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A Level 1 Contributor to B-BBEE

**Date:** 12 August 2025

**Our Ref:** UDS821/Reports/TIA

ASLA Devco (Pty) Ltd.  
25 Jan Conradie Crescent  
ASLA Park  
Strand  
7140

**ATTENTION:** Ms Belinda Munsamy-Swartland

Dear Madam,

**APPLICATION FOR AMENDMENT OF APPROVED SUBDIVISION PLAN FOR REMAINDER OF ERF 5478, VREDENDAL: TRAFFIC IMPACT ASSESSMENT**

This company was appointed by *ASLA Devco (Pty) Ltd* to prepare a Traffic Impact Assessment (TIA) for the proposed amendment to the previously approved subdivision plan for Phase 7 of the Matzikama Housing project, planned on a portion of the Remainder of Erf 5478, Vredendal.

## **1 BACKGROUND AND LOCALITY**

The subject property, which is currently undeveloped, is situated in the north of Vredendal-Noord, within the urban edge. It has a total area of  $\pm 533.5$  ha, of which the application area overlays only  $\pm 9.7$  ha. See the attached **Locality Plan**.

In November 2014, the Matzikama Municipality approved the land use application for the Subdivision, Rezoning (from an Undetermined Zone to a Subdivisional Area Overlay Zone) and Departures pertaining to Portion 171 of Farm 292 (now demarcated as Erf 5478) and the adjacent Remainder of Portion 386 of Farm 272. See the **Previously Approved Layout Plan** attached. It should be noted that the phase numbering has since been revised. Phases 1 to 5 have been renumbered as Phases 4 to 8, respectively. Phase 4 on the previously approved layout plan corresponds to the current application area (now Phase 7).

To date, Phases 4 and 5 (new numbering) have been fully implemented. According to the Project Manager, Ms Belinda Munsamy-Swartland, Phase 8 was scheduled for completion at the end of July 2025 and Phase 6 in September 2025.

The aforementioned approved application included a TIA, dated September 2013 and compiled by *Kantey and Templer (Pty) Ltd.* Relevant references to this TIA are provided throughout the current report.

As stated, an amendment to the approved subdivision plan is proposed for Phase 7. This TIA accompanies the Application for the Amendment of an Approved Subdivision Plan for the Remainder of Erf 5478, Vredendal.

## **2 PROPOSED DEVELOPMENT**

### **2.1 Development Proposal**

In 2014, approval was granted for 345 residential erven (Residential Zone III) and a crèche (Institutional Zone I) for Phase 7 of the Matzikama Housing project in Vredendal.

The revised layout within the same application area includes 445 residential erven (Residential Zone III, as per the zonings of a former zoning scheme), with an average erf size of  $\pm 120$  m<sup>2</sup>, a crèche (Institutional Zone I) with an erf area of  $\pm 1,200$  m<sup>2</sup>, and a business erf (Business Zone I) measuring  $\pm 931$  m<sup>2</sup>. Refer to the attached ***Proposed Layout Plan***, dated 17 April 2024 and prepared by *Urban Dynamics South Cape Town and Regional Planners*.

The proposed development therefore comprises an additional 100 residential (social housing) erven and one additional business erf in comparison to the previously approved layout. This Traffic Impact Assessment, however, evaluates the traffic impact of the entire Phase 7 development.

### **2.2 Access to the Property**

At present, there is no formal access to the application area.

As indicated in ***Figure 1*** on the next page and on the attached ***Proposed Layout Plan***, seven future access points are planned for the application area. These will connect to Sarel Cilliers Street, the extension of Hoog Street included in Phase 6 of the housing project (previously referred to as Phase 3) to the southwest, as well as to the local streets of Phase 8 (previously Phase 5) to the northeast.

Via Sarel Cilliers Street, Hoog Street and Hoërskool Street lead directly to/from Aas Le Fleur Street, which serves as the primary access route to the Vredendal-Noord settlement.

A secondary, predominantly unsurfaced access to Vredendal-Noord is available on the southwestern side of the settlement via Gegund Street. Just south of the Vredendal Solar Power Park, this route intersects with "Beeswater Road" (unsurfaced), which leads to/from the R362 to the south. The municipality's Spatial Development Framework (SDF) proposes the upgrade of "Beeswater Road" in order to improve accessibility to the industrial area located in Vredendal-Noord and to enhance road safety for pedestrians along the settlement's other (main) roads. This upgrade is independent of the proposed development.

Further details of the proposed access points are discussed in ***Section 4***.

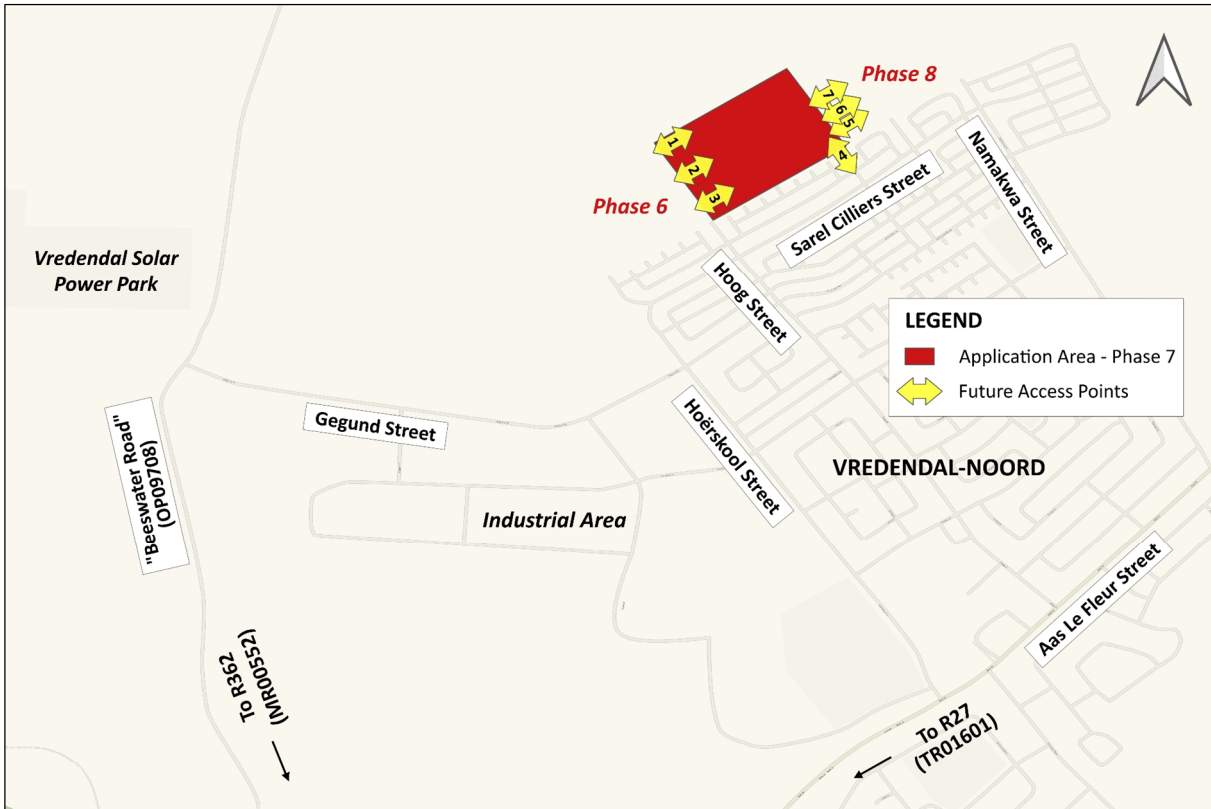


Figure 1: Future Access Points of Phase 7 of the Matzikama Housing project

### 3 TRAFFIC

#### 3.1 Existing Traffic

To obtain an indication of the existing traffic in the vicinity of the subject property, traffic counts were conducted at the below-listed intersections on Tuesday, 20 May 2025 (a typical weekday outside of school holidays). The counts were carried out during the AM (06:00 to 09:00) and PM (15:00 to 18:00) peak periods.

1. R27 (TR01601)/Aas Le Fleur Street/"Unknown Road"
2. Aas Le Fleur Street/Hoërskool Street

The peak-hour volumes derived from these counts are indicated in **Figure 2** and **Figure 3** below.

