



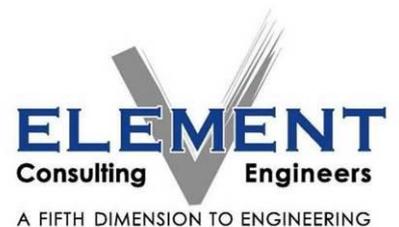
**DEVELOPMENT OF HEROLDS BAY COUNTRY ESTATE:  
COMMERCIAL SITE:**



**TRAFFIC IMPACT ASSESSMENT**

**REVISION 3**

**OCTOBER 2025**



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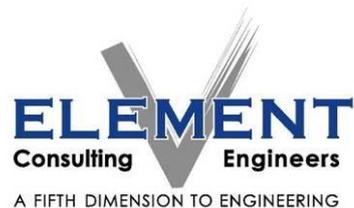
**REVISION 3**

**OCTOBER 2025**

PREPARED FOR:

Herolds Bay Country Estate  
Oubaai Main Road  
Herolds Bay  
George  
6529

PREPARED BY:



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2	For approval	Mar 2020	HL
3	Revised density and mix for commercial site only	Oct 2025	HL

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**DEVELOPMENT OF HEROLDS BAY COUNTRY ESTATE:  
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**REVISION 3**

**OCTOBER 2025**

**CONTENTS**

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<b>Chapter</b>	<b>Description</b>	<b>Page</b>
<b>1</b>	<b>INTRODUCTION</b>	<b>3</b>
	1.1 Background	3
	1.2 Development densification and mix amendment	3
	1.3 Locality, access and layout	4
	1.4 Purpose of the report	6
	1.5 Extent of analysis	6
<b>2</b>	<b>TRIP GENERATION</b>	<b>7</b>
	2.1 Trip generation	7
	2.2 Trip distribution and assignment	9
<b>3</b>	<b>TRAFFIC DEMAND</b>	<b>11</b>
	3.1 Background traffic	11
	3.2 Traffic growth rates	11
	3.3 Development traffic	12
	3.4 Other developments	12
	3.5 Total future traffic demand	12
<b>4</b>	<b>CAPACITY ANALYSIS</b>	<b>13</b>
	4.1 Intersection 1: Oubaai Main Road and Herolds Bay Country Estate Access	13

4.1.1	Existing Geometry	13
4.1.2	Analysis	14
4.1.3	Mitigation measures	16
4.2	Intersection 2: Oubaai Main Road and Commercial Access	17
4.2.1	Existing Geometry	17
4.2.2	Proposed Geometry	17
4.2.3	Analysis	18
4.2.4	Mitigation measures	20
4.2.5	Warrants for right turn lanes	20
4.2.6	Negotiations with Municipality and adjacent land owner (Denneoseerus)	21
4.3	Intersection 3: Oubaai Main Road and Roodraai Road/DR1590(R404)	22
4.3.1	Existing Geometry	22
4.3.2	Analysis	24
4.3.3	Mitigation measures	25
<b>5</b>	<b>SALIENT ISSUES</b>	<b>26</b>
5.1	Sight Distances (commercial access)	26
5.2	Non-motorized- and public transport facilities (commercial site)	26
5.3	Parking (commercial site)	26
5.4	Commercial centre access gate	26
5.5	Refuse removal	26
<b>6</b>	<b>CONCLUSSIONS</b>	<b>27</b>
<b>7</b>	<b>RECOMMENDATIONS</b>	<b>30</b>
<b>8</b>	<b>ADDENDA</b>	<b>31</b>
8.1	Addendum A – Commercial Site Development Plan	31
8.2	Addendum B – Traffic volumes	31
8.3	Addendum C – Sidra analysis	31

# 1 INTRODUCTION

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## 1.1 Background

Element Consulting Engineers (ECE) has been appointed by Herolds Bay Country Estate to update the Traffic Impact Assessment (TIA) for the development. The development was approved and a services agreement has been signed between the developer and the municipality. Services for phase 1 and 2 of the development have been completed and houses are under construction. The original TIA was approved during the approval process of the development.

The developers wish to now amend the density and mix of the commercial erf only. The rest of the residential development will remain as per the approved SDP and as per the signed services agreement.

The purpose of this updated TIA is to inform and accompany the application for the amendment on the commercial erf, this is the only amendment applied for.

## 1.2 Development densification and mix amendment

The table below indicates the approved rights versus the proposed densification and mix amendment. Note that all of the amendments are on the commercial site only and the rest of the development will remain as per the approved SDP.

Description	Original (quantity)	Proposed (quantity)	Site
Single residential erven	102	102	Residential
Group housing units	68	68	Residential
Filling Station	1	0	Commercial
Retail (GLA m2)	750	768	Commercial
Restaurant (GLA m2)	250	300	Commercial
Offices (GLA m2)	300	0	Commercial
Flats (units)	0	76	Commercial

*Figure 1: Existing and proposed rights*

The following can be noted from the table concerning the commercial site:

1. The filling station is omitted from the mix;
2. Offices are omitted from the mix;
3. Retail GLA is increased slightly from 750m2 to 768m2;
4. Restaurant GLA is increased slightly from 250m2 to 300m2;
5. Flats are added (76 flats).

### 1.3 Locality, access and layout

The development is located on a portion of Portion 7 of the farm Buffelsfontein, Herolds Bay. The site is located directly north-east of Herolds Bay town and directly west of the existing Oubaai Golf Estate. The site is bounded to the north and west by farmland.

Access to the residential development is obtained via Oubaai Main Road from the traffic circle at the entrance to Oubaai Golf Estate. This access has been approved during the approval of the development and has been formally constructed during the construction of phase 1 of the Herolds Bay Country Estate.

Access to the commercial site has been approved during the approval of the development. The access has been incorporated into the signed services agreement with the municipality. This access is from Oubaai Main Road at a point approximately 78m east of the intersection with the DR1590(R404).

The locations of the two accesses are indicated on the figure below.



Figure 2: Locality and access

The latest version of the proposed new SDP for the commercial site, as prepared by Urban Concept Architects, is indicated in the figure below and attached as addendum.

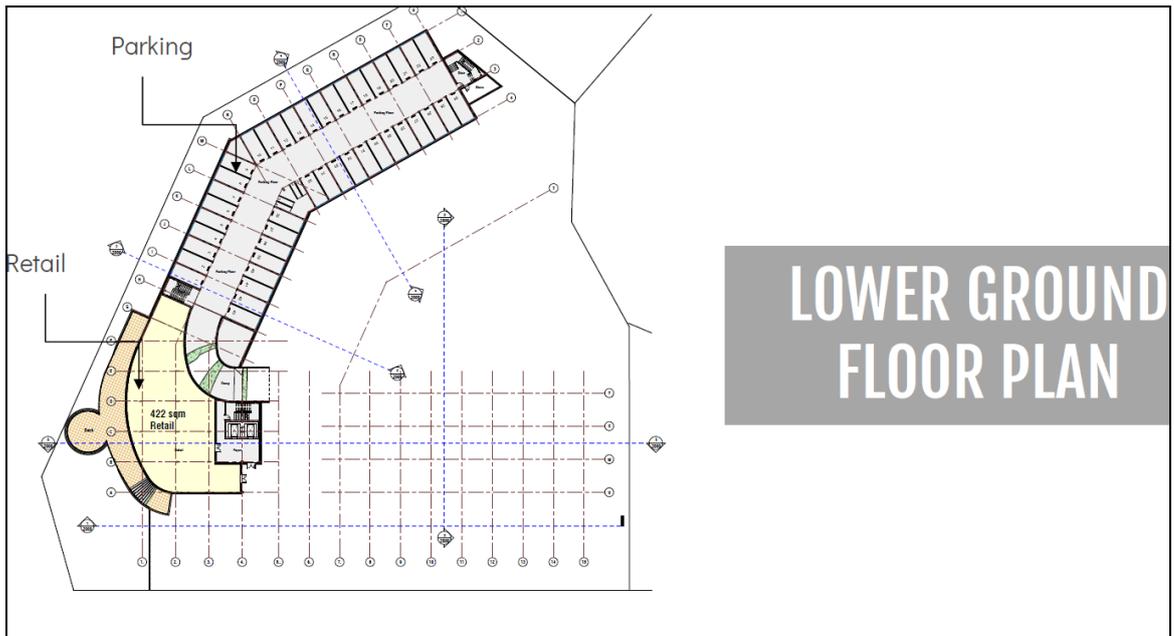


Figure 3.1: Proposed new Site Development Plan for the Commercial Site (Lower ground floor)

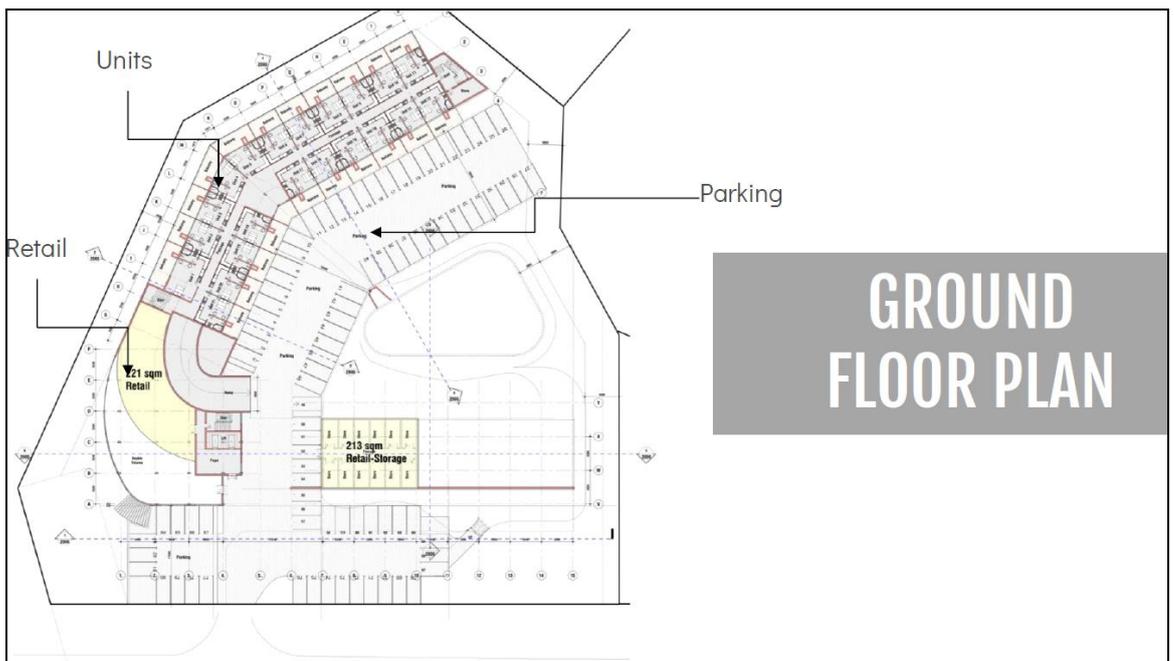


Figure 3.2: Proposed new Site Development Plan for the Commercial Site (Ground floor)

As per the original approval, no thoroughfare may be provided between the boundaries of the commercial site and the residential development. Pedestrian access may be provided at this point.

## 1.4 Purpose of the report

The purpose of the report is to assess the traffic impact of the proposed amended SDP for the commercial site on the adjacent road network. The following will be discussed and addressed in the report:

- Description of the development
- Locality, layout and access
- Background traffic conditions
- Trip generation and distribution
- Total future traffic conditions
- Traffic impact to capacity analysis
- Infrastructure upgrades required (if any)
- Discussion of salient issues

## 1.5 Extent of analysis

The traffic impact study of the proposed amended commercial development, road configuration alterations as well as the other developments mentioned, were evaluated for the intersections affected by the development as well as the road upgrades.

The intersections analysed for the traffic impact study were the following:

- Intersection 1: Traffic circle at the dead-end of Oubai Main Road, shared between Herolds Bay Country Estate, Oubai Golf Estate, Breakwater Bay Eco Estate & The Brink Eco Estate;
- Intersection 2: Access to commercial site, shared intersection with Denneseerus;
- Intersection 3: T-Junction DR1590(R404) / Oubai Main Road.

The impact of the proposed revised commercial development mix was evaluated for both the weekday morning and afternoon peak hours. The assessment years are for the base year 2025 and horizon year 2030.

## 2 TRIP GENERATION

### 2.1 Trip generation

Trip generation rates used in the report were obtained from the “South African Trip Data Manual” Version 1.01 September 2013 (TMH 17) as well as the “South African Trip Generation Rates” guideline document of June 1995 where necessary. The following trip generation rates were used to calculate trip generation during the peak hour of the adjacent road network:

The estate is a good example of a mixed-use development and estate residents will liberally utilize in-house facilities rather than venture outside the estate. Estate residents will utilize non-motorised transport to reach destinations within the estate rather than venture outside the estate. Reduction factors may hence be applied to the number of new trips generated due to the following:

- Mixed use development (TMH 17 Table 3.2)
- Holiday and retirement homes (prominent in Southern Cape)
- Work-from-home (prominent in Southern Cape)
- Work elsewhere, family in estate (prominent in Southern Cape)
- Business zone development for- and used by internal residents (mixed use).

As discussed earlier in the report, the residential estate portion does not change from the previous revision of the TIA. The trip generation volumes for the residential portion of the estate are calculated in the following table in line with the trip generation rates and reduction factors discussed above:

TMH 17 Classification	Peak Hour	Units / GLA	Trip Reduction Factor	Trip Generation Rate	Split		Trips		Sub Total
					In	Out	In	Out	
210 Single Dwelling Units	AM	102	10%	1	25%	75%	23	69	92
	PM		10%	1	70%	30%	64	28	92
231 Townhouses	AM	68	15%	0.85	25%	75%	12	37	49
	PM		15%	0.85	70%	30%	34	15	49
Total Trips (Res. Estate)	AM						35	106	141
	PM						99	42	141

Figure 4: Trip Generation: Residential Estate (No change)

As discussed earlier in the report, the developers wish to amend the density and mix of the commercial erf. Note that all of the amendments are on the commercial site only and the rest of the development will remain as per the approved SDP. The table below indicates the approved rights versus the proposed densification and mix amendment:

Description	Original (quantity)	Proposed (quantity)	Comment
Single residential erven	102	102	Residential
Group housing units	68	68	Residential
Filling Station	1	0	Commercial
Retail (GLA m2)	750	768	Commercial
Restaurant (GLA m2)	250	300	Commercial
Offices (GLA m2)	300	0	Commercial
Flats (units)	0	76	Commercial

Figure 5: Existing and proposed rights

The following can be noted from the table:

1. The filling station is omitted from the mix.
2. Offices are omitted from the mix.
3. Retail GLA is increased slightly from 750m2 to 768m2.
4. Restaurant GLA is increased slightly from 250m2 to 300m2.
5. Flats are added (76 flats)

The trip generation volumes for the revised commercial site SDP and mix are calculated in the following table in line with the trip generation rates and reduction factors discussed above:

TMH 17 Classification	Peak Hour	Units / GLA	Trip Reduction Factor	Trip Generation Rate	Split		Trips		Sub Total
					In	Out	In	Out	
820 Retail	AM	768 sqm	10%	3.56/100sqm	65%	35%	16	8	24
	PM		10%	20.13/100sqm	50%	50%	69	69	138
932 Restaurant	AM	300 sqm	10%	0/100sqm	-	-	0	0	0
	PM		10%	8/100sqm	65%	35%	14	8	22
Total Trips (Commercial)	AM						16	8	24
	PM						83	77	160

Figure 6: Trip Generation: Commercial Development (Revised SDP Mix)

TMH 17 Classification	Peak Hour	Units / GLA	Trip Reduction Factor	Trip Generation Rate	Split		Trips		Sub Total
					In	Out	In	Out	
220 Flats	AM	76	15%	0.65	25%	75%	11	33	44
	PM		15%	0.65	70%	30%	31	13	44
Total Trips (Flats)	AM						11	33	44
	PM						31	13	44

Figure 7: Trip Generation: Flats (on commercial erf)

## 2.2 Trip distribution and assignment

It is anticipated that traffic that will be generated by the proposed development will be distributed on the road network as follows:

### Residential Estate:

- All access to the development will be via the sole access from Oubai Main Road at the circle;
- 82% of traffic developed will be attracted to George;
- 4% of traffic developed will be attracted to Herolds Bay;
- 5% of traffic developed will be attracted to the commercial centre;
- 1% of traffic development will be attracted to Breakwater Bay Eco Estate and The Brink Eco Estate;
- 4% of traffic development will distribute towards Oubai Golf Estate;
- 2% of traffic development will distribute directly to Oubai Golf Estate via the pedestrian access and golf cart parking area. This traffic will not be directed through the public road network;
- 2% of traffic development will distribute directly to the commercial centre via the pedestrian access and golf cart parking area. This traffic will not be directed through the public road network;

The trip distribution is indicated in the figure attached as addendum.

### Commercial Centre (New SDP mix):

- Access will be via the approved access from Oubai Main Road at a point approximately 78m east of the intersection with the DR1590(R404);
- 45% of traffic will be attracted from Herolds Bay;
- 10% of traffic will be attracted from the direction of George;
- 12% of traffic will be attracted from Herolds Bay Estate;

- 27% of traffic will be attracted from Oubai Golf Estate;
- 6% of traffic will be attracted from Breakwater Bay Eco Estate and The Brink Eco Estate.

The trip distribution is indicated in the figure attached as addendum.

#### Commercial Centre (New flats)

- Access will be via the approved access from Oubai Main Road at a point approximately 78m east of the intersection with the DR1590(R404);
- 89% of traffic developed will be attracted to George;
- 4% of traffic developed will be attracted to Herolds Bay;
- 1% of traffic development will be attracted to Breakwater Bay Eco Estate and The Brink Eco Estate;
- 2% of traffic development will distribute towards Oubai Golf Estate;
- 2% of traffic development will distribute towards Herolds Bay Estate
- 2% of traffic development will distribute directly to Herolds Bay Estate via the pedestrian access and golf cart access. This traffic will not be directed through the public road network;

The trip distribution is indicated in the figure attached as addendum.

