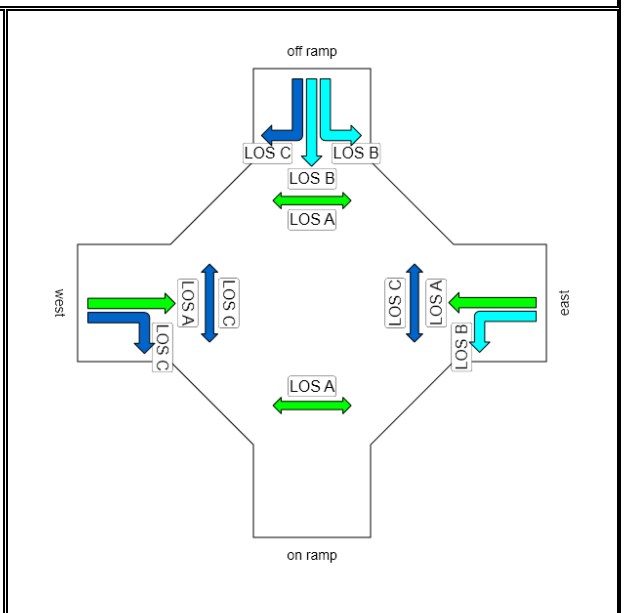
The results of the SIDRA analysis reveal that this intersection will operate efficiently in the 10 year horizon as good levels of service will be encountered. Therefore, no upgrades will be required in 2026.

9.2.4 P288/N2 Interchange Eastern Ramp Intersection (New Interchange)





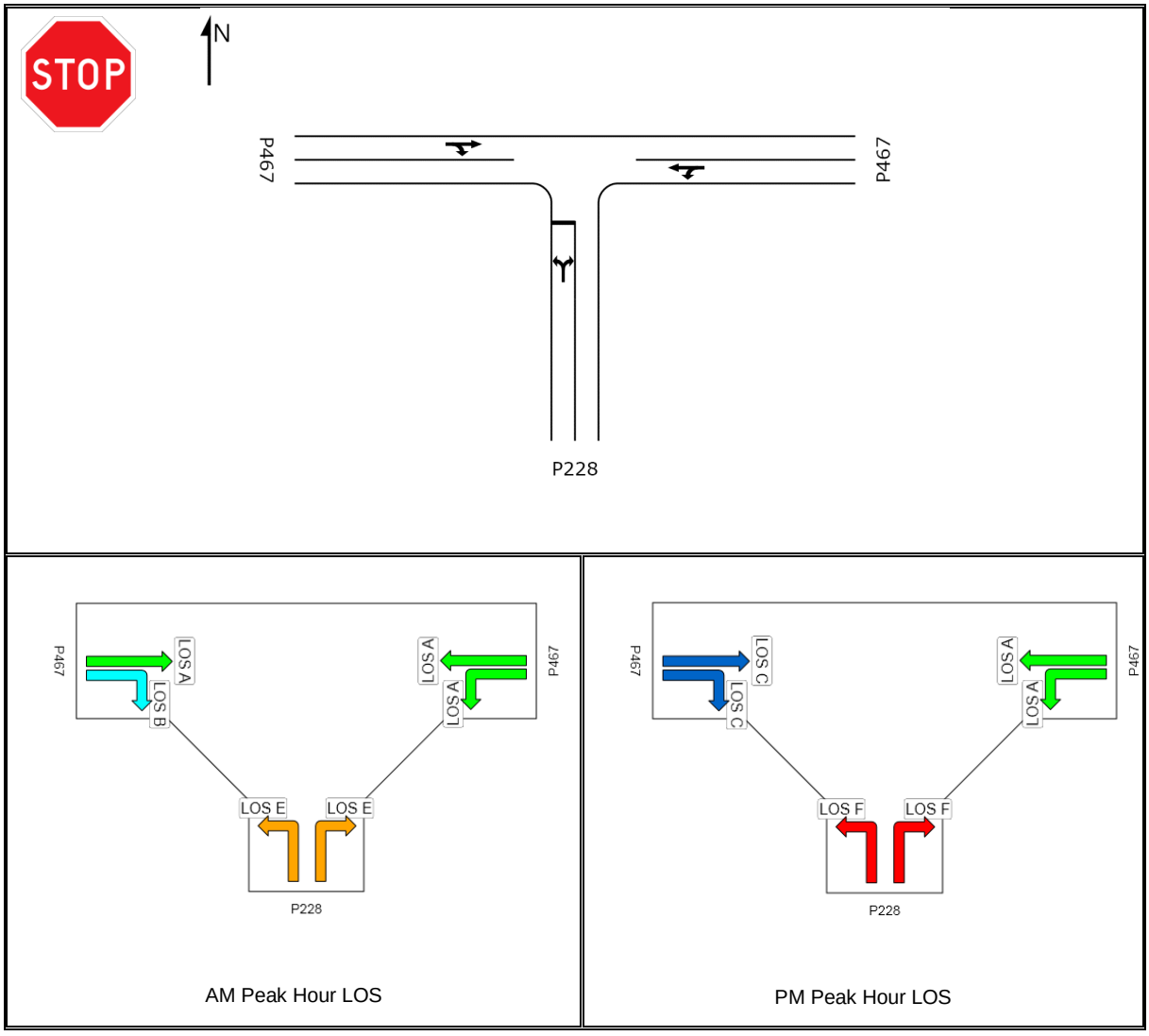
AM Peak Hour LOS



PM Peak Hour LOS

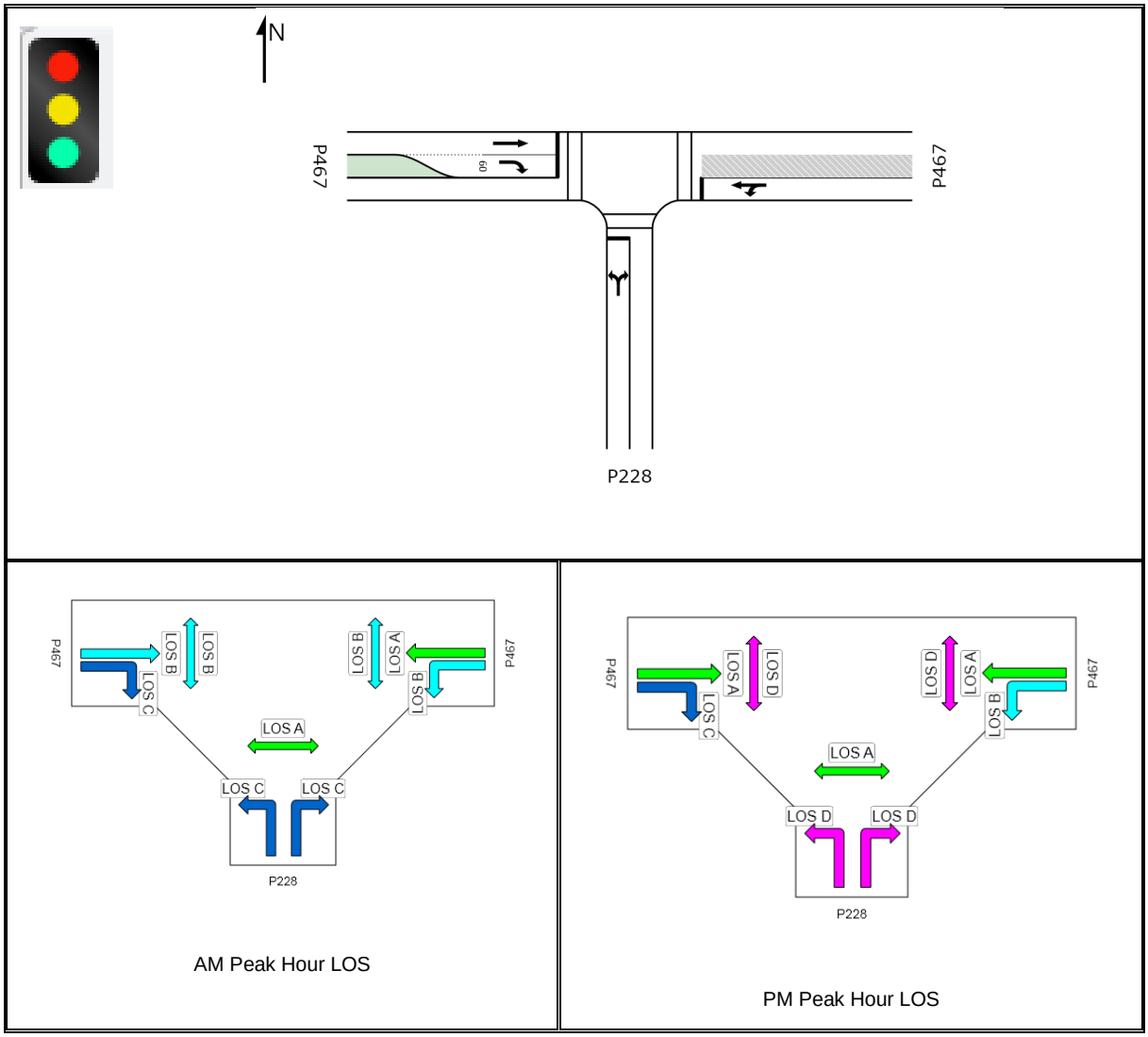
It can be seen that all levels of service are good at this new ramp intersection. Acceptable delay and queue lengths are encountered at this intersection. As such, no upgrades will be required with the 10 year horizon traffic passing through this intersection.

9.2.5 P228/P467 Intersection



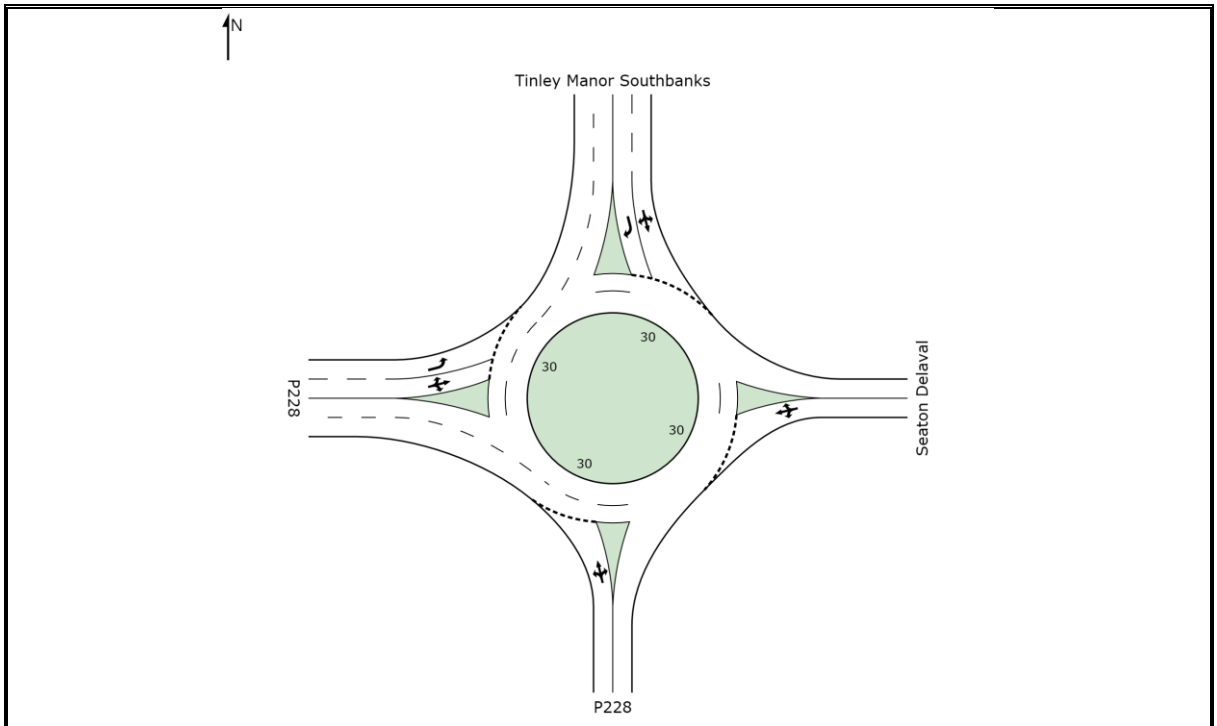
It can be seen that the southern approach, in both the AM and PM peak hours, will operate at LOS E and F respectively. Therefore, this intersection will require upgrading in the 10 year horizon as shown hereafter.

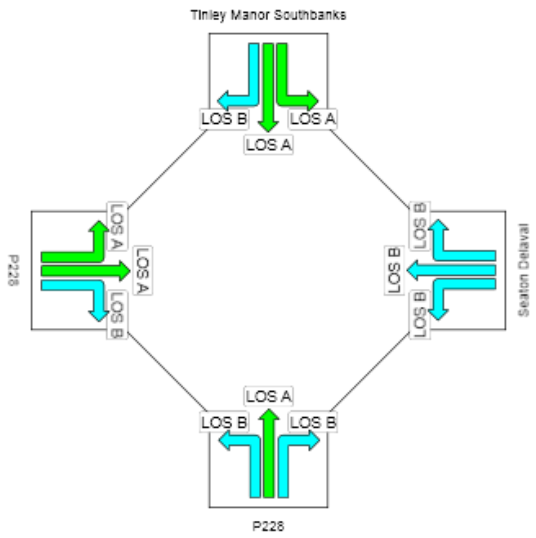
P228/P467 Intersection - Upgrade



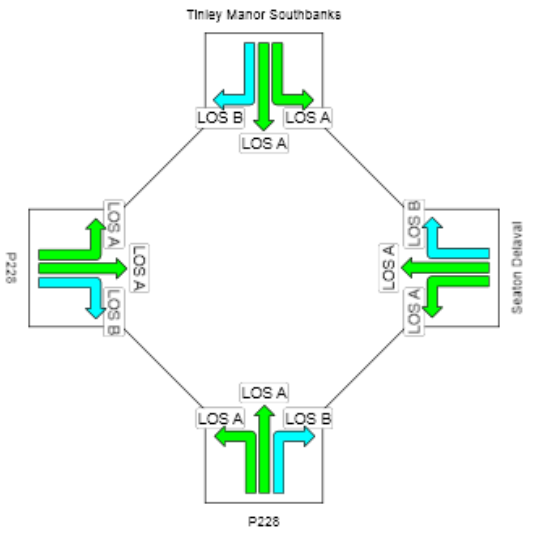
It evident from the above SIDRA analysis, that upon upgrading of this intersection to traffic signals along with a 60m short right turn lane at the western approach, all the movements in both the AM and PM peak hours will operate at acceptable levels of service in the 10 year horizon.

9.2.6 Access to Tinley Manor/ Access to Seaton Delaval/P228 intersection





AM Peak Hour LOS



PM Peak Hour LOS

It evident from the SIDRA analysis that a roundabout at this junction will provide adequate capacity in the 10 year horizon. All the movements at the proposed roundabout in both the AM and PM peak hours will operate at acceptable levels of service in the 10 year horizon as shown above.

10. Traffic Analysis in 2036 (20 year horizon)

It is envisaged that by 2036 the Tinley Manor South Banks development will be a 100% complete. Therefore, the purpose of this chapter is to analyse the road network in the 2036 horizon to assess the traffic impact of this proposed development on the surrounding road network. As part of this analysis, the traffic generated by all other major developments in the 20 year horizon i.e. Seaton Delaval, Palm Lakes and Nkwazi will also be included in the analysis of the 20 year horizon. It is important to note that the traffic analysis in this chapter will be undertaken on the premise that all the road network upgrades that were recommended in Chapter 9 have been implemented in 2026.

10.1 Trip Generation

It is envisaged that by 2036, the residential units will be increased to its maximum potential as shown in the tables below. In addition, the following development components will be completely built:

- Retail
- Offices
- Resorts
- Education

The trips that will be generated by the above mentioned developments in the 2036 horizon are tabulated in the tables hereafter.

10.1.1 Total High Income Single Residential Units

No. of Units	Trip gen rate / du	AM two-way trips	PM two-way trips
667	1.5	1001	1001
		Comment	
Reduction Factor	20%	Holiday & Retirement Homes	
	10%	Public transport	
	Adjusted Total	**700**	**700**

10.1.2 Cluster Housing

No. of Units	Trip gen rate / du	AM two-way trips	PM two-way trips
3642	1.1	4006	4006
		Comment	
Reduction Factor	20%	Holiday & Retirement Homes	
	10%	Public transport	
	Adjusted Total	**2804**	**2804**

10.1.3 Retail 1

GLA (m^2)	Trip gen rate / 100m^2	AM two-way trips	PM two-way trips
18482	AM: 250.2 * $GLA^{-0.3}$ PM: 224.5 * $GLA^{-0.34}$	-	1470
		Comment	
Reduction Factor	10%	Internal Shopping/Mixed Use Development	
	10%	Public transport	
	Adjusted Total	**-**	**1176**

10.1.4 Retail 2

GLA (m^2)	Trip gen rate / 100m^2	AM two-way trips	PM two-way trips
9255	AM: 250.2 * GLA$^{-0.3}$ PM: 224.5 * GLA$^{-0.34}$	-	931
		Comment	
Reduction Factor	10%	Internal Shopping/Mixed Use Development	
	10%	Public transport	
	Adjusted Total	**-**	**745**

10.1.5 Offices

GLA (m^2)	Trip gen rate / du	AM two-way trips	PM two-way trips
2416	2.3	56	56
		Comment	
Reduction Factor	10%	Work from home	
	10%	Public transport	
	Adjusted Total	**44**	**44**

10.1.6 Education

Students	Trip gen rate / student	AM two-way trips	PM two-way trips
1000	0.5	500	500
		Comment	
Reduction Factor	10%	Public transport	
	Adjusted Total	**450**	**450**

10.1.7 Resort

Rooms	Trip gen rate / room	AM two-way trips	PM two-way trips
200	0.7	140	140
		Comment	
Reduction Factor	-	-	
	Adjusted Total	**140**	**140**

Table 12 hereafter, summarises the trips that will be generated by the proposed Tinley Manor Southbanks development during the design peak hours (weekday AM and PM) in the 20 year horizon (2036) at a 100% completion.

TRIPS GENERATED BY TINLEY MANOR in 2036 (20 year)		
Landuse	Total Two-way trips	
	AM	PM
Single Residential - 1500m^2		
Residential Units	164	164
Single Residential - 1000m^2		
Residential Units	277	277
Single Residential - 600/800m^2		
Residential Units	259	259
Planned Unit Development		
Residential Units	829	829
High Density Residential		
Residential Units	1045	1045
Retail (m^2)	Int	Int
Mixed Use		
Residential Units	930	930
Retail (m^2)	0	1176
Offices	44	44
Low Impact Mixed Use		
Retail (m^2)	0	745
Resort		
Rooms	140	140
Education		
Students	450	450
Total Trips	4139	6060

Table 12: Trips generated by Tinley Manor Southbanks in 2036 (20 year horizon)

The development generated traffic volumes as shown above are illustrated in Figure 21 hereafter. These traffic volumes will be added to the traffic generated by the proposed adjacent developments of Seaton Delaval, Palm Lakes and Nkwazi and analysed in the 20 year horizon (2036).

10.2 Traffic Generated by Seaton Delaval

The following table shows the total traffic volumes generated by Seaton Delaval onto the external road network in 2036. A 10 % reduction in all trips generated is applied due to public transport improvements.

TRIP ORIGIN / END	AM		PM	
	IN	OUT	IN	OUT
To / from South via N2	396	806	812	402
To / from Umhlali via P474	28	56	58	30
To / from Salt Rock via P330	58	112	116	60
To / from North via N2	62	118	124	70
To / from west via P228	8	8	14	14
To / from Brettenwood and Zululami	6	6	10	10

Table 13: Seaton Delaval Traffic Volumes 2036 (20 year)

10.3 Traffic Generated by Palm Lakes

The following table shows the total traffic volumes generated by Palm Lakes onto the external road network in 2036. A 10 % reduction in all trips generated is applied due to public transport improvements.

	DIRECTION	ROUTE	AM PEAK HOUR		PM PEAK	
			In	Out	In	Out
Palm Lakes Residential Estate and Corporate Park	NORTH	MR467 - P228 - N2	87	93	89	92
	SOUTH	MR467 - P228 - N2	111	73	78	106
	WEST	MR467 - MR2	528	445	445	528

Table 14: Palm Lakes Residential Estate & Corporate Park Traffic Volumes in 2036 – 20 year horizon (100% completion)

	DIRECTION	ROUTE	AM PEAK HOUR		PM PEAK HOUR	
			IN	OUT	IN	OUT
Forest Lakes Office park	WEST	MR467 through the N2 interchange	420	109	109	420

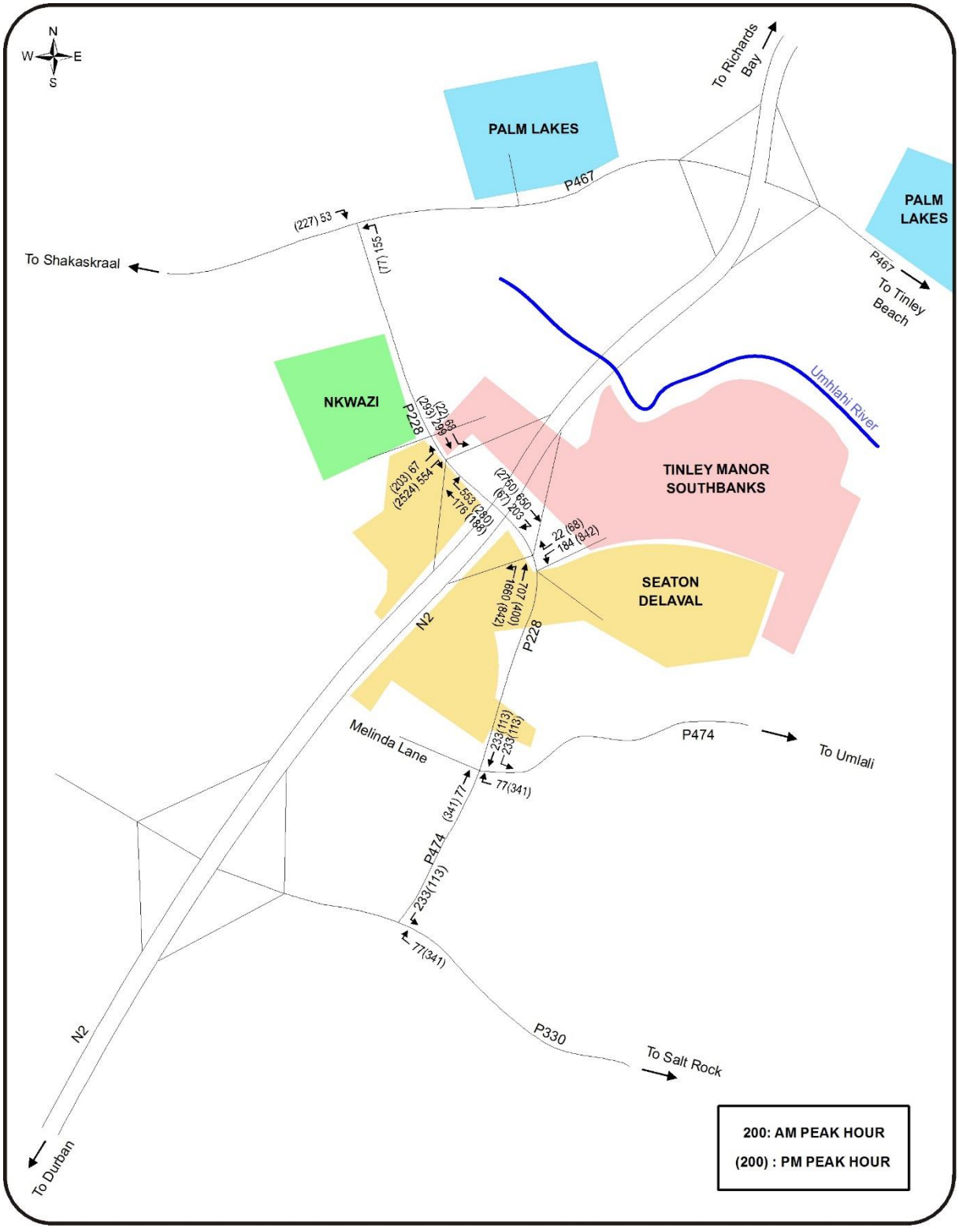
Table 15: Palm Lakes Forest Office Park Traffic Volumes in 2036 – 20 year horizon (100% completion)

10.4 Traffic Generated by Nkwazi

The following table shows the total traffic volumes generated by Nkwazi onto the external road network in 2036. A 10 % reduction in all trips generated is applied due to public transport improvements.

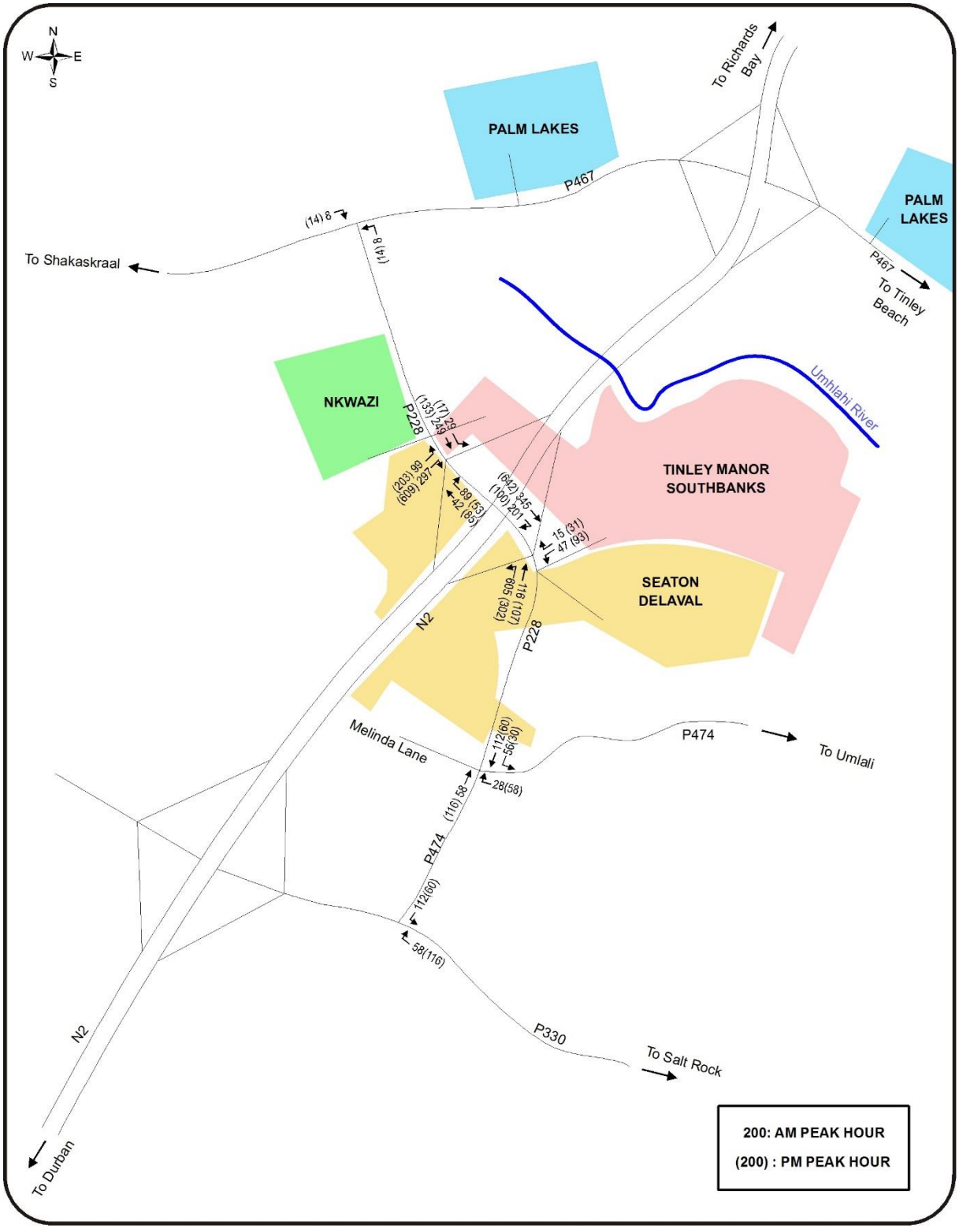
DIRECTION	ROUTE	AM PEAK HOUR		PM PEAK HOUR	
		In	Out	In	Out
NORTH	MR228 – MR467	24	57	58	24
	MR228 – MR467 – MR2	94	227	231	97
	MR228 – N2	71	171	173	73
SOUTH	MR228 – N2	141	341	346	146
	MR228 – MR467 – MR2	71	171	173	73
EAST	MR228 – MR330	47	114	115	49
WEST	MR228 – MR330	24	57	58	24

Table 16: Nkwazi traffic volumes in 2036 (100%)



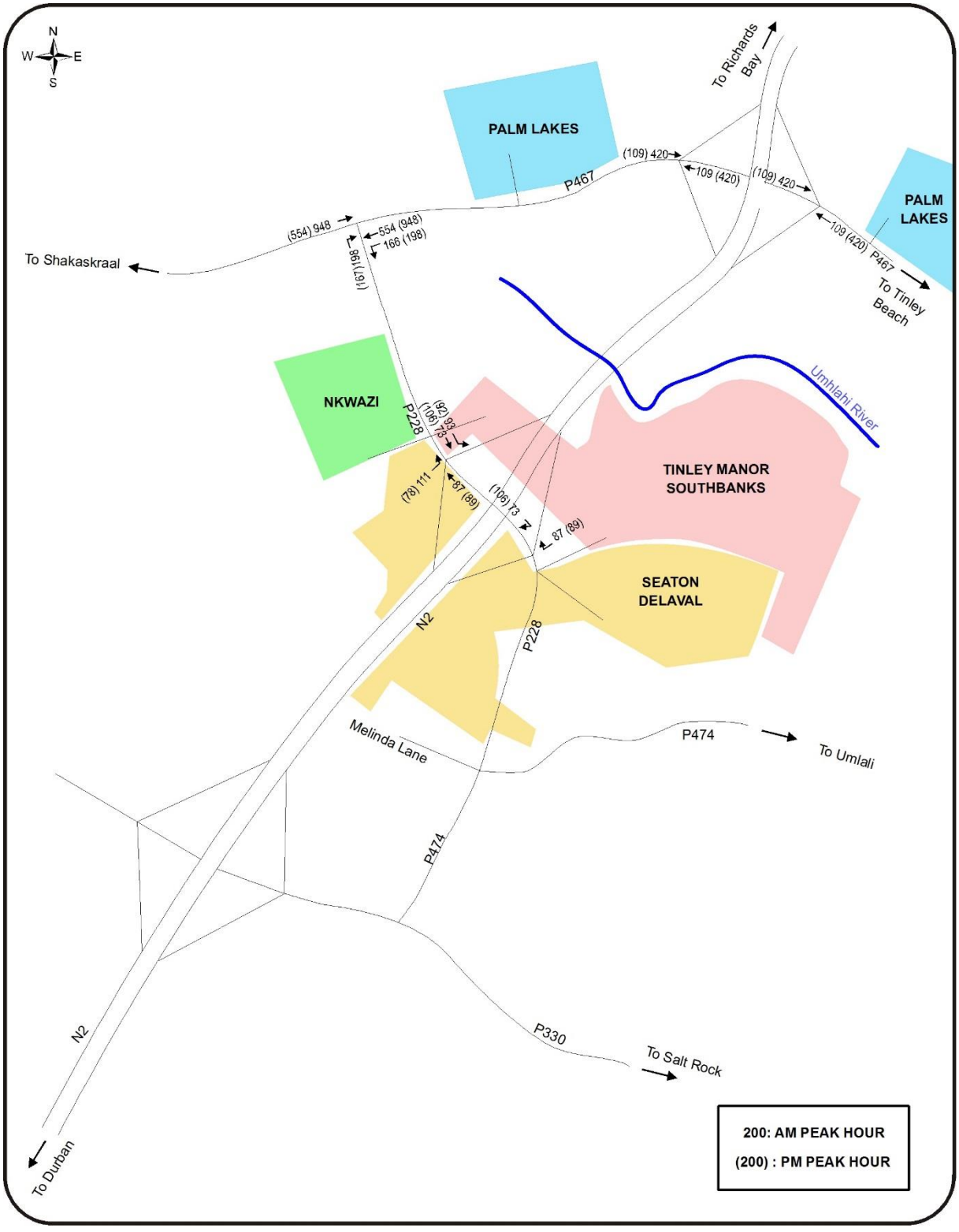
aurecon Leading. Vibrant. Global.	TRAFFIC GENERATED BY TINLEY MANOR IN 2036 (20 YEAR HORIZON) Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 21
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

Figure 21: Traffic generated by Tinley Manor in 2036



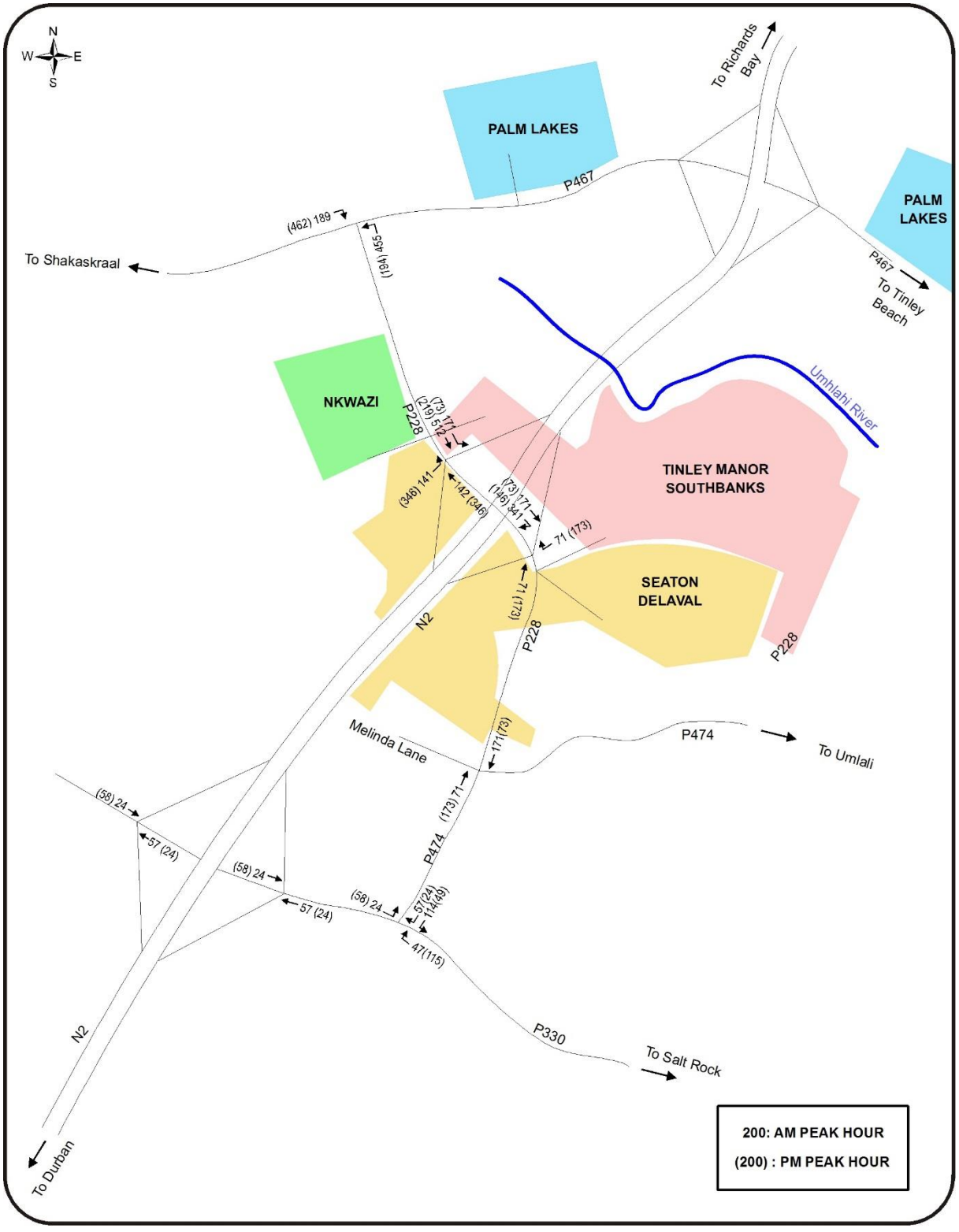
aurecon Leading. Vibrant. Global.	TRAFFIC GENERATED BY SEATON DELAVAL IN 2036 (20 YEAR HORIZON) Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 22
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

Figure 22: Traffic generated by Seaton Delaval in 2036



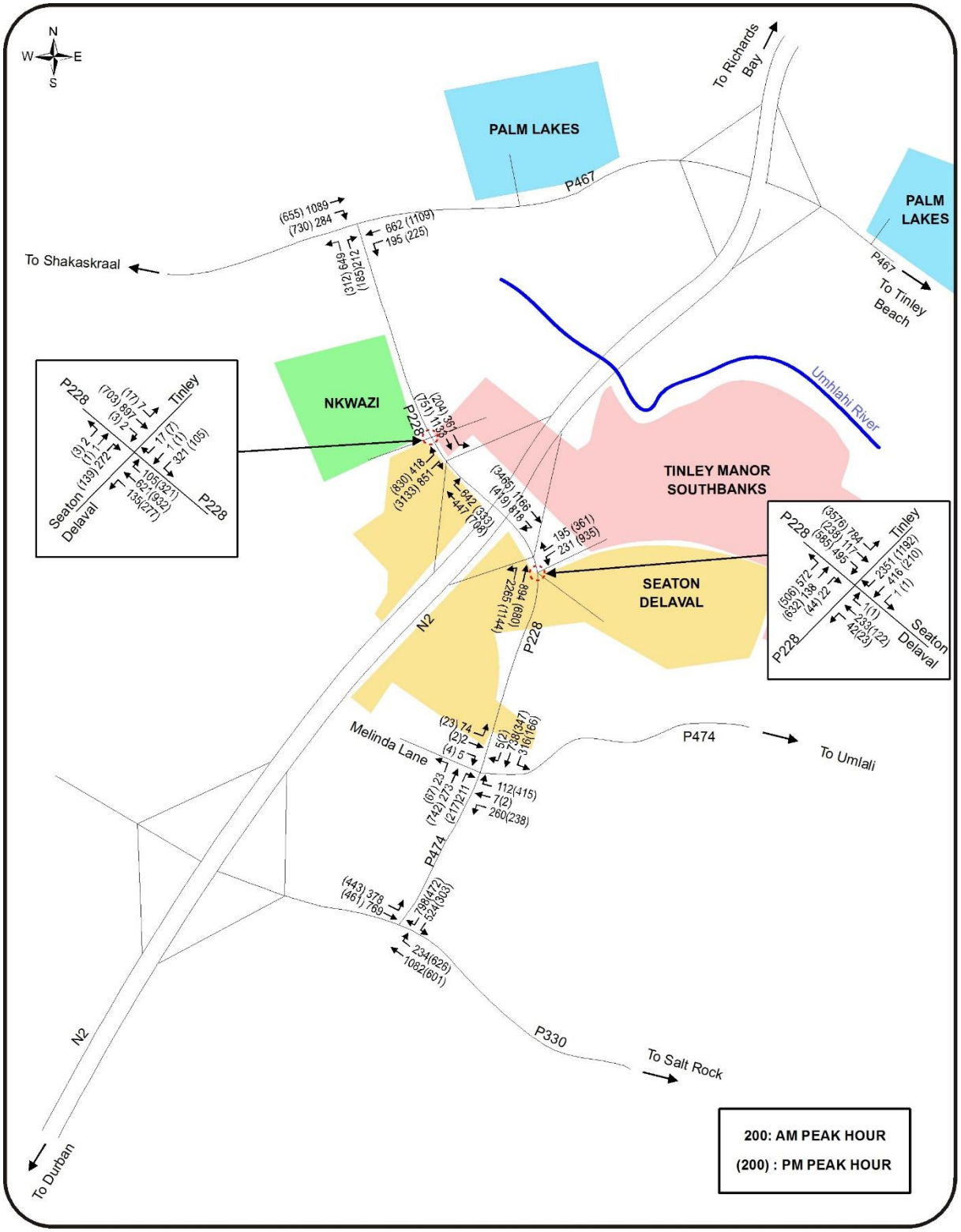
aurecon Leading. Vibrant. Global.	TRAFFIC GENERATED BY PALM LAKES IN 2036 (20 YEAR HORIZON) Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 23
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

Figure 23: Traffic generated in Palm Lakes in 2036



aurecon Leading. Vibrant. Global.	TRAFFIC GENERATED BY NKWAZI IN 2036 (20 YEAR HORIZON) Proposed Tinley Manor Development	PROJECT: 108498
		FIGURE: 24
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

Figure 24: Traffic generated by Nkwazi in 2036



aurecon Leading. Vibrant. Global.	20 YEAR BACKGROUND PLUS ALL DEVELOPMENTS GENERATED TRAFFIC WITH PROPOSED INTERCHANGE Proposed Tinley Manor Development	PROJECT: 108498 FIGURE: 25
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

10.5 Link Upgrades in 2036 (20 year)

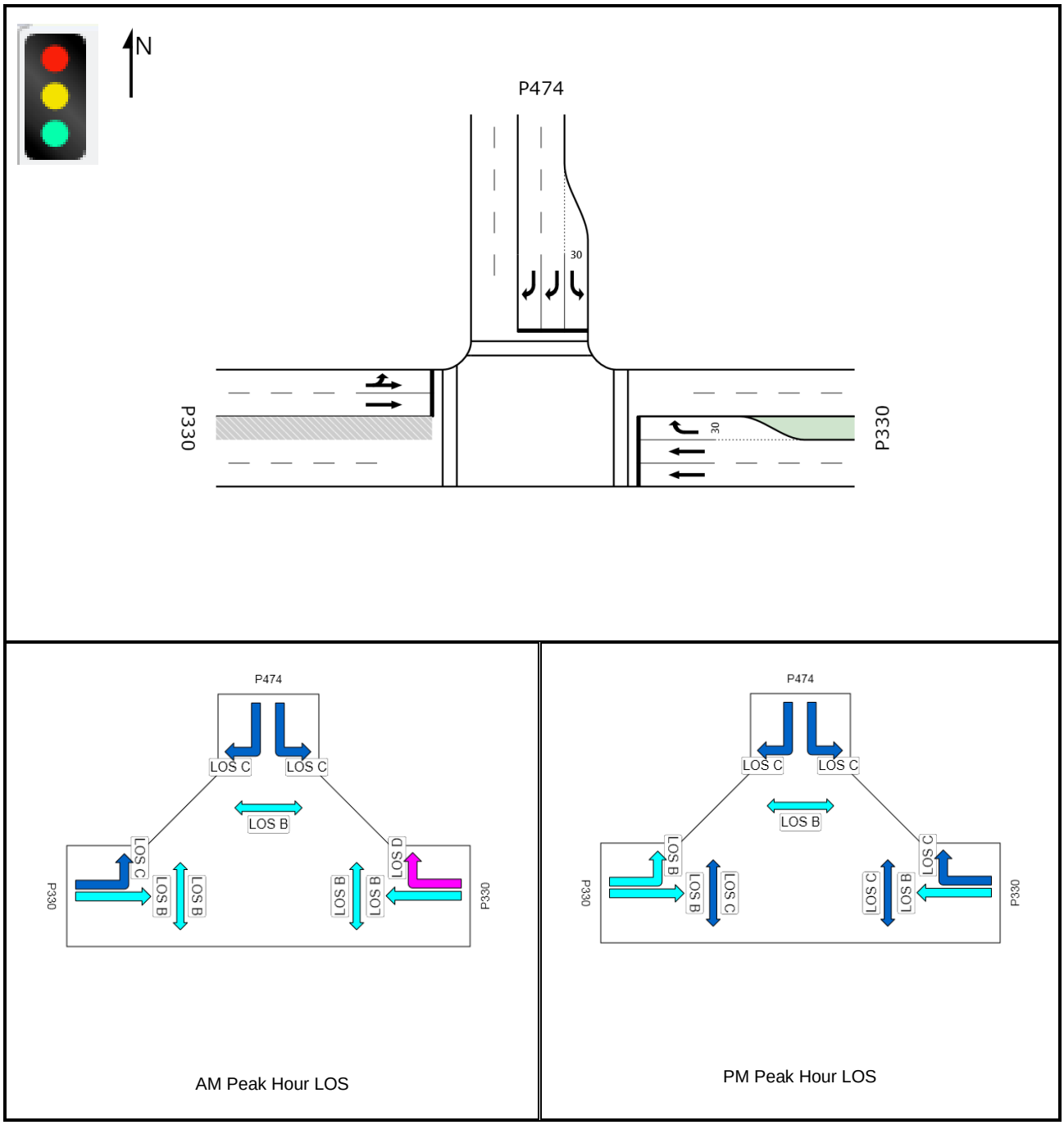
As mentioned previously in this report the following road network improvements are recommended in the traffic studies for the adjacent developments in the area. These upgrades are as follows:

- P330 from Salt Rock to the intersection of P330 and P474 will be upgraded from a two lane two way road to a 4 lane two way road.
- P474 will be upgraded to a 4 lane two way road from the intersection of P474/P228 to the intersection of P330/P474.
- The link between the intersection of P474/P228 intersection and the new proposed roundabout at Tinley Manor will be upgraded to a 4 lane two way road.
- Furthermore the P228 link between the proposed Sheffield interchange western terminal and the intersection of P228 and Tinley Manor Education District Access/Seaton Delaval Access west of the N2 will be upgraded to a 4 lane dual carriageway with two lanes in each direction
- The Link P467 from Tinley Manor Interchange to R102 will also be upgraded to a 4 lane two way road.