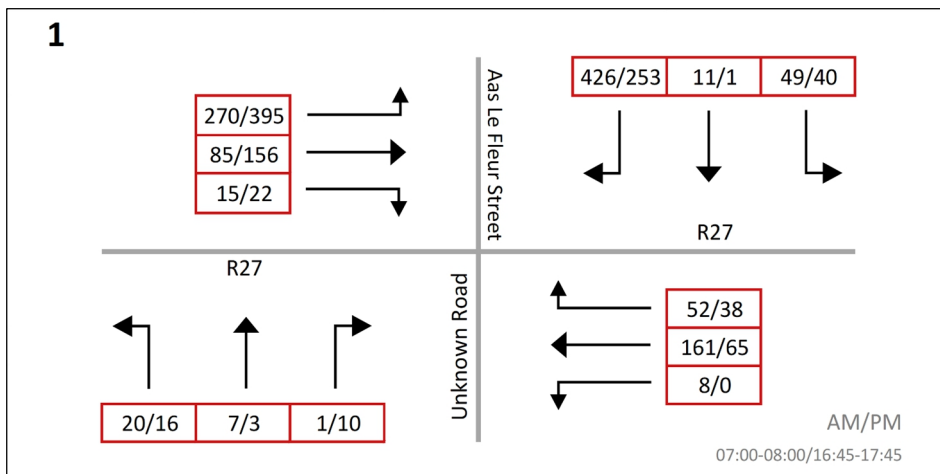
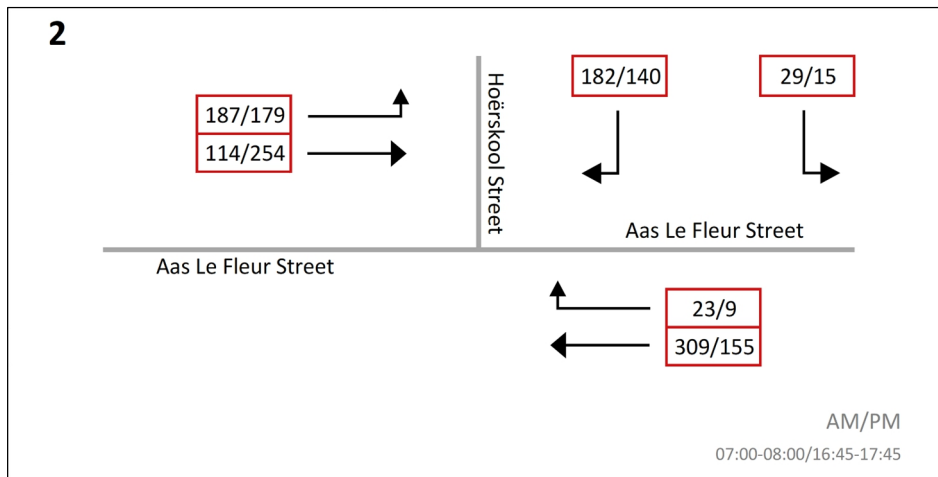


Figure 2: Existing 2025 AM/PM Peak-Hour Traffic Volumes – Intersection 1



**Figure 3: Existing 2025 AM/PM Peak-Hour Traffic Volumes – Intersection 2**

### 3.2 Traffic Growth

For the assessment of a future scenario over a 5-year horizon period, the projected peak-hour background traffic volumes were estimated as outlined below. No traffic growth was applied to the “Unknown Road” approach at Intersection 1. Furthermore, although the long-term plan for future residential development along Namakwa Street, located on the northeastern side of Vredendal-Noord, is acknowledged, this development was not included in the 5-year/short-term background traffic projections.

- 1. The existing peak-hour traffic volumes along the R27 (through movements only) were compounded for 5 years using an annual growth rate of 2%.**

The *TMH 17 South African Trip Data Manual* (2013) suggests 0 - 3% typical annual traffic growth rates for low-growth areas, 3 - 4% for average-growth areas and 4 - 6% for above-average-growth areas. The 2% growth rate was informed by the 2023 Spatial Development Framework (SDF) for Matzikama Municipality, as well as the Western Cape Government (WCG) *Road Network Information System (RNIS)*, which contains historical two-way traffic count data (from 2024, 2021, 2017, and earlier), along with corresponding growth rates, for two key locations along the R27 in the vicinity of the proposed development:

- RNIS* Node 83: the R362 (to/from Lutzville)/R27 Voortrekker Street/Station Street intersection, situated ± 1.2 km southwest of the R27/Aas Le Fleur Street/“Unknown Road” intersection (measured along the road centreline), with no other intersections present in between; and
  - RNIS* Node 85: the R27/R362 (to/from Klawer) intersection, positioned ± 2.2 km southeast of the R27/Aas Le Fleur Street/“Unknown Road” intersection.
- 2. The potential future traffic of Phases 6 and 8 of the Matzikama Housing project was added to the existing traffic along the R27, Aas Le Fleur Street and Hoërskool Street.**

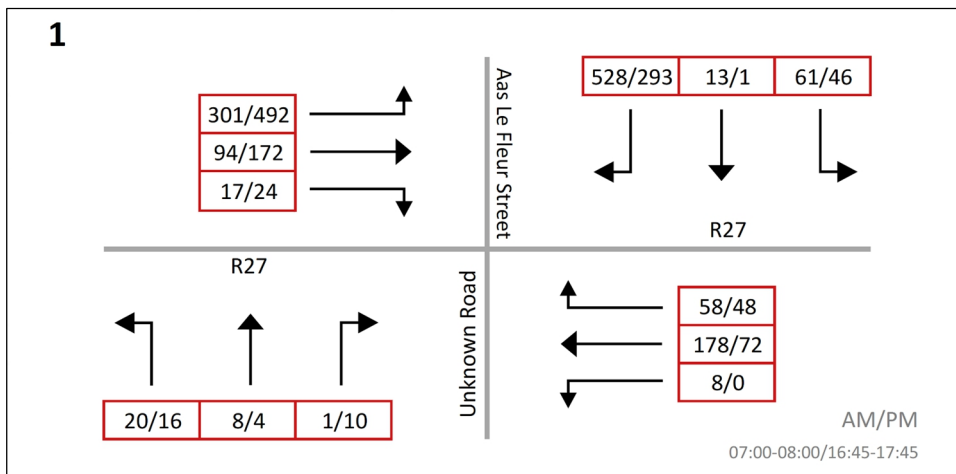
In the TIS for Phase 8, dated 18 October 2024 and compiled by *UDS Africa (UDS776)*, a total of 75 potential additional trip ends were estimated for the development, comprising ± 250 informal residential structures, for both the AM (19 inbound; 56 outbound) and PM (53 inbound; 22 outbound) weekday peak hours.

In the 2013 TIA for the Matzikama Housing project, a peak-hour trip generation rate of 0.5 was applied to each proposed residential dwelling unit. However, no justification or reference was provided for this rate. The Department of Transport’s Research Report RR92/228 *South African Trip Generation Rates*, 2<sup>nd</sup> Edition (1995) recommended a peak-hour rate of 0.45 for low-income residential areas. In contrast, the *TMH 17* specifies a base rate of 1.0 for ‘Single Dwelling Units’, with the following percentage reductions applicable under specific conditions: mixed-use development (10%), low vehicle ownership (40%), very low

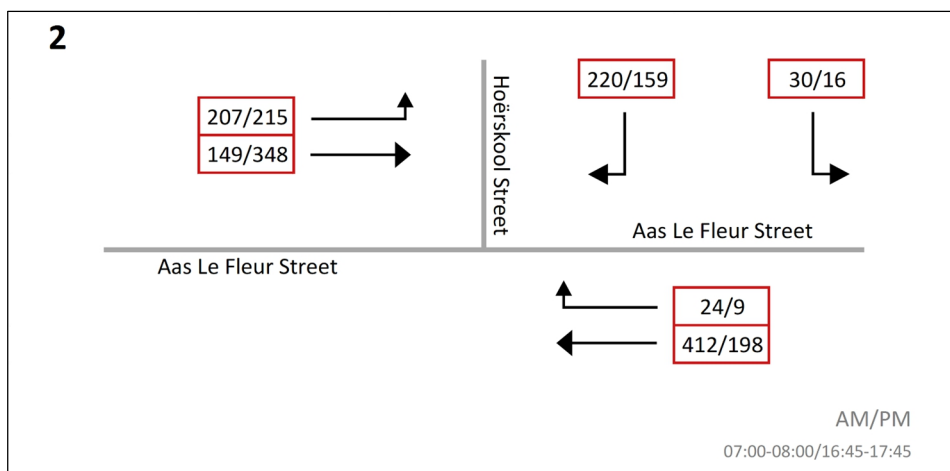
vehicle ownership (70%), and proximity to transit nodes or corridors (15%). As discussed in **Section 3.3**, the very low vehicle ownership adjustment factor was deemed to be applicable to the Matzikama Housing project. Consequently, the potential trip generation calculated in the previous TIA was revised accordingly for this report. For the 264 residential units proposed for Phase 6, a total of 79 potential trip ends is anticipated for both the AM (20 inbound; 59 outbound) and PM (55 inbound; 24 outbound) weekday peak hours, based on the directional splits (inbound/outbound) provided in the *TMH 17* (see **Table 1** in **Section 3.3**).