### 3 TRAFFIC DEMAND

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#### 3.1 Background traffic

Updated traffic counts were conducted for this revised TIA on 18 September 2025. The day on the traffic counts were conducted was a normal work and school day. No rain was present. The volumes of the 2025 base year are indicated diagrammatically in the figures in the addenda:

#### 3.2 Traffic growth rates

The TMH17: South African Trip Data Manual, recommends the following growth rate factors for different development areas:

<b>Development Area</b>	<b>Growth rate</b>
Low growth areas	0 - 3%
Average growth areas	3 - 4%
Above average growth areas	4 - 6%
Fast growing areas	6 - 8%
Exceptionally high growth areas	> 8%
Source: City Council of Pretoria (1998)	

Figure 8: TMH17 Growth Rate Factors

The proposed development forms part of an area experiencing average growth, although limited geographically, whilst approved developments are not fully built-up yet. It is hence expected that the area will develop at an average growth rate, in line with the table above, of approximately 3.5%. A growth rate of 3.5% per annum will thus be applied.

A standard horizon period of 5 years will be used to determine the impact of the proposed development on the surrounding road network.

The background volumes of the 2030 horizon year are indicated diagrammatically in the figures attached as addenda.

### **3.3 Development traffic**

The traffic generated by the proposed development, assigned to the road network, is indicated on the figures in the addenda.

### **3.4 Other developments**

A number of developments are located adjacent and/or in close proximity to the study area. The extent of these developments and approved rights was studied as input into this report. Residential construction is ongoing at most of these estates and is expected to continue in the foreseeable future. The following developments were considered as background to the report:

- Oubaai Golf Estate – east of the traffic circle, shared circle;
- Breakwater Bay Eco Estate – south of the traffic circle, shared circle;
- The Brink Eco Estate – south of the traffic circle, shared circle;
- Denneseerus – south of the commercial development, shared intersection with commercial site.

Existing traffic of these developments are included in the background traffic. It is anticipated that the 3.5% annual traffic growth allowed for in this study, will be sufficient to allow for the medium term (5-year horizon period) expansion of these developments. For the long term, limited further development will be possible in the area due to geographical constraints.

It is noted that a significant percentage of the background traffic counted comprises of construction traffic, a non-permanent traffic volume generator, which will remain for the medium term, but will subside to insignificance once all the estates are fully developed.

### **3.5 Total future traffic demand**

The total 2030 future traffic demand, consisting of the future background traffic demand plus development traffic, is indicated on the figures in the addenda.

## **4 CAPACITY ANALYSIS**

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A capacity analysis was performed for the weekday AM and PM peak hours for the future background (2030) and total future traffic (2030) conditions. The capacity analysis was performed by means of the Sidra Intersection 8.0 software to compare the impact of the development against the background traffic.

A discussion of the analysis of the various intersections and scenarios is presented below, whilst the detailed Sidra results are included as addenda.

### **4.1 Intersection 1: Oubaai Main Road and Herolds Bay Country Estate Access**

#### **4.1.1 Existing Geometry**

The existing intersection geometry consists of a traffic circle with a 12m internal diameter and 30m outer diameter. The traffic circle has single lanes in all approaches and provides access to all the developments in this node via Oubaai Main Road approaching from the west. The traffic circle provides access to the Herolds Bay Country Estate (north), to Oubaai Golf Estate (east) and to Breakwater Bay Eco Estate & The Brink Eco Estate (south). This geometry is shown in the figure below and was used to analyse the background 2030 and total traffic 2030 scenarios for the intersection.

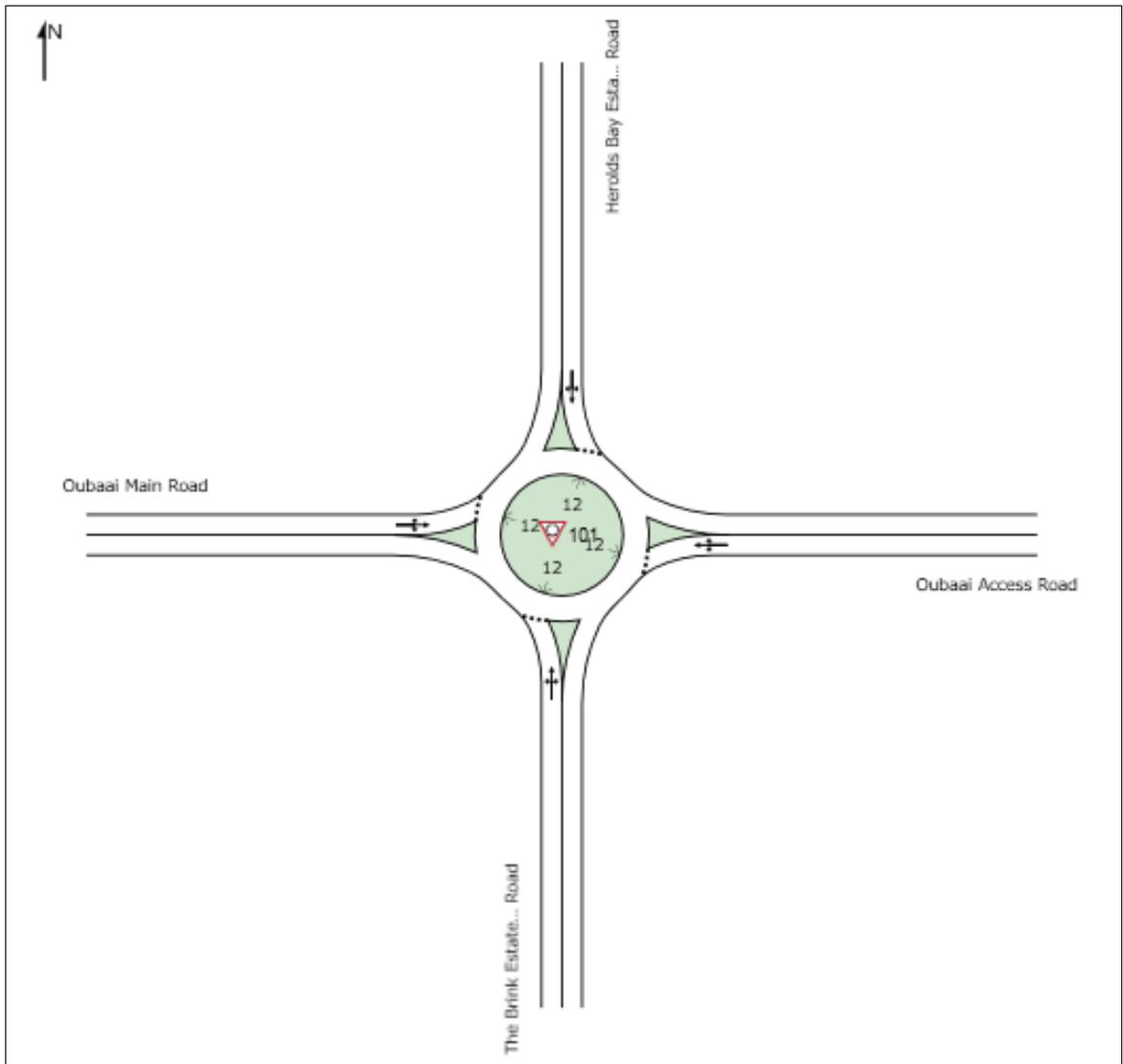


Figure 9: Intersection 1: Geometry: Oubaai Main Road and Herolds Bay Country Estate Access

#### 4.1.2 Analysis

The results of the analysis are shown in tabular form below:

Scenario	Peak Hour	Intersection Control	Intersection Avg Delay (s)	Intersection LOS	Intersection v/c	Critical Approach				
						Approach	Movement	Delay	LOS	v/c
Existing (2025)	AM	Traffic Circle	4.8	A	0.083	S	L	4.0	A	0.017
							T	4.4	A	0.017
							R	7.9	A	0.017
						E	L	3.7	A	0.069
							T	4.0	A	0.069
							R	7.6	A	0.069
						N	L	3.1	A	0.003
							T	3.6	A	0.003
							R	6.9	A	0.003
W	L	4.3	A	0.083						
	T	4.6	A	0.083						
	R	8.2	A	0.083						
Background (2030)	AM	Traffic Circle	4.9	A	0.098	S	L	4.1	A	0.019
							T	4.5	A	0.019
							R	8.0	A	0.019
						E	L	3.7	A	0.083
							T	4.1	A	0.083
							R	7.6	A	0.083
						N	L	3.2	A	0.003
							T	3.8	A	0.003
							R	7.0	A	0.003
W	L	4.3	A	0.098						
	T	4.6	A	0.098						
	R	8.2	A	0.098						
Total (2030)	AM	Traffic Circle	5.6	A	0.119	S	L	4.7	A	0.022
							T	5.1	A	0.022
							R	8.6	A	0.022
						E	L	4.4	A	0.097
							T	4.8	A	0.097
							R	8.3	A	0.097
						N	L	3.4	A	0.097
							T	3.9	A	0.097
							R	7.2	A	0.097
W	L	4.3	A	0.119						
	T	4.6	A	0.119						
	R	8.2	A	0.119						

Scenario	Peak Hour	Intersection Control	Intersection Avg Delay (s)	Intersection LOS	Intersection v/c	Critical Approach				
						Approach	Movement	Delay	LOS	v/c
Existing (2025)	PM	Traffic Circle	4.8	A	0.077	S	L	4.0	A	0.024
							T	4.4	A	0.024
							R	7.9	A	0.024
						E	L	3.7	A	0.068
							T	4.0	A	0.068
							R	7.6	A	0.068
						N	L	3.1	A	0.004
							T	3.6	A	0.004
							R	6.8	A	0.004
						W	L	4.3	A	0.077
							T	4.6	A	0.077
							R	8.2	A	0.077
Background (2030)	PM	Traffic Circle	4.8	A	0.090	S	L	4.1	A	0.030
							T	4.5	A	0.030
							R	8.0	A	0.030
						E	L	3.7	A	0.079
							T	4.0	A	0.079
							R	7.6	A	0.079
						N	L	3.2	A	0.005
							T	3.7	A	0.005
							R	6.9	A	0.005
						W	L	4.3	A	0.090
							T	4.6	A	0.090
							R	8.2	A	0.090
Total (2030)	PM	Traffic Circle	5.1	A	0.171	S	L	4.6	A	0.037
							T	4.9	A	0.037
							R	8.5	A	0.037
						E	L	4.1	A	0.111
							T	4.4	A	0.111
							R	8.0	A	0.111
						N	L	3.4	A	0.054
							T	3.9	A	0.054
							R	7.2	A	0.054
						W	L	4.3	A	0.171
							T	4.7	A	0.171
							R	8.3	A	0.171

Figure 10: Results of analysis: Oubaai Main Road and Herolds Bay Country Estate Access

The results of the analysis indicate that the development has a negligible impact on the Level of Service during both the morning and afternoon horizon year peak hours and the intersection will continue to operate at a Level of Service A for both the morning and afternoon peak hours.

#### 4.1.3 Mitigation measures

No upgrades or other mitigation measures are required or proposed for the intersection.

## 4.2 Intersection 2: Oubaai Main Road and Commercial Access

### 4.2.1 Existing Geometry

The existing intersection geometry has a shared through and right lane in the western approach, a shared through and left lane in the eastern approach, and a shared right and left lane in the southern approach (Denneseerus). The intersection is stop controlled from the south (Denneseerus). This geometry is shown in the figure below and was used to analyse the existing 2025 and background 2030 scenarios for the intersection.

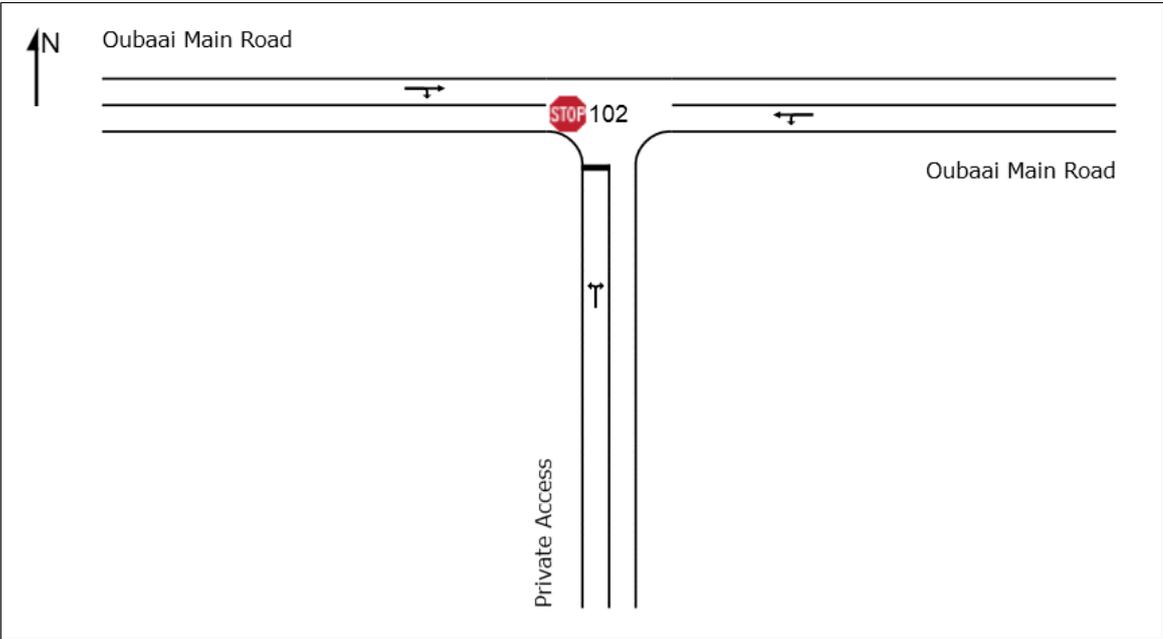


Figure 11: Intersection 2: Existing geometry

### 4.2.2 Proposed Geometry

The proposed intersection geometry to service the development has a shared left, through and right lane in the western approach, a shared left and right lane in the northern approach (this development), a shared left, through and right lane in the eastern approach, and a shared left and right lane in the southern approach (Denneseerus). The intersection is stop controlled from the north (this development) and south (Denneseerus). This geometry is shown in the figure below and was used to analyse the total traffic 2030 scenario for the intersection.

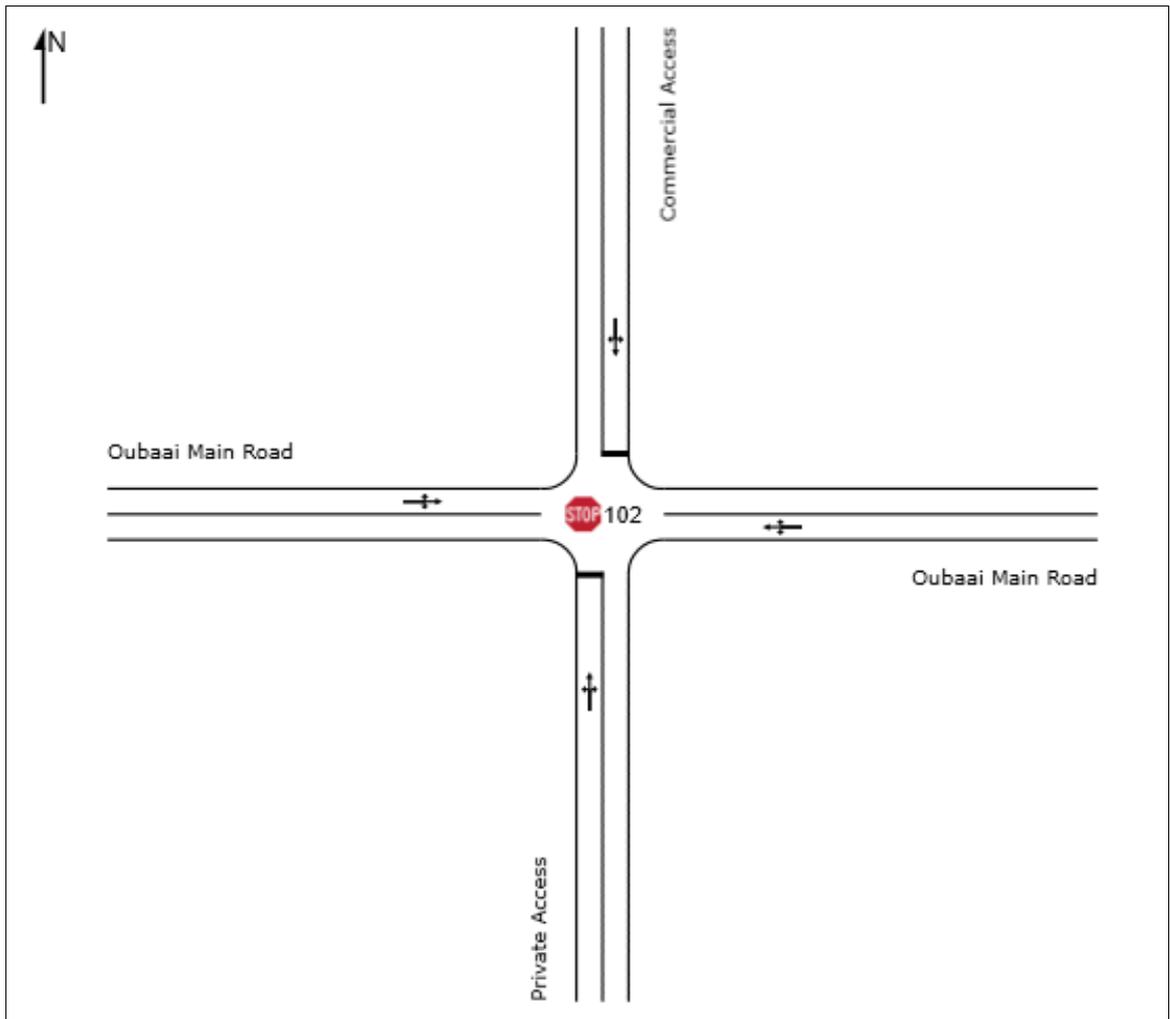


Figure 12: Intersection 2: Proposed geometry: Oubaai Main Road and Commercial Access

### 4.2.3 Analysis

The results of the analysis are shown in tabular form below:

Scenario	Peak Hour	Intersection Control	Intersection Avg Delay (s)	Intersection LOS	Intersection v/c	Critical Approach				
						Approach	Movement	Delay	LOS	v/c
Existing (2025)	AM	TWSC	0.1	A	0.070	S	L	5.2	A	0.002
							R	5.2	A	0.002
						E	L	5.5	A	0.057
							T	0.0	A	0.057
						W	T	0.0	A	0.070
R			5.4	A	0.070					
Background (2030)			0.1	A	0.083	S	L	5.3	A	0.002
							R	5.5	A	0.002
						E	L	5.5	A	0.068
							T	0.0	A	0.068
	W	T				0.0	A	0.083		
R		5.5	A	0.083						
Total (2030)	1.2	A	0.127	S	L	5.7	A	0.004		
					T	6.9	A	0.004		
					R	7.1	A	0.004		
				E	L	6.3	A	0.127		
					T	0.1	A	0.127		
					R	6.2	A	0.127		
				N	L	6.1	A	0.070		
					T	7.6	A	0.070		
					R	7.9	A	0.070		
				W	L	5.2	A	0.109		
					T	0.0	A	0.109		
					R	5.9	A	0.109		
				Existing (2025)	PM	TWSC	0.1	A	0.063	S
R	5.3	A	0.002							
E	L	5.5	A							0.060
	T	0.0	A							0.060
W	T	0.0	A							0.063
	R	5.5	A	0.063						
Background (2030)	0.1	A	0.074	S			L	5.3	A	0.002
							R	5.5	A	0.002
				E			L	5.5	A	0.071
							T	0.0	A	0.071
				W			T	0.0	A	0.074
R	5.5	A	0.074							
Total (2030)	2.5	A	0.163	S			L	5.5	A	0.004
					T	7.6	A	0.004		
					R	7.6	A	0.004		
				E	L	6.7	A	0.125		
					T	0.4	A	0.125		
					R	6.6	A	0.125		
				N	L	6.3	A	0.140		
					T	8.2	A	0.140		
					R	8.7	A	0.140		
W	L	5.2	A	0.163						
	T	0.0	A	0.163						
	R	5.7	A	0.163						

Figure 13: Results of analysis: Oubaai Main Road and Commercial Access

The results of the analysis indicate that the development has a negligible impact on the Level of Service during both the morning and afternoon horizon year peak hours and the intersection will continue to operate at a Level of Service A for both the morning and afternoon peak hours.

