APPENDIX D11

TRAFFIC IMPACT STUDY

Proposed Township Application, Portion 27 of the Farm Arthursseat 214-KU

Traffic Impact Study

Issue 01

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Document control record

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Document Control					
Document Reference	220224_0045_Acorn City_ R001 Issue 01		Project Number	0058	
Client	Dzana Investments (Pty) Ltd				
Rev	Date	Revision	Author	Reviewer	Approved
01	24/02/22	Issue	Aidan Noble	Aidan Noble	Aidan Noble

Approval			
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CONTENTS Page

1. Introduction 1

1.1 Background 1

1.2 Scope of Report 2

1.3 Extent of Study Area 2

1.4 Traffic Data 2

1.5 Development Traffic 2

1.6 Traffic Growth Rate 3

1.7 Peak Hours Analysed 3

1.8 Scenarios Analysed 3

2. Existing Situation 3

2.1 Surrounding Road Network 3

2.2 Visual Observations 6

2.3 Available Traffic Data 6

2.4 Future Traffic Volumes 14

3. Available Documentation 14

3.1 Ehlanzeni District Municipality – 2019 / 2020 Draft Integrated Devleopment Plan 14

3.2 Ehlanzeni District Spatial Development Framework - 2010 14

3.3 Bushbuckridge Local Municipality Final Integrated Development Plan – 2017 / 2022 14

4. Proposed Development 15

5. Development Accessibility 16

6. Access Spacing 17

7. Roads Masterplanning 22

7.1 SANRAL 22

7.2 Ehlanzeni District Municipality 23

7.3 Acorn City Development 24

8. R40 and Development Access 27

9. Development Traffic 28
9.1 Trip Generation 28
9.2 Trip Distribution and Assignment 33
10. Intersection Capacity Analysis 34
10.1 Assessment Criteria 34
10.2 Intersection Analysis Software 34
10.3 Background and Development Traffic Capacity Analysis 34
10.4 Comment 35
11. Access to Public Transport 35
11.1 Introduction 35
11.2 Availability of Public Transport 36
11.3 Public Transport Infrastructure 38
12. Summary and Recommendation 39

APPENDICES

APPENDIX A	**1**
Figures	**1**
APPENDIX B	**1**
Town Planning Memorandum	**1**
APPENDIX C	**1**
Acorn City Concept Plan	**1**
APPENDIX D	**1**
R40 Concept Layout	**1**
APPENDIX E	**1**
Background and Development Traffic Capacity Analysis	**1**

1. Introduction

1.1 Background

Aidan Noble Consulting was appointed by Dzana Investments (Pty) Ltd to prepare a traffic impact and access study in support of a township application for Portion 27 of the Farm Arthursseat 214-KU. The proposed township will be known as Acorn City and the site area is 46.7 hectares in extent. The property is located adjacent to the R40, which is a national road and links Nelspruit to Phalaborwa. The location of Acorn City is indicated on Figures 1 and 2 and a copy of the figures is included in Appendix A.

The property is currently zoned agricultural, and the intention is to rezone the property for different land uses. The township will be divided into several erven and the different land uses and activities are outlined in Table 1 below.

Table 1: Proposed Development Land uses

Erf	Proposed Land Use	Possible Activity
1	Residential	Hotel
2, 3, 4, 5	Agricultural	
6	Business 1	Retail Centre
7	Business 1	Home Décor / building material
8	Business 1	Warehousing
9	Educational	Educational Centre
10	Educational	Primary and High School
11	Educational	Digital Learning Centre
12	Institutional	Municipal Office
13	Institutional	Medical Facility
14	Filing Station	
15	Transport Services (Bus and Minibus Taxis)	

A copy of the town planning application is included in Appendix B.

The R40 falls under the jurisdiction of SANRAL and it is proposed to take access to Acorn City from the R40 and the intention is to apply for two access points. Preliminary engagement with SANRAL has taken place to discuss the draft report and access to the proposed development.

The proposed development will be in a semi-rural area and the surrounding land use is predominantly residential in nature. The residential can be described as small plots of land with dwelling units. In the broader area there are several educational and religious facilities. Along the R40 there are number of informal commercial activities. There are several guest houses in the area surrounding the proposed development.

Located approximately 5.0 Km to the north of the proposed development is Acornhoek, which is the small-town centre. The centre consists to two shopping centres the Acornhoek Mall and the Acornhoek Plaza, in addition are several other retail and commercial activities. Other land uses in Acornhoek is the Tintswalo Hospital and Ehlanzeni FET college.

The area is also served by a Transnet rail line, which is located just to the east of Acornhoek.

1.2 Scope of Report

The purpose of this report is to assess the potential traffic that would be generated by the proposed land uses and whether the traffic will have an impact on the surrounding road network. In particular for the accesses to the proposed development, which will be from the R40.

The study area, background traffic, development trip generation, trip distribution, capacity analysis and site access and traffic management will be addressed in the following sections of the report.

The proposed development is expected to generate more than 50 peak hour trips and therefore in accordance with the guidelines for traffic studies a traffic impact study will be required. The study also proposes any road improvements required to accommodate the additional traffic.

The scope of this report will include the following:

- Site visit during the morning and afternoon peak period;
- Source existing data prior to the pre-covid 19 pandemic on the R40 past the site;
- Adjustment of the traffic volumes to estimate the pre-covid traffic volumes, if applicable;
- Review of available documentations;
- Discuss the proposed development;
- Assessment of the development accessibility and access spacing;
- Potential roads master planning;
- Calculate the expected trip generation for the proposed development;
- Capacity analysis of the proposed accesses to the development;
- Capacity analysis of mitigation measures (if applicable);
- Access to Public transport;
- Recommendations and summary.

1.3 Extent of Study Area

The traffic impact study will concentrate on the section of the R40 past the proposed development and the access(es) to the proposed development.

1.4 Traffic Data

The Covid-19 pandemic has had a significant impact on the traffic volumes and patterns on South African Road. To estimate the 2021 traffic volumes on the section of the R40 past the proposed development it is proposed to use available traffic data from SANRAL. SANRAL have undertaken traffic counts at several locations along the R40.

1.5 Development Traffic

The proposed development traffic was calculated using the TMH 17 South African Trip Data Manual (September 2013) published by South Africa Committee Transport Officials (COTO), hereafter referred to as TMH 17. The development traffic will be discussed later in the report. It should be noted that the trip generation rates in the manual have been prepared for developments located in an urban setting.

1.6 Traffic Growth Rate

In accordance with the Guidelines for Traffic Impact Assessments, a 5-year design horizon was used to calculate the future traffic volumes. The future traffic volumes will be estimated using a growth rate of 3% applied to the estimated 2021 traffic volumes to calculate the expected 2026 traffic volumes.

1.7 Peak Hours Analysed

The critical peak hour or critical traffic scenario from a road capacity point of view occurs when the traffic generated by the development is at its peak or when the highest combination of existing street traffic and traffic generated by the development occurs.

The critical peak periods for the different land uses are outlined below:

1. Residential – AM and PM peak hour;
2. Educational – AM and PM peak hour;
3. Business – AM and PM peak hour;
4. Retail – Friday PM and Saturday midmorning peak; and
5. Institutional – AM and PM peak hour.

Based on the above the critical peak hours for this mixed use development will be during the AM and PM peak hours.

1.8 Scenarios Analysed

To determine the existing impact and the road improvements, if any, that are necessary to accommodate the proposed development traffic, the following scenarios will be analysed:

- 2021 background and development traffic demand; and
- 2026 background and development traffic demand.

The various scenarios will be compared to one another to determine the potential traffic impact of the background and development traffic on the R40. The background traffic only scenario has been omitted as this will only contains the north and southbound traffic on the R40.

2. Existing Situation

2.1 Surrounding Road Network

This section outlines the key road infrastructure on the local road network, as shown on both Figures 1 and 2. Each identified key road is discussed in terms of its function, linkage to other roads and road layout.

R40

- The R40 is national road, which links Nelspurit in the south to Phalabowra in the North;
- The road past the proposed development is a single lane per direction;
- The road provides access to the various townships along the route; and
- Currently there are no formal intersection along the route in the vicinity of the proposed development.

R40 (South of the Proposed Development)

- The R40 is national road, which links Nelspurit in the south to Phalabowra in the North;
- The road is a single lane per direction;
- The road provides access to the various townships along the route; and
- Currently there are no formal intersections along the route and a typical intersection is on the right side of the image

R40 – Typical Intersection

- The adjacent images indicate a typical intersection to the surrounding townships; and
- The typical intersection link to the R40 is a gravel road.

Typical Local Road

- The local roads within the surrounding townships that provide access to individual properties and are predominately gravel roads as indicated in the adjacent photograph.

Typical Local Road Sefoma Township

- The Sefoma township is located to the east of the R40 and a small portion of the internal roads are paved.

R40 (Acornhoek Mall)

- The R40 past the Acornhoek Mall;
- The road is predominantly a single lane per direction with additional lanes at the existing roundabouts at the entrances to the mall; and
- Traffic calming measures are provided on the section of the R40 past the Acornhoek Maill.

Main Entrance to Acornhoek Mall)

- The main entrance to the Acornhoek Mall, which is controlled with a roundabout.

Secondary Access to Acornhoek Mall

- The secondary entrance to the Acornhoek Mall, which is controlled with a roundabout.

2.2 Visual Observations

Visual observations were conducted during the AM and PM peak periods and Saturday midmorning peak period on the R40 past the proposed site and the following should be noted:

1. No traffic problems were observed on the section of the R40 past the proposed development;
2. Traffic volumes can be described as low to moderate;
3. The traffic flow was observed as either single vehicle's or vehicles travelling in platoons;
4. Traffic observations on the R40 past the Acornhoek Mall also indicated no problems at the current access points to the Mall;
5. Traffic passing the Mall was observed moving at low speeds, which could be due to the roundabouts and speed humps on the section of road past the Mall slowing the traffic flow;
6. The predominant form of public transport on the R40 is minibus taxis; and
7. Limited pedestrian movements were observed on the R40 in the vicinity of the proposed development.

2.3 Available Traffic Data

During the site visit it was observed that the traffic volumes on the section of the R40 adjacent to the proposed development can be described as low to moderate. The observed traffic operations were discussed at a design team meeting and comments received from a team member suggested that the traffic volumes on the R40 in the area should be higher.

To assess the traffic volumes on the R40 traffic data was sourced from SANRAL, which included the following:

1. Traffic summary for Section 4 and 5 of the R40, between Whiteriver and Hoedspruit;
2. Traffic data for the following count locations between Bushbuckridge and Acornhoek:
    - 19531
    - 19532
    - 19533
    - 19535
    - 19539

From the data the following traffic information was extracted and is discussed below.

2.3.1 Traffic Summary

This section will assess the traffic data for Section 4 and 5 of the R40 and the following should be noted:

- Section 4 is from Whiteriver to Hazyview;
- Section 5 is from Hazyview to Hoedspruit;
- The traffic data indicated in the tables below is the estimated average peak hour volumes for the different sections of the R40;
- The estimated peak hour volume is based on 10% of the ADT (light and heavy)
- The available traffic data is for 2018 and 2019;

To estimate the 2021 traffic the existing data has been expanded by 2%, the 2% is based economic growth, which was between 1 and 2% in 2018 and 2019. Since the start of the pandemic the economic growth has been negative. Therefore the use of a 2% growth can be described as a conservative approach.

2.3.1.1 R40 - Section 4

Table 2: Estimate Peak Hour Traffic Volumes

Description of Section	Year	Northbound	Southbound	Total
Witrivier - The Fountains	2019	696	674	1369
The Fountains - Ligfontein	2019	328	358	686
Ligfontein - Noord-Sandrivier	2019	274	346	620
1.5 km from Safari - Hazyview	2019	866	868	1734

Table 3: Estimated 2021 Peak Hour Traffic Volumes

Description of Section	Northbound	Southbound	Total
Witrivier - The Fountains	724	701	1425
The Fountains - Ligfontein	341	372	713
Ligfontein - Noord-Sandrivier	285	359	645
1.5 km from Safari - Hazyview	901	903	1804

The traffic data indicates that the traffic volumes vary along the route. The higher traffic volumes on this section are from count station close to population centres in this case White River and Hazyview. The traffic volumes can be attributed to trips in and around the towns and could include work, educational, retail and leisure trips. The lower traffic volumes are on sections of the road where population density is lower.

2.3.1.2 R40 - Section 5

Table 4: Estimate Peak Hour Traffic Volumes

Description of Section	Year	Northbound	Southbound	Total
North of Hazyview	2019	613	616	1229
Between Mariti and Maviljan	2019	489	490	978
Arthur Seats	2018	255	254	508
Klaserie	2018	261	243	504

Table 5: Estimate Peak Hour Traffic Volumes

Description of Section	Northbound	Southbound	Total
North of Hazyview	637	641	1279
Between Mariti and Maviljan	509	510	1019
Arthur Seats	270	269	539
Klaserie	277	258	535

The traffic data indicates that the traffic volumes vary along the route. The higher traffic volumes on this section are from a count station close to population centre in this case to the north of Hazyview. The traffic volumes can be attributed to trips in and around the town and could include work, educational, retail and leisure trips. The lower traffic volumes are on sections of the road where population density is lower.

The traffic volume at Arthursseat, which is to the south of the proposed development are low with approximately 550 vehicles in the peak hour.

Klaserie is located to the north of Acornhoek on the section of the R40 between Acornhoek and Hoedspruit and the traffic volumes can also be described as low, with approximately 550 vehicles in the peak hour.

2.3.2 Traffic Data

A review of the traffic count station locations received from SANRAL would indicate that the data from the following stations would be most relevant:

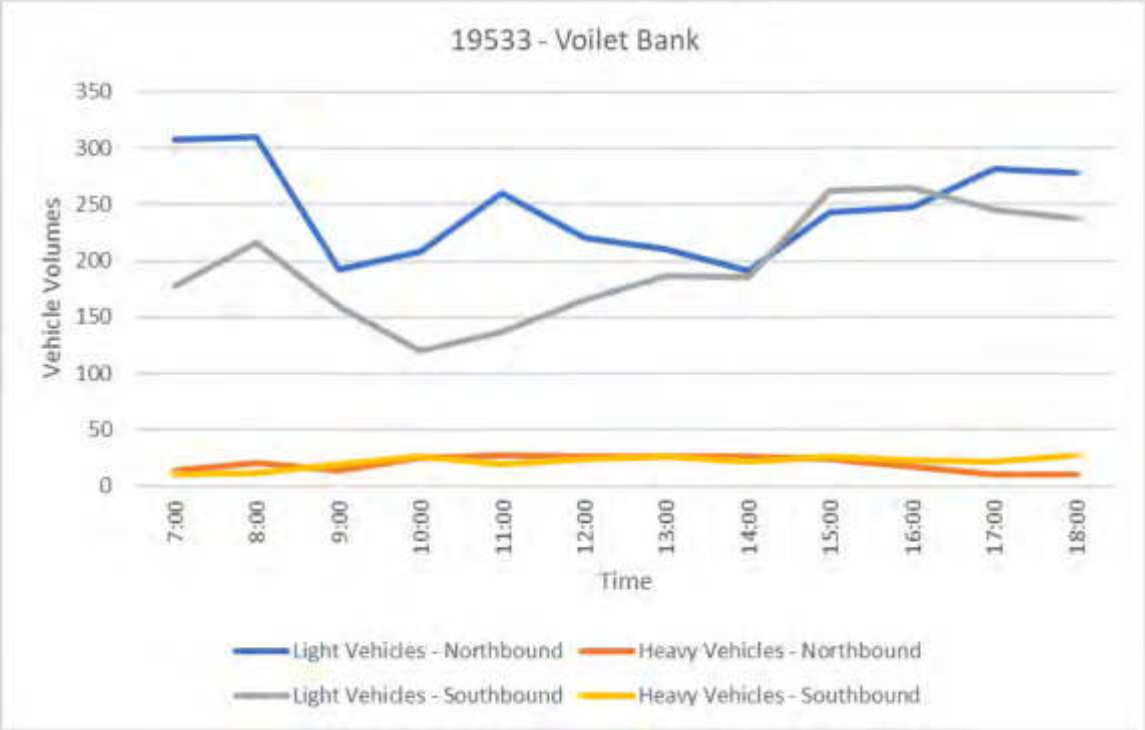
- 19533;
- 19535; and
- 19539.

The location of the traffic count stations in relation to the proposed development is indicated on the figure below.

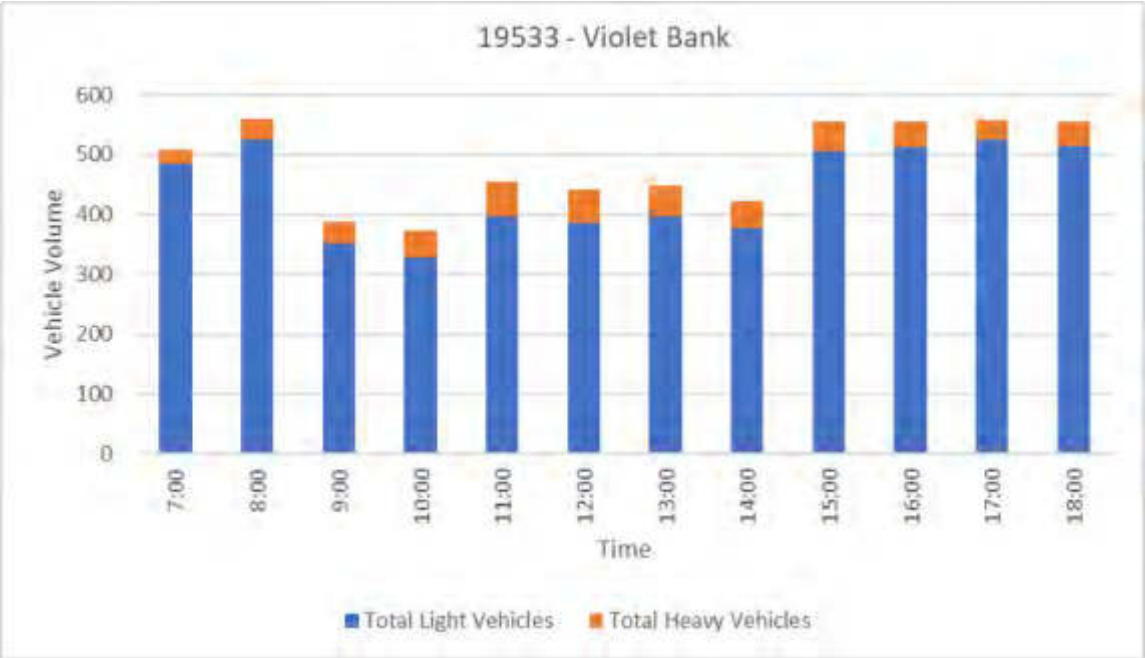
Figure 3: Location of the SANRAL Traffic Count Station

The available data for each location is outlined below.

2.3.2.1 Traffic Count Station – 19533 Violet Bank



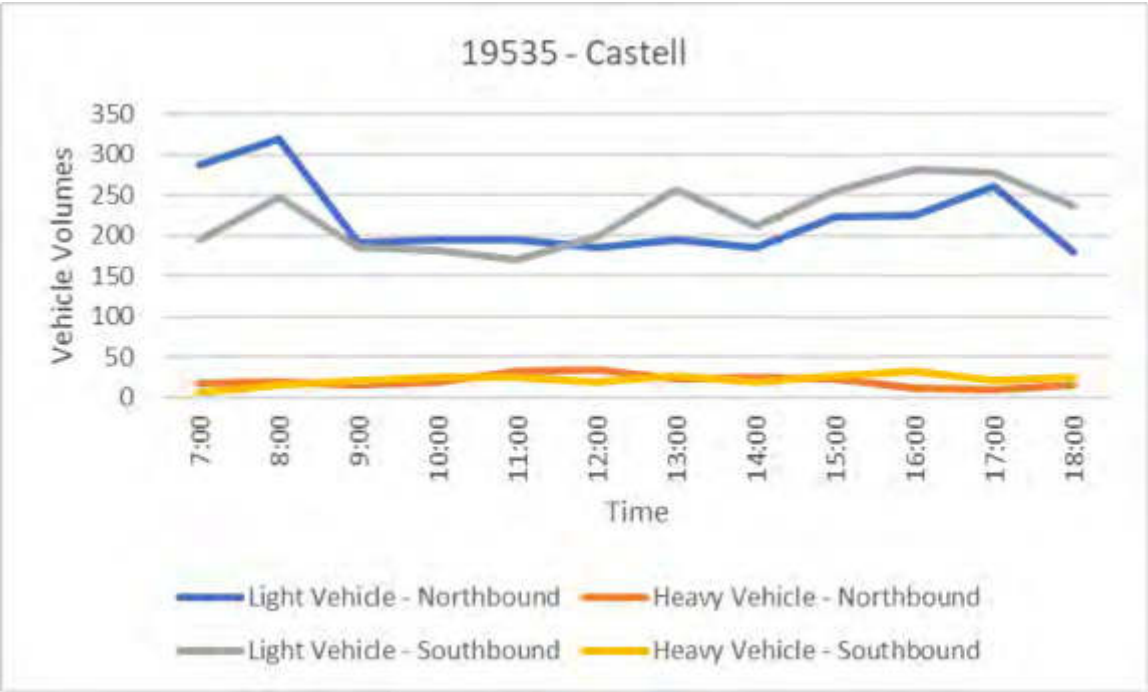
Graph 1: Traffic Volumes Per Direction for Light and Heavy Vehicles



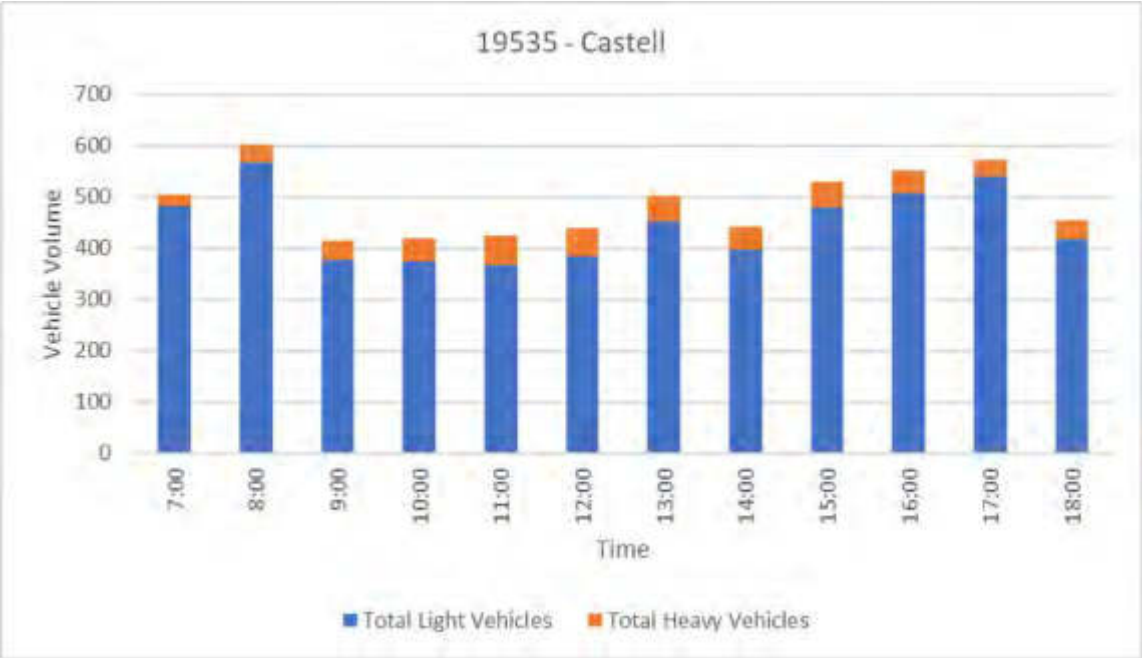
Graph 2: Total Two-way Traffic Volumes

The data indicates that the two-way traffic volumes at this location is less than 600 vehicles per hour, in addition the heavy vehicle traffic is approximately 9% of the overall traffic volume.

2.3.2.2 Traffic Count Station – 19535 Castell



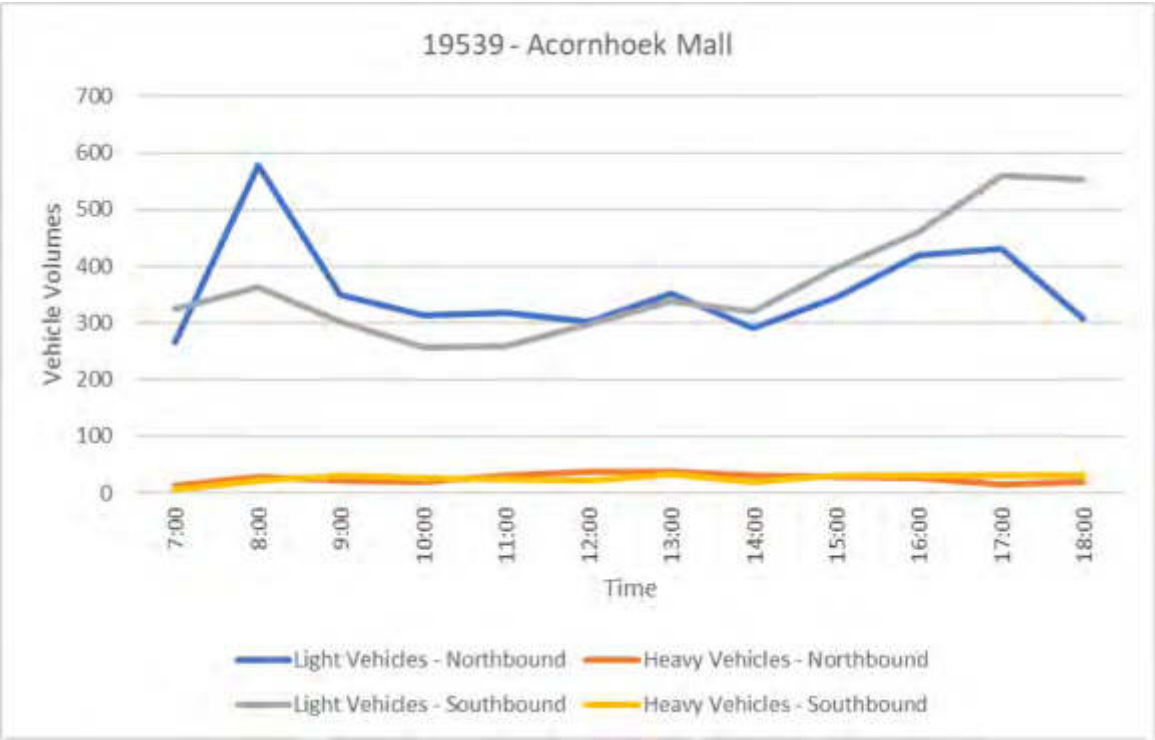
Graph 3: Traffic Volumes Per Direction for Light and Heavy Vehicles



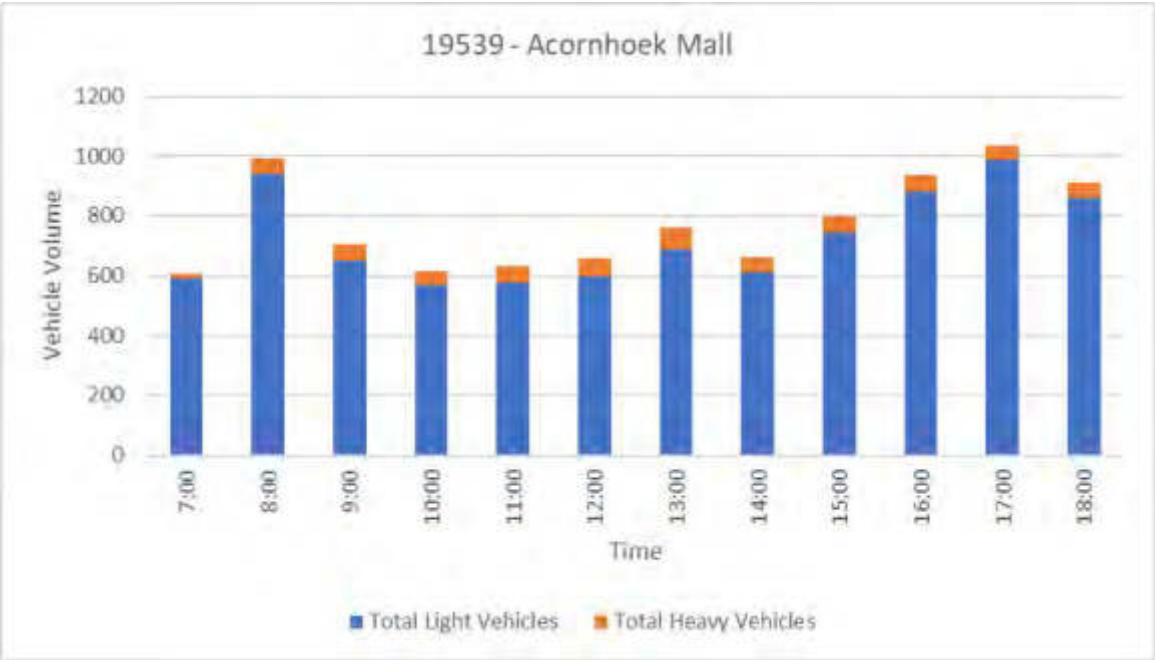
Graph 4: Total Two-way Traffic Volumes

The data indicates that the two-way traffic volumes at this location is less than 600 vehicles per hour, in addition the heavy vehicle traffic is approximately 10% of the overall traffic volume.