The combined potential weekday trip generation for Phases 6 and 8 amounts to 154 trip ends for both the AM (38 inbound; 116 outbound) and PM (108 inbound; 46 outbound) peak hours. These trips were distributed to and from Hoog Street and Hoërskool Street via Intersection 2 at a respective split of 75:25 for both peak hours. At the R27/Aas Le Fleur Street/“Unknown Road” intersection, the distribution of trips across the various turning movements was based on the directional splits observed in the existing peak-hour traffic counts.

Based on the above, the projected 2030 peak-hour volumes are as indicated in **Figure 4** and **Figure 5** below.



**Figure 4:** Projected 2030 AM/PM Peak-Hour Background Traffic Volumes – Intersection 1



**Figure 5:** Projected 2030 AM/PM Peak-Hour Background Traffic Volumes – Intersection 2

### 3.3 Trip Generation

The *TMH 17* trip generation rates for the ‘Single Dwelling Units’ land use were applied to determine the number of potential peak-hour trip ends that could be generated by the whole of Phase 7. These rates, along with their inbound and outbound splits, are presented in **Table 1**.

**Table 1:** Applicable Weekday Peak-Hour Trip Generation Rates

Land Use	AM Peak-Hour Trips		PM Peak-Hour Trips	
	Total	Split (IN/OUT)	Total	Split (IN/OUT)
Single Dwelling Unit	1.0 per unit	25:75	1.0 per unit	70:30

The trip generation adjustment factor for ‘Very Low Vehicle Ownership’ (a 70% reduction), as also provided in the *TMH 17*, was considered applicable to the proposed development. This adjustment factor was further based on a 2017 study conducted by *GIBB (Pty) Ltd* on behalf of *Communicare*, which assessed bespoke trip generation and parking ratios for *Communicare’s* social housing projects.

The trip generation rates and inbound/outbound splits in **Table 1**, combined with the aforementioned adjustment, thus result in the potential additional peak-hour development trips given in **Table 2**.

**Table 2:** Potential New Peak-Hour Trip Generation of the Proposed Development

Land Use	AM Peak Hour			PM Peak Hour		
	Total	IN	OUT	Total	IN	OUT
Single Dwelling Units – 445 units	133	33	100	133	93	40

In summary, Phase 7 of the Matzikama Housing project has the potential to generate a total of 133 additional trip ends during both the AM (33 inbound; 100 outbound) and PM (93 inbound; 40 outbound) weekday peak hours.

### 3.4 Trip Distribution

Based on Phase 7’s location within Vredendal-Noord, the potential new development trips were distributed to and from Hoog Street and Hoërskool Street via Intersection 2 at a corresponding 80:20 split for both peak hours. At Intersection 1, the applied splits reflect the existing distribution of the individual turning movements. The resulting trip distribution for Phase 7 is hence as shown in **Figure 6** and **Figure 7** on the next page.

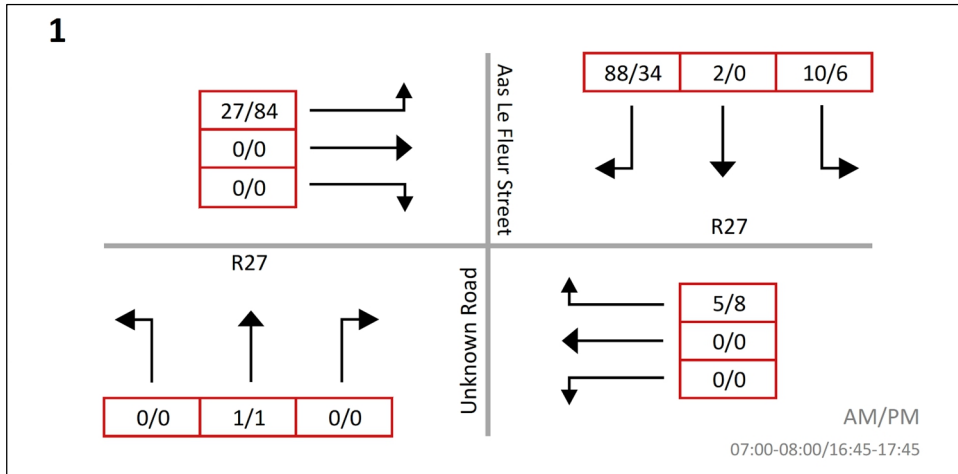


Figure 6: Distribution of Potential AM/PM Peak-Hour Development Trips – Intersection 1

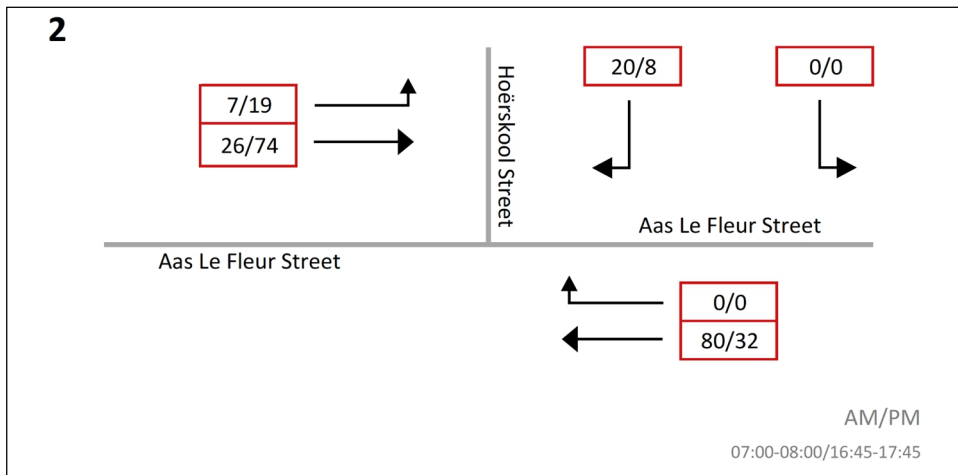


Figure 7: Distribution of Potential AM/PM Peak-Hour Development Trips – Intersection 2

When these potential peak-hour development trips are added to the projected 2030 background traffic volumes presented in **Section 3.2**, the respective total expected 2030 peak-hour volumes are as shown in **Figure 8** and **Figure 9**.

