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11 November 2024

Our Reference: 4761

Attention: Michael Wurbach

TRANSPORT IMPACT STUDY: REMAINDER 281 SPOOKDRAAI ESTATE, STRUISBAAI

We refer to our appointment to evaluate the expected transport related impacts associated with the proposed development on Remainder 281 Spookdraai, Struisbaai. This report is in support of an application to rezone the subdivided area to subdivisional area.

The property is located to the south of Marine Drive (R319) near Spookdraai in Struisbaai. See **Figure 1** in Annexure A for a Locality Plan.

Terms of Reference

- Obtain and review relevant background information for the study area;
- Obtain any relevant mapping information;
- Visit the site and identify the existing physical and operational characteristics of the roadways adjacent to the site, including the different alternative access routes;
- Evaluate road geometry, shoulder sight distances, posted speed and surfacing;
- Quantitatively evaluate the existing pavement (road surface) conditions;
- Obtain necessary road network information for the peak periods;
- Evaluate the operation of the existing road elements in terms of standard measures.
- Estimate the daily and peak hour traffic that would be generated by the development;
- Assign the estimated site-generated traffic to the study roadways using the estimated trip distribution patterns within the site vicinity;
- Evaluate the road network in the site vicinity in terms of the expected traffic impact;
- Recommend essential and best practice mitigation measures;
- Compile a TIA report, which summarises the results of the study

Methodology

This section provides an outline of the approach and methodology used in the study. The TIA identifies and assesses the potential traffic impact on the surrounding road network in the vicinity of the site during the construction and operational phases of the proposed development. The TIA includes the following tasks:

Site Visit and Project Assessment

- Overview of project background information including location maps.
- Research of all available documentation and information relevant to the proposed development.

Traffic and Road Network Assessment

- Trip generation
- Access requirements.
- Traffic volume data was obtained from Western Cape Government Road Network Information System.
- Investigation of the impact of the development traffic.

Access Accessment

- Feasible location of access point;
- Motorised and non-motorised access requirements;
- Queuing analysis and stacking requirements if required;
- Access geometry and
- Sight distances and required access spacing.

Report

Reporting on all findings and preparation of the report

Proposed Development

As part of the environmental application process three different development alternatives, i.e. 1) with 7 single residential units and 2) with 5 single residential units, 2 medium density residential units and 3) 6 single residential units were evaluated. Alternative 3 with six single dwelling houses is the preferred alternative. Refer to **Figure 2A**, **2B** and **2C** in Annexure A for the proposed site development plans.

Existing Traffic Conditions

Existing Roadways in Site Vicinity

Marine Drive R319 (Provincial Main Road MR00261): One lane per direction, 60 km/h posted speed limit with a gravel shoulder on the northern side of the road and a walkway along the southern side of the road. The road surface is in a fair condition in the site vicinity.

Photo 1 & **2** in Annexure B shows the typical cross sections of MR00261 in the site vicinity.

Transport Impact Analysis

Existing Conditions

The existing traffic volumes and traffic demand on the surrounding road system as observed during the site visit are relatively low, not only on the side streets, but also along MR00261. The Annual Average Daily Traffic (AADT) along MR00261 is approximately 3 900 with approximately 330 two-way peak hour trips. The directional split is close to 50/50 meaning the peak hour traffic volume in the peak direction is in the order of 165 vehicles per hour. The existing low traffic demand along the surrounding roads results in many gaps in the traffic stream, which enables side road traffic to enter these roads with minimal delay. No significant conflict situations were observed during the site visit.

Year 2029 Background Traffic Conditions (No-Go Alternative)

The 2029 Background Traffic conditions are based on the 2024 existing traffic volumes adjusted with a growth rate of 3 percent per annum over a five-year period without the proposed development. Due to the low traffic volumes along the surrounding road network the intersections and road network will continue to operate at acceptable levels-of-services during the 2029 background traffic conditions.