2.3.2.3 Traffic Count Station – 19539 Acornhoek Mall



Graph 5: Traffic Volumes Per Direction for Light and Heavy Vehicles



Graph 6: Total Two-way Traffic Volumes

The data indicates that the two-way traffic volumes at this location is approximately 1000 vehicles per hour, in addition the heavy vehicle traffic is approximately 7% of the overall traffic volume. The count station is located adjacent to the Acornhoek Mall. The higher trips on this section of the R40 could be attributed to the local trips in and around Acornhoek.

2.3.2.4 Ehlanzeni District Municipality GIS Data

GIS data for the Roads Master Plan and the District Integrated Transport Plan was obtained from the Ehlanzeni District Municipality and from the data the following traffic information was extracted for the section of R40 past the proposed development.

- AM peak period – 496 vehicles
- Off peak period – 623 vehicles
- PM peak period – 954 vehicles

2.3.2.5 Comment

From the traffic data the estimated traffic volume on the R40 to the south of the Acornhoek area is approximately 600 vehicles in the peak periods and the percentage of heavy vehicles is approximately 10%. The estimated traffic volumes on the section of the R40 past the Acornhoek Mall are higher with approximately 1000 vehicles in the peak periods and the percentage of heavy vehicles will be approximately 7% of the total volume.

The higher traffic volumes on the R40 past the Acornhoek Mall could be attributed to local trips within Acornhoek Mall moving between the various retails, commercial activities and the residential townships around the town.

During the recent site visit short traffic counts were done during the Friday AM and PM peak periods and Saturday midmorning and the following traffic data was estimated:

- AM peak period – 500 light vehicles and 64 heavy vehicles;
- PM peak period – 720 light vehicles and 80 heavy vehicles; and
- Saturday midmorning peak period – 560 light vehicles and 52 heavy vehicles.

The traffic volumes indicated above are two-way traffic volumes.

This traffic data above would correlate with the traffic data collected from the SANRAL traffic count stations 19533 and 19535, which indicates that traffic volumes on the R40 are approximately 600 vehicles in the peak periods.

2.3.2.6 Background Design Trafffc

Based on the above it is proposed to use the traffic data from SANRAL count station 19539 located adjacent to the Acornhoek Mall as the background traffic on the section of the road past the proposed development. The use of the higher traffic volumes can be described as a conservative approach.

The proposed background traffic volumes are as follows:

- AM peak hour – Northbound 606 vehicles and southbound 385 vehicles; and
- PM peak hour – Northbound 446 vehicles and southbound 591 vehicles.

The estimated background traffic is indicated on the following figures and a copy are included in Appendix A

- Figure 4: 2021 AM background traffic; and
- Figure 5: 2021 PM background traffic.

2.4 Future Traffic Volumes

In accordance with the Guidelines for Traffic Impact Assessments, a 5-year design horizon was used to calculate the future traffic volumes. The future traffic volumes will be estimated using a growth rate of 3% applied to the estimated 2021 traffic volumes to calculate the expected 2026 traffic volumes. The future traffic volumes are indicated on the following figures and a copy re included in Appendix A.

- Figure 6: 2021 AM background traffic
- Figure 7: 2021 PM background traffic

3. Available Documentation

A review of the various integrated development plans and transport plans for the district and surrounding areas was carried out and any relevant comments are outlined below:

3.1 Ehlanzeni District Municipality – 2019 / 2020 Draft Integrated Devleopment Plan

- The Ehlanzeni District Municipality is made up of 4 local municipalities including the Bushbuckridge local municipality;
- The key transport link in the district municipality is the N4 Corridor, which links South Africa to the port of Maputo;
- The district is served by a rail network, with a rail link running north from Nelspruit to Phalabowra, roughly following the alignment of the R40. There is a rail station at Acornhoek. The existing rail network currently caters for long distance travel and freight movements;
- The existing road infrastructure is a mix of national, district and local (rural) road.
- The rural roads are mainly gravel construction;
- The district is well served by public transport;
    - 85% of commuters travel by bus on 500 routes, with 139 terminals and approximately 350 buses; and
    - 20% of commuters use minibus taxis and there are 1200 registered vehicles.

3.2 Ehlanzeni District Spatial Development Framework - 2010

The 2010 spatial development plan identified the R40 Transportation Corridor as an impetus to regional development

3.3 Bushbuckridge Local Municipality Final Integrated Development Plan – 2017 / 2022

The integrated development plan identifies Acornhoek as an economic and transportation node. The site falls within a Strategic Development Area (SDA5), which includes the Rooiboklaagte, Arthursseat and Tsakani area. The draft integrated development plan (IDP) indicating the following priority issues in relation to the provision of transport;

- There is a lack of buses;
- The need for the establishment and upgrading of bus and taxi facilities;
- Transport currently represents 3.9% of employment in the district; and
- For planning purposes, the local municipality makes use of the District Integrated Transport Plan.

4. Proposed Development

The proposed Acorn City township will be located on Portion 27 of the Farm Arthursseat 214-KU and falls within the Bushbuckridge municipality and is approximately 5 km to the south of Acornhoek a small local town, which consists of commercial, retail, education (Ehlanzeni FET college) and medical (Tintswalo Hospital) land uses. There are two existing retail centres, Acornhoek Mall and Acornhoek Plaza, located within the town.

The property is located adjacent to the R40, which is a national road and the road links Nelspruit to Phalaborwa. Along the route there are several towns, including White River, Hazyview, Bushbuckridge, Acornhoek and Hoedspruit.

The proposed development will be in a semi-rural area and the surrounding land use is predominantly residential in nature and can be described as small plots of land with dwelling units. In the broader area around Acorn City there are several educational and religious facilities. Along the R40 there are several commercial activities. There are several guest houses in the area surrounding the proposed development.

The property is currently zoned agricultural, and the intention is to rezone the property for different land uses. The township will be divided into several erven with different land uses.

The different land uses, possible activities and size of development are outlined in the Table 6 below.

Table 6: Proposed Development Land uses

Erven	Development Control	Development Area	FAR	Allowable Development	Number of Room	GLA	Number of Learners
1	Residential	40 639	0.5	20 320	406		
2, 3, 4, 5	Agricultural	222 215					
6	Business 1	78 852	0.5	39 426		39 426	
7	Business 1	8 695	0.5	4 348		4 348	
8	Business 1	3 620	0.5	1 810		1 810	
9	Educational	5 523	0.5	2 762			200
10	Educational	56 573	0.5	28 287			2000
11	Educational	9 538	0.5	4 769			200
12	Institutional	59 812	0.5	23 903		23 903	
13	Institutional	12 007	0.5	6 004		6 004	
14	Filing Station	5 627					
15	Transport Services (Bus and Minibus Taxis)	5 815					
Total		**496 909**		**131 626**	**406**	**75 490**	**2 400**

A copy of the concept site development plan is included in Appendix C.

The R40 falls under the jurisdiction of SANRAL and it is proposed to request two access points from the road to the development. The proposed access(es) location and roads master planning will be discussed in the following sections of the report.

It is recommended that a site traffic assessment be prepared in support of the final site development plan, which will address the following:

1. Internal road network;
2. Internal intersection spacing and control;
3. Access to the individual erven / land uses that make up Acorn City; and
4. Parking requirements.

5. Development Accessibility

As indicated in the section above we are requesting two access points for the development, a primary and secondary access. The initial engagement with SANRAL indicated that access to the proposed development will be assessed in accordance with the requirements of TRH 26, South African Road Classification and Access Management Manual.

The R40 was previously a provincial road and now falls under the jurisdiction of SANRAL. The road is currently a single lane per direction, however it is feasible that the road could be upgraded to two lanes per direction at some future date. The known future SANRAL planning is discussed in the following section.

The TRH 26 manual provides a classification criterion for roads and the classification will influence the allowable access spacing. Section 4.3 of the manual defines the difference between an urban and rural road. The following has been extracted from the manual.

"For the purposes of this document, an urban area is defined as an area that has been subdivided into erven, whether formal or informal. It includes areas on which townships have been formally declared as well as informal settlements. Rural settlements of one hectare or less are also included in the urban definition.

A rural area is an area which is not an urban area. The areas are characterized by sparse development, mainly given over to nature or farming activities."

Near the proposed development the area can be described as a rural settlement and a review of the area would indicate that the vast majority dwelling units are located on plots less than a hectare. TRH 26 indicates that the area could be defined as falling into an urban classification.

For completeness the R40 was reviewed in terms of rural and urban classification and the information is indicated in the table below and commented on.

In terms of Table B: Rural Functional Road Classification the existing R40 is defined as follows:

Table 7: Rural Functional Road Classification

Basic Function	Alternate Functional Description	Class	Origin / Destination	Through traffic component	Reach of Connectivity	AADT
Mobility	Vehicle priority	2, Major Arterial	The route links several towns / population centres	Exclusively / Predominant	Greater than 25 km	500 – 25 000

In terms of Table C: Urban Functional Road Classification the existing R40 is defined as follows:

Table 8: Urban Functional Road Classification

Basic Function	Alternate Functional Description	Class	Origin / Destination	Through traffic component	Reach of Connectivity	AADT
Mobility	Vehicle priority	2, Major Arterial	N/A	Predominant	>5 km	20 000 – 60 000

Based on the above the rural classification would be appropriates for the following reasons:

1. The R40 connects population centres greater than 25 km, the distance between Acornhoek to Bushbuckridge and Acornhoek to Hoedespruit is approximately 35 km;
2. The ADT is approximately 9 000, but there is some variation on the different section of the road;
3. According to the classification criteria the traffic that would use the R40 would be described as through traffic, however the following should be noted:
   - There a number of educational facilities located along the R40;
   - The local populstion have to use the R40 to access medical and retail activities in Acornhoek.

   Therefore the section of the R40 in the vicinity of Acorn City is also used for local trips.

6. Access Spacing

As discussed in the section above the R40 is the only major road in the vicinity of Acorn City and is predominantly a mobility road, however the road is also used to make local trips. From the site visit there are several intersections along the road that link the surrounding townships to the R40. The intersections along the R40 in the vicinity of Acorn City can be described as informal and the local road the intersect with the R40 are gravel construction.

SANRAL have indicated that the current site access arrangement relates to existing land-use. This development will have a significant impact on the land-use, which will change. The access to the proposed development will have to be assessed in the terms of the applicable guideline documents, form TRH26, South African, Road Classification and Access Management Manual.

Preliminary engagement with SANRAL indicates that they will consider two full intersections to provide access to the proposed development from the R40.

The known and potential intersections along the R40 are indicated in the Table and figure below.

Table 9: Existing and Proposed Access Locations

Intersection		Distance Between Intersections
Intersection 1 (main access to Acornhoek Mall)	Intersection 2 (secondary access to Acornhoek Mall)	375 m
Intersection 2 (secondary access to Acornhoek Mall)	Intersection 3 (existing)	1 070 m
Intersection 3 (existing)	Intersection 4 (existing)	875 m
Intersection 4 (existing)	Intersection 5 (proposed second access to Acorn City)	750 m

Intersection		Distance Between Intersections
Intersection 5 (proposed second access to Acorn City)	Intersection 6 (proposed main access to Acorn City)	690 m
Intersection 6 (proposed second access to Acorn City)	Intersection 7 (Future)	1 670 m
Intersection 7 (Future)	Intersection 8 (existing)	1 350 m

The following should be noted in relation of the above access indicated in the table above:

1. Intersection 1, 2 and 8 can be described as formal intersections;
2. Intersection 3 and 4 are informal intersections, but can be described as the main access points to the residential townships that are located along the R40, in the future if the R40 is upgraded these intersections would be formalised;
3. Intersection 5 and 6 are the proposed access points to Acorn City; and
4. Intersection 7 is a future intersection to accommodate a potential roads masterplan for area; and
5. Intersection 8 can be described as a informal intersection and has been identified as key intersection in the GIS data provided by the Ehlanzeni District Municipality as this will link a main road to the R40, which will run parallel to the R40.

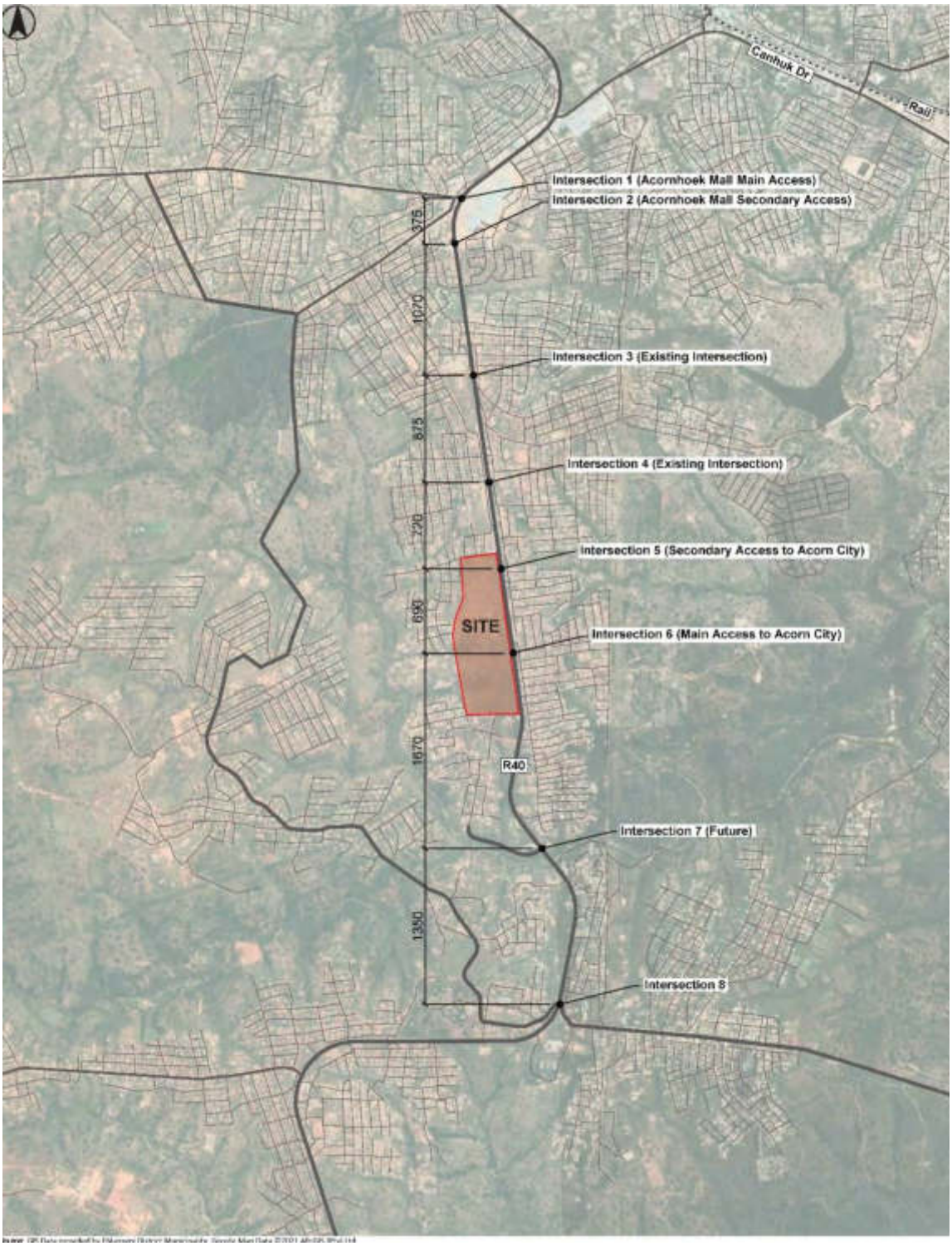


Figure 8: Existing and Future Access Intersections Location

In terms of TRH 26 the following intersection spacing is applicable for rural roads:

- Class 2 – 5.0 km
- Class 3 – 1.6 km

Based on the above none of the existing and future intersections spacing meet the requirements as per TRH 26 for either a Class 2 and 3 road.

It should be noted that the R40 was previously a provincial road and would have been designed when traffic volumes were probably significantly lower and traffic patterns different. Therefore retrofitting techniques will need to be considered to achieve an appropriate access spacing along this section of the R40

Using the Class 3 access spacing for an urban road a possible intersection spacing is outlined in the Table 10 and the figure below, which would provide a reasonable spacing between intersections

Table 10: Class 3 Road Existing and Proposed Access Locations

Intersection		**Distance Between Intersections**
Intersection 1 (main access to Acornhoek Mall)	Intersection 2 (secondary access to Acornhoek Mall)	375 m
Intersection 2 (secondary access to Acornhoek Mall)	Intersection 3 (New)	1 555 m
Intersection 3 (new)	Intersection 4 (proposed second access to Acorn City)	720 m
Intersection 4 (proposed second access to Acorn City)	Intersection 5 (proposed main access to Acorn City)	690 m
Intersection 5 (proposed main access to Acorn City)	Intersection 6 (Future)	1 670 m
Intersection 6 (Future)	Intersection 7 (existing)	1 350 m

The following should be noted in relation of the above access indicated in the table above:

1. Intersection 1, 2 and 8 can be described as formal intersections;
2. Intersection 3 is an informal intersection, on this layout intersection 3 would replace intersections 3 and 4 indicated on Figure 8 and would become the main access point to the residential townships that are located along the R40;
3. Intersection 4 is the proposed second access point to Acorn City;
4. Intersection 5 is the proposed main access point to Acorn City;
5. Intersection 6 is a future intersection to accommodate a potential roads masterplan for area; and
6. Intersection 7 can be described as a informal intersection and has been identified as key intersection in the GIS data provided by the Ehlanzeni District Municipality as this will link a main road to the R40, which will run parallel to the R40.

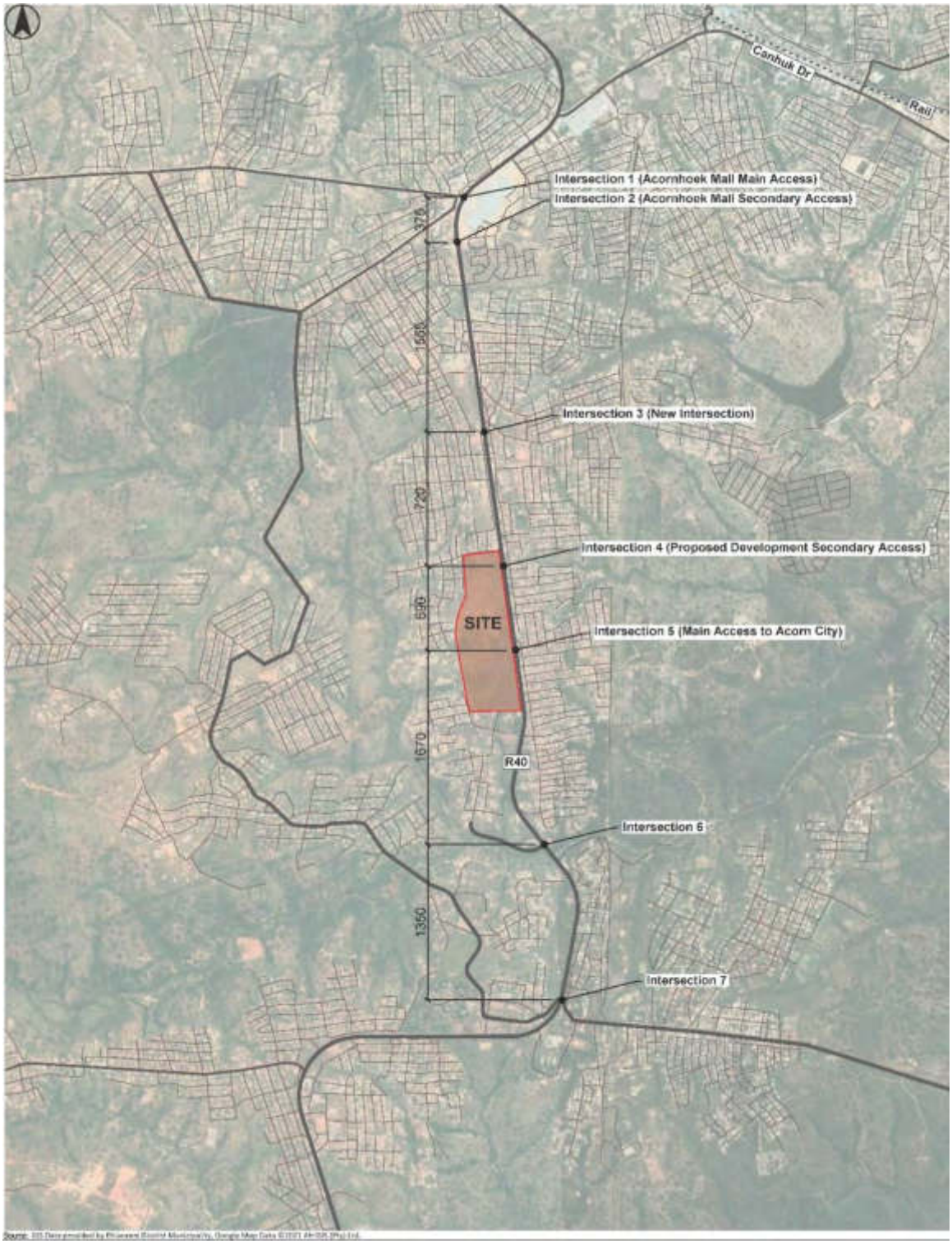


Figure 9: Existing and Future Access Intersections Location

Comment

The potential intersections identified in the figures above is based on the possibility that the R40 will be upgraded at some future date and that the access spacing and geometry will need to be formalised. A roads masterplan / roads hierarchy will be developed for the residential townships surrounding Acorn City.

There is a total distance of approximately 6.4 Km between intersection 2 and 8, which have been identified as formal intersections. The proposed main access to Acorn City will be formal intersection and will be located approximately 3.0 Km from intersection 2 and 8.

However, the proposed access to the surrounding area need to take account of any potential master planning in the broader area.

The Acorn City is a large mixed use devleopment and could be described as an economic node, which benefit from two access points as this will provide some flexibility for development traffic to enter and exit the development.

The above section has assessed the section of the R40 past the proposed Acorn City as a rural road, however TRH 26 indicates that the road could be considered as an urban road, based on the description in the manual.

This would allow the section of R40 past the proposed development to be considered as an urban section of road, with the section of R40 north and south of the development as a rural section. The urban intersection spacing for a Class 2 road is 800 metres (+ / - 15%) and the spacing between the main and second access is 690 metres, which will conform to the spacing criteria.

In addition as discussed above the R40 was previously a provincial road and if the road is upgraded in the future retrofitting techniques will need to be considered to achieve an appropriate access spacing along this section of the R40.

7. Roads Masterplanning

The available information in relation to roads master planning in the broader area surrounding the proposed developments includes the following:

- SANRAL;
- Ehlanzeni District Municipality; and
- Acorn City development.

7.1 SANRAL

The information provided by SANRAL indicates that there are three projects for the upgrading of the following sections of the R40:

- Section 5 of the R40 from Km 66.6 to Hoedspruit (km 93.7), this section is north of Acornhoek;
- Section 5 of the R40 from Hazyview (km 0.0) to Maviljan (km 32.1); and
- Section 5 of the R40 from Maviljan (km 32.1) to Arthur's seat (km 53.0).

The two sections of the R40 from Hazyview to Maviljan to Arthur's seat (km 53.0) are located to the south of the proposed development. SANRAL is implementing the upgrade of the section of the R40 between Mavilijan to Arthursseat and the project is currently at the concept design phase of the project.

7.2 Ehlanzeni District Municipality

The known roads and transport master planning was extracted from the GIS data provided by the Ehlanzeni District Municipality and is indicated on the Figure below. It should be noted that the information provided is limited.

Figure 10: Existing Road Network as Per Ehlanzeni District Municipality

The key road in the network is the R40, which runs north south and links Nelspruit to Phalaborwa. The district municipality masterplan has identified a main road, which will also run north south and is located to the west of the proposed development. All the other roads in the broader area are predominantly local access road that link the residential townships to the R40. According to the GIS data the R40 is in good condition.

The available information does not indicate possible intersection locations on the R40 and the proposed Main Road to provide access to the residential townships.

7.3 Acorn City Development

Acorn City will be a large mixed-use development, with an internal road network of collector distributor roads and local access roads. SANRAL requires that the proposed internal road network provides access to the local road network around the proposed development. Currently the local road surrounding the proposed development are gravel road that provide access to individual plots. The local road network is laid out in a rough grid pattern.

The figures below represent two possible road masterplans taking into account the possible intersection and access locations indicated on Figures 8 and 9 above:

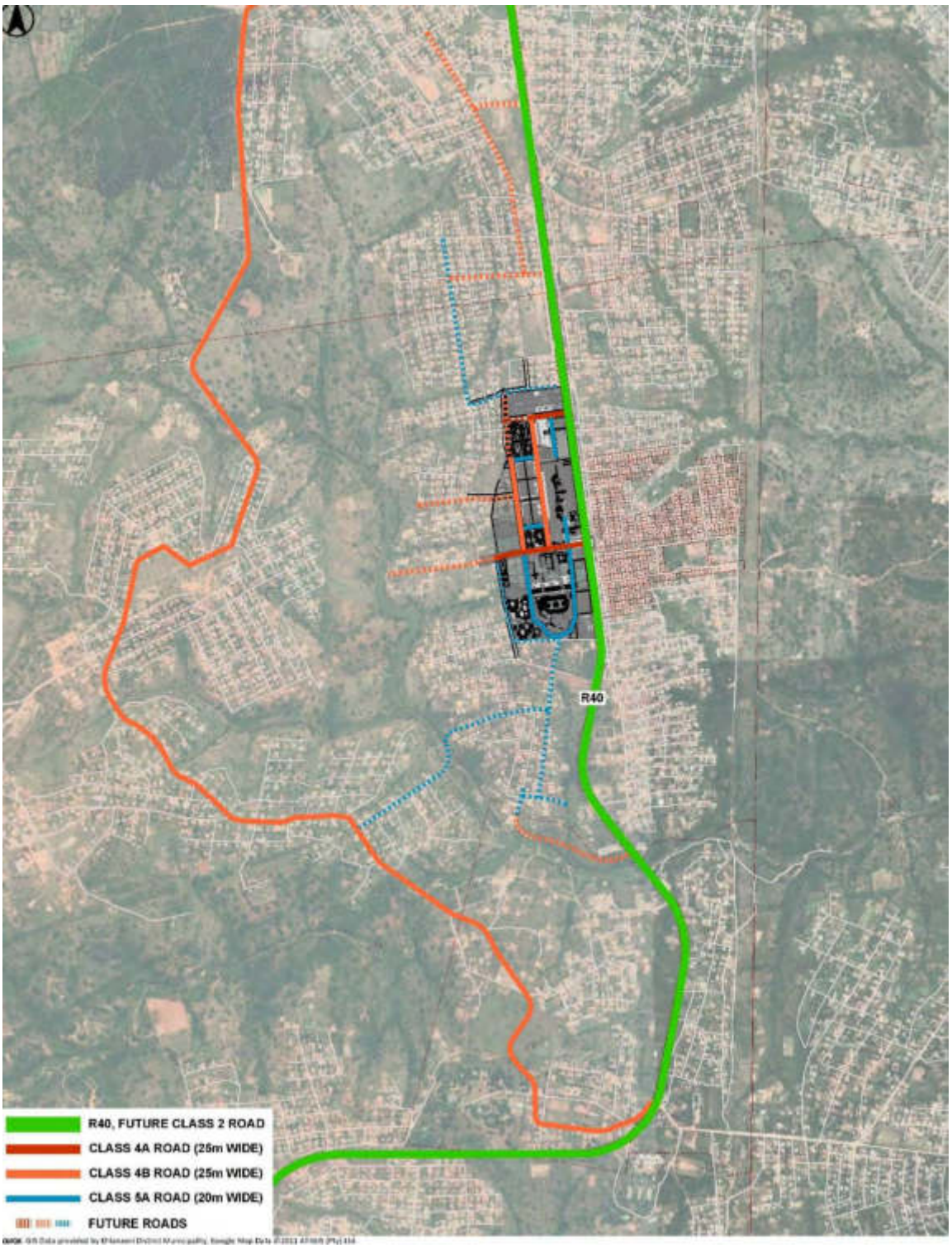


Figure 11: Future Local Roads Masterplan

The following comments are made in relation to the road network outlined above:

1. Internally it is proposed to have two north-south Class 4 road and two east-west Class 4 roads;
2. The east-west roads will link the internal roads from Acorn City to the surround residential townships;
3. The east-west Class 4 roads will link Acorn City to the R40;
4. The remainder of the local roads in Acorn City will be Class 5;
5. For future road planning to the broader area the following is proposed:
    - To the north of Acorn City two Class 4 roads are proposed linking the residential townships to the R40 at existing intersections;
    - To the south of Acorn City a new Class 4 road is proposed with a new intersection to connect the area to the R40;
    - The new Class 4 roads to the north and south of Acorn City can be linked to the proposed Acorn City road network with a network of local Class 5 roads; and
    - The local road network to the south of Acorn City can be link to the existing main road to the west of the proposed development identified in the Ehlanzeni District Municipality with a Class 5 link.
6. The spacing of the intersections on the R40 will be as per the intersections indicated on Figure 8.

