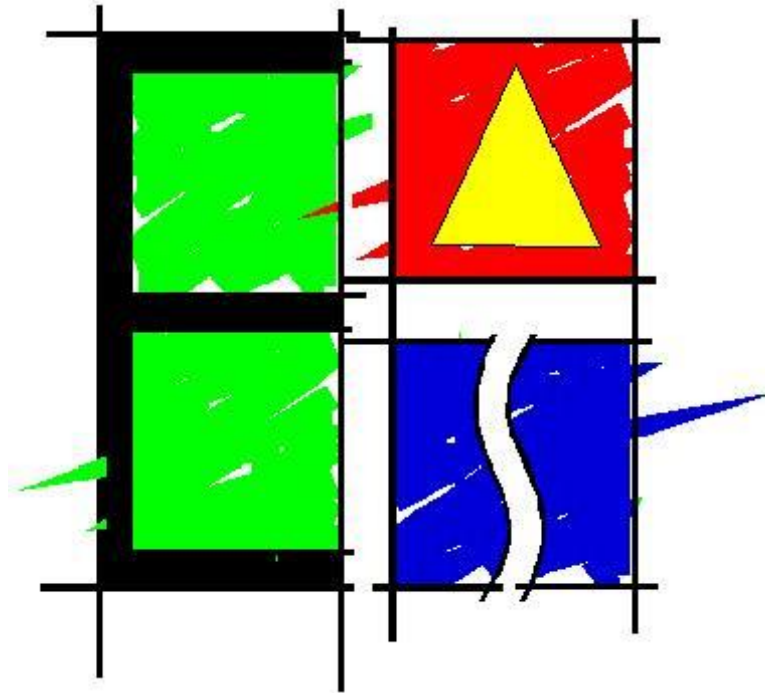


# ***TRAFFIC IMPACT ASSESSMENT***

***FOR PROPOSED  
LOW COST HOUSING DEVELOPMENTS ON  
PTNS OF ERVEN 237, 238, 240 & 590 CLARENDON MARINE  
AND PTNS 1, 10 & 31 OF FARM 28, SEAVIEW***



**March 2017**

Prepared for: **SRK Consulting South Africa (Pty) Ltd**  
Obo Nelson Mandela Bay Municipality

Prepared by: **Engineering Advice and Services (Pty) Ltd**  
(041) 5812421

**DOCUMENT CONTROL SHEET**

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## AUTHOR BIOGRAPHIES

### **Cary Hastie Pr Tech Eng**

Cary Hastie is a specialist in Traffic Engineering and Transportation Planning.

Cary joined the Port Elizabeth Municipality City Engineers Department in 2004 and studied at the Port Elizabeth Technikon, graduating with a National Higher Diploma in Civil Engineering in 1987 and a Master's Diploma in Technology (Civil Engineering - Transportation) in 1990.

Cary spent twenty years with the Nelson Mandela Metropolitan Municipality, involved with traffic engineering and transportation planning matters. He was solely responsible for liaison with public transport operators through the municipal Taxi Liaison Committee and the Port Elizabeth and Uitenhage Taxi Owners Forum and managed a wide variety of projects including public transport planning, transportation planning, traffic signal design and traffic engineering. Cary also has extensive experience in traffic management projects having served as assistant manager of the NMMM's Urban Traffic Control System and being responsible for the design and implementation of various traffic engineering / management projects.

Cary joined Engineering Advice and Services in April 2004 and has since gained extensive experience in a large variety of projects. Cary manages EAS transportation division and has conducted and project managed many transportation planning, traffic engineering, road safety, geometric design and road traffic signage projects in his tenure with the firm.

Among these projects are over 250 traffic impact assessments for a wide variety of clients and covering a wide variety of developments.

Cary is registered as a professional technologist with the Engineering Council of South Africa since 2000.

Cary is married to Sharnell and has a daughter 22 and a son 18.

### **Jared Charlton – Candidate technician**

Jared Charlton is a technician specialising in traffic and transportation. Jared attended the Nelson Mandela Metropolitan University graduating with a National Diploma in Civil Engineering in 2011 and completing a B. Tech degree in Transportation Engineering in 2013.

Jared is registered as a Candidate Technician with the Engineering Council of South Africa.

Jared joined Engineering Advice and Services in 2010 and has been involved in a wide variety of projects necessary for registration as a professional with ECSA.

Projects include fourteen traffic impact assessments, traffic signal investigations, road safety audits, road sign assessments and design, as well as Assistant Resident Engineer on road maintenance and construction projects.

Jared is married to Tammy.

# 1 INTRODUCTION

## 1.1 BACKGROUND

Engineering Advice & Services (Pty) Ltd was appointed by SRK Consulting (South Africa) Pty Ltd during February 2017 to conduct a traffic impact assessment for two proposed low cost housing development options on Portions of Erven 237, 238, 240 and 590 Clarendon Marine and Portions 1, 10 & 31 of Farm 28, Seaview situated in the Nelson Mandela Bay Municipality as indicated on the Locality Plan **Figure 1** overleaf.



## 1.2 METHODOLOGY

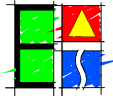
The approach followed in conducting the traffic impact assessment was in accordance with the guidelines set by the Nelson Mandela Bay Municipality <sup>(1)</sup> and contained in **TMH 16 Volume 1- South African Traffic Impact and Site Assessment Manual** <sup>(2)</sup>. The developer intends commencing with the development as soon as practically possible. The 2017 and 2022 development horizons will therefore be analysed in this TIA.

The methodology used was as follows:

- Present traffic flow patterns were obtained and the affected access points and intersections analysed, where after recommendations were made on the present need for road upgrading, without taking the proposed development into account.
- Given the extent of the development, the expected additional trips that will be generated by the low cost housing development options were determined by using applicable trip generation rates specified in **TMH 17 Volume 1 - South African Trip Data Manual** <sup>(3)</sup> as well as surveys conducted at entrances to the existing informal housing areas.
- The distribution of the generated trips was estimated where after the generated traffic was assigned to the surrounding road network for both housing development options.
- Once again, the functioning of the access junctions was analysed and recommendations made on the need for road upgrading taking cognisance of the proposed development for the development (2017) and development plus 5-year (2022) planning horizons for both housing development options.
- Taking cognisance of proposed generated traffic volumes measures were identified to ensure that existing routes are not negatively impacted in terms of traffic flow, safety and road surface condition.
- The proposed access locations was assessed in terms of traffic safety in order to ensure that they operate at acceptable levels of service and conform to traffic safety requirements.
- Potential impacts were assessed in terms of traffic operation, safety and road condition for construction and operational phases of each development option, making use of the Impact Rating Methodology outlined in the **Final Scoping Report** for the **Seaview Low Income Housing Development** <sup>(4)</sup>.
- By taking into account the major findings of the study, conclusions were made regarding the financial responsibilities of the affected parties for required road upgrading measures.

## 1.3 STUDY AREA

Based on the type and extent of the development options and their location adjacent to Seaview Road, the study area extended to the length of Seaview Road passing through the proposed development options as well as the existing residential roads in Seaview necessary to gain access to portions of the development.



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**LEGEND**

- Option 1
- Option 2

Project Title:

Traffic Impact Assessment for a Low Cost Housing  
Development (Two Options) in Seaview

Drawing Title:

Figure 1: Locality Plan

Drawing No.:

1406-P-001

Drawing Date:

March 2017

Scale 1 : 20 000

Prepared by : JC

Checked by : CH

## 2 THE DEVELOPMENT AND ENVIRONS

### 2.1 OVERVIEW OF DEVELOPMENT AND ENVIRONS

The proposed development consists of two options as described below. The land use surrounding the development options can be described as residential to the south (suburbs of Seaview and Clarendon Marine) and rural residential and open space to the north, east and west (Chelsea).

The Island Forest Nature Reserve and Seaview Game Park (protected areas) are situated to the west and east of erf 590 respectively. Evidence of historical and possibly current quarrying activities is present north of Farm 28/1.

#### 2.1.1 Development Option 1

Option 1 entails the subdivision of Portions of Erven 237, 238, 240 and 590 Clarendon Marine and Portions 10 and 31 of Farm 28, Seaview into 478 residential sites ranging in size from 250m<sup>2</sup> to 500m<sup>2</sup>, 4 community sites, 2 waste transfer station sites and 20 Public Open Space sites as indicated on **Figure 2** overleaf.

#### 2.1.2 Development Option 2

Option 2 entails the subdivision of Portion 1 of the Farm Seaview 28 into 1 125 residential sites ranging in size from 250m<sup>2</sup> to 500m<sup>2</sup>, 2 school sites, 4 creche sites, 3 business sites, 1 social site, 6 church sites, a waste transfer site and a taxi rank as indicated on **Figure 3** overleaf.



## 2.2 CURRENT AND PROPOSED LAND USE RIGHTS

Portion 1 of Farm 28 is zoned for agricultural purposes (Agriculture Zone 1). Approximately 76 ha in the eastern portion of the site has been cleared and is mostly used as pasture for horses. Existing structures include an informal landing strip and two hangers, a single dwelling for the owner and a store. The remainder of the site (66 ha) is unutilised and consists largely of fynbos-thicket vegetation with alien infestation in places.

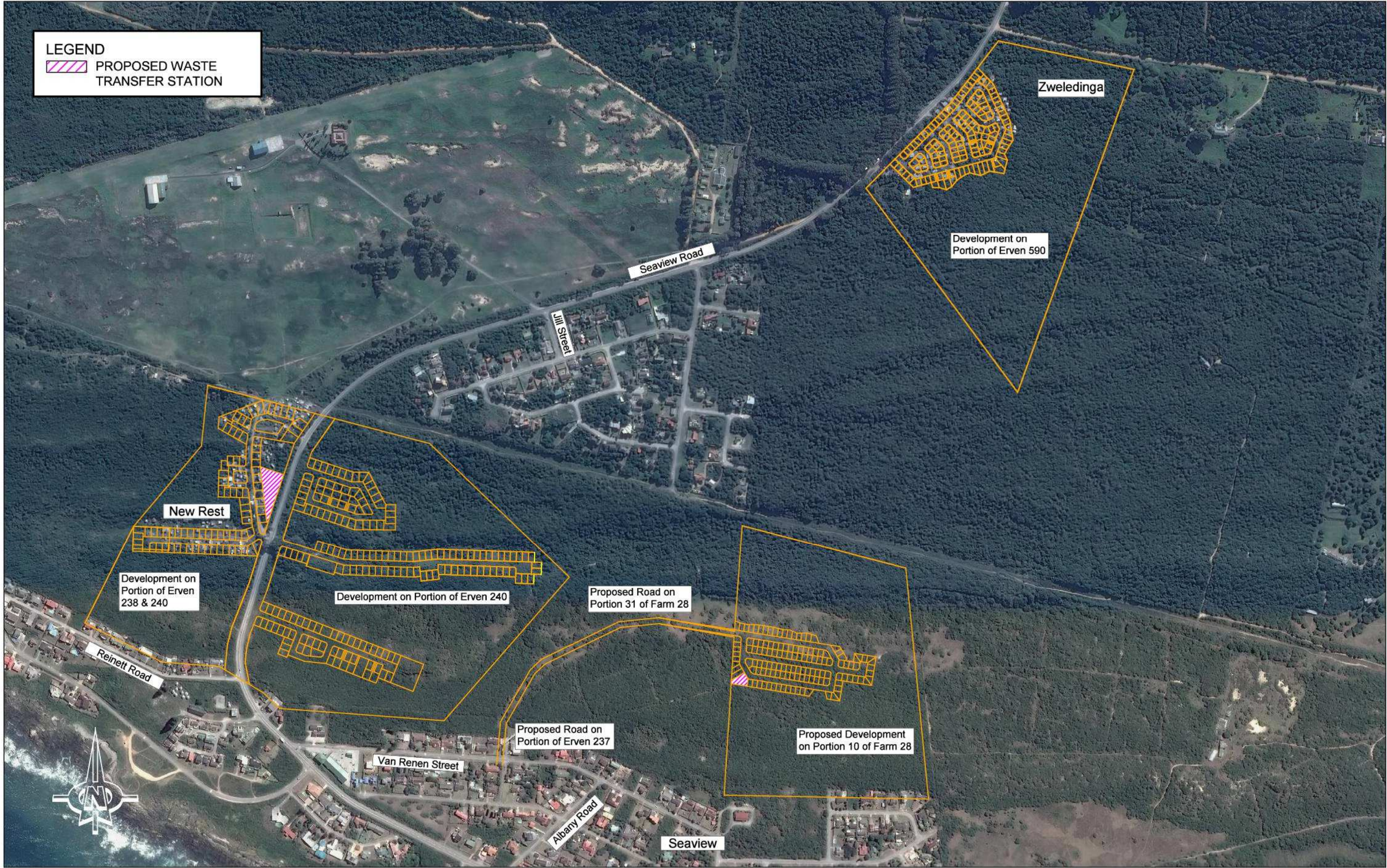
Erven 238 and 240 are largely undeveloped and covered by forest. A small portion of land has been transformed largely due to the presence of the New Rest informal Settlement which stretches over both properties. Erf 590 similarly is largely covered by forest apart from the Zweeledinga informal settlement which is situated in the western corner of the site.

Portion 10 of Farm 28 is currently undeveloped with a transformed area of approximately 11 ha. The property is dominated by thicket and fynbos.

Portions of Erven 238, 240 and 590 Clarendon Marine and Portion 10 of Farm 28, Seaview will be zoned for residential, Special Purposes / Community, Public Open Space (Active), Public Open Space (Passive) and Transportation 1 purposes.

Portion 10 of Farm 28, Seaview will be zoned for Residential, Special Purposes / Community, Business 1, Public Open Space and Transportation 1 purposes.





**LEGEND**  
 PROPOSED WASTE TRANSFER STATION

FOR REPORT

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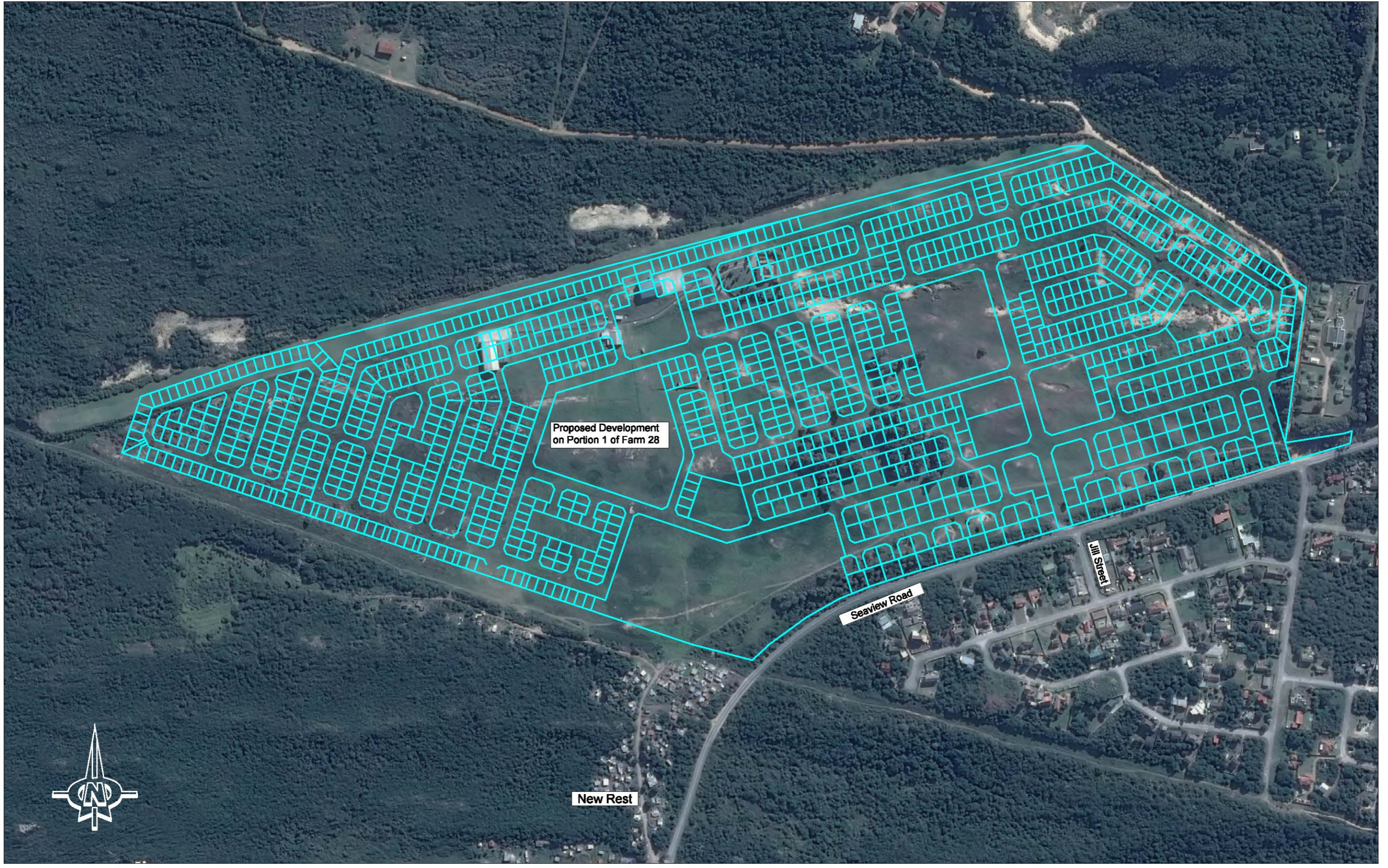
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UMHLA / DATE	UMHLA / DATE

IPROJETI / PROJECT	INANI LESVUMELWANO CONTRACT NO.
PROPOSED LOW COST HOUSING DEVELOPMENTS ON PTNS OF ERVEN 237, 238, 240 CLARENDON MARINE AND PTNS 1 & 10 OF FARM 28, SEAVIEW	INANI LOMZOBO DWG. NO. 1406-P-002
UMZOBO/INKCAZA / DWG DESCRIPTION	FIGURE 2 : DEVELOPMENT OPTION 1

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PROPOSED LOW COST HOUSING DEVELOPMENTS ON PTNS OF ERVEN 237, 238, 240 CLARENDON MARINE AND PTNS 1 & 10 OF FARM 28, SEAVIEW	INANI LOMZOBO DWG. NO. 1406-P-002
UMZOBO/INKCAZA / DWG DESCRIPTION	FIGURE 2 : DEVELOPMENT OPTION 1



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UMHLA DATE	MAR 2017

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 PROPOSED LOW COST HOUSING DEVELOPMENTS ON PTNS OF ERVEN 237, 238, 240 CLARENDON MARINE AND PTNS 1 & 10 OF FARM 28, SEAVIEW  
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 FIGURE 3 : DEVELOPMENT OPTION 2

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 1408-P-003

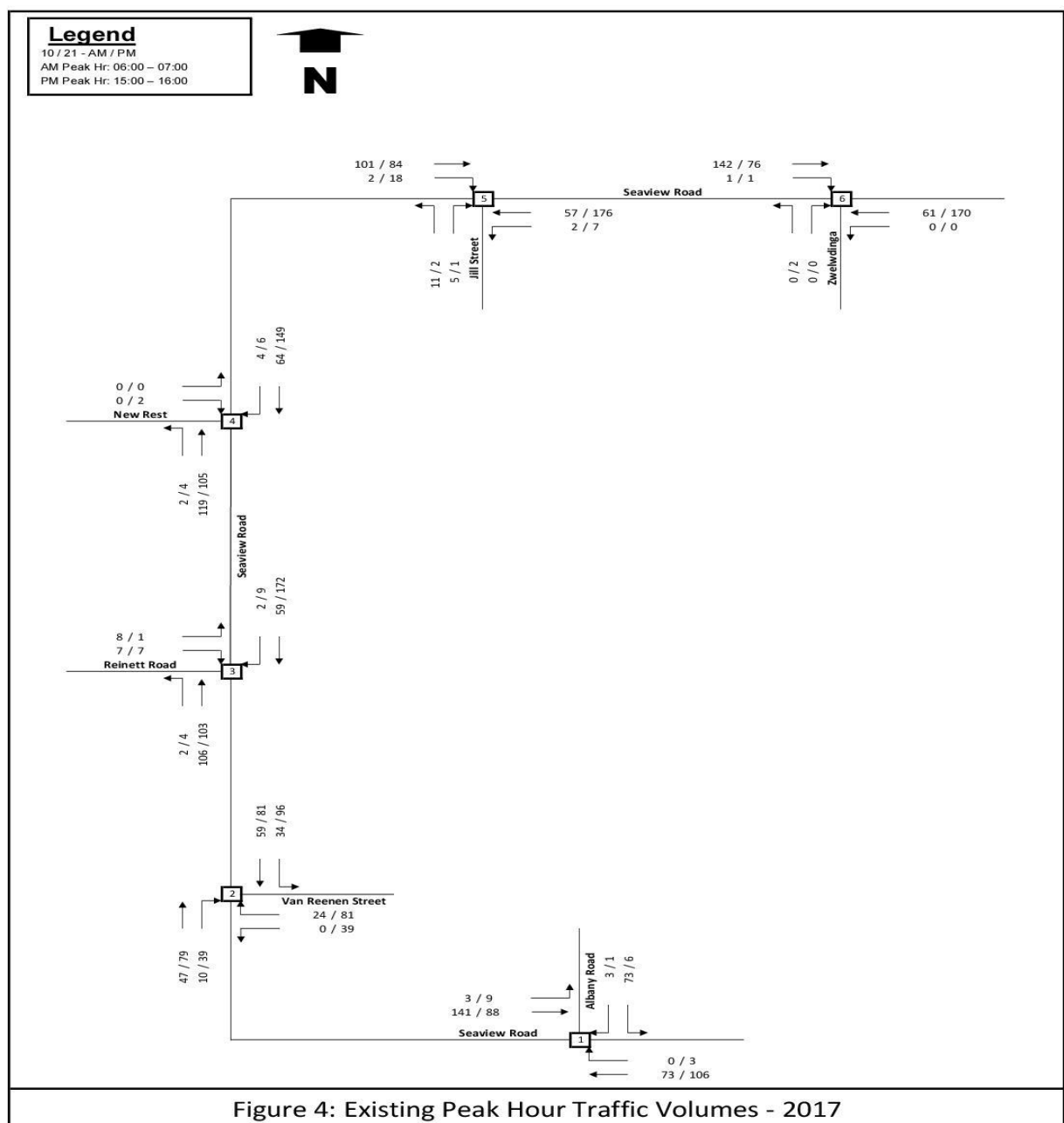
### 3 DATA COLLECTION

#### 3.1 PEAK HOUR TRAFFIC VOLUMES

Peak hour traffic turning movement counts were conducted on Tuesday 28 February 2017 at the following junctions as well as accesses to the existing informal settlements on Seaview Road:

- Seaview Road / Jill Street
- Seaview Road / Reinett Road
- Seaview Road / Van Renen Street
- Seaview Road / Albany Street

The detailed survey data is attached as **Annexure A** and summarised on **Figure 4** below.



### 3.2 DAILY TRAFFIC VOLUMES

As this study will also analyse the impact of the development in 2025, historical daily traffic volume data at a count station on Seaview Road just south of Kragga Kamma Road (Station 02013) was sourced from the Eastern Cape Department of Transport.

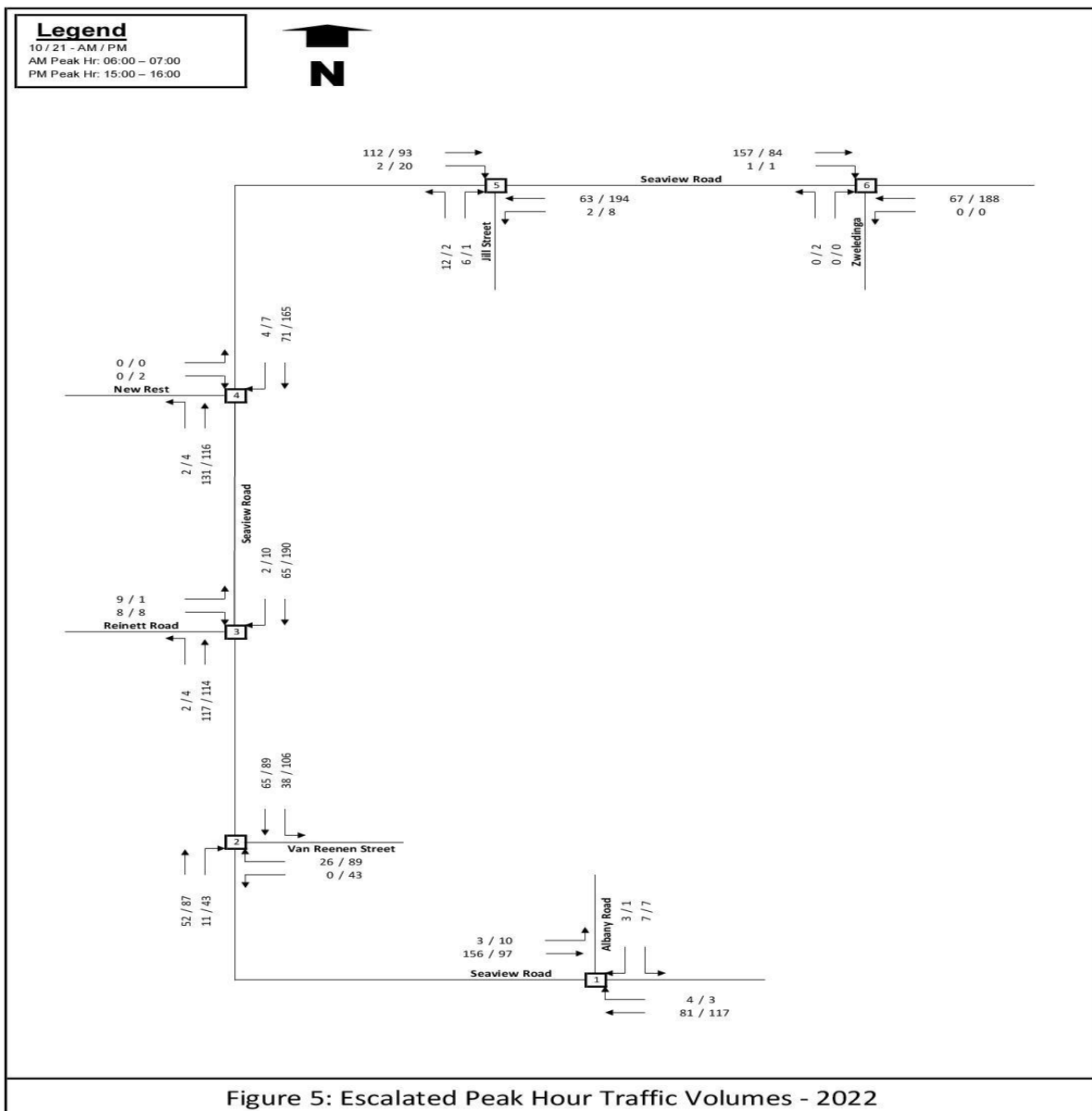
The data, attached as **Annexure B** and summarised in **Table 1** below indicates that between 2006 and 2015, traffic growth was 1.35% per annum. Given that this station is some distance from Seaview it is recommended that an annual growth rate of 2% per annum be used for this study.

**Table 1: ADT and Annual Growth Rates**

Stn.	Description	Authority	2006	2009	2011	2012	2015	% p.a.
2013	MR0422 – South of Kragga Kamma	ECDOT	2088	2197	-	1948	2356	1.35

Source: ECDOT

It is assumed that traffic will escalate at a similar rate than the historical growth rate. The existing 2017 surveyed volumes (indicated in **Figure 4**) were thus escalated by 2% per annum to reflect the 2025 development horizon background traffic volumes and are summarised on **Figure 3** overleaf.



### 3.3 ROAD NETWORK

**Seaview Road (MR422)** is a proclaimed provincial Class 3 road that links the south western suburbs of Chelsea, Seaview and Collen Glen with the N2. Through the Seaview Village the road consists of a 3.7m traffic lane in each direction with a 2.5m wide surfaced shoulder. The posted speed limit in the village and up to the junction with Lower Seaview Road north of Zweledinga is 60km/h. Through Seaview the road is in a fair condition while north of Seaview it can be categorised as poor.

On the north approach into Seaview the shoulders are gravel. Vegetation encroaches onto the road reserve restricting shoulder sight distance along sections of the road.



**Reinett Road** is a Class 5 residential access street that serves residential properties in Seaview. The road is surfaced and 6m wide.

**Jill Street** is a Class 5 residential access street that serves residential properties in Clarendon Marine. The road is surfaced and 6m wide.

**Van Renen Street** is a Class 5 residential access street that serves residential properties and a commercial node in Seaview. The road is surfaced and 6m wide

**Albany Street** is a Class 5 residential access street that serves residential properties in Seaview. The road is surfaced and 6m wide.

**Aliwal Road** is a Class 5 residential access street that serves residential properties in Seaview. The road is surfaced and 6m wide.



The existing road network is indicated on **Figure 6**.

