



CLINKSCALES MAUGHAN - BROWN
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Our ref: JDV/jdv/19146

20 May 2022

By e-mail
(rhuschan@hessequa.gov.za)

Attention: Mr. Werner Manho

Dear Sir

**PROPOSED FLEUR DE VIE DEVELOPMENT, STILL BAY
ON PORTION 1 OF THE FARM DUINEKROON NO. 591, DEVISION RIVERSDALE**

Attached please find herewith the electrical services report for the abovementioned development, based on the discussions that this office has had with Mr Innocent Tererayi of Hessequa Municipality's Electrical Department, in Still Bay.

We would appreciate it if you could provide this office with feedback regarding the requests under Item No.'s 7.0 and 14.0 where the Capital Contributions be used to fund the external municipal connection, including the request that the Phase 2 connection be done when 50% of the residential house connections have been made.

Should you need to discuss the above to obtain more clarity in this regard please do not hesitate to contact me.

Yours faithfully

J.S. de Villiers Pr Tech Eng
CLINKSCALES MAUGHAN-BROWN

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ELECTRICAL SERVICES REPORT

FOR THE

**PROPOSED DEVELOPMENT ON
REMAINDER OF THE FARM DUINEKROON NO. 591,
DIVISION RIVERSDALE**

FOR

TREVEE INVESTMENTS (PTY) LTD

REPORT NO: G/19146/E/R1

MAY 2022



**CLINKSCALES MAUGHAN-BROWN
CONSULTING MECHANICAL
& ELECTRICAL ENGINEERS**

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**PROPOSED DEVELOPMENT ON REMAINDER OF THE FARM
DUINEKROON NO. 591, DIVISION RIVERSDALE
SERVICES REPORT ON ELECTRICAL RETICULATION:
REPORT NO G/19146/E/R1 OF MAY 2022**

1.0 INTRODUCTION

This report has been prepared by Messrs. Clinkscales Maughan-Brown, who has been appointed by the Developer, Trevee Investments (Pty) Ltd, as the Electrical Consultants for this project. The purpose of this report is to provide the necessary information on the proposed electrical supply to and inside this Development and the connection to the main infrastructure in the area in order to obtain approval from the Supply Authority.

2.0 THE AREA

The property to be developed is Remainder of the Farm Duinekroon No. 591, Division Riversdale, in the location as indicated on the attached Drawing No. 19146/E/01. The development includes one hundred and forty six (146) General Residential Zone II (Group Housing) erven, one (1) General Residential Zone IV erf (approximately 35 units), and one (1) Business Zone III erf.

3.0 SUPPLY AUTHORITY

The Supply Authority for the area is Hessequa Municipality, and therefore their Electricity Department was consulted on all matters related to the electrical services.

4.0 BASIS OF REPORT

The report is based on the following:

- (i) Discussions with Mr. Innocent Tererayi at the Electricity Department at Hessequa Municipality.
- (ii) The layout drawing received from Planserv.
- (iii) Investigation of the existing and master MV (11kV) municipal primary network in the area.

5.0 DRAWING

Drawing No. 19146/E/01, which is a plan layout, also depicts the following:

- (i) The extent of the existing MV municipal primary network in the area.
- (ii) The two Connection Points to the existing Municipal network.
- (iii) The external and internal reticulation to and inside this development.
- (iv) The external reticulation that is requested to be funded with funds from the Capital Contribution Levy.
- (v) The external reticulation that is requested to be funded with funds from the Capital Contribution Levy by the other adjacent future Developers.

6.0 **CONNECTION POINTS**

It is proposed that the connection point be the MV underground cable between SS-Main Intake and SS-3 in the approximate location as depicted on Drawing No. 19146/E/01. A ring main unit, i.e. RMU No. 1 will be cut into the underground cable as depicted on the aforementioned drawing.

The second Connection Point will be the 11kV busbars where two 11kV circuit breaker panels will be connected.

7.0 **EXTERNAL CONNECTION**

It is proposed that the external connection to this development be completed in the following phases as depicted on Drawing No. 19146/E/01:

Phase 1:

The supply and installation of Ring Main Unit No.'s 1 and 2, including the MV underground cable between the aforementioned ring main units indicated in pink on the aforementioned drawing.

Phase 2:

The supply and installation of the Circuit Breaker Panel No.1 in the Main Intake Substation, including the MV underground cable between the aforementioned circuit breaker panel and Ring Main Unit "RMU No. 2". This work is requested to be completed when 50% of the 146 General Residential Zone II (Group Housing) erven have been registered. It is further requested that these works, indicated in green on the aforementioned drawing, be funded from the Capital Contribution received from the Developer. Should the Capital Contribution not cover the installation the balance will be funded by the Developer.

Phase 3:

The supply and installation of the Circuit Breaker Panel No. 2 in the Main Intake Substation, including the MV underground cable indicated in blue between the aforementioned circuit breaker panel and Ring Main Unit "RMU No. 1", which will ensure a ring feed supply to this and the adjacent future developments. It is requested that this work be funded from the external connection costs and Capital Contributions received from the adjacent Developers.

8.0 **TAKING-OVER OF INTERNAL INSTALLATIONS**

The Municipality will take over the complete external and internal reticulation, i.e. circuit breaker panels in the Intake Substation. MV underground cables, ring main units. miniature substations, LV distribution kiosks, streetlights, LV underground cables and service connection installations to the erf boundary of each consumer. For this reason the complete electrical installation would have to comply with the technical requirements of the Municipality and their supply conditions.

9.0 **TECHNICAL PARTICULARS**

All MV and LV cabling will be underground. Ring Main Units and Miniature Substations will be plinth mounted. Distribution kiosks, located next to the roads, will be used to house the consumer circuit breakers. Each consumer circuit will be metered via a pre-payment meter inside each building. Provision will, however, be made for space allowance for a single / three phase conventional meter inside the aforementioned distribution kiosks should the Municipality decide to approve the supply and installation of conventional meters at a later stage. Streetlight fittings will be supplied and installed along the roads.

Provision has been made for LV bulk supply points to the General Residential Zone IV erf (30 flats), and one (1) Business Zone III erf.

The complete electrical installation, incl. streetlights, would have to comply with the technical requirements of Hessequa Municipality and their supply conditions

The plans and specification will be submitted to the Municipality for their records and approval.

10.0 **ENVIRONMENTAL MANAGEMENT PLAN**

All work on site will comply in all respects with the environmental management requirements.

11.0 **SWITCHING OF SUPPLIES AND APPROVALS**

No switching of supplies or trenching adjacent to existing cables will be carried out without prior arrangement with the Town Electrical Engineer's Department. The Electrical Contractor will also liaise with the Town Engineer's Department and Telkom to ensure that no damage is caused to existing underground piped services during construction.

12.0 **DEMAND**

Based on the information presently available, the peak kVA demand of this development has been calculated as follows:

146 General Residential Zone II (Group Housing) erven @ 10,35kVA (45A single phase) x 0,3 diversity factor =	454 kVA
1 General Residential Zone IV erf (35 units), @ 10,35kVA (45A single phase) per flat x 0,3 diversity factor =	109 kVA
(1) Business Zone III erf =	200 kVA
Others, streetlighting, pumpstations etc. =	<u>50 kVA</u>
	813 kVA

This is a provisional calculation and will be finalised after all the network load particulars have been concluded.

13.0 **PROGRAMME**

It is expected that the installation of services at the development will commence immediately after all the necessary approvals have been received.

14.0 **CAPITAL COSTS**

The following assumptions are being made:

- (i) The Developer will be responsible for the supply, installation and commissioning of the external MV and internal LV installation and connection to the external network as indicated on the attached drawing. This work will be done under the direction of an Electrical Engineer and Electrical Contractor to be approved by the Municipality.
- (ii) The Capital Contribution will be calculated in terms of the standard municipal policy in this regard. It is requested that External MV cable No.1, including the Circuit Breaker No. 1 Panel inside the Main Intake Substation be funded from the aforementioned capital contribution.

It is requested that the costs of External MV Cable No. 2, including the Circuit Breaker No.2 Panel inside the Main Intake Substation be funded from the other nearby Developers in future.

15.0 **CONCLUSION**

We trust that this information is sufficient for the Municipality to draw-up the Services Agreement.

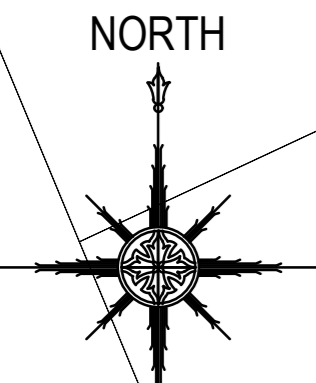
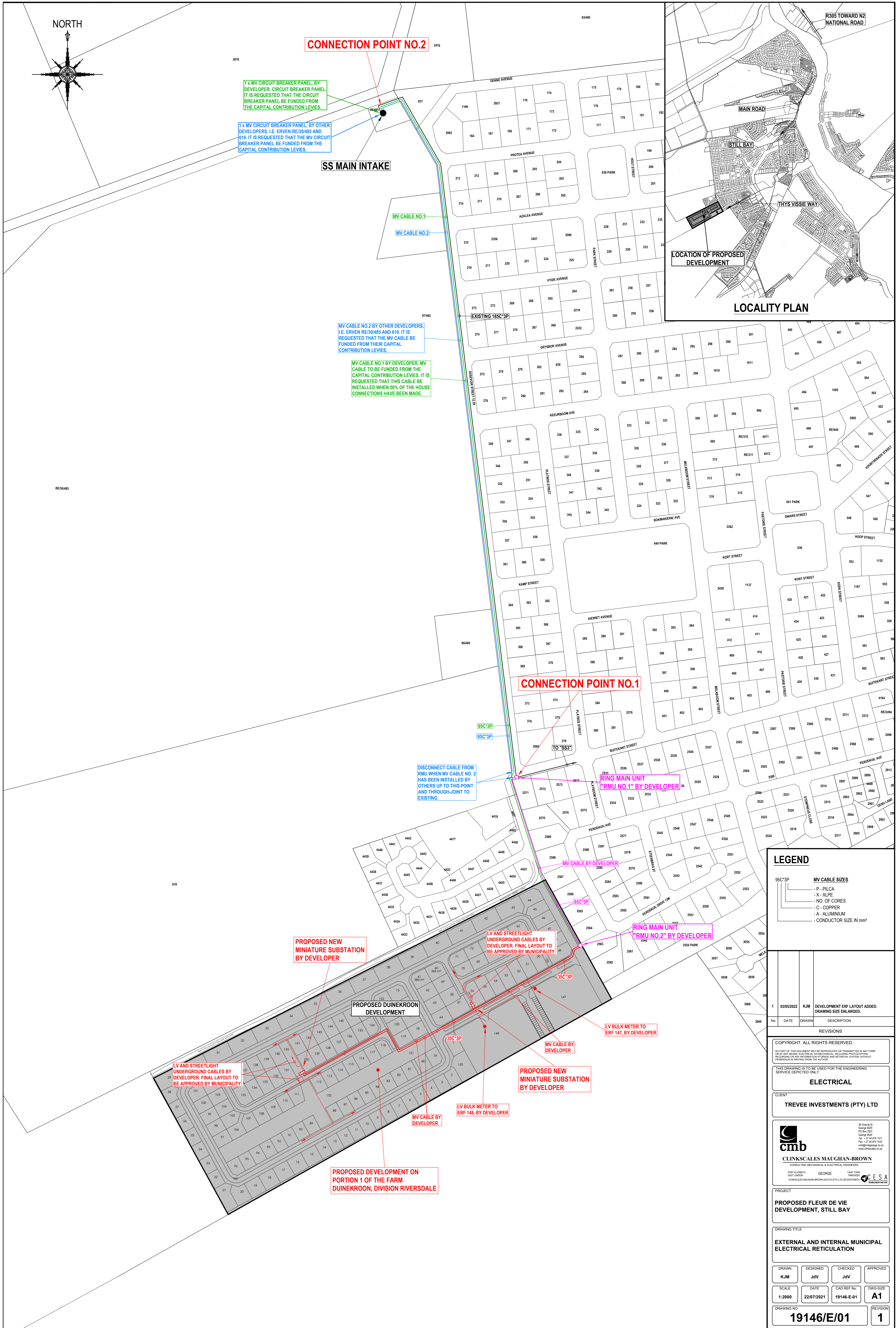
Yours faithfully

A handwritten signature in black ink, appearing to read "J.S. de Villiers". The signature is written in a cursive style with a large initial 'J'.

J.S. de Villiers Pr. Tech. Eng.
CLINKSCALES MAUGHAN-BROWN

ANNEXURE A:

Drawing No. 19146/E/01



CONNECTION POINT NO.2

1 x MV CIRCUIT BREAKER PANEL, BY DEVELOPER. CIRCUIT BREAKER PANEL IT IS REQUESTED THAT THE CIRCUIT BREAKER PANEL BE FUNDED FROM THE CAPITAL CONTRIBUTION LEVIES.

1 x MV CIRCUIT BREAKER PANEL, BY OTHER DEVELOPERS, I.E. ERVEN RE/30485 AND 619. IT IS REQUESTED THAT THE MV CIRCUIT BREAKER PANEL BE FUNDED FROM THE CAPITAL CONTRIBUTION LEVIES.

SS MAIN INTAKE

MV CABLE NO.1
MV CABLE NO.2

MV CABLE NO.2 BY OTHER DEVELOPERS, I.E. ERVEN RE/30485 AND 619. IT IS REQUESTED THAT THE MV CABLE BE FUNDED FROM THEIR CAPITAL CONTRIBUTION LEVIES.

MV CABLE NO.1 BY DEVELOPER. MV CABLE TO BE FUNDED FROM THE CAPITAL CONTRIBUTION LEVIES. IT IS REQUESTED THAT THIS CABLE BE INSTALLED WHEN 50% OF THE HOUSE CONNECTIONS HAVE BEEN MADE.

CONNECTION POINT NO.1

DISCONNECT CABLE FROM RMU WHEN MV CABLE NO. 2 HAS BEEN INSTALLED BY OTHERS UP TO THIS POINT AND THROUGH-JOINT TO EXISTING.

RING MAIN UNIT "RMU NO.1" BY DEVELOPER

MV CABLE BY DEVELOPER

RING MAIN UNIT "RMU NO.2" BY DEVELOPER

PROPOSED NEW MINIATURE SUBSTATION BY DEVELOPER

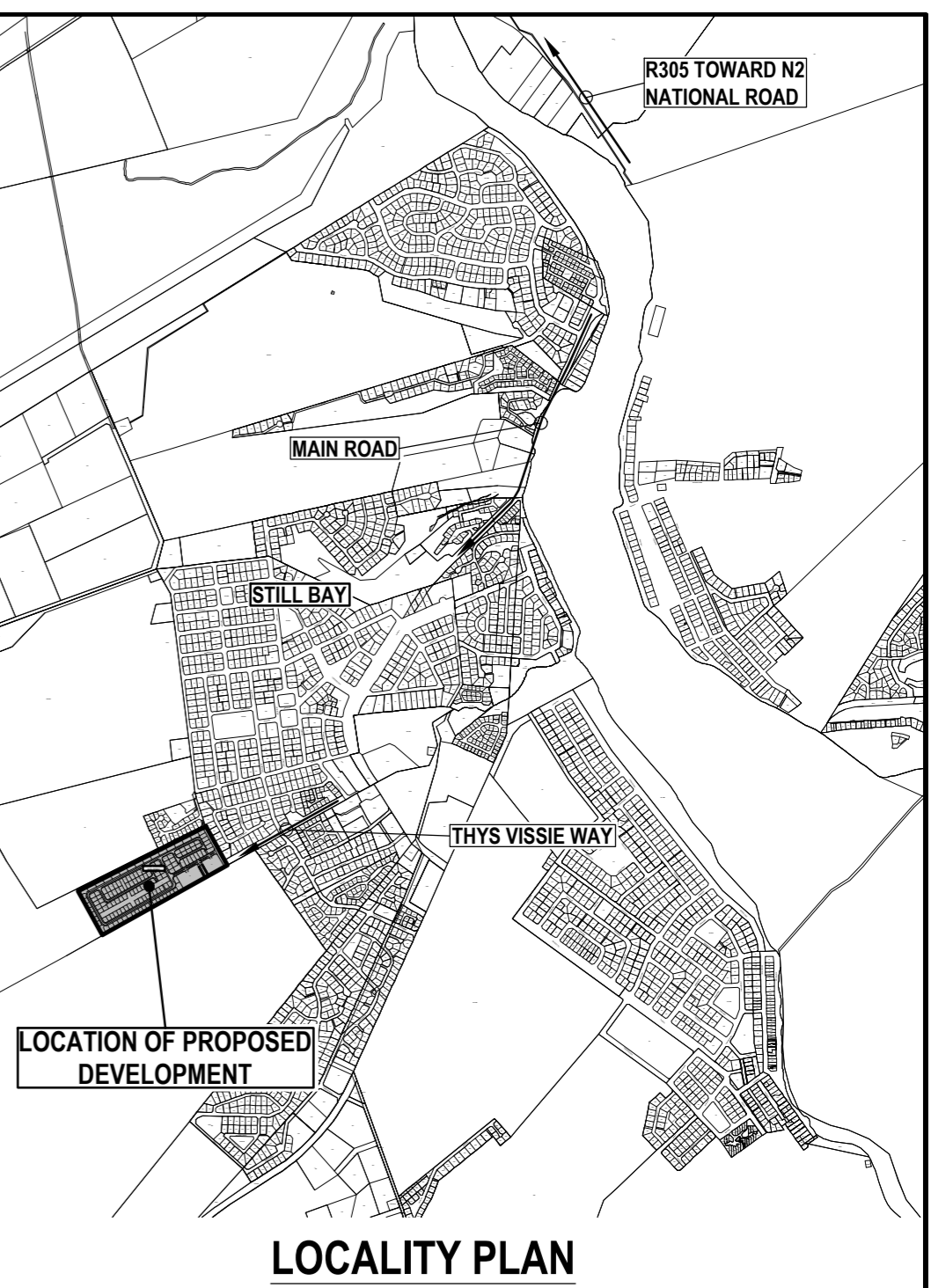
LV AND STREET LIGHT UNDERGROUND CABLES BY DEVELOPER. FINAL LAYOUT TO BE APPROVED BY MUNICIPALITY

LV BULK METER TO ERF 147, BY DEVELOPER

PROPOSED NEW MINIATURE SUBSTATION BY DEVELOPER

LV BULK METER TO ERF 148, BY DEVELOPER

PROPOSED DEVELOPMENT ON PORTION 1 OF THE FARM DUINEKROON, DIVISION RIVERSDALE



LEGEND

95C*3P	MV CABLE SIZES
- P - PILCA	
- X - XLPE	
- NO. OF CORES	
- C - COPPER	
- A - ALUMINIUM	
- CONDUCTOR SIZE IN mm ²	

No.	DATE	DRAWN	DESCRIPTION
1	03/05/2022	KJM	DEVELOPMENT ERF LAYOUT ADDED. DRAWING SIZE ENLARGED.

ELECTRICAL

CLIENT
TREEVE INVESTMENTS (PTY) LTD

cmb
CLINKSCALES MAUGHAN-BROWN
CONSULTING MECHANICAL & ELECTRICAL ENGINEERS

PROJECT
PROPOSED FLEUR DE VIE DEVELOPMENT, STILL BAY

DRAWING TITLE
EXTERNAL AND INTERNAL MUNICIPAL ELECTRICAL RETICULATION

DRAWN	DESIGNED	CHECKED	APPROVED
KJM	JdV	JdV	
SCALE	DATE	CAD REF NO.	DWG-SIZE
1:2000	22/07/2021	19146-E-01	A1
DRAWING NO.	REVISION		
19146/E/01	1		

FLEUR DE VIE LIFESTYLE ESTATE

**SERVICES REPORT FOR
CIVIL ENGINEERING SERVICES FOR THE
DEVELOPMENT OF PORTION 1 OF THE FARM
DUINEKROON NO. 591, STILL BAY WEST**

HESRIV-515

Revision 0.0

JUNE 2022

PREPARED BY:



CLIENT:

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1. INTRODUCTION

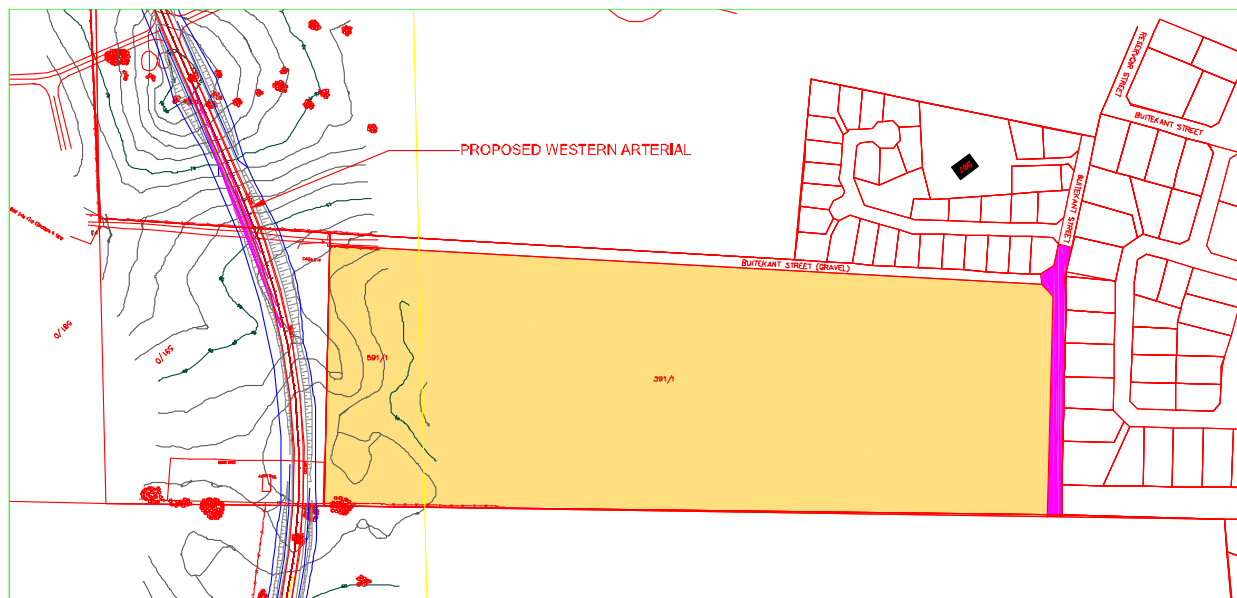
Hessequa Consulting Engineers CC has been appointed by the Developers of Trevee Investments (Pty) Ltd for the planning of civil engineering services for the proposed development of Portion 1 of the Farm Duinekroon No. 591, Still Bay West.

The provision of civil engineering services will be in accordance with the guidelines and requirements of the *Guidelines for the Provision of Engineering Services and Amenities in Residential Township Development* as published by the CSIR and those of the Hessequa Municipality.

This report indicates, discusses and elaborates on the design criteria and specifications to be applied in the detail design of the internal and external infrastructure including roads, stormwater, water and sewer reticulation as well as requirements for the provision of communication and electrical sleeves.

2. LOCATION AND ACCESS

Portion 1 of the Farm Duinekroon No. 591 is located to the south eastern side of Buitekant Street (Gravel portion) in Still Bay West.



Access to the proposed development will be from an extension of the existing paved road. (Extension of Buitekant Street) The Developer will extend the Public Road parallel to the eastern boundary up to the south eastern boundary peg of the development. Hessequa Municipality plans to extend the Public Road, from the south eastern boundary, to intersect with a future extension of Thys Vissie

Street, and ultimately joins with Bosbokduin Avenue. The proposed development will not have direct access from the planned Western Arterial.

SMEC Consulting Engineers compiled a Traffic Impact Assessment (TIA – Reference No. C1880 Revision 1 dated 6 May 2022) for the proposed development. The recommendations underlined in the TIA must be read in conjunction with the Traffic Master Plan, for Still Bay, as prepared by Lyners Consulting Engineers. The following recommendations are made with regard to access to the development as well as the upgrading of other related road infrastructure:

- The roadside environment has been identified as a suburban area. It is recommended that the access spacing requirements of a Class 5 Local Street be applied to the Public Road extension.
- Access to the development not to be closer than 105m from the Buitekant Street intersection from the new Public Road.
- The intersection between Main Road and Buitekant Street to be upgraded to a roundabout with two circulating lanes. The north approach to comprise of a shared through-and-left lane plus a short shared through-and-right lane. The east approach to comprise of a single lane serving all movements. The south approach to comprise of a shared through-and-left lane plus a short shared through-and-right lane. The west approach to comprise of a single lane serving all movements.

It is proposed that the Developer and Hessequa Municipality negotiate the incremental impact and cost related to the incremental impact for the required roundabout upgrading in relation to the Road Master Planning.

3. ENGINEERING SERVICES

Civil engineering services will be designed in accordance with the design standards of the *Guidelines for the Provision of Engineering Services and Amenities in Residential Township Development* as published by the CSIR as well as the minimum requirements of Hessequa Municipality.

3.1. MASS EARTHWORKS

No mass earthworks are envisaged.

3.2. ROADS

The access road will consist of 2 x 4m wide lanes with a 3m wide island within the proposed 13m road reserve. Road finishing will consist of 80mm Interlocking segmented paving with stormwater pipework and inlet- and outlet structures. In areas with steep slopes (12% and more) cross beams will be constructed at 15m intervals.

The design criteria will be based on the design standards of the *Guidelines for the Provision of Engineering Services and Amenities in Residential Township Development* as shown in Table 1 below.

Table 1 Road Design Criteria			
Parameter	Local Street (Class 5)	Residential Access Loop (Class 5b)	Residential Access way (Class 5d)
Category	UB	UC	UC
Traffic Class	E1	E0	E0
Structural Design Traffic	0.05 - 3 x 10 ⁶	< 0.2 x 10 ⁶	< 0.2 x 10 ⁶
Surface Treatment	80mm Interlocking Segmented Paving	80mm Interlocking Segmented Paving	80mm Interlocking Segmented Paving
Sub-base from commercial sources	150mm G5 (95% MAASHTO) on 150mm Upper Selected (93% MAASHTO) on 150mm Roadbed prep in-situ Material (90% MAASHTO)	150mm G5 (95% MAASHTO) on 150mm Upper Selected (93% MAASHTO) on 150mm Roadbed prep in-situ Material (90% MAASHTO)	150mm G5 (95% MAASHTO) on 150mm Upper Selected (93% MAASHTO) on 150mm Roadbed prep in-situ Material (90% MAASHTO)
Geotechnical Report	-	-	-
Carriage Way Width	6m	5,5m	5m
Design Speed	50 km/h	40 km/h	30 km/h
Maximum Gradient	10% over 100m max	16% over 50m max	16% over 30m max
Minimum Gradient	0.5%	0.5%	0.5%
Cross Fall	2,5%	2,5%	2,5%
Bell mouths	8m Radius	8m Radius	8m Radius

A Geological Report will be completed prior to the commencement of the design stage. Pavement design will be done in accordance with the Urban Transport Guidelines, UTG2, Structural Design of

Segmental Pavements for Southern Africa, 1987. Suitable commercial sources for construction materials are available in Still Bay and surrounding towns.

3.3. STORMWATER

3.3.1. *Stormwater Management Strategy*

It is estimated that stormwater runoff, depending on erf coverage, will increase by approximately 25% post development. The site drains in a north eastern direction. Stormwater will cross the new Public Road and drain onto existing linked open park areas, between existing township development, which ultimately reaches and releases into the Goukou River.

The following measures are proposed to mitigate the impact of post development stormwater runoff on the existing infrastructure downstream from the proposed development:

- Installation of 2 kℓ water tanks on each residential erf will contribute to the attenuation of initial runoffs.
- Public Open Spaces will be utilised as recreation areas as well as stormwater detention areas where the concentration of stormwater runoff will be minimised through the application of landscaping techniques, i.e. by creating grass lined swales, undulations and depressions.

3.3.2. *Stormwater Design*

Stormwater infrastructure will be constructed in accordance with the standard requirements and specifications as agreed with the Hessequa Municipality.

Stormwater runoff from the erven will gravitate towards the internal road network. Surface runoff from roadways will be collected via kerb inlets into a piped stormwater system. Servitudes have been provided for stormwater infrastructure and drainage as required.

Attenuation areas will, as far as possible, be created on open spaces and at stormwater pipework outlets, to prevent any negative effect on lower lying properties.

Design criteria adopted for the development with regard to stormwater infrastructure is summarised as follows:

Runoff rates will be determined according to the Rational Method.

Flood recurrence interval	:	2 years
Pipe material	:	Concrete
Pipe class	:	75D / 100D

Pipe diameters	:	Minimum 375mm Ø up to diameter as required
Bedding	:	Class C
Inlets	:	Kerb and drop inlets as required
Manholes	:	Point of deflections on pipes

3.4. WATER

3.4.1. Water Demand

The estimated Annual Average Daily Demand (AADD) for the development is as follows:

146 General Residential Erven Zone II @ 600 ℓ/unit/day	87,60 kℓ/day
38 General Residential Erven Zone IV (Flats) @ 450 ℓ/unit/day	17,10 kℓ/day
1 Business Zone III : 0,3915 ha @ 18 kℓ/d/ha	7,05 kℓ/day

Total AADD **111,75 kℓ/day or 1,29 ℓ/s**

3.4.2. Water Sources for Still Bay West

The current peak weekly demand for Still Bay is 1,7 to 1,8 times the AADD and is experienced during December. The current peak week flow for Still Bay West is 53,0 ℓ/s. The proposed full development requires a peak weekly demand of $1,29 \times 1,75 = 2,258$ ℓ/s. Hessequa Municipality, in June 2022 completed a water source audit to confirm the yields of existing bore holes and fountains. The development of water sources is an ongoing exercise which is driven by Hessequa Municipality and funded through Capital Contributions payable per erf.

Table 2 : Water Sources for Still Bay West	
SUPPLY SOURCE	DELIVERY (ℓ/s)
Olienhoutfontein	5
Grootsandfontein	10
Attie Nel	9
Hawefontein	7
Palinggatfontein	7,5
Gholfbaan Borehole	5
Olive Grove Dam	11
Total Still Bay West	54.5

3.4.3. *Water Storage*

The proposed development falls within the Plattebosch district and require storage capacity of 224 kl which is 48 hours of the AADD. The existing storage capacity at Plattebosch is 6,84 Ml with a Full Water Level (FWL) of 108m. The proposed development has an elevation range between 49,5 and 63 m a.s.l.

In accordance with the GLS Report dated 19 April 2022 sufficient storage capacity exists, within the Plattebosch reservoir district, to accommodate the proposed development.

3.4.4. *Water Link Services*

In accordance with the GLS Revised Report, dated 19 April 2022, the following Link Water Mains will be required to accommodate the proposed development in the existing system (Reference to GLS Report dated 19 April 2022 – Annexure A : Figure 1) :

- HStW1.2 : 880 m x 400 mm Ø new supply pipe to replace existing 150mm pipe
- HStW1.3 : 305 m x 355 mm Ø new supply pipe

The incremental impact of the link services, for the development, on the relevant master plan items are as follows:

Table 3 : Incremental Impact of Development on relevant Master Plan Items	
ITEM	INCREMENTAL (%)
HStW1.2 : 880 m x 400 mm Ø new supply pipe	7,97
HStW1.3 : 305 m x 355 mm Ø new supply pip	8,73

3.4.5. *Water Reticulation*

New 75/110/160mm class 12 MPVC water mains complete with isolating valves, fire hydrants and erf connections will be provided. Erf connections will be made with HDPE PE80 PN12,5 pipes and terminate with an end cap.

The basis of the water reticulation design for the proposed development is summarised in the table below:

Table 4 : Water Reticulation Design Criteria	
PARAMETER	GUIDELINE
Pipe materials for erf connections	HDPE PE80 PN12,5
Pipe materials for reticulation mains	MPVC (Class 12)
Minimum diameter for reticulation mains	75mm
Minimum diameter for erf connections serving two erven	25mm branching to 2 x 20mm
Minimum diameter for erf connections serving one erf	20mm Polycop
Valves	75/110/160mm AVK (open clockwise)
Fire Hydrants	AVK London V on respective pipe Ø
Water meters	20mm Elster Kent (Water meter to be installed by Hessequa Municipality with Building Plan approvals.)

3.4.6. Bulk Supply Upgrading

The development of water sources is an ongoing exercise, driven by Hessequa Municipality, and funded through Capital Contributions payable per erf.

The development and incorporation of new boreholes, upgrading of bulk supply pipelines and pumping infrastructure will be in accordance with Hessequa Municipality's Master Planning. The developments impact, on existing bulk supply infrastructure, will be determined and confirmed by Hessequa Municipality. The development's incremental impact on the exploration of new water sources as well as the provision and or upgrading of new bulk infrastructure will be determined and negotiated with Hessequa Municipality.

3.5. SEWERAGE

3.5.1. WWTW

The existing WWTW consist over a design capacity of 4,0 Ml/d. The WWTW consists over sufficient capacity to accommodate the proposed development.

3.5.2. Sewer Design Flows

In accordance with the *Guidelines for the Provision of Engineering Services and Amenities in Residential Township Development* it is expected that 70% of the Average annual water daily demand will end up in the wastewater system.

The annual average dry weather flow (AADWF) equals 70% of 111,75 kl/d = 78,23kl/d = 0,905 l/s.

To determine the Peak Wet Weather Flow (PWWF) a peak factor of 2,5 were taken in consideration with an expected stormwater infiltration of 15%. The PWWF equals 2,60 l/s.

3.5.3. Sewer Link and Bulk Infrastructure

The proposed development on Farm 591/1 drains to the south eastern boundary and falls within the existing Still Bay Adlepracht pumping station (PS) drainage area. A new link sewer main is required to connect the proposed development to the existing sewer infrastructure.

In accordance with the GLS Report the recommended position for a connection to the existing sewer system is to the 100 mm Ø gravity sewer in Melkboom Street. (Reference to GLS Report dated March 2022 – Annexure A : Figure 3) The existing sewer main between the point of connection and the existing 150 mm Ø outfall sewer in Main Road West has insufficient capacity to accommodate the additional sewage demand, from the development, and must be upgraded.

In accordance with the GLS Revised Report, dated 19 April 2022, the following link/upgrading of services items are required to connect the proposed development to the existing sewer system. (Reference to GLS Report dated March 2022 – Annexure A : Figures 3 & 4) :

- HStS7.3 : 415m x 200mm Ø New outfall sewer
- HStS7.4 : 210m x 200mm Ø Replace existing sewer
- HStS7.5 : 120m x 200mm Ø New outfall sewer

It is further proposed that when the link service item HStS7.3 is constructed that the existing sewer system for the development directly to the north of Farm 591/1 be re-directed to the new outfall sewer, as shown on Figure 3 (Reference to GLS Report dated March 2022 – Annexure A). The gravity sewer system in Main Road West, which gravitates towards the Adlepracht PS, has sufficient spare capacity to accommodate the proposed development in the existing system.

The incremental impact of the link services, for the development, on the relevant master plan items are as follows:

Table 5 : Incremental Impact of Development on relevant Master Plan Items	
ITEM	INCREMENTAL (%)
HStS7.3 : 415m x 200mm Ø New outfall sewer	100
HStS7.4 : 210m x 200mm Ø Replace existing sewer	15,52
HStS7.5 : 120m x 200mm Ø New outfall sewer	15,52

3.5.4. Design Criteria

The following minimum design criteria shall be applicable to sewer pipework:

- Design parameters : Average daily flow as per Red Book for the different housing categories
Peak factor – Harmon formula : Extraneous flow – 15% : Minimum velocity – 0.7m
- Minimum cover to pipes : 0.80m
- Minimum pipe size : 110mm diameter for house connections : 160mm diameter for sewer mains
- Minimum gradients : 110mm diameter house connection 1:60 : main lines at 80% capacity as follows :

Number of Dwelling/units	Grade
Less than 6	1:80
6 to 10	1:100
11 to 80	1:120

- House connection depth shall generally be 1.0m but at least be able to drain 80% of an erf.
- Maximum manhole spacing of 80m.

3.6. ELECTRICAL SLEEVES

The position of communication and electrical sleeves (110/160mm Class 34 PVC) will be determined in consultation with the Electrical Engineer.

4. SOLID WASTE

Hessequa Municipality to collect solid waste for discharging at the Riversdale solid waste dump site. All garden refuse can be discharged at the Melkhoutfontein dump site.

The estimated solid waste generated per day, fully developed, is as follows:

$3,5\text{kg} \times \text{person/d} (784) = 2,744 \text{ ton/day} = 2,058 \text{ m}^3/\text{day}$ (volume).

5. AUGMENTATION LEVIES

It is accepted that budgetary constraints, within the approved three-year Hessequa Municipality budget, will result in the Developer having to provide bridging finance for incremental services. The offset of Augmentation Levies, payable for water and sewer services, against the bridging finance of incremental services will be negotiated with Hessequa Municipality.

Levies, approved from 1 July 2022, are as follows:

General Residential Erven Zone II	:	Water & Sewer	:	R 18,020.00/erf
General Residential Erven Zone IV	:	Water & Sewer	:	R 7,155.00/erf
Business Zone III : 3,915 m ²	:	Water & Sewer	:	R 10,759/1,000m ² (Building)

6. CONCLUSION

We trust that the information included in this report will provide insight to the level of services required for the development of Portion 1 of the Farm Duinekroon No 591.