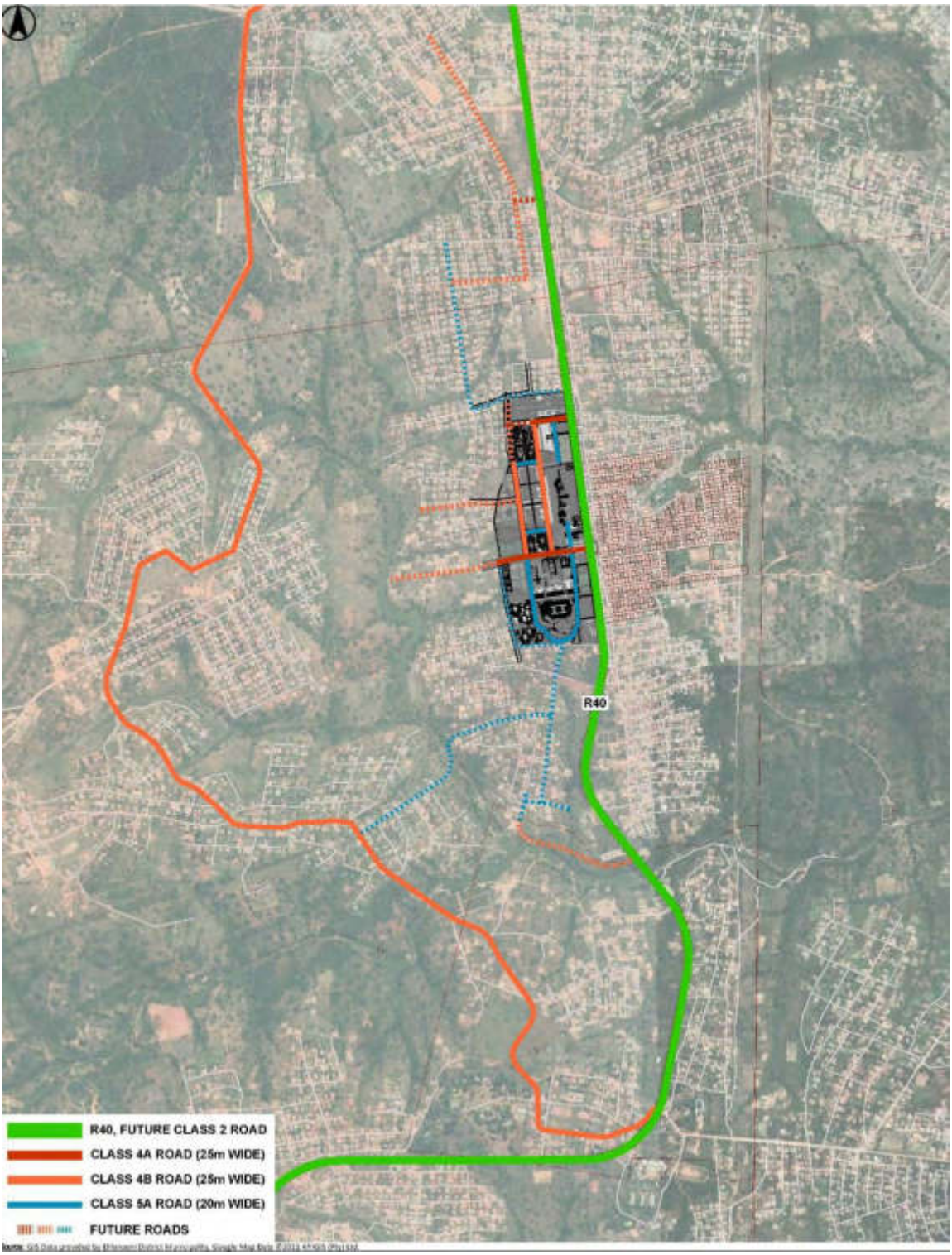


Figure 12: Future Local Roads Masterplan

The proposed road network is indicated on Figure 12 and is as per Figure 11 with the following difference for the future road planning for the broader area:

1. To the north of Acorn City there will be single intersection linking the residential township to the R40;
2. To the south of Acorn City a new Class 4 road is proposed with a new intersection to connect the area to the R40;

3. The new Class 4 roads to the north and south of Acorn City can be linked to the proposed Acorn City road network with a network of local Class 5 roads; and
4. The local road network to the south of Acorn City can be link to the existing main road to the west of the proposed development identified in the Ehlanzeni District Municipality with a Class 5 link.

The spacing of the intersections on the R40 will be as per the intersections indicated on Figure 9.

The future roads masterplan indicated on Figure 11 and 12 is conceptual and indicative only and is included in this study for references purposes. The purpose of the figures is to show that the proposed internal Acorn City road network can be linked to the local road network that serves the surrounding residential townships.

8. R40 and Development Access

SANRAL have commenced with the design of Section 5 of the R40 from Maviljan (km 32.1) to Arthur's seat (km 53.0). which is located to the south of the study area. In addition there is a project proposed for the upgrade of the section of the R40 north of Acornhoek.

Therefore it is realistic to assume that the section of the R40 past the proposed development will be upgraded to join the two sections north and south of Acorn City.

SANRAL has appointed BVI Consulting Engineers to prepare the design the section Maviljan (km 32.1) to Arthur's seat (km 53.0). The typical cross section that is proposed for this section is indicated in the image below:

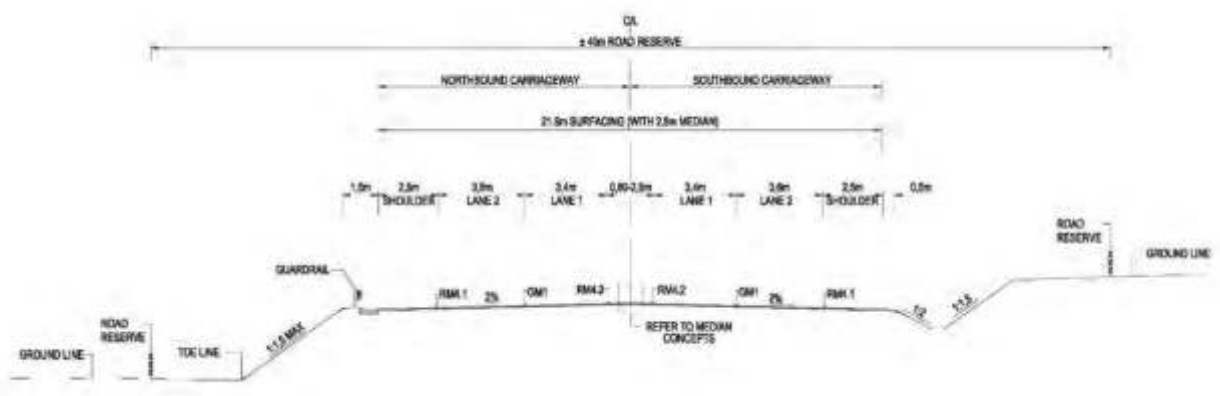


Figure 13: Typical Cross Section

The above cross section has been extracted from the BVI Consulting Engineers drawing number 33947.00-103-01. It should be noted that the above cross section is conceptual only and approval is still required. The cross-section consists of the following elements:

- Median – 2.8 metres;
- Outside lane – 3.4 metres;
- Inside lane – 3.6 metres; and
- Shoulders – 2.5 metres.

The overall width of the road reserve required to accommodate the above cross section is 40 metres. The available information indicates that there is a 40 metre wide road reserve on the section of the R40 past the proposed development, which is indicated on the sketch included in Appendix D

Based on the above a concept layout of the future R40 past the proposed site is indicated on Drawing 01 and a copy of the drawing is included in Appendix D.

The concept layout includes the following elements:

1. A hard shoulder on each carriageway
2. Two lanes per direction
3. A median

As indicated in previous sections of the report our preliminary engagement with SANRAL would allow for two full access intersections on the R40 and we are proposing to implement a roundabout at each access. The developer should be responsible for the upgrade of the section of the R40 past the Acorn City development including the accesses to the development.

9. Development Traffic

9.1 Trip Generation

The additional vehicle trips that are expected to be generated by the proposed development were calculated using the TMH 17 South African Trip Data Manual (COTO, 2013). Different trip generation and directional splits will be applicable for the proposed development and are outlined in Table 11 below.

Table 11: Proposed Trip Rate and Directional Split

Development	Unit	AM Trip Rate	PM Trip Rate	AM Directional Split	PM Directional Split
Warehousing and Distribution	100 m² GLA	0.5	0.5	60:40	45:55
Hotel, Residential	1 Room	0.5	0.5	60:40	55:45
Public Primary School	1 Student	1.5	0.3	50:50	50:50
Public Secondary School	1 Student	1.4	0.3	50:50	50:50
University/College	1 Student	0.3	0.2	80:20	30:70
Medical Clinic	100 m² GLA	6.0	6.0	60:40	40:60
Offices	100 m² GLA	2.1	2.1	85:15	20:80
Hardware and Paint Store	100 m² GLA	1.2	0.0	65:35	45:55
Shopping Centre	100 m² GLA	0.6	3.4	65:35	50:50

The COTO manual allows for a reduction in the trips generated for the following categories:

- Mixed use development;
- Low car ownership;
- Very low car ownership; and
- Transit node or corridor.

The available information would indicate that car ownership is very low and that car ownership in the Bushbuckridge municipality is 19%. However according to the COTO Manual TMH 17, very low vehicle ownership means that more that 90% of households do not own a vehicle.

According to SANRAL the 19% vehicle ownership only qualifies for the use of the “low vehicle ownership” reduction factor. The proposed reduction factors used for the trip generation calculation is indicated in Table 12 below.

Table 12: Proposed Trip Reduction Factors for Low Car Ownership

Development	Mixed-Use Development	Low Car Ownership
Warehousing and Distribution	0%	20%
Hotel, Residential	0%	0%
Public Primary School	0%	50%
Public Secondary School	0%	50%
University/College	20%	40%
Medical Clinic	0%	50%
Offices	20%	20%
Hardware and Paint Store	0%	30%
Shopping Centre	10%	30%

Table 13 below outlines the proposed development traffic considering the reduction factors.

Table 13: Proposed Development Traffic

Development	AM Peak		PM Peak	
	In	Out	In	Out
Warehousing and Distribution	4	3	3	4
Hotel, Residential	122	81	112	91
Public Primary School	386	386	75	75
Public Secondary School	341	341	63	63
University/College	47	12	12	27
Medical Clinic	108	72	72	108
Offices	273	48	64	257
Hardware and Paint Store	23	12	71	87
Shopping Centre	144	78	629	629
Total Trips Per Direction	**1445**	**1031**	**1097**	**1337**
Overall Peak Hour Trips	**2476**		**2434**	

During the initial engagement with SANRAL concerns were raised that the proposed development traffic is higher than the actual traffic on the R40. Therefore the following approach will be adopted to assess the potential development traffic that would reflect possible car ownership in the broader area surrounding the proposed development.

1. Assess the potential development traffic using very low traffic ownership; and
2. Estimate the potential development using the known car ownership for the area.

9.1.1 Proposed development traffic based on Very Low Car Ownership

The trip reduction factor and the potential development traffic is outlined in the tables below.

Table 14: Proposed Trip Reduction Factors for Very Low Car Ownership

Development	Mixed-Use Development	Very Low Car Ownership
Warehousing and Distribution	0%	30%
Hotel, Residential	0%	0%
Public Primary School	0%	80%
Public Secondary School	0%	80%
University/College	20%	60%
Medical Clinic	0%	80%
Offices	20%	30%
Hardware and Paint Store	0%	50%
Shopping Centre	10%	60%

Table 15 below outlines the proposed development traffic considering the reduction factors.

Table 15: Proposed Development Traffic

Development	AM Peak		PM Peak	
	In	Out	In	Out
Warehousing and Distribution	4	3	3	3
Hotel, Residential	122	81	112	91
Public Primary School	155	155	30	30
Public Secondary School	136	136	25	25
University/College	32	8	8	18
Medical Clinic	43	29	29	43

Development	AM Peak		PM Peak	
	In	Out	In	Out
Offices	239	42	56	225
Hardware and Paint Store	16	9	51	62
Shopping Centre	82	44	359	359
Total Trips Per Direction	**829**	**507**	**673**	**857**
Overall Peak Hour Trips	**1336**		**1530**	

Using the very low car ownership the potential development traffic will be approximately 1 000 peak hour trips less than the development traffic calculated using the low car ownership. Even with the very low car ownership reduction factor the potential development traffic will still exceed the actual traffic on the R40.

9.1.2 Proposed development trip based on Adjusted Very Low Car Ownership

The following section will assess the potential development traffic taking account of an adjusted very low car ownership, the adjusted car ownership will be based on the available information. The website Wazimap provides demographic information, which is based on the 2011 census data, including the percentage of car ownership at different levels, which is outlined below.

- Provincial;
- District municipality;
- Local Municipality; and
- Ward.

The percentage ow car ownership for the different levels is outlined in Table 16 below.

Table 16: Car Ownership Data

Level	Description	Very Low Car Ownership
Province	Limpopo	23%
	Mpumalanga	29%
District Municipality	Ehlanzeni	24%
	Mopani	20%
Local Municipality	Bushbuckridge	19%
	Maruleng	19%
Average		**22%**

Level	Description	Very Low Car Ownership
Ward	12	13%
	14	14%
	15	15%
	16	14%
	17	16%
	18	17%
	19	17%
	22	15%
	32	14%
Average		**18%**

Based on the above we are proposing to use a car ownership value of 22% for the area around the proposed development and the reduction factor for the adjusted very low car ownership is indicated in Table 17 below.

Table 17: Adjusted Trip Reduction Factor for Very Low Car Ownership

Development	Mixed-Use Development	Very Low Car Ownership
Warehousing and Distribution	0%	27%
Hotel, Residential	0%	0%
Public Primary School	0%	71%
Public Secondary School	0%	71%
University/College	20%	54%
Medical Clinic	0%	71%
Offices	20%	27%
Hardware and Paint Store	0%	44%
Shopping Centre	10%	51%

Table 18 below outlines the proposed development traffic considering the reduction factors.

Table 18: Proposed Development Traffic

Development	AM Peak		PM Peak	
	In	Out	In	Out
Warehousing and Distribution	4	3	3	4
Hotel, Residential	122	81	112	91
Public Primary School	224	224	44	44
Public Secondary School	198	198	36	36
University/College	36	9	9	21
Medical Clinic	63	42	42	63
Offices	249	44	59	235
Hardware and Paint Store	18	10	57	70
Shopping Centre	101	54	440	440
Total Trips Per Direction	**1015**	**665**	**801**	**1002**
Overall Peak Hour Trips	**1670**		**1803**	

Using the adjusted very low car ownership the potential development traffic will be approximately 700 peak hour trips less than the development traffic calculated using the low car ownership. Even with the adjusted very low car ownership reduction factor the potential development traffic will still exceed the actual traffic on the R40.

Therefore using the traffic data from the Acornhoek traffic count station and the development traffic outlined in the table for analysis purposes could be described as a robust and conservative approach.

9.2 Trip Distribution and Assignment

The proposed development traffic will have good access to the R40 and it is proposed to use the following distribution to assign the devleopment traffic to the R40.

1. The existing traffic volumes on the R40 indicates that 60% of the development traffic will come from and go the south in the direction of Bushbuckridge and 40% of the development traffic will come from and go to the north in the direction of Acornhoek;
2. The majority of the development traffic coming from and going to the north in the direction of Acornhoek will use the second access to the development from the R40; and
3. The majority of the development traffic coming from and going to the south in the direction of Bushbuckridge will use the main access to the development from the R40.

The expected that AM and PM development traffic distribution is indicated on the following figures:

- Figure 14: AM and PM Development traffic Distribution;
- Figure 15: AM Development Traffic;
- Figure 16: PM Development Traffic;
- Figure 17: 2021 AM Background and Development Traffic;
- Figure 18: 2021 PM Background and Development Traffic;

- Figure 19: 2026 AM Background and Development Traffic; and
- Figure 20: 2026 PM Background and Development Traffic.

A copy of the figures outlined above is included in Appendix A.

10. Intersection Capacity Analysis

10.1 Assessment Criteria

The performance criteria for the intersections in the study area are indicated in Table 19 below. The LOS, delay and v/c ratios have been defined in accordance with the Highway Capacity Manual (HCM 2000). In addition, if any intersection operates at LOS E or worse or at a v/c ratio of more than 0.95, it is regarded as operating at capacity and therefore requiring mitigation measures where possible.

Table 19: Performance Criteria

Level of Service	Control delay Per Vehicle (Seconds (d))	
	Signal and Roundabouts	Stop and Give-Way / Yield Signs
A	d ≤ 10	d ≤ 10
B	10 < d ≤ 20	10 < d ≤15
C	20 < d ≤ 35	15 < d ≤25
D	35 < d ≤ 55	25 < d ≤ 35
E	55 < d ≤ 80	35 < d ≤ 50
F	d > 80	d ≤ 50

10.2 Intersection Analysis Software

The capacity analysis of the intersections in the study area was undertaken using the AutoJ intersection software.

10.3 Background and Development Traffic Capacity Analysis

The capacity analysis results for the 2021 and 2026 background traffic with development traffic are summarised in Table 20 below. In this scenario the development traffic will enter and exit at two access points and each access will be a roundabout.

A copy of the detailed capacity analysis results is included in Appendix E.

Table 20: Option 3 Background and Development Traffic Capacity Analysis

Intersection / Movement		2021 Background and Development Traffic						2026 Background and Development Traffic					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		V/C	Delay (s)	LOS	V/C	Delay (s)	LOS	V/C	Delay (s)	LOS	V/C	Delay (s)	LOS
R40 and Acorn City Primary Access	R40 (NB)	0.46	8.0	A	0.34	7.3	B	0.48	8.2	A	0.36	7.4	A
	R40 (SB)	0.28	7.0	A	0.46	8.0	A	0.30	7.1	A	0.49	8.3	A
	Acorn City Access (EB)	0.28	7.0	A	0.33	7.2	A	0.30	7.1	A	0.35	7.3	A
	Overall	**0.38**	**7.6**	**A**	**0.38**	**7.6**	**A**	**0.40**	**7.7**	**A**	**0.44**	**7.7**	**A**
R40 and Secondary Access	R40 (NB)	0.41	7.7	A	0.31	7.1	A	0.44	7.9	A	0.33	7.2	A
	R40 (SB)	0.31	7.1	A	0.42	7.7	A	0.33	7.2	A	0.44	7.9	A
	Acorn City Access (EB)	0.24	6.8	A	0.31	7.1	A	0.25	7.2	A	0.33	7.2	A
	Overall	**0.34**	**7.3**	**A**	**0.36**	**7.4**	**A**	**0.37**	**7.5**	**A**	**0.38**	**7.5**	**A**

The following comments are made in relation to the above analysis.

R40 and Acorn City Primary Access

The main intersection will operate at LOS A in the 2021 AM and PM peak hour and the v/c ratio will not exceed 0.95. The growth in background traffic will have a minor impact on the performance of the intersection. In the 2026 AM and PM peak hour scenarios the intersection will operate at LOS A and the v/c will not exceed 0.95.

R40 and Acorn City Secondary Access

In 2021 and 2026 AM and PM peak hour scenarios the secondary access will operate at LOS A and the v/c ratio will not exceed 0.95.

10.4 Comment

The analysis indicates that the access roundabouts proposed for the R40 will operate at LOS A in all the scenarios and the v/c ratio will not exceed 0.95. The upgrade of the R40 and the implementation of the roundabout will be sufficient to accommodate the background and development traffic. It is recommended that that Acorn City developer should be responsible for the upgrade of the R40 past the proposed development.

11. Access to Public Transport

11.1 Introduction

In terms of the National Land Transport Act (NLTA) (Act No.5 of 2009), it is a requirement that an assessment of the public transport be included in traffic impact assessments. The following comments are relevant in respect to the public transport availability for the proposed development.

11.2 Availability of Public Transport

The available information form the Ehlanzeni District Municipality indicates that the area is served by both Buses and Minibus taxis, with the predominant from of public transport minibus taxis. The known public transport routes and facilities in the area surrounding the development are indicated on the following figures:

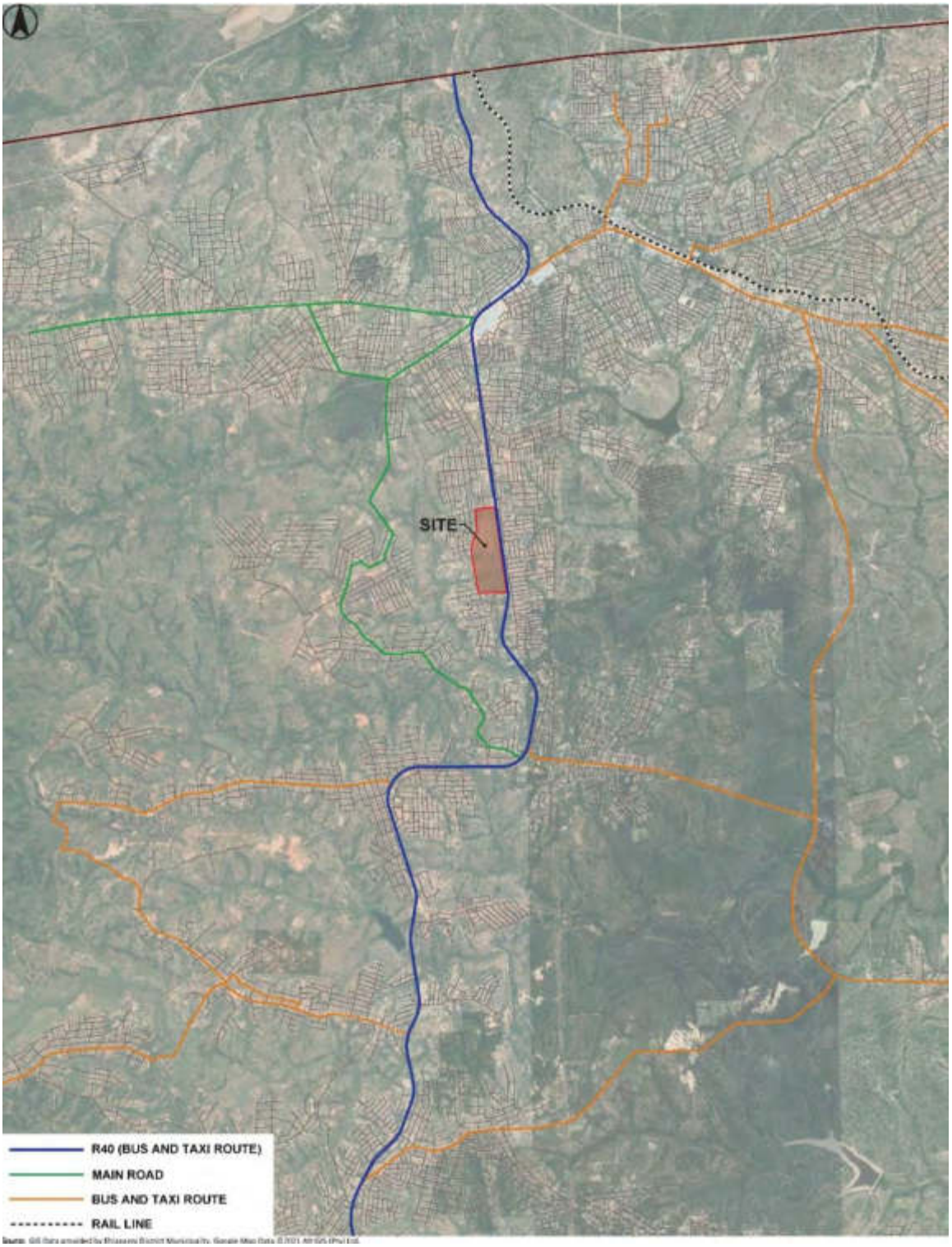


Figure 21: Known Public Transport Routes

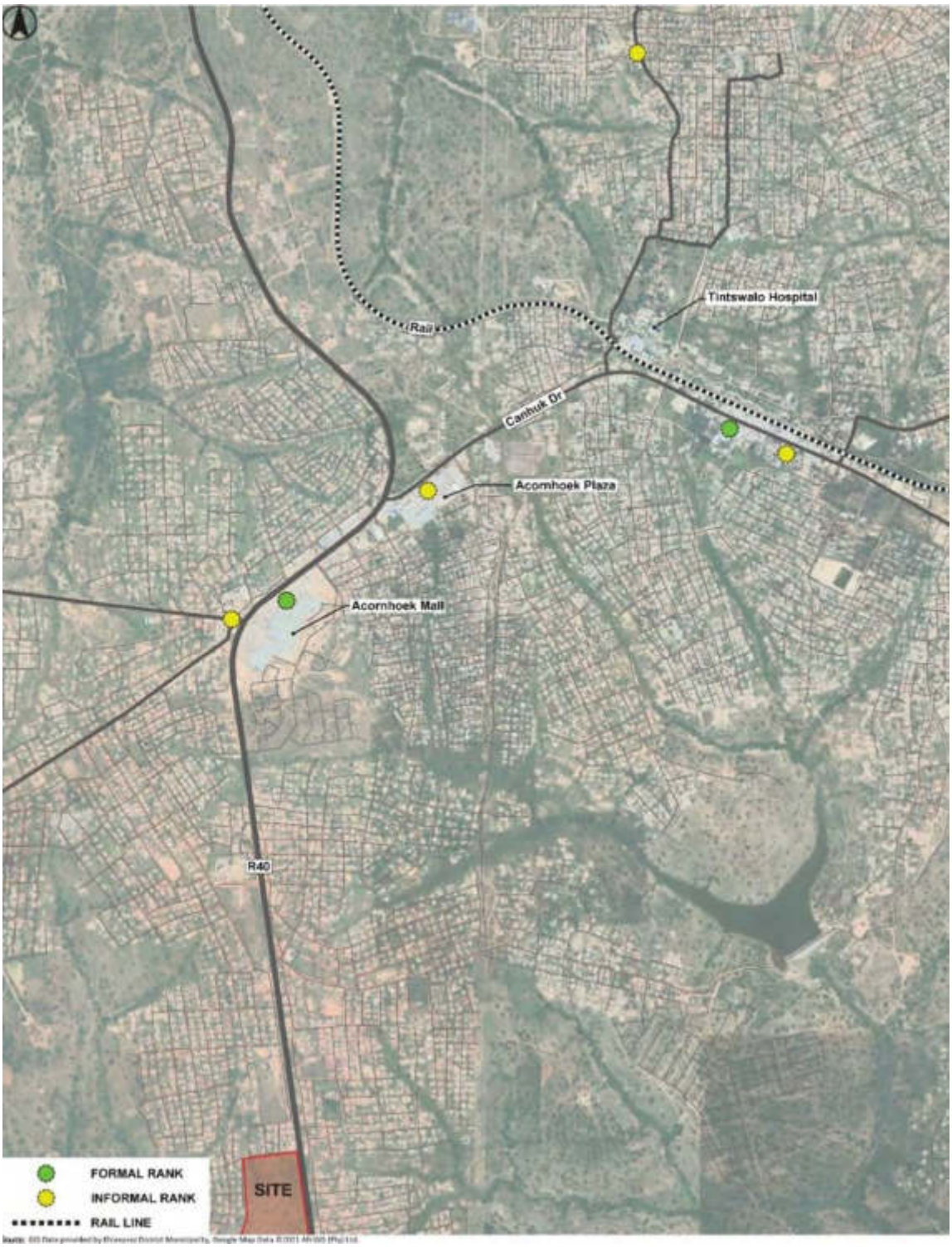


Figure 22: Known Public Transport Facilities

11.3 Public Transport Infrastructure

The development will have a bus and taxi ranks will be provided as part of the development in the vicinity of the main access to the development. The footpaths will be provided on the internal road network to link the public transport facilities to various parts of the developments.