The 20 year horizon analysis will be carried out on the premise that the above mentioned upgrades have already been implemented by 2036.

10.6 SIDRA Intersection Analysis

10.6.1 **P330 /** P474 Intersection

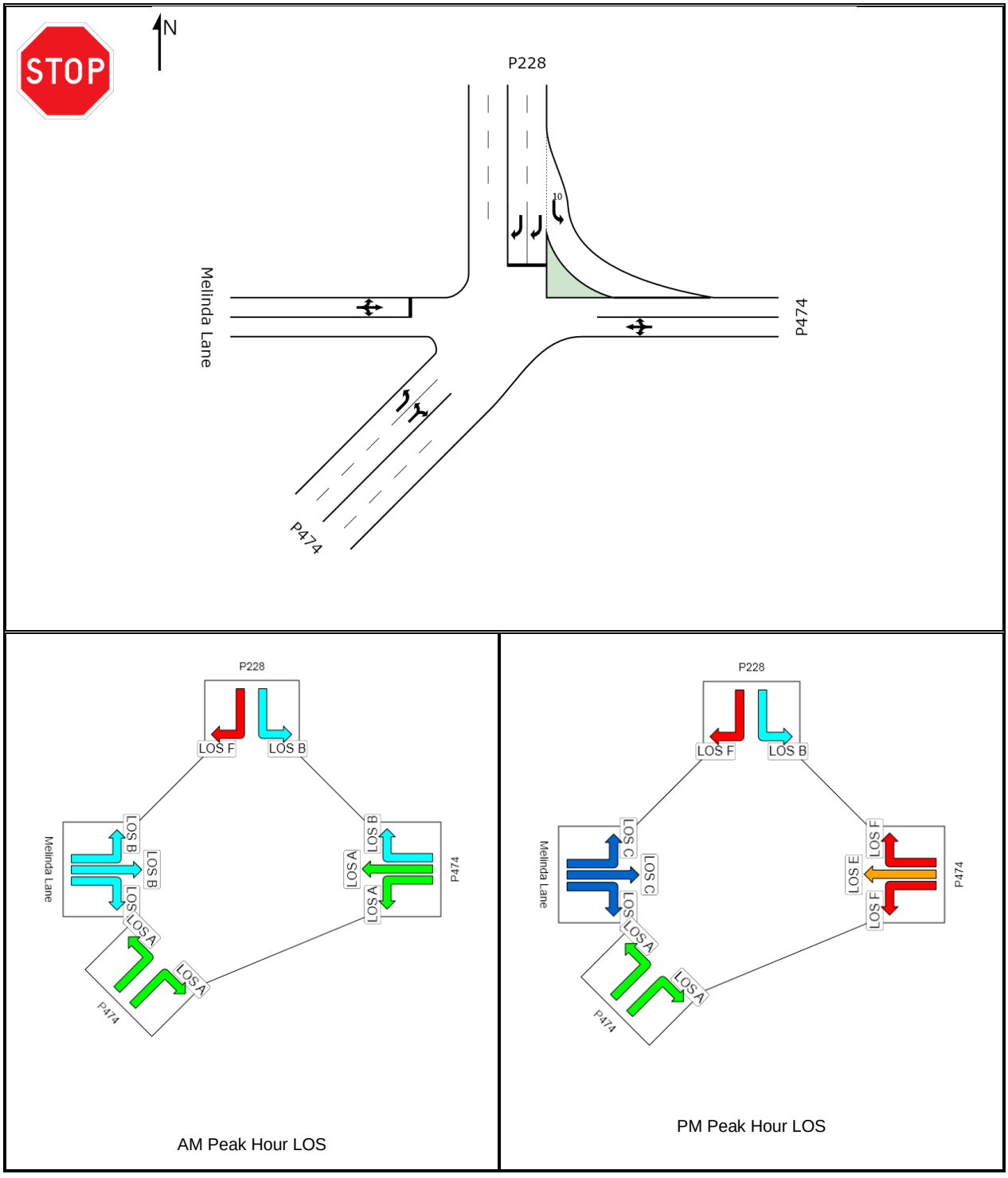


AM Peak Hour LOS

PM Peak Hour LOS

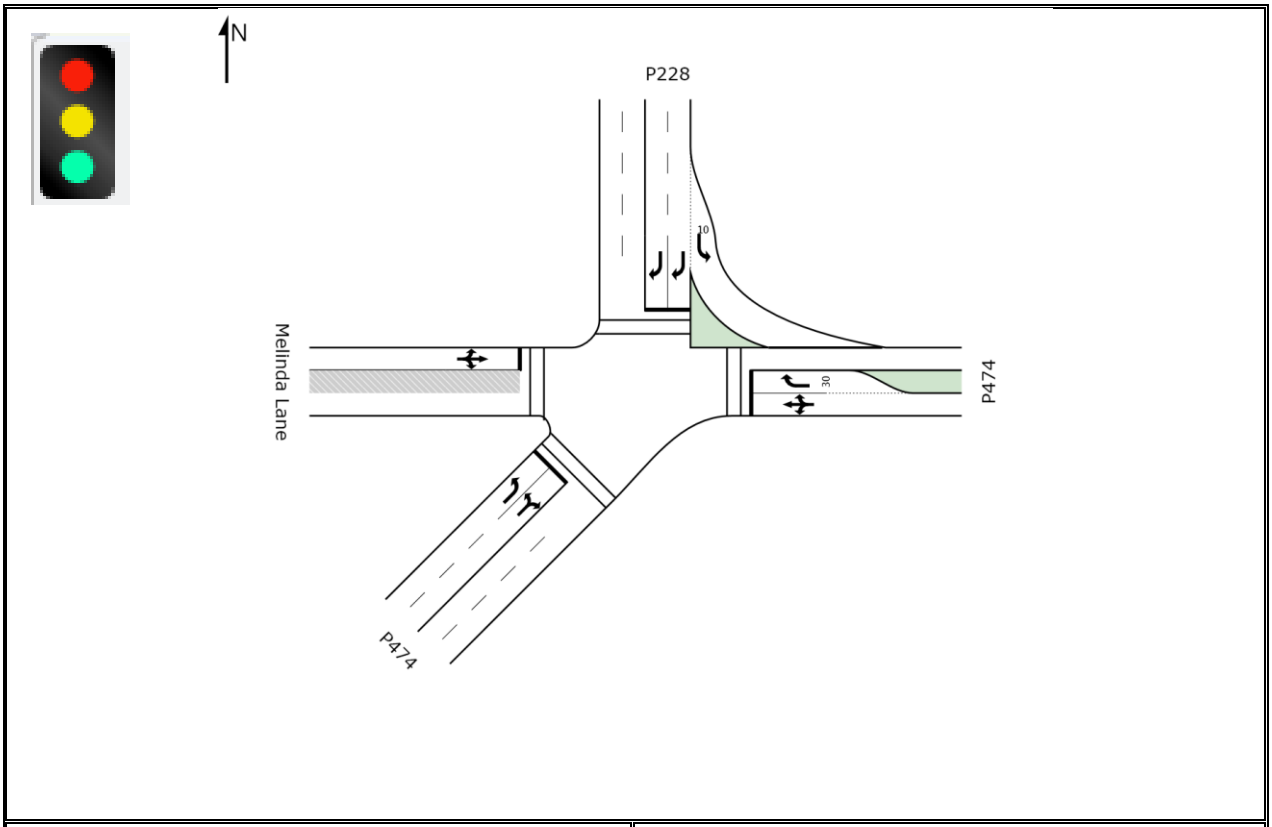
The results of the SIDRA analysis reveal that this intersection will operate efficiently in the 20 year horizon as good levels of service will be encountered. Acceptable delay and queue lengths will be encountered at this intersection. As such no upgrades will be required at this intersection in the 20 year horizon.

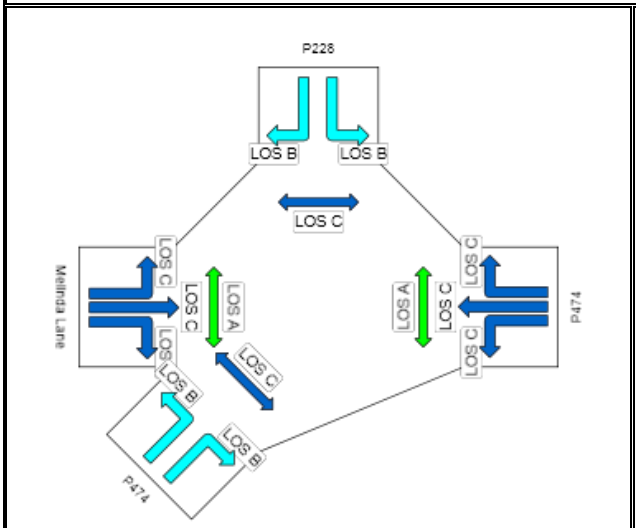
10.6.2 P474 / P228 Intersection



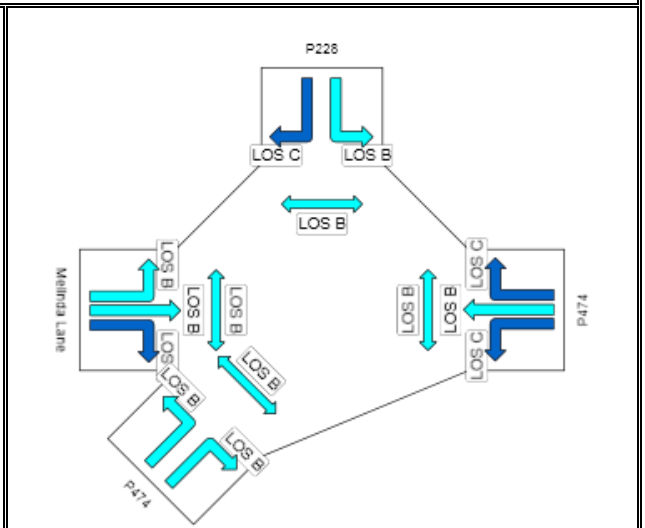
It can be seen that the north and east approaches in the AM and PM peak hours are operating at LOS F. The indications are that this intersection requires upgrading in the 20 year horizon.

P474 / P228 Intersection - Upgrade





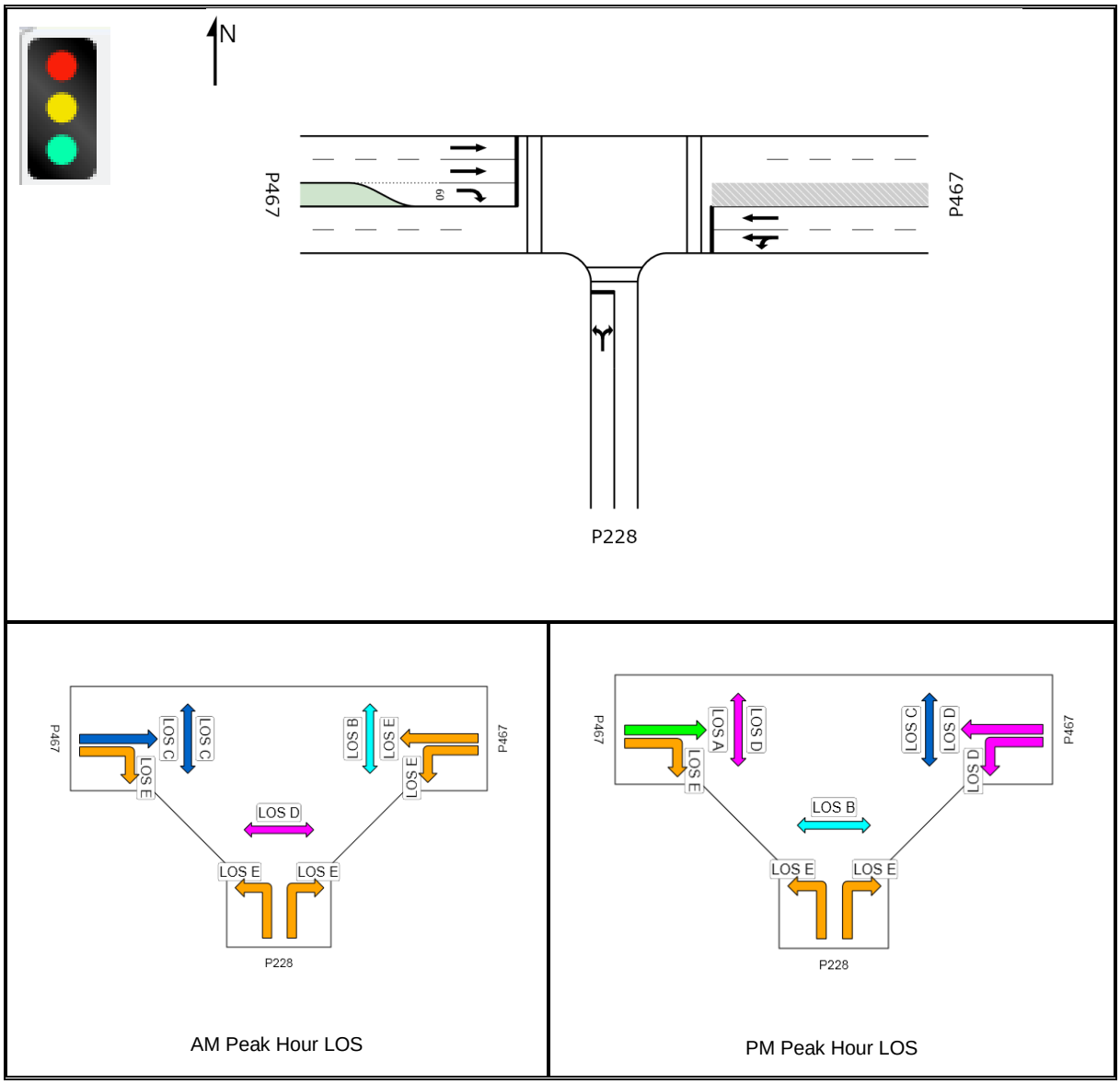
AM Peak Hour LOS



PM Peak Hour LOS

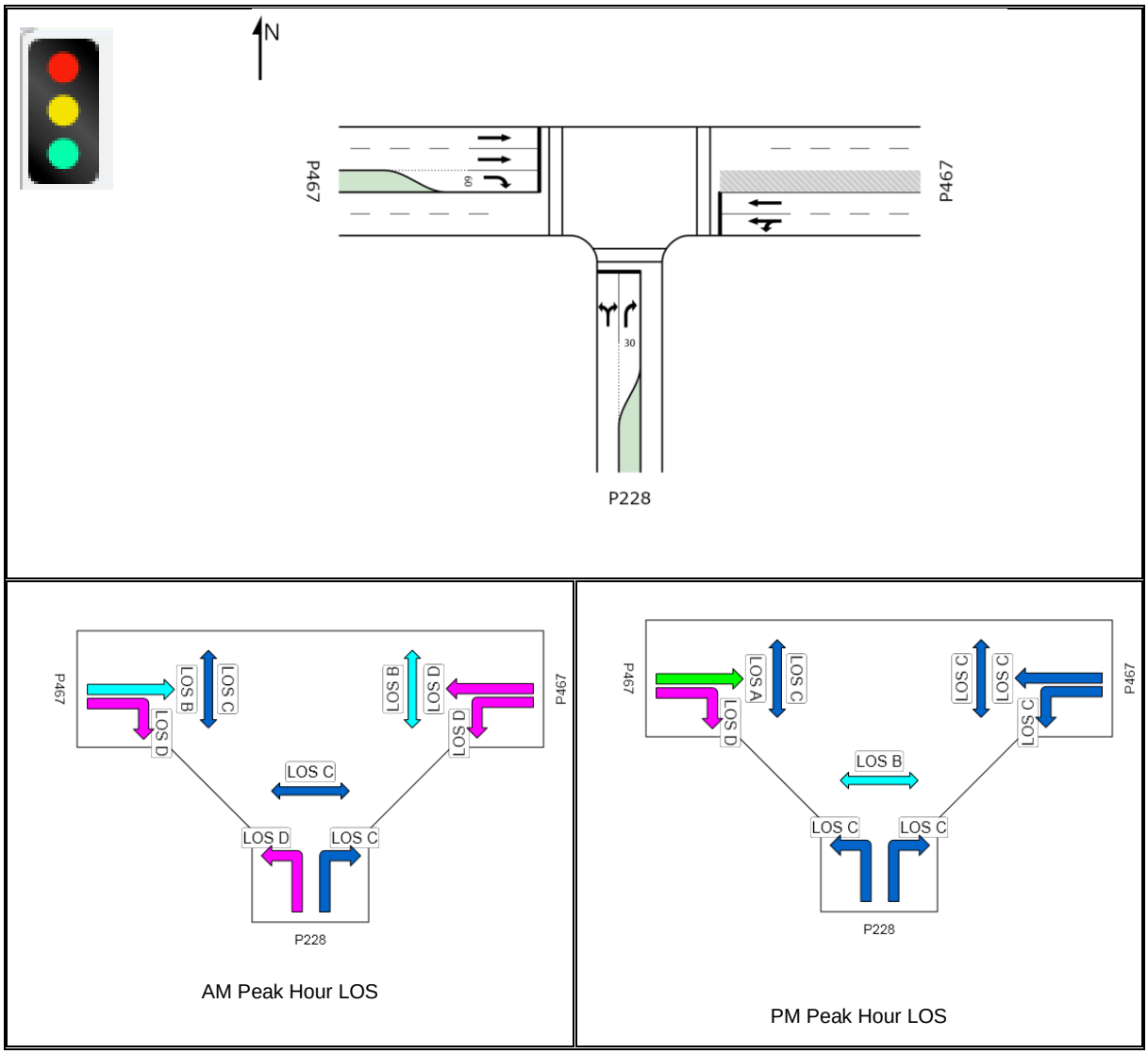
It can be seen that upon upgrading of this intersection to the above layout and installing traffic signals in the 20 year horizon, all the movements in both the AM and PM peak hours will operate at acceptable levels of service in the 20 year horizon.

10.6.3 P228/P467 Intersection



It can be seen that several movements in both the AM and PM peak hours are operating at LOS E. The indications are that this intersection will require upgrading in the 20 year horizon.

P228/P467 Intersection - Upgrade

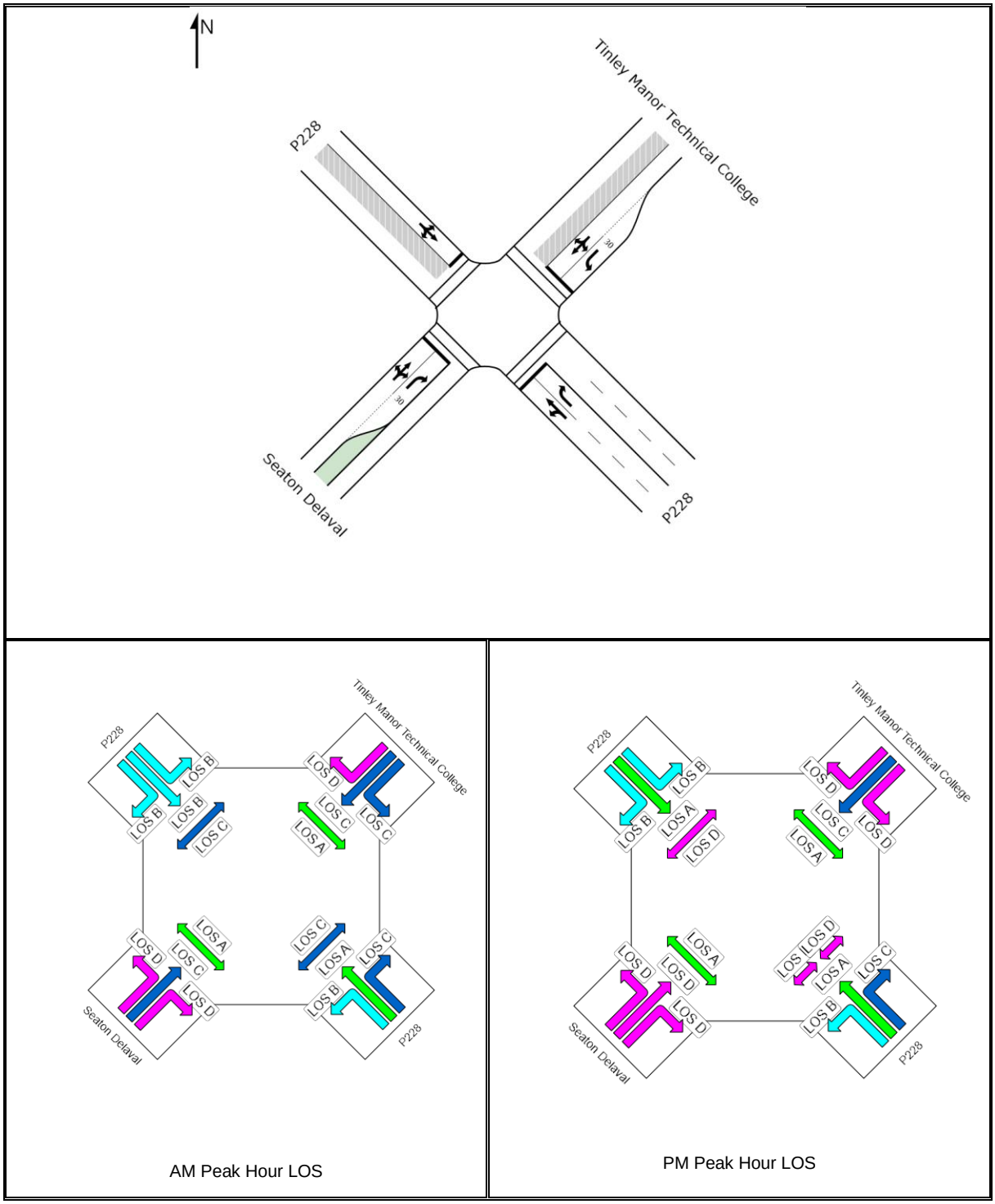


AM Peak Hour LOS

PM Peak Hour LOS

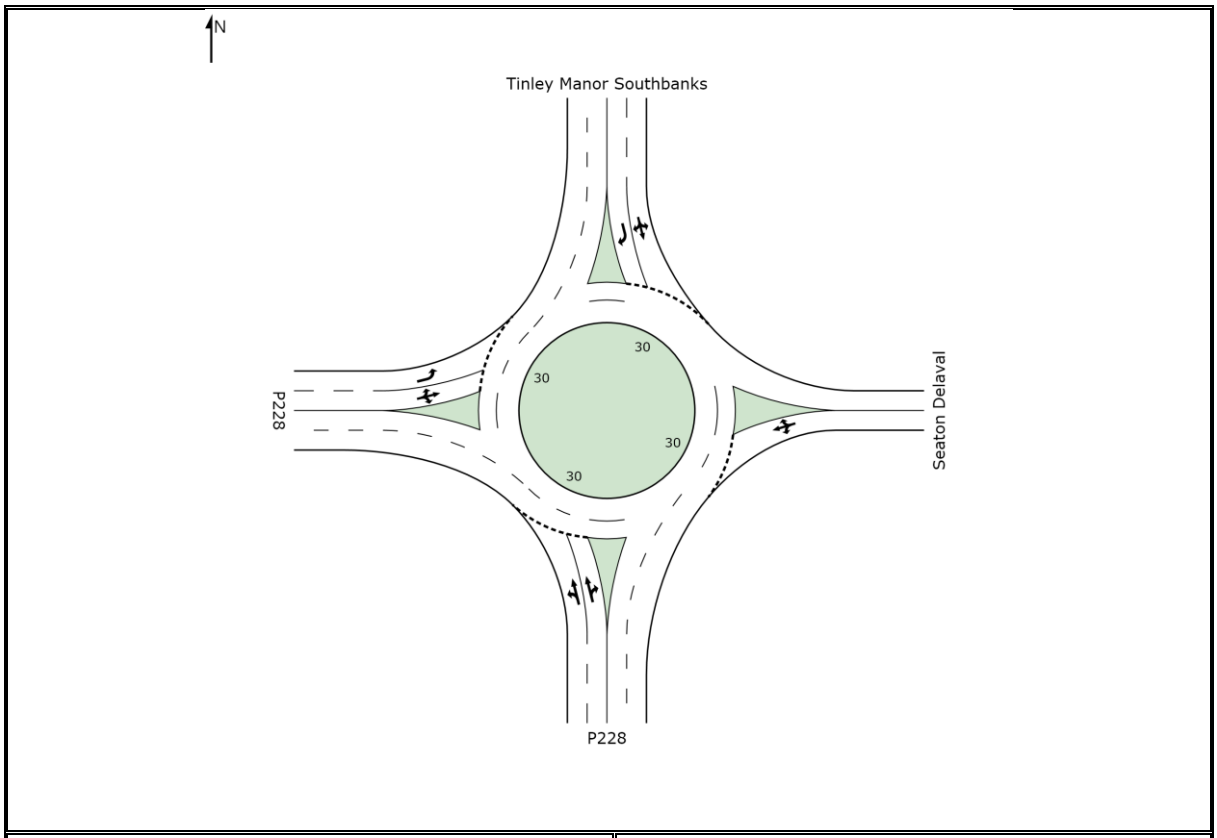
It can be seen that with the addition of a short right turn lane on the southern approach, all movements at this intersection will operate at acceptable levels of service. Acceptable delays and queue lengths will be encountered at this intersection in the 20 year horizon.

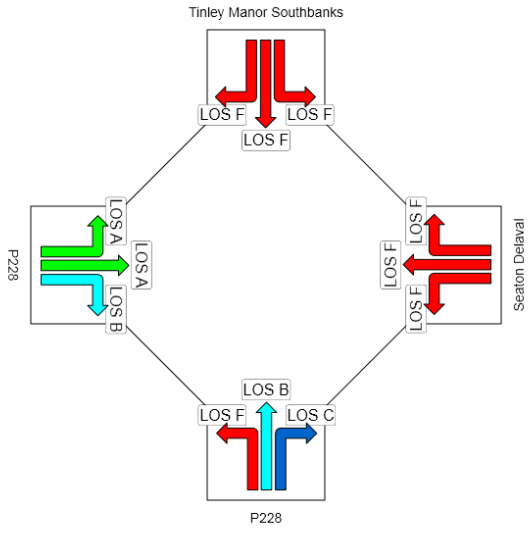
10.6.4 Access to Tinley Manor Technical College/ Access to Seaton Delaval/P228 intersection – West of the N2



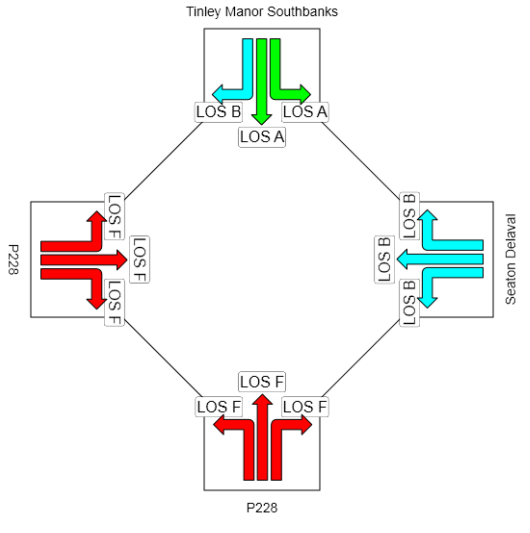
It can be seen that if the above configuration is applied to this new intersection, all the movements in both the AM and PM peak hours will operate at acceptable levels of service in the 20 year horizon.

10.6.5 Access to Tinley Manor/ Access to Seaton Delaval/P228 intersection





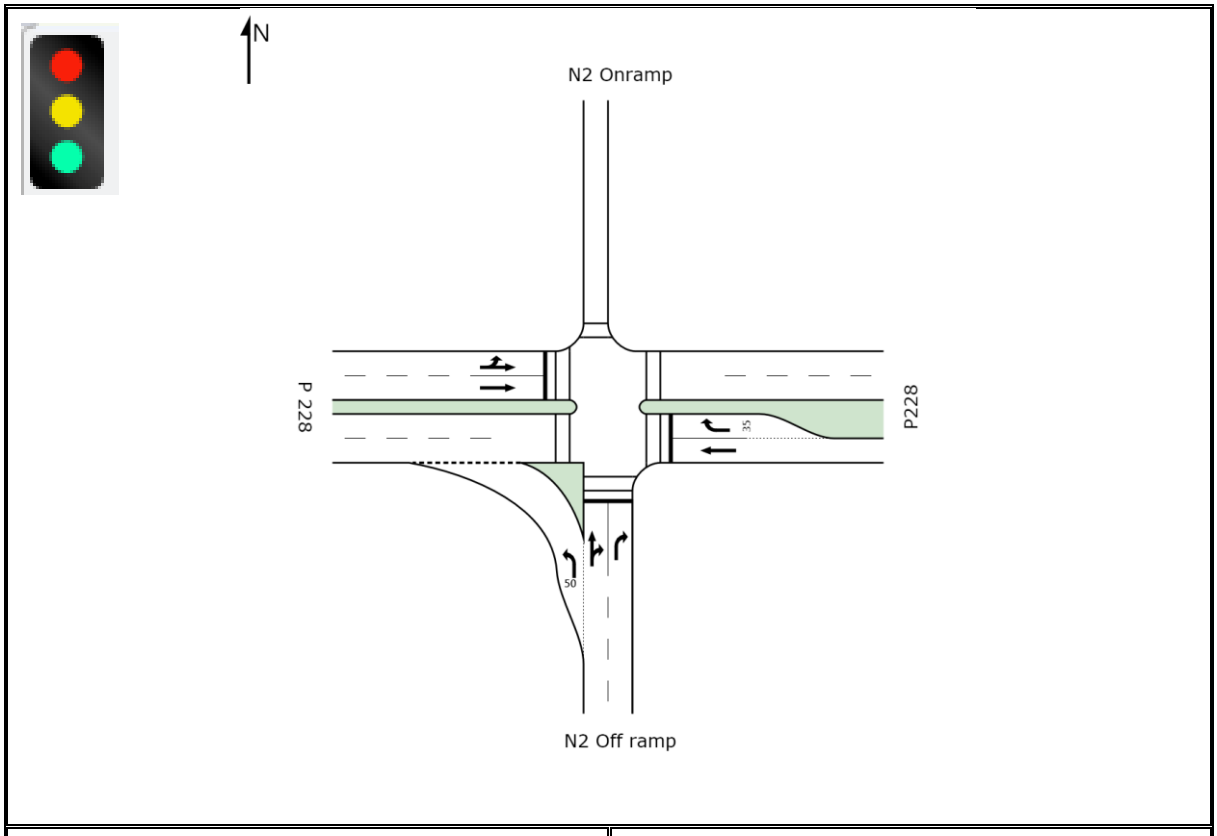
AM Peak Hour LOS

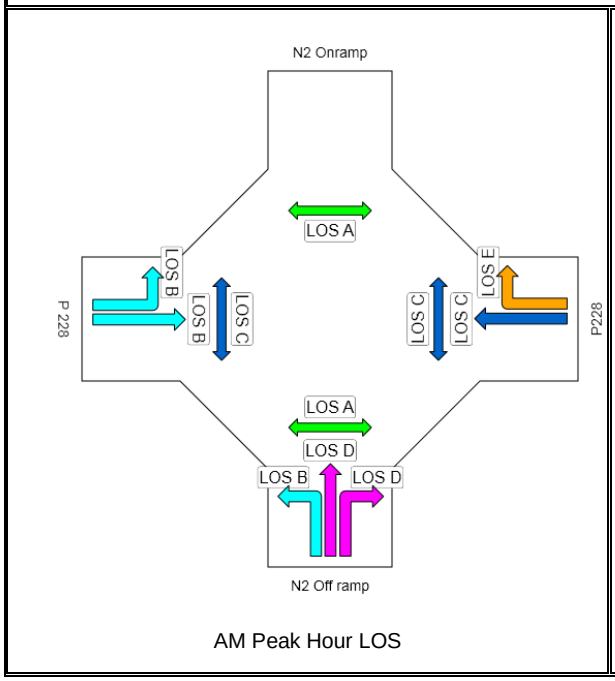


PM Peak Hour LOS

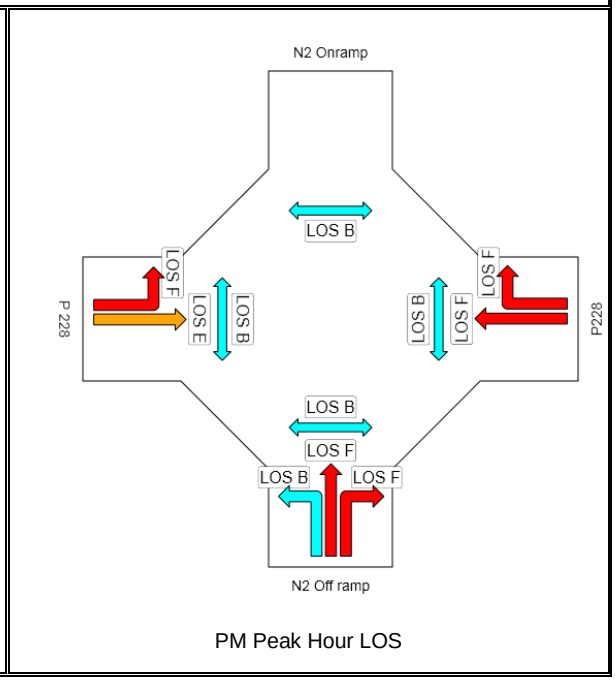
It can be seen that several movements in both the AM and PM peak hours will operate at a LOS F. The indications are that this intersection will require upgrading in the 20 year horizon.

10.6.6 P288/N2 Interchange Western Ramp Intersection





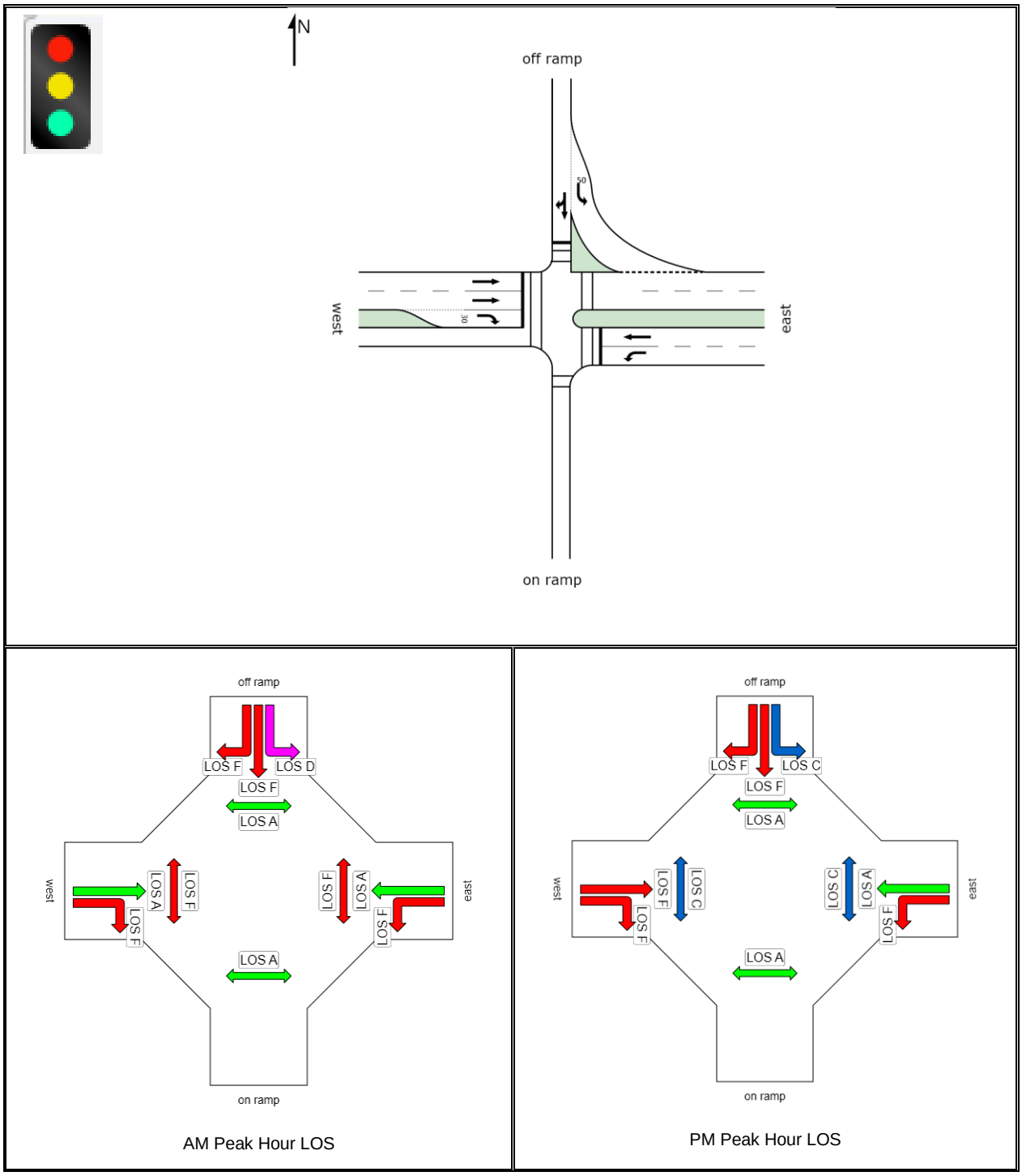
AM Peak Hour LOS



PM Peak Hour LOS

It can be seen that several movements in both the AM and PM peak hours will operate at a LOS F. The indications are that this intersection will require upgrading in the 20 year horizon.

10.6.7 P288/N2 Interchange Eastern Ramp Intersection



AM Peak Hour LOS

PM Peak Hour LOS

It can be seen that several movements in both the AM and PM peak hours will operate at a LOS F. The indications are that this intersection will require upgrading in the 20 year horizon.