Trip Generation and Trip Distribution

Based on the Committee of Transport Official's South African Trip Data Manual (TMH17), the following trip generation rates is suggested for the proposed development:

- Single dwelling units - 1 trip per unit with 25/75 directional split during a.m. peak hour and 70/30 directional split during the p.m. peak hour.
- Townhouses (Simplexes & Duplexes) - 0.85 trips per unit with 25/75 directional split during a.m. peak hour and 70/30 directional split during the p.m. peak hour.

Based on the trip rates above Alternative 3 (Preferred) can generate approximately 6 vehicle trips during the peak traffic hours (2 inbound and 4 outbound during the a.m. peak hour and 4 inbound and 2 outbound during the p.m. peak hour).

Based on the trip rates above Alternative 2 can generate approximately 7 vehicle trips during the peak traffic hours (2 inbound and 5 outbound during the a.m. peak hour and 5 inbound and 2 outbound during the p.m. peak hour).

Alternative 1 can also generate 7 vehicular trips during the peak traffic hours (2 inbound and 5 outbound during the a.m. peak hour and 5 inbound and 2 outbound during the p.m. peak hour).

It is expected that most trips will travel to the east along MR00261 to/from commercial uses in the larger Struisbaai area.

Traffic Impact

From the observations during the site visit it is evident that all the intersections in the vicinity of the site have sufficient capacity to accommodate the additional trips that will be generated by the proposed development. Based on the nature and extent of the proposed development and the current traffic conditions it is concluded that the transport impact of the proposed development will be insignificant. Therefore, no specific road improvements other than the access off Marine Drive will be required to accommodate the additional trips that will be generated by the proposed development. Alternative 1,Alternative 2 and Alternative 3 (Preferred) have similar trip generation and the expected transport impact will be the same for both Alternatives. The transport impact associated with Alternative 1, Alternative 2 and Alternative 3 will be of low negative significance.

During the peak holiday periods during Easter weekend and the Christmas holidays the traffic volumes along the road network in the surrounding area can increase to almost double the volumes during the typical weekday peak hours. However, due to small size of the proposed development the surrounding road network will have sufficient capacity to accommodate the new trips associated with the proposed development even during the peak holiday periods. See the impact table in Annexure C for a summary of the transport impact significance indicators.

Access, Access Spacing and Shoulder Sight Distance

Access is proposed via a new servitude access off Marine Drive as shown on the SDP **Figure 2A**, **B & C** in Annexure A. The proposed access layout is illustrated in **Figure 3** in Annexure A.

The proposed access is a low volume driveway and the proposed access spacing is sufficient in terms of the minimum access spacing requirements.

The required shoulder sight distance for light motor vehicle along a two-lane road in a 60km/h roadside environment is 120 metres. The available shoulder sight distance from the access, is more than 120 metres in both directions along Marine Drive, which is sufficient. See **Photo 3** & **4** in Annexure B.

Parking

Parking should be provided in accordance with the local zoning scheme requirements.

Public Transport and Non-Motorise Transport

It is not expected that the proposed development will generate a significant demand for public transport or non-motorised transport. No dedicated public transport or non-motorised transport facilities are recommended for the proposed development.

Conclusions and Recommendations

Based on the evaluation in this report, the conclusions and recommendations are as follows:

- The existing traffic volumes along the surrounding road network in the site vicinity is low.
- Trips generated by the proposed development will be less than 10 trips during the typical weekday peak hours, which is low.
- The surrounding road network has sufficient capacity to accommodate the trips associated with the proposed development, even during the peak holiday periods.
- The access spacing is acceptable and the available shoulder sight distance in both directions along Marine Drive is sufficient.
- No public transport or NMT facilities are recommended for the development.
- The proposed development will have a low negative significance in terms of the transport impact.
- It is recommended that the development be approved from a transport impact perspective.

