

Traffic Impact Statement

Hout Bay Cemetery Extension

City of Cape Town

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Contents

1	Introduction.....	5
2	Assumptions.....	6
3	Study Area.....	7
3.1	Locality	7
3.2	Land Use	8
3.3	Developments in the area	8
4	Road Network	9
4.1	Intersections within the study area	9
4.2	Traffic Conditions.....	9
4.3	NMT and Public Transport Facilities.....	10
5	Trip Generation Rates	12
6	Existing Cemetery Development on Erf 1460, Erf 1461-RE, Erf 1462 and Erf 1830-RE.....	13
6.1	Background	13
6.2	Access	13
6.3	Parking	15
7	Proposed Development on Erf 1459-RE	17
7.1	Proposed Development Extent.....	17
7.2	Trips Generated	18
7.3	Provision for Alternative Modes of Transport.....	18
7.4	Access Management	18
7.4.1	Proposed Vehicular Access	18
7.4.2	Warrants for turning slots	20
7.4.3	Proposed Pickup / Drop Off Embayment	21
7.4.4	Pedestrian Accesses	21
7.5	Parking	21
7.5.1	Parking Required	21
7.5.2	Proposed Parking	22
8	Traffic Impact	23
9	Conclusions	24
10	Recommendations	25

Figures

Figure 1: Proposed Development Location (Source: <https://citymaps.capetown.gov.za/EGISViewer/>)

Figure 2: Zoning Map (Source: <https://citymaps.capetown.gov.za/EGISViewer/>)

Figure 3: Location of intersections

Figure 4: Traffic Count Data

Figure 5: Bus stop

Figure 6: Sidewalks along Hout Bay Main Road along cemetery

Figure 7: Sidewalks along Hughenden Road along cemetery

Figure 8: Access to Erf 1460, Erf 1461-RE and Erf 1462

Figure 9: Access to cemetery from Erf 1461-RE from Hout Bay Main Road

Figure 10: Closed off access to the site Erf 1460 along Hout Bay Main Road

Figure 11: Closed off access to the site ERF 1462 along Hout Bay Main Road

Figure 12: Assumption of the number of parking bays

Figure 13: Existing Parking lot

Figure 14: Cars parking under the trees on Erf 1461-RE.

Figure 15: On-street parking

Figure 16: Proposed Development

Figure 17: Access to site Erf 1459-RE from Hughenden Street

Figure 18: Proposed Access

Figure 19: Right turn lane warrants

Figure 20: Left turn lane warrants

Figure 21: Pick-up / Drop-off embayment

Figure 22: Proposed Parking

Tables

Table 1: Peak-hour Trip Generation Rates

Table 2: Extract from the TMH16, Parking bay dimensions

Table 3: Total number of trips generated by the development

Table 4: Guidelines for permitting “conventional” driveways (Source: AMG (2020))

Table 5: Parking requirement comparison

Table 6: Summary of Conclusions

1 Introduction

Zutari (Pty) Ltd. was appointed to prepare a Traffic Impact Statement for the development of Remainder Erf 1459 in Hout Bay for the extension of the existing cemetery.

The City of Cape are experiencing a shortage of suitable and well located burial space. The Recreation and Parks department is responsible for the provision of burial space within the City of Cape Town and is considering the expansion of the existing Hout Bay Cemetery. The purpose of this report is to understand what the impact of the expansion of the existing Cemetery will be on the road network.

This report will be a Traffic Impact Statement and not a Traffic Impact Assessment as the number of trips generated is less than 50 trips.

The intention of this report is to:

- ▶ Provide status quo of the study area.
- ▶ Calculate the impact of the development in terms of number of vehicular trips generated.
- ▶ Investigate the number of parking bays as prescribed in the City of Cape Town: Municipal Planning By-law of 2019.
- ▶ Ensure that access to the site complies with the requirements in the Access Management Guidelines 2020.
- ▶ Make recommendations regarding traffic related improvements for the development and area.

2 Assumptions

In order to complete the calculations in this report certain assumptions were made:

- 1) The two portions will be connected by a walkway, making it possible for visitors to access the extended portion of the cemetery via the existing cemetery. This will allow visitors to park in the existing parking lot and walk to the extended portion of the cemetery.
- 2) No parking will be provided on the extended portion of the cemetery
- 3) Trip reduction factors are not applicable.
- 4) The existing parking lot at the cemetery does not have demarcated parking bays. The assumed bay size and the subsequent capacity of the parking lot were calculated based on the parking provisions in TMH16.

3 Study Area

3.1 Locality

The proposed cemetery development site (Remainder Erf 1459) is located in Hout Bay, bordering the existing Hout Bay Cemetery. The cemetery falls within the jurisdiction of the City of Cape Town Municipality.