G PEPLER Pr Tech Eng
HESSEQUA CONSULTING ENGINEERS

29 June 2022

ANNEXURE A : DRAWINGS


GLS FIGURE 1 : WATER LINK SERVICES

GLS FIGURE 3 : SEWER LINK SERVICES

GLS FIGURE 4 : SEWER LINK SERVICES

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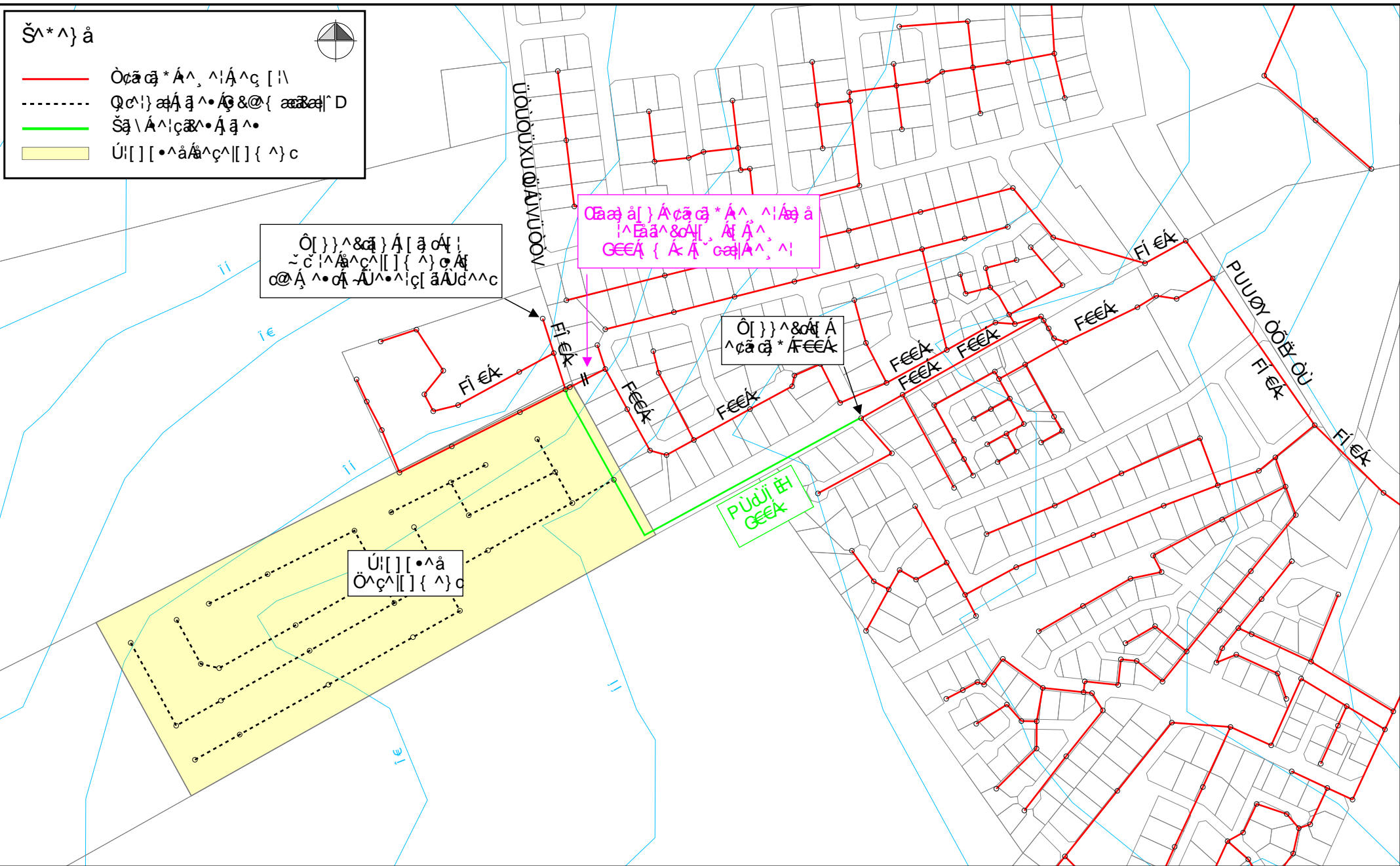
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


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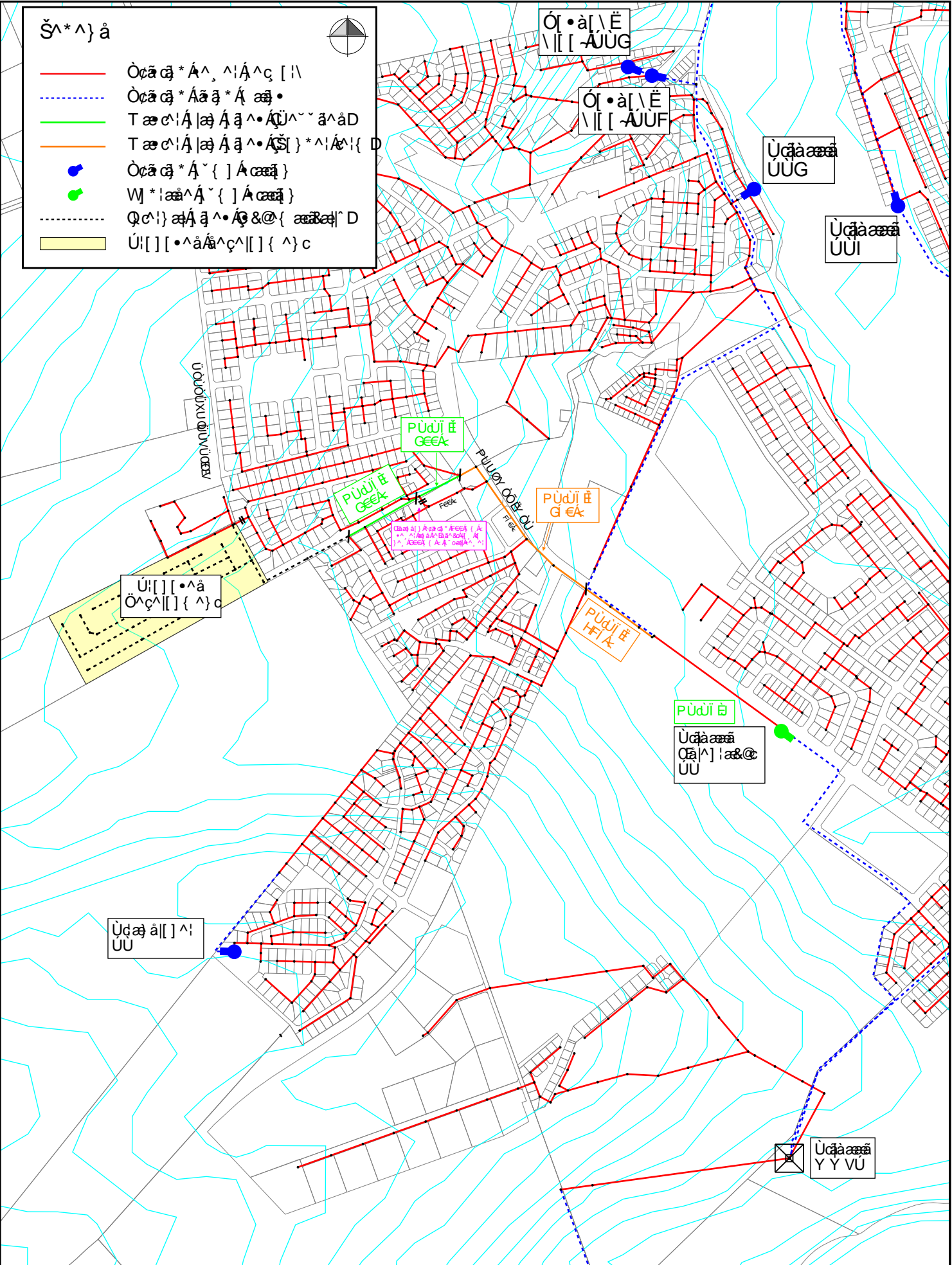


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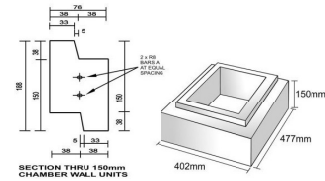
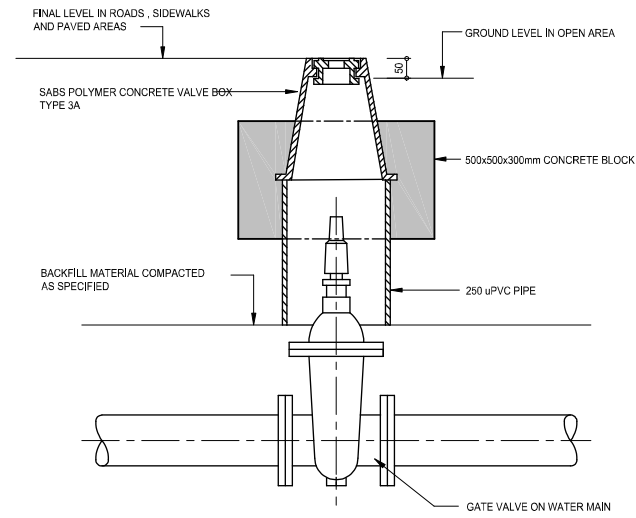


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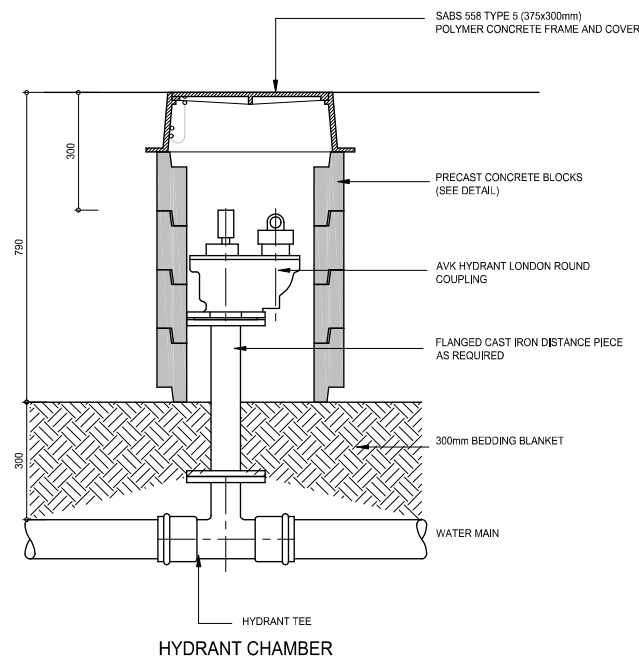
## ANNEXURE B : DRAWINGS

HESRIV-515-W1 : WATER TYPICAL DETAILS

HESRIV-515-S1 : SEWER TYPICAL DETAILS

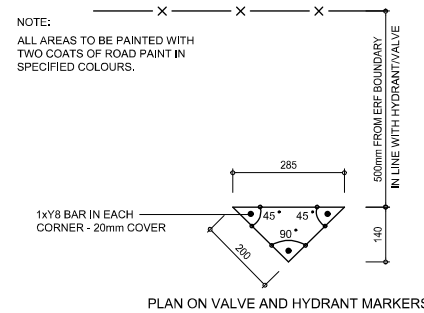


PRECAST CONCRETE BLOCK

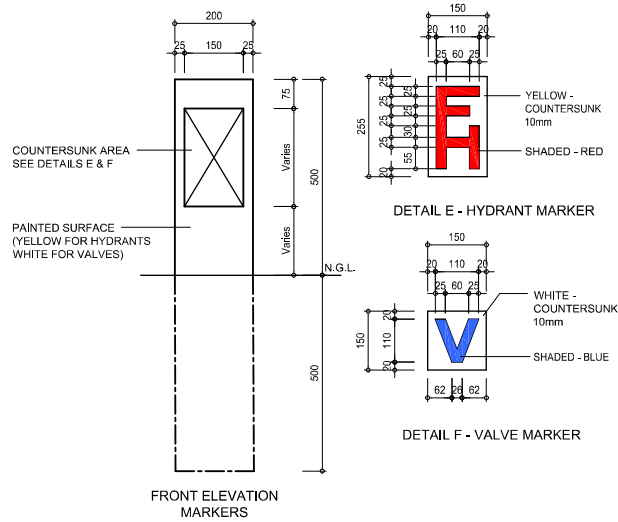


TYPICAL DETAIL OF VALVE CHAMBER

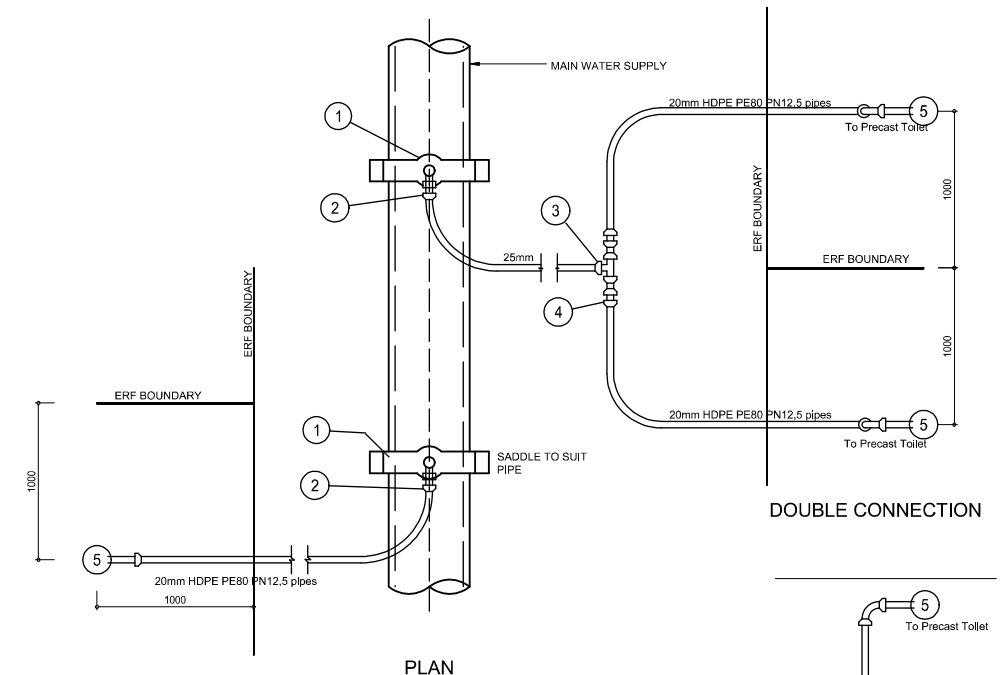
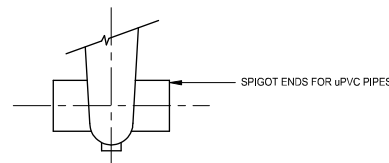
NOTE: ALL AREAS TO BE PAINTED WITH TWO COATS OF ROAD PAINT IN SPECIFIED COLOURS.



PLAN ON VALVE AND HYDRANT MARKERS



TYPICAL DETAIL OF VALVE AND HYDRANT MARKERS



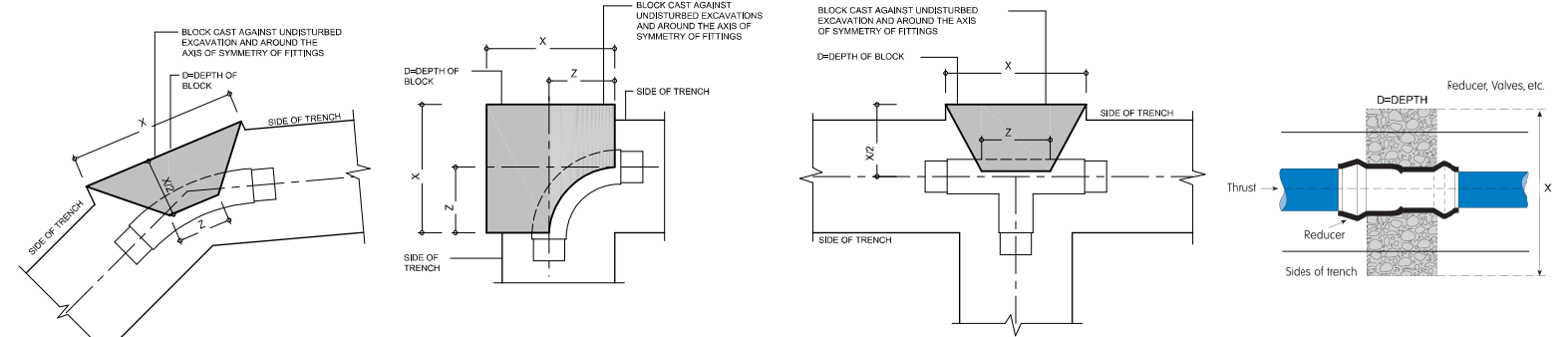
SINGLE CONNECTION

PLAN

SECTION

TYPICAL DETAIL OF WATER CONNECTION ON ERFEN (25/20mm)

- NOTES
- 90° MALE TO FEMALE ELBOW
  - PLASSON MALE COUPLING
  - 25 x 25mm T-PIECE
  - 25 x 20mm REDUCER
  - WATER METER

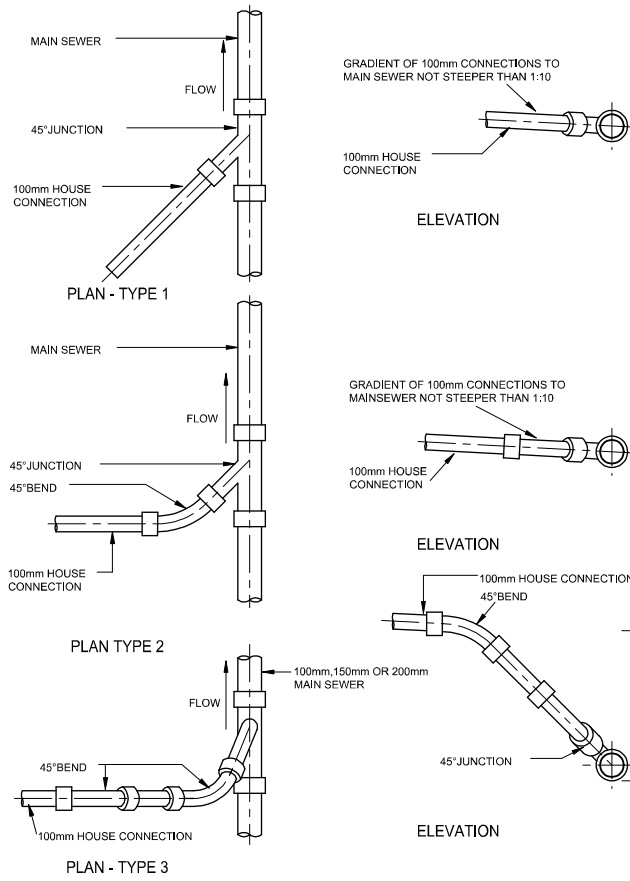


TYPICAL THRUST BLOCK DETAILS SANDY SOIL BEARING CAPACITY 200-400kPA

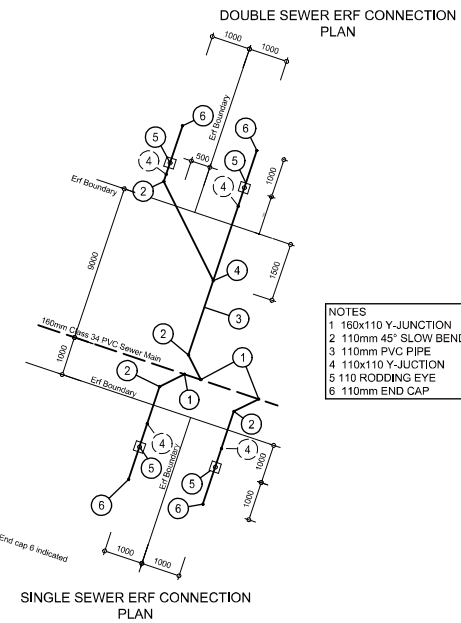
NOTE: COUPLINGS AND FLANGES MUST BE LEFT FREE OF CONCRETE

| PIPE | 11 1/4° BEND |     |     | 22 1/2° BEND |     |     | 45° BEND |     |     | 90° BEND |     |     | T-JUNCTION |     |     | END CAPS/VALVES REDUCERS |     |
|------|--------------|-----|-----|--------------|-----|-----|----------|-----|-----|----------|-----|-----|------------|-----|-----|--------------------------|-----|
|      | DIAM.        | Xmm | Dmm | Zmm          | Xmm | Dmm | Zmm      | Xmm | Dmm | Zmm      | Xmm | Dmm | Zmm        | Xmm | Dmm | Zmm                      | Xmm |
| 75   | 200          | 100 | 100 | 200          | 150 | 150 | 250      | 200 | 150 | 300      | 220 | 180 | 300        | 210 | 150 | 700                      | 300 |
| 100  | 200          | 150 | 100 | 250          | 200 | 150 | 350      | 250 | 200 | 350      | 300 | 250 | 350        | 210 | 200 | 1000                     | 400 |
| 150  | 250          | 200 | 200 | 350          | 300 | 200 | 500      | 450 | 350 | 550      | 450 | 400 | 600        | 400 | 280 | 1050                     | 500 |
| 200  | 350          | 250 | 250 | 500          | 350 | 250 | 650      | 500 | 450 | 750      | 550 | 480 | 700        | 600 | 350 | 1100                     | 600 |
| 250  | 400          | 350 | 300 | 600          | 450 | 300 | 800      | 600 | 500 | 1000     | 650 | 530 | 900        | 700 | 450 | 1150                     | 700 |
| 300  | 500          | 400 | 350 | 700          | 550 | 350 | 950      | 750 | 550 | 1200     | 770 | 580 | 1150       | 800 | 550 | 1200                     | 800 |
| 350  | 600          | 500 | 400 | 900          | 700 | 400 | 1200     | 900 | 600 | 1480     | 950 | 630 | 1550       | 900 | 550 | 1500                     | 800 |

|                                                                       |  |  |  |                                |  |                                                                                                                  |  |                                                                    |  |                                                                            |  |                                                                                                                           |  |                                                                             |  |                                                                                               |  |
|-----------------------------------------------------------------------|--|--|--|--------------------------------|--|------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------|--|----------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------|--|
| Wysiging/Amendment                                                    |  |  |  | VERKLEINDE SKAAL/REDUCED SCALE |  |                                                                                                                  |  | Ontwerp Designed: AA<br>Getekene Drawn: AA<br>Nagesien Checked: GP |  | Klient/Client: FLEUR DE VIE<br>TREVEE INVESTMENTS (Pty) Ltd                |  | Projek/Project: CIVIL ENGINEERING SERVICES FOR THE DEVELOPMENT OF PORTION 1 OF THE FARM DUINEKROON NO.591, STILL BAY WEST |  | Tekening Beskrywing/Drawing description: WATER RETICULATION TYPICAL DETAILS |  | Skaal/Scale: N.T.S.<br>Datum/Date: JUNE 2022<br>Tekening Nummer/Drawing number: HESRIV-515-W1 |  |
| Nr. Datum Nagesien Deur Beskrywing/Description<br>No. Date Checked By |  |  |  |                                |  | P.O. BOX 577<br>RIVERSDALE 6670<br>22 HEIDELBERG ROAD, RIVERSDALE<br>CELL: 083 447 9297<br>TEL/FAX: 028 713 4030 |  | CESA                                                               |  | Pr Tech Eng<br>Raadgewende Ingenieur<br>Consulting Engineer<br>Datum/Date: |  | Klient/Client<br>Datum/Date:                                                                                              |  | Tekening Beskrywing/Drawing description                                     |  | Skaal/Scale                                                                                   |  |

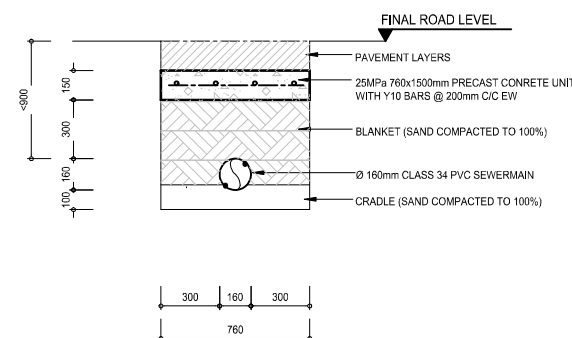


TYPICAL DETAIL OF SEWER ERF CONNECTIONS  
N.T.S

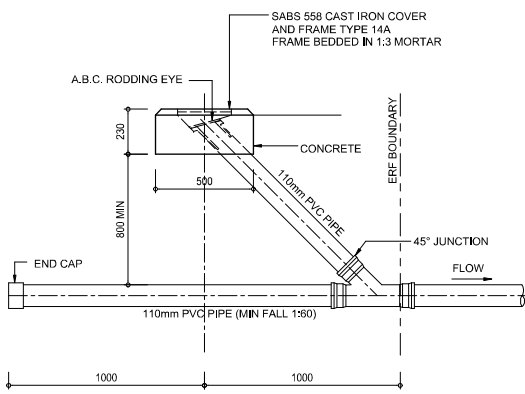


- NOTES:  
1. 160x110 Y-JUNCTION  
2. 110mm 45° SLOW BEND  
3. 110mm PVC PIPE  
4. 110x110 Y-JUNCTION  
5. 110 RODDING EYE  
6. 110mm END CAP

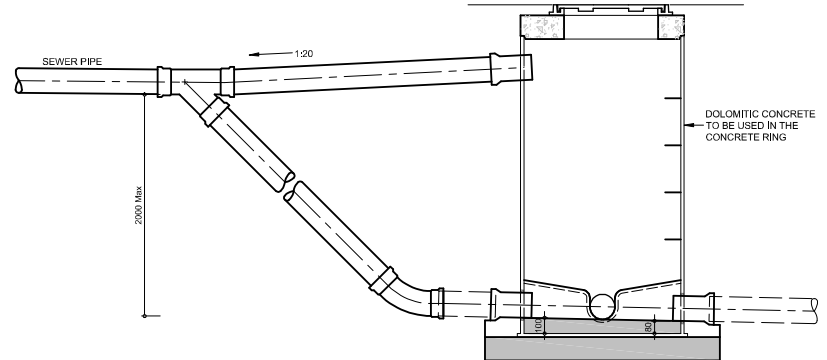
SINGLE SEWER ERF CONNECTION PLAN



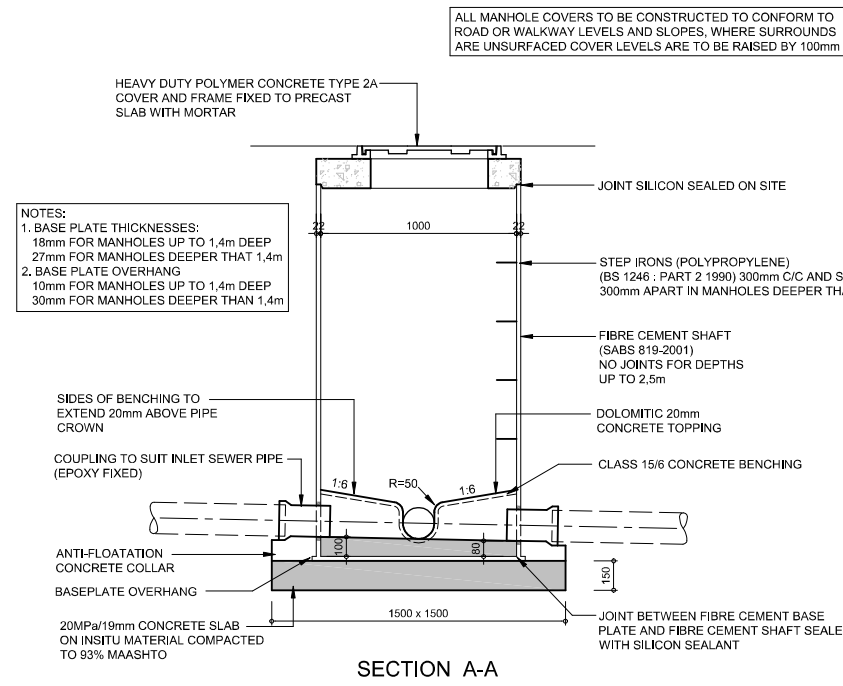
PROTECTION OF PIPES AT REDUCED DEPTHS OF COVER  
SECTION - TRENCH  
N.T.S



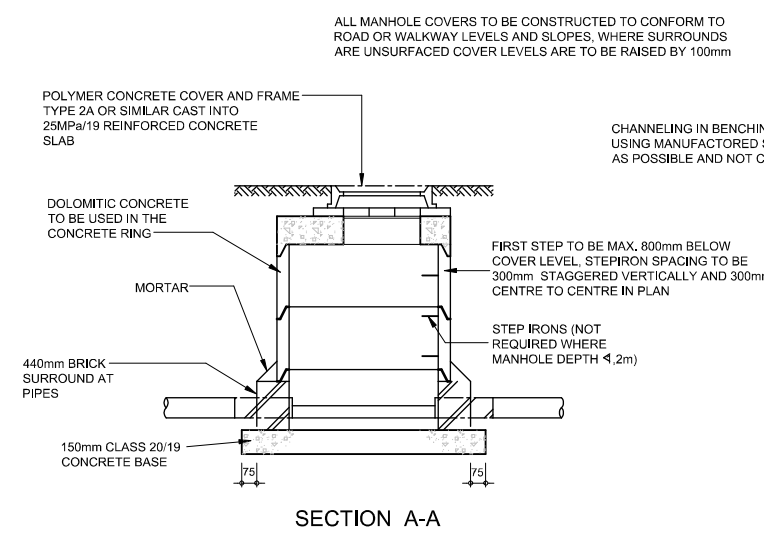
TYPICAL DETAIL OF SEWER ERF CONNECTION  
N.T.S



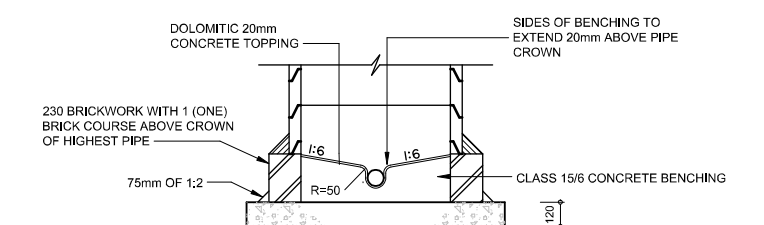
TYPICAL SECTION OF SEWER DROP CONNECTIONS  
(2m MAX DEPTH)



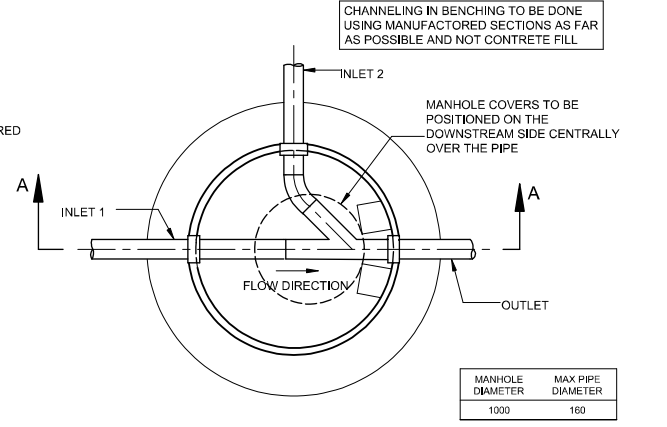
TYPICAL DETAIL OF SEWER MANHOLE  
N.T.S



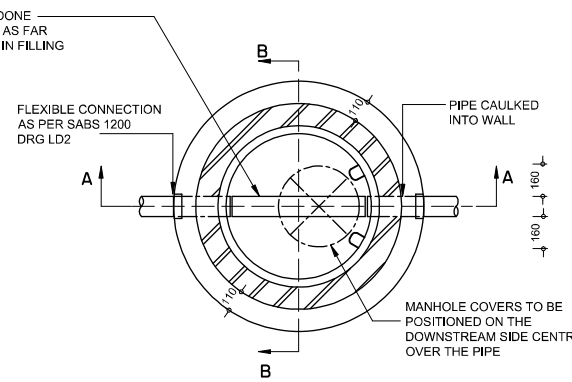
SECTION A-A  
TYPICAL DETAIL OF CONCRETE SEWER MANHOLE  
N.T.S



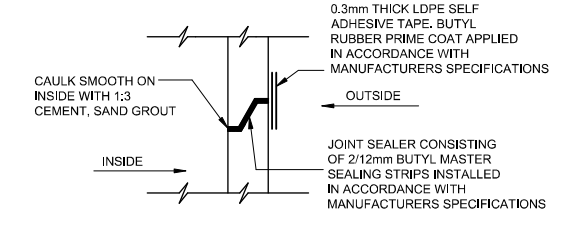
SECTION B-B  
TYPICAL DETAIL OF CONCRETE SEWER MANHOLE  
N.T.S



PLAN



PLAN



DETAIL OF JOINT IN PRECAST RINGS

| Wysiging/Amendment |       |          |      |                        |
|--------------------|-------|----------|------|------------------------|
| Nr                 | Datum | Nagesien | Deur | Beskriving/Description |
| No                 | Date  | Checked  | By   |                        |
|                    |       |          |      |                        |
|                    |       |          |      |                        |
|                    |       |          |      |                        |

| VERKLEINDE SKAAL/REDUCED SCALE |
|--------------------------------|
| 0 10 20 30 40 50               |
| Notas/Notes                    |

**ESSEQUA**  
RAADGEWENDE INGENIEURS • CONSULTING ENGINEERS  
P.O. BOX 577  
RIVERSDALE 6670  
22 HEIDELBERG ROAD, RIVERSDALE  
CELL: 083 447 9297  
TEL/FAX: 028 713 4030

|                     |    |                                                            |
|---------------------|----|------------------------------------------------------------|
| Ontwerp<br>Designed | AA | Pr Tech Eng                                                |
| Geteken<br>Drawn    | AA | Raadgewende Ingenieur<br>Consulting Engineer<br>Datum/Date |
| Nagesien<br>Checked | GP | Klient/Client<br>Datum/Date                                |

|               |                                              |
|---------------|----------------------------------------------|
| Klient/Client | FLEUR DE VIE<br>TREVEE INVESTMENTS (Pty) Ltd |
|---------------|----------------------------------------------|

|                |                                                                                                                    |
|----------------|--------------------------------------------------------------------------------------------------------------------|
| Projek/Project | CIVIL ENGINEERING SERVICES FOR<br>THE DEVELOPMENT OF PORTION 1<br>OF THE FARM DUINEKROON NO.591,<br>STILL BAY WEST |
|----------------|--------------------------------------------------------------------------------------------------------------------|

|                                         |                          |
|-----------------------------------------|--------------------------|
| Tekening Beskriving/Drawing description | SEWER<br>TYPICAL DETAILS |
|-----------------------------------------|--------------------------|

|                                |               |
|--------------------------------|---------------|
| Skaal/Scale                    | N.T.S         |
| Datum/Date                     | JUNE 2022     |
| Tekening Nommer/Drawing number | HESRIV-515-S1 |



C1880

Traffic Impact Assessment

# Proposed Residential Development, Stilbaai

Reference No. C1880

Prepared for Trevee Investments (Pty) Ltd

6 May 2022

## DOCUMENT CONTROL

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|-----------------|--------------------------------------------|
| Document        | Proposed Residential Development, Stilbaai |
| File Location   | P:\ZAGRFPV001                              |
| Project Number: | C1880                                      |
| Revision Number | Rev. 1                                     |


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|--------------|-------------|---------------|---------------------|-----------------------|
| 0            | 19 Sep 2021 | Taariq Parker | Abduraghmaan Salasa | Emile Jordaan         |
| 1            | 06 May 2022 | Taariq Parker | Emile Jordaan       | Emile Jordaan         |

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## ABBREVIATIONS & SYMBOLS

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| ABBREVIATION / SYMBOL | DESCRIPTION                                        |
|-----------------------|----------------------------------------------------|
| AMP                   | Arterial Management Plan                           |
| CBD                   | Central Business District                          |
| CITP                  | Current Integrated Transport Plan                  |
| COTO                  | The Committee of Transport Officials South African |
| GLA                   | Gross Lettable Area                                |
| HA                    | Hectares                                           |
| HCM                   | Highway Capacity Manual                            |
| LOS                   | Level of Service                                   |
| LSDF                  | Local Spatial Development Framework                |
| NMT                   | Non-Motorised Transport                            |
| SDF                   | Spatial Development Framework                      |
| SDP                   | Site Development Plan                              |
| SMEC                  | Snowy Mountains Engineering Corporation            |
| SQM                   | Square Metres                                      |
| STA                   | Site Traffic Assessment                            |
| SU+T                  | Single Unit plus Trailer                           |
| TIA                   | Traffic Impact Assessment                          |
| TMH                   | Technical Methods for Highways                     |
| VPH                   | Vehicles Per Hour                                  |
| WCG                   | Western Cape Government                            |
| ~                     | Approximately Equal                                |
| ±                     | Plus or Minus                                      |

# 1 Introduction

SMEC South Africa (Pty) Ltd was appointed by Trevee Investments (Pty) Ltd to conduct a Traffic Impact Assessment for the proposed residential development on Portion 1 of the farm Duinekroon No. 591, Stilbaai. The site is bounded by Buitekant Street to the north, and Thys Vissie Way to the south. A locality plan is shown in Figure 1-1.



Figure 1-1 Locality Plan

The site measures approximately 10 Hectares in extent and is planned to comprise of single residential units and townhouses. The proposed Site Layout Plan is shown in Figure 1-2.

The purpose of the Traffic Impact Assessment is to quantify the anticipated impact of the new development traffic. The study was conducted in accordance with The Committee of Transport Officials South African Traffic Impact and Site Traffic Assessment Manual (COTO, TMH 16 Volume 1).



Figure 1-2 Site Layout Plan

## 2 Background Information

### 2.1 Existing Roads

Figure 2-1 shows the existing roads the vicinity of the subject site.

**Main Road** provides connectivity between Stilbaai and the R305. Main Road is classified as a Class 3 Minor Arterial. In the vicinity of the site it comprises of a single carriageway road with one lane per direction, with dedicated right turning lanes provided at intersections. It experiences moderate traffic flows during peak hours.

**Buitekant Street (between Main Road and Reservoir Street)** is a Class 4 Distributor, serving the surrounding residential area. The road comprises of one lane per direction in the vicinity of the subject site. It experiences low traffic flows during peak hours.

**Buitekant Street (west of Reservoir Street)** is a Class 5 Local Street, serving the surrounding residential area. The road is an unsurfaced gravel road in the vicinity of the subject site. It experiences low traffic flows during peak hours.

**Reservoir Street** is a Class 5 Local Street, serving the surrounding residential area. The road comprises of one lane per direction in the vicinity of the subject site. It experiences low traffic flows during peak hours.

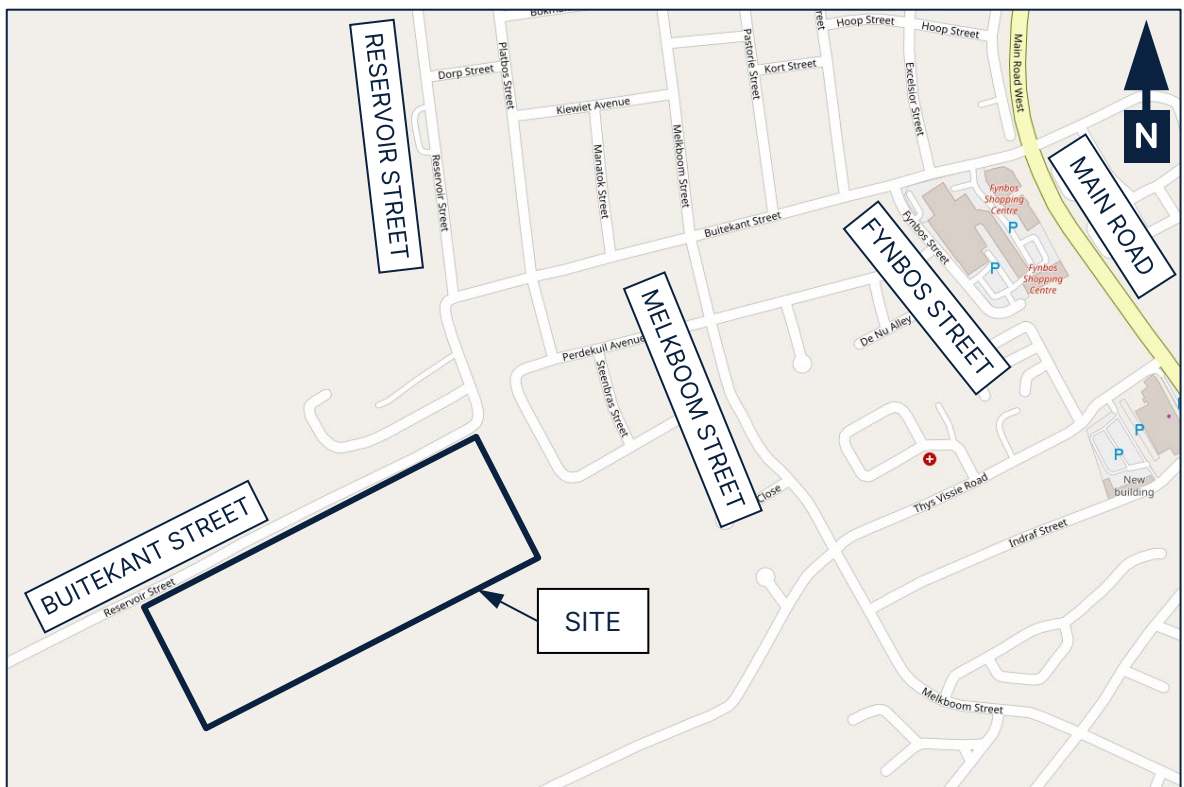


Figure 2-1 Existing Roads

### 2.2 Planned Roads

The Hessequa Local Municipality plans to extend Buitekant Street to the south (Road 1 in figure below) so that it bisects Thys Vissie Way and joins with Bosbokduin Avenue. Refer to Figure 2-2.

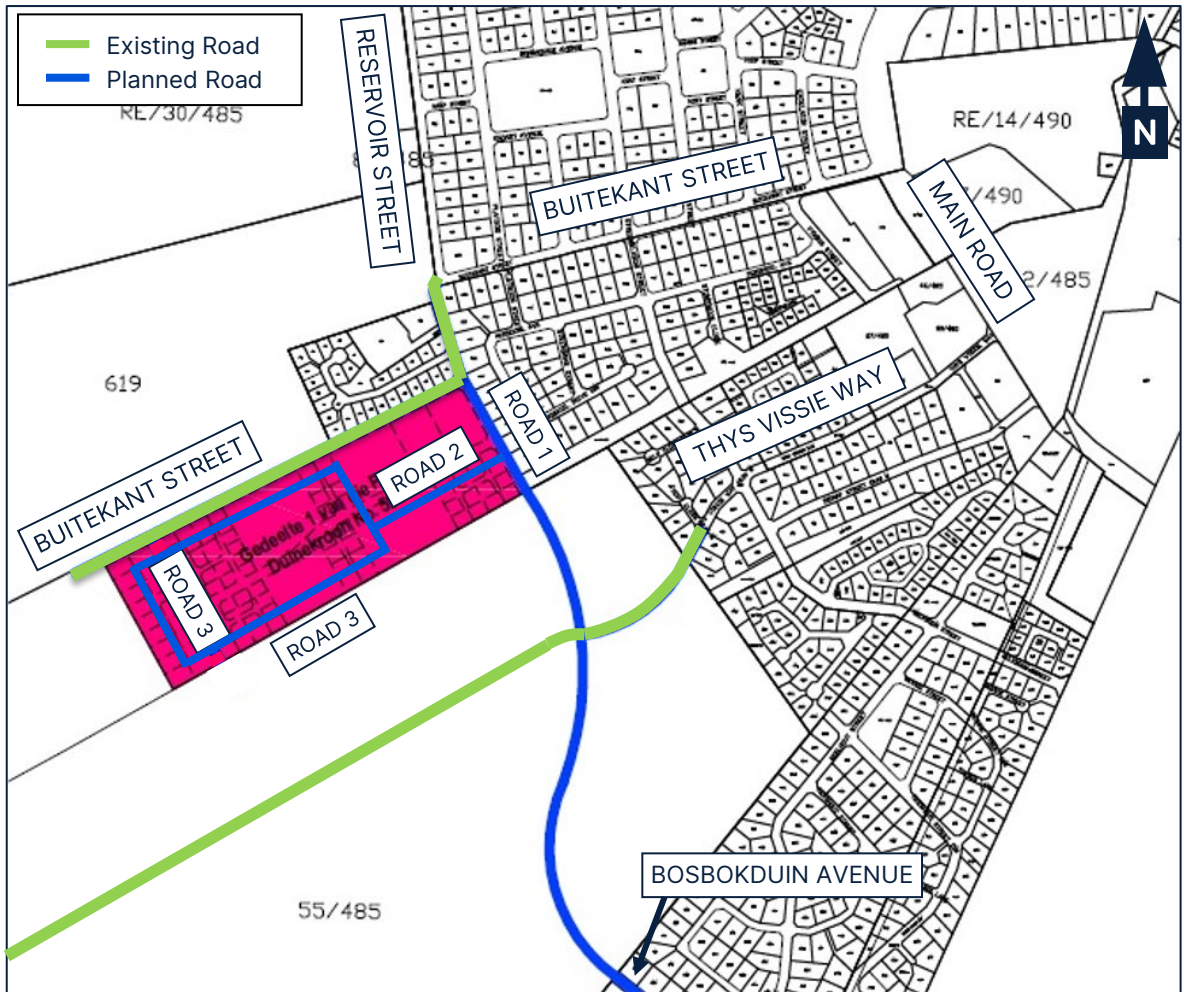


Figure 2-2 Planned Road Layout

## 2.3 Existing Public Transport Facilities

There are bus stops along Main Road within walking distance of 1 km to the subject site. Refer to Figure 2-3.



Figure 2-3 Existing Public Transport Facilities

## 2.4 Site Access

The subject site is proposed to be served by one public access, as follows (refer to Figure 2-5):

- Access 1: Along Road 1, ~105 metres south of Buitekant Street

The access spacing requirements were derived from the WCG Access Management Guidelines (2020).

According to the Hessequa SDF, the future Road 1 in the vicinity of the subject site will operate as a Class 5 Local Street. Refer to Figure 2-4. Furthermore, the roadside environment has been identified as a suburban area. It is therefore recommended that the access spacing requirements of a Class 5 Local Street in a suburban roadside environment be applied to Road 1.

According to the WCG Access Management Guidelines (2020), the anticipated volume of traffic that would use Access 1 of the development means that Access 1 would operate as an equivalent Class 4 Collector driveway.