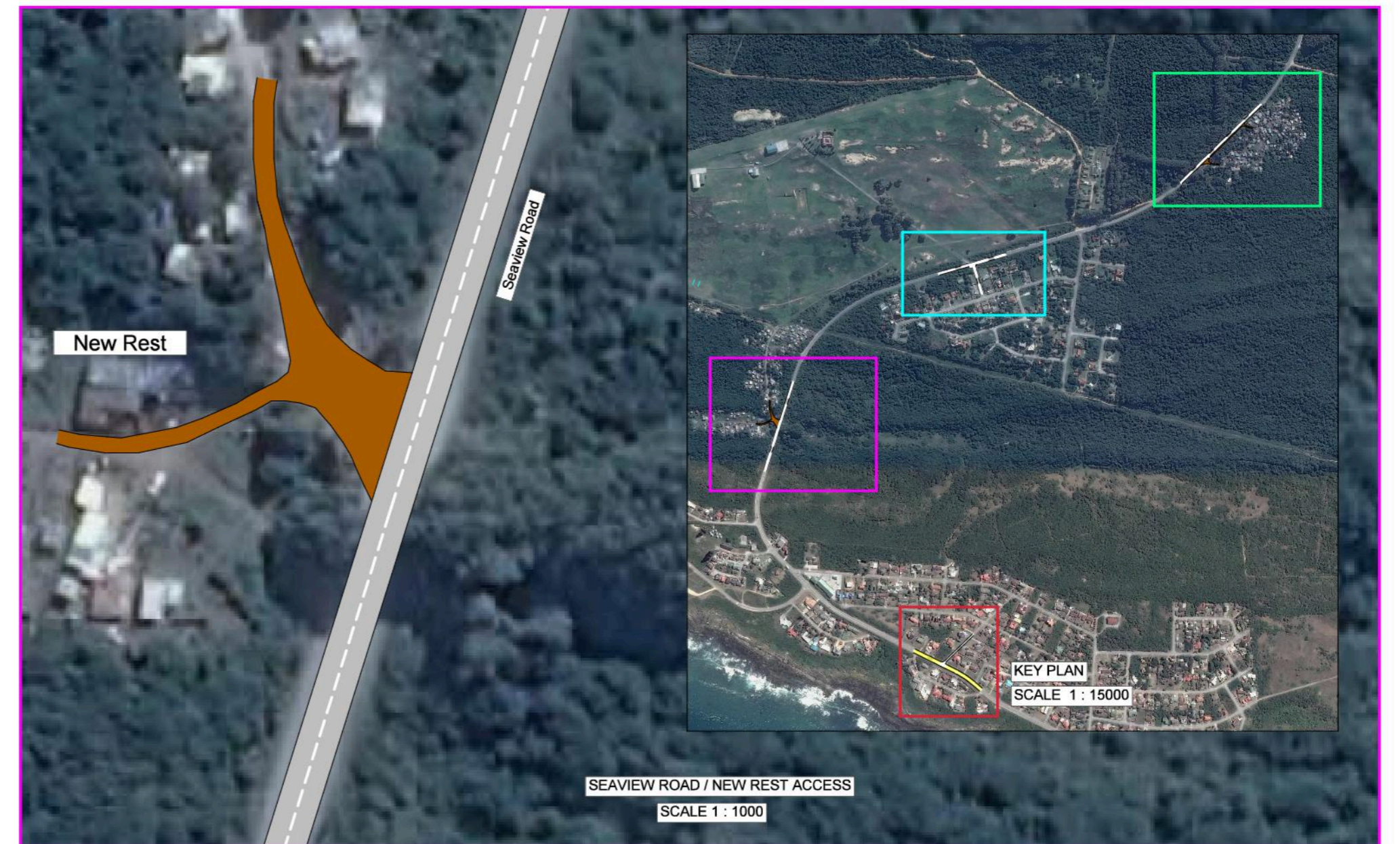
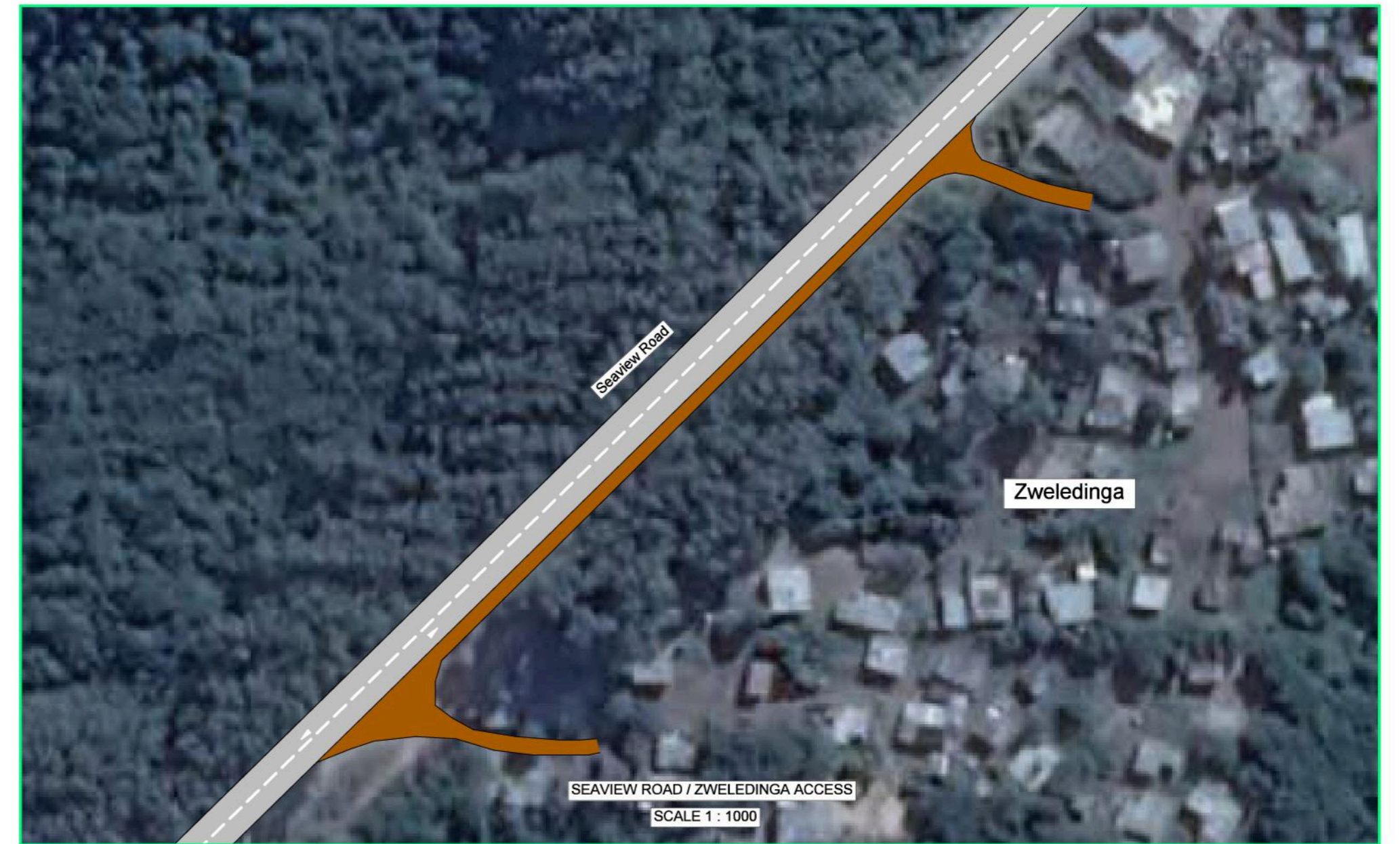
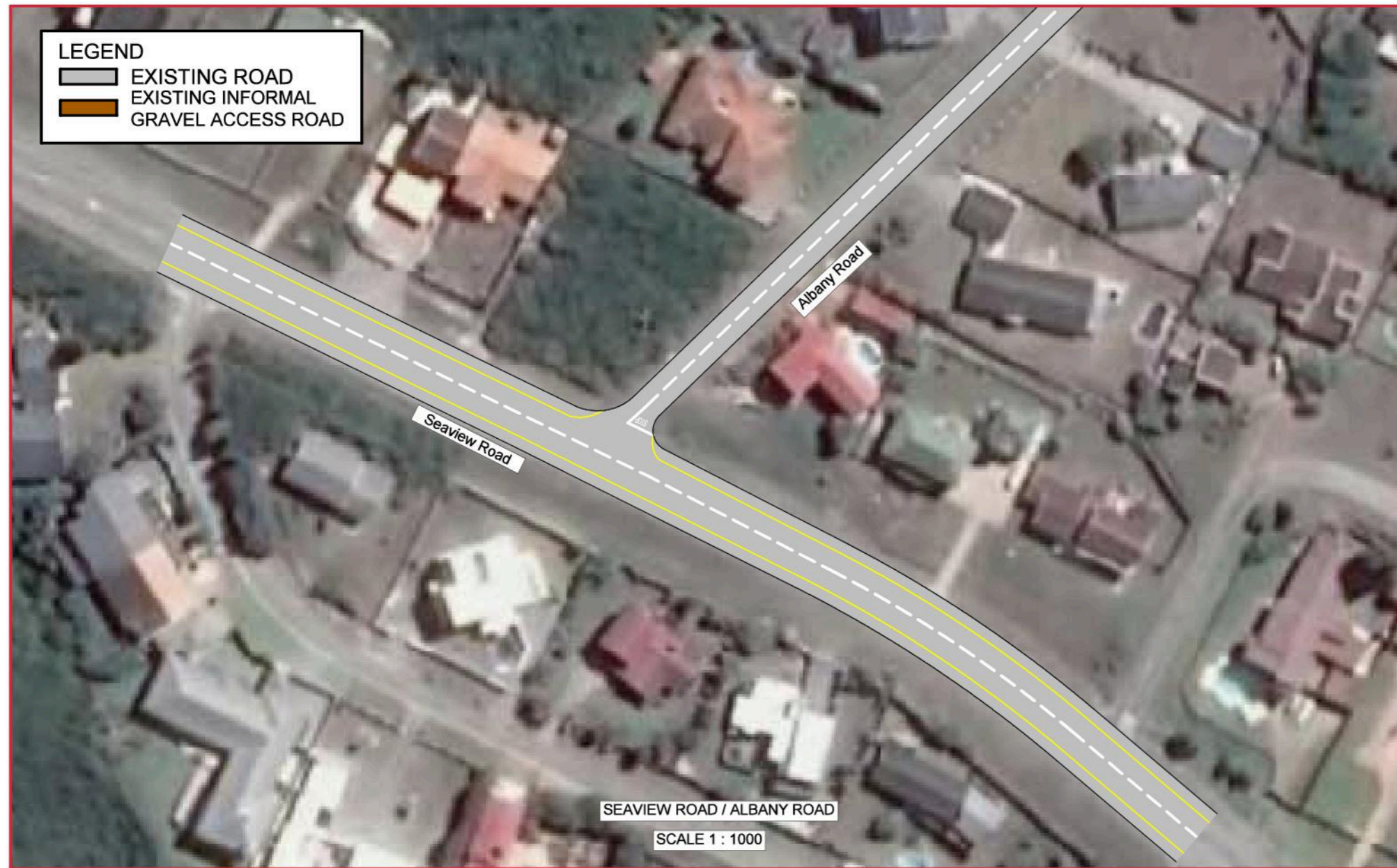
### 3.4 PUBLIC TRANSPORT

Public transport services are provided by unscheduled minibus-taxi services that operate from the entrances to the New Rest and Zweledinga settlements. At both locations, vehicles use the gravel shoulder causing damage to the surfaced road edge. No formal and safe public transport facilities with related amenities for operators and passengers are in place at these locations.

### 3.5 NON-MOTORISED TRANSPORT

Despite the majority of residents needing to walk to their destinations, there are no pedestrian facilities in place in the vicinity, nor is there sufficient warning advancing approaching motorists of the presence of vulnerable road users.





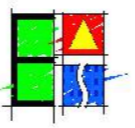
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FIGURE 6 : EXISTING ROAD LAYOUT

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### 3.6 COLLISION STATISTICS

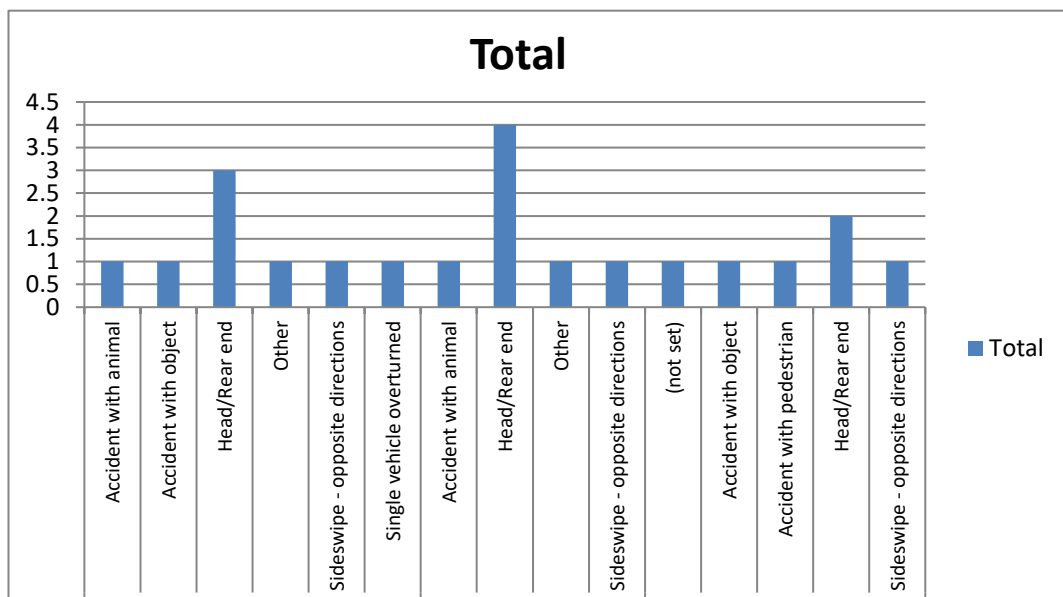
Collision statistics recorded by the NMBM on Seaview Road and junctions with intersections Road in respect of Options 1 and 2 and including Van Renen, Aliwal and Albany Roads in respect of Option 1 were sourced from the NMBM for the period between January 2014 and December 2016.

#### 3.6.1 Option 1

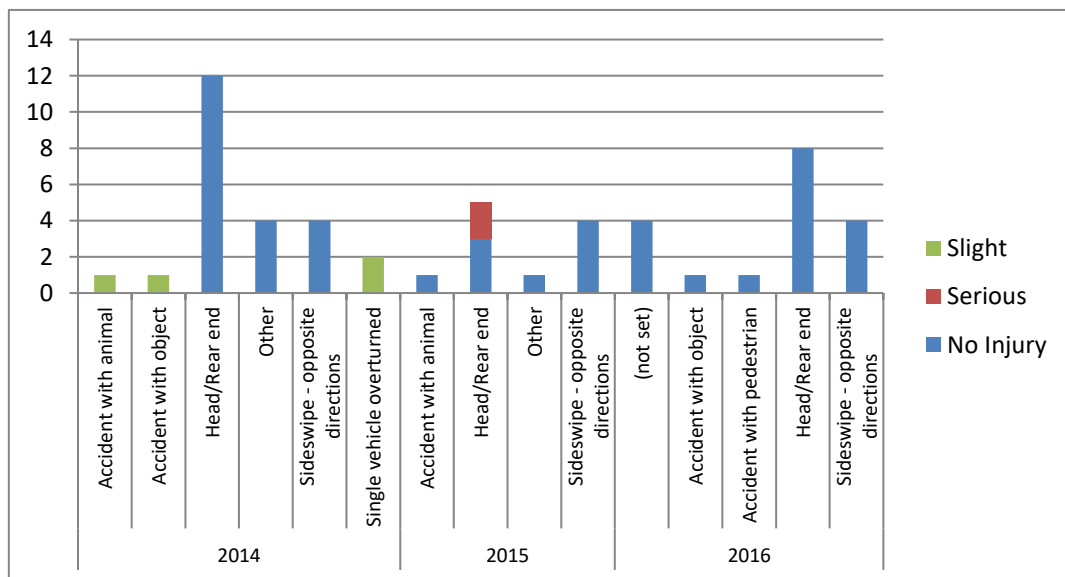
The collision statistics indicate that 21 collisions occurred during this period along Seaview, Van Renen, Albany and Aliwal Roads. Of the 21 collisions, 9 were head/rear-end collisions, 3 were sideswipe collisions, 4 were collisions with animals or objects, 1 vehicle overturned and 1 was pedestrian related. Details of 3 collisions were not recorded.

Two serious injuries were sustained in a rear-end collision. Four slight injuries were sustained, two in two collisions with an animal and an object and two in a vehicle that overturned.

The number of collisions and casualties by accident type are indicated in **Figures 7 and 8** below and overleaf respectively detailed accident data attached as **Annexure C**.



**Figure 7: Collision Data – Option 1**



**Figure 8: Casualties – Option 1**



### 3.6.2 Option 2

The collision statistics indicate that 15 collisions occurred during this period along Seaview Road. Of the 15 collisions, 6 were head/rear-end collisions, 2 were sideswipe collisions, 3 were collisions with animals or objects, 1 vehicle overturned and 1 was pedestrian related. Details of 2 collisions were not recorded.

Two serious injuries were sustained in a rear-end collision. Four slight injuries were sustained, two in two collisions with an animal and an object and two in a vehicle that overturned.

The number of collisions and casualties by accident type are indicated in **Figures 9 and 10** below and the detailed accident data attached as **Annexure C**.

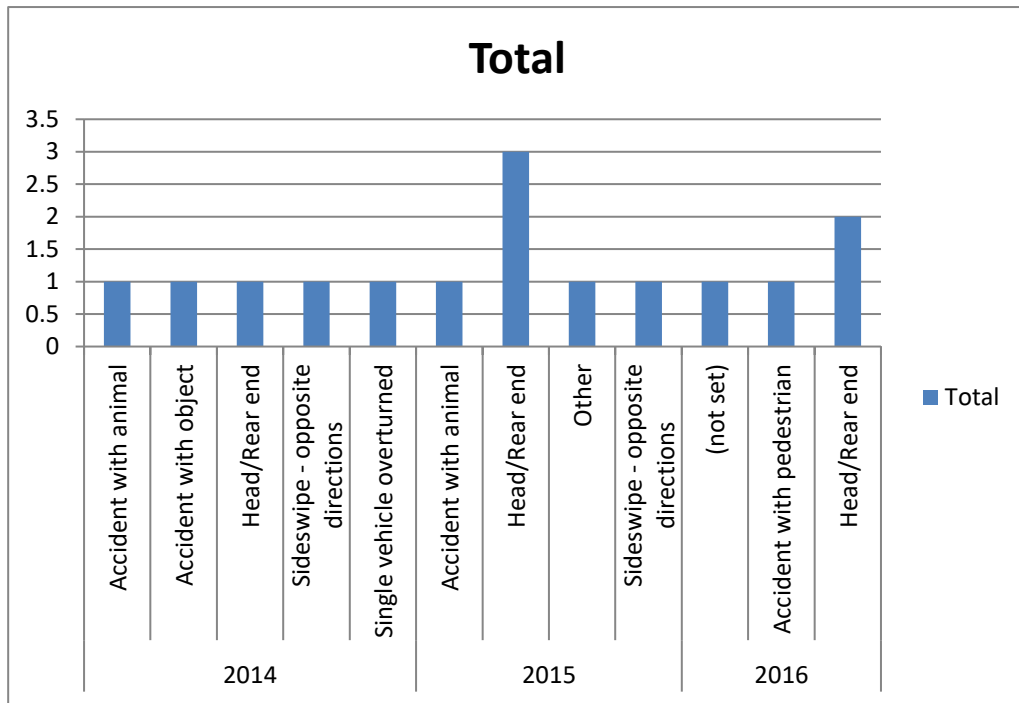


Figure 9: Collision Data – Option 2

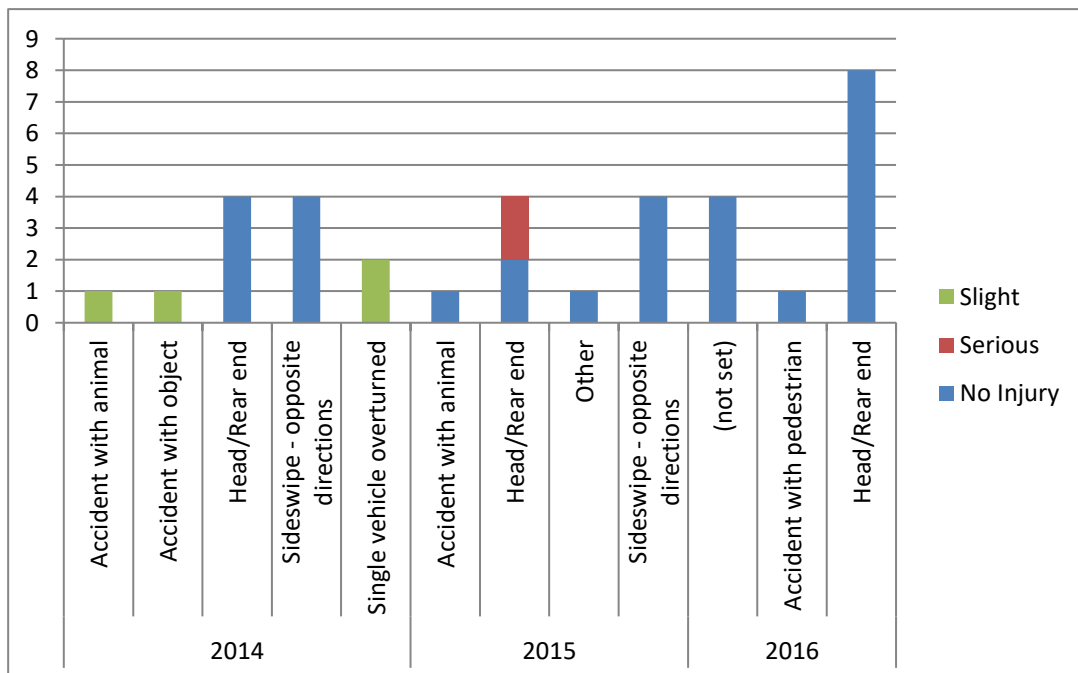


Figure 10: Casualties– Option 2



### 3.7 SPATIAL DEVELOPMENT FRAMEWORK

**Figure 11** below is an extract of the NMBM SDF <sup>(4)</sup>. The proposed development sites are located within the Seaview and Clarendon Marine urban edge permitting residential development.

The proposed development is thus in line with the intentions of the SDF.



**Figure 11: Extract of NMBM SDF**

## 4 CAPACITY ANALYSIS – BEFORE DEVELOPMENT

**Level of Service (LOS)** is defined as the operating condition that may occur at an intersection when it accommodates various traffic volumes. LOS is a qualitative measure of the effect of speed, travel time, traffic interruptions, freedom to manoeuvre, safety, driving comfort and convenience, and operating costs. **LOS D** is considered an acceptable design standard. The LOS applicable to intersections under various control conditions, as defined in the **Highway Capacity Manual** <sup>(6)</sup> are indicated in **Table 2** below:

**Table 2: Level of Service definitions for Vehicles (Highway Capacity Manual <sup>(6)</sup> method)**

Level of Service	Control delay per vehicle in seconds (d) (including geometric delay)	
	Signals and Roundabouts	Stop Signs and Yield Signs
A	$d \leq 10$	$d \leq 10$
B	$10 < d \leq 20$	$10 < d \leq 15$
C	$20 < d \leq 35$	$15 < d \leq 25$
D	$35 < d \leq 55$	$25 < d \leq 35$
E	$55 < d \leq 80$	$35 < d \leq 50$
F	$80 < d$	$50 < d$

The traffic situation was analysed in order to determine the Level of Service at which the junction would operate before development occurs under existing traffic conditions. The capacity analysis was undertaken using the **SIDRA Intersection** <sup>(7)</sup> capacity analysis method, but applying the **Highway Capacity Manual** <sup>(6)</sup> gap acceptance criteria for unsignalised intersections where applicable. The results are shown in **Table 3** below and the detailed SIDRA output sheets attached as **Annexure C**.

**Table 3: Results of Intersection Capacity Analysis – 2018 Before Development**

Intersection	Delay (s)		V/C		LOS	
	AM	PM	AM	PM	AM	PM
Seaview / Albany	0.5	0.6	0.077	0.058	A*	A*
Seaview / Van Renen	2.5	4.3	0.05	0.125	A*	A*
Seaview / Reinett	0.8	0.5	0.057	0.097	A*	A*
Seaview / Jill	0.9	0.7	0.055	0.097	A*	A*

\* - **SIDRA Intersection** <sup>(7)</sup> does not calculate intersection LOS for stop controlled intersections. The LOS indicated is sourced from the **Highway Capacity Manual** <sup>(6)</sup> (**Table 1** above).

As can be seen from the results contained in **Table 3**, no capacity problems are experienced at the affected intersections.

Furthermore, given that volumes recorded at the settlement entrances are negligible no analysis was conducted at these intersections.

## 5 TRIP GENERATION AND DISTRIBUTION

### 5.1 TRIP GENERATION

**TMH 17 Volume 1 - South African Trip Data Manual** <sup>(2)</sup> recommends peak hour trip generation rates of 1 vehicle trip per residential unit for weekday AM and PM peak hours.

**TMH 17** also allows for a reduction in generated trips based on a variety of factors such as car ownership, mixed use development and location adjacent to public transport nodes. In this case a combined reduction of 69.4% would be applied to the generated trips based on car ownership in the area being very low (60%), location of the development adjacent to an existing or proposed public transport node/corridor (15%) and whether the development comprises mixed land uses that reduce the need for vehicle trips (10%).

Thus effectively in a low cost development of this nature, where car ownership is low, residents use either public transport or walk to work and where community facilities (schools, crèches, shops and churches) are integrated into the development the effective trip generation rate is 0.306 vehicle trips per residential unit.

#### 5.1.1 Development Option 1

For Option 1, the development proposals essentially formalise the current informal settlements as well as develop additional sites in three settlements in the New Rest settlement. Existing vehicle trips were recorded at the entrances to the existing informal settlements. A total of 267 sites are proposed in four areas in New Rest as well as 76 sites in Zweledinga and 132 sites to the east of New Rest. Given the lack of vehicular activity at the existing settlements, it is unlikely that additional vehicle trips would be generated. However, the trip generation rate calculated above has been used to determine the possible peak hour vehicle trips entering and exiting each component of option 1 in order to simulate the worst case scenario.

The 132 erven proposed on erf 237 and ptn of Ptn 10 of Farm 28 would generate an additional 41 peak hour vehicle trips, the 267 erven in New Rest 82 peak hour vehicle trips and the 76 erven at Zweledinga 23 peak hour vehicle trips with an in : out split of 25:75 during the AM peak hour and 70:30 in the PM peak hour.

#### 5.1.2 Development Option 2

For Option 2, there are a number of business, school and community sites in addition to the proposed 1125 residential sites. It is submitted that trips generated by these land uses would be shared with the residential uses. It is further submitted that this option would have a greater impact on traffic operations simply because it accommodates more residential sites.

The 1125 erven proposed would generate 334 peak hour vehicle trips with an in : out split of 25:75 during the AM peak hour and 70:30 in the PM peak hour.

For this option, the existing trips generated by the informal settlements have been relocated to the proposed access at the Jill Street intersection.

These vehicle trips have then been included in the generated trips.

### 5.2 TRIP DISTRIBUTION

Based on the observed traffic volumes and taking into account the location of the developments relative to employment opportunities in the surrounding areas of Seaview, Chelsea and Colleen Glen, the following distribution has been assumed for trips generated by the development:

- 40% to and from the north via Seaview Road; and
- 60% to and from the south via Seaview Road.

The generated peak hour trips for development Options 1 and 2 are indicated on **Figures 12** and **13** respectively overleaf.



The generated trips added to the weekday AM and PM peak hour volumes for the 2017 and 2022 development horizons are indicated on **Figures 14** and **15** respectively for Option 1 and **Figures 16** and **17** respectively for Option 2.