The walking distance to the development from the nearest sources of public transport is within 1 km. This satisfies the objectives of the National Transport Policy (published by the National Department of Transport in September 1996), aiming to limit the walking distances to less than 1 km in urban areas.

The location of the public transport facilities and NMT facilities are indicated on the Figure below.

Figure 23: Proposed Public Transport Facilities and NMT Routes

During the initial engagement with the SANRAL concern was raised in relation to the pedestrians walking along the R40 to access the development. The proposed access points on the R40 can also be used for pedestrian and NMT access, however the accesses are approximately 700 metres apart. To increase pedestrian access to the development it is recommended that pedestrian links from the R40 road reserve to the internal road network be implemented. This would help minimise the distance the pedestrian might have to walk on the R40 to gain access to Acorn City.

It is recommended that as part of the site development plan process and detail design of the R40, pedestrian and NMT infrastructure should be implemented to separate vehicle and pedestrian movements.

12. Summary and Recommendation

The purpose of this traffic impact and access study is to support a township application for Portion 27 of the Farm Arthursseat 214-KU. The proposed township will be known as Acorn City and the site area is 46.7 hectares in size. The property is located adjacent to the R40, which is a national road and the road links Nelspruit to Phalaborwa. Acorn City will be located approximately 5.0 Km south of Acornhoek a small local town.

The property is currently zoned agricultural, and the intention is to rezone the property for different land uses. The township will be divided into several erven and the following land uses are proposed:

1. Residential;
2. Agricultural;
3. Business;
4. Educational;
5. Institutional;
6. Filing Station; and
7. Transport Services (Bus and Minibus Taxis).

The R40 falls under the jurisdiction of SANRAL and It is proposed to take access to Acorn City from the R40 and the intention is to apply for two access points.

The proposed development will be in a semi-rural area and the surrounding land use is predominantly residential in nature. The residential can be described as small plots of land with dwelling units. In the broader area there are educational and religious facilities. Along the R40 there are number of informal commercial activities. There are several guest houses in the area surrounding the proposed development.

The Acornhoek town centre consists of two shopping centres the Acornhoek Mall and the Acornhoek Plaza, in addition there are other retail and commercial activities. Other land uses in Acornhoek is the Tintswalo Hospital and Ehlanzeni FET college. The area is also served by a Transnet rail line, which is located just to the east of Acornhoek.

In the vicinity of Acorn City the R40 is the primary route that links Nelspruit and Phalaborwa. The surround residential townships are served by a network of local access road, which are predominantly gravel construction.

Traffic data was sourced from SANRAL to assess the traffic flow on the surrounding road network. The data, visual observations and local traffic counts indicated that traffic volumes on R40 can be described low to moderate. The data indicated that the traffic volumes on the R40 past the site carries approximately 600 vph in the peak periods.

The estimated traffic volumes on the section of the R40 past the Acornhoek Mall are higher with approximately 1000 vehicles in the peak periods and the percentage of heavy vehicles will be approximately 7% of the total volume. For analysis purposes this traffic volume was used, as the this was the highest traffic volume and could be considered a conservative approach.

The future traffic volumes will be estimated using a growth rate of 3% applied to the estimated 2021 traffic volumes to calculate the expected 2026 traffic volumes.

The different land uses possible activities and size of development is outlined in Table 21 below.

Table 21: Proposed Development Land uses

Erven	Development Control	Development Area	FAR	Allowable Development	Number of Room	GLA	Number of Learners
1	Residential	40 639	0.5	20 320	406		
2, 3, 4, 5	Agricultural	222 215					
6	Business 1	78 852	0.5	39 426		39 426	
7	Business 1	8 695	0.5	4 348		4 348	
8	Business 1	3 620	0.5	1 810		1 810	
9	Educational	5 523	0.5	2 762			200
10	Educational	56 573	0.5	28 287			2000
11	Educational	9 538	0.5	4 769			200
12	Institutional	59 812	0.5	23 903		23 903	
13	Institutional	12 007	0.5	6 004		6 004	
14	Filing Station	5 627					
15	Transport Services (Bus and Minibus Taxis)	5 815					
Total		**496 909**		**131 626**	**406**	**75 490**	**2 400**

It is recommended that a site traffic assessment be prepared in support of the final site development plan, which will address in detail the following:

- Internal road network;
- Internal intersection spacing and control;
- Access to the individual erven / land uses that make up Acorn City; and
- Parking requirements.

The R40 was assessed using the TRH 26, South African Road Classification and Access Management Manual and based on the manual the road should be classified as a rural road, taking the following classification criteria into account.

1. The R40 connects population centres greater than 25 km, the distance between Acornhoek to Bushbuckridge and Acornhoek to Hoedespruit is approximately 35 km;
2. The ADT is approximately 9 000, but there is some variation on the different section of the road;
3. According to the classification criteria the traffic that would use the R40 would be described as through traffic, however the following should be noted:
   - There a number of educational facilities located along the R40; and
   - Local people have to use the R40 to access medical and retail activities in Acornhoek.

It is realistic to assume that the section of the R40 in the vicinity of Acorn City is also used for local trips.

The current spacing on the R40 north and south of Acorn City does not conform with the required spacing for either a Class 2 or 3 rural road. The recommended intersection spacing for a Class 2 road is 5.0 Km and for a Class 3 road is 1.6 Km.

Currently the number of formal intersections of the R40 are limited, with adjacent residential township linked to the R40 via gravel roads and informal intersections. However, the proposed access to the surrounding area need to take account of any potential master planning in the broader area.

The access to the Acorn City will be via two formal intersections on the R40. The Acorn City is a large mixed use devleopment and could be described as an economic node, which benefit from two access points as this will provide some flexibility for development traffic to enter and exit the development.

The above section has assessed the section of the R40 past the proposed Acorn City as a rural road, however TRH 26 indicates that the road could be considered as an urban road, based on the description in the manual.

This would allow the section of R40 past the proposed development to be considered as an urban section of road, with the section of R40 north and south of the development as a rural section. The urban intersection spacing would be applicable past the proposed development and this would support the second access on the R40.

The R40 was previously a provincial road and if the road is upgraded in the future retrofitting techniques will need to be considered to achieve an appropriate access spacing along this section of the R40.

SANRAL is proposing to upgrade the section of the R40 to the south of the development area and the section of the R40 to the north of Acornhoek. It is reasonable to assume that the section of the R40 would be upgraded like the other sections of the R40 at some future date.

A local roads masterplan is required to ensure that the surrounding residential township road link to the adjacent R40 and the Acorn City internal road network.

Information was sourced from BVI Consulting Engineers who are responsible for the upgrade of section of the R40 between Maviljan (km 32.1) to Arthur's seat (km 53.0). The following cross-section is proposed for the R40:

- Median – 2.8 metres;
- Outside lane – 3.4 metres;
- Inside lane – 3.6 metres; and
- Shoulders – 2.5 metres.

The overall width of the road reserve required to accommodate the above cross section is 40 metres. The available information indicates that there is a 40 metre wide road reserve on the section of the R40 past the proposed development. A concept layout of the future R40 past the proposed site is indicated on Drawing 01 and the concept layout includes the following elements:

- A hard shoulder on each carriageway
- Two lanes per direction
- A median

Two full access will be permitted on the R40 for the devleopment and the analysis indicates that the access roundabouts proposed for the R40 will operate at LOS A in all the scenarios and the v/c ratio will not exceed 0.95. The upgrade of the R40 and the implementation of the roundabout will be sufficient to accommodate the background and development traffic. It is recommended that that Acorn City developer be responsible for the upgrade of the R40.

The Ehlanzeni District Municipality GIS data indicates that the area is served by both buses and minibus taxis, with the predominant from of public transport minibus taxis, with routes on the R40 and the local road network, which serves the surrounding residential township.

The development will have a bus and taxi ranks will be provided as part of the development in the vicinity of the main access to Acorn City. Footpaths will be provided on the internal road network to link the public transport facilities to various parts of the developments. To increase pedestrian access to the development it is recommended that pedestrian links from the R40 road reserve to the internal road network are implemented.

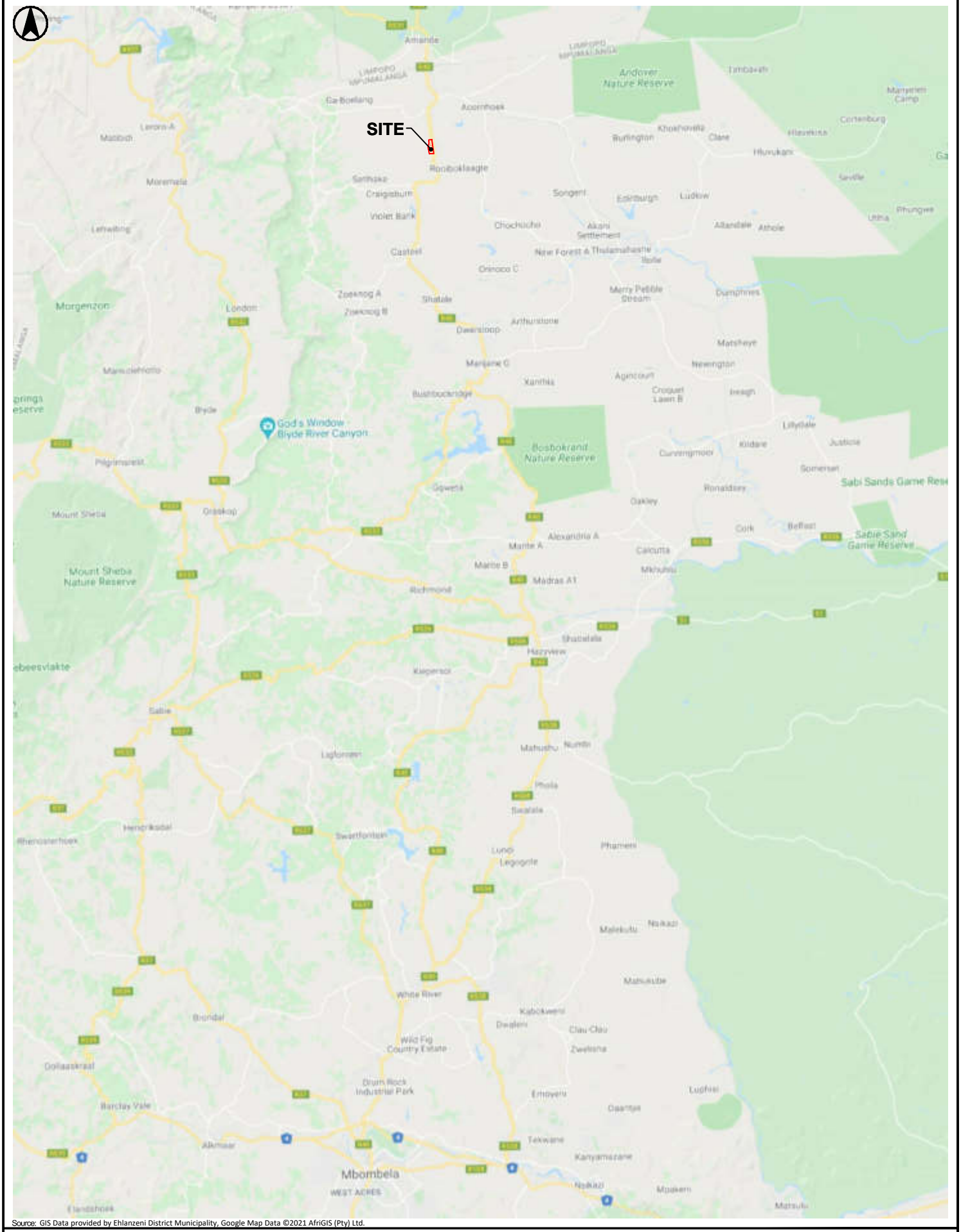
It is recommended that as part of the site development plan process and detail design of the R40, pedestrian and NMT infrastructure should be implemented to separate vehicle and pedestrian movements.

Based on the above and that any conditions are adhered to the proposed township application can be supported from a traffic engineering perspective.

APPENDIX A

Figures

Figure 1: Locality Plan
Figure 2: Aerial View of the Site
Figure 3: Location of the SANRAL Traffic Count Station
Figure 4: 2021 AM Background Traffic
Figure 5: 2021 PM Background Traffic
Figure 6: 2026 AM Background Traffic
Figure 7: 2026 PM Background Traffic
Figure 8: Known and Future Access Intersection Locations
Figure 9: Known and Future Access Intersection Locations
Figure 10: Existing Road Network as Per Ehlanzeni District Municipality
Figure 11: Future Local Roads Masterplan
Figure 12: Future Local Roads Masterplan
Figure 13: Typical Cross Section
Figure 14: AM and PM Development traffic distribution
Figure 15: AM Development traffic
Figure 16: PM Development traffic
Figure 17: 2021 AM Background and development traffic
Figure 18: 2021 PM Background and development traffic
Figure 19: 2026 AM Background and devleopment traffic
Figure 20: 2026 PM Background and development traffic
Figure 21: Known Public Transport Routes
Figure 22: Known Public Transport Facilities
Figure 23: Proposed Public Transport Facilities and NMT Routes



Source: GIS Data provided by Ehlanzeni District Municipality, Google Map Data ©2021 AfriGIS (Pty) Ltd.

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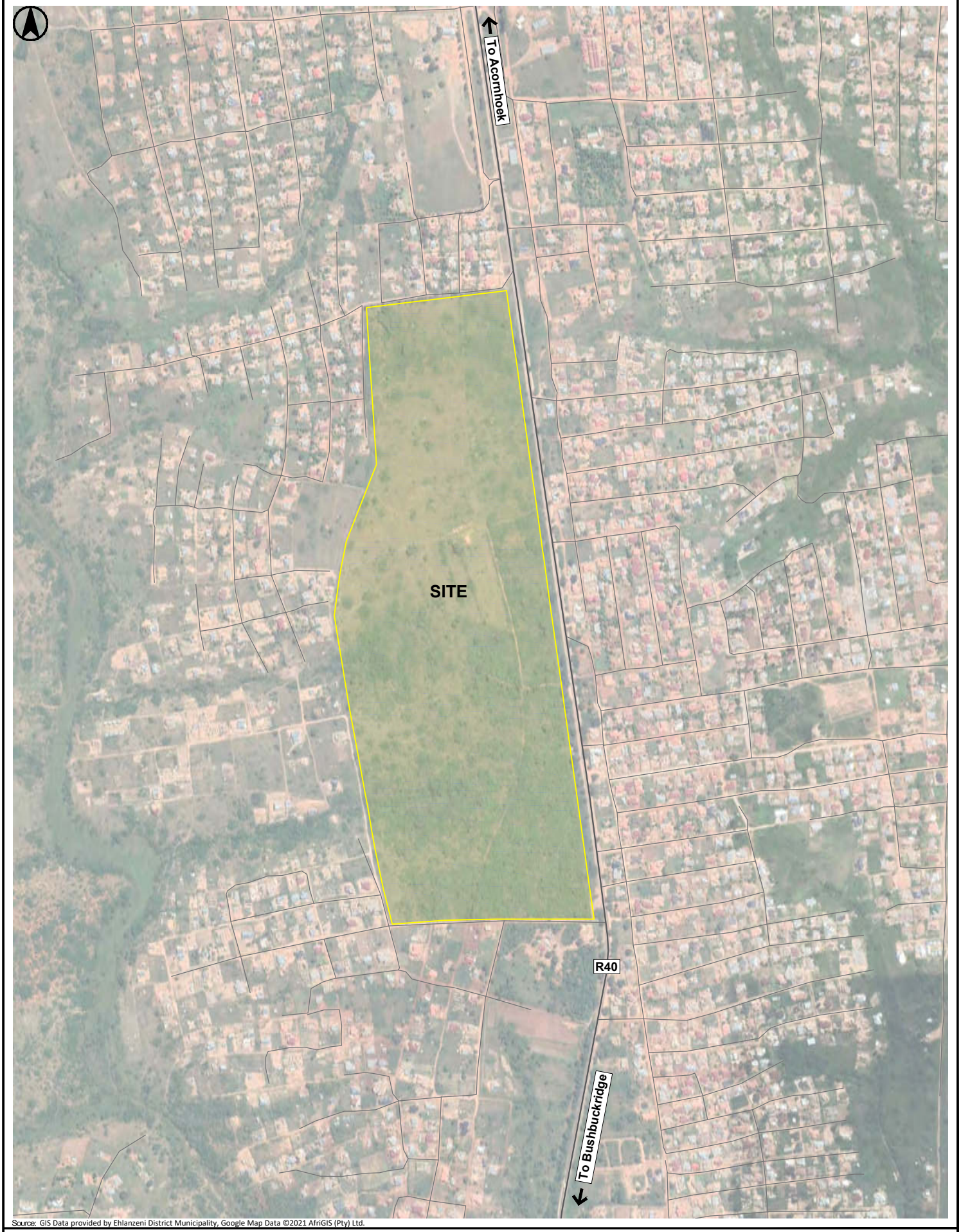
aidanbgnoble@gmail.com

Locality Map

Proposed Township Establishment, Acorn City, Portion 27 of the Farm Arthursseat 214-KU

Job No
058

Figure No
01



Source: GIS Data provided by Ehlanzeni District Municipality, Google Map Data ©2021 AfriGIS (Pty) Ltd.

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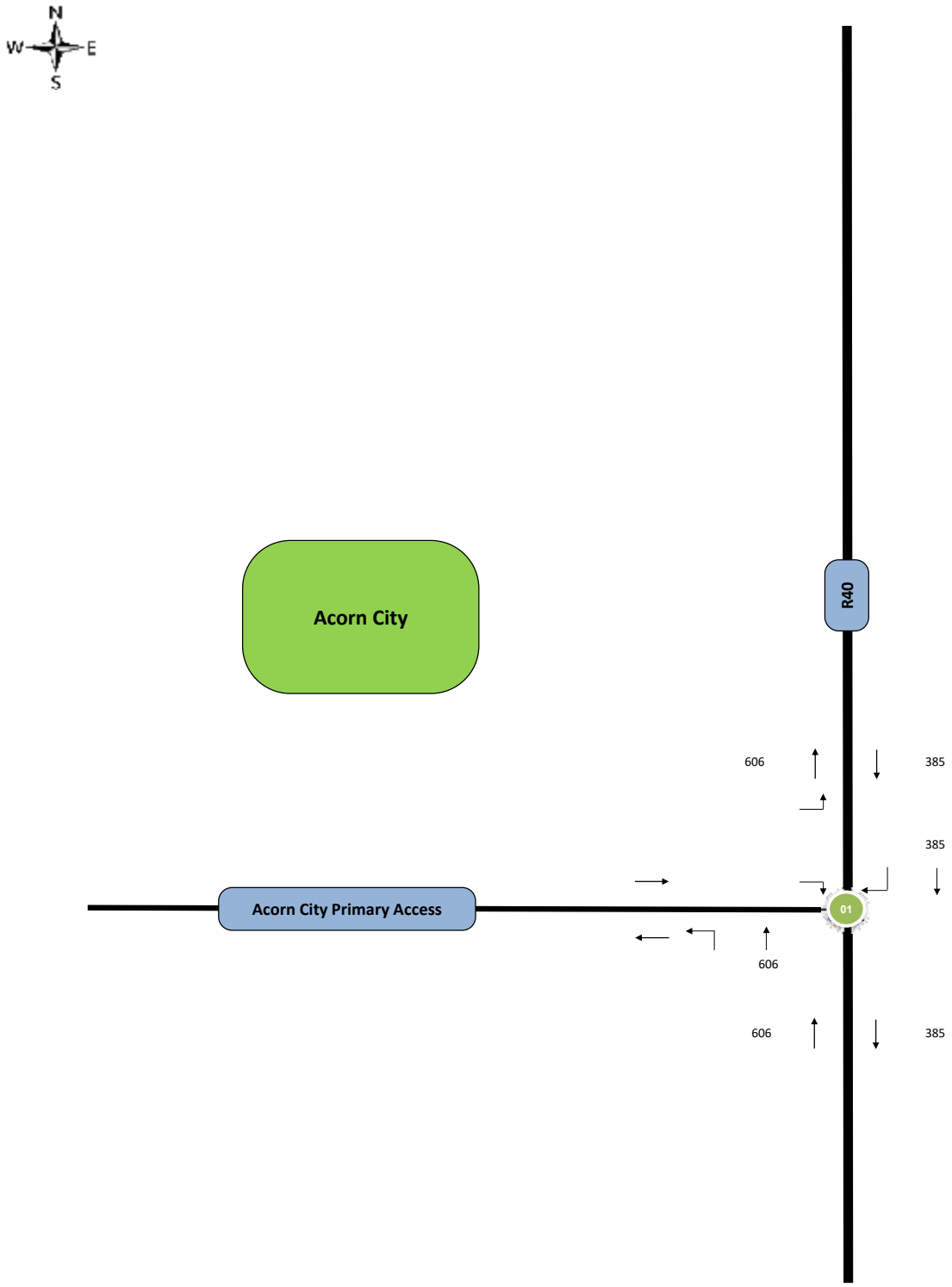
Aerial Map

Proposed Township Establishment, Acorn City,
Portion 27 of the Farm Arthursseat 214-KU

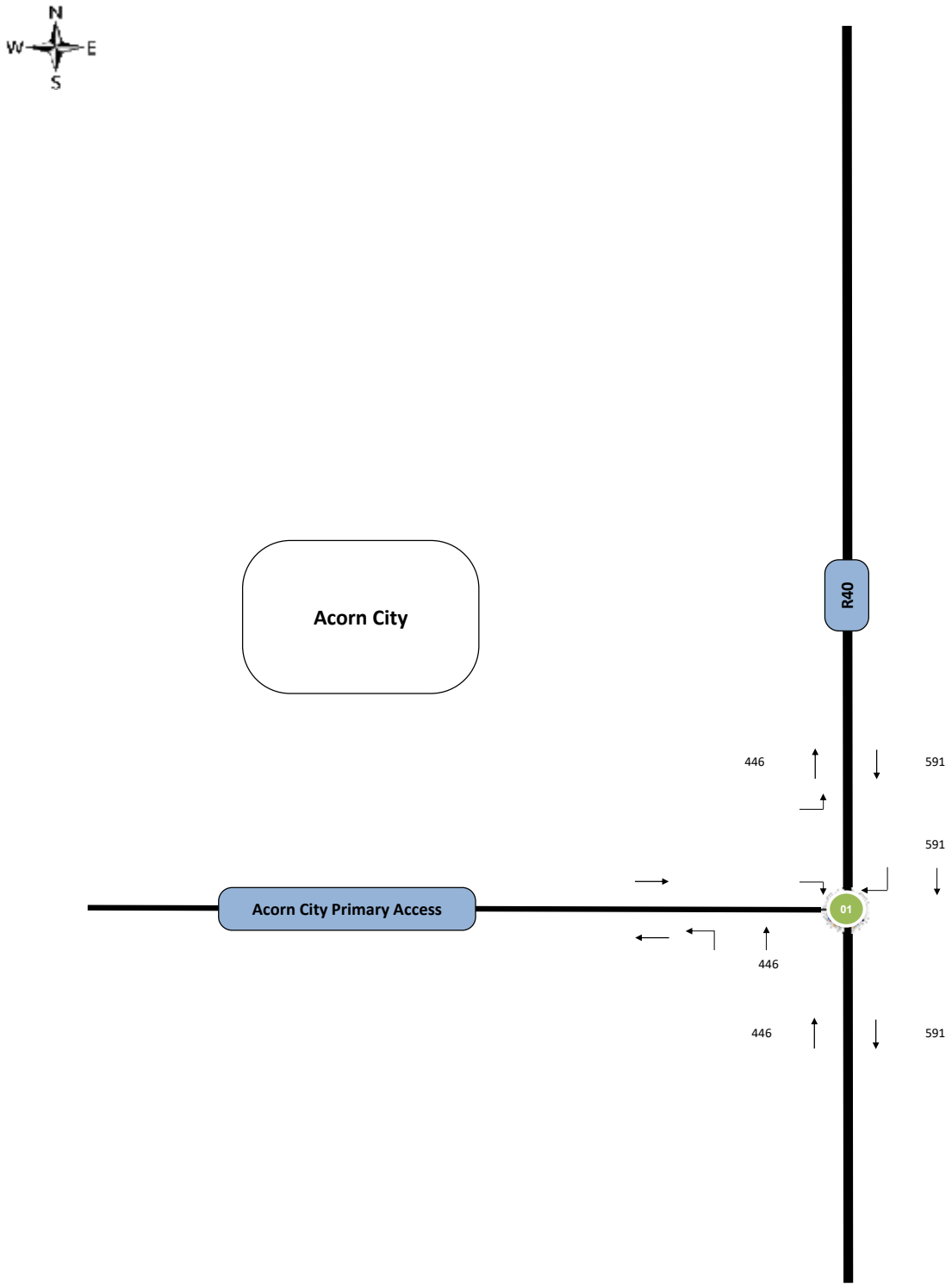
Job No
058

Figure No
02



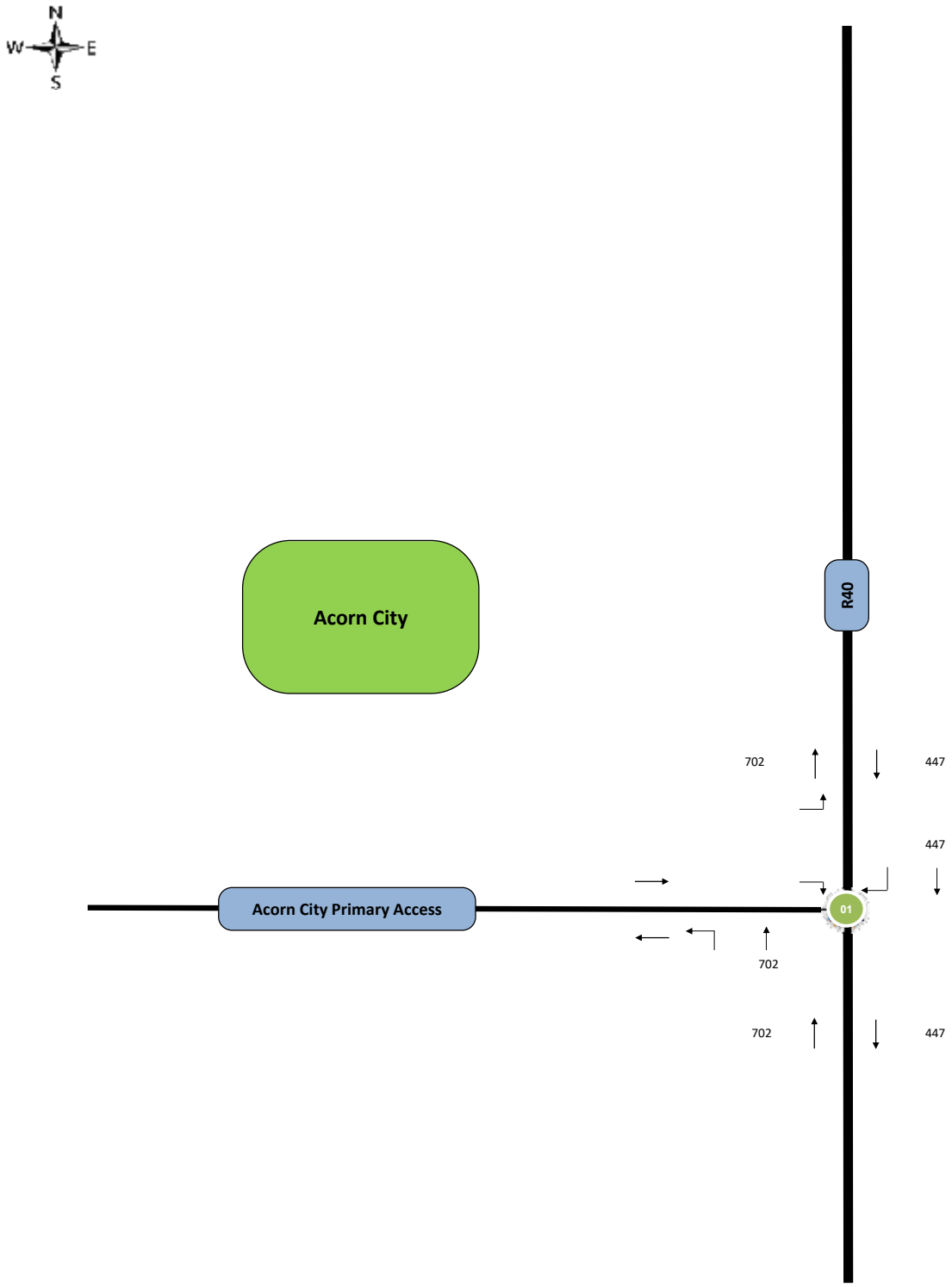
Schematic (NTS)