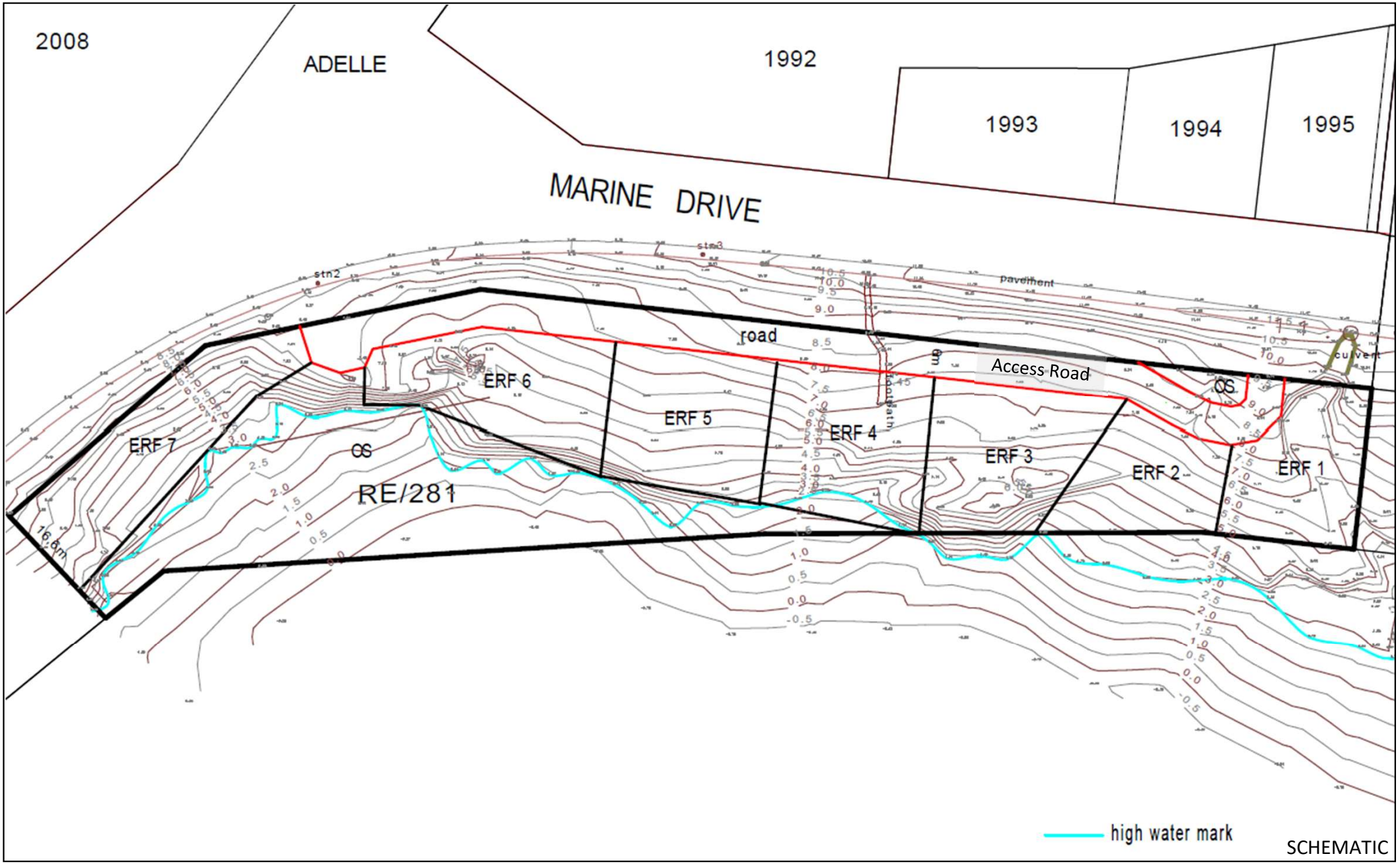
We hope this adequately addresses the expected transport impact associated with the proposed development. Please do not hesitate to contact us should you required any further information.