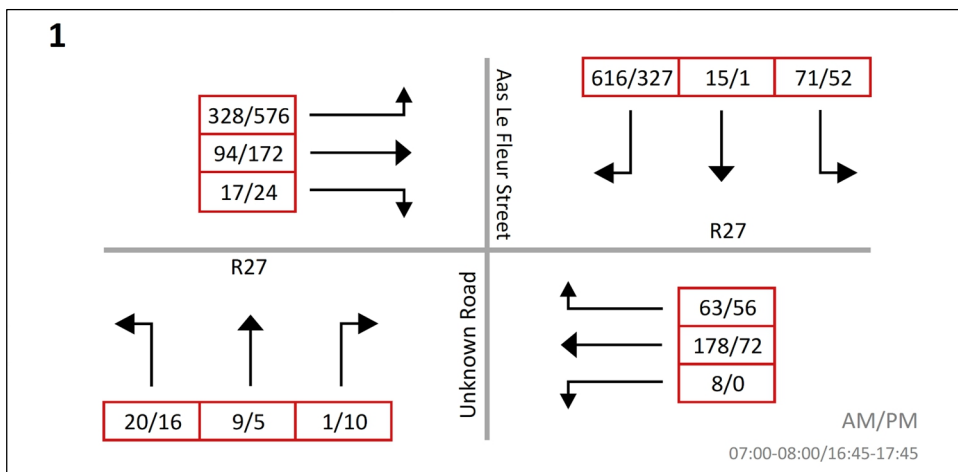
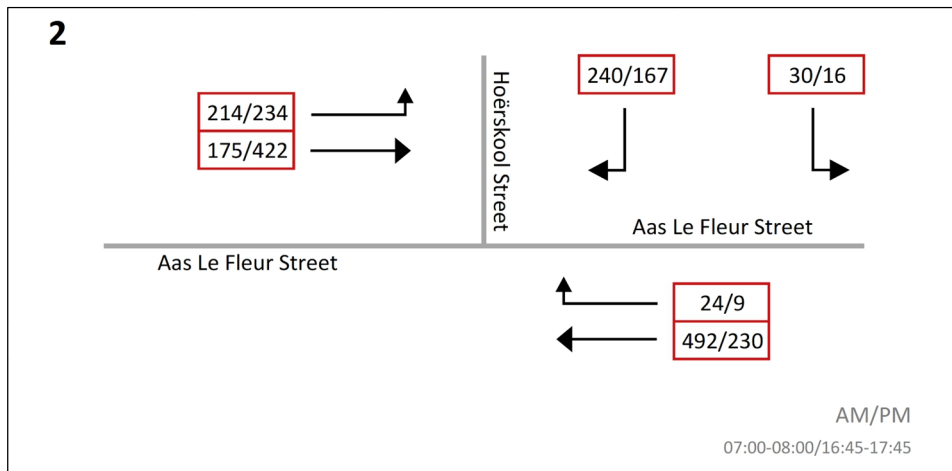


Figure 8: Total Expected 2030 AM/PM Peak-Hour Traffic Volumes – Intersection 1



**Figure 9: Total Expected 2030 AM/PM Peak-Hour Traffic Volumes – Intersection 2**

### 3.5 Traffic Analysis

Capacity analyses were performed for the key links and intersections surrounding the proposed development.

Analyses of the intersections were carried out by means of the *SIDRA INTERSECTION 10* software and with reference to the *South African Road Traffic Signs Manual (SARTSM)*. The former was utilised to perform capacity analyses, while the latter was applied to assess the warrants for a traffic signal at Intersection 1. For the intersection capacity analyses, Levels of Service (LOS) A to D were considered acceptable, with D being critical.

The lane layouts of the analysed intersections are as described and shown below.

#### Intersection 1: R27 (TR01601)/Aas Le Fleur Street/“Unknown Road”

This is a four-legged intersection with stop control on the Aas Le Fleur Street and “Unknown Road” approaches (side streets) and free-flow conditions along the R27. Each approach comprises a single shared lane. At the side-street approaches, the lane width at the stop line allows a left-turning vehicle to pass a vehicle waiting to execute either a through or right-turn movement. See **Figure 10** below.



**Figure 10:** Existing Layout of R27/Aas Le Fleur Street/“Unknown Road” Intersection (Intersection 1)  
(Source: Google Satellite)

Intersection 2: Aas Le Fleur Street/Hoërskool Street

This is a T-intersection with stop control on the Hoërskool Street approach and free-flow conditions along Aas Le Fleur Street. As for Intersection 1, each approach consists of a single shared lane. Refer to **Figure 11** below.



**Figure 11:** Existing Layout of Aas Le Fleur Street/Hoërskool Street Intersection (Intersection 2)  
(Source: Google Satellite)

### 3.5.1 Analysis of Available and Projected Peak Hour Volumes (without Proposed Development)

The existing 2025 and projected 2030 peak-hour total two-way mid-block traffic volumes along the R27 and Aas Le Fleur Street are as presented in **Table 3** below.

**Table 3:** Existing and Projected 2030 Peak-Hour Background Two-Way Mid-Block Link Volumes

Road	2025		2030 background	
	AM	PM	AM	PM
<b>R27 – Southeast of intersection with Aas Le Fleur Street</b>	356 (221/135)	309 (103/206)	400 (244/156)	348 (120/228)
<b>R27 – Northwest of intersection with Aas Le Fleur Street</b>	977 (370/607)	907 (573/334)	1,138 (412/726)	1,069 (688/381)
<b>Aas Le Fleur Street – Northeast of intersection with R27</b>	815 (486/329)	730 (294/436)	969 (602/367)	884 (340/544)

When compared to the typical mid-block capacity for undivided two-lane (one lane per direction) urban roads with interrupted traffic flow:  $\pm 900$  passenger cars per hour (pc/h) per direction (*Highway Capacity Manual, 2016*), **it can be concluded that no mid-block capacity upgrades are deemed necessary along the R27 (TR01601) or Aas Le Fleur Street to accommodate the existing 2025 or projected 2030 background peak-hour traffic volumes.**

#### Intersection 1: R27 (TR01601)/Aas Le Fleur Street/“Unknown Road”

It is important to note that on the day the traffic count was conducted (a typical weekday), a pointsman was observed directing traffic at this stop-controlled intersection during the AM peak hour. They helped create acceptable gaps in the traffic stream along the R27 for right-turning vehicles exiting Vredendal-Noord. Typically, the role performed by a pointsman is comparable to the function of a traffic signal. As such, the intersection was analysed under both stop-control and signalised-control scenarios. The implementation of traffic signals would align with the alternative to stop control adopted at other intersections in Vredendal to address operational traffic issues.

According to the *SIDRA* analyses for stop control, all movements on the Aas Le Fleur Street approach experience an unacceptable LOS F during the existing 2025 AM peak hour, whereas the remaining three approaches operate at an acceptable LOS B or better. For the worst 15-min period of the AM peak hour, the average control delay for the right-turn movement from Aas Le Fleur Street (the highest demand movement) was calculated to be  $\pm 90$  s, with an associated average queue length of around 18 vehicles. In contrast, the intersection operates at LOS C or better during the existing PM peak hour with stop control. These improved PM peak conditions are attributed not only to a reduction of  $\pm 200$  vehicles in the total volume of the intersection compared to the AM peak, but also to the fact that the highest demand movement—the left turn from the R27 into Aas Le Fleur Street—operates under free-flow conditions.

The implementation of a dedicated right-turn lane on the Aas Le Fleur approach could improve conditions for the other two movements on that approach (i.e. through and left) to an acceptable LOS B or better. However, the right-turn movement itself, with the highest amount of traffic, would still experience unacceptable LOS F.

For the projected 2030 background AM peak-hour traffic volumes, the *SIDRA* outputs indicate that the average control delay for the right-turn movement out of Aas Le Fleur Street and the corresponding average queue length will approximately double to over 3 minutes and 36 vehicles, respectively, during

the worst 15-min period. LOS B or better remains on all movements of the other approaches. During the projected 2030 PM peak hour, the Aas Le Fleur Street approach deteriorates from an acceptable LOS C to LOS E, with the right-turn movement experiencing the worst average delay and average queue length during the worst 15-min period, calculated at  $\pm 40$  s and 5 vehicles, respectively.

Under signalised control, with no changes to the current lane configuration, acceptable LOS C or better is achieved at Intersection 1 during the existing AM and PM peak hours. For the projected 2030 background AM and PM traffic volumes, critical yet acceptable LOS D or better is achieved across all movements.

Based on the average hourly queue lengths for the Aas Le Fleur Street approach during the observed time periods, as calculated in the *SIDRA* analyses and validated by field observations via the video footage from the traffic counts, the traffic signal warrants provided in the *SARTSM* are triggered as summarised in **Table 4**.