AIDAN NOBLE CONSULTING	Proposed Township Establishment, Acorn City, Portion 27 of the Farm Arthursseat 214-KU	Project Number 0045
	2021 AM Background traffic	Figure Number 4



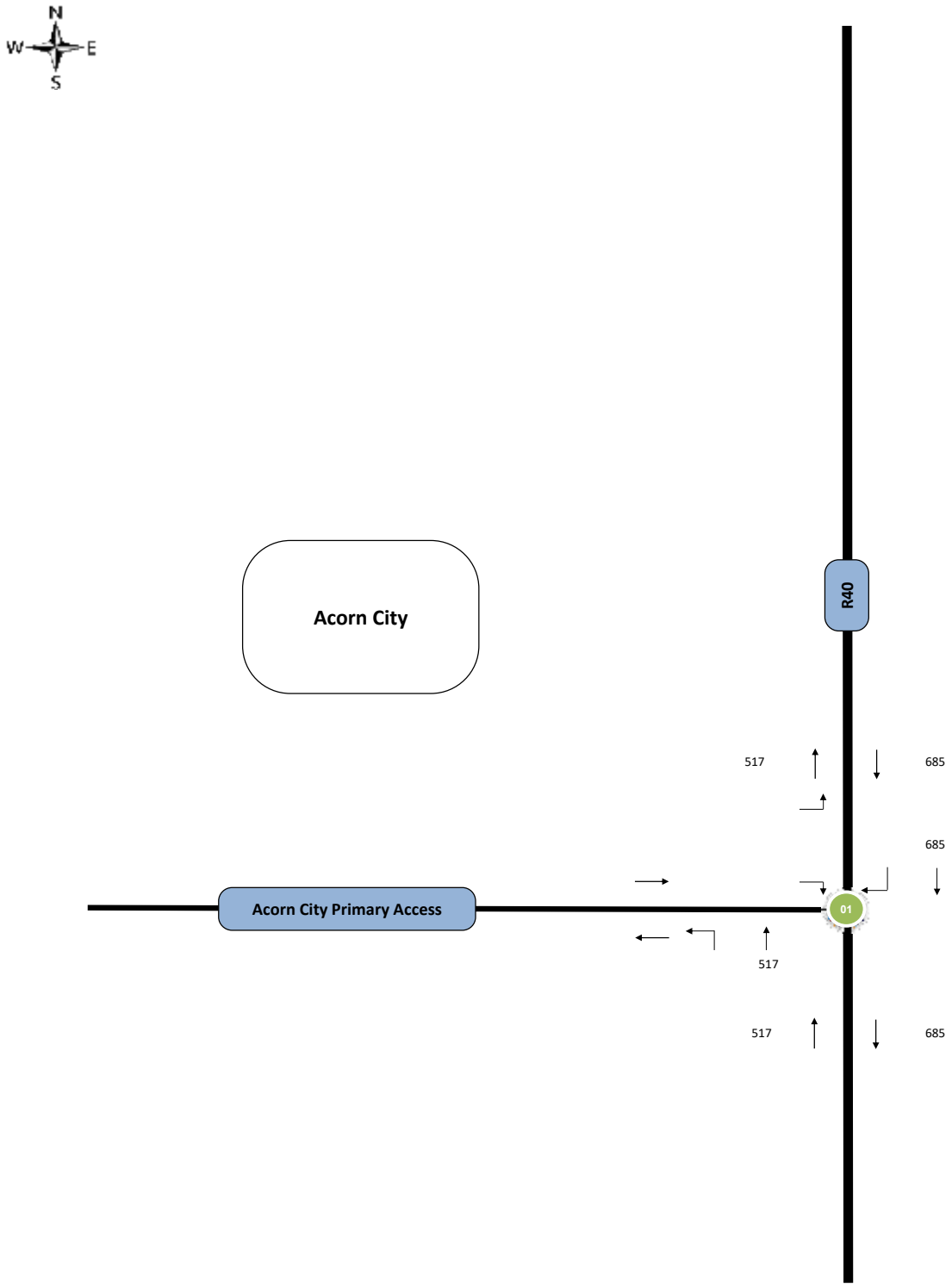
Schematic (NTS)

AIDAN NOBLE CONSULTING	Proposed Township Establishment, Acorn City, Portion 27 of the Farm Arthursseat 214-KU	Project Number 0045
	2021 PM Background traffic	Figure Number 5



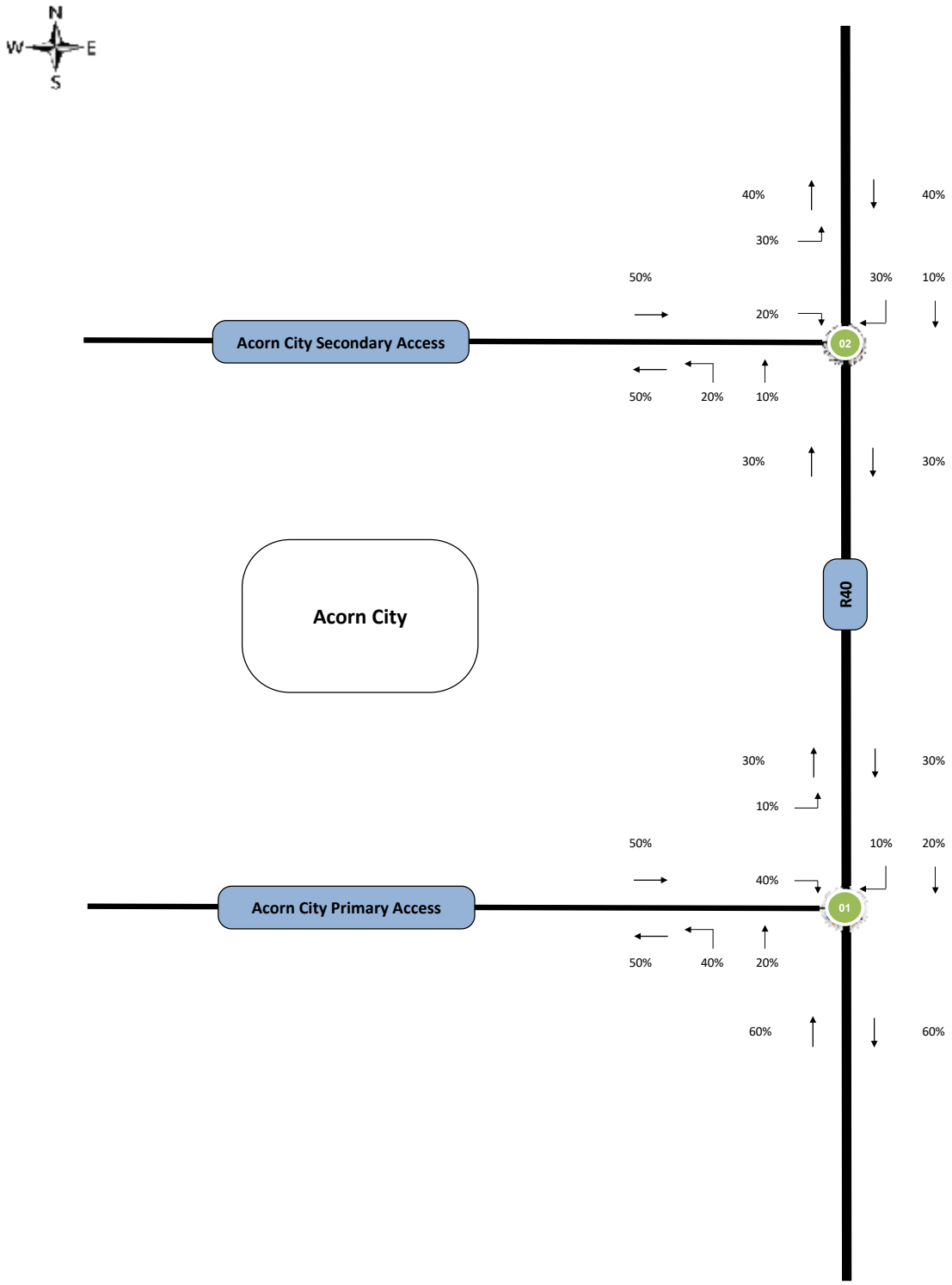
Schematic (NTS)

AIDAN NOBLE CONSULTING	Proposed Township Establishment, Acorn City, Portion 27 of the Farm Arthursseat 214-KU	Project Number 0045
	2026 AM Background traffic	Figure Number 6



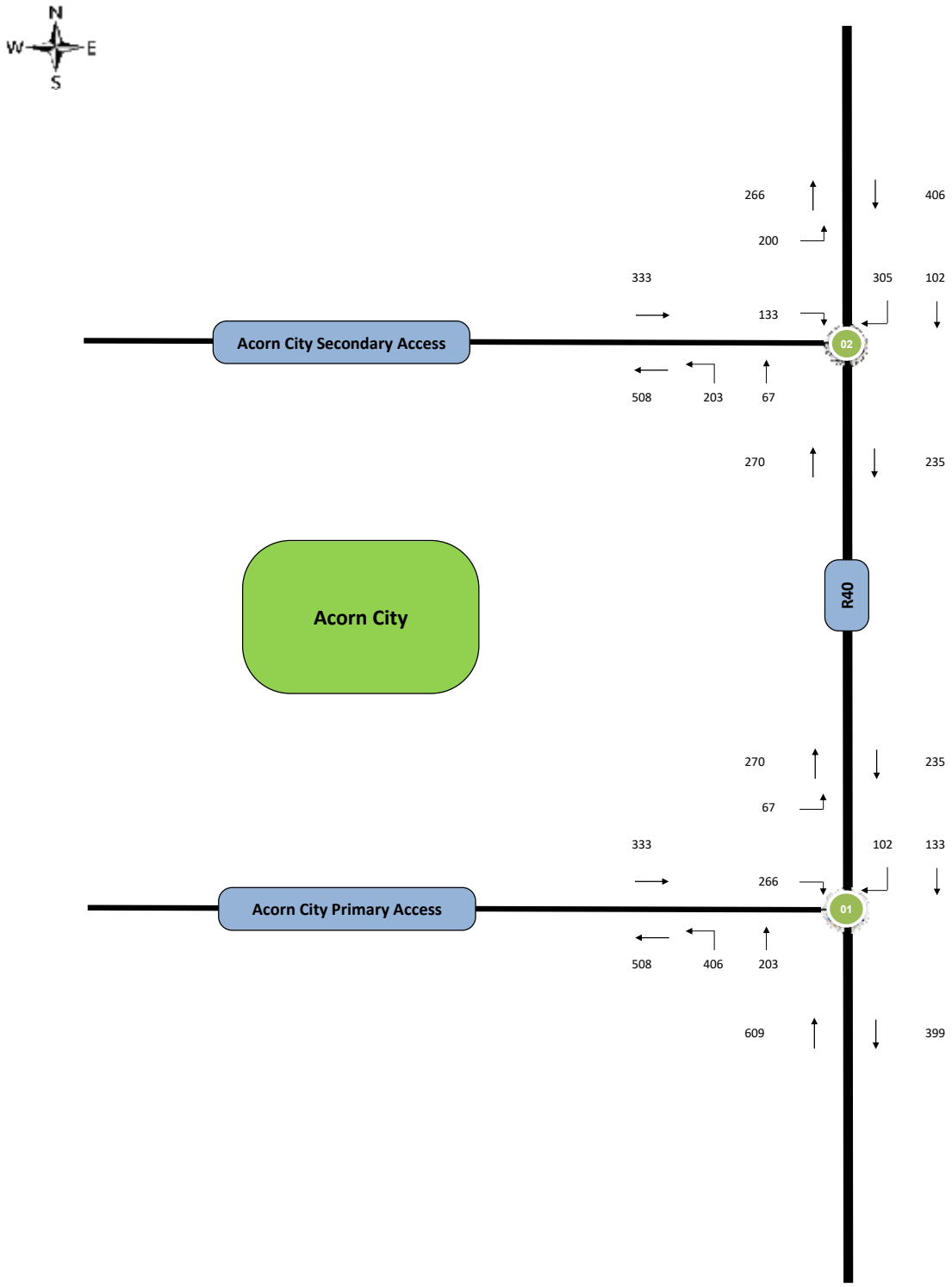
Schematic (NTS)

AIDAN NOBLE CONSULTING	Proposed Township Establishment, Acorn City, Portion 27 of the Farm Arthursseat 214-KU	Project Number 0045
	2026 PM Background traffic	Figure Number 7



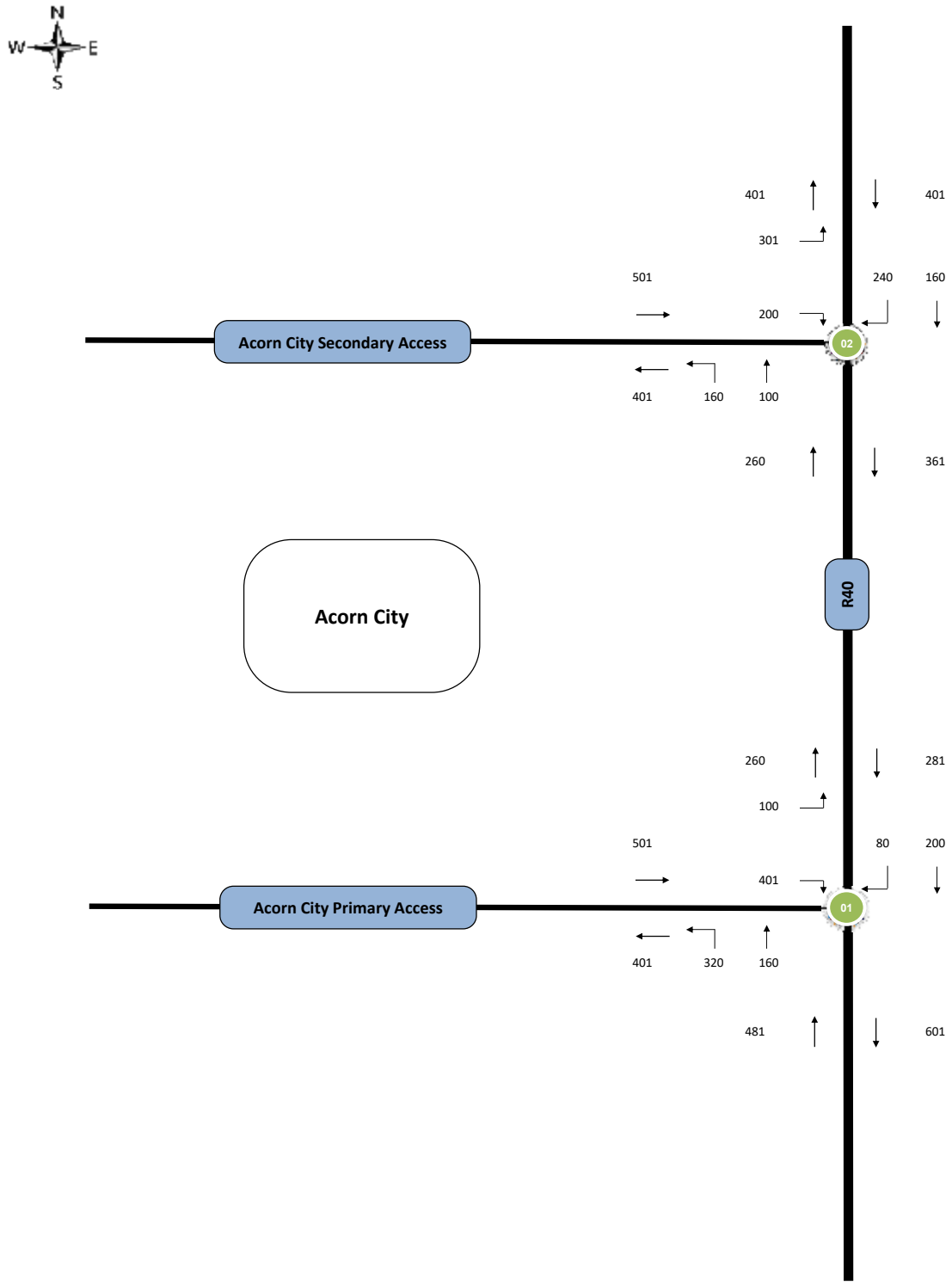
Schematic (NTS)

AIDAN NOBLE CONSULTING	Proposed Township Establishment, Acorn City, Portion 27 of the Farm Arthursseat 214-KU	Project Number 0045
	AM and PM Development Traffic Distribution	Figure Number 14



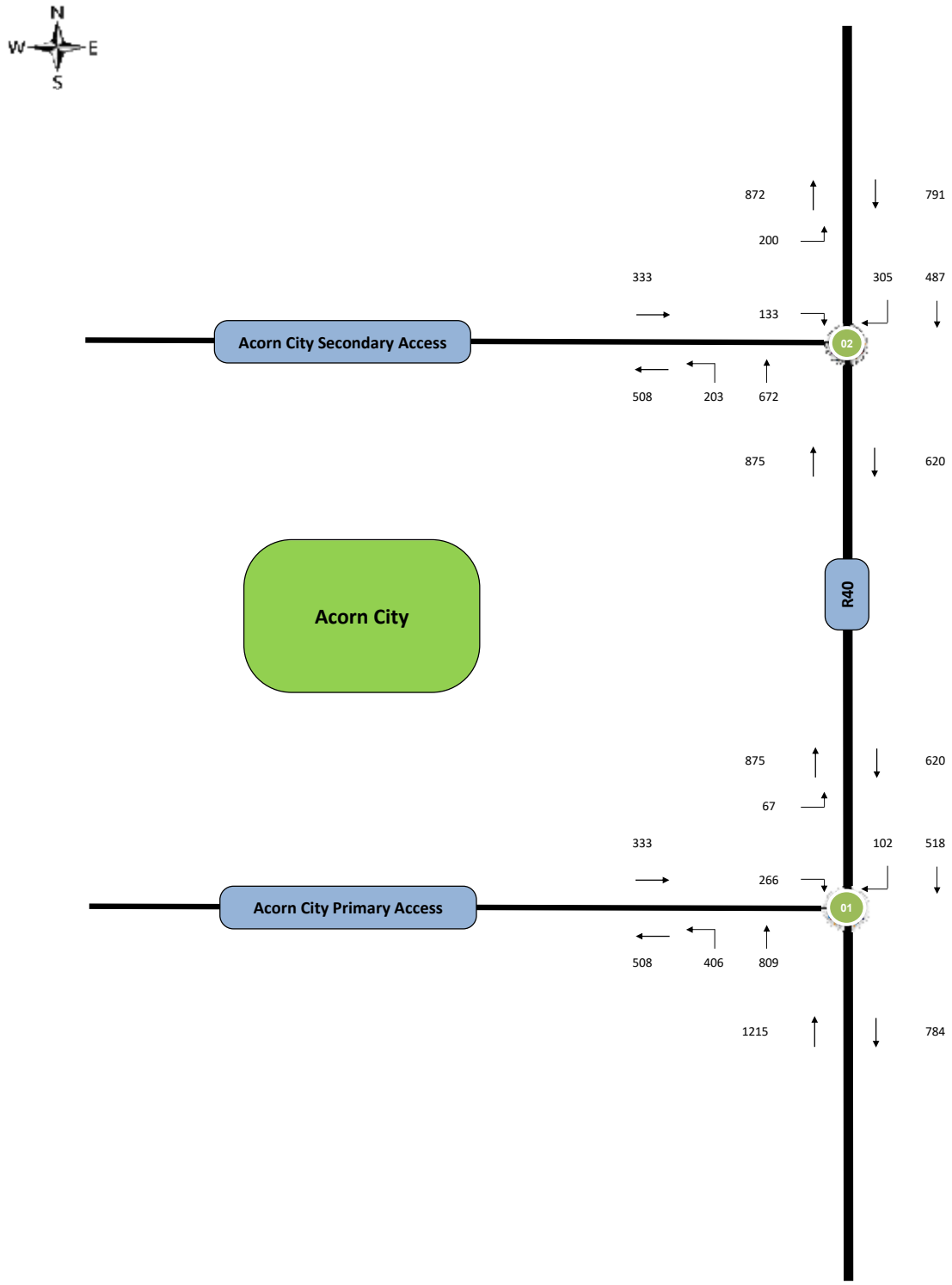
Schematic (NTS)

AIDAN NOBLE CONSULTING	Proposed Township Establishment, Acorn City, Portion 27 of the Farm Arthursseat 214-KU	Project Number 0045
	AM Development Traffic	Figure Number 15



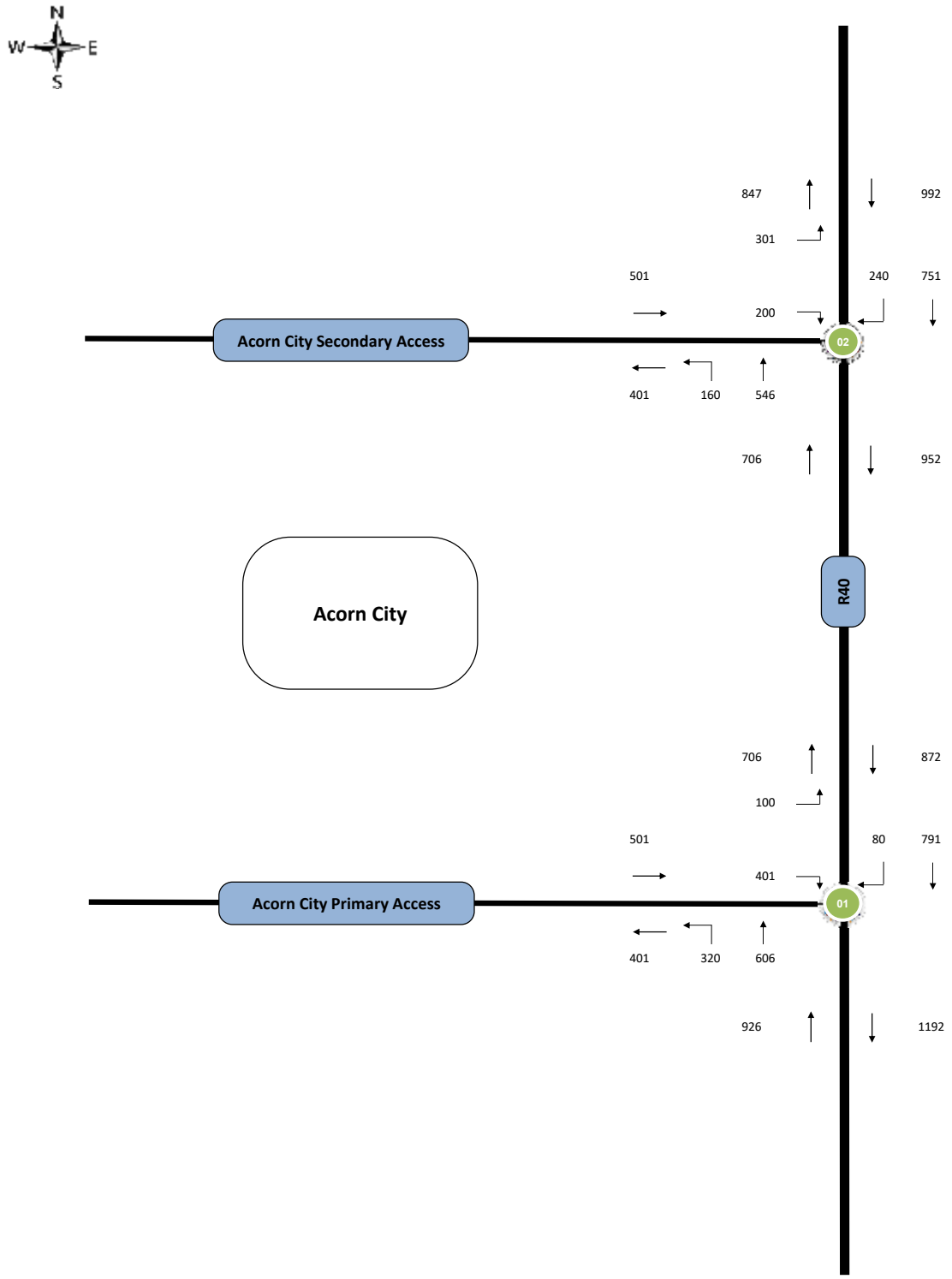
Schematic (NTS)

AIDAN NOBLE CONSULTING	Proposed Township Establishment, Acorn City, Portion 27 of the Farm Arthursseat 214-KU	Project Number 0045
	PM Development Traffic	Figure Number 16