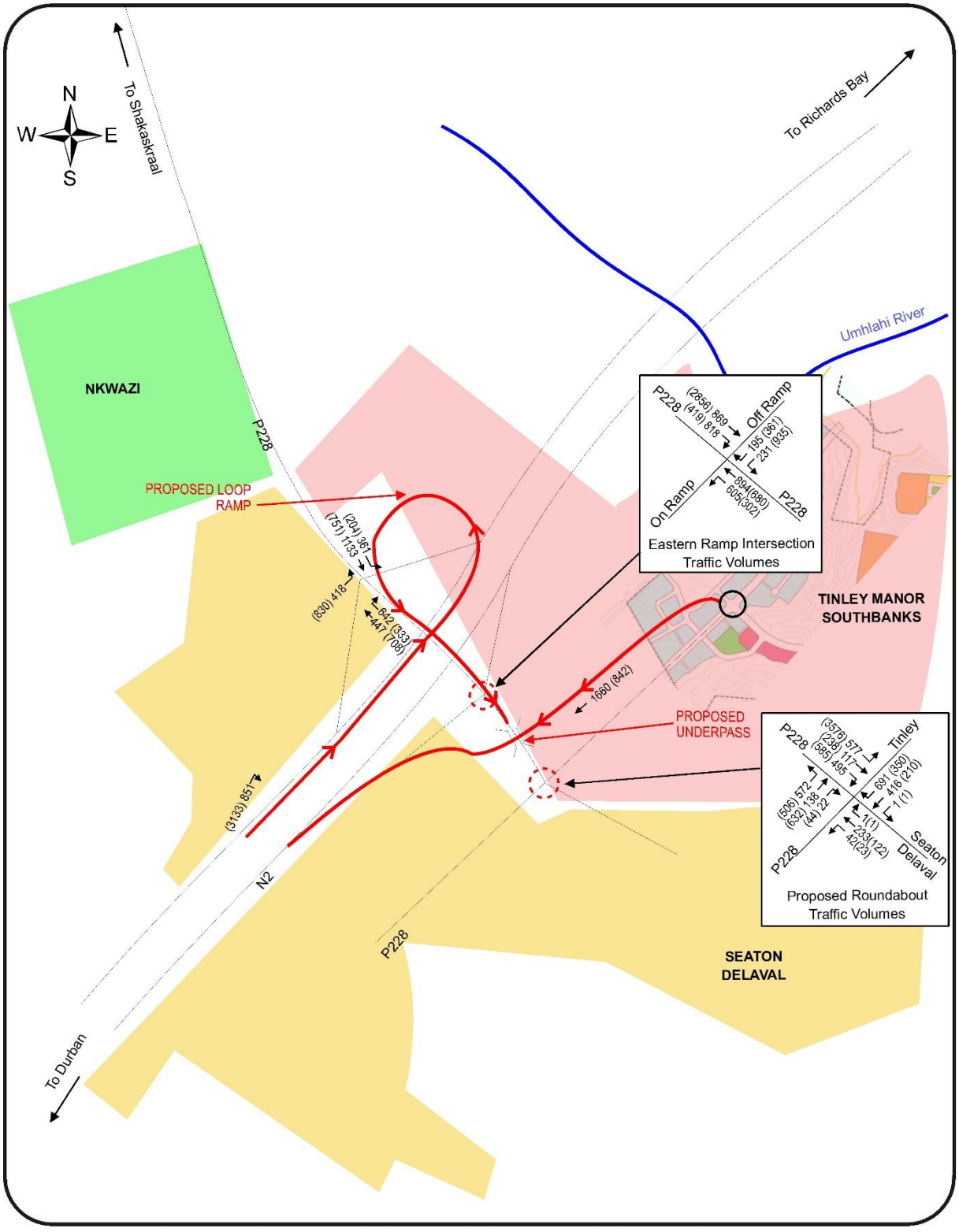
11. New Loop Ramp South to East & Tinley Manor to N2 southbound link

It evident from the preceding analysis of the proposed Sheffield Interchange in Sections 10.6.6 and 10.6.7 and the Tinley Manor Southbanks access intersection in Section 10.6.5, that the predicted traffic volumes expected travel through the proposed interchange and access roundabout in 2036 horizon, exceeds the capacity of these important road network elements. This is as a result of the large volume of traffic exiting the Tinley Manor South Bank Development in the southbound direction during the AM peak hour. In the PM peak hour, the converse of this movement holds true as the right turning movement on the western ramp intersection experiences severe congestion due to the high volume of vehicles returning to the study area in the PM peak hour. Therefore, major upgrades will be required at the proposed new Sheffield Beach interchange in 2036 horizon, as discussed in this chapter of the study.

In mitigation of the expected congestion at the above mentioned interchange and roundabout, the following upgrades are proposed:

- A LOOP ramp traversing from the south to the east is recommended at the proposed Sheffield Beach interchange in order to eliminate the right turning movement at the western ramp intersection.
- A new link road that allows traffic to exit the Tinley Manor Development directly onto to the N2 southbound on-ramp at the new Sheffield Beach interchange is recommended. It is envisaged that this new link road will cross under the P228 in the vicinity of the new interchange by means of an underpass. The benefit of adding this new link road is to ensure that vehicles exiting the proposed development do not have to traverse through the roundabout on P228.

The above mentioned upgrades are shown on Figure 26 hereafter. In addition, the traffic volumes passing through the proposed Sheffield Beach interchange were revised as a result on the introduction of the above mentioned upgrades. As such, the ramp intersections at this proposed interchange were re-analysed to factor in the proposed upgrades and revised traffic volumes, and discussed hereafter in this chapter.

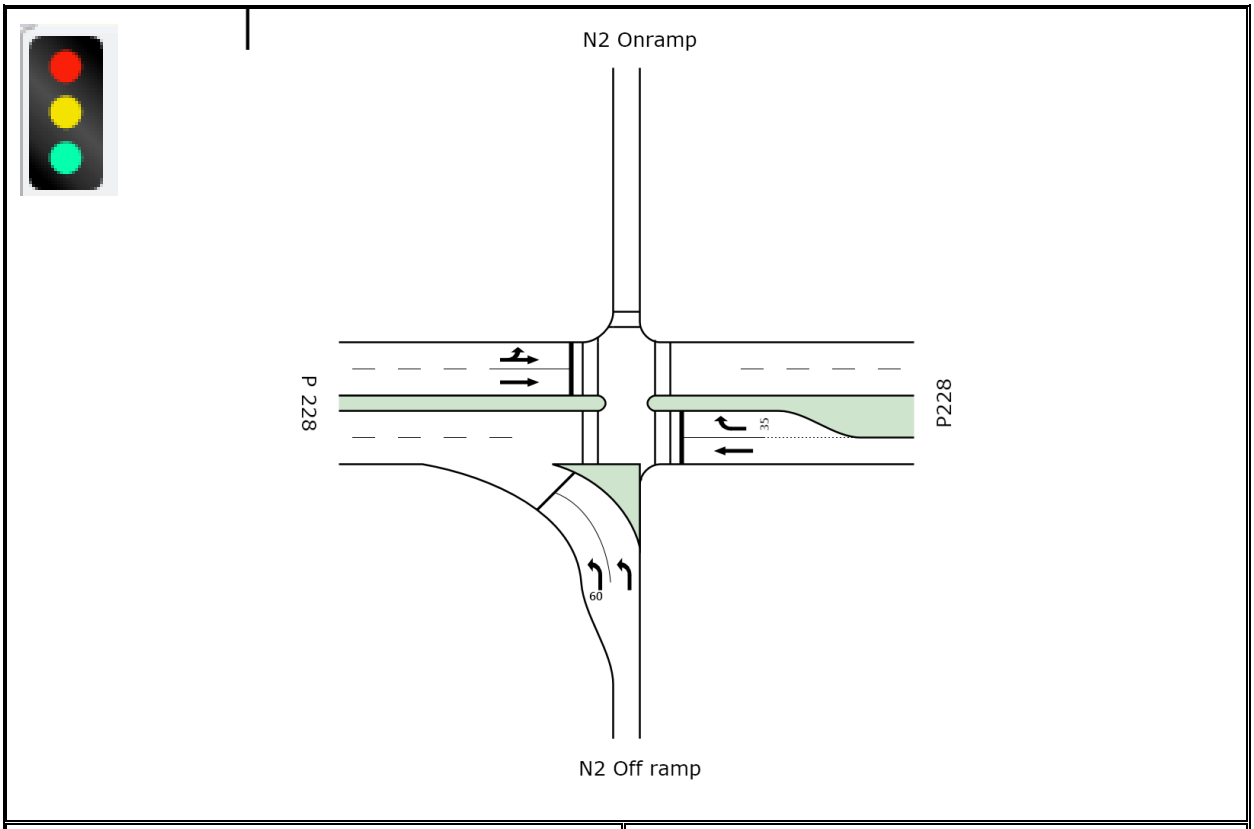


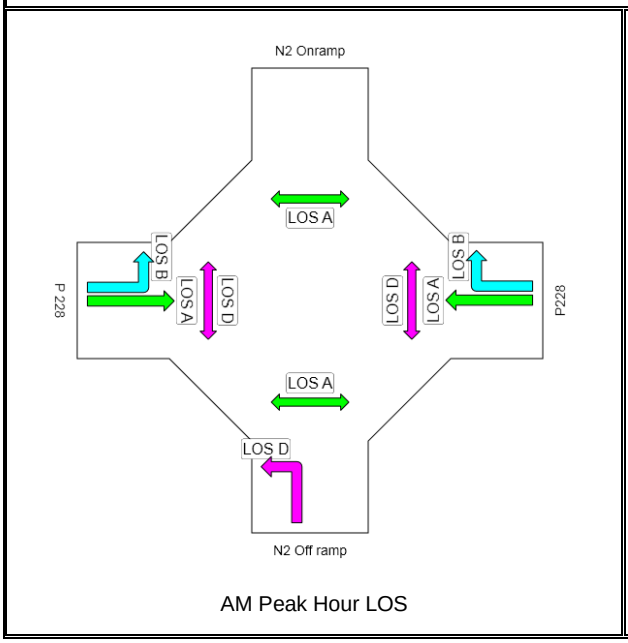
aurecon Leading. Vibrant. Global.	PROPOSED UPGRADES TOTHE NEW SHEFFIELD BEACH INTERCHANGE	PROJECT: 108498
	Proposed Tinley Manor Development	FIGURE: 26
Decemberber 2015	AURECON (PTY) LTD	SCALE: Not to Scale

Figure 25: Traffic volumes with the proposed upgrades to the new Sheffield Beach Interchange

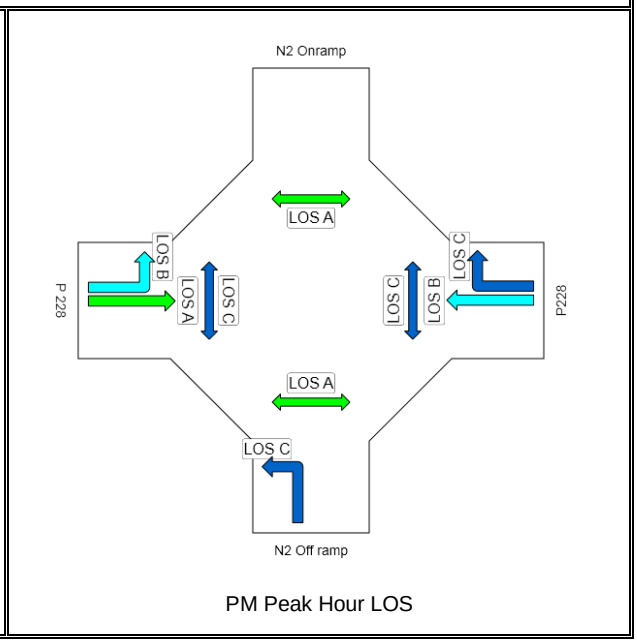
11.1.1 P288/N2 Interchange Western Ramp Intersection

The introduction of this loop ramp and underpass will mean the western ramp intersection at this interchange will need to be modified to remove right turning traffic at this intersection. This new intersection configuration is shown below.





AM Peak Hour LOS

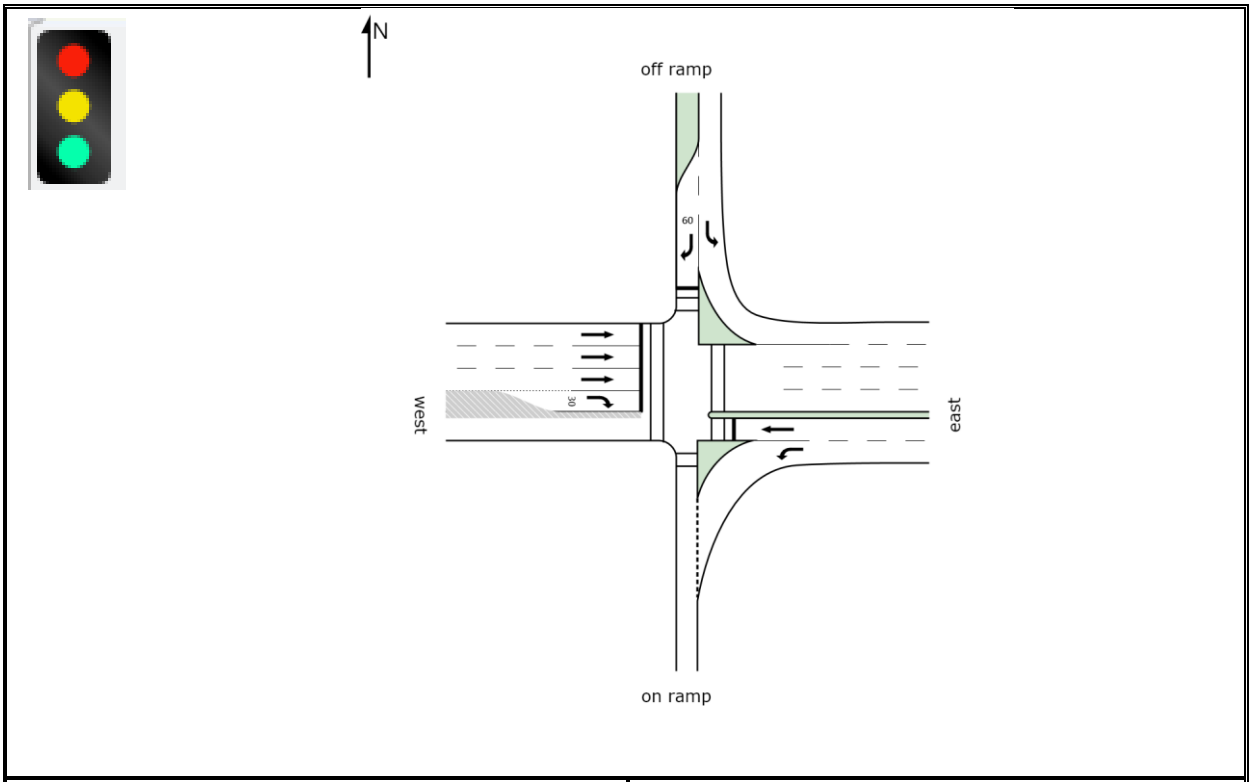


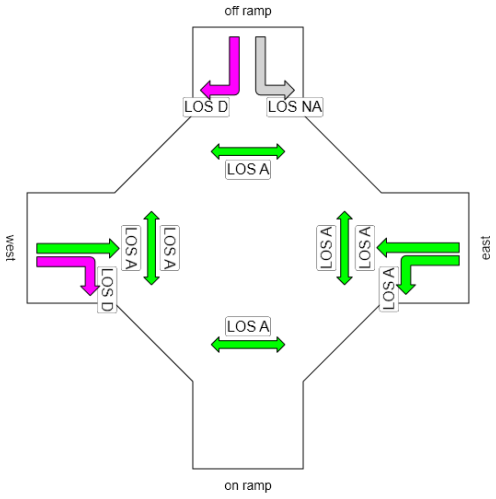
PM Peak Hour LOS

It evident that if the above configuration is adopted all movements in both the AM and PM peak hours will operate at acceptable levels of service in the 20 year horizon.

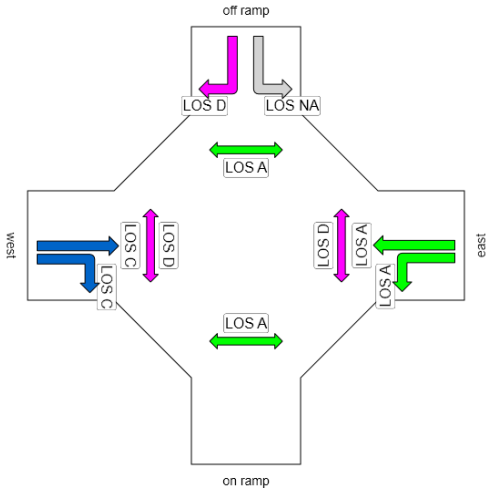
11.1.2 P288/N2 Interchange Eastern Ramp Intersection

The configuration below is to be adopted upon introduction of the loop ramp.





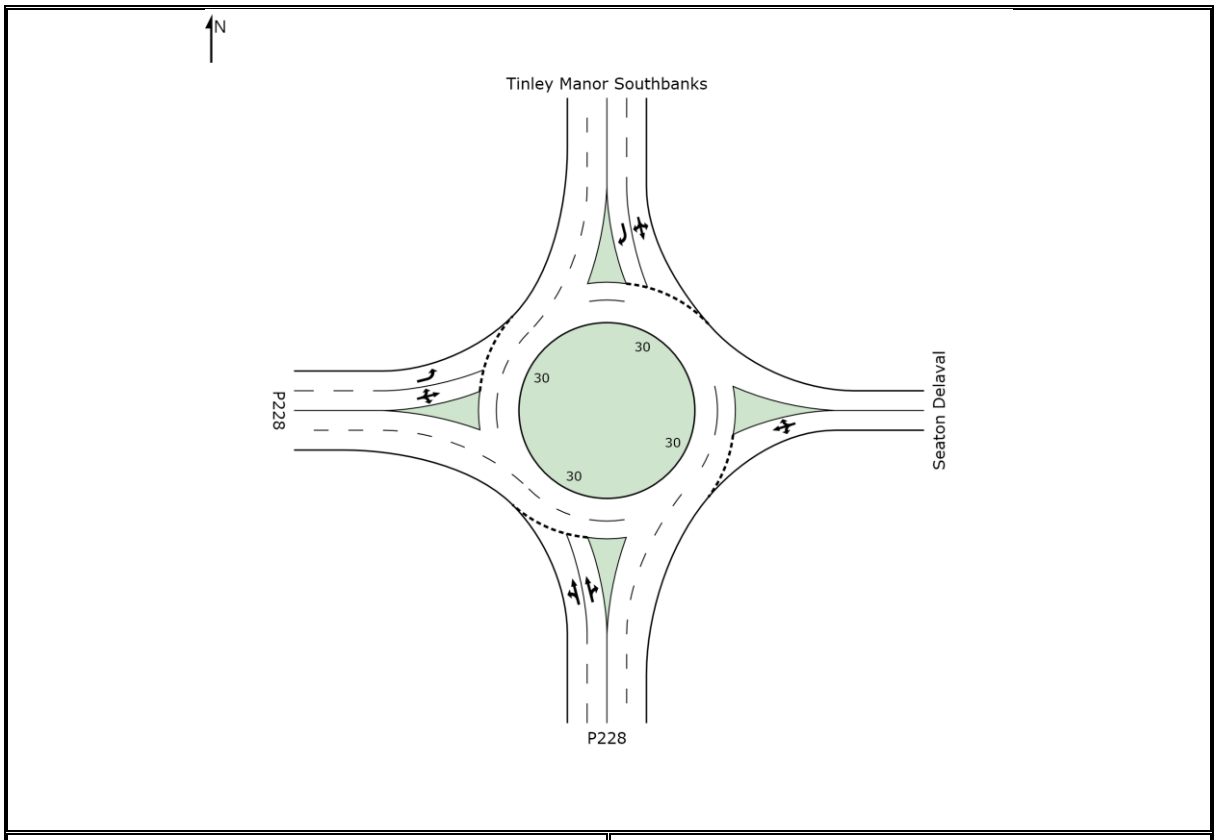
AM Peak Hour LOS

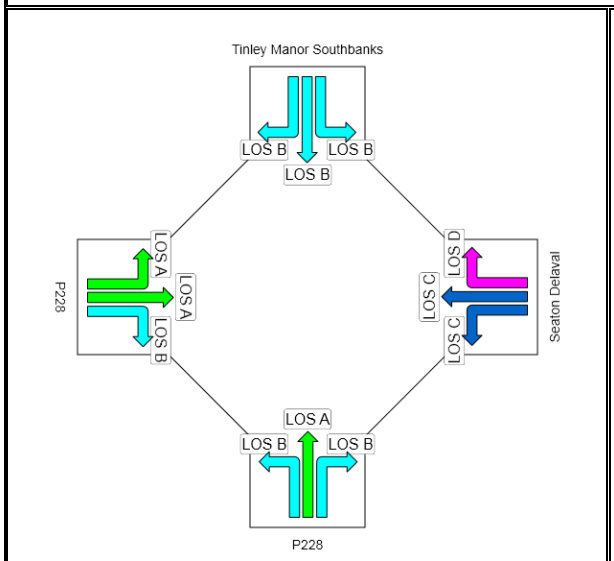


PM Peak Hour LOS

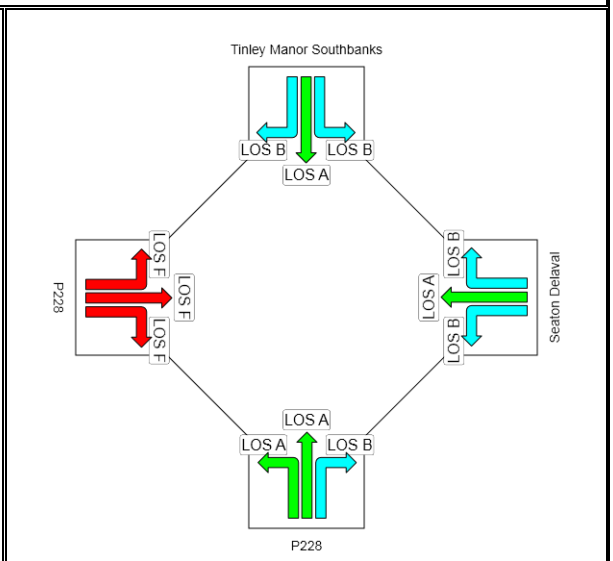
The SIDRA analysis for this eastern terminal of the Sheffield interchange shows acceptable levels of service in both the AM and PM peak hours upon the introduction of the loop ramp and Tinley Manor to N2 southbound onramp.

11.1.3 Access to Tinley Manor/ Access to Seaton Delaval/P228 intersection





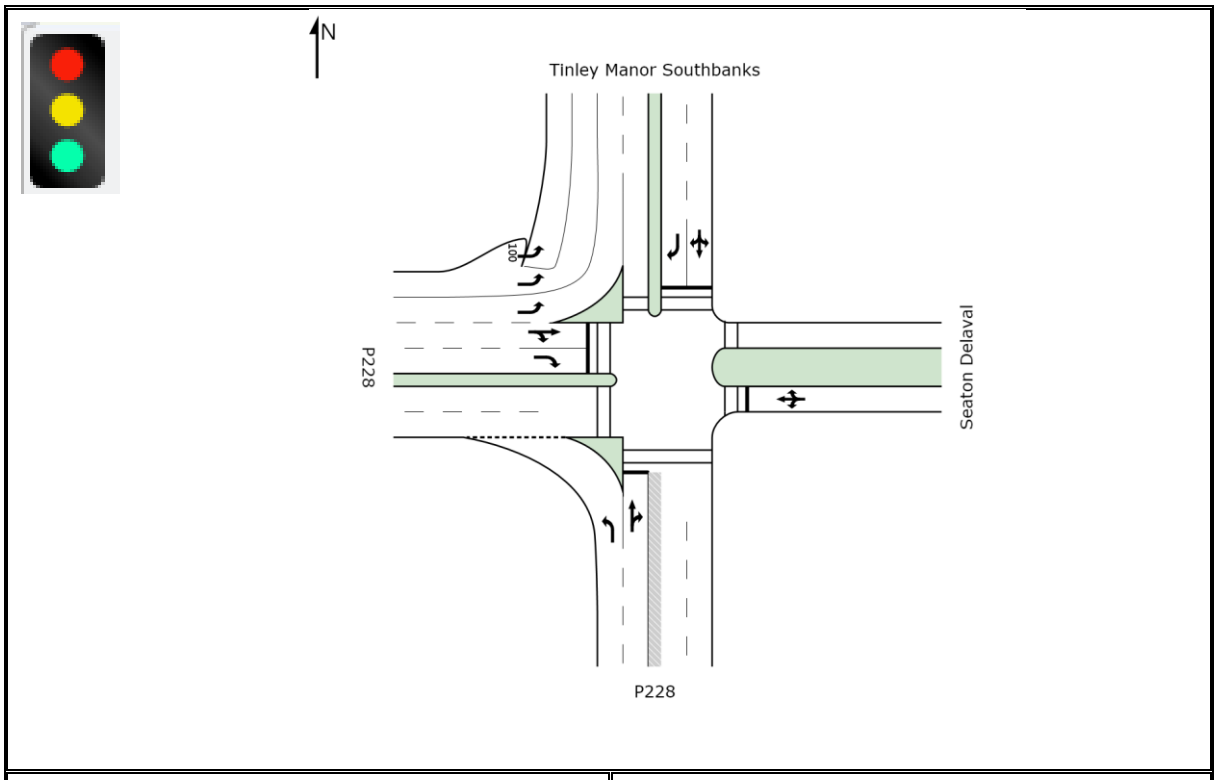
AM Peak Hour LOS

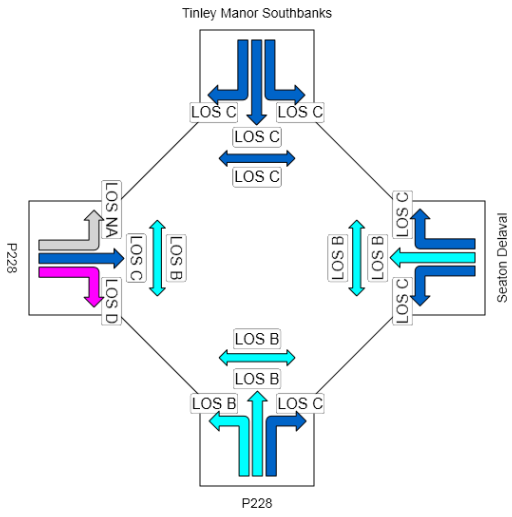


PM Peak Hour LOS

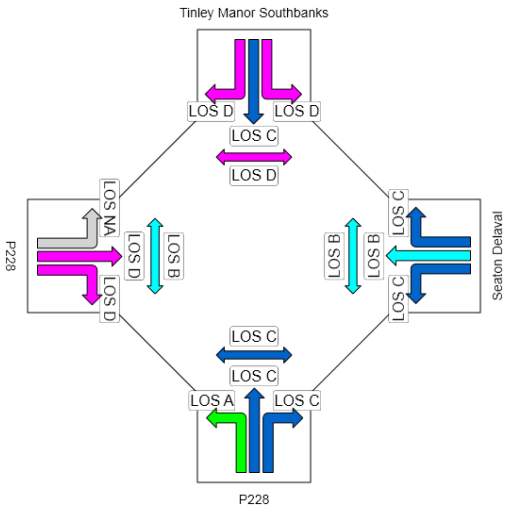
The SIDRA analysis shows that the western approach will operate at a LOS F in the PM peak hour. Therefore, minor upgrades will be required at this intersection in the 20 year horizon.

Access to Tinley Manor/ Access to Seaton Delaval/P228 intersection – Upgrade





AM Peak Hour LOS



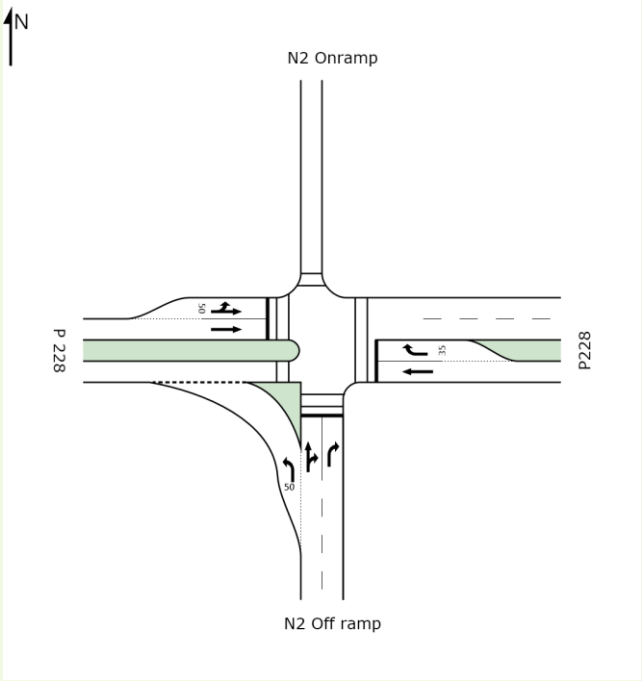
PM Peak Hour LOS

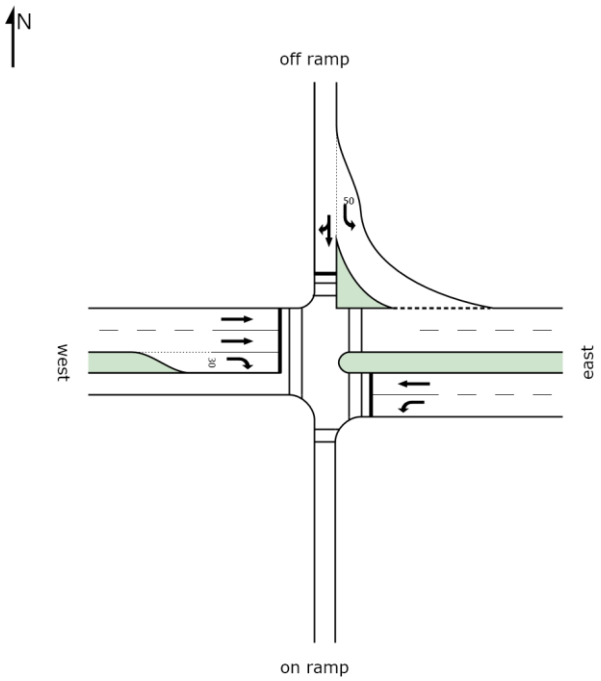
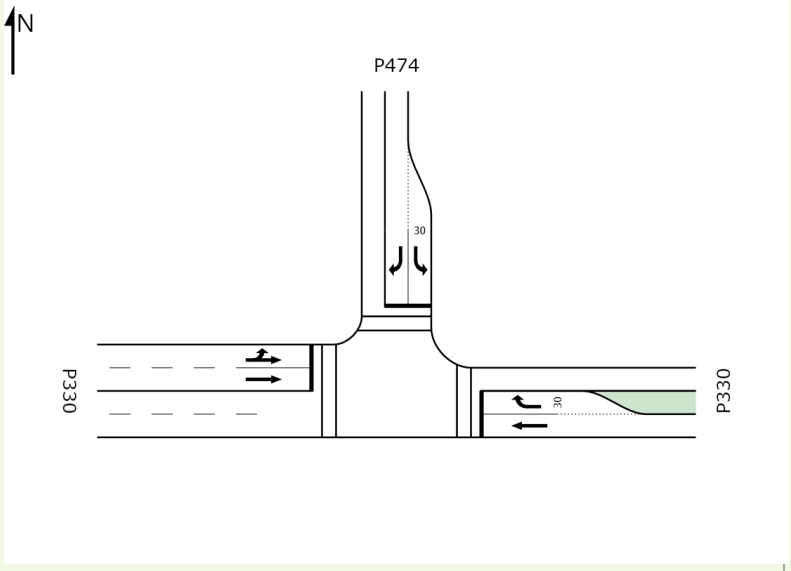
It recommended that this roundabout is converted to a signalised intersection in the 20 year horizon. It can be seen that upon converting this roundabout to a signalised intersection and with minor intersection upgrades, all movements in both the AM and PM peak hours operate at acceptable levels of service in the 20 year horizon.

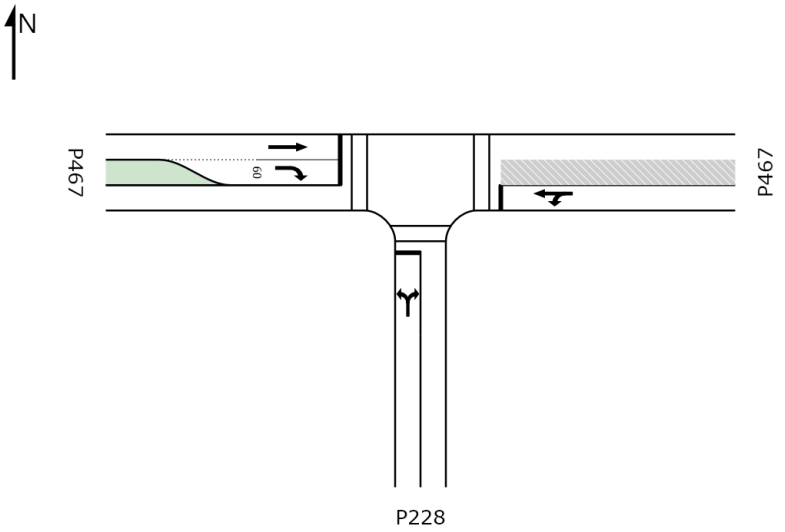
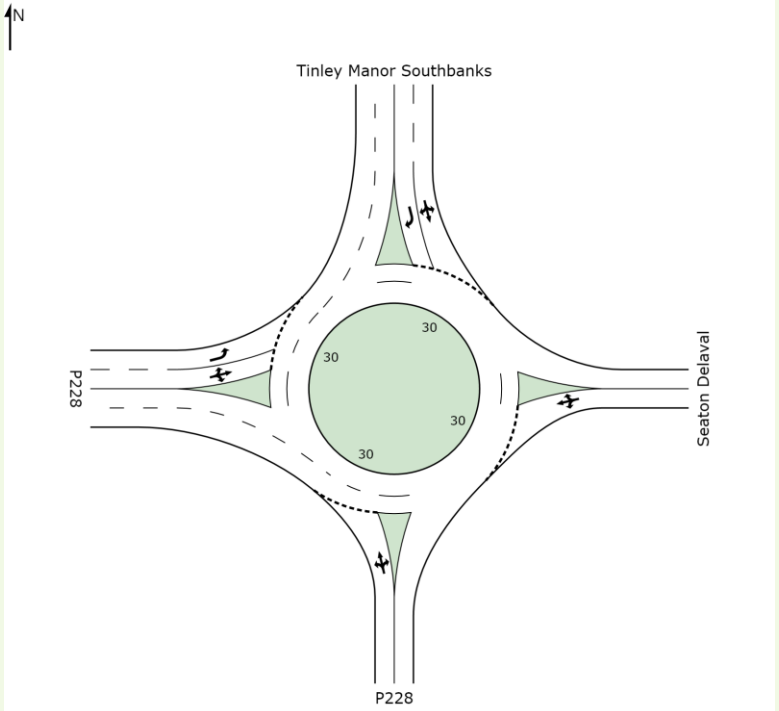
12. Recommendations

The purpose of this Chapter is to summarise the recommendations that were made in the preceding chapters of this study in mitigation of the envisaged congestion that will be encountered on the road network in the various planning horizons. These recommendations for the 10 year and 20 year planning horizons are tabulated hereafter for ease of reference.

12.1 Upgrades required in 2026 (10 year horizon)

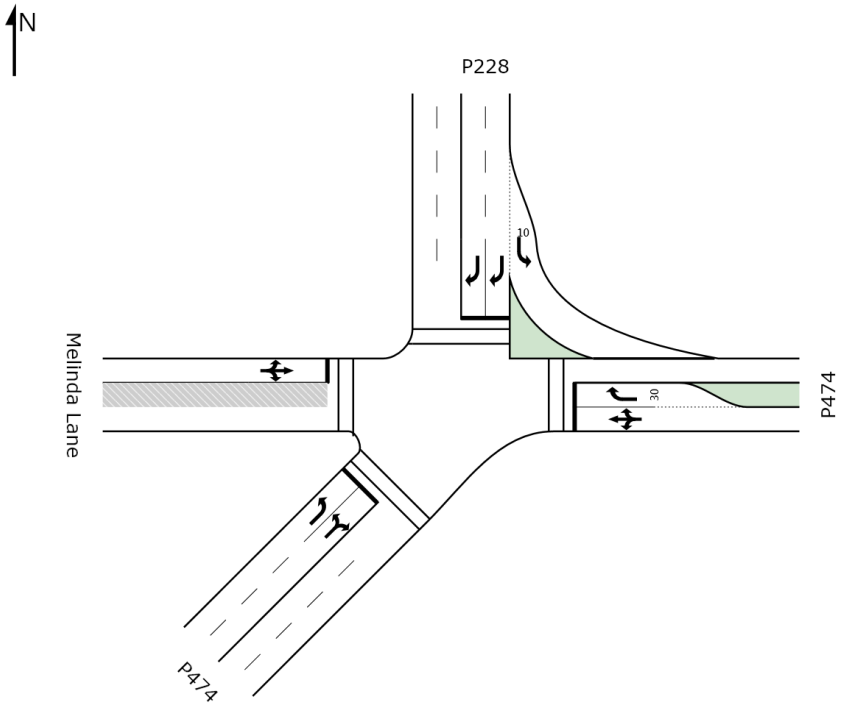
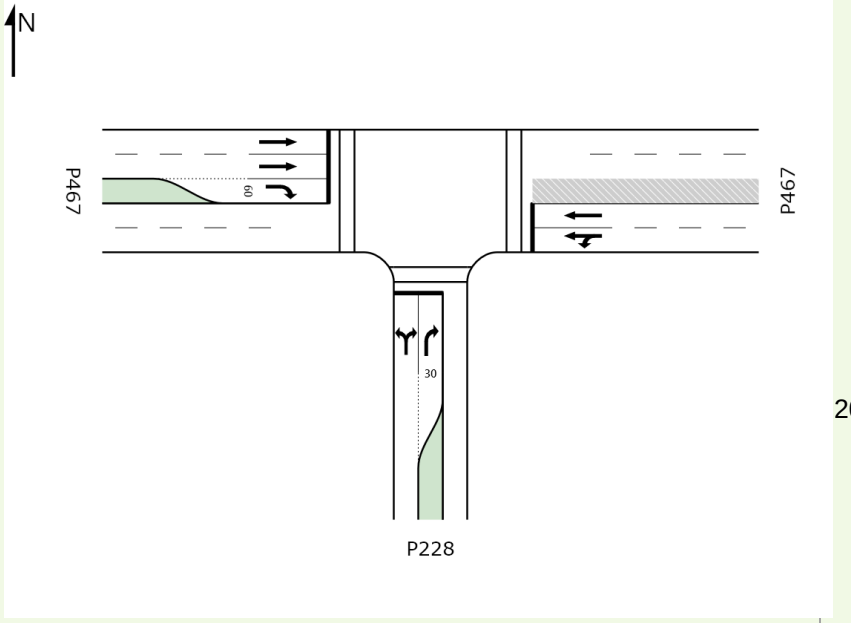
Road element	Layout	Horizon Year
Link P228 from Tinley Manor Access roundabout to new Sheffield interchange.	• Upgrade road to 4 lanes dual carriageway. Two lanes in each direction with centre median.	2026
Proposed new Sheffield Diamond Interchange with N2 – Eastern Ramp Intersection	 • Intersection layout as above	2026

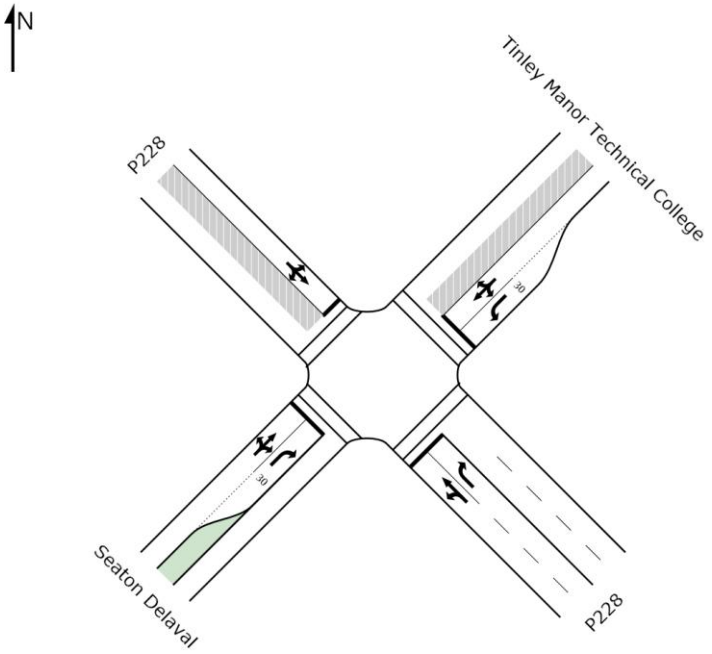
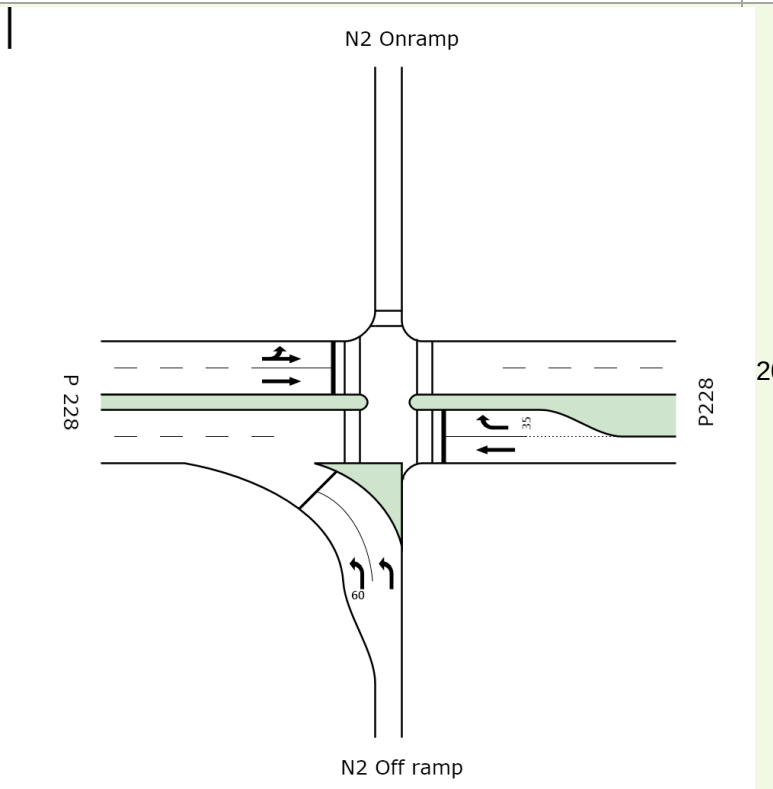
Proposed new Sheffield Diamond Interchange with N2-Western Ramp Intersection	 • Intersection layout as above	2026
P330 / P474 Intersection	 • Upgrade to traffic signals. • Intersection layout as above	2026

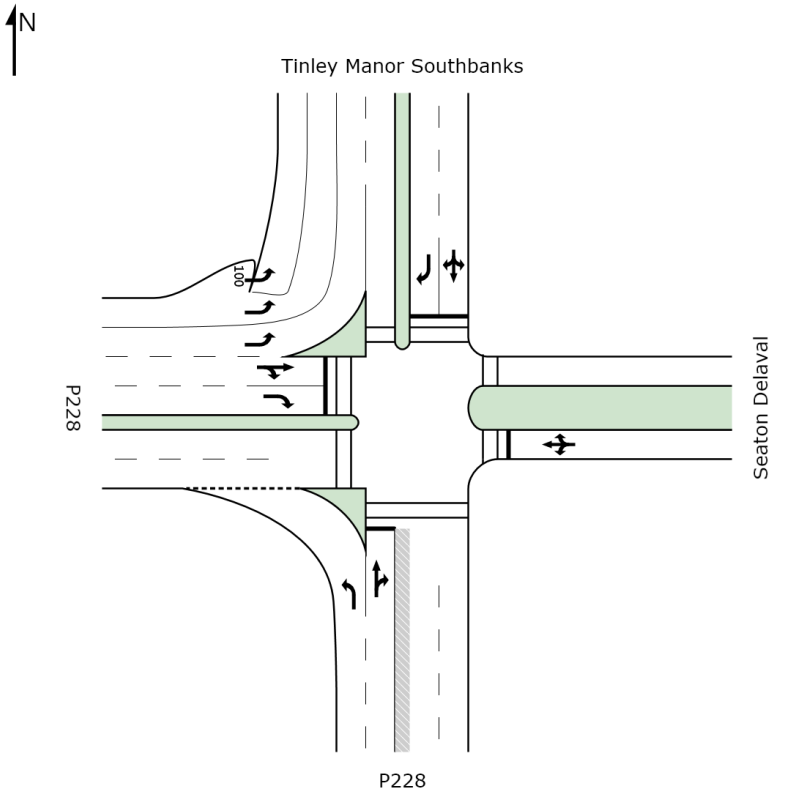
P228 / P467 Intersection	 • Upgrade to traffic signals. • Intersection layout as above	2026
Tinley Manor Access Roundabout	 • Intersection layout as above	2026

12.2 Upgrades required in 2036 (20 year horizon)

Road element	Layout	Horizon Year
Link P228 from proposed Sheffield Interchange western terminal to proposed new intersection of Tinley Manor Education Access/ P228/ Seaton Delaval Access	• Upgrade road to 4 lanes undivided. Two lanes in each direction.	Completed by 2036
Link P228 from P474/P228 intersection to Tinley manor access roundabout	• Upgrade road to 4 lanes undivided. Two lanes in each direction.	2036
Loop Ramp	• New south to east 2 lane loop ramp	2036
Tinley Manor to N2 southbound ramp link	• Link that starts at Tinley Manor, underpasses the P228 and merges with proposed interchange eastern terminal southbound onramp	2036

Intersection of P228 and P474	 • Upgrade to traffic signals. • Intersection layout as above	2036
Intersection of P467 and P228	 • Intersection layout as above	2036

P228/Tinley Manor Technical College Access /Seaton Delaval Access intersection	 • Intersection layout as above	2036
P228 / Proposed Sheffield Interchange western intersection	 • Intersection layout reconfigured as above to eliminate right turn movements	2036

Tinley Manor Access/Seaton Delaval Access/P228 intersection	 • Convert roundabout to traffic signals • Layout as above	2036

13. Conclusion

- The existing local intersection analysis shows a number of critical intersections are operating at unacceptable levels of service, experiencing congestion and hence currently require upgrading. These intersections will need to be upgraded due to the existing background traffic and also to accommodate traffic from approved undeveloped land.
- The increase of background traffic in the 10 year horizon along with the traffic generated by the development of Tinley Manor, Seaton Delaval, Palm Lakes, Nkwazi and several other smaller residential developments travelling through these intersections means they will experience severe congestion in the 10 year horizon.
- To alleviate the stress caused by this increase of traffic, a new proposed diamond interchange on the N2 proposed to be called Sheffield interchange will need to be constructed in the 10 year horizon (2026).
- The introduction of this new proposed interchange will mean the majority of the traffic generated by Tinley Manor will use this interchange to access the N2. The analysis of the Salt Rock interchange and the Tinley Manor interchange will hence be excluded from the study as they experience negligible traffic generated by Tinley Manor Southbank's. The analysis of these interchanges need to be carried out as a separate exercise from affected parties.
- The traffic analysis with the introduction of this new interchange shows local intersections will be able to operate at acceptable levels of service with minor intersection upgrades in 2026.
- Upon the introduction of this new interchange, majority of the traffic generated from Tinley Manor Southbanks will use this interchange to access the N2.
- The analysis of the 20 year horizon has revealed the following:
    - The increase of background traffic and all developments generated traffic requires substantial upgrades to the local road network. This includes both intersection upgrades along with link upgrades.
    - The large volume of Friday PM peak hour traffic volumes, a result of commuter trips returning from south on the N2 means a very large right turn volume is encountered at the proposed Sheffield interchange. This warrants the introduction of a south to east loop ramp at this interchange.
    - The large volume of trips generated by Tinley Manor Southbanks in the AM peak hour requires an underpass be constructed under the P228 that commences at Tinley Manor Southbanks and merges with the proposed Sheffield beach eastern terminal southbound onramp.
    - It is recommended that a cost sharing agreement with adjacent landowners, SANRAL, DOT and local municipalities be entered into in funding the proposed Sheffield Interchange.
- Public transport facilities are to be carefully planned at detailed design stage and implemented. The Ilembe Municipality is expected to expand its public transport operations in line with national policy and link to this section of the north coast and reduce traffic.