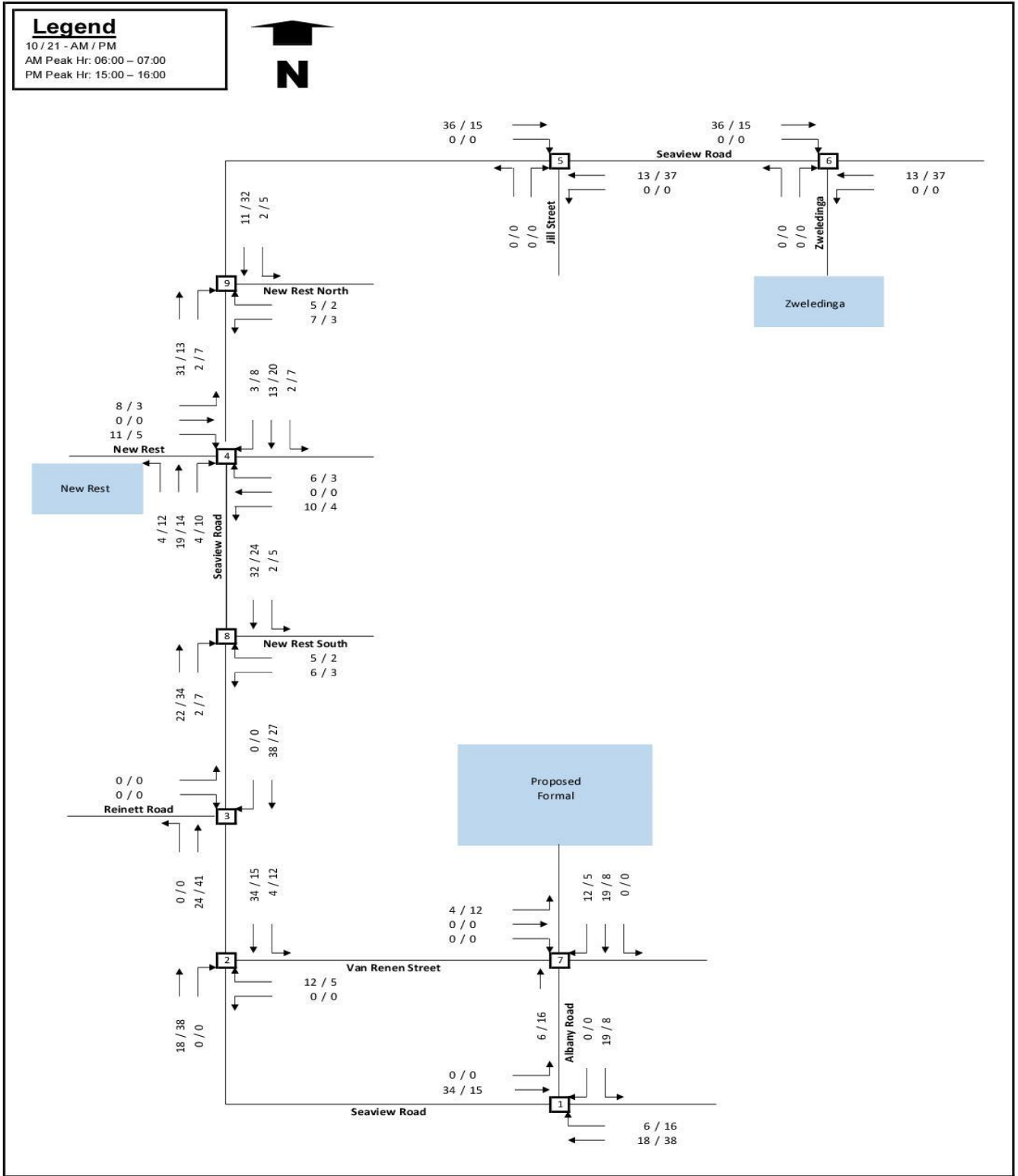


Figure 12: Generated Peak Hour Traffic Volumes - Option 1

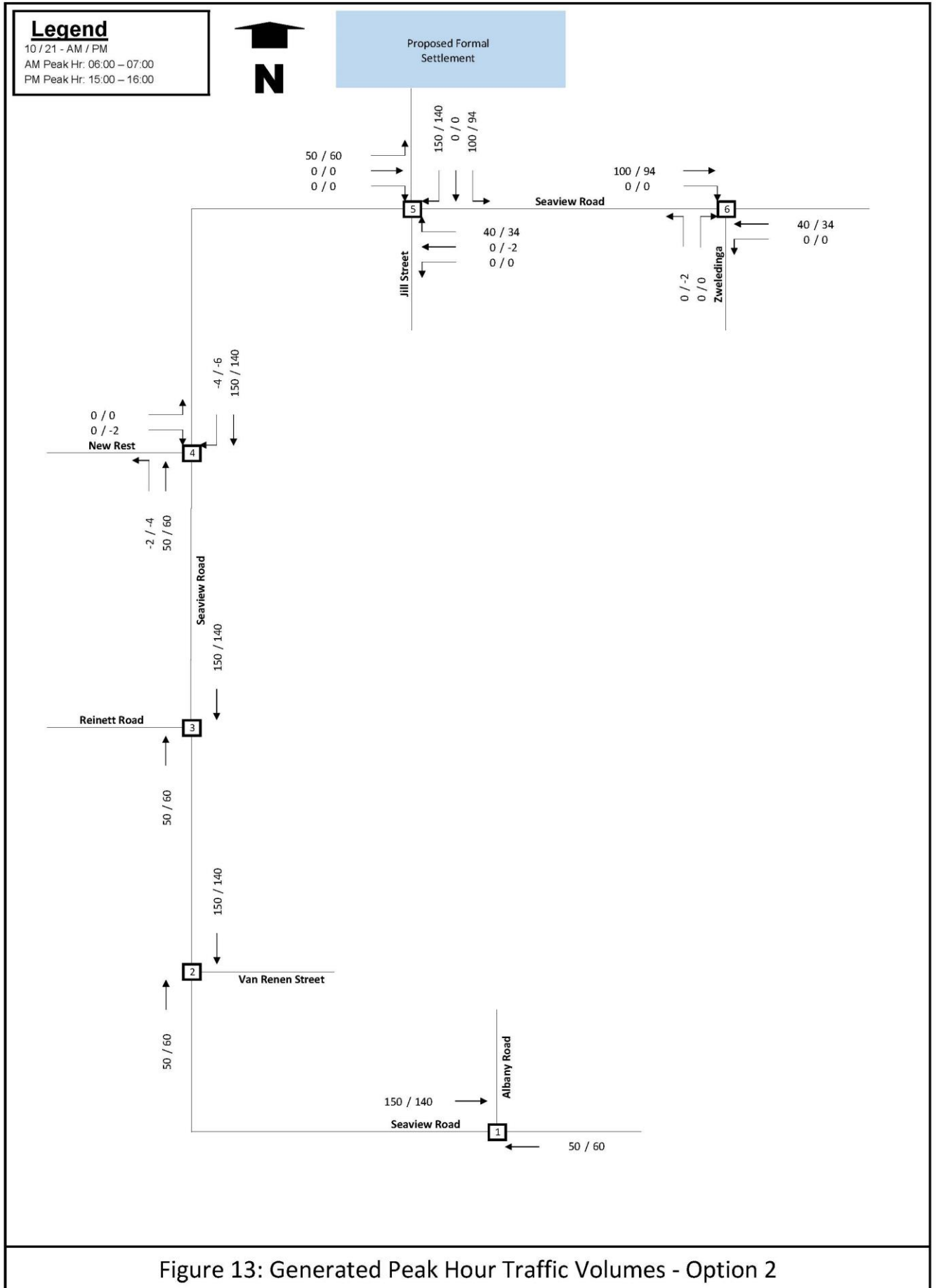


Figure 13: Generated Peak Hour Traffic Volumes - Option 2

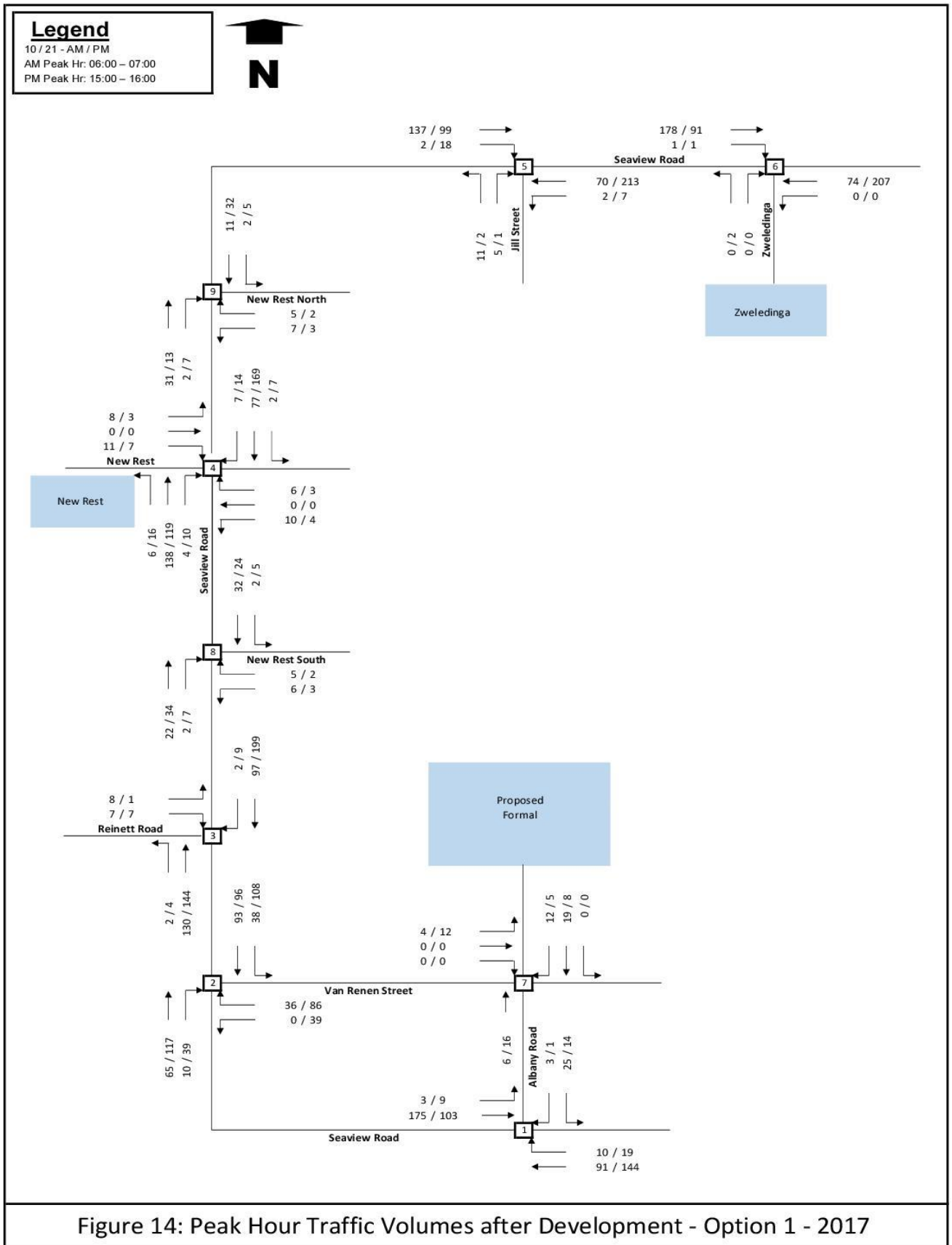


Figure 14: Peak Hour Traffic Volumes after Development - Option 1 - 2017

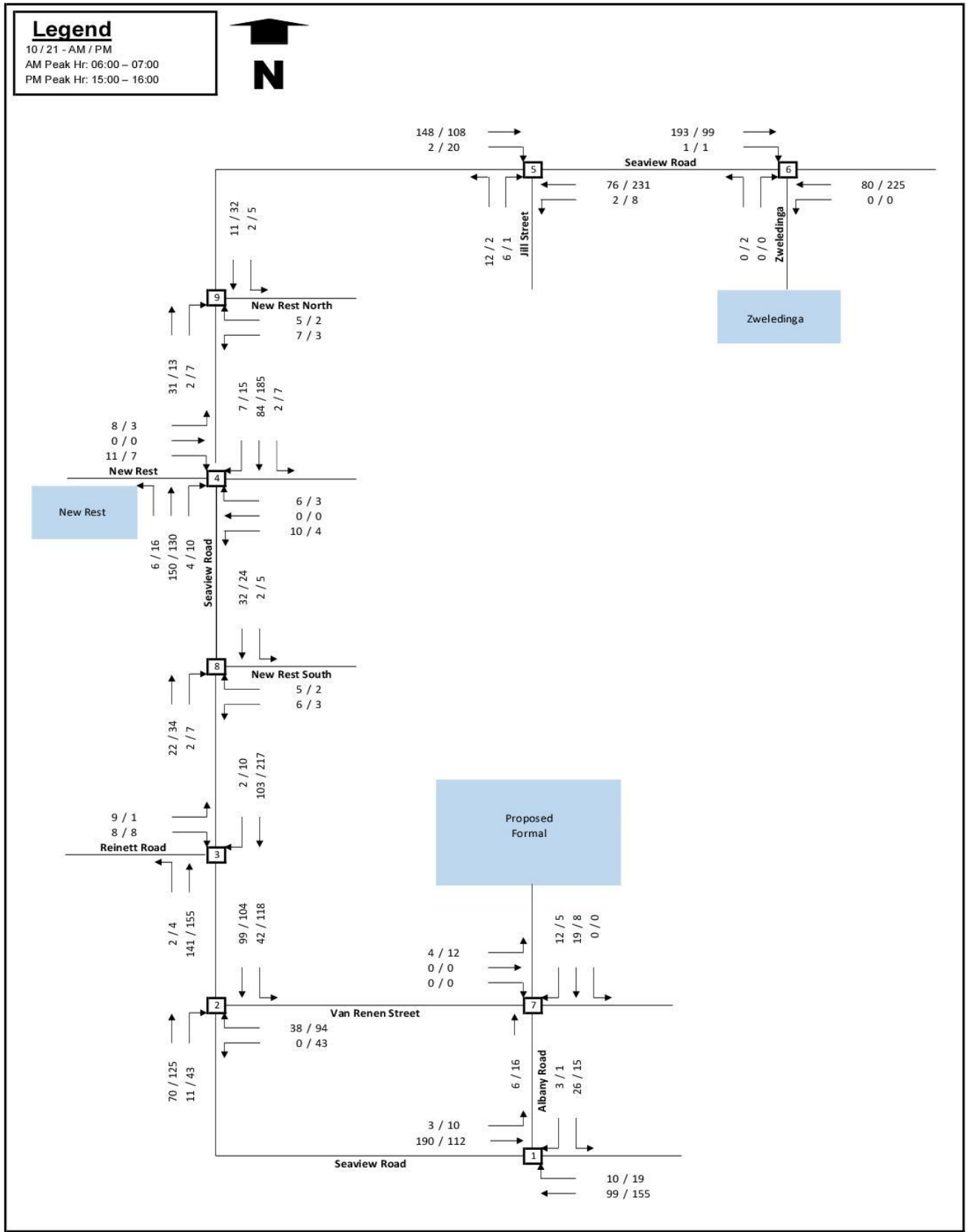


Figure 15: Peak Hour Traffic Volumes after Development - Option 1 - 2022

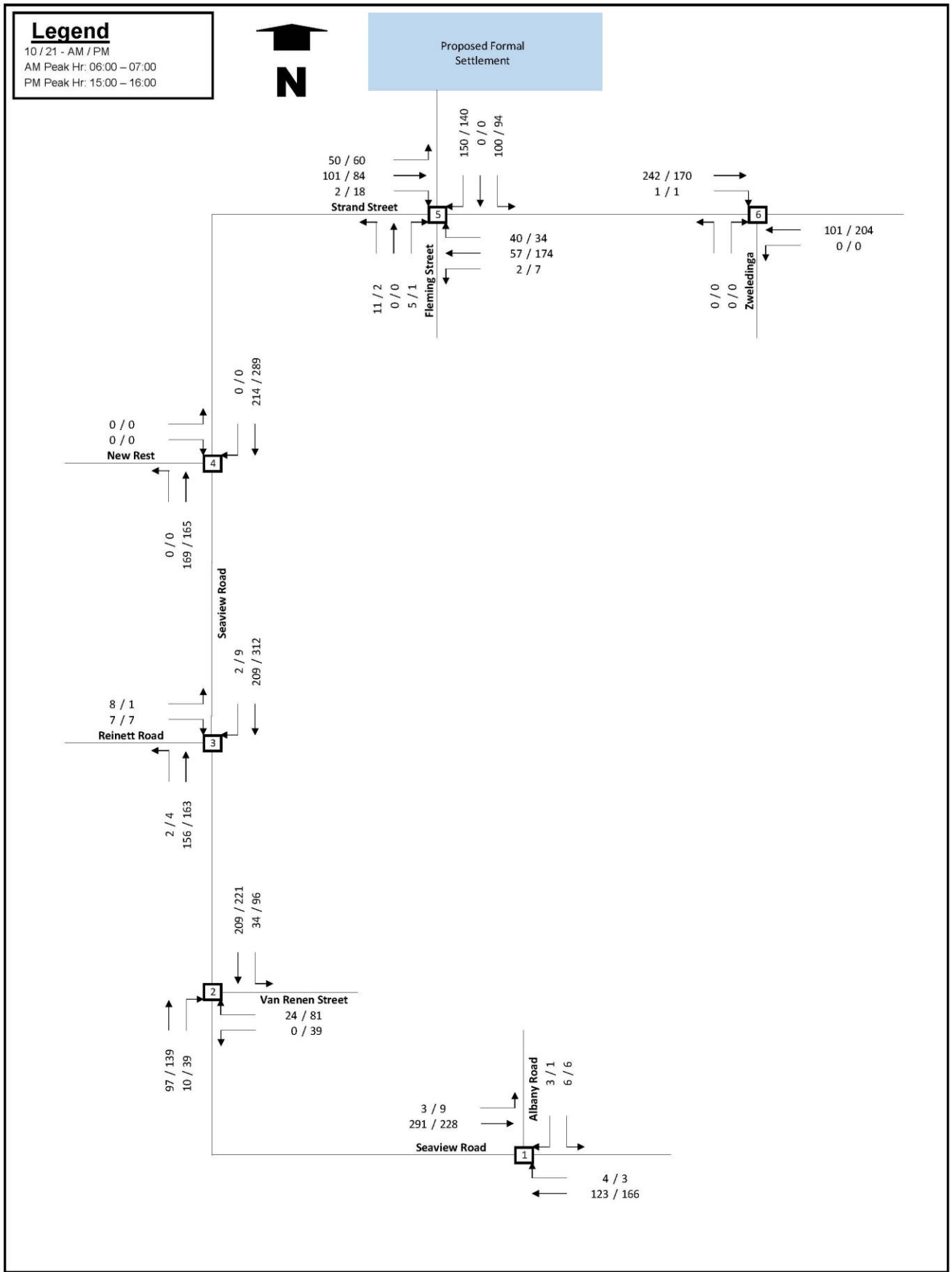


Figure 16: Peak Hour Traffic Volumes after Development - Option 2 - 2017



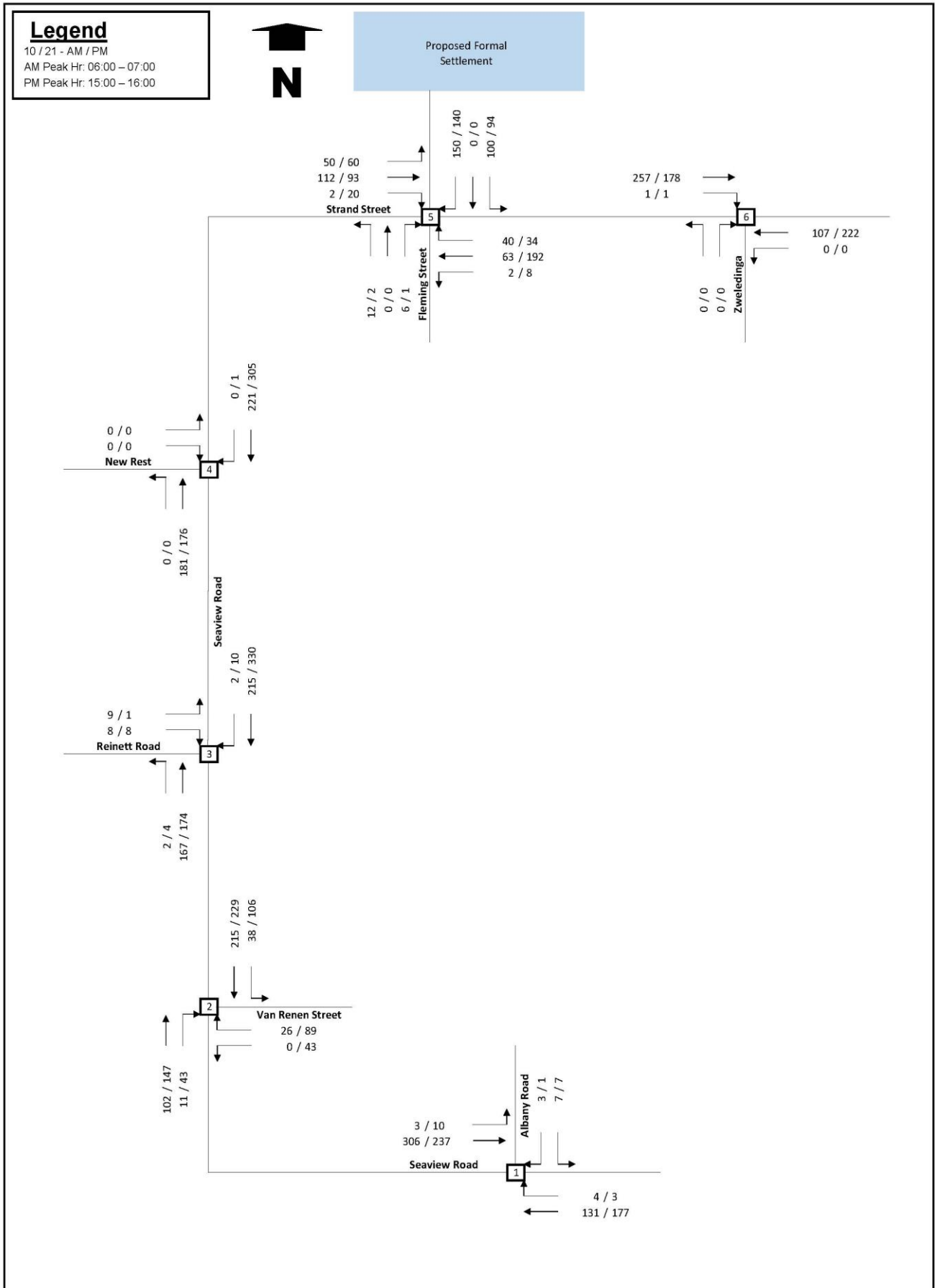


Figure 17: Peak Hour Traffic Volumes after Development - Option 2 - 2022

## 6 PROPOSED ACCESS ARRANGEMENTS

### 6.1 DEVELOPMENT OPTION 1

Access to the existing New Rest and Zweledinga settlements will be formalised more or less in the existing locations. Two additional access points are proposed to serve two new portions of the proposed New Rest erven on the eastern side of Seaview Road and to the north and south of the existing new Rest Access point. These intersections are approximately 150m from the existing access, thus relatively close to each other as intersection spacing should be in excess of 200m.

Shoulder sight distance was assessed in terms of **TRH 17: Geometric Design of Rural Roads** <sup>(8)</sup>. TRH17 recommends that a single unit vehicle entering a 7.5m wide road with a design speed of 60kph turning left or right requires shoulder sight distance of 175m. The requirement for a passenger car is 120m.

Access to the proposed development on Ptn erf 237 will be gained from Seaview Road via existing intersections with Albany or Van Renen Roads and then via Aliwal Road to access the proposed development.

Site observations indicate that sight distance requirements can be achieved in both directions from the existing Zweledinga and New Rest access points. Sight distance at the proposed north New Rest access is marginal on the north (southbound) approach while at the proposed south New Rest access sight distance is marginal to the south (northbound).

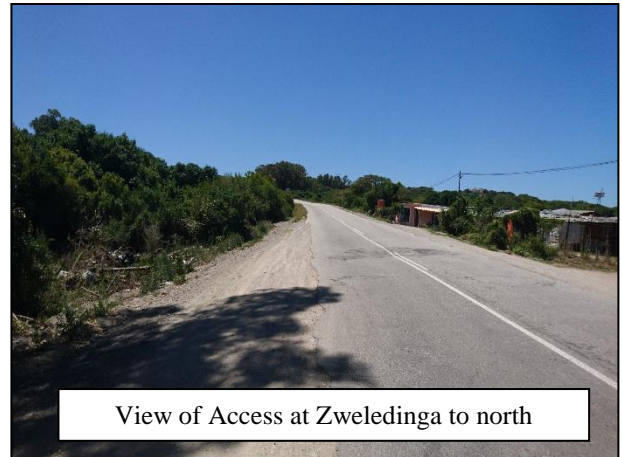
The proposed access arrangements for Option 1 are indicated on **Figure 18**.

### 6.2 DEVELOPMENT OPTION 2

Access to Option 2 will be gained from Seaview Road via the existing intersection with Jill Street.

Site observations indicate that sight distance requirements can be achieved in both directions.

The proposed access arrangements for Option 2 are indicated on **Figure 19**.



View of Access at Zweledinga to north



View of Access at New Rest to north



View from Jill Street access to north

## 7 CAPACITY ANALYSIS – AFTER DEVELOPMENT – OPTION 1

Capacity analysis was undertaken using the **SIDRA Intersection** <sup>(7)</sup> capacity analysis method, but applying **Highway Capacity Manual** <sup>(6)</sup> gap acceptance criteria for unsignalised intersections where applicable.

### 7.1 2017 HORIZON

After adding generated traffic volumes to the background peak hour volumes, the traffic situation was analysed in order to determine the LOS at which the intersections would operate after development occurs for the 2017 development horizon. The results are shown in **Table 4** below and the detailed SIDRA output sheets attached as **Annexure E**.

Note that analysis has only been conducted at the Main New Rest settlement entrances as no additional erven are being established.

**Table 4: Results of Intersection Capacity Analysis – Option 1 - 2017 After Development**

Intersection	Delay (s)		V/C		LOS	
	AM	PM	AM	PM	AM	PM
Seaview / Albany	0.8	0.8	0.095	0.084	A*	A*
Seaview / Van Renen	2.2	3.9	0.070	0.135	A*	A*
Seaview / Reinett	0.6	0.4	0.067	0.109	A*	A*
Seaview / New Rest (Main)	1.7	1.4	0.076	0.100	A*	A*
Seaview / Jill	0.7	0.6	0.058	0.114	A*	A*

\* - **SIDRA Intersection** <sup>(7)</sup> does not calculate intersection LOS for stop controlled intersections. The LOS indicated is sourced from the **Highway Capacity Manual** <sup>(6)</sup> (**Table 1** above).

As can be seen from the results contained in **Table 4**, the additional traffic generated by the development has minimal impact on operation of the affected intersections.

### 7.2 2022 HORIZON

After adding generated traffic volumes to the background peak hour volumes, the traffic situation was analysed in order to determine the LOS at which the intersections would operate after development occurs for the 2022 development horizon. The results are shown in **Table 5** below and the detailed SIDRA output sheets attached as **Annexure F**.

**Table 5: Results of Intersection Capacity Analysis – Option 1 – 2022 After Development**

Intersection	Delay (s)		V/C		LOS	
	AM	PM	AM	PM	AM	PM
Seaview / Albany	0.7	0.8	0.103	0.090	A*	A*
Seaview / Van Renen	2.2	4.00	0.075	0.151	A*	A*
Seaview / Reinett	0.7	0.4	0.073	0.119	A*	A*
Seaview / New Rest (Main)	1.4	2.00	0.042	0.043	A*	A*
Seaview / Jill	0.7	0.6	0.077	0.124	A*	A*

\* - **SIDRA Intersection** <sup>(7)</sup> does not calculate intersection LOS for stop controlled intersections. The LOS indicated is sourced from the **Highway Capacity Manual** <sup>(6)</sup> (**Table 1** above).

As can be seen from the results contained in **Table 5**, the additional traffic generated by the development has minimal impact on operation of the affected intersections with no problems in terms of capacity.

## 8 CAPACITY ANALYSIS – AFTER DEVELOPMENT – OPTION 2

### 8.1 2017 HORIZON

After adding generated traffic volumes to the background peak hour volumes, the traffic situation was analysed in order to determine the LOS at which the intersections would operate after development occurs for the 2017 development horizon. The results are shown in **Table 6** below and the detailed SIDRA output sheets attached as **Annexure G**.

**Table 6: Results of Intersection Capacity Analysis - Option 2 – 2017 After Development**

Intersection	Delay (s)		V/C		LOS	
	AM	PM	AM	PM	AM	PM
Seaview / Albany	0.3	0.4	0.156	0.126	A*	A*
Seaview / Van Renen	1.3	3.2	0.130	0.171	A*	A*
Seaview / Reinett	0.4	0.2	0.112	0.167	A*	A*
Seaview / Jill	6.3	5.7	0.353	0.377	A*	A*

\* - **SIDRA Intersection** <sup>(7)</sup> does not calculate intersection LOS for stop controlled intersections. The LOS indicated is sourced from the **Highway Capacity Manual** <sup>(6)</sup> (**Table 1** above).

As can be seen from the results contained in **Table 6**, the additional traffic generated by the development has minimal impact on the operations of the access junction.

While operation of the Jill Street / Seaview Road intersection is not problematic in terms of congestion, turning lanes have been provided on the Seaview Road approaches in order to enhance traffic safety (see **Figure 19**).

### 8.2 2022 HORIZON

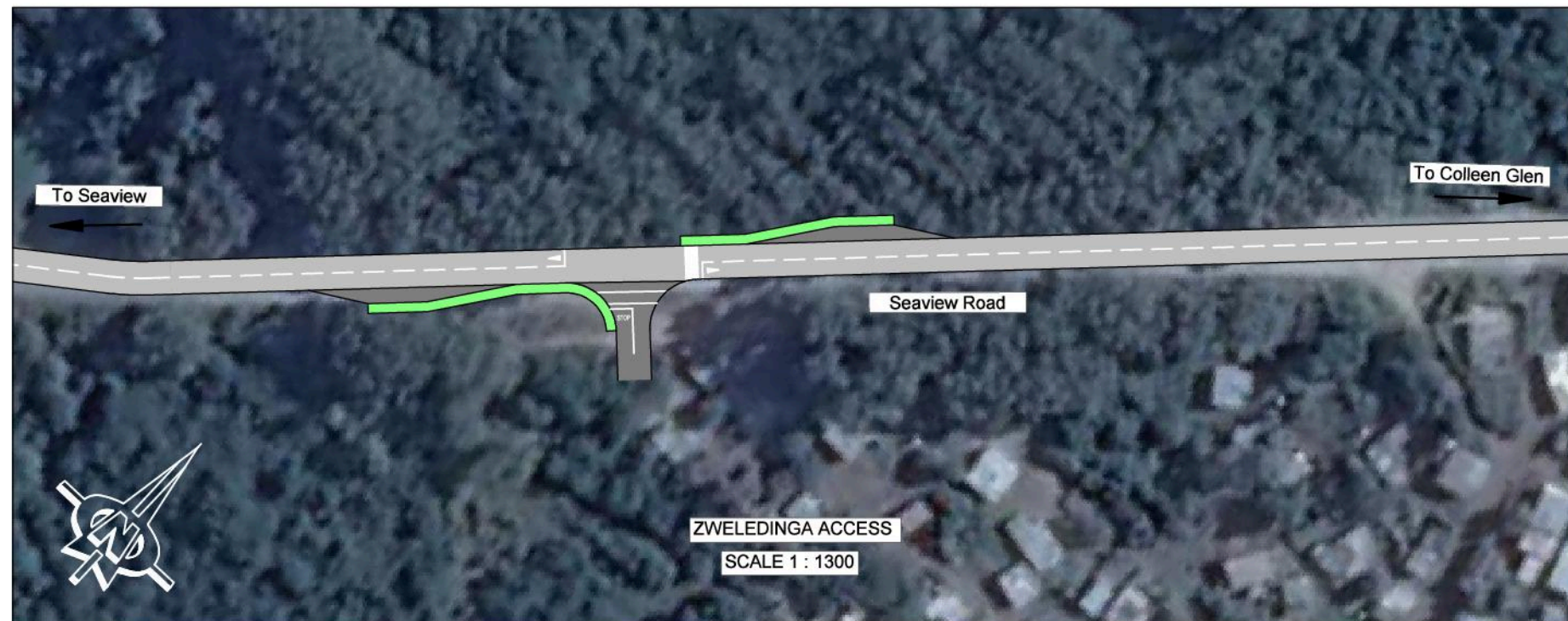
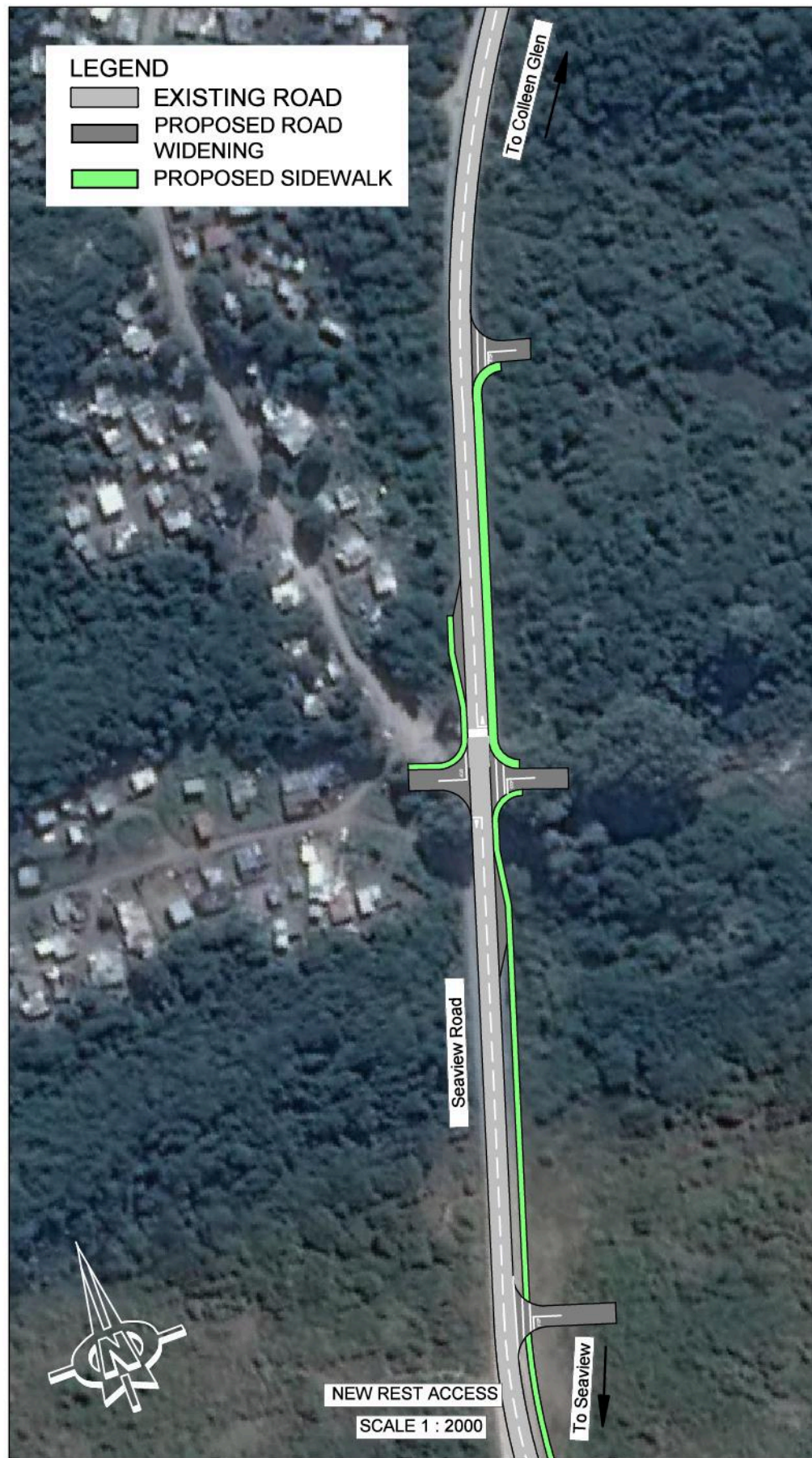
After adding generated traffic volumes to the background peak hour volumes, the traffic situation was analysed in order to determine the LOS at which the intersections would operate after development occurs for the 2022 development horizon. The results are shown in **Table 7** below and the detailed SIDRA output sheets attached as **Annexure H**.

**Table 7: Results of Intersection Capacity Analysis – 2022 After Development**




Intersection	Delay (s)		V/C		LOS	
	AM	PM	AM	PM	AM	PM
Seaview / Albany	0.3	0.4	0.164	0.132	A*	A*
Seaview / Van Renen	1.3	3.4	0.135	0.181	A*	A*
Seaview / Reinett	0.4	0.4	0.116	0.183	A*	A*
Seaview / Jill	6.3	4.9	0.363	0.303	A*	A*

\* - **SIDRA Intersection** <sup>(7)</sup> does not calculate intersection LOS for stop controlled intersections. The LOS indicated is sourced from the **Highway Capacity Manual** <sup>(6)</sup> (**Table 1** above).

As can be seen from the results contained in **Table 7**, the additional traffic generated by the development has minimal impact on the operations of the access junction.



FOR REPORT	UTSHINTSHO / AMENDMENTS				UMLINGANISELO SCALE	UMLINGANISELO WOMZOBO OHLISHIWEYO SCALE ON REDUCED DRAWING	UMENZI DESIGN	JC	ENGINEERING ADVICE AND SERVICES associated with ULWAZI 73 Heugh Road, Walmer P.O. Box 13867 Humeewood Port Elizabeth 6013 tel/fax: (041) 581 2421	IVUNYELWE APPROVED	IVUNYELWE APPROVED	IPROJETHI / PROJECT	INANI LESIVUMELWANO CONTRACT NO.				
	INANI NO.	UMHLA DATE	INKCAZA DESCRIPTION	IVUNYELWE APPROVED	AS SHOWN	60mm KUMZOBO WANGAPHAMBILI 60mm ON ORIGINAL DRAWING	UMZOBI DRAWN	MS		INJINELI/ENG.	UMENZELWA / CLIENT			PROPOSED LOW COST HOUSING DEVELOPMENTS ON PTNS OF ERVEN 237, 238, 240 CLARENDON MARINE AND PTNS 1 & 10 OF FARM 28, SEAVIEW	INANI LOMZOBO DWG. NO. 1406-P-018		
												UMZOBI APPROVED	CH	UMHLA / DATE		UMHLA / DATE	UMZOBONKCAZA / DWG DESCRIPTION
												MAR 2017			FIGURE 18 : PROPOSED ACCESS ARRANGEMENTS - OPTION 1		

LEGEND	
	EXISTING ROAD
	PROPOSED ROAD AND WIDENING
	PROPOSED SIDEWALK



FOR REPORT

UTSHINTSHO / AMENDMENTS			
INANI NO.	UMHLA DATE	INKCAZA DESCRIPTION	IVUNYELWE APPROVED

UMLINGANISELO SCALE	UMLINGANISELO WOMZOBO OHLISIWEYO SCALE ON REDUCED DRAWING
1:1600	50mm KUMZOBO WANGAPHAMBILI 50mm ON ORIGINAL DRAWING

UMENZI DESIGN	JC
UMZOBI DRAWN	MS
IVUNYELWE APPROVED	CH
UMHLA DATE	MAR 2017

ENGINEERING ADVICE AND SERVICES associated with ULWAZI  
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Humeewood  
Port Elizabeth  
6013  
tel/fax: (041) 581 2421

IVUNYELWE APPROVED	IVUNYELWE APPROVED
INJINELI/ENG.	UMENZELWA / CLIENT
UMHLA / DATE	UMHLA / DATE

IPROJETI / PROJECT	INANI LESIVUMELWANO CONTRACT NO.
PROPOSED LOW COST HOUSING DEVELOPMENTS ON PTNS OF ERVEN 237, 238, 240 CLARENDON MARINE AND PTNS 1 & 10 OF FARM 28, SEAVIEW	
UMZOBNKCAZA / DWG DESCRIPTION	INANI LOMZOBO DWG. NO.
FIGURE 19 : PROPOSED ACCESS ARRANGEMENTS - OPTION 2	1406-P-019

## **9 PUBLIC TRANSPORT OPERATIONS AND PEDESTRIAN ARRANGEMENTS**

### **9.1 PUBLIC TRANSPORT**

No formal public transport nor pedestrian facilities are in place at New Rest or Zweledinga informal settlements.