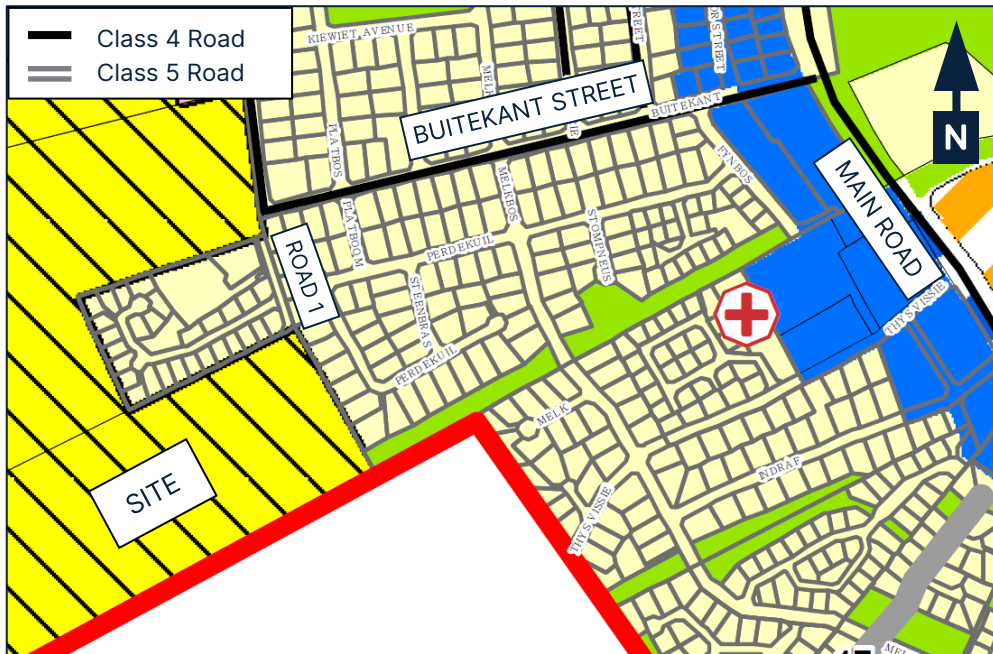


Figure 2-4 Hessequa SDF Extract

The minimum spacing of an unsignalled full intersection along a Class 5 road within a suburban roadside environment, upstream and downstream of an unsignalled full intersection is 95 metres.

Access 1 would satisfy the minimum spacing requirements of 95 metres.



Figure 2-5 Proposed Site Access



### 3 Other Planning Authorities

Other than the Hessequa Local Municipality, no other planning authority would need to be included in the approval process.

## 4 Traffic Demand Estimation

### 4.1 Assessment Years

A base year assessment was undertaken to identify shortcomings in the road-based capacity in the short term, if any. In addition, thereto, it is required to grow traffic flows to an acceptable horizon year in order to ensure that the proposed road network would be able to operate satisfactorily once the development traffic is added to the surrounding road network.

TMH 16 Volume 1 Version 1.0, states that transportation improvements for developments must be designed for a horizon year of 5 years. Hence, a 2021 Base Year and a 2026 Design Year was used for this TIA.

### 4.2 Assessment Hours

The assessment has been undertaken considering the periods during which the combined effect of background and development traffic would result in the highest traffic demand. Hence, it was deemed suitable to assess the Weekday AM and PM Peak Hours.

### 4.3 Traffic Counts

Taking into consideration the location and extent of the proposed development with relation to the surrounding road network, the following traffic count surveys were undertaken as part of this project assignment:

- Counting Station 1: Intersection of Main Road and Buitekant Street;
- Counting Station 2: Intersection of Buitekant Street and Fynbos Street; and
- Counting Station 3: Intersection of Buitekant Street and Melkboom Street.

Traffic count locations are shown in Figure 4-1.

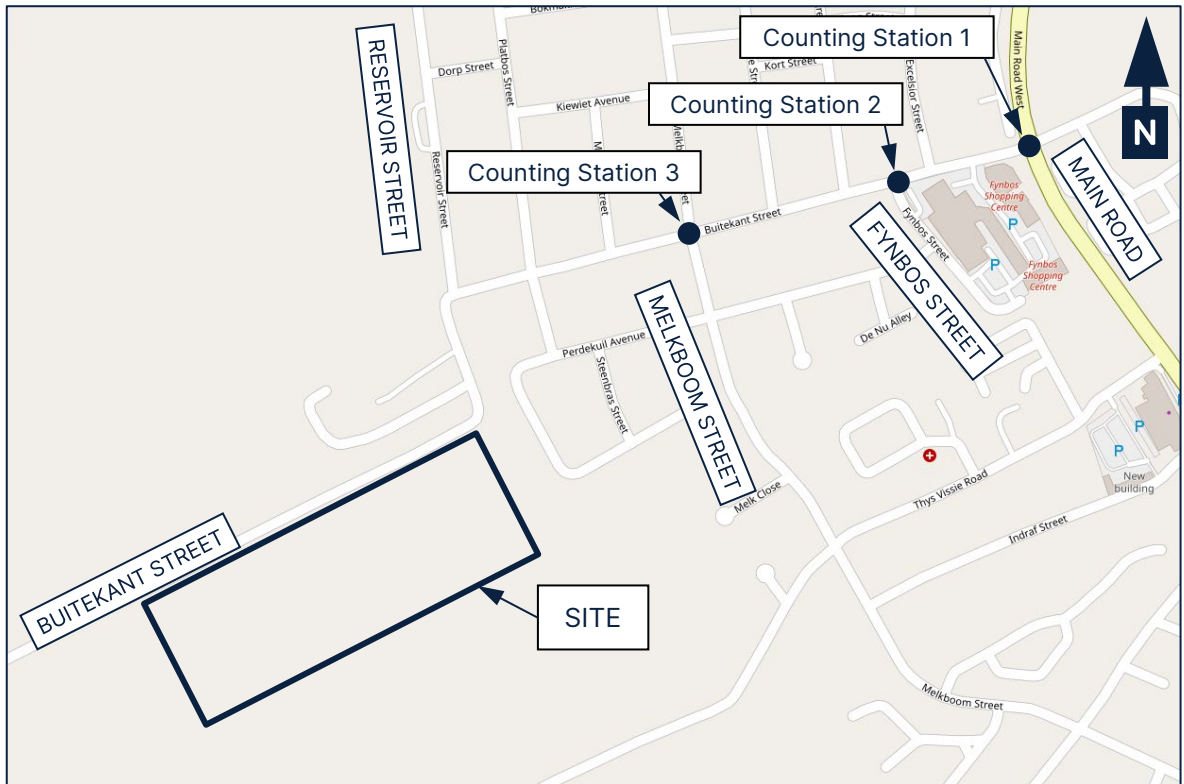


Figure 4-1 Traffic Count Locations

Details of the traffic survey are provided below:

- Date counted                      September 2021
- Day                                      Wednesday during National State of Disaster Lockdown Level 3
- Congestion levels                  Low
- Enumerator                         Motion Consulting Engineers

The detailed traffic count data is provided in Appendix A.

A common peak hour was identified for the intersections under discussion, as follows:

- Weekday AM Peak Hour          08h00 – 09h00
- Weekday PM Peak Hour          15h45 – 16h45

The 2021 Base Year traffic flows are shown in Figure 4-2.

Traffic Demand Estimation

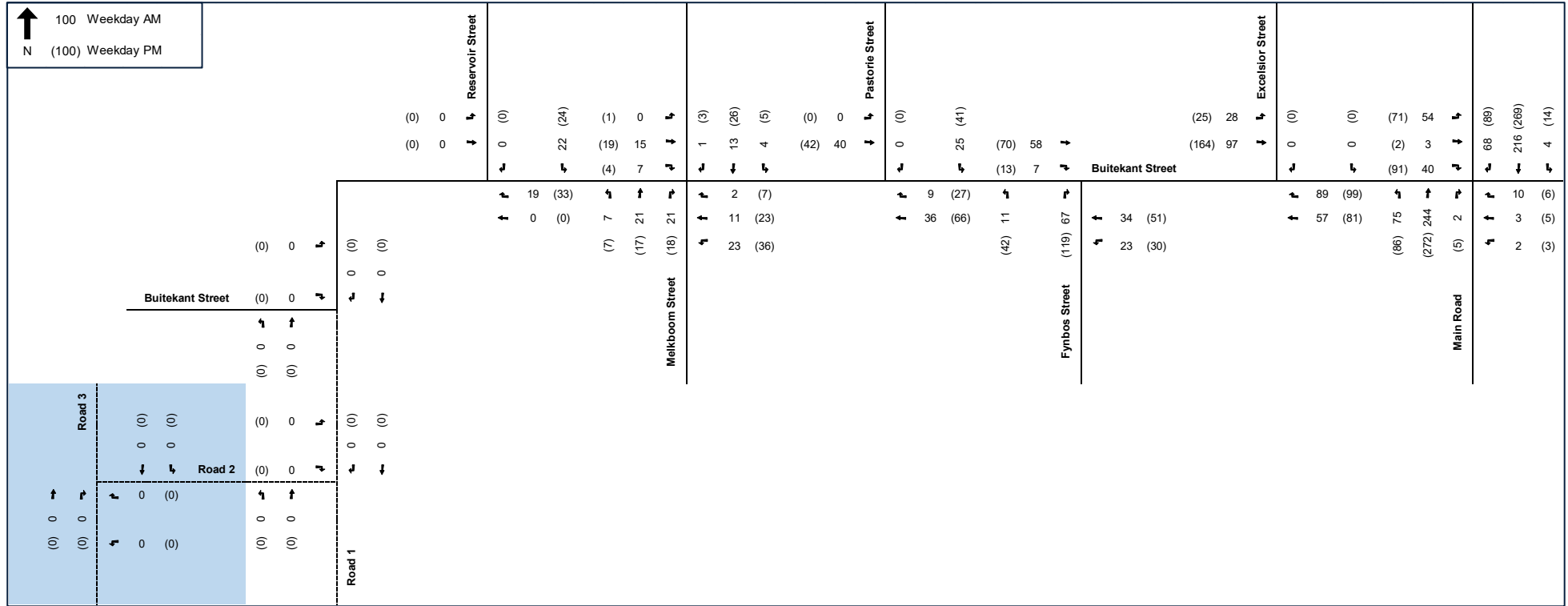


Figure 4-2 2021 Base Year Traffic Flows

## 4.4 Traffic Growth Rates

A traffic growth rate is applied to background traffic in order to determine the anticipated growth in this traffic besides that relating to planned and new developments. The Committee of Transport Officials Trip Data Manual (COTO, TMH 17 Volume 1 Version 1.01) provides typical growth rates to be used for growth areas based on the existing/anticipated rate of growth. Refer to Table 4-1.

Table 4-1 Typical Growth Rates

| Development Area                | Growth Rate |
|---------------------------------|-------------|
| Low Growth Areas                | 0% - 3%     |
| Average Growth Areas            | 3% - 4%     |
| Above Average Growth Areas      | 4% - 6%     |
| Fast Growing Ares               | 6% - 8%     |
| Exceptionally High Growth Areas | > 8%        |

Taking into consideration the nature and extent of development within this area, an annual compounded traffic growth rate of 1.0% was applied to the 2021 background traffic along Main Road in order to derive the 2026 Design Year traffic flows.

The 2026 Forecast Year traffic flows are shown in Figure 4-3.



# 5 Trip Generation, Distribution and Traffic Assignment

## 5.1 Trip Generation

The Trip Generation Rates for the land use types forming part of the development were obtained from the COTO TMH 17 South African Trip Data Manual dated September 2012.

The trip generation potential of the development is shown in Table 5-1.

Table 5-1 Trip Generation

| Land Use                           | Dwelling units (du) | Trip rate (trips /du) | Directional Split (%) |     |            |     | Trips generated (vph) |     |            |     |
|------------------------------------|---------------------|-----------------------|-----------------------|-----|------------|-----|-----------------------|-----|------------|-----|
|                                    |                     |                       | Weekday AM            |     | Weekday PM |     | Weekday AM            |     | Weekday PM |     |
|                                    |                     |                       | IN                    | OUT | IN         | OUT | IN                    | OUT | IN         | OUT |
| Residential – Single Dwelling Unit | 146                 | 1                     | 25%                   | 75% | 70%        | 30% | 37                    | 110 | 102        | 44  |
| Residential – Townhouses           | 32                  | 0.85                  | 25%                   | 75% | 70%        | 30% | 7                     | 20  | 19         | 6   |
| <b>ALL New Trips</b>               |                     |                       |                       |     |            |     | <b>174</b>            |     | <b>173</b> |     |

It is anticipated that the proposed development would generate 174 and 173 new vehicular trips during the Weekday AM and PM Peak Hours, respectively.

## 5.2 Trip Distribution

Trip distribution was estimated manually, based on existing traffic flows, the land use of the surrounding areas and the proposed access configuration. Refer to Figure 5-1.

## 5.3 Traffic Assignment

Traffic assignment involves determining the amount of traffic that will use specific routes in the network. The traffic assignment is made with consideration to logical routings, available roadway capacity, right-turn movements, travel times and other factors. Refer to Figure 5-2.

The 2021 Base + Development Trips are shown in Figure 5-3.

The 2026 Base + Development Trips are shown in Figure 5-4.

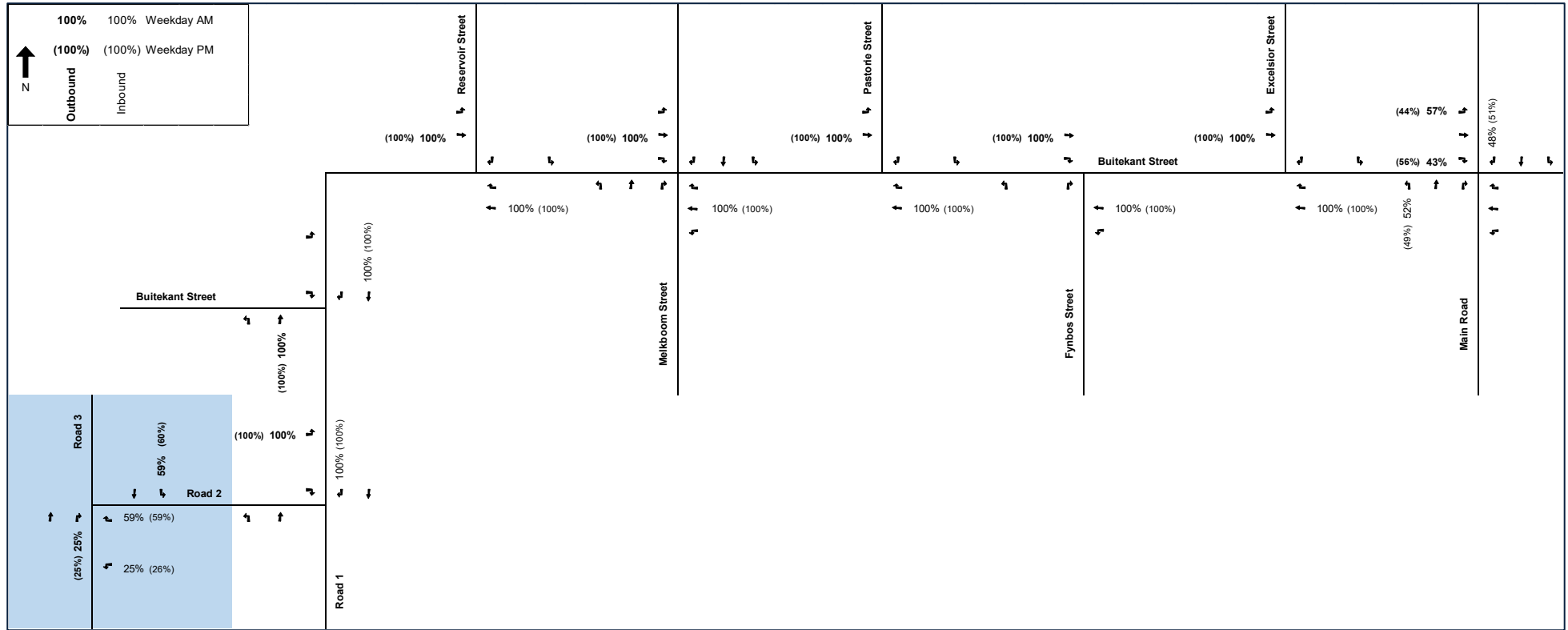


Figure 5-1 Trip Distribution (New Trips)



|                                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| ↑ 100 Weekday AM<br>N (100) Weekday PM |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|                                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|                                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Figure 5-2 Traffic Assignment (New Trips)

Trip Generation, Distribution and Traffic Assignment

|                                                 |  |                  |            |   |   |   |   |                  |          |       |   |   |   |                  |          |           |        |          |         |                  |           |          |       |          |         |                  |           |        |        |       |       |                  |  |  |  |  |  |           |  |  |  |  |  |
|-------------------------------------------------|--|------------------|------------|---|---|---|---|------------------|----------|-------|---|---|---|------------------|----------|-----------|--------|----------|---------|------------------|-----------|----------|-------|----------|---------|------------------|-----------|--------|--------|-------|-------|------------------|--|--|--|--|--|-----------|--|--|--|--|--|
| ↑ 100 Weekday AM<br>N (100) Weekday PM          |  | Reservoir Street |            |   |   |   |   | Pastorie Street  |          |       |   |   |   | Excelsior Street |          |           |        |          |         |                  |           |          |       |          |         |                  |           |        |        |       |       |                  |  |  |  |  |  |           |  |  |  |  |  |
|                                                 |  | (0) 0            | (52) 130   | ↓ | ↓ | ↓ | ↓ | 0 (0)            | 22 (24)  | (1) 0 | ↓ | ↓ | ↓ | 0 (0)            | 25 (41)  | (122) 188 | ↓      | (25) 28  | ↓       | 0 (0)            | 0 (0)     | (94) 129 | ↓     |          |         |                  |           |        |        |       |       |                  |  |  |  |  |  |           |  |  |  |  |  |
| Road 3<br>↑ 0 (13) 33<br>↓ 26 (71)<br>↓ 11 (31) |  | Buitekant Street |            |   |   |   |   | Melkboom Street  |          |       |   |   |   | Fynbos Street    |          |           |        |          |         | Buitekant Street |           |          |       |          |         | Excelsior Street |           |        |        |       |       | Main Road        |  |  |  |  |  |           |  |  |  |  |  |
|                                                 |  | (0) 0            | ↓          | ↓ | ↓ | ↓ | ↓ | 19 (33)          | 44 (121) | 7     | ↓ | ↓ | ↓ | 2 (7)            | 55 (144) | 23 (36)   | 9 (27) | 80 (187) | 11 (42) | 89 (99)          | 101 (202) | 98 (145) | 2 (5) | 78 (172) | 23 (30) | 89 (151)         | 216 (269) | 4 (14) | 10 (6) | 3 (5) | 2 (3) |                  |  |  |  |  |  |           |  |  |  |  |  |
| Road 2<br>↑ 0 (13) 33<br>↓ 26 (71)<br>↓ 11 (31) |  | Road 1           |            |   |   |   |   | Buitekant Street |          |       |   |   |   | Melkboom Street  |          |           |        |          |         | Fynbos Street    |           |          |       |          |         | Buitekant Street |           |        |        |       |       | Excelsior Street |  |  |  |  |  | Main Road |  |  |  |  |  |
|                                                 |  | 0 (0)            | 0 (62) 130 | ↓ | ↓ | ↓ | ↓ | 0 (0)            | 44 (121) | 0 (0) | ↓ | ↓ | ↓ | 0 (0)            | 44 (121) | 0 (0)     | ↓      | ↓        | ↓       | 89 (99)          | 101 (202) | 98 (145) | 2 (5) | 78 (172) | 23 (30) | 89 (151)         | 216 (269) | 4 (14) | 10 (6) | 3 (5) | 2 (3) |                  |  |  |  |  |  |           |  |  |  |  |  |

Figure 5-3 2021 Base + Development Trips

Trip Generation, Distribution and Traffic Assignment

|                                          |                                                                                                | 100 Weekday AM                         |                                                                          | N (100) Weekday PM                  |                                                |                                                   |                                   |                                   |                                      |                                                                |                                                  |                                     |                                |                                      |                                                   |                                                    |                                                     |                                   |                                               |                                   |                                                     |                                    |       |          |       |       |       |       |       |       |         |           |       |       |          |          |  |  |  |  |  |  |  |  |  |
|------------------------------------------|------------------------------------------------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------------|-------------------------------------|------------------------------------------------|---------------------------------------------------|-----------------------------------|-----------------------------------|--------------------------------------|----------------------------------------------------------------|--------------------------------------------------|-------------------------------------|--------------------------------|--------------------------------------|---------------------------------------------------|----------------------------------------------------|-----------------------------------------------------|-----------------------------------|-----------------------------------------------|-----------------------------------|-----------------------------------------------------|------------------------------------|-------|----------|-------|-------|-------|-------|-------|-------|---------|-----------|-------|-------|----------|----------|--|--|--|--|--|--|--|--|--|
| <b>Road 3</b><br>↑ (0) 0<br>(13) 33<br>→ | <b>Road 2</b><br>↓ 0 (0)<br>↘ 77 (31)<br>↙ 26 (71)<br>↑ 11 (31)<br>→ (0) 0<br>(0) 0<br>↓ (0) 0 | <b>Road 1</b><br>↑ 44 (121)<br>→ 0 (0) | <b>Buitekant Street</b><br>→ (0) 0<br>↓ (52) 130<br>↑ 19 (33)<br>↓ 7 (7) | <b>Melkboom Street</b><br>↑ 18 (21) | <b>Melkboom Street</b><br>↓ (18) 21<br>↑ 2 (7) | <b>Pastorie Street</b><br>↓ (94) 170<br>↑ 13 (26) | <b>Melkboom Street</b><br>↓ 4 (5) | <b>Melkboom Street</b><br>↑ 1 (3) | <b>Melkboom Street</b><br>↓ (94) 170 | <b>Melkboom Street</b><br>↑ 25 (41)<br>↓ (122) 188<br>↑ 9 (27) | <b>Melkboom Street</b><br>↓ (13) 7<br>↑ 80 (187) | <b>Melkboom Street</b><br>↓ (42) 11 | <b>Melkboom Street</b><br>↑ 67 | <b>Melkboom Street</b><br>↓ (119) 67 | <b>Melkboom Street</b><br>↓ 78 (172)<br>↑ 23 (30) | <b>Melkboom Street</b><br>↓ 89 (99)<br>↑ 101 (202) | <b>Melkboom Street</b><br>↓ (145) 98<br>↑ (286) 256 | <b>Melkboom Street</b><br>↓ (5) 2 | <b>Melkboom Street</b><br>↑ 10 (6)<br>↓ 3 (5) | <b>Melkboom Street</b><br>↓ 2 (3) | <b>Melkboom Street</b><br>↓ 88 (151)<br>↑ 227 (283) | <b>Melkboom Street</b><br>↓ 4 (14) |       |          |       |       |       |       |       |       |         |           |       |       |          |          |  |  |  |  |  |  |  |  |  |
|                                          |                                                                                                |                                        |                                                                          |                                     |                                                |                                                   |                                   |                                   |                                      |                                                                |                                                  |                                     |                                |                                      |                                                   |                                                    |                                                     |                                   |                                               |                                   |                                                     |                                    | (0) 0 | (52) 130 | (0) 0 | (0) 0 | (0) 0 | (0) 0 | (0) 0 | (0) 0 | (25) 28 | (216) 227 | 0 (0) | 0 (0) | (94) 129 | 88 (151) |  |  |  |  |  |  |  |  |  |
|                                          |                                                                                                |                                        |                                                                          |                                     |                                                |                                                   |                                   |                                   |                                      |                                                                |                                                  |                                     |                                |                                      |                                                   |                                                    |                                                     |                                   |                                               |                                   |                                                     |                                    |       |          |       |       |       |       |       |       |         |           |       |       |          |          |  |  |  |  |  |  |  |  |  |

Figure 5-4 2026 Base + Development Trips

## 6 Traffic Analysis

Intersection capacity analyses were undertaken to determine the anticipated operational performance of the site accesses and surrounding road network, taking into consideration the phased implementation of the development and associated development trips. The state-of-the-art traffic engineering software package, SIDRA Intersection 8.0 software, was used. The intersections analysed for the development are listed below:

- Main Road and Buitekant Street;
- Buitekant Street and Excelsior Street;
- Buitekant Street and Fynbos Street;
- Buitekant Street and Pastorie Street;
- Buitekant Street and Melkboom Street;
- Buitekant Street and Reservoir Street;
- Buitekant Street and Road 1;
- Road 1 and Road 2; and
- Road 2 and Road 3.

The intersection of Buitekant Street and Road 3 was not analysed as part of this exercise as it was assumed that all the development trips would use Access 1 during the Weekday AM and PM Peak Hours.

The following scenarios were analysed as part of this project assignment:

- 2021 Background Traffic;
- 2021 Background + Development Traffic; and
- 2026 Background + Development Traffic.

The operational performance of an intersection is typically quantified in terms of Level of Service as defined by the US Highway Capacity Manual (HCM). These definitions relate average delays at intersections (for individual turning movements, for each approach and for the overall intersection) to a level of service ranging from A to F, as are shown in Table 6-1.

Table 6-1: Intersection-Based Level of Service Criteria

| Level of Service | Control Delay per Vehicle in Seconds (d) |                            | LOS for V/C Ratio |
|------------------|------------------------------------------|----------------------------|-------------------|
|                  | Signals and Roundabouts                  | Stop Signs and Yield Signs | V/C > 1           |
| <b>A</b>         | $d \leq 10$                              | $d \leq 10$                | F                 |
| <b>B</b>         | $10 < d \leq 20$                         | $10 < d \leq 15$           | F                 |
| <b>C</b>         | $20 < d \leq 35$                         | $15 < d \leq 25$           | F                 |
| <b>D</b>         | $35 < d \leq 55$                         | $25 < d \leq 35$           | F                 |
| <b>E</b>         | $55 < d \leq 80$                         | $35 < d \leq 50$           | F                 |
| <b>F</b>         | $80 < d$                                 | $50 < d$                   | F                 |

The following sub-sections set out the intersection capacity analyses of the proposed development.

Detailed Sidra outputs are contained in Appendix B.

## 6.1 Main Road and Buitekant Street

The existing intersection of Main Road and Buitekant Street is a priority-controlled intersection with stop controls along each approach. The north approach comprises of a shared through-and-left lane and short right-turn lane. The east approach comprises of a single lane serving all movements. The south approach comprises of a shared through-and-left lane and short right-turn lane. The west approach comprises of a single lane serving all movements. Refer to Figure 6-1.

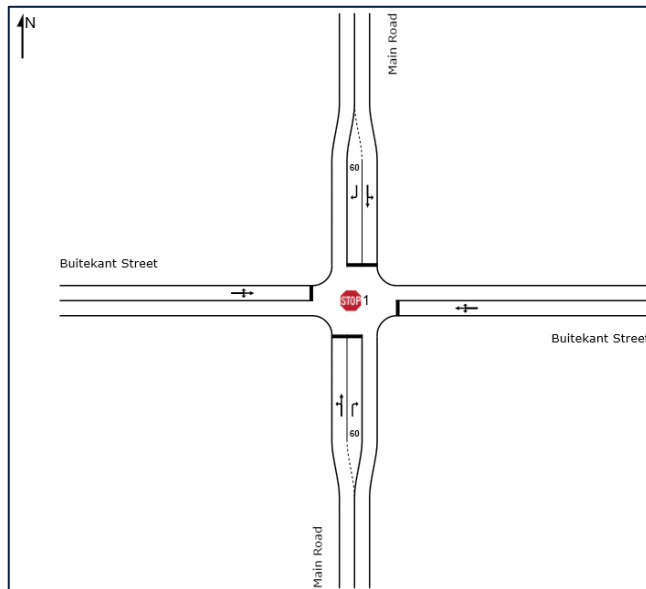


Figure 6-1 Main Road and Buitekant Street: Existing Layout

### 2021 Background Traffic

Taking into consideration the 2021 Base Year traffic flows, the intersection is currently operating at Level of Service F and E during the Weekday AM and PM Peak Hours, with an average delay of approximately 59 and 46 seconds respectively.

It is concluded that the existing intersection configuration is unable to accommodate the 2021 Background Traffic at an acceptable Level of Service.

### 2021 Background + Development Traffic – Existing Layout

Taking into consideration the existing intersection layout as well as the 2021 Background Traffic plus the anticipated development traffic flows, the intersection is anticipated to operate at Level of Service F during both the Weekday AM and PM Peak Hours, with an average delay of approximately 73 and 80 seconds respectively.

It is concluded that the existing intersection configuration would be unable to accommodate the 2021 Background plus Development Traffic at an acceptable Level of Service.

In order to improve operations and minimise delay along Main Road, the proposed intersection of Main Road and Buitekant Street would be converted to a roundabout with two circulating lanes. The north approach would comprise of a shared through-and-left lane and a short shared through-and-right lane. The east approach would comprise of a single lane serving all movements. The south approach would comprise of a shared through-and-left lane and a short shared through-and-right lane. The west approach would comprise of a single lane serving all movements. Refer to Figure 6-2.

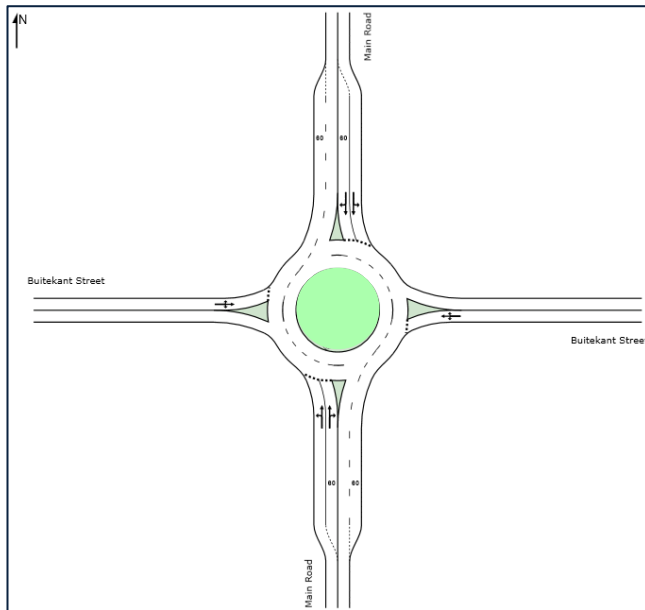


Figure 6-2 Main Road and Buitekant Street: Proposed Layout

2021 Background + Development Traffic – Proposed Layout

Taking into consideration the proposed intersection layout as well as the 2021 Background Traffic plus the anticipated development traffic flows, the intersection is anticipated to operate at an overall Level of Service A during both the Weekday AM and PM Peak Hours, with an average delay of approximately 6 seconds.

It is concluded that the proposed intersection configuration would be able to accommodate the 2021 Background plus Development Traffic at an acceptable Level of Service.

2026 Background + Development Traffic – Proposed Layout

Taking into consideration the proposed intersection layout as well as the 2026 Background Traffic plus the anticipated development traffic flows, the intersection is anticipated to operate at an overall Level of Service A during both the Weekday AM and PM Peak Hours, with an average delay of approximately 6 seconds.

It is concluded that the proposed intersection configuration would be able to accommodate the 2026 Background plus Development Traffic at an acceptable Level of Service.

## 6.2 Buitekant Street and Excelsior Street

The existing intersection of Buitekant Street and Excelsior Street is a priority-controlled T-junction with a stop control along the north approach. All approaches comprise of one lane serving all movements. Refer to Figure 6-3.

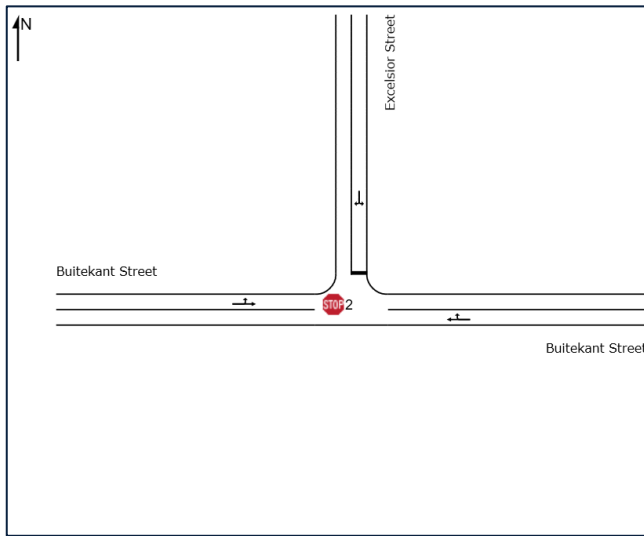


Figure 6-3 Buitekant Street and Excelsior Street: Existing Layout

### 2021 Background Traffic

Taking into consideration the 2021 Base Year traffic flows, the priority-controlled side road is currently operating at Level of Service A during both the Weekday AM and PM Peak Hours, with an average delay of approximately 9 seconds.

It is concluded that the existing intersection configuration is able to accommodate the 2021 Background Traffic at an acceptable Level of Service.

### 2021 Background + Development Traffic – Existing Layout

Taking into consideration the existing intersection layout as well as the 2021 Background Traffic plus the anticipated development traffic flows, the priority-controlled side road is anticipated to operate at an overall Level of Service A during both the Weekday AM and PM Peak Hours, with an average delay of approximately 9 and 10 seconds respectively.

It is concluded that the existing intersection configuration would be able to accommodate the 2021 Background plus Development Traffic at an acceptable Level of Service.

### 2026 Background + Development Traffic – Existing Layout

Taking into consideration the existing intersection layout as well as the 2026 Background Traffic plus the anticipated development traffic flows, the priority-controlled side road is anticipated to operate at an overall Level of Service A during both the Weekday AM and PM Peak Hours, with an average delay of approximately 9 and 10 seconds respectively.

It is concluded that the existing intersection configuration would be able to accommodate the 2026 Background plus Development Traffic at an acceptable Level of Service.

### 6.3 Buitekant Street and Fynbos Street

The existing intersection of Buitekant Street and Fynbos Street is a priority-controlled T-junction with a stop controls along all approaches. All approaches comprise of one lane serving all movements. Refer to Figure 6-4.

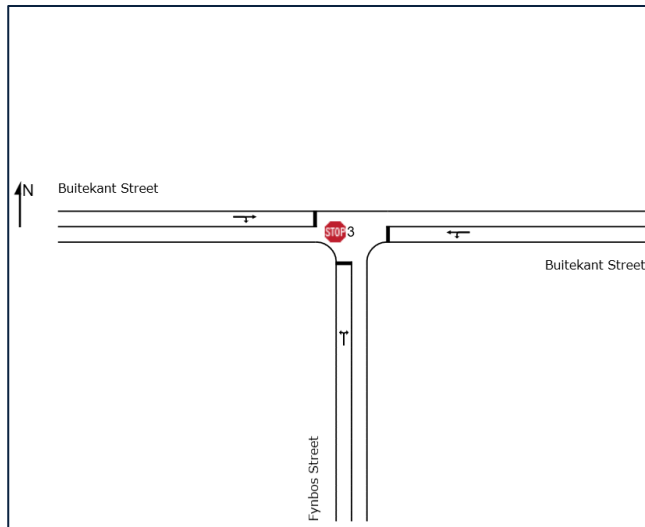


Figure 6-4 Buitekant Street and Fynbos Street: Existing Layout

#### 2021 Background Traffic

Taking into consideration the 2021 Background Traffic flows, the intersection is currently operating at an overall Level of Service B and C during the Weekday AM and PM Peak Hours, with an average delay of approximately 15 seconds.

It is concluded that the existing intersection configuration is able to accommodate the 2021 Background Traffic at an acceptable Level of Service.

#### 2021 Background + Development Traffic – Existing Layout

Taking into consideration the existing intersection layout as well as the 2021 Background Traffic plus the anticipated development traffic flows, the intersection is anticipated to operate at an overall Level of Service B and C during the Weekday AM and PM Peak Hours, with an average delay of approximately 15 and 16 seconds respectively.

It is concluded that the existing intersection configuration would be able to accommodate the 2021 Background plus Development Traffic at an acceptable Level of Service.

#### 2026 Background + Development Traffic – Existing Layout

Taking into consideration the existing intersection layout as well as the 2026 Background Traffic plus the anticipated development traffic flows, the intersection is anticipated to operate at an overall Level of Service B and C during the Weekday AM and PM Peak Hours, with an average delay of approximately 15 and 16 seconds respectively.

It is concluded that the existing intersection configuration would be able to accommodate the 2026 Background plus Development Traffic at an acceptable Level of Service.



## 6.4 Buitekant Street and Pastorie Street

The existing intersection of Buitekant Street and Pastorie Street is a priority-controlled T-junction with a stop control along the north approach. All approaches comprise of one lane serving all movements. Refer to Figure 6-5.

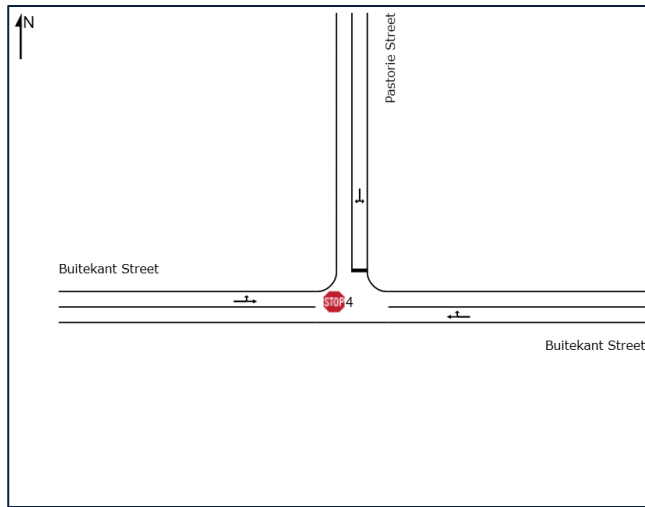


Figure 6-5 Buitekant Street and Pastorie Street: Existing Layout

### 2021 Background Traffic

Taking into consideration the 2021 Base Year traffic flows, the priority-controlled side road is currently operating at Level of Service A during both the Weekday AM and PM Peak Hours, with an average delay of approximately 8 seconds.

It is concluded that the existing intersection configuration is able to accommodate the 2021 Background Traffic at an acceptable Level of Service.

### 2021 Background + Development Traffic – Existing Layout

Taking into consideration the existing intersection layout as well as the 2021 Background Traffic plus the anticipated development traffic flows, the priority-controlled side road is anticipated to operate at an overall Level of Service A during both the Weekday AM and PM Peak Hours, with an average delay of approximately 9 and 8 seconds respectively.

It is concluded that the existing intersection configuration would be able to accommodate the 2021 Background plus Development Traffic at an acceptable Level of Service.

### 2026 Background + Development Traffic – Existing Layout

Taking into consideration the existing intersection layout as well as the 2026 Background Traffic plus the anticipated development traffic flows, the priority-controlled side road is anticipated to operate at an overall Level of Service A during both the Weekday AM and PM Peak Hours, with an average delay of approximately 9 and 8 seconds respectively.

It is concluded that the existing intersection configuration would be able to accommodate the 2026 Background plus Development Traffic at an acceptable Level of Service.

## 6.5 Buitekant Street and Melkboom Street

The existing intersection of Buitekant Street and Melkboom Street is a priority-controlled intersection with stop controls along all approaches. All approaches comprise of one lane serving all movements. Refer to Figure 6-6.

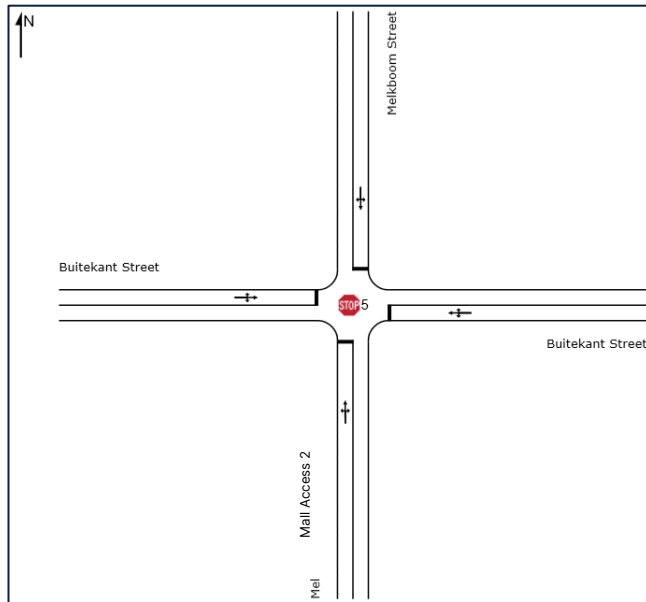


Figure 6-6 Buitekant Street and Melkboom Street: Existing Layout

### 2021 Background Traffic

Taking into consideration the 2021 Base Year traffic flows, the intersection is currently operating at Level of Service B during both the Weekday AM and PM Peak Hours, with an average delay of approximately 13 seconds.

It is concluded that the existing intersection configuration is able to accommodate the 2021 Background Traffic at an acceptable Level of Service.

### 2021 Background + Development Traffic – Existing Layout

Taking into consideration the existing intersection layout as well as the 2021 Background Traffic plus the anticipated development traffic flows, the intersection is anticipated to operate at an overall Level of Service B during both the Weekday AM and PM Peak Hours, with an average delay of approximately 14 seconds.

It is concluded that the existing intersection configuration would be able to accommodate the 2021 Background plus Development Traffic at an acceptable Level of Service.

### 2026 Background + Development Traffic – Existing Layout

Taking into consideration the existing intersection layout as well as the 2026 Background Traffic plus the anticipated development traffic flows, the intersection is anticipated to operate at an overall Level of Service B during both the Weekday AM and PM Peak Hours, with an average delay of approximately 14 seconds.

It is concluded that the existing intersection configuration would be able to accommodate the 2026 Background plus Development Traffic at an acceptable Level of Service.

## 6.6 Buitekant Street and Reservoir Street

The existing intersection of Buitekant Street and Reservoir Street is a priority-controlled T-junction with stop controls along all approaches. All approaches comprise of one lane serving all movements. Refer to Figure 6-7.

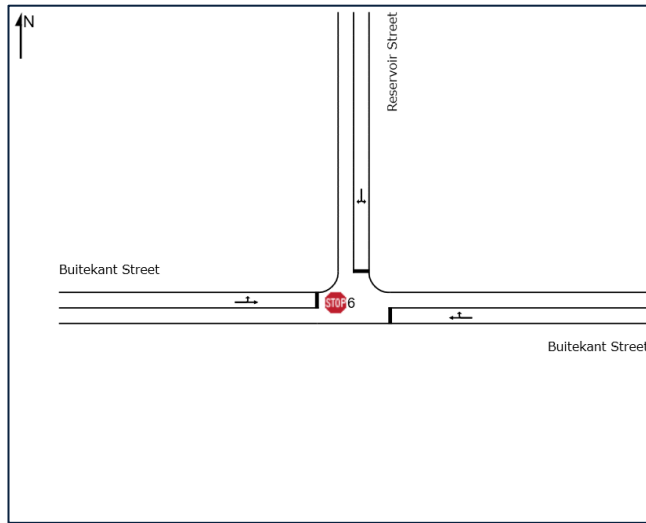


Figure 6-7 Buitekant Street and Reservoir Street: Existing Layout

### 2021 Background Traffic

Taking into consideration the 2021 Base Year traffic flows, the intersection is currently operating at Level of Service B during both the Weekday AM and PM Peak Hours, with an average delay of approximately 12 and 13 seconds respectively.