Provided the recommendations in section 12 of this report are adopted there is no reason of a traffic engineering nature why the development should not be permitted to proceed.

Appendix

Appendix A

Traffic Counts

TRAFFIC SURVEY																
CLIENT:	AURECON															
SITE:	INTERSECTION OF N2 AND MAIN ROAD 228 (WEST OF INTERCHANGE)															
DATE:	12 HOUR COUNT ON THURSDAY 27 AUGUST 2015															
UNITS:	CLASSIFIED															

APPROACH FROM	NORTH															TOTAL
NAME																
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 - 06:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 - 06:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 - 07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 - 07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 - 07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 - 07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 - 08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 - 08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 - 08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 - 08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 - 09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00 - 09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 - 09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 - 09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15 - 13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30 - 13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45 - 14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00 - 14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15 - 14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30 - 14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45 - 15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 - 15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 - 16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15 - 16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30 - 16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45 - 17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00 - 17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15 - 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30 - 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 - 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

TRAFFIC SURVEY	
CLIENT:	AURECON
SITE:	INTERSECTION OF N2 AND MAIN ROAD 228 (WEST OF INTERCHANGE)
DATE:	12 HOUR COUNT ON THURSDAY 27 AUGUST 2015
UNITS:	CLASSIFIED

APPROACH FROM	SOUTH															TOTAL
NAME	N2 OFF RAMP															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	13	9	1	0	23	0	0	0	0	0	8	0	1	0	9	32
06:15 - 06:30	19	14	5	0	38	0	0	0	0	0	25	2	0	2	29	67
06:30 - 06:45	28	17	4	1	50	0	0	0	0	0	38	0	1	0	39	89
06:45 - 07:00	76	26	4	3	109	0	0	0	0	0	31	0	0	1	32	141
07:00 - 07:15	55	19	9	1	84	0	0	0	0	0	70	0	3	0	73	157
07:15 - 07:30	90	20	6	0	116	0	0	0	0	0	34	1	1	0	36	152
07:30 - 07:45	47	20	2	1	70	0	0	0	0	0	55	0	0	0	55	125
07:45 - 08:00	75	16	5	1	97	0	0	0	0	0	41	0	3	0	44	141
08:00 - 08:15	44	22	7	1	74	0	0	0	0	0	85	0	6	0	91	165
08:15 - 08:30	41	17	3	1	62	0	0	0	0	0	77	1	3	0	81	143
08:30 - 08:45	24	13	1	0	38	0	0	0	0	0	86	0	3	0	89	127
08:45 - 09:00	43	14	6	1	64	0	0	0	0	0	60	0	1	0	61	125
09:00 - 09:15	39	8	7	0	54	0	0	0	0	0	79	0	1	0	80	134
09:15 - 09:30	36	5	4	0	45	0	0	0	0	0	38	0	3	0	41	86
09:30 - 09:45	28	7	10	0	45	0	0	0	0	0	45	0	4	0	49	94
09:45 - 10:00	38	2	6	1	47	0	0	0	0	0	66	0	4	0	70	117
10:00 - 10:15	32	6	6	0	44	0	0	0	0	0	62	0	1	0	63	107
10:15 - 10:30	27	8	3	0	38	0	0	0	0	0	51	0	7	1	59	97
10:30 - 10:45	33	4	5	0	42	0	0	0	0	0	78	1	5	0	84	126
10:45 - 11:00	23	4	2	0	29	0	0	0	0	0	69	0	6	0	75	104
11:00 - 11:15	19	2	4	0	25	0	0	0	0	0	48	0	5	0	53	78
11:15 - 11:30	40	5	10	0	55	0	0	0	0	0	53	0	7	0	60	115
11:30 - 11:45	48	7	6	0	61	0	0	0	0	0	58	0	3	0	61	122
11:45 - 12:00	56	1	9	1	67	0	0	0	0	0	65	0	1	0	66	133
12:00 - 12:15	58	1	9	0	68	0	0	0	0	0	74	2	3	0	79	147
12:15 - 12:30	53	6	14	0	73	0	0	0	0	0	100	0	3	0	103	176
12:30 - 12:45	60	2	8	0	70	0	0	0	0	0	68	5	0	0	73	143
12:45 - 13:00	64	3	6	1	74	0	0	0	0	0	61	1	0	0	62	136
13:00 - 13:15	74	3	8	0	85	0	0	0	0	0	66	0	4	0	70	155
13:15 - 13:30	57	5	7	0	69	0	0	0	0	0	96	0	4	0	100	169
13:30 - 13:45	53	2	11	3	69	0	0	0	0	0	75	0	4	0	79	148
13:45 - 14:00	60	3	4	0	67	0	0	0	0	0	69	0	1	1	71	138
14:00 - 14:15	54	8	12	0	74	0	0	0	0	0	86	1	3	0	90	164
14:15 - 14:30	69	5	8	0	82	0	0	0	0	0	80	0	3	0	83	165
14:30 - 14:45	58	9	12	0	79	0	0	0	0	0	67	0	6	0	73	152
14:45 - 15:00	65	8	5	1	79	0	0	0	0	0	97	1	1	0	99	178
15:00 - 15:15	79	7	6	1	93	0	0	0	0	0	53	0	4	0	57	150
15:15 - 15:30	90	10	7	0	107	0	0	0	0	0	57	0	1	0	58	165
15:30 - 15:45	53	10	3	1	67	0	0	0	0	0	69	2	3	0	74	141
15:45 - 16:00	48	13	8	1	70	0	0	0	0	0	83	0	2	0	85	155
16:00 - 16:15	84	15	4	2	105	0	0	0	0	0	65	0	2	0	67	172
16:15 - 16:30	53	7	5	2	67	0	0	0	0	0	96	1	0	1	98	165
16:30 - 16:45	58	17	3	1	79	0	0	0	0	0	106	1	0	0	107	186
16:45 - 17:00	63	7	4	1	75	0	0	0	0	0	110	0	0	0	110	185
17:00 - 17:15	61	6	7	2	76	0	0	0	0	0	63	0	0	0	63	139
17:15 - 17:30	63	14	3	0	80	0	0	0	0	0	85	0	1	0	86	166
17:30 - 17:45	50	10	3	2	65	0	0	0	0	0	69	0	0	1	70	135
17:45 - 18:00	52	10	4	3	69	0	0	0	0	0	70	0	0	0	70	139
TOTAL	**2453**	**447**	**286**	**33**	**3219**	**0**	**0**	**0**	**0**	**0**	**3187**	**19**	**114**	**7**	**3327**	**6546**

TRAFFIC SURVEY																	
CLIENT:	AURECON																
SITE:	INTERSECTION OF N2 AND MAIN ROAD 228 (WEST OF INTERCHANGE)																
DATE:	12 HOUR COUNT ON THURSDAY 27 AUGUST 2015																
UNITS:	CLASSIFIED																

APPROACH FROM	EAST															TOTAL
NAME	MAIN ROAD 228															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	0	0	0	0	0	10	2	0	0	12	8	0	0	0	8	20
06:15 - 06:30	0	0	0	0	0	18	4	1	0	23	14	0	0	0	14	37
06:30 - 06:45	0	0	0	0	0	56	6	0	1	63	11	0	0	0	11	74
06:45 - 07:00	0	0	0	0	0	125	5	0	0	130	24	0	0	0	24	154
07:00 - 07:15	0	0	0	0	0	131	3	1	1	136	22	0	0	0	22	158
07:15 - 07:30	0	0	0	0	0	84	6	0	3	93	37	0	1	0	38	131
07:30 - 07:45	0	0	0	0	0	55	5	0	0	60	16	1	1	0	18	78
07:45 - 08:00	0	0	0	0	0	71	3	3	2	79	17	0	0	0	17	96
08:00 - 08:15	0	0	0	0	0	44	3	3	0	50	21	1	0	0	22	72
08:15 - 08:30	0	0	0	0	0	54	3	2	0	59	16	0	1	0	17	76
08:30 - 08:45	0	0	0	0	0	38	4	1	0	43	13	0	0	0	13	56
08:45 - 09:00	0	0	0	0	0	39	2	3	0	44	16	0	2	0	18	62
09:00 - 09:15	0	0	0	0	0	51	3	4	0	58	19	0	0	0	19	77
09:15 - 09:30	0	0	0	0	0	42	2	2	0	46	16	0	0	0	16	62
09:30 - 09:45	0	0	0	0	0	23	0	0	0	23	9	0	2	0	11	34
09:45 - 10:00	0	0	0	0	0	41	3	3	0	47	13	0	1	0	14	61
10:00 - 10:15	0	0	0	0	0	28	4	1	0	33	13	0	3	0	16	49
10:15 - 10:30	0	0	0	0	0	19	1	2	0	22	16	0	1	0	17	39
10:30 - 10:45	0	0	0	0	0	41	2	4	0	47	19	0	1	0	20	67
10:45 - 11:00	0	0	0	0	0	18	1	1	0	20	8	0	0	0	8	28
11:00 - 11:15	0	0	0	0	0	29	3	4	0	36	20	0	0	0	20	56
11:15 - 11:30	0	0	0	0	0	46	2	1	0	49	10	0	1	0	11	60
11:30 - 11:45	0	0	0	0	0	37	1	5	0	43	15	0	0	0	15	58
11:45 - 12:00	0	0	0	0	0	53	5	1	0	59	10	0	3	0	13	72
12:00 - 12:15	0	0	0	0	0	32	2	1	0	35	9	0	2	0	11	46
12:15 - 12:30	0	0	0	0	0	63	1	2	1	67	20	0	0	0	20	87
12:30 - 12:45	0	0	0	0	0	56	3	1	0	60	13	0	1	0	14	74
12:45 - 13:00	0	0	0	0	0	69	3	4	1	77	18	0	1	0	19	96
13:00 - 13:15	0	0	0	0	0	52	6	1	0	59	13	0	0	0	13	72
13:15 - 13:30	0	0	0	0	0	37	3	1	0	41	14	0	0	0	14	55
13:30 - 13:45	0	0	0	0	0	57	5	6	0	68	15	0	1	0	16	84
13:45 - 14:00	0	0	0	0	0	80	4	3	0	87	13	0	0	0	13	100
14:00 - 14:15	0	0	0	0	0	59	5	5	0	69	12	0	2	0	14	83
14:15 - 14:30	0	0	0	0	0	43	5	2	1	51	21	0	1	0	22	73
14:30 - 14:45	0	0	0	0	0	48	3	5	0	56	12	0	0	0	12	68
14:45 - 15:00	0	0	0	0	0	53	5	4	0	62	25	0	1	0	26	88
15:00 - 15:15	0	0	0	0	0	69	5	3	0	77	14	1	0	0	15	92
15:15 - 15:30	0	0	0	0	0	70	12	0	0	82	15	0	0	0	15	97
15:30 - 15:45	0	0	0	0	0	33	7	5	0	45	16	0	1	0	17	62
15:45 - 16:00	0	0	0	0	0	51	7	5	0	63	13	0	1	1	15	78
16:00 - 16:15	0	0	0	0	0	63	8	2	0	73	18	0	0	0	18	91
16:15 - 16:30	0	0	0	0	0	56	7	5	1	69	14	0	0	1	15	84
16:30 - 16:45	0	0	0	0	0	70	12	1	0	83	13	0	0	0	13	96
16:45 - 17:00	0	0	0	0	0	62	5	1	0	68	25	0	0	0	25	93
17:00 - 17:15	0	0	0	0	0	55	5	1	0	61	19	0	0	0	19	80
17:15 - 17:30	0	0	0	0	0	38	2	1	0	41	11	0	0	0	11	52
17:30 - 17:45	0	0	0	0	0	30	2	0	0	32	11	0	0	0	11	43
17:45 - 18:00	0	0	0	0	0	34	2	1	0	37	16	0	0	0	16	53
TOTAL	**0**	**0**	**0**	**0**	**0**	**2433**	**192**	**102**	**11**	**2738**	**753**	**3**	**28**	**2**	**786**	**3524**

TRAFFIC SURVEY	
CLIENT:	AURECON
SITE:	INTERSECTION OF N2 AND MAIN ROAD 228 (WEST OF INTERCHANGE)
DATE:	12 HOUR COUNT ON THURSDAY 27 AUGUST 2015
UNITS:	CLASSIFIED

APPROACH FROM	WEST															TOTAL
NAME	MAIN ROAD 228															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	0	0	0	0	0	49	17	3	1	70	0	0	0	0	0	70
06:15 - 06:30	1	0	0	0	1	59	28	3	3	93	0	0	0	0	0	94
06:30 - 06:45	4	0	0	0	4	96	43	7	3	149	0	0	0	0	0	153
06:45 - 07:00	9	0	1	0	10	162	33	9	2	206	0	0	0	0	0	216
07:00 - 07:15	4	0	0	0	4	132	35	14	0	181	0	0	0	0	0	185
07:15 - 07:30	10	0	0	0	10	208	36	8	2	254	0	0	0	0	0	264
07:30 - 07:45	2	0	0	0	2	166	36	7	2	211	0	0	0	0	0	213
07:45 - 08:00	9	0	1	0	10	177	35	7	1	220	0	0	0	0	0	230
08:00 - 08:15	4	0	1	0	5	98	29	12	0	139	0	0	0	0	0	144
08:15 - 08:30	8	0	0	0	8	76	16	10	0	102	0	0	0	0	0	110
08:30 - 08:45	5	0	1	0	6	85	14	7	2	108	0	0	0	0	0	114
08:45 - 09:00	4	0	1	0	5	74	9	7	2	92	0	0	0	0	0	97
09:00 - 09:15	5	0	0	0	5	88	9	8	0	105	0	0	0	0	0	110
09:15 - 09:30	0	0	1	0	1	74	9	9	1	93	0	0	0	0	0	94
09:30 - 09:45	6	0	0	0	6	63	5	11	0	79	0	0	0	0	0	85
09:45 - 10:00	1	0	0	0	1	81	9	9	0	99	0	0	0	0	0	100
10:00 - 10:15	6	0	0	0	6	87	8	5	1	101	0	0	0	0	0	107
10:15 - 10:30	2	0	0	0	2	46	4	9	0	59	0	0	0	0	0	61
10:30 - 10:45	4	0	0	0	4	80	5	9	0	94	0	0	0	0	0	98
10:45 - 11:00	2	0	0	0	2	81	5	4	1	91	0	0	0	0	0	93
11:00 - 11:15	4	0	0	0	4	55	2	9	1	67	0	0	0	0	0	71
11:15 - 11:30	3	0	1	0	4	67	10	10	0	87	0	0	0	0	0	91
11:30 - 11:45	4	0	1	0	5	92	10	9	0	111	0	0	0	0	0	116
11:45 - 12:00	4	0	1	0	5	93	7	6	1	107	0	0	0	0	0	112
12:00 - 12:15	2	0	0	0	2	86	4	5	1	96	0	0	0	0	0	98
12:15 - 12:30	6	0	1	0	7	102	3	6	3	114	0	0	0	0	0	121
12:30 - 12:45	5	0	0	0	5	113	6	7	1	127	0	0	0	0	0	132
12:45 - 13:00	9	0	1	0	10	142	8	8	1	159	0	0	0	0	0	169
13:00 - 13:15	0	0	0	0	0	125	9	7	2	143	0	0	0	0	0	143
13:15 - 13:30	6	0	0	0	6	101	3	11	0	115	0	0	0	0	0	121
13:30 - 13:45	6	0	0	0	6	76	4	11	1	92	0	0	0	0	0	98
13:45 - 14:00	1	0	0	0	1	74	8	6	0	88	0	0	0	0	0	89
14:00 - 14:15	4	0	1	0	5	159	10	13	0	182	0	0	0	0	0	187
14:15 - 14:30	9	0	0	0	9	177	10	4	2	193	0	0	0	0	0	202
14:30 - 14:45	0	0	0	0	0	94	8	4	0	106	0	0	0	0	0	106
14:45 - 15:00	2	1	0	0	3	162	15	12	1	190	0	0	0	0	0	193
15:00 - 15:15	2	0	0	0	2	100	11	5	1	117	0	0	0	0	0	119
15:15 - 15:30	6	0	0	0	6	190	17	13	0	220	0	0	0	0	0	226
15:30 - 15:45	4	0	0	0	4	162	13	11	1	187	0	0	0	0	0	191
15:45 - 16:00	4	1	0	0	5	129	32	6	0	167	0	0	0	0	0	172
16:00 - 16:15	4	2	0	0	6	159	21	8	2	190	0	0	0	0	0	196
16:15 - 16:30	3	1	0	0	4	97	18	8	2	125	0	0	0	0	0	129
16:30 - 16:45	9	2	0	0	11	157	27	6	0	190	0	0	0	0	0	201
16:45 - 17:00	6	2	1	0	9	128	25	7	2	162	0	0	0	0	0	171
17:00 - 17:15	7	0	0	0	7	68	26	5	6	105	0	0	0	0	0	112
17:15 - 17:30	2	0	0	0	2	51	20	7	1	79	0	0	0	0	0	81
17:30 - 17:45	0	0	0	0	0	56	19	2	0	77	0	0	0	0	0	77
17:45 - 18:00	5	0	0	0	5	56	12	2	0	70	0	0	0	0	0	75
TOTAL	**203**	**9**	**13**	**0**	**225**	**5053**	**743**	**366**	**50**	**6212**	**0**	**0**	**0**	**0**	**0**	**6437**

TRAFFIC SURVEY																
CLIENT:	AURECON															
SITE:	INTERSECTION OF N2 AND MAIN ROAD 228 (EAST OF INTERCHANGE)															
DATE:	12 HOUR COUNT ON THURSDAY 27 AUGUST 2015															
UNITS:	CLASSIFIED															

APPROACH FROM	NORTH															TOTAL
NAME	N2 OFF RAMP															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	2	0	0	1	3	0	0	0	0	0	2	0	0	0	2	5
06:15 - 06:30	4	0	1	0	5	0	0	0	0	0	1	0	0	0	1	6
06:30 - 06:45	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	7
06:45 - 07:00	5	1	0	1	7	0	0	0	0	0	3	0	0	0	3	10
07:00 - 07:15	10	0	1	0	11	0	0	0	0	0	2	0	0	0	2	13
07:15 - 07:30	6	0	0	0	6	0	0	0	0	0	1	0	0	1	2	8
07:30 - 07:45	4	0	0	0	4	0	0	0	0	0	9	0	0	1	10	14
07:45 - 08:00	14	0	0	0	14	0	0	0	0	0	3	0	0	0	3	17
08:00 - 08:15	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
08:15 - 08:30	8	0	0	0	8	0	0	0	0	0	4	0	0	0	4	12
08:30 - 08:45	14	0	0	0	14	0	0	0	0	0	4	0	0	0	4	18
08:45 - 09:00	12	0	0	0	12	0	0	0	0	0	5	0	0	0	5	17
09:00 - 09:15	7	0	0	0	7	0	0	0	0	0	3	0	0	0	3	10
09:15 - 09:30	6	0	0	0	6	0	0	0	0	0	1	0	0	0	1	7
09:30 - 09:45	7	0	0	0	7	0	0	0	0	0	3	0	0	0	3	10
09:45 - 10:00	5	0	0	0	5	0	0	0	0	0	4	0	0	0	4	9
10:00 - 10:15	6	0	0	0	6	0	0	0	0	0	4	0	0	0	4	10
10:15 - 10:30	9	0	0	0	9	0	0	0	0	0	5	0	0	0	5	14
10:30 - 10:45	10	0	1	0	11	0	0	0	0	0	4	0	0	0	4	15
10:45 - 11:00	3	0	0	0	3	0	0	0	0	0	2	0	0	0	2	5
11:00 - 11:15	8	0	0	0	8	0	0	0	0	0	2	0	0	0	2	10
11:15 - 11:30	10	0	0	0	10	0	0	0	0	0	2	0	0	0	2	12
11:30 - 11:45	9	0	1	1	11	0	0	0	0	0	6	0	0	0	6	17
11:45 - 12:00	7	0	0	2	9	0	0	0	0	0	2	0	0	0	2	11
12:00 - 12:15	14	0	0	0	14	0	0	0	0	0	1	0	0	0	1	15
12:15 - 12:30	14	0	0	0	14	0	0	0	0	0	6	0	0	0	6	20
12:30 - 12:45	8	0	0	0	8	0	0	0	0	0	2	0	0	0	2	10
12:45 - 13:00	8	0	0	0	8	0	0	0	0	0	3	0	0	0	3	11
13:00 - 13:15	7	0	1	0	8	0	0	0	0	0	2	0	0	0	2	10
13:15 - 13:30	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
13:30 - 13:45	12	0	0	0	12	0	0	0	0	0	1	0	2	0	3	15
13:45 - 14:00	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5
14:00 - 14:15	10	0	0	0	10	0	0	0	0	0	3	0	0	0	3	13
14:15 - 14:30	17	0	0	0	17	0	0	0	0	0	3	0	0	1	4	21
14:30 - 14:45	4	0	1	0	5	0	0	0	0	0	4	0	0	0	4	9
14:45 - 15:00	4	0	1	0	5	0	0	0	0	0	2	0	0	0	2	7
15:00 - 15:15	12	0	0	0	12	0	0	0	0	0	4	0	0	0	4	16
15:15 - 15:30	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	9
15:30 - 15:45	14	0	0	0	14	0	0	0	0	0	4	0	0	0	4	18
15:45 - 16:00	11	0	1	0	12	0	0	0	0	0	4	0	0	0	4	16
16:00 - 16:15	5	1	0	0	6	0	0	0	0	0	3	0	0	0	3	9
16:15 - 16:30	14	1	1	0	16	0	0	0	0	0	6	0	0	0	6	22
16:30 - 16:45	30	0	0	0	30	0	0	0	0	0	6	0	0	0	6	36
16:45 - 17:00	14	0	0	0	14	0	0	0	0	0	3	0	0	0	3	17
17:00 - 17:15	11	0	0	0	11	0	0	0	0	0	4	0	0	0	4	15
17:15 - 17:30	8	0	0	0	8	0	0	0	0	0	1	0	0	0	1	9
17:30 - 17:45	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6
17:45 - 18:00	22	0	0	0	22	0	0	0	0	0	0	0	1	0	1	23
TOTAL	**436**	**3**	**9**	**5**	**453**	**0**	**0**	**0**	**0**	**0**	**134**	**0**	**3**	**3**	**140**	**593**

TRAFFIC SURVEY																
CLIENT:	AURECON															
SITE:	INTERSECTION OF N2 AND MAIN ROAD 228 (EAST OF INTERCHANGE)															
DATE:	12 HOUR COUNT ON THURSDAY 27 AUGUST 2015															
UNITS:	CLASSIFIED															

APPROACH FROM	SOUTH															TOTAL
NAME																
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 - 06:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 - 06:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 - 07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 - 07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 - 07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 - 07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 - 08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 - 08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 - 08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 - 08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 - 09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00 - 09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 - 09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 - 09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15 - 13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30 - 13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45 - 14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00 - 14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15 - 14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30 - 14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45 - 15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 - 15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 - 16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15 - 16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30 - 16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45 - 17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00 - 17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15 - 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30 - 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 - 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

TRAFFIC SURVEY																	
CLIENT:	AURECON																
SITE:	INTERSECTION OF N2 AND MAIN ROAD 228 (EAST OF INTERCHANGE)																
DATE:	12 HOUR COUNT ON THURSDAY 27 AUGUST 2015																
UNITS:	CLASSIFIED																

APPROACH FROM	EAST															TOTAL
NAME	MAIN ROAD 228															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	28	0	0	0	28	15	2	0	0	17	0	0	0	0	0	45
06:15 - 06:30	60	0	0	0	60	28	5	1	0	34	0	0	0	0	0	94
06:30 - 06:45	90	0	0	0	90	86	6	0	1	93	0	0	0	0	0	183
06:45 - 07:00	100	0	2	0	102	115	4	0	0	119	0	0	0	0	0	221
07:00 - 07:15	149	0	3	1	153	142	4	2	1	149	0	0	0	0	0	302
07:15 - 07:30	159	0	2	0	161	105	4	1	0	110	0	0	0	0	0	271
07:30 - 07:45	143	1	3	0	147	74	8	2	1	85	0	0	0	0	0	232
07:45 - 08:00	119	1	4	0	124	76	3	2	2	83	0	0	0	0	0	207
08:00 - 08:15	114	0	1	0	115	66	4	3	0	73	0	0	0	0	0	188
08:15 - 08:30	101	2	2	0	105	60	3	3	0	66	0	0	0	0	0	171
08:30 - 08:45	95	0	2	0	97	52	4	1	0	57	0	0	0	0	0	154
08:45 - 09:00	103	0	2	0	105	62	3	5	0	70	0	0	0	0	0	175
09:00 - 09:15	82	0	2	0	84	53	1	6	0	60	0	0	0	0	0	144
09:15 - 09:30	74	0	2	0	76	56	2	2	0	60	0	0	0	0	0	136
09:30 - 09:45	82	0	3	0	85	33	0	2	0	35	0	0	0	0	0	120
09:45 - 10:00	104	0	3	0	107	50	3	4	0	57	0	0	0	0	0	164
10:00 - 10:15	88	0	4	0	92	46	3	4	0	53	0	0	0	0	0	145
10:15 - 10:30	84	0	3	0	87	42	2	4	0	48	0	0	0	0	0	135
10:30 - 10:45	81	0	3	0	84	56	2	4	0	62	0	0	0	0	0	146
10:45 - 11:00	67	1	8	0	76	27	2	1	0	30	0	0	0	0	0	106
11:00 - 11:15	49	0	6	0	55	39	3	4	0	46	0	0	0	0	0	101
11:15 - 11:30	60	0	3	0	63	50	2	2	0	54	0	0	0	0	0	117
11:30 - 11:45	43	0	6	0	49	55	2	7	0	64	0	0	0	0	0	113
11:45 - 12:00	41	0	7	0	48	40	4	2	0	46	0	0	0	0	0	94
12:00 - 12:15	55	0	3	1	59	34	2	4	0	40	0	0	0	0	0	99
12:15 - 12:30	94	2	3	0	99	72	1	2	1	76	0	0	0	0	0	175
12:30 - 12:45	86	0	4	2	92	57	2	1	0	60	0	0	0	0	0	152
12:45 - 13:00	83	0	1	0	84	84	3	5	1	93	0	0	0	0	0	177
13:00 - 13:15	79	0	2	0	81	43	6	1	0	50	0	0	0	0	0	131
13:15 - 13:30	62	0	3	0	65	49	2	2	0	53	0	0	0	0	0	118
13:30 - 13:45	65	0	3	0	68	58	5	4	0	67	0	0	0	0	0	135
13:45 - 14:00	73	0	3	0	76	83	3	3	0	89	0	0	0	0	0	165
14:00 - 14:15	74	1	4	0	79	56	5	5	0	66	0	0	0	0	0	145
14:15 - 14:30	89	1	2	0	92	69	6	4	0	79	0	0	0	0	0	171
14:30 - 14:45	106	0	4	0	110	65	3	5	0	73	0	0	0	0	0	183
14:45 - 15:00	89	1	4	0	94	68	5	5	0	78	0	0	0	0	0	172
15:00 - 15:15	84	0	3	0	87	81	9	3	0	93	0	0	0	0	0	180
15:15 - 15:30	60	1	1	0	62	66	9	0	0	75	0	0	0	0	0	137
15:30 - 15:45	74	1	2	1	78	53	9	5	0	67	0	0	0	0	0	145
15:45 - 16:00	58	1	3	0	62	58	7	7	1	73	0	0	0	0	0	135
16:00 - 16:15	93	0	4	0	97	86	9	2	0	97	0	0	0	0	0	194
16:15 - 16:30	90	1	1	0	92	96	12	5	2	115	0	0	0	0	0	207
16:30 - 16:45	80	0	1	1	82	93	7	1	0	101	0	0	0	0	0	183
16:45 - 17:00	83	1	1	0	85	91	6	1	0	98	0	0	0	0	0	183
17:00 - 17:15	92	1	0	1	94	90	6	1	0	97	0	0	0	0	0	191
17:15 - 17:30	46	0	0	1	47	33	1	1	0	35	0	0	0	0	0	82
17:30 - 17:45	62	0	0	0	62	46	1	0	0	47	0	0	0	0	0	109
17:45 - 18:00	45	0	0	0	45	36	0	0	0	36	0	0	0	0	0	81
TOTAL	**3938**	**16**	**123**	**8**	**4085**	**2995**	**195**	**129**	**10**	**3329**	**0**	**0**	**0**	**0**	**0**	**7414**

TRAFFIC SURVEY

CLIENT: AURECON

SITE: INTERSECTION OF N2 AND MAIN ROAD 228 (EAST OF INTERCHANGE)

DATE: 12 HOUR COUNT ON THURSDAY 27 AUGUST 2015

UNITS: CLASSIFIED

APPROACH FROM	WEST															TOTAL
NAME	MAIN ROAD 228															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	0	0	0	0	0	15	2	1	0	18	36	11	2	0	49	67
06:15 - 06:30	0	0	0	0	0	36	9	1	3	49	37	25	3	2	67	116
06:30 - 06:45	0	0	0	0	0	88	12	0	0	100	70	42	1	3	116	216
06:45 - 07:00	0	0	0	0	0	115	6	3	2	126	56	23	11	1	91	217
07:00 - 07:15	0	0	0	0	0	121	15	5	0	141	80	20	13	0	113	254
07:15 - 07:30	0	0	0	0	0	152	19	4	1	176	108	21	8	1	138	314
07:30 - 07:45	0	0	0	0	0	138	13	4	0	155	83	18	5	2	108	263
07:45 - 08:00	0	0	0	0	0	130	11	3	1	145	76	15	5	1	97	242
08:00 - 08:15	0	0	0	0	0	135	11	11	0	157	28	19	6	0	53	210
08:15 - 08:30	0	0	0	0	0	102	9	2	0	113	28	7	9	1	45	158
08:30 - 08:45	0	0	0	0	0	105	7	6	0	118	47	10	2	1	60	178
08:45 - 09:00	0	0	0	0	0	92	3	3	0	98	66	6	6	2	80	178
09:00 - 09:15	0	0	0	0	0	91	2	1	0	94	32	12	5	0	49	143
09:15 - 09:30	0	0	0	0	0	84	1	5	0	90	41	8	5	0	54	144
09:30 - 09:45	0	0	0	0	0	76	0	9	0	85	34	4	10	1	49	134
09:45 - 10:00	0	0	0	0	0	100	0	8	0	108	41	9	4	0	54	162
10:00 - 10:15	0	0	0	0	0	87	2	2	0	91	42	8	2	1	53	144
10:15 - 10:30	0	0	0	0	0	80	0	12	1	93	35	8	8	0	51	144
10:30 - 10:45	0	0	0	0	0	112	1	6	1	120	40	4	4	0	48	168
10:45 - 11:00	0	0	0	0	0	93	4	11	0	108	43	5	3	0	51	159
11:00 - 11:15	0	0	0	0	0	100	1	7	0	108	41	3	7	1	52	160
11:15 - 11:30	0	0	0	0	0	57	2	10	0	69	22	2	5	0	29	98
11:30 - 11:45	0	0	0	0	0	117	2	5	0	124	50	6	5	0	61	185
11:45 - 12:00	0	0	0	0	0	95	1	1	1	98	16	4	6	0	26	124
12:00 - 12:15	0	0	0	0	0	137	2	3	0	142	40	9	6	1	56	198
12:15 - 12:30	0	0	0	0	0	94	0	1	0	95	35	3	7	3	48	143
12:30 - 12:45	0	0	0	0	0	109	2	13	1	125	26	7	4	0	37	162
12:45 - 13:00	0	0	0	0	0	116	8	2	0	126	69	6	7	1	83	209
13:00 - 13:15	0	0	0	0	0	146	4	4	0	154	54	4	5	2	65	219
13:15 - 13:30	0	0	0	0	0	122	6	4	0	132	34	4	8	0	46	178
13:30 - 13:45	0	0	0	0	0	143	6	4	0	153	42	1	15	1	59	212
13:45 - 14:00	0	0	0	0	0	96	1	3	0	100	30	1	3	0	34	134
14:00 - 14:15	0	0	0	0	0	154	5	5	0	164	86	5	10	0	101	265
14:15 - 14:30	0	0	0	0	0	140	7	1	0	148	96	6	2	2	106	254
14:30 - 14:45	0	0	0	0	0	184	3	7	0	194	52	4	5	1	62	256
14:45 - 15:00	0	0	0	0	0	141	6	6	1	154	48	9	5	0	62	216
15:00 - 15:15	0	0	0	0	0	191	3	6	0	200	54	0	6	2	62	262
15:15 - 15:30	0	0	0	0	0	171	4	5	0	180	67	20	7	0	94	274
15:30 - 15:45	0	0	0	0	0	184	9	7	0	200	60	11	9	1	81	281
15:45 - 16:00	0	0	0	0	0	193	6	4	0	203	50	12	6	0	68	271
16:00 - 16:15	0	0	0	0	0	165	5	1	0	171	50	11	6	2	69	240
16:15 - 16:30	0	0	0	0	0	181	5	2	1	189	54	9	5	1	69	258
16:30 - 16:45	0	0	0	0	0	160	17	1	0	178	65	11	5	0	81	259
16:45 - 17:00	0	0	0	0	0	184	15	1	0	200	109	23	6	2	140	340
17:00 - 17:15	0	0	0	0	0	160	11	0	0	171	28	18	7	5	58	229
17:15 - 17:30	0	0	0	0	0	109	4	2	0	115	49	14	9	0	72	187
17:30 - 17:45	0	0	0	0	0	142	2	0	1	145	38	22	4	0	64	209
17:45 - 18:00	0	0	0	0	0	62	1	0	0	63	18	7	2	0	27	90
TOTAL	**0**	**0**	**0**	**0**	**0**	**5805**	**265**	**202**	**14**	**6286**	**2406**	**507**	**284**	**41**	**3238**	**9524**

TRAFFIC SURVEY

CLIENT: AURECON

SITE: INTERSECTION OF N2 AND P467 (WEST OF INTERCHANGE)

DATE: 12 HOUR COUNT ON TUESDAY 25 AUGUST 2015

UNITS: CLASSIFIED

APPROACH FROM	NORTH															TOTAL
NAME																
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 - 06:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 - 06:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 - 07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 - 07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 - 07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 - 07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 - 08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 - 08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 - 08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 - 08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 - 09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00 - 09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 - 09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 - 09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15 - 13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30 - 13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45 - 14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00 - 14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15 - 14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30 - 14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45 - 15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 - 15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 - 16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15 - 16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30 - 16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45 - 17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00 - 17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15 - 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30 - 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 - 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

TRAFFIC SURVEY																
CLIENT:	AURECON															
SITE:	INTERSECTION OF N2 AND P467 (WEST OF INTERCHANGE)															
DATE:	12 HOUR COUNT ON TUESDAY 25 AUGUST 2015															
UNITS:	CLASSIFIED															