It is recommended that formal public transport facilities be provided on both sides of Seaview Road downstream of both settlement entrances as indicated on **Figure 18** should Option 1 be pursued. While this option is not ideal given that passengers will need to cross Seaview Road and minibus-taxis will need to turn around it will serve to improve safety for all road users should there be clearly demarcated facilities to load / off-load passengers.

Should Option 2 be pursued, a formal minibus-taxi rank must be constructed as part of the development as indicated on **Figure 19**.

### **9.2 PEDESTRIAN ARRANGEMENTS**

Pedestrian sidewalks should be provided at least between the settlements and the proposed public transport embayments with clearly demarcated crossings over Seaview Road at both settlement entrances should Option 1 be pursued. Appropriate signage warning approaching motorists of the presence of pedestrians should also be erected on Seaview Road.

In addition pedestrian sidewalks should be provided along Seaview Road between Zweledinga and Seaview Village as indicated on **Figures 18** and **19** for either development option.

## **10 PARKING AND LOADING REQUIREMENTS**

### **10.1 PARKING REQUIREMENTS**

Even though car ownership of residents is likely to be very low, provision should be made for parking facilities at the community facilities should development option 2 be pursued. Community, school and church sites should also make provision for parking for at least one bay on or adjacent to the sites.

The required parking bays will be indicated on the site development plan.

### **10.2 SERVICE AND DELIVERY VEHICLE REQUIREMENTS**

Suitable arrangements must be made to accommodate delivery vehicles on the business and school site in Option 2. Delivery vehicles will enter and exit the site via the existing access point.

Provision has also been made for Waster Transfer Station sites in the proposed development on Ptn 10 of Farm 28 as well as on a site on the western side of Seaview Road in the New Rest area as indicated on **Figure 2**.

It is assumed that refuse collection vehicles will collect waste from these stations on a weekly basis.

The site next to Seaview Road is not ideal from a traffic safety perspective, given that it will generate significant activity from the surrounding residential areas with residents from Seaview and Clarendon Marine making use of the facility.

It is suggested that vehicle access be gained from the internal road in order that vehicle movements on Seaview Road be kept to a minimum.

## 11 POTENTIAL TRAFFIC IMPACTS

### 11.1 IMPACT RATING SYSTEM

The impact rating system used for the study is indicated in the tables below. The assessment of impacts is based on the professional judgement of specialists at Engineering Advice and Services, fieldwork, and desk-top analysis. The significance of potential impacts that may result from the proposed development has been determined in order to assist the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) in making a decision.

The significance of an impact is defined as a combination of the consequence of the impact occurring and the probability that the impact will occur. The criteria used to determine impact consequences are presented in Table 7 below.

**Table 8: Criteria used to determine the Consequence of the Impact**

Rating	Definition of Rating	Score
<b>A. Extent– the area over which the impact will be experienced</b>		
None		0
Local	Confined to project or study area or part thereof (e.g. site)	1
Regional	The region, which may be defined in various ways, e.g. cadastral, catchment, topographic	2
(Inter) national	Nationally or beyond	3
<b>B. Intensity– the magnitude of the impact in relation to the sensitivity of the receiving environment</b>		
None		0
Low	Site-specific and wider natural and/or social functions and processes are negligibly altered	1
Medium	Site-specific and wider natural and/or social functions and processes continue albeit in a modified way	2
High	Site-specific and wider natural and/or social functions or processes are severely altered	3
<b>C. Duration– the time frame for which the impact will be experienced</b>		
None		0
Short-term	Up to 2 years	1
Medium-term	2 to 15 years	2
Long-term	More than 15 years	3

The combined score of these three criteria corresponds to a **Consequence Rating**, as follows:

**Table 9: Method used to determine the Consequence Score**

Combined Score (A+B+C)	0 – 2	3 – 4	5	6	7	8 – 9
Consequence Rating	Not significant	Very low	Low	Medium	High	Very high

**Table 10: Probability Classification**

<b>Probability– the likelihood of the impact occurring</b>	
Improbable	< 40% chance of occurring
Possible	40% - 70% chance of occurring
Probable	> 70% - 90% chance of occurring
Definite	> 90% chance of occurring

The overall **significance** of impacts will be determined by considering consequence and probability using the rating system prescribed in the table below.



**Table 11: Impact Significance Ratings**

Significance Rating	Possible Impact Combinations	
	Consequence	Probability
Insignificant	Very Low &	Improbable
	Very Low &	Possible
Very Low	Very Low &	Probable
	Very Low &	Definite
	Low &	Improbable
	Low &	Possible
Low	Low &	Probable
	Low &	Definite
	Medium &	Improbable
	Medium &	Possible
Medium	Medium &	Probable
	Medium &	Definite
	High &	Improbable
	High &	Possible
High	High &	Probable
	High &	Definite
	Very High &	Improbable
	Very High &	Possible
Very High	&	Probable
	Very High &	Definite

Finally, the impacts will also be considered in terms of their status (positive or negative impact) and the confidence in the ascribed impact significance rating. The system for considering impact status and confidence (in assessment) is laid out in the table below.

**Table 12: Impact status and confidence classification**

Status of impact	
Indication whether the impact is adverse (negative) or beneficial (positive).	+ ve (positive – a ‘benefit’)
	– ve (negative – a ‘cost’)
Confidence of assessment	
The degree of confidence in predictions based on available information, SRK’s judgment and/or specialist knowledge.	Low
	Medium
	High

The impact significance rating should be considered by authorities in their decision-making process based on the implications of ratings ascribed below:

- **Insignificant:** the potential impact is negligible and will not have an influence on the decision regarding the proposed activity/development.
- **Very Low:** the potential impact is very small and should not have any meaningful influence on the decision regarding the proposed activity/development.
- **Low:** the potential impact may not have any meaningful influence on the decision regarding the proposed activity/development.
- **Medium:** the potential impact should influence the decision regarding the proposed activity/development.
- **High:** the potential impact will affect the decision regarding the proposed activity/development.
- **Very High:** The proposed activity should only be approved under special circumstances.

Practicable mitigation measures will be recommended and impacts will be rated in the prescribed way both with and without the assumed effective implementation of mitigation measures. Mitigation measures will be classified as either:

- **Essential:** must be implemented and are non-negotiable; or
- **Optional:** must be shown to have been considered and sound reasons provided by the proponent, if not implemented.

## 11.2 TRAFFIC IMPACTS

As indicated in **Chapters 6 and 7**, traffic volumes have been assessed to indicate the impact of the proposed development options during weekday morning and evening peak hours.

A general assessment has been undertaken of impacts on various factors as described below. Note that this assessment does not deal with issues relating to noise, emissions, job creation or environmental matters, as the author is not qualified to comment on these issues.

The following potential traffic related impacts relating to the project have been identified. Note that some impacts will occur over the course of construction of the facilities on site while others will be permanent.

### 11.2.1 Development Option 1

#### Construction Impacts

- Increased Construction Traffic on Existing Roads  
Construction vehicles will travel along Seaview Road and Van Renen Road to the sites and will interact with existing general traffic on these roads.
- Road Condition  
The condition of the approach roads particularly Van Renen Road may be negatively impacted upon by heavy construction vehicles during construction.
- Traffic Safety  
The safety of general traffic and residents along Seaview Road and Van Renen Road may be compromised as a result of slow moving construction vehicles on these roads.

The following safety issues may arise:

- Possible collisions between faster moving passing traffic and slow moving construction vehicles at the entrances to the settlement areas;
- Possible collisions due to construction vehicles travelling through established residential areas;
- Impact of construction traffic on existing residents in the informal settlements.

#### Operational Impacts

- Increased Traffic and Pedestrian Volumes on Existing Residential Roads  
Additional 40 peak hour vehicle trips will make use of Van Renen, Aliwal and Albany Roads;  
Additional 81 peak hour vehicle trips will make use of Seaview Road  
Additional pedestrian movement along Van Renen, Aliwal and Albany Roads.
- Road Condition  
Additional vehicle trips will make use of Van Renen, Aliwal and Albany Roads contributing to deterioration of the road should no maintenance be effected;
- Operational Capacity  
Additional trips passing through Seaview Village albeit minimal impact.
- Traffic Safety  
The following safety issues may arise:
  - Possible collisions with current pedestrian and vehicle traffic as a result of additional vehicle movements along Van Renen, Aliwal and Albany Roads;
  - Possible collisions with public transport vehicles and pedestrians at multiple community entrances should no pedestrian and public transport facilities be provided
  - Possible collisions with entering and exiting vehicles at two locations due to marginal sight distances and close intersection spacing.

## 11.2.2 Development Option 2

### Construction Impacts

- Increased Construction Traffic on Existing Roads  
Construction vehicles will travel along Seaview Road to the sites and will interact with existing general traffic.
- Road Condition  
The condition of Seaview Road may be negatively impacted upon by heavy construction vehicles during construction.
- Traffic Safety  
The safety of general traffic and residents along Seaview Road may be compromised as a result of slow moving construction vehicles on these roads.

The following safety issues may arise:

- Possible collisions between faster moving passing traffic and slow moving construction vehicles at the Jill Street intersection;

### Operational Impacts

- Increased Motorised and Non-motorised Traffic Volumes
  - Additional vehicle trips will make use of Seaview Road and impact on the Jill Street intersection;
  - Additional pedestrian activity will occur at the Seaview Road / Jill Street intersection.
- Concentrated vehicle and pedestrian activity at Jill Street Intersection  
Potential conflict locations will be reduced by relocating activity occurring at two informal locations to one formal location.
- Operational Capacity  
Reduction of intersection capacity at Seaview Road / Jill Street intersection.
- Road Condition  
Additional vehicle trips will make use of Seaview Road contributing to deterioration of the road should no maintenance be effected;
- Traffic Safety  
The following safety issues may arise as a result of additional vehicle movements along Seaview Road:
  - Possible collisions with current pedestrian and vehicular traffic between Jill Street and Seaview Village;
  - Possible collisions with public transport vehicles and pedestrians at the Seaview Road / Jill Street intersection should no pedestrian and public transport facilities be provided;
  - Possible collisions with pedestrians due to increased distance between development and Seaview Village.

## 12 IMPACT ASSESSMENTS

### 12.1 DEVELOPMENT OPTION 1

#### 12.1.1 Construction Impacts

**Table 13: Impact Assessments: Option 1 – Construction Impacts**

ASSESSMENT		PRIOR TO MITIGATION										POST MITIGATION									
Impact Description	Phase	Extent	Intensity	Duration	Combined Score	Consequence Rating	Probability	Significance Rating	Confidence	Status (+ 0 -)	Mitigation Measures	Classification	Extent	Intensity	Duration	Combined Score	Consequence Rating	Probability	Significance Rating	Confidence	Status (+ 0 -)
Increased Construction Traffic Volumes on Existing Roads	Construction	1 - Local	2 - Medium	1 - Short-term	4	Very low	Definite	Very Low	High	- ve	Create awareness of presence of construction traffic, restrict construction vehicle operations to low-volume periods, combine delivery of resources to minimise trips	Essential	1 - Local	2 - Medium	1 - Short-term	4	Very low	Definite	Very Low	High	- ve
Road Condition	Construction	1 - Local	2 - Medium	1 - Short-term	4	Very low	Definite	Very Low	High	- ve	Record condition before commencement, repair immediately, monitor during construction and if required effect repairs after construction	Essential	1 - Local	2 - Medium	1 - Short-term	4	Very low	Definite	Very Low	High	- ve
Traffic Safety – Conflict with General Traffic	Construction	1 - Local	2 - Medium	1 - Short-term	4	Very low	Definite	Very Low	High	- ve	Create awareness of presence of construction traffic, restrict construction vehicle operations to low-volume periods, combine delivery of resources to minimise trips	Essential	1 - Local	2 - Medium	1 - Short-term	4	Very low	Definite	Very Low	High	- ve

12.1.2 Operational Impacts

Table 14: Impact Assessments: Option 1 – Operational Impacts

ASSESSMENT		PRIOR TO MITIGATION										POST MITIGATION									
Impact Description	Phase	Extent	Intensity	Duration	Combined Score	Consequence Rating	Probability	Significance Rating	Confidence	Status (+ o -)	Mitigation Measures	Classification	Extent	Intensity	Duration	Combined Score	Consequence Rating	Probability	Significance Rating	Confidence	Status (+ o -)
Increased Traffic Volumes on Existing Residential Roads - Van Renen, Albany, Aliwal	Operational	1 - Local	2 - Medium	3 - Long-term	6	Medium	Definite	Medium	High	- ve	Upgrade of Van Renen, Aliwal and Albany Roads if necessary	Optional	1 - Local	1 - Low	3 - Long-term	5	Low	Definite	Low	High	+ ve
Increased Pedestrian Volumes on Existing Residential Roads - Van Renen, Albany, Aliwal	Operational	1 - Local	2 - Medium	3 - Long-term	6	Medium	Definite	Medium	High	- ve	No development on ptn 10/28 or reposition access road to west	Optional	1 - Local	1 - Low	3 - Long-term	5	Low	Definite	Low	High	+ ve
Increased Pedestrian Volumes on Existing Residential Roads - Van Renen, Albany, Aliwal leading to potential pedestrian safety concerns	Operational	1 - Local	2 - Medium	3 - Long-term	6	Medium	Probable	Medium	High	- ve	Provision of Sidewalk along affected roads	Essential	1 - Local	2 - Medium	3 - Long-term	6	Medium	Probable	Medium	High	+ ve
Road Condition of Existing Residential Roads - Van Renen, Albany, Aliwal	Operational	1 - Local	2 - Medium	3 - Long-term	6	Medium	Definite	Medium	High	- ve	No development on ptn 10/28 or reposition access road to west	Optional	1 - Local	1 - Low	3 - Long-term	5	Low	Definite	Low	High	+ ve
											Upgrade of Van Renen, Aliwal and Albany Roads if necessary	Optional	1 - Local	0 - None	3 - Long-term	4	Very low	Definite	Very Low	High	+ ve
Intersection and Link Capacity reduced along Seaview, Van Renen, Aliwal and Albany Road	Operational	1 - Local	2 - Medium	3 - Long-term	6	Medium	Probable	Medium	High	- ve	No development on ptn 10/28 or reposition access road to west	Optional	1 - Local	1 - Low	3 - Long-term	5	Low	Definite	Low	High	- ve
Pedestrian and public transport conflict at existing entrances	Operational	1 - Local	2 - Medium	3 - Long-term	6	Medium	Probable	Medium	High	- ve	Provision of formal embayments and turn-around facilities at entrances	Essential	1 - Local	1 - Low	3 - Long-term	5	Low	Definite	Low	High	- ve
Vehicle conflict at proposed entrances with Marginal Sight Distance	Operational	1 - Local	2 - Medium	3 - Long-term	6	Medium	Probable	Medium	High	- ve	Provision of Advanced warning measures and improvement of shoulder sight distance	Essential	1 - Local	1 - Low	3 - Long-term	5	Low	Probable	Low	High	- ve

**12.2 DEVELOPMENT OPTION 2**

**12.2.1 Construction Impacts**

**Table 15: Impact Assessments: Option 2 – Construction Impacts**

ASSESSMENT		PRIOR TO MITIGATION										POST MITIGATION									
Impact Description	Phase	Extent	Intensity	Duration	Combined Score	Consequence Rating	Probability	Significance Rating	Confidence	Status (+ o -)	Mitigation Measures	Classification	Extent	Intensity	Duration	Combined Score	Consequence Rating	Probability	Significance Rating	Confidence	Status (+ o -)
Increased Construction Traffic Volumes on Existing Roads	Construction	1 - Local	2 - Medium	1 - Short-term	4	Very low	Definite	Very Low	High	- ve	Create awareness of presence of construction traffic, restrict construction vehicle operations to low-volume periods, combine delivery of resources to minimise trips	Essential	1 - Local	2 - Medium	1 - Short-term	4	Very low	Definite	Very Low	High	- ve
Road Condition	Construction	1 - Local	2 - Medium	1 - Short-term	4	Very low	Definite	Very Low	High	- ve	Record condition before commencement, repair immediately, monitor during construction and if required effect repairs after construction	Essential	1 - Local	2 - Medium	1 - Short-term	4	Very low	Definite	Very Low	High	- ve
Impact Assessment: Conflict with General Traffic – Jill Street intersect	Construction	1 - Local	2 - Medium	1 - Short-term	4	Very low	Probable	Very Low	High	- ve	Create awareness of presence of construction traffic, restrict construction vehicle operations to low-volume periods, combine delivery of resources to minimise trips	Essential	1 - Local	2 - Medium	1 - Short-term	4	Very low	Probable	Very Low	High	- ve

12.2.2 Operational Impacts

Table 16: Impact Assessments: Option 2 – Operational Impacts

ASSESSMENT		PRIOR TO MITIGATION										POST MITIGATION									
Impact Description	Phase	Extent	Intensity	Duration	Combined Score	Consequence Rating	Probability	Significance Rating	Confidence	Status (+ o -)	Mitigation Measures	Classification	Extent	Intensity	Duration	Combined Score	Consequence Rating	Probability	Significance Rating	Confidence	Status (+ o -)
Daily additional traffic volumes through Seaview Road / Jill Street intersection	Operational	1 - Local	2 - Medium	3 - Long-term	6	Medium	Definite	Medium	High	- ve	Upgrade Jill Street intersection to accommodate additional volumes	Essential	1 - Local	1 - Low	3 - Long-term	5	Low	Definite	Low	High	- ve
Increased Pedestrian Activity – Jill Street intersection	Operational	1 - Local	2 - Medium	3 - Long-term	6	Medium	Definite	Medium	High	- ve	Provision of pedestrian facilities	Essential	1 - Local	1 - Low	3 - Long-term	5	Low	Definite	Low	High	- ve
Road Condition - Seaview Road	Operational	1 - Local	2 - Medium	3 - Long-term	6	Medium	Probable	Medium	High	- ve	Upgrade of Seaview Road if necessary	Optional	1 - Local	1 - Low	3 - Long-term	5	Low	Probable	Low	High	- ve
Intersection and Link Capacity - Seaview Road / Jill Street	Operational	1 - Local	2 - Medium	3 - Long-term	6	Medium	Definite	Medium	High	- ve	Upgrade Jill St junction to accommodate additional volumes	Essential	1 - Local	1 - Low	3 - Long-term	5	Low	Definite	Low	High	+ ve
Traffic Safety: Increased Pedestrian activity – Jill St to Seaview	Operational	1 - Local	2 - Medium	3 - Long-term	6	Medium	Definite	Medium	High	- ve	Provision of formal embayments and turn-around facilities at entrances	Essential	1 - Local	1 - Low	3 - Long-term	5	Low	Definite	Low	High	+ ve
Pedestrian and public transport conflict at Jill Street intersection	Operational	1 - Local	2 - Medium	3 - Long-term	6	Medium	Definite	Medium	High	- ve	Provision of formal public transport facility at entrance to development	Essential	1 - Local	2 - Medium	3 - Long-term	6	Medium	Probable	Medium	High	- ve

## 13 CONCLUSIONS

The following conclusions can be drawn from the study:

- Although Development Option 2 is likely to generate more traffic given its larger footprint, it is the preferred option given that vehicular and pedestrian activity is restricted to one formalised location.
- The affected intersections operate at acceptable Levels of Service (LOS) in terms of capacity under existing background traffic conditions (2017);
- Should development Option 1 be pursued,
  - Access to the components of development Option 1 can be formalised provided that suitable advanced warning measures are provided, vehicle speeds are controlled at 60km/h and sight distance improved on the approaches to the north and south entrances to New Rest as indicated on **Figure 18**;
  - Suitable formal public transport and pedestrian facilities must be provided at the entrances to New Rest and Zweledinga as indicated on **Figure 18**;
  - Suitable pedestrian facilities must be provided along Aliwal Road;
  - The configuration of and access to the proposed Waste Transfer Station on Seaview Road must be addressed in detail, with vehicular and pedestrian access gained from the internal roads;
- The intersection capacity analysis indicates that traffic generated by development Option 1 has minimal impact on the operational capacity of the affected intersections for the 2017 and 2022 development horizons;
- The intersection capacity analysis indicates that traffic generated by development Option 2 has minimal impact on the operational capacity of the affected intersections for the 2017 and 2022 development horizons ;
- While the intersection capacity analysis indicates that the Seaview Road / Jill Street intersection does not experience capacity problems as a result of development Option 2, the intersection should be configured as indicated on Figure 18 in order to ensure safety of road users is not compromised;
- In the event of development Option 1 or 2 being pursued, provision must be made for a pedestrian sidewalk along Seaview Road between either the existing New Rest / Zweledinga settlements or Jill Street and Seaview Village.
- Temporary road construction and traffic accommodation signage in accordance with **Volume 2 Chapter 13** of the **SADC Road Traffic Signs Manual** <sup>(5)</sup> shall be displayed on Seaview Road on the approaches to the development sites in order to create awareness of construction vehicles by other road users and to ensure that construction vehicle speeds are restricted. In addition, suitable measures must be provided to accommodate pedestrians during the construction period. Such signage, to be determined by the appointed contractor as per the required Health and Safety Plan and approved by the Engineer shall include speed restrictions, warning of construction workers and construction vehicles and information signs advising motorists of the hours the route will be used by construction vehicles.

The impacts assessed are indicated in **Tables 22 to 31**.



## 14 RECOMMENDATIONS

In view of the findings of this study, it is recommended that:

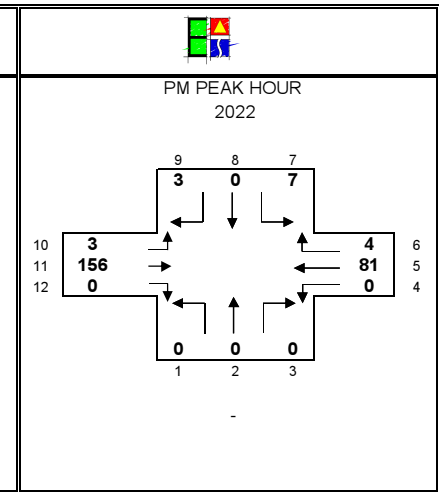
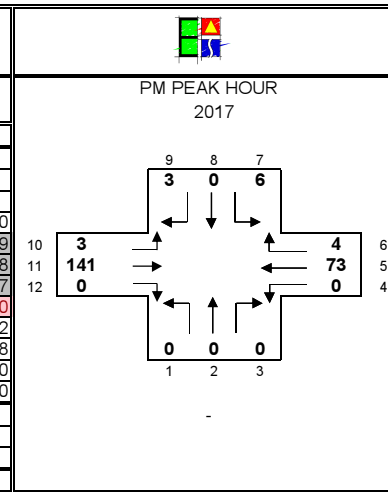
- From a traffic operational and safety perspective the NMBM proceeds with the development of Option 2 on Portion 1 of Farm 28 Seaview;
- Should option 2 be implemented, the access to the proposed development at Jill Street be configured as indicated on **Figure 19** with the cost of the upgraded junction being met by the Municipality;
- Should option 2 be implemented, pedestrian facilities be provided between Jill Street and Seaview Village as indicated on **Figure 19** with the cost of the facilities being met by the Municipality
- Should option 1 be implemented:
  - Access to the components of development Option 1 must be formalised and suitable advanced warning measures provided, vehicle speeds are controlled at 60km/h and sight distance improved on the approaches to the north and south entrances to New Rest as indicated on **Figure 18**;
  - Suitable formal public transport and pedestrian facilities must be provided at the entrances to New Rest and Zweledinga as indicated on **Figure 18**;
  - Suitable pedestrian facilities must be provided along Aliwal Road;
  - A pedestrian sidewalk be provided along Seaview Road between New Rest and Seaview;
  - Vehicular and pedestrian access to the proposed Waste Transfer Station on Seaview Road must be gained from the internal roads.
- Suitable measures to accommodate construction traffic and protect road users (both vehicular and pedestrian) must be taken during implementation.

## 15 REFERENCES

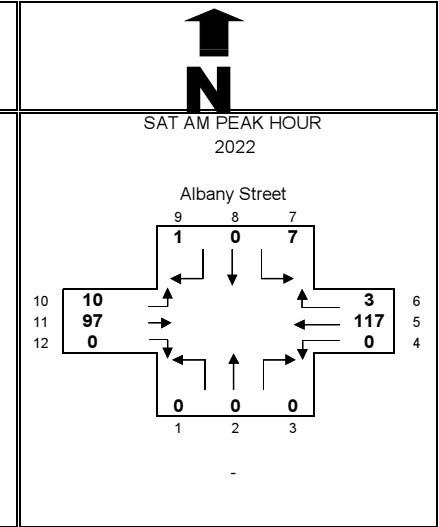
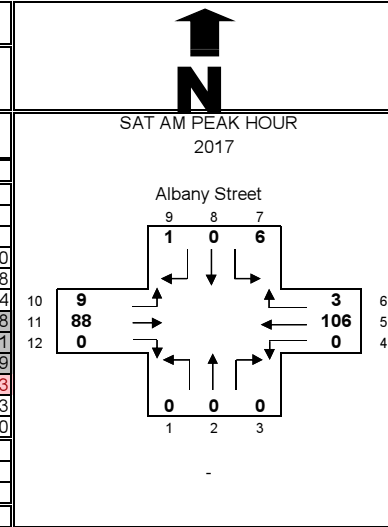
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6. *Transportation Research Board, Highway Capacity Manual*, 2000.
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ANNEXURE A  
Peak Hour  
Traffic Counts

Project : TIA : PROPOSED LOW COST HOUSING DEVELOPMENT, SEAVIEW														Day & date : 28/02/2017				
Intersection : Seaview Road / Albany Street														NO. 1		Time period: 06:00 - 09:00		
STARTING TIME	- Northbound				Seaview Road Westbound				Albany Street Southbound				Seaview Road Eastbound				INTER-SECTION	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
06:00	0	0	0	0	0	10	0	10	3	0	5	8	0	6	0	6	24	
06:15	0	0	0	0	0	6	0	6	4	0	5	9	0	16	0	16	31	
06:30	0	0	0	0	0	11	0	11	5	0	2	7	0	34	0	34	52	
06:45	0	0	0	0	0	10	0	10	4	0	3	7	0	-4	0	-4	13	120
07:00	0	0	0	0	0	19	3	22	1	0	1	2	0	69	0	69	93	189
07:15	0	0	0	0	0	19	0	19	2	0	1	3	0	28	0	28	50	208
07:30	0	0	0	0	0	15	1	16	2	0	0	2	2	21	0	23	41	197
07:45	0	0	0	0	0	20	0	20	1	0	1	2	1	23	0	24	46	230
08:00	0	0	0	0	0	12	0	12	3	0	0	3	1	29	0	30	45	182
08:15	0	0	0	0	0	15	0	15	0	0	0	0	0	11	0	11	26	158
08:30	0	0	0	0	0	15	1	16	1	0	0	1	0	16	0	16	33	150
08:45	0	0	0	0	0	22	0	22	0	0	0	0	0	24	0	24	46	150
Total	0	0	0	0	0	174	5	179	26	0	18	44	4	273	0	277	500	
Peak hour	0	0	0	0	0	73	4	77	6	0	3	9	3	141	0	144	230	
Peak 15 min								22				3				69	93	
PHF				#####				0.88				0.75				0.52	0.62	

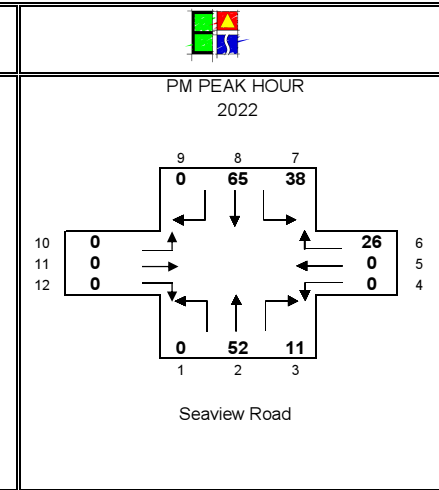
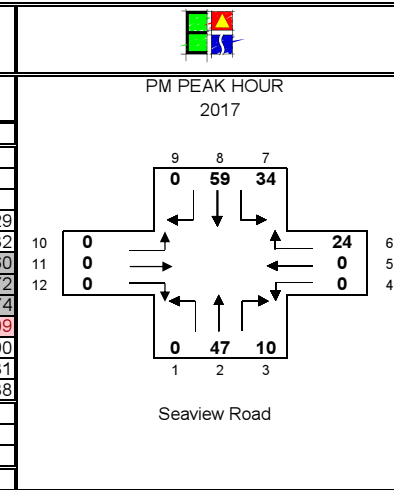


Project : TIA : PROPOSED LOW COST HOUSING DEVELOPMENT, SEAVIEW														Day & date : 28/02/2017				
Intersection : Seaview Road / Albany Street														NO. 1		Time period: 15:00 - 18:00		
STARTING TIME	- Northbound				Seaview Road Westbound				Albany Street Southbound				Seaview Road Eastbound				INTER-SECTION	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
15:00	0	0	0	0	0	19	0	19	0	0	2	2	2	14	0	16	37	
15:15	0	0	0	0	0	22	1	23	1	0	0	1	0	8	0	8	32	
15:30	0	0	0	0	0	16	1	17	1	0	0	1	0	17	0	17	35	
15:45	0	0	0	0	0	18	0	18	0	0	0	0	0	18	0	18	36	140
16:00	0	0	0	0	0	25	0	25	4	0	0	4	1	15	0	16	45	148
16:15	0	0	0	0	0	23	1	24	0	0	0	0	1	13	0	14	38	154
16:30	0	0	0	0	0	28	0	28	1	0	1	2	3	26	0	29	59	178
16:45	0	0	0	0	0	23	1	24	1	0	0	1	2	22	0	24	49	191
17:00	0	0	0	0	0	28	2	30	4	0	0	4	3	26	0	29	63	209
17:15	0	0	0	0	0	27	0	27	0	0	0	0	1	14	0	15	42	213
17:30	0	0	0	0	0	26	0	26	1	0	1	2	0	11	0	11	39	193
17:45	0	0	0	0	0	26	0	26	1	0	0	1	0	9	0	9	36	180
Total	0	0	0	0	0	281	6	287	14	0	4	18	13	193	0	206	475	
Peak hour	0	0	0	0	0	106	3	109	6	0	1	7	9	88	0	97	213	
Peak 15 min								30				4				29	63	
PHF				#####				0.91				0.44				0.84	0.85	



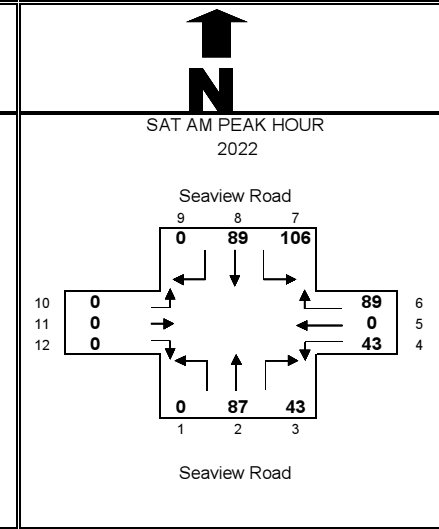
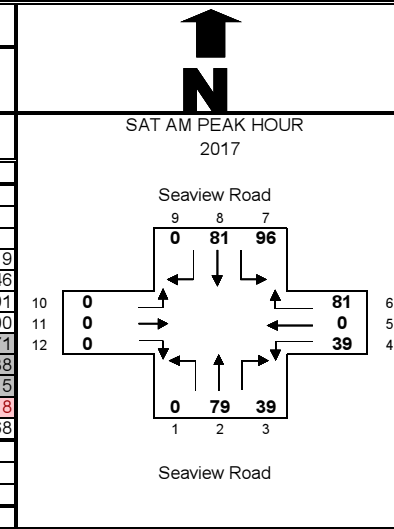
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 Intersection : Seaview Road / Van Renen Street NO. 2  
 Day & date : 28/02/2017  
 Time period: 06:00 - 09:00