It is concluded that the existing intersection configuration is able to accommodate the 2021 Background Traffic at an acceptable Level of Service.

### 2021 Background + Development Traffic – Existing Layout

Taking into consideration existing intersection layout as well as the 2021 Background Traffic plus the anticipated development traffic flows, the intersection is anticipated to operate at an overall Level of Service C during both the Weekday AM and PM Peak Hours, with an average delay of approximately 20 and 21 seconds respectively.

It is concluded that the existing intersection configuration would be able to accommodate the 2021 Background plus Development Traffic at an acceptable Level of Service.

### 2026 Background + Development Traffic – Existing Layout

Taking into consideration existing intersection layout as well as the 2026 Background Traffic plus the anticipated development traffic flows, the intersection is anticipated to operate at an overall Level of Service C during both the Weekday AM and PM Peak Hours, with an average delay of approximately 20 and 21 seconds respectively.

It is concluded that the existing intersection configuration would be able to accommodate the 2026 Background plus Development Traffic at an acceptable Level of Service.

## 6.7 Buitekant Street and Road 1

The proposed intersection of Buitekant Street and Road 1 would be a priority-controlled T-junction with a stop control along the west approach. All approaches would comprise of one lane serving all movements. Refer to Figure 6-8.

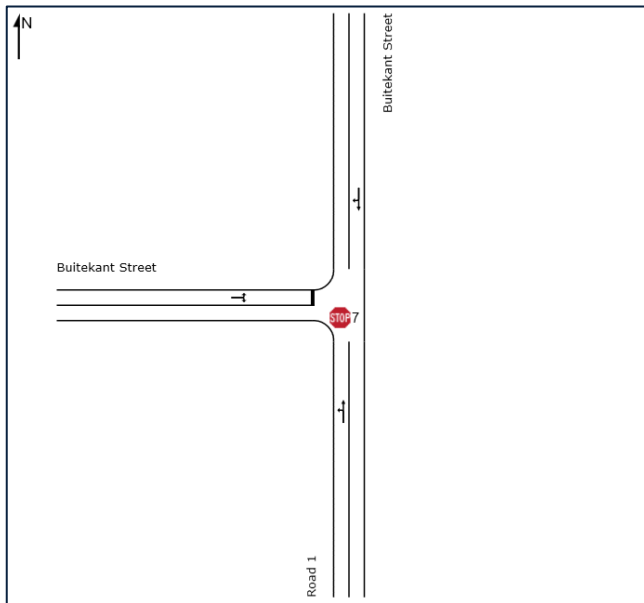


Figure 6-8 Buitekant Street and Road 1: Proposed Layout

### 2021 Background + Development Traffic

Taking into consideration the proposed intersection layout as well as the 2021 Background Traffic plus the anticipated development traffic flows, the priority-controlled access road is anticipated to operate at an overall Level of Service A during both the Weekday AM and PM Peak Hours, with an average delay of approximately 8 seconds.

It is concluded that the proposed intersection configuration would be able to accommodate the 2021 Background plus Development Traffic at an acceptable Level of Service.

### 2026 Background + Development Traffic – Proposed Layout

Taking into consideration the proposed intersection layout as well as the 2026 Background Traffic plus the anticipated development traffic flows, the priority-controlled access road is anticipated to operate at an overall Level of Service A during both the Weekday AM and PM Peak Hours, with an average delay of approximately 8 seconds.

It is concluded that the proposed intersection configuration would be able to accommodate the 2026 Background plus Development Traffic at an acceptable Level of Service.

## 6.8 Road 1 and Road 2

The proposed intersection of Road 1 and Road 2 would be a priority-controlled T-junction with a stop control along the west approach. All approaches would comprise of one lane serving all movements. Refer to Figure 6-9 Figure 6-8.

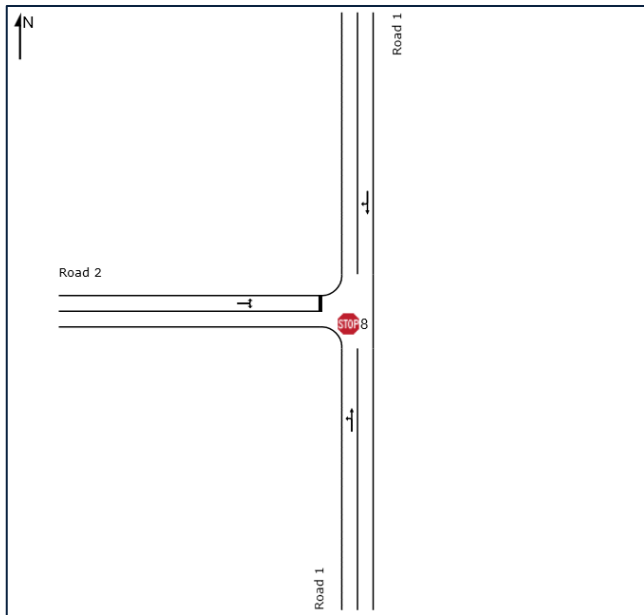


Figure 6-9 Road 1 and Road 2: Proposed Layout

### 2021 Background + Development Traffic

Taking into consideration the proposed intersection layout as well as the 2021 Background Traffic plus the anticipated development traffic flows, the priority-controlled access road is anticipated to operate at an overall Level of Service B and C during the Weekday AM and PM Peak Hours, with an average delay of approximately 14 and 22 seconds respectively.

It is concluded that the proposed intersection configuration would be able to accommodate the 2021 Background plus Development Traffic at an acceptable Level of Service.

### 2026 Background + Development Traffic – Proposed Layout

Taking into consideration the proposed intersection layout as well as the 2026 Background Traffic plus the anticipated development traffic flows, the priority-controlled access road is anticipated to operate at an overall Level of Service B and C during the Weekday AM and PM Peak Hours, with an average delay of approximately 14 and 22 seconds respectively.

It is concluded that the proposed intersection configuration would be able to accommodate the 2026 Background plus Development Traffic at an acceptable Level of Service.

## 6.9 Road 2 and Road 3

The proposed intersection of Road 2 and Road 3 would be a priority-controlled T-junction with a stop control along the east approach. All approaches would comprise of one lane serving all movements. Refer to Figure 6-10.

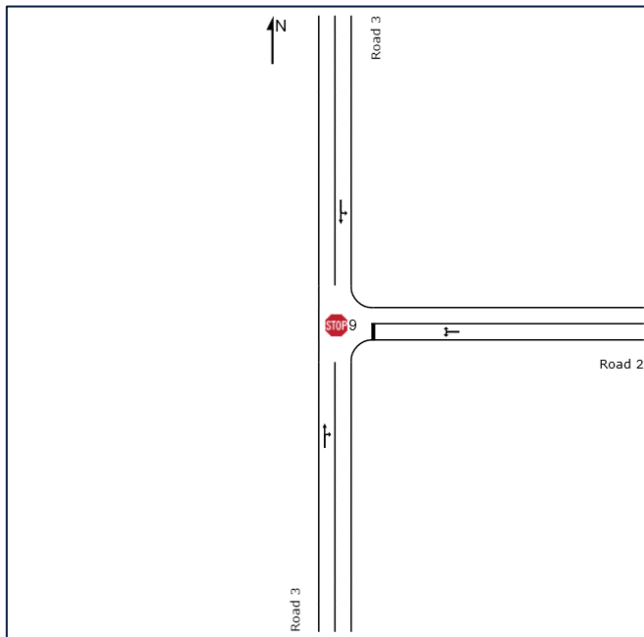


Figure 6-10 Road 2 and Road 3: Proposed Layout

### 2021 Background + Development Traffic

Taking into consideration the proposed intersection layout as well as the 2021 Background Traffic plus the anticipated development traffic flows, the priority-controlled side road is anticipated to operate at an overall Level of Service A during both the Weekday AM and PM Peak Hours, with an average delay of approximately 8 seconds.

It is concluded that the proposed intersection configuration would be able to accommodate the 2021 Background plus Development Traffic at an acceptable Level of Service.

### 2026 Background + Development Traffic – Proposed Layout

Taking into consideration the proposed intersection layout as well as the 2026 Background Traffic plus the anticipated development traffic flows, the priority-controlled side road is anticipated to operate at an overall Level of Service A during both the Weekday AM and PM Peak Hours, with an average delay of approximately 8 seconds.

It is concluded that the proposed intersection configuration would be able to accommodate the 2026 Background plus Development Traffic at an acceptable Level of Service.

## 7 Other Road Users

### 7.1 Public Transport

There are several public transport lay-byes provided along Main Road, which are within walking distance of subject site. Refer to Figure 7-1.



Figure 7-1 Existing Public Transport Facilities

It is our submission that the existing public transport lay-byes along Main Road are adequate to serve the proposed development, therefore no further provision need to be made for public transport.

### 7.2 Non-Motorised Transport

No provision is made for pedestrian sidewalks along Class 4 or 5 Roads within Stilbaai. It is therefore our submission that no provision would need to be made for pedestrian movements as part of the proposed development.

## 8 Site Impact Assessment

This report does not include a Site Traffic Assessment, as the building plans are not yet finalised. Reference is however made to general design criteria to be considered in compilation of the site development plan.

### 8.1 Internal Operations

Provision should be made for ease of circulation as part of the internal layout of the planned development. Security-controlled access could be provided to the development for the safety of the residents, as long as the corresponding throat length and queue length requirements are satisfied.

### 8.2 Throat Length

Adequate throat length provision is essential in ensuring sufficient operation of a development access and preventing possible spill-back onto the surrounding public road.

The WCG Access Management Guidelines (2020) sets out minimum requirements pertaining to access throat lengths for driveways serving private commercial or residential developments. Based on this, the following are required:

- A minimum ingress and egress throat length of 20 metres is required along a Class 4 or lower order road.

The Site Development Plan would need to make suitable provision for throat lengths for both the ingress and egress movements at the development access.

### 8.3 Parking

Parking provision is an important consideration of any development and would ultimately ensure that vehicular traffic is accommodated on-site in its entirety. Insufficient parking provision would have a negative impact on the operational performance of the site and surrounding public roads, as well as on road safety.

The Hessequa Zoning Scheme By-Law was used to ascertain the parking standards to be adhered to, based on the site-specific land use rights, as follows. For normal areas:

- Erven > 350 m<sup>2</sup>, a minimum of 2 parking bays would be required per dwelling unit.
- 100 m<sup>2</sup> < Erven < 350 m<sup>2</sup>, a minimum of 1 parking bay would be required per dwelling unit.
- Erven < 100 m<sup>2</sup>, zero parking bays would be required per dwelling unit.

### 8.4 Loading

The proposed design vehicle would be a Single Unit (SU) truck, with a turning radius of approximately 10 metres. The turning path of the design vehicle would need to be tested to ensure that the site development plan would be sufficient to accommodate truck turning movements on site to allow refuse collection.



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## 9 Proposed Improvements

The following road capacity improvements are proposed:

2021 Base Year:

- Convert the intersection of Main Road and Buitekant Street to a roundabout with two circulating lanes. The north approach would comprise of a shared through-and-left lane plus a short shared through-and-right lane. The east approach would comprise of a single lane serving all movements. The south approach would comprise of a shared through-and-left lane plus a short shared through-and-right lane. The west approach would comprise of a single lane serving all movements.

## 10 Conclusion and Recommendations

- SMEC South Africa (Pty) Ltd was appointed by Trevee Investments (Pty) Ltd to conduct a Traffic Impact Assessment for the proposed residential development on Portion 1 of the farm Duinekroon No. 591, Stilbaai. The site is bounded by Buitekant Street to the north, and Thys Vissie Way to the south.
- The subject site is proposed to be served by one public access, as follows:
  - Access 1: Along Road 1, ~105 metres south of Buitekant Street
- It is anticipated that the proposed development would generate 174 and 173 new vehicular trips during the Weekday AM and PM Peak Hours, respectively.
- It is our submission that the existing bus stops along Main Road are adequate to serve the proposed development, therefore no further provision would need to be made for public transport.
- The following road capacity improvements are proposed:  
2021 Base Year:
  - Convert the intersection of Main Road and Buitekant Street to a roundabout with two circulating lanes. The north approach would comprise of a shared through-and-left lane plus a short shared through-and-right lane. The east approach would comprise of a single lane serving all movements. The south approach would comprise of a shared through-and-left lane plus a short shared through-and-right lane. The west approach would comprise of a single lane serving all movements.

This Traffic Impact Assessment is supported from a traffic engineering perspective, provided that the required improvements be implemented in accordance with appropriate design standards.

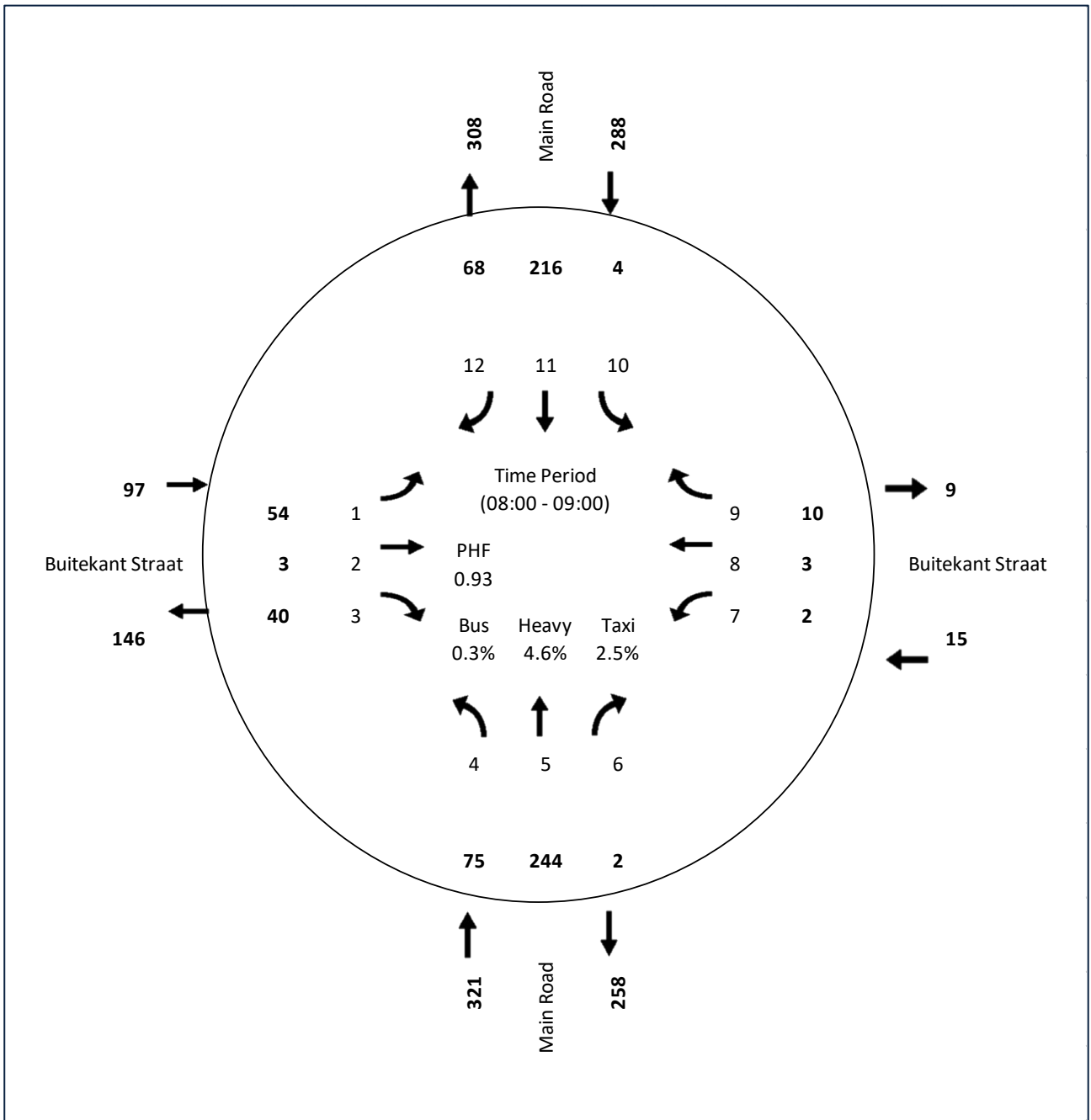
Appendices

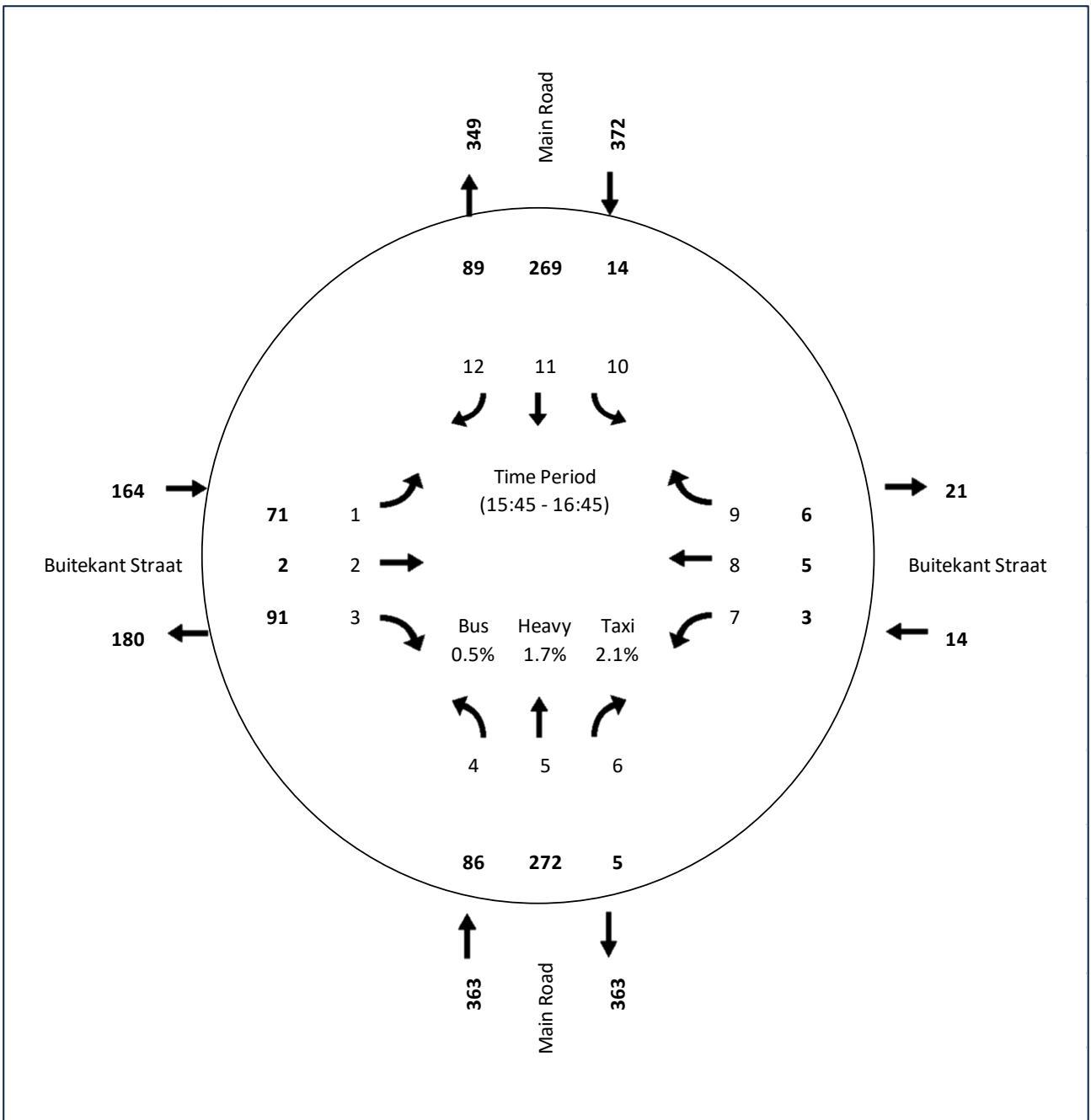
Appendix A – Detailed Traffic Counts

Appendix B – Detailed SIDRA Outputs

# Appendix A Detailed Traffic Counts

## Main Road and Buitekant Street

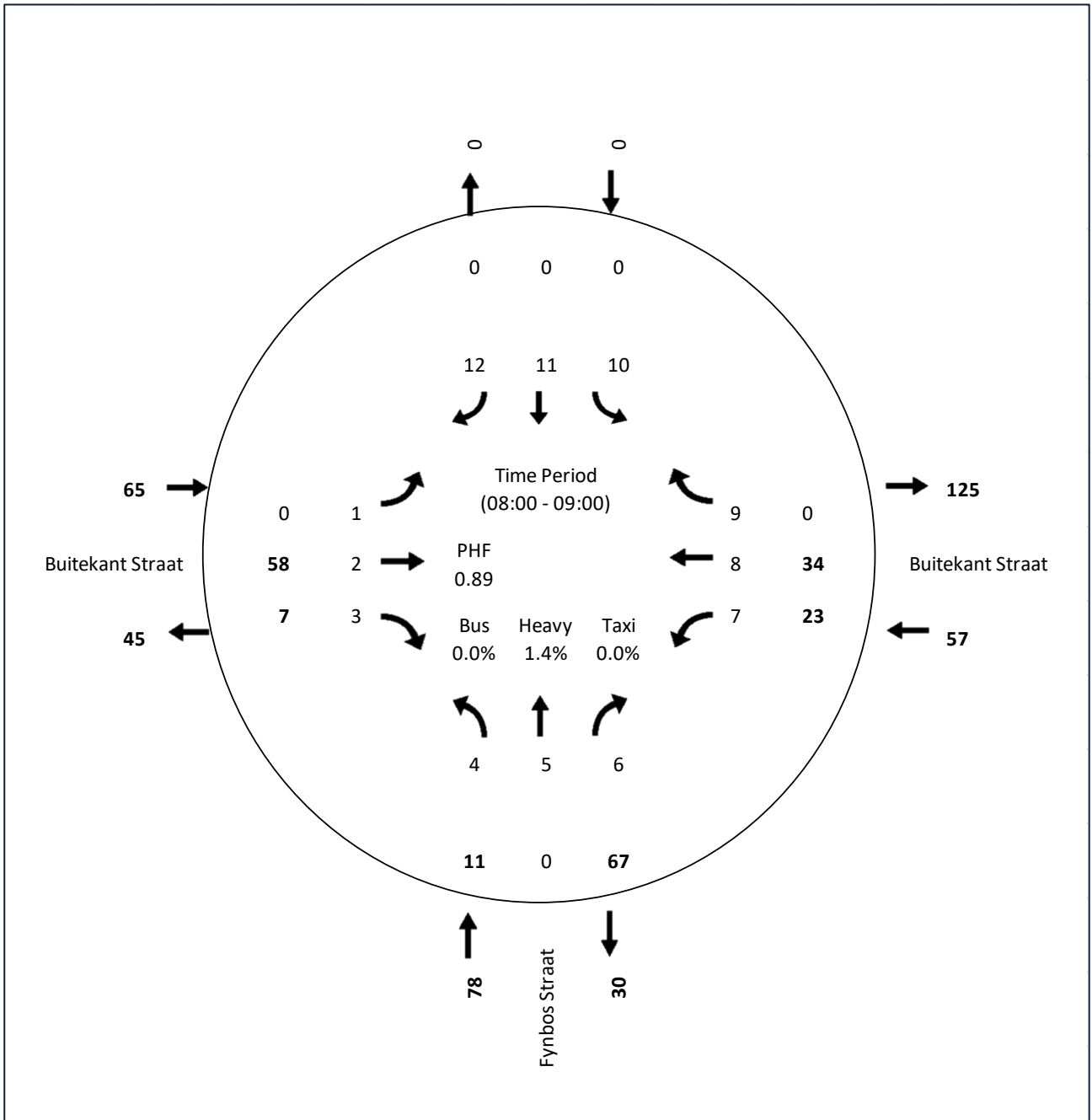




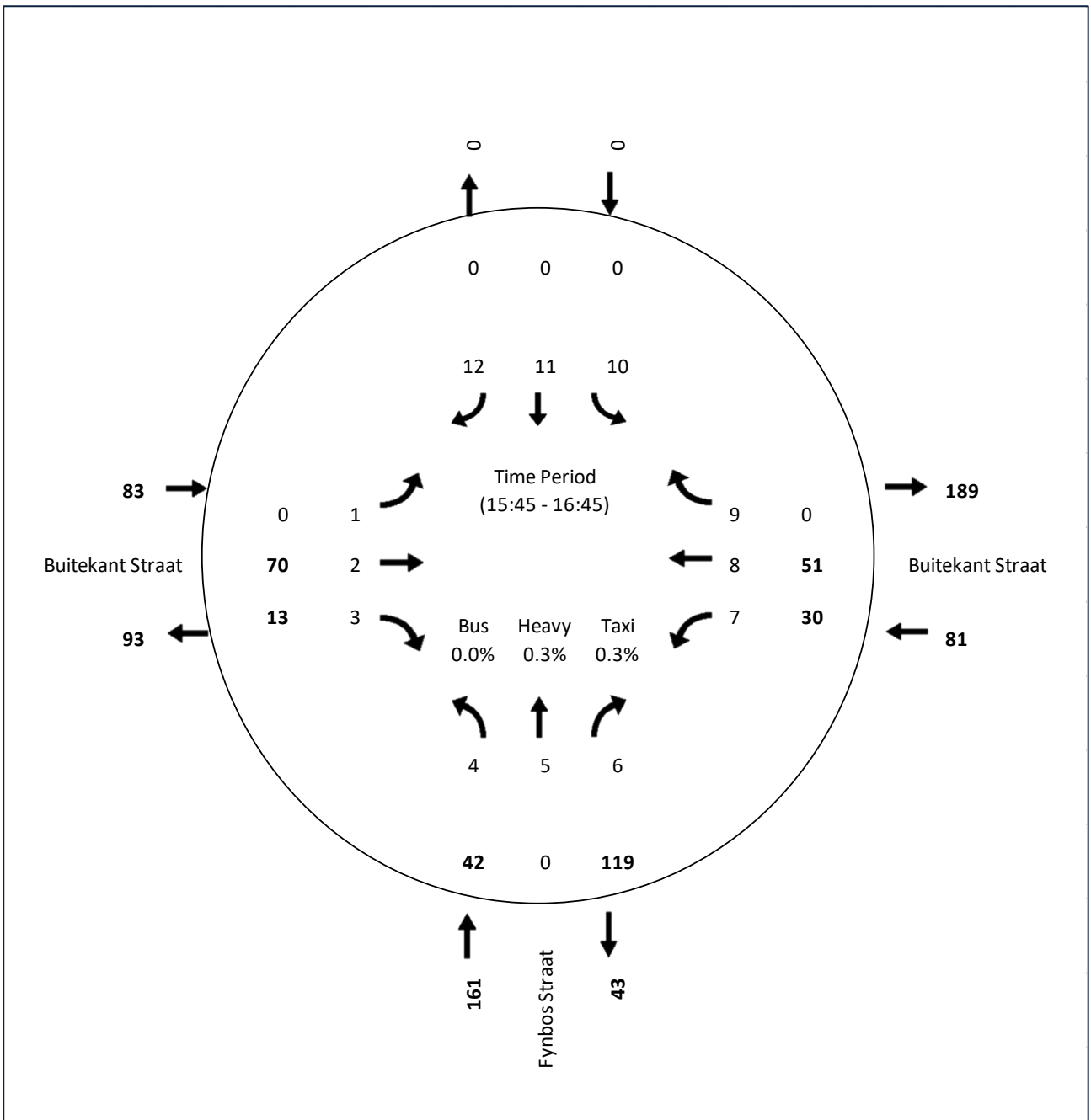
| 15 min survey intervals |       | Total 15min Interval Volumes | Total Hourly Volumes | Peak Hour Factor | Bus 0.8% | Heavy 2.2% | Taxi 3.2% | 1     |     |       |      |       | 2     |     |       |      |       | 3     |     |       |      |       | 4     |     |       |      |       | 5     |     |       |      |       |
|-------------------------|-------|------------------------------|----------------------|------------------|----------|------------|-----------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|
| Start                   | End   |                              |                      |                  |          |            |           | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light |
| 06:00                   | 06:15 | 33                           |                      |                  |          |            |           | 1     | 0   | 0     | 0    | 1     | 0     | 0   | 0     | 0    | 0     | 1     | 0   | 0     | 0    | 1     | 2     | 0   | 0     | 0    | 2     | 14    | 0   | 0     | 0    | 14    |
| 06:15                   | 06:30 | 40                           |                      |                  |          |            |           | 3     | 0   | 0     | 0    | 3     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 2     | 0   | 0     | 0    | 2     | 18    | 3   | 0     | 3    | 12    |
| 06:30                   | 06:45 | 53                           |                      |                  |          |            |           | 7     | 0   | 0     | 0    | 7     | 0     | 0   | 0     | 0    | 0     | 3     | 0   | 0     | 0    | 3     | 1     | 0   | 0     | 0    | 1     | 27    | 0   | 0     | 1    | 26    |
| 06:45                   | 07:00 | 78                           | 204                  | 0.65             | 2.6%     | 3.8%       | 7.7%      | 4     | 0   | 0     | 0    | 4     | 0     | 0   | 0     | 0    | 0     | 2     | 0   | 0     | 1    | 1     | 1     | 0   | 0     | 0    | 1     | 29    | 1   | 1     | 2    | 25    |
| 07:00                   | 07:15 | 137                          | 308                  | 0.56             | 2.9%     | 1.5%       | 5.8%      | 11    | 0   | 0     | 2    | 9     | 0     | 0   | 0     | 0    | 0     | 7     | 0   | 0     | 0    | 7     | 7     | 0   | 0     | 0    | 7     | 56    | 2   | 0     | 2    | 52    |
| 07:15                   | 07:30 | 191                          | 459                  | 0.6              | 0.5%     | 1.0%       | 2.6%      | 13    | 0   | 0     | 0    | 13    | 2     | 0   | 0     | 0    | 2     | 8     | 0   | 1     | 0    | 7     | 4     | 0   | 0     | 0    | 4     | 66    | 1   | 1     | 2    | 62    |
| 07:30                   | 07:45 | 167                          | 573                  | 0.75             | 1.8%     | 0.6%       | 4.2%      | 11    | 0   | 0     | 0    | 11    | 0     | 0   | 0     | 0    | 0     | 5     | 0   | 0     | 0    | 5     | 6     | 0   | 0     | 0    | 6     | 53    | 1   | 1     | 2    | 49    |
| 07:45                   | 08:00 | 191                          | 686                  | 0.9              | 0.5%     | 2.1%       | 6.3%      | 9     | 0   | 0     | 1    | 8     | 3     | 0   | 0     | 0    | 3     | 9     | 0   | 0     | 0    | 9     | 9     | 0   | 0     | 1    | 8     | 72    | 1   | 0     | 5    | 66    |
| 08:00                   | 08:15 | 182                          | 731                  | 0.96             | 0.0%     | 4.9%       | 3.3%      | 11    | 0   | 1     | 1    | 9     | 2     | 0   | 0     | 0    | 2     | 10    | 0   | 0     | 0    | 10    | 21    | 0   | 0     | 0    | 21    | 63    | 0   | 5     | 2    | 56    |
| 08:15                   | 08:30 | 193                          | 733                  | 0.95             | 0.0%     | 5.2%       | 2.1%      | 13    | 0   | 0     | 0    | 13    | 1     | 0   | 0     | 0    | 1     | 14    | 0   | 0     | 0    | 14    | 14    | 0   | 0     | 0    | 14    | 73    | 0   | 5     | 2    | 66    |
| 08:30                   | 08:45 | 175                          | 741                  | 0.96             | 0.0%     | 3.4%       | 1.1%      | 13    | 0   | 0     | 0    | 13    | 0     | 0   | 0     | 0    | 0     | 6     | 0   | 0     | 0    | 6     | 22    | 0   | 0     | 0    | 22    | 61    | 0   | 4     | 1    | 56    |
| 08:45                   | 09:00 | 171                          | 721                  | 0.93             | 1.2%     | 4.7%       | 3.5%      | 17    | 0   | 0     | 1    | 16    | 0     | 0   | 0     | 0    | 0     | 10    | 0   | 0     | 1    | 9     | 18    | 0   | 1     | 0    | 17    | 47    | 1   | 2     | 2    | 42    |
| 15:00                   | 15:15 | 216                          |                      |                  |          |            |           | 36    | 0   | 3     | 1    | 32    | 0     | 0   | 0     | 0    | 0     | 20    | 0   | 1     | 0    | 19    | 26    | 0   | 1     | 0    | 25    | 49    | 1   | 1     | 2    | 45    |
| 15:15                   | 15:30 | 201                          |                      |                  |          |            |           | 18    | 0   | 0     | 0    | 18    | 1     | 0   | 0     | 0    | 1     | 19    | 0   | 0     | 0    | 19    | 21    | 0   | 3     | 1    | 17    | 67    | 0   | 3     | 1    | 63    |
| 15:30                   | 15:45 | 193                          |                      |                  |          |            |           | 25    | 0   | 1     | 0    | 24    | 0     | 0   | 0     | 0    | 0     | 21    | 0   | 0     | 2    | 19    | 17    | 0   | 0     | 0    | 17    | 59    | 0   | 3     | 2    | 54    |
| 15:45                   | 16:00 | 224                          | 834                  | 0.93             | 0.9%     | 2.2%       | 1.8%      | 11    | 0   | 1     | 0    | 10    | 1     | 0   | 0     | 0    | 1     | 24    | 0   | 0     | 2    | 22    | 21    | 0   | 0     | 0    | 21    | 64    | 1   | 0     | 2    | 61    |
| 16:00                   | 16:15 | 252                          | 870                  | 0.86             | 0.8%     | 3.2%       | 1.6%      | 20    | 0   | 0     | 0    | 20    | 0     | 0   | 0     | 0    | 0     | 19    | 0   | 0     | 1    | 18    | 24    | 0   | 0     | 0    | 24    | 68    | 2   | 6     | 1    | 59    |
| 16:15                   | 16:30 | 216                          | 885                  | 0.88             | 0.0%     | 0.9%       | 2.8%      | 15    | 0   | 0     | 0    | 15    | 0     | 0   | 0     | 0    | 0     | 27    | 0   | 0     | 2    | 25    | 25    | 0   | 0     | 0    | 25    | 63    | 0   | 0     | 2    | 61    |
| 16:30                   | 16:45 | 221                          | 913                  | 0.91             | 0.5%     | 0.5%       | 2.3%      | 25    | 0   | 0     | 1    | 24    | 1     | 0   | 0     | 0    | 1     | 21    | 0   | 0     | 1    | 20    | 16    | 0   | 0     | 0    | 16    | 77    | 0   | 1     | 1    | 75    |
| 16:45                   | 17:00 | 212                          | 901                  | 0.89             | 0.9%     | 0.9%       | 3.3%      | 25    | 0   | 0     | 2    | 23    | 2     | 0   | 0     | 0    | 2     | 10    | 0   | 0     | 0    | 10    | 22    | 0   | 0     | 0    | 22    | 65    | 1   | 1     | 3    | 60    |
| 17:00                   | 17:15 | 215                          | 864                  | 0.98             | 0.5%     | 1.4%       | 1.9%      | 29    | 0   | 0     | 1    | 28    | 0     | 0   | 0     | 0    | 0     | 13    | 0   | 0     | 1    | 12    | 20    | 0   | 0     | 0    | 20    | 59    | 1   | 3     | 2    | 53    |
| 17:15                   | 17:30 | 167                          | 815                  | 0.92             | 0.6%     | 1.2%       | 2.4%      | 21    | 0   | 0     | 1    | 20    | 1     | 0   | 0     | 0    | 1     | 18    | 0   | 0     | 0    | 18    | 13    | 0   | 0     | 0    | 13    | 52    | 1   | 2     | 1    | 48    |
| 17:30                   | 17:45 | 149                          | 743                  | 0.86             | 0.7%     | 1.3%       | 1.3%      | 20    | 0   | 0     | 0    | 20    | 0     | 0   | 0     | 0    | 0     | 18    | 0   | 0     | 0    | 18    | 12    | 0   | 0     | 0    | 12    | 34    | 0   | 2     | 0    | 32    |
| 17:45                   | 18:00 | 104                          | 635                  | 0.74             | 0.0%     | 0.0%       | 2.9%      | 12    | 0   | 0     | 0    | 12    | 0     | 0   | 0     | 0    | 0     | 12    | 0   | 0     | 1    | 11    | 3     | 0   | 0     | 0    | 3     | 28    | 0   | 0     | 2    | 26    |

| 15 min survey intervals |       | 6     |     |       |      |       | 7     |     |       |      |       | 8     |     |       |      |       | 9     |     |       |      |       | 10    |     |       |      |       | 11    |     |       |      |       | 12    |     |       |      |       |
|-------------------------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|
| Start                   | End   | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light |
| 06:00                   | 06:15 | 1     | 0   | 0     | 0    | 1     | 1     | 0   | 0     | 0    | 1     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 11  | 0     | 0    | 0     | 11    | 2   | 0     | 0    | 0     | 2     |     |       |      |       |
| 06:15                   | 06:30 | 1     | 0   | 0     | 0    | 1     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 16  | 3     | 0    | 5     | 8     | 0   | 0     | 0    | 0     | 0     |     |       |      |       |
| 06:30                   | 06:45 | 2     | 0   | 0     | 0    | 2     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 2     | 0     | 0   | 1     | 1    | 1     | 6     | 1   | 0     | 2    | 3     | 4     | 0   | 0     | 1    | 3     |       |     |       |      |       |
| 06:45                   | 07:00 | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 39  | 1     | 2    | 3     | 33    | 3   | 0     | 0    | 0     | 3     |     |       |      |       |
| 07:00                   | 07:15 | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 1     | 49    | 2   | 2     | 3    | 42    | 6     | 0   | 0     | 1    | 5     |       |     |       |      |       |
| 07:15                   | 07:30 | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 1     | 89    | 0   | 0     | 3    | 86    | 8     | 0   | 0     | 0    | 8     |       |     |       |      |       |
| 07:30                   | 07:45 | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 74    | 2   | 0     | 5    | 67    | 18    | 0   | 0     | 0    | 18    |       |     |       |      |       |
| 07:45                   | 08:00 | 3     | 0   | 0     | 0    | 3     | 0     | 0   | 0     | 0    | 2     | 0     | 0   | 0     | 2    | 0     | 0     | 0   | 0     | 0    | 3     | 69    | 0   | 3     | 4    | 62    | 12    | 0   | 1     | 1    | 10    |       |     |       |      |       |
| 08:00                   | 08:15 | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 2     | 0     | 0   | 0     | 2    | 0     | 0     | 0   | 0     | 0    | 2     | 57    | 0   | 3     | 3    | 51    | 14    | 0   | 0     | 0    | 14    |       |     |       |      |       |
| 08:15                   | 08:30 | 2     | 0   | 0     | 0    | 2     | 1     | 0   | 0     | 0    | 1     | 0     | 0   | 0     | 0    | 1     | 0     | 0   | 0     | 0    | 1     | 62    | 0   | 5     | 2    | 55    | 12    | 0   | 0     | 0    | 12    |       |     |       |      |       |
| 08:30                   | 08:45 | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 4     | 0     | 0   | 0     | 4    | 1     | 46    | 0   | 2     | 1    | 43    | 22    | 0   | 0     | 0    | 22    |       |     |       |      |       |
| 08:45                   | 09:00 | 0     | 0   | 0     | 0    | 0     | 1     | 0   | 0     | 0    | 1     | 1     | 0   | 0     | 0    | 1     | 5     | 0   | 0     | 0    | 5     | 51    | 1   | 4     | 1    | 45    | 20    | 0   | 1     | 1    | 18    |       |     |       |      |       |
| 15:00                   | 15:15 | 1     | 0   | 0     | 0    | 1     | 2     | 0   | 0     | 0    | 2     | 0     | 0   | 0     | 0    | 1     | 0     | 0   | 0     | 1    | 1     | 60    | 0   | 0     | 3    | 57    | 20    | 0   | 0     | 0    | 20    |       |     |       |      |       |
| 15:15                   | 15:30 | 0     | 0   | 0     | 0    | 0     | 2     | 0   | 0     | 0    | 2     | 0     | 0   | 0     | 0    | 1     | 0     | 0   | 0     | 1    | 0     | 46    | 1   | 2     | 1    | 42    | 26    | 0   | 1     | 0    | 25    |       |     |       |      |       |
| 15:30                   | 15:45 | 2     | 0   | 0     | 0    | 2     | 0     | 0   | 0     | 0    | 0     | 1     | 0   | 0     | 0    | 1     | 0     | 0   | 0     | 0    | 0     | 49    | 0   | 1     | 1    | 47    | 19    | 0   | 0     | 1    | 18    |       |     |       |      |       |
| 15:45                   | 16:00 | 3     | 0   | 0     | 0    | 3     | 1     | 0   | 0     | 0    | 1     | 2     | 0   | 0     | 0    | 2     | 1     | 0   | 0     | 0    | 1     | 76    | 1   | 4     | 0    | 71    | 15    | 0   | 0     | 0    | 15    |       |     |       |      |       |
| 16:00                   | 16:15 | 0     | 0   | 0     | 0    | 0     | 1     | 0   | 0     | 0    | 1     | 3     | 0   | 0     | 0    | 3     | 3     | 0   | 0     | 0    | 3     | 84    | 0   | 2     | 2    | 80    | 26    | 0   | 0     | 0    | 26    |       |     |       |      |       |
| 16:15                   | 16:30 | 1     | 0   | 0     | 0    | 1     | 1     | 0   | 0     | 0    | 1     | 0     | 0   | 0     | 0    | 1     | 3     | 0   | 0     | 0    | 3     | 55    | 0   | 2     | 2    | 51    | 25    | 0   | 0     | 0    | 25    |       |     |       |      |       |
| 16:30                   | 16:45 | 1     | 0   | 0     | 0    | 1     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 1     | 2     | 0   | 0     | 0    | 2     | 54    | 1   | 0     | 1    | 52    | 23    | 0   | 0     | 1    | 22    |       |     |       |      |       |
| 16:45                   | 17:00 | 3     | 0   | 0     | 0    | 3     | 2     | 0   | 0     | 0    | 2     | 0     | 0   | 0     | 0    | 2     | 1     | 0   | 0     | 0    | 1     | 61    | 1   | 1     | 2    | 57    | 19    | 0   | 0     | 0    | 19    |       |     |       |      |       |
| 17:00                   | 17:15 | 1     | 0   | 0     | 0    | 1     | 3     | 0   | 0     | 0    | 3     | 2     | 0   | 0     | 0    | 2     | 5     | 0   | 0     | 0    | 5     | 53    | 0   | 0     | 0    | 53    | 29    | 0   | 0     | 0    | 29    |       |     |       |      |       |
| 17:15                   | 17:30 | 1     | 0   | 0     | 0    | 1     | 1     | 0   | 0     | 0    | 1     | 1     | 0   | 0     | 0    | 1     | 2     | 0   | 0     | 0    | 2     | 38    | 0   | 0     | 1    | 37    | 17    | 0   | 0     | 1    | 16    |       |     |       |      |       |
| 17:30                   | 17:45 | 3     | 0   | 0     | 0    | 3     | 3     | 0   | 0     | 1    | 2     | 2     | 0   | 0     | 0    | 2     | 1     | 0   | 0     | 0    | 1     | 36    | 1   | 0     | 0    | 35    | 17    | 0   | 0     | 0    | 17    |       |     |       |      |       |
| 17:45                   | 18:00 | 2     | 0   | 0     | 0    | 2     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 3     | 0     | 0   | 0     | 0    | 0     | 35    | 0   | 0     | 0    | 35    | 9     | 0   | 0     | 0    | 9     |       |     |       |      |       |