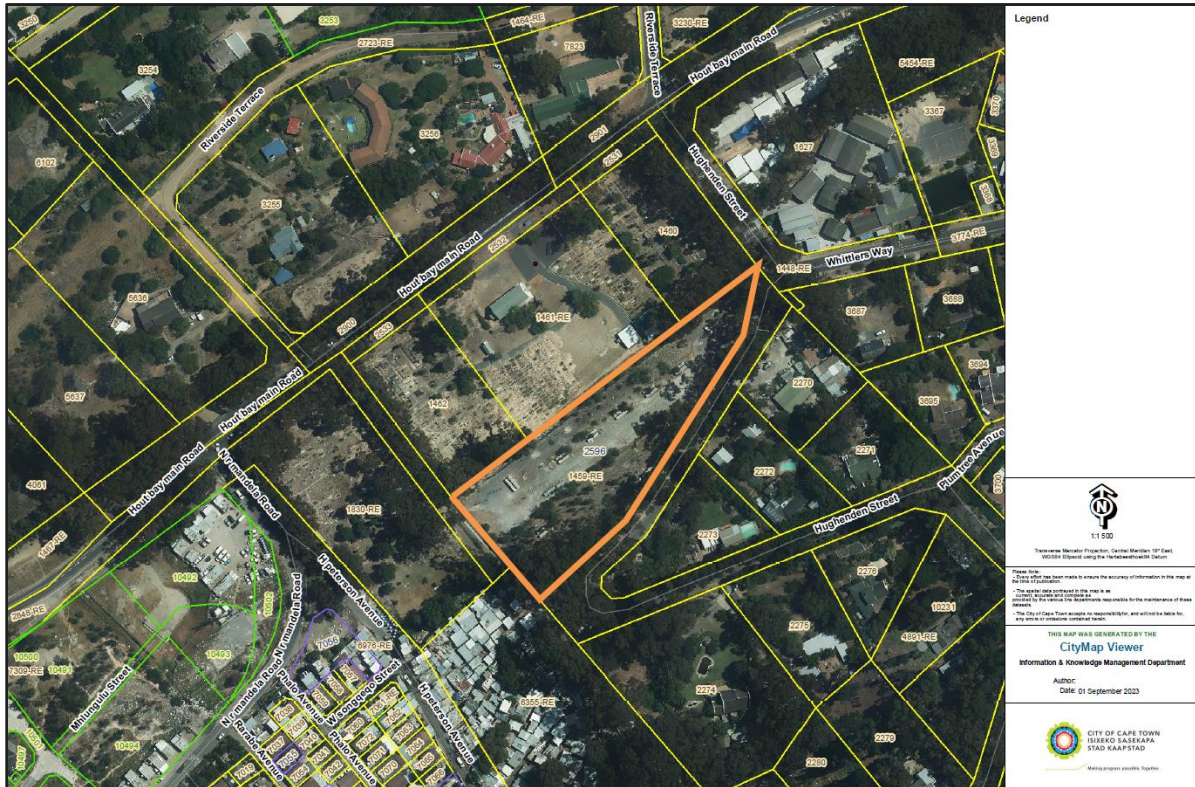


Figure 1: Proposed Development Location (Source: <https://citymaps.capetown.gov.za/EGISViewer/>)

Based on the road classification provided in the Access Management Guidelines (AMG, 2020)¹ Hout Bay Main Road can be classified as Class 3 Minor Arterial. Hughenden Street, Riverside Terrace, Whittlers Way and NR Mandela Road can be classified as Class 5 Local Streets. All the roads in the vicinity of the site are single carriageways (with a single lane per direction). Hout Bay Main Road is owned by the Western Cape Government. Hughenden Street, Riverside Terrace, Whittlers Way and NR Mandela Road is owned by the City of Cape Town.

¹ Access Management Guidelines, Second Edition, 2020

Figure 2 shows the zoning map of Hout Bay. The image was obtained from the City of Cape Town Map Viewer website and the property under consideration is zoned Public Open Space 2.