STARTING TIME	Seaview Road Northbound				Van Renen Street Westbound				Seaview Road Southbound				- Eastbound				INTER-SECTION	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
06:00	0	24	1	25	0	0	1	1	1	2	0	3	0	0	0	0	29	
06:15	0	7	0	7	0	0	5	5	1	7	0	8	0	0	0	0	20	
06:30	0	12	3	15	2	0	3	5	3	10	0	13	0	0	0	0	33	
06:45	0	22	0	22	0	0	4	4	3	18	0	21	0	0	0	0	47	129
07:00	0	9	0	9	0	0	2	2	7	14	0	21	0	0	0	0	32	132
07:15	0	16	0	16	0	0	7	7	10	15	0	25	0	0	0	0	48	160
07:30	0	11	4	15	0	0	7	7	7	16	0	23	0	0	0	0	45	172
07:45	0	11	6	17	0	0	8	8	10	14	0	24	0	0	0	0	49	174
08:00	0	15	3	18	11	0	9	20	13	16	0	29	0	0	0	0	67	209
08:15	0	10	1	11	0	0	4	4	7	7	0	14	0	0	0	0	29	190
08:30	0	8	1	9	3	0	4	7	10	10	0	20	0	0	0	0	36	181
08:45	0	11	1	12	1	0	6	7	19	18	0	37	0	0	0	0	56	188
Total	0	156	20	176	17	0	60	77	91	147	0	238	0	0	0	0	491	
Peak hour	0	47	10	57	0	0	24	24	34	59	0	93	0	0	0	0	174	
Peak 15 min				17				8				25					49	
PHF				0.84				0.75				0.93				#####	0.89	



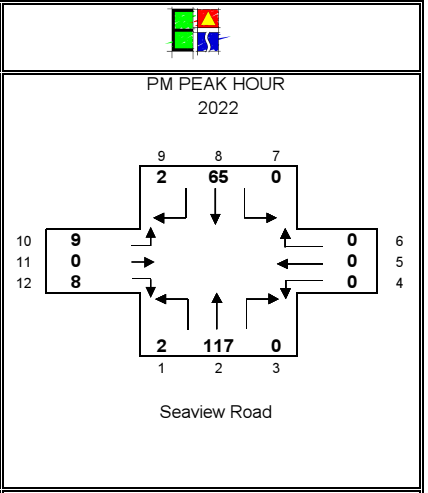
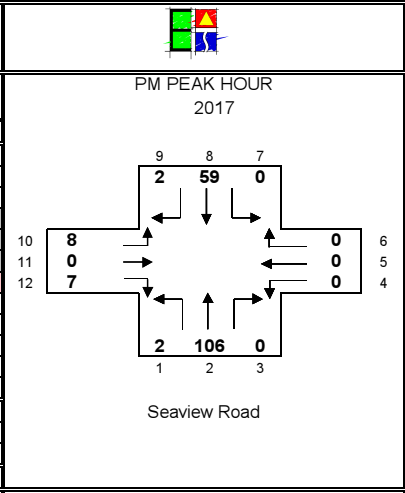
Project : TIA : PROPOSED LOW COST HOUSING DEVELOPMENT, SEAVIEW  
 Intersection : Seaview Road / Van Renen Street NO. 2  
 Day & date : 28/02/2017  
 Time period: 15:00 - 18:00

STARTING TIME	Seaview Road Northbound				Van Renen Street Westbound				Seaview Road Southbound				- Eastbound				INTER-SECTION	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
15:00	0	12	9	21	4	0	5	9	10	13	0	23	0	0	0	0	53	
15:15	0	5	5	10	5	0	13	18	11	13	0	24	0	0	0	0	52	
15:30	0	13	4	17	2	0	17	19	18	16	0	34	0	0	0	0	70	
15:45	0	6	0	6	1	0	9	10	11	17	0	28	0	0	0	0	44	219
16:00	0	6	10	16	6	0	22	28	16	20	0	36	0	0	0	0	80	246
16:15	0	10	15	25	4	0	34	38	20	14	0	34	0	0	0	0	97	291
16:30	0	7	13	20	7	0	18	25	15	19	0	34	0	0	0	0	79	300
16:45	0	40	11	51	23	0	12	35	16	13	0	29	0	0	0	0	115	371
17:00	0	13	6	19	2	0	20	22	27	29	0	56	0	0	0	0	97	388
17:15	0	19	9	28	7	0	31	38	38	20	0	58	0	0	0	0	124	415
17:30	0	16	5	21	5	0	16	21	20	20	0	40	0	0	0	0	82	418
17:45	0	13	2	15	1	0	16	17	27	6	0	33	0	0	0	0	65	368
Total	0	160	89	249	67	0	213	280	229	200	0	429	0	0	0	0	905	
Peak hour	0	79	39	118	39	0	81	120	96	81	0	177	0	0	0	0	415	
Peak 15 min				51				38				58					124	
PHF				0.58				0.79				0.76				#####	0.84	



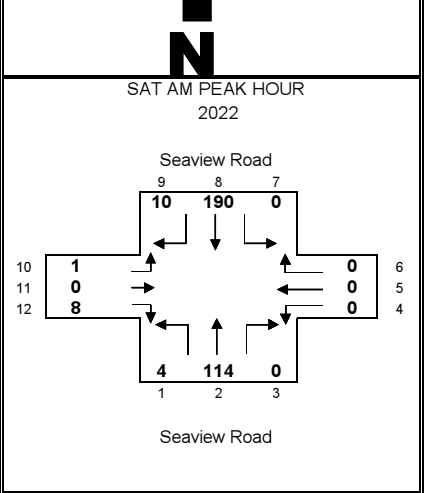
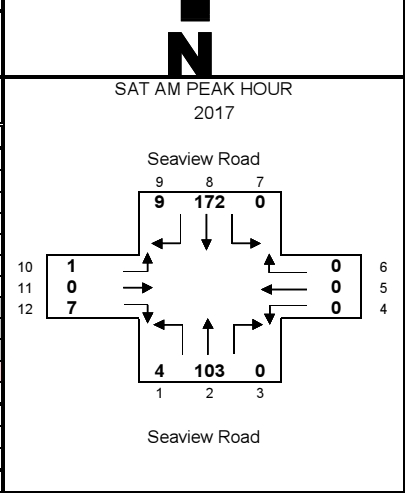
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 Intersection : Seaview Road / Reinett Road NO. 3  
 Day & date : 28/02/2017  
 Time period: 06:00 - 09:00

STARTING TIME	Seaview Road Northbound				- Westbound				Seaview Road Southbound				Reinett Road Eastbound				INTER-SECTION	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
06:00	0	15	0	15	0	0	0	0	0	3	0	3	0	0	0	0	18	
06:15	0	36	0	36	0	0	0	0	0	13	0	13	4	0	1	5	54	
06:30	0	17	0	17	0	0	0	0	0	4	0	4	2	0	2	4	25	
06:45	0	22	0	22	0	0	0	0	0	15	0	15	3	0	1	4	41	
07:00	1	25	0	26	0	0	0	0	0	12	1	13	2	0	2	4	43	
07:15	1	33	0	34	0	0	0	0	0	24	0	24	2	0	2	4	62	
07:30	0	24	0	24	0	0	0	0	0	11	0	11	4	0	0	4	39	
07:45	0	24	0	24	0	0	0	0	0	12	1	13	0	0	3	3	40	
08:00	1	16	0	17	0	0	0	0	0	15	0	15	0	0	1	1	33	
08:15	0	14	0	14	0	0	0	0	0	11	0	11	1	0	0	1	26	
08:30	0	23	0	23	0	0	0	0	0	7	0	7	1	0	2	3	33	
08:45	1	22	0	23	0	0	0	0	0	18	1	19	3	0	3	6	48	
Total	4	271	0	275	0	0	0	0	0	145	3	148	22	0	17	39	462	
Peak hour	2	106	0	108	0	0	0	0	0	59	2	61	8	0	7	15	184	
Peak 15 min				34							24					4	62	
PHF				0.79				#####			0.64					0.94	0.74	



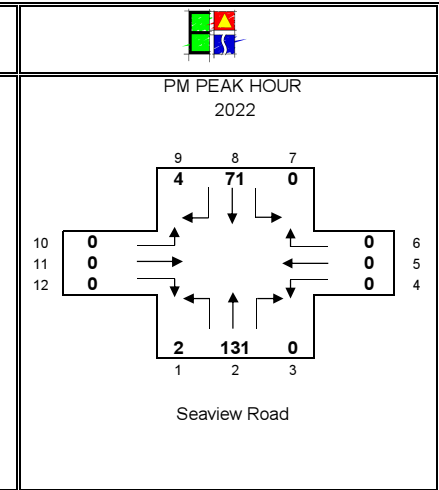
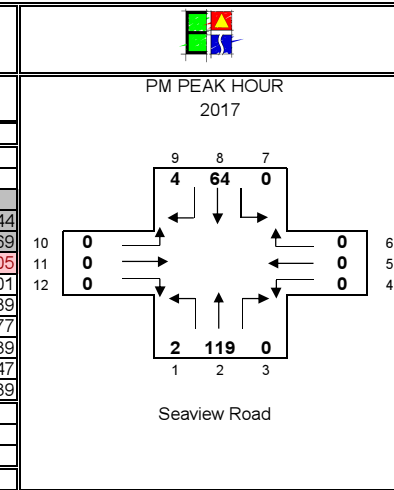
Project : TIA : PROPOSED LOW COST HOUSING DEVELOPMENT, SEAVIEW  
 Intersection : Seaview Road / Reinett Road NO. 3  
 Day & date : 28/02/2017  
 Time period: 15:00 - 18:00

STARTING TIME	Seaview Road Northbound				- Westbound				Seaview Road Southbound				Reinett Road Eastbound				INTER-SECTION	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
15:00	4	23	0	27	0	0	0	0	0	15	0	15	1	0	1	2	44	
15:15	0	13	0	13	0	0	0	0	0	14	0	14	0	0	0	0	27	
15:30	0	7	0	7	0	0	0	0	0	23	1	24	0	0	0	0	31	
15:45	0	27	0	27	0	0	0	0	0	22	2	24	1	0	0	1	52	
16:00	4	10	0	14	0	0	0	0	0	30	1	31	0	0	2	2	47	
16:15	1	27	0	28	0	0	0	0	0	31	0	31	0	0	1	1	60	
16:30	0	32	0	32	0	0	0	0	0	32	3	35	0	0	4	4	71	
16:45	2	29	0	31	0	0	0	0	0	55	3	58	0	0	1	1	90	
17:00	0	19	0	19	0	0	0	0	0	44	1	45	0	0	0	0	64	
17:15	2	23	0	25	0	0	0	0	0	41	2	43	1	0	2	3	71	
17:30	5	36	0	41	0	0	0	0	0	26	4	30	0	0	8	8	79	
17:45	3	16	0	19	0	0	0	0	0	32	1	33	0	0	3	3	55	
Total	21	262	0	283	0	0	0	0	0	365	18	383	3	0	22	25	691	
Peak hour	4	103	0	107	0	0	0	0	0	172	9	181	1	0	7	8	296	
Peak 15 min				32							58					4	90	
PHF				0.84				#####			0.78					0.50	0.82	



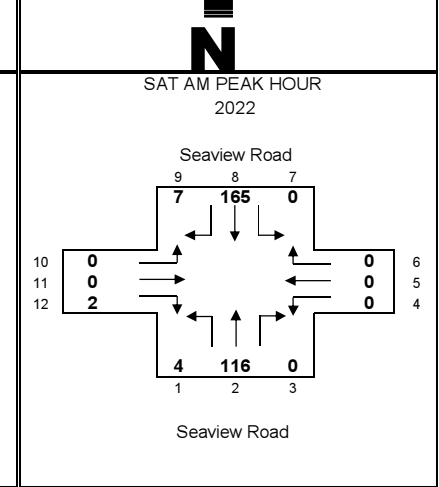
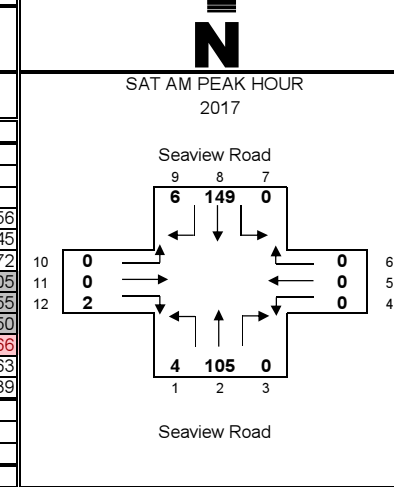
Project : TIA : PROPOSED LOW COST HOUSING DEVELOPMENT, SEAVIEW  
 Intersection : Seaview Road / New Rest NO. 4 Day & date : 28/02/2017  
 Time period: 06:00 - 09:00

STARTING TIME	Seaview Road Northbound				- Westbound				Seaview Road Southbound				New Rest Eastbound				INTER-SECTION	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
06:00	2	10	0	12	0	0	0	0	0	2	0	2	0	0	0	0	14	
06:15	0	27	0	27	0	0	0	0	0	7	0	7	0	0	0	0	34	
06:30	0	30	0	30	0	0	0	0	0	13	0	13	0	0	0	0	43	
06:45	0	39	0	39	0	0	0	0	0	14	0	14	0	0	0	0	53	144
07:00	0	25	0	25	0	0	0	0	0	14	0	14	0	0	0	0	39	169
07:15	0	39	0	39	0	0	0	0	0	28	3	31	0	0	0	0	70	205
07:30	0	29	0	29	0	0	0	0	0	9	1	10	0	0	0	0	39	201
07:45	2	26	0	28	0	0	0	0	0	13	0	13	0	0	0	0	41	189
08:00	0	13	0	13	0	0	0	0	0	14	0	14	0	0	0	0	27	177
08:15	0	19	0	19	0	0	0	0	0	12	1	13	0	0	0	0	32	139
08:30	1	30	0	31	0	0	0	0	0	14	2	16	0	0	0	0	47	147
08:45	0	19	0	19	0	0	0	0	0	13	1	14	0	0	0	0	33	139
Total	5	306	0	311	0	0	0	0	0	153	8	161	0	0	0	0	472	
Peak hour	2	119	0	121	0	0	0	0	0	64	4	68	0	0	0	0	189	
Peak 15 min				39								31					70	
PHF				0.78				#####				0.55				#####	0.68	



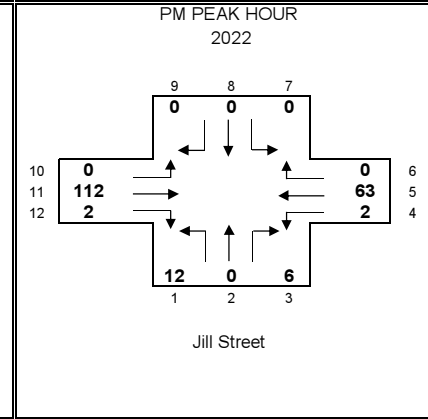
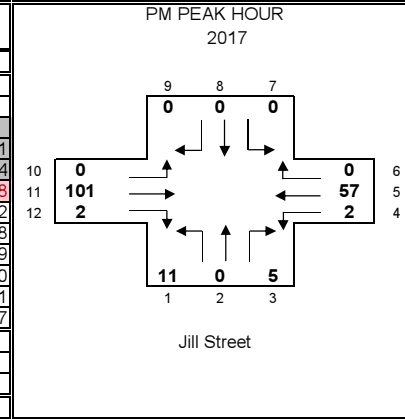
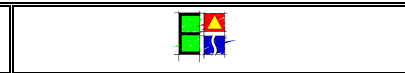
Project : TIA : PROPOSED LOW COST HOUSING DEVELOPMENT, SEAVIEW  
 Intersection : Seaview Road / New Rest NO. 4 Day & date : 28/02/2017  
 Time period: 15:00 - 18:00

STARTING TIME	Seaview Road Northbound				- Westbound				Seaview Road Southbound				New Rest Eastbound				INTER-SECTION	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
15:00	3	28	0	31	0	0	0	0	0	19	0	19	0	0	4	4	54	
15:15	0	9	0	9	0	0	0	0	0	17	1	18	0	0	0	0	27	
15:30	0	16	0	16	0	0	0	0	0	25	0	25	0	0	0	0	41	
15:45	0	13	0	13	0	0	0	0	0	20	1	21	0	0	0	0	34	156
16:00	0	10	0	10	0	0	0	0	0	32	1	33	0	0	0	0	43	145
16:15	0	24	0	24	0	0	0	0	0	29	1	30	0	0	0	0	54	172
16:30	4	32	0	36	0	0	0	0	0	35	1	36	0	0	2	2	74	205
16:45	0	29	0	29	0	0	0	0	0	51	4	55	0	0	0	0	84	255
17:00	0	15	0	15	0	0	0	0	0	23	0	23	0	0	0	0	38	250
17:15	0	29	0	29	0	0	0	0	0	40	1	41	0	0	0	0	70	266
17:30	0	25	0	25	0	0	0	0	0	33	2	35	8	0	3	11	71	263
17:45	2	18	0	20	0	0	0	0	0	38	0	38	0	0	2	2	60	239
Total	9	248	0	257	0	0	0	0	0	362	12	374	8	0	11	19	650	
Peak hour	4	105	0	109	0	0	0	0	0	149	6	155	0	0	2	2	266	
Peak 15 min				36								55				2	84	
PHF				0.76				#####				0.70				0.25	0.79	



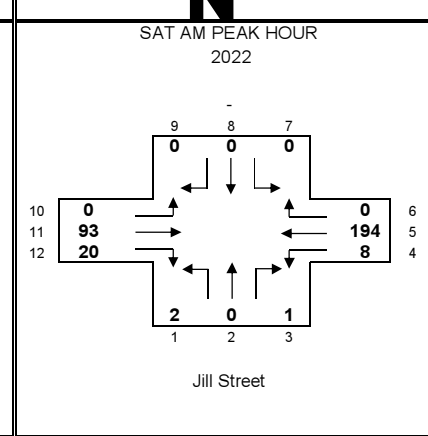
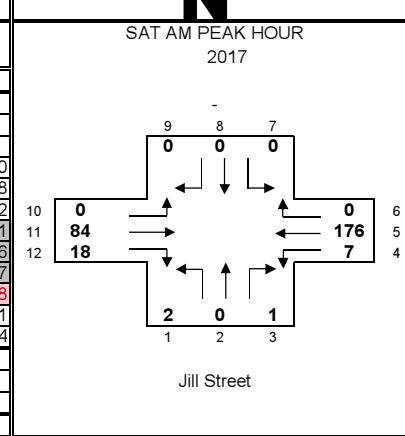
Project : TIA : PROPOSED LOW COST HOUSING DEVELOPMENT, SEAVIEW  
 Intersection : Seaview Road / Jill Street NO. 5  
 Day & date : 28/02/2017  
 Time period: 06:00 - 09:00

STARTING TIME	Jill Street Northbound				Seaview Road Westbound				- Southbound				Seaview Road Eastbound				INTER-SECTION	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
06:00	4	0	3	7	0	6	0	6	0	0	0	0	0	36	0	36	49	
06:15	1	0	0	1	0	2	0	2	0	0	0	0	0	10	0	10	13	
06:30	4	0	1	5	0	8	0	8	0	0	0	0	0	36	0	36	49	
06:45	3	0	0	3	0	8	0	8	0	0	0	0	0	29	0	29	40	151
07:00	5	0	2	7	0	14	0	14	0	0	0	0	0	31	0	31	52	154
07:15	2	0	1	3	2	23	0	25	0	0	0	0	0	28	1	29	57	198
07:30	1	0	1	2	0	7	0	7	0	0	0	0	0	23	1	24	33	182
07:45	3	0	1	4	0	13	0	13	0	0	0	0	0	19	0	19	36	178
08:00	0	0	0	0	1	11	0	12	0	0	0	0	0	10	1	11	23	149
08:15	0	0	0	0	0	15	0	15	0	0	0	0	0	32	1	33	48	140
08:30	0	0	0	0	0	11	0	11	0	0	0	0	0	3	0	3	14	121
08:45	1	0	0	1	0	11	0	11	0	0	0	0	0	19	1	20	32	117
Total	24	0	9	33	3	129	0	132	0	0	0	0	0	276	5	281	446	
Peak hour	11	0	5	16	2	57	0	59	0	0	0	0	0	101	2	103	178	
Peak 15 min				7				25								36	57	
PHF				0.57				0.59				#####				0.72	0.78	



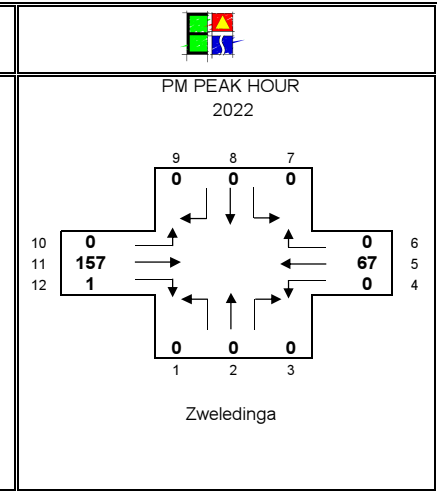
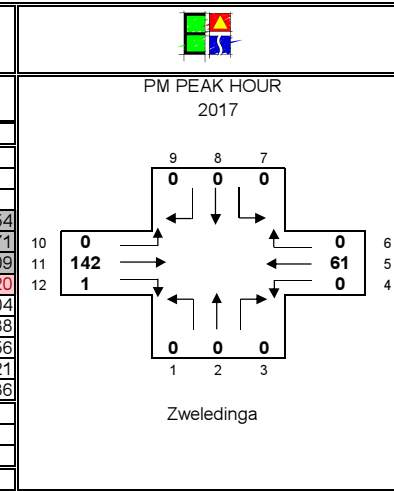
Project : TIA : PROPOSED LOW COST HOUSING DEVELOPMENT, SEAVIEW  
 Intersection : Seaview Road / Jill Street NO. 5  
 Day & date : 28/02/2017  
 Time period: 15:00 - 18:00

STARTING TIME	Jill Street Northbound				Seaview Road Westbound				- Southbound				Seaview Road Eastbound				INTER-SECTION	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
15:00	0	0	0	0	0	23	0	23	0	0	0	0	0	18	4	22	45	
15:15	1	0	0	1	1	15	0	16	0	0	0	0	0	8	2	10	27	
15:30	0	0	0	0	0	21	0	21	0	0	0	0	0	13	0	13	34	
15:45	0	0	0	0	1	19	0	20	0	0	0	0	0	11	3	14	34	140
16:00	0	0	2	2	1	32	0	33	0	0	0	0	0	7	1	8	43	138
16:15	3	0	0	3	1	31	0	32	0	0	0	0	0	14	2	16	51	162
16:30	0	0	0	0	3	59	0	62	0	0	0	0	0	25	6	31	93	221
16:45	2	0	0	2	0	32	0	32	0	0	0	0	0	22	3	25	59	246
17:00	0	0	1	1	1	51	0	52	0	0	0	0	0	17	4	21	74	277
17:15	0	0	0	0	3	34	0	37	0	0	0	0	0	20	5	25	62	288
17:30	2	0	1	3	1	35	0	36	0	0	0	0	0	25	2	27	66	261
17:45	1	0	0	1	0	26	0	26	0	0	0	0	0	13	2	15	42	244
Total	9	0	4	13	12	378	0	390	0	0	0	0	0	193	34	227	630	
Peak hour	2	0	1	3	7	176	0	183	0	0	0	0	0	84	18	102	288	
Peak 15 min				2				62								31	93	
PHF				0.38				0.74				#####				0.82	0.77	



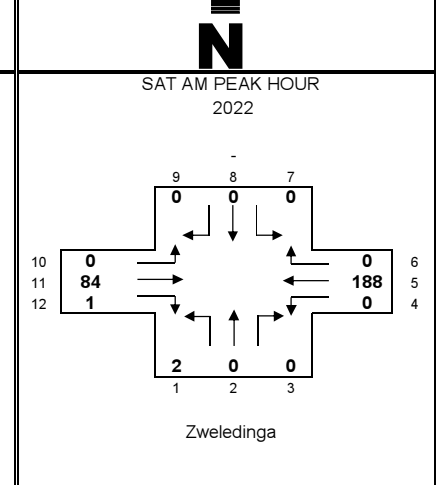
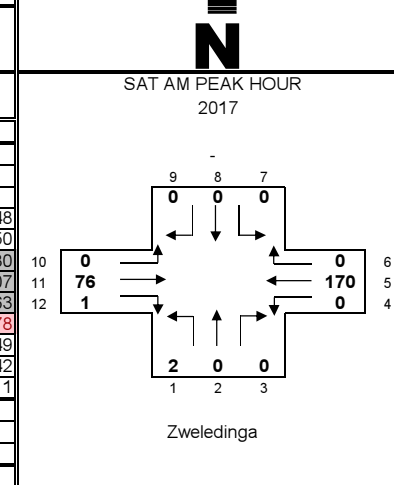
Project : TIA : PROPOSED LOW COST HOUSING DEVELOPMENT, SEAVIEW  
 Intersection : Seaview Road / Zweelodinga NO. 6  
 Day & date : 28/02/2017  
 Time period: 06:00 - 09:00

STARTING TIME	Zweelodinga Northbound				Seaview Road Westbound				- Southbound				Seaview Road Eastbound				INTER-SECTION	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
06:00	0	0	0	0	0	5	0	5	0	0	0	0	0	28	0	28	33	
06:15	0	0	0	0	0	1	0	1	0	0	0	0	0	30	1	31	32	
06:30	0	0	0	0	0	5	0	5	0	0	0	0	0	44	0	44	49	
06:45	0	0	0	0	0	6	0	6	0	0	0	0	0	34	0	34	40	154
07:00	0	0	0	0	0	14	0	14	0	0	0	0	0	36	0	36	50	171
07:15	0	0	0	0	0	22	0	22	0	0	0	0	0	47	1	48	70	209
07:30	0	0	0	0	0	17	0	17	0	0	0	0	0	43	0	43	60	220
07:45	0	0	0	0	0	8	0	8	0	0	0	0	0	16	0	16	24	204
08:00	0	0	0	0	0	17	0	17	0	0	0	0	0	17	0	17	34	188
08:15	0	0	0	0	0	12	0	12	0	0	0	0	0	26	0	26	38	156
08:30	0	0	0	0	0	13	0	13	0	0	0	0	0	12	0	12	25	121
08:45	0	0	0	0	0	16	0	16	0	0	0	0	0	23	0	23	39	136
Total	0	0	0	0	0	136	0	136	0	0	0	0	0	356	2	358	494	
Peak hour	0	0	0	0	0	61	0	61	0	0	0	0	0	142	1	143	204	
Peak 15 min	0	0	0	0	0	22	0	22	0	0	0	0	0	48	0	48	70	
PHF				#####				0.69								0.74	0.73	



Project : TIA : PROPOSED LOW COST HOUSING DEVELOPMENT, SEAVIEW  
 Intersection : Seaview Road / Zweelodinga NO. 6  
 Day & date : 28/02/2017  
 Time period: 15:00 - 18:00

STARTING TIME	Zweelodinga Northbound				Seaview Road Westbound				- Southbound				Seaview Road Eastbound				INTER-SECTION	
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total	Hour
15:00	0	0	0	0	0	31	0	31	0	0	0	0	0	21	0	21	52	
15:15	0	0	0	0	0	22	0	22	0	0	0	0	0	9	0	9	31	
15:30	0	0	0	0	0	40	0	40	0	0	0	0	0	9	0	9	49	
15:45	0	0	0	0	0	7	0	7	0	0	0	0	0	9	0	9	16	148
16:00	0	0	0	0	1	37	0	38	0	0	0	0	0	16	0	16	54	150
16:15	1	0	0	1	0	40	0	40	0	0	0	0	0	20	0	20	61	180
16:30	0	0	0	0	0	53	0	53	0	0	0	0	0	23	0	23	76	207
16:45	0	0	0	0	0	49	0	49	0	0	0	0	0	22	1	23	72	263
17:00	1	0	0	1	0	46	0	46	0	0	0	0	0	22	0	22	69	278
17:15	1	0	0	1	0	22	0	22	0	0	0	0	0	9	0	9	32	249
17:30	2	0	0	2	0	41	0	41	0	0	0	0	0	25	1	26	69	242
17:45	1	0	0	1	0	31	0	31	0	0	0	0	0	9	0	9	41	211
Total	6	0	0	6	1	419	0	420	0	0	0	0	0	194	2	196	622	
Peak hour	2	0	0	2	0	170	0	170	0	0	0	0	0	76	1	77	249	
Peak 15 min				1		53		53								23	76	
PHF				0.50				0.80								0.84	0.82	





ANNEXURE B  
Historical Daily  
Counts

**Seaview Low Cost Housing Development**

**24 Hr Count Volumes**

<b>Count Station</b>	<b>Location</b>	<b>2006</b>	<b>2009</b>	<b>2010</b>	<b>2012</b>	<b>2015</b>	<b>Total Growth (%)</b>	<b>Average Growth Per Annum (from 2006)</b>
2013	MR0422 Seaview Road	2088	2197		1948	2356	12.84	1.35
<b>AVERAGE (All stations)</b>								<u><u>1.35</u></u>



# TRAFFIC SURVEILLANCE SYSTEM

## COMPREHENSIVE TRAFFIC OBSERVATIONS

### Eastern Cape District Mun

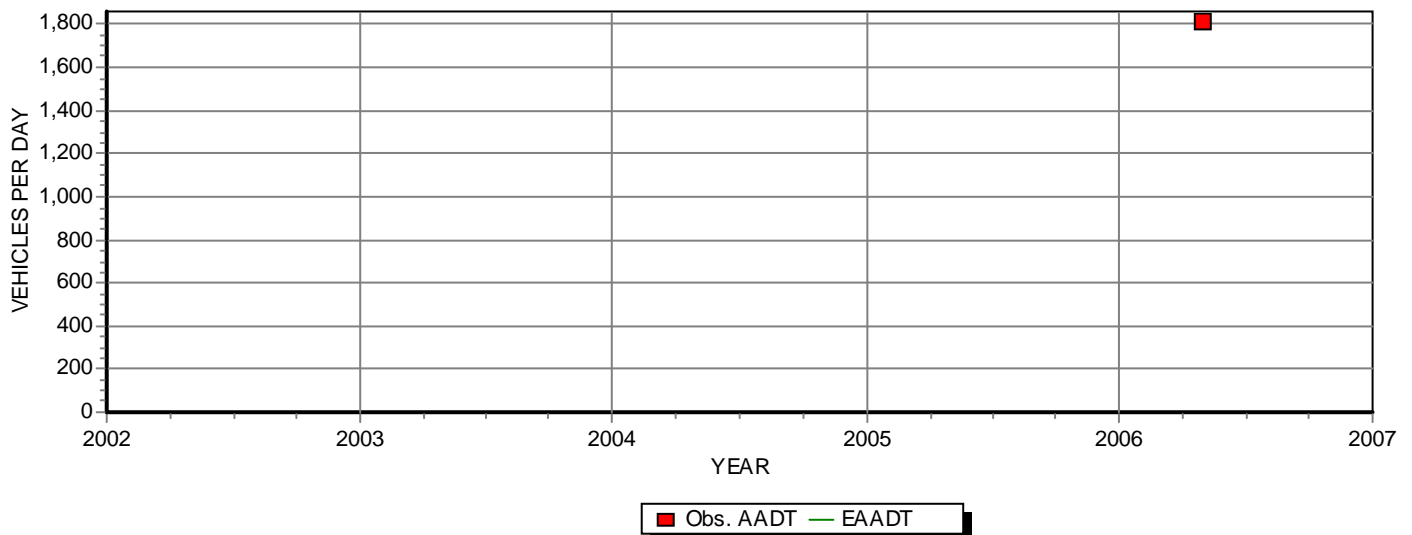


**Site: 02013**      Site Type: Secondary      Latest Count: 2006/05/12      **Assessment Date :** 2006/05

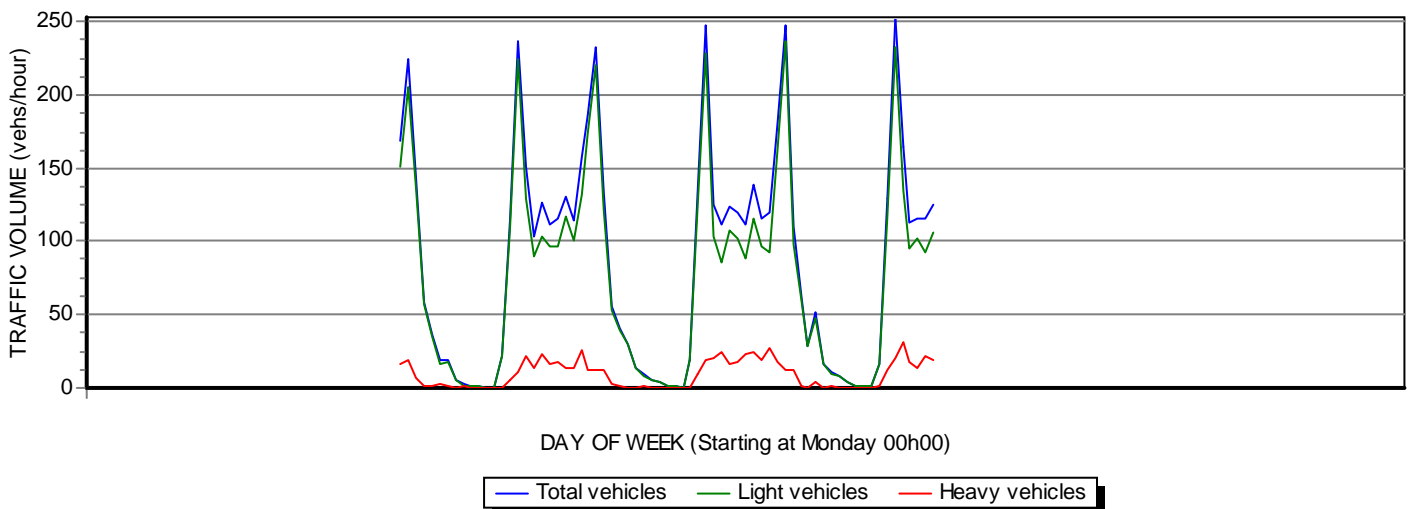
Number	Site Name	Road/Street	Location Between	Lanes	Region	Rec. (hrs)
02013			-	2	CACADU	69