## Buitekant Street and Fynbos Street



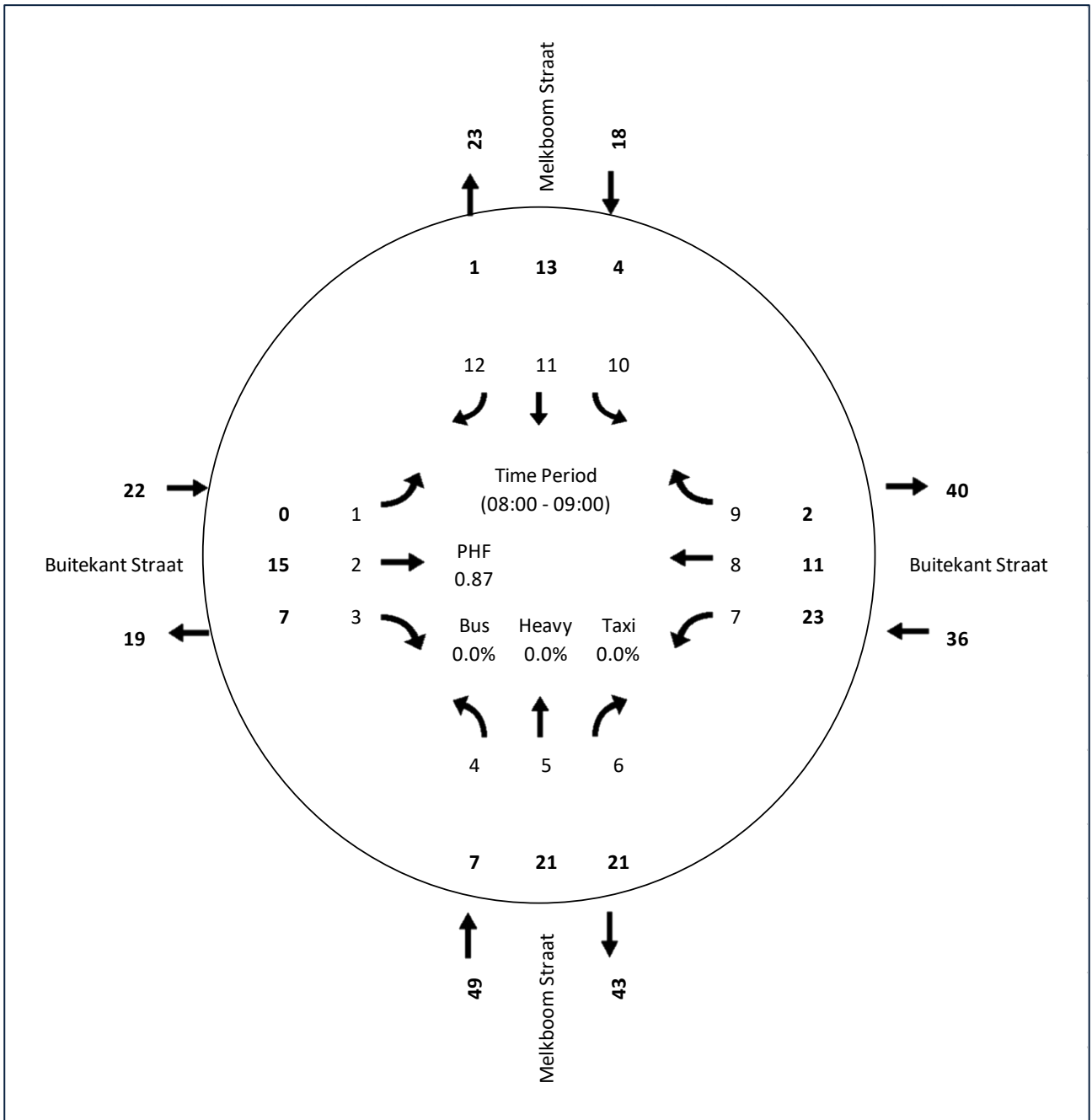


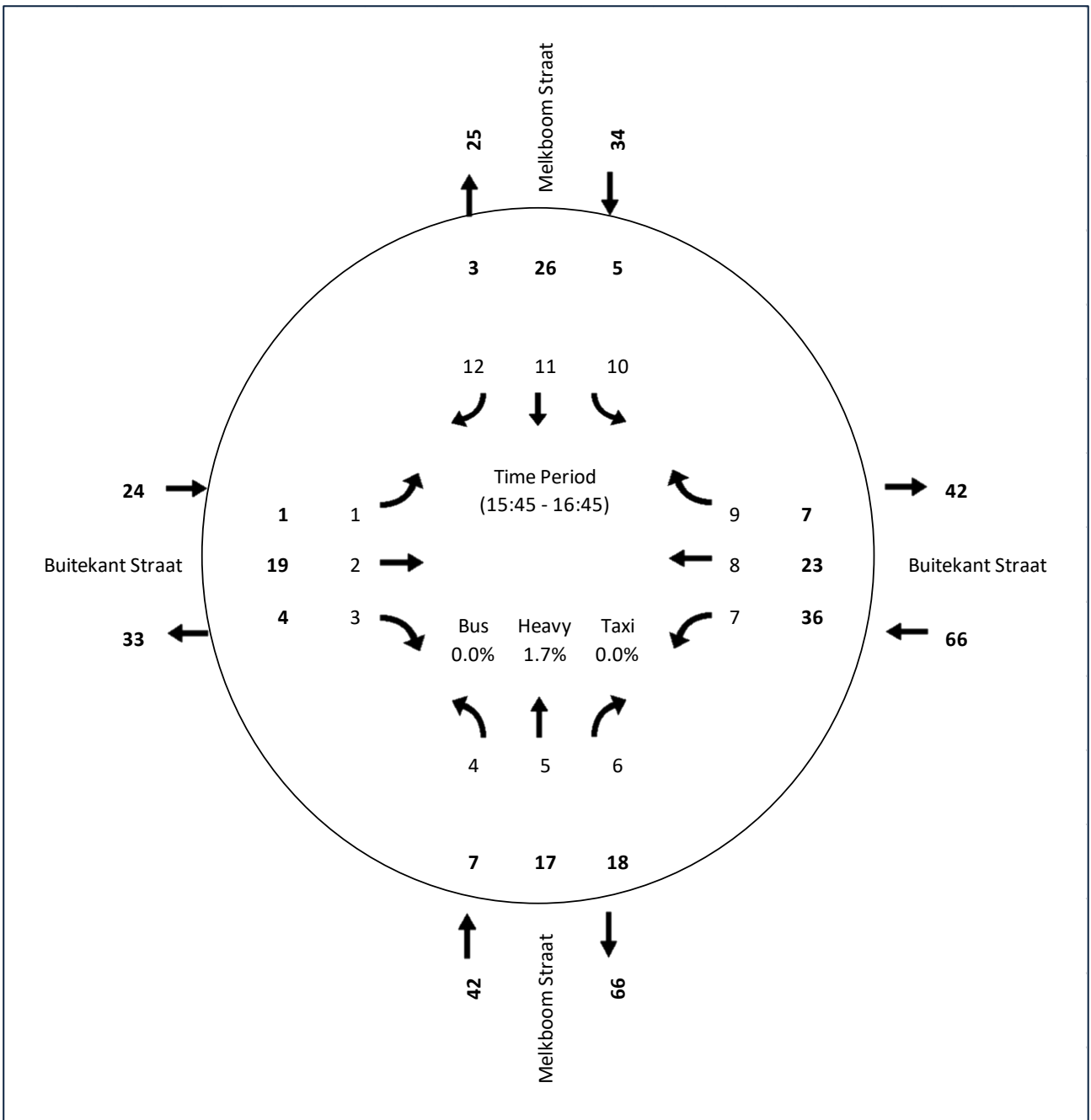


| 15 min survey intervals |       | Total 15min Interval Volumes | Total Hourly Volumes | Peak Hour Factor | Bus 0.0% | Heavy 0.7% | Taxi 0.1% | 1     |     |       |      |       | 2     |     |       |      |       | 3     |     |       |      |       | 4     |     |       |      |       | 5     |     |       |      |       |  |  |
|-------------------------|-------|------------------------------|----------------------|------------------|----------|------------|-----------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|--|--|
| Start                   | End   |                              |                      |                  |          |            |           | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light |  |  |
| 06:00                   | 06:15 | 3                            |                      |                  |          |            |           |       |     |       |      | 1     | 0     | 0   | 0     | 1    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     |     |       |      |       |  |  |
| 06:15                   | 06:30 | 3                            |                      |                  |          |            |           |       |     |       |      | 1     | 0     | 0   | 0     | 1    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     |     |       |      |       |  |  |
| 06:30                   | 06:45 | 12                           |                      |                  |          |            |           |       |     |       |      | 5     | 0     | 0   | 0     | 5    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     |     |       |      |       |  |  |
| 06:45                   | 07:00 | 13                           | 31                   | 0.6              | 0.0%     | 0.0%       | 0.0%      |       |     |       |      | 4     | 0     | 0   | 0     | 4    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     |       |     |       |      |       |  |  |
| 07:00                   | 07:15 | 33                           | 61                   | 0.46             | 0.0%     | 0.0%       | 0.0%      |       |     |       |      | 16    | 0     | 0   | 0     | 16   | 3     | 0     | 0   | 0     | 0    | 3     | 2     | 0   | 0     | 0    | 0     | 2     |     |       |      |       |  |  |
| 07:15                   | 07:30 | 31                           | 89                   | 0.67             | 0.0%     | 3.2%       | 0.0%      |       |     |       |      | 16    | 0     | 1   | 0     | 15   | 1     | 0     | 0   | 0     | 0    | 1     | 1     | 0   | 0     | 0    | 0     | 1     |     |       |      |       |  |  |
| 07:30                   | 07:45 | 31                           | 108                  | 0.82             | 0.0%     | 0.0%       | 0.0%      |       |     |       |      | 8     | 0     | 0   | 0     | 8    | 3     | 0     | 0   | 0     | 0    | 3     | 1     | 0   | 0     | 0    | 0     | 1     |     |       |      |       |  |  |
| 07:45                   | 08:00 | 33                           | 128                  | 0.97             | 0.0%     | 3.0%       | 0.0%      |       |     |       |      | 17    | 0     | 0   | 0     | 17   | 0     | 0     | 0   | 0     | 0    | 0     | 2     | 0   | 0     | 0    | 0     | 2     |     |       |      |       |  |  |
| 08:00                   | 08:15 | 50                           | 145                  | 0.73             | 0.0%     | 2.0%       | 0.0%      |       |     |       |      | 14    | 0     | 0   | 0     | 14   | 3     | 0     | 0   | 0     | 0    | 3     | 1     | 0   | 0     | 0    | 0     | 1     |     |       |      |       |  |  |
| 08:15                   | 08:30 | 56                           | 170                  | 0.76             | 0.0%     | 0.0%       | 0.0%      |       |     |       |      | 18    | 0     | 0   | 0     | 18   | 2     | 0     | 0   | 0     | 0    | 2     | 4     | 0   | 0     | 0    | 0     | 4     |     |       |      |       |  |  |
| 08:30                   | 08:45 | 40                           | 179                  | 0.8              | 0.0%     | 0.0%       | 0.0%      |       |     |       |      | 8     | 0     | 0   | 0     | 8    | 1     | 0     | 0   | 0     | 0    | 1     | 3     | 0   | 0     | 0    | 0     | 3     |     |       |      |       |  |  |
| 08:45                   | 09:00 | 54                           | 200                  | 0.89             | 0.0%     | 3.7%       | 0.0%      |       |     |       |      | 18    | 0     | 0   | 0     | 18   | 1     | 0     | 0   | 0     | 0    | 1     | 3     | 0   | 0     | 0    | 0     | 3     |     |       |      |       |  |  |
| 15:00                   | 15:15 | 76                           |                      |                  |          |            |           |       |     |       |      | 13    | 0     | 1   | 0     | 12   | 5     | 0     | 0   | 0     | 0    | 5     | 10    | 0   | 1     | 0    | 9     |       |     |       |      |       |  |  |
| 15:15                   | 15:30 | 95                           |                      |                  |          |            |           |       |     |       |      | 13    | 0     | 1   | 0     | 12   | 6     | 0     | 0   | 0     | 0    | 6     | 9     | 0   | 0     | 0    | 9     |       |     |       |      |       |  |  |
| 15:30                   | 15:45 | 77                           |                      |                  |          |            |           |       |     |       |      | 14    | 0     | 0   | 0     | 14   | 0     | 0     | 0   | 0     | 0    | 0     | 9     | 0   | 0     | 0    | 9     |       |     |       |      |       |  |  |
| 15:45                   | 16:00 | 79                           | 327                  | 0.86             | 0.0%     | 1.3%       | 1.3%      |       |     |       |      | 23    | 0     | 1   | 0     | 22   | 2     | 0     | 0   | 0     | 0    | 2     | 9     | 0   | 0     | 0    | 9     |       |     |       |      |       |  |  |
| 16:00                   | 16:15 | 86                           | 337                  | 0.89             | 0.0%     | 0.0%       | 0.0%      |       |     |       |      | 10    | 0     | 0   | 0     | 10   | 6     | 0     | 0   | 0     | 0    | 6     | 17    | 0   | 0     | 0    | 17    |       |     |       |      |       |  |  |
| 16:15                   | 16:30 | 82                           | 324                  | 0.94             | 0.0%     | 0.0%       | 0.0%      |       |     |       |      | 15    | 0     | 0   | 0     | 15   | 2     | 0     | 0   | 0     | 0    | 2     | 13    | 0   | 0     | 0    | 13    |       |     |       |      |       |  |  |
| 16:30                   | 16:45 | 78                           | 325                  | 0.94             | 0.0%     | 0.0%       | 0.0%      |       |     |       |      | 22    | 0     | 0   | 0     | 22   | 3     | 0     | 0   | 0     | 0    | 3     | 3     | 0   | 0     | 0    | 3     |       |     |       |      |       |  |  |
| 16:45                   | 17:00 | 78                           | 324                  | 0.94             | 0.0%     | 0.0%       | 1.3%      |       |     |       |      | 14    | 0     | 0   | 0     | 14   | 6     | 0     | 0   | 0     | 0    | 6     | 8     | 0   | 0     | 0    | 8     |       |     |       |      |       |  |  |
| 17:00                   | 17:15 | 81                           | 319                  | 0.97             | 0.0%     | 0.0%       | 0.0%      |       |     |       |      | 14    | 0     | 0   | 0     | 14   | 2     | 0     | 0   | 0     | 0    | 2     | 9     | 0   | 0     | 0    | 9     |       |     |       |      |       |  |  |
| 17:15                   | 17:30 | 62                           | 299                  | 0.92             | 0.0%     | 0.0%       | 0.0%      |       |     |       |      | 15    | 0     | 0   | 0     | 15   | 4     | 0     | 0   | 0     | 0    | 4     | 11    | 0   | 0     | 0    | 11    |       |     |       |      |       |  |  |
| 17:30                   | 17:45 | 61                           | 282                  | 0.87             | 0.0%     | 0.0%       | 0.0%      |       |     |       |      | 8     | 0     | 0   | 0     | 8    | 1     | 0     | 0   | 0     | 0    | 1     | 10    | 0   | 0     | 0    | 10    |       |     |       |      |       |  |  |
| 17:45                   | 18:00 | 38                           | 242                  | 0.75             | 0.0%     | 0.0%       | 0.0%      |       |     |       |      | 7     | 0     | 0   | 0     | 7    | 0     | 0     | 0   | 0     | 0    | 0     | 6     | 0   | 0     | 0    | 6     |       |     |       |      |       |  |  |

| 15 min survey intervals |       | 6     |     |       |      |       | 7     |     |       |      |       | 8     |     |       |      |       | 9     |     |       |      |       | 10    |     |       |      |       | 11    |     |       |      |       | 12    |     |       |      |       |
|-------------------------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|
| Start                   | End   | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light |
| 06:00                   | 06:15 | 1     | 0   | 0     | 0    | 1     | 0     | 0   | 0     | 0    | 0     | 1     | 0   | 0     | 0    | 0     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 06:15                   | 06:30 | 2     | 0   | 0     | 0    | 2     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 06:30                   | 06:45 | 3     | 0   | 0     | 0    | 3     | 2     | 0   | 0     | 0    | 2     | 2     | 0   | 0     | 0    | 2     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 06:45                   | 07:00 | 3     | 0   | 0     | 0    | 3     | 1     | 0   | 0     | 0    | 1     | 5     | 0   | 0     | 0    | 5     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 07:00                   | 07:15 | 3     | 0   | 0     | 0    | 3     | 3     | 0   | 0     | 0    | 3     | 6     | 0   | 0     | 0    | 6     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 07:15                   | 07:30 | 5     | 0   | 0     | 0    | 5     | 2     | 0   | 0     | 0    | 2     | 6     | 0   | 0     | 0    | 6     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 07:30                   | 07:45 | 8     | 0   | 0     | 0    | 8     | 5     | 0   | 0     | 0    | 5     | 6     | 0   | 0     | 0    | 6     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 07:45                   | 08:00 | 6     | 0   | 0     | 0    | 6     | 5     | 0   | 0     | 0    | 5     | 3     | 0   | 1     | 0    | 2     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 08:00                   | 08:15 | 12    | 0   | 1     | 0    | 11    | 5     | 0   | 0     | 0    | 5     | 15    | 0   | 0     | 0    | 15    |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 08:15                   | 08:30 | 19    | 0   | 0     | 0    | 19    | 4     | 0   | 0     | 0    | 4     | 9     | 0   | 0     | 0    | 9     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 08:30                   | 08:45 | 16    | 0   | 0     | 0    | 16    | 7     | 0   | 0     | 0    | 7     | 5     | 0   | 0     | 0    | 5     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 08:45                   | 09:00 | 20    | 0   | 0     | 0    | 20    | 7     | 0   | 2     | 0    | 5     | 5     | 0   | 0     | 0    | 5     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 15:00                   | 15:15 | 34    | 0   | 1     | 0    | 33    | 5     | 0   | 1     | 0    | 4     | 9     | 0   | 0     | 0    | 9     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 15:15                   | 15:30 | 50    | 0   | 1     | 0    | 49    | 8     | 0   | 0     | 0    | 8     | 9     | 0   | 3     | 0    | 6     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 15:30                   | 15:45 | 39    | 0   | 1     | 0    | 38    | 7     | 0   | 0     | 1    | 6     | 8     | 0   | 0     | 0    | 8     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 15:45                   | 16:00 | 28    | 0   | 0     | 1    | 27    | 8     | 0   | 0     | 0    | 8     | 9     | 0   | 0     | 0    | 9     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 16:00                   | 16:15 | 29    | 0   | 0     | 0    | 29    | 8     | 0   | 0     | 0    | 8     | 16    | 0   | 0     | 0    | 16    |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 16:15                   | 16:30 | 33    | 0   | 0     | 0    | 33    | 8     | 0   | 0     | 0    | 8     | 11    | 0   | 0     | 0    | 11    |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 16:30                   | 16:45 | 29    | 0   | 0     | 0    | 29    | 6     | 0   | 0     | 0    | 6     | 15    | 0   | 0     | 0    | 15    |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 16:45                   | 17:00 | 29    | 0   | 0     | 1    | 28    | 5     | 0   | 0     | 0    | 5     | 16    | 0   | 0     | 0    | 16    |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 17:00                   | 17:15 | 35    | 0   | 0     | 0    | 35    | 6     | 0   | 0     | 0    | 6     | 15    | 0   | 0     | 0    | 15    |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 17:15                   | 17:30 | 22    | 0   | 0     | 0    | 22    | 2     | 0   | 0     | 0    | 2     | 8     | 0   | 0     | 0    | 8     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 17:30                   | 17:45 | 33    | 0   | 0     | 0    | 33    | 4     | 0   | 0     | 0    | 4     | 5     | 0   | 0     | 0    | 5     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |
| 17:45                   | 18:00 | 21    | 0   | 0     | 0    | 21    | 0     | 0   | 0     | 0    | 0     | 4     | 0   | 0     | 0    | 4     |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |       |     |       |      |       |

## Buitekant Street and Melkboom Street





| 15 min survey intervals |       | Total 15min Interval Volumes | Total Hourly Volumes | Peak Hour Factor | Bus 0.0% | Heavy 1.4% | Taxi 0.0% | 1     |     |       |      |       | 2     |     |       |      |       | 3     |     |       |      |       | 4     |     |       |      |       | 5     |     |       |      |       |
|-------------------------|-------|------------------------------|----------------------|------------------|----------|------------|-----------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|
| Start                   | End   |                              |                      |                  |          |            |           | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light |
| 06:00                   | 06:15 | 1                            |                      |                  |          |            |           | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     |     |       |      |       |
| 06:15                   | 06:30 | 1                            |                      |                  |          |            |           | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     |     |       |      |       |
| 06:30                   | 06:45 | 3                            |                      |                  |          |            |           | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     |     |       |      |       |
| 06:45                   | 07:00 | 13                           | 18                   | 0.35             | 0.0%     | 0.0%       | 0.0%      | 0     | 0   | 0     | 0    | 0     | 3     | 0   | 0     | 0    | 0     | 3     | 0   | 0     | 0    | 0     | 0     | 2   | 0     | 0    | 0     | 0     |     |       |      |       |
| 07:00                   | 07:15 | 15                           | 32                   | 0.53             | 0.0%     | 0.0%       | 0.0%      | 0     | 0   | 0     | 0    | 0     | 3     | 0   | 0     | 0    | 0     | 3     | 1   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 1     |       |     |       |      |       |
| 07:15                   | 07:30 | 27                           | 58                   | 0.54             | 0.0%     | 3.7%       | 0.0%      | 0     | 0   | 0     | 0    | 0     | 5     | 0   | 1     | 0    | 0     | 4     | 2   | 0     | 0    | 0     | 0     | 0   | 0     | 1    | 0     |       |     |       |      |       |
| 07:30                   | 07:45 | 13                           | 68                   | 0.63             | 0.0%     | 0.0%       | 0.0%      | 0     | 0   | 0     | 0    | 0     | 3     | 0   | 0     | 0    | 0     | 3     | 1   | 0     | 0    | 0     | 0     | 0   | 0     | 1    | 0     |       |     |       |      |       |
| 07:45                   | 08:00 | 19                           | 74                   | 0.69             | 0.0%     | 10.5%      | 0.0%      | 0     | 0   | 0     | 0    | 0     | 4     | 0   | 0     | 0    | 0     | 4     | 1   | 0     | 0    | 0     | 0     | 1   | 5     | 0    |       |       |     |       |      |       |
| 08:00                   | 08:15 | 36                           | 95                   | 0.66             | 0.0%     | 0.0%       | 0.0%      | 0     | 0   | 0     | 0    | 0     | 5     | 0   | 0     | 0    | 0     | 5     | 3   | 0     | 0    | 0     | 0     | 0   | 8     | 0    |       |       |     |       |      |       |
| 08:15                   | 08:30 | 32                           | 100                  | 0.69             | 0.0%     | 0.0%       | 0.0%      | 0     | 0   | 0     | 0    | 0     | 3     | 0   | 0     | 0    | 0     | 3     | 1   | 0     | 0    | 0     | 0     | 1   | 2     | 0    |       |       |     |       |      |       |
| 08:30                   | 08:45 | 27                           | 114                  | 0.79             | 0.0%     | 0.0%       | 0.0%      | 0     | 0   | 0     | 0    | 0     | 4     | 0   | 0     | 0    | 0     | 4     | 2   | 0     | 0    | 0     | 0     | 1   | 3     | 0    |       |       |     |       |      |       |
| 08:45                   | 09:00 | 30                           | 125                  | 0.87             | 0.0%     | 0.0%       | 0.0%      | 0     | 0   | 0     | 0    | 0     | 3     | 0   | 0     | 0    | 0     | 3     | 1   | 0     | 0    | 0     | 0     | 1   | 4     | 0    |       |       |     |       |      |       |
| 15:00                   | 15:15 | 32                           |                      |                  |          |            |           | 0     | 0   | 0     | 0    | 0     | 6     | 0   | 0     | 0    | 0     | 6     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 2    | 0     |       |     |       |      |       |
| 15:15                   | 15:30 | 40                           |                      |                  |          |            |           | 0     | 0   | 0     | 0    | 0     | 5     | 0   | 1     | 0    | 0     | 4     | 2   | 0     | 0    | 0     | 0     | 2   | 2     | 0    |       |       |     |       |      |       |
| 15:30                   | 15:45 | 30                           |                      |                  |          |            |           | 0     | 0   | 0     | 0    | 0     | 3     | 0   | 0     | 0    | 0     | 3     | 3   | 0     | 1    | 0     | 0     | 2   | 6     | 0    |       |       |     |       |      |       |
| 15:45                   | 16:00 | 38                           | 140                  | 0.88             | 0.0%     | 2.6%       | 0.0%      | 0     | 0   | 0     | 0    | 0     | 5     | 0   | 1     | 0    | 0     | 4     | 3   | 0     | 0    | 0     | 0     | 3   | 2     | 0    |       |       |     |       |      |       |
| 16:00                   | 16:15 | 49                           | 157                  | 0.8              | 0.0%     | 4.1%       | 0.0%      | 0     | 0   | 0     | 0    | 0     | 3     | 0   | 0     | 0    | 0     | 3     | 0   | 0     | 0    | 0     | 0     | 3   | 10    | 0    |       |       |     |       |      |       |
| 16:15                   | 16:30 | 34                           | 151                  | 0.77             | 0.0%     | 0.0%       | 0.0%      | 0     | 0   | 0     | 0    | 0     | 6     | 0   | 0     | 0    | 0     | 6     | 1   | 0     | 0    | 0     | 0     | 1   | 3     | 0    |       |       |     |       |      |       |
| 16:30                   | 16:45 | 45                           | 166                  | 0.85             | 0.0%     | 0.0%       | 0.0%      | 1     | 0   | 0     | 0    | 0     | 5     | 0   | 0     | 0    | 0     | 5     | 0   | 0     | 0    | 0     | 0     | 1   | 2     | 0    |       |       |     |       |      |       |
| 16:45                   | 17:00 | 44                           | 172                  | 0.88             | 0.0%     | 0.0%       | 0.0%      | 0     | 0   | 0     | 0    | 0     | 4     | 0   | 0     | 0    | 0     | 4     | 3   | 0     | 0    | 0     | 0     | 2   | 11    | 0    |       |       |     |       |      |       |
| 17:00                   | 17:15 | 43                           | 166                  | 0.92             | 0.0%     | 0.0%       | 0.0%      | 0     | 0   | 0     | 0    | 0     | 6     | 0   | 0     | 0    | 0     | 6     | 1   | 0     | 0    | 0     | 0     | 1   | 5     | 0    |       |       |     |       |      |       |
| 17:15                   | 17:30 | 26                           | 158                  | 0.88             | 0.0%     | 0.0%       | 0.0%      | 0     | 0   | 0     | 0    | 0     | 4     | 0   | 0     | 0    | 0     | 4     | 0   | 0     | 0    | 0     | 0     | 1   | 2     | 0    |       |       |     |       |      |       |
| 17:30                   | 17:45 | 25                           | 138                  | 0.78             | 0.0%     | 4.0%       | 0.0%      | 0     | 0   | 0     | 0    | 0     | 2     | 0   | 0     | 0    | 0     | 2     | 0   | 0     | 0    | 0     | 0     | 1   | 3     | 0    |       |       |     |       |      |       |
| 17:45                   | 18:00 | 15                           | 109                  | 0.63             | 0.0%     | 0.0%       | 0.0%      | 0     | 0   | 0     | 0    | 0     | 4     | 0   | 0     | 0    | 0     | 4     | 0   | 0     | 0    | 0     | 0     | 0   | 2     | 0    |       |       |     |       |      |       |

| 15 min survey intervals |       | 6     |     |       |      |       | 7     |     |       |      |       | 8     |     |       |      |       | 9     |     |       |      |       | 10    |     |       |      |       | 11    |     |       |      |       | 12    |     |       |      |       |   |   |
|-------------------------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|-------|-----|-------|------|-------|---|---|
| Start                   | End   | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light | Total | Bus | Heavy | Taxi | Light |   |   |
| 06:00                   | 06:15 | 0     | 0   | 0     | 0    | 0     | 1     | 0   | 0     | 0    | 1     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     |   |   |
| 06:15                   | 06:30 | 1     | 0   | 0     | 0    | 1     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     |   |   |
| 06:30                   | 06:45 | 1     | 0   | 0     | 0    | 1     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     |   |   |
| 06:45                   | 07:00 | 2     | 0   | 0     | 0    | 2     | 1     | 0   | 0     | 0    | 1     | 4     | 0   | 0     | 0    | 4     | 1     | 0   | 0     | 0    | 0     | 1     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     |   |   |
| 07:00                   | 07:15 | 5     | 0   | 0     | 0    | 5     | 1     | 0   | 0     | 0    | 1     | 3     | 0   | 0     | 0    | 3     | 0     | 0   | 0     | 0    | 0     | 1     | 0   | 0     | 0    | 0     | 1     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     |   |   |
| 07:15                   | 07:30 | 5     | 0   | 0     | 0    | 5     | 3     | 0   | 0     | 0    | 3     | 4     | 0   | 0     | 0    | 4     | 0     | 0   | 0     | 0    | 0     | 1     | 0   | 0     | 0    | 0     | 1     | 6   | 0     | 0    | 0     | 0     | 6   | 0     | 0    | 0     |   |   |
| 07:30                   | 07:45 | 1     | 0   | 0     | 0    | 1     | 4     | 0   | 0     | 0    | 4     | 2     | 0   | 0     | 0    | 2     | 0     | 0   | 0     | 0    | 0     | 1     | 0   | 0     | 0    | 0     | 1     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     |   |   |
| 07:45                   | 08:00 | 3     | 0   | 0     | 0    | 3     | 2     | 0   | 0     | 0    | 2     | 1     | 0   | 1     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 2     | 0   | 0     | 0    | 0     | 2     | 0   | 0     | 0    | 0     |   |   |
| 08:00                   | 08:15 | 2     | 0   | 0     | 0    | 2     | 7     | 0   | 0     | 0    | 7     | 4     | 0   | 0     | 0    | 4     | 2     | 0   | 0     | 0    | 0     | 2     | 1   | 0     | 0    | 0     | 1     | 4   | 0     | 0    | 0     | 0     | 4   | 0     | 0    | 0     | 0 |   |
| 08:15                   | 08:30 | 8     | 0   | 0     | 0    | 8     | 5     | 0   | 0     | 0    | 5     | 5     | 0   | 0     | 0    | 5     | 0     | 0   | 0     | 0    | 0     | 1     | 0   | 0     | 0    | 0     | 1     | 4   | 0     | 0    | 0     | 0     | 4   | 1     | 0    | 0     | 0 | 1 |
| 08:30                   | 08:45 | 4     | 0   | 0     | 0    | 4     | 7     | 0   | 0     | 0    | 7     | 2     | 0   | 0     | 0    | 2     | 0     | 0   | 0     | 0    | 0     | 1     | 0   | 0     | 0    | 0     | 1     | 3   | 0     | 0    | 0     | 0     | 3   | 0     | 0    | 0     | 0 |   |
| 08:45                   | 09:00 | 7     | 0   | 0     | 0    | 7     | 4     | 0   | 0     | 0    | 4     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 1     | 0   | 0     | 0    | 0     | 1     | 2   | 0     | 0    | 0     | 0     | 2   | 0     | 0    | 0     | 0 |   |
| 15:00                   | 15:15 | 6     | 0   | 0     | 0    | 6     | 4     | 0   | 0     | 0    | 4     | 5     | 0   | 0     | 0    | 5     | 3     | 0   | 0     | 0    | 0     | 3     | 2   | 0     | 0    | 0     | 2     | 3   | 0     | 0    | 0     | 0     | 3   | 1     | 0    | 0     | 0 | 1 |
| 15:15                   | 15:30 | 5     | 0   | 0     | 0    | 5     | 3     | 0   | 0     | 0    | 3     | 8     | 0   | 2     | 0    | 6     | 3     | 0   | 0     | 0    | 0     | 3     | 1   | 0     | 0    | 0     | 1     | 4   | 0     | 0    | 0     | 0     | 4   | 0     | 0    | 0     | 0 |   |
| 15:30                   | 15:45 | 2     | 0   | 0     | 0    | 2     | 7     | 0   | 1     | 0    | 6     | 2     | 0   | 0     | 0    | 2     | 0     | 0   | 0     | 0    | 0     | 3     | 0   | 0     | 0    | 0     | 3     | 3   | 0     | 0    | 0     | 0     | 3   | 0     | 0    | 0     | 0 |   |
| 15:45                   | 16:00 | 6     | 0   | 0     | 0    | 6     | 10    | 0   | 0     | 0    | 10    | 3     | 0   | 0     | 0    | 3     | 1     | 0   | 0     | 0    | 0     | 1     | 1   | 0     | 0    | 0     | 1     | 5   | 0     | 0    | 0     | 0     | 5   | 0     | 0    | 0     | 0 |   |
| 16:00                   | 16:15 | 2     | 0   | 1     | 0    | 1     | 9     | 0   | 0     | 0    | 9     | 8     | 0   | 0     | 0    | 8     | 3     | 0   | 1     | 0    | 0     | 2     | 2   | 0     | 0    | 0     | 2     | 8   | 0     | 0    | 0     | 0     | 8   | 1     | 0    | 0     | 0 | 1 |
| 16:15                   | 16:30 | 3     | 0   | 0     | 0    | 3     | 6     | 0   | 0     | 0    | 6     | 5     | 0   | 0     | 0    | 5     | 1     | 0   | 0     | 0    | 0     | 1     | 0   | 0     | 0    | 0     | 6     | 0   | 0     | 0    | 0     | 6     | 2   | 0     | 0    | 0     | 2 |   |
| 16:30                   | 16:45 | 7     | 0   | 0     | 0    | 7     | 11    | 0   | 0     | 0    | 11    | 7     | 0   | 0     | 0    | 7     | 2     | 0   | 0     | 0    | 0     | 2     | 2   | 0     | 0    | 0     | 2     | 7   | 0     | 0    | 0     | 0     | 7   | 0     | 0    | 0     | 0 |   |
| 16:45                   | 17:00 | 5     | 0   | 0     | 0    | 5     | 7     | 0   | 0     | 0    | 7     | 5     | 0   | 0     | 0    | 5     | 0     | 0   | 0     | 0    | 0     | 2     | 0   | 0     | 0    | 0     | 2     | 4   | 0     | 0    | 0     | 0     | 4   | 1     | 0    | 0     | 0 | 1 |
| 17:00                   | 17:15 | 2     | 0   | 0     | 0    | 2     | 13    | 0   | 0     | 0    | 13    | 7     | 0   | 0     | 0    | 7     | 2     | 0   | 0     | 0    | 0     | 2     | 2   | 0     | 0    | 0     | 2     | 4   | 0     | 0    | 0     | 0     | 4   | 0     | 0    | 0     | 0 |   |
| 17:15                   | 17:30 | 5     | 0   | 0     | 0    | 5     | 1     | 0   | 0     | 0    | 1     | 7     | 0   | 0     | 0    | 7     | 2     | 0   | 0     | 0    | 0     | 2     | 2   | 0     | 0    | 0     | 2     | 2   | 0     | 0    | 0     | 0     | 2   | 0     | 0    | 0     | 0 |   |
| 17:30                   | 17:45 | 3     | 0   | 0     | 0    | 3     | 4     | 0   | 0     | 0    | 4     | 7     | 0   | 0     | 0    | 7     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 5     | 0   | 1     | 0    | 0     | 4     | 0   | 0     | 0    | 0     | 0 |   |
| 17:45                   | 18:00 | 3     | 0   | 0     | 0    | 3     | 3     | 0   | 0     | 0    | 3     | 3     | 0   | 0     | 0    | 3     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0     | 0   | 0     | 0    | 0     | 0 |   |

## Appendix B Detailed SIDRA Outputs

### Main Road and Buitekant Street

#### MOVEMENT SUMMARY

**STOP** Site: 1 [Main/Buitekant 2021 Base AM]

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Main Road                |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 1                               | L2   | 79                 | 3.0        | 0.748         | 30.6              | LOS D            | 5.5                            | 39.4       | 1.00         | 1.77                | 4.37             | 40.3               |
| 2                               | T1   | 257                | 3.0        | 0.748         | 30.3              | LOS D            | 5.5                            | 39.4       | 1.00         | 1.77                | 4.37             | 40.1               |
| 3                               | R2   | 2                  | 3.0        | 0.005         | 9.8               | LOS A            | 0.0                            | 0.1        | 0.85         | 1.23                | 1.85             | 51.0               |
| Approach                        |      | 338                | 3.0        | 0.748         | 30.2              | LOS D            | 5.5                            | 39.4       | 1.00         | 1.77                | 4.36             | 40.2               |
| East: Buitekant Street          |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 4                               | L2   | 2                  | 3.0        | 0.077         | 25.3              | LOS D            | 0.3                            | 1.9        | 0.98         | 1.25                | 2.06             | 42.6               |
| 5                               | T1   | 3                  | 3.0        | 0.077         | 24.9              | LOS C            | 0.3                            | 1.9        | 0.98         | 1.25                | 2.06             | 42.5               |
| 6                               | R2   | 11                 | 3.0        | 0.077         | 25.0              | LOS D            | 0.3                            | 1.9        | 0.98         | 1.25                | 2.06             | 42.5               |
| Approach                        |      | 16                 | 3.0        | 0.077         | 25.0              | LOS D            | 0.3                            | 1.9        | 0.98         | 1.25                | 2.06             | 42.5               |
| North: Main Road                |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 7                               | L2   | 4                  | 3.0        | 0.462         | 15.9              | LOS C            | 2.1                            | 15.1       | 0.91         | 1.43                | 2.72             | 48.0               |
| 8                               | T1   | 227                | 3.0        | 0.462         | 15.6              | LOS C            | 2.1                            | 15.1       | 0.91         | 1.43                | 2.72             | 47.8               |
| 9                               | R2   | 72                 | 3.0        | 0.157         | 10.8              | LOS B            | 0.5                            | 3.8        | 0.86         | 1.27                | 2.04             | 50.3               |
| Approach                        |      | 303                | 3.0        | 0.462         | 14.5              | LOS B            | 2.1                            | 15.1       | 0.90         | 1.39                | 2.56             | 48.4               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 10                              | L2   | 57                 | 3.0        | 1.292         | 293.0             | LOS F            | 11.2                           | 80.6       | 1.00         | 1.94                | 5.10             | 10.3               |
| 11                              | T1   | 3                  | 3.0        | 1.292         | 292.7             | LOS F            | 11.2                           | 80.6       | 1.00         | 1.94                | 5.10             | 10.3               |
| 12                              | R2   | 42                 | 3.0        | 1.292         | 292.8             | LOS F            | 11.2                           | 80.6       | 1.00         | 1.94                | 5.10             | 10.3               |
| Approach                        |      | 102                | 3.0        | 1.292         | 292.9             | LOS F            | 11.2                           | 80.6       | 1.00         | 1.94                | 5.10             | 10.3               |
| All Vehicles                    |      | 759                | 3.0        | 1.292         | 59.1              | LOS F            | 11.2                           | 80.6       | 0.96         | 1.63                | 3.69             | 30.4               |

#### MOVEMENT SUMMARY

**STOP** Site: 1 [Main/Buitekant 2021 Base PM]

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Main Road                |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 1                               | L2   | 91                 | 3.0        | 0.937         | 59.6              | LOS F            | 10.8                           | 77.6       | 1.00         | 2.34                | 6.82             | 30.5               |
| 2                               | T1   | 286                | 3.0        | 0.937         | 59.3              | LOS F            | 10.8                           | 77.6       | 1.00         | 2.34                | 6.82             | 30.4               |
| 3                               | R2   | 5                  | 3.0        | 0.014         | 10.4              | LOS B            | 0.0                            | 0.3        | 0.88         | 1.23                | 1.89             | 50.6               |
| Approach                        |      | 382                | 3.0        | 0.937         | 58.7              | LOS F            | 10.8                           | 77.6       | 1.00         | 2.32                | 6.75             | 30.6               |
| East: Buitekant Street          |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 4                               | L2   | 3                  | 3.0        | 0.091         | 30.7              | LOS D            | 0.3                            | 2.3        | 1.00         | 1.25                | 2.09             | 40.1               |
| 5                               | T1   | 5                  | 3.0        | 0.091         | 30.4              | LOS D            | 0.3                            | 2.3        | 1.00         | 1.25                | 2.09             | 40.0               |
| 6                               | R2   | 6                  | 3.0        | 0.091         | 30.5              | LOS D            | 0.3                            | 2.3        | 1.00         | 1.25                | 2.09             | 40.0               |
| Approach                        |      | 15                 | 3.0        | 0.091         | 30.5              | LOS D            | 0.3                            | 2.3        | 1.00         | 1.25                | 2.09             | 40.0               |
| North: Main Road                |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 7                               | L2   | 15                 | 3.0        | 0.649         | 23.6              | LOS C            | 3.9                            | 28.1       | 0.98         | 1.60                | 3.61             | 43.7               |
| 8                               | T1   | 283                | 3.0        | 0.649         | 23.3              | LOS C            | 3.9                            | 28.1       | 0.98         | 1.60                | 3.61             | 43.5               |
| 9                               | R2   | 94                 | 3.0        | 0.224         | 12.1              | LOS B            | 0.8                            | 5.8        | 0.89         | 1.29                | 2.17             | 49.4               |
| Approach                        |      | 392                | 3.0        | 0.649         | 20.6              | LOS C            | 3.9                            | 28.1       | 0.96         | 1.53                | 3.27             | 44.8               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 10                              | L2   | 75                 | 3.0        | 0.846         | 78.1              | LOS F            | 6.7                            | 47.9       | 1.00         | 1.84                | 4.64             | 26.4               |
| 11                              | T1   | 2                  | 3.0        | 0.846         | 77.8              | LOS F            | 6.7                            | 47.9       | 1.00         | 1.84                | 4.64             | 26.3               |
| 12                              | R2   | 96                 | 3.0        | 0.846         | 77.9              | LOS F            | 6.7                            | 47.9       | 1.00         | 1.84                | 4.64             | 26.3               |
| Approach                        |      | 173                | 3.0        | 0.846         | 78.0              | LOS F            | 6.7                            | 47.9       | 1.00         | 1.84                | 4.64             | 26.3               |
| All Vehicles                    |      | 961                | 3.0        | 0.937         | 46.2              | LOS E            | 10.8                           | 77.6       | 0.98         | 1.90                | 4.88             | 34.1               |