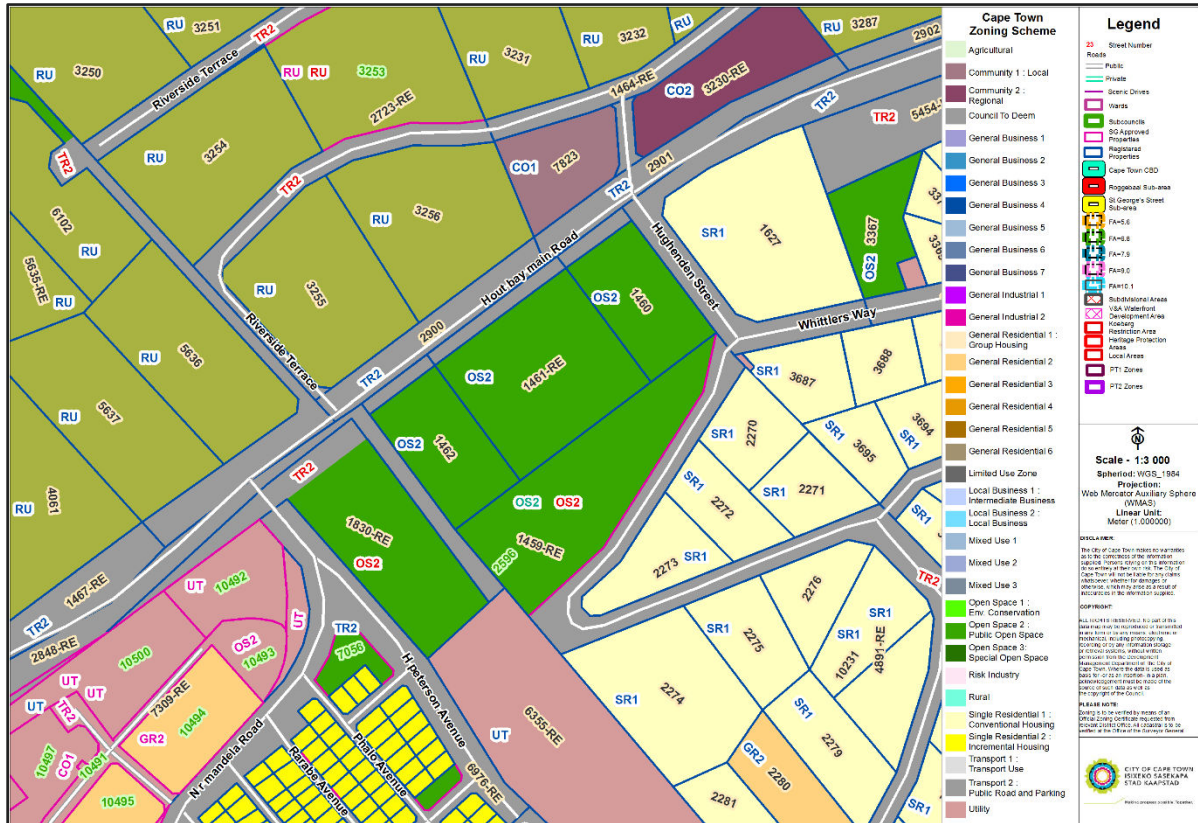


Figure 2: Zoning Map (Source: <https://citymaps.capetown.gov.za/EGISViewer/>)

Considering that the proposed extension falls within the Open Space 2: Public Open Space classification, rezoning will not be required.

3.3 Developments in the area

It was assumed that there are no other planned developments within the study area.

4 Road Network

4.1 Intersections within the study area

The intersections which will be impacted by the proposed development were identified, these are:

1. **Hout Bay Main Road and Hughenden Street and Riverside Terrace Road:** This is a two way stop controlled intersection with vehicles approaching along Hout Bay Main Road having right of way.
2. **Whittlers Way and Hughenden Street:** This is a stop-controlled T-junction with the minor approach being Whittlers Way. Vehicles approaching this intersection along Hughenden Street has right of way.
3. **Hout Bay Main Road and NR Mandela Road:** This is a stop-controlled T-junction. Vehicles approaching along Hout Bay Main Road have right of way.
4. **Hout Bay Main Road and entrance to the cemetery.**

The intersections are shown below in Figure 3.



Figure 3: Location of intersections

4.2 Traffic Conditions

During a site visit on Thursday, 16 November 2023 between 10:00-11:00, it was observed that the vehicular traffic volumes along the roads within the study area and at intersections 1, 2 and 3 are very low. Considering the low traffic volumes on minor roads, the size of the development and the fact that the development is expected to generate less than 30 trips in the peak hour (discussed in Paragraph 7.2), it was decided that traffic counts will not be necessary at all intersections. However, due to the traffic volume along Hout Bay Main Road and the possibility of turning slots being warranted at the access to the cemetery, a traffic count was done where the cemetery's access road intersects with Hout Bay Main Road (intersection number 4 in Figure 3).

A traffic count was done on Saturday, 20 January 2024. The count was done between 09:00 and 12:00 as this is the period during which the trips to/from the cemetery is expected to be at its highest. The peak hour traffic data collected are shown in Figure 4 below.