Daily Traffic		Speeds (km/h)		Road Loads and Growth	Photo:
AADT	1813	Speed limit	80.0	Ave axles / heavy	0.0
ADT	2088	Arithmetic mean	0.0	Ave mass / heavy	0.0
ADHV	227	Arith mean, light	0.0	Ave mass/Short HV	0
AWDT	4,176	Arith mean, heavy	0.0	Ave mass/Med HV	0
Heavy Vehicle %	10.9	Harmonic mean	0.0	Ave mass/Long HV	0
Busses %	0.0	Exceed limit V %	0.0	Ave E80's / heavy	0.0
Heavy S M L %	0 0 0			ADE80 worst lane	0.0
Night Traffic %	15.9			Growth HV Avg Mass	0.00%
				Growth: linear est.	
				Growth: expon	
				Estimated if only v ol data available	

AADT Variations



TRAFFIC FLOW VARIATIONS  
DURING AN AVERAGE WEEK



Disclaimer: Every effort has been made to supply complete and accurate info. However, the user should take full responsibility for the interpretation & application of the data

TRAFFIC HIGHLIGHTS OF SITE 02013			
1.1	Site Identifier		02013
1.2	Site Name		Seaview/K Kamma S
1.3	Site Description	South of Seaview Rd and Kragga Kamma Rd Junction	
1.4	Road Description	Route : Seaview Rd Road : MR00422 Section : Distance : 0.0km	
1.5	GPS Position	25 22 59.4E -33 58 33.2S	
1.6	Number of Lanes		2
1.7	Station Type		Secondary (Temp)
1.8	Requested Period	2009/01/01 - 2009/12/31	
1.9	Length of record requested (hours)		8760
1.10	Actual First & Last Dates	2009/05/25 - 2009/05/28	
1.11	Actual available data (hours)		70
1.12	Percentage data available for requested period		0.8
		To Kragga Kamma	To Seaview
2.1	Total number of vehicles	3193	3214
2.2	Average daily traffic (ADT)	1095	1102
2.3	Average daily truck traffic (ADTT)	163	180
2.4	Percentage of trucks	14.9	16.3
2.5	Truck split % (short:medium:long)		
2.6	Percentage of night traffic (20:00 - 06:00)	5.7	7.5
3.1	Speed limit (km/hr)		80
3.2	Average speed (km/hr)		
3.3	Average speed - light vehicles (km/hr)		
3.4	Average speed - heavy vehicles (km/hr)		
3.5	Average night speed (km/hr)		
3.6	15th centile speed (km/hr)		
3.7	85th centile speed (km/hr)		
3.8	Percentage vehicles in excess of speed limit	0.0	0.0
4.1	Percentage vehicles in flows over 600 vehicles/hr	0.0	0.0
4.2	Highest volume on the road (vehicles/hr)		2009/05/27 08:00:00
4.3	Highest volume in the North (vehs/hr)		2009/05/26 08:00:00
4.4	Highest volume in the South (vehs/hr)		2009/05/26 18:00:00
4.5	Highest volume in a lane (vehicles/hr)		2009/05/26 08:00:00
4.6	15th highest volume on the road (vehicles/hr)		2009/05/27 16:00:00
4.7	15th highest volume in the North direction (vehs/hr)		2009/05/26 11:00:00
4.8	15th highest volume in the South direction (vehs/hr)		2009/05/25 13:00:00
4.9	30th highest volume on the road (vehicles/hr)		2009/05/27 15:00:00
4.10	30th highest volume in the North direction (vehs/hr)		2009/05/27 15:00:00
4.11	30th highest volume in the South direction (vehs/hr)		2009/05/26 08:00:00
5.1	Percentage of vehicles less than 2s behind vehicle ahead		
6.1	Total number of heavy vehicles	476	525
6.2	Estimated average number of axles per truck		
6.3	Estimated truck mass (Ton/truck)		
6.4	Estimated average E80/truck		
6.5	Estimated daily E80 on the road		
6.6	Estimated daily E80 in the North direction		
6.7	Estimated daily E80 in the South direction		
6.8	Estimated daily E80 in the worst North lane		
6.9	Estimated daily E80 in the worst South lane		
6.10	ASSUMPTION on Axles/Truck (Short:Medium:Long)		(2.0 : 5.0 : 7.0)
6.11	ASSUMPTION on Mass/Truck (Short:Medium:Long)		(10.9 : 31.5 : 39.8)
6.12	ASSUMPTION on E80s/Truck (Short:Medium:Long)		(0.6 : 2.5 : 2.1)



# TRAFFIC SURVEILLANCE SYSTEM


## COMPREHENSIVE TRAFFIC OBSERVATIONS

### Eastern Cape Province



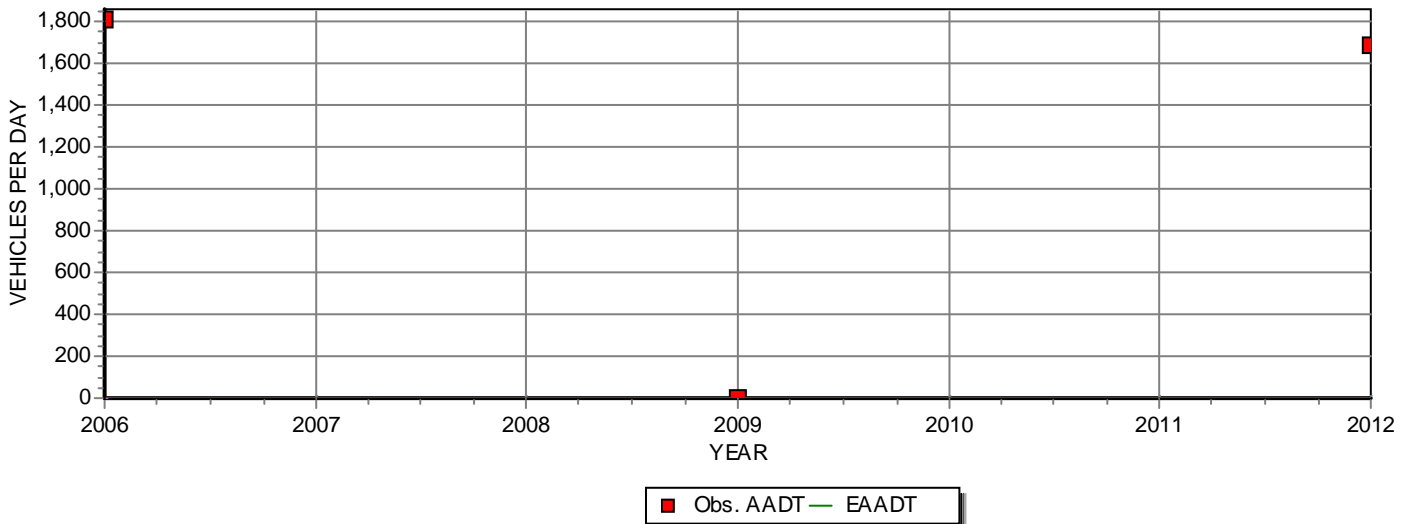
**Site: 02013**      Site Type: Secondary      Latest Count: 2012/06/15      **Assessment Date :** 2012/01

Number	Site Name	Road/Street	Location Between	Lanes	Region	Rec. (hrs)
02013			-	2		69

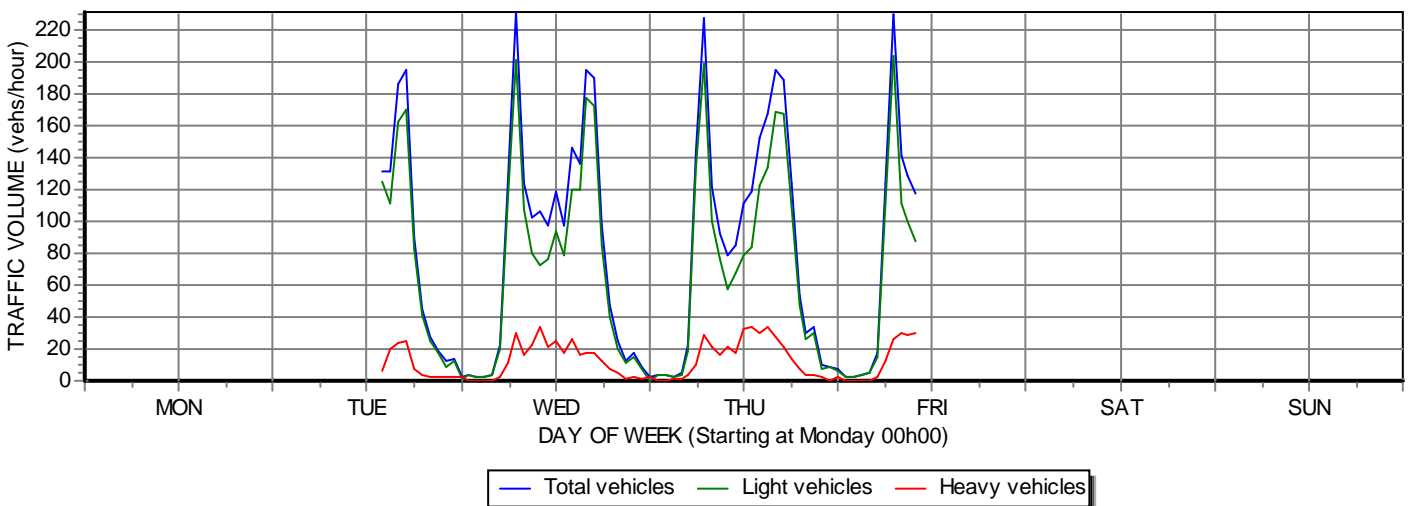
Daily Traffic		Speeds (km/h)		Road Loads and Growth		Photo:
AADT	1692	Speed limit	80.0	Ave axles / heavy	0.0	
ADT	1948	Arithmetic mean	0.0	Ave mass / heavy	0.0	
ADHV	312	Arith mean, light	0.0	Ave mass/Short HV	0.0	
AWDT	1,948	Arith mean, heavy	0.0	Ave mass/Med HV	0.0	
Heavy Vehicle %	15.4	Harmonic mean	0.0	Ave mass/Long HV	0.0	
Busses %	0.0	Exceed limit V %	0.0	Ave E80's / heavy	0.0	
Taxis %	0.0			ADE80 worst lane	0.0	
Heavy S M L %	0 0 0			Growth HV Avg Mass	0.00%	
Night Traffic %	14.4			Growth: linear est.		
				Growth: expon		

\* = Data not sufficient for accurate calculation.

AADT Variations



TRAFFIC FLOW VARIATIONS  
DURING AN AVERAGE WEEK



Disclaimer: Every effort has been made to supply complete and accurate info. However, the user should take full responsibility for the interpretation & application of the data



# TRAFFIC SURVEILLANCE SYSTEM


## COMPREHENSIVE TRAFFIC OBSERVATIONS

### Eastern Cape Province



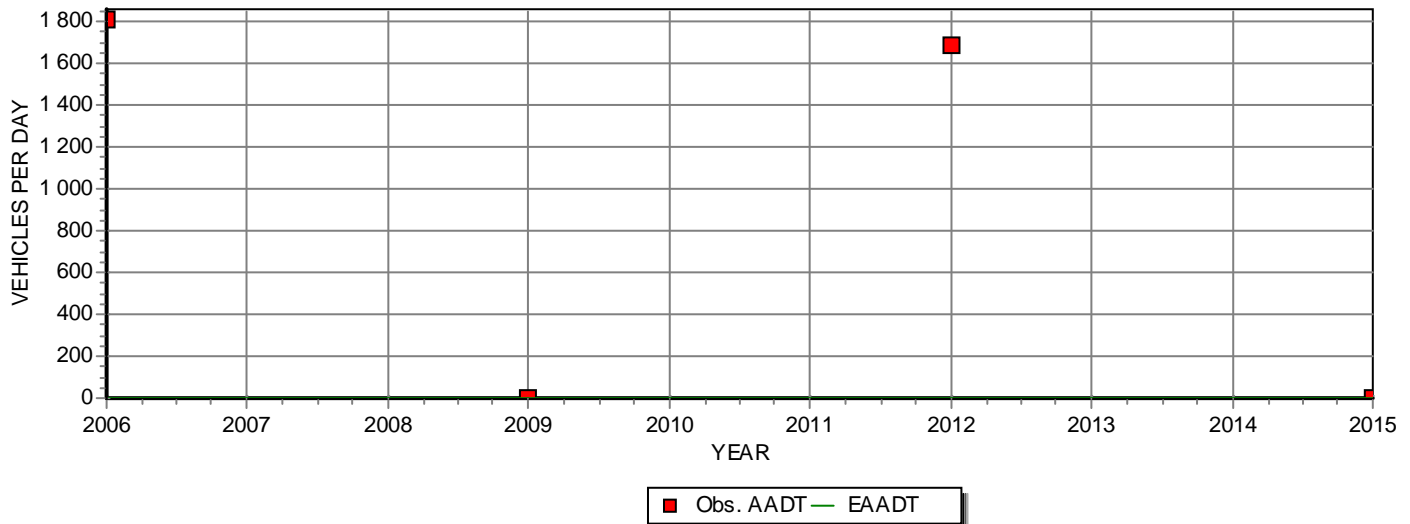
**Site: 02013**      Site Type: Secondary      Latest Count: 2015/05/28      **Assessment Date :** 2015/01

Number	Site Name	Road/Street	Location Between	Lanes	Region	Rec. (hrs)
02013			-	2		71

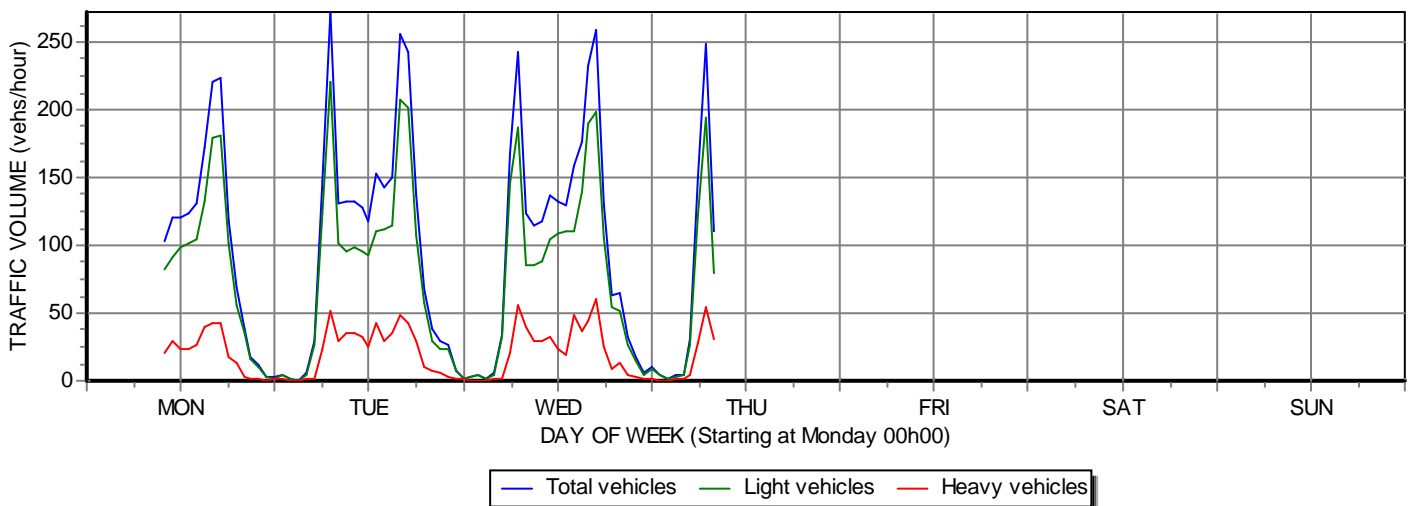
Daily Traffic		Speeds (km/h)		Road Loads and Growth		Photo:
AADT	*	Speed limit	80.0	Ave axles / heavy	0.0	
ADT	2356	Arithmetic mean	0.0	Ave mass / heavy	0.0	
ADHV	496	Arith mean, light	0.0	Ave mass/Short HV	0.0	
AWDT	2 356	Arith mean, heavy	0.0	Ave mass/Med HV	0.0	
Heavy Vehicle %	20.7	Harmonic mean	0.0	Ave mass/Long HV	0.0	
Busses %	0.0	Exceed limit V %	0.0	Ave E80's / heavy	0.0	
Taxis %	0.0			ADE80 worst lane	0.0	
Heavy S M L %	0 0 0			Growth HV Avg Mass	0.00%	
Night Traffic %	15.3			Growth: linear est.		
				Growth: expon		
				Estimated if only v ol data available		

\* = Data not sufficient for accurate calculation.

AADT Variations



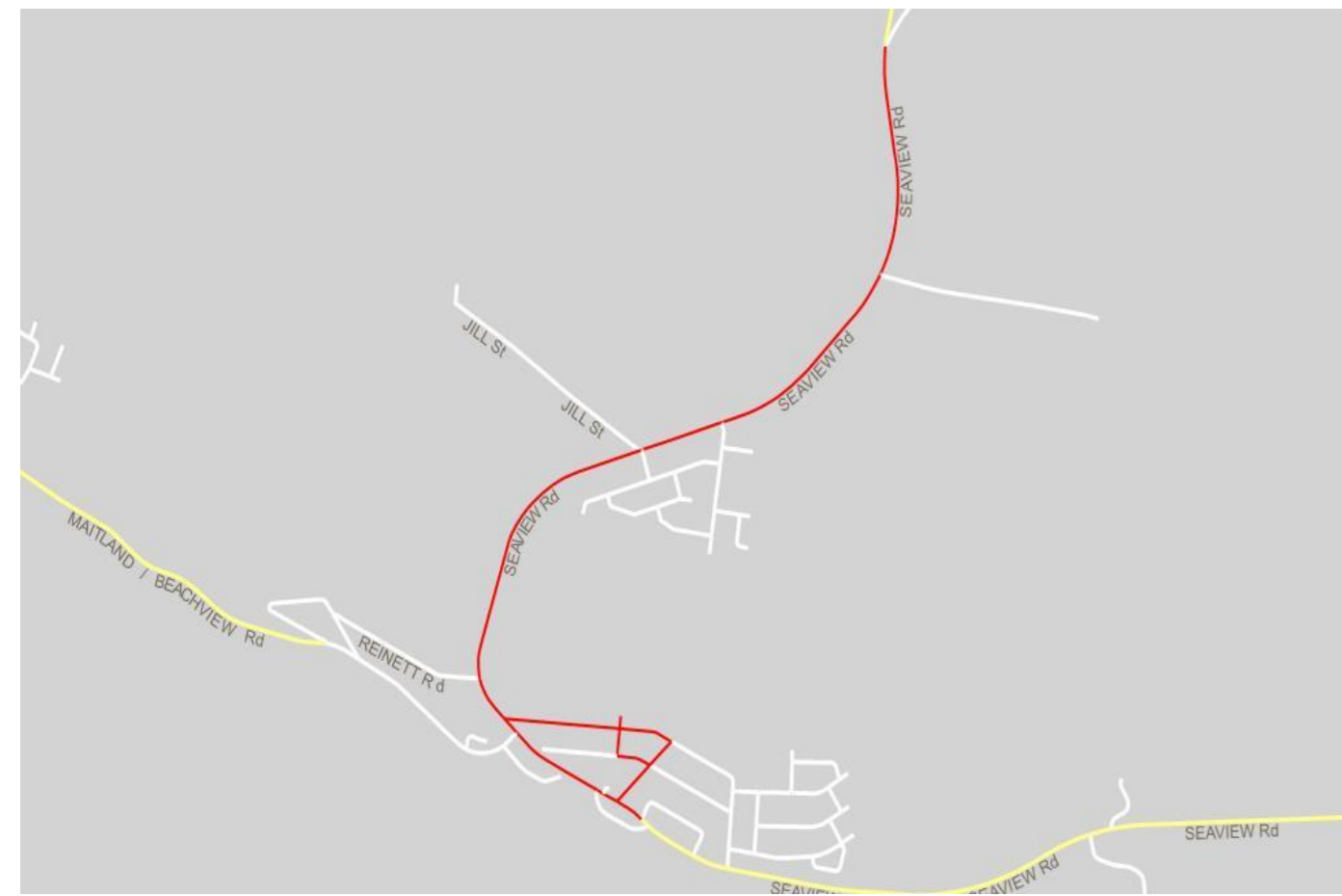
TRAFFIC FLOW VARIATIONS  
DURING AN AVERAGE WEEK



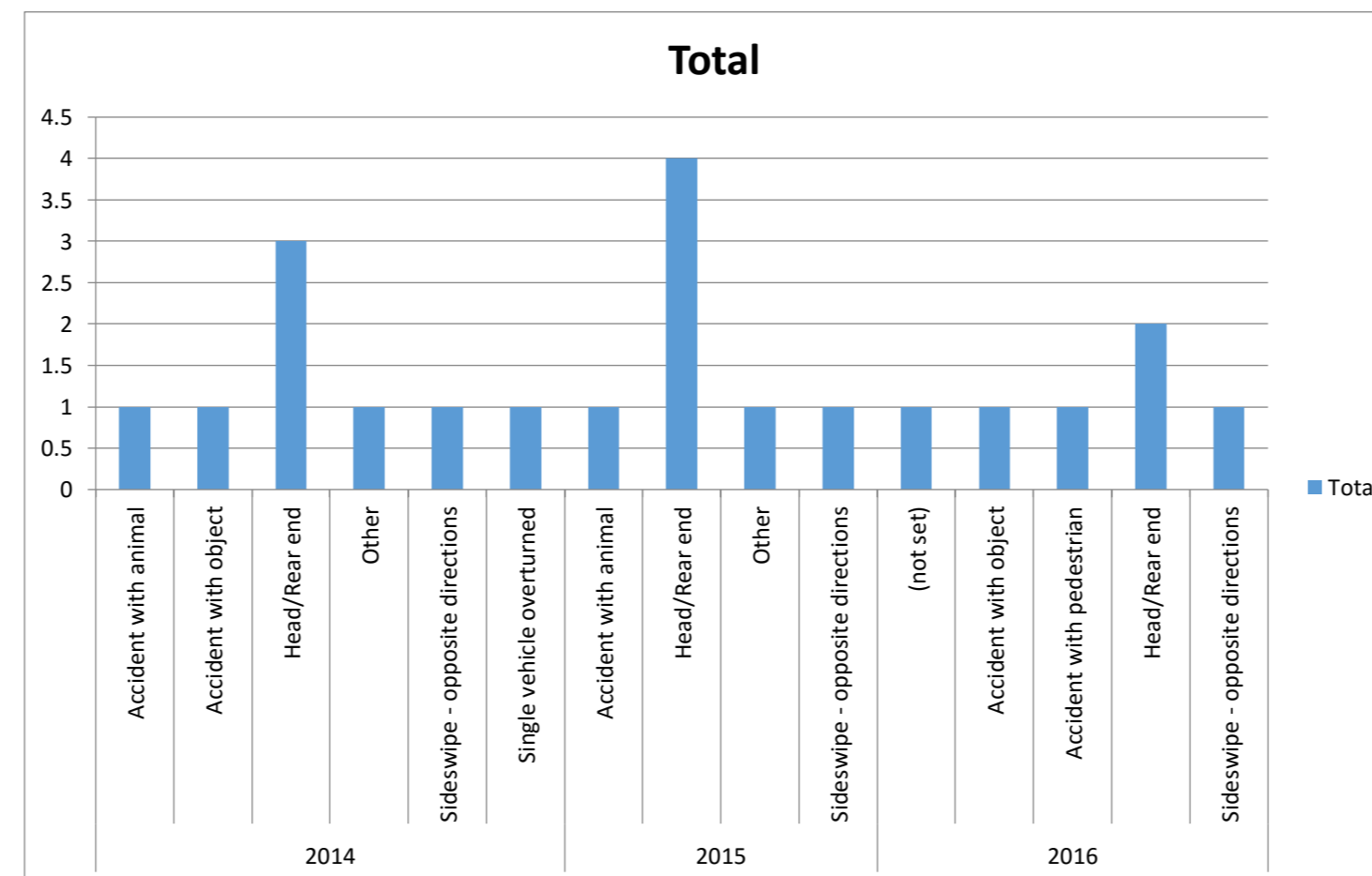
Disclaimer: Every effort has been made to supply complete and accurate info. However, the user should take full responsibility for the interpretation & application of the data

ANNEXURE C  
Collision Data

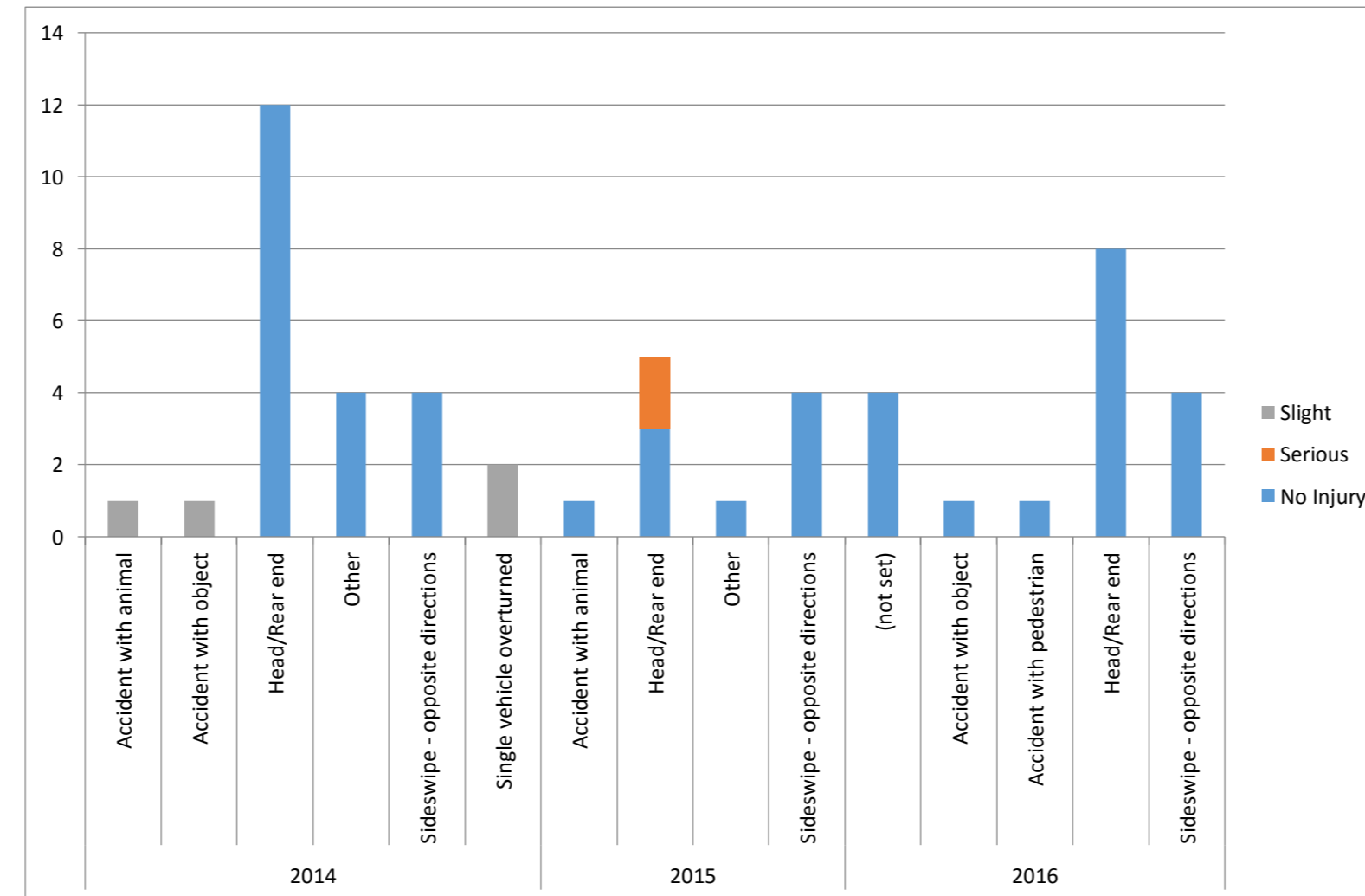
**Collision Data - Development Option 1**



Count of Tarnumber		
Year	AccidentType	Total
2014	Accident with animal	1
	Accident with object	1
	Head/Rear end	3
	Other	1
	Sideswipe - opposite directions	1
	Single vehicle overturned	1
<b>2014 Total</b>		<b>8</b>
2015	Accident with animal	1
	Head/Rear end	4
	Other	1
	Sideswipe - opposite directions	1
<b>2015 Total</b>		<b>7</b>
2016	(not set)	1
	Accident with object	1
	Accident with pedestrian	1
	Head/Rear end	2
	Sideswipe - opposite directions	1
<b>2016 Total</b>		<b>6</b>
<b>Grand Total</b>		<b>21</b>



Count of Tarnumber		Severity			Grand Total
Year	AccidentType	No Injury	Serious	Slight	
2014	Accident with animal			1	1
	Accident with object			1	1
	Head/Rear end	12			12
	Other	4			4
	Sideswipe - opposite directions	4			4
	Single vehicle overturned			2	
<b>2014 Total</b>		<b>20</b>		<b>4</b>	<b>24</b>
2015	Accident with animal	1			1
	Head/Rear end	3		2	5
	Other	1			1
	Sideswipe - opposite directions	4			4
<b>2015 Total</b>		<b>9</b>		<b>2</b>	<b>11</b>
2016	(not set)	4			4
	Accident with object	1			1
	Accident with pedestrian	1			1
	Head/Rear end	8			8
	Sideswipe - opposite directions	4			4
<b>2016 Total</b>		<b>18</b>			<b>18</b>
<b>Grand Total</b>		<b>47</b>	<b>2</b>	<b>4</b>	<b>53</b>