**Table 4:** Traffic Signal Warrant Checks for the Existing and Projected 2030 Peak-Hour Background Traffic

Road	2025		2030 background	
	AM	PM	AM	PM
<b>WARRANT 1: The average length of ANY individual queue equals or exceeds four (4) over any one hour of a normal day.</b>	✓	✗	✓	✗
<b>WARRANT 2: The SUM of the average lengths of all queues equals or exceeds six (6) over any one hour of a normal day.</b>	✓	✗	✓	✗
<b>WARRANT 3: The SUM of the average lengths of all queues equals or exceeds four (4) over each of any eight hours of a normal day (the hours do not have to be consecutive, but they may not overlap).</b>	Not assessed.			

**It could thereby be concluded that an upgrade of the R27/Aas Le Fleur Street/“Unknown Road” intersection, specifically the installation of traffic signals, is already justified under existing traffic conditions.** Regardless of the proposed development, namely an additional 100 dwelling units to Phase 7 of the Matzikama Housing project, as well as the anticipated continued expansion of Vredendal-Noord, it is recommended that the municipality proceed with the implementation of the warranted traffic signals as a separate project. In comparison to pointsmen, traffic signals are deemed to provide a safer, more efficient, and more sustainable long-term solution for traffic management.

Intersection 2: Aas Le Fleur Street/Hoërskool Street

According to the *SIDRA* analyses, all movements at this intersection currently operate at acceptable LOS B or better during both the AM and PM peak hours. Under the projected 2030 background traffic conditions, LOS C or better is expected to be achieved.

**It is thereby concluded that no upgrades are required at the Aas Le Fleur Street/Hoërskool Street intersection to accommodate the projected 2030 background peak-hour traffic.**

**3.5.2 Analysis of Expected Peak Hour Volumes (with Proposed Development)**

The total expected 2030 peak-hour two-way mid-block traffic volumes along the R27 and Aas Le Fleur Street are as presented in **Table 5** below. The comment that no mid-block capacity upgrades are required on this link to accommodate the projected 2030 background peak-hour traffic remains valid for the total expected 2030 peak-hour link volumes.

**Table 5: Total Expected 2030 Peak-Hour Two-Way Mid-Block Link Volumes (with Proposed Development)**

Road	2030	
	AM	PM
<b>R27 – Southeast of intersection with Aas Le Fleur Street</b>	415 (249/166)	362 (128/234)
<b>R27 – Northwest of intersection with Aas Le Fleur Street</b>	1,253 (439/814)	1,187 (772/415)
<b>Aas Le Fleur Street – Northeast of intersection with R27</b>	1,102 (702/400)	1,014 (380/637)

Intersection 1: R27 (TR01601)/Aas Le Fleur Street/“Unknown Road”

Based on the *SIDRA* analyses, the combination of the projected 2030 peak-hour background traffic and potential peak-hour trip generation of Phase 7 will continue to result in acceptable LOS D and better on all movements of this intersection (signalised) during the 2030 PM peak hour. However, during the AM peak hour, LOS E is experienced by some of the movements, with the specific movements affected depending on the allocated green times. Given the limited period of the day for which the LOS E would apply, further upgrades as a result thereof are not considered necessary.

**It is thereby concluded that, aside from the installation of signalised intersection control, as discussed in Section 3.5.1, no additional upgrades are deemed necessary at the R27/Aas Le Fleur Street/“Unknown Road” intersection to accommodate the total expected 2030 peak-hour traffic volumes.**

Intersection 2: Aas Le Fleur Street/Hoërskool Street

For this intersection, the *SIDRA* analyses indicate that a LOS C or better will remain for the total expected 2030 AM and PM peak hour traffic volumes, with the exception of the right-turn movement from Hoërskool Street, which is expected to operate at LOS D during the AM peak hour. This movement is projected to experience an average delay of almost 30 s and an average queue length of ± 3 vehicles for the worst 15-min period.

**It is thereby concluded that the traffic generated by the proposed development does not present a clear requirement for any upgrades to the Aas Le Fleur Street/Hoërskool Street intersection.**

**4 GEOMETRY**

As previously illustrated, access to the proposed development will eventually be obtained from seven access points connected to the existing and future planned road network. The access roads are single carriageways (one lane per direction), classified as Class 5 local streets. At Access Point 4, the existing road reserve is ± 13 m wide. The extension of Hoog Street to the southwest of the application area, and along which Access Points 1 to 3 are located, has been constructed as part of Phase 6 of the overall housing project, retaining the 6.4-m-wide road width within a ± 16-m-wide road reserve from the existing section of the street. To the northeast, Access Points 5 to 7 will connect to the ± 10-m-wide road reserves of Phase 8’s internal streets.

For the internal streets of Phase 7 of the Matzikama Housing project, road reserves of 10 m and 13 m are indicated on the attached **Proposed Layout Plan**. Based on the available information, the 10 m road reserve accommodates a road width of 4.5 m, while either a 4.5 m or 6 m road width is provided along the streets with a 13 m road reserve. These respective widths align with the typical standard for

Class 5B local residential streets, as outlined in the *TRH26 South African Road Classification and Access Management Manual* (2012). The intersections that form the access points to the development areas, as well as those within the new local street network, will be priority-controlled (i.e. stop or yield). Surfaced streets, as implemented during Phases 3 and 4 (previously Phases 1 and 2), are planned for the proposed development.

Further design elements of the streets, such as the overall cross-section, right of way and kerb radii, are not included in the layout plan. These are expected to be addressed during subsequent design stages and will require separate assessment and approval to ensure compliance with the applicable standards, including provisions for emergency vehicle access.

It is recommended that street lighting, consistent with that provided in the completed phases of the Matzikama Housing project, be installed within Phase 7.

Based on the municipality's 2019 *Integrated Waste Management Plan, 3<sup>rd</sup> Generation* (IWMP), and as confirmed by the client, refuse removal will be conducted by the municipality through kerbside collection, consistent with current practice in the surrounding area.

## 5 PARKING

In accordance with the Matzikama Municipality *Concept Draft Zoning Scheme By-law* (2022), a dwelling house/shelter with an erf size of less than 250 m<sup>2</sup>, as applicable to the proposed development, requires 1 (one) off-street parking bay.

## 6 PUBLIC- AND NON-MOTORISED TRANSPORT

### 6.1 Public Transport

At present, Vredendal-Noord is served by two formal taxi ranks or bus stops, located along Aas Le Fleur Street (between Hoog Street and Hoërskool Street) and at the corner of Hoog Street and Gegund Street (refer to **Figure 12** below). The rank nearest to the proposed development is situated ± 280 m from Access 3 and ± 620 m from Access 4, both of which fall within acceptable walking distances. According to the *TMH 16 Volume 2: South African Traffic Impact and Site Impact Assessment Standards and Requirements Manual*, walking distances to public transport stops should preferably be within 400 m but not exceed 800 m.

As outlined in **Section 4**, the new local streets within the proposed development are to be constructed with a road width of either 4.5 m or 6.4 m. The 6.4 m wide streets have been designed to accommodate a future bus route, a provision consistently applied across all phases of the Matzikama Housing project. For Phase 7, the bus route is proposed to run along the northwestern and northeastern periphery of the application area. It is anticipated that buses or taxis operating along this route will stop within the roadway, without the provision of dedicated embayments. While this arrangement is considered acceptable, it is recommended that designated stop points be formally identified and clearly demarcated with road markings and signage.