## MOVEMENT SUMMARY

### Site: 1 [Main/Buitekant 2021 Base + Dev AM - Existing]

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
|---------------------------------|------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|------------------|---------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|                                 |      | Total veh/h  | HV % | v/c       | sec           |                  | Vehicles veh      | Distance m |              |                     |                  | km/h          |
| South: Main Road                |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 1                               | L2   | 102          | 3.0  | 0.895     | 51.9          | LOS F            | 9.2               | 66.3       | 1.00         | 2.17                | 6.11             | 32.6          |
| 2                               | T1   | 257          | 3.0  | 0.895     | 51.6          | LOS F            | 9.2               | 66.3       | 1.00         | 2.17                | 6.11             | 32.5          |
| 3                               | R2   | 2            | 3.0  | 0.006     | 10.3          | LOS B            | 0.0               | 0.1        | 0.88         | 1.23                | 1.88             | 50.7          |
| Approach                        |      | 361          | 3.0  | 0.895     | 51.4          | LOS F            | 9.2               | 66.3       | 1.00         | 2.17                | 6.08             | 32.6          |
| East: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 4                               | L2   | 2            | 3.0  | 0.056     | 19.6          | LOS C            | 0.2               | 1.3        | 0.94         | 1.24                | 1.99             | 45.6          |
| 5                               | T1   | 3            | 3.0  | 0.056     | 19.3          | LOS C            | 0.2               | 1.3        | 0.94         | 1.24                | 1.99             | 45.4          |
| 6                               | R2   | 11           | 3.0  | 0.056     | 19.4          | LOS C            | 0.2               | 1.3        | 0.94         | 1.24                | 1.99             | 45.4          |
| Approach                        |      | 16           | 3.0  | 0.056     | 19.4          | LOS C            | 0.2               | 1.3        | 0.94         | 1.24                | 1.99             | 45.4          |
| North: Main Road                |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 7                               | L2   | 4            | 3.0  | 0.495     | 17.5          | LOS C            | 2.4               | 17.0       | 0.93         | 1.45                | 2.85             | 47.1          |
| 8                               | T1   | 227          | 3.0  | 0.495     | 17.2          | LOS C            | 2.4               | 17.0       | 0.93         | 1.45                | 2.85             | 46.8          |
| 9                               | R2   | 93           | 3.0  | 0.220     | 12.0          | LOS B            | 0.8               | 5.7        | 0.89         | 1.29                | 2.16             | 49.5          |
| Approach                        |      | 324          | 3.0  | 0.495     | 15.7          | LOS C            | 2.4               | 17.0       | 0.92         | 1.40                | 2.66             | 47.6          |
| West: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 10                              | L2   | 135          | 3.0  | 1.226     | 189.1         | LOS F            | 17.0              | 122.1      | 1.00         | 2.65                | 8.19             | 14.6          |
| 11                              | T1   | 3            | 3.0  | 1.226     | 188.8         | LOS F            | 17.0              | 122.1      | 1.00         | 2.65                | 8.19             | 14.6          |
| 12                              | R2   | 99           | 3.0  | 1.226     | 188.9         | LOS F            | 17.0              | 122.1      | 1.00         | 2.65                | 8.19             | 14.6          |
| Approach                        |      | 237          | 3.0  | 1.226     | 189.0         | LOS F            | 17.0              | 122.1      | 1.00         | 2.65                | 8.19             | 14.6          |
| All Vehicles                    |      | 938          | 3.0  | 1.226     | 73.3          | LOS F            | 17.0              | 122.1      | 0.97         | 2.01                | 5.36             | 27.2          |

## MOVEMENT SUMMARY

### Site: 1 [Main/Buitekant 2021 Base + Dev PM - Existing]

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
|---------------------------------|------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|------------------|---------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|                                 |      | Total veh/h  | HV % | v/c       | sec           |                  | Vehicles veh      | Distance m |              |                     |                  | km/h          |
| South: Main Road                |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 1                               | L2   | 152          | 3.0  | 1.159     | 125.9         | LOS F            | 22.3              | 160.0      | 1.00         | 3.39                | 11.40            | 19.6          |
| 2                               | T1   | 286          | 3.0  | 1.159     | 125.6         | LOS F            | 22.3              | 160.0      | 1.00         | 3.39                | 11.40            | 19.6          |
| 3                               | R2   | 5            | 3.0  | 0.015     | 10.7          | LOS B            | 0.0               | 0.4        | 0.89         | 1.23                | 1.91             | 50.4          |
| Approach                        |      | 443          | 3.0  | 1.159     | 124.4         | LOS F            | 22.3              | 160.0      | 1.00         | 3.36                | 11.28            | 19.7          |
| East: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 4                               | L2   | 3            | 3.0  | 0.087     | 29.4          | LOS D            | 0.3               | 2.2        | 1.00         | 1.25                | 2.09             | 40.7          |
| 5                               | T1   | 5            | 3.0  | 0.087     | 29.1          | LOS D            | 0.3               | 2.2        | 1.00         | 1.25                | 2.09             | 40.6          |
| 6                               | R2   | 6            | 3.0  | 0.087     | 29.2          | LOS D            | 0.3               | 2.2        | 1.00         | 1.25                | 2.09             | 40.6          |
| Approach                        |      | 15           | 3.0  | 0.087     | 29.2          | LOS D            | 0.3               | 2.2        | 1.00         | 1.25                | 2.09             | 40.6          |
| North: Main Road                |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 7                               | L2   | 15           | 3.0  | 0.643     | 23.2          | LOS C            | 3.8               | 27.6       | 0.98         | 1.60                | 3.57             | 43.9          |
| 8                               | T1   | 283          | 3.0  | 0.643     | 22.9          | LOS C            | 3.8               | 27.6       | 0.98         | 1.60                | 3.57             | 43.7          |
| 9                               | R2   | 158          | 3.0  | 0.375     | 14.7          | LOS B            | 1.6               | 11.2       | 0.92         | 1.36                | 2.49             | 47.8          |
| Approach                        |      | 456          | 3.0  | 0.643     | 20.0          | LOS C            | 3.8               | 27.6       | 0.96         | 1.52                | 3.20             | 45.0          |
| West: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 10                              | L2   | 98           | 3.0  | 1.031     | 116.9         | LOS F            | 11.5              | 82.7       | 1.00         | 2.28                | 6.58             | 20.6          |
| 11                              | T1   | 2            | 3.0  | 1.031     | 116.5         | LOS F            | 11.5              | 82.7       | 1.00         | 2.28                | 6.58             | 20.6          |
| 12                              | R2   | 126          | 3.0  | 1.031     | 116.6         | LOS F            | 11.5              | 82.7       | 1.00         | 2.28                | 6.58             | 20.6          |
| Approach                        |      | 226          | 3.0  | 1.031     | 116.7         | LOS F            | 11.5              | 82.7       | 1.00         | 2.28                | 6.58             | 20.6          |
| All Vehicles                    |      | 1140         | 3.0  | 1.159     | 79.9          | LOS F            | 22.3              | 160.0      | 0.98         | 2.38                | 7.00             | 25.9          |

## MOVEMENT SUMMARY

### Site: 1 [Main/Buitekant 2021 Base + Dev AM - Proposed]

New Site  
Site Category: (None)  
Roundabout

| Movement Performance - Vehicles |      |                          |      |               |                   |                  |                                |            |              |                     |                  |                    |
|---------------------------------|------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | 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 | Aver. No. Cycles | Average Speed km/h |
| South: Main Road                |      |                          |      |               |                   |                  |                                |            |              |                     |                  |                    |
| 1                               | L2   | 102                      | 3.0  | 0.097         | 4.2               | LOS A            | 0.5                            | 3.4        | 0.28         | 0.45                | 0.28             | 55.4               |
| 2                               | T1   | 257                      | 3.0  | 0.183         | 4.3               | LOS A            | 1.0                            | 7.2        | 0.27         | 0.41                | 0.27             | 56.2               |
| 3                               | R2   | 2                        | 3.0  | 0.183         | 9.5               | LOS A            | 1.0                            | 7.2        | 0.27         | 0.41                | 0.27             | 56.6               |
| Approach                        |      | 361                      | 3.0  | 0.183         | 4.3               | LOS A            | 1.0                            | 7.2        | 0.27         | 0.42                | 0.27             | 56.0               |
| East: Buitekant Street          |      |                          |      |               |                   |                  |                                |            |              |                     |                  |                    |
| 4                               | L2   | 2                        | 3.0  | 0.019         | 5.9               | LOS A            | 0.1                            | 0.6        | 0.48         | 0.63                | 0.48             | 51.5               |
| 5                               | T1   | 3                        | 3.0  | 0.019         | 5.9               | LOS A            | 0.1                            | 0.6        | 0.48         | 0.63                | 0.48             | 53.2               |
| 6                               | R2   | 11                       | 3.0  | 0.019         | 11.0              | LOS B            | 0.1                            | 0.6        | 0.48         | 0.63                | 0.48             | 53.0               |
| Approach                        |      | 16                       | 3.0  | 0.019         | 9.3               | LOS A            | 0.1                            | 0.6        | 0.48         | 0.63                | 0.48             | 52.8               |
| North: Main Road                |      |                          |      |               |                   |                  |                                |            |              |                     |                  |                    |
| 7                               | L2   | 4                        | 3.0  | 0.082         | 4.3               | LOS A            | 0.4                            | 3.0        | 0.30         | 0.41                | 0.30             | 54.8               |
| 8                               | T1   | 227                      | 3.0  | 0.171         | 4.4               | LOS A            | 1.0                            | 7.1        | 0.29         | 0.47                | 0.29             | 55.3               |
| 9                               | R2   | 93                       | 3.0  | 0.171         | 9.5               | LOS A            | 1.0                            | 7.1        | 0.28         | 0.50                | 0.28             | 55.2               |
| Approach                        |      | 324                      | 3.0  | 0.171         | 5.8               | LOS A            | 1.0                            | 7.1        | 0.29         | 0.48                | 0.29             | 55.2               |
| West: Buitekant Street          |      |                          |      |               |                   |                  |                                |            |              |                     |                  |                    |
| 10                              | L2   | 135                      | 3.0  | 0.253         | 5.7               | LOS A            | 1.4                            | 10.1       | 0.50         | 0.65                | 0.50             | 52.5               |
| 11                              | T1   | 3                        | 3.0  | 0.253         | 5.7               | LOS A            | 1.4                            | 10.1       | 0.50         | 0.65                | 0.50             | 54.2               |
| 12                              | R2   | 99                       | 3.0  | 0.253         | 10.8              | LOS B            | 1.4                            | 10.1       | 0.50         | 0.65                | 0.50             | 54.1               |
| Approach                        |      | 237                      | 3.0  | 0.253         | 7.9               | LOS A            | 1.4                            | 10.1       | 0.50         | 0.65                | 0.50             | 53.2               |
| All Vehicles                    |      | 938                      | 3.0  | 0.253         | 5.8               | LOS A            | 1.4                            | 10.1       | 0.34         | 0.50                | 0.34             | 54.9               |

## MOVEMENT SUMMARY

### Site: 1 [Main/Buitekant 2021 Base + Dev PM - Proposed]

New Site  
Site Category: (None)  
Roundabout

| Movement Performance - Vehicles |      |                          |      |               |                   |                  |                                |            |              |                     |                  |                    |
|---------------------------------|------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | 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 | Aver. No. Cycles | Average Speed km/h |
| South: Main Road                |      |                          |      |               |                   |                  |                                |            |              |                     |                  |                    |
| 1                               | L2   | 152                      | 3.0  | 0.142         | 4.6               | LOS A            | 0.7                            | 5.3        | 0.37         | 0.49                | 0.37             | 55.0               |
| 2                               | T1   | 286                      | 3.0  | 0.220         | 4.6               | LOS A            | 1.3                            | 9.1        | 0.36         | 0.45                | 0.36             | 55.7               |
| 3                               | R2   | 5                        | 3.0  | 0.220         | 9.9               | LOS A            | 1.3                            | 9.1        | 0.36         | 0.45                | 0.36             | 56.0               |
| Approach                        |      | 443                      | 3.0  | 0.220         | 4.6               | LOS A            | 1.3                            | 9.1        | 0.36         | 0.47                | 0.36             | 55.5               |
| East: Buitekant Street          |      |                          |      |               |                   |                  |                                |            |              |                     |                  |                    |
| 4                               | L2   | 3                        | 3.0  | 0.019         | 6.6               | LOS A            | 0.1                            | 0.6        | 0.55         | 0.64                | 0.55             | 51.8               |
| 5                               | T1   | 5                        | 3.0  | 0.019         | 6.6               | LOS A            | 0.1                            | 0.6        | 0.55         | 0.64                | 0.55             | 53.5               |
| 6                               | R2   | 6                        | 3.0  | 0.019         | 11.7              | LOS B            | 0.1                            | 0.6        | 0.55         | 0.64                | 0.55             | 53.3               |
| Approach                        |      | 15                       | 3.0  | 0.019         | 8.8               | LOS A            | 0.1                            | 0.6        | 0.55         | 0.64                | 0.55             | 53.0               |
| North: Main Road                |      |                          |      |               |                   |                  |                                |            |              |                     |                  |                    |
| 7                               | L2   | 15                       | 3.0  | 0.118         | 4.5               | LOS A            | 0.6                            | 4.5        | 0.35         | 0.44                | 0.35             | 54.6               |
| 8                               | T1   | 283                      | 3.0  | 0.247         | 4.6               | LOS A            | 1.5                            | 11.0       | 0.34         | 0.50                | 0.34             | 54.9               |
| 9                               | R2   | 158                      | 3.0  | 0.247         | 9.7               | LOS A            | 1.5                            | 11.0       | 0.34         | 0.54                | 0.34             | 54.6               |
| Approach                        |      | 456                      | 3.0  | 0.247         | 6.3               | LOS A            | 1.5                            | 11.0       | 0.34         | 0.51                | 0.34             | 54.8               |
| West: Buitekant Street          |      |                          |      |               |                   |                  |                                |            |              |                     |                  |                    |
| 10                              | L2   | 98                       | 3.0  | 0.250         | 5.9               | LOS A            | 1.4                            | 10.1       | 0.53         | 0.68                | 0.53             | 51.9               |
| 11                              | T1   | 2                        | 3.0  | 0.250         | 5.9               | LOS A            | 1.4                            | 10.1       | 0.53         | 0.68                | 0.53             | 53.6               |
| 12                              | R2   | 126                      | 3.0  | 0.250         | 11.0              | LOS B            | 1.4                            | 10.1       | 0.53         | 0.68                | 0.53             | 53.5               |
| Approach                        |      | 226                      | 3.0  | 0.250         | 8.8               | LOS A            | 1.4                            | 10.1       | 0.53         | 0.68                | 0.53             | 52.8               |
| All Vehicles                    |      | 1140                     | 3.0  | 0.250         | 6.2               | LOS A            | 1.5                            | 11.0       | 0.39         | 0.53                | 0.39             | 54.6               |

## MOVEMENT SUMMARY

### Site: 1 [Main/Buitekant 2026 AM - Proposed]

New Site  
Site Category: (None)  
Roundabout

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                                |                  |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Main Road                |      |                    |            |               |                   |                  |                                |                  |              |                     |                  |                    |
| 1                               | L2   | 102                | 3.0        | 0.098         | 4.3               | LOS A            | 0.5                            | 3.5              | 0.29         | 0.45                | 0.29             | 55.4               |
| 2                               | T1   | 269                | 3.0        | 0.192         | 4.3               | LOS A            | 1.1                            | 7.6              | 0.27         | 0.41                | 0.27             | 56.2               |
| 3                               | R2   | 2                  | 3.0        | 0.192         | 9.5               | LOS A            | 1.1                            | 7.6              | 0.27         | 0.41                | 0.27             | 56.6               |
| Approach                        |      | 374                | 3.0        | 0.192         | 4.3               | LOS A            | 1.1                            | 7.6              | 0.28         | 0.42                | 0.28             | 56.0               |
| East: Buitekant Street          |      |                    |            |               |                   |                  |                                |                  |              |                     |                  |                    |
| 4                               | L2   | 2                  | 3.0        | 0.019         | 5.9               | LOS A            | 0.1                            | 0.6              | 0.49         | 0.63                | 0.49             | 51.5               |
| 5                               | T1   | 3                  | 3.0        | 0.019         | 5.9               | LOS A            | 0.1                            | 0.6              | 0.49         | 0.63                | 0.49             | 53.1               |
| 6                               | R2   | 11                 | 3.0        | 0.019         | 11.0              | LOS B            | 0.1                            | 0.6              | 0.49         | 0.63                | 0.49             | 53.0               |
| Approach                        |      | 16                 | 3.0        | 0.019         | 9.3               | LOS A            | 0.1                            | 0.6              | 0.49         | 0.63                | 0.49             | 52.8               |
| North: Main Road                |      |                    |            |               |                   |                  |                                |                  |              |                     |                  |                    |
| 7                               | L2   | 4                  | 3.0        | 0.085         | 4.3               | LOS A            | 0.4                            | 3.2              | 0.30         | 0.41                | 0.30             | 54.8               |
| 8                               | T1   | 239                | 3.0        | 0.178         | 4.4               | LOS A            | 1.0                            | 7.5              | 0.29         | 0.47                | 0.29             | 55.3               |
| 9                               | R2   | 93                 | 3.0        | 0.178         | 9.5               | LOS A            | 1.0                            | 7.5              | 0.28         | 0.50                | 0.28             | 55.2               |
| Approach                        |      | 336                | 3.0        | 0.178         | 5.8               | LOS A            | 1.0                            | 7.5              | 0.29         | 0.48                | 0.29             | 55.3               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                                |                  |              |                     |                  |                    |
| 10                              | L2   | 135                | 3.0        | 0.257         | 5.8               | LOS A            | 1.4                            | 10.3             | 0.51         | 0.66                | 0.51             | 52.4               |
| 11                              | T1   | 3                  | 3.0        | 0.257         | 5.8               | LOS A            | 1.4                            | 10.3             | 0.51         | 0.66                | 0.51             | 54.2               |
| 12                              | R2   | 99                 | 3.0        | 0.257         | 10.9              | LOS B            | 1.4                            | 10.3             | 0.51         | 0.66                | 0.51             | 54.0               |
| Approach                        |      | 237                | 3.0        | 0.257         | 8.0               | LOS A            | 1.4                            | 10.3             | 0.51         | 0.66                | 0.51             | 53.1               |
| All Vehicles                    |      | 962                | 3.0        | 0.257         | 5.8               | LOS A            | 1.4                            | 10.3             | 0.34         | 0.50                | 0.34             | 54.9               |

## MOVEMENT SUMMARY

### Site: 1 [Main/Buitekant 2026 PM - Proposed]

New Site  
Site Category: (None)  
Roundabout

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                                |                  |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Main Road                |      |                    |            |               |                   |                  |                                |                  |              |                     |                  |                    |
| 1                               | L2   | 152                | 3.0        | 0.144         | 4.6               | LOS A            | 0.8                            | 5.4              | 0.37         | 0.49                | 0.37             | 55.0               |
| 2                               | T1   | 301                | 3.0        | 0.231         | 4.6               | LOS A            | 1.3                            | 9.7              | 0.37         | 0.45                | 0.37             | 55.7               |
| 3                               | R2   | 5                  | 3.0        | 0.231         | 9.9               | LOS A            | 1.3                            | 9.7              | 0.37         | 0.45                | 0.37             | 56.0               |
| Approach                        |      | 458                | 3.0        | 0.231         | 4.7               | LOS A            | 1.3                            | 9.7              | 0.37         | 0.47                | 0.37             | 55.5               |
| East: Buitekant Street          |      |                    |            |               |                   |                  |                                |                  |              |                     |                  |                    |
| 4                               | L2   | 3                  | 3.0        | 0.020         | 6.7               | LOS A            | 0.1                            | 0.6              | 0.56         | 0.64                | 0.56             | 51.7               |
| 5                               | T1   | 5                  | 3.0        | 0.020         | 6.6               | LOS A            | 0.1                            | 0.6              | 0.56         | 0.64                | 0.56             | 53.4               |
| 6                               | R2   | 6                  | 3.0        | 0.020         | 11.7              | LOS B            | 0.1                            | 0.6              | 0.56         | 0.64                | 0.56             | 53.3               |
| Approach                        |      | 15                 | 3.0        | 0.020         | 8.8               | LOS A            | 0.1                            | 0.6              | 0.56         | 0.64                | 0.56             | 53.0               |
| North: Main Road                |      |                    |            |               |                   |                  |                                |                  |              |                     |                  |                    |
| 7                               | L2   | 15                 | 3.0        | 0.122         | 4.5               | LOS A            | 0.7                            | 4.7              | 0.35         | 0.44                | 0.35             | 54.6               |
| 8                               | T1   | 298                | 3.0        | 0.254         | 4.6               | LOS A            | 1.6                            | 11.5             | 0.35         | 0.50                | 0.35             | 54.9               |
| 9                               | R2   | 158                | 3.0        | 0.254         | 9.7               | LOS A            | 1.6                            | 11.5             | 0.35         | 0.54                | 0.35             | 54.7               |
| Approach                        |      | 471                | 3.0        | 0.254         | 6.3               | LOS A            | 1.6                            | 11.5             | 0.35         | 0.51                | 0.35             | 54.8               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                                |                  |              |                     |                  |                    |
| 10                              | L2   | 98                 | 3.0        | 0.253         | 6.0               | LOS A            | 1.4                            | 10.3             | 0.54         | 0.69                | 0.54             | 51.8               |
| 11                              | T1   | 2                  | 3.0        | 0.253         | 6.0               | LOS A            | 1.4                            | 10.3             | 0.54         | 0.69                | 0.54             | 53.5               |
| 12                              | R2   | 126                | 3.0        | 0.253         | 11.1              | LOS B            | 1.4                            | 10.3             | 0.54         | 0.69                | 0.54             | 53.4               |
| Approach                        |      | 226                | 3.0        | 0.253         | 8.9               | LOS A            | 1.4                            | 10.3             | 0.54         | 0.69                | 0.54             | 52.7               |
| All Vehicles                    |      | 1169               | 3.0        | 0.254         | 6.2               | LOS A            | 1.6                            | 11.5             | 0.39         | 0.53                | 0.39             | 54.6               |

## Buitekant Street and Excelsior Street

### MOVEMENT SUMMARY

**STOP Site: 2 [Buitekant/Excelsior 2021 Base AM]**

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
|---------------------------------|------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|------------------|---------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|                                 |      | Total veh/h  | HV % | v/c       | sec           |                  | Vehicles veh      | Distance m |              |                     |                  | km/h          |
| East: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 5                               | T1   | 60           | 3.0  | 0.089     | 0.4           | LOS A            | 0.4               | 3.0        | 0.24         | 0.35                | 0.24             | 56.1          |
| 6                               | R2   | 94           | 0.0  | 0.089     | 5.9           | LOS A            | 0.4               | 3.0        | 0.24         | 0.35                | 0.24             | 54.1          |
| Approach                        |      | 154          | 1.2  | 0.089     | 3.7           | NA               | 0.4               | 3.0        | 0.24         | 0.35                | 0.24             | 54.8          |
| North: Excelsior Street         |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 7                               | L2   | 1            | 0.0  | 0.002     | 8.4           | LOS A            | 0.0               | 0.0        | 0.22         | 0.86                | 0.22             | 51.7          |
| 9                               | R2   | 1            | 0.0  | 0.002     | 8.6           | LOS A            | 0.0               | 0.0        | 0.22         | 0.86                | 0.22             | 51.2          |
| Approach                        |      | 2            | 0.0  | 0.002     | 8.5           | LOS A            | 0.0               | 0.0        | 0.22         | 0.86                | 0.22             | 51.5          |
| West: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 10                              | L2   | 29           | 0.0  | 0.069     | 5.5           | LOS A            | 0.0               | 0.0        | 0.00         | 0.13                | 0.00             | 57.2          |
| 11                              | T1   | 102          | 3.0  | 0.069     | 0.0           | LOS A            | 0.0               | 0.0        | 0.00         | 0.13                | 0.00             | 58.8          |
| Approach                        |      | 132          | 2.3  | 0.069     | 1.2           | NA               | 0.0               | 0.0        | 0.00         | 0.13                | 0.00             | 58.4          |
| All Vehicles                    |      | 287          | 1.7  | 0.089     | 2.6           | NA               | 0.4               | 3.0        | 0.13         | 0.26                | 0.13             | 56.4          |

### MOVEMENT SUMMARY

**STOP Site: 2 [Buitekant/Excelsior 2021 Base PM]**

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
|---------------------------------|------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|------------------|---------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|                                 |      | Total veh/h  | HV % | v/c       | sec           |                  | Vehicles veh      | Distance m |              |                     |                  | km/h          |
| East: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 5                               | T1   | 85           | 3.0  | 0.106     | 0.5           | LOS A            | 0.5               | 3.6        | 0.29         | 0.31                | 0.29             | 56.3          |
| 6                               | R2   | 94           | 0.0  | 0.106     | 6.1           | LOS A            | 0.5               | 3.6        | 0.29         | 0.31                | 0.29             | 54.3          |
| Approach                        |      | 179          | 1.4  | 0.106     | 3.5           | NA               | 0.5               | 3.6        | 0.29         | 0.31                | 0.29             | 55.2          |
| North: Excelsior Street         |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 7                               | L2   | 1            | 0.0  | 0.002     | 8.6           | LOS A            | 0.0               | 0.1        | 0.30         | 0.84                | 0.30             | 51.5          |
| 9                               | R2   | 1            | 0.0  | 0.002     | 9.1           | LOS A            | 0.0               | 0.1        | 0.30         | 0.84                | 0.30             | 51.1          |
| Approach                        |      | 2            | 0.0  | 0.002     | 8.9           | LOS A            | 0.0               | 0.1        | 0.30         | 0.84                | 0.30             | 51.3          |
| West: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 10                              | L2   | 29           | 0.0  | 0.106     | 5.6           | LOS A            | 0.0               | 0.0        | 0.00         | 0.09                | 0.00             | 57.6          |
| 11                              | T1   | 173          | 3.0  | 0.106     | 0.0           | LOS A            | 0.0               | 0.0        | 0.00         | 0.09                | 0.00             | 59.2          |
| Approach                        |      | 202          | 2.6  | 0.106     | 0.8           | NA               | 0.0               | 0.0        | 0.00         | 0.09                | 0.00             | 58.9          |
| All Vehicles                    |      | 383          | 2.0  | 0.106     | 2.1           | NA               | 0.5               | 3.6        | 0.14         | 0.20                | 0.14             | 57.1          |

## MOVEMENT SUMMARY

**STOP Site: 2 [Buitekant/Excelsior 2021 Base + Dev AM - Existing]**

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
|---------------------------------|------|-----------------------|---------------|------------------|----------------------|------------------|--------------------------------------|---------------|--------------|---------------------|------------------|-----------------------|
| Mov ID                          | Turn | Demand Total<br>veh/h | Flows HV<br>% | Deg. Satn<br>v/c | Average Delay<br>sec | Level of Service | 95% Back of Queue<br>Vehicles<br>veh | Distance<br>m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed<br>km/h |
| East: Buitekant Street          |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 5                               | T1   | 104                   | 3.0           | 0.119            | 0.7                  | LOS A            | 0.6                                  | 4.0           | 0.33         | 0.29                | 0.33             | 56.3                  |
| 6                               | R2   | 94                    | 0.0           | 0.119            | 6.4                  | LOS A            | 0.6                                  | 4.0           | 0.33         | 0.29                | 0.33             | 54.3                  |
| Approach                        |      | 198                   | 1.6           | 0.119            | 3.4                  | NA               | 0.6                                  | 4.0           | 0.33         | 0.29                | 0.33             | 55.4                  |
| North: Excelsior Street         |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 7                               | L2   | 1                     | 0.0           | 0.002            | 8.9                  | LOS A            | 0.0                                  | 0.1           | 0.36         | 0.83                | 0.36             | 51.3                  |
| 9                               | R2   | 1                     | 0.0           | 0.002            | 9.6                  | LOS A            | 0.0                                  | 0.1           | 0.36         | 0.83                | 0.36             | 50.9                  |
| Approach                        |      | 2                     | 0.0           | 0.002            | 9.3                  | LOS A            | 0.0                                  | 0.1           | 0.36         | 0.83                | 0.36             | 51.1                  |
| West: Buitekant Street          |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 10                              | L2   | 29                    | 0.0           | 0.140            | 5.6                  | LOS A            | 0.0                                  | 0.0           | 0.00         | 0.07                | 0.00             | 57.8                  |
| 11                              | T1   | 237                   | 3.0           | 0.140            | 0.0                  | LOS A            | 0.0                                  | 0.0           | 0.00         | 0.07                | 0.00             | 59.4                  |
| Approach                        |      | 266                   | 2.7           | 0.140            | 0.6                  | NA               | 0.0                                  | 0.0           | 0.00         | 0.07                | 0.00             | 59.2                  |
| All Vehicles                    |      | 466                   | 2.2           | 0.140            | 1.8                  | NA               | 0.6                                  | 4.0           | 0.14         | 0.17                | 0.14             | 57.5                  |

## MOVEMENT SUMMARY

**STOP Site: 2 [Buitekant/Excelsior 2021 Base + Dev PM - Existing]**

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
|---------------------------------|------|-----------------------|---------------|------------------|----------------------|------------------|--------------------------------------|---------------|--------------|---------------------|------------------|-----------------------|
| Mov ID                          | Turn | Demand Total<br>veh/h | Flows HV<br>% | Deg. Satn<br>v/c | Average Delay<br>sec | Level of Service | 95% Back of Queue<br>Vehicles<br>veh | Distance<br>m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed<br>km/h |
| East: Buitekant Street          |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 5                               | T1   | 211                   | 3.0           | 0.179            | 0.5                  | LOS A            | 0.7                                  | 5.3           | 0.27         | 0.21                | 0.27             | 57.2                  |
| 6                               | R2   | 104                   | 0.0           | 0.179            | 6.4                  | LOS A            | 0.7                                  | 5.3           | 0.27         | 0.21                | 0.27             | 55.2                  |
| Approach                        |      | 315                   | 2.0           | 0.179            | 2.5                  | NA               | 0.7                                  | 5.3           | 0.27         | 0.21                | 0.27             | 56.5                  |
| North: Excelsior Street         |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 7                               | L2   | 1                     | 0.0           | 0.003            | 8.8                  | LOS A            | 0.0                                  | 0.1           | 0.37         | 0.83                | 0.37             | 51.1                  |
| 9                               | R2   | 1                     | 0.0           | 0.003            | 10.4                 | LOS B            | 0.0                                  | 0.1           | 0.37         | 0.83                | 0.37             | 50.6                  |
| Approach                        |      | 2                     | 0.0           | 0.003            | 9.6                  | LOS A            | 0.0                                  | 0.1           | 0.37         | 0.83                | 0.37             | 50.9                  |
| West: Buitekant Street          |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 10                              | L2   | 26                    | 0.0           | 0.132            | 5.6                  | LOS A            | 0.0                                  | 0.0           | 0.00         | 0.06                | 0.00             | 57.8                  |
| 11                              | T1   | 226                   | 3.0           | 0.132            | 0.0                  | LOS A            | 0.0                                  | 0.0           | 0.00         | 0.06                | 0.00             | 59.4                  |
| Approach                        |      | 253                   | 2.7           | 0.132            | 0.6                  | NA               | 0.0                                  | 0.0           | 0.00         | 0.06                | 0.00             | 59.2                  |
| All Vehicles                    |      | 569                   | 2.3           | 0.179            | 1.7                  | NA               | 0.7                                  | 5.3           | 0.15         | 0.15                | 0.15             | 57.7                  |

## MOVEMENT SUMMARY

### Site: 2 [Buitekant/Excelsior 2026 AM - Existing]

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                   |            |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|-------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
|                                 |      |                    |            |               |                   |                  | Vehicles veh      | Distance m |              |                     |                  |                    |
| East: Buitekant Street          |      |                    |            |               |                   |                  |                   |            |              |                     |                  |                    |
| 5                               | T1   | 104                | 3.0        | 0.119         | 0.7               | LOS A            | 0.6               | 4.0        | 0.33         | 0.29                | 0.33             | 56.3               |
| 6                               | R2   | 94                 | 0.0        | 0.119         | 6.4               | LOS A            | 0.6               | 4.0        | 0.33         | 0.29                | 0.33             | 54.3               |
| Approach                        |      | 198                | 1.6        | 0.119         | 3.4               | NA               | 0.6               | 4.0        | 0.33         | 0.29                | 0.33             | 55.4               |
| North: Excelsior Street         |      |                    |            |               |                   |                  |                   |            |              |                     |                  |                    |
| 7                               | L2   | 1                  | 0.0        | 0.002         | 8.9               | LOS A            | 0.0               | 0.1        | 0.36         | 0.83                | 0.36             | 51.3               |
| 9                               | R2   | 1                  | 0.0        | 0.002         | 9.6               | LOS A            | 0.0               | 0.1        | 0.36         | 0.83                | 0.36             | 50.9               |
| Approach                        |      | 2                  | 0.0        | 0.002         | 9.3               | LOS A            | 0.0               | 0.1        | 0.36         | 0.83                | 0.36             | 51.1               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                   |            |              |                     |                  |                    |
| 10                              | L2   | 29                 | 0.0        | 0.140         | 5.6               | LOS A            | 0.0               | 0.0        | 0.00         | 0.07                | 0.00             | 57.8               |
| 11                              | T1   | 237                | 3.0        | 0.140         | 0.0               | LOS A            | 0.0               | 0.0        | 0.00         | 0.07                | 0.00             | 59.4               |
| Approach                        |      | 266                | 2.7        | 0.140         | 0.6               | NA               | 0.0               | 0.0        | 0.00         | 0.07                | 0.00             | 59.2               |
| All Vehicles                    |      | 466                | 2.2        | 0.140         | 1.8               | NA               | 0.6               | 4.0        | 0.14         | 0.17                | 0.14             | 57.5               |

## MOVEMENT SUMMARY

### Site: 2 [Buitekant/Excelsior 2026 PM - Existing]

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                   |            |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|-------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
|                                 |      |                    |            |               |                   |                  | Vehicles veh      | Distance m |              |                     |                  |                    |
| East: Buitekant Street          |      |                    |            |               |                   |                  |                   |            |              |                     |                  |                    |
| 5                               | T1   | 211                | 3.0        | 0.179         | 0.5               | LOS A            | 0.7               | 5.3        | 0.27         | 0.21                | 0.27             | 57.2               |
| 6                               | R2   | 104                | 0.0        | 0.179         | 6.4               | LOS A            | 0.7               | 5.3        | 0.27         | 0.21                | 0.27             | 55.2               |
| Approach                        |      | 315                | 2.0        | 0.179         | 2.5               | NA               | 0.7               | 5.3        | 0.27         | 0.21                | 0.27             | 56.5               |
| North: Excelsior Street         |      |                    |            |               |                   |                  |                   |            |              |                     |                  |                    |
| 7                               | L2   | 1                  | 0.0        | 0.003         | 8.8               | LOS A            | 0.0               | 0.1        | 0.37         | 0.83                | 0.37             | 51.1               |
| 9                               | R2   | 1                  | 0.0        | 0.003         | 10.4              | LOS B            | 0.0               | 0.1        | 0.37         | 0.83                | 0.37             | 50.6               |
| Approach                        |      | 2                  | 0.0        | 0.003         | 9.6               | LOS A            | 0.0               | 0.1        | 0.37         | 0.83                | 0.37             | 50.9               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                   |            |              |                     |                  |                    |
| 10                              | L2   | 26                 | 0.0        | 0.132         | 5.6               | LOS A            | 0.0               | 0.0        | 0.00         | 0.06                | 0.00             | 57.8               |
| 11                              | T1   | 226                | 3.0        | 0.132         | 0.0               | LOS A            | 0.0               | 0.0        | 0.00         | 0.06                | 0.00             | 59.4               |
| Approach                        |      | 253                | 2.7        | 0.132         | 0.6               | NA               | 0.0               | 0.0        | 0.00         | 0.06                | 0.00             | 59.2               |
| All Vehicles                    |      | 569                | 2.3        | 0.179         | 1.7               | NA               | 0.7               | 5.3        | 0.15         | 0.15                | 0.15             | 57.7               |

## Buitekant Street and Fynbos Street

### MOVEMENT SUMMARY

**STOP** Site: 3 [Buitekant/Fynbos 2021 Base AM]

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |              |            |               |                   |                  |                                |            |              |                     |                  |                    |
|---------------------------------|------|--------------|------------|---------------|-------------------|------------------|--------------------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Fynbos Street            |      |              |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 1                               | L2   | 12           | 3.0        | 0.132         | 12.8              | LOS B            | 0.4                            | 3.0        | 0.76         | 1.27                | 1.91             | 49.6               |
| 3                               | R2   | 71           | 3.0        | 0.132         | 12.3              | LOS B            | 0.4                            | 3.0        | 0.76         | 1.27                | 1.91             | 49.2               |
| Approach                        |      | 82           | 3.0        | 0.132         | 12.3              | LOS B            | 0.4                            | 3.0        | 0.76         | 1.27                | 1.91             | 49.2               |
| East: Buitekant Street          |      |              |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 4                               | L2   | 24           | 3.0        | 0.167         | 18.2              | LOS C            | 0.6                            | 4.2        | 0.91         | 1.28                | 2.10             | 46.5               |
| 5                               | T1   | 36           | 3.0        | 0.167         | 17.8              | LOS C            | 0.6                            | 4.2        | 0.91         | 1.28                | 2.10             | 46.3               |
| Approach                        |      | 60           | 3.0        | 0.167         | 18.0              | LOS C            | 0.6                            | 4.2        | 0.91         | 1.28                | 2.10             | 46.4               |
| West: Buitekant Street          |      |              |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 11                              | T1   | 61           | 3.0        | 0.142         | 14.5              | LOS B            | 0.5                            | 3.4        | 0.84         | 1.28                | 2.00             | 48.3               |
| 12                              | R2   | 7            | 3.0        | 0.142         | 14.3              | LOS B            | 0.5                            | 3.4        | 0.84         | 1.28                | 2.00             | 48.1               |
| Approach                        |      | 68           | 3.0        | 0.142         | 14.5              | LOS B            | 0.5                            | 3.4        | 0.84         | 1.28                | 2.00             | 48.3               |
| All Vehicles                    |      | 211          | 3.0        | 0.167         | 14.6              | LOS B            | 0.6                            | 4.2        | 0.83         | 1.27                | 1.99             | 48.1               |

### MOVEMENT SUMMARY

**STOP** Site: 3 [Buitekant/Fynbos 2021 Base PM]

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |              |            |               |                   |                  |                                |            |              |                     |                  |                    |
|---------------------------------|------|--------------|------------|---------------|-------------------|------------------|--------------------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Fynbos Street            |      |              |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 1                               | L2   | 44           | 3.0        | 0.237         | 12.7              | LOS B            | 0.8                            | 5.8        | 0.73         | 1.30                | 2.04             | 49.6               |
| 3                               | R2   | 125          | 3.0        | 0.237         | 12.2              | LOS B            | 0.8                            | 5.8        | 0.73         | 1.30                | 2.04             | 49.2               |
| Approach                        |      | 169          | 3.0        | 0.237         | 12.3              | LOS B            | 0.8                            | 5.8        | 0.73         | 1.30                | 2.04             | 49.3               |
| East: Buitekant Street          |      |              |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 4                               | L2   | 32           | 3.0        | 0.256         | 20.7              | LOS C            | 1.0                            | 7.0        | 0.94         | 1.31                | 2.27             | 45.1               |
| 5                               | T1   | 54           | 3.0        | 0.256         | 20.3              | LOS C            | 1.0                            | 7.0        | 0.94         | 1.31                | 2.27             | 44.9               |
| Approach                        |      | 85           | 3.0        | 0.256         | 20.5              | LOS C            | 1.0                            | 7.0        | 0.94         | 1.31                | 2.27             | 45.0               |
| West: Buitekant Street          |      |              |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 11                              | T1   | 74           | 3.0        | 0.193         | 15.6              | LOS C            | 0.7                            | 4.8        | 0.86         | 1.29                | 2.10             | 47.7               |
| 12                              | R2   | 14           | 3.0        | 0.193         | 15.4              | LOS C            | 0.7                            | 4.8        | 0.86         | 1.29                | 2.10             | 47.5               |
| Approach                        |      | 87           | 3.0        | 0.193         | 15.6              | LOS C            | 0.7                            | 4.8        | 0.86         | 1.29                | 2.10             | 47.6               |
| All Vehicles                    |      | 342          | 3.0        | 0.256         | 15.2              | LOS C            | 1.0                            | 7.0        | 0.82         | 1.30                | 2.11             | 47.7               |