Yours sincerely,

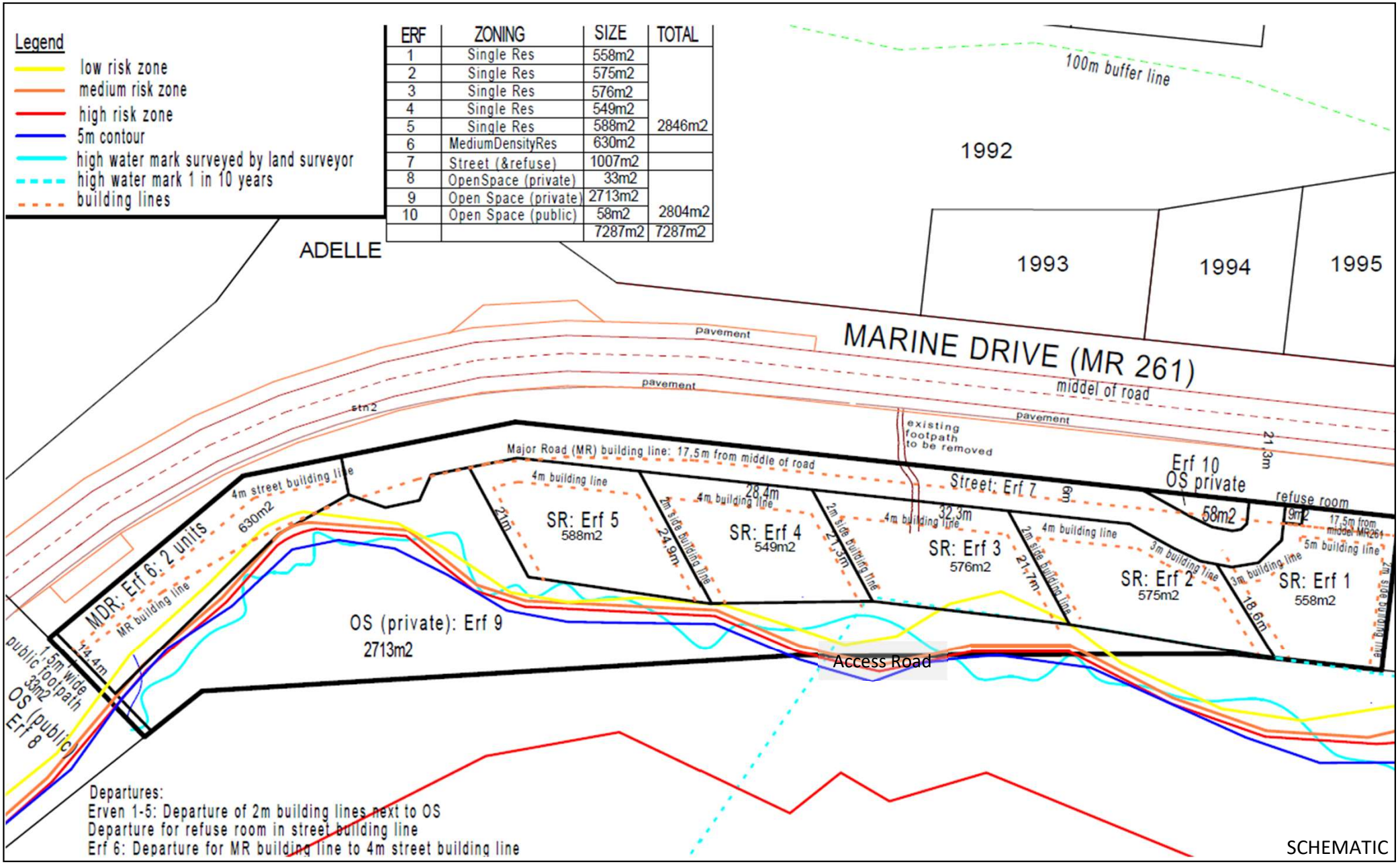
Christoff Krogscheepers
For *Innovative Transport Solutions*