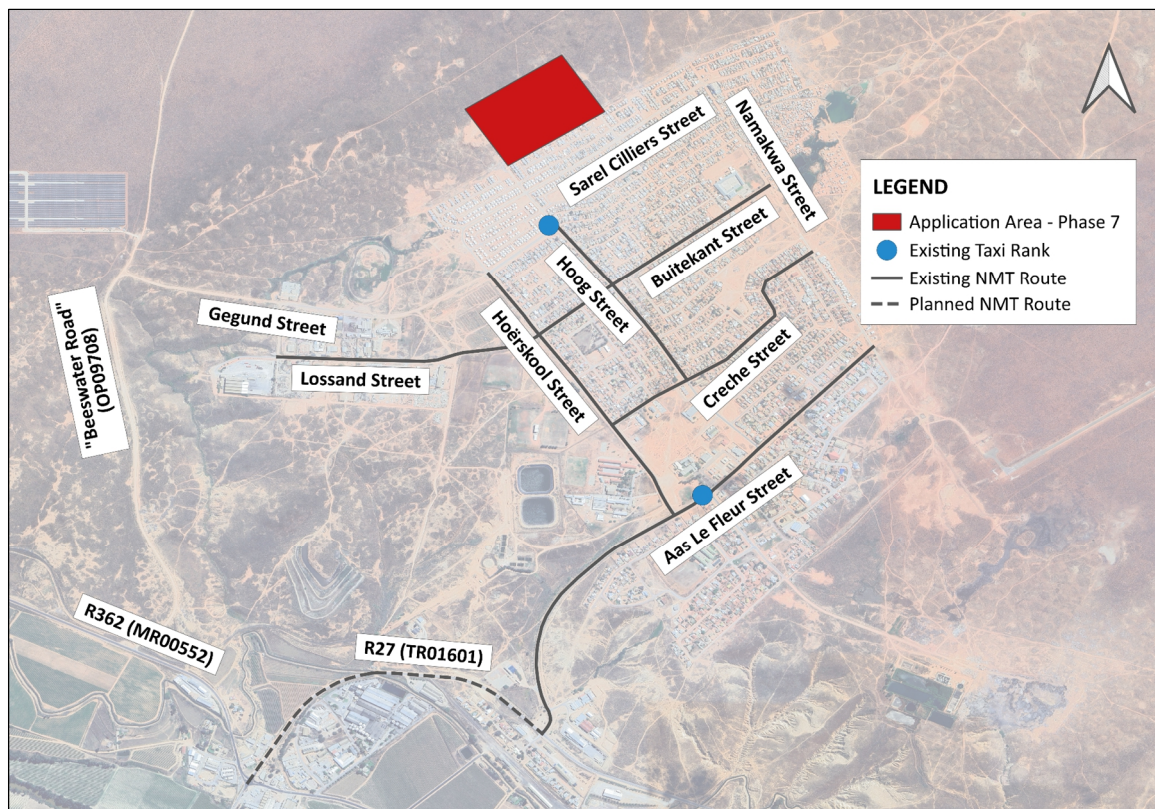
No further public transport infrastructure is deemed necessary as part of the proposed development.

### 6.2 Non-Motorised Transport (NMT)

The Matzikama Municipality Local Integrated Transport Plan's 2020-2025 NMT needs assessment identified a lack of NMT infrastructure in Vredendal-Noord. It proposed NMT routes along the R27 (between Aas Le Fleur Street and the R362 (to/from Lutzville)/Station Street intersection), Aas Le Fleur Street, Hoërskool Street, Hoog Street, Buitekant Street, Lossand Street and Creche Street (see **Figure 12** below). With the exception of the section along the R27, surfaced sidewalks have since been implemented along all the identified streets.

Based on information obtained from the Project Manager, the existing sidewalks on Hoërskool Street and Hoog Street, which currently terminate at Gegund Street, were not extended further northward as part of the Phase 6 (formerly Phase 3) construction. These extensions were reportedly excluded from the project's scope. Although the implementation of these sidewalk extensions is not considered a prerequisite for Phase 7, it is recommended that the municipality consider this undertaking as a separate project.

Sidewalks within the proposed development's application area itself are not regarded as essential.



**Figure 12:** Public Transport and NMT Infrastructure in Vredendal-Noord

## 7 CONCLUSIONS

The following can be summarised/concluded from the report:

- 1) This TIS accompanies the Application for the Amendment of an Approved Subdivision Plan for the Remainder of Erf 5478, Vredendal.
- 2) The proposed development pertains to 100 additional residential erven and one additional business erf to the previous layout of Phase 7 of the Matzikama Housing project in Vredendal-Noord, approved in 2014.
- 3) In total, Phase 7 is to consist of 445 residential erven with an average erf size of  $\pm 120 \text{ m}^2$ , a crèche with an erf area of  $\pm 1,200 \text{ m}^2$ , and a business erf measuring  $\pm 931 \text{ m}^2$ .
- 4) Seven future access points are planned for the application area. These will connect to Sarel Cilliers Street, the extension of Hoog Street included in Phase 6 of the housing project (previously referred to as Phase 3) to the southwest, as well as to the local streets of Phase 8 (previously Phase 5) to the northeast.
- 5) Traffic counts were conducted at the R27 (TR01601)/Aas Le Fleur Street/"Unknown Road" and Aas Le Fleur Street/Hoërskool Street intersections on Tuesday, 20 May 2025, during the AM (06:00 to 09:00) and PM (15:00 to 18:00) peak periods.
- 6) Phase 7 as a whole has the potential to generate a total of 133 trip ends during both the AM (33 inbound; 100 outbound) and PM (93 inbound; 40 outbound) weekday peak hours.

- 7) No mid-block capacity upgrades are deemed necessary along the R27 (TR01601) or Aas Le Fleur Street to accommodate the proposed development.
- 8) While the traffic generated by the proposed development does not clearly indicate the need for any upgrades to the Aas Le Fleur Street/Hoërskool Street intersection, upgrades to the R27/Aas Le Fleur Street/“Unknown Road” intersection can already be justified for the existing AM peak-hour traffic volumes.
- 9) According to the *SIDRA* analyses, all movements on the Aas Le Fleur Street approach of the R27/Aas Le Fleur Street/“Unknown Road” intersection experience an unacceptable LOS F during the existing 2025 AM peak hour and an acceptable LOS C during the existing 2025 PM peak hour. For the projected 2030 background AM peak-hour traffic volumes, the *SIDRA* outputs indicate that the average control delay for the right-turn movement out of Aas Le Fleur Street and the corresponding average queue length will approximately double to over 3 minutes and 36 vehicles, respectively, during the worst 15-min period. During the projected 2030 PM peak hour, the Aas Le Fleur Street approach deteriorates to LOS E, with the right-turn movement experiencing the worst average delay and average queue length during the worst 15-min period, calculated at  $\pm 40$  s and 5 vehicles, respectively.
- 10) Warrant 1 and Warrant 2 for traffic signals as specified in the SARTSM are already satisfied for the existing 2025 AM peak hour.
- 11) Aside from the installation of signalised intersection control, no additional upgrades are deemed necessary at the R27/Aas Le Fleur Street/“Unknown Road” intersection to accommodate the total expected 2030 peak-hour traffic volumes.
- 12) The **Proposed Layout Plan** indicates 10 m and 13 m road reserves for the internal streets of Phase 7. The 10 m road reserve accommodates a 4.5 m road width, while the 13 m road reserve allows for either 4.5 m or 6 m road widths, consistent with Class 5B Local Residential Street standards in the *TRH26* (2012). Access and internal intersections will be priority-controlled, and surfaced streets, as implemented in earlier phases, are planned.
- 13) Further design elements of the streets, such as the overall cross-section and kerb radii, are expected to be addressed during subsequent design stages.
- 14) It is recommended that street lighting, consistent with that provided in the completed phases of the Matzikama Housing project, be installed within Phase 7.
- 15) Based on the municipality’s 2019 IWMP, and as confirmed by the client, refuse removal will be conducted by the municipality through kerbside collection.
- 16) In accordance with the Matzikama Municipality parking requirements, each dwelling house/shelter requires 1 (one) off-street parking bay.
- 17) The provision for additional public transport and/or NMT is not considered a prerequisite for the proposed development.

## 8 RECOMMENDATIONS

From the discussions provided in this report, it is recommended that the proposed development (an additional 100 dwelling units and one additional business erf for Phase 7 of the Matzikama Housing project) on Erf 5478, Vredendal, indicated on the attached **Proposed Layout Plan**, be supported from a traffic impact perspective.

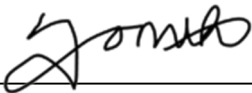
However, based on a) the updated traffic counts, b) the related operational issues not only calculated for the future background traffic but also already observed for the existing traffic conditions, and c) the satisfaction of the criteria of Warrant 1 and Warrant 2 for traffic signals as specified in the *South African Road Traffic Signs Manual (SARTSM)*, it is recommended that the installation of traffic signals at the R27/Aas Le Fleur Street/“Unknown Road” intersection be considered by the applicable Roads Authority, irrespective of the proposed development to which this report pertains.