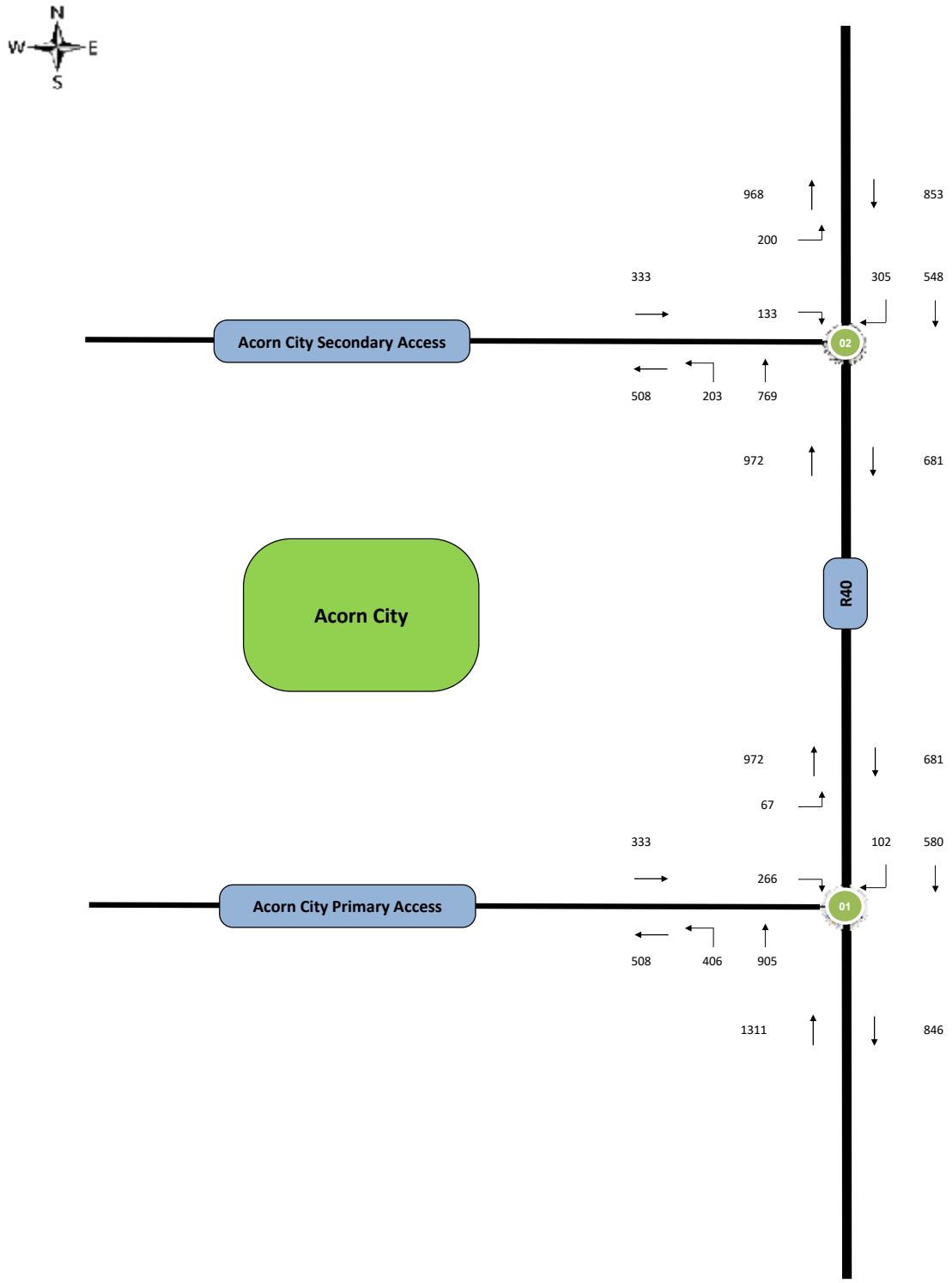
Schematic (NTS)

AIDAN NOBLE CONSULTING	Proposed Township Establishment, Acorn City, Portion 27 of the Farm Arthursseat 214-KU	Project Number 0045
	2021 Background and Development Traffic (AM)	Figure Number 17



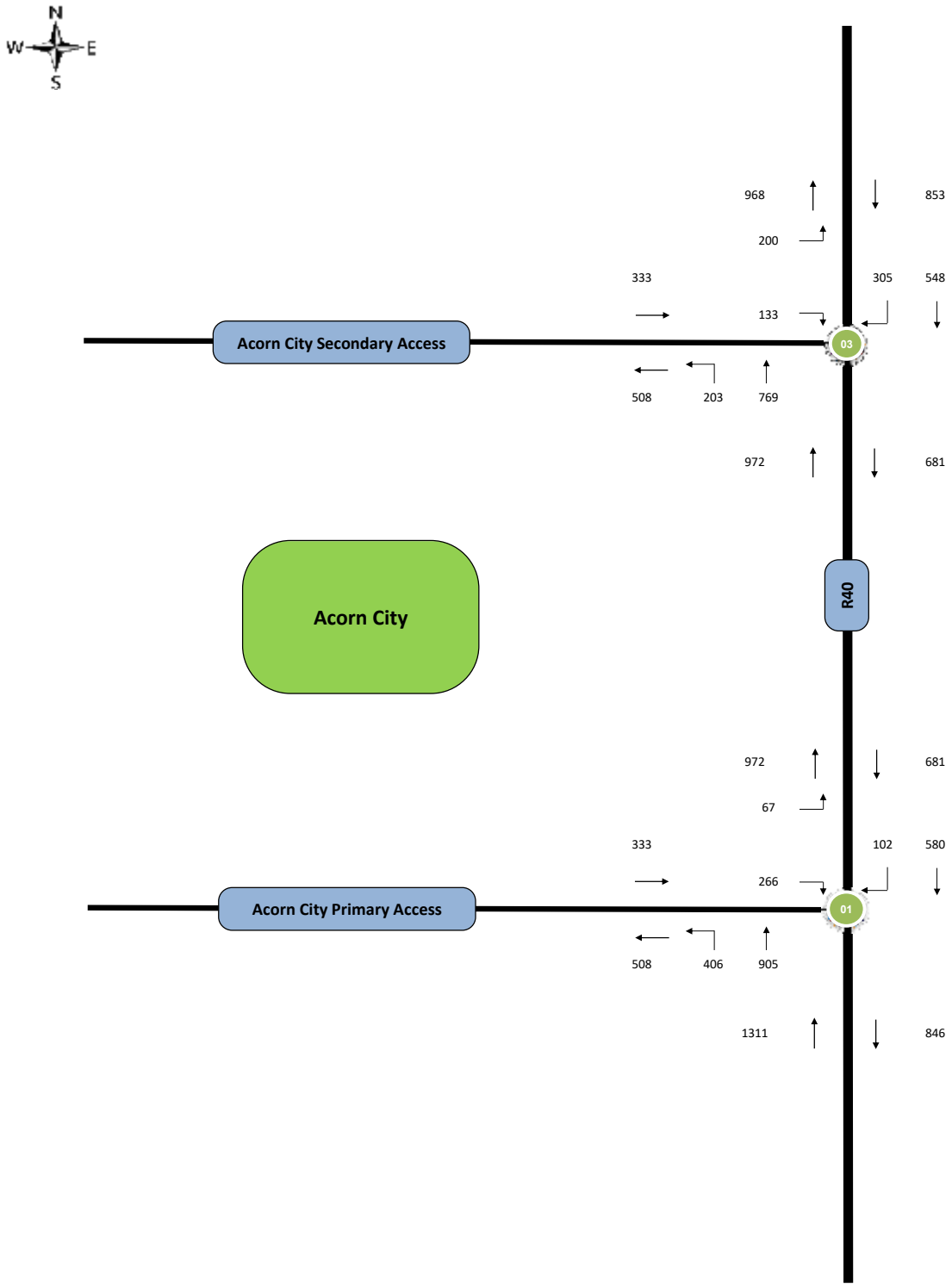
Schematic (NTS)

AIDAN NOBLE CONSULTING	Proposed Township Establishment, Acorn City, Portion 27 of the Farm Arthursseat 214-KU	Project Number 0045
	2021 Background and Development Traffic (PM)	Figure Number 18



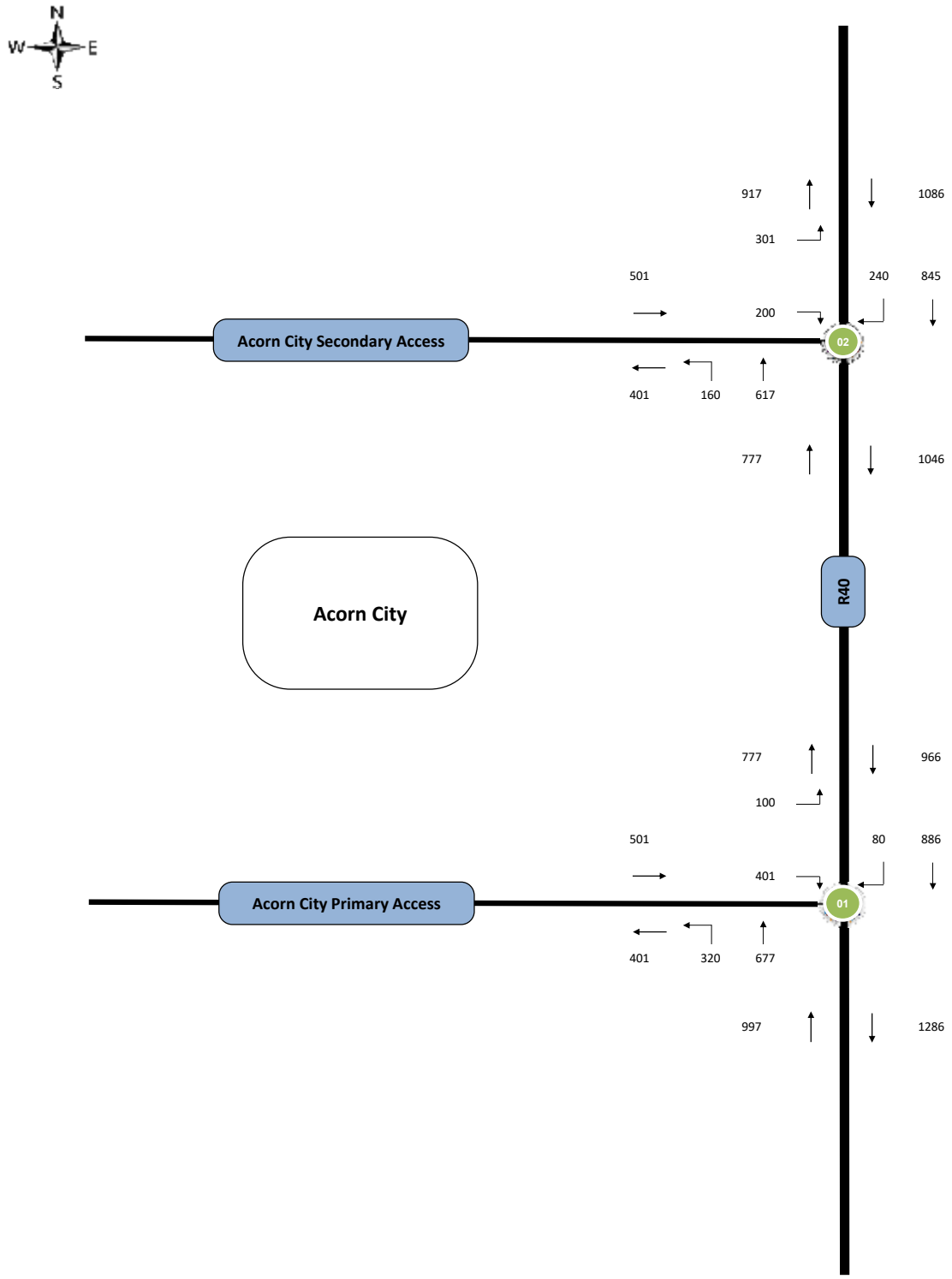
Schematic (NTS)

AIDAN NOBLE CONSULTING	Proposed Township Establishment, Acorn City, Portion 27 of the Farm Arthursseat 214-KU	Project Number 0045
	2026 Background and Development Traffic (AM)	Figure Number 19



Schematic (NTS)

AIDAN NOBLE CONSULTING	Proposed Township Establishment, Acorn City, Portion 27 of the Farm Arthursseat 214-KU	Project Number 0045
	2026 Background and Development Traffic (AM)	Figure Number 19



Schematic (NTS)

AIDAN NOBLE CONSULTING	Proposed Township Establishment, Acorn City, Portion 27 of the Farm Arthursseat 214-KU	Project Number 0045
	2026 Background and Development Traffic (PM)	Figure Number 20

APPENDIX B

Town Planning Memorandum

SCHEDULE 5
APPLICATION FORM FOR TOWNSHIP ESTABLISHMENT IN TERMS OF SECTION 29(1)(D) OF BUSHBUCKRIDGE LAND USE MANAGEMENT BY-LAW, 2014

TO: The Bushbuckridge Local Municipality
Private Bag X9308
BUSHBUCKRIDGE
1280

Reference No. . . . . .

Date : 26 February 2021

1. **DESCRIPTION OF LAND ACCORDING TO TITLE DEED**

Proposed Township	Acron City
Holdings/Portions	Portion 27
Agricultural Holdings/Farm	Arthursseat 214-KU
Number and Name of Street or Road	

2. **PROPOSED USE**

Erf No	Use Zone	Height	Coverage	FAR	Other
1	Zone 8 - "Residential 4"	3 Storeys	50%	0.6	150 rooms
2 to 5	Zone 1 - "Agriculture"	2 Storeys	10%	0.1	
6 to 8	Zone 10 - "Business 1"	3 Storeys	50%	0.35	
9 to 11	Zone 16 - "Educational"	3 Storeys	50%	0.5	
12 & 13	Zone 15 - "Institutional"	3 Storeys	50&	0.5	
14	Zone 24 "Special" for a filling station	2 Storeys	40%	0.3	
15	Zone 18 "Transportation Servicves"	1 Storey	50%	0.1	

General Conditions

1. A 20m building lines shall apply to road R40
2. All development within the township shall be subject to a site development plan in terms of Clause 9 of the Scheme

3. **PROPERTY INFORMATION**

Town Planning Scheme	Bushbuckridge Land Use Scheme 2014	
Current Zoning	"Agriculture"	
Property Size	49,6909ha	
Bond	~~*YES*~~	*N/A*
Bond Holder's Name	Not Applicable	
Special Power of Attorney	*YES*	~~*N/A*~~
Company Resolution	*YES*	~~*N/A*~~

4. **APPLICANT'S DETAILS**

Type of Applicant	~~*INDIVIDUAL*~~	*LEGAL ENTITY/OTHER*
Name of Legal Entity/other	**Raven Town Planners**	
Company/CC Registration No	*2018/421385/07*	
Representative Name	Rick Raven	
Title	Mr	
Initial	R.	
First Name(s)	Rick	
Surname	Raven	
Postal Address	P. O. Box 522359 **SAXONWOLD** 2132	
Physical Address	Third Floor, Bergild House 54 Andries Street **WYNBERG** 2090	
E-mail Address	rick@raventp.co.za	
Cell Phone	083 624 2865	
Telephone	011 882 4035	

5. **OWNER'S DETAILS (if different from applicant)**

Type of Applicant	~~*INDIVIDUAL*~~	*LEGAL ENTITY/OTHER*
Name of Legal Entity/other	The Republic of South Africa c/o Dzana Investments (Pty) Ltd	
Company/CC Registration No	2007/010745	
Representative Name	Nkateko Khoza	

Title	Ms		
Initial	N.		
First Name(s)	Nkateko		
Surname	Khoza		
ID Number			
Postal Address	P. O. Box 786684 **SANDTON** 2146		
Physical Address	104 Wesley Avenue West **FOURWAYS** 2055		
E-mail Address	nkatekok@dzanainvestments.co.za		
Cell Phone	082 890 5140		
Telephone	(011) 465 6666		
Details of Owner's Marital Satus	Not Applicable	~~Married in Cop~~	~~Married out of CoP~~

6. REQUIRED DOCUMENTS TO BE ATTACHED TO APPLICATION FORMS:

Documents Required	Number of Copies	Submitted (X or N/A)
Documents to be attached to the Application Form		
Application Fee		√
Confirmation from Engineering Services Departments in respect of services capacity (pre-consultation)	1	√
Proof of Registration as a Planner	1	√
Bond Holder's Consent (if applicable	2	N/A
Comments from the External Departments	1	√
Company Resolution (if applicable)	2	N/A
Layout Plan	20	N/A
Maps (Locality, Land Use and Zoning Plans)	20	√
Motivating Memorandum	20	√
Special Power of Attorney (if applicable)	2	√
Title Deed	2	√
Environmental Impact Assessment (if applicable)	2	N/A
Flood Line Certificate	2	√
Geotechnical Investigation (if applicable)	2	√

Mineral Rights Holder's Consent (if applicable)	2	N/A
Traffic Impact Study (if applicable)	2	√
Documents to be submitted prior to finalisation		
Affidavit confirming that the site notice was maintained	1	√
Photographic evidence of site notice	1	√
Proof of newspaper advertisements	1	√
Proof of Provincial Gazette Advertisements	1	√
Proof of Notification to Adjoining Property Owners	1	√
Affidavit that the site notice was maintained	1	√

DECLARATION OF COMPLIANCE

I **Hendrik Raven**, being an employee of **Raven Town Planners**

ID Number : **650316 5210 08 6** hereby declare that:

I have provided the correct information to the Municipality to enable it to take an informed decision.

I understand that the Municipality has the authority to ensure orderly built environment through land use management.

I declare that all conditions attached to this application, if approved, will be fully complied with.

I certify that the municipal officials shall be granted access to the property in order to conduct inspections and other related municipal functions

Signed at Sandton on this the 26th day of February 2021

SIGNATURE OF APPLICANT _____

BUSHBUCKRIDGE
Local Municipality

GENERAL INFORMATION AND PROCEDURE FOR TOWNSHIP ESTABLISHMENT IN TERMS OF SECTION 29(1)(d) OF THE BUSHBUCKRIDGE LAND USE MANAGEMENT BY-LAW, 2014

1. APPLICATION

A complete application duly completed and accompanied by prescribed documents, must be submitted to the City Planning office at the applicable Customer Care Centre. Further information can also be obtained from the relevant Customer Care Centre.

2. LODGING OF APPLICATION

THE APPLICANT MUST SUBMIT THE FOLLOWING TO:

The Bushbuckridge Local Municipality
Private Bag X9308
BUSHBUCKRIDGE
1280

2.1 An application form, duly signed by the applicant.

2.2 If the applicant is not the registered owner of the property, the application must be accompanied by a **Power of Attorney from the registered owner**

2.3 Should the owner of the property be a registered company, a resolution taken by the board of directors of the company, authorising the relevant director/employee to apply on behalf of the company is required in addition.

2.4 The memorandum referred to in sub-regulation (a) must contain at least the following information:

2.4.1 The development intentions of the municipality on the application property;
2.4.2 as contained in the spatial development framework and other municipal policies;
2.4.3 Compliance with applicable norms and standards as set out in National and Provincial legislation;
2.4.4 The existing land use rights on the property;
2.4.5 The need and desirability of the proposed land development;
2.4.6 The density of the proposed development;
2.4.7 The area and dimensions of each erf in the proposed township;
2.4.8 The layout of roads having regard to their function and relationship to existing roads;
2.4.9 The provision and location of public open space and other community facilities;
2.4.10 Reasons for providing certain numbers of community facilities;
2.4.11 Any phased developments;

2.5 A layout plan on a scale of 1:500,1:1000,1:1500 or 1:2500, containing, as a minimum, the information prescribed in Schedule 15;

2.6 Township Layout Plan, showing the following in relation to each other and the property:

2.6.1 contour lines, the values of which shall be based on the datum plane of national geodetic bench marks based on sea-level as datum plane;

2.6.2 the accuracy of the contour lines shall be such that when the contour lines are compared with the results of as elective test survey, not more than 5% of the interpolated heights of the testing points shall differ by more than half of the contour line interval, and not more than l % of the testing points shall show a greater difference than the relative contour interval;

2.6.3 the contour intervals shall be determined as follows -

(1) meter intervals where the average gradient is 1 in 20 or less;

(2) meter intervals where the average gradient is greater than 1 in 20 but less than 1 in 5; and

(3) 5 meter intervals where the average gradient is 1 in 5 and greater;

2.6.4 existing buildings in the proposed township;

2.6.5 streets, squares and open spaces in the proposed township;

2.6.6 the widths and proposed names of streets in the proposed township;

2.6.7 all adjoining existing and adjoining proposed streets and roads with their names;

2.6.8 all adjoining erven in existing townships or proposed townships in respect of which applications have been submitted;

2.6.9 all adjoining informal erven;

2.6.10 watercourses, railways, pipelines, powerlines, existing public roads and all servitudes in or abutting the proposed township;

2.6.11 the sites in the proposed township proposed to be reserved for specific purposes;

2.6.12 the boundaries of the proposed township and the name of the municipality within whose area of jurisdiction the land on which the applicant proposes to establish the township is situated;

2.6.13 a land use table indicating the total number of erven in the proposed township, the number of erven for specific purposes and their numbers, the total length of the streets within the township and the area of the erven and streets as a percentage of the total area of the township;

2.6.14 the ruling size of the erven;

2.6.15 the minimum and maximum gradient of the streets;

2.6.16 environmentally sensitive areas;

2.6.17 a locality plan, as an inset on the plan of the township, accurately drawn to a scale of not less than 1:500000 or such other scale which the municipality may approve, indicating –

(1) the situation of the proposed township on the farm or agricultural holding;

(2) the routes giving access to the nearest main road and the road network in the vicinity of the township;

(3) the boundaries of the farm portion or agricultural holding on which the township is to be established;

(4) the situation of existing sewage disposal works and the distance from the proposed township of such works, where such works are situated within 3 km of the boundaries of the township;

(5) the boundaries of a demarcated noise zone, if applicable;
(6) a bar scale, in respect of the locality plan;
(7) the true north;

2.6.18 the erven in the proposed townshipaccurately drawn to a scale of 1 : 1000, 1 : 1250, 1 : 1500, 1:2000, 1:2500 or 1:5 000 and numbered consecutively in each block;
2.6.19 in an enclosure, the names of the persons responsible for the contour surveys, a reference to the datum plane on which the contour values are based and a certification as to the accuracy of the contour lines;
2.6.20 if the township is to be established on two or more farm portions or agricultural holdings, the boundaries and description of such farm portions or holdings;
2.6.21 each registered servitude over the land in the proposed township with a reference to the notarial deed or approved diagram relati ng to s uch servitude and, where an alteration in the route of such servitude is contemplated, the proposed route;
2.6.22 grid co-ordinates and a reference to the geodetic system used;
2.6.23 if the land in the proposed township is subject to flooding ,the 1 :: 100 year flood line;
2.6.24 the results of the engineering geological investigation, indicated as zones;
2.6.25 a bar scale;
2.6.26 the true north;
2.6.27 in an enclosure, the name of the person responsible for the design of the layout plan;
2.6.28 in an enclosure the name of the person responsible for the flood line determination and the flood line appearing on the layout plan certified as correct by such person; and
2.6.29 in an enclosure, the name of the person responsible for the engineering geological investigation and the geological zones appearing on the layout plan certified as correct by such person.

2.7 Bond holder's consent (if applicable)

2.8 Any environmental implications of the proposed land development;

2.9 An indication whether an application must be made for an environmental authorization in terms of the National Environmental Management Act (Act 107 of 1998);

2.10 A certified copy of the title deed or any proof of ownership of every application property;

2.11 A copy of the diagram of every application property or, where such diagram is not available, a plot diagram to every piece of land being the subject of the application;

2.12 A locality plan on an appropriate scale;

2.13 A layout plan on a scale of 1:500,1:1000,1:1500 or 1:2500, containing, as a minimum, the information prescribed in Schedule 15;

2.14 Draft conditions of establishment for the proposed township;

2.15 A zoning or land use rights certificate to every application property;

2.16 A Land Use Rights Schedule;

2.17 An engineering geological investigation and report compiled by a suitably qualified professional;

2.18 An undermining stability report, where applicable, compiled by a suitably qualified professional;

2.19 Confirmation whether or not a mining or prospecting right or permit over the land is held or is being applied for in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002);

2.20 Other limited real rights on the property;

2.21 Confirmation and details of any land claims on the property;

2.22 A conveyancer's certificate;

2.23 A Land Surveyor Report;

2.24 In the case of the extension of the boundaries of a township, the consent from the Surveyor-General to the proposed extension of boundaries.

2.25 An application fee as per the Council Tariffs payable to the Municipality.

3. PUBLIC NOTICE AND PARTICIPATION

3.1 After a land development application has been registered in terms of section32(1)(b)the municipality, or applicant with consent from the municipality, must give notice of the application within 14 days, subject to the requirements in Schedule 7, in the following manner:

3.1.1 Publication of notice, in the format as set out in Schedule 8, in two local newspapers and the *Provincial Gazette* once a week for two consecutive weeks;

3.1.2 By posting a copy of the notice, in the format as set out in Schedule 8, the size of which must be at least 60cm by 42cm, on every street boundary of the land which is the subject of the application, in a conspicuous and easily accessible place, no later than the date of first publication of the notice in the *Provincial Gazette,* which notice must remain visible and be maintained on the property for a period of 14 days;

3.1.3 By written notice, in the format as set out in Schedule 8, to all adjoining owners and interested and affected parties;

3.1.4 By circulatinga copy of the application to all persons, bodies and State departments as referred to in section 32(1)(e).

3.1.5 By circulating a copy of the application to every municipality whose area of jurisdiction is situated within a distance of 10km from the land in respect of which application has been made; and

3.1.6 The municipality may, in its discretion, prescribe any other reasonable means of notification that is appropriate for the local context and which is necessary to ensure that all persons whose rights may be affected by the application are adequately informed of it.

3.2 The applicant must submit the following evidence of compliance with the requirements for public notification, only if the applicant placed the notices as contemplated in section 33 (1), by providing the municipality with the following documentation within 21 days from the date on which the notice was first published:

3.2.1 a copy of the record of the registered post or delivery of the notice to all persons and bodies as set out in subsections l(c) and (d);

3.2.2 copies of the newspaper advertisements and *Provincial Gazette* notice as set out in subsection 1 (a);

3.2.3 photographs of the notice on site as set out in subsection l(b); and

3.2.4 an affidavit that the notice, as set out in subsection l(b)was posted on site and maintained for 14 days after such posting.

4. RAISING OF OBJECTIONS

4.1 Any person who intends to object to any land development application or to make representations thereon must do so in writing by delivering three signed copies of the objection or representation, as set out in Schedule 9,within a period of 28 days from the first date of the publication of the notice, to the municipality and to the applicant, at the address provided for that purpose in the public notice.

4.2 The objection or representation must, in addition to any other information referred to in Schedule 9 include the following information:

4.2.1 The full names, identity or registration numbers, postal and physical address of the person so objecting or making representations as the case may be; and

4.2.2 A written statement of the grounds of their objection or of the representations which they wish to make with sufficient detail to enable the municipal manager, the applicant and other interested and affected parties to understand the nature thereof.

4.3 The municipal manager may require such objector or person who has made representatio nto deliver copies of the objection or representation, on other persons or bodies that have lodged objections or made representations.

4.4 Where several objectors or persons who have made representations have lodged similar objections or made similar representations they may agree to combine their objections or representations and if so they may give the applicant, the municipal manager and any other interested and affected parties written notice of that fact and in such event all future documents to be provided to them may be served at the place designated by them in such notice.

4.5 The municipal manager must forward any comments, objections or representations submitted to the municipality, to the applicant within 14 days after receipt thereof.

4.6 The applicant and the municipal manager may, on receipt of an objection or representations, in writing delivered to the objector or person who has made representation request further elaboration in respect thereof, and such request must be responded to within not more than 14 days of the delivery of such request.

4.7 If no response is received by the municipality to a request made in terms of subsection(6) the Municipal Planning Tribunalmay proceed with a consideration only of the original documents delivered to it.

4.8 The applicant may, within 28 days of the expiry of the period during which objections or representations may be lodged submit a written response thereto, to both the objector concerned and the municipality and on expiry of such period of 28 days the exchange of documents shall be deemed to be complete and the application must be considered.

NB. THIS APPLICATION DOES NOT EXEMPT APPLICANTS FROM COMPLIANCE WITH ANY OTHER PROCEDURE AND/OR REQUIREMENTS PRESCRIBED BY ANY OTHER APPLICABLE LEGISLATION.

5. **PLEASE NOTE:**

MERELY SUBMITTING AN APPLICATION, MUST NOT BE CONSIDERED AS APPROVAL BEING GRANTED. A SUBMITTED APPLICATION IS MERELY FOR CONSIDERATION AND THE FINAL DECISION MUST STILL BE MADE BY THE MUNICIPALITY.

26 February 2021

the **Director Economic Development, Planning & Environment**
of the Bushbuckridge Local Municipality

in the application by
THE REPUBLIC OF SOUTH AFRICA **Applicant**

in respect of land known as
PORTION 27 OF THE FARM ARTHURSSEAT 214-KU

for the establishment of
PROPOSED ACORN CITY

MOTIVATING MEMORANDUM

Section 2.4 of Schedule 5

1. BACKGROUND INFORMATION

1.1 Application

1.1.1 Application is submitted in terms of Section 29(1) of the of the Bushbuckridge Land Use Management By-law, 2014 ("the By-Law") in respect of Portion 27 of the Farm Arthursseat for the establishment of a mixed use township, comprising roads and erven, being proposed Acorn City.