#### **4.2.4 Mitigation measures**

No other upgrades or mitigation measures, other than the new northern approach, are required or proposed for the intersection.

#### **4.2.5 Warrants for right turn lanes**

The total horizon year 2030 traffic at the commercial development access was weighed against the warrants for right turn lanes in order to consider the safety of right turn manoeuvres alongside and opposed to the main traffic stream in Oubai Main Road. The warrants consider the total advancing volume, the total opposing volume, the percentage right turn movements as well as the vehicle speed on the through route.

The necessity of a right turn lane is not triggered in this analysis for this intersection. The analysis is presented on the graph in the following diagram.

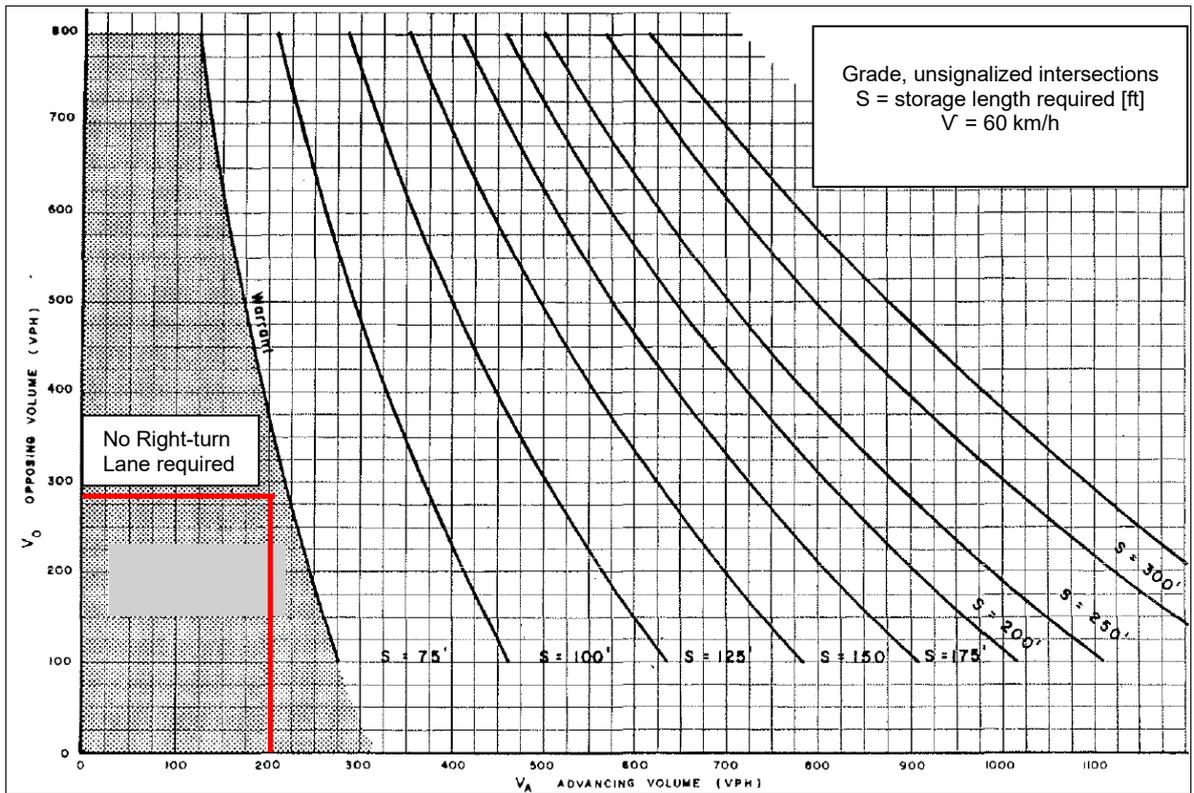


Figure 14: Warrant for right-turn storage lanes for 60km/h road

#### 4.2.6 Negotiations with Municipality and adjacent land owner (Denneseeerus)

Although a right turn lane is not triggered for this intersection, during the original approval of the development, a right turn lane was negotiated between the developer of Herolds Bay Country Estate, the municipality and the adjacent land owner (Denneseeerus). The detail design of the configuration will be workshopped with the Municipality during the detail design stage. A concept configuration is provided in the figure below as has been approved during the original negotiations.

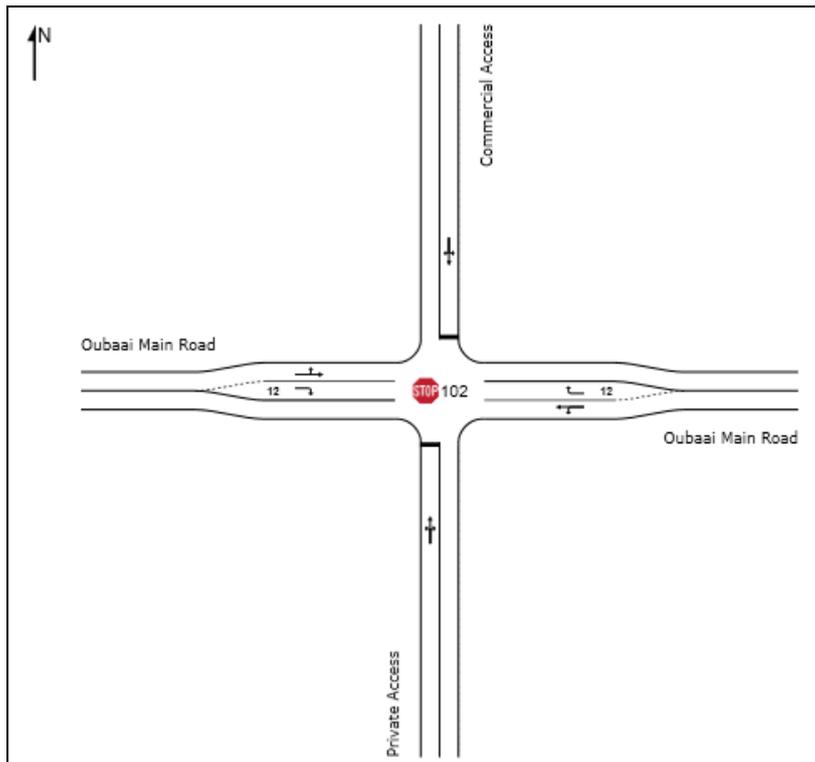


Figure 15: Concept design for right turn lane at commercial access

### 4.3 Intersection 3: Oubaai Main Road and Rooidraai Road/DR1590(R404)

#### 4.3.1 Existing Geometry

The existing intersection geometry consists of a shared through and right lane from the south, a shared left and through lane from the north and a shared left and right lane from the east. This geometry is shown in the figure below and was used to analyse the existing 2025, background 2030 and total traffic 2030 scenarios for the intersection.

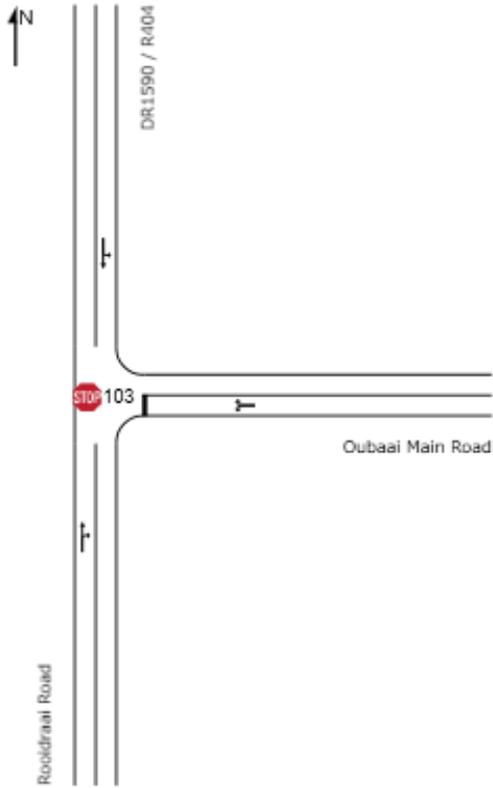


Figure 16: Intersection 3: Geometry: Oubaai Main Road and Rooddraai Road/DR1590(R404)

### 4.3.2 Analysis

The results of the analysis are shown in tabular form below:

Scenario	Peak Hour	Intersection Control	Intersection Avg Delay (s)	Intersection LOS	Intersection v/c	Critical Approach						
						Approach	Movement	Delay	LOS	v/c		
Existing (2025)	AM	TWSC	4.7	A	0.114	S	T	0.1	A	0.046		
							R	5.9	A	0.046		
						E	L	8.2	A	0.114		
							R	8.4	A	0.114		
N			L	5.5	A	0.082						
			T	0.0	A	0.082						
Background (2030)			AM	TWSC	4.8	A	0.140	S	T	0.2	A	0.055
									R	6.0	A	0.055
	E	L						8.2	A	0.140		
		R						8.6	A	0.140		
N	L	5.5			A	0.097						
	T	0.0			A	0.097						
Total (2030)	AM	TWSC			5.9	A	0.290	S	T	0.3	A	0.062
									R	6.2	A	0.062
			E	L				8.3	A	0.290		
				R				9.0	A	0.290		
N			L	5.6	A	0.118						
			T	0.0	A	0.118						
Existing (2025)			PM	TWSC	4.5	A	0.117	S	T	0.1	A	0.037
									R	6.0	A	0.037
	E	L						8.3	A	0.117		
		R						8.4	A	0.117		
N	L	5.5			A	0.091						
	T	0.0			A	0.091						
Background (2030)	PM	TWSC			4.5	A	0.144	S	T	0.1	A	0.044
									R	6.1	A	0.044
			E	L				8.3	A	0.144		
				R				8.6	A	0.144		
N			L	5.6	A	0.108						
			T	0.0	A	0.108						
Total (2030)			PM	TWSC	5.7	A	0.259	S	T	0.8	A	0.079
									R	6.7	A	0.079
	E	L						8.4	A	0.259		
		R						9.5	A	0.259		
N	L	5.6			A	0.171						
	T	0.0			A	0.171						

Figure 17: Results of analysis: Oubaai Main Road and Rooidraai Road/R404

The results of the analysis indicate that the development has a negligible impact on the Level of Service during both the morning and afternoon horizon year peak hours and the intersection will continue to operate at a Level of Service A for both the morning and afternoon peak hours.

### **4.3.3 Mitigation measures**

No upgrades or other mitigation measures are required or proposed for the intersection.

## **5 SALIENT ISSUES**

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A number of salient issues are addressed below and shall also be considered in parallel to all relevant approved documentation and applicable legislation:

### **5.1 Sight Distances (commercial access)**

Access to the commercial site has been approved during the approval of the development. The access has been incorporated into the signed services agreement with the municipality. This access is from Oubaai Main Road at a point approximately 78m east of the intersection with the DR1590(R404). Sight distances at this access point are acceptable in both the horizontal and vertical alignments and satisfactory for development purposes.

### **5.2 Non-motorized- and public transport facilities (commercial site)**

These facilities will remain as per the original negotiations and signed services agreement with the municipality. Refer to the signed services agreement for details.

### **5.3 Parking (commercial site)**

Sufficient parking exists on the proposed SDP of the commercial development. Disabled parking is provided and are indicated on the SDP. Delivery parking is provided and are indicated on the SDP. Detail designs of the commercial site layout will be submitted for approval prior to construction.

### **5.4 Commercial centre access gate**

The commercial centre will not have an access gate and ingress traffic will be free flow.

### **5.5 Refuse removal**

Refuse removal shall be performed by the George Municipality in accordance with the signed services agreement.

## 6 CONCLUSIONS

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The following conclusions can be reached from the updated Traffic Impact Study (Revision 3) for the proposed development of the commercial site at Herolds Bay Country Estate:

1. The development was approved and a services agreement has been signed between the developer and the municipality.
2. Services for phase 1 and 2 of the development have been completed and houses are under construction.
3. The original TIA was approved during the approval process of the development.
4. The developers wish to now amend the density and mix of the commercial erf only. The rest of the residential development will remain as per the approved SDP and as per the signed services agreement.
5. The purpose of this updated TIA is to inform and accompany the application for the amendment on the commercial erf, this is the only amendment applied for.
6. The residential development will still consist of 102 single residential erven and 68 group housing units, the approved SDP will not change and is hence not the focus of this TIA.
7. The approved rights versus the proposed densification and mix amendment of the commercial site are as follows:

Description	Approved	Proposed
Filling Station	1	0
Retail (GLA m2)	750	768
Restaurant (GLA m2)	250	300
Offices (GLA m2)	300	0
Flats (units)	0	76

- a. The filling station is omitted from the mix;
  - b. Offices are omitted from the mix;
  - c. Retail GLA is increased slightly from 750m2 to 768m2;
  - d. Restaurant GLA is increased slightly from 250m2 to 300m2;
  - e. Flats are added (76 flats).
8. Access to the residential development is obtained via Oubaai Main Road from the traffic circle at the entrance to Oubaai Golf Estate. This access has been approved during the approval of the development and has been formally constructed during the construction of phase 1 of the Herolds Bay Country Estate.
  9. Access to the commercial site has been approved during the approval of the development. The access has been incorporated into the signed services

agreement with the municipality. This access is from Oubaa Main Road at a point approximately 78m east of the intersection with the DR1590(R404);

10. A number of developments are located adjacent and/or in close proximity to the study area. The extent of these developments and approved rights was studied as input into this report;
11. The peak hour trip generation of the development is indicated in the tables presented in the report.
12. Trip distribution and assignment are presented in the report.
13. Updated traffic counts were conducted for this revised TIA on 18 September 2025. The day on the traffic counts were conducted was a normal work and school day. No rain was present.;
14. The study area is classified as an average growth area and a growth rate of 3.5% per annum was applied to obtain the horizon year traffic volumes;
15. A capacity analysis was performed for the weekday AM and PM peak hours for the existing background (2025), future background (2030) and total future traffic (2030) conditions. The capacity analysis was performed by means of the Sidra Intersection 8.0 software to compare the impact of the development against the background traffic. The analysis is presented in detail in the report. The analysis concluded the following:
  - a. Intersection 1 (Oubaa Main Road and Development Access - Traffic circle): The development has a negligible impact on the Level of Service during both the morning and afternoon horizon year peak hours and the intersection will continue to operate at a Level of Service A for both the morning and afternoon peak hours;
  - b. Intersection 2 (Oubaa Main Road and Commercial Access):
    - i. The development has a negligible impact on the Level of Service during both the morning and afternoon horizon year peak hours and the intersection will continue to operate at a Level of Service A for both the morning and afternoon peak hours;
    - ii. The total horizon year 2030 traffic at the commercial development access was weighed against the warrants for right turn lanes in order to consider the safety of right turn manoeuvres alongside and opposed to the main traffic stream in Oubaa Main Road. The necessity of a right turn lane is not triggered in this analysis for this intersection.
    - iii. Although a right turn lane is not triggered for this intersection, during the original approval of the development, a right turn lane

was negotiated between the developer of Herolds Bay Country Estate, the municipality and the adjacent land owner (Denneseerus). The detail design of the configuration will be workshopped with the Municipality during the detail design stage. A concept configuration is provided in the report, as per the original approval.

- c. Intersection 3 (Oubai Main Road and Roodraai Road/DR1590(R404)): The development has a negligible impact on the Level of Service during both the morning and afternoon horizon year peak hours and the intersection will continue to operate at a Level of Service A for both the morning and afternoon peak hours;
16. Access to the commercial site has been approved during the approval of the development. The access has been incorporated into the signed services agreement with the municipality. This access is from Oubai Main Road at a point approximately 78m east of the intersection with the DR1590(R404). Sight distances at this access point are acceptable in both the horizontal and vertical alignments and satisfactory for development purposes.
17. Non-motorized- and public transport facilities (commercial site): These facilities will remain as per the original negotiations and signed services agreement with the municipality. Refer to the signed services agreement for details.
18. Parking (commercial site): Sufficient parking exists on the proposed SDP of the commercial development. Disabled parking is provided and are indicated on the SDP. Delivery parking is provided and are indicated on the SDP. Detail designs of the commercial site layout will be submitted for approval prior to construction.
19. The commercial centre will not have an access gate and ingress traffic will be free flow.
20. Refuse removal shall be performed by the George Municipality in accordance with the signed services agreement.
21. No vehicular thoroughfare may be obtained between the boundaries of the commercial site and the residential development. Pedestrian and golf cart access may be provided at this point;

## 7 RECOMMENDATIONS

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In line with the conclusions above, the following is recommended:

1. That the proposed densification of the commercial site at Herolds Bay Country Estate be approved from a Traffic Engineering perspective;
2. That an addendum to the services agreement with the municipality be compiled and signed;
3. That all recommendations contained in this report be implemented in accordance with the relevant design standards and legislation;
4. That all engineering designs be performed by a registered professional engineer and be submitted to the municipality for approval prior to construction.