## MOVEMENT SUMMARY

**STOP Site: 3 [Buitekant/Fynbos 2021 Base + Dev AM - Existing]**

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |                       |               |                  |                      |                  |                                      |                           |              |                     |                  |                       |
|---------------------------------|------|-----------------------|---------------|------------------|----------------------|------------------|--------------------------------------|---------------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID                          | Turn | Demand Total<br>veh/h | Flows HV<br>% | Deg. Satn<br>v/c | Average Delay<br>sec | Level of Service | 95% Back of Queue<br>Vehicles<br>veh | of Queue<br>Distance<br>m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed<br>km/h |
| South: Fynbos Street            |      |                       |               |                  |                      |                  |                                      |                           |              |                     |                  |                       |
| 1                               | L2   | 12                    | 3.0           | 0.195            | 16.8                 | LOS C            | 0.7                                  | 5.0                       | 0.88         | 1.28                | 2.12             | 47.3                  |
| 3                               | R2   | 71                    | 3.0           | 0.195            | 16.2                 | LOS C            | 0.7                                  | 5.0                       | 0.88         | 1.28                | 2.12             | 46.8                  |
| Approach                        |      | 82                    | 3.0           | 0.195            | 16.3                 | LOS C            | 0.7                                  | 5.0                       | 0.88         | 1.28                | 2.12             | 46.9                  |
| East: Buitekant Street          |      |                       |               |                  |                      |                  |                                      |                           |              |                     |                  |                       |
| 4                               | L2   | 24                    | 3.0           | 0.209            | 15.3                 | LOS C            | 0.7                                  | 5.3                       | 0.84         | 1.30                | 2.10             | 48.3                  |
| 5                               | T1   | 80                    | 3.0           | 0.209            | 14.9                 | LOS B            | 0.7                                  | 5.3                       | 0.84         | 1.30                | 2.10             | 48.0                  |
| Approach                        |      | 104                   | 3.0           | 0.209            | 15.0                 | LOS B            | 0.7                                  | 5.3                       | 0.84         | 1.30                | 2.10             | 48.1                  |
| West: Buitekant Street          |      |                       |               |                  |                      |                  |                                      |                           |              |                     |                  |                       |
| 11                              | T1   | 196                   | 3.0           | 0.322            | 14.2                 | LOS B            | 1.2                                  | 8.8                       | 0.81         | 1.36                | 2.27             | 48.5                  |
| 12                              | R2   | 7                     | 3.0           | 0.322            | 14.0                 | LOS B            | 1.2                                  | 8.8                       | 0.81         | 1.36                | 2.27             | 48.3                  |
| Approach                        |      | 203                   | 3.0           | 0.322            | 14.2                 | LOS B            | 1.2                                  | 8.8                       | 0.81         | 1.36                | 2.27             | 48.5                  |
| All Vehicles                    |      | 389                   | 3.0           | 0.322            | 14.9                 | LOS B            | 1.2                                  | 8.8                       | 0.83         | 1.33                | 2.19             | 48.0                  |

## MOVEMENT SUMMARY

**STOP Site: 3 [Buitekant/Fynbos 2021 Base + Dev PM - Existing]**

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |                       |               |                  |                      |                  |                                      |                           |              |                     |                  |                       |
|---------------------------------|------|-----------------------|---------------|------------------|----------------------|------------------|--------------------------------------|---------------------------|--------------|---------------------|------------------|-----------------------|
| Mov ID                          | Turn | Demand Total<br>veh/h | Flows HV<br>% | Deg. Satn<br>v/c | Average Delay<br>sec | Level of Service | 95% Back of Queue<br>Vehicles<br>veh | of Queue<br>Distance<br>m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed<br>km/h |
| South: Fynbos Street            |      |                       |               |                  |                      |                  |                                      |                           |              |                     |                  |                       |
| 1                               | L2   | 44                    | 3.0           | 0.318            | 16.0                 | LOS C            | 1.2                                  | 8.8                       | 0.86         | 1.33                | 2.31             | 47.7                  |
| 3                               | R2   | 125                   | 3.0           | 0.318            | 15.5                 | LOS C            | 1.2                                  | 8.8                       | 0.86         | 1.33                | 2.31             | 47.2                  |
| Approach                        |      | 169                   | 3.0           | 0.318            | 15.6                 | LOS C            | 1.2                                  | 8.8                       | 0.86         | 1.33                | 2.31             | 47.3                  |
| East: Buitekant Street          |      |                       |               |                  |                      |                  |                                      |                           |              |                     |                  |                       |
| 4                               | L2   | 32                    | 3.0           | 0.410            | 17.9                 | LOS C            | 1.8                                  | 12.6                      | 0.89         | 1.39                | 2.56             | 46.7                  |
| 5                               | T1   | 179                   | 3.0           | 0.410            | 17.6                 | LOS C            | 1.8                                  | 12.6                      | 0.89         | 1.39                | 2.56             | 46.5                  |
| Approach                        |      | 211                   | 3.0           | 0.410            | 17.7                 | LOS C            | 1.8                                  | 12.6                      | 0.89         | 1.39                | 2.56             | 46.5                  |
| West: Buitekant Street          |      |                       |               |                  |                      |                  |                                      |                           |              |                     |                  |                       |
| 11                              | T1   | 127                   | 3.0           | 0.265            | 15.0                 | LOS C            | 1.0                                  | 7.0                       | 0.84         | 1.33                | 2.19             | 48.0                  |
| 12                              | R2   | 14                    | 3.0           | 0.265            | 14.8                 | LOS B            | 1.0                                  | 7.0                       | 0.84         | 1.33                | 2.19             | 47.8                  |
| Approach                        |      | 141                   | 3.0           | 0.265            | 15.0                 | LOS B            | 1.0                                  | 7.0                       | 0.84         | 1.33                | 2.19             | 48.0                  |
| All Vehicles                    |      | 521                   | 3.0           | 0.410            | 16.3                 | LOS C            | 1.8                                  | 12.6                      | 0.87         | 1.36                | 2.38             | 47.2                  |



## MOVEMENT SUMMARY

**STOP Site: 3 [Buitekant/Fynbos 2026 AM - Existing]**

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
|---------------------------------|------|--------------|------|---------------|-------------------|------------------|-------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
|                                 |      | Total veh/h  | HV % |               |                   |                  | Vehicles veh      | Distance m |              |                     |                  |                    |
| South: Fynbos Street            |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 1                               | L2   | 12           | 3.0  | 0.195         | 16.8              | LOS C            | 0.7               | 5.0        | 0.88         | 1.28                | 2.12             | 47.3               |
| 3                               | R2   | 71           | 3.0  | 0.195         | 16.2              | LOS C            | 0.7               | 5.0        | 0.88         | 1.28                | 2.12             | 46.8               |
| Approach                        |      | 82           | 3.0  | 0.195         | 16.3              | LOS C            | 0.7               | 5.0        | 0.88         | 1.28                | 2.12             | 46.9               |
| East: Buitekant Street          |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 4                               | L2   | 24           | 3.0  | 0.209         | 15.3              | LOS C            | 0.7               | 5.3        | 0.84         | 1.30                | 2.10             | 48.3               |
| 5                               | T1   | 80           | 3.0  | 0.209         | 14.9              | LOS B            | 0.7               | 5.3        | 0.84         | 1.30                | 2.10             | 48.0               |
| Approach                        |      | 104          | 3.0  | 0.209         | 15.0              | LOS B            | 0.7               | 5.3        | 0.84         | 1.30                | 2.10             | 48.1               |
| West: Buitekant Street          |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 11                              | T1   | 196          | 3.0  | 0.322         | 14.2              | LOS B            | 1.2               | 8.8        | 0.81         | 1.36                | 2.27             | 48.5               |
| 12                              | R2   | 7            | 3.0  | 0.322         | 14.0              | LOS B            | 1.2               | 8.8        | 0.81         | 1.36                | 2.27             | 48.3               |
| Approach                        |      | 203          | 3.0  | 0.322         | 14.2              | LOS B            | 1.2               | 8.8        | 0.81         | 1.36                | 2.27             | 48.5               |
| All Vehicles                    |      | 389          | 3.0  | 0.322         | 14.9              | LOS B            | 1.2               | 8.8        | 0.83         | 1.33                | 2.19             | 48.0               |

## MOVEMENT SUMMARY

**STOP Site: 3 [Buitekant/Fynbos 2026 PM - Existing]**

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
|---------------------------------|------|--------------|------|---------------|-------------------|------------------|-------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
|                                 |      | Total veh/h  | HV % |               |                   |                  | Vehicles veh      | Distance m |              |                     |                  |                    |
| South: Fynbos Street            |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 1                               | L2   | 44           | 3.0  | 0.318         | 16.0              | LOS C            | 1.2               | 8.8        | 0.86         | 1.33                | 2.31             | 47.7               |
| 3                               | R2   | 125          | 3.0  | 0.318         | 15.5              | LOS C            | 1.2               | 8.8        | 0.86         | 1.33                | 2.31             | 47.2               |
| Approach                        |      | 169          | 3.0  | 0.318         | 15.6              | LOS C            | 1.2               | 8.8        | 0.86         | 1.33                | 2.31             | 47.3               |
| East: Buitekant Street          |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 4                               | L2   | 32           | 3.0  | 0.410         | 17.9              | LOS C            | 1.8               | 12.6       | 0.89         | 1.39                | 2.56             | 46.7               |
| 5                               | T1   | 179          | 3.0  | 0.410         | 17.6              | LOS C            | 1.8               | 12.6       | 0.89         | 1.39                | 2.56             | 46.5               |
| Approach                        |      | 211          | 3.0  | 0.410         | 17.7              | LOS C            | 1.8               | 12.6       | 0.89         | 1.39                | 2.56             | 46.5               |
| West: Buitekant Street          |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 11                              | T1   | 127          | 3.0  | 0.265         | 15.0              | LOS C            | 1.0               | 7.0        | 0.84         | 1.33                | 2.19             | 48.0               |
| 12                              | R2   | 14           | 3.0  | 0.265         | 14.8              | LOS B            | 1.0               | 7.0        | 0.84         | 1.33                | 2.19             | 47.8               |
| Approach                        |      | 141          | 3.0  | 0.265         | 15.0              | LOS B            | 1.0               | 7.0        | 0.84         | 1.33                | 2.19             | 48.0               |
| All Vehicles                    |      | 521          | 3.0  | 0.410         | 16.3              | LOS C            | 1.8               | 12.6       | 0.87         | 1.36                | 2.38             | 47.2               |

## Buitekant Street and Pastorie Street

### MOVEMENT SUMMARY

**STOP Site: 4 [Buitekant/Pastorie 2021 Base AM]**

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
|---------------------------------|------|-----------------------|---------------|------------------|----------------------|------------------|--------------------------------------|---------------|--------------|---------------------|------------------|-----------------------|
| Mov ID                          | Turn | Demand Total<br>veh/h | Flows HV<br>% | Deg. Satn<br>v/c | Average Delay<br>sec | Level of Service | 95% Back of Queue<br>Vehicles<br>veh | Distance<br>m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed<br>km/h |
| East: Buitekant Street          |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 5                               | T1   | 38                    | 3.0           | 0.024            | 0.0                  | LOS A            | 0.1                                  | 0.4           | 0.05         | 0.12                | 0.05             | 58.7                  |
| 6                               | R2   | 9                     | 0.0           | 0.024            | 5.6                  | LOS A            | 0.1                                  | 0.4           | 0.05         | 0.12                | 0.05             | 56.5                  |
| Approach                        |      | 47                    | 2.4           | 0.024            | 1.1                  | NA               | 0.1                                  | 0.4           | 0.05         | 0.12                | 0.05             | 58.3                  |
| North: Pastorie Street          |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 7                               | L2   | 26                    | 0.0           | 0.020            | 8.2                  | LOS A            | 0.1                                  | 0.5           | 0.12         | 0.91                | 0.12             | 51.8                  |
| 9                               | R2   | 1                     | 0.0           | 0.020            | 7.8                  | LOS A            | 0.1                                  | 0.5           | 0.12         | 0.91                | 0.12             | 51.3                  |
| Approach                        |      | 27                    | 0.0           | 0.020            | 8.1                  | LOS A            | 0.1                                  | 0.5           | 0.12         | 0.91                | 0.12             | 51.7                  |
| West: Buitekant Street          |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 10                              | L2   | 1                     | 0.0           | 0.023            | 5.5                  | LOS A            | 0.0                                  | 0.0           | 0.00         | 0.01                | 0.00             | 58.2                  |
| 11                              | T1   | 42                    | 3.0           | 0.023            | 0.0                  | LOS A            | 0.0                                  | 0.0           | 0.00         | 0.01                | 0.00             | 59.9                  |
| Approach                        |      | 43                    | 2.9           | 0.023            | 0.1                  | NA               | 0.0                                  | 0.0           | 0.00         | 0.01                | 0.00             | 59.8                  |
| All Vehicles                    |      | 118                   | 2.0           | 0.024            | 2.4                  | NA               | 0.1                                  | 0.5           | 0.05         | 0.27                | 0.05             | 57.1                  |

### MOVEMENT SUMMARY

**STOP Site: 4 [Buitekant/Pastorie 2021 Base PM]**

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
|---------------------------------|------|-----------------------|---------------|------------------|----------------------|------------------|--------------------------------------|---------------|--------------|---------------------|------------------|-----------------------|
| Mov ID                          | Turn | Demand Total<br>veh/h | Flows HV<br>% | Deg. Satn<br>v/c | Average Delay<br>sec | Level of Service | 95% Back of Queue<br>Vehicles<br>veh | Distance<br>m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed<br>km/h |
| East: Buitekant Street          |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 5                               | T1   | 69                    | 3.0           | 0.051            | 0.1                  | LOS A            | 0.2                                  | 1.1           | 0.08         | 0.17                | 0.08             | 58.1                  |
| 6                               | R2   | 28                    | 0.0           | 0.051            | 5.6                  | LOS A            | 0.2                                  | 1.1           | 0.08         | 0.17                | 0.08             | 56.0                  |
| Approach                        |      | 98                    | 2.1           | 0.051            | 1.7                  | NA               | 0.2                                  | 1.1           | 0.08         | 0.17                | 0.08             | 57.5                  |
| North: Pastorie Street          |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 7                               | L2   | 43                    | 0.0           | 0.032            | 8.2                  | LOS A            | 0.1                                  | 0.9           | 0.12         | 0.91                | 0.12             | 51.8                  |
| 9                               | R2   | 1                     | 0.0           | 0.032            | 8.1                  | LOS A            | 0.1                                  | 0.9           | 0.12         | 0.91                | 0.12             | 51.3                  |
| Approach                        |      | 44                    | 0.0           | 0.032            | 8.2                  | LOS A            | 0.1                                  | 0.9           | 0.12         | 0.91                | 0.12             | 51.7                  |
| West: Buitekant Street          |      |                       |               |                  |                      |                  |                                      |               |              |                     |                  |                       |
| 10                              | L2   | 1                     | 0.0           | 0.024            | 5.5                  | LOS A            | 0.0                                  | 0.0           | 0.00         | 0.01                | 0.00             | 58.2                  |
| 11                              | T1   | 44                    | 3.0           | 0.024            | 0.0                  | LOS A            | 0.0                                  | 0.0           | 0.00         | 0.01                | 0.00             | 59.9                  |
| Approach                        |      | 45                    | 2.9           | 0.024            | 0.1                  | NA               | 0.0                                  | 0.0           | 0.00         | 0.01                | 0.00             | 59.8                  |
| All Vehicles                    |      | 187                   | 1.8           | 0.051            | 2.8                  | NA               | 0.2                                  | 1.1           | 0.07         | 0.31                | 0.07             | 56.5                  |

## MOVEMENT SUMMARY

**STOP** Site: 4 [Buitekant/Pastorie 2021 Base + Dev AM - Existing]

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                                |                     |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|---------------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | of Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| East: Buitekant Street          |      |                    |            |               |                   |                  |                                |                     |              |                     |                  |                    |
| 5                               | T1   | 82                 | 3.0        | 0.047         | 0.1               | LOS A            | 0.1                            | 0.5                 | 0.07         | 0.06                | 0.07             | 59.1               |
| 6                               | R2   | 9                  | 0.0        | 0.047         | 6.0               | LOS A            | 0.1                            | 0.5                 | 0.07         | 0.06                | 0.07             | 56.9               |
| Approach                        |      | 92                 | 2.7        | 0.047         | 0.7               | NA               | 0.1                            | 0.5                 | 0.07         | 0.06                | 0.07             | 58.9               |
| North: Pastorie Street          |      |                    |            |               |                   |                  |                                |                     |              |                     |                  |                    |
| 7                               | L2   | 26                 | 0.0        | 0.023         | 8.7               | LOS A            | 0.1                            | 0.6                 | 0.28         | 0.86                | 0.28             | 51.7               |
| 9                               | R2   | 1                  | 0.0        | 0.023         | 8.7               | LOS A            | 0.1                            | 0.6                 | 0.28         | 0.86                | 0.28             | 51.2               |
| Approach                        |      | 27                 | 0.0        | 0.023         | 8.7               | LOS A            | 0.1                            | 0.6                 | 0.28         | 0.86                | 0.28             | 51.7               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                                |                     |              |                     |                  |                    |
| 10                              | L2   | 1                  | 0.0        | 0.093         | 5.5               | LOS A            | 0.0                            | 0.0                 | 0.00         | 0.00                | 0.00             | 58.3               |
| 11                              | T1   | 177                | 3.0        | 0.093         | 0.0               | LOS A            | 0.0                            | 0.0                 | 0.00         | 0.00                | 0.00             | 59.9               |
| Approach                        |      | 178                | 3.0        | 0.093         | 0.0               | NA               | 0.0                            | 0.0                 | 0.00         | 0.00                | 0.00             | 59.9               |
| All Vehicles                    |      | 297                | 2.6        | 0.093         | 1.0               | NA               | 0.1                            | 0.6                 | 0.05         | 0.10                | 0.05             | 58.7               |

## MOVEMENT SUMMARY

**STOP** Site: 4 [Buitekant/Pastorie 2021 Base + Dev PM - Existing]

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                                |                     |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|---------------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | of Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| East: Buitekant Street          |      |                    |            |               |                   |                  |                                |                     |              |                     |                  |                    |
| 5                               | T1   | 195                | 3.0        | 0.114         | 0.1               | LOS A            | 0.2                            | 1.4                 | 0.06         | 0.08                | 0.06             | 59.0               |
| 6                               | R2   | 28                 | 0.0        | 0.114         | 5.8               | LOS A            | 0.2                            | 1.4                 | 0.06         | 0.08                | 0.06             | 56.8               |
| Approach                        |      | 223                | 2.6        | 0.114         | 0.8               | NA               | 0.2                            | 1.4                 | 0.06         | 0.08                | 0.06             | 58.8               |
| North: Pastorie Street          |      |                    |            |               |                   |                  |                                |                     |              |                     |                  |                    |
| 7                               | L2   | 43                 | 0.0        | 0.034         | 8.4               | LOS A            | 0.1                            | 0.9                 | 0.20         | 0.88                | 0.20             | 51.8               |
| 9                               | R2   | 1                  | 0.0        | 0.034         | 9.0               | LOS A            | 0.1                            | 0.9                 | 0.20         | 0.88                | 0.20             | 51.3               |
| Approach                        |      | 44                 | 0.0        | 0.034         | 8.4               | LOS A            | 0.1                            | 0.9                 | 0.20         | 0.88                | 0.20             | 51.7               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                                |                     |              |                     |                  |                    |
| 10                              | L2   | 1                  | 0.0        | 0.052         | 5.5               | LOS A            | 0.0                            | 0.0                 | 0.00         | 0.01                | 0.00             | 58.3               |
| 11                              | T1   | 98                 | 3.0        | 0.052         | 0.0               | LOS A            | 0.0                            | 0.0                 | 0.00         | 0.01                | 0.00             | 59.9               |
| Approach                        |      | 99                 | 3.0        | 0.052         | 0.1               | NA               | 0.0                            | 0.0                 | 0.00         | 0.01                | 0.00             | 59.9               |
| All Vehicles                    |      | 366                | 2.4        | 0.114         | 1.5               | NA               | 0.2                            | 1.4                 | 0.06         | 0.16                | 0.06             | 58.1               |

## MOVEMENT SUMMARY

 Site: 4 [Buitekant/Pastorie 2026 AM - Existing]

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
|---------------------------------|------|--------------|------|---------------|-------------------|------------------|-------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
|                                 |      | Total veh/h  | HV % |               |                   |                  | Vehicles veh      | Distance m |              |                     |                  |                    |
| East: Buitekant Street          |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 5                               | T1   | 82           | 3.0  | 0.047         | 0.1               | LOS A            | 0.1               | 0.5        | 0.07         | 0.06                | 0.07             | 59.1               |
| 6                               | R2   | 9            | 0.0  | 0.047         | 6.0               | LOS A            | 0.1               | 0.5        | 0.07         | 0.06                | 0.07             | 56.9               |
| Approach                        |      | 92           | 2.7  | 0.047         | 0.7               | NA               | 0.1               | 0.5        | 0.07         | 0.06                | 0.07             | 58.9               |
| North: Pastorie Street          |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 7                               | L2   | 26           | 0.0  | 0.023         | 8.7               | LOS A            | 0.1               | 0.6        | 0.28         | 0.86                | 0.28             | 51.7               |
| 9                               | R2   | 1            | 0.0  | 0.023         | 8.7               | LOS A            | 0.1               | 0.6        | 0.28         | 0.86                | 0.28             | 51.2               |
| Approach                        |      | 27           | 0.0  | 0.023         | 8.7               | LOS A            | 0.1               | 0.6        | 0.28         | 0.86                | 0.28             | 51.7               |
| West: Buitekant Street          |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 10                              | L2   | 1            | 0.0  | 0.093         | 5.5               | LOS A            | 0.0               | 0.0        | 0.00         | 0.00                | 0.00             | 58.3               |
| 11                              | T1   | 177          | 3.0  | 0.093         | 0.0               | LOS A            | 0.0               | 0.0        | 0.00         | 0.00                | 0.00             | 59.9               |
| Approach                        |      | 178          | 3.0  | 0.093         | 0.0               | NA               | 0.0               | 0.0        | 0.00         | 0.00                | 0.00             | 59.9               |
| All Vehicles                    |      | 297          | 2.6  | 0.093         | 1.0               | NA               | 0.1               | 0.6        | 0.05         | 0.10                | 0.05             | 58.7               |

## MOVEMENT SUMMARY

 Site: 4 [Buitekant/Pastorie 2026 PM - Existing]

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
|---------------------------------|------|--------------|------|---------------|-------------------|------------------|-------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
|                                 |      | Total veh/h  | HV % |               |                   |                  | Vehicles veh      | Distance m |              |                     |                  |                    |
| East: Buitekant Street          |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 5                               | T1   | 195          | 3.0  | 0.114         | 0.1               | LOS A            | 0.2               | 1.4        | 0.06         | 0.08                | 0.06             | 59.0               |
| 6                               | R2   | 28           | 0.0  | 0.114         | 5.8               | LOS A            | 0.2               | 1.4        | 0.06         | 0.08                | 0.06             | 56.8               |
| Approach                        |      | 223          | 2.6  | 0.114         | 0.8               | NA               | 0.2               | 1.4        | 0.06         | 0.08                | 0.06             | 58.8               |
| North: Pastorie Street          |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 7                               | L2   | 43           | 0.0  | 0.034         | 8.4               | LOS A            | 0.1               | 0.9        | 0.20         | 0.88                | 0.20             | 51.8               |
| 9                               | R2   | 1            | 0.0  | 0.034         | 9.0               | LOS A            | 0.1               | 0.9        | 0.20         | 0.88                | 0.20             | 51.3               |
| Approach                        |      | 44           | 0.0  | 0.034         | 8.4               | LOS A            | 0.1               | 0.9        | 0.20         | 0.88                | 0.20             | 51.7               |
| West: Buitekant Street          |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 10                              | L2   | 1            | 0.0  | 0.052         | 5.5               | LOS A            | 0.0               | 0.0        | 0.00         | 0.01                | 0.00             | 58.3               |
| 11                              | T1   | 98           | 3.0  | 0.052         | 0.0               | LOS A            | 0.0               | 0.0        | 0.00         | 0.01                | 0.00             | 59.9               |
| Approach                        |      | 99           | 3.0  | 0.052         | 0.1               | NA               | 0.0               | 0.0        | 0.00         | 0.01                | 0.00             | 59.9               |
| All Vehicles                    |      | 366          | 2.4  | 0.114         | 1.5               | NA               | 0.2               | 1.4        | 0.06         | 0.16                | 0.06             | 58.1               |

## Buitekant Street and Melkboom Street

### MOVEMENT SUMMARY

**STOP** Site: 5 [Buitekant/Melkboom 2021 Base AM]

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
|---------------------------------|------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|------------------|---------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|                                 |      | Total veh/h  | HV % | v/c       | sec           |                  | Vehicles veh      | Distance m |              |                     |                  | km/h          |
| South: Melkboom Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 1                               | L2   | 7            | 3.0  | 0.075     | 11.8          | LOS B            | 0.2               | 1.6        | 0.70         | 1.26                | 1.78             | 50.3          |
| 2                               | T1   | 22           | 0.0  | 0.075     | 11.3          | LOS B            | 0.2               | 1.6        | 0.70         | 1.26                | 1.78             | 50.2          |
| 3                               | R2   | 22           | 3.0  | 0.075     | 11.2          | LOS B            | 0.2               | 1.6        | 0.70         | 1.26                | 1.78             | 49.8          |
| Approach                        |      | 52           | 1.7  | 0.075     | 11.4          | LOS B            | 0.2               | 1.6        | 0.70         | 1.26                | 1.78             | 50.0          |
| East: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 4                               | L2   | 24           | 3.0  | 0.100     | 16.7          | LOS C            | 0.3               | 2.4        | 0.89         | 1.26                | 2.00             | 47.2          |
| 5                               | T1   | 12           | 3.0  | 0.100     | 16.4          | LOS C            | 0.3               | 2.4        | 0.89         | 1.26                | 2.00             | 47.0          |
| 6                               | R2   | 2            | 0.0  | 0.100     | 16.1          | LOS C            | 0.3               | 2.4        | 0.89         | 1.26                | 2.00             | 46.9          |
| Approach                        |      | 38           | 2.8  | 0.100     | 16.6          | LOS C            | 0.3               | 2.4        | 0.89         | 1.26                | 2.00             | 47.2          |
| North: Melkboom Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 7                               | L2   | 4            | 0.0  | 0.039     | 13.7          | LOS B            | 0.1               | 0.8        | 0.81         | 1.25                | 1.85             | 49.3          |
| 8                               | T1   | 14           | 0.0  | 0.039     | 13.3          | LOS B            | 0.1               | 0.8        | 0.81         | 1.25                | 1.85             | 49.0          |
| 9                               | R2   | 1            | 0.0  | 0.039     | 13.1          | LOS B            | 0.1               | 0.8        | 0.81         | 1.25                | 1.85             | 48.8          |
| Approach                        |      | 19           | 0.0  | 0.039     | 13.4          | LOS B            | 0.1               | 0.8        | 0.81         | 1.25                | 1.85             | 49.1          |
| West: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 10                              | L2   | 1            | 0.0  | 0.045     | 13.0          | LOS B            | 0.1               | 1.0        | 0.78         | 1.26                | 1.83             | 49.7          |
| 11                              | T1   | 16           | 3.0  | 0.045     | 12.8          | LOS B            | 0.1               | 1.0        | 0.78         | 1.26                | 1.83             | 49.3          |
| 12                              | R2   | 7            | 3.0  | 0.045     | 12.6          | LOS B            | 0.1               | 1.0        | 0.78         | 1.26                | 1.83             | 49.1          |
| Approach                        |      | 24           | 2.9  | 0.045     | 12.8          | LOS B            | 0.1               | 1.0        | 0.78         | 1.26                | 1.83             | 49.3          |
| All Vehicles                    |      | 133          | 2.0  | 0.100     | 13.4          | LOS B            | 0.3               | 2.4        | 0.78         | 1.26                | 1.86             | 48.9          |

### MOVEMENT SUMMARY

**STOP** Site: 5 [Buitekant/Melkboom 2021 Base PM]

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
|---------------------------------|------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|------------------|---------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|                                 |      | Total veh/h  | HV % | v/c       | sec           |                  | Vehicles veh      | Distance m |              |                     |                  | km/h          |
| South: Melkboom Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 1                               | L2   | 7            | 3.0  | 0.076     | 12.9          | LOS B            | 0.2               | 1.7        | 0.76         | 1.26                | 1.85             | 49.7          |
| 2                               | T1   | 18           | 0.0  | 0.076     | 12.4          | LOS B            | 0.2               | 1.7        | 0.76         | 1.26                | 1.85             | 49.5          |
| 3                               | R2   | 19           | 3.0  | 0.076     | 12.3          | LOS B            | 0.2               | 1.7        | 0.76         | 1.26                | 1.85             | 49.2          |
| Approach                        |      | 44           | 1.8  | 0.076     | 12.4          | LOS B            | 0.2               | 1.7        | 0.76         | 1.26                | 1.85             | 49.4          |
| East: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 4                               | L2   | 38           | 3.0  | 0.135     | 14.2          | LOS B            | 0.4               | 3.2        | 0.82         | 1.27                | 1.97             | 48.8          |
| 5                               | T1   | 24           | 3.0  | 0.135     | 13.9          | LOS B            | 0.4               | 3.2        | 0.82         | 1.27                | 1.97             | 48.5          |
| 6                               | R2   | 7            | 0.0  | 0.135     | 13.5          | LOS B            | 0.4               | 3.2        | 0.82         | 1.27                | 1.97             | 48.4          |
| Approach                        |      | 69           | 2.7  | 0.135     | 14.0          | LOS B            | 0.4               | 3.2        | 0.82         | 1.27                | 1.97             | 48.7          |
| North: Melkboom Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 7                               | L2   | 5            | 0.0  | 0.076     | 14.3          | LOS B            | 0.2               | 1.7        | 0.83         | 1.26                | 1.91             | 48.9          |
| 8                               | T1   | 27           | 0.0  | 0.076     | 13.9          | LOS B            | 0.2               | 1.7        | 0.83         | 1.26                | 1.91             | 48.7          |
| 9                               | R2   | 3            | 0.0  | 0.076     | 13.7          | LOS B            | 0.2               | 1.7        | 0.83         | 1.26                | 1.91             | 48.5          |
| Approach                        |      | 36           | 0.0  | 0.076     | 14.0          | LOS B            | 0.2               | 1.7        | 0.83         | 1.26                | 1.91             | 48.7          |
| West: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 10                              | L2   | 1            | 0.0  | 0.045     | 12.8          | LOS B            | 0.1               | 1.0        | 0.77         | 1.26                | 1.82             | 49.9          |
| 11                              | T1   | 20           | 3.0  | 0.045     | 12.6          | LOS B            | 0.1               | 1.0        | 0.77         | 1.26                | 1.82             | 49.5          |
| 12                              | R2   | 4            | 3.0  | 0.045     | 12.3          | LOS B            | 0.1               | 1.0        | 0.77         | 1.26                | 1.82             | 49.3          |
| Approach                        |      | 25           | 2.9  | 0.045     | 12.5          | LOS B            | 0.1               | 1.0        | 0.77         | 1.26                | 1.82             | 49.5          |
| All Vehicles                    |      | 175          | 1.9  | 0.135     | 13.4          | LOS B            | 0.4               | 3.2        | 0.80         | 1.26                | 1.90             | 49.0          |

## MOVEMENT SUMMARY

### Site: 5 [Buitekant/Melkboom 2021 Base + Dev AM - Existing]

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Melkboom Street          |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 1                               | L2   | 7                  | 3.0        | 0.147         | 18.1              | LOS C            | 0.5                            | 3.6        | 0.91         | 1.27                | 2.08             | 46.5               |
| 2                               | T1   | 22                 | 0.0        | 0.147         | 17.7              | LOS C            | 0.5                            | 3.6        | 0.91         | 1.27                | 2.08             | 46.4               |
| 3                               | R2   | 22                 | 3.0        | 0.147         | 17.6              | LOS C            | 0.5                            | 3.6        | 0.91         | 1.27                | 2.08             | 46.1               |
| Approach                        |      | 52                 | 1.7        | 0.147         | 17.7              | LOS C            | 0.5                            | 3.6        | 0.91         | 1.27                | 2.08             | 46.3               |
| East: Buitekant Street          |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 4                               | L2   | 24                 | 3.0        | 0.126         | 12.5              | LOS B            | 0.4                            | 2.8        | 0.74         | 1.28                | 1.88             | 49.9               |
| 5                               | T1   | 56                 | 3.0        | 0.126         | 12.2              | LOS B            | 0.4                            | 2.8        | 0.74         | 1.28                | 1.88             | 49.7               |
| 6                               | R2   | 2                  | 0.0        | 0.126         | 11.8              | LOS B            | 0.4                            | 2.8        | 0.74         | 1.28                | 1.88             | 49.6               |
| Approach                        |      | 82                 | 2.9        | 0.126         | 12.2              | LOS B            | 0.4                            | 2.8        | 0.74         | 1.28                | 1.88             | 49.7               |
| North: Melkboom Street          |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 7                               | L2   | 4                  | 0.0        | 0.097         | 26.5              | LOS D            | 0.3                            | 2.4        | 0.99         | 1.25                | 2.09             | 42.2               |
| 8                               | T1   | 14                 | 0.0        | 0.097         | 26.2              | LOS D            | 0.3                            | 2.4        | 0.99         | 1.25                | 2.09             | 42.0               |
| 9                               | R2   | 1                  | 0.0        | 0.097         | 25.9              | LOS D            | 0.3                            | 2.4        | 0.99         | 1.25                | 2.09             | 41.8               |
| Approach                        |      | 19                 | 0.0        | 0.097         | 26.2              | LOS D            | 0.3                            | 2.4        | 0.99         | 1.25                | 2.09             | 42.0               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 10                              | L2   | 1                  | 0.0        | 0.202         | 11.8              | LOS B            | 0.7                            | 4.7        | 0.68         | 1.32                | 1.93             | 50.4               |
| 11                              | T1   | 151                | 3.0        | 0.202         | 11.6              | LOS B            | 0.7                            | 4.7        | 0.68         | 1.32                | 1.93             | 50.1               |
| 12                              | R2   | 7                  | 3.0        | 0.202         | 11.3              | LOS B            | 0.7                            | 4.7        | 0.68         | 1.32                | 1.93             | 49.8               |
| Approach                        |      | 159                | 3.0        | 0.202         | 11.5              | LOS B            | 0.7                            | 4.7        | 0.68         | 1.32                | 1.93             | 50.1               |
| All Vehicles                    |      | 312                | 2.6        | 0.202         | 13.6              | LOS B            | 0.7                            | 4.7        | 0.75         | 1.30                | 1.95             | 48.8               |

## MOVEMENT SUMMARY

### Site: 5 [Buitekant/Melkboom 2021 Base + Dev PM - Existing]

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Melkboom Street          |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 1                               | L2   | 7                  | 3.0        | 0.136         | 19.0              | LOS C            | 0.5                            | 3.4        | 0.92         | 1.27                | 2.08             | 46.1               |
| 2                               | T1   | 18                 | 0.0        | 0.136         | 18.5              | LOS C            | 0.5                            | 3.4        | 0.92         | 1.27                | 2.08             | 45.9               |
| 3                               | R2   | 19                 | 3.0        | 0.136         | 18.4              | LOS C            | 0.5                            | 3.4        | 0.92         | 1.27                | 2.08             | 45.7               |
| Approach                        |      | 44                 | 1.8        | 0.136         | 18.5              | LOS C            | 0.5                            | 3.4        | 0.92         | 1.27                | 2.08             | 45.8               |
| East: Buitekant Street          |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 4                               | L2   | 38                 | 3.0        | 0.260         | 12.6              | LOS B            | 0.9                            | 6.4        | 0.72         | 1.33                | 2.07             | 49.8               |
| 5                               | T1   | 149                | 3.0        | 0.260         | 12.3              | LOS B            | 0.9                            | 6.4        | 0.72         | 1.33                | 2.07             | 49.6               |
| 6                               | R2   | 7                  | 0.0        | 0.260         | 11.9              | LOS B            | 0.9                            | 6.4        | 0.72         | 1.33                | 2.07             | 49.5               |
| Approach                        |      | 195                | 2.9        | 0.260         | 12.4              | LOS B            | 0.9                            | 6.4        | 0.72         | 1.33                | 2.07             | 49.6               |
| North: Melkboom Street          |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 7                               | L2   | 5                  | 0.0        | 0.162         | 25.4              | LOS D            | 0.6                            | 4.1        | 0.98         | 1.27                | 2.17             | 42.7               |
| 8                               | T1   | 27                 | 0.0        | 0.162         | 25.0              | LOS D            | 0.6                            | 4.1        | 0.98         | 1.27                | 2.17             | 42.6               |
| 9                               | R2   | 3                  | 0.0        | 0.162         | 24.8              | LOS C            | 0.6                            | 4.1        | 0.98         | 1.27                | 2.17             | 42.4               |
| Approach                        |      | 36                 | 0.0        | 0.162         | 25.1              | LOS D            | 0.6                            | 4.1        | 0.98         | 1.27                | 2.17             | 42.6               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 10                              | L2   | 1                  | 0.0        | 0.114         | 11.9              | LOS B            | 0.4                            | 2.5        | 0.71         | 1.29                | 1.84             | 50.4               |
| 11                              | T1   | 74                 | 3.0        | 0.114         | 11.7              | LOS B            | 0.4                            | 2.5        | 0.71         | 1.29                | 1.84             | 50.0               |
| 12                              | R2   | 4                  | 3.0        | 0.114         | 11.4              | LOS B            | 0.4                            | 2.5        | 0.71         | 1.29                | 1.84             | 49.8               |
| Approach                        |      | 79                 | 3.0        | 0.114         | 11.7              | LOS B            | 0.4                            | 2.5        | 0.71         | 1.29                | 1.84             | 50.0               |
| All Vehicles                    |      | 354                | 2.5        | 0.260         | 14.3              | LOS B            | 0.9                            | 6.4        | 0.77         | 1.31                | 2.03             | 48.4               |

## MOVEMENT SUMMARY

### **STOP** Site: 5 [Buitekant/Melkboom 2026 AM - Existing]

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
|---------------------------------|------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|------------------|---------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|                                 |      | Total veh/h  | HV % | v/c       | sec           |                  | Vehicles veh      | Distance m |              |                     |                  | km/h          |
| South: Melkboom Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 1                               | L2   | 7            | 3.0  | 0.147     | 18.1          | LOS C            | 0.5               | 3.6        | 0.91         | 1.27                | 2.08             | 46.5          |
| 2                               | T1   | 22           | 0.0  | 0.147     | 17.7          | LOS C            | 0.5               | 3.6        | 0.91         | 1.27                | 2.08             | 46.4          |
| 3                               | R2   | 22           | 3.0  | 0.147     | 17.6          | LOS C            | 0.5               | 3.6        | 0.91         | 1.27                | 2.08             | 46.1          |
| Approach                        |      | 52           | 1.7  | 0.147     | 17.7          | LOS C            | 0.5               | 3.6        | 0.91         | 1.27                | 2.08             | 46.3          |
| East: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 4                               | L2   | 24           | 3.0  | 0.126     | 12.5          | LOS B            | 0.4               | 2.8        | 0.74         | 1.28                | 1.88             | 49.9          |
| 5                               | T1   | 56           | 3.0  | 0.126     | 12.2          | LOS B            | 0.4               | 2.8        | 0.74         | 1.28                | 1.88             | 49.7          |
| 6                               | R2   | 2            | 0.0  | 0.126     | 11.8          | LOS B            | 0.4               | 2.8        | 0.74         | 1.28                | 1.88             | 49.6          |
| Approach                        |      | 82           | 2.9  | 0.126     | 12.2          | LOS B            | 0.4               | 2.8        | 0.74         | 1.28                | 1.88             | 49.7          |
| North: Melkboom Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 7                               | L2   | 4            | 0.0  | 0.097     | 26.5          | LOS D            | 0.3               | 2.4        | 0.99         | 1.25                | 2.09             | 42.2          |
| 8                               | T1   | 14           | 0.0  | 0.097     | 26.2          | LOS D            | 0.3               | 2.4        | 0.99         | 1.25                | 2.09             | 42.0          |
| 9                               | R2   | 1            | 0.0  | 0.097     | 25.9          | LOS D            | 0.3               | 2.4        | 0.99         | 1.25                | 2.09             | 41.8          |
| Approach                        |      | 19           | 0.0  | 0.097     | 26.2          | LOS D            | 0.3               | 2.4        | 0.99         | 1.25                | 2.09             | 42.0          |
| West: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 10                              | L2   | 1            | 0.0  | 0.202     | 11.8          | LOS B            | 0.7               | 4.7        | 0.68         | 1.32                | 1.93             | 50.4          |
| 11                              | T1   | 151          | 3.0  | 0.202     | 11.6          | LOS B            | 0.7               | 4.7        | 0.68         | 1.32                | 1.93             | 50.1          |
| 12                              | R2   | 7            | 3.0  | 0.202     | 11.3          | LOS B            | 0.7               | 4.7        | 0.68         | 1.32                | 1.93             | 49.8          |
| Approach                        |      | 159          | 3.0  | 0.202     | 11.5          | LOS B            | 0.7               | 4.7        | 0.68         | 1.32                | 1.93             | 50.1          |
| All Vehicles                    |      | 312          | 2.6  | 0.202     | 13.6          | LOS B            | 0.7               | 4.7        | 0.75         | 1.30                | 1.95             | 48.8          |