1.2 Locality

1.2.1 The property is situated within Arthursseat,a rural farm land within the Bushbuckridge Municipal Area, west of the R40 Provincial Road, opposite Sefoma Township.

1.2.2 The property is situated 4.3km South of the Acornhoek Mall in Green Valley, also situated along the R40.

1.2.3 The R40 is a major provincial road connecting Nelspruit to Palaborwa and also provides connectivity to the N4 Highway in Nelspruit

1.2.4 Nelspruit is situated approximately 125km south of the site.

1.2.5 The subject site is surrounded by large tracts of land Used for Rural Settlements.

1.3 Ownership

1.3.1 The site is registered in the name(s) of **Republic of South Africa** and is held by virtue of Deed of transfer **T8670/1948**

1.3.2 The land has been made available for development to the Dzana Investment Group by means of a 30 year agreement of lease between the parties.

1.3.3 The development proposed on the site will be constructed by and to the benefit of the Dazana Investment Group.

1.3.4 The Republic of South Africa is therefore the *de jure* applicant in this matter and the Dzana Investment Group is the *de facto* applicant in this matter.

1.4 Size

1.4.1 The farm measures **49.6930ha** in extent.

1.4.2 A copy of Diagram **SG No. 171/2013** is attached hereto.

1.5 Existing and Surrounding Zoning and Land Use

1.5.1 The property is zoned **"Agriculture"** in terms of the Bushbuckridge Local Municipality - Land Use Scheme, 2014 ("the Scheme").

1.5.2 The land is presently vacant.

1.5.3 Directly east of the site is the township of Sefoma, a formally laid out and proclaimed residential township comprising erven measuring an average of 600m^2 in extent.

1.5.4 The area in question is a typical rural residential area comprising low density rural residential settlements scattered throughout the landscape.

1.5.5 The area lacks cohesion and formal nodal points where the provision of goods and services are concentrated. This is also identified in the Spatial Development Framework as the main challenge in creating a sustainable environment in the area.

1.5.6 The nearest nodal point is approximately 4.2km to the north of the site, where the Acorn Mall is situated.

1.5.7 A detailed study was prepared by Demcon looking at the number of residents in the area, as well as a needs analysis, in terms of which it was found that a proposed mixed use development can be supported in the area.

1.6 Legal Aspects

1.6.1 There are no restrictive conditions of title which prohibit the development as proposed.

1.6.2 The property is not bonded.

2. DESIGN AND USE OF ERVEN

2.1 Nature of the Application

2.1.1 Application is submitted in terms of Section 29(1) of the of the Bushbuckridge Land Use Management By-law, 2014 ("the By-Law") in respect of Portion 27 of the Farm Arthursseat for the establishment of a mixed use township, comprising roads and erven, being proposed Acorn City, as follows:

(1) Proposed Erf 1 - this is an Erf measuring 4,0639ha in extent , which is to be zoned "Residential 4" in order to accommodate a new hotel facility.

(2) Proposed Erven 2 to 5 - these erven are to be zoned "Agriculture" and will not be subject to any development at this moment in time. These erven are reserved for the future extension of the development as the need arises.

(3) Proposed Erven 6 to 8 - these erven are to be zoned "Business 1", with Erf 6 to be developed as a shopping centre on a site measuring 7,8852ha in extent. Erven 7 and 8 are located along the R40 and are ideally suited for uses such as a Tile Africa shop or warehouse.

(4) Proposed Erven 9 to 11 - these erven are to be zoned "Educational", with the aim to establish the following:

(a) a primary and high school on proposed Erf 10, measuring 5,6573ha in extent;

(b) an educational centre on proposed Erf 9, measuring 5,523m^2 in extent; and

(c) a digital learning centre on proposed Erf 11, measuring 9,538m^2 in extent.

(5) Proposed Erven 12 and 13 are to be zoned "Institutional" and it is proposed that proposed Erf 12 is developed as the new offices for the Bushbuckridge Municipality, whilst proposed Erf 13 is to be developed as a medical facility.

(6) Proposed Erf 14 is to be zoned "Special" for a Filling/Fuel Station and related uses..

(7) Proposed Erf 15 is to be zoned "Transportation Services" and used as a bus and taxi stop, serving both commuters and the tourist industry.

2.1.2 The entire proposal is to create a central focal point where local residents have access to a wide range of services, including educational, medical, municipal, retail and entertainment facilities.

2.1.3 The application aims to create a nodal focal point as proposed in the Spatial Development Framework where services and facilities are focused in a single area.

2.1.4 This will be contrary to the status quo, where services and the rural settlements are scattered throughout the municipal district.

2.2 Proposed Controls

2.2.1 Proposed Erf 1 Acorn City

(1)	Zoning :	“Residential 4"
(2)	Primary Rights :	As per Scheme, including an hotel, conference facilities and ancillary uses
(3)	Consent rights :	As per Scheme
(4)	No Rights :	Uses not under primary and consent use rights
(5)	Height :	As per Scheme, 3 Storeys
(6)	Density:	Unrestricted
(7)	Coverage:	50%
(8)	FAR :	As per Scheme, 0.5
(9)	Building Lines	16m from Route R40 and 3m from any other boundaries

(10) General Conditions

(a) Access to and egress from the site shall be to the satisfaction of the Municipality

2.2.2 Proposed Erven 2 to 5 Acorn City

(1)	Zoning :	“Agriculture”

(2) All conditions as per the Land Use Scheme, except building lines, which will be 16m from Route R40 and 3m from all other boundaries.

2.2.3 Proposed Erven 6 to 8 Acorn City

(1)	Zoning :	“Business 1"
(2)	Primary Rights :	As per Scheme
(3)	Consent rights :	As per Scheme
(4)	No Rights :	Uses not under primary and consent use rights
(5)	Height :	As per Scheme, 3 Storeys
(6)	Density:	Not applicable
(7)	Coverage:	50%
(8)	FAR :	As per Scheme, 0.5
(9)	Building Lines	16m from Route R40 and 3m from any other boundaries

(10) General Conditions

(a) Access to and egress from the site shall be to the satisfaction of the Municipality

2.2.4 Proposed Erven 9 to 11 Acorn City

(1)	Zoning :	“Educational”
(2)	Primary Rights :	As per Scheme
(3)	Consent rights :	As per Scheme

(4)	No Rights :	Uses not under primary and consent use rights
(5)	Height :	As per Scheme, 3 Storeys
(6)	Density:	Not applicable
(7)	Coverage:	50%
(8)	FAR :	As per Scheme, 0.5
(9)	Building Lines	16m from Route R40 and 3m from any other boundaries

(10) General Conditions

(a) Access to and egress from the site shall be to the satisfaction of the Municipality

2.2.5 Proposed Erven 12 and 13 Acorn City

(1)	Zoning :	"Institutional"
(2)	Primary Rights :	As per Scheme, including municipal offices
(3)	Consent rights :	As per Scheme
(4)	No Rights :	Uses not under primary and consent use rights
(5)	Height :	As per Scheme, 3 Storeys
(6)	Density:	Not applicable
(7)	Coverage:	50%
(8)	FAR :	As per Scheme, 0.35
(9)	Building Lines	16m from Route R40 and 3m from any other boundaries

(10) General Conditions

(i) Access to and egress from the site shall be to the satisfaction of the Municipality

2.2.6 Proposed Erf 14 Acorn City

(1)	Zoning :	"Special"
(2)	Primary Rights :	Filling Station, Convenience Store, ATM and Car Wash
(3)	Consent rights :	As per Scheme
(4)	No Rights :	Uses not under primary and consent use rights
(5)	Height :	As per Scheme, 3 Storeys
(6)	Density:	Not applicable
(7)	Coverage:	50%
(8)	FAR :	As per Scheme, 0.5
(9)	Building Lines	16m from Route R40 and 3m from any other boundaries

(10) General Conditions

(a) Access to and egress from the site shall be to the satisfaction of the Municipality

2.2.7 Proposed Erf 15 Acorn City

(1)	Zoning :	"Transportation Service"
(2)	Primary Rights :	As per Scheme, Bus Terminal & Taxi Rank

(3) Consent rights : As per Scheme

(4) All other conditions as per the Land Use Scheme, except building lines, which will be 16m from Route R40 and 3m from all other boundaries.

2.3 Applicant's intention

2.3.1 As detailed before, the applicant intends to develop the site as a nodal point concentrating a range of services for the community at large.

2.3.2 Services provided will include proposed municipal offices, educational facilities, learning and training centres, an hotel aiming at the tourist industry as well as retail and business uses.

2.3.3 The SDF points out that the area in question has been developed with numerous low density villages scattered throughout the municipal area with no specific focal where a range of goods and services can be provided.

2.3.4 Although the area in question is likely to require a number of focal points, simply because the area is too large to develop one central area, as this would affect the accessibility to such services for many residents in the area.

2.3.5 The area in question is eminently suitable to establish the first such focal point, for the following reasons:

(1) the formal township of Sefoma is located directly east of the site and it is hoped that other formal townships could also be established around this nodal area;

(2) the applicant has designed the township in such a manner so as to provide connectivity through the township, thereby connecting the eastern and western areas, which is presently lacking; and

(3) once the township is developed, further formal townships can be established to the west, north and south of this nodal point, providing easy access to Road R40 as well as the services within the proposed township.

2.3.6 The intention is therefore to create a focal point providing a range of services and also improve connectivity to the surrounding area, so as to allow for a more compact settlement pattern as encouraged in the SDF.

3. MOTIVATION IN SUPPORT OF THE APPLICATION

3.1 Nature of the Area and Its Surrounding Environment

3.1.1 The proposed site is located along the **R40**. The **R40** route connects Phalaborwa in the Limpopo Province, to Nelspruit, the capital of the Mpumalanga Province.

3.1.2 Phalaborwa has been identified as a Spatial Development Initiative (SDI) that serves as a pilot project for South Africa's largely unregulated and untapped small-scale mining sector.

3.1.3 This corridor connection to Nelspruit which is a Strategic Infrastructure Project area (SIP 14: Higher Education Infrastructure), has an economic significance to the region, of which the R40 is a key role player.

3.1.4 The **R40** passes through **Acornhoek**, as a **high activity spine** that connects to the wider region through a connection of key national routes (i.e. N4), which serves as a developmental corridor (i.e. Maputo Corridor).

3.1.5 It is important to note that the **R40** creates a strong linkage between Phalaborwa , Nelspruit and the Coastal economic region through the N2 Corridor.

3.2 Proposed Zoning for the Erven

3.2.1 The erven will have a mix of zoning rights, providing for a range of services as detailed under paragraph 2.1 of this memorandum.

3.2.2 Essentially, the applicant aims to capitalise on the accessibility provided in the area by Road R40, while at the same time looking at the future development of the area.

3.2.3 Two main east-west roads are proposed through the township as follows:

(1) directly south of Erf 1; and

(2) between Erven 3, 4, 6, 12, 14 and 15.

3.2.4 The entire proposal is to, on the one hand create this focal point serving the community, while at the other hand allow greater accessibility, especially for existing and proposed settlements west of the townships, providing direct access to Road R40.

3.2.5 A significant portion of the land will remain “Agriculture”, as the feasibility study, as prepared by Demacon, only shows limited demand for the uses as proposed.

3.2.6 The applicant hopes to encourage further settlements around the node, such as Sefoma and create employment opportunities on the land in the form of small workshops, retail space and access to public markets. Allowing both the formal and informal sector to thrive within the township.

3.2.7 It is respectfully submitted that the abovementioned zoning proposals are not only in line with the current policy environment, they represent a reasoned assessment from a town-planning point of view for the most appropriate land use for the erven, given the circumstances that affect each property.

3.3 Provision of Engineering Services

3.3.1 Roads

(1) The site is situated along Road R40, a major provincial road and central point of access to the entire municipal district of Bushbuckridge.

(2) Road R40 provides linkages between Nelspruit and Phalaborwa and all business centres, no matter how small or large have been established along this road.

(3) The applicant proposes two points of access to the townships, as indicated on the layout plan.

(4) A traffic impact assessment will be prepared by a suitably qualified traffic engineer to obtain the approval for the township from both the provincial and municipal authorities.

(5) Any amendments to the access will be accommodated by the applicant.

(6) A line of no access is proposed along the entire eastern boundary, other than the proposed two access points.

(7) Building lines along Road R40 are proposed at 16m in line with provincial standards.

3.3.2 Stormwater

(1) The township is not affected by any 1 in 100 year flood line

(2) A stormwater management report will eventually have to be prepared for each of the individual erven in order to ensure that stormwater is managed in a responsible manner.

(3) It is not necessary to register any servitudes for stormwater purposes.

3.3.3 Water

(1) The applicant will appoint a civil engineer to discuss the water supply to the township with the municipality.

(2) A detailed report will be submitted for approval by the municipality in this regard.

3.3.4 Sewer

(1) The applicant will appointed a civil engineer to discuss the disposal of sewerage within the township.

(2) A detailed report will be submitted for approval by the municipality in this regard.

3.3.5 Electricity

(1) Eskom is the supplier of electricity to the area and no difficulty is foreseen in providing electricity to the site for the proposed development.

(2) This application and the proposed Development will definitely be discussed and circulated with Eskom and/or the responsible.

3.3.6 Topography

(1) The application site is fairly flat, right from the Northern tip to the southern tip of the application site where the proposed Township is to be established.

(2) There is a downward slope from proposed Erf 12, towards proposed Erf 10, in the southerly direction.

(3) The site is not affected by any Flood Lines, and we have obtained endorsement on the Township Lay-out Plan by a Qualified Civil Engineer.

3.4 Geo-Technical Conditions

3.4.1 A Geo-technical engineering report has been commissioned, and should be filed with the Municipality ass soon as it is completed.

3.5 Impact of the Township Application

3.5.1 The proposed use or development of the subject site poses no threat to the nature and character of the immediate surrounding environment or otherwise.

3.5.2 The proposed Township brings with it much needed development in the area in which it is to be established.

3.5.3 The proposed Township will in fact offer employment opportunities to the inhabitants of the area surrounding the application site, Townships and Villages alike.

3.5.4 Besides the Employment opportunities brought in by the proposed uses of the site, there are also Social Amenities that the proposed development seeks to introduce in the area, including Training and/or Leaning Centre(s), Sports Facilitie(s), Wild Life Information centre(s), etc;

3.5.5 There proposed development in itself brings with it roads improvement, by introducing traffic calming facilities along the R40, to allow for a smoother access and exit from the proposed Acorn City.

3.5.6 The proposed Township/development is accordingly in the interest of development in the area and to the benefits of the inhabitants.

4. NEED AND DESIRABILITY

4.1 Strategic Location of the Application Site

4.1.1 The application site is located along the R40, a very important Arterial Road within the development District in which the application site is located.

4.1.2 It is highly needed and desirable that the proposed Township Establishment is situated along the R40, in this particular application so that the traffic attracted by the proposed development does not interfere with the internal roads of the surrounding township(s) and rural villages, which are in most cases not very well served by Road Infrastructure.

4.1.3 In terms of the proposed uses on the subject application site, the proposed Township and corresponding Land uses, couldnt be better located.

4.1.4 Bushbuckridge in itself being a “Rural Town”, there is quite a backlog in infrastructure development and provision.

4.1.5 In terms of the Bushbuckridge Spatial Development Framework, only electricity is of satisfactory standards, leaving behind water, sanitation and roads infrastructure.

4.1.6 Developments such as the proposed Township, will trigger the creation and/or development of settlements around the application site, thereby attracting infrastructure development and/or upgrades by the relevant Municipality and/or Government Departments and/or relevant State owned entities.

4.1.7 In terms of the Bushbuckridge Local Municipality IDP 2017/2022, less than 15% of the Population is employed.

4.1.8 It is accordingly submitted that the proposed development of the application site is highly desirable and needed to contribute to the much needed employment opportunities in the Municipal area.

4.1.9 The proposed development couldn't be better located, and should accordingly be supported.

5. COMPLIANCE WITH THE POLICY FRAMEWORK

5.1 Bushbuckridge Spatial Development Framework

5.1.1 The subject site is located along the Maputo Sub-Corridor, where the R40 along which the site is located, connects Nelpruit and palaborwa along the all inportant Tourism Route

5.1.2 Although the Municipal area consists of large tracts of land that have not been formally planned, Spatially, this application seeks to comply with the SDF by applying with the Municipality and filing the requisite Township Lay-Out Plan(s) so the Municipality is aware of all uses within the proposed Township, extent and location within the proposed Township.

5.1.3 This will assist the Municipality in Budget Planning, in terms of infrastructure expansion developments, looking at priority areas, and areas that can be attended to last.

5.1.4 The proposed Township will combat the wide spread Low-Development Residential pattern in the area.

5.1.5 This will be achieved by encouraging developments around the proposed development site, by the inhabitants, in search or work and other social opportunities.

5.1.6 In terms of the Bushbuckridge SDF, the area in which the application site is located, and its suroounding Township(s) and villages, is desperately in need of Development to contribute to the highly sought employment opportunities and to contribute to the highly needed Social facilities.

5.1.7 In terms of the Bushbuckridge Local Municipality IDP 2017/2022, under priority issues, it is explicitly stated that Job Creation and the Construction of Business Centres are some of the issues that the Municipality should create of support in addressing the Socio-Economic hardships of the people of Bushbuckridge.

5.1.8 This application site couldn't be better located, and should accordingly be supported as it falls in line with the provisions of the Bushbuckridge Local Municipality Spatial Development Framework, read with the Integrated Development Framework 2017/2022.

6. Chapter 2: Spatial Planning & Land Use Management Act No 16 of 2013

6.1 All land development applications must give effect to the development principles as set out in Chapter 2 of the SPLUMA.

6.2 In terms of the RLM SPLUM By-law this application must be guided and informed by the RLM SDF as adopted and approved in terms of section 20 of the SPLUMA.

6.3 This application must address need, reasonableness, desirability and public interest.

6.4 Section 7 of SPLUMA deals with five (5) development principles, namely:

6.4.1 The ***principle of spatial justice***, which is aimed at redressing the distorted patterns of land development and unequal access to resources through apartheid legislation. The key attributes of the SPLUMA directive principle of spatial justice are: social inclusion, spatial equity, access to services, choice, green areas, and healthy living.

6.4.2 **The *principle of spatial sustainability***, which aims to ensure that development proposals are sustainable and within the fiscal means of the Municipality.

6.4.3 The ***principle of efficiency****,* which aims to optimise the use of existing resources and infrastructure to promote development and minimize the negative financial, social, economic and environmental impacts and imposes time frames for the completion and assessment of applications.

6.4.4 Clearly, the establishment of a Mixed use Township on the subject site is entirely consistent with the principle of efficiency.

6.4.5 The ***principle of spatial resilience***, ensures that flexibility in spatial plans, policies and land use management systems are accommodated to ensure sustainable livelihoods in communities most likely to suffer the impacts of economic and environmental shocks; Spatial resilience relates to the adaptability, innovation, climate change adaptation and mitigation.

6.4.6 The ***principle of good administration***, which relates to the manner and way in which policies and principles are drafted and applied to ensure integrated planning.

6.4.7 The applicant is committed to ensuring the provision of information required for the decision maker to be fully appraised of all relevant factors required for a just decision in this matter.

6.4.8 Furthermore and in addition to the governance aspects of this application, public participation is enhanced and upheld by the applicant's adherence to the prescripts of the municipal By-laws on notices and right to public objection.

6.4.9 The public is kept informed and empowered to foster transparency, and outcomes based planning.

7. Summary and Conclusion

7.1 Application is submitted in terms of Section 29(1) of the of the Bushbuckridge Land Use Management By-law, 2014 ("the By-Law") in respect of Portion 27 of the Farm Arthursseat for the establishment of a mixed use township, comprising roads and erven.

7.2 Application is submitted for the establishment of Acorn City

7.3 The application is for the use of the property for a township accommodating 15 erven.

7.4 The proposed development is in line with the Provisions of the SDF, read with the IDP 2017/2022.

7.5 The application site is adjacent to the Strategic Development Area 5, which will be well served by the proposed township and vice-versa.

7.6 Need and desirability has been shown in respect of this application and the site is proven to be suitable for the development as intended.

7.7 It is therefore submitted that, this application has substantial town planning merit worthy of approval.

Date: 26 February 2021 **Prepared by:**

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2132

DRAFT CONDITIONS OF ESTABLISHMENT

CONDITIONS UNDER WHICH THE APPLICATION FOR TOWNSHIP ESTABLISHMENT IN TERMS 0F THE BUSHBUCKRIDGE LAND USE BY-LAW, 2014 ON PORTION 27 OF THE FARM ARTHURSSEAT 214-KU MPUMALANGA PROVINCE, BY THE REPUBLIC OF SOUTH AFRICA (HEREINAFTER REFERRED TO AS THE TOWNSHIP APPLICANT /TOWNSHIP OWNER) AND BEING THE REGISTERED OWNER OF THE LAND HAS BEEN APPROVED.

1. **CONDITIONS TO BE COMPLIED WITH PRIOR TO THE TOWNSHIP BEING DECLARED AN APPROVED TOWNSHIP**

1.1 Excision of Agricultural of Holding :

The township applicant/owner shall at its own expense cause the property to be excised as an agricultural holding as defined in the Agricultural Holdings (Transvaal) Registration Act, 1919.

1.2 Consolidation of farm portions:

The township applicant/ownershall have the components on which the township is to be established consolidated at its expense.

1.3 Cancellation of Existing Conditions of Title/Servitudes

The applicant/owner shall at its own cost cause the following conditions and servitudes to be cancelled or the township area be freed there from - Conditions l and 2 in Deed of Transfer T and servitude of right ofway as set out in title condition ___ in Deed of Transfer T ___ .

1.4 Amendment Scheme:

The township applicant/owner shall satisfy the municipality that the concerned amendment schemeh as been submitted and approved with and can be published consecutively with the declaration of the township as an approved township.

1.5 Registration of Servitude:

The township applicant/owner shall make the necessary arrangements to ensure that the proposed water line servitude in favour of and to the satisfaction of . . . . . to be registered notarialIy by way of a Notarial Deed of Servitude with the accompanying servitude diagram and shall cause such servitude to be shown on the small scale diagram of the farm portion/General Plan of the township.

1.6 A Section 21 Act 61/1973 company must be registered by the Township owner in order to administer security and services in the township.

2. CONDITIONS OF ESTABLISHMENT:

2.1 Name:

Then name of the township shall be Acorn City

2.2 Design:

The township shall consist of erven and streets indicated on Layout Plabn RR2162-5 (General Plan SG No. . . . .)

2.3 Access:

No ingress from Road ___ to the township and no egress to Road ___ from the township shall be allowed.

2.4 Acceptance and Disposal of Stormwater:

The township applicant/owner shall arrange for the drainage of the township to fit in with that of Road and for all stormwater running of or being diverted from the road to be received and disposed of.

2.5 Removal, Repositioning, Modification or Replacement of Existing Post Office/Telkom Plant:

If, by reason of the establishment of the township, it should become necessary to remove, reposition, modify or replace any existing Post Office/Telkomp lant, the cost thereof shall be borne by the township applicant/owner.

2.6 EnvironmentalManagement:

The township applicant/owner shall at its own expense ensure that an Environmental Management Plan (EMP) is submitted tot he Department of Economic Development, Environment and Tourism for approval before construction commences.

The township applicant/owner must ensure that all conditions imposed by the Department of Economic Development, Environment and Tourism in terms of the Record of Decision (ROD) issued by the said Department on are adhered to.

2.7 Obligations with regard to Services and Restriction regarding the Alienation of Erven

The township owner shall within such period as the Municipality may determine, fulfil its obligations in respect of the provision of water, electricity and sanitary services as well as the construction of roads and stormwater drainage and the installation of systems thereof, as previously agreed upon between the township owner and the municipality.

Erven may not be alienated or be transferred into the name of a purchaser prior to the municipality certifying that sufficient guarantees/cash contributions in respect of the supply of services by the township owner have been submitted or paid to the said municipality.

2.8 Endowment:

The township owner shall pay the Municipality a lump-sum endowment, as set out in Section 67, for the provisions of land for parks and open spaces. Such endowment shall be payable as determined by the Municipality.

2.9 Endowment Erven:

The following erven must be transferred to the municipality:

Erven

2.10 ErvenforSection21Company:

The following erven must betransferred to the Section21 Company for services and road purposes:

Erven

3. CONDITIONS TO BE COMPLIED WITH BEFORE THE ERVEN IN THE TOWNSHIP BE COME REGISTERABLE

Installation and provision of services:

3.1 The township applicant/owner shall install and provide internal engineering services in the township as provided for in the service level agreement

3.2 The municipality shall install and provide external engineering services for the township as provided for in thes ervice level agreement.

4. DISPOSAL OF EXISTING CONDITIONS OF TITLE

All erven shall be made subject to existing conditions and servitudes, if any, but excluding:

4.1 The following servitude which affects Erf __ in the township only:

4.2 The waterline servitude in favour of registered in terms of Notarial Deed of Servitude about to be registered as indicatedon Servitude Diagram SG No ___, which affects Erf __ in the township only,

4.3 The following rights/entitlements which will not be passed on to the erven in the township:

"The Remaining Extent of Portion __ of the Eastern Portion of the aforesaid farm _ No___ "Registration Division J. T.(formerly No. ( ), District __ , measuring ___ hectares(aportion whereof is hereby transferred) is entitled to the right of way over certain Portion ___ of Portion ___ of the Eastern Portion of the aforesaid farm ___ No ___, held under Deed of Transfer T___ dated __

5. CONDITIONS OF TITLE:

5.1 CONDITIONS OF TITLE IMPOSED IN TERMS OF THE PROVISIONS OF THE BUSHBUCKRIDGE LAND USE BY-LAW, 2014

5.1.1 All Erven:

(1) The erf is subject to a servitude, 2metres wide along any two boundaries in favour of the Municipality for sewerage and other municipal purposes and, in the case of a panhandle erf, an additional servitude for municipal purposes 2metres wide across the access portion of the erf, if and when required by the Municipality: Provided that the Municipality may relax or grant exemption from the required servitudes.

(2) No building or other structure shall be erected within the aforesaid servitude area and no large-rooted trees shall be planted within the area of such servitude or within2metres thereof.

(3) The Municipality shall be entitled to deposit temporarily on the land adjoining the aforesaid servitude such material as may be excavated by it during the course of the construction, maintenance or removal of such sewerage mains and other works as it, in its discretion, may deem necessary and shall further be entitled to reasonable access to the said land for the aforesaid purpose, sub ject to any damage done during the process of the construction, maintenance or removal of such sewerage mains and other works being made good by the Municipality.

5.1.2 Erven subject to special conditions:

(1) In addition to the relevant conditions set out in pa ragraphs 5.1.1. (1), (2) and (3) above,the undermentioned erven shall be subject to the conditions as indicated:

(a) ERF

(i) The erf is subject to a servitude, 5 meters wide, in favour of the municipality for municipal purposes as indicated on the General Plan.

(b) ERF

(i) The entire erf is subject to a Right-of-Way servitude in favour of all other remaining erven in the township.

5.2 CONDITIONS OF TITLE IN FAVOUR OF THIRD PARTIES TO BE REGISTERED/CREATED ON FIRST REGISTRATION OF THE ERVEN CONCERNED

No erf in the township may be transferred unless the following requirements have been complied with and the following conditions and servitudes are registered:

5.2.1 All the erven with the exception of erven __ will be subject to the following conditions in favour of the Section 21Company to be created on transfer of the erven to any purchaser:

Each and every owner of an erf in the townshipshall on transfer automatically become a member of the Acorn City Landowners Association established for the development (hereinafter referred to as the "Association") and the township owner shall procure that each erf be made subject to the following conditions in favour of the Association:

Every owner of the erf or owner of any sub-divided portion of an erf or owner of any unit thereon, shall on transfer automatically become and shall remain a member of the Association and shall be subject to its Constitution until he/she ceases to be an owner as aforesaid and the property may not be transferred without the consent in writing of the association.

5.2.2 "The erf is subject to a servitude, 3m wide, in favour of the Section 21 Company for sewerage and other engineering services, along any two boundaries other than a street boundary and in the case of apanhandle erf, an additionalservitudeforservices,1 metre wide across the access portion of the erf, if and when required by the Section21Company; Provided that the Section 21 Company may dispense with any such servitude.