## **8 ADDENDA**

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**8.1 Addendum A – Commercial Site Development Plan**

**8.2 Addendum B – Traffic volumes**

**8.3 Addendum C – Sidra analysis**

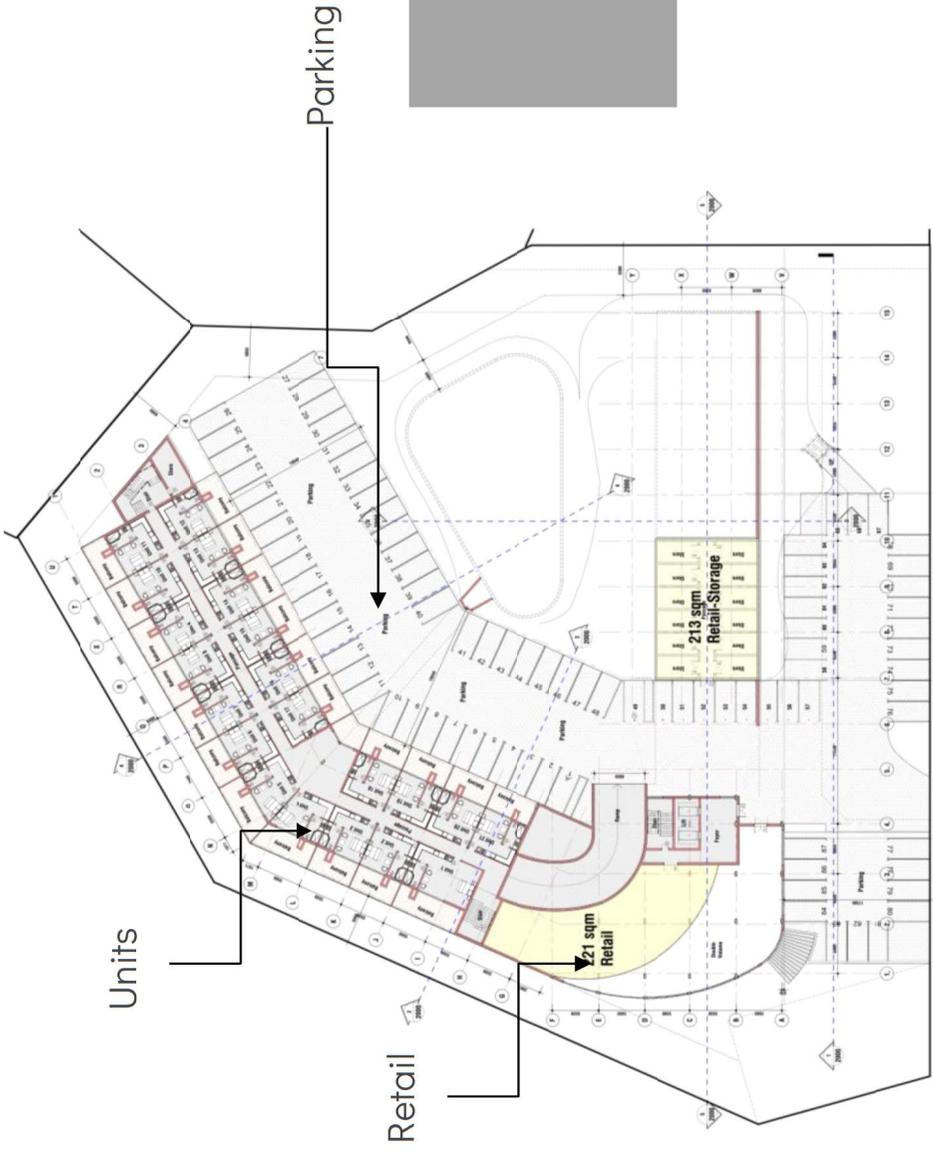
# **ADDENDUM A**

## **Commercial Site Development Plan**





# GROUND FLOOR PLAN



Drawing not to scale



## **ANNEXURE B**

### **Traffic volumes**



GEORGE  
↑

DR1590 / R404

HEROLDS BAY  
COUNTRY  
ESTATE

2% →

COMMERCIAL  
CENTRE

2% →

DEVELOPMENT  
ACCESS

91% 1% 4%

OUBAAI

← 82%  
← 4%

← 5%  
← 86%

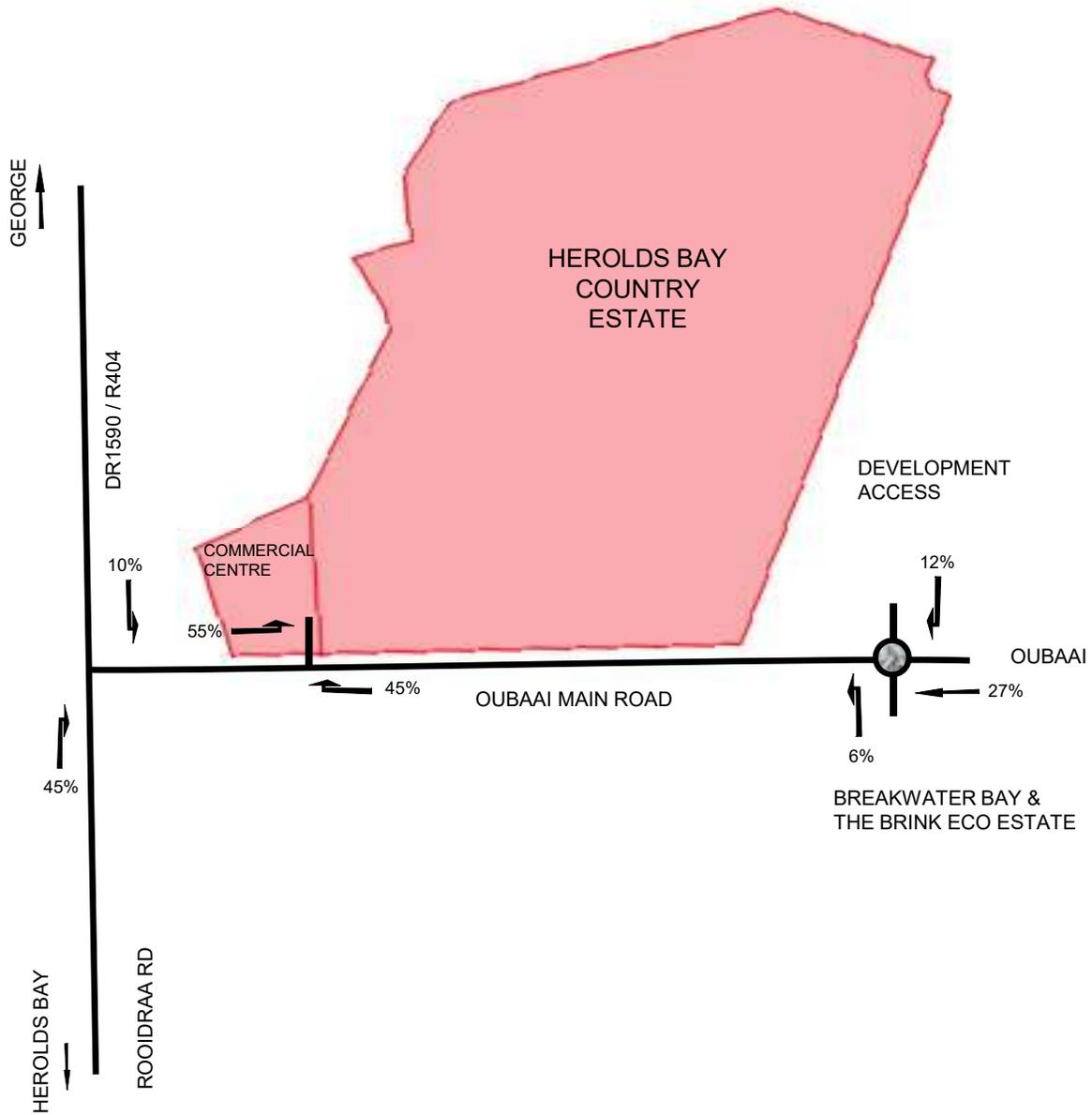
OUBAAI MAIN ROAD

BREAKWATER BAY &  
THE BRINK ECO ESTATE

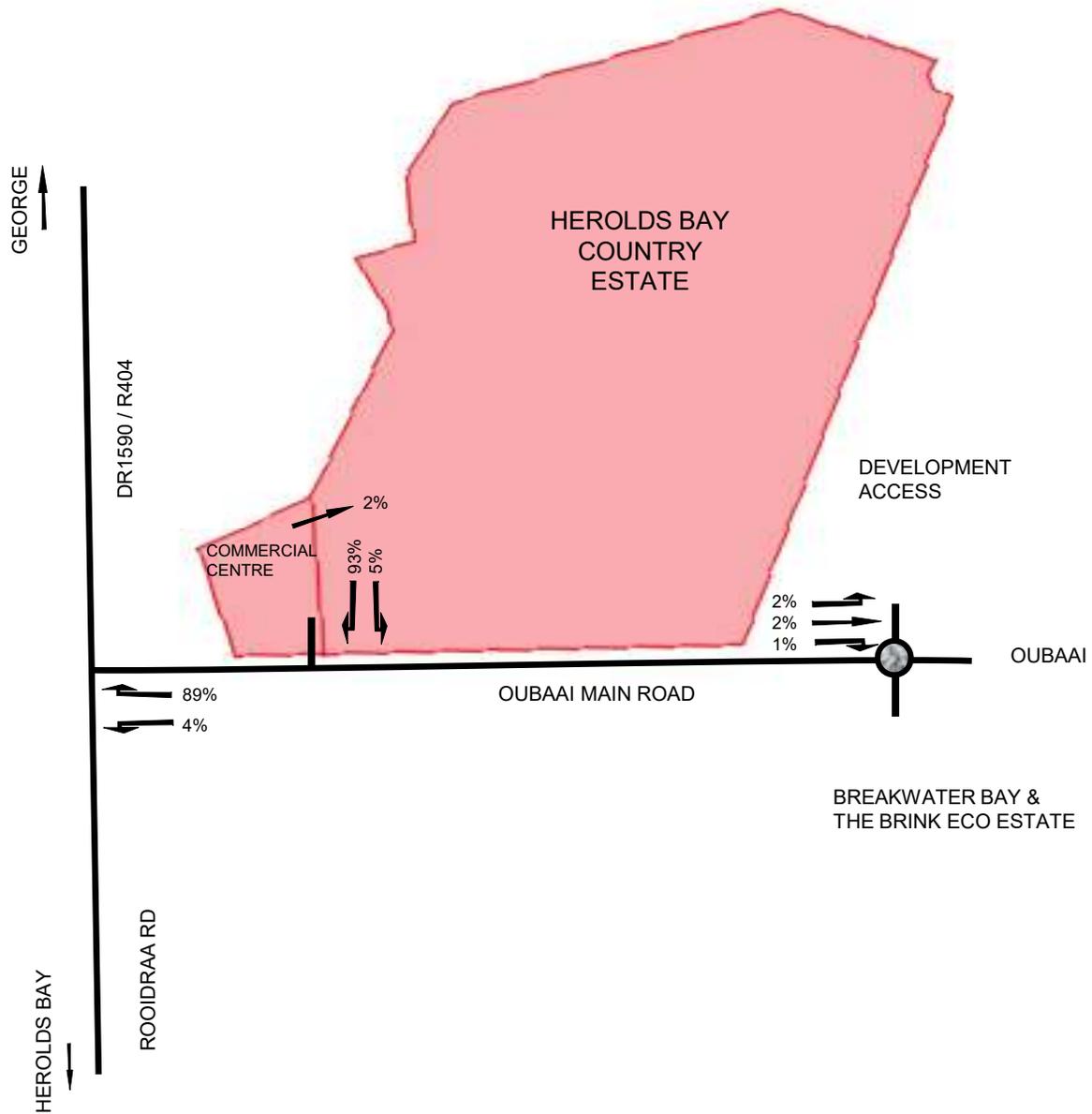
HEROLDS BAY  
↓

ROOIDRAA RD

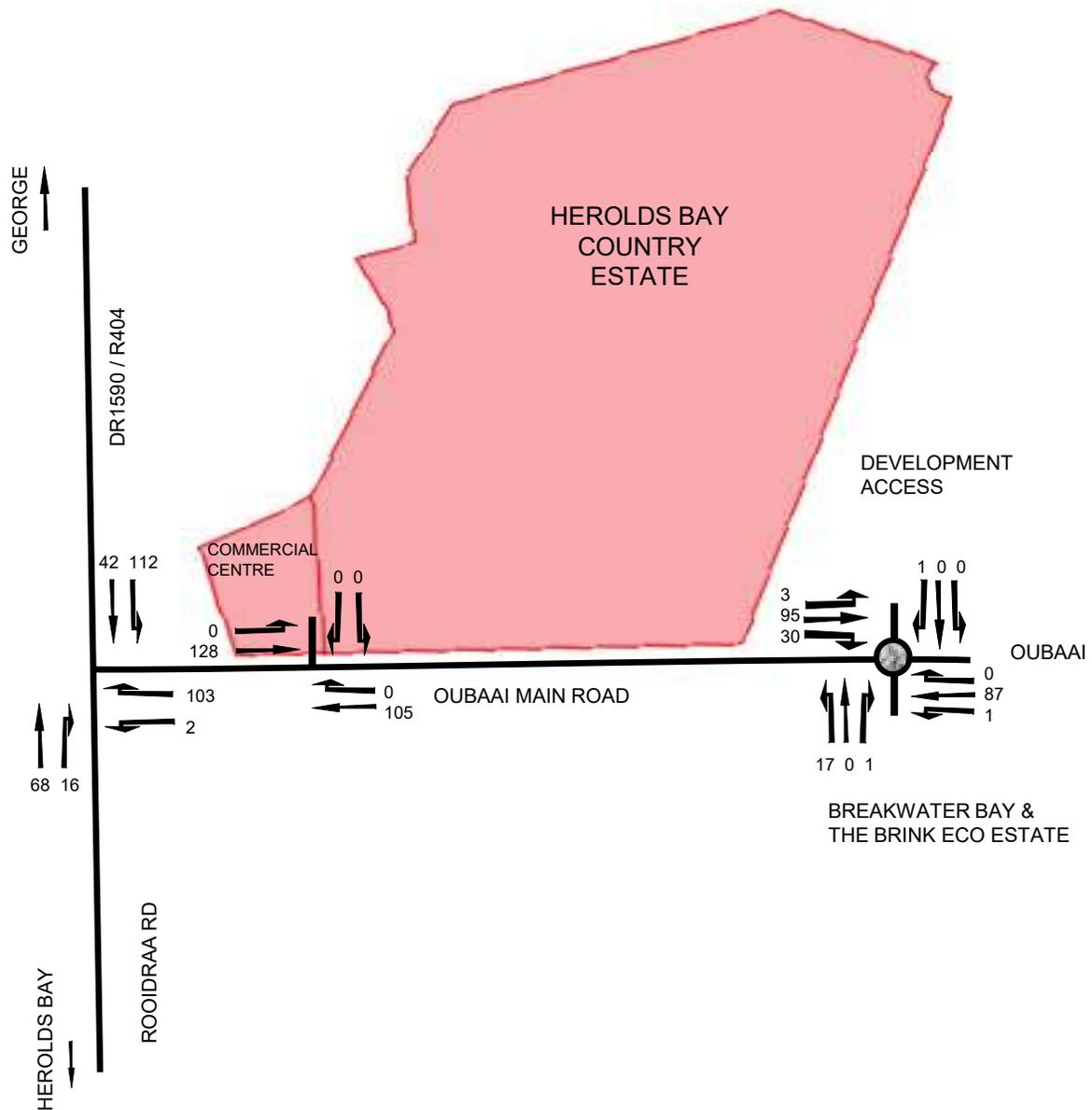
## PORTION 7 OF THE FARM BUFFELSFONTEIN, HEROLDS BAY – TRAFFIC IMPACT STUDY



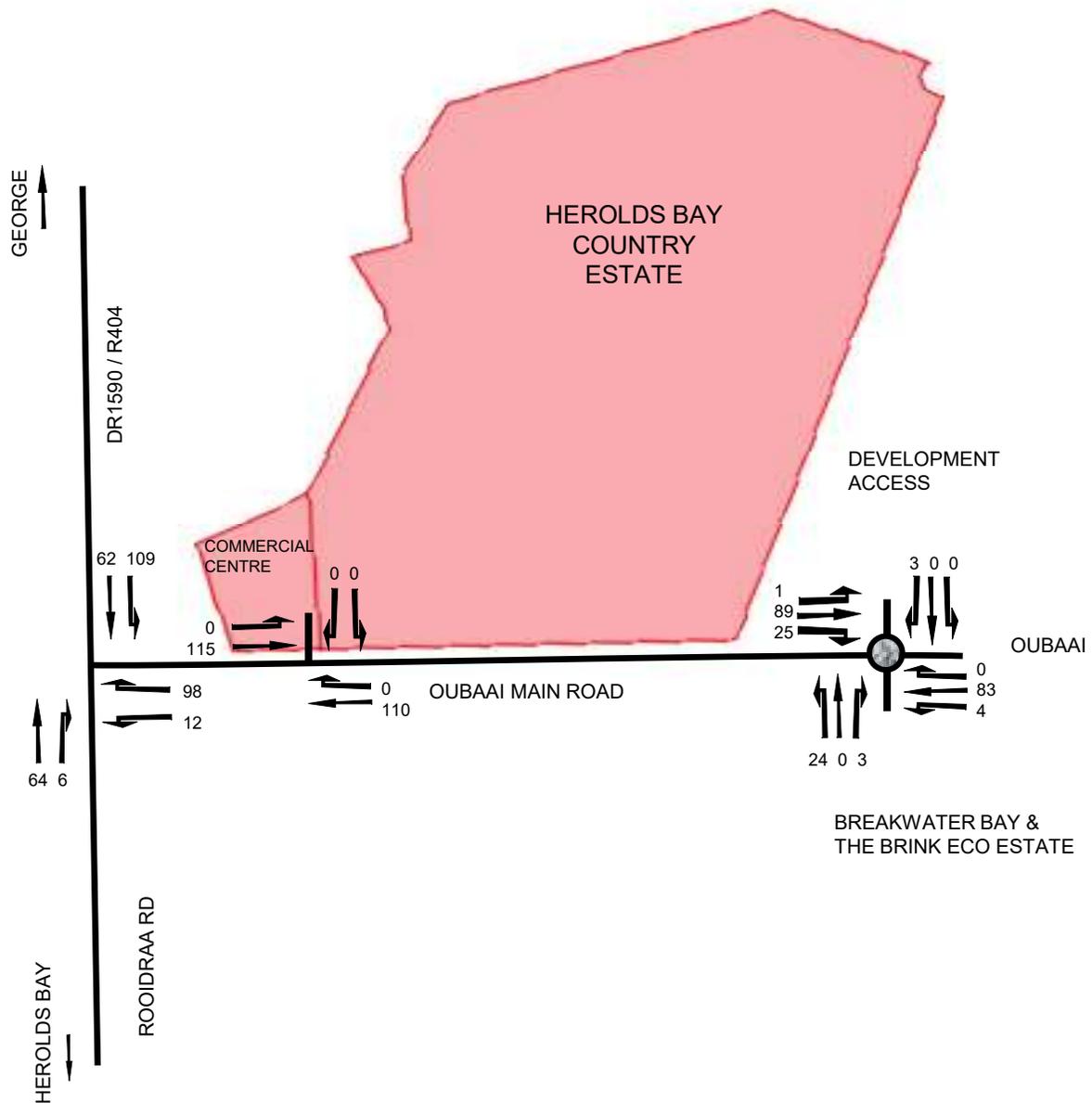
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TRAFFIC IMPACT STUDY**