APPROACH FROM	SOUTH															TOTAL
NAME	N2 OFF RAMP															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6
06:15 - 06:30	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
06:30 - 06:45	4	0	0	0	4	0	0	0	0	0	1	0	0	0	1	5
06:45 - 07:00	13	0	1	0	14	0	0	0	0	0	1	0	0	0	1	15
07:00 - 07:15	16	0	0	0	16	0	0	0	0	0	1	0	0	0	1	17
07:15 - 07:30	12	0	3	0	15	0	0	0	0	0	3	0	0	0	3	18
07:30 - 07:45	18	1	1	0	20	0	0	0	0	0	4	0	0	0	4	24
07:45 - 08:00	18	0	2	0	20	0	0	0	0	0	3	0	0	0	3	23
08:00 - 08:15	23	2	0	0	25	0	0	0	0	0	2	0	0	0	2	27
08:15 - 08:30	18	0	2	0	20	0	0	0	0	0	2	0	0	0	2	22
08:30 - 08:45	13	0	0	0	13	0	0	0	0	0	1	0	0	0	1	14
08:45 - 09:00	11	0	2	0	13	0	0	0	0	0	3	0	1	0	4	17
09:00 - 09:15	13	0	0	0	13	0	0	0	0	0	1	0	0	0	1	14
09:15 - 09:30	15	0	4	0	19	0	0	0	0	0	5	0	0	0	5	24
09:30 - 09:45	17	0	1	0	18	0	0	0	0	0	1	0	0	0	1	19
09:45 - 10:00	12	0	1	0	13	0	0	0	0	0	0	0	0	0	0	13
10:00 - 10:15	12	0	2	0	14	0	0	0	0	0	1	0	0	0	1	15
10:15 - 10:30	18	0	0	0	18	0	0	0	0	0	10	0	0	0	10	28
10:30 - 10:45	9	0	0	0	9	0	0	0	0	0	3	0	0	0	3	12
10:45 - 11:00	10	0	0	0	10	0	0	0	0	0	1	0	0	0	1	11
11:00 - 11:15	12	0	0	0	12	0	0	0	0	0	4	0	0	0	4	16
11:15 - 11:30	13	0	2	0	15	0	0	0	0	0	2	0	0	0	2	17
11:30 - 11:45	13	0	0	0	13	0	0	0	0	0	7	1	0	0	8	21
11:45 - 12:00	16	0	2	0	18	0	0	0	0	0	5	0	0	0	5	23
12:00 - 12:15	14	0	1	0	15	0	0	0	0	0	5	0	0	0	5	20
12:15 - 12:30	14	0	2	0	16	0	0	0	0	0	1	0	0	0	1	17
12:30 - 12:45	17	0	3	0	20	0	0	0	0	0	5	0	0	0	5	25
12:45 - 13:00	13	0	0	0	13	0	0	0	0	0	6	0	1	0	7	20
13:00 - 13:15	6	0	1	0	7	0	0	0	0	0	4	0	0	0	4	11
13:15 - 13:30	19	0	0	0	19	0	0	0	0	0	6	0	0	0	6	25
13:30 - 13:45	15	0	0	0	15	0	0	0	0	0	3	0	0	0	3	18
13:45 - 14:00	18	0	1	0	19	0	0	0	0	0	4	0	0	0	4	23
14:00 - 14:15	16	0	0	0	16	0	0	0	0	0	3	0	0	0	3	19
14:15 - 14:30	19	0	2	0	21	0	0	0	0	0	6	0	0	0	6	27
14:30 - 14:45	18	0	0	0	18	0	0	0	0	0	3	0	1	0	4	22
14:45 - 15:00	21	0	2	0	23	0	0	0	0	0	7	0	0	0	7	30
15:00 - 15:15	19	0	1	0	20	0	0	0	0	0	3	0	0	0	3	23
15:15 - 15:30	12	0	2	0	14	0	0	0	0	0	7	0	0	0	7	21
15:30 - 15:45	15	0	1	0	16	0	0	0	0	0	4	0	1	0	5	21
15:45 - 16:00	17	0	2	0	19	0	0	0	0	0	4	0	0	0	4	23
16:00 - 16:15	20	0	0	0	20	0	0	0	0	0	5	0	0	0	5	25
16:15 - 16:30	31	0	0	1	32	0	0	0	0	0	5	0	0	0	5	37
16:30 - 16:45	25	0	3	0	28	0	0	0	0	0	11	0	0	0	11	39
16:45 - 17:00	35	0	0	0	35	0	0	0	0	0	8	0	0	0	8	43
17:00 - 17:15	28	0	0	0	28	0	0	0	0	0	9	0	1	0	10	38
17:15 - 17:30	19	0	0	0	19	0	0	0	0	0	12	0	0	0	12	31
17:30 - 17:45	20	0	0	0	20	0	0	0	0	0	10	0	0	0	10	30
17:45 - 18:00	19	0	0	0	19	0	0	0	0	0	1	0	0	0	1	20
TOTAL	**765**	**3**	**44**	**1**	**813**	**0**	**0**	**0**	**0**	**0**	**193**	**1**	**5**	**0**	**199**	**1012**

TRAFFIC SURVEY																	
CLIENT:	AURECON																
SITE:	INTERSECTION OF N2 AND P467 (WEST OF INTERCHANGE)																
DATE:	12 HOUR COUNT ON TUESDAY 25 AUGUST 2015																
UNITS:	CLASSIFIED																

APPROACH FROM	EAST															TOTAL
NAME	P467															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
06:15 - 06:30	0	0	0	0	0	4	0	0	0	4	4	0	0	0	4	8
06:30 - 06:45	0	0	0	0	0	10	0	0	0	10	1	0	0	0	1	11
06:45 - 07:00	0	0	0	0	0	13	0	0	0	13	5	0	0	0	5	18
07:00 - 07:15	0	0	0	0	0	15	0	0	3	18	5	0	0	0	5	23
07:15 - 07:30	0	0	0	0	0	14	0	0	0	14	2	0	0	0	2	16
07:30 - 07:45	0	0	0	0	0	11	0	2	0	13	4	0	0	0	4	17
07:45 - 08:00	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	4
08:00 - 08:15	0	0	0	0	0	6	0	0	0	6	3	0	0	0	3	9
08:15 - 08:30	0	0	0	0	0	6	0	0	0	6	5	0	0	0	5	11
08:30 - 08:45	0	0	0	0	0	6	0	0	0	6	2	0	0	0	2	8
08:45 - 09:00	0	0	0	0	0	4	0	0	0	4	1	0	0	0	1	5
09:00 - 09:15	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
09:15 - 09:30	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
09:30 - 09:45	0	0	0	0	0	2	0	0	0	2	2	0	0	0	2	4
09:45 - 10:00	0	0	0	0	0	3	0	0	0	3	1	0	0	0	1	4
10:00 - 10:15	0	0	0	0	0	4	0	0	0	4	1	0	0	0	1	5
10:15 - 10:30	0	0	0	0	0	2	0	0	0	2	3	0	2	0	5	7
10:30 - 10:45	0	0	0	0	0	2	0	0	0	2	3	0	0	0	3	5
10:45 - 11:00	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	5
11:00 - 11:15	0	0	0	0	0	6	0	0	0	6	1	0	0	0	1	7
11:15 - 11:30	0	0	0	0	0	4	0	1	0	5	3	0	0	0	3	8
11:30 - 11:45	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	2
11:45 - 12:00	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	2
12:00 - 12:15	0	0	0	0	0	10	1	1	0	12	0	0	0	0	0	12
12:15 - 12:30	0	0	0	0	0	2	0	1	0	3	1	0	0	0	1	4
12:30 - 12:45	0	0	0	0	0	8	0	0	0	8	1	0	0	0	1	9
12:45 - 13:00	0	0	0	0	0	6	0	1	0	7	4	0	0	0	4	11
13:00 - 13:15	0	0	0	0	0	6	0	1	0	7	1	0	0	0	1	8
13:15 - 13:30	0	0	0	0	0	7	0	1	0	8	0	0	0	0	0	8
13:30 - 13:45	0	0	0	0	0	6	0	0	0	6	3	0	0	0	3	9
13:45 - 14:00	0	0	0	0	0	10	0	1	0	11	0	0	0	0	0	11
14:00 - 14:15	0	0	0	0	0	2	0	0	0	2	4	0	0	0	4	6
14:15 - 14:30	0	0	0	0	0	9	0	0	0	9	1	0	0	0	1	10
14:30 - 14:45	0	0	0	0	0	5	0	0	0	5	2	0	0	0	2	7
14:45 - 15:00	0	0	0	0	0	8	0	3	0	11	3	0	0	0	3	14
15:00 - 15:15	0	0	0	0	0	4	0	0	0	4	6	0	0	0	6	10
15:15 - 15:30	0	0	0	0	0	9	0	1	0	10	2	0	0	0	2	12
15:30 - 15:45	0	0	0	0	0	12	1	0	0	13	2	0	0	0	2	15
15:45 - 16:00	0	0	0	0	0	2	0	0	0	2	1	0	0	0	1	3
16:00 - 16:15	0	0	0	0	0	8	0	0	1	9	0	0	0	0	0	9
16:15 - 16:30	0	0	0	0	0	6	0	0	0	6	2	0	0	0	2	8
16:30 - 16:45	0	0	0	0	0	4	0	1	0	5	1	0	0	0	1	6
16:45 - 17:00	0	0	0	0	0	8	0	0	0	8	3	0	0	0	3	11
17:00 - 17:15	0	0	0	0	0	13	0	1	0	14	3	0	0	0	3	17
17:15 - 17:30	0	0	0	0	0	14	0	1	0	15	2	0	0	0	2	17
17:30 - 17:45	0	0	0	0	0	5	0	0	0	5	1	0	0	0	1	6
17:45 - 18:00	0	0	0	0	0	16	0	0	0	16	0	0	0	0	0	16
TOTAL	**0**	**0**	**0**	**0**	**0**	**305**	**2**	**16**	**4**	**327**	**93**	**0**	**3**	**0**	**96**	**423**

TRAFFIC SURVEY

CLIENT: AURECON

SITE: INTERSECTION OF N2 AND P467 (WEST OF INTERCHANGE)

DATE: 12 HOUR COUNT ON TUESDAY 25 AUGUST 2015

UNITS: CLASSIFIED

APPROACH FROM	WEST															TOTAL
NAME	P467															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	3	0	2	0	5	12	0	1	0	13	0	0	0	0	0	18
06:15 - 06:30	4	0	0	0	4	11	0	1	0	12	0	0	0	0	0	16
06:30 - 06:45	6	0	0	0	6	23	0	0	0	23	0	0	0	0	0	29
06:45 - 07:00	7	0	0	0	7	38	0	0	0	38	0	0	0	0	0	45
07:00 - 07:15	10	0	0	0	10	53	0	0	1	54	0	0	0	0	0	64
07:15 - 07:30	15	0	0	0	15	25	0	1	0	26	0	0	0	0	0	41
07:30 - 07:45	6	0	0	0	6	45	1	1	0	47	0	0	0	0	0	53
07:45 - 08:00	8	0	0	0	8	32	1	0	0	33	0	0	0	0	0	41
08:00 - 08:15	5	0	0	0	5	28	0	4	0	32	0	0	0	0	0	37
08:15 - 08:30	3	0	0	0	3	16	0	4	0	20	0	0	0	0	0	23
08:30 - 08:45	4	0	0	0	4	11	0	0	0	11	0	0	0	0	0	15
08:45 - 09:00	2	0	0	0	2	16	0	0	0	16	0	0	0	0	0	18
09:00 - 09:15	3	0	0	0	3	19	0	1	0	20	0	0	0	0	0	23
09:15 - 09:30	4	0	0	0	4	23	0	0	0	23	0	0	0	0	0	27
09:30 - 09:45	6	0	0	0	6	20	0	0	0	20	0	0	0	0	0	26
09:45 - 10:00	3	0	0	0	3	16	0	2	0	18	0	0	0	0	0	21
10:00 - 10:15	2	0	0	0	2	16	0	0	0	16	0	0	0	0	0	18
10:15 - 10:30	1	0	0	0	1	17	0	0	0	17	0	0	0	0	0	18
10:30 - 10:45	0	0	0	0	0	22	0	3	0	25	0	0	0	0	0	25
10:45 - 11:00	3	0	0	0	3	20	0	1	0	21	0	0	0	0	0	24
11:00 - 11:15	2	0	0	0	2	17	0	1	0	18	0	0	0	0	0	20
11:15 - 11:30	1	0	1	0	2	12	0	0	0	12	0	0	0	0	0	14
11:30 - 11:45	3	0	1	0	4	19	0	0	0	19	0	0	0	0	0	23
11:45 - 12:00	4	0	0	0	4	18	0	0	0	18	0	0	0	0	0	22
12:00 - 12:15	3	0	0	0	3	13	0	0	0	13	0	0	0	0	0	16
12:15 - 12:30	2	0	0	0	2	12	0	0	0	12	0	0	0	0	0	14
12:30 - 12:45	2	0	0	0	2	20	0	4	0	24	0	0	0	0	0	26
12:45 - 13:00	4	0	0	0	4	10	0	2	0	12	0	0	0	0	0	16
13:00 - 13:15	2	0	0	0	2	9	0	0	0	9	0	0	0	0	0	11
13:15 - 13:30	2	0	0	0	2	19	0	1	0	20	0	0	0	0	0	22
13:30 - 13:45	1	0	0	0	1	19	0	3	0	22	0	0	0	0	0	23
13:45 - 14:00	3	0	0	0	3	19	0	2	0	21	0	0	0	0	0	24
14:00 - 14:15	7	0	1	0	8	11	0	0	0	11	0	0	0	0	0	19
14:15 - 14:30	4	0	1	0	5	15	0	2	0	17	0	0	0	0	0	22
14:30 - 14:45	3	0	1	1	5	21	0	2	0	23	0	0	0	0	0	28
14:45 - 15:00	1	0	0	0	1	18	1	2	0	21	0	0	0	0	0	22
15:00 - 15:15	3	0	0	0	3	15	0	0	0	15	0	0	0	0	0	18
15:15 - 15:30	3	0	1	0	4	17	0	3	0	20	0	0	0	0	0	24
15:30 - 15:45	1	1	0	0	2	9	0	1	0	10	0	0	0	0	0	12
15:45 - 16:00	4	0	0	0	4	13	0	2	0	15	0	0	0	0	0	19
16:00 - 16:15	2	0	1	0	3	23	0	0	0	23	0	0	0	0	0	26
16:15 - 16:30	9	0	0	1	10	19	0	1	0	20	0	0	0	0	0	30
16:30 - 16:45	7	0	0	0	7	20	0	1	0	21	0	0	0	0	0	28
16:45 - 17:00	2	0	0	0	2	18	0	0	0	18	0	0	0	0	0	20
17:00 - 17:15	9	0	1	0	10	18	0	0	0	18	0	0	0	0	0	28
17:15 - 17:30	2	0	1	0	3	10	0	1	0	11	0	0	0	0	0	14
17:30 - 17:45	3	0	0	0	3	11	0	2	0	13	0	0	0	0	0	16
17:45 - 18:00	3	0	0	0	3	15	0	0	0	15	0	0	0	0	0	18
TOTAL	**187**	**1**	**11**	**2**	**201**	**903**	**3**	**49**	**1**	**956**	**0**	**0**	**0**	**0**	**0**	**1157**

TRAFFIC SURVEY

CLIENT: AURECON

SITE: INTERSECTION OF MAIN ROAD 228 AND SALT ROCK ROAD

DATE: 12 HOUR COUNT ON MONDAY 31 AUGUST 2015

UNITS: CLASSIFIED

APPROACH FROM	NORTH															TOTAL
NAME	MAIN ROAD 228															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	1	0	0	0	1	0	0	0	0	0	22	0	0	0	22	23
06:15 - 06:30	1	0	0	0	1	0	0	0	0	0	45	2	0	0	47	48
06:30 - 06:45	7	0	0	0	7	0	0	0	0	0	77	3	0	0	80	87
06:45 - 07:00	16	0	0	0	16	0	0	0	0	0	129	0	0	1	130	146
07:00 - 07:15	5	0	0	0	5	0	0	0	0	0	85	0	1	1	87	92
07:15 - 07:30	5	0	0	0	5	0	0	0	0	0	90	0	2	0	92	97
07:30 - 07:45	8	0	2	0	10	0	0	0	0	0	97	0	4	0	101	111
07:45 - 08:00	7	0	1	0	8	0	0	0	0	0	96	0	0	0	96	104
08:00 - 08:15	4	0	0	0	4	0	0	0	0	0	75	0	2	0	77	81
08:15 - 08:30	5	0	1	0	6	0	0	0	0	0	50	0	1	0	51	57
08:30 - 08:45	9	0	1	0	10	0	0	0	0	0	70	0	4	0	74	84
08:45 - 09:00	4	0	0	0	4	0	0	0	0	0	30	0	0	0	30	34
09:00 - 09:15	8	0	1	0	9	0	0	0	0	0	56	0	2	0	58	67
09:15 - 09:30	11	0	1	0	12	0	0	0	0	0	30	0	1	0	31	43
09:30 - 09:45	4	0	0	0	4	0	0	0	0	0	41	0	5	0	46	50
09:45 - 10:00	7	0	1	0	8	0	0	0	0	0	64	0	4	0	68	76
10:00 - 10:15	8	0	0	0	8	0	0	0	0	0	53	0	3	0	56	64
10:15 - 10:30	9	0	2	0	11	0	0	0	0	0	66	0	2	0	68	79
10:30 - 10:45	7	0	0	0	7	0	0	0	0	0	54	0	2	0	56	63
10:45 - 11:00	7	0	0	0	7	0	0	0	0	0	43	0	2	0	45	52
11:00 - 11:15	7	0	0	0	7	0	0	0	0	0	48	0	5	0	53	60
11:15 - 11:30	4	0	1	0	5	0	0	0	0	0	37	0	4	0	41	46
11:30 - 11:45	10	0	0	0	10	0	0	0	0	0	42	0	4	0	46	56
11:45 - 12:00	4	0	0	0	4	0	0	0	0	0	49	0	3	0	52	56
12:00 - 12:15	7	0	0	0	7	0	0	0	0	0	55	0	2	0	57	64
12:15 - 12:30	13	0	2	0	15	0	0	0	0	0	72	0	0	0	72	87
12:30 - 12:45	9	0	1	0	10	0	0	0	0	0	62	0	1	0	63	73
12:45 - 13:00	14	0	0	0	14	0	0	0	0	0	50	0	3	2	55	69
13:00 - 13:15	2	0	0	0	2	0	0	0	0	0	29	0	0	0	29	31
13:15 - 13:30	2	0	0	0	2	0	0	0	0	0	61	0	1	0	62	64
13:30 - 13:45	4	0	1	0	5	0	0	0	0	0	35	0	0	0	35	40
13:45 - 14:00	1	0	1	0	2	0	0	0	0	0	49	0	5	0	54	56
14:00 - 14:15	8	0	0	0	8	0	0	0	0	0	55	0	2	0	57	65
14:15 - 14:30	11	0	0	0	11	0	0	0	0	0	30	0	1	0	31	42
14:30 - 14:45	6	0	0	0	6	0	0	0	0	0	37	0	2	0	39	45
14:45 - 15:00	3	0	1	0	4	0	0	0	0	0	37	0	2	0	39	43
15:00 - 15:15	4	0	1	0	5	0	0	0	0	0	48	0	4	0	52	57
15:15 - 15:30	4	0	1	0	5	0	0	0	0	0	51	0	5	0	56	61
15:30 - 15:45	3	0	1	0	4	0	0	0	0	0	58	0	4	0	62	66
15:45 - 16:00	15	0	0	0	15	0	0	0	0	0	57	0	0	0	57	72
16:00 - 16:15	7	0	0	0	7	0	0	0	0	0	60	2	3	1	66	73
16:15 - 16:30	9	0	0	0	9	0	0	0	0	0	61	1	4	0	66	75
16:30 - 16:45	13	0	0	0	13	0	0	0	0	0	70	0	2	0	72	85
16:45 - 17:00	6	0	0	0	6	0	0	0	0	0	52	0	2	0	54	60
17:00 - 17:15	17	0	0	0	17	0	0	0	0	0	55	0	1	0	56	73
17:15 - 17:30	7	0	0	0	7	0	0	0	0	0	45	0	1	0	46	53
17:30 - 17:45	1	0	0	0	1	0	0	0	0	0	36	0	1	0	37	38
17:45 - 18:00	1	0	0	0	1	0	0	0	0	0	23	0	0	0	23	24
TOTAL	**325**	**0**	**20**	**0**	**345**	**0**	**0**	**0**	**0**	**0**	**2637**	**8**	**97**	**5**	**2747**	**3092**

TRAFFIC SURVEY																
CLIENT:	AURECON															
SITE:	INTERSECTION OF MAIN ROAD 228 AND SALT ROCK ROAD															
DATE:	12 HOUR COUNT ON MONDAY 31 AUGUST 2015															
UNITS:	CLASSIFIED															

APPROACH FROM	SOUTH															TOTAL
NAME																
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 - 06:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 - 06:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 - 07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 - 07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 - 07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 - 07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 - 08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 - 08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 - 08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 - 08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 - 09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00 - 09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 - 09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 - 09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15 - 13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30 - 13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45 - 14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00 - 14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15 - 14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30 - 14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45 - 15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 - 15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 - 16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15 - 16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30 - 16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45 - 17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00 - 17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15 - 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30 - 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 - 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

TRAFFIC SURVEY																	
CLIENT:	AURECON																
SITE:	INTERSECTION OF MAIN ROAD 228 AND SALT ROCK ROAD																
DATE:	12 HOUR COUNT ON MONDAY 31 AUGUST 2015																
UNITS:	CLASSIFIED																

APPROACH FROM	EAST															TOTAL
NAME	SALT ROCK ROAD															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	0	0	0	0	0	26	1	0	1	28	3	0	0	0	3	31
06:15 - 06:30	0	0	0	0	0	33	2	0	0	35	0	0	0	0	0	35
06:30 - 06:45	0	0	0	0	0	72	3	0	2	77	3	0	0	0	3	80
06:45 - 07:00	0	0	0	0	0	135	2	0	0	137	3	0	0	0	3	140
07:00 - 07:15	0	0	0	0	0	130	0	2	1	133	4	0	0	0	4	137
07:15 - 07:30	0	0	0	0	0	175	2	0	0	177	6	0	0	0	6	183
07:30 - 07:45	0	0	0	0	0	148	4	0	0	152	16	0	0	0	16	168
07:45 - 08:00	0	0	0	0	0	122	6	2	0	130	11	0	0	0	11	141
08:00 - 08:15	0	0	0	0	0	100	2	1	0	103	10	0	0	0	10	113
08:15 - 08:30	0	0	0	0	0	73	7	0	0	80	7	0	0	0	7	87
08:30 - 08:45	0	0	0	0	0	73	4	1	1	79	12	0	2	0	14	93
08:45 - 09:00	0	0	0	0	0	54	0	2	0	56	6	0	0	0	6	62
09:00 - 09:15	0	0	0	0	0	50	1	1	0	52	9	0	1	0	10	62
09:15 - 09:30	0	0	0	0	0	60	1	0	0	61	13	0	1	0	14	75
09:30 - 09:45	0	0	0	0	0	56	2	1	0	59	5	0	1	0	6	65
09:45 - 10:00	0	0	0	0	0	67	2	2	0	71	10	0	1	0	11	82
10:00 - 10:15	0	0	0	0	0	66	1	1	1	69	6	0	1	0	7	76
10:15 - 10:30	0	0	0	0	0	60	1	2	0	63	7	0	0	0	7	70
10:30 - 10:45	0	0	0	0	0	58	2	4	0	64	5	0	1	0	6	70
10:45 - 11:00	0	0	0	0	0	61	1	1	0	63	4	0	1	0	5	68
11:00 - 11:15	0	0	0	0	0	53	2	1	0	56	7	0	0	0	7	63
11:15 - 11:30	0	0	0	0	0	49	2	4	1	56	3	0	0	0	3	59
11:30 - 11:45	0	0	0	0	0	78	0	4	0	82	10	0	1	0	11	93
11:45 - 12:00	0	0	0	0	0	44	0	0	0	44	10	0	0	0	10	54
12:00 - 12:15	0	0	0	0	0	71	3	0	0	74	12	0	0	0	12	86
12:15 - 12:30	0	0	0	0	0	96	1	1	0	98	10	0	1	0	11	109
12:30 - 12:45	0	0	0	0	0	49	3	2	0	54	10	0	0	0	10	64
12:45 - 13:00	0	0	0	0	0	77	2	2	0	81	6	0	0	0	6	87
13:00 - 13:15	0	0	0	0	0	63	2	2	0	67	7	0	0	0	7	74
13:15 - 13:30	0	0	0	0	0	70	4	1	1	76	4	0	0	0	4	80
13:30 - 13:45	0	0	0	0	0	71	3	2	0	76	4	0	0	0	4	80
13:45 - 14:00	0	0	0	0	0	73	4	2	0	79	12	0	0	0	12	91
14:00 - 14:15	0	0	0	0	0	77	4	0	0	81	11	0	0	0	11	92
14:15 - 14:30	0	0	0	0	0	81	5	3	1	90	10	0	0	0	10	100
14:30 - 14:45	0	0	0	0	0	91	5	3	0	99	8	0	0	0	8	107
14:45 - 15:00	0	0	0	0	0	49	4	2	0	55	4	0	1	0	5	60
15:00 - 15:15	0	0	0	0	0	62	2	0	0	64	7	0	1	0	8	72
15:15 - 15:30	0	0	0	0	0	74	6	3	0	83	10	0	0	0	10	93
15:30 - 15:45	0	0	0	0	0	71	8	3	0	82	24	0	1	0	25	107
15:45 - 16:00	0	0	0	0	0	70	6	5	1	82	7	0	1	0	8	90
16:00 - 16:15	0	0	0	0	0	109	4	0	0	113	11	0	0	0	11	124
16:15 - 16:30	0	0	0	0	0	86	4	1	0	91	3	0	0	0	3	94
16:30 - 16:45	0	0	0	0	0	69	7	0	1	77	10	0	0	0	10	87
16:45 - 17:00	0	0	0	0	0	97	5	0	0	102	11	0	0	0	11	113
17:00 - 17:15	0	0	0	0	0	61	0	2	0	63	6	0	0	0	6	69
17:15 - 17:30	0	0	0	0	0	38	3	2	0	43	8	0	0	0	8	51
17:30 - 17:45	0	0	0	0	0	40	0	0	0	40	8	0	0	0	8	48
17:45 - 18:00	0	0	0	0	0	24	1	0	0	25	8	0	0	0	8	33
TOTAL	**0**	**0**	**0**	**0**	**0**	**3512**	**134**	**65**	**11**	**3722**	**381**	**0**	**15**	**0**	**396**	**4118**

TRAFFIC SURVEY	
CLIENT:	AURECON
SITE:	INTERSECTION OF MAIN ROAD 228 AND SALT ROCK ROAD
DATE:	12 HOUR COUNT ON MONDAY 31 AUGUST 2015
UNITS:	CLASSIFIED

APPROACH FROM	WEST															TOTAL
NAME	MAIN ROAD 228															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	8	0	0	0	8	14	3	0	2	19	0	0	0	0	0	27
06:15 - 06:30	11	0	0	0	11	15	8	0	1	24	0	0	0	0	0	35
06:30 - 06:45	27	3	0	0	30	37	5	0	1	43	0	0	0	0	0	73
06:45 - 07:00	36	2	1	1	40	77	8	0	2	87	0	0	0	0	0	127
07:00 - 07:15	57	0	3	0	60	105	14	1	0	120	0	0	0	0	0	180
07:15 - 07:30	46	0	0	0	46	90	14	0	0	104	0	0	0	0	0	150
07:30 - 07:45	48	0	2	0	50	105	6	2	2	115	0	0	0	0	0	165
07:45 - 08:00	63	0	3	0	66	72	10	2	0	84	0	0	0	0	0	150
08:00 - 08:15	38	0	2	0	40	48	9	0	0	57	0	0	0	0	0	97
08:15 - 08:30	36	0	3	0	39	52	12	0	0	64	0	0	0	0	0	103
08:30 - 08:45	49	0	4	0	53	50	4	2	0	56	0	0	0	0	0	109
08:45 - 09:00	35	0	2	0	37	30	3	1	0	34	0	0	0	0	0	71
09:00 - 09:15	41	0	2	0	43	41	0	2	0	43	0	0	0	0	0	86
09:15 - 09:30	23	0	1	0	24	27	0	2	0	29	0	0	0	0	0	53
09:30 - 09:45	28	0	3	0	31	26	0	2	0	28	0	0	0	0	0	59
09:45 - 10:00	37	0	2	0	39	54	0	1	1	56	0	0	0	0	0	95
10:00 - 10:15	40	0	2	0	42	59	0	1	0	60	0	0	0	0	0	102
10:15 - 10:30	38	0	3	0	41	39	0	2	0	41	0	0	0	0	0	82
10:30 - 10:45	44	0	2	0	46	60	0	2	0	62	0	0	0	0	0	108
10:45 - 11:00	32	0	7	0	39	51	0	1	0	52	0	0	0	0	0	91
11:00 - 11:15	52	0	3	0	55	61	0	5	0	66	0	0	0	0	0	121
11:15 - 11:30	25	0	0	0	25	44	0	2	0	46	0	0	0	0	0	71
11:30 - 11:45	42	0	2	0	44	48	0	0	0	48	0	0	0	0	0	92
11:45 - 12:00	36	0	2	0	38	27	1	1	0	29	0	0	0	0	0	67
12:00 - 12:15	43	0	4	0	47	77	2	1	0	80	0	0	0	0	0	127
12:15 - 12:30	63	0	4	0	67	63	0	3	0	66	0	0	0	0	0	133
12:30 - 12:45	54	0	1	0	55	57	1	0	0	58	0	0	0	0	0	113
12:45 - 13:00	62	0	2	0	64	78	0	0	0	78	0	0	0	0	0	142
13:00 - 13:15	33	0	3	0	36	60	0	1	0	61	0	0	0	0	0	97
13:15 - 13:30	54	0	3	0	57	55	0	2	0	57	0	0	0	0	0	114
13:30 - 13:45	51	0	3	0	54	53	0	0	0	53	0	0	0	0	0	107
13:45 - 14:00	39	0	3	0	42	57	0	3	0	60	0	0	0	0	0	102
14:00 - 14:15	54	0	0	0	54	67	0	3	1	71	0	0	0	0	0	125
14:15 - 14:30	46	1	5	0	52	77	1	2	0	80	0	0	0	0	0	132
14:30 - 14:45	74	0	3	0	77	67	0	2	0	69	0	0	0	0	0	146
14:45 - 15:00	31	0	2	0	33	57	0	0	0	57	0	0	0	0	0	90
15:00 - 15:15	46	0	2	0	48	59	2	1	1	63	0	0	0	0	0	111
15:15 - 15:30	59	0	4	0	63	77	5	2	0	84	0	0	0	0	0	147
15:30 - 15:45	54	0	1	0	55	67	2	2	0	71	0	0	0	0	0	126
15:45 - 16:00	59	3	2	0	64	97	2	0	0	99	0	0	0	0	0	163
16:00 - 16:15	80	0	0	0	80	85	2	1	0	88	0	0	0	0	0	168
16:15 - 16:30	62	0	0	0	62	73	3	1	0	77	0	0	0	0	0	139
16:30 - 16:45	40	0	2	0	42	50	1	0	0	51	0	0	0	0	0	93
16:45 - 17:00	44	0	0	0	44	27	0	0	0	27	0	0	0	0	0	71
17:00 - 17:15	65	0	0	0	65	97	3	0	0	100	0	0	0	0	0	165
17:15 - 17:30	77	0	1	0	78	86	1	0	0	87	0	0	0	0	0	165
17:30 - 17:45	65	0	1	0	66	71	0	0	0	71	0	0	0	0	0	137
17:45 - 18:00	65	0	0	0	65	64	1	0	0	65	0	0	0	0	0	130
TOTAL	**2212**	**9**	**95**	**1**	**2317**	**2853**	**123**	**53**	**11**	**3040**	**0**	**0**	**0**	**0**	**0**	**5357**

TRAFFIC SURVEY

CLIENT: AURECON

SITE: INTERSECTION OF MAIN ROAD 474 AND MAIN ROAD 228

DATE: 12 HOUR COUNT ON MONDAY 31 AUGUST 2015

UNITS: CLASSIFIED

APPROACH FROM	NORTH															TOTAL
NAME	MAIN ROAD 228															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	0	0	0	0	0	11	0	0	0	11	0	0	0	0	0	11
06:15 - 06:30	1	0	0	0	1	19	0	0	0	19	0	0	0	0	0	20
06:30 - 06:45	0	0	1	0	1	40	0	0	0	40	0	0	0	0	0	41
06:45 - 07:00	1	0	0	0	1	41	0	0	0	41	0	0	0	0	0	42
07:00 - 07:15	6	0	0	0	6	32	0	0	0	32	3	0	0	0	3	41
07:15 - 07:30	3	0	2	0	5	25	0	0	0	25	0	0	0	0	0	30
07:30 - 07:45	3	0	0	0	3	24	0	1	0	25	0	0	0	0	0	28
07:45 - 08:00	2	0	0	0	2	21	0	0	0	21	0	0	0	0	0	23
08:00 - 08:15	0	0	0	0	0	20	0	0	0	20	0	0	0	0	0	20
08:15 - 08:30	1	0	0	0	1	18	0	1	0	19	1	0	0	0	1	21
08:30 - 08:45	1	0	1	0	2	9	0	0	0	9	0	0	0	0	0	11
08:45 - 09:00	2	0	1	0	3	13	0	0	0	13	0	0	0	0	0	16
09:00 - 09:15	1	0	5	0	6	8	0	0	0	8	0	0	1	0	1	15
09:15 - 09:30	1	0	3	0	4	7	0	0	0	7	1	0	0	0	1	12
09:30 - 09:45	3	0	2	0	5	13	0	0	0	13	1	0	0	0	1	19
09:45 - 10:00	1	0	0	0	1	19	0	1	0	20	0	0	0	0	0	21
10:00 - 10:15	2	0	0	0	2	6	0	0	0	6	0	0	0	0	0	8
10:15 - 10:30	3	0	0	0	3	13	0	1	0	14	0	0	0	0	0	17
10:30 - 10:45	1	0	0	0	1	8	0	0	0	8	0	0	0	0	0	9
10:45 - 11:00	1	0	0	0	1	5	0	0	0	5	0	0	0	0	0	6
11:00 - 11:15	0	0	1	0	1	9	0	0	0	9	0	0	0	0	0	10
11:15 - 11:30	1	0	0	0	1	2	0	1	0	3	0	0	0	0	0	4
11:30 - 11:45	0	0	1	0	1	9	0	1	0	10	0	0	0	0	0	11
11:45 - 12:00	1	0	0	0	1	6	0	0	0	6	0	0	0	0	0	7
12:00 - 12:15	1	0	0	0	1	13	0	0	0	13	0	0	0	0	0	14
12:15 - 12:30	1	0	1	0	2	10	0	1	0	11	0	0	0	0	0	13
12:30 - 12:45	2	0	3	0	5	13	0	1	0	14	0	0	0	0	0	19
12:45 - 13:00	1	0	0	0	1	5	0	2	2	9	1	0	0	0	1	11
13:00 - 13:15	3	0	0	0	3	13	0	0	0	13	0	0	0	0	0	16
13:15 - 13:30	2	0	0	0	2	14	0	1	0	15	0	0	0	0	0	17
13:30 - 13:45	1	0	1	0	2	8	0	0	0	8	1	0	0	0	1	11
13:45 - 14:00	4	0	0	0	4	7	0	0	0	7	1	0	0	0	1	12
14:00 - 14:15	1	0	2	0	3	18	0	1	0	19	0	0	0	0	0	22
14:15 - 14:30	0	0	0	0	0	6	0	1	0	7	0	0	0	0	0	7
14:30 - 14:45	1	0	2	0	3	14	0	0	0	14	0	0	0	0	0	17
14:45 - 15:00	2	0	0	0	2	19	0	0	0	19	0	0	0	0	0	21
15:00 - 15:15	2	0	1	0	3	7	0	1	0	8	0	0	0	0	0	11
15:15 - 15:30	1	0	0	0	1	15	0	1	0	16	0	0	0	0	0	17
15:30 - 15:45	0	0	0	0	0	7	0	2	0	9	0	0	0	0	0	9
15:45 - 16:00	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	14
16:00 - 16:15	0	0	1	0	1	10	0	0	0	10	1	0	0	0	1	12
16:15 - 16:30	6	0	0	0	6	14	0	2	0	16	0	0	0	0	0	22
16:30 - 16:45	2	0	0	0	2	20	0	0	0	20	0	0	0	0	0	22
16:45 - 17:00	1	0	0	0	1	9	0	0	0	9	1	0	0	0	1	11
17:00 - 17:15	2	0	2	0	4	11	0	0	0	11	0	0	0	0	0	15
17:15 - 17:30	3	0	0	0	3	10	0	0	0	10	0	0	0	0	0	13
17:30 - 17:45	1	0	0	0	1	10	0	0	0	10	0	0	0	0	0	11
17:45 - 18:00	1	0	0	0	1	11	0	0	0	11	0	0	0	0	0	12
TOTAL	**73**	**0**	**30**	**0**	**103**	**656**	**0**	**19**	**2**	**677**	**11**	**0**	**1**	**0**	**12**	**792**

TRAFFIC SURVEY

CLIENT: AURECON

SITE: INTERSECTION OF MAIN ROAD 474 AND MAIN ROAD 228

DATE: 12 HOUR COUNT ON MONDAY 31 AUGUST 2015

UNITS: CLASSIFIED

APPROACH FROM	SOUTH															TOTAL
NAME	MAIN ROAD 228 / SHEFFIELD BEACH ROAD															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	0	0	0	0	0	2	0	0	0	2	4	0	0	0	4	6
06:15 - 06:30	1	0	0	0	1	3	0	0	0	3	8	0	0	0	8	12
06:30 - 06:45	2	0	0	0	2	2	0	0	0	2	10	2	0	0	12	16
06:45 - 07:00	3	2	0	1	6	5	0	0	0	5	15	0	1	0	16	27
07:00 - 07:15	1	0	0	0	1	18	0	1	0	19	36	1	2	0	39	59
07:15 - 07:30	4	0	0	0	4	3	0	0	0	3	31	0	0	0	31	38
07:30 - 07:45	2	0	0	0	2	9	0	1	0	10	30	0	1	0	31	43
07:45 - 08:00	0	0	0	0	0	9	0	0	0	9	23	0	2	0	25	34
08:00 - 08:15	1	0	0	0	1	17	0	0	0	17	27	0	3	0	30	48
08:15 - 08:30	2	0	1	0	3	13	0	0	0	13	26	0	2	0	28	44
08:30 - 08:45	2	0	0	0	2	7	0	2	0	9	21	0	2	0	23	34
08:45 - 09:00	0	0	0	0	0	6	0	1	0	7	25	0	2	0	27	34
09:00 - 09:15	1	0	0	0	1	12	0	1	0	13	22	0	2	0	24	38
09:15 - 09:30	0	0	0	0	0	10	0	2	2	14	16	0	1	0	17	31
09:30 - 09:45	3	0	0	0	3	11	0	0	0	11	25	0	3	0	28	42
09:45 - 10:00	0	0	0	0	0	5	0	0	0	5	14	0	1	0	15	20
10:00 - 10:15	2	0	0	0	2	11	0	1	0	12	15	0	1	0	16	30
10:15 - 10:30	1	0	0	0	1	3	0	0	0	3	9	0	3	0	12	16
10:30 - 10:45	1	0	1	0	2	6	0	0	0	6	13	0	1	0	14	22
10:45 - 11:00	0	0	0	0	0	7	0	0	0	7	10	0	6	0	16	23
11:00 - 11:15	2	0	0	0	2	7	0	0	0	7	16	0	4	0	20	29
11:15 - 11:30	1	0	0	0	1	5	0	0	0	5	17	0	0	0	17	23
11:30 - 11:45	1	0	0	0	1	9	0	1	0	10	16	0	1	0	17	28
11:45 - 12:00	1	0	1	0	2	6	0	0	0	6	17	0	1	0	18	26
12:00 - 12:15	2	0	0	0	2	16	0	1	0	17	19	0	3	0	22	41
12:15 - 12:30	0	0	0	0	0	7	0	1	0	8	22	0	2	0	24	32
12:30 - 12:45	1	0	0	0	1	18	0	1	0	19	29	0	2	0	31	51
12:45 - 13:00	3	0	0	0	3	12	0	0	0	12	33	0	2	0	35	50
13:00 - 13:15	5	0	1	0	6	9	0	1	0	10	14	0	2	0	16	32
13:15 - 13:30	4	0	0	0	4	14	0	0	0	14	25	0	3	0	28	46
13:30 - 13:45	2	0	2	0	4	10	0	0	0	10	24	0	2	0	26	40
13:45 - 14:00	2	0	0	0	2	13	0	1	0	14	11	0	2	0	13	29
14:00 - 14:15	5	0	0	0	5	5	0	0	0	5	36	0	0	0	36	46
14:15 - 14:30	2	0	0	0	2	10	0	0	0	10	18	0	5	0	23	35
14:30 - 14:45	4	0	0	0	4	22	0	0	0	22	14	0	1	0	15	41
14:45 - 15:00	2	0	0	0	2	8	0	2	0	10	32	0	4	0	36	48
15:00 - 15:15	3	0	1	0	4	14	0	1	0	15	19	0	1	0	20	39
15:15 - 15:30	8	0	0	0	8	18	0	2	0	20	42	0	3	0	45	73
15:30 - 15:45	3	0	0	0	3	22	0	1	0	23	28	0	0	0	28	54
15:45 - 16:00	1	2	1	1	5	11	0	0	0	11	27	0	2	0	29	45
16:00 - 16:15	13	0	0	0	13	11	0	0	0	11	34	1	0	0	35	59
16:15 - 16:30	3	0	0	0	3	14	0	0	0	14	26	0	0	0	26	43
16:30 - 16:45	5	0	0	0	5	20	0	0	0	20	48	0	0	0	48	73
16:45 - 17:00	14	0	1	0	15	17	0	0	0	17	23	0	1	0	24	56
17:00 - 17:15	14	0	0	0	14	11	0	0	0	11	21	0	1	0	22	47
17:15 - 17:30	6	0	0	0	6	8	0	0	0	8	22	0	1	0	23	37
17:30 - 17:45	2	0	1	0	3	7	0	0	0	7	7	0	0	0	7	17
17:45 - 18:00	3	0	0	0	3	14	0	0	0	14	13	0	1	0	14	31
TOTAL	**138**	**4**	**10**	**2**	**154**	**497**	**0**	**21**	**2**	**520**	**1033**	**4**	**77**	**0**	**1114**	**1788**