Furthermore, it is recommended that the municipality consider extending the existing non-motorised transport network in Vredendal-Noord, particularly along the new extensions of Hoog Street and Hoërskool Street, as funding becomes available.

We trust that the Traffic Impact Assessment will be to your satisfaction and will gladly provide any additional information required on request.

Please take note of the following included attachments: **Locality Plan**, **Previously Approved Layout Plan** and **Proposed Layout Plan**.

Yours faithfully,



**Compiled by: Dominique ter Huurne**  
(PhD (Civil Eng), MPhil)




**Yolandi Obermeyer (BEng)**

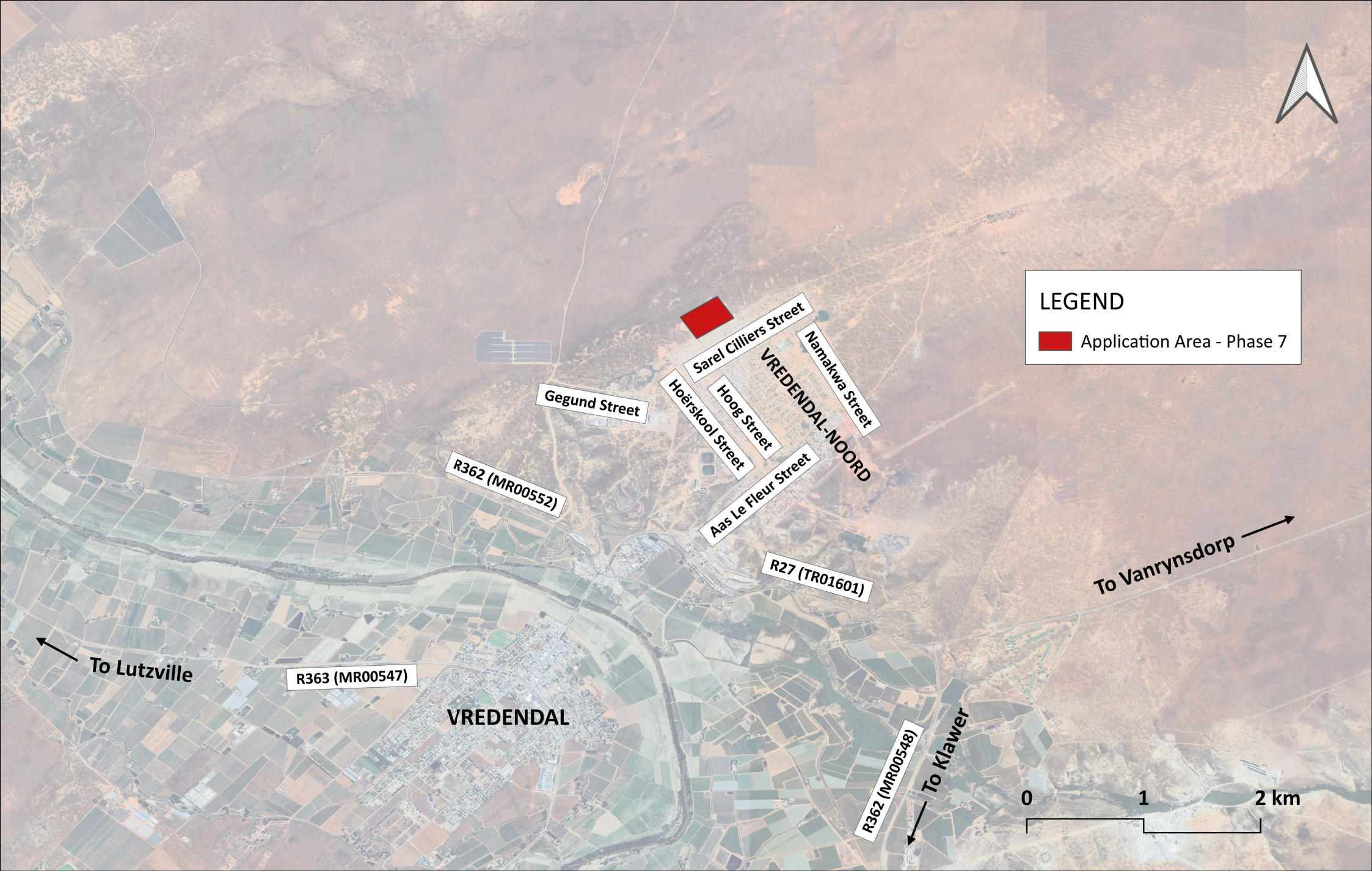
UDS AFRICA





**LEGEND**

 Application Area - Phase 7



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# Locality Plan

MUNISIPALITEIT MATZIKAMA MUNICIPALITY  
Hierdie onderverdeling is deur Matzikama Raad  
goedkeure kragtens Artikel 25 van  
Ordonnansie No.15 van 1985, onderworpe  
aan die voorwaardes volgens aanhangsel

Mun. Bestuurder .....  
Verw. Nr.: 11/3/2014/29, Datum 13.11.2014.  
17/5/14/12.09/292/586

PROJECT  
**MATZIKAMA  
VREDENDAL HOUSING  
FARM 292, PTNS 171 & 386**

**PROPOSED LAYOUT PLAN**

Application Areas

**Land Use Table (Phase 1)**

Land Use	Zoning	Notation	No. of Erven	Extent(Ha)	% of Total
Residential	Residential Zone III		268	24.44	65.54
Business	Business Zone I		1	10.12	1.76
P.O.S	Public Open Space Zone		5	10.08	1.17
Road	Transport Zone II		1	12.18	31.97
<b>TOTAL</b>			<b>275</b>	<b>±6.82Ha</b>	<b>100</b>

**Land Use Table (Phase 2)**

Land Use	Zoning	Notation	No. of Erven	Extent(Ha)	% of Total
Residential	Residential Zone III		392	36.06	93.54
P.O.S	Public Open Space Zone		1	10.22	2.03
Business	Business Zone I		1	10.12	1.11
Church	Institutional Zone II		1	10.12	1.11
Creche	Institutional Zone I		1	10.22	2.03
Taxi Rank	Transport Zone I		1	10.19	1.75
Road	Transport Zone II		1	13.52	30.43
<b>TOTAL</b>			<b>399</b>	<b>±10.85Ha</b>	<b>100</b>

**Land Use Table (Phase 3)**

Land Use	Zoning	Notation	No. of Erven	Extent(Ha)	% of Total
Residential	Residential Zone III		264	24.53	59.28
Open Space	Public Open Space Zone		6	10.86	30.55
Business	Business Zone I		1	10.12	1.47
Road	Transport Zone II		1	12.64	32.40
<b>TOTAL</b>			<b>272</b>	<b>±8.15Ha</b>	<b>100</b>

**Land Use Table (Phase 4)**

Land Use	Zoning	Notation	No. of Erven	Extent(Ha)	% of Total
Residential	Residential Zone III		345	15.82	59.82
Open Space	Public Open Space Zone		7	11.07	11.00
Creche	Institutional Zone I		1	10.12	1.23
Road	Transport Zone II		1	12.72	27.95
<b>TOTAL</b>			<b>354</b>	<b>±9.73Ha</b>	<b>100</b>