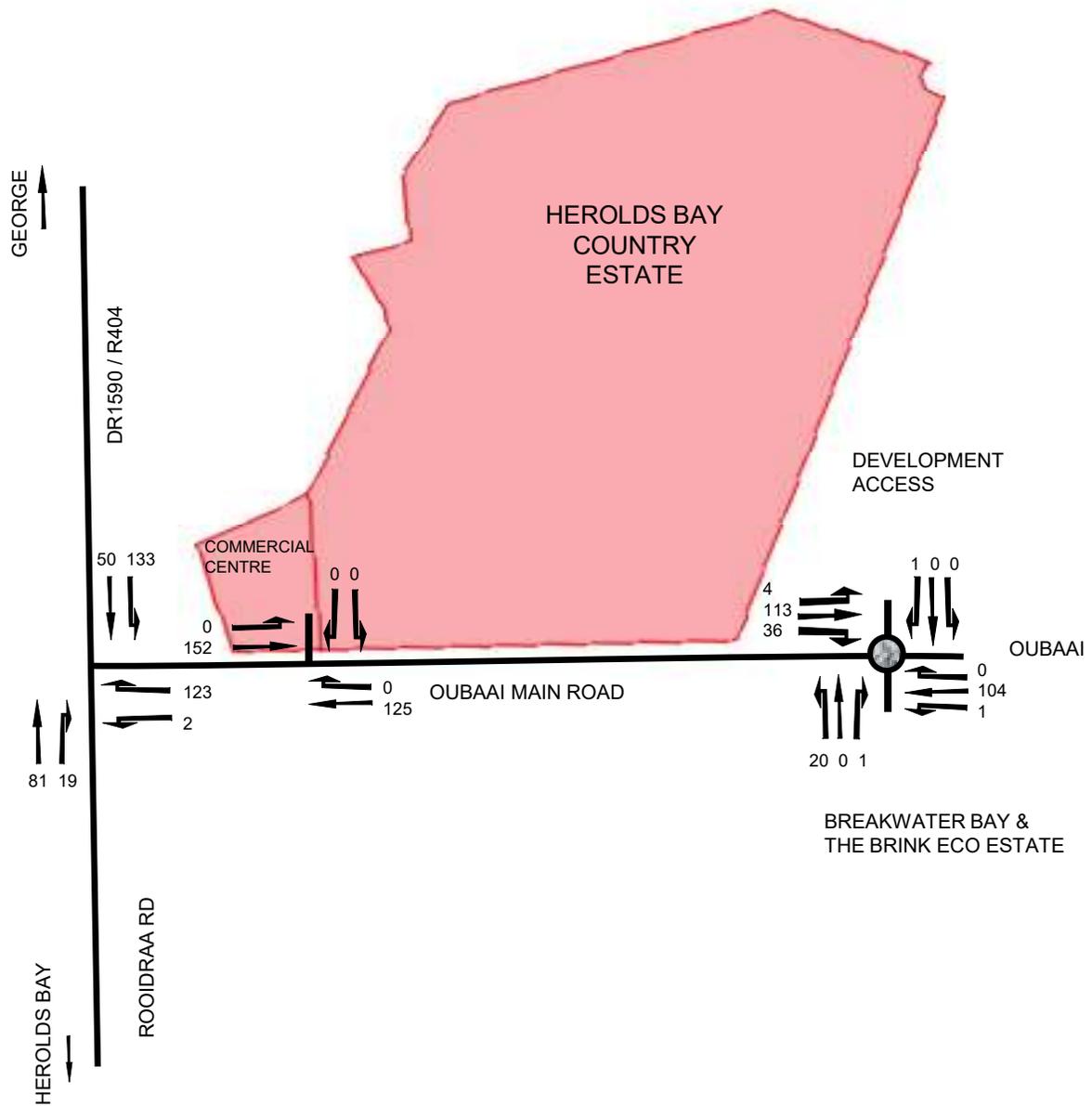
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TRAFFIC IMPACT STUDY**



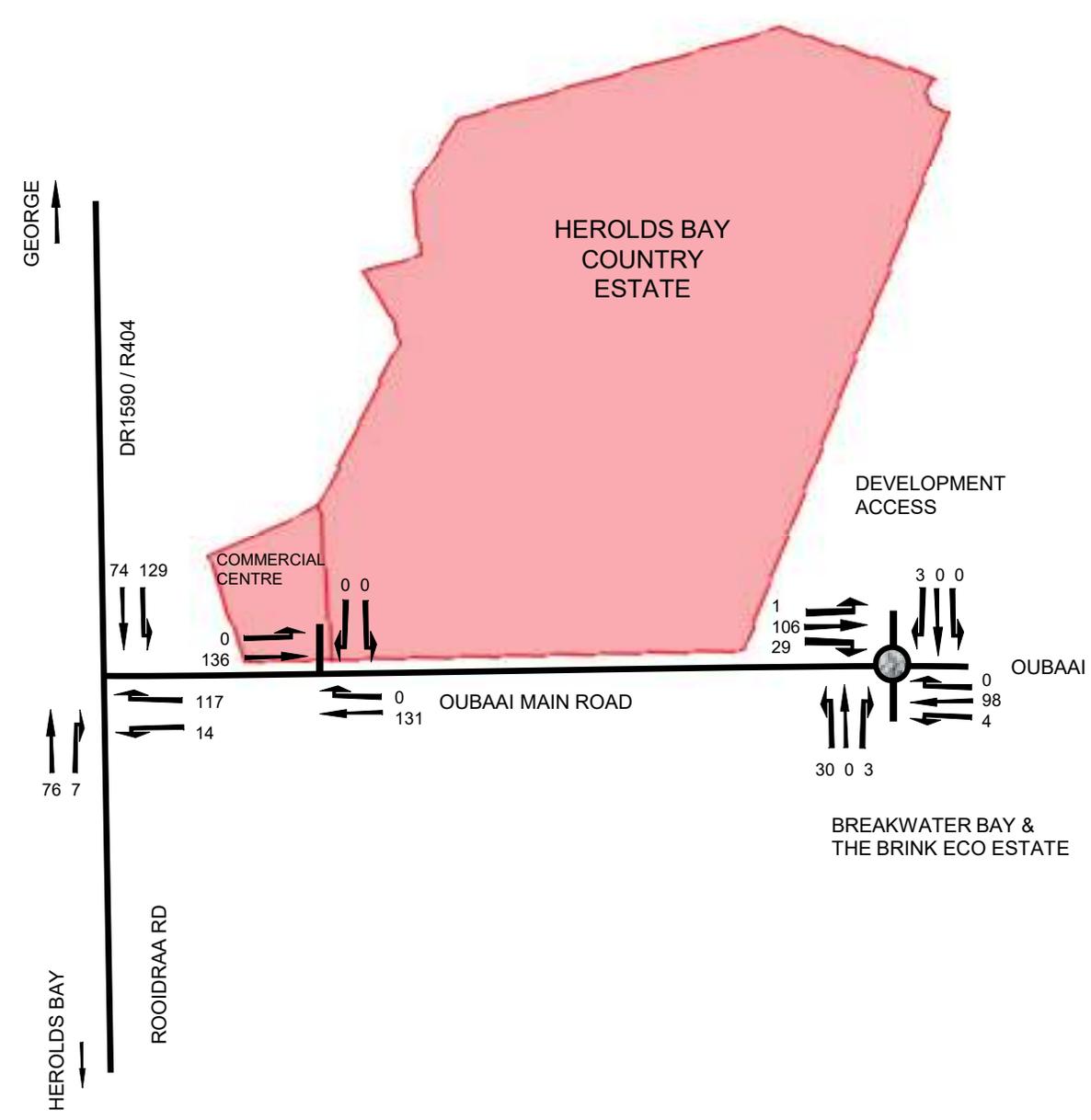
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TRAFFIC IMPACT STUDY**



**PORTION 7 OF THE FARM BUFFELSFONTEIN, HEROLDS BAY –  
TRAFFIC IMPACT STUDY**



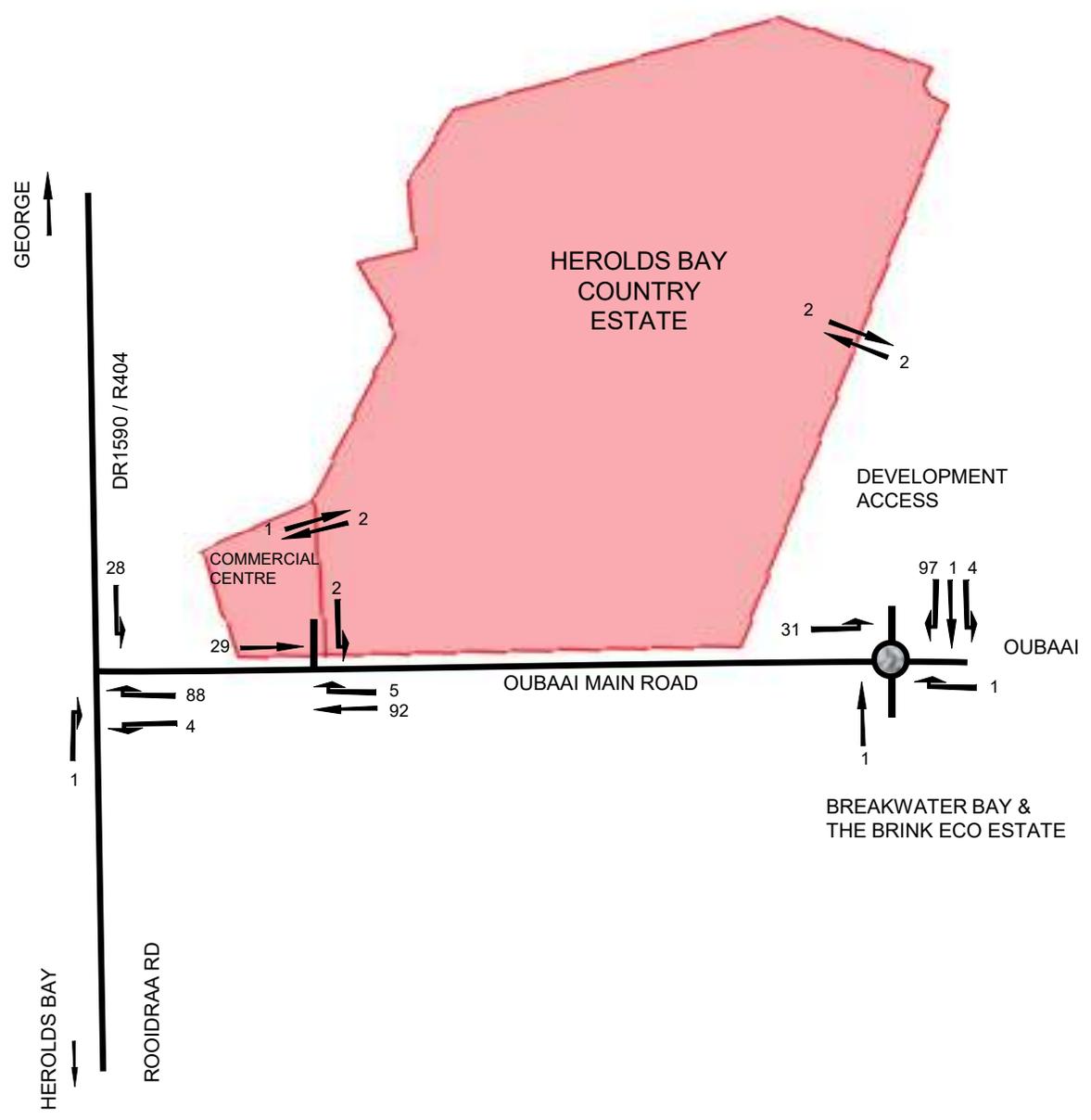
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TRAFFIC IMPACT STUDY**