TRAFFIC SURVEY

CLIENT: AURECON

SITE: INTERSECTION OF MAIN ROAD 474 AND MAIN ROAD 228

DATE: 12 HOUR COUNT ON MONDAY 31 AUGUST 2015

UNITS: CLASSIFIED

APPROACH FROM	EAST															TOTAL
NAME	MAIN ROAD 474															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	9
06:15 - 06:30	14	0	0	0	14	1	0	0	0	1	0	0	0	0	0	15
06:30 - 06:45	21	2	0	0	23	0	0	0	0	0	1	0	0	0	1	24
06:45 - 07:00	27	0	0	0	27	1	0	0	0	1	1	0	0	0	1	29
07:00 - 07:15	29	1	1	0	31	2	0	0	0	2	1	0	1	0	2	35
07:15 - 07:30	40	0	0	0	40	1	0	0	0	1	0	0	0	0	0	41
07:30 - 07:45	42	0	4	0	46	0	0	0	0	0	0	0	1	0	1	47
07:45 - 08:00	23	0	1	0	24	0	0	0	0	0	0	0	0	0	0	24
08:00 - 08:15	36	0	1	0	37	1	0	0	0	1	0	0	0	0	0	38
08:15 - 08:30	25	0	1	0	26	0	0	0	0	0	1	0	0	0	1	27
08:30 - 08:45	20	0	0	0	20	1	0	0	0	1	2	0	0	0	2	23
08:45 - 09:00	22	0	1	0	23	0	0	0	0	0	1	0	0	0	1	24
09:00 - 09:15	35	0	2	0	37	2	0	0	0	2	0	0	1	0	1	40
09:15 - 09:30	17	0	0	0	17	0	0	0	0	0	0	0	1	0	1	18
09:30 - 09:45	30	0	3	0	33	1	0	0	0	1	3	0	0	0	3	37
09:45 - 10:00	23	0	4	0	27	1	0	0	0	1	1	0	0	0	1	29
10:00 - 10:15	28	0	1	0	29	0	0	0	0	0	5	0	0	0	5	34
10:15 - 10:30	26	0	3	0	29	0	0	0	0	0	2	0	0	0	2	31
10:30 - 10:45	17	0	2	0	19	0	0	0	0	0	2	0	2	0	4	23
10:45 - 11:00	36	0	1	0	37	1	0	0	0	1	1	0	0	0	1	39
11:00 - 11:15	6	0	4	0	10	0	0	0	0	0	0	0	0	0	0	10
11:15 - 11:30	12	0	3	0	15	0	0	0	0	0	0	0	0	0	0	15
11:30 - 11:45	30	0	3	0	33	0	0	0	0	0	1	0	0	0	1	34
11:45 - 12:00	18	0	2	0	20	0	0	0	0	0	0	0	1	0	1	21
12:00 - 12:15	30	0	2	0	32	2	0	0	0	2	1	0	2	0	3	37
12:15 - 12:30	32	0	0	0	32	0	0	0	0	0	1	0	0	0	1	33
12:30 - 12:45	37	0	1	0	38	2	0	0	0	2	2	0	1	0	3	43
12:45 - 13:00	25	0	1	0	26	0	0	0	0	0	0	0	1	0	1	27
13:00 - 13:15	18	0	1	0	19	0	0	0	0	0	1	0	0	0	1	20
13:15 - 13:30	19	0	0	0	19	0	0	0	0	0	1	0	1	0	2	21
13:30 - 13:45	13	0	0	0	13	0	0	0	0	0	1	0	0	0	1	14
13:45 - 14:00	18	0	3	0	21	0	0	0	0	0	0	0	0	0	0	21
14:00 - 14:15	21	0	2	0	23	0	0	0	0	0	2	0	0	0	2	25
14:15 - 14:30	18	0	0	0	18	0	0	0	0	0	0	0	1	0	1	19
14:30 - 14:45	10	0	1	0	11	0	0	0	0	0	0	0	2	0	2	13
14:45 - 15:00	23	0	4	0	27	0	0	0	0	0	3	0	1	0	4	31
15:00 - 15:15	27	0	4	0	31	0	0	0	0	0	4	0	0	0	4	35
15:15 - 15:30	33	0	4	0	37	0	0	0	0	0	0	0	0	0	0	37
15:30 - 15:45	15	0	3	0	18	0	0	0	0	0	0	0	0	0	0	18
15:45 - 16:00	30	0	0	0	30	0	0	0	0	0	0	0	0	0	0	30
16:00 - 16:15	40	0	1	0	41	2	0	0	0	2	5	0	0	0	5	48
16:15 - 16:30	29	1	3	0	33	0	0	0	0	0	3	0	1	0	4	37
16:30 - 16:45	39	0	1	0	40	0	0	0	0	0	3	0	0	0	3	43
16:45 - 17:00	31	0	3	0	34	0	0	0	0	0	2	0	0	0	2	36
17:00 - 17:15	24	0	1	0	25	1	0	0	0	1	0	0	0	0	0	26
17:15 - 17:30	7	0	1	0	8	1	0	0	0	1	1	0	0	0	1	10
17:30 - 17:45	14	0	1	0	15	0	0	0	0	0	0	0	0	0	0	15
17:45 - 18:00	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	8
TOTAL	**1147**	**4**	**74**	**0**	**1225**	**20**	**0**	**0**	**0**	**20**	**52**	**0**	**17**	**0**	**69**	**1314**

TRAFFIC SURVEY

CLIENT: AURECON

SITE: INTERSECTION OF MAIN ROAD 474 AND MAIN ROAD 228

DATE: 12 HOUR COUNT ON MONDAY 31 AUGUST 2015

UNITS: CLASSIFIED

APPROACH FROM	WEST															TOTAL
NAME	MELINDA LANE															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
06:15 - 06:30	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	2
06:30 - 06:45	0	0	0	0	0	1	0	0	0	1	7	0	0	0	7	8
06:45 - 07:00	0	0	0	0	0	1	0	0	0	1	9	1	0	1	11	12
07:00 - 07:15	2	0	0	0	2	0	0	0	0	0	12	0	1	0	13	15
07:15 - 07:30	0	0	0	0	0	0	0	0	0	0	11	0	0	0	11	11
07:30 - 07:45	1	0	0	0	1	0	0	0	0	0	6	0	0	0	6	7
07:45 - 08:00	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	5
08:00 - 08:15	0	0	0	0	0	0	0	0	0	0	3	0	1	0	4	4
08:15 - 08:30	1	0	0	0	1	0	0	0	0	0	2	0	1	0	3	4
08:30 - 08:45	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	6
08:45 - 09:00	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3	3
09:00 - 09:15	2	0	0	0	2	0	0	0	0	0	2	0	0	0	2	4
09:15 - 09:30	3	0	0	0	3	0	0	0	0	0	3	0	1	0	4	7
09:30 - 09:45	1	0	0	0	1	0	0	0	0	0	3	0	0	0	3	4
09:45 - 10:00	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3	3
10:00 - 10:15	1	0	0	0	1	0	0	0	0	0	3	0	0	0	3	4
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	2
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
11:30 - 11:45	2	0	0	0	2	0	0	0	0	0	2	0	0	0	2	4
11:45 - 12:00	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	2
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
13:00 - 13:15	4	0	0	0	4	0	0	0	0	0	1	0	0	0	1	5
13:15 - 13:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
13:30 - 13:45	3	0	0	0	3	0	0	0	0	0	3	0	0	0	3	6
13:45 - 14:00	0	0	1	0	1	0	0	0	0	0	3	0	1	0	4	5
14:00 - 14:15	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	6
14:15 - 14:30	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	2
14:30 - 14:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
14:45 - 15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
15:15 - 15:30	0	0	0	0	0	1	0	0	0	1	2	0	0	0	2	3
15:30 - 15:45	1	0	0	0	1	0	0	0	0	0	3	0	0	0	3	4
15:45 - 16:00	0	0	0	0	0	1	0	0	0	1	3	0	0	0	3	4
16:00 - 16:15	0	0	0	0	0	0	0	0	0	0	3	2	1	0	6	6
16:15 - 16:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
16:30 - 16:45	1	0	0	0	1	0	0	0	0	0	3	0	0	0	3	4
16:45 - 17:00	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	5
17:00 - 17:15	1	0	0	0	1	0	0	0	0	0	3	0	0	0	3	4
17:15 - 17:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
17:30 - 17:45	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
17:45 - 18:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
TOTAL	**26**	**0**	**1**	**0**	**27**	**5**	**0**	**0**	**0**	**5**	**146**	**3**	**8**	**1**	**158**	**190**

TRAFFIC SURVEY	
CLIENT:	AURECON
SITE:	INTERSECTION OF MAIN ROAD 228 AND MAIN ROAD 467
DATE:	12 HOUR COUNT ON MONDAY 31 AUGUST 2015
UNITS:	CLASSIFIED

APPROACH FROM	NORTH															TOTAL
NAME	NUTRI FLO ACCESS															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	0	0	0	0	0	1	0	0	0	1	2	0	0	0	2	3
06:15 - 06:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
06:30 - 06:45	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
06:45 - 07:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
07:00 - 07:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
07:15 - 07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 - 07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 - 08:00	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
08:00 - 08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 - 08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 - 08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 - 09:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
09:00 - 09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 - 09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 - 09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 - 10:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
13:00 - 13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15 - 13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30 - 13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45 - 14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00 - 14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15 - 14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30 - 14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45 - 15:00	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	2
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 - 15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 - 16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
16:15 - 16:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
16:30 - 16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45 - 17:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
17:00 - 17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15 - 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30 - 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 - 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**2**	**0**	**0**	**0**	**2**	**3**	**0**	**0**	**0**	**3**	**10**	**0**	**7**	**0**	**17**	**22**

TRAFFIC SURVEY

CLIENT: AURECON

SITE: INTERSECTION OF MAIN ROAD 228 AND MAIN ROAD 467

DATE: 12 HOUR COUNT ON MONDAY 31 AUGUST 2015

UNITS: CLASSIFIED

APPROACH FROM	SOUTH															TOTAL
NAME	MAIN ROAD 228															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	1	1	0	0	2	0	0	0	0	0	1	0	2	0	3	5
06:15 - 06:30	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	2
06:30 - 06:45	0	0	1	0	1	0	0	0	0	0	3	0	1	0	4	5
06:45 - 07:00	2	0	3	0	5	0	0	0	0	0	0	0	1	0	1	6
07:00 - 07:15	2	0	2	0	4	0	0	0	0	0	0	0	0	0	0	4
07:15 - 07:30	1	0	0	0	1	0	0	0	0	0	2	0	2	0	4	5
07:30 - 07:45	3	0	4	0	7	0	0	0	0	0	0	0	3	0	3	10
07:45 - 08:00	4	0	3	0	7	0	0	0	0	0	2	0	4	0	6	13
08:00 - 08:15	1	0	1	0	2	0	0	0	0	0	0	0	2	0	2	4
08:15 - 08:30	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
08:30 - 08:45	0	0	2	0	2	0	0	0	0	0	1	0	2	0	3	5
08:45 - 09:00	1	0	2	0	3	0	0	0	0	0	1	0	2	0	3	6
09:00 - 09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 - 09:30	0	0	1	0	1	0	0	0	0	0	1	0	1	0	2	3
09:30 - 09:45	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	3
09:45 - 10:00	2	0	1	0	3	0	0	0	0	0	1	0	0	0	1	4
10:00 - 10:15	2	0	3	0	5	0	0	0	0	0	0	0	1	0	1	6
10:15 - 10:30	1	0	0	0	1	0	0	0	0	0	1	0	1	0	2	3
10:30 - 10:45	1	0	1	0	2	0	0	0	0	0	0	0	1	0	1	3
10:45 - 11:00	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
11:00 - 11:15	1	0	1	0	2	0	0	0	0	0	1	0	1	0	2	4
11:15 - 11:30	1	0	2	0	3	0	0	0	0	0	0	0	3	0	3	6
11:30 - 11:45	0	0	1	0	1	0	0	0	0	0	1	0	1	0	2	3
11:45 - 12:00	1	0	0	0	1	0	0	0	0	0	0	0	3	0	3	4
12:00 - 12:15	0	0	1	0	1	0	0	0	0	0	1	0	1	0	2	3
12:15 - 12:30	1	0	1	0	2	0	0	0	0	0	0	0	3	0	3	5
12:30 - 12:45	1	0	5	0	6	0	0	0	0	0	2	0	3	0	5	11
12:45 - 13:00	3	0	4	0	7	0	0	0	0	0	2	0	1	0	3	10
13:00 - 13:15	0	0	1	0	1	0	0	0	0	0	3	0	3	0	6	7
13:15 - 13:30	1	0	1	0	2	0	0	0	0	0	1	0	1	0	2	4
13:30 - 13:45	2	0	2	0	4	0	0	0	0	0	3	0	2	0	5	9
13:45 - 14:00	2	0	2	0	4	0	0	0	0	0	1	0	1	0	2	6
14:00 - 14:15	1	0	0	0	1	0	0	0	0	0	0	0	5	0	5	6
14:15 - 14:30	0	0	2	0	2	0	0	0	0	0	1	0	2	0	3	5
14:30 - 14:45	1	0	1	0	2	0	0	0	0	0	3	0	4	0	7	9
14:45 - 15:00	3	0	2	0	5	0	0	0	0	0	2	0	3	0	5	10
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
15:15 - 15:30	1	0	1	0	2	0	0	0	0	0	0	0	3	0	3	5
15:30 - 15:45	1	0	1	0	2	0	0	0	0	0	0	0	1	0	1	3
15:45 - 16:00	2	0	0	0	2	0	0	0	0	0	4	0	2	0	6	8
16:00 - 16:15	3	0	0	0	3	0	0	0	0	0	1	0	2	0	3	6
16:15 - 16:30	1	0	0	0	1	0	0	0	0	0	1	0	3	0	4	5
16:30 - 16:45	3	0	1	0	4	0	0	0	0	0	1	0	1	0	2	6
16:45 - 17:00	1	0	3	0	4	0	0	0	0	0	2	0	0	0	2	6
17:00 - 17:15	3	0	3	0	6	0	0	0	0	0	2	0	0	0	2	8
17:15 - 17:30	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5
17:30 - 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 - 18:00	2	0	0	0	2	0	0	0	0	0	1	0	0	0	1	3
TOTAL	**62**	**1**	**66**	**0**	**129**	**0**	**0**	**0**	**0**	**0**	**47**	**0**	**73**	**0**	**120**	**249**

TRAFFIC SURVEY																	
CLIENT:	AURECON																
SITE:	INTERSECTION OF MAIN ROAD 228 AND MAIN ROAD 467																
DATE:	12 HOUR COUNT ON MONDAY 31 AUGUST 2015																
UNITS:	CLASSIFIED																

APPROACH FROM	EAST															TOTAL
NAME	MAIN ROAD 467															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	0	0	4	0	4	4	0	2	0	6	0	0	0	0	0	10
06:15 - 06:30	0	0	2	0	2	8	0	2	0	10	0	0	0	0	0	12
06:30 - 06:45	1	0	0	0	1	28	0	1	0	29	0	0	0	0	0	30
06:45 - 07:00	2	0	1	0	3	7	0	4	0	11	0	0	0	0	0	14
07:00 - 07:15	1	0	4	0	5	18	0	1	0	19	0	0	0	0	0	24
07:15 - 07:30	1	0	1	0	2	19	0	0	0	19	1	0	0	0	1	22
07:30 - 07:45	1	0	5	0	6	10	0	1	0	11	0	0	0	0	0	17
07:45 - 08:00	5	0	7	0	12	14	0	2	0	16	0	0	0	0	0	28
08:00 - 08:15	1	0	1	0	2	7	0	0	0	7	0	0	0	0	0	9
08:15 - 08:30	1	0	1	0	2	8	0	2	0	10	0	0	0	0	0	12
08:30 - 08:45	3	0	0	0	3	8	0	1	0	9	0	0	0	0	0	12
08:45 - 09:00	0	0	2	0	2	5	0	2	0	7	1	0	0	0	1	10
09:00 - 09:15	2	0	1	0	3	8	0	1	0	9	0	0	0	0	0	12
09:15 - 09:30	0	0	1	0	1	9	0	3	0	12	0	0	0	0	0	13
09:30 - 09:45	1	0	1	0	2	7	0	4	0	11	0	0	0	0	0	13
09:45 - 10:00	3	0	0	0	3	13	0	2	0	15	1	0	0	0	1	19
10:00 - 10:15	0	0	0	0	0	11	0	0	0	11	0	0	0	0	0	11
10:15 - 10:30	1	0	0	0	1	12	0	1	0	13	0	0	0	0	0	14
10:30 - 10:45	1	0	1	0	2	9	0	4	0	13	0	0	0	0	0	15
10:45 - 11:00	0	0	0	0	0	10	0	3	0	13	0	0	0	0	0	13
11:00 - 11:15	0	0	0	0	0	6	0	2	0	8	0	0	0	0	0	8
11:15 - 11:30	3	0	1	0	4	5	0	2	0	7	0	0	0	0	0	11
11:30 - 11:45	2	0	8	0	10	5	0	2	0	7	0	0	0	0	0	17
11:45 - 12:00	0	0	1	0	1	11	0	1	0	12	0	0	0	0	0	13
12:00 - 12:15	1	0	1	0	2	8	0	1	0	9	0	0	0	0	0	11
12:15 - 12:30	2	0	4	0	6	7	0	1	0	8	0	0	0	0	0	14
12:30 - 12:45	1	0	3	0	4	9	0	0	0	9	0	0	0	0	0	13
12:45 - 13:00	3	0	0	0	3	12	0	5	0	17	0	0	0	0	0	20
13:00 - 13:15	1	0	2	0	3	7	0	6	0	13	0	0	0	0	0	16
13:15 - 13:30	0	0	2	0	2	10	0	2	0	12	0	0	0	0	0	14
13:30 - 13:45	2	0	3	0	5	5	0	2	0	7	0	0	0	0	0	12
13:45 - 14:00	1	0	1	0	2	11	0	1	0	12	0	0	0	0	0	14
14:00 - 14:15	0	0	2	0	2	12	0	0	0	12	0	0	0	0	0	14
14:15 - 14:30	4	0	1	0	5	11	0	2	0	13	0	0	0	0	0	18
14:30 - 14:45	0	0	2	0	2	8	0	1	0	9	0	0	0	0	0	11
14:45 - 15:00	1	0	1	0	2	10	0	4	0	14	0	0	0	0	0	16
15:00 - 15:15	0	0	0	0	0	12	0	4	0	16	0	0	0	0	0	16
15:15 - 15:30	0	0	1	0	1	16	0	3	0	19	0	0	0	0	0	20
15:30 - 15:45	3	0	2	0	5	9	0	1	0	10	0	0	0	0	0	15
15:45 - 16:00	1	0	1	0	2	10	0	2	0	12	0	0	0	0	0	14
16:00 - 16:15	1	0	0	0	1	17	0	1	0	18	0	0	1	0	1	20
16:15 - 16:30	1	0	4	0	5	21	0	7	0	28	0	0	0	0	0	33
16:30 - 16:45	3	0	1	0	4	23	0	2	0	25	0	0	0	0	0	29
16:45 - 17:00	2	0	4	0	6	19	0	0	0	19	0	0	0	0	0	25
17:00 - 17:15	0	0	0	0	0	13	0	4	0	17	0	0	0	0	0	17
17:15 - 17:30	0	0	0	0	0	8	0	1	0	9	0	0	0	0	0	9
17:30 - 17:45	1	0	0	0	1	8	0	1	0	9	0	0	0	0	0	10
17:45 - 18:00	0	0	0	0	0	6	0	1	0	7	0	0	0	0	0	7
TOTAL	**57**	**0**	**77**	**0**	**134**	**514**	**0**	**95**	**0**	**609**	**3**	**0**	**1**	**0**	**4**	**747**

TRAFFIC SURVEY	
CLIENT:	AURECON
SITE:	INTERSECTION OF MAIN ROAD 228 AND MAIN ROAD 467
DATE:	12 HOUR COUNT ON MONDAY 31 AUGUST 2015
UNITS:	CLASSIFIED

APPROACH FROM	WEST															TOTAL
NAME	MAIN ROAD 467															
MOVEMENT	LEFT TURN					STRAIGHT					RIGHT TURN					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	2	0	0	0	2	1	0	2	0	3	0	0	1	0	1	6
06:15 - 06:30	0	0	0	0	0	5	0	3	0	8	2	0	2	0	4	12
06:30 - 06:45	0	0	0	0	0	11	0	1	0	12	1	0	4	0	5	17
06:45 - 07:00	1	0	1	0	2	19	0	1	0	20	2	0	3	0	5	27
07:00 - 07:15	2	0	0	0	2	16	0	0	0	16	2	0	1	0	3	21
07:15 - 07:30	0	0	0	0	0	18	0	5	0	23	4	0	1	0	5	28
07:30 - 07:45	0	0	0	0	0	18	0	1	0	19	3	0	3	0	6	25
07:45 - 08:00	0	0	1	0	1	10	0	5	0	15	2	0	0	0	2	18
08:00 - 08:15	0	0	0	0	0	7	0	0	0	7	0	0	1	0	1	8
08:15 - 08:30	0	0	0	0	0	11	0	3	0	14	0	0	0	0	0	14
08:30 - 08:45	1	0	0	0	1	8	0	1	0	9	0	0	2	0	2	12
08:45 - 09:00	1	0	0	0	1	4	0	0	0	4	0	0	0	0	0	5
09:00 - 09:15	0	0	0	0	0	9	0	5	0	14	5	0	2	0	7	21
09:15 - 09:30	0	0	0	0	0	7	0	0	0	7	3	0	4	0	7	14
09:30 - 09:45	0	0	0	0	0	9	0	0	0	9	1	0	1	0	2	11
09:45 - 10:00	1	0	0	0	1	7	0	1	0	8	0	0	3	0	3	12
10:00 - 10:15	0	0	0	0	0	7	0	1	0	8	0	0	1	0	1	9
10:15 - 10:30	0	0	0	0	0	7	0	0	0	7	1	0	2	0	3	10
10:30 - 10:45	0	0	1	0	1	9	0	2	0	11	0	0	4	0	4	16
10:45 - 11:00	0	0	0	0	0	13	0	1	0	14	0	0	2	0	2	16
11:00 - 11:15	0	0	0	0	0	10	0	1	0	11	0	0	3	0	3	14
11:15 - 11:30	0	0	0	0	0	9	0	4	0	13	0	0	0	0	0	13
11:30 - 11:45	1	0	0	0	1	6	0	0	0	6	0	0	0	0	0	7
11:45 - 12:00	0	0	0	0	0	9	0	6	0	15	0	0	4	0	4	19
12:00 - 12:15	0	0	0	0	0	5	0	0	0	5	1	0	2	0	3	8
12:15 - 12:30	1	0	0	0	1	14	0	4	0	18	0	0	2	0	2	21
12:30 - 12:45	0	0	0	0	0	7	0	3	0	10	1	0	0	0	1	11
12:45 - 13:00	0	0	0	0	0	5	0	1	0	6	1	0	2	0	3	9
13:00 - 13:15	0	0	0	0	0	12	0	0	0	12	1	0	0	0	1	13
13:15 - 13:30	0	0	0	0	0	11	0	2	0	13	2	0	2	0	4	17
13:30 - 13:45	1	0	0	0	1	3	0	2	0	5	1	0	0	0	1	7
13:45 - 14:00	0	0	0	0	0	10	0	2	0	12	3	0	2	0	5	17
14:00 - 14:15	0	0	0	0	0	10	0	4	0	14	1	0	2	0	3	17
14:15 - 14:30	0	0	1	0	1	10	0	1	1	12	0	0	0	0	0	13
14:30 - 14:45	0	0	0	0	0	11	0	1	0	12	1	0	2	0	3	15
14:45 - 15:00	0	0	0	0	0	8	0	1	0	9	0	0	2	0	2	11
15:00 - 15:15	0	0	0	0	0	10	1	0	0	11	0	0	1	0	1	12
15:15 - 15:30	0	0	0	0	0	8	0	2	0	10	1	0	1	0	2	12
15:30 - 15:45	0	0	1	0	1	12	0	0	0	12	0	0	2	0	2	15
15:45 - 16:00	0	0	0	0	0	9	0	2	0	11	1	0	0	0	1	12
16:00 - 16:15	1	0	0	0	1	10	0	1	0	11	0	0	1	0	1	13
16:15 - 16:30	0	0	1	0	1	13	0	5	0	18	2	0	2	0	4	23
16:30 - 16:45	0	0	0	0	0	12	0	1	0	13	3	0	0	0	3	16
16:45 - 17:00	0	0	0	0	0	8	0	2	0	10	1	0	2	0	3	13
17:00 - 17:15	0	0	0	0	0	15	0	0	0	15	3	0	2	0	5	20
17:15 - 17:30	0	0	0	0	0	10	0	0	0	10	1	0	0	0	1	11
17:30 - 17:45	0	0	0	0	0	11	0	1	0	12	0	0	0	0	0	12
17:45 - 18:00	0	0	0	0	0	5	0	4	0	9	1	0	0	0	1	10
TOTAL	**12**	**0**	**6**	**0**	**18**	**459**	**1**	**82**	**1**	**543**	**51**	**0**	**71**	**0**	**122**	**683**

TRAFFIC SURVEY											
CLIENT:	AURECON										
SITE:	TWO WAY COUNT ON N2 AT UMHLALI RIVER										
DATE:	12 HOUR COUNT ON THURSDAY 27 AUGUST 2015										
UNITS:	CLASSIFIED										

APPROACH FROM	NORTH / SOUTH										TOTAL
NAME	N2										
MOVEMENT	NORTHBOUND					SOUTHBOUND					ALL
TIME	C	T	H	B	TOTAL	C	T	H	B	TOTAL	MOVEMENTS
06:00 - 06:15	107	2	19	1	129	72	2	14	1	89	218
06:15 - 06:30	155	2	38	1	196	118	4	14	1	137	333
06:30 - 06:45	205	4	42	0	251	175	7	23	1	206	457
06:45 - 07:00	168	5	13	0	186	141	5	10	4	160	346
07:00 - 07:15	226	4	33	0	263	231	6	21	1	259	522
07:15 - 07:30	210	11	20	2	243	228	2	22	5	257	500
07:30 - 07:45	217	8	25	0	250	203	8	19	3	233	483
07:45 - 08:00	183	5	21	0	209	206	6	16	1	229	438
08:00 - 08:15	193	4	19	0	216	184	6	10	1	201	417
08:15 - 08:30	202	1	18	2	223	172	3	21	2	198	421
08:30 - 08:45	201	5	22	6	234	193	3	15	6	217	451
08:45 - 09:00	227	2	37	2	268	186	1	23	3	213	481
09:00 - 09:15	194	3	30	0	227	139	3	11	1	154	381
09:15 - 09:30	185	0	32	1	218	137	6	22	2	167	385
09:30 - 09:45	210	7	39	0	256	178	4	20	4	206	462
09:45 - 10:00	201	2	23	3	229	145	4	22	3	174	403
10:00 - 10:15	184	3	31	1	219	129	13	24	3	169	388
10:15 - 10:30	202	9	32	0	243	153	11	24	1	189	432
10:30 - 10:45	171	4	30	0	205	148	2	17	3	170	375
10:45 - 11:00	112	3	30	2	147	131	3	10	2	146	293
11:00 - 11:15	148	2	30	2	182	140	4	21	4	169	351
11:15 - 11:30	135	3	21	0	159	155	5	23	2	185	344
11:30 - 11:45	174	12	38	1	225	205	13	29	1	248	473
11:45 - 12:00	86	2	21	0	109	125	2	24	0	151	260
12:00 - 12:15	92	8	22	0	122	103	2	13	2	120	242
12:15 - 12:30	51	2	28	0	81	140	4	21	0	165	246
12:30 - 12:45	72	3	24	1	100	86	0	27	1	114	214
12:45 - 13:00	74	2	21	1	98	82	4	26	0	112	210
13:00 - 13:15	102	3	21	1	127	163	5	29	0	197	324
13:15 - 13:30	128	0	14	1	143	140	10	23	1	174	317
13:30 - 13:45	177	8	32	2	219	217	8	34	1	260	479
13:45 - 14:00	147	3	13	2	165	172	4	19	1	196	361
14:00 - 14:15	166	7	22	3	198	193	6	26	2	227	425
14:15 - 14:30	167	8	14	2	191	221	0	37	1	259	450
14:30 - 14:45	159	3	24	4	190	230	11	43	0	284	474
14:45 - 15:00	196	7	16	1	220	229	3	33	0	265	485
15:00 - 15:15	139	7	21	2	169	216	14	39	0	269	438
15:15 - 15:30	141	6	19	0	166	200	4	32	1	237	403
15:30 - 15:45	133	9	18	2	162	215	13	32	1	261	423
15:45 - 16:00	148	4	10	0	162	228	3	31	0	262	424
16:00 - 16:15	132	8	19	0	159	204	7	27	1	239	398
16:15 - 16:30	175	12	19	1	207	245	7	43	0	295	502
16:30 - 16:45	199	6	18	2	225	233	6	43	0	282	507
16:45 - 17:00	197	12	21	2	232	201	5	30	1	237	469
17:00 - 17:15	247	10	22	2	281	244	12	48	0	304	585
17:15 - 17:30	150	2	14	2	168	135	7	24	1	167	335
17:30 - 17:45	187	6	23	0	216	195	7	42	1	245	461
17:45 - 18:00	125	2	15	0	142	150	4	29	0	183	325
TOTAL	**7800**	**241**	**1134**	**55**	**9230**	**8336**	**269**	**1206**	**70**	**9881**	**19111**

Appendix B

SIDRA Outputs

MOVEMENT SUMMARY

Site: P330 and On-ramp(western) - AM

P330 and Onramp
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Off ramp											
1	L	399	0.0	3.950	5351.5	LOS F	578.0	4045.8	1.00	17.08	0.4
3	R	206	0.0	3.968	5351.4	LOS F	578.0	4045.8	1.00	11.45	0.4
Approach		605	0.0	3.939	5351.5	LOS F	578.0	4045.8	1.00	15.16	0.4
East: P330											
5	T	441	0.0	0.226	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
6	R	107	0.0	0.276	18.6	LOS C	1.3	9.0	0.79	0.97	39.6
Approach		548	0.0	0.276	3.6	LOS C	1.3	9.0	0.15	0.19	54.5
West: P330											
10	L	27	0.0	0.472	8.2	LOS A	0.0	0.0	0.00	1.07	49.0
11	T	897	0.0	0.475	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		924	0.0	0.475	0.2	LOS A	0.0	0.0	0.00	0.03	59.6
All Vehicles		2078	0.0	3.939	1559.9	NA	578.0	4045.8	0.33	4.48	1.4

MOVEMENT SUMMARY

Site: P330 and On-ramp(western) - PM

P330 and Onramp
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Onramp											
1	L	313	0.0	2.719	3138.1	LOS F	574.6	4022.2	1.00	20.09	0.7
3	R	398	0.0	2.725	3137.9	LOS F	574.6	4022.2	1.00	13.69	0.7
Approach		711	0.0	2.721	3138.0	LOS F	574.6	4022.2	1.00	16.51	0.7
East: P330											
5	T	296	0.0	0.152	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
6	R	76	0.0	0.115	12.9	LOS B	0.5	3.7	0.58	0.87	44.2
Approach		372	0.0	0.152	2.6	LOS B	0.5	3.7	0.12	0.18	56.0
West: P330											
10	L	33	0.0	0.333	8.2	LOS A	0.0	0.0	0.00	1.06	49.0
11	T	613	0.0	0.332	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		645	0.0	0.332	0.4	LOS A	0.0	0.0	0.00	0.05	59.3
All Vehicles		1727	0.0	2.721	1291.5	NA	574.6	4022.2	0.44	6.85	1.6

MOVEMENT SUMMARY

Site: P330 and Onramp (eastern)- AM

P330 and Onramp (eastern)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P330											
4	L	593	0.0	0.569	8.2	LOS A	0.0	0.0	0.00	0.80	49.0
5	T	487	0.0	0.569	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1080	0.0	0.569	4.5	LOS A	0.0	0.0	0.00	0.44	53.4
North: Off-ramp											
7	L	29	0.0	0.307	37.7	LOS E	1.3	9.1	0.85	1.04	30.1
9	R	18	0.0	0.309	37.5	LOS E	1.3	9.1	0.85	1.04	30.2
Approach		47	0.0	0.308	37.6	LOS E	1.3	9.1	0.85	1.04	30.1
West: P330											
11	T	838	0.0	0.435	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	265	0.0	1.003	114.2	LOS F	19.7	137.9	1.00	2.49	14.4
Approach		1103	0.0	1.003	27.4	LOS F	19.7	137.9	0.24	0.60	34.2
All Vehicles		2231	0.0	1.003	16.5	NA	19.7	137.9	0.14	0.53	41.3

MOVEMENT SUMMARY

Site: P330 and Onramp (eastern)- PM

P330 and Onramp (eastern)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P330											
4	L	372	0.0	0.422	8.2	LOS A	0.0	0.0	0.00	0.84	49.0
5	T	433	0.0	0.422	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		804	0.0	0.422	3.8	LOS A	0.0	0.0	0.00	0.39	54.3
North: Off-ramp											
7	L	75	0.0	0.639	53.7	LOS F	3.3	23.4	0.91	1.18	24.7
9	R	20	0.0	0.645	53.5	LOS F	3.3	23.4	0.91	1.15	24.7
Approach		95	0.0	0.639	53.6	LOS F	3.3	23.4	0.91	1.17	24.7
West: P330											
11	T	777	0.0	0.398	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	366	0.0	0.733	23.2	LOS C	6.5	45.2	0.88	1.27	36.5
Approach		1143	0.0	0.733	7.4	LOS C	6.5	45.2	0.28	0.41	49.8
All Vehicles		2042	0.0	0.733	8.1	NA	6.5	45.2	0.20	0.44	49.1

MOVEMENT SUMMARY

Site: P330 and P474- AM

P330 and P474
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P330											
5	T	631	0.0	0.430	23.4	LOS C	17.8	124.7	1.00	0.00	34.3
6	R	31	0.0	0.430	31.9	LOS D	17.8	124.7	1.00	1.19	34.1
Approach		661	0.0	0.430	23.8	LOS D	17.8	124.7	1.00	0.06	34.3
North: P474											
7	L	38	0.0	5.414	8263.3	LOS F	497.0	3478.7	1.00	11.37	0.3
9	R	432	0.0	5.533	8263.1	LOS F	497.0	3478.7	1.00	8.55	0.3
Approach		469	0.0	5.551	8263.1	LOS F	497.0	3478.7	1.00	8.78	0.3
West: P330											
10	L	206	0.0	0.341	8.2	LOS A	0.0	0.0	0.00	0.90	49.0
11	T	448	0.0	0.341	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		655	0.0	0.341	2.6	LOS A	0.0	0.0	0.00	0.28	56.0
All Vehicles		1785	0.0	5.551	2182.7	NA	497.0	3478.7	0.63	2.43	1.0

MOVEMENT SUMMARY

Site: P330 and P474- PM

P330 and P474
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P330											
5	T	351	0.0	0.261	9.9	LOS A	5.5	38.5	0.89	0.00	43.8
6	R	32	0.0	0.261	18.3	LOS C	5.5	38.5	0.89	1.01	42.9
Approach		382	0.0	0.261	10.6	LOS C	5.5	38.5	0.89	0.08	43.7
North: P474											
7	L	47	0.0	1.155	344.4	LOS F	65.4	458.0	1.00	5.99	5.7
9	R	261	0.0	1.160	344.2	LOS F	65.4	458.0	1.00	4.72	5.7
Approach		308	0.0	1.159	344.2	LOS F	65.4	458.0	1.00	4.91	5.7
West: P330											
10	L	224	0.0	0.258	8.2	LOS A	0.0	0.0	0.00	0.84	49.0
11	T	268	0.0	0.258	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		493	0.0	0.258	3.7	LOS A	0.0	0.0	0.00	0.38	54.4
All Vehicles		1183	0.0	1.159	94.7	NA	65.4	458.0	0.55	1.47	16.6

MOVEMENT SUMMARY

Site: P474 and P228-AM

P474 and P228
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P474											
4	L	152	0.0	0.087	8.5	LOS A	0.6	4.3	0.49	0.36	47.0
5	T	4	0.0	0.088	0.2	LOS A	0.6	4.3	0.49	0.00	49.0
6	R	4	0.0	0.088	8.5	LOS A	0.6	4.3	0.49	0.51	46.8
Approach		160	0.0	0.087	8.3	LOS A	0.6	4.3	0.49	0.35	47.0
North: P228											
7	L	16	0.0	0.009	11.0	LOS B	0.0	0.0	0.00	1.00	46.2
9	R	133	0.0	0.185	11.9	LOS B	1.0	6.9	0.36	0.88	46.0
Approach		148	0.0	0.185	11.8	LOS B	1.0	6.9	0.33	0.90	46.0
West: Melinda Lane											
10	L	3	0.0	0.081	13.8	LOS B	0.4	2.7	0.35	0.71	43.9
11	T	1	0.0	0.081	13.5	LOS B	0.4	2.7	0.35	0.82	44.1
12	R	43	0.0	0.080	14.1	LOS B	0.4	2.7	0.35	0.94	43.7
Approach		47	0.0	0.080	14.1	LOS B	0.4	2.7	0.35	0.92	43.7
South West: P474											
30	L	53	0.0	0.182	8.4	LOS A	1.2	8.6	0.26	0.46	48.3
32	R	123	0.0	0.182	8.7	LOS A	1.2	8.6	0.26	0.63	48.1
Approach		176	0.0	0.182	8.6	LOS A	1.2	8.6	0.26	0.58	48.2
All Vehicles		532	0.0	0.185	9.9	NA	1.2	8.6	0.36	0.63	46.8

MOVEMENT SUMMARY

Site: P474 and P228-PM

P474 and P228
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P474											
4	L	139	0.0	0.083	8.7	LOS A	0.6	4.1	0.63	0.26	46.4
5	T	1	0.0	0.081	0.4	LOS A	0.6	4.1	0.63	0.00	46.5
6	R	9	0.0	0.082	8.7	LOS A	0.6	4.1	0.63	0.53	46.2
Approach		149	0.0	0.083	8.6	LOS A	0.6	4.1	0.63	0.28	46.4
North: P228											
7	L	14	0.0	0.007	11.0	LOS B	0.0	0.0	0.00	1.00	46.2
9	R	60	0.0	0.088	12.1	LOS B	0.4	3.0	0.37	0.88	45.8
Approach		74	0.0	0.088	11.9	LOS B	0.4	3.0	0.30	0.90	45.9
West: Melinda Lane											
10	L	2	0.0	0.028	13.5	LOS B	0.1	0.9	0.35	0.73	44.2
11	T	1	0.0	0.028	13.2	LOS B	0.1	0.9	0.35	0.81	44.4
12	R	14	0.0	0.028	13.8	LOS B	0.1	0.9	0.35	0.92	44.0
Approach		17	0.0	0.028	13.8	LOS B	0.1	0.9	0.35	0.89	44.0
South West: P474											
30	L	104	0.0	0.211	8.5	LOS A	1.7	11.7	0.26	0.47	48.2
32	R	126	0.0	0.212	8.7	LOS A	1.7	11.7	0.26	0.63	48.2
Approach		231	0.0	0.211	8.6	LOS A	1.7	11.7	0.26	0.55	48.2
All Vehicles		471	0.0	0.211	9.3	NA	1.7	11.7	0.39	0.53	47.1

MOVEMENT SUMMARY

Site: P467 and Off-ramp(western)-AM

P467 and Off-ramp(western)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Off-Ramp											
1	L	68	0.0	0.076	11.2	LOS B	0.4	2.5	0.16	0.89	46.1
3	R	9	0.0	0.076	11.3	LOS B	0.4	2.5	0.16	1.02	46.1
Approach		78	0.0	0.076	11.2	LOS B	0.4	2.5	0.16	0.91	46.1
East: P467											
5	T	61	0.0	0.046	0.9	LOS A	0.3	2.3	0.33	0.00	53.5
6	R	17	0.0	0.046	9.7	LOS A	0.3	2.3	0.33	0.93	48.5
Approach		78	0.0	0.046	2.8	LOS A	0.3	2.3	0.33	0.20	52.3
West: P467											
10	L	40	0.0	0.110	8.2	LOS A	0.0	0.0	0.00	0.97	49.0
11	T	174	0.0	0.111	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		214	0.0	0.111	1.5	LOS A	0.0	0.0	0.00	0.18	57.6
All Vehicles		369	0.0	0.111	3.8	NA	0.4	2.5	0.10	0.34	53.6

MOVEMENT SUMMARY

Site: P467 and Off-ramp(western)-PM

P467 and Off-ramp(western)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Off-Ramp											
1	L	129	0.0	0.159	11.1	LOS B	0.8	5.7	0.13	0.90	46.2
3	R	36	0.0	0.159	11.1	LOS B	0.8	5.7	0.13	1.01	46.1
Approach		165	0.0	0.159	11.1	LOS B	0.8	5.7	0.13	0.92	46.2
East: P467											
5	T	35	0.0	0.025	0.4	LOS A	0.2	1.2	0.23	0.00	55.4
6	R	9	0.0	0.025	9.3	LOS A	0.2	1.2	0.23	0.95	48.4
Approach		44	0.0	0.025	2.3	LOS A	0.2	1.2	0.23	0.20	53.7
West: P467											
10	L	31	0.0	0.058	8.2	LOS A	0.0	0.0	0.00	0.92	49.0
11	T	81	0.0	0.058	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		112	0.0	0.058	2.2	LOS A	0.0	0.0	0.00	0.25	56.5
All Vehicles		321	0.0	0.159	6.8	NA	0.8	5.7	0.10	0.59	50.4

MOVEMENT SUMMARY

Site: P467 and On-ramp (eastern)-AM

P467 and On-ramp
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P467											
4	L	40	0.0	0.046	8.2	LOS A	0.0	0.0	0.00	0.84	49.0
5	T	47	0.0	0.046	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		87	0.0	0.046	3.7	LOS A	0.0	0.0	0.00	0.38	54.4
North: Off-ramp											
7	L	2	0.0	0.058	12.9	LOS B	0.3	1.9	0.29	0.73	44.6
9	R	36	0.0	0.058	12.9	LOS B	0.3	1.9	0.29	0.92	44.6
Approach		38	0.0	0.058	12.9	LOS B	0.3	1.9	0.29	0.91	44.6
West: P467											
11	T	19	0.0	0.137	0.4	LOS A	0.8	5.4	0.20	0.00	54.9
12	R	169	0.0	0.137	9.2	LOS A	0.8	5.4	0.20	0.70	47.6
Approach		188	0.0	0.137	8.3	LOS A	0.8	5.4	0.20	0.63	48.2
All Vehicles		314	0.0	0.137	7.6	NA	0.8	5.4	0.16	0.59	49.3

MOVEMENT SUMMARY

Site: P467 and On-ramp (eastern)-PM

P467 and On-ramp
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P467											
4	L	12	0.0	0.016	8.2	LOS A	0.0	0.0	0.00	0.88	49.0
5	T	20	0.0	0.016	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		32	0.0	0.016	3.0	LOS A	0.0	0.0	0.00	0.32	55.4
North: Off-ramp											
7	L	11	0.0	0.044	11.7	LOS B	0.2	1.5	0.21	0.81	45.7
9	R	25	0.0	0.044	11.7	LOS B	0.2	1.5	0.21	0.93	45.7
Approach		36	0.0	0.044	11.7	LOS B	0.2	1.5	0.21	0.90	45.7
West: P467											
11	T	47	0.0	0.080	0.1	LOS A	0.5	3.3	0.11	0.00	57.4
12	R	78	0.0	0.080	9.0	LOS A	0.5	3.3	0.11	0.81	48.0
Approach		125	0.0	0.080	5.6	LOS A	0.5	3.3	0.11	0.50	51.2
All Vehicles		193	0.0	0.080	6.3	NA	0.5	3.3	0.11	0.54	50.7