Annexure A: Figures

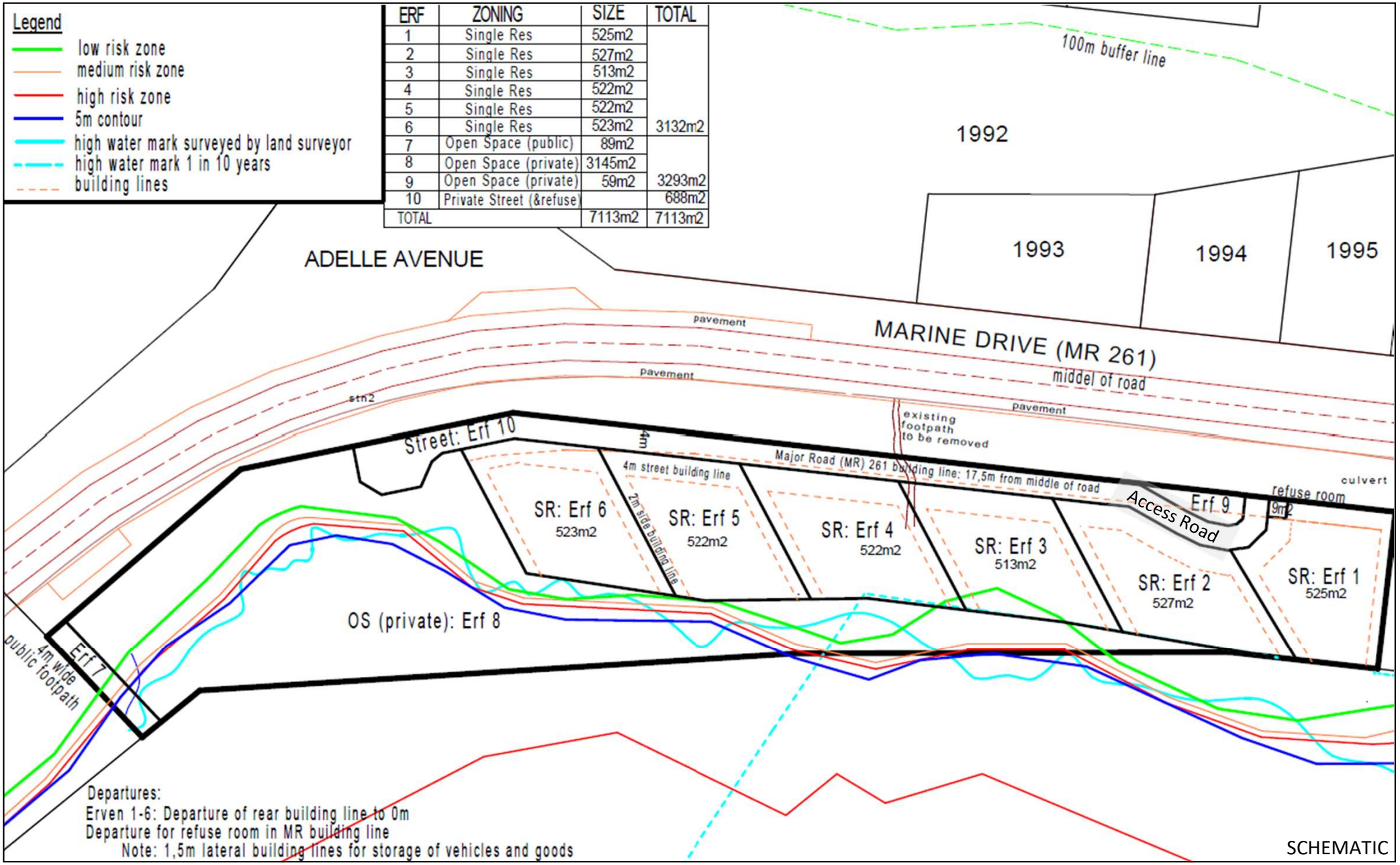
PROJECT:	FIGURE:	NUMBER:
REMAINDER 281 SPOOKDRAAI ESTATE, STRUISBAAI	LOCALITY MAP	1