**PORTION 7 OF THE FARM BUFFELSFONTEIN, HEROLDS BAY – TRAFFIC IMPACT STUDY**



Background Traffic: 2030 horizon year – PM Peak Hour

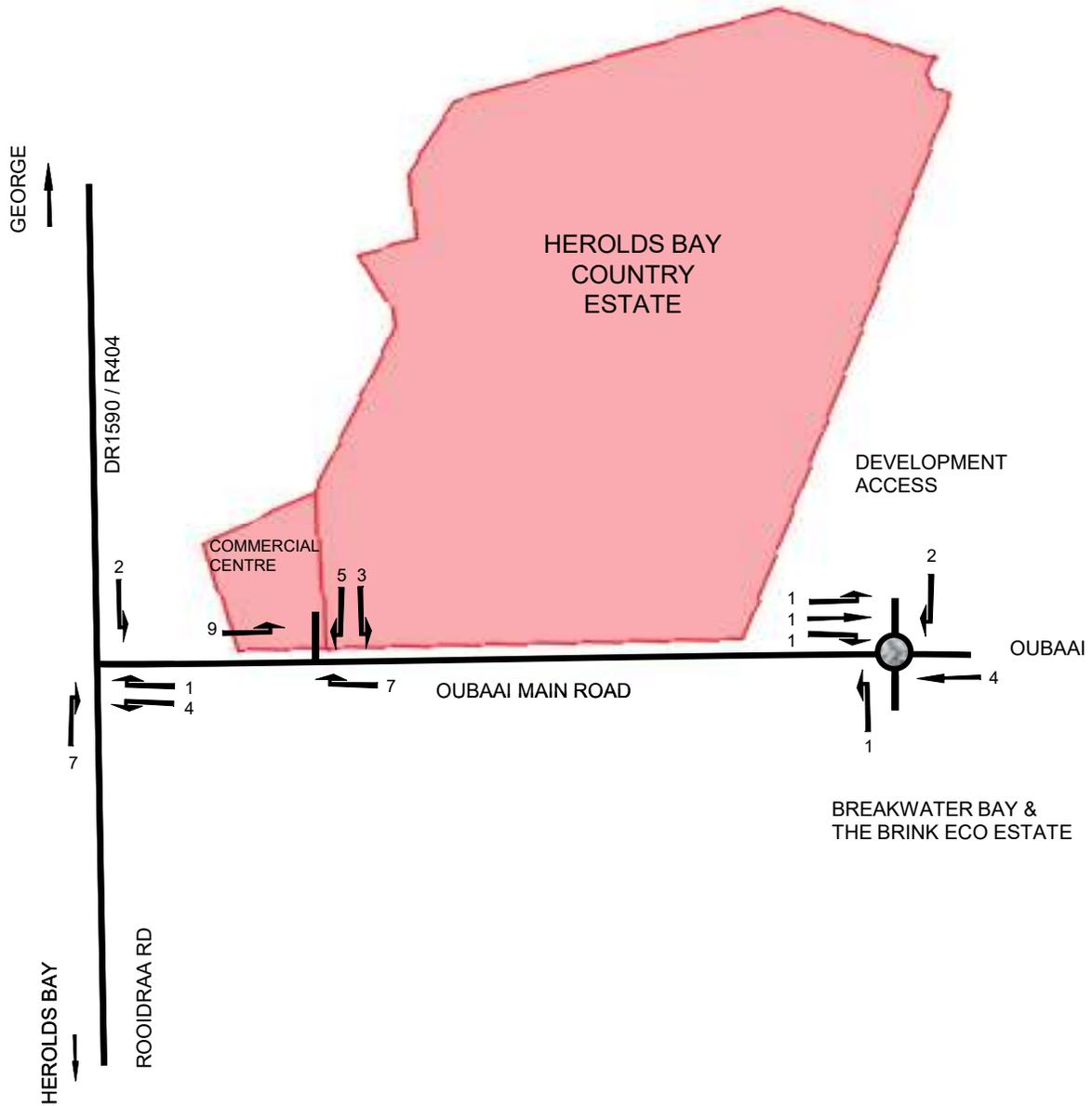


**PORTION 7 OF THE FARM BUFFELSFONTEIN, HEROLDS BAY –  
TRAFFIC IMPACT STUDY**

Development Traffic:  
Residential Estate - AM Peak Hour

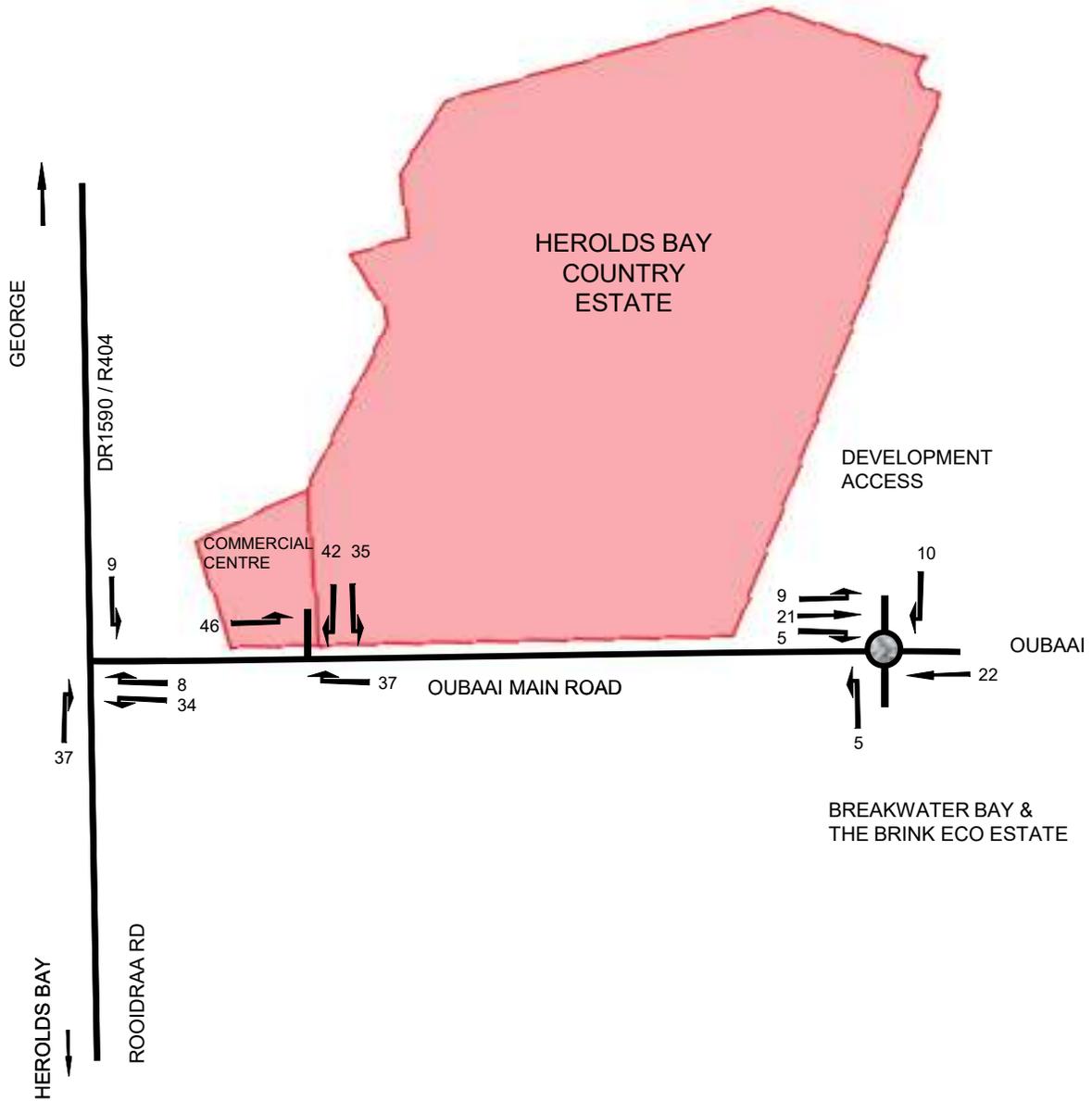






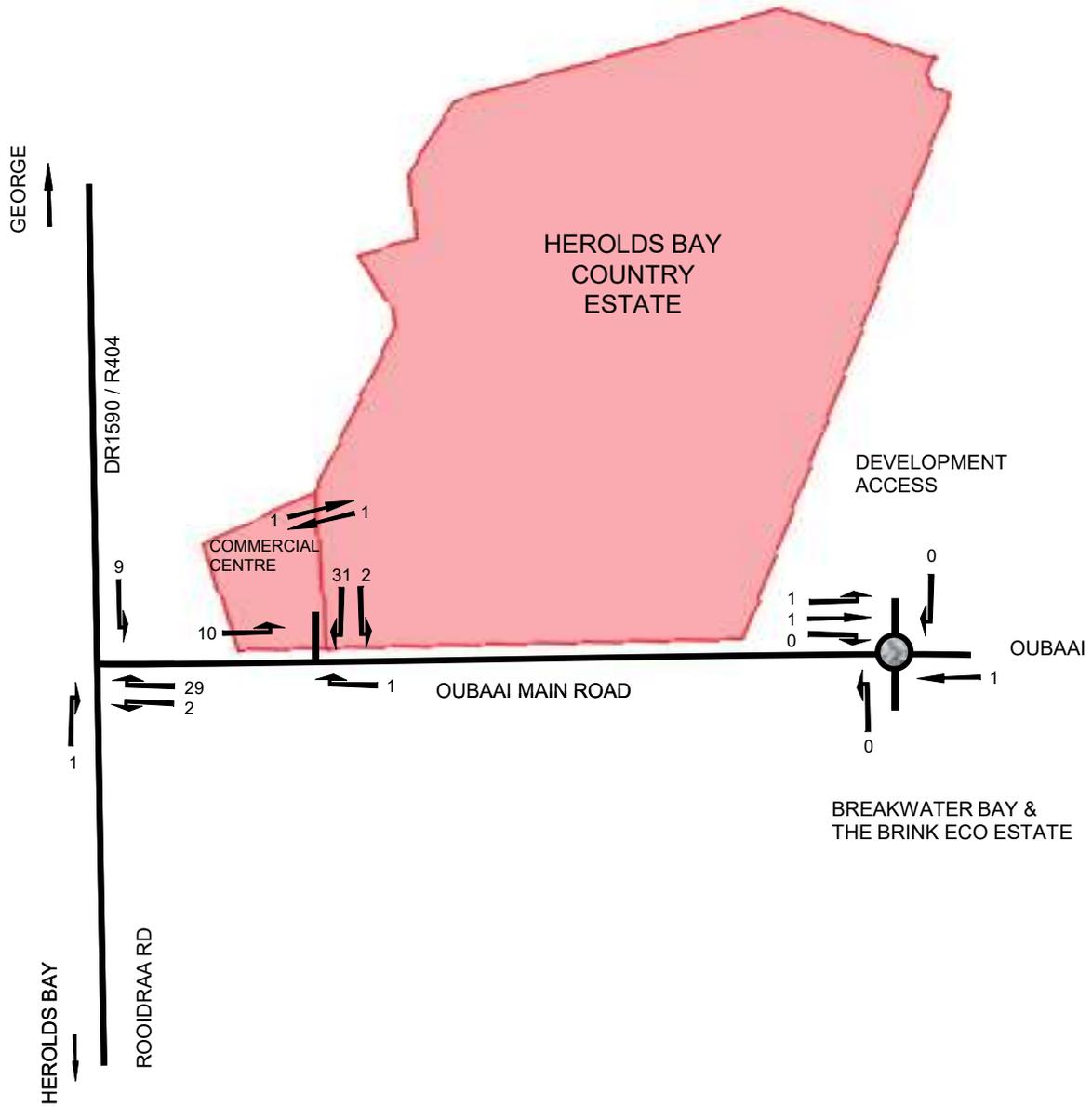
**PORTION 7 OF THE FARM BUFFELSFONTEIN, HEROLDS BAY –  
TRAFFIC IMPACT STUDY**

Development Traffic:  
Commercial Centre - AM Peak Hour



**PORTION 7 OF THE FARM BUFFELSFONTEIN, HEROLDS BAY –  
TRAFFIC IMPACT STUDY**

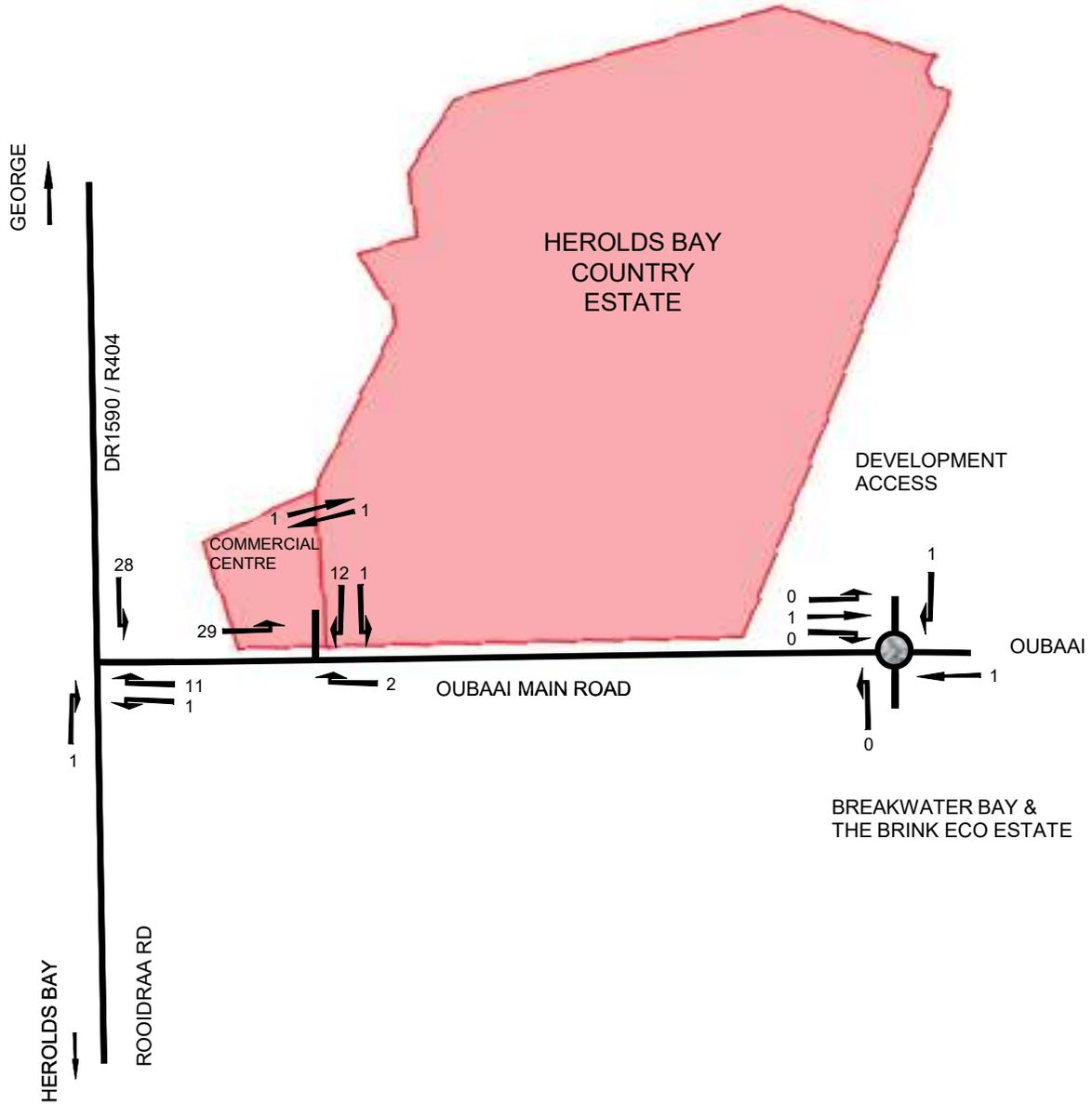
Development Traffic:  
Commercial Centre - PM Peak Hour



**PORTION 7 OF THE FARM BUFFELSFONTEIN, HEROLDS BAY –  
TRAFFIC IMPACT STUDY**

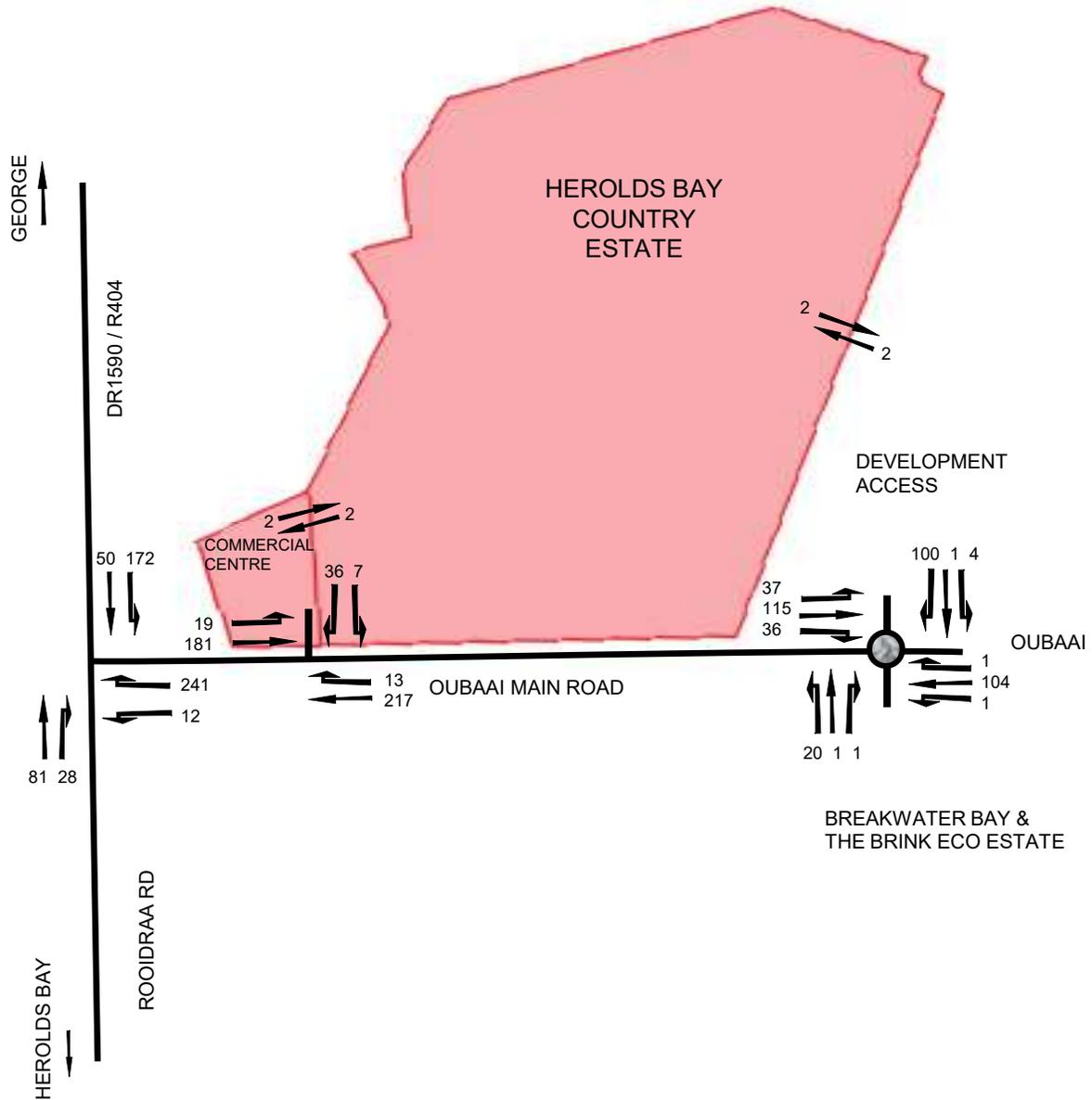


Development Traffic:  
Flats (commercial erf) - AM Peak Hour

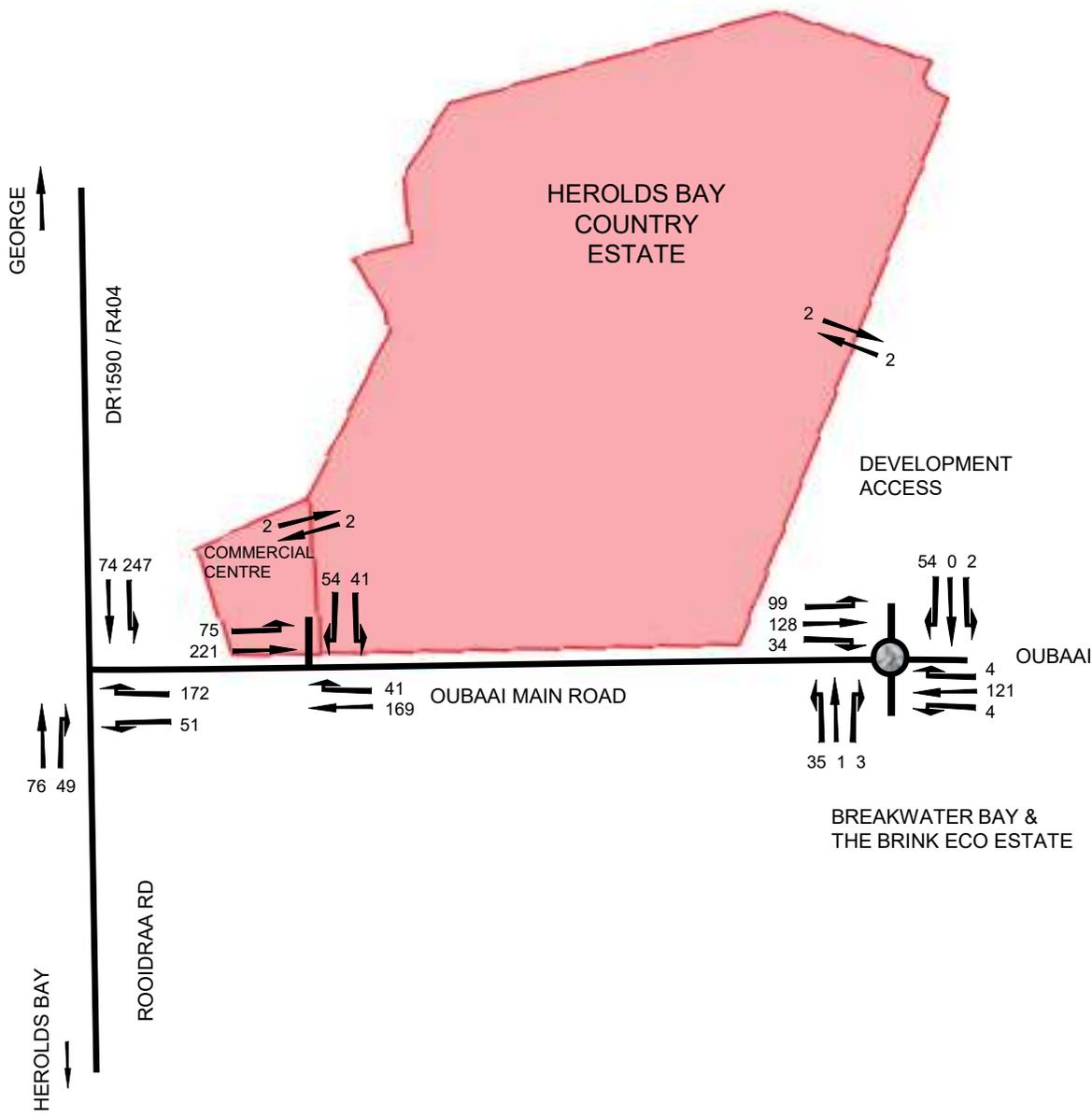


**PORTION 7 OF THE FARM BUFFELSFONTEIN, HEROLDS BAY –  
TRAFFIC IMPACT STUDY**

Development Traffic:  
Flats (commercial erf) - PM Peak Hour



**PORTION 7 OF THE FARM BUFFELSFONTEIN, HEROLDS BAY –  
TRAFFIC IMPACT STUDY**



**PORTION 7 OF THE FARM BUFFELSFONTEIN, HEROLDS BAY – TRAFFIC IMPACT STUDY**

# **ANNEXURE C**

**Sidra analysis**

# MOVEMENT SUMMARY

Site: 101 [Int 1 Backgr 2025 AM]