MOVEMENT SUMMARY

Site: P467 and P228- AM

P467 and P228
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	18	0.0	0.029	11.4	LOS B	0.1	0.9	0.20	0.86	46.0
2	T	1	0.0	0.029	11.0	LOS B	0.1	0.9	0.20	0.91	46.4
3	R	8	0.0	0.029	11.2	LOS B	0.1	0.9	0.20	0.95	46.2
Approach		27	0.0	0.029	11.3	LOS B	0.1	0.9	0.20	0.89	46.1
East: P467											
4	L	17	0.0	0.042	8.5	LOS A	0.3	2.1	0.23	0.73	48.8
5	T	63	0.0	0.042	0.3	LOS A	0.3	2.1	0.23	0.00	55.4
6	R	1	0.0	0.042	8.8	LOS A	0.3	2.1	0.23	0.90	48.7
Approach		81	0.0	0.042	2.1	LOS A	0.3	2.1	0.23	0.16	53.8
North: Entrance of Nutri Flo											
7	L	1	0.0	0.005	11.9	LOS B	0.0	0.2	0.28	0.79	45.7
8	T	1	0.0	0.005	11.5	LOS B	0.0	0.2	0.28	0.84	46.0
9	R	2	0.0	0.005	11.7	LOS B	0.0	0.2	0.28	0.88	45.8
Approach		4	0.0	0.005	11.7	LOS B	0.0	0.2	0.28	0.85	45.8
West: P467											
10	L	4	0.0	0.059	8.5	LOS A	0.4	2.8	0.20	0.75	48.8
11	T	82	0.0	0.059	0.3	LOS A	0.4	2.8	0.20	0.00	56.0
12	R	20	0.0	0.059	8.7	LOS A	0.4	2.8	0.20	0.90	48.7
Approach		106	0.0	0.059	2.2	LOS A	0.4	2.8	0.20	0.20	54.1
All Vehicles		219	0.0	0.059	3.5	NA	0.4	2.8	0.21	0.29	52.7

MOVEMENT SUMMARY

Site: P467 and P228- PM

P467 and P228
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	16	0.0	0.031	11.6	LOS B	0.1	1.0	0.25	0.84	45.9
2	T	1	0.0	0.031	11.2	LOS B	0.1	1.0	0.25	0.88	46.3
3	R	11	0.0	0.031	11.4	LOS B	0.1	1.0	0.25	0.92	46.1
Approach		27	0.0	0.031	11.5	LOS B	0.1	1.0	0.25	0.87	46.0
East: P467											
4	L	16	0.0	0.057	8.4	LOS A	0.4	2.9	0.18	0.81	48.9
5	T	94	0.0	0.057	0.2	LOS A	0.4	2.9	0.18	0.00	56.4
6	R	1	0.0	0.058	8.7	LOS A	0.4	2.9	0.18	0.96	48.7
Approach		111	0.0	0.057	1.5	LOS A	0.4	2.9	0.18	0.12	55.1
North: Entrance of Nutri Flo											
7	L	1	0.0	0.007	12.0	LOS B	0.0	0.2	0.27	0.79	45.6
8	T	1	0.0	0.007	11.5	LOS B	0.0	0.2	0.27	0.85	45.9
9	R	3	0.0	0.007	11.8	LOS B	0.0	0.2	0.27	0.89	45.7
Approach		5	0.0	0.007	11.8	LOS B	0.0	0.2	0.27	0.86	45.7
West: P467											
10	L	1	0.0	0.042	8.6	LOS A	0.3	2.0	0.23	0.72	48.8
11	T	59	0.0	0.043	0.4	LOS A	0.3	2.0	0.23	0.00	55.4
12	R	16	0.0	0.043	8.9	LOS A	0.3	2.0	0.23	0.89	48.7
Approach		76	0.0	0.043	2.3	LOS A	0.3	2.0	0.23	0.20	53.7
All Vehicles		219	0.0	0.057	3.3	NA	0.4	2.9	0.21	0.26	53.1

10 Year Horizon with all Development Traffic

MOVEMENT SUMMARY

Site: P330 and On-ramp(western) - AM

P330 and Onramp
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Off ramp											
1	L	536	0.0	13.068	21798.1	LOS F	1480.0	10359.7	1.00	15.71	0.1
3	R	720	0.0	13.091	21797.9	LOS F	1480.0	10359.7	1.00	11.14	0.1
Approach		1256	0.0	12.990	21798.0	LOS F	1480.0	10359.7	1.00	13.09	0.1
East: P330											
5	T	656	0.0	0.338	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
6	R	162	0.0	1.050	203.6	LOS F	19.8	138.3	1.00	2.45	9.0
Approach		818	0.0	1.048	40.3	LOS F	19.8	138.3	0.20	0.48	28.5
West: P330											
10	L	37	0.0	0.646	8.2	LOS A	0.0	0.0	0.00	1.07	49.0
11	T	1214	0.0	0.642	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1251	0.0	0.642	0.2	LOS A	0.0	0.0	0.00	0.03	59.6
All Vehicles		3324	0.0	12.990	8244.6	NA	1480.0	10359.7	0.43	5.08	0.3

MOVEMENT SUMMARY

Site: P330 and On-ramp(western) - PM

P330 and Onramp
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Onramp											
1	L	420	0.0	26.250	44355.3	LOS F	2720.0	19040.0	1.00	14.87	0.0
3	R	1788	0.0	25.549	44355.1	LOS F	2720.0	19040.0	1.00	9.81	0.0
Approach		2208	0.0	25.607	44355.1	LOS F	2720.0	19040.0	1.00	10.77	0.0
East: P330											
5	T	406	0.0	0.208	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
6	R	128	0.0	0.305	18.0	LOS C	1.5	10.5	0.78	0.98	40.0
Approach		535	0.0	0.305	4.3	LOS C	1.5	10.5	0.19	0.24	53.6
West: P330											
10	L	44	0.0	0.456	8.2	LOS A	0.0	0.0	0.00	1.06	49.0
11	T	844	0.0	0.457	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		888	0.0	0.457	0.4	LOS A	0.0	0.0	0.00	0.05	59.3
All Vehicles		3632	0.0	25.607	26973.8	NA	2720.0	19040.0	0.64	6.60	0.1

MOVEMENT SUMMARY

Site: P330 and Onramp (eastern)- AM

P330 and Onramp (eastern)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P330											
4	L	2048	0.0	1.103	193.6	LOS F	239.1	1673.8	1.00	0.00	9.5
5	T	736	0.0	0.377	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		2784	0.0	1.103	142.4	LOS F	239.1	1673.8	0.74	0.00	12.2
North: Off-ramp											
7	L	65	0.0	1.483	1098.9	LOS F	44.5	311.4	1.00	3.23	1.9
9	R	24	0.0	1.513	1098.7	LOS F	44.5	311.4	1.00	3.10	1.9
Approach		89	0.0	1.491	1098.9	LOS F	44.5	311.4	1.00	3.19	1.9
West: P330											
11	T	1868	0.0	0.958	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R	67	0.0	1.111	1152.6	LOS F	19.8	138.3	1.00	2.86	1.8
Approach		1935	0.0	1.111	40.1	LOS F	19.8	138.3	0.03	0.10	23.6
All Vehicles		4808	0.0	1.491	118.9	NA	239.1	1673.8	0.46	0.10	12.7

MOVEMENT SUMMARY

Site: P330 and Onramp (eastern)- PM

P330 and Onramp (eastern)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P330											
4	L	944	0.0	0.508	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
5	T	616	0.0	0.316	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1560	0.0	0.508	5.0	LOS A	0.0	0.0	0.00	0.40	52.8
North: Off-ramp											
7	L	162	0.0	3.179	46177.5	LOS F	292.9	2050.4	1.00	13.19	0.0
9	R	27	0.0	3.041	46177.3	LOS F	292.9	2050.4	1.00	13.92	0.0
Approach		189	0.0	3.158	46177.5	LOS F	292.9	2050.4	1.00	13.30	0.0
West: P330											
11	T	2643	0.0	1.355	639.3	LOS F	862.4	6036.8	1.00	0.00	3.2
12	R	169	0.0	1.037	195.3	LOS F	19.8	138.9	1.00	2.43	9.3
Approach		2812	0.0	1.355	613.1	LOS F	862.4	6036.8	1.00	0.15	3.4
All Vehicles		4561	0.0	3.158	2297.6	NA	862.4	6036.8	0.66	0.78	0.9

MOVEMENT SUMMARY

Site: P330 and P474- AM

P330 and P474
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P330											
5	T	847	0.0	2.242	2244.0	LOS F	708.1	4956.8	1.00	0.00	1.0
6	R	108	0.0	2.259	2252.5	LOS F	708.1	4956.8	1.00	4.86	0.9
Approach		956	0.0	2.242	2245.0	LOS F	708.1	4956.8	1.00	0.55	1.0
North: P474											
7	L	234	0.0	33.383	57028.4	LOS F	2670.0	18689.8	1.00	10.88	0.0
9	R	1913	0.0	32.417	57028.3	LOS F	2670.0	18689.8	1.00	8.77	0.0
Approach		2146	0.0	32.563	57028.3	LOS F	2670.0	18689.8	1.00	9.00	0.0
West: P330											
10	L	754	0.0	0.406	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
11	T	603	0.0	0.309	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1357	0.0	0.406	4.5	LOS A	0.0	0.0	0.00	0.37	53.3
All Vehicles		4459	0.0	32.563	27933.2	NA	2670.0	18689.8	0.70	4.57	0.1

MOVEMENT SUMMARY

Site: P330 and P474- PM

P330 and P474
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P330											
5	T	472	0.0	4.031	5459.0	LOS F	681.4	4769.7	1.00	0.00	0.4
6	R	226	0.0	4.041	5467.5	LOS F	681.4	4769.7	1.00	6.78	0.4
Approach		698	0.0	4.014	5461.8	LOS F	681.4	4769.7	1.00	2.20	0.4
North: P474											
7	L	132	0.0	14.620	24301.9	LOS F	1152.6	8068.0	1.00	9.88	0.1
9	R	831	0.0	14.319	24301.8	LOS F	1152.6	8068.0	1.00	8.52	0.1
Approach		962	0.0	14.392	24301.8	LOS F	1152.6	8068.0	1.00	8.70	0.1
West: P330											
10	L	1638	0.0	0.882	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
11	T	361	0.0	0.185	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1999	0.0	0.882	6.7	LOS A	0.0	0.0	0.00	0.55	50.6
All Vehicles		3659	0.0	14.392	7435.5	NA	1152.6	8068.0	0.45	3.01	0.3

MOVEMENT SUMMARY

Site: P474 and P228-AM

P474 and P228
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P474											
4	L	204	0.0	0.187	12.7	LOS B	2.0	13.7	1.00	0.00	44.4
5	T	5	0.0	0.188	4.5	LOS A	2.0	13.7	1.00	0.00	41.0
6	R	52	0.0	0.187	12.8	LOS B	2.0	13.7	1.00	1.00	44.3
Approach		261	0.0	0.187	12.6	LOS B	2.0	13.7	1.00	0.20	44.3
North: P228											
7	L	157	0.0	0.084	11.0	LOS B	0.0	0.0	0.00	1.00	46.2
9	R	1694	0.0	4.504	6334.8	LOS F	1665.3	11657.4	1.00	23.48	0.3
Approach		1851	0.0	4.506	5798.9	LOS F	1665.3	11657.4	0.92	21.57	0.4
West: Melinda Lane											
10	L	58	0.0	0.088	13.3	LOS B	0.4	2.8	0.45	0.90	44.7
11	T	1	0.0	0.088	13.1	LOS B	0.4	2.8	0.45	0.97	44.9
12	R	4	0.0	0.088	13.7	LOS B	0.4	2.8	0.45	1.05	44.5
Approach		63	0.0	0.088	13.4	LOS B	0.4	2.8	0.45	0.91	44.7
South West: P474											
30	L	615	0.0	0.546	10.1	LOS B	10.3	72.3	0.68	0.20	46.5
32	R	165	0.0	0.545	10.5	LOS B	10.3	72.3	0.68	0.67	46.6
Approach		780	0.0	0.546	10.2	LOS B	10.3	72.3	0.68	0.30	46.6
All Vehicles		2955	0.0	4.506	3635.9	NA	1665.3	11657.4	0.85	13.63	0.6

MOVEMENT SUMMARY

Site: P474 and P228-PM

P474 and P228
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P474											
4	L	186	0.0	2.588	3132.0	LOS F	294.1	2058.4	1.00	0.00	0.7
5	T	1	0.0	1.053	3123.7	LOS F	294.1	2058.4	1.00	0.00	0.7
6	R	148	0.0	2.559	3132.0	LOS F	294.1	2058.4	1.00	6.59	0.7
Approach		336	0.0	2.575	3132.0	LOS F	294.1	2058.4	1.00	2.91	0.7
North: P228											
7	L	65	0.0	0.035	11.0	LOS B	0.0	0.0	0.00	1.00	46.2
9	R	628	0.0	5.371	7914.6	LOS F	655.2	4586.3	1.00	10.94	0.3
Approach		694	0.0	5.367	7171.0	LOS F	655.2	4586.3	0.91	10.00	0.3
West: Melinda Lane											
10	L	18	0.0	0.093	24.4	LOS C	0.4	2.6	0.78	1.00	36.8
11	T	1	0.0	0.096	24.1	LOS C	0.4	2.6	0.78	1.00	36.9
12	R	3	0.0	0.093	24.7	LOS C	0.4	2.6	0.78	1.02	36.7
Approach		22	0.0	0.093	24.4	LOS C	0.4	2.6	0.78	1.00	36.8
South West: P474											
30	L	1661	0.0	1.110	218.9	LOS F	331.1	2317.7	1.00	0.00	8.5
32	R	169	0.0	1.108	219.3	LOS F	331.1	2317.7	1.00	2.63	8.5
Approach		1831	0.0	1.110	219.0	LOS F	331.1	2317.7	1.00	0.24	8.5
All Vehicles		2882	0.0	5.367	2230.1	NA	655.2	4586.3	0.98	2.91	1.0

MOVEMENT SUMMARY

Site: P467 and Off-ramp(western)-AM

P467 and Off-ramp(western)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Off-Ramp											
1	L	1258	0.0	33.997	2088510.0	LOS F	4129.4	28906.0	1.00	20.09	0.0
3	R	786	0.0	34.188	2088510.0	LOS F	4129.4	28906.0	1.00	17.05	0.0
Approach		2044	0.0	34.070	2088510.0	LOS F	4129.4	28906.0	1.00	18.92	0.0
East: P467											
5	T	1374	0.0	4.460	8197.9	LOS F	1780.6	12464.3	1.00	0.00	0.3
6	R	225	0.0	4.417	8206.7	LOS F	1780.6	12464.3	1.00	12.14	0.3
Approach		1599	0.0	4.459	8199.1	LOS F	1780.6	12464.3	1.00	1.71	0.3
West: P467											
10	L	1394	0.0	1.554	1003.8	LOS F	1311.6	9181.1	1.00	0.00	2.1
11	T	1565	0.0	1.553	995.7	LOS F	1311.6	9181.1	1.00	0.00	2.1
Approach		2959	0.0	1.553	999.5	LOS F	1311.6	9181.1	1.00	0.00	2.1
All Vehicles		6602	0.0	34.070	649099.1	NA	4129.4	28906.0	1.00	6.27	0.0

MOVEMENT SUMMARY

Site: P467 and Off-ramp(western)-PM

P467 and Off-ramp(western)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Off-Ramp											
1	L	994	0.0	20.702	1101340000.0	LOS F	96251.9	673763.6	1.00	1002.83	0.0
3	R	251	0.0	20.877	1101340000.0	LOS F	96251.9	673763.6	1.00	926.77	0.0
Approach		1244	0.0	20.737	1101340000.0	LOS F	96251.9	673763.6	1.00	987.52	0.0
East: P467											
5	T	1900	0.0	14.074	25689.8	LOS F	3197.8	22384.5	1.00	0.00	0.1
6	R	786	0.0	14.041	25698.7	LOS F	3197.8	22384.5	1.00	9.40	0.1
Approach		2686	0.0	14.080	25692.4	LOS F	3197.8	22384.5	1.00	2.75	0.1
West: P467											
10	L	1135	0.0	1.366	667.4	LOS F	870.3	6092.1	1.00	0.00	3.1
11	T	1473	0.0	1.366	659.2	LOS F	870.3	6092.1	1.00	0.00	3.1
Approach		2607	0.0	1.366	662.7	LOS F	870.3	6092.1	1.00	0.00	3.1
All Vehicles		6538	0.0	20.737	209604000.0	NA	96251.9	673763.6	1.00	189.06	0.0

MOVEMENT SUMMARY

Site: P467 and On-ramp (eastern)-AM

P467 and On-ramp
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P467											
4	L	226	0.0	0.317	8.2	LOS A	0.0	0.0	0.00	0.87	49.0
5	T	380	0.0	0.317	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		606	0.0	0.317	3.1	LOS A	0.0	0.0	0.00	0.33	55.3
North: Off-ramp											
7	L	666	0.0	28.970	91910.0	LOS F	2345.7	16419.8	1.00	11.52	0.0
9	R	1086	0.0	28.587	91910.0	LOS F	2345.7	16419.8	1.00	10.08	0.0
Approach		1753	0.0	28.955	91910.1	LOS F	2345.7	16419.8	1.00	10.63	0.0
West: P467											
11	T	1358	0.0	2.118	2016.1	LOS F	1566.4	10965.0	1.00	0.00	1.1
12	R	1000	0.0	2.119	2025.0	LOS F	1566.4	10965.0	1.00	27.39	1.1
Approach		2358	0.0	2.118	2019.9	LOS F	1566.4	10965.0	1.00	11.62	1.1
All Vehicles		4717	0.0	28.955	35161.0	NA	2345.7	16419.8	0.87	9.80	0.1

MOVEMENT SUMMARY

Site: P467 and On-ramp (eastern)-PM

P467 and On-ramp
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P467											
4	L	679	0.0	1.003	13.8	LOS B	10.3	71.8	1.00	0.00	46.0
5	T	1243	0.0	1.003	5.6	LOS A	10.3	71.8	1.00	0.00	43.5
Approach		1922	0.0	1.003	8.5	LOS B	10.3	71.8	1.00	0.00	44.3
North: Off-ramp											
7	L	186	0.0	23.289	651065.3	LOS F	3684.2	25789.2	1.00	52.50	0.0
9	R	1328	0.0	22.516	651065.3	LOS F	3684.2	25789.2	1.00	29.84	0.0
Approach		1515	0.0	22.435	651065.3	LOS F	3684.2	25789.2	1.00	32.63	0.0
West: P467											
11	T	519	0.0	20.758	36031.2	LOS F	2110.8	14775.3	1.00	0.00	0.1
12	R	1215	0.0	20.589	36040.0	LOS F	2110.8	14775.3	1.00	9.24	0.1
Approach		1734	0.0	20.512	36037.4	LOS F	2110.8	14775.3	1.00	6.47	0.1
All Vehicles		5171	0.0	22.435	202820.0	NA	3684.2	25789.2	1.00	11.73	0.0

MOVEMENT SUMMARY

Site: P467 and P228- AM

P467 and P228
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	272	0.0	6.789	10567.8	LOS F	699.4	4895.9	1.00	13.18	0.2
3	R	368	0.0	6.823	10567.6	LOS F	699.4	4895.9	1.00	10.21	0.2
Approach		640	0.0	6.777	10567.7	LOS F	699.4	4895.9	1.00	11.47	0.2
East: P467											
4	L	144	0.0	0.420	8.2	LOS A	0.0	0.0	0.00	0.97	49.0
5	T	668	0.0	0.420	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		813	0.0	0.420	1.5	LOS A	0.0	0.0	0.00	0.17	57.7
West: P467											
11	T	683	0.0	0.800	31.6	LOS D	17.9	125.2	1.00	0.00	30.0
12	R	221	0.0	0.801	40.0	LOS E	17.9	125.2	1.00	1.53	29.8
Approach		904	0.0	0.800	33.6	LOS E	17.9	125.2	1.00	0.37	29.9
All Vehicles		2357	0.0	6.777	2883.1	NA	699.4	4895.9	0.66	3.32	0.7

MOVEMENT SUMMARY

Site: P467 and P228- PM

P467 and P228
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	119	0.0	3.837	16115.0	LOS F	301.9	2113.3	1.00	11.54	0.1
3	R	136	0.0	3.880	16114.8	LOS F	301.9	2113.3	1.00	10.11	0.1
Approach		255	0.0	3.834	16114.9	LOS F	301.9	2113.3	1.00	10.78	0.1
East: P467											
4	L	379	0.0	0.781	8.2	LOS A	0.0	0.0	0.00	0.93	49.0
5	T	1124	0.0	0.781	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1503	0.0	0.781	2.1	LOS A	0.0	0.0	0.00	0.24	56.8
West: P467											
11	T	1077	0.0	3.451	4409.2	LOS F	1157.1	8100.0	1.00	0.00	0.5
12	R	174	0.0	3.474	4417.7	LOS F	1157.1	8100.0	1.00	6.22	0.5
Approach		1251	0.0	3.447	4410.4	LOS F	1157.1	8100.0	1.00	0.86	0.5
All Vehicles		3008	0.0	3.834	3198.9	NA	1157.1	8100.0	0.50	1.39	0.7

MOVEMENT SUMMARY

Site: P330 and P474- AM

P330 and P474
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P330											
5	T	847	0.0	1.106	223.1	LOS F	175.7	1230.0	1.00	0.00	8.3
6	R	108	0.0	1.106	231.6	LOS F	175.7	1230.0	1.00	3.52	8.2
Approach		956	0.0	1.106	224.1	LOS F	175.7	1230.0	1.00	0.40	8.3
North: P474											
7	L	234	0.0	10.622	17181.2	LOS F	968.9	6782.0	1.00	12.16	0.1
9	R	600	0.0	10.526	17181.1	LOS F	968.9	6782.0	1.00	9.20	0.1
Approach		834	0.0	10.476	17181.1	LOS F	968.9	6782.0	1.00	10.03	0.1
West: P330											
10	L	285	0.0	0.154	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
11	T	603	0.0	0.309	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		888	0.0	0.309	2.6	LOS A	0.0	0.0	0.00	0.21	56.0
All Vehicles		2678	0.0	10.476	5429.7	NA	968.9	6782.0	0.67	3.34	0.4

MOVEMENT SUMMARY

Site: P330 and P474- PM

P330 and P474
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P330											
5	T	472	0.0	1.092	189.2	LOS F	105.2	736.3	1.00	0.00	9.5
6	R	226	0.0	1.093	197.6	LOS F	105.2	736.3	1.00	3.96	9.4
Approach		698	0.0	1.091	191.9	LOS F	105.2	736.3	1.00	1.28	9.4
North: P474											
7	L	132	0.0	3.655	4922.4	LOS F	459.6	3217.2	1.00	14.76	0.4
9	R	359	0.0	3.700	4922.3	LOS F	459.6	3217.2	1.00	10.65	0.4
Approach		491	0.0	3.703	4922.3	LOS F	459.6	3217.2	1.00	11.75	0.4
West: P330											
10	L	322	0.0	0.173	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
11	T	361	0.0	0.185	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		683	0.0	0.185	3.9	LOS A	0.0	0.0	0.00	0.31	54.2
All Vehicles		1872	0.0	3.703	1363.1	NA	459.6	3217.2	0.63	3.67	1.6

MOVEMENT SUMMARY

Site: P330 and P474- AM - Conversion

P330 and P474
Signals - Fixed Time Cycle Time = 72 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P330											
5	T	847	0.0	0.869	26.0	LOS C	32.7	228.8	0.95	1.02	33.2
6	R	108	0.0	0.553	33.5	LOS C	4.7	33.2	0.88	0.81	31.2
Approach		956	0.0	0.869	26.8	LOS C	32.7	228.8	0.95	0.99	33.0
North: P474											
7	L	234	0.0	0.884	34.3	LOS C	8.7	60.9	0.84	0.87	30.8
9	R	600	0.0	0.895	45.3	LOS D	26.6	186.0	1.00	1.02	26.6
Approach		834	0.0	0.895	42.2	LOS D	26.6	186.0	0.96	0.98	27.7
West: P330											
10	L	285	0.0	0.307	19.6	LOS B	7.6	53.1	0.63	0.78	38.9
11	T	603	0.0	0.619	14.1	LOS B	16.7	116.6	0.78	0.69	41.0
Approach		888	0.0	0.619	15.9	LOS B	16.7	116.6	0.73	0.72	40.3
All Vehicles		2678	0.0	0.895	28.0	LOS C	32.7	228.8	0.88	0.90	33.0

MOVEMENT SUMMARY

Site: P330 and P474- PM - Conversion

P330 and P474
Signals - Fixed Time Cycle Time = 40 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P330											
5	T	472	0.0	0.691	13.5	LOS B	10.3	72.4	0.91	0.83	41.1
6	R	226	0.0	0.799	30.1	LOS C	6.9	48.1	1.00	1.01	32.8
Approach		698	0.0	0.799	18.9	LOS B	10.3	72.4	0.94	0.89	38.0
North: P474											
7	L	132	0.0	0.297	16.8	LOS B	2.5	17.7	0.68	0.75	41.0
9	R	359	0.0	0.483	18.3	LOS B	7.0	49.2	0.79	0.82	39.9
Approach		491	0.0	0.483	17.9	LOS B	7.0	49.2	0.76	0.80	40.2
West: P330											
10	L	322	0.0	0.496	19.7	LOS B	6.8	47.3	0.83	0.81	38.9
11	T	361	0.0	0.529	11.6	LOS B	7.5	52.6	0.85	0.72	42.8
Approach		683	0.0	0.529	15.4	LOS B	7.5	52.6	0.84	0.76	40.9
All Vehicles		1872	0.0	0.799	17.4	LOS B	10.3	72.4	0.86	0.82	39.6

MOVEMENT SUMMARY

Site: P474 and P228-AM

P474 and P228
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P474											
4	L	204	0.0	0.154	8.9	LOS A	1.2	8.1	0.52	0.34	46.8
5	T	5	0.0	0.155	0.7	LOS A	1.2	8.1	0.52	0.00	48.4
6	R	52	0.0	0.154	9.0	LOS A	1.2	8.1	0.52	0.61	46.6
Approach		261	0.0	0.154	8.8	LOS A	1.2	8.1	0.52	0.38	46.8
North: P228											
7	L	157	0.0	0.084	11.0	LOS B	0.0	0.0	0.00	1.00	46.2
9	R	381	0.0	0.687	20.9	LOS C	8.7	60.9	0.76	1.25	39.3
Approach		538	0.0	0.686	18.0	LOS C	8.7	60.9	0.53	1.17	41.1
West: Melinda Lane											
10	L	58	0.0	0.066	11.6	LOS B	0.3	2.1	0.24	0.87	45.9
11	T	1	0.0	0.066	11.3	LOS B	0.3	2.1	0.24	0.92	46.2
12	R	4	0.0	0.066	12.0	LOS B	0.3	2.1	0.24	1.04	45.6
Approach		63	0.0	0.066	11.6	LOS B	0.3	2.1	0.24	0.89	45.9
South West: P474											
30	L	146	0.0	0.294	8.9	LOS A	2.6	18.5	0.38	0.39	47.9
32	R	165	0.0	0.294	9.3	LOS A	2.6	18.5	0.38	0.65	47.7
Approach		312	0.0	0.294	9.1	LOS A	2.6	18.5	0.38	0.53	47.8
All Vehicles		1174	0.0	0.686	13.3	NA	8.7	60.9	0.47	0.81	44.2

MOVEMENT SUMMARY

Site: P474 and P228-PM

P474 and P228
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P474											
4	L	186	0.0	0.248	10.3	LOS B	2.0	13.7	0.70	0.21	46.2
5	T	1	0.0	0.263	2.1	LOS A	2.0	13.7	0.70	0.00	45.4
6	R	148	0.0	0.249	10.4	LOS B	2.0	13.7	0.70	0.77	45.9
Approach		336	0.0	0.249	10.3	LOS B	2.0	13.7	0.70	0.46	46.1
North: P228											
7	L	65	0.0	0.035	11.0	LOS B	0.0	0.0	0.00	1.00	46.2
9	R	157	0.0	0.378	19.3	LOS C	2.4	16.6	0.66	1.07	40.3
Approach		222	0.0	0.378	16.8	LOS C	2.4	16.6	0.46	1.05	41.9
West: Melinda Lane											
10	L	18	0.0	0.031	13.1	LOS B	0.1	1.0	0.43	0.85	44.8
11	T	1	0.0	0.031	12.9	LOS B	0.1	1.0	0.43	0.89	45.0
12	R	3	0.0	0.031	13.5	LOS B	0.1	1.0	0.43	1.00	44.6
Approach		22	0.0	0.031	13.2	LOS B	0.1	1.0	0.43	0.87	44.8
South West: P474											
30	L	345	0.0	0.402	9.1	LOS A	5.1	36.0	0.45	0.34	47.5
32	R	169	0.0	0.402	9.5	LOS A	5.1	36.0	0.45	0.65	47.5
Approach		515	0.0	0.402	9.2	LOS A	5.1	36.0	0.45	0.44	47.5
All Vehicles		1095	0.0	0.402	11.2	NA	5.1	36.0	0.53	0.58	45.8

MOVEMENT SUMMARY

Site: P228/N2 West intersection - AM proposed by VKE

N2/P228 West
Signals - Fixed Time Cycle Time = 45 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: N2 Off ramp											
1	L	63	0.0	0.058	8.5	LOS A	0.4	2.6	0.29	0.65	48.2
2	T	1	0.0	0.279	10.8	LOS B	4.3	30.4	0.73	0.60	41.0
3	R	393	0.0	0.278	19.1	LOS B	4.3	30.4	0.73	0.79	39.2
Approach		457	0.0	0.278	17.7	LOS B	4.3	30.4	0.67	0.77	40.3
East: P228											
5	T	146	0.0	0.186	9.6	LOS A	3.1	21.7	0.68	0.55	45.1
6	R	357	0.0	0.930	26.7	LOS C	9.9	69.0	0.94	0.91	34.5
Approach		503	0.0	0.930	21.8	LOS C	9.9	69.0	0.87	0.81	37.0
West: P 228											
10	L	72	0.0	0.211	17.7	LOS B	2.7	18.7	0.67	0.80	41.2
11	T	220	0.0	0.211	9.7	LOS A	3.5	24.6	0.69	0.55	44.6
Approach		292	0.0	0.211	11.6	LOS B	3.5	24.6	0.68	0.61	43.7
All Vehicles		1252	0.0	0.930	17.9	LOS B	9.9	69.0	0.75	0.75	39.6

MOVEMENT SUMMARY

Site: P228/N2 West intersection - PM proposed by VKE

N2/P228 West
Signals - Fixed Time Cycle Time = 40 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: N2 Off ramp											
1	L	134	0.0	0.113	8.7	LOS A	0.8	5.8	0.34	0.67	48.0
2	T	1	0.0	0.739	8.8	LOS A	10.3	71.9	0.80	0.70	42.1
3	R	1129	0.0	0.634	17.2	LOS B	10.3	71.9	0.80	0.84	40.7
Approach		1264	0.0	0.634	16.3	LOS B	10.3	71.9	0.75	0.82	41.4
East: P228											
5	T	163	0.0	0.301	12.9	LOS B	3.8	26.4	0.83	0.67	41.8
6	R	122	0.0	0.324	22.4	LOS C	3.0	21.3	0.86	0.78	37.0
Approach		285	0.0	0.324	17.0	LOS B	3.8	26.4	0.84	0.72	39.6
West: P 228											
10	L	37	0.0	0.199	20.7	LOS C	2.5	17.2	0.80	0.80	39.7
11	T	177	0.0	0.199	12.5	LOS B	2.5	17.5	0.80	0.63	41.8
Approach		214	0.0	0.199	13.9	LOS B	2.5	17.5	0.80	0.66	41.4
All Vehicles		1763	0.0	0.634	16.1	LOS B	10.3	71.9	0.77	0.79	41.1

MOVEMENT SUMMARY

Site: P228/N2 East intersection - AM proposed by VKE

New Site
Signals - Fixed Time Cycle Time = 70 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: east											
4	L	1129	0.0	0.897	21.9	LOS C	29.8	208.5	0.58	0.88	37.4
5	T	467	0.0	0.353	1.9	LOS A	3.5	24.5	0.16	0.15	56.1
Approach		1597	0.0	0.897	16.0	LOS B	29.8	208.5	0.46	0.67	41.5
North: off ramp											
7	L	121	0.0	0.159	8.1	LOS A	0.6	4.5	0.18	0.64	48.8
8	T	1	0.0	0.105	26.1	LOS C	1.6	11.4	0.86	0.64	31.5
9	R	36	0.0	0.106	34.3	LOS C	1.6	11.4	0.86	0.73	30.9
Approach		158	0.0	0.159	14.2	LOS B	1.6	11.4	0.34	0.66	43.0
West: west											
11	T	482	0.0	0.182	1.7	LOS A	1.6	10.9	0.13	0.11	56.6
12	R	131	0.0	0.850	47.2	LOS D	7.2	50.7	0.93	1.04	26.0
Approach		613	0.0	0.851	11.4	LOS B	7.2	50.7	0.30	0.31	45.3
All Vehicles		2367	0.0	0.897	14.7	LOS B	29.8	208.5	0.41	0.58	42.5

MOVEMENT SUMMARY

Site: P228/N2 East intersection - PM proposed by VKE

New Site
Signals - Fixed Time Cycle Time = 64 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: east											
4	L	393	0.0	0.372	16.5	LOS B	8.5	59.5	0.59	0.79	41.2
5	T	213	0.0	0.192	7.4	LOS A	4.5	31.7	0.52	0.43	47.9
Approach		605	0.0	0.372	13.3	LOS B	8.5	59.5	0.57	0.66	43.3
North: off ramp											
7	L	358	0.0	0.571	13.3	LOS B	8.3	58.2	0.69	0.79	43.9
8	T	1	0.0	0.139	18.8	LOS B	2.6	18.2	0.78	0.61	35.6
9	R	73	0.0	0.140	27.0	LOS C	2.6	18.2	0.78	0.75	34.4
Approach		432	0.0	0.571	15.6	LOS B	8.3	58.2	0.70	0.79	42.0
West: west											
11	T	1241	0.0	0.560	9.7	LOS A	13.9	97.4	0.69	0.61	45.0
12	R	65	0.0	0.235	20.2	LOS C	1.9	13.1	0.62	0.77	38.4
Approach		1306	0.0	0.560	10.2	LOS B	13.9	97.4	0.68	0.62	44.7
All Vehicles		2343	0.0	0.571	12.0	LOS B	13.9	97.4	0.66	0.66	43.8

MOVEMENT SUMMARY

Site: P467 and P228- AM

P467 and P228
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	272	0.0	0.836	42.8	LOS E	11.3	79.1	0.78	1.73	28.1
3	R	35	0.0	0.827	42.6	LOS E	11.3	79.1	0.78	1.49	28.1
Approach		306	0.0	0.835	42.8	LOS E	11.3	79.1	0.78	1.70	28.1
East: P467											
4	L	42	0.0	0.234	8.2	LOS A	0.0	0.0	0.00	1.03	49.0
5	T	412	0.0	0.234	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		454	0.0	0.234	0.8	LOS A	0.0	0.0	0.00	0.10	58.8
West: P467											
11	T	669	0.0	0.484	5.5	LOS A	9.4	65.7	0.84	0.00	46.1
12	R	123	0.0	0.483	13.9	LOS B	9.4	65.7	0.84	1.11	46.4
Approach		793	0.0	0.484	6.8	LOS B	9.4	65.7	0.84	0.17	46.2
All Vehicles		1553	0.0	0.835	12.1	NA	11.3	79.1	0.58	0.45	43.4

MOVEMENT SUMMARY

Site: P467 and P228- PM

P467 and P228
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	119	0.0	0.975	142.5	LOS F	13.5	94.2	0.95	2.14	12.3
3	R	34	0.0	0.962	142.3	LOS F	13.5	94.2	0.95	1.89	12.3
Approach		153	0.0	0.972	142.4	LOS F	13.5	94.2	0.95	2.09	12.3
East: P467											
4	L	44	0.0	0.375	8.2	LOS A	0.0	0.0	0.00	1.05	49.0
5	T	685	0.0	0.375	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		729	0.0	0.375	0.5	LOS A	0.0	0.0	0.00	0.06	59.2
West: P467											
11	T	405	0.0	0.681	15.1	LOS C	10.7	74.8	1.00	0.00	38.2
12	R	272	0.0	0.681	23.6	LOS C	10.7	74.8	1.00	1.29	38.0
Approach		677	0.0	0.681	18.5	LOS C	10.7	74.8	1.00	0.52	38.1
All Vehicles		1559	0.0	0.972	22.2	NA	13.5	94.2	0.53	0.46	36.7

MOVEMENT SUMMARY

Site: P467 and P228- AM - Conversion

P467 and P228
Signals - Fixed Time Cycle Time = 40 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	272	0.0	0.507	20.5	LOS C	6.7	46.6	0.86	0.81	38.3
3	R	35	0.0	0.507	20.8	LOS C	6.7	46.6	0.86	0.82	38.3
Approach		306	0.0	0.508	20.5	LOS C	6.7	46.6	0.86	0.81	38.3
East: P467											
4	L	42	0.0	0.550	17.8	LOS B	8.6	60.0	0.80	0.90	42.7
5	T	412	0.0	0.550	9.6	LOS A	8.6	60.0	0.80	0.69	44.4
Approach		454	0.0	0.550	10.4	LOS B	8.6	60.0	0.80	0.71	44.2
West: P467											
11	T	669	0.0	0.808	15.4	LOS B	15.4	107.8	0.94	0.96	39.6
12	R	123	0.0	0.356	22.8	LOS C	3.1	21.8	0.86	0.79	36.8
Approach		793	0.0	0.808	16.5	LOS B	15.4	107.8	0.93	0.94	39.2
All Vehicles		1553	0.0	0.808	15.5	LOS B	15.4	107.8	0.88	0.85	40.3

MOVEMENT SUMMARY

Site: P467 and P228- PM - Conversion

P467 and P228
Signals - Fixed Time Cycle Time = 80 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	119	0.0	0.506	42.4	LOS D	7.3	51.1	0.96	0.80	27.6
3	R	34	0.0	0.506	42.7	LOS D	7.3	51.1	0.96	0.80	27.6
Approach		153	0.0	0.506	42.5	LOS D	7.3	51.1	0.96	0.80	27.6
East: P467											
4	L	44	0.0	0.526	13.8	LOS B	14.4	100.9	0.50	0.98	45.3
5	T	685	0.0	0.527	5.6	LOS A	14.4	100.9	0.50	0.45	49.7
Approach		729	0.0	0.527	6.1	LOS A	14.4	100.9	0.50	0.48	49.4
West: P467											
11	T	405	0.0	0.292	4.4	LOS A	7.3	51.1	0.39	0.34	51.7
12	R	272	0.0	0.717	27.2	LOS C	10.8	75.5	0.80	0.89	34.2
Approach		677	0.0	0.717	13.6	LOS B	10.8	75.5	0.55	0.56	42.9
All Vehicles		1559	0.0	0.717	12.9	LOS B	14.4	100.9	0.57	0.55	43.2

MOVEMENT SUMMARY

Site: Tinley Manor Access/Seaton Delaval Access/P228 - AM

New Site
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	25	0.0	0.218	10.7	LOS B	1.3	8.9	0.76	0.88	46.8
2	T	86	0.0	0.218	9.7	LOS A	1.3	8.9	0.76	0.85	47.1
3	R	11	0.0	0.219	16.6	LOS B	1.3	8.9	0.76	0.99	43.4
Approach		122	0.0	0.218	10.5	LOS B	1.3	8.9	0.76	0.87	46.7
East: Seaton Delaval											
4	L	21	0.0	0.266	11.3	LOS B	1.6	10.9	0.79	0.89	46.4
5	T	117	0.0	0.266	10.3	LOS B	1.6	10.9	0.79	0.87	46.7
6	R	1	0.0	0.263	17.2	LOS B	1.6	10.9	0.79	1.00	43.1
Approach		139	0.0	0.266	10.5	LOS B	1.6	10.9	0.79	0.87	46.6
North: Tinley Manor Southbanks											
7	L	1	0.0	0.526	6.3	LOS A	5.8	40.3	0.40	0.51	49.1
8	T	257	0.0	0.604	5.1	LOS A	5.8	40.3	0.40	0.43	49.6
9	R	1455	0.0	0.605	12.0	LOS B	5.8	40.3	0.42	0.67	45.2
Approach		1713	0.0	0.605	11.0	LOS B	5.8	40.3	0.42	0.63	45.8
West: P228											
10	L	484	0.0	0.216	5.9	LOS A	1.5	10.5	0.26	0.48	50.2
11	T	58	0.0	0.216	4.7	LOS A	1.5	10.3	0.26	0.39	51.1
12	R	61	0.0	0.216	11.6	LOS B	1.5	10.3	0.26	0.74	46.2
Approach		603	0.0	0.216	6.4	LOS B	1.5	10.5	0.26	0.50	49.8
All Vehicles		2577	0.0	0.605	9.9	LOS A	5.8	40.3	0.42	0.62	46.7

MOVEMENT SUMMARY

Site: Tinley Manor Access/Seaton Delaval Access/P228 - PM

New Site
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	62	0.0	0.365	7.5	LOS A	2.2	15.1	0.57	0.67	48.8
2	T	257	0.0	0.365	6.6	LOS A	2.2	15.1	0.57	0.60	48.9
3	R	22	0.0	0.362	13.4	LOS B	2.2	15.1	0.57	0.94	45.8
Approach		341	0.0	0.365	7.2	LOS B	2.2	15.1	0.57	0.63	48.7
East: Seaton Delaval											
4	L	12	0.0	0.078	7.1	LOS A	0.4	2.7	0.48	0.64	49.4
5	T	59	0.0	0.078	6.1	LOS A	0.4	2.7	0.48	0.56	49.7
6	R	1	0.0	0.081	13.0	LOS B	0.4	2.7	0.48	0.90	46.1
Approach		72	0.0	0.078	6.4	LOS B	0.4	2.7	0.48	0.57	49.6
North: Tinley Manor Southbanks											
7	L	1	0.0	0.211	6.1	LOS A	1.5	10.2	0.33	0.50	49.6
8	T	86	0.0	0.219	4.9	LOS A	1.5	10.2	0.33	0.41	50.3
9	R	484	0.0	0.218	11.8	LOS B	1.5	10.2	0.33	0.68	45.5
Approach		572	0.0	0.218	10.8	LOS B	1.5	10.2	0.33	0.64	46.1
West: P228											
10	L	1455	0.0	0.655	7.8	LOS A	7.3	50.8	0.66	0.68	47.7
11	T	118	0.0	0.655	6.9	LOS A	7.3	50.8	0.68	0.65	47.6
12	R	26	0.0	0.658	13.7	LOS B	7.3	50.8	0.68	0.82	45.3
Approach		1599	0.0	0.655	7.8	LOS B	7.3	50.8	0.67	0.68	47.6
All Vehicles		2583	0.0	0.655	8.3	LOS A	7.3	50.8	0.57	0.66	47.5