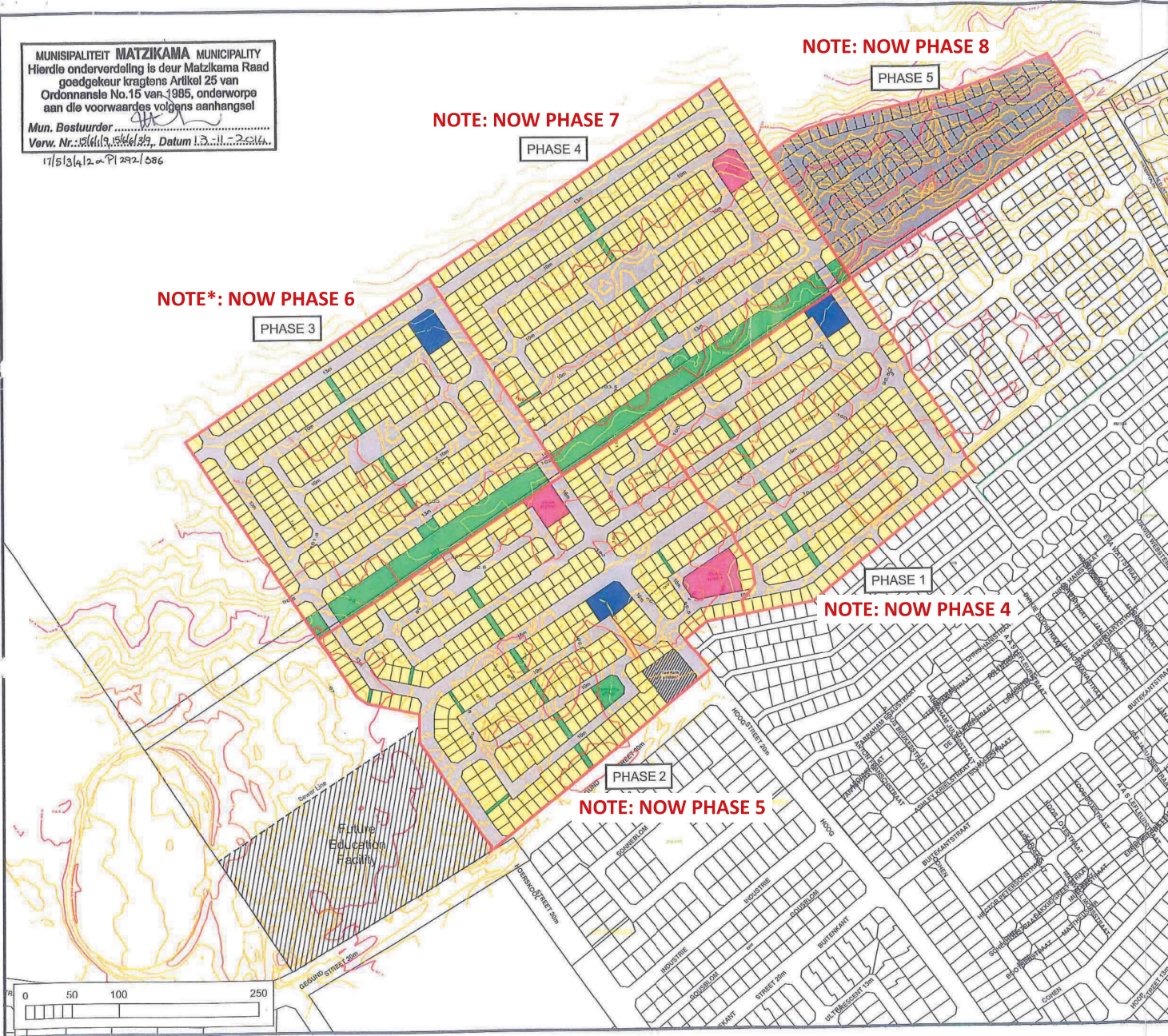
**Future Development (Phase 5)**

Land Use	Zoning	Notation	No. of Erven	Extent(Ha)
To be determined	Subdivisional Area		To be determined	13.82

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DATE 15 Sept 2014	CLIENT
SCALE See Linescale	COPYRIGHT RESERVED
PLAN NO. 4	

FILE NAME: Vredendal\_Subdivision Plan  
**URBAN DYNAMICS WESTERN CAPE  
TOWN & REGIONAL PLANNERS**  
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\*NOTES ADDED BY UDS AFRICA

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*Previously Approved Layout Plan*

*lie*

# MATZIKAMA HOUSING

REMAINDER ERF 5478 VREDENDAL  
& RE/286/292 VANRHYNDORP


## PROPOSED LAYOUT PLAN PHASE 7

-  APPLICATION AREA (±9.72ha)
-  CADASTRAL BOUNDARIES
-  EXISTING SERVITUDES
-  PROPOSED LAYOUT = 445 UNITS  
MINIMUM ERF SIZE = AVE. ±120m<sup>2</sup>
-  CONTOUR LINES

PLEASE NOTE:  
All boundary line positions, distances and property sizes need to be verified by a Professional Land Surveyor.

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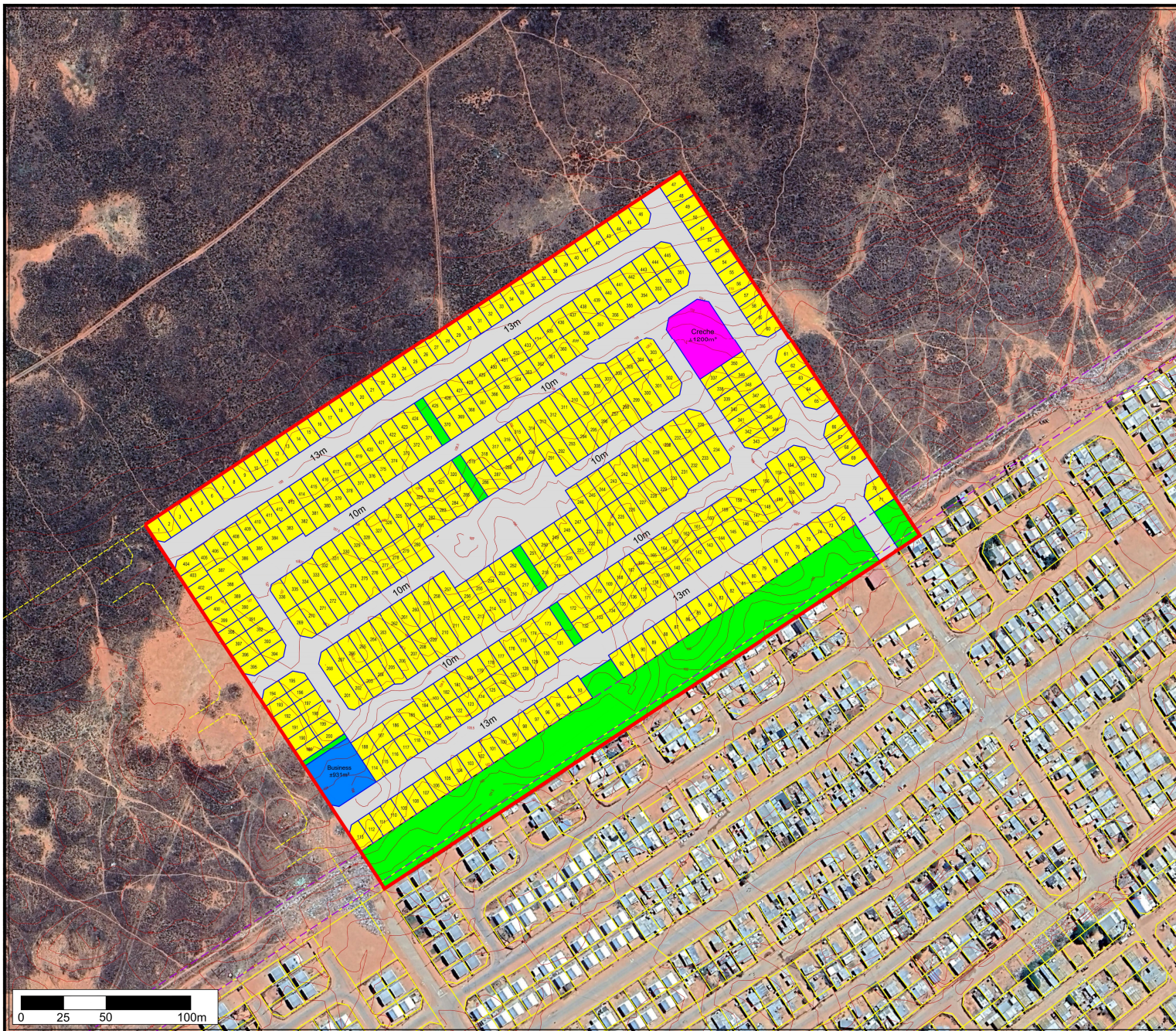
	DATE	17 April 2024	COPYRIGHT RESERVED	CLIENT
	SCALE	See linescale		
	PLAN NO.	1		

FILE NAME:

**URBAN DYNAMICS south cape**  
TOWN & REGIONAL PLANNERS



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## Proposed Layout Plan