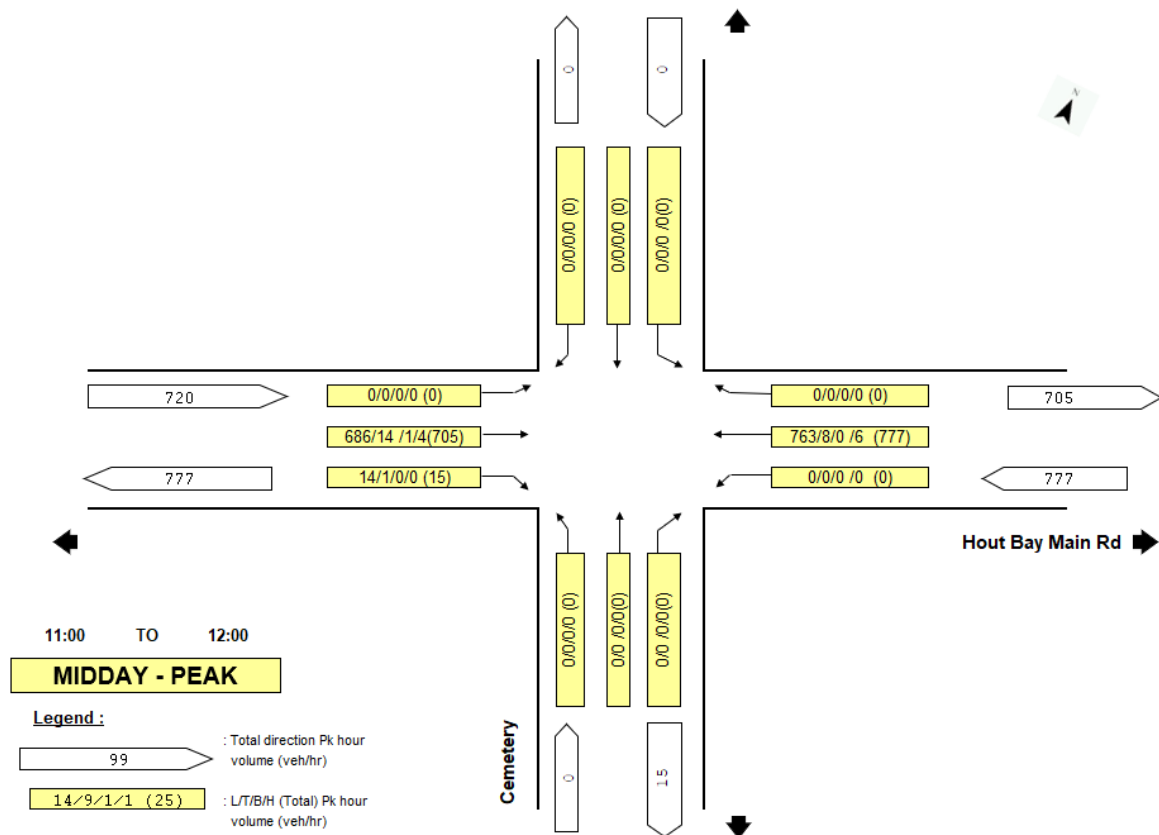


Figure 4: Traffic Count Data

4.3 NMT and Public Transport Facilities

There is an existing bus stop along Hout Bay Main Road, outside the existing cemetery access. The bus stop is shown in Figure 5 below. There are no MyCiTi bus routes going past the cemetery. There is however a taxi route(s) along Hout Bay Main Road.

The property is bordered by a paved sidewalk.

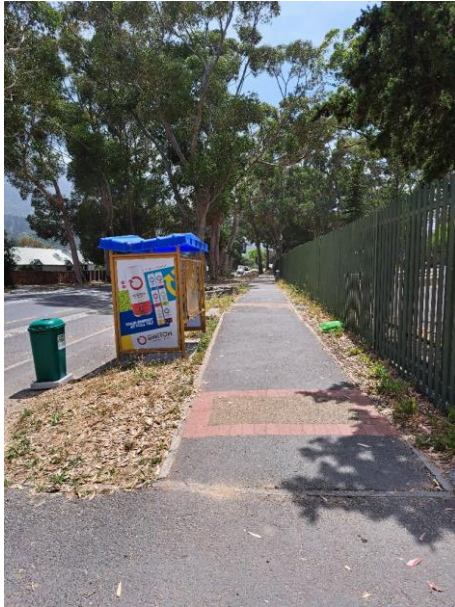


Figure 5: Bus stop



**Figure 6: Sidewalks along Hout Bay Main Road
along cemetery**



**Figure 7: Sidewalks along Hughenden Road along
cemetery**

5 Trip Generation Rates

The trip generation rates, as provided in COTO TMH 17² for the land use “Cemetery” was used to estimate the number of trips generated by the proposed extension. According to the COTO rates a “Cemetery” generates a maximum of 8 trips per ha on a Saturday. The trip generation rates used to estimate the number of trips generated by the existing and extended portion of the cemetery will be calculated based on the rates in Table 1 below. It was assumed that trip reduction factors will not be applicable.

Table 1: Peak-hour Trip Generation Rates

Land use	TMH17 Code	Unit	Trip Rate				Directional Split			
			AM Peak	PM Peak	Midday	Saturday	AM Peak	PM Peak	Midday	Saturday
Cemetery	566	Trips/ha	0.2	0.2	4	8	70:30	35:65	75:25	50:50

² Technical Methods for Highways : South African Trip Data Manual, Version 1.01, 2013
1002839-ZUT-REP-WA089-KR-00001-Traffic Impact Statement Report.docx, 2024/02/23

6 Existing Cemetery Development on Erf 1460, Erf 1461-RE, Erf 1462 and Erf 1830-RE

6.1 Background

The City of Cape Town, Parks and Recreation department would like to extend the existing cemetery in Hout Bay to include Erf 1459-RE. There is an existing parking lot and a church on Erf 1462, 1461-RE and 1460.