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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: The Brink Estate Access Road												
1	L2	18	0.0	0.017	4.0	LOS A	0.1	0.6	0.26	0.49	0.26	51.1
2	T1	1	0.0	0.017	4.4	LOS A	0.1	0.6	0.26	0.49	0.26	33.1
3	R2	1	0.0	0.017	7.9	LOS A	0.1	0.6	0.26	0.49	0.26	33.6
Approach		20	0.0	0.017	4.2	LOS A	0.1	0.6	0.26	0.49	0.26	50.4
East: Oubaai Access Road												
4	L2	1	0.0	0.069	3.7	LOS A	0.4	2.6	0.15	0.43	0.15	35.9
5	T1	92	0.0	0.069	4.0	LOS A	0.4	2.6	0.15	0.43	0.15	53.0
6	R2	1	0.0	0.069	7.6	LOS A	0.4	2.6	0.15	0.43	0.15	32.7
Approach		94	0.0	0.069	4.1	LOS A	0.4	2.6	0.15	0.43	0.15	52.8
North: Herolds Bay Estate Access Road												
7	L2	1	0.0	0.003	3.1	LOS A	0.0	0.1	0.31	0.50	0.31	32.5
8	T1	1	0.0	0.003	3.6	LOS A	0.0	0.1	0.31	0.50	0.31	33.5
9	R2	1	0.0	0.003	6.9	LOS A	0.0	0.1	0.31	0.50	0.31	51.9
Approach		3	0.0	0.003	4.5	LOS A	0.0	0.1	0.31	0.50	0.31	43.8
West: Oubaai Main Road												
10	L2	3	0.0	0.083	4.3	LOS A	0.5	3.3	0.04	0.52	0.04	49.3
11	T1	100	0.0	0.083	4.6	LOS A	0.5	3.3	0.04	0.52	0.04	49.9
12	R2	32	0.0	0.083	8.2	LOS A	0.5	3.3	0.04	0.52	0.04	48.7
Approach		135	0.0	0.083	5.5	LOS A	0.5	3.3	0.04	0.52	0.04	49.6
All Vehicles		252	0.0	0.083	4.8	LOS A	0.5	3.3	0.10	0.48	0.10	50.8

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

Roundabout LOS Method: SIDRA Roundabout LOS.

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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Organisation: ELEMENT CONSULTING ENGINEERS | Processed: 09 February 2026 09:53:38

Project: Z:\2017\1701561 - Herolds Bay Estate\B - Reports\Traffic Impact Assessment Rev3 Oct 2025\Sidra Oct 2025\1701561 Heroldsbaai Landgoed TIA Rev3 Oct 2025 Int1.sip8

# MOVEMENT SUMMARY

Site: 101 [Int 1 Backgr 2025 PM]

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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: The Brink Estate Access Road												
1	L2	25	0.0	0.024	4.0	LOS A	0.1	0.9	0.26	0.50	0.26	50.9
2	T1	1	0.0	0.024	4.4	LOS A	0.1	0.9	0.26	0.50	0.26	32.8
3	R2	3	0.0	0.024	7.9	LOS A	0.1	0.9	0.26	0.50	0.26	33.3
Approach		29	0.0	0.024	4.4	LOS A	0.1	0.9	0.26	0.50	0.26	49.8
East: Oubaai Access Road												
4	L2	4	0.0	0.068	3.7	LOS A	0.4	2.6	0.14	0.43	0.14	36.0
5	T1	87	0.0	0.068	4.0	LOS A	0.4	2.6	0.14	0.43	0.14	53.1
6	R2	1	0.0	0.068	7.6	LOS A	0.4	2.6	0.14	0.43	0.14	32.8
Approach		93	0.0	0.068	4.0	LOS A	0.4	2.6	0.14	0.43	0.14	52.6
North: Herolds Bay Estate Access Road												
7	L2	1	0.0	0.004	3.1	LOS A	0.0	0.2	0.30	0.54	0.30	31.3
8	T1	1	0.0	0.004	3.6	LOS A	0.0	0.2	0.30	0.54	0.30	32.1
9	R2	3	0.0	0.004	6.8	LOS A	0.0	0.2	0.30	0.54	0.30	50.9
Approach		5	0.0	0.004	5.4	LOS A	0.0	0.2	0.30	0.54	0.30	46.9
West: Oubaai Main Road												
10	L2	1	0.0	0.077	4.3	LOS A	0.4	3.1	0.05	0.51	0.05	49.3
11	T1	94	0.0	0.077	4.6	LOS A	0.4	3.1	0.05	0.51	0.05	49.8
12	R2	26	0.0	0.077	8.2	LOS A	0.4	3.1	0.05	0.51	0.05	48.7
Approach		121	0.0	0.077	5.4	LOS A	0.4	3.1	0.05	0.51	0.05	49.6
All Vehicles		248	0.0	0.077	4.8	LOS A	0.4	3.1	0.11	0.48	0.11	50.7

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

Roundabout LOS Method: SIDRA Roundabout LOS.

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

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

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

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

# MOVEMENT SUMMARY

Site: 101 [Int 1 Backgr 2030 AM]

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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: The Brink Estate Access Road												
1	L2	21	0.0	0.019	4.1	LOS A	0.1	0.7	0.29	0.49	0.29	51.0
2	T1	1	0.0	0.019	4.5	LOS A	0.1	0.7	0.29	0.49	0.29	33.0
3	R2	1	0.0	0.019	8.0	LOS A	0.1	0.7	0.29	0.49	0.29	33.4
Approach		23	0.0	0.019	4.3	LOS A	0.1	0.7	0.29	0.49	0.29	50.4
East: Oubaai Access Road												
4	L2	1	0.0	0.083	3.7	LOS A	0.5	3.2	0.16	0.43	0.16	35.7
5	T1	109	0.0	0.083	4.1	LOS A	0.5	3.2	0.16	0.43	0.16	52.9
6	R2	1	0.0	0.083	7.6	LOS A	0.5	3.2	0.16	0.43	0.16	32.5
Approach		112	0.0	0.083	4.1	LOS A	0.5	3.2	0.16	0.43	0.16	52.8
North: Herolds Bay Estate Access Road												
7	L2	1	0.0	0.003	3.2	LOS A	0.0	0.1	0.33	0.50	0.33	32.2
8	T1	1	0.0	0.003	3.8	LOS A	0.0	0.1	0.33	0.50	0.33	33.2
9	R2	1	0.0	0.003	7.0	LOS A	0.0	0.1	0.33	0.50	0.33	51.8
Approach		3	0.0	0.003	4.7	LOS A	0.0	0.1	0.33	0.50	0.33	43.6
West: Oubaai Main Road												
10	L2	4	0.0	0.098	4.3	LOS A	0.6	4.1	0.04	0.52	0.04	49.3
11	T1	119	0.0	0.098	4.6	LOS A	0.6	4.1	0.04	0.52	0.04	49.8
12	R2	38	0.0	0.098	8.2	LOS A	0.6	4.1	0.04	0.52	0.04	48.7
Approach		161	0.0	0.098	5.5	LOS A	0.6	4.1	0.04	0.52	0.04	49.6
All Vehicles		299	0.0	0.098	4.9	LOS A	0.6	4.1	0.11	0.48	0.11	50.7

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

Roundabout LOS Method: SIDRA Roundabout LOS.

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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# MOVEMENT SUMMARY

Site: 101 [Int 1 Backgr 2030 PM]

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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: The Brink Estate Access Road												
1	L2	32	0.0	0.030	4.1	LOS A	0.2	1.1	0.29	0.50	0.29	50.9
2	T1	1	0.0	0.030	4.5	LOS A	0.2	1.1	0.29	0.50	0.29	32.7
3	R2	3	0.0	0.030	8.0	LOS A	0.2	1.1	0.29	0.50	0.29	33.2
Approach		36	0.0	0.030	4.5	LOS A	0.2	1.1	0.29	0.50	0.29	50.0
East: Oubaai Access Road												
4	L2	4	0.0	0.079	3.7	LOS A	0.4	3.1	0.15	0.43	0.15	35.8
5	T1	103	0.0	0.079	4.0	LOS A	0.4	3.1	0.15	0.43	0.15	53.0
6	R2	1	0.0	0.079	7.6	LOS A	0.4	3.1	0.15	0.43	0.15	32.7
Approach		108	0.0	0.079	4.1	LOS A	0.4	3.1	0.15	0.43	0.15	52.6
North: Herolds Bay Estate Access Road												
7	L2	1	0.0	0.005	3.2	LOS A	0.0	0.2	0.32	0.54	0.32	31.1
8	T1	1	0.0	0.005	3.7	LOS A	0.0	0.2	0.32	0.54	0.32	32.0
9	R2	3	0.0	0.005	6.9	LOS A	0.0	0.2	0.32	0.54	0.32	50.8
Approach		5	0.0	0.005	5.5	LOS A	0.0	0.2	0.32	0.54	0.32	46.8
West: Oubaai Main Road												
10	L2	1	0.0	0.090	4.3	LOS A	0.5	3.7	0.05	0.51	0.05	49.3
11	T1	112	0.0	0.090	4.6	LOS A	0.5	3.7	0.05	0.51	0.05	49.9
12	R2	31	0.0	0.090	8.2	LOS A	0.5	3.7	0.05	0.51	0.05	48.7
Approach		143	0.0	0.090	5.4	LOS A	0.5	3.7	0.05	0.51	0.05	49.6
All Vehicles		293	0.0	0.090	4.8	LOS A	0.5	3.7	0.12	0.48	0.12	50.7

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

Roundabout LOS Method: SIDRA Roundabout LOS.

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

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

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

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

# MOVEMENT SUMMARY

Site: 101 [Int 1 Total 2030 AM]

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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: The Brink Estate Access Road												
1	L2	21	0.0	0.022	4.7	LOS A	0.1	0.8	0.41	0.52	0.41	50.6
2	T1	1	0.0	0.022	5.1	LOS A	0.1	0.8	0.41	0.52	0.41	32.0
3	R2	1	0.0	0.022	8.6	LOS A	0.1	0.8	0.41	0.52	0.41	32.6
Approach		23	0.0	0.022	4.9	LOS A	0.1	0.8	0.41	0.52	0.41	49.9
East: Oubaai Access Road												
4	L2	1	0.0	0.097	4.4	LOS A	0.6	4.0	0.36	0.48	0.36	33.9
5	T1	109	0.0	0.097	4.8	LOS A	0.6	4.0	0.36	0.48	0.36	51.7
6	R2	1	0.0	0.097	8.3	LOS A	0.6	4.0	0.36	0.48	0.36	30.7
Approach		112	0.0	0.097	4.8	LOS A	0.6	4.0	0.36	0.48	0.36	51.6
North: Herolds Bay Estate Access Road												
7	L2	4	0.0	0.097	3.4	LOS A	0.5	3.8	0.36	0.63	0.36	29.3
8	T1	1	0.0	0.097	3.9	LOS A	0.5	3.8	0.36	0.63	0.36	30.0
9	R2	105	0.0	0.097	7.2	LOS A	0.5	3.8	0.36	0.63	0.36	49.2
Approach		111	0.0	0.097	7.0	LOS A	0.5	3.8	0.36	0.63	0.36	48.8
West: Oubaai Main Road												
10	L2	39	0.0	0.119	4.3	LOS A	0.7	5.2	0.04	0.51	0.04	49.5
11	T1	121	0.0	0.119	4.6	LOS A	0.7	5.2	0.04	0.51	0.04	50.1
12	R2	38	0.0	0.119	8.2	LOS A	0.7	5.2	0.04	0.51	0.04	48.9
Approach		198	0.0	0.119	5.3	LOS A	0.7	5.2	0.04	0.51	0.04	49.7
All Vehicles		443	0.0	0.119	5.6	LOS A	0.7	5.2	0.22	0.53	0.22	50.0

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

Roundabout LOS Method: SIDRA Roundabout LOS.

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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# MOVEMENT SUMMARY

Site: 101 [Int 1 Total 2030 PM]

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	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: The Brink Estate Access Road												
1	L2	37	0.0	0.037	4.6	LOS A	0.2	1.4	0.39	0.53	0.39	50.5
2	T1	1	0.0	0.037	4.9	LOS A	0.2	1.4	0.39	0.53	0.39	32.0
3	R2	3	0.0	0.037	8.5	LOS A	0.2	1.4	0.39	0.53	0.39	32.6
Approach		41	0.0	0.037	4.9	LOS A	0.2	1.4	0.39	0.53	0.39	49.8
East: Oubaai Access Road												
4	L2	4	0.0	0.111	4.1	LOS A	0.7	4.6	0.29	0.46	0.29	34.4
5	T1	127	0.0	0.111	4.4	LOS A	0.7	4.6	0.29	0.46	0.29	52.1
6	R2	4	0.0	0.111	8.0	LOS A	0.7	4.6	0.29	0.46	0.29	31.2
Approach		136	0.0	0.111	4.5	LOS A	0.7	4.6	0.29	0.46	0.29	51.6
North: Herolds Bay Estate Access Road												
7	L2	2	0.0	0.054	3.4	LOS A	0.3	2.0	0.37	0.62	0.37	29.3
8	T1	1	0.0	0.054	3.9	LOS A	0.3	2.0	0.37	0.62	0.37	30.0
9	R2	57	0.0	0.054	7.2	LOS A	0.3	2.0	0.37	0.62	0.37	49.2
Approach		60	0.0	0.054	7.0	LOS A	0.3	2.0	0.37	0.62	0.37	48.8
West: Oubaai Main Road												
10	L2	104	0.0	0.171	4.3	LOS A	1.1	7.6	0.07	0.50	0.07	49.6
11	T1	135	0.0	0.171	4.7	LOS A	1.1	7.6	0.07	0.50	0.07	50.2
12	R2	36	0.0	0.171	8.3	LOS A	1.1	7.6	0.07	0.50	0.07	49.0
Approach		275	0.0	0.171	5.0	LOS A	1.1	7.6	0.07	0.50	0.07	49.8
All Vehicles		512	0.0	0.171	5.1	LOS A	1.1	7.6	0.19	0.51	0.19	50.2

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

Roundabout LOS Method: SIDRA Roundabout LOS.