5.2.3 A servitude for the purposes of an electrical substation shall be registered in favour of ESKOM as indicated on the general plan over Erf ___

5.2.4 A servitude of pipeline shall be registered in favour of ___ as indicated on the general plan over Erf ___

5.2.5 A servitude of right of way must be registered over Portion ___ of the farm ___ No __ Registration Division __ , Mpumalanga Province in favour of Erven in the township.

5.2.6 A servitude of right of way overt he entire Erf ___must be registered in favour of Portion ___of the farm __ , No --' Registration Division __ , Mpumalanga Province.

5.3 CONDITIONS OF TITLE IMPOSED BY THE SOUTH AFRICAN NATIONAL ROADS AGENCY LIMITED BY VIRTUE OF SECTION 49(5)(a)(i) OF ACT 7 0F 1998

The undermentioned erven shall be subject to the condition as indicated:

Erf ___:

Except for any essential stormwater drainage structure, no building, structure of other thing which is attached to the land, even though it does not form part of that land, shall be erected nor shall anything be constructed or laid under or below the surface of the erf within a distance less than 20m from the reserved boundary of Road ___ nor shall any alteration or addition to *any existing structure or building situated within such distance of the said boundary be made except with the consent in writing of the South African National Roads Agency.*

6. CONDITIONS TO BE INCORPORATED WITHIN THE LAND USE SCHEME IN ADDITION TO THE EXISTING PROVISIONS OF THE LAND USE SCHEME

6.1 All Erven:

6.1.1 The erf lies in an area where soil conditions can affect buildings and structures and result in damage to them. Building plans submitted to the Municipality must show measures to betaken, in accordance with recommendations contained in the geotechnical report for the township, to limit possible damage to buildings and structures as a result of detrimental foundation conditions, unless itis proved to the Municipality that such measures are unnecessary or that the same purpose can be achieved by other more effective means.

6.2 Erf

6.2.1 The use zone/category of the erf shall be " ___ "
6.2.2 Density: ___ dwellings units per hectare.
6.2.3 Coverage: ___%.
6.2.4 Height restriction:___storeys.
6.2.5 Floor Area Ratio (FAR): ___.
6.2.6 Parking: ln accordance with the Bushbuckridge Land UseScheme:2014

6.2.7 Except for any essential stormwater drainage structure, no buiIdings, structure or other thing which is attached to the land even though it does not form part of that land, shall be erected nor shall anything be constructed or laid under or below the surface of the erf within a distance less than 20m from the reserve boundary of Road N4 nor shall any alteration or addition to any existing structure or building situated within such distance of the said boundary be made except with the consent in writing of the South African National Roads Agency Limited.

6.2.8 Ingress to and egress from the erf shall not be permitted along the boundary thereof abutting on Road ____ ; Provided that the South African National Roads Agency Limited may grant written permission for access subject to such conditions as the South African National Roads Agency Limited may determine.

APPENDIX C

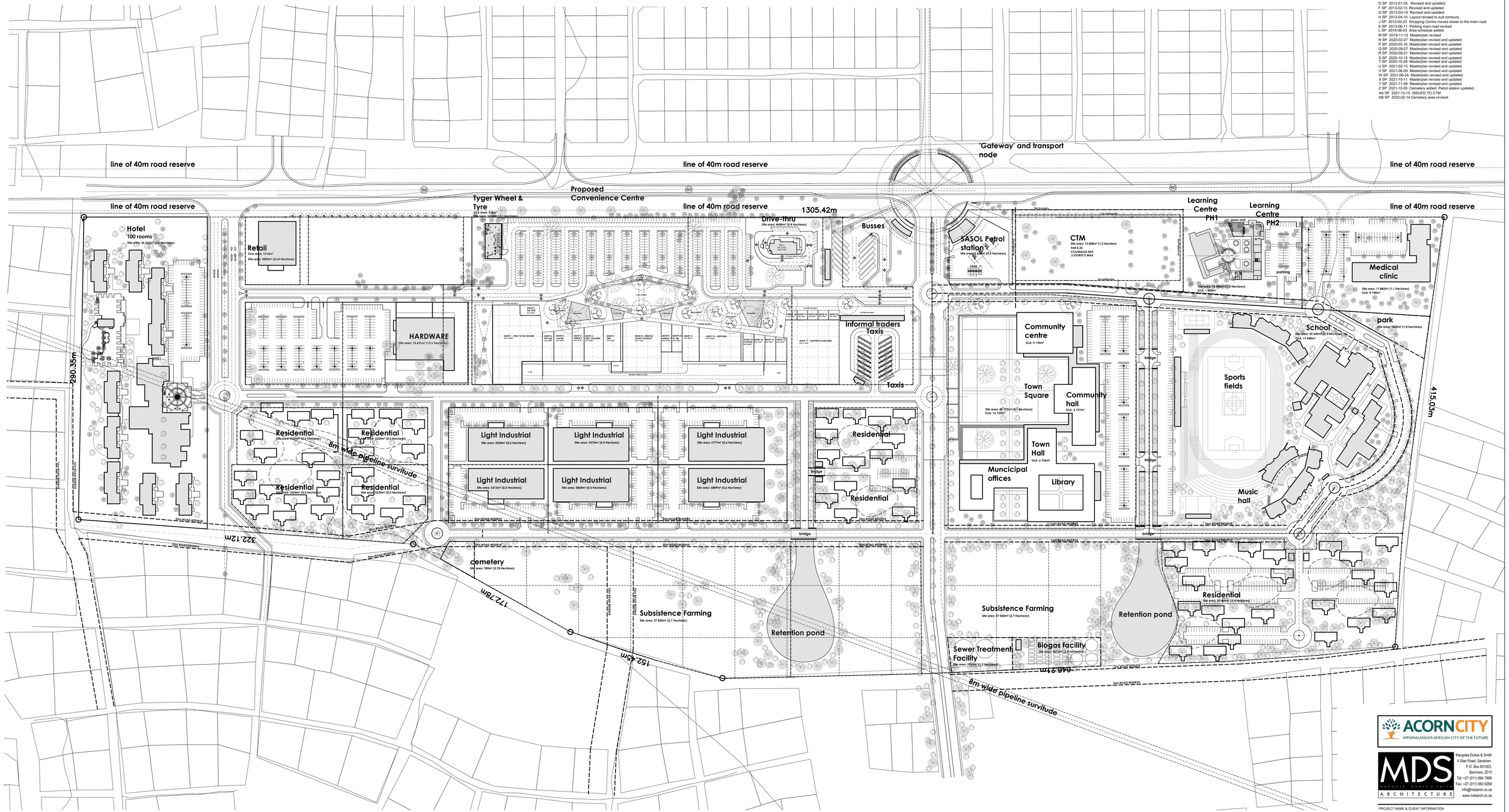
Acorn City Concept Plan

1215-001	AB
NUMBER FOR ARCHITECTS FILING REFERENCE ONLY	REVISION

NOTES:

1. The design on this drawing is copyright and remains the property of Margoles Dukes & Smith Architects.
2. All work to be carried out in strict accordance with local authority requirements, National Building Regulations, and the S.A.B.S standards.
3. This drawing may not be scaled. Only figured dimensions and levels may be used.
4. All relevant details, levels, dimensions must be checked on site before commencement of work. Any discrepancies to be reported to the Architects office immediately.

Rev.	Int.	Date.	Description of Revision
A	SP	2012-06-02	For information.
B	SP	2012-06-11	Revised and updated.
C	SP	2012-11-20	Revised and updated.
D	SP	2013-01-25	Revised and updated.
F	SP	2013-02-13	Revised and updated.
G	SP	2013-03-14	Revised and updated.
H	SP	2013-04-15	Layout revised to suit contours.
J	SP	2013-05-23	Shopping Centre moved closer to the main road
K	SP	2013-06-11	Parking main road revised
L	SP	2014-06-03	Area schedule added.
M	SP	2019-11-12	Masterplan revised
N	SP	2020-02-27	Masterplan revised and updated
P	SP	2020-03-16	Masterplan revised and updated
Q	SP	2020-09-07	Masterplan revised and updated
R	SP	2020-09-21	Masterplan revised and updated
S	SP	2020-10-15	Masterplan revised and updated
T	SP	2020-10-28	Masterplan revised and updated
U	SP	2021-02-15	Masterplan revised and updated
V	SP	2021-06-09	Masterplan revised and updated
W	SP	2021-06-24	Masterplan revised and updated
X	SP	2021-10-11	Masterplan revised and updated
Y	SP	2021-11-08	Masterplan revised and updated
Z	SP	2021-12-09	Cemetery added. Petrol station updated.
AA	SP	2021-12-15	ISSUED TO CTM
AB	SP	2022-02-14	Cemetery area revised.



Acorn City Urban Mixed-use Development Plan
scale 1:1250

ACORNCITY
MPUMALANGA'S AFRICAN CITY OF THE FUTURE

MDS
MARGOLES DUKES & SMITH
ARCHITECTURE

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PROJECT NAME & CLIENT INFORMATION

Acorn City Urban
Mixed-use Development

DRAWING DESCRIPTION

PRELIMINARY DRAWING

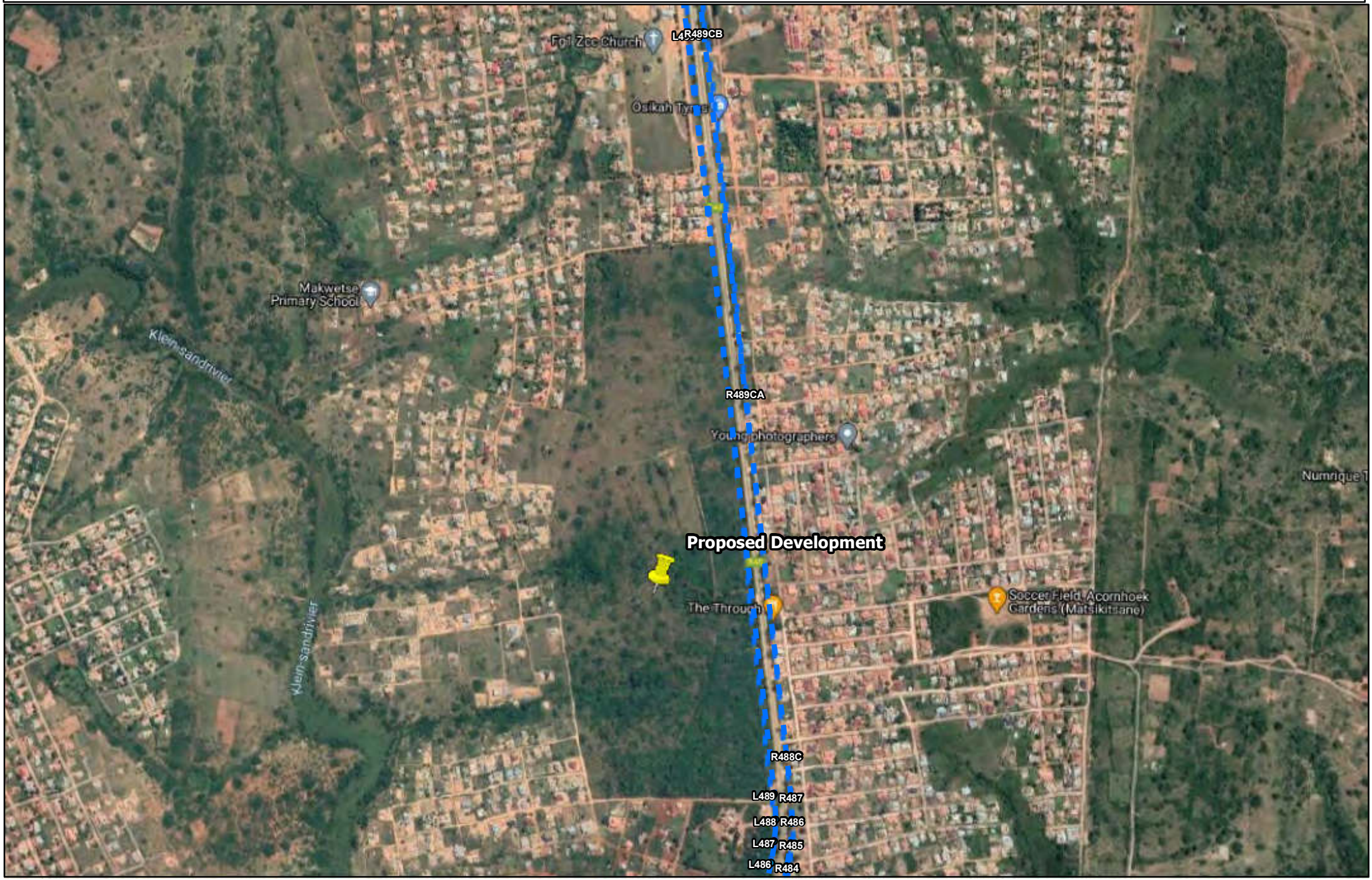
Site Plan

SCALE	DATE	DRAWN
As shown	June 2010	SP
PROJECT No - DRAWING NUMBER		REVISION
1215-001		AB

APPENDIX D

R40 Concept Layout

R040-005


N
Fo1 Zoe Church
R489CB
Osikah Tyres
Makwetse Primary School
Klein-sandrivier
R489CA
Young photographers
Numrique T
Proposed Development
The Through
Soccer Field, Acornhoek Gardens (Matsikitsane)
Klein-sandrivier
R488C
L489
R487
L488
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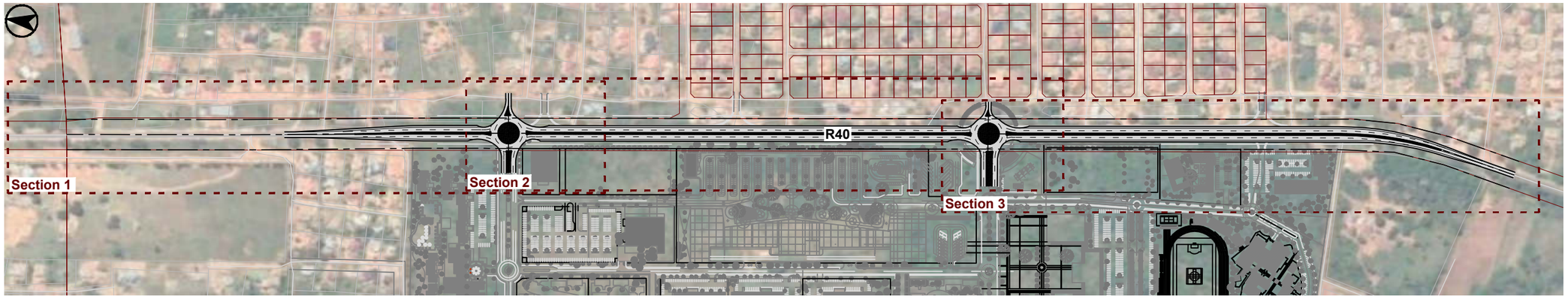

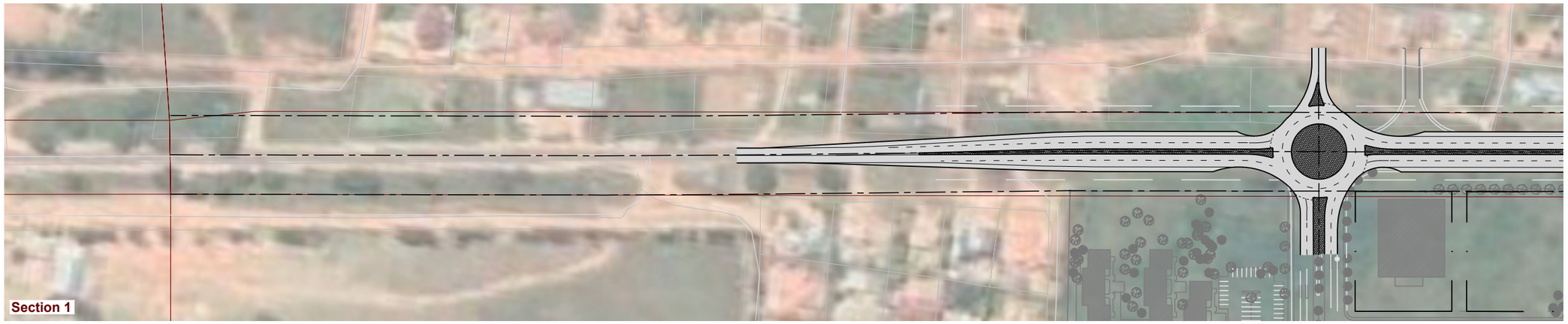

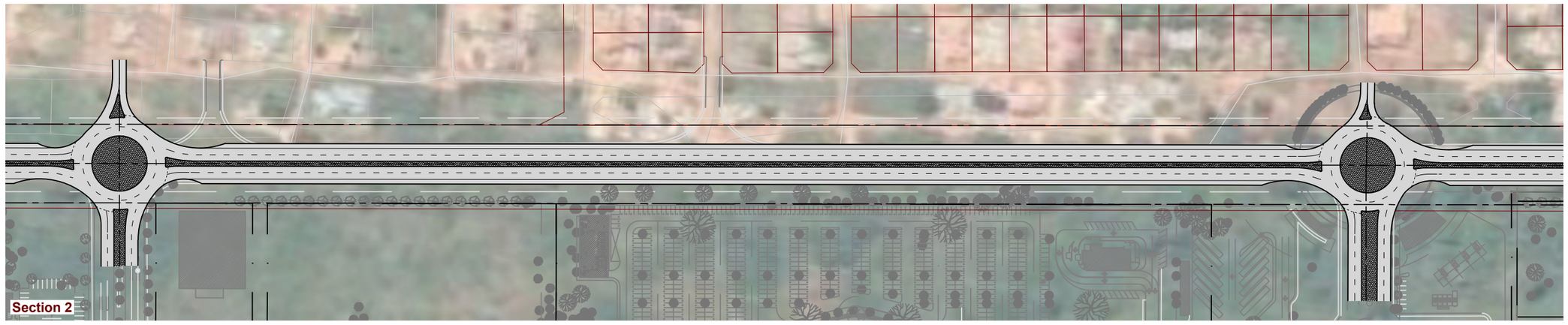

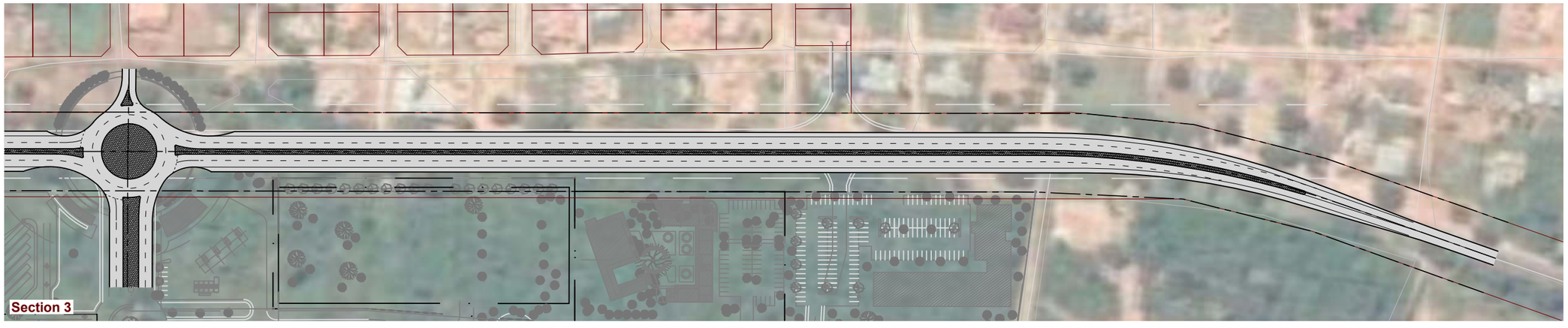

Issue	Date	By	Chkd	Appd
03	2022-02-24	ES	AN	AN
02	2021-09-28	ES	AN	AN
01	2021-07-19	ES	AN	AN

0m 20 40 60 80 100 120
Scale 1:2500 (A3)

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Client

Dzana Investments (Pty) Ltd

Job Title

Proposed Township Establishment, Acorn City, Portion 27 of the Farm Arthursseat 214-KU

Drawing Title

Proposed Future R40 Layout and Development Access

Job No	Drawing Status
P0045	**For Information**

Drawing No	Issue
01	**03**

APPENDIX E

Background and Development Traffic Capacity Analysis

R40 & Acorn City Primary Access

Acornhoek, Bushbuckridge

AutoJ

&AutoJ1810 noble

RR | **Roundabout, yield on all approaches**

Volume (evu/hr)

	from North					from South					from West					from East					intersection
	peds	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	**total**
AM			518	102	**620**		406	809		**1,215**		67		266	**333**						**2,168**
off																					
PM			791	80	**871**		320	607		**927**		100		401	**501**						**2,299**

Lanes

	from North L~	from North LSR	from South L~	from South LSR	from West L~	from West LSR	from East L~	from East LSR
# lanes		2.0		2.0		2.0		2.0

Control

from North				from South				from West				from East			
peds	left	str	right	*peds*	left	str	right	*peds*	left	str	right	*peds*	left	str	right
		yield	yield		yield	yield			yield		yield				

VOLUME to CAPACITY (V/C)

Southbound | Northbound | Eastbound | Westbound

A-B | C-D | E | F

LOS A<0.5, B<0.8, C<0.9, D<0.95, E<0.99

Ped LOS A<0.1, B<0.3, C<0.4, D<0.6, E<0.97, F=0.97+

	V/C from North					V/C from South					V/C from West					V/C from East					V/C	
	peds	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	max	**overall**
AM		0.28	0.28	0.28	**0.28**		0.46	0.46	0.46	**0.46**		0.28	0.28	0.28	**0.28**						0.46	0.38
off																						
PM		0.46	0.46	0.46	**0.46**		0.34	0.34	0.34	**0.34**		0.33	0.33	0.33	**0.33**						0.46	0.38

Average DELAY per vehicle (secs)

A-B | C-D | E | F

LOS A<10, B<15, C<25, D<35, E<50

Ped LOS A<10, B<15, C<25, D<35, E<50, F=50+

	delay from North					delay from South					delay from West					delay from East					delay / veh	
	peds	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	max	**overall**
AM			7.0	7.0	**7.0**		8.0	8.0		**8.0**		7.0		7.0	**7.0**						8.0	**7.6**
off																						
PM			8.0	8.0	**8.0**		7.3	7.3		**7.3**		7.2		7.2	**7.2**						8.0	**7.6**

Average QUEUE length (veh)

(= total delay veh-hrs / hr)

OK | WARN | POOR

Q <4 = OK, <10 = WARN, 10+ = POOR

	Q from North					Q from South					Q from West					Q from East					Queue	
	peds	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	max	**total**
AM			1.0	0.2	**1.2**		0.9	1.8		**2.7**		0.1		0.5	**0.6**						1.8	**4.6**
off																						
PM			1.8	0.2	**1.9**		0.6	1.2		**1.9**		0.2		0.8	**1.0**						1.8	**4.8**

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Dr John Sampson

AutoJ

R40 & Acorn City Primary Access

Acornhoek, Bushbuckridge

&AutoJ1810 noble

RR | **Roundabout, yield on all approaches**

Volume (evu/hr)

	from North					from South					from West					from East					intersection
	peds	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	**total**
AM			558	102	**660**		406	872		**1,278**		67		266	**333**						**2,271**
off																					
PM			852	80	**932**		320	654		**974**		100		401	**501**						**2,407**

Lanes

	L~	LSR	L~	LSR	L~	LSR	L~	LSR
# lanes		2.0		2.0		2.0		2.0

Control

from North				from South				from West				from East			
peds	left	str	right	*peds*	left	str	right	*peds*	left	str	right	*peds*	left	str	right
		yield	yield		yield	yield			yield		yield				

VOLUME to CAPACITY (V/C)

Southbound | Northbound | Eastbound | Westbound

A-B | C-D | E | F

LOS A<0.5, B<0.8, C<0.9, D<0.95, E<0.99

Ped LOS A<0.1, B<0.3, C<0.4, D<0.6, E<0.97, F=0.97+

	V/C from North					V/C from South					V/C from West					V/C from East					V/C	
	peds	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	max	**overall**
AM		0.30	0.30	0.30	**0.30**		0.48	0.48	0.48	**0.48**		0.30	0.30	0.30	**0.30**						0.48	0.40
off																						
PM		0.49	0.49	0.49	**0.49**		0.36	0.36	0.36	**0.36**		0.35	0.35	0.35	**0.35**						0.49	0.41

Average DELAY per vehicle (secs)

A-B | C-D | E | F

LOS A<10, B<15, C<25, D<35, E<50

Ped LOS A<10, B<15, C<25, D<35, E<50, F=50+

	delay from North					delay from South					delay from West					delay from East					delay / veh	
	peds	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	max	**overall**
AM			7.1	7.1	**7.1**		8.2	8.2		**8.2**		7.1		7.1	**7.1**						8.2	**7.7**
off																						
PM			8.3	8.3	**8.3**		7.4	7.4		**7.4**		7.3		7.3	**7.3**						8.3	**7.7**

Average QUEUE length (veh)

(= total delay veh-hrs / hr)

OK | WARN | POOR

Q <4 = OK, <10 = WARN, 10+ = POOR

	Q from North					Q from South					Q from West					Q from East					Queue	
	peds	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	max	**total**
AM			1.1	0.2	**1.3**		0.9	2.0		**2.9**		0.1		0.5	**0.7**						2.0	**4.9**
off																						
PM			2.0	0.2	**2.2**		0.7	1.3		**2.0**		0.2		0.8	**1.0**						2.0	**5.2**

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R40 & Acorn City Secondary Access

Acornhoek, Bushbuckridge

AutoJ

&AutoJ1810 noble

RR | **Roundabout, yield on all approaches**

Volume (evu/hr)

	from North					from South					from West					from East					intersection
	peds	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	**total**
AM			487	305	**792**		203	673		**876**		200		133	**333**						**2,001**
off																					
PM			751	240	**991**		160	547		**707**		301		200	**501**						**2,199**

Lanes

	L~	LSR	L~	LSR	L~	LSR	L~	LSR
# lanes		2.0		2.0		2.0		2.0

Control

from North				from South				from West				from East			
peds	left	str	right	*peds*	left	str	right	*peds*	left	str	right	*peds*	left	str	right
		yield	yield		yield	yield			yield		yield				

VOLUME to CAPACITY (V/C)

Southbound | Northbound | Eastbound | Westbound

A-B | C-D | E | F

LOS A<0.5, B<0.8, C<0.9, D<0.95, E<0.99

Ped LOS A<0.1, B<0.3, C<0.4, D<0.6, E<0.97, F=0.97+

	V/C from North					V/C from South					V/C from West					V/C from East					V/C	
	peds	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	max	**overall**
AM		0.31	0.31	0.31	**0.31**		0.41	0.41	0.41	**0.41**		0.24	0.24	0.24	**0.24**						0.41	0.34
off																						
PM		0.42	0.42	0.42	**0.42**		0.31	0.31	0.31	**0.31**		0.31	0.31	0.31	**0.31**						0.42	0.36

Average DELAY per vehicle (secs)

A-B | C-D | E | F

LOS A<10, B<15, C<25, D<35, E<50

Ped LOS A<10, B<15, C<25, D<35, E<50, F=50+

	delay from North					delay from South					delay from West					delay from East					delay / veh	
	peds	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	max	**overall**
AM			7.1	7.1	**7.1**		7.7	7.7		**7.7**		6.8		6.8	**6.8**						7.7	**7.3**
off																						
PM			7.7	7.7	**7.7**		7.1	7.1		**7.1**		7.1		7.1	**7.1**						7.7	**7.4**

Average QUEUE length (veh)

(= total delay veh-hrs / hr)

OK | WARN | POOR

Q <4 = OK, <10 = WARN, 10+ = POOR

	Q from North					Q from South					Q from West					Q from East					Queue	
	peds	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	max	**total**
AM			1.0	0.6	**1.6**		0.4	1.4		**1.9**		0.4		0.3	**0.6**						1.4	**4.1**
off																						
PM			1.6	0.5	**2.1**		0.3	1.1		**1.4**		0.6		0.4	**1.0**						1.6	**4.5**

R40 & Acorn City Secondary Access

Acornhoek, Bushbuckridge

AutoJ

&AutoJ1810 noble