6.2 Access

There are 3 access points to the existing cemetery. Two of the access points are closed by means of a locked gate. There is one working access point to the cemetery from Hout Bay Main Road. The three access locations are shown in Figure 8 below.



Figure 8: Access to Erf 1460, Erf 1461-RE and Erf 1462



Figure 9: Access to cemetery from Erf 1461-RE from Hout Bay Main Road



Figure 10: Closed off access to the site Erf 1460 along Hout Bay Main Road

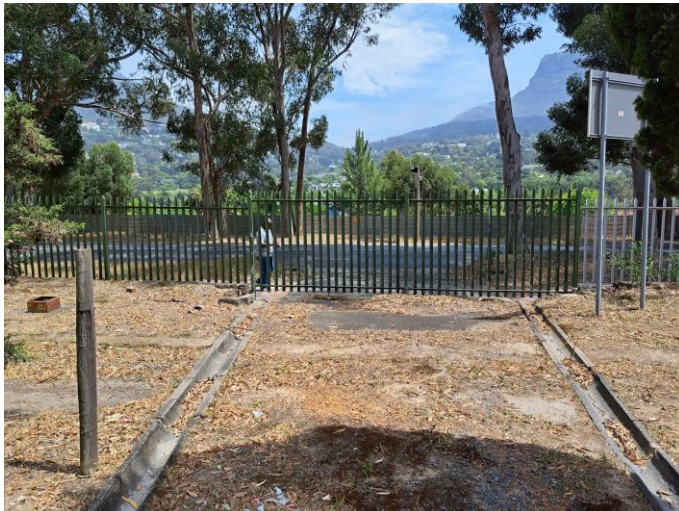


Figure 11: Closed off access to the site ERF 1462 along Hout Bay Main Road

6.3 Parking

The existing parking lot at the cemetery does not have demarcated parking bays. The existing off-street parking area is shown in Figure 13 and Figure 14. The standard parking bay size is based on the COTO TMH 16³. The parking bay dimension as provided in the TMH 16 are shown in Table 2. Bays which are angled at 90° are normally 2.5m wide and 5m long. The total area of the parking lot was estimated at 442m² (26m x 17m). It was assumed that the existing parking lot can therefore accommodate approximately 14 parking bays.

In addition to the off-street parking bays, there are existing on-street parking bays along Hughenden Street. The on-street parking bays are shown in Figure 15.

Table 2: Extract from the TMH16, Parking bay dimensions

Bay Angle	Bay* Width (m)	Bay depth (m)		Aisle width (m)	
		No interlock	Interlocked	Two-way	One-Way
90°	2.5	5.0	5.0	7.5	7.5
60°	2.9	5.3	4.8	5.2	4.4
45°	3.5	4.9	4.2	5.2	4.2

(*) Add 0.35 m for parking bays adjacent to a wall.



Figure 12: Assumption of the number of parking bays



Figure 13: Existing Parking lot

In addition to the surfaced parking area there are ample open space on the property and some on street parking bays where visitors can park (refer to Figure 14).

³ Technical Methods for Highways : South African Traffic Impact and Site Traffic Assessment Standards and Requirements Manual, Version 1.01, 2014



Figure 14: Cars parking under the trees on Erf 1461-RE.

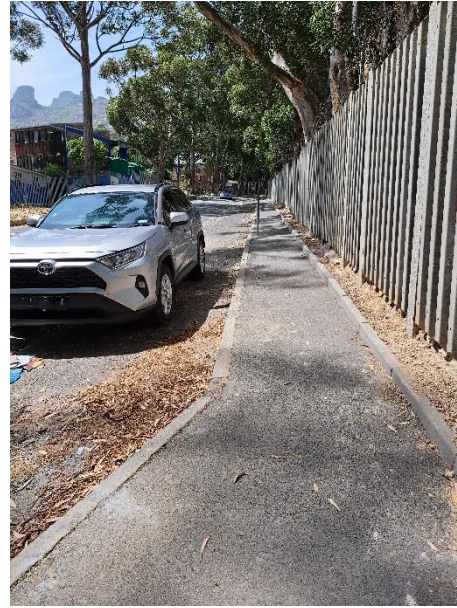


Figure 15: On-street parking

7 Proposed Development on Erf 1459-RE

7.1 Proposed Development Extent

The existing cemetery and proposed extension site are separated by a steep gradient with a retaining wall and fence. Vehicular access to the extended cemetery will therefore be from Hughenden Street. It is assumed that there will be a pedestrian walkway linking the two properties. The proposed cemetery extension and access are shown in Figure 16 and Figure 17.



Figure 16: Proposed Development



Figure 17: Access to site Erf 1459-RE from Hughenden Street

7.2 Trips Generated

The directional split provided in COTO TMH 17 for land use “Cemetery” was used to calculate the expected number of trips in and out of the development. The trip generation rates were multiplied with the area of the existing cemetery and extension respectively to calculate the number of trips in/out. The cemetery will be extended so that the total size of the cemetery is 2.85 ha, with the size of the new portion being 0.64 ha.