## MOVEMENT SUMMARY

### **STOP** Site: 5 [Buitekant/Melkboom 2026 PM - Existing]

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
|---------------------------------|------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|------------------|---------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|                                 |      | Total veh/h  | HV % | v/c       | sec           |                  | Vehicles veh      | Distance m |              |                     |                  | km/h          |
| South: Melkboom Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 1                               | L2   | 7            | 3.0  | 0.136     | 19.0          | LOS C            | 0.5               | 3.4        | 0.92         | 1.27                | 2.08             | 46.1          |
| 2                               | T1   | 18           | 0.0  | 0.136     | 18.5          | LOS C            | 0.5               | 3.4        | 0.92         | 1.27                | 2.08             | 45.9          |
| 3                               | R2   | 19           | 3.0  | 0.136     | 18.4          | LOS C            | 0.5               | 3.4        | 0.92         | 1.27                | 2.08             | 45.7          |
| Approach                        |      | 44           | 1.8  | 0.136     | 18.5          | LOS C            | 0.5               | 3.4        | 0.92         | 1.27                | 2.08             | 45.8          |
| East: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 4                               | L2   | 38           | 3.0  | 0.260     | 12.6          | LOS B            | 0.9               | 6.4        | 0.72         | 1.33                | 2.07             | 49.8          |
| 5                               | T1   | 149          | 3.0  | 0.260     | 12.3          | LOS B            | 0.9               | 6.4        | 0.72         | 1.33                | 2.07             | 49.6          |
| 6                               | R2   | 7            | 0.0  | 0.260     | 11.9          | LOS B            | 0.9               | 6.4        | 0.72         | 1.33                | 2.07             | 49.5          |
| Approach                        |      | 195          | 2.9  | 0.260     | 12.4          | LOS B            | 0.9               | 6.4        | 0.72         | 1.33                | 2.07             | 49.6          |
| North: Melkboom Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 7                               | L2   | 5            | 0.0  | 0.162     | 25.4          | LOS D            | 0.6               | 4.1        | 0.98         | 1.27                | 2.17             | 42.7          |
| 8                               | T1   | 27           | 0.0  | 0.162     | 25.0          | LOS D            | 0.6               | 4.1        | 0.98         | 1.27                | 2.17             | 42.6          |
| 9                               | R2   | 3            | 0.0  | 0.162     | 24.8          | LOS C            | 0.6               | 4.1        | 0.98         | 1.27                | 2.17             | 42.4          |
| Approach                        |      | 36           | 0.0  | 0.162     | 25.1          | LOS D            | 0.6               | 4.1        | 0.98         | 1.27                | 2.17             | 42.6          |
| West: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 10                              | L2   | 1            | 0.0  | 0.114     | 11.9          | LOS B            | 0.4               | 2.5        | 0.71         | 1.29                | 1.84             | 50.4          |
| 11                              | T1   | 74           | 3.0  | 0.114     | 11.7          | LOS B            | 0.4               | 2.5        | 0.71         | 1.29                | 1.84             | 50.0          |
| 12                              | R2   | 4            | 3.0  | 0.114     | 11.4          | LOS B            | 0.4               | 2.5        | 0.71         | 1.29                | 1.84             | 49.8          |
| Approach                        |      | 79           | 3.0  | 0.114     | 11.7          | LOS B            | 0.4               | 2.5        | 0.71         | 1.29                | 1.84             | 50.0          |
| All Vehicles                    |      | 354          | 2.5  | 0.260     | 14.3          | LOS B            | 0.9               | 6.4        | 0.77         | 1.31                | 2.03             | 48.4          |

## Buitekant Street and Reservoir Street

### MOVEMENT SUMMARY

**STOP Site: 6 [Buitekant/Reservoir 2021 Base AM]**

New Site  
 Site Category: (None)  
 Stop (All-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| East: Buitekant Street          |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 5                               | T1   | 1                  | 3.0        | 0.022         | 9.7               | LOS A            | 0.1                            | 0.4        | 0.53         | 1.23                | 1.55             | 51.1               |
| 6                               | R2   | 20                 | 0.0        | 0.022         | 9.3               | LOS A            | 0.1                            | 0.4        | 0.53         | 1.23                | 1.55             | 51.0               |
| Approach                        |      | 21                 | 0.2        | 0.022         | 9.3               | LOS A            | 0.1                            | 0.4        | 0.53         | 1.23                | 1.55             | 51.0               |
| North: Reservoir Street         |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 7                               | L2   | 23                 | 0.0        | 0.052         | 14.2              | LOS B            | 0.2                            | 1.1        | 0.83         | 1.24                | 1.88             | 48.7               |
| 9                               | R2   | 1                  | 0.0        | 0.052         | 13.6              | LOS B            | 0.2                            | 1.1        | 0.83         | 1.24                | 1.88             | 48.3               |
| Approach                        |      | 24                 | 0.0        | 0.052         | 14.1              | LOS B            | 0.2                            | 1.1        | 0.83         | 1.24                | 1.88             | 48.7               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 10                              | L2   | 1                  | 0.0        | 0.005         | 14.2              | LOS B            | 0.0                            | 0.1        | 0.83         | 1.24                | 1.84             | 48.8               |
| 11                              | T1   | 1                  | 3.0        | 0.005         | 14.0              | LOS B            | 0.0                            | 0.1        | 0.83         | 1.24                | 1.84             | 48.5               |
| Approach                        |      | 2                  | 1.5        | 0.005         | 14.1              | LOS B            | 0.0                            | 0.1        | 0.83         | 1.24                | 1.84             | 48.7               |
| All Vehicles                    |      | 47                 | 0.1        | 0.052         | 12.0              | LOS B            | 0.2                            | 1.1        | 0.69         | 1.24                | 1.73             | 49.7               |

### MOVEMENT SUMMARY

**STOP Site: 6 [Buitekant/Reservoir 2021 Base PM]**

New Site  
 Site Category: (None)  
 Stop (All-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| East: Buitekant Street          |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 5                               | T1   | 1                  | 3.0        | 0.034         | 9.3               | LOS A            | 0.1                            | 0.6        | 0.46         | 1.24                | 1.50             | 51.2               |
| 6                               | R2   | 35                 | 0.0        | 0.034         | 9.0               | LOS A            | 0.1                            | 0.6        | 0.46         | 1.24                | 1.50             | 51.1               |
| Approach                        |      | 36                 | 0.1        | 0.034         | 9.0               | LOS A            | 0.1                            | 0.6        | 0.46         | 1.24                | 1.50             | 51.1               |
| North: Reservoir Street         |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 7                               | L2   | 25                 | 0.0        | 0.077         | 17.4              | LOS C            | 0.3                            | 1.8        | 0.90         | 1.25                | 1.98             | 46.8               |
| 9                               | R2   | 1                  | 0.0        | 0.077         | 16.8              | LOS C            | 0.3                            | 1.8        | 0.90         | 1.25                | 1.98             | 46.4               |
| Approach                        |      | 26                 | 0.0        | 0.077         | 17.4              | LOS C            | 0.3                            | 1.8        | 0.90         | 1.25                | 1.98             | 46.8               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 10                              | L2   | 1                  | 0.0        | 0.004         | 13.2              | LOS B            | 0.0                            | 0.1        | 0.79         | 1.24                | 1.80             | 49.5               |
| 11                              | T1   | 1                  | 3.0        | 0.004         | 13.0              | LOS B            | 0.0                            | 0.1        | 0.79         | 1.24                | 1.80             | 49.1               |
| Approach                        |      | 2                  | 1.5        | 0.004         | 13.1              | LOS B            | 0.0                            | 0.1        | 0.79         | 1.24                | 1.80             | 49.3               |
| All Vehicles                    |      | 64                 | 0.1        | 0.077         | 12.6              | LOS B            | 0.3                            | 1.8        | 0.66         | 1.24                | 1.71             | 49.2               |



## MOVEMENT SUMMARY

 Site: 6 [Buitekant/Reservoir 2021 Base + Dev AM - Existing]

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|-----------------------|---------------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back Vehicles veh | of Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| East: Buitekant Street          |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 5                               | T1   | 44                 | 3.0        | 0.060         | 9.4               | LOS A            | 0.2                   | 1.1                 | 0.46         | 1.28                | 1.52             | 51.2               |
| 6                               | R2   | 20                 | 0.0        | 0.060         | 9.0               | LOS A            | 0.2                   | 1.1                 | 0.46         | 1.28                | 1.52             | 51.1               |
| Approach                        |      | 64                 | 2.1        | 0.060         | 9.3               | LOS A            | 0.2                   | 1.1                 | 0.46         | 1.28                | 1.52             | 51.2               |
| North: Reservoir Street         |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 7                               | L2   | 23                 | 0.0        | 0.087         | 20.2              | LOS C            | 0.3                   | 2.1                 | 0.94         | 1.25                | 2.03             | 45.2               |
| 9                               | R2   | 1                  | 0.0        | 0.087         | 19.6              | LOS C            | 0.3                   | 2.1                 | 0.94         | 1.25                | 2.03             | 44.9               |
| Approach                        |      | 24                 | 0.0        | 0.087         | 20.1              | LOS C            | 0.3                   | 2.1                 | 0.94         | 1.25                | 2.03             | 45.2               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 10                              | L2   | 1                  | 0.0        | 0.127         | 9.9               | LOS A            | 0.3                   | 2.5                 | 0.48         | 1.32                | 1.62             | 51.5               |
| 11                              | T1   | 135                | 3.0        | 0.127         | 9.7               | LOS A            | 0.3                   | 2.5                 | 0.48         | 1.32                | 1.62             | 51.1               |
| Approach                        |      | 136                | 3.0        | 0.127         | 9.7               | LOS A            | 0.3                   | 2.5                 | 0.48         | 1.32                | 1.62             | 51.1               |
| All Vehicles                    |      | 224                | 2.4        | 0.127         | 10.7              | LOS B            | 0.3                   | 2.5                 | 0.52         | 1.30                | 1.64             | 50.4               |

## MOVEMENT SUMMARY

 Site: 6 [Buitekant/Reservoir 2021 Base + Dev PM - Existing]

New Site  
Site Category: (None)  
Stop (All-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|-----------------------|---------------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back Vehicles veh | of Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| East: Buitekant Street          |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 5                               | T1   | 125                | 3.0        | 0.135         | 9.3               | LOS A            | 0.4                   | 2.5                 | 0.41         | 1.31                | 1.56             | 51.2               |
| 6                               | R2   | 35                 | 0.0        | 0.135         | 8.9               | LOS A            | 0.4                   | 2.5                 | 0.41         | 1.31                | 1.56             | 51.1               |
| Approach                        |      | 160                | 2.3        | 0.135         | 9.2               | LOS A            | 0.4                   | 2.5                 | 0.41         | 1.31                | 1.56             | 51.2               |
| North: Reservoir Street         |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 7                               | L2   | 25                 | 0.0        | 0.101         | 21.3              | LOS C            | 0.3                   | 2.4                 | 0.95         | 1.25                | 2.06             | 44.6               |
| 9                               | R2   | 1                  | 0.0        | 0.101         | 20.7              | LOS C            | 0.3                   | 2.4                 | 0.95         | 1.25                | 2.06             | 44.2               |
| Approach                        |      | 26                 | 0.0        | 0.101         | 21.3              | LOS C            | 0.3                   | 2.4                 | 0.95         | 1.25                | 2.06             | 44.6               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 10                              | L2   | 1                  | 0.0        | 0.055         | 9.9               | LOS A            | 0.1                   | 1.0                 | 0.51         | 1.29                | 1.57             | 51.5               |
| 11                              | T1   | 54                 | 3.0        | 0.055         | 9.7               | LOS A            | 0.1                   | 1.0                 | 0.51         | 1.29                | 1.57             | 51.1               |
| Approach                        |      | 55                 | 2.9        | 0.055         | 9.7               | LOS A            | 0.1                   | 1.0                 | 0.51         | 1.29                | 1.57             | 51.1               |
| All Vehicles                    |      | 241                | 2.2        | 0.135         | 10.6              | LOS B            | 0.4                   | 2.5                 | 0.49         | 1.30                | 1.62             | 50.4               |

## MOVEMENT SUMMARY

**STOP** Site: 6 [Buitekant/Reservoir 2026 AM - Existing]

New Site  
 Site Category: (None)  
 Stop (All-Way)

| Movement Performance - Vehicles |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
|---------------------------------|------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|------------------|---------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|                                 |      | Total veh/h  | HV % | v/c       | sec           |                  | Vehicles veh      | Distance m |              |                     |                  | km/h          |
| East: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 5                               | T1   | 44           | 3.0  | 0.060     | 9.4           | LOS A            | 0.2               | 1.1        | 0.46         | 1.28                | 1.52             | 51.2          |
| 6                               | R2   | 20           | 0.0  | 0.060     | 9.0           | LOS A            | 0.2               | 1.1        | 0.46         | 1.28                | 1.52             | 51.1          |
| Approach                        |      | 64           | 2.1  | 0.060     | 9.3           | LOS A            | 0.2               | 1.1        | 0.46         | 1.28                | 1.52             | 51.2          |
| North: Reservoir Street         |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 7                               | L2   | 23           | 0.0  | 0.087     | 20.2          | LOS C            | 0.3               | 2.1        | 0.94         | 1.25                | 2.03             | 45.2          |
| 9                               | R2   | 1            | 0.0  | 0.087     | 19.6          | LOS C            | 0.3               | 2.1        | 0.94         | 1.25                | 2.03             | 44.9          |
| Approach                        |      | 24           | 0.0  | 0.087     | 20.1          | LOS C            | 0.3               | 2.1        | 0.94         | 1.25                | 2.03             | 45.2          |
| West: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 10                              | L2   | 1            | 0.0  | 0.127     | 9.9           | LOS A            | 0.3               | 2.5        | 0.48         | 1.32                | 1.62             | 51.5          |
| 11                              | T1   | 135          | 3.0  | 0.127     | 9.7           | LOS A            | 0.3               | 2.5        | 0.48         | 1.32                | 1.62             | 51.1          |
| Approach                        |      | 136          | 3.0  | 0.127     | 9.7           | LOS A            | 0.3               | 2.5        | 0.48         | 1.32                | 1.62             | 51.1          |
| All Vehicles                    |      | 224          | 2.4  | 0.127     | 10.7          | LOS B            | 0.3               | 2.5        | 0.52         | 1.30                | 1.64             | 50.4          |

## MOVEMENT SUMMARY

**STOP** Site: 6 [Buitekant/Reservoir 2026 PM - Existing]

New Site  
 Site Category: (None)  
 Stop (All-Way)

| Movement Performance - Vehicles |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
|---------------------------------|------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|------------------|---------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed |
|                                 |      | Total veh/h  | HV % | v/c       | sec           |                  | Vehicles veh      | Distance m |              |                     |                  | km/h          |
| East: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 5                               | T1   | 125          | 3.0  | 0.135     | 9.3           | LOS A            | 0.4               | 2.5        | 0.41         | 1.31                | 1.56             | 51.2          |
| 6                               | R2   | 35           | 0.0  | 0.135     | 8.9           | LOS A            | 0.4               | 2.5        | 0.41         | 1.31                | 1.56             | 51.1          |
| Approach                        |      | 160          | 2.3  | 0.135     | 9.2           | LOS A            | 0.4               | 2.5        | 0.41         | 1.31                | 1.56             | 51.2          |
| North: Reservoir Street         |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 7                               | L2   | 25           | 0.0  | 0.101     | 21.3          | LOS C            | 0.3               | 2.4        | 0.95         | 1.25                | 2.06             | 44.6          |
| 9                               | R2   | 1            | 0.0  | 0.101     | 20.7          | LOS C            | 0.3               | 2.4        | 0.95         | 1.25                | 2.06             | 44.2          |
| Approach                        |      | 26           | 0.0  | 0.101     | 21.3          | LOS C            | 0.3               | 2.4        | 0.95         | 1.25                | 2.06             | 44.6          |
| West: Buitekant Street          |      |              |      |           |               |                  |                   |            |              |                     |                  |               |
| 10                              | L2   | 1            | 0.0  | 0.055     | 9.9           | LOS A            | 0.1               | 1.0        | 0.51         | 1.29                | 1.57             | 51.5          |
| 11                              | T1   | 54           | 3.0  | 0.055     | 9.7           | LOS A            | 0.1               | 1.0        | 0.51         | 1.29                | 1.57             | 51.1          |
| Approach                        |      | 55           | 2.9  | 0.055     | 9.7           | LOS A            | 0.1               | 1.0        | 0.51         | 1.29                | 1.57             | 51.1          |
| All Vehicles                    |      | 241          | 2.2  | 0.135     | 10.6          | LOS B            | 0.4               | 2.5        | 0.49         | 1.30                | 1.62             | 50.4          |

## Buitekant Street and Road 1

### MOVEMENT SUMMARY

 Site: 7 [Buitekant/Road 1 2021 Base + Dev AM - Proposed]

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|-----------------------|---------------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back Vehicles veh | of Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Road 1                   |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 1                               | L2   | 1                  | 0.0        | 0.066         | 5.5               | LOS A            | 0.0                   | 0.0                 | 0.00         | 0.00                | 0.00             | 58.3               |
| 2                               | T1   | 135                | 0.0        | 0.066         | 0.0               | LOS A            | 0.0                   | 0.0                 | 0.00         | 0.00                | 0.00             | 59.9               |
| Approach                        |      | 136                | 0.0        | 0.066         | 0.0               | NA               | 0.0                   | 0.0                 | 0.00         | 0.00                | 0.00             | 59.9               |
| North: Buitekant Street         |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 8                               | T1   | 44                 | 0.0        | 0.023         | 0.0               | LOS A            | 0.0                   | 0.0                 | 0.01         | 0.01                | 0.01             | 59.8               |
| 9                               | R2   | 1                  | 0.0        | 0.023         | 5.8               | LOS A            | 0.0                   | 0.0                 | 0.01         | 0.01                | 0.01             | 57.6               |
| Approach                        |      | 45                 | 0.0        | 0.023         | 0.1               | NA               | 0.0                   | 0.0                 | 0.01         | 0.01                | 0.01             | 59.8               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 10                              | L2   | 1                  | 0.0        | 0.002         | 8.5               | LOS A            | 0.0                   | 0.0                 | 0.24         | 0.85                | 0.24             | 51.8               |
| 12                              | R2   | 1                  | 3.0        | 0.002         | 8.3               | LOS A            | 0.0                   | 0.0                 | 0.24         | 0.85                | 0.24             | 51.2               |
| Approach                        |      | 2                  | 1.5        | 0.002         | 8.4               | LOS A            | 0.0                   | 0.0                 | 0.24         | 0.85                | 0.24             | 51.5               |
| All Vehicles                    |      | 183                | 0.0        | 0.066         | 0.2               | NA               | 0.0                   | 0.0                 | 0.01         | 0.02                | 0.01             | 59.8               |

### MOVEMENT SUMMARY

 Site: 7 [Buitekant/Road 1 2021 Base + Dev PM - Proposed]

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|-----------------------|---------------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back Vehicles veh | of Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Road 1                   |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 1                               | L2   | 1                  | 3.0        | 0.027         | 5.6               | LOS A            | 0.0                   | 0.0                 | 0.00         | 0.01                | 0.00             | 58.1               |
| 2                               | T1   | 54                 | 0.0        | 0.027         | 0.0               | LOS A            | 0.0                   | 0.0                 | 0.00         | 0.01                | 0.00             | 59.9               |
| Approach                        |      | 55                 | 0.1        | 0.027         | 0.1               | NA               | 0.0                   | 0.0                 | 0.00         | 0.01                | 0.00             | 59.9               |
| North: Buitekant Street         |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 8                               | T1   | 125                | 0.0        | 0.065         | 0.0               | LOS A            | 0.0                   | 0.0                 | 0.00         | 0.01                | 0.00             | 59.9               |
| 9                               | R2   | 1                  | 0.0        | 0.065         | 5.6               | LOS A            | 0.0                   | 0.0                 | 0.00         | 0.01                | 0.00             | 57.7               |
| Approach                        |      | 126                | 0.0        | 0.065         | 0.0               | NA               | 0.0                   | 0.0                 | 0.00         | 0.01                | 0.00             | 59.9               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 10                              | L2   | 1                  | 0.0        | 0.002         | 8.2               | LOS A            | 0.0                   | 0.0                 | 0.15         | 0.90                | 0.15             | 51.8               |
| 12                              | R2   | 1                  | 3.0        | 0.002         | 8.3               | LOS A            | 0.0                   | 0.0                 | 0.15         | 0.90                | 0.15             | 51.2               |
| Approach                        |      | 2                  | 1.5        | 0.002         | 8.2               | LOS A            | 0.0                   | 0.0                 | 0.15         | 0.90                | 0.15             | 51.5               |
| All Vehicles                    |      | 183                | 0.0        | 0.065         | 0.2               | NA               | 0.0                   | 0.0                 | 0.00         | 0.02                | 0.00             | 59.8               |

## MOVEMENT SUMMARY

**STOP** Site: 7 [Buitekant/Road 1 2026 AM - Proposed]

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                                           |     |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|-------------------------------------------|-----|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh Distance m |     | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Road 1                   |      |                    |            |               |                   |                  |                                           |     |              |                     |                  |                    |
| 1                               | L2   | 1                  | 0.0        | 0.066         | 5.5               | LOS A            | 0.0                                       | 0.0 | 0.00         | 0.00                | 0.00             | 58.3               |
| 2                               | T1   | 135                | 0.0        | 0.066         | 0.0               | LOS A            | 0.0                                       | 0.0 | 0.00         | 0.00                | 0.00             | 59.9               |
| Approach                        |      | 136                | 0.0        | 0.066         | 0.0               | NA               | 0.0                                       | 0.0 | 0.00         | 0.00                | 0.00             | 59.9               |
| North: Buitekant Street         |      |                    |            |               |                   |                  |                                           |     |              |                     |                  |                    |
| 8                               | T1   | 44                 | 0.0        | 0.023         | 0.0               | LOS A            | 0.0                                       | 0.0 | 0.01         | 0.01                | 0.01             | 59.8               |
| 9                               | R2   | 1                  | 0.0        | 0.023         | 5.8               | LOS A            | 0.0                                       | 0.0 | 0.01         | 0.01                | 0.01             | 57.6               |
| Approach                        |      | 45                 | 0.0        | 0.023         | 0.1               | NA               | 0.0                                       | 0.0 | 0.01         | 0.01                | 0.01             | 59.8               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                                           |     |              |                     |                  |                    |
| 10                              | L2   | 1                  | 0.0        | 0.002         | 8.5               | LOS A            | 0.0                                       | 0.0 | 0.24         | 0.85                | 0.24             | 51.8               |
| 12                              | R2   | 1                  | 3.0        | 0.002         | 8.3               | LOS A            | 0.0                                       | 0.0 | 0.24         | 0.85                | 0.24             | 51.2               |
| Approach                        |      | 2                  | 1.5        | 0.002         | 8.4               | LOS A            | 0.0                                       | 0.0 | 0.24         | 0.85                | 0.24             | 51.5               |
| All Vehicles                    |      | 183                | 0.0        | 0.066         | 0.2               | NA               | 0.0                                       | 0.0 | 0.01         | 0.02                | 0.01             | 59.8               |

## MOVEMENT SUMMARY

**STOP** Site: 7 [Buitekant/Road 1 2026 PM - Proposed]

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                                           |     |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|-------------------------------------------|-----|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh Distance m |     | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Road 1                   |      |                    |            |               |                   |                  |                                           |     |              |                     |                  |                    |
| 1                               | L2   | 1                  | 3.0        | 0.027         | 5.6               | LOS A            | 0.0                                       | 0.0 | 0.00         | 0.01                | 0.00             | 58.1               |
| 2                               | T1   | 54                 | 0.0        | 0.027         | 0.0               | LOS A            | 0.0                                       | 0.0 | 0.00         | 0.01                | 0.00             | 59.9               |
| Approach                        |      | 55                 | 0.1        | 0.027         | 0.1               | NA               | 0.0                                       | 0.0 | 0.00         | 0.01                | 0.00             | 59.9               |
| North: Buitekant Street         |      |                    |            |               |                   |                  |                                           |     |              |                     |                  |                    |
| 8                               | T1   | 125                | 0.0        | 0.065         | 0.0               | LOS A            | 0.0                                       | 0.0 | 0.00         | 0.01                | 0.00             | 59.9               |
| 9                               | R2   | 1                  | 0.0        | 0.065         | 5.6               | LOS A            | 0.0                                       | 0.0 | 0.00         | 0.01                | 0.00             | 57.7               |
| Approach                        |      | 126                | 0.0        | 0.065         | 0.0               | NA               | 0.0                                       | 0.0 | 0.00         | 0.01                | 0.00             | 59.9               |
| West: Buitekant Street          |      |                    |            |               |                   |                  |                                           |     |              |                     |                  |                    |
| 10                              | L2   | 1                  | 0.0        | 0.002         | 8.2               | LOS A            | 0.0                                       | 0.0 | 0.15         | 0.90                | 0.15             | 51.8               |
| 12                              | R2   | 1                  | 3.0        | 0.002         | 8.3               | LOS A            | 0.0                                       | 0.0 | 0.15         | 0.90                | 0.15             | 51.2               |
| Approach                        |      | 2                  | 1.5        | 0.002         | 8.2               | LOS A            | 0.0                                       | 0.0 | 0.15         | 0.90                | 0.15             | 51.5               |
| All Vehicles                    |      | 183                | 0.0        | 0.065         | 0.2               | NA               | 0.0                                       | 0.0 | 0.00         | 0.02                | 0.00             | 59.8               |

## Road 1 and Road 2

### MOVEMENT SUMMARY

 Site: 8 [Road 1/Road 2 2021 Base + Dev AM - Proposed]

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Road 1                   |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 1                               | L2   | 1                  | 3.0        | 0.001         | 5.6               | LOS A            | 0.0                            | 0.0        | 0.00         | 0.30                | 0.00             | 55.8               |
| 2                               | T1   | 1                  | 0.0        | 0.001         | 0.0               | LOS A            | 0.0                            | 0.0        | 0.00         | 0.30                | 0.00             | 57.4               |
| Approach                        |      | 2                  | 1.5        | 0.001         | 2.8               | NA               | 0.0                            | 0.0        | 0.00         | 0.30                | 0.00             | 56.6               |
| North: Road 1                   |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 8                               | T1   | 1                  | 0.0        | 0.025         | 0.0               | LOS A            | 0.1                            | 0.8        | 0.02         | 0.58                | 0.02             | 55.1               |
| 9                               | R2   | 44                 | 0.0        | 0.025         | 5.5               | LOS A            | 0.1                            | 0.8        | 0.02         | 0.58                | 0.02             | 53.2               |
| Approach                        |      | 45                 | 0.0        | 0.025         | 5.3               | NA               | 0.1                            | 0.8        | 0.02         | 0.58                | 0.02             | 53.2               |
| West: Road 2                    |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 10                              | L2   | 135                | 0.0        | 0.095         | 8.0               | LOS A            | 0.4                            | 2.8        | 0.01         | 0.99                | 0.01             | 51.8               |
| 12                              | R2   | 1                  | 3.0        | 0.095         | 7.8               | LOS A            | 0.4                            | 2.8        | 0.01         | 0.99                | 0.01             | 51.1               |
| Approach                        |      | 136                | 0.0        | 0.095         | 8.0               | LOS A            | 0.4                            | 2.8        | 0.01         | 0.99                | 0.01             | 51.7               |
| All Vehicles                    |      | 183                | 0.0        | 0.095         | 7.3               | NA               | 0.4                            | 2.8        | 0.01         | 0.88                | 0.01             | 52.2               |

### MOVEMENT SUMMARY

 Site: 8 [Road 1/Road 2 2021 Base + Dev PM - Proposed]

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|--------------------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Road 1                   |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 1                               | L2   | 1                  | 3.0        | 0.001         | 5.6               | LOS A            | 0.0                            | 0.0        | 0.00         | 0.30                | 0.00             | 55.8               |
| 2                               | T1   | 1                  | 0.0        | 0.001         | 0.0               | LOS A            | 0.0                            | 0.0        | 0.00         | 0.30                | 0.00             | 57.4               |
| Approach                        |      | 2                  | 1.5        | 0.001         | 2.8               | NA               | 0.0                            | 0.0        | 0.00         | 0.30                | 0.00             | 56.6               |
| North: Road 1                   |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 8                               | T1   | 1                  | 0.0        | 0.070         | 0.0               | LOS A            | 0.3                            | 2.3        | 0.02         | 0.59                | 0.02             | 55.0               |
| 9                               | R2   | 125                | 0.0        | 0.070         | 5.5               | LOS A            | 0.3                            | 2.3        | 0.02         | 0.59                | 0.02             | 53.1               |
| Approach                        |      | 126                | 0.0        | 0.070         | 5.4               | NA               | 0.3                            | 2.3        | 0.02         | 0.59                | 0.02             | 53.1               |
| West: Road 2                    |      |                    |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 10                              | L2   | 54                 | 0.0        | 0.038         | 8.0               | LOS A            | 0.2                            | 1.1        | 0.01         | 0.99                | 0.01             | 51.8               |
| 12                              | R2   | 1                  | 3.0        | 0.038         | 8.1               | LOS A            | 0.2                            | 1.1        | 0.01         | 0.99                | 0.01             | 51.1               |
| Approach                        |      | 55                 | 0.1        | 0.038         | 8.0               | LOS A            | 0.2                            | 1.1        | 0.01         | 0.99                | 0.01             | 51.7               |
| All Vehicles                    |      | 183                | 0.0        | 0.070         | 6.2               | NA               | 0.3                            | 2.3        | 0.02         | 0.70                | 0.02             | 52.7               |

## MOVEMENT SUMMARY

**STOP** Site: 8 [Road 1/Road 2 2026 AM - Proposed]

New Site  
 Site Category: (None)  
 Stop (Two-Way)

| Movement Performance - Vehicles |      |              |            |               |                   |                  |                                |            |              |                     |                  |                    |
|---------------------------------|------|--------------|------------|---------------|-------------------|------------------|--------------------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Road 1                   |      |              |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 1                               | L2   | 1            | 3.0        | 0.001         | 5.6               | LOS A            | 0.0                            | 0.0        | 0.00         | 0.30                | 0.00             | 55.8               |
| 2                               | T1   | 1            | 0.0        | 0.001         | 0.0               | LOS A            | 0.0                            | 0.0        | 0.00         | 0.30                | 0.00             | 57.4               |
| Approach                        |      | 2            | 1.5        | 0.001         | 2.8               | NA               | 0.0                            | 0.0        | 0.00         | 0.30                | 0.00             | 56.6               |
| North: Road 1                   |      |              |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 8                               | T1   | 1            | 0.0        | 0.025         | 0.0               | LOS A            | 0.1                            | 0.8        | 0.02         | 0.58                | 0.02             | 55.1               |
| 9                               | R2   | 44           | 0.0        | 0.025         | 5.5               | LOS A            | 0.1                            | 0.8        | 0.02         | 0.58                | 0.02             | 53.2               |
| Approach                        |      | 45           | 0.0        | 0.025         | 5.3               | NA               | 0.1                            | 0.8        | 0.02         | 0.58                | 0.02             | 53.2               |
| West: Road 2                    |      |              |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 10                              | L2   | 135          | 0.0        | 0.095         | 8.0               | LOS A            | 0.4                            | 2.8        | 0.01         | 0.99                | 0.01             | 51.8               |
| 12                              | R2   | 1            | 3.0        | 0.095         | 7.8               | LOS A            | 0.4                            | 2.8        | 0.01         | 0.99                | 0.01             | 51.1               |
| Approach                        |      | 136          | 0.0        | 0.095         | 8.0               | LOS A            | 0.4                            | 2.8        | 0.01         | 0.99                | 0.01             | 51.7               |
| All Vehicles                    |      | 183          | 0.0        | 0.095         | 7.3               | NA               | 0.4                            | 2.8        | 0.01         | 0.88                | 0.01             | 52.2               |

## MOVEMENT SUMMARY

**STOP** Site: 8 [Road 1/Road 2 2026 PM - Proposed]

New Site  
 Site Category: (None)  
 Stop (Two-Way)

| Movement Performance - Vehicles |      |              |            |               |                   |                  |                                |            |              |                     |                  |                    |
|---------------------------------|------|--------------|------------|---------------|-------------------|------------------|--------------------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Road 1                   |      |              |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 1                               | L2   | 1            | 3.0        | 0.001         | 5.6               | LOS A            | 0.0                            | 0.0        | 0.00         | 0.30                | 0.00             | 55.8               |
| 2                               | T1   | 1            | 0.0        | 0.001         | 0.0               | LOS A            | 0.0                            | 0.0        | 0.00         | 0.30                | 0.00             | 57.4               |
| Approach                        |      | 2            | 1.5        | 0.001         | 2.8               | NA               | 0.0                            | 0.0        | 0.00         | 0.30                | 0.00             | 56.6               |
| North: Road 1                   |      |              |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 8                               | T1   | 1            | 0.0        | 0.070         | 0.0               | LOS A            | 0.3                            | 2.3        | 0.02         | 0.59                | 0.02             | 55.0               |
| 9                               | R2   | 125          | 0.0        | 0.070         | 5.5               | LOS A            | 0.3                            | 2.3        | 0.02         | 0.59                | 0.02             | 53.1               |
| Approach                        |      | 126          | 0.0        | 0.070         | 5.4               | NA               | 0.3                            | 2.3        | 0.02         | 0.59                | 0.02             | 53.1               |
| West: Road 2                    |      |              |            |               |                   |                  |                                |            |              |                     |                  |                    |
| 10                              | L2   | 54           | 0.0        | 0.038         | 8.0               | LOS A            | 0.2                            | 1.1        | 0.01         | 0.99                | 0.01             | 51.8               |
| 12                              | R2   | 1            | 3.0        | 0.038         | 8.1               | LOS A            | 0.2                            | 1.1        | 0.01         | 0.99                | 0.01             | 51.1               |
| Approach                        |      | 55           | 0.1        | 0.038         | 8.0               | LOS A            | 0.2                            | 1.1        | 0.01         | 0.99                | 0.01             | 51.7               |
| All Vehicles                    |      | 183          | 0.0        | 0.070         | 6.2               | NA               | 0.3                            | 2.3        | 0.02         | 0.70                | 0.02             | 52.7               |

## Road 2 and Road 3

### MOVEMENT SUMMARY

**STOP** Site: 9 [Road 2/Road 3 2021 Base + Dev AM - Proposed]

New Site  
 Site Category: (None)  
 Stop (Two-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|-----------------------|---------------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back Vehicles veh | of Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Road 3                   |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 2                               | T1   | 1                  | 0.0        | 0.001         | 0.0               | LOS A            | 0.0                   | 0.0                 | 0.05         | 0.29                | 0.05             | 57.2               |
| 3                               | R2   | 1                  | 0.0        | 0.001         | 5.5               | LOS A            | 0.0                   | 0.0                 | 0.05         | 0.29                | 0.05             | 55.2               |
| Approach                        |      | 2                  | 0.0        | 0.001         | 2.8               | NA               | 0.0                   | 0.0                 | 0.05         | 0.29                | 0.05             | 56.2               |
| East: Road 2                    |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 4                               | L2   | 1                  | 0.0        | 0.004         | 8.0               | LOS A            | 0.0                   | 0.1                 | 0.02         | 0.98                | 0.02             | 52.1               |
| 6                               | R2   | 4                  | 0.0        | 0.004         | 7.5               | LOS A            | 0.0                   | 0.1                 | 0.02         | 0.98                | 0.02             | 51.6               |
| Approach                        |      | 5                  | 0.0        | 0.004         | 7.6               | LOS A            | 0.0                   | 0.1                 | 0.02         | 0.98                | 0.02             | 51.7               |
| North: Road 3                   |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 7                               | L2   | 14                 | 0.0        | 0.008         | 5.5               | LOS A            | 0.0                   | 0.0                 | 0.00         | 0.54                | 0.00             | 53.9               |
| 8                               | T1   | 1                  | 0.0        | 0.008         | 0.0               | LOS A            | 0.0                   | 0.0                 | 0.00         | 0.54                | 0.00             | 55.3               |
| Approach                        |      | 15                 | 0.0        | 0.008         | 5.1               | NA               | 0.0                   | 0.0                 | 0.00         | 0.54                | 0.00             | 54.0               |
| All Vehicles                    |      | 22                 | 0.0        | 0.008         | 5.5               | NA               | 0.0                   | 0.1                 | 0.01         | 0.62                | 0.01             | 53.6               |

### MOVEMENT SUMMARY

**STOP** Site: 9 [Road 2/Road 3 2021 Base + Dev PM - Proposed]

New Site  
 Site Category: (None)  
 Stop (Two-Way)

| Movement Performance - Vehicles |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
|---------------------------------|------|--------------------|------------|---------------|-------------------|------------------|-----------------------|---------------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Total veh/h | Flows HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back Vehicles veh | of Queue Distance m | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
| South: Road 3                   |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 2                               | T1   | 1                  | 0.0        | 0.001         | 0.0               | LOS A            | 0.0                   | 0.0                 | 0.03         | 0.30                | 0.03             | 57.3               |
| 3                               | R2   | 1                  | 0.0        | 0.001         | 5.5               | LOS A            | 0.0                   | 0.0                 | 0.03         | 0.30                | 0.03             | 55.2               |
| Approach                        |      | 2                  | 0.0        | 0.001         | 2.7               | NA               | 0.0                   | 0.0                 | 0.03         | 0.30                | 0.03             | 56.2               |
| East: Road 2                    |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 4                               | L2   | 1                  | 0.0        | 0.012         | 8.0               | LOS A            | 0.0                   | 0.3                 | 0.03         | 0.98                | 0.03             | 52.1               |
| 6                               | R2   | 13                 | 0.0        | 0.012         | 7.5               | LOS A            | 0.0                   | 0.3                 | 0.03         | 0.98                | 0.03             | 51.6               |
| Approach                        |      | 14                 | 0.0        | 0.012         | 7.5               | LOS A            | 0.0                   | 0.3                 | 0.03         | 0.98                | 0.03             | 51.6               |
| North: Road 3                   |      |                    |            |               |                   |                  |                       |                     |              |                     |                  |                    |
| 7                               | L2   | 5                  | 0.0        | 0.003         | 5.5               | LOS A            | 0.0                   | 0.0                 | 0.00         | 0.49                | 0.00             | 54.4               |
| 8                               | T1   | 1                  | 0.0        | 0.003         | 0.0               | LOS A            | 0.0                   | 0.0                 | 0.00         | 0.49                | 0.00             | 55.8               |
| Approach                        |      | 6                  | 0.0        | 0.003         | 4.6               | NA               | 0.0                   | 0.0                 | 0.00         | 0.49                | 0.00             | 54.6               |
| All Vehicles                    |      | 22                 | 0.0        | 0.012         | 6.2               | NA               | 0.0                   | 0.3                 | 0.02         | 0.77                | 0.02             | 52.9               |


## MOVEMENT SUMMARY

 Site: 9 [Road 2/Road 3 2026 AM - Proposed]

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
|---------------------------------|------|--------------|------|---------------|-------------------|------------------|-------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
|                                 |      | Total veh/h  | HV % |               |                   |                  | Vehicles veh      | Distance m |              |                     |                  |                    |
| South: Road 3                   |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 2                               | T1   | 1            | 0.0  | 0.001         | 0.0               | LOS A            | 0.0               | 0.0        | 0.05         | 0.29                | 0.05             | 57.2               |
| 3                               | R2   | 1            | 0.0  | 0.001         | 5.5               | LOS A            | 0.0               | 0.0        | 0.05         | 0.29                | 0.05             | 55.2               |
| Approach                        |      | 2            | 0.0  | 0.001         | 2.8               | NA               | 0.0               | 0.0        | 0.05         | 0.29                | 0.05             | 56.2               |
| East: Road 2                    |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 4                               | L2   | 1            | 0.0  | 0.004         | 8.0               | LOS A            | 0.0               | 0.1        | 0.02         | 0.98                | 0.02             | 52.1               |
| 6                               | R2   | 4            | 0.0  | 0.004         | 7.5               | LOS A            | 0.0               | 0.1        | 0.02         | 0.98                | 0.02             | 51.6               |
| Approach                        |      | 5            | 0.0  | 0.004         | 7.6               | LOS A            | 0.0               | 0.1        | 0.02         | 0.98                | 0.02             | 51.7               |
| North: Road 3                   |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 7                               | L2   | 14           | 0.0  | 0.008         | 5.5               | LOS A            | 0.0               | 0.0        | 0.00         | 0.54                | 0.00             | 53.9               |
| 8                               | T1   | 1            | 0.0  | 0.008         | 0.0               | LOS A            | 0.0               | 0.0        | 0.00         | 0.54                | 0.00             | 55.3               |
| Approach                        |      | 15           | 0.0  | 0.008         | 5.1               | NA               | 0.0               | 0.0        | 0.00         | 0.54                | 0.00             | 54.0               |
| All Vehicles                    |      | 22           | 0.0  | 0.008         | 5.5               | NA               | 0.0               | 0.1        | 0.01         | 0.62                | 0.01             | 53.6               |

## MOVEMENT SUMMARY

 Site: 9 [Road 2/Road 3 2026 PM - Proposed]

New Site  
Site Category: (None)  
Stop (Two-Way)

| Movement Performance - Vehicles |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
|---------------------------------|------|--------------|------|---------------|-------------------|------------------|-------------------|------------|--------------|---------------------|------------------|--------------------|
| Mov ID                          | Turn | Demand Flows |      | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue |            | Prop. Queued | Effective Stop Rate | Aver. No. Cycles | Average Speed km/h |
|                                 |      | Total veh/h  | HV % |               |                   |                  | Vehicles veh      | Distance m |              |                     |                  |                    |
| South: Road 3                   |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 2                               | T1   | 1            | 0.0  | 0.001         | 0.0               | LOS A            | 0.0               | 0.0        | 0.03         | 0.30                | 0.03             | 57.3               |
| 3                               | R2   | 1            | 0.0  | 0.001         | 5.5               | LOS A            | 0.0               | 0.0        | 0.03         | 0.30                | 0.03             | 55.2               |
| Approach                        |      | 2            | 0.0  | 0.001         | 2.7               | NA               | 0.0               | 0.0        | 0.03         | 0.30                | 0.03             | 56.2               |
| East: Road 2                    |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 4                               | L2   | 1            | 0.0  | 0.012         | 8.0               | LOS A            | 0.0               | 0.3        | 0.03         | 0.98                | 0.03             | 52.1               |
| 6                               | R2   | 13           | 0.0  | 0.012         | 7.5               | LOS A            | 0.0               | 0.3        | 0.03         | 0.98                | 0.03             | 51.6               |
| Approach                        |      | 14           | 0.0  | 0.012         | 7.5               | LOS A            | 0.0               | 0.3        | 0.03         | 0.98                | 0.03             | 51.6               |
| North: Road 3                   |      |              |      |               |                   |                  |                   |            |              |                     |                  |                    |
| 7                               | L2   | 5            | 0.0  | 0.003         | 5.5               | LOS A            | 0.0               | 0.0        | 0.00         | 0.49                | 0.00             | 54.4               |
| 8                               | T1   | 1            | 0.0  | 0.003         | 0.0               | LOS A            | 0.0               | 0.0        | 0.00         | 0.49                | 0.00             | 55.8               |
| Approach                        |      | 6            | 0.0  | 0.003         | 4.6               | NA               | 0.0               | 0.0        | 0.00         | 0.49                | 0.00             | 54.6               |
| All Vehicles                    |      | 22           | 0.0  | 0.012         | 6.2               | NA               | 0.0               | 0.3        | 0.02         | 0.77                | 0.02             | 52.9               |



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