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

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

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

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

# MOVEMENT SUMMARY

Site: 102 [Int 2 Backgr 2025 AM]

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: Private Access												
1	L2	1	0.0	0.002	5.2	LOS A	0.0	0.0	0.23	0.86	0.23	10.7
3	R2	1	0.0	0.002	5.3	LOS A	0.0	0.0	0.23	0.86	0.23	49.0
Approach		2	0.0	0.002	5.3	LOS A	0.0	0.0	0.23	0.86	0.23	30.1
East: Oubaai Main Road												
4	L2	1	0.0	0.057	5.5	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
5	T1	111	0.0	0.057	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach		112	0.0	0.057	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.9
West: Oubaai Main Road												
11	T1	135	0.0	0.070	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
12	R2	1	0.0	0.070	5.4	LOS A	0.0	0.0	0.00	0.00	0.00	47.3
Approach		136	0.0	0.070	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
All Vehicles		249	0.0	0.070	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.6

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

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

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

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

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

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

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

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# MOVEMENT SUMMARY

Site: 102 [Int 2 Backgr 2025 PM]

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: Private Access												
1	L2	1	0.0	0.002	5.2	LOS A	0.0	0.0	0.23	0.86	0.23	10.7
3	R2	1	0.0	0.002	5.3	LOS A	0.0	0.0	0.23	0.86	0.23	49.0
Approach		2	0.0	0.002	5.3	LOS A	0.0	0.0	0.23	0.86	0.23	30.1
East: Oubaai Main Road												
4	L2	1	0.0	0.060	5.5	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
5	T1	116	0.0	0.060	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach		117	0.0	0.060	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.9
West: Oubaai Main Road												
11	T1	121	0.0	0.063	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
12	R2	1	0.0	0.063	5.5	LOS A	0.0	0.0	0.00	0.01	0.00	47.2
Approach		122	0.0	0.063	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.9
All Vehicles		241	0.0	0.063	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.6

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

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

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

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

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

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

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

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# MOVEMENT SUMMARY

Site: 102 [Int 2 Backgr 2030 AM]

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
South: Private Access												
1	L2	1	0.0	0.002	5.3	LOS A	0.0	0.0	0.26	0.85	0.26	10.6
3	R2	1	0.0	0.002	5.5	LOS A	0.0	0.0	0.26	0.85	0.26	48.9
Approach		2	0.0	0.002	5.4	LOS A	0.0	0.0	0.26	0.85	0.26	30.0
East: Oubaai Main Road												
4	L2	1	0.0	0.068	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	57.2
5	T1	132	0.0	0.068	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		133	0.0	0.068	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Oubaai Main Road												
11	T1	160	0.0	0.083	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	59.9
12	R2	1	0.0	0.083	5.5	LOS A	0.0	0.1	0.00	0.00	0.00	47.3
Approach		161	0.0	0.083	0.0	NA	0.0	0.1	0.00	0.00	0.00	59.9
All Vehicles		296	0.0	0.083	0.1	NA	0.0	0.1	0.00	0.01	0.00	59.7

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

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

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

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

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

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

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

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# MOVEMENT SUMMARY

Site: 102 [Int 2 Backgr 2030 PM]

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: Private Access												
1	L2	1	0.0	0.002	5.3	LOS A	0.0	0.0	0.26	0.85	0.26	10.6
3	R2	1	0.0	0.002	5.5	LOS A	0.0	0.0	0.26	0.85	0.26	48.9
Approach		2	0.0	0.002	5.4	LOS A	0.0	0.0	0.26	0.85	0.26	30.0
East: Oubaai Main Road												
4	L2	1	0.0	0.071	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	57.2
5	T1	138	0.0	0.071	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		139	0.0	0.071	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Oubaai Main Road												
11	T1	143	0.0	0.074	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	59.9
12	R2	1	0.0	0.074	5.5	LOS A	0.0	0.1	0.00	0.00	0.00	47.3
Approach		144	0.0	0.074	0.0	NA	0.0	0.1	0.00	0.00	0.00	59.9
All Vehicles		285	0.0	0.074	0.1	NA	0.0	0.1	0.00	0.01	0.00	59.6

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

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

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

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

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

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

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

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Project: Z:\2017\1701561 - Herolds Bay Estate\B - Reports\Traffic Impact Assessment Rev3 Oct 2025\Sidra Oct 2025\1701561 Heroldsbaai Landgoed TIA Rev3 Oct 2025 Int2.sip8

# MOVEMENT SUMMARY

Site: 102 [Int 2 Total 2030 AM]

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
South: Private Access												
1	L2	1	0.0	0.004	5.7	LOS A	0.0	0.1	0.40	0.87	0.40	10.3
2	T1	1	0.0	0.004	6.9	LOS A	0.0	0.1	0.40	0.87	0.40	6.3
3	R2	1	0.0	0.004	7.1	LOS A	0.0	0.1	0.40	0.87	0.40	47.8
Approach		3	0.0	0.004	6.6	LOS A	0.0	0.1	0.40	0.87	0.40	22.2
East: Oubaai Main Road												
4	L2	1	0.0	0.127	6.3	LOS A	0.1	0.8	0.05	0.04	0.05	56.4
5	T1	228	0.0	0.127	0.1	LOS A	0.1	0.8	0.05	0.04	0.05	59.1
6	R2	14	0.0	0.127	6.2	LOS A	0.1	0.8	0.05	0.04	0.05	55.4
Approach		243	0.0	0.127	0.4	NA	0.1	0.8	0.05	0.04	0.05	58.9
North: Commercial Access												
7	L2	7	0.0	0.070	6.1	LOS A	0.2	1.7	0.43	0.92	0.43	47.5
8	T1	1	0.0	0.070	7.6	LOS A	0.2	1.7	0.43	0.92	0.43	18.4
9	R2	38	0.0	0.070	7.9	LOS A	0.2	1.7	0.43	0.92	0.43	10.7
Approach		46	0.0	0.070	7.6	LOS A	0.2	1.7	0.43	0.92	0.43	16.7
West: Oubaai Main Road												
10	L2	20	0.0	0.109	5.2	LOS A	0.0	0.1	0.01	0.06	0.01	10.9
11	T1	191	0.0	0.109	0.0	LOS A	0.0	0.1	0.01	0.06	0.01	59.1
12	R2	1	0.0	0.109	5.9	LOS A	0.0	0.1	0.01	0.06	0.01	44.8
Approach		212	0.0	0.109	0.5	NA	0.0	0.1	0.01	0.06	0.01	54.1
All Vehicles		504	0.0	0.127	1.2	NA	0.2	1.7	0.07	0.13	0.07	52.4

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

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

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

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

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

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

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

# MOVEMENT SUMMARY

Site: 102 [Int 2 Total 2030 PM]

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
South: Private Access												
1	L2	1	0.0	0.004	5.5	LOS A	0.0	0.1	0.38	0.88	0.38	10.2
2	T1	1	0.0	0.004	7.6	LOS A	0.0	0.1	0.38	0.88	0.38	6.3
3	R2	1	0.0	0.004	7.6	LOS A	0.0	0.1	0.38	0.88	0.38	47.4
Approach		3	0.0	0.004	6.9	LOS A	0.0	0.1	0.38	0.88	0.38	22.0
East: Oubaai Main Road												
4	L2	1	0.0	0.125	6.7	LOS A	0.3	2.4	0.19	0.12	0.19	54.3
5	T1	178	0.0	0.125	0.4	LOS A	0.3	2.4	0.19	0.12	0.19	57.0
6	R2	43	0.0	0.125	6.6	LOS A	0.3	2.4	0.19	0.12	0.19	53.3
Approach		222	0.0	0.125	1.6	NA	0.3	2.4	0.19	0.12	0.19	56.3
North: Commercial Access												
7	L2	43	0.0	0.140	6.3	LOS A	0.5	3.5	0.43	0.93	0.43	47.5
8	T1	1	0.0	0.140	8.2	LOS A	0.5	3.5	0.43	0.93	0.43	18.6
9	R2	57	0.0	0.140	8.7	LOS A	0.5	3.5	0.43	0.93	0.43	10.8
Approach		101	0.0	0.140	7.7	LOS A	0.5	3.5	0.43	0.93	0.43	26.6
West: Oubaai Main Road												
10	L2	79	0.0	0.163	5.2	LOS A	0.0	0.1	0.00	0.15	0.00	10.8
11	T1	233	0.0	0.163	0.0	LOS A	0.0	0.1	0.00	0.15	0.00	57.8
12	R2	1	0.0	0.163	5.7	LOS A	0.0	0.1	0.00	0.15	0.00	41.2
Approach		313	0.0	0.163	1.3	NA	0.0	0.1	0.00	0.15	0.00	45.0
All Vehicles		639	0.0	0.163	2.5	NA	0.5	3.5	0.14	0.27	0.14	45.6

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

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

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

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

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

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

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

# MOVEMENT SUMMARY

Site: 102 [Int 2 RTLane Total 2030 AM]

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
South: Private Access												
1	L2	1	0.0	0.005	5.9	LOS A	0.0	0.1	0.46	0.83	0.46	10.1
2	T1	1	0.0	0.005	8.9	LOS A	0.0	0.1	0.46	0.83	0.46	6.3
3	R2	1	0.0	0.005	9.6	LOS A	0.0	0.1	0.46	0.83	0.46	46.6
Approach		3	0.0	0.005	8.1	LOS A	0.0	0.1	0.46	0.83	0.46	21.6
East: Oubaai Main Road												
4	L2	1	0.0	0.119	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	57.3
5	T1	228	0.0	0.119	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	14	0.0	0.009	6.1	LOS A	0.0	0.3	0.30	0.55	0.30	47.3
Approach		243	0.0	0.119	0.4	NA	0.0	0.3	0.02	0.03	0.02	59.1
North: Commercial Access												
7	L2	7	0.0	0.094	6.3	LOS A	0.3	2.4	0.51	0.94	0.51	45.2
8	T1	1	0.0	0.094	9.7	LOS A	0.3	2.4	0.51	0.94	0.51	16.1
9	R2	38	0.0	0.094	10.7	LOS B	0.3	2.4	0.51	0.94	0.51	10.4
Approach		46	0.0	0.094	10.0	LOS A	0.3	2.4	0.51	0.94	0.51	16.1
West: Oubaai Main Road												
10	L2	20	0.0	0.108	5.2	LOS A	0.0	0.0	0.00	0.06	0.00	11.0
11	T1	191	0.0	0.108	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	59.2
12	R2	1	0.0	0.001	5.7	LOS A	0.0	0.0	0.32	0.52	0.32	27.3
Approach		212	0.0	0.108	0.5	NA	0.0	0.0	0.00	0.06	0.00	54.1
All Vehicles		504	0.0	0.119	1.4	NA	0.3	2.4	0.06	0.13	0.06	52.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).  
Vehicle movement LOS values are based on average delay per movement.

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

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

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

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

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

# MOVEMENT SUMMARY

Site: 102 [Int 2 RTLane Total 2030 PM]

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
South: Private Access												
1	L2	1	0.0	0.006	5.6	LOS A	0.0	0.1	0.45	0.83	0.45	10.0
2	T1	1	0.0	0.006	10.2	LOS B	0.0	0.1	0.45	0.83	0.45	6.2
3	R2	1	0.0	0.006	10.6	LOS B	0.0	0.1	0.45	0.83	0.45	45.9
Approach		3	0.0	0.006	8.8	LOS A	0.0	0.1	0.45	0.83	0.45	21.3
East: Oubaai Main Road												
4	L2	1	0.0	0.093	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	57.3
5	T1	178	0.0	0.093	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	43	0.0	0.032	6.5	LOS A	0.1	1.0	0.39	0.60	0.39	47.0
Approach		222	0.0	0.093	1.3	NA	0.1	1.0	0.07	0.12	0.07	57.1
North: Commercial Access												
7	L2	43	0.0	0.188	6.6	LOS A	0.7	5.1	0.51	0.94	0.51	45.4
8	T1	1	0.0	0.188	11.0	LOS B	0.7	5.1	0.51	0.94	0.51	16.4
9	R2	57	0.0	0.188	12.2	LOS B	0.7	5.1	0.51	0.94	0.51	10.5
Approach		101	0.0	0.188	9.8	LOS A	0.7	5.1	0.51	0.94	0.51	25.6
West: Oubaai Main Road												
10	L2	79	0.0	0.162	5.2	LOS A	0.0	0.0	0.00	0.15	0.00	10.8
11	T1	233	0.0	0.162	0.0	LOS A	0.0	0.0	0.00	0.15	0.00	57.8
12	R2	1	0.0	0.001	5.6	LOS A	0.0	0.0	0.28	0.52	0.28	27.6
Approach		313	0.0	0.162	1.3	NA	0.0	0.0	0.00	0.15	0.00	45.0
All Vehicles		639	0.0	0.188	2.7	NA	0.7	5.1	0.11	0.27	0.11	45.5

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

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

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

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

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

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

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

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# MOVEMENT SUMMARY

Site: 103 [Int 3 Backgr 2025 AM]

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: Rooidraai Road												
2	T1	74	0.0	0.048	0.1	LOS A	0.1	0.8	0.12	0.12	0.12	58.1
3	R2	19	0.0	0.048	5.9	LOS A	0.1	0.8	0.12	0.12	0.12	55.4
Approach		93	0.0	0.048	1.3	NA	0.1	0.8	0.12	0.12	0.12	57.5
East: Oubaai Main Road												
4	L2	5	0.0	0.067	8.2	LOS A	0.2	1.6	0.22	0.90	0.22	50.1
6	R2	61	0.0	0.067	8.3	LOS A	0.2	1.6	0.22	0.90	0.22	51.3
Approach		66	0.0	0.067	8.3	LOS A	0.2	1.6	0.22	0.90	0.22	51.3
North: R404												
7	L2	113	0.0	0.077	5.5	LOS A	0.0	0.0	0.00	0.44	0.00	54.8
8	T1	39	0.0	0.077	0.0	LOS A	0.0	0.0	0.00	0.44	0.00	55.3
Approach		152	0.0	0.077	4.1	NA	0.0	0.0	0.00	0.44	0.00	54.9
All Vehicles		311	0.0	0.077	4.2	NA	0.2	1.6	0.08	0.44	0.08	54.6

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

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

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

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

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

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

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

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# MOVEMENT SUMMARY

Site: 103 [Int 3 Backgr 2025 PM]

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: Rooidraai Road												
2	T1	29	0.0	0.022	0.2	LOS A	0.1	0.5	0.14	0.16	0.14	57.5
3	R2	12	0.0	0.022	5.8	LOS A	0.1	0.5	0.14	0.16	0.14	54.9
Approach		41	0.0	0.022	1.8	NA	0.1	0.5	0.14	0.16	0.14	56.7
East: Oubaai Main Road												
4	L2	13	0.0	0.129	8.3	LOS A	0.5	3.2	0.23	0.90	0.23	50.3
6	R2	122	0.0	0.129	8.1	LOS A	0.5	3.2	0.23	0.90	0.23	51.4
Approach		135	0.0	0.129	8.1	LOS A	0.5	3.2	0.23	0.90	0.23	51.4
North: R404												
7	L2	66	0.0	0.066	5.5	LOS A	0.0	0.0	0.00	0.30	0.00	55.9
8	T1	65	0.0	0.066	0.0	LOS A	0.0	0.0	0.00	0.30	0.00	56.7
Approach		132	0.0	0.066	2.8	NA	0.0	0.0	0.00	0.30	0.00	56.2
All Vehicles		307	0.0	0.129	5.0	NA	0.5	3.2	0.12	0.54	0.12	53.9

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

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

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

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

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

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

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

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# MOVEMENT SUMMARY

Site: 103 [Int 3 Backgr 2030 AM]

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: Rooidraai Road												
2	T1	87	0.0	0.057	0.2	LOS A	0.1	1.0	0.13	0.12	0.13	58.0
3	R2	22	0.0	0.057	6.0	LOS A	0.1	1.0	0.13	0.12	0.13	55.4
Approach		109	0.0	0.057	1.4	NA	0.1	1.0	0.13	0.12	0.13	57.5
East: Oubaai Main Road												
4	L2	6	0.0	0.082	8.2	LOS A	0.3	2.0	0.25	0.91	0.25	50.0
6	R2	73	0.0	0.082	8.5	LOS A	0.3	2.0	0.25	0.91	0.25	51.2
Approach		79	0.0	0.082	8.5	LOS A	0.3	2.0	0.25	0.91	0.25	51.2
North: R404												
7	L2	134	0.0	0.092	5.5	LOS A	0.0	0.0	0.00	0.43	0.00	54.8
8	T1	47	0.0	0.092	0.0	LOS A	0.0	0.0	0.00	0.43	0.00	55.3
Approach		181	0.0	0.092	4.1	NA	0.0	0.0	0.00	0.43	0.00	54.9
All Vehicles		369	0.0	0.092	4.2	NA	0.3	2.0	0.09	0.44	0.09	54.6

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

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

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

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

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

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

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

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# MOVEMENT SUMMARY

Site: 103 [Int 3 Backgr 2030 PM]

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: Rooidraai Road												
2	T1	35	0.0	0.026	0.2	LOS A	0.1	0.6	0.16	0.17	0.16	57.4
3	R2	14	0.0	0.026	5.9	LOS A	0.1	0.6	0.16	0.17	0.16	54.8
Approach		48	0.0	0.026	1.8	NA	0.1	0.6	0.16	0.17	0.16	56.7
East: Oubaai Main Road												
4	L2	15	0.0	0.158	8.3	LOS A	0.6	4.0	0.26	0.90	0.26	50.2
6	R2	145	0.0	0.158	8.3	LOS A	0.6	4.0	0.26	0.90	0.26	51.4
Approach		160	0.0	0.158	8.3	LOS A	0.6	4.0	0.26	0.90	0.26	51.3
North: R404												
7	L2	79	0.0	0.078	5.5	LOS A	0.0	0.0	0.00	0.30	0.00	55.9
8	T1	78	0.0	0.078	0.0	LOS A	0.0	0.0	0.00	0.30	0.00	56.7
Approach		157	0.0	0.078	2.8	NA	0.0	0.0	0.00	0.30	0.00	56.2
All Vehicles		365	0.0	0.158	5.1	NA	0.6	4.0	0.13	0.54	0.13	53.9

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

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

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

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

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

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

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

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# MOVEMENT SUMMARY

Site: 103 [Int 3 Total 2030 AM]

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
South: Rooidraai Road												
2	T1	87	0.0	0.064	0.3	LOS A	0.2	1.4	0.18	0.16	0.18	57.4
3	R2	31	0.0	0.064	6.1	LOS A	0.2	1.4	0.18	0.16	0.18	54.9
Approach		118	0.0	0.064	1.8	NA	0.2	1.4	0.18	0.16	0.18	56.8
East: Oubaai Main Road												
4	L2	16	0.0	0.193	8.2	LOS A	0.7	5.0	0.28	0.92	0.28	49.9
6	R2	166	0.0	0.193	8.8	LOS A	0.7	5.0	0.28	0.92	0.28	51.1
Approach		182	0.0	0.193	8.7	LOS A	0.7	5.0	0.28	0.92	0.28	51.0
North: R404												
7	L2	165	0.0	0.106	5.6	LOS A	0.0	0.0	0.00	0.46	0.00	54.5
8	T1	44	0.0	0.106	0.0	LOS A	0.0	0.0	0.00	0.46	0.00	55.1
Approach		209	0.0	0.106	4.4	NA	0.0	0.0	0.00	0.46	0.00	54.6
All Vehicles		509	0.0	0.193	5.3	NA	0.7	5.0	0.14	0.55	0.14	53.6

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

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

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

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

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

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

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

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# MOVEMENT SUMMARY

Site: 103 [Int 3 Total 2030 PM]

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: Rooidraai Road												
2	T1	35	0.0	0.039	0.6	LOS A	0.2	1.2	0.29	0.28	0.29	55.7
3	R2	31	0.0	0.039	6.2	LOS A	0.2	1.2	0.29	0.28	0.29	53.3
Approach		65	0.0	0.039	3.2	NA	0.2	1.2	0.29	0.28	0.29	54.6
East: Oubaai Main Road												
4	L2	28	0.0	0.220	8.4	LOS A	0.8	5.9	0.30	0.91	0.30	49.9
6	R2	185	0.0	0.220	8.7	LOS A	0.8	5.9	0.30	0.91	0.30	51.2
Approach		214	0.0	0.220	8.7	LOS A	0.8	5.9	0.30	0.91	0.30	51.0
North: R404												
7	L2	167	0.0	0.124	5.6	LOS A	0.0	0.0	0.00	0.40	0.00	55.0
8	T1	78	0.0	0.124	0.0	LOS A	0.0	0.0	0.00	0.40	0.00	55.7
Approach		245	0.0	0.124	3.8	NA	0.0	0.0	0.00	0.40	0.00	55.2
All Vehicles		524	0.0	0.220	5.7	NA	0.8	5.9	0.16	0.59	0.16	53.3

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

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

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

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

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

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

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

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