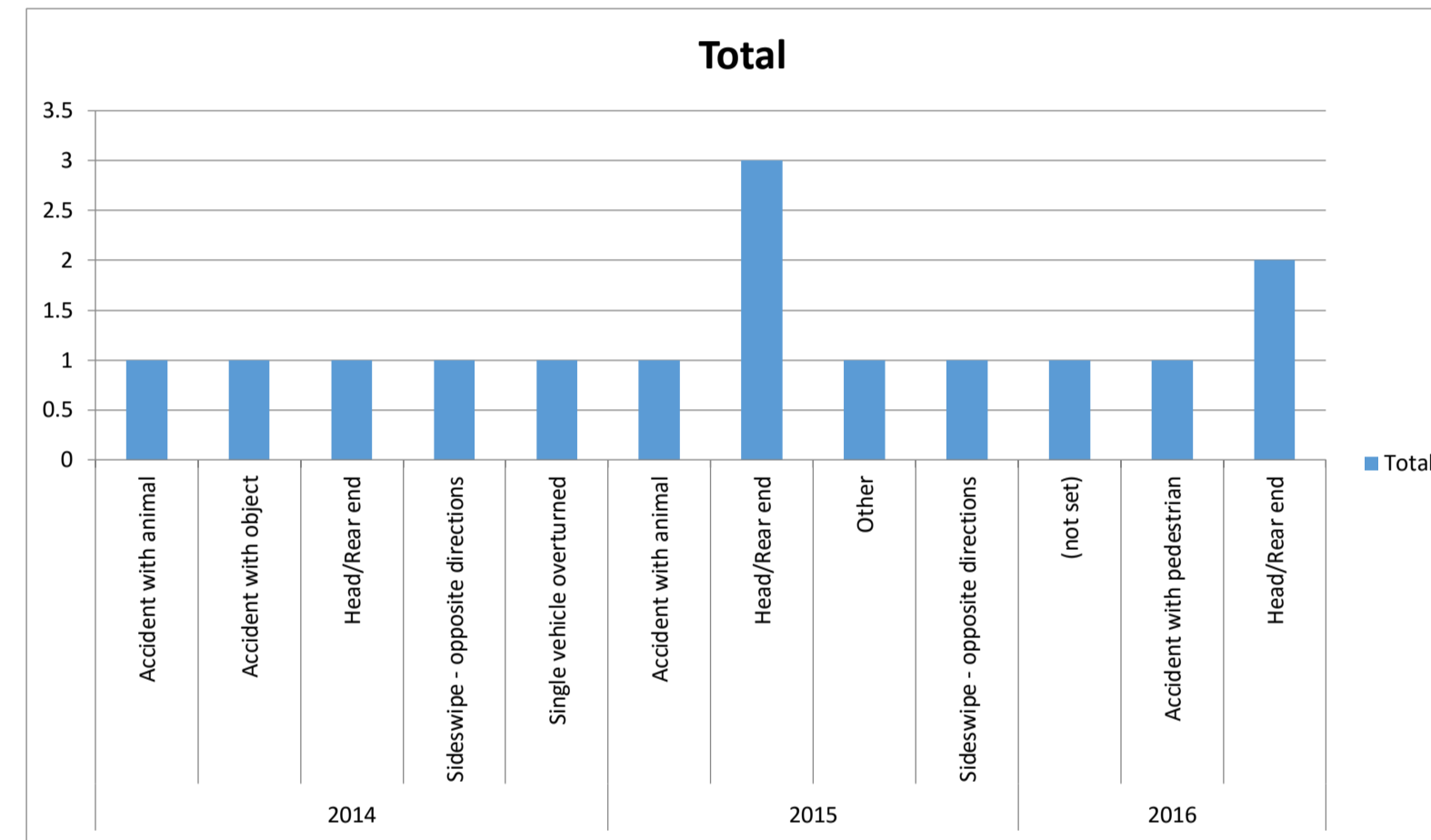




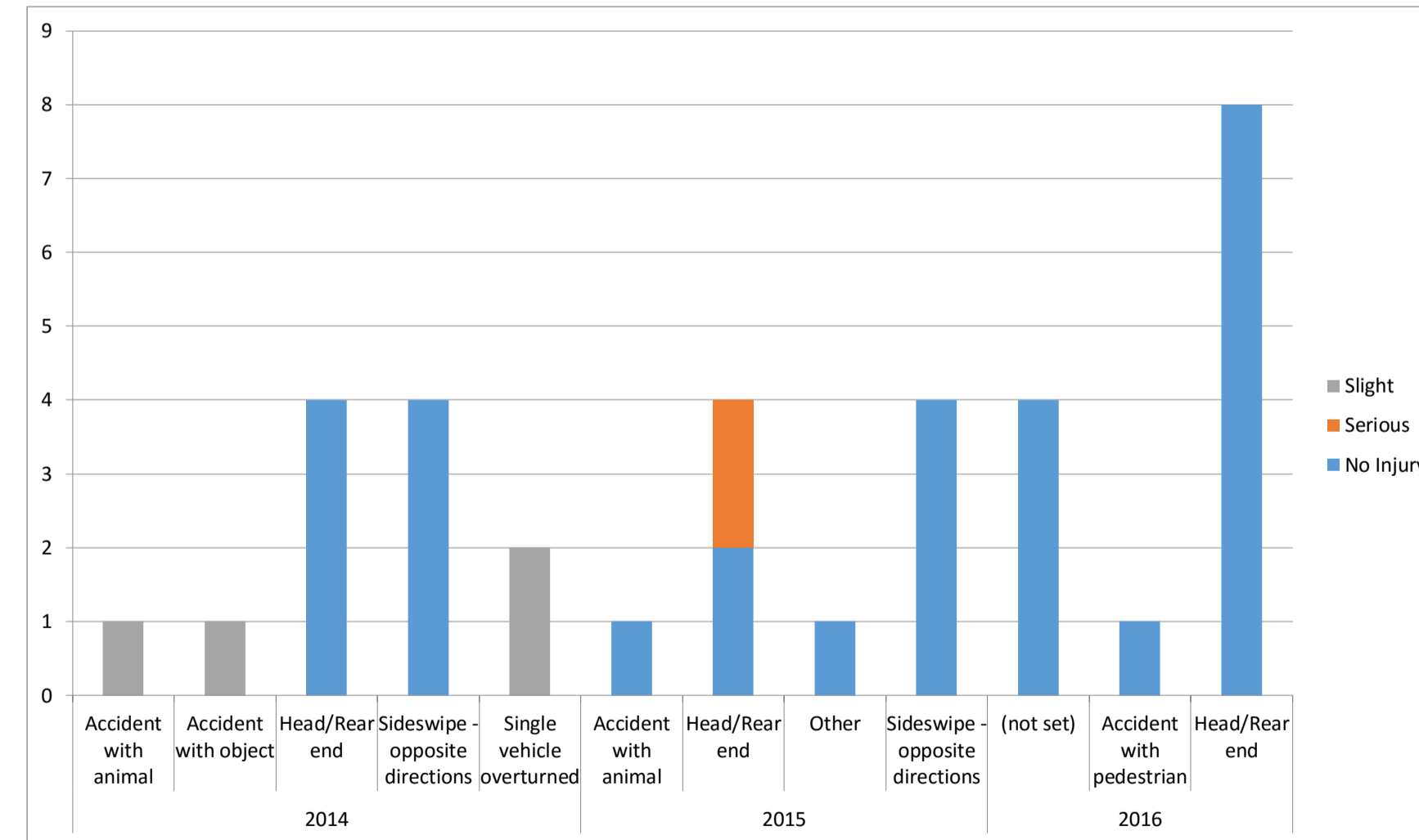
Collision Data - Development Option 2



Count of Tarnumber		
Year	AccidentType	Total
2014	Accident with animal	1
	Accident with object	1
	Head/Rear end	1
	Sideswipe - opposite directions	1
	Single vehicle overturned	1
<b>2014 Total</b>		<b>5</b>
2015	Accident with animal	1
	Head/Rear end	3
	Other	1
	Sideswipe - opposite directions	1
<b>2015 Total</b>		<b>6</b>
2016 (not set)	Accident with pedestrian	1
	Head/Rear end	2
<b>2016 Total</b>		<b>4</b>
<b>Grand Total</b>		<b>15</b>



Count of Tarnumber		Severity			Grand Total
Year	AccidentType	No Injury	Serious	Slight	
2014	Accident with animal				1
	Accident with object			1	1
	Head/Rear end	4			4
	Sideswipe - opposite directions	4			4
	Single vehicle overturned			2	
<b>2014 Total</b>		<b>8</b>		<b>4</b>	<b>12</b>
2015	Accident with animal	1			1
	Head/Rear end	2	2		4
	Other	1			1
	Sideswipe - opposite directions	4			4
<b>2015 Total</b>		<b>8</b>	<b>2</b>		<b>10</b>
2016 (not set)	Accident with pedestrian	4			4
	Head/Rear end	1			1
<b>2016 Total</b>		<b>8</b>			<b>8</b>
<b>Grand Total</b>		<b>29</b>	<b>2</b>	<b>4</b>	<b>35</b>



ANNEXURE D  
SIDRA  
OUTPUT  
SHEETS: 2017  
Before  
Development

# MOVEMENT SUMMARY

 Site: 01 [01 AM ND]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m			
East: Seaview Road											
5	T1	77	0.0	0.042	0.0	LOS A	0.0	0.2	0.03	0.03	59.3
6	R2	4	0.0	0.042	5.9	LOS A	0.0	0.2	0.03	0.03	52.2
Approach		81	0.0	0.042	0.3	NA	0.0	0.2	0.03	0.03	59.1
North: Albany Road											
7	L2	6	0.0	0.008	8.5	LOS A	0.0	0.2	0.26	0.86	39.6
9	R2	3	0.0	0.008	8.4	LOS A	0.0	0.2	0.26	0.86	48.0
Approach		9	0.0	0.008	8.5	LOS A	0.0	0.2	0.26	0.86	43.6
West: Seaview Road											
10	L2	3	0.0	0.077	5.5	LOS A	0.0	0.0	0.00	0.01	57.5
11	T1	148	0.0	0.077	0.0	LOS A	0.0	0.0	0.00	0.01	59.8
Approach		152	0.0	0.077	0.1	NA	0.0	0.0	0.00	0.01	59.7
All Vehicles		242	0.0	0.077	0.5	NA	0.0	0.2	0.02	0.05	58.9

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 01 [01 PM ND]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Seaview Road											
5	T1	112	0.0	0.058	0.0	LOS A	0.0	0.1	0.01	0.02	59.7
6	R2	3	0.0	0.058	5.7	LOS A	0.0	0.1	0.01	0.02	52.7
Approach		115	0.0	0.058	0.2	NA	0.0	0.1	0.01	0.02	59.6
North: Albany Road											
7	L2	6	0.0	0.006	8.3	LOS A	0.0	0.2	0.19	0.88	39.7
9	R2	1	0.0	0.006	8.3	LOS A	0.0	0.2	0.19	0.88	48.1
Approach		7	0.0	0.006	8.3	LOS A	0.0	0.2	0.19	0.88	41.7
West: Seaview Road											
10	L2	9	0.0	0.052	5.5	LOS A	0.0	0.0	0.00	0.06	57.0
11	T1	93	0.0	0.052	0.0	LOS A	0.0	0.0	0.00	0.06	59.2
Approach		102	0.0	0.052	0.5	NA	0.0	0.0	0.00	0.06	59.0
All Vehicles		224	0.0	0.058	0.6	NA	0.0	0.2	0.01	0.06	58.8

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 101 [02 AM ND]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
2	T1	49	0.0	0.032	0.1	LOS A	0.1	0.4	0.08	0.10	54.7
3	R2	11	0.0	0.032	4.5	LOS A	0.1	0.4	0.08	0.10	54.2
Approach		60	0.0	0.032	0.8	NA	0.1	0.4	0.08	0.10	54.5
East: Van Reenen Street											
4	L2	1	0.0	0.026	8.2	LOS A	0.1	0.6	0.22	0.89	45.3
6	R2	25	0.0	0.026	8.0	LOS A	0.1	0.6	0.22	0.89	45.6
Approach		26	0.0	0.026	8.0	LOS A	0.1	0.6	0.22	0.89	45.6
North: Seaview Road											
7	L2	36	0.0	0.050	5.5	LOS A	0.0	0.0	0.00	0.22	54.0
8	T1	62	0.0	0.050	0.0	LOS A	0.0	0.0	0.00	0.22	50.2
Approach		98	0.0	0.050	2.0	NA	0.0	0.0	0.00	0.22	52.6
All Vehicles		184	0.0	0.050	2.5	NA	0.1	0.6	0.06	0.28	51.1

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 101 [02 PM ND]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
2	T1	83	0.0	0.070	0.3	LOS A	0.3	1.8	0.20	0.19	50.1
3	R2	41	0.0	0.070	4.8	LOS A	0.3	1.8	0.20	0.19	52.6
Approach		124	0.0	0.070	1.8	NA	0.3	1.8	0.20	0.19	51.6
East: Van Reenen Street											
4	L2	41	0.0	0.125	8.4	LOS A	0.5	3.2	0.25	0.91	44.8
6	R2	85	0.0	0.125	8.8	LOS A	0.5	3.2	0.25	0.91	45.1
Approach		126	0.0	0.125	8.6	LOS A	0.5	3.2	0.25	0.91	45.0
North: Seaview Road											
7	L2	101	0.0	0.097	5.5	LOS A	0.0	0.0	0.00	0.32	52.7
8	T1	85	0.0	0.097	0.0	LOS A	0.0	0.0	0.00	0.32	46.5
Approach		186	0.0	0.097	3.0	NA	0.0	0.0	0.00	0.32	51.3
All Vehicles		437	0.0	0.125	4.3	NA	0.5	3.2	0.13	0.45	48.7

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 03 [03 AM ND]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
1	L2	2	0.0	0.057	5.5	LOS A	0.0	0.0	0.00	0.01	57.1
2	T1	112	0.0	0.057	0.0	LOS A	0.0	0.0	0.00	0.01	59.8
Approach		114	0.0	0.057	0.1	NA	0.0	0.0	0.00	0.01	59.8
North: Seaview Road											
8	T1	62	0.0	0.033	0.0	LOS A	0.0	0.1	0.02	0.02	59.6
9	R2	2	0.0	0.033	5.8	LOS A	0.0	0.1	0.02	0.02	57.5
Approach		64	0.0	0.033	0.2	NA	0.0	0.1	0.02	0.02	59.5
West: Reinett Road											
10	L2	8	0.0	0.014	8.4	LOS A	0.0	0.3	0.22	0.87	51.8
12	R2	7	0.0	0.014	8.2	LOS A	0.0	0.3	0.22	0.87	46.2
Approach		16	0.0	0.014	8.3	LOS A	0.0	0.3	0.22	0.87	49.7
All Vehicles		194	0.0	0.057	0.8	NA	0.0	0.3	0.02	0.08	58.4

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 03 [03 PM ND ]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
1	L2	4	0.0	0.057	5.5	LOS A	0.0	0.0	0.00	0.02	57.0
2	T1	108	0.0	0.057	0.0	LOS A	0.0	0.0	0.00	0.02	59.6
Approach		113	0.0	0.057	0.2	NA	0.0	0.0	0.00	0.02	59.5
North: Seaview Road											
8	T1	181	0.0	0.097	0.0	LOS A	0.1	0.5	0.03	0.03	59.4
9	R2	9	0.0	0.097	5.8	LOS A	0.1	0.5	0.03	0.03	57.4
Approach		191	0.0	0.097	0.3	NA	0.1	0.5	0.03	0.03	59.2
West: Reinett Road											
10	L2	1	0.0	0.009	8.4	LOS A	0.0	0.2	0.30	0.87	51.6
12	R2	7	0.0	0.009	8.8	LOS A	0.0	0.2	0.30	0.87	45.8
Approach		8	0.0	0.009	8.7	LOS A	0.0	0.2	0.30	0.87	46.8
All Vehicles		312	0.0	0.097	0.5	NA	0.1	0.5	0.02	0.05	58.9

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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



# MOVEMENT SUMMARY

 Site: 05 [05 AM ND]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Jill Street											
1	L2	12	0.0	0.014	8.2	LOS A	0.1	0.4	0.15	0.90	47.7
3	R2	5	0.0	0.014	8.2	LOS A	0.1	0.4	0.15	0.90	44.2
Approach		17	0.0	0.014	8.2	LOS A	0.1	0.4	0.15	0.90	46.8
East: Seaview Road											
4	L2	2	0.0	0.031	5.5	LOS A	0.0	0.0	0.00	0.02	56.2
5	T1	60	0.0	0.031	0.0	LOS A	0.0	0.0	0.00	0.02	59.8
Approach		62	0.0	0.031	0.2	NA	0.0	0.0	0.00	0.02	59.7
West: Seaview Road											
11	T1	106	0.0	0.055	0.0	LOS A	0.0	0.1	0.01	0.01	59.8
12	R2	2	0.0	0.055	5.6	LOS A	0.0	0.1	0.01	0.01	56.3
Approach		108	0.0	0.055	0.1	NA	0.0	0.1	0.01	0.01	59.8
All Vehicles		187	0.0	0.055	0.9	NA	0.1	0.4	0.02	0.09	58.7

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 05 [05 PM ND]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Jill Street											
1	L2	2	0.0	0.003	8.7	LOS A	0.0	0.1	0.29	0.84	47.5
3	R2	1	0.0	0.003	8.8	LOS A	0.0	0.1	0.29	0.84	43.9
Approach		3	0.0	0.003	8.7	LOS A	0.0	0.1	0.29	0.84	46.5
East: Seaview Road											
4	L2	7	0.0	0.097	5.5	LOS A	0.0	0.0	0.00	0.02	56.2
5	T1	185	0.0	0.097	0.0	LOS A	0.0	0.0	0.00	0.02	59.7
Approach		193	0.0	0.097	0.2	NA	0.0	0.0	0.00	0.02	59.7
West: Seaview Road											
11	T1	88	0.0	0.058	0.2	LOS A	0.1	0.9	0.12	0.11	58.3
12	R2	19	0.0	0.058	6.1	LOS A	0.1	0.9	0.12	0.11	54.5
Approach		107	0.0	0.058	1.2	NA	0.1	0.9	0.12	0.11	57.8
All Vehicles		303	0.0	0.097	0.7	NA	0.1	0.9	0.05	0.06	58.9

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

ANNEXURE E  
SIDRA  
OUTPUT  
SHEETS:  
Option 1 - 2017  
After  
Development

# MOVEMENT SUMMARY

 Site: 01 [01 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Prop. of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Seaview Road											
5	T1	96	0.0	0.053	0.1	LOS A	0.1	0.4	0.05	0.04	59.0
6	R2	7	0.0	0.053	6.0	LOS A	0.1	0.4	0.05	0.04	51.7
Approach		103	0.0	0.053	0.5	NA	0.1	0.4	0.05	0.04	58.7
North: Albany Road											
7	L2	16	0.0	0.017	8.7	LOS A	0.1	0.4	0.29	0.86	39.5
9	R2	3	0.0	0.017	8.7	LOS A	0.1	0.4	0.29	0.86	47.9
Approach		19	0.0	0.017	8.7	LOS A	0.1	0.4	0.29	0.86	41.7
West: Seaview Road											
10	L2	3	0.0	0.095	5.5	LOS A	0.0	0.0	0.00	0.01	57.5
11	T1	184	0.0	0.095	0.0	LOS A	0.0	0.0	0.00	0.01	59.8
Approach		187	0.0	0.095	0.1	NA	0.0	0.0	0.00	0.01	59.8
All Vehicles		309	0.0	0.095	0.8	NA	0.1	0.4	0.03	0.07	58.5

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 01 [01 PM AD]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Seaview Road											
5	T1	152	0.0	0.084	0.0	LOS A	0.1	0.5	0.04	0.04	59.1
6	R2	12	0.0	0.084	5.8	LOS A	0.1	0.5	0.04	0.04	51.8
Approach		163	0.0	0.084	0.4	NA	0.1	0.5	0.04	0.04	58.8
North: Albany Road											
7	L2	11	0.0	0.009	8.4	LOS A	0.0	0.2	0.21	0.87	39.7
9	R2	1	0.0	0.009	8.7	LOS A	0.0	0.2	0.21	0.87	48.1
Approach		12	0.0	0.009	8.4	LOS A	0.0	0.2	0.21	0.87	41.0
West: Seaview Road											
10	L2	9	0.0	0.060	5.5	LOS A	0.0	0.0	0.00	0.05	57.0
11	T1	108	0.0	0.060	0.0	LOS A	0.0	0.0	0.00	0.05	59.3
Approach		118	0.0	0.060	0.5	NA	0.0	0.0	0.00	0.05	59.1
All Vehicles		293	0.0	0.084	0.8	NA	0.1	0.5	0.03	0.08	58.4

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 101 [02 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Prop. of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
2	T1	68	0.0	0.041	0.1	LOS A	0.1	0.5	0.07	0.08	55.7
3	R2	11	0.0	0.041	4.6	LOS A	0.1	0.5	0.07	0.08	54.5
Approach		79	0.0	0.041	0.7	NA	0.1	0.5	0.07	0.08	55.3
East: Van Renen Street											
4	L2	1	0.0	0.034	8.4	LOS A	0.1	0.8	0.27	0.88	45.1
6	R2	32	0.0	0.034	8.3	LOS A	0.1	0.8	0.27	0.88	45.4
Approach		33	0.0	0.034	8.3	LOS A	0.1	0.8	0.27	0.88	45.4
North: Seaview Road											
7	L2	38	0.0	0.070	5.5	LOS A	0.0	0.0	0.00	0.17	54.7
8	T1	98	0.0	0.070	0.0	LOS A	0.0	0.0	0.00	0.17	52.2
Approach		136	0.0	0.070	1.5	NA	0.0	0.0	0.00	0.17	53.6
All Vehicles		247	0.0	0.070	2.2	NA	0.1	0.8	0.06	0.23	51.6

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 101 [02 PM AD]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
2	T1	123	0.0	0.090	0.3	LOS A	0.3	1.9	0.18	0.15	51.9
3	R2	41	0.0	0.090	4.9	LOS A	0.3	1.9	0.18	0.15	53.2
Approach		164	0.0	0.090	1.4	NA	0.3	1.9	0.18	0.15	52.6
East: Van Renen Street											
4	L2	41	0.0	0.135	8.4	LOS A	0.5	3.4	0.28	0.91	44.5
6	R2	87	0.0	0.135	9.1	LOS A	0.5	3.4	0.28	0.91	44.9
Approach		128	0.0	0.135	8.9	LOS A	0.5	3.4	0.28	0.91	44.8
North: Seaview Road											
7	L2	107	0.0	0.108	5.5	LOS A	0.0	0.0	0.00	0.30	52.9
8	T1	101	0.0	0.108	0.0	LOS A	0.0	0.0	0.00	0.30	47.0
Approach		208	0.0	0.108	2.9	NA	0.0	0.0	0.00	0.30	51.4
All Vehicles		501	0.0	0.135	3.9	NA	0.5	3.4	0.13	0.41	49.0

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 03 [03 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
1	L2	2	0.0	0.067	5.5	LOS A	0.0	0.0	0.00	0.01	57.2
2	T1	131	0.0	0.067	0.0	LOS A	0.0	0.0	0.00	0.01	59.8
Approach		133	0.0	0.067	0.1	NA	0.0	0.0	0.00	0.01	59.8
North: Seaview Road											
8	T1	100	0.0	0.052	0.0	LOS A	0.0	0.1	0.01	0.01	59.7
9	R2	2	0.0	0.052	5.8	LOS A	0.0	0.1	0.01	0.01	57.6
Approach		102	0.0	0.052	0.1	NA	0.0	0.1	0.01	0.01	59.6
West: Reinett Road											
10	L2	8	0.0	0.015	8.5	LOS A	0.1	0.4	0.25	0.87	51.8
12	R2	7	0.0	0.015	8.4	LOS A	0.1	0.4	0.25	0.87	46.0
Approach		16	0.0	0.015	8.5	LOS A	0.1	0.4	0.25	0.87	49.7
All Vehicles		251	0.0	0.067	0.6	NA	0.1	0.4	0.02	0.07	58.7

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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



# MOVEMENT SUMMARY

 Site: 03 [03 PM AD]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: Seaview Road												
1	L2	4	0.0	0.077	5.5	LOS A	0.0	0.0	0.00	0.02	57.1	
2	T1	148	0.0	0.077	0.0	LOS A	0.0	0.0	0.00	0.02	59.7	
Approach		153	0.0	0.077	0.2	NA	0.0	0.0	0.00	0.02	59.7	
North: Seaview Road												
8	T1	203	0.0	0.109	0.0	LOS A	0.1	0.5	0.03	0.03	59.4	
9	R2	9	0.0	0.109	5.9	LOS A	0.1	0.5	0.03	0.03	57.4	
Approach		213	0.0	0.109	0.3	NA	0.1	0.5	0.03	0.03	59.2	
West: Reinett Road												
10	L2	1	0.0	0.010	8.5	LOS A	0.0	0.2	0.35	0.86	51.4	
12	R2	7	0.0	0.010	9.1	LOS A	0.0	0.2	0.35	0.86	45.6	
Approach		8	0.0	0.010	9.1	LOS A	0.0	0.2	0.35	0.86	46.6	
All Vehicles		374	0.0	0.109	0.4	NA	0.1	0.5	0.02	0.04	59.0	

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 04 [04 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
1	L2	6	0.0	0.076	5.6	LOS A	0.0	0.2	0.02	0.04	57.9
2	T1	139	0.0	0.076	0.0	LOS A	0.0	0.2	0.02	0.04	59.6
3	R2	4	0.0	0.076	5.7	LOS A	0.0	0.2	0.02	0.04	57.4
Approach		149	0.0	0.076	0.4	NA	0.0	0.2	0.02	0.04	59.4
East: New Rest											
4	L2	11	0.0	0.017	8.3	LOS A	0.1	0.4	0.19	0.90	51.6
5	T1	1	0.0	0.017	8.8	LOS A	0.1	0.4	0.19	0.90	51.4
6	R2	6	0.0	0.017	8.9	LOS A	0.1	0.4	0.19	0.90	51.2
Approach		18	0.0	0.017	8.5	LOS A	0.1	0.4	0.19	0.90	51.5
North: Seaview Road											
7	L2	2	0.0	0.046	5.9	LOS A	0.1	0.4	0.05	0.06	57.6
8	T1	79	0.0	0.046	0.1	LOS A	0.1	0.4	0.05	0.06	59.2
9	R2	7	0.0	0.046	5.9	LOS A	0.1	0.4	0.05	0.06	57.0
Approach		88	0.0	0.046	0.7	NA	0.1	0.4	0.05	0.06	59.0
West: New Rest											
10	L2	8	0.0	0.023	8.5	LOS A	0.1	0.5	0.28	0.87	51.6
11	T1	1	0.0	0.023	8.7	LOS A	0.1	0.5	0.28	0.87	51.4
12	R2	12	0.0	0.023	8.9	LOS A	0.1	0.5	0.28	0.87	51.2
Approach		21	0.0	0.023	8.7	LOS A	0.1	0.5	0.28	0.87	51.3
All Vehicles		277	0.0	0.076	1.7	NA	0.1	0.5	0.06	0.17	58.0

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 04 [04 PM AD]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
1	L2	17	0.0	0.078	5.8	LOS A	0.1	0.7	0.06	0.11	57.2
2	T1	122	0.0	0.078	0.1	LOS A	0.1	0.7	0.06	0.11	58.8
3	R2	11	0.0	0.078	6.0	LOS A	0.1	0.7	0.06	0.11	56.6
Approach		149	0.0	0.078	1.1	NA	0.1	0.7	0.06	0.11	58.4
East: New Rest											
4	L2	4	0.0	0.009	8.6	LOS A	0.0	0.2	0.31	0.86	51.5
5	T1	1	0.0	0.009	9.3	LOS A	0.0	0.2	0.31	0.86	51.2
6	R2	3	0.0	0.009	9.5	LOS A	0.0	0.2	0.31	0.86	51.0
Approach		8	0.0	0.009	9.0	LOS A	0.0	0.2	0.31	0.86	51.3
North: Seaview Road											
7	L2	7	0.0	0.100	5.9	LOS A	0.1	0.8	0.05	0.07	57.6
8	T1	172	0.0	0.100	0.1	LOS A	0.1	0.8	0.05	0.07	59.2
9	R2	15	0.0	0.100	5.9	LOS A	0.1	0.8	0.05	0.07	57.0
Approach		194	0.0	0.100	0.7	NA	0.1	0.8	0.05	0.07	58.9
West: New Rest											
10	L2	3	0.0	0.014	8.4	LOS A	0.0	0.3	0.31	0.88	51.3
11	T1	1	0.0	0.014	9.3	LOS A	0.0	0.3	0.31	0.88	51.1
12	R2	7	0.0	0.014	9.5	LOS A	0.0	0.3	0.31	0.88	50.9
Approach		12	0.0	0.014	9.2	LOS A	0.0	0.3	0.31	0.88	51.0
All Vehicles		363	0.0	0.100	1.4	NA	0.1	0.8	0.07	0.13	58.2

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 05 [05 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Jill Street											
1	L2	12	0.0	0.014	8.3	LOS A	0.1	0.4	0.17	0.90	47.7
3	R2	5	0.0	0.014	8.4	LOS A	0.1	0.4	0.17	0.90	44.1
Approach		17	0.0	0.014	8.3	LOS A	0.1	0.4	0.17	0.90	46.7
East: Seaview Road											
4	L2	2	0.0	0.037	5.5	LOS A	0.0	0.0	0.00	0.02	56.3
5	T1	72	0.0	0.037	0.0	LOS A	0.0	0.0	0.00	0.02	59.8
Approach		74	0.0	0.037	0.2	NA	0.0	0.0	0.00	0.02	59.8
West: Seaview Road											
11	T1	138	0.0	0.071	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	2	0.0	0.071	5.7	LOS A	0.0	0.1	0.01	0.01	56.4
Approach		140	0.0	0.071	0.1	NA	0.0	0.1	0.01	0.01	59.8
All Vehicles		231	0.0	0.071	0.7	NA	0.1	0.4	0.02	0.08	59.0

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 05 [05 PM AD]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: Jill Street												
1	L2	2	0.0	0.003	8.8	LOS A	0.0	0.1	0.32	0.83	47.4	
3	R2	1	0.0	0.003	9.0	LOS A	0.0	0.1	0.32	0.83	43.8	
Approach		3	0.0	0.003	8.9	LOS A	0.0	0.1	0.32	0.83	46.4	
East: Seaview Road												
4	L2	7	0.0	0.114	5.5	LOS A	0.0	0.0	0.00	0.02	56.2	
5	T1	218	0.0	0.114	0.0	LOS A	0.0	0.0	0.00	0.02	59.8	
Approach		225	0.0	0.114	0.2	NA	0.0	0.0	0.00	0.02	59.7	
West: Seaview Road												
11	T1	101	0.0	0.064	0.2	LOS A	0.1	0.9	0.12	0.10	58.4	
12	R2	19	0.0	0.064	6.2	LOS A	0.1	0.9	0.12	0.10	54.6	
Approach		120	0.0	0.064	1.1	NA	0.1	0.9	0.12	0.10	58.0	
All Vehicles		348	0.0	0.114	0.6	NA	0.1	0.9	0.04	0.05	59.0	

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

ANNEXURE F  
SIDRA  
OUTPUT  
SHEETS:  
Option 1 - 2022  
After  
Development

# MOVEMENT SUMMARY

 Site: 01 [2022 01 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Seaview Road											
5	T1	104	0.0	0.058	0.1	LOS A	0.1	0.4	0.05	0.04	59.1
6	R2	7	0.0	0.058	6.1	LOS A	0.1	0.4	0.05	0.04	51.8
Approach		112	0.0	0.058	0.5	NA	0.1	0.4	0.05	0.04	58.8
North: Albany Road											
7	L2	17	0.0	0.018	8.8	LOS A	0.1	0.5	0.30	0.86	39.4
9	R2	3	0.0	0.018	8.9	LOS A	0.1	0.5	0.30	0.86	47.9
Approach		20	0.0	0.018	8.8	LOS A	0.1	0.5	0.30	0.86	41.6
West: Seaview Road											
10	L2	3	0.0	0.103	5.5	LOS A	0.0	0.0	0.00	0.01	57.5
11	T1	200	0.0	0.103	0.0	LOS A	0.0	0.0	0.00	0.01	59.8
Approach		203	0.0	0.103	0.1	NA	0.0	0.0	0.00	0.01	59.8
All Vehicles		335	0.0	0.103	0.7	NA	0.1	0.5	0.03	0.07	58.5

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 01 [2022 01 PM AD]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Seaview Road											
5	T1	163	0.0	0.090	0.0	LOS A	0.1	0.6	0.04	0.04	59.2
6	R2	12	0.0	0.090	5.9	LOS A	0.1	0.6	0.04	0.04	51.9
Approach		175	0.0	0.090	0.4	NA	0.1	0.6	0.04	0.04	58.9
North: Albany Road											
7	L2	12	0.0	0.010	8.4	LOS A	0.0	0.3	0.22	0.87	39.7
9	R2	1	0.0	0.010	8.8	LOS A	0.0	0.3	0.22	0.87	48.0
Approach		13	0.0	0.010	8.5	LOS A	0.0	0.3	0.22	0.87	40.8
West: Seaview Road											
10	L2	11	0.0	0.065	5.5	LOS A	0.0	0.0	0.00	0.05	57.0
11	T1	118	0.0	0.065	0.0	LOS A	0.0	0.0	0.00	0.05	59.3
Approach		128	0.0	0.065	0.5	NA	0.0	0.0	0.00	0.05	59.1
All Vehicles		316	0.0	0.090	0.8	NA	0.1	0.6	0.03	0.08	58.4

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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