PROJECT:	FIGURE:	NUMBER:
REMAINDER 281 SPOOKDRAAI STRUISBAAI	SITE DEVELOPMENT PLAN ALTERNATIVE 1	2A

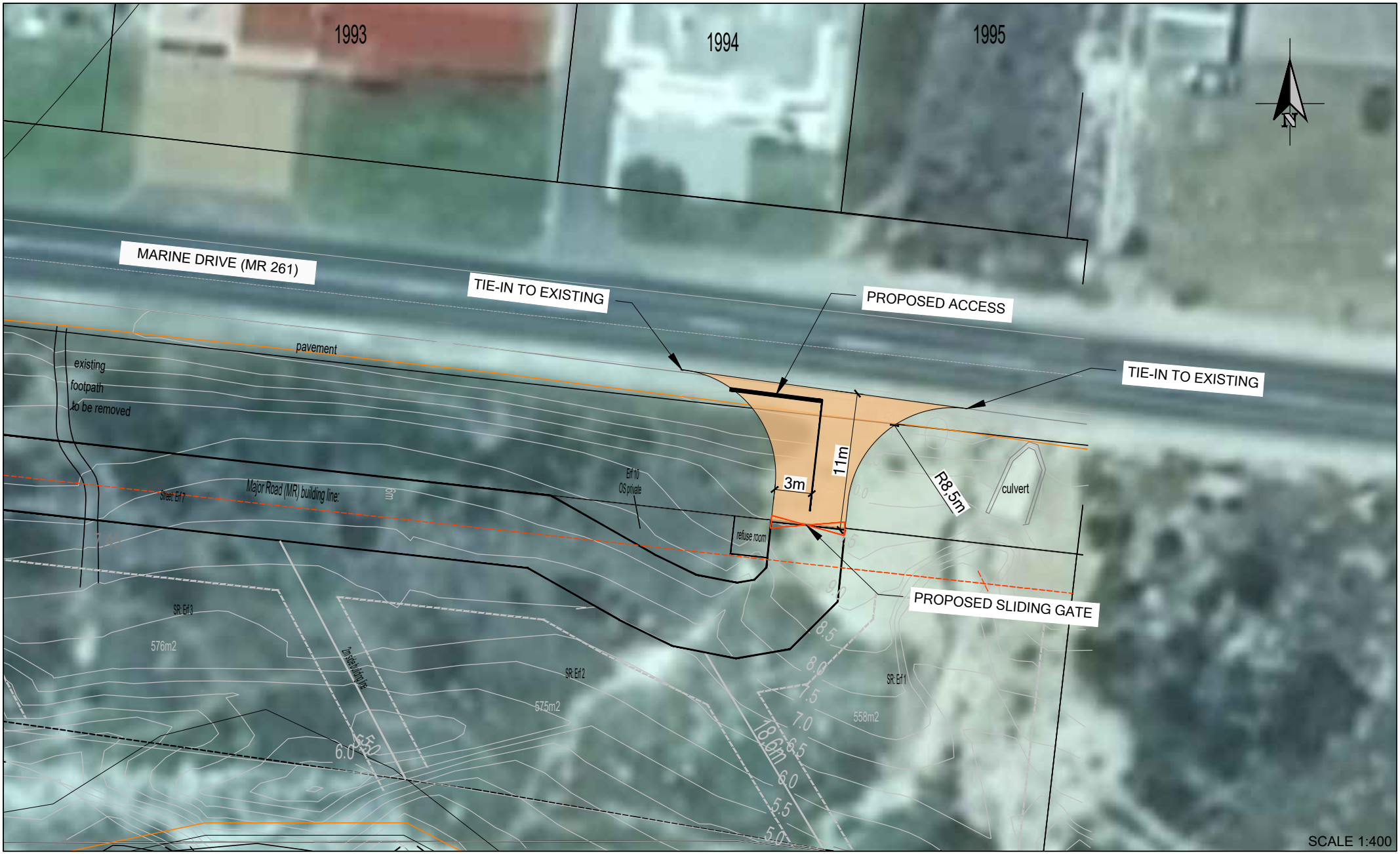


PROJECT:	FIGURE:	NUMBER:
REMAINDER 281 SPOOKDRAAI STRUISBAAI	SITE DEVELOPMENT PLAN ALTERNATIVE 2	2B



ERF	ZONING	SIZE	TOTAL
1	Single Res	525m2	
2	Single Res	527m2	
3	Single Res	513m2	
4	Single Res	522m2	
5	Single Res	522m2	
6	Single Res	523m2	3132m2
7	Open Space (public)	89m2	
8	Open Space (private)	3145m2	
9	Open Space (private)	59m2	3293m2
10	Private Street (&refuse)		688m2
TOTAL		7113m2	7113m2

PROJECT:	FIGURE:	NUMBER:
REMAINDER 281 SPOOKDRAAI STRUISBAAI	SITE DEVELOPMENT PLAN ALTERNATIVE 3 (PREFERRED)	2C



PROJECT:	FIGURE:	NUMBER:
TIA SPOOKDRAAI SRUISBAAI	ACCESS PROPOSAL	3

G:\4761 TIA Spookdraai Struisbaai\11 Drawings, Figures & GIS\CAD\4761 TIA Spookdraai Struisbaai - Access Layout_TW_2024-11-04.dwg