The number of trips generated are shown in Table 3 below.

Table 3: Total number of trips generated by the development

	Trips Generated			Directional Split	
	Existing Cemetery	Cemetery Extension	Total	IN	OUT
AM Peak	0.44	0.16	0.61	0.42	0.18
PM Peak	0.44	0.16	0.61	0.21	0.39
Midday	8.81	3.30	12.10	9.08	3.03
Saturday	17.62	6.59	24.21	12.10	12.10

The extended portion of the cemetery will generate approximately 7 trips on a Saturday. The whole cemetery (existing and extended) will generate approximately 25 trips in total on a Saturday.

7.3 Provision for Alternative Modes of Transport

The provision of public transport in the vicinity of the cemetery is considered to be sufficient. There is an existing bus stop outside the current access into the cemetery along Hout Bay Main Road. Currently there are no MyCiTi bus routes going past the cemetery. The area is however served by taxis. Based on the traffic counts that was done there were 28 taxi's in the peak hour along Hout Bay Main Road.

7.4 Access Management

7.4.1 Proposed Vehicular Access

As there are no parking on extended portion of the cemetery, vehicular access will mainly be via the access off Hout Bay Main Road. The access off Hughenden Road will only be used by the hearse.

Hout Bay Main Road can be classified as Class 3 Minor Arterial.

Considering that:

- the access off Hout Bay Main Road is the main access to the cemetery and the parking lot,
- number of vehicles that is expected to use the access off Hout Bay Main Road is 25,

The access to the cemetery can be classified as a low volume driveway in a suburban development environment.

Table 4 is taken from the Provincial AMG (2020). This table indicates that a low volume driveway is not permitted along a Class 3 in a suburban development environment.

Considering that:

- The access of Hout Bay Main Road is a historical access and
- There is a level difference between the existing and extended portion of the cemetery,

It is not recommended that the access be relocated.

Table 4: Guidelines for permitting “conventional” driveways (Source: AMG (2020))

Roadside development environment	Class 2 Major	Class 3 Minor			Class 4 Collector			Class 5 Local		
	LVD+HVD	DED	LVD	HVD	DED	LVD	HVD	DED	LVD	HVD
CBD										
Intermediate										
Suburban										
Semi-rural										
Rural										



No “conventional” driveways should be allowed



“Conventional” driveways may be considered according to Section 12-5 (CBD, intermediate, suburban and semi-rural RDEs)



DEDs and LVDs should not normally be considered unless in exceptional circumstances and with the agreement of the road authority



“Conventional” driveways may be considered according to Chapter 13 (Rural RDEs)

Driveway type

HVD

LVD

DED

“Conventional” driveways

High-volume driveway

Low-volume driveway

Domestic equivalent driveway

The only vehicular access to the extended portion of the cemetery extension will be via the existing access point along Hughenden Street. Hughenden Street is classified as Class 5 Local Collector Street. The access itself can be classified as a Domestic Equivalent Driveway as only the hearse will use this access.