Movement Summaries – 20 year horizon

MOVEMENT SUMMARY

Site: P330 and P474- AM - Conversion

P330 and P474
Signals - Fixed Time Cycle Time = 50 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P330											
5	T	1198	0.0	0.733	14.9	LOS B	14.8	103.5	0.90	0.84	40.0
6	R	187	0.0	1.000[3]	53.9	LOS D	8.7	60.9	1.00	1.11	24.2
Approach		1385	0.0	1.000	20.1	LOS C	14.8	103.5	0.91	0.87	36.7
North: P474											
7	L	362	0.0	1.000[3]	23.7	LOS C	8.7	60.9	0.96	0.84	36.3
9	R	1030	0.0	0.730	24.5	LOS C	13.4	93.6	0.92	0.89	35.8
Approach		1392	0.0	1.000	24.3	LOS C	13.4	93.6	0.93	0.88	35.9
West: P330											
10	L	398	0.0	0.750	23.7	LOS C	15.0	105.1	0.91	0.92	37.0
11	T	809	0.0	0.749	15.4	LOS B	15.4	107.6	0.91	0.86	39.2
Approach		1207	0.0	0.749	18.2	LOS B	15.4	107.6	0.91	0.88	38.4
All Vehicles		3984	0.0	1.000	21.0	LOS C	15.4	107.6	0.92	0.88	36.9

MOVEMENT SUMMARY

Site: P330 and P474- PM - Conversion

P330 and P474
Signals - Fixed Time Cycle Time = 58 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P330											
5	T	1052	0.0	0.550	10.9	LOS B	12.2	85.4	0.74	0.65	42.7
6	R	239	0.0	1.000[3]	29.2	LOS C	8.7	60.9	1.00	0.86	33.3
Approach		1292	0.0	1.000	14.3	LOS B	12.2	85.4	0.79	0.69	40.5
North: P474											
7	L	300	0.0	1.000[3]	27.7	LOS C	8.7	60.9	0.96	0.83	34.0
9	R	516	0.0	0.424	25.0	LOS C	7.5	52.5	0.83	0.81	35.5
Approach		816	0.0	1.000	26.0	LOS C	8.7	60.9	0.88	0.81	34.9
West: P330											
10	L	466	0.0	0.502	18.7	LOS B	10.6	74.3	0.71	0.82	39.6
11	T	485	0.0	0.498	10.5	LOS B	10.9	76.4	0.71	0.62	44.2
Approach		952	0.0	0.502	14.5	LOS B	10.9	76.4	0.71	0.72	41.8
All Vehicles		3059	0.0	1.000	17.5	LOS B	12.2	85.4	0.79	0.73	39.2

MOVEMENT SUMMARY

Site: P474 and P228-AM

P474 and P228
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P474											
4	L	274	0.0	0.264	9.3	LOS A	2.3	16.1	0.78	0.14	46.1
5	T	7	0.0	0.263	1.9	LOS A	2.3	16.1	0.78	0.00	44.5
6	R	118	0.0	0.264	10.0	LOS B	2.3	16.1	0.78	0.76	45.9
Approach		399	0.0	0.264	9.4	LOS B	2.3	16.1	0.78	0.32	46.0
North: P228											
7	L	333	0.0	0.179	11.0	LOS B	0.0	0.0	0.00	1.00	46.2
9	R	782	0.0	1.012	106.9	LOS F	36.0	252.1	1.00	3.01	15.5
Approach		1115	0.0	1.011	78.3	LOS F	36.0	252.1	0.70	2.41	19.4
West: Melinda Lane											
10	L	78	0.0	0.107	12.7	LOS B	0.5	3.5	0.40	0.88	45.2
11	T	2	0.0	0.105	13.2	LOS B	0.5	3.5	0.40	0.94	44.8
12	R	5	0.0	0.107	13.3	LOS B	0.5	3.5	0.40	1.04	44.8
Approach		85	0.0	0.107	12.8	LOS B	0.5	3.5	0.40	0.89	45.1
South West: P474											
30	L	312	0.0	0.168	7.0	LOS A	0.0	0.0	0.00	0.60	50.2
32	R	222	0.0	0.306	9.7	LOS A	1.8	12.7	0.39	0.68	47.3
Approach		534	0.0	0.306	8.1	LOS A	1.8	12.7	0.16	0.63	49.0
All Vehicles		2133	0.0	1.011	45.2	NA	36.0	252.1	0.57	1.51	26.9

MOVEMENT SUMMARY

Site: P474 and P228-PM

P474 and P228
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P474											
4	L	251	0.0	0.928	52.8	LOS F	40.3	282.2	1.00	0.00	24.3
5	T	2	0.0	1.053	45.3	LOS E	40.3	282.2	1.00	0.00	24.4
6	R	437	0.0	0.929	53.5	LOS F	40.3	282.2	1.00	2.88	24.3
Approach		689	0.0	0.929	53.2	LOS F	40.3	282.2	1.00	1.82	24.3
North: P228											
7	L	175	0.0	0.094	11.0	LOS B	0.0	0.0	0.00	1.00	46.2
9	R	378	0.0	1.442	862.6	LOS F	79.5	556.5	1.00	5.30	2.4
Approach		553	0.0	1.440	593.4	LOS F	79.5	556.5	0.68	3.94	3.5
West: Melinda Lane											
10	L	24	0.0	0.082	18.7	LOS C	0.3	2.4	0.68	1.00	40.6
11	T	2	0.0	0.081	19.2	LOS C	0.3	2.4	0.68	1.00	40.3
12	R	4	0.0	0.081	19.3	LOS C	0.3	2.4	0.68	1.02	40.3
Approach		31	0.0	0.082	18.8	LOS C	0.3	2.4	0.68	1.00	40.5
South West: P474											
30	L	852	0.0	0.382	7.4	LOS A	3.6	25.2	0.08	0.55	49.8
32	R	228	0.0	0.383	9.9	LOS A	3.6	25.2	0.46	0.68	47.2
Approach		1080	0.0	0.382	7.9	LOS A	3.6	25.2	0.16	0.58	49.2
All Vehicles		2353	0.0	1.440	158.9	NA	79.5	556.5	0.53	1.74	11.2

MOVEMENT SUMMARY

Site: P474 and P228-AM - Conversion

P474 and P228
Signals - Fixed Time Cycle Time = 63 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P474											
4	L	274	0.0	0.552	30.1	LOS C	9.4	66.1	0.92	0.82	32.8
5	T	7	0.0	0.547	22.6	LOS C	9.4	66.1	0.92	0.77	33.1
6	R	118	0.0	0.498	31.4	LOS C	4.5	31.3	0.88	0.78	32.2
Approach		399	0.0	0.552	30.3	LOS C	9.4	66.1	0.91	0.81	32.6
North: P228											
7	L	333	0.0	0.548	12.1	LOS B	1.6	11.1	0.42	0.93	46.2
9	R	782	0.0	0.643	18.6	LOS B	10.6	74.2	0.77	0.81	39.6
Approach		1115	0.0	0.643	16.7	LOS B	10.6	74.2	0.67	0.85	41.4
West: Melinda Lane											
10	L	78	0.0	0.197	28.6	LOS C	3.1	21.6	0.82	0.76	33.6
11	T	2	0.0	0.197	20.4	LOS C	3.1	21.6	0.82	0.64	34.5
12	R	5	0.0	0.197	29.7	LOS C	3.1	21.6	0.82	0.78	33.3
Approach		85	0.0	0.197	28.5	LOS C	3.1	21.6	0.82	0.76	33.6
South West: P474											
30	L	312	0.0	0.245	13.8	LOS B	5.4	37.6	0.51	0.73	43.4
32	R	222	0.0	0.245	14.3	LOS B	5.4	37.6	0.51	0.75	43.0
Approach		534	0.0	0.245	14.0	LOS B	5.4	37.6	0.51	0.74	43.2
All Vehicles		2133	0.0	0.643	19.0	LOS B	10.6	74.2	0.68	0.81	39.5

MOVEMENT SUMMARY

Site: P474 and P228-PM - Conversion

P474 and P228
Signals - Fixed Time Cycle Time = 47 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: P474											
4	L	251	0.0	0.750	25.4	LOS C	11.7	81.7	0.94	0.92	35.2
5	T	2	0.0	0.773	17.9	LOS B	11.7	81.7	0.94	0.88	35.4
6	R	437	0.0	0.750	25.9	LOS C	11.7	81.7	0.88	0.92	35.0
Approach		689	0.0	0.750	25.7	LOS C	11.7	81.7	0.90	0.92	35.1
North: P228											
7	L	175	0.0	0.287	11.7	LOS B	0.8	5.4	0.25	0.95	46.2
9	R	378	0.0	0.750	29.8	LOS C	6.4	45.0	0.98	0.95	32.9
Approach		553	0.0	0.749	24.0	LOS C	6.4	45.0	0.75	0.95	36.3
West: Melinda Lane											
10	L	24	0.0	0.056	19.7	LOS B	0.8	5.3	0.70	0.72	39.0
11	T	2	0.0	0.056	11.5	LOS B	0.8	5.3	0.70	0.52	41.0
12	R	4	0.0	0.056	20.7	LOS C	0.8	5.3	0.70	0.75	38.5
Approach		31	0.0	0.056	19.2	LOS B	0.8	5.3	0.70	0.71	39.1
South West: P474											
30	L	852	0.0	0.651	18.3	LOS B	11.6	81.4	0.83	0.83	39.8
32	R	228	0.0	0.650	18.9	LOS B	11.6	81.4	0.83	0.84	39.5
Approach		1080	0.0	0.651	18.5	LOS B	11.6	81.4	0.83	0.83	39.7
All Vehicles		2353	0.0	0.750	21.9	LOS C	11.7	81.7	0.83	0.89	37.4

MOVEMENT SUMMARY

Site: P467 and P228- AM

P467 and P228
Signals - Fixed Time Cycle Time = 117 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	683	0.0	0.936	59.9	LOS E	64.0	448.0	1.00	1.02	22.6
3	R	223	0.0	0.937	60.0	LOS E	64.0	448.0	1.00	1.02	22.6
Approach		906	0.0	0.936	59.9	LOS E	64.0	448.0	1.00	1.02	22.6
East: P467											
4	L	205	0.0	0.913	70.9	LOS E	30.7	215.1	1.00	1.08	20.7
5	T	697	0.0	0.912	62.5	LOS E	31.3	219.1	1.00	1.10	21.2
Approach		902	0.0	0.912	64.4	LOS E	31.3	219.1	1.00	1.09	21.1
West: P467											
11	T	1201	0.0	0.785	34.2	LOS C	30.9	216.5	0.94	0.86	29.4
12	R	244	0.0	1.000 [3]	70.2	LOS E	15.4	107.5	1.00	1.00	20.4
Approach		1445	0.0	1.000	40.3	LOS D	30.9	216.5	0.95	0.88	27.4
All Vehicles		3254	0.0	1.000	52.5	LOS D	64.0	448.0	0.98	0.98	24.0

MOVEMENT SUMMARY

Site: P467 and P228- PM

P467 and P228
Signals - Fixed Time Cycle Time = 84 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	328	0.0	0.946	67.7	LOS E	31.2	218.4	1.00	1.12	20.9
3	R	195	0.0	0.947	67.8	LOS E	31.2	218.4	1.00	1.12	20.9
Approach		523	0.0	0.947	67.7	LOS E	31.2	218.4	1.00	1.12	20.9
East: P467											
4	L	237	0.0	0.925	47.6	LOS D	34.6	242.5	0.99	1.10	26.8
5	T	1167	0.0	0.924	39.3	LOS D	35.1	245.7	0.99	1.11	27.3
Approach		1404	0.0	0.924	40.7	LOS D	35.1	245.7	0.99	1.11	27.3
West: P467											
11	T	1113	0.0	0.499	6.7	LOS A	10.1	70.6	0.39	0.35	48.3
12	R	345	0.0	1.000 [3]	60.0	LOS E	15.4	107.5	1.00	1.07	22.6
Approach		1458	0.0	1.000	19.3	LOS B	15.4	107.5	0.53	0.52	38.1
All Vehicles		3385	0.0	1.000	35.7	LOS D	35.1	245.7	0.80	0.86	29.5

MOVEMENT SUMMARY

Site: P467 and P228- AM - Upgrade

P467 and P228
Signals - Fixed Time Cycle Time = 65 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	683	0.0	0.920	47.2	LOS D	30.3	211.8	1.00	1.09	26.1
3	R	223	0.0	0.734	27.2	LOS C	7.3	51.1	0.72	0.86	34.3
Approach		906	0.0	0.920	42.3	LOS D	30.3	211.8	0.93	1.03	27.7
East: P467											
4	L	205	0.0	0.895	45.8	LOS D	18.8	131.7	1.00	1.14	27.3
5	T	697	0.0	0.894	37.5	LOS D	19.1	134.0	1.00	1.14	27.9
Approach		902	0.0	0.894	39.4	LOS D	19.1	134.0	1.00	1.14	27.8
West: P467											
11	T	1146	0.0	0.659	15.4	LOS B	15.8	110.3	0.84	0.74	39.9
12	R	299	0.0	0.929	37.4	LOS D	10.6	74.3	1.00	1.05	29.5
Approach		1445	0.0	0.929	19.9	LOS B	15.8	110.3	0.87	0.81	37.2
All Vehicles		3254	0.0	0.929	31.6	LOS C	30.3	211.8	0.92	0.96	31.3

MOVEMENT SUMMARY

Site: P467 and P228- PM - Upgrade

P467 and P228
Signals - Fixed Time Cycle Time = 67 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	328	0.0	0.671	32.2	LOS C	12.3	86.1	0.94	0.85	31.8
3	R	195	0.0	0.671	31.1	LOS C	12.3	86.1	0.85	0.84	32.3
Approach		523	0.0	0.672	31.8	LOS C	12.3	86.1	0.91	0.85	31.9
East: P467											
4	L	237	0.0	0.869	32.1	LOS C	24.2	169.5	0.92	1.02	33.0
5	T	1167	0.0	0.869	23.9	LOS C	24.5	171.7	0.92	0.96	34.0
Approach		1404	0.0	0.869	25.3	LOS C	24.5	171.7	0.92	0.97	33.9
West: P467											
11	T	1037	0.0	0.421	2.2	LOS A	5.3	37.1	0.19	0.17	55.2
12	R	421	0.0	1.000[3]	42.8	LOS D	15.4	107.5	1.00	1.08	27.5
Approach		1458	0.0	1.000	14.0	LOS B	15.4	107.5	0.42	0.43	42.8
All Vehicles		3385	0.0	1.000	21.4	LOS C	24.5	171.7	0.71	0.72	36.8

MOVEMENT SUMMARY

Site: P228/Tinley Manor Education Access/Seaton Delaval Access AM

New Site
Signals - Fixed Time Cycle Time = 71 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South East: P228											
21	L	142	0.0	0.650	16.9	LOS B	18.2	127.7	0.67	0.93	42.9
22	T	654	0.0	0.649	8.7	LOS A	18.2	127.7	0.67	0.61	45.4
23	R	111	0.0	0.565	34.1	LOS C	5.0	34.7	0.90	0.83	30.9
Approach		906	0.0	0.650	13.1	LOS B	18.2	127.7	0.70	0.69	42.6
North East: Tinley Manor Technical College											
24	L	338	0.0	0.567	34.8	LOS C	9.0	63.3	0.91	0.81	30.6
25	T	1	0.0	0.584	27.2	LOS C	9.0	63.3	0.94	0.78	30.7
26	R	18	0.0	0.567	35.7	LOS D	9.0	63.3	0.94	0.82	30.3
Approach		357	0.0	0.567	34.8	LOS C	9.0	63.3	0.92	0.81	30.6
North West: P228											
27	L	7	0.0	0.775	19.1	LOS B	25.2	176.5	0.78	0.97	41.8
28	T	944	0.0	0.778	11.0	LOS B	25.2	176.5	0.78	0.73	43.5
29	R	2	0.0	0.791	19.3	LOS B	25.2	176.5	0.78	0.98	41.8
Approach		954	0.0	0.778	11.0	LOS B	25.2	176.5	0.78	0.74	43.5
South West: Seaton Delaval											
30	L	2	0.0	0.779	43.1	LOS D	7.3	50.8	0.99	0.95	27.4
31	T	1	0.0	0.779	34.9	LOS C	7.3	50.8	0.99	0.94	27.5
32	R	286	0.0	0.761	44.5	LOS D	7.3	50.8	0.99	0.93	26.9
Approach		289	0.0	0.761	44.5	LOS D	7.3	50.8	0.99	0.93	26.9
All Vehicles		2506	0.0	0.778	19.0	LOS B	25.2	176.5	0.80	0.75	38.2

MOVEMENT SUMMARY

Site: P228/Tinley Manor Education Access/Seaton Delaval Access PM

New Site
Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South East: P228											
21	L	292	0.0	0.894	15.3	LOS B	23.1	161.4	0.36	0.99	43.2
22	T	981	0.0	0.895	7.2	LOS A	23.1	161.4	0.36	0.39	48.3
23	R	338	0.0	0.873	22.8	LOS C	9.3	65.4	0.37	0.85	36.9
Approach		1611	0.0	0.895	11.9	LOS B	23.1	161.4	0.37	0.60	44.4
North East: Tinley Manor Technical College											
24	L	111	0.0	0.273	42.7	LOS D	3.4	23.9	0.89	0.75	27.6
25	T	1	0.0	0.273	34.7	LOS C	3.4	23.9	0.90	0.69	27.9
26	R	7	0.0	0.273	43.2	LOS D	3.4	23.9	0.90	0.76	27.4
Approach		119	0.0	0.273	42.6	LOS D	3.4	23.9	0.89	0.75	27.6
North West: P228											
27	L	18	0.0	0.564	13.2	LOS B	14.7	102.8	0.49	0.99	45.9
28	T	740	0.0	0.565	5.0	LOS A	14.7	102.8	0.49	0.45	50.5
29	R	3	0.0	0.547	13.3	LOS B	14.7	102.8	0.49	1.02	45.8
Approach		761	0.0	0.565	5.3	LOS A	14.7	102.8	0.49	0.46	50.4
South West: Seaton Delaval											
30	L	3	0.0	0.389	44.2	LOS D	3.9	27.5	0.92	0.77	27.0
31	T	1	0.0	0.383	36.0	LOS D	3.9	27.5	0.92	0.71	27.4
32	R	146	0.0	0.391	45.1	LOS D	4.0	27.8	0.93	0.77	26.7
Approach		151	0.0	0.391	45.0	LOS D	4.0	27.8	0.93	0.77	26.7
All Vehicles		2641	0.0	0.895	13.3	LOS B	23.1	161.4	0.46	0.57	43.1

MOVEMENT SUMMARY

Site: Tinley Manor Access/Seaton Delaval Access/P228 - AM

New Site
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	602	0.0	1.183	359.7	LOS F	129.6	907.0	1.00	6.59	5.5
2	T	145	0.0	0.483	14.2	LOS B	3.4	24.1	0.90	0.99	43.0
3	R	23	0.0	0.482	21.0	LOS C	3.4	24.1	0.90	1.05	40.4
Approach		771	0.0	1.184	284.4	LOS F	129.6	907.0	0.98	5.37	6.8
East: Seaton Delaval											
4	L	44	0.0	1.579	1086.5	LOS F	142.7	998.7	1.00	6.20	1.9
5	T	245	0.0	1.562	1085.5	LOS F	142.7	998.7	1.00	6.20	2.0
6	R	1	0.0	1.053	1092.4	LOS F	142.7	998.7	1.00	6.20	2.1
Approach		291	0.0	1.567	1085.7	LOS F	142.7	998.7	1.00	6.20	2.0
North: Tinley Manor Southbanks											
7	L	1	0.0	1.053	1193.8	LOS F	800.6	5603.9	1.00	20.06	1.8
8	T	438	0.0	1.652	1192.6	LOS F	800.6	5603.9	1.00	20.06	1.8
9	R	2475	0.0	1.655	1200.4	LOS F	800.6	5603.9	1.00	19.05	1.9
Approach		2914	0.0	1.655	1199.2	LOS F	800.6	5603.9	1.00	19.20	1.9
West: P228											
10	L	825	0.0	0.555	6.4	LOS A	5.6	39.5	0.50	0.55	48.6
11	T	123	0.0	0.555	5.4	LOS A	5.5	38.5	0.52	0.49	48.4
12	R	521	0.0	0.555	12.2	LOS B	5.5	38.5	0.52	0.69	45.1
Approach		1469	0.0	0.555	8.4	LOS B	5.6	39.5	0.51	0.60	47.2
All Vehicles		5444	0.0	1.655	742.3	LOS F	800.6	5603.9	0.86	11.53	2.9

MOVEMENT SUMMARY

Site: Tinley Manor Access/Seaton Delaval Access/P228 - PM

New Site
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	533	0.0	1.057	138.2	LOS F	67.8	474.8	1.00	4.04	12.5
2	T	665	0.0	1.056	141.5	LOS F	67.8	474.8	1.00	3.70	12.3
3	R	46	0.0	1.053	150.0	LOS F	53.3	372.8	1.00	3.57	12.7
Approach		1244	0.0	1.056	140.4	LOS F	67.8	474.8	1.00	3.84	12.4
East: Seaton Delaval											
4	L	24	0.0	0.367	13.1	LOS B	2.5	17.8	0.87	0.97	44.8
5	T	128	0.0	0.369	12.1	LOS B	2.5	17.8	0.87	0.95	45.0
6	R	1	0.0	0.351	19.0	LOS B	2.5	17.8	0.87	1.03	41.9
Approach		154	0.0	0.369	12.3	LOS B	2.5	17.8	0.87	0.95	44.9
North: Tinley Manor Southbanks											
7	L	1	0.0	0.526	8.9	LOS A	8.7	60.9	0.80	0.79	46.5
8	T	221	0.0	0.680	7.7	LOS A	8.7	60.9	0.80	0.76	46.1
9	R	1255	0.0	0.679	14.9	LOS B	8.7	60.9	0.80	0.86	43.7
Approach		1477	0.0	0.679	13.8	LOS B	8.7	60.9	0.80	0.85	44.1
West: P228											
10	L	3764	0.0	2.592	2877.1	LOS F	1955.0	13685.0	1.00	31.55	0.7
11	T	251	0.0	2.583	2876.4	LOS F	1630.5	11413.2	1.00	29.24	0.8
12	R	616	0.0	2.598	2883.3	LOS F	1630.5	11413.2	1.00	29.24	0.8
Approach		4631	0.0	2.593	2877.9	LOS F	1955.0	13685.0	1.00	31.12	0.8
All Vehicles		7505	0.0	2.593	1801.8	LOS F	1955.0	13685.0	0.96	20.02	1.2

MOVEMENT SUMMARY

Site: P228/N2 West intersection - AM proposed by VKE

N2/P228 West
Signals - Fixed Time Cycle Time = 70 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: N2 Off ramp											
1	L	440	0.0	0.739	15.8	LOS B	9.8	68.5	0.56	0.80	42.0
2	T	1	0.0	0.970	37.4	LOS D	19.4	135.9	1.00	1.02	26.7
3	R	896	0.0	0.881	45.6	LOS D	19.4	135.9	1.00	1.02	26.5
Approach		1337	0.0	0.880	35.8	LOS D	19.4	135.9	0.86	0.94	30.3
East: P228											
5	T	993	0.0	0.883	24.0	LOS C	37.7	263.9	0.93	0.97	33.1
6	R	154	0.0	1.000[3]	67.3	LOS E	9.9	69.0	1.00	1.10	21.0
Approach		1146	0.0	1.000	29.8	LOS C	37.7	263.9	0.94	0.99	30.7
West: P 228											
10	L	380	0.0	0.689	19.0	LOS B	19.5	136.3	0.75	0.89	40.5
11	T	1193	0.0	0.690	10.9	LOS B	19.9	139.2	0.75	0.68	43.2
Approach		1573	0.0	0.690	12.8	LOS B	19.9	139.2	0.75	0.73	42.5
All Vehicles		4056	0.0	1.000	25.2	LOS C	37.7	263.9	0.84	0.87	34.2

MOVEMENT SUMMARY

Site: P228/N2 West intersection - PM proposed by VKE

N2/P228 West
Signals - Fixed Time Cycle Time = 58 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: N2 Off ramp											
1	L	874	0.0	0.995	14.4	LOS B	13.2	92.4	0.69	0.86	43.2
2	T	1	0.0	1.850	1015.6	LOS F	537.4	3761.7	1.00	5.10	2.1
3	R	3298	0.0	1.545	1023.9	LOS F	537.4	3761.7	1.00	5.10	2.0
Approach		4173	0.0	1.545	812.5	LOS F	537.4	3761.7	0.94	4.21	2.6
East: P228											
5	T	957	0.0	1.898	1654.5	LOS F	401.8	2812.5	1.00	9.18	1.3
6	R	139	0.0	1.019	98.9	LOS F	9.8	68.5	1.00	1.51	16.0
Approach		1096	0.0	1.898	1457.0	LOS F	401.8	2812.5	1.00	8.21	1.5
West: P 228											
10	L	215	0.0	0.997	88.3	LOS F	29.9	209.6	1.00	1.70	17.8
11	T	791	0.0	0.997	79.9	LOS E	30.5	213.3	1.00	1.70	18.1
Approach		1005	0.0	0.997	81.7	LOS F	30.5	213.3	1.00	1.70	18.0
All Vehicles		6274	0.0	1.898	808.0	LOS F	537.4	3761.7	0.96	4.51	2.6

MOVEMENT SUMMARY

Site: P228/N2 East intersection - AM proposed by VKE

New Site
Signals - Fixed Time Cycle Time = 150 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: east											
4	L	2384	0.0	1.563	1055.9	LOS F	909.3	6365.3	1.00	2.78	2.0
5	T	941	0.0	0.587	1.6	LOS A	9.3	64.9	0.12	0.12	56.8
Approach		3325	0.0	1.562	757.5	LOS F	909.3	6365.3	0.75	2.03	2.7
North: off ramp											
7	L	243	0.0	0.928	35.1	LOS D	13.2	92.4	0.51	0.84	30.7
8	T	1	0.0	0.877	88.3	LOS F	18.6	130.5	1.00	1.00	16.5
9	R	205	0.0	0.916	96.5	LOS F	18.6	130.5	1.00	1.00	16.4
Approach		449	0.0	0.928	63.3	LOS E	18.6	130.5	0.73	0.91	22.0
West: west											
11	T	2033	0.0	0.647	1.8	LOS A	11.2	78.6	0.14	0.13	56.0
12	R	56	0.0	1.052	200.1	LOS F	8.7	60.9	1.00	1.15	9.2
Approach		2088	0.0	1.052	7.1	LOS A	11.2	78.6	0.16	0.16	49.4
All Vehicles		5863	0.0	1.562	437.0	LOS F	909.3	6365.3	0.54	1.28	4.6

MOVEMENT SUMMARY

Site: P228/N2 East intersection - PM proposed by VKE

New Site
Signals - Fixed Time Cycle Time = 69 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: east											
4	L	1204	0.0	1.080	205.8	LOS F	141.6	991.3	1.00	1.93	9.0
5	T	716	0.0	0.611	9.6	LOS A	16.6	116.3	0.69	0.62	45.1
Approach		1920	0.0	1.080	132.6	LOS F	141.6	991.3	0.88	1.44	12.8
North: off ramp											
7	L	507	0.0	1.000[3]	31.5	LOS C	14.3	100.0	0.98	0.99	32.4
8	T	478	0.0	1.753	1397.4	LOS F	335.0	2344.7	1.00	6.19	1.5
9	R	380	0.0	1.753	1405.6	LOS F	335.0	2344.7	1.00	6.19	1.5
Approach		1365	0.0	1.752	892.0	LOS F	335.0	2344.7	0.99	4.25	2.4
West: west											
11	T	3972	0.0	1.704	1305.3	LOS F	759.3	5314.9	1.00	9.25	1.6
12	R	116	0.0	1.011	95.6	LOS F	8.6	60.3	1.00	1.38	16.4
Approach		4088	0.0	1.704	1271.0	LOS F	759.3	5314.9	1.00	9.02	1.7
All Vehicles		7374	0.0	1.752	904.4	LOS F	759.3	5314.9	0.97	6.17	2.3

Movement Summaries – 20 year horizon with loop ramp and underpass

MOVEMENT SUMMARY

Site: P228/N2 West intersection - AM proposed by VKE - directional ramp

N2/P228 West
Signals - Fixed Time Cycle Time = 87 seconds (Practical Cycle Time)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: N2 Off ramp											
1	L	440	0.0	0.610	41.9	LOS D	11.0	77.3	0.95	0.82	28.1
Approach		440	0.0	0.610	41.9	LOS D	11.0	77.3	0.95	0.82	28.1
East: P228											
5	T	950	0.0	0.729	1.5	LOS A	8.2	57.3	0.18	0.16	56.0
6	R	196	0.0	1.001	10.8	LOS B	10.8	75.4	1.00	0.88	44.9
Approach		1146	0.0	1.000	3.1	LOS A	10.8	75.4	0.32	0.29	53.8
West: P 228											
10	L	380	0.0	0.595	10.9	LOS B	8.5	59.4	0.23	0.85	46.6
11	T	1193	0.0	0.596	2.8	LOS A	8.6	60.5	0.23	0.21	54.4
Approach		1573	0.0	0.596	4.7	LOS A	8.6	60.5	0.23	0.36	52.3
All Vehicles		3159	0.0	1.000	9.3	LOS A	11.0	77.3	0.36	0.40	47.0

MOVEMENT SUMMARY

Site: P228/N2 West intersection - PM proposed by VKE - directional ramp

N2/P228 West
Signals - Fixed Time Cycle Time = 58 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: N2 Off ramp											
1	L	874	0.0	0.803	31.9	LOS C	15.4	107.8	0.96	0.96	32.2
Approach		874	0.0	0.802	31.9	LOS C	15.4	107.8	0.96	0.96	32.2
East: P228											
5	T	832	0.0	0.820	17.3	LOS B	23.8	166.6	0.90	0.92	38.1
6	R	264	0.0	1.001[3]	30.0	LOS C	9.9	69.1	1.00	0.87	32.8
Approach		1096	0.0	1.000	20.3	LOS C	23.8	166.6	0.93	0.91	36.7
West: P 228											
10	L	215	0.0	0.498	18.1	LOS B	10.9	76.5	0.70	0.87	41.3
11	T	791	0.0	0.498	9.9	LOS A	11.1	77.7	0.70	0.61	44.3
Approach		1005	0.0	0.499	11.6	LOS B	11.1	77.7	0.70	0.67	43.6
All Vehicles		2975	0.0	1.000	20.8	LOS C	23.8	166.6	0.86	0.84	37.1

MOVEMENT SUMMARY

Site: P228/N2 East intersection - AM proposed by VKE - directional ramp

New Site
Signals - Fixed Time Cycle Time = 96 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: east											
4	L	637	0.0	0.439	9.1	LOS A	9.6	57.6	0.47	0.73	47.3
5	T	941	0.0	0.706	3.5	LOS A	13.2	79.3	0.29	0.27	53.3
Approach		1578	0.0	0.705	5.8	LOS A	13.2	79.3	0.36	0.45	50.7
North: off ramp											
7	L	243	0.0	0.130	7.6	NA[9]	NA[9]	NA[9]	NA[9]	0.60	49.8
9	R	205	0.0	0.525	37.4	LOS D	9.3	55.9	0.82	0.79	29.6
Approach		448	0.0	0.525	21.2	LOS C	9.3	55.9	0.38	0.69	38.0
West: west											
11	T	1603	0.0	0.542	7.1	LOS A	4.2	25.2	0.42	0.08	55.5
12	R	173	0.0	1.000[3]	37.3	LOS D	9.9	59.2	1.00	0.89	29.5
Approach		1776	0.0	1.000	10.0	LOS A	23.8	142.7	0.48	0.16	48.7
All Vehicles		3802	0.0	1.000	9.6	LOS A	23.8	142.7	0.42	0.34	47.7

MOVEMENT SUMMARY

Site: P228/N2 East intersection - PM proposed by VKE - directional ramp

New Site
Signals - Fixed Time Cycle Time = 88 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: east											
4	L	318	0.0	0.220	8.2	LOS A	2.3	16.1	0.19	0.65	48.7
5	T	716	0.0	0.571	9.7	LOS A	18.5	129.3	0.62	0.56	45.2
Approach		1034	0.0	0.571	9.3	LOS A	18.5	129.3	0.49	0.59	46.2
North: off ramp											
7	L	996	0.0	0.531	7.7	NA[9]	NA[9]	NA[9]	NA[9]	0.60	49.7
9	R	368	0.0	1.000[3]	35.7	LOS D	15.4	107.5	0.97	0.85	30.3
Approach		1364	0.0	1.000	15.2	LOS B	15.4	107.5	0.26	0.67	42.4
West: west											
11	T	3239	0.0	0.864	24.4	LOS C	46.1	323.0	0.98	0.96	33.8
12	R	208	0.0	1.000[3]	33.8	LOS C	8.7	60.9	0.95	0.85	31.0
Approach		3447	0.0	1.000	24.9	LOS C	46.1	323.0	0.98	0.95	33.6
All Vehicles		5845	0.0	1.000	19.9	LOS B	46.1	323.0	0.72	0.82	37.2

MOVEMENT SUMMARY

Site: Tinley Manor Access/Seaton Delaval Access/P228 - AM - directional ramp

New Site
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	602	0.0	0.745	14.8	LOS B	9.5	66.5	0.95	1.15	42.7
2	T	145	0.0	0.319	9.5	LOS A	2.0	14.3	0.77	0.86	47.4
3	R	23	0.0	0.317	16.4	LOS B	2.0	14.3	0.77	0.99	43.6
Approach		771	0.0	0.745	13.8	LOS B	9.5	66.5	0.91	1.09	43.5
East: Seaton Delaval											
4	L	44	0.0	0.749	29.8	LOS C	7.9	55.6	0.98	1.24	33.4
5	T	245	0.0	0.750	28.8	LOS C	7.9	55.6	0.98	1.24	33.5
6	R	1	0.0	1.053	35.7	LOS D	7.9	55.6	0.98	1.25	32.5
Approach		291	0.0	0.750	29.0	LOS D	7.9	55.6	0.98	1.24	33.5
North: Tinley Manor Southbanks											
7	L	1	0.0	0.526	12.3	LOS B	8.3	58.3	0.87	0.99	45.2
8	T	438	0.0	0.657	11.1	LOS B	8.3	58.3	0.87	0.97	45.5
9	R	727	0.0	0.656	18.7	LOS B	8.3	58.3	0.87	1.05	41.0
Approach		1166	0.0	0.657	15.8	LOS B	8.3	58.3	0.87	1.02	42.5
West: P228											
10	L	242	0.0	0.240	6.5	LOS A	1.6	11.1	0.38	0.54	49.4
11	T	123	0.0	0.461	5.1	LOS A	4.1	28.5	0.44	0.45	49.2
12	R	521	0.0	0.461	12.0	LOS B	4.1	28.5	0.44	0.69	45.3
Approach		886	0.0	0.461	9.5	LOS B	4.1	28.5	0.42	0.61	46.8
All Vehicles		3114	0.0	0.750	14.8	LOS B	9.5	66.5	0.76	0.94	42.8

MOVEMENT SUMMARY

Site: Tinley Manor Access/Seaton Delaval Access/P228 - PM - directional ramp

New Site
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	533	0.0	0.605	8.6	LOS A	6.1	42.4	0.73	0.79	47.4
2	T	665	0.0	0.605	7.8	LOS A	6.1	42.4	0.74	0.76	47.6
3	R	46	0.0	0.602	14.8	LOS B	5.9	41.2	0.74	0.98	45.0
Approach		1244	0.0	0.605	8.4	LOS B	6.1	42.4	0.74	0.78	47.4
East: Seaton Delaval											
4	L	24	0.0	0.266	10.6	LOS B	1.8	12.5	0.79	0.90	47.1
5	T	128	0.0	0.265	9.7	LOS A	1.8	12.5	0.79	0.87	47.3
6	R	1	0.0	0.263	16.5	LOS B	1.8	12.5	0.79	1.00	43.6
Approach		154	0.0	0.265	9.9	LOS B	1.8	12.5	0.79	0.88	47.3
North: Tinley Manor Southbanks											
7	L	1	0.0	0.526	11.1	LOS B	5.0	34.9	0.95	0.95	46.3
8	T	221	0.0	0.471	9.9	LOS A	5.0	34.9	0.95	0.94	45.8
9	R	368	0.0	0.472	17.6	LOS B	5.0	34.9	0.94	1.00	41.8
Approach		591	0.0	0.472	14.7	LOS B	5.0	34.9	0.94	0.97	43.2
West: P228											
10	L	1107	0.0	1.107	212.9	LOS F	150.2	1051.5	1.00	6.39	8.8
11	T	251	0.0	1.109	214.2	LOS F	128.1	896.9	1.00	5.90	8.7
12	R	616	0.0	1.108	221.1	LOS F	128.1	896.9	1.00	5.90	9.1
Approach		1974	0.0	1.107	215.6	LOS F	150.2	1051.5	1.00	6.17	8.9
All Vehicles		3962	0.0	1.107	112.6	LOS F	150.2	1051.5	0.90	3.50	14.9

MOVEMENT SUMMARY

Site: Tinley Manor Access/Seaton Delaval Access/P228 - AM - directional ramp - Conversion -

New Site
Signals - Fixed Time Cycle Time = 69 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	602	0.0	0.745	14.6	LOS B	12.5	87.8	0.77	0.85	43.0
2	T	145	0.0	0.249	16.1	LOS B	5.4	37.6	0.73	0.60	39.3
3	R	23	0.0	0.249	24.2	LOS C	5.4	37.6	0.73	0.86	37.7
Approach		771	0.0	0.745	15.2	LOS B	12.5	87.8	0.76	0.81	42.1
East: Seaton Delaval											
4	L	44	0.0	0.372	24.4	LOS C	8.7	61.1	0.76	0.88	37.6
5	T	245	0.0	0.371	16.2	LOS B	8.7	61.1	0.76	0.64	39.1
6	R	1	0.0	0.378	24.3	LOS C	8.7	61.1	0.76	0.87	37.6
Approach		291	0.0	0.371	17.5	LOS B	8.7	61.1	0.76	0.68	38.8
North: Tinley Manor Southbanks											
7	L	1	0.0	0.757	29.8	LOS C	22.3	156.2	0.92	0.99	34.5
8	T	438	0.0	0.808	21.6	LOS C	22.3	156.2	0.92	0.91	35.0
9	R	727	0.0	0.808	31.1	LOS C	22.3	156.2	0.94	0.96	32.9
Approach		1166	0.0	0.808	27.6	LOS C	22.3	156.2	0.93	0.94	33.7
West: P228											
10	L	607	0.0	0.105	7.6	NA [9]	NA [9]	NA [9]	NA [9]	0.60	49.8
11	T	123	0.0	0.801	29.9	LOS C	14.1	98.8	0.98	0.97	30.1
12	R	521	0.0	0.801	38.6	LOS D	14.1	98.8	0.98	0.98	29.4
Approach		1252	0.0	0.801	22.7	LOS C	14.1	98.8	0.51	0.79	36.8
All Vehicles		3479	0.0	0.808	22.2	LOS C	22.3	156.2	0.72	0.84	36.8

MOVEMENT SUMMARY

Site: Tinley Manor Access/Seaton Delaval Access/P228 - PM - directional ramp - Conversion

New Site
Signals - Fixed Time Cycle Time = 73 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: P228											
1	L	533	0.0	0.493	9.8	LOS A	6.3	44.1	0.44	0.73	47.3
2	T	665	0.0	0.841	25.8	LOS C	26.8	187.5	0.96	0.97	33.1
3	R	46	0.0	0.841	33.9	LOS C	26.8	187.5	0.96	1.02	32.8
Approach		1244	0.0	0.841	19.3	LOS B	26.8	187.5	0.74	0.87	38.0
East: Seaton Delaval											
4	L	24	0.0	0.209	25.2	LOS C	5.1	36.0	0.72	0.86	37.0
5	T	128	0.0	0.209	17.0	LOS B	5.1	36.0	0.72	0.59	38.6
6	R	1	0.0	0.213	25.0	LOS C	5.1	36.0	0.72	0.85	37.0
Approach		154	0.0	0.209	18.3	LOS B	5.1	36.0	0.72	0.63	38.4
North: Tinley Manor Southbanks											
7	L	1	0.0	0.712	40.7	LOS D	16.4	115.1	0.93	1.10	29.4
8	T	221	0.0	0.847	32.5	LOS C	16.4	115.1	0.93	1.04	29.8
9	R	368	0.0	0.848	44.7	LOS D	16.4	115.1	0.98	1.06	27.5
Approach		591	0.0	0.848	40.1	LOS D	16.4	115.1	0.96	1.05	28.3
West: P228											
10	L	3764	0.0	0.652	7.7	NA [9]	NA [9]	NA [9]	NA [9]	0.60	49.6
11	T	251	0.0	0.873	35.7	LOS D	21.4	149.8	1.00	1.09	28.1
12	R	616	0.0	0.873	45.3	LOS D	21.4	149.8	1.00	1.07	27.0
Approach		4631	0.0	0.873	14.2	LOS B	21.4	149.8	0.19	0.69	43.1
All Vehicles		6619	0.0	0.873	17.6	LOS B	26.8	187.5	0.37	0.75	40.1

Aurecon, South Africa (Pty) Ltd
1977/003711/07

P.O. Box. 932
Pinetown
3600
South Africa

T +27 31 714 2500
F +27 31 702 0287
E eThekweni@aurecongroup.com
W www.aurecongroup.com