Annexure B: Photos

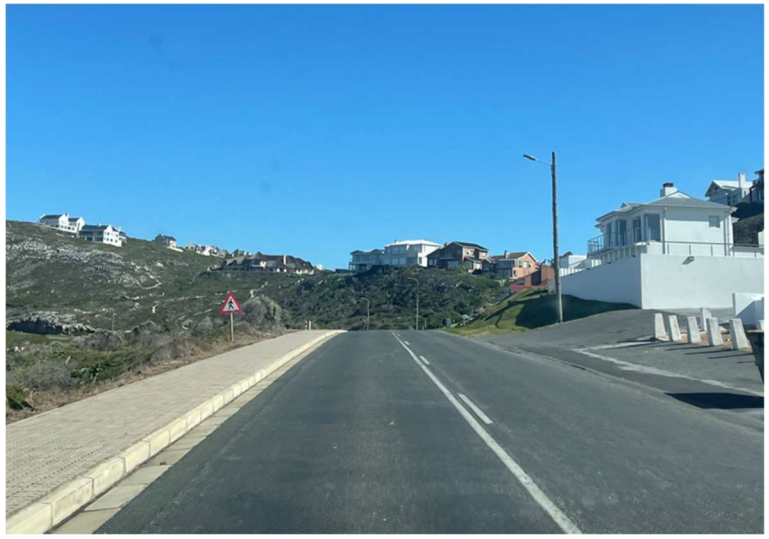


Photo 1: MR394 Eastbound View towards Struisbaai

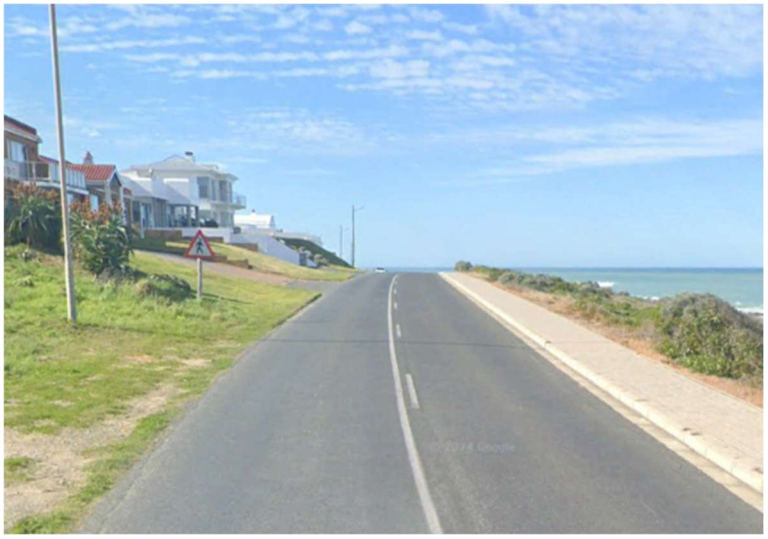


Photo 2: MR394 Westbound View towards the Site

Photo 3: Marine Drive Eastbound View from the Access

Photo 4: Marine Drive Westbound View from the Access

Annexure C: Impact Summary Table

Table 1: Transport Impact Summary Table

Alternative:	**ALTERNATIVE 1**	**ALTERNATIVE 2**	**ALTERNATIVE 3 – NO GO**
PLANNING, DESIGN AND DEVELOPMENT PHASE			
Potential impact:	**Transport Impact**	**Transport Impact**	**Transport Impact**
Nature of impact:	**Traffic delay and congestion at intersections and road networks during the construction phase.**	**Traffic delay and congestion at intersections and road networks during the construction phase.**	**Increase in traffic volumes due to background traffic growth.**
Extent and duration of impact:	**Local, short-term**	**Local, short-term**	**Regional, medium to long-term**
Consequence of impact or risk:	**Very-low**	**Very-low**	**Very-low**
Probability of occurrence:	**Possible**	**Possible**	**Definite**
Degree to which the impact may cause irreplaceable loss of resources:	**No loss**	**No loss**	**No loss**
Degree to which the impact can be reversed:	**Reversible**	**Reversible**	**Reversible**
Indirect impacts:	**None**	**None**	**None**
Cumulative impact prior to mitigation:	**Low**	**Low**	**Low**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Very-low**	**Very-low**	**Neutral**
Degree to which the impact can be avoided:	**Low**	**Low**	**Low**
Degree to which the impact can be managed:	**Medium**	**Medium**	**Medium**
Degree to which the impact can be mitigated:	**Medium**	**Medium**	**Medium**
Proposed mitigation:	**Heavy construction traffic should not be allowed on the public road network during the typical a.m. and p.m. peak hours.**	**Heavy construction traffic should not be allowed on the public road network during the typical a.m. and p.m. peak hours.**	**Routine road maintenance by the Roads Authority.**