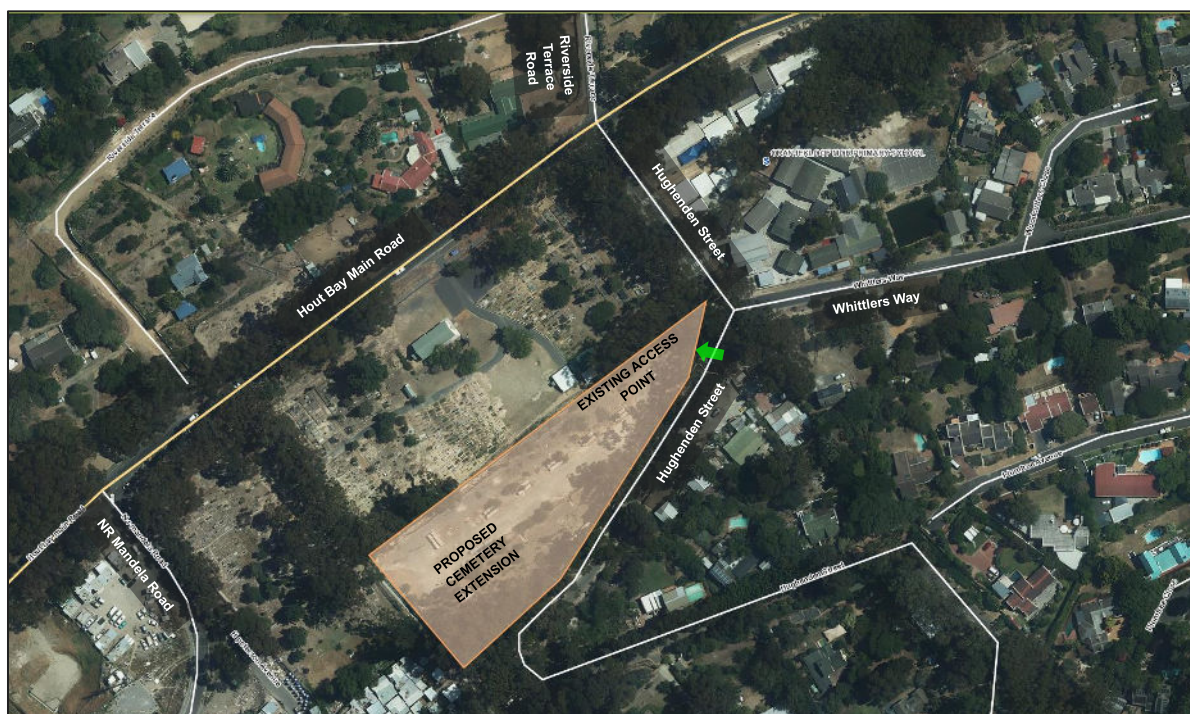


Figure 18: Proposed Access

7.4.2 Warrants for turning slots

Given the volumes of traffic along Hout Bay Main Road, a traffic count was done at the entrance to the cemetery in order to determine whether turning slots are warranted. Refer to Section 4.2 for the peak hour traffic count.

The AMG guidelines provide warrants for left and right turn slots. The warrants are shown in Figure 19 and Figure 20.

Right turn slot

Based on the peak hour traffic counts the:

- advancing volume was 720,
- opposing volume was 777 and
- right turn volume was 15.

Hout Bay Main Road is a Class 3 road, and the operating speed is 60 km/hr. Based on the warrant for right turn slots (shown in Figure 19) a right turn lane is warranted.

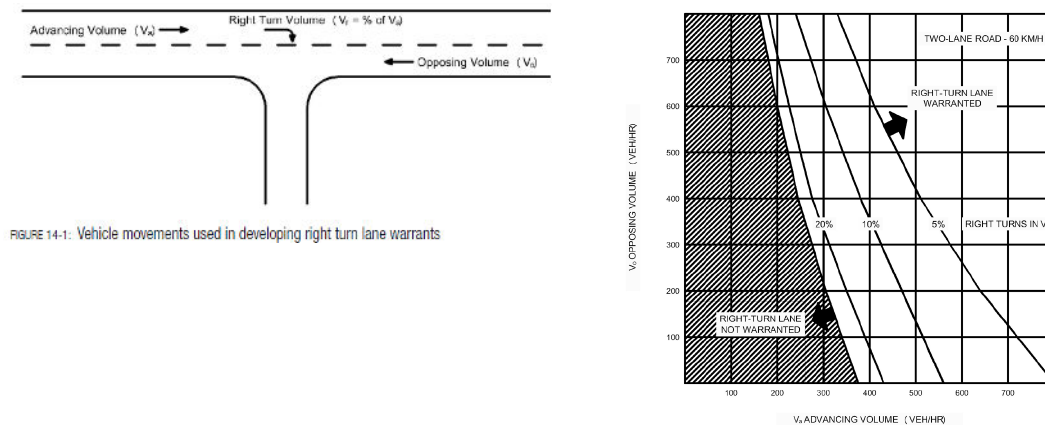


Figure 19: Right turn lane warrants

Left turn lane

Based on the peak hour traffic counts and the warrants shown in Figure 20 a left turn lane is not warranted. Based on the peak hour traffic counts the:

- advancing volume was 720 and
- the left turn volume is 0.

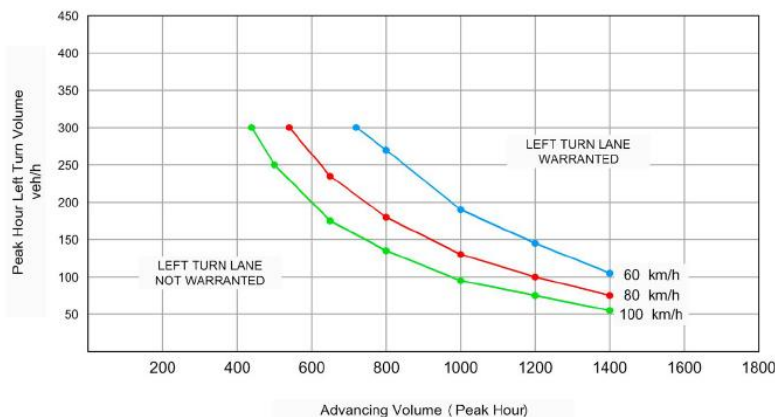


Figure 20: Left turn lane warrants

7.4.3 Proposed Pickup / Drop Off Embayment

There is an existing public transport embayment in Hout Bay Main Road which can be utilised for the cemetery extension. See Figure 21 below. This is the only public transport stop in the vicinity of the cemetery and is considered to be sufficient.



Figure 21: Pick-up / Drop-off embayment

7.4.4 Pedestrian Accesses

Pedestrians will gain access to the site from the existing vehicular access points show in Figure 9 and Figure 17. It is assumed that there will be a pedestrian walkway connecting the two properties.

7.5 Parking

7.5.1 Parking Required

The number of parking bays that a particular land use requires is calculated based on parking rates provided in policy documents such as the City of Cape Town Municipality Planning By Law of 2019. These documents prescribe (minimum) parking ratios for various land uses in three defined areas, namely Normal Areas, PT1 areas and PT2 areas:

- ▶ 'Normal' parking ratios are based on a survey of local authority Town Planning Scheme requirements for areas where public transport is not being promoted.
- ▶ 'Public Transport Zones' (PT1 Zones) refer to sites in areas where the use of public transport is to be promoted but where the provision of public transport is currently considered to be inadequate.
- ▶ 'Public Transport Zones' (PT2 Zones) refer to sites in areas where the use of public transport is actively promoted and the provision of public transport is good.

For the purpose of this report, it is assumed that the proposed development falls within the Normal Parking area where Normal parking ratios are applicable.

The CoCT 2019 by law does not provide parking ratios for a cemetery. Based on source document land uses (shown in Table 5), the description “Place of Worship” fits the development land use best.

Table 5: Parking requirement comparison

Land Use	Source	Recommended Parking Rate	Comments	Estimated parking Bays
Place of worship	Municipal Planning Amendment Bylaw, 2019	1 bay per 6 seats or persons, calculated at 1,4 m ² floor space = 1 person		13 Bays

The 2019 By law recommends that 1 bay be provided per 6 seats of persons. As the number of seats are unknown, the number of persons were calculated using the floor area of the church.

The footprint of the church is estimated to be 144m² (8m x 18m). An assumption was made that 20% of the total area would be used for bathroom and other facilities. A total of 80% of the area (115 m²) is assumed to be usable. 1.4m² floor space was used to calculate the number of persons. The number of bays were calculated per 6 seats.

The number of parking bays required is 14.

7.5.2 Proposed Parking

The existing parking lot can accommodate 14 parking bays (refer to Section 6.3). The existing number of parking bays provided prescribed minimum of 14 bays. The existing parking lot with the additional parking opportunities on site and on street parking bays along Hughenden Street will therefore be sufficient to accommodate visitors to the existing and extended cemetery.



Figure 22: Proposed Parking

8 Traffic Impact

The extended portion of the cemetery generates/attracts 0.61 additional trips in the AM and PM peak hour respectively. The total number of peak hour trips to/from the cemetery are expected to be 25 trips on a Saturday.

The traffic impact of the additional trips to and from the cemetery, as a result of the cemetery expansion, is considered to be negligible.

9 Conclusions

The table below summarises the conclusions of this report.

Table 6: Summary of Conclusions

Topic	Conclusion
Existing Cemetery	Access: Two of access points have been closed and there is only one main vehicular access point off Hout Bay Main Road. Parking: There is available on-street parking and existing parking lot which meets the parking bay zoning scheme requirements.
Proposed Development	Recreation and Parks is looking to extend the cemetery The proposed extension of the cemetery will generate approximately 6.59 trips on a Saturday – this is the maximum number of trips the cemetery is expected to generate.
Access	Vehicular access: via the existing accesses off Hout Bay Main road and Hughenden Street. Due to level changes across the site there will not be a vehicular link between the existing and extended portion of the cemetery. Warrants for turning slots: Based on the traffic counts a right turn lane is warranted at the access off Hout Bay Main Road. Pedestrian Accesses: Pedestrians will gain access from the exiting vehicular access to the site extension.
PT Access	There is an existing Public Transport embayment along Hout Bay main road which is deemed to be sufficient.
Proposed development Parking	Number of parking bays required (existing + extended portion of the cemetery): The existing parking lot can accommodate 14 parking bays. The number of parking bays required are 14. Number of parking bays provided (existing off street parking area): The existing parking lot with the on-street parking bays are sufficient.
Impact on road network	Considering that the extended portion of the cemetery will only generate 6.59 trips the impact the extension has on the road network is negligible. The existing road network has sufficient capacity to accommodate the additional trips.

10 Recommendations

The objective of the Traffic Impact Statement was to determine if the impact that the proposed extension of the cemetery would have on the surrounding road network. The following is recommended:

- ▶ Due to the high volumes of traffic along Hout Bay Main Road, it is recommended that a right turn lane is provided at the access to the existing cemetery off Hout Bay Main Road.
- ▶ The current parking at the cemetery is deemed to be sufficient.
- ▶ The impact of the traffic generated by the proposed development is considered negligible.
- ▶ Given the difference in height across the site, vehicular access to the extended portion of the site (Erf 1459-RE) will be via the existing access along Hughenden Street.
- ▶ A pedestrian link be provided to allow visitor to use the parking lot on ERF 1461-RE existing cemetery) and then walk to the extended portion of the cemetery.

In diversity there is beauty and
there is strength.

MAYA ANGELOU

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