# MOVEMENT SUMMARY

 Site: 101 [2022 02 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
2	T1	74	0.0	0.045	0.1	LOS A	0.1	0.5	0.08	0.08	55.5
3	R2	12	0.0	0.045	4.6	LOS A	0.1	0.5	0.08	0.08	54.4
Approach		85	0.0	0.045	0.7	NA	0.1	0.5	0.08	0.08	55.2
East: Van Renen Street											
4	L2	1	0.0	0.036	8.4	LOS A	0.1	0.8	0.28	0.88	45.1
6	R2	34	0.0	0.036	8.4	LOS A	0.1	0.8	0.28	0.88	45.4
Approach		35	0.0	0.036	8.4	LOS A	0.1	0.8	0.28	0.88	45.4
North: Seaview Road											
7	L2	42	0.0	0.075	5.5	LOS A	0.0	0.0	0.00	0.17	54.6
8	T1	104	0.0	0.075	0.0	LOS A	0.0	0.0	0.00	0.17	51.9
Approach		146	0.0	0.075	1.6	NA	0.0	0.0	0.00	0.17	53.5
All Vehicles		266	0.0	0.075	2.2	NA	0.1	0.8	0.06	0.23	51.6

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 101 [2022 02 PM AD]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
2	T1	132	0.0	0.098	0.3	LOS A	0.3	2.2	0.19	0.15	51.6
3	R2	45	0.0	0.098	5.0	LOS A	0.3	2.2	0.19	0.15	53.1
Approach		177	0.0	0.098	1.5	NA	0.3	2.2	0.19	0.15	52.4
East: Van Renen Street											
4	L2	45	0.0	0.151	8.5	LOS A	0.6	3.9	0.30	0.91	44.4
6	R2	96	0.0	0.151	9.3	LOS A	0.6	3.9	0.30	0.91	44.8
Approach		141	0.0	0.151	9.1	LOS A	0.6	3.9	0.30	0.91	44.7
North: Seaview Road											
7	L2	118	0.0	0.118	5.5	LOS A	0.0	0.0	0.00	0.31	52.8
8	T1	109	0.0	0.118	0.0	LOS A	0.0	0.0	0.00	0.31	47.0
Approach		227	0.0	0.118	2.9	NA	0.0	0.0	0.00	0.31	51.4
All Vehicles		545	0.0	0.151	4.0	NA	0.6	3.9	0.14	0.41	48.9

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 03 [2022 03 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
1	L2	2	0.0	0.073	5.5	LOS A	0.0	0.0	0.00	0.01	57.2
2	T1	142	0.0	0.073	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
Approach		144	0.0	0.073	0.1	NA	0.0	0.0	0.00	0.01	59.8
North: Seaview Road											
8	T1	106	0.0	0.055	0.0	LOS A	0.0	0.1	0.01	0.01	59.7
9	R2	2	0.0	0.055	5.9	LOS A	0.0	0.1	0.01	0.01	57.6
Approach		108	0.0	0.055	0.1	NA	0.0	0.1	0.01	0.01	59.7
West: Reinett Road											
10	L2	9	0.0	0.017	8.5	LOS A	0.1	0.4	0.26	0.87	51.7
12	R2	8	0.0	0.017	8.5	LOS A	0.1	0.4	0.26	0.87	46.0
Approach		18	0.0	0.017	8.5	LOS A	0.1	0.4	0.26	0.87	49.6
All Vehicles		271	0.0	0.073	0.7	NA	0.1	0.4	0.02	0.07	58.7

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 03 [2022 03 PM AD ]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
1	L2	4	0.0	0.083	5.5	LOS A	0.0	0.0	0.00	0.02	57.1
2	T1	160	0.0	0.083	0.0	LOS A	0.0	0.0	0.00	0.02	59.7
Approach		164	0.0	0.083	0.1	NA	0.0	0.0	0.00	0.02	59.7
North: Seaview Road											
8	T1	222	0.0	0.119	0.0	LOS A	0.1	0.5	0.03	0.03	59.4
9	R2	11	0.0	0.119	6.0	LOS A	0.1	0.5	0.03	0.03	57.4
Approach		233	0.0	0.119	0.3	NA	0.1	0.5	0.03	0.03	59.2
West: Reinett Road											
10	L2	1	0.0	0.012	8.6	LOS A	0.0	0.3	0.37	0.87	51.3
12	R2	8	0.0	0.012	9.3	LOS A	0.0	0.3	0.37	0.87	45.4
Approach		9	0.0	0.012	9.2	LOS A	0.0	0.3	0.37	0.87	46.4
All Vehicles		406	0.0	0.119	0.4	NA	0.1	0.5	0.03	0.04	59.0

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 04 [2022 04 AM AD]

Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: Seaview Road												
1	L2	4	0.0	0.042	5.5	LOS A	0.0	0.0	0.00	0.03	58.1	
2	T1	152	0.0	0.042	0.0	LOS A	0.0	0.2	0.01	0.03	59.7	
3	R2	4	0.0	0.042	5.9	LOS A	0.0	0.2	0.02	0.03	58.0	
Approach		160	0.0	0.042	0.3	NA	0.0	0.2	0.01	0.03	59.6	
East: New Rest Road												
4	L2	11	0.0	0.010	8.2	LOS A	0.0	0.3	0.13	0.91	51.7	
5	T1	1	0.0	0.010	10.2	LOS B	0.0	0.3	0.16	0.90	51.6	
6	R2	6	0.0	0.010	10.5	LOS B	0.0	0.3	0.41	0.84	50.6	
Approach		18	0.0	0.010	9.1	LOS A	0.0	0.3	0.23	0.89	51.3	
North: Seaview Road												
7	L2	2	0.0	0.026	5.5	LOS A	0.0	0.0	0.00	0.03	58.2	
8	T1	86	0.0	0.026	0.1	LOS A	0.1	0.4	0.04	0.06	59.3	
9	R2	7	0.0	0.026	6.1	LOS A	0.1	0.4	0.10	0.09	57.1	
Approach		96	0.0	0.026	0.7	NA	0.1	0.4	0.05	0.06	59.1	
West: New Rest Road												
10	L2	8	0.0	0.008	8.3	LOS A	0.0	0.2	0.17	0.89	51.8	
11	T1	1	0.0	0.007	10.1	LOS B	0.0	0.2	0.41	0.83	50.7	
12	R2	3	0.0	0.007	10.5	LOS B	0.0	0.2	0.41	0.83	50.7	
Approach		13	0.0	0.008	9.0	LOS A	0.0	0.2	0.25	0.87	51.4	
All Vehicles		286	0.0	0.042	1.4	NA	0.1	0.4	0.05	0.13	58.4	

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 04 [2022 04 PM AD ]

Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
1	L2	17	0.0	0.043	5.5	LOS A	0.0	0.0	0.00	0.12	57.3
2	T1	134	0.0	0.043	0.0	LOS A	0.1	0.5	0.03	0.10	59.0
3	R2	11	0.0	0.043	5.9	LOS A	0.1	0.5	0.06	0.08	57.4
Approach		161	0.0	0.043	1.0	NA	0.1	0.5	0.03	0.10	58.7
East: New Rest Road											
4	L2	11	0.0	0.010	8.2	LOS A	0.0	0.3	0.13	0.91	51.7
5	T1	1	0.0	0.010	10.2	LOS B	0.0	0.3	0.18	0.90	51.5
6	R2	6	0.0	0.010	10.3	LOS B	0.0	0.3	0.40	0.84	50.7
Approach		18	0.0	0.010	9.1	LOS A	0.0	0.3	0.23	0.89	51.3
North: Seaview Road											
7	L2	2	0.0	0.026	5.5	LOS A	0.0	0.0	0.00	0.03	58.2
8	T1	86	0.0	0.026	0.1	LOS A	0.1	0.4	0.04	0.06	59.3
9	R2	7	0.0	0.026	6.1	LOS A	0.1	0.4	0.09	0.09	57.1
Approach		96	0.0	0.026	0.6	NA	0.1	0.4	0.04	0.06	59.1
West: New Rest Road											
10	L2	8	0.0	0.009	8.3	LOS A	0.0	0.2	0.16	0.90	51.6
11	T1	1	0.0	0.009	10.1	LOS B	0.0	0.2	0.16	0.90	51.7
12	R2	12	0.0	0.019	10.5	LOS B	0.1	0.5	0.41	0.85	50.6
Approach		21	0.0	0.019	9.6	LOS A	0.1	0.5	0.30	0.87	51.1
All Vehicles		296	0.0	0.043	2.0	NA	0.1	0.5	0.06	0.19	57.7

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 05 [2022 05 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Jill Street											
1	L2	13	0.0	0.016	8.3	LOS A	0.1	0.4	0.18	0.90	47.7
3	R2	6	0.0	0.016	8.5	LOS A	0.1	0.4	0.18	0.90	44.1
Approach		19	0.0	0.016	8.4	LOS A	0.1	0.4	0.18	0.90	46.6
East: Seaview Road											
4	L2	2	0.0	0.040	5.5	LOS A	0.0	0.0	0.00	0.02	56.3
5	T1	78	0.0	0.040	0.0	LOS A	0.0	0.0	0.00	0.02	59.8
Approach		80	0.0	0.040	0.1	NA	0.0	0.0	0.00	0.02	59.8
West: Seaview Road											
11	T1	149	0.0	0.077	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	2	0.0	0.077	5.7	LOS A	0.0	0.1	0.01	0.01	56.4
Approach		152	0.0	0.077	0.1	NA	0.0	0.1	0.01	0.01	59.8
All Vehicles		251	0.0	0.077	0.7	NA	0.1	0.4	0.02	0.08	58.9

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 05 [2022 05 PM AD ]

TIA : Proposed Low Cost Housing Development, Seaview  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Jill Street											
1	L2	2	0.0	0.003	8.9	LOS A	0.0	0.1	0.34	0.83	47.3
3	R2	1	0.0	0.003	9.2	LOS A	0.0	0.1	0.34	0.83	43.7
Approach		3	0.0	0.003	9.0	LOS A	0.0	0.1	0.34	0.83	46.3
East: Seaview Road											
4	L2	8	0.0	0.124	5.5	LOS A	0.0	0.0	0.00	0.02	56.2
5	T1	237	0.0	0.124	0.0	LOS A	0.0	0.0	0.00	0.02	59.8
Approach		245	0.0	0.124	0.2	NA	0.0	0.0	0.00	0.02	59.7
West: Seaview Road											
11	T1	111	0.0	0.071	0.2	LOS A	0.2	1.1	0.13	0.10	58.4
12	R2	21	0.0	0.071	6.3	LOS A	0.2	1.1	0.13	0.10	54.5
Approach		132	0.0	0.071	1.2	NA	0.2	1.1	0.13	0.10	57.9
All Vehicles		380	0.0	0.124	0.6	NA	0.2	1.1	0.05	0.05	59.0

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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



ANNEXURE G  
SIDRA  
OUTPUT  
SHEETS:  
Option 2 - 2017  
After  
Development

# MOVEMENT SUMMARY

 Site: 01 [01 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview - OPTION 2 - 2017  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Seaview Road											
5	T1	129	0.0	0.069	0.1	LOS A	0.0	0.2	0.03	0.02	59.5
6	R2	4	0.0	0.069	6.5	LOS A	0.0	0.2	0.03	0.02	52.4
Approach		134	0.0	0.069	0.3	NA	0.0	0.2	0.03	0.02	59.4
North: Albany Road											
7	L2	6	0.0	0.010	9.2	LOS A	0.0	0.3	0.39	0.85	38.8
9	R2	3	0.0	0.010	9.7	LOS A	0.0	0.3	0.39	0.85	47.5
Approach		9	0.0	0.010	9.4	LOS A	0.0	0.3	0.39	0.85	42.9
West: Seaview Road											
10	L2	3	0.0	0.156	5.6	LOS A	0.0	0.0	0.00	0.01	57.5
11	T1	306	0.0	0.156	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
Approach		309	0.0	0.156	0.1	NA	0.0	0.0	0.00	0.01	59.9
All Vehicles		453	0.0	0.156	0.3	NA	0.0	0.3	0.02	0.03	59.4

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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# MOVEMENT SUMMARY

 Site: 01 [01 PM AD]

TIA : Proposed Low Cost Housing Development, Seaview - OPTION 2 - 2017  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Seaview Road											
5	T1	112	0.0	0.059	0.0	LOS A	0.0	0.2	0.02	0.02	59.6
6	R2	3	0.0	0.059	6.3	LOS A	0.0	0.2	0.02	0.02	52.6
Approach		115	0.0	0.059	0.2	NA	0.0	0.2	0.02	0.02	59.5
North: Albany Road											
7	L2	6	0.0	0.007	8.9	LOS A	0.0	0.2	0.33	0.84	39.3
9	R2	1	0.0	0.007	9.1	LOS A	0.0	0.2	0.33	0.84	47.8
Approach		7	0.0	0.007	8.9	LOS A	0.0	0.2	0.33	0.84	41.3
West: Seaview Road											
10	L2	9	0.0	0.126	5.6	LOS A	0.0	0.0	0.00	0.02	57.3
11	T1	240	0.0	0.126	0.0	LOS A	0.0	0.0	0.00	0.02	59.6
Approach		249	0.0	0.126	0.2	NA	0.0	0.0	0.00	0.02	59.5
All Vehicles		372	0.0	0.126	0.4	NA	0.0	0.2	0.01	0.04	59.2

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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# MOVEMENT SUMMARY

 Site: 101 [02 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview - OPTION 2 - 2017  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
2	T1	102	0.0	0.059	0.1	LOS A	0.1	0.6	0.08	0.06	56.4
3	R2	11	0.0	0.059	5.1	LOS A	0.1	0.6	0.08	0.06	54.7
Approach		113	0.0	0.059	0.6	NA	0.1	0.6	0.08	0.06	56.0
East: Van Reenen Street											
4	L2	1	0.0	0.032	8.9	LOS A	0.1	0.7	0.37	0.89	44.4
6	R2	25	0.0	0.032	9.1	LOS A	0.1	0.7	0.37	0.89	44.8
Approach		26	0.0	0.032	9.1	LOS A	0.1	0.7	0.37	0.89	44.8
North: Seaview Road											
7	L2	36	0.0	0.130	5.5	LOS A	0.0	0.0	0.00	0.08	55.9
8	T1	220	0.0	0.130	0.0	LOS A	0.0	0.0	0.00	0.08	55.8
Approach		256	0.0	0.130	0.8	NA	0.0	0.0	0.00	0.08	55.8
All Vehicles		395	0.0	0.130	1.3	NA	0.1	0.7	0.05	0.13	53.8

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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# MOVEMENT SUMMARY

 Site: 101 [02 PM AD]

TIA : Proposed Low Cost Housing Development, Seaview - OPTION 2 - 2017  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
2	T1	146	0.0	0.106	0.4	LOS A	0.3	2.3	0.21	0.13	51.9
3	R2	41	0.0	0.106	5.5	LOS A	0.3	2.3	0.21	0.13	53.2
Approach		187	0.0	0.106	1.5	NA	0.3	2.3	0.21	0.13	52.5
East: Van Reenen Street											
4	L2	41	0.0	0.156	9.0	LOS A	0.6	3.9	0.42	0.93	43.8
6	R2	85	0.0	0.156	10.3	LOS B	0.6	3.9	0.42	0.93	44.2
Approach		126	0.0	0.156	9.9	LOS A	0.6	3.9	0.42	0.93	44.1
North: Seaview Road											
7	L2	101	0.0	0.171	5.5	LOS A	0.0	0.0	0.00	0.18	54.5
8	T1	233	0.0	0.171	0.0	LOS A	0.0	0.0	0.00	0.18	51.6
Approach		334	0.0	0.171	1.7	NA	0.0	0.0	0.00	0.18	53.3
All Vehicles		647	0.0	0.171	3.2	NA	0.6	3.9	0.14	0.31	49.7

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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# MOVEMENT SUMMARY

 Site: 03 [03 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview - OPTION 2 - 2017  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
1	L2	2	0.0	0.084	5.5	LOS A	0.0	0.0	0.00	0.01	57.2
2	T1	164	0.0	0.084	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
Approach		166	0.0	0.084	0.1	NA	0.0	0.0	0.00	0.01	59.8
North: Seaview Road											
8	T1	220	0.0	0.112	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
9	R2	2	0.0	0.112	6.0	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		222	0.0	0.112	0.1	NA	0.0	0.1	0.01	0.01	59.8
West: Reinett Road											
10	L2	8	0.0	0.016	8.6	LOS A	0.1	0.4	0.30	0.87	51.5
12	R2	7	0.0	0.016	9.3	LOS A	0.1	0.4	0.30	0.87	45.7
Approach		16	0.0	0.016	8.9	LOS A	0.1	0.4	0.30	0.87	49.3
All Vehicles		404	0.0	0.112	0.4	NA	0.1	0.4	0.02	0.04	59.2

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 03 [03 PM AD]

TIA : Proposed Low Cost Housing Development, Seaview - OPTION 2 - 2017  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
1	L2	4	0.0	0.089	5.5	LOS A	0.0	0.0	0.00	0.01	57.1
2	T1	172	0.0	0.089	0.0	LOS A	0.0	0.0	0.00	0.01	59.8
Approach		176	0.0	0.089	0.1	NA	0.0	0.0	0.00	0.01	59.7
North: Seaview Road											
8	T1	328	0.0	0.167	0.0	LOS A	0.0	0.1	0.00	0.00	60.0
9	R2	1	0.0	0.167	6.1	LOS A	0.0	0.1	0.00	0.00	57.7
Approach		329	0.0	0.167	0.0	NA	0.0	0.1	0.00	0.00	59.9
West: Reinett Road											
10	L2	1	0.0	0.012	8.6	LOS A	0.0	0.3	0.41	0.88	50.9
12	R2	7	0.0	0.012	10.1	LOS B	0.0	0.3	0.41	0.88	44.9
Approach		8	0.0	0.012	9.9	LOS A	0.0	0.3	0.41	0.88	45.9
All Vehicles		514	0.0	0.167	0.2	NA	0.0	0.3	0.01	0.02	59.5

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 05 [05 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview - OPTION 2 - 2017  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Jill Street											
1	L2	12	0.0	0.021	8.3	LOS A	0.1	0.5	0.18	0.91	46.8
2	T1	1	0.0	0.021	10.0	LOS B	0.1	0.5	0.18	0.91	46.7
3	R2	5	0.0	0.021	11.1	LOS B	0.1	0.5	0.18	0.91	43.6
Approach		18	0.0	0.021	9.2	LOS A	0.1	0.5	0.18	0.91	46.0
East: Seaview Road											
4	L2	2	0.0	0.031	5.5	LOS A	0.0	0.0	0.00	0.02	56.2
5	T1	60	0.0	0.031	0.0	LOS A	0.0	0.0	0.00	0.02	59.8
6	R2	42	0.0	0.027	5.9	LOS A	0.1	0.8	0.26	0.56	51.3
Approach		104	0.0	0.031	2.5	NA	0.1	0.8	0.11	0.24	56.0
North: Jill Street											
7	L2	105	0.0	0.353	8.7	LOS A	1.7	11.9	0.39	0.90	49.3
8	T1	1	0.0	0.353	10.7	LOS B	1.7	11.9	0.39	0.90	46.1
9	R2	158	0.0	0.353	11.4	LOS B	1.7	11.9	0.39	0.90	50.5
Approach		264	0.0	0.353	10.3	LOS B	1.7	11.9	0.39	0.90	50.1
West: Seaview Road											
10	L2	53	0.0	0.082	5.5	LOS A	0.0	0.0	0.00	0.20	56.7
11	T1	106	0.0	0.082	0.0	LOS A	0.0	0.0	0.00	0.20	57.9
12	R2	2	0.0	0.001	5.6	LOS A	0.0	0.0	0.15	0.54	49.1
Approach		161	0.0	0.082	1.9	NA	0.0	0.0	0.00	0.20	57.4
All Vehicles		547	0.0	0.353	6.3	NA	1.7	11.9	0.21	0.57	53.0

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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



# MOVEMENT SUMMARY

 Site: 05 [05 PM AD]

TIA : Proposed Low Cost Housing Development, Seaview - OPTION 2 - 2017  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Jill Street											
1	L2	2	0.0	0.006	8.8	LOS A	0.0	0.2	0.39	0.83	46.1
2	T1	1	0.0	0.006	11.4	LOS B	0.0	0.2	0.39	0.83	46.0
3	R2	1	0.0	0.006	12.6	LOS B	0.0	0.2	0.39	0.83	42.7
Approach		4	0.0	0.006	10.4	LOS B	0.0	0.2	0.39	0.83	45.3
East: Seaview Road											
4	L2	7	0.0	0.096	5.5	LOS A	0.0	0.0	0.00	0.02	56.2
5	T1	183	0.0	0.096	0.0	LOS A	0.0	0.0	0.00	0.02	59.7
6	R2	36	0.0	0.023	5.9	LOS A	0.1	0.7	0.25	0.55	51.4
Approach		226	0.0	0.096	1.1	NA	0.1	0.7	0.04	0.11	58.1
North: Jill Street											
7	L2	99	0.0	0.377	9.1	LOS A	2.1	14.4	0.38	0.95	48.0
8	T1	1	0.0	0.377	13.1	LOS B	2.1	14.4	0.38	0.95	44.5
9	R2	147	0.0	0.377	13.9	LOS B	2.1	14.4	0.38	0.95	49.4
Approach		247	0.0	0.377	12.0	LOS B	2.1	14.4	0.38	0.95	48.9
West: Seaview Road											
10	L2	63	0.0	0.078	5.5	LOS A	0.0	0.0	0.00	0.25	56.3
11	T1	88	0.0	0.078	0.0	LOS A	0.0	0.0	0.00	0.25	57.4
12	R2	19	0.0	0.012	6.0	LOS A	0.1	0.4	0.29	0.55	48.5
Approach		171	0.0	0.078	2.7	NA	0.1	0.4	0.03	0.28	56.1
All Vehicles		648	0.0	0.377	5.7	NA	2.1	14.4	0.17	0.48	53.5

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

ANNEXURE H  
SIDRA  
OUTPUT  
SHEETS:  
Option 2 - 2022  
After  
Development

# MOVEMENT SUMMARY

 Site: 01 [01 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview - OPTION 2 - 2022  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Seaview Road											
5	T1	138	0.0	0.073	0.1	LOS A	0.0	0.3	0.03	0.02	59.5
6	R2	4	0.0	0.073	6.6	LOS A	0.0	0.3	0.03	0.02	52.5
Approach		142	0.0	0.073	0.2	NA	0.0	0.3	0.03	0.02	59.4
North: Albany Road											
7	L2	7	0.0	0.012	9.3	LOS A	0.0	0.3	0.40	0.85	38.7
9	R2	3	0.0	0.012	9.8	LOS A	0.0	0.3	0.40	0.85	47.4
Approach		11	0.0	0.012	9.5	LOS A	0.0	0.3	0.40	0.85	42.5
West: Seaview Road											
10	L2	3	0.0	0.164	5.6	LOS A	0.0	0.0	0.00	0.01	57.5
11	T1	322	0.0	0.164	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
Approach		325	0.0	0.164	0.1	NA	0.0	0.0	0.00	0.01	59.9
All Vehicles		478	0.0	0.164	0.3	NA	0.0	0.3	0.02	0.03	59.4

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 01 [01 PM AD]

TIA : Proposed Low Cost Housing Development, Seaview - OPTION 2 - 2022  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Seaview Road											
5	T1	186	0.0	0.096	0.0	LOS A	0.0	0.2	0.02	0.01	59.7
6	R2	3	0.0	0.096	6.4	LOS A	0.0	0.2	0.02	0.01	52.8
Approach		189	0.0	0.096	0.1	NA	0.0	0.2	0.02	0.01	59.7
North: Albany Road											
7	L2	7	0.0	0.008	9.0	LOS A	0.0	0.2	0.34	0.84	39.2
9	R2	1	0.0	0.008	9.6	LOS A	0.0	0.2	0.34	0.84	47.7
Approach		8	0.0	0.008	9.0	LOS A	0.0	0.2	0.34	0.84	40.9
West: Seaview Road											
10	L2	11	0.0	0.132	5.6	LOS A	0.0	0.0	0.00	0.02	57.3
11	T1	249	0.0	0.132	0.0	LOS A	0.0	0.0	0.00	0.02	59.6
Approach		260	0.0	0.132	0.2	NA	0.0	0.0	0.00	0.02	59.5
All Vehicles		458	0.0	0.132	0.4	NA	0.0	0.2	0.01	0.03	59.3

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 101 [02 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview - OPTION 2 - 2022  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
2	T1	107	0.0	0.063	0.1	LOS A	0.1	0.6	0.08	0.06	56.3
3	R2	12	0.0	0.063	5.1	LOS A	0.1	0.6	0.08	0.06	54.7
Approach		119	0.0	0.063	0.6	NA	0.1	0.6	0.08	0.06	55.9
East: Van Reenen Street											
4	L2	1	0.0	0.035	8.9	LOS A	0.1	0.8	0.38	0.89	44.4
6	R2	27	0.0	0.035	9.2	LOS A	0.1	0.8	0.38	0.89	44.7
Approach		28	0.0	0.035	9.2	LOS A	0.1	0.8	0.38	0.89	44.7
North: Seaview Road											
7	L2	40	0.0	0.135	5.5	LOS A	0.0	0.0	0.00	0.09	55.8
8	T1	226	0.0	0.135	0.0	LOS A	0.0	0.0	0.00	0.09	55.5
Approach		266	0.0	0.135	0.8	NA	0.0	0.0	0.00	0.09	55.6
All Vehicles		414	0.0	0.135	1.3	NA	0.1	0.8	0.05	0.14	53.6

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 101 [02 PM AD]

TIA : Proposed Low Cost Housing Development, Seaview - OPTION 2 - 2022  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
2	T1	155	0.0	0.114	0.5	LOS A	0.4	2.6	0.23	0.14	51.6
3	R2	45	0.0	0.114	5.6	LOS A	0.4	2.6	0.23	0.14	53.1
Approach		200	0.0	0.114	1.6	NA	0.4	2.6	0.23	0.14	52.3
East: Van Reenen Street											
4	L2	45	0.0	0.176	9.1	LOS A	0.6	4.5	0.43	0.94	43.7
6	R2	94	0.0	0.176	10.5	LOS B	0.6	4.5	0.43	0.94	44.0
Approach		139	0.0	0.176	10.1	LOS B	0.6	4.5	0.43	0.94	43.9
North: Seaview Road											
7	L2	112	0.0	0.181	5.5	LOS A	0.0	0.0	0.00	0.19	54.4
8	T1	241	0.0	0.181	0.0	LOS A	0.0	0.0	0.00	0.19	51.3
Approach		353	0.0	0.181	1.8	NA	0.0	0.0	0.00	0.19	53.1
All Vehicles		692	0.0	0.181	3.4	NA	0.6	4.5	0.15	0.33	49.5

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 03 [03 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview - OPTION 2 - 2022  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
1	L2	2	0.0	0.090	5.5	LOS A	0.0	0.0	0.00	0.01	57.2
2	T1	176	0.0	0.090	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
Approach		178	0.0	0.090	0.1	NA	0.0	0.0	0.00	0.01	59.8
North: Seaview Road											
8	T1	226	0.0	0.116	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
9	R2	2	0.0	0.116	6.0	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		228	0.0	0.116	0.1	NA	0.0	0.1	0.01	0.01	59.8
West: Reinett Road											
10	L2	9	0.0	0.019	8.7	LOS A	0.1	0.5	0.31	0.87	51.4
12	R2	8	0.0	0.019	9.4	LOS A	0.1	0.5	0.31	0.87	45.6
Approach		18	0.0	0.019	9.0	LOS A	0.1	0.5	0.31	0.87	49.3
All Vehicles		424	0.0	0.116	0.4	NA	0.1	0.5	0.02	0.04	59.1

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 03 [03 PM AD]

TIA : Proposed Low Cost Housing Development, Seaview - OPTION 2 - 2022  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Seaview Road											
1	L2	4	0.0	0.095	5.5	LOS A	0.0	0.0	0.00	0.01	57.1
2	T1	183	0.0	0.095	0.0	LOS A	0.0	0.0	0.00	0.01	59.8
Approach		187	0.0	0.095	0.1	NA	0.0	0.0	0.00	0.01	59.7
North: Seaview Road											
8	T1	347	0.0	0.183	0.0	LOS A	0.1	0.6	0.02	0.02	59.6
9	R2	11	0.0	0.183	6.1	LOS A	0.1	0.6	0.02	0.02	57.5
Approach		358	0.0	0.183	0.2	NA	0.1	0.6	0.02	0.02	59.5
West: Reinett Road											
10	L2	1	0.0	0.014	8.7	LOS A	0.0	0.3	0.43	0.88	50.7
12	R2	8	0.0	0.014	10.4	LOS B	0.0	0.3	0.43	0.88	44.6
Approach		9	0.0	0.014	10.2	LOS B	0.0	0.3	0.43	0.88	45.6
All Vehicles		555	0.0	0.183	0.4	NA	0.1	0.6	0.02	0.03	59.2

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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



# MOVEMENT SUMMARY

 Site: 05 [05 AM AD]

TIA : Proposed Low Cost Housing Development, Seaview - OPTION 2 - 2022  
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Jill Street											
1	L2	13	0.0	0.024	8.3	LOS A	0.1	0.6	0.19	0.90	46.7
2	T1	1	0.0	0.024	10.2	LOS B	0.1	0.6	0.19	0.90	46.6
3	R2	6	0.0	0.024	11.4	LOS B	0.1	0.6	0.19	0.90	43.4
Approach		20	0.0	0.024	9.4	LOS A	0.1	0.6	0.19	0.90	45.8
East: Seaview Road											
4	L2	2	0.0	0.035	5.5	LOS A	0.0	0.0	0.00	0.02	56.3
5	T1	66	0.0	0.035	0.0	LOS A	0.0	0.0	0.00	0.02	59.8
6	R2	42	0.0	0.027	6.0	LOS A	0.1	0.8	0.27	0.56	51.3
Approach		111	0.0	0.035	2.4	NA	0.1	0.8	0.10	0.22	56.2
North: Jill Street											
7	L2	105	0.0	0.363	8.9	LOS A	1.8	12.9	0.41	0.91	49.1
8	T1	1	0.0	0.363	11.1	LOS B	1.8	12.9	0.41	0.91	45.7
9	R2	158	0.0	0.363	11.9	LOS B	1.8	12.9	0.41	0.91	50.3
Approach		264	0.0	0.363	10.7	LOS B	1.8	12.9	0.41	0.91	49.8
West: Seaview Road											
10	L2	53	0.0	0.087	5.5	LOS A	0.0	0.0	0.00	0.18	56.8
11	T1	118	0.0	0.087	0.0	LOS A	0.0	0.0	0.00	0.18	58.1
12	R2	2	0.0	0.001	5.6	LOS A	0.0	0.0	0.16	0.54	49.0
Approach		173	0.0	0.087	1.8	NA	0.0	0.0	0.00	0.19	57.5
All Vehicles		567	0.0	0.363	6.3	NA	1.8	12.9	0.22	0.56	53.0

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

# MOVEMENT SUMMARY

 Site: 05 [05 PM AD]

TIA : Proposed Low Cost Housing Development, Seaview - OPTION 2 - 2022  
Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: Jill Street												
1	L2	2	0.0	0.005	8.7	LOS A	0.0	0.1	0.35	0.85	46.9	
2	T1	1	0.0	0.005	9.8	LOS A	0.0	0.1	0.35	0.85	46.6	
3	R2	1	0.0	0.005	10.5	LOS B	0.0	0.1	0.35	0.85	43.2	
Approach		4	0.0	0.005	9.5	LOS A	0.0	0.1	0.35	0.85	46.0	
East: Seaview Road												
4	L2	8	0.0	0.130	6.0	LOS A	0.3	1.9	0.10	0.11	54.0	
5	T1	202	0.0	0.130	0.1	LOS A	0.3	1.9	0.10	0.11	58.4	
6	R2	36	0.0	0.130	6.0	LOS A	0.3	1.9	0.10	0.11	56.0	
Approach		246	0.0	0.130	1.2	NA	0.3	1.9	0.10	0.11	57.9	
North: Jill Street												
7	L2	99	0.0	0.303	8.5	LOS A	1.3	8.9	0.32	0.93	49.5	
8	T1	1	0.0	0.303	10.5	LOS B	1.3	8.9	0.32	0.93	46.0	
9	R2	147	0.0	0.303	11.0	LOS B	1.3	8.9	0.32	0.93	50.4	
Approach		247	0.0	0.303	10.0	LOS A	1.3	8.9	0.32	0.93	50.0	
West: Seaview Road												
10	L2	63	0.0	0.097	5.8	LOS A	0.2	1.4	0.12	0.25	55.7	
11	T1	98	0.0	0.097	0.2	LOS A	0.2	1.4	0.12	0.25	56.7	
12	R2	21	0.0	0.097	6.2	LOS A	0.2	1.4	0.12	0.25	52.5	
Approach		182	0.0	0.097	2.8	NA	0.2	1.4	0.12	0.25	55.9	
All Vehicles		680	0.0	0.303	4.9	NA	1.3	8.9	0.19	0.45	54.0	

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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