Residual impacts:	**Low**	**Low**	**Low**
Cumulative impact post mitigation:	**Low**	**Low**	**Low**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Very-low**	**Very-low**	**Neutral**

OPERATIONAL PHASE			
Potential impact and risk: ie. Botanical, visual, heritage, etc	**Transport Impact**	**Transport Impact**	**Transport Impact**
Nature of impact:	**Traffic delay and congestion at intersections and road networks during the operationla phase.**	**Traffic delay and congestion at intersections and road networks during the operational phase.**	**Increase in traffic volumes due to background traffic growth.**
Extent and duration of impact:	**Local, short-term**	**Local, short-term**	**Regional, medium to long-term**
Consequence of impact or risk:	**Very-low**	**Very-low**	**Very-low**
Probability of occurrence:	**Possible**	**Possible**	**Definite**
Degree to which the impact may cause irreplaceable loss of resources:	**No loss**	**No loss**	**No loss**
Degree to which the impact can be reversed:	**Reversible**	**Reversible**	**Reversible**
Indirect impacts:	**None**	**None**	**None**
Cumulative impact prior to mitigation:	**Low**	**Low**	**Low**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Very-low**	**Very-low**	**Neutral**
Degree to which the impact can be avoided:	**Low**	**Low**	**Low**
Degree to which the impact can be managed:	**Medium**	**Medium**	**Medium**
Degree to which the impact can be mitigated:	**Medium**	**Medium**	**Medium**
Proposed mitigation:	**Routine road maintenance by the Roads Authority.**	**Routine road maintenance by the Roads Authority.**	**Routine road maintenance by the Roads Authority.**
Residual impacts:	**Low**	**Low**	**Low**
Cumulative impact post mitigation:	**Low**	**Low**	**Low**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Very-low**	**Very-low**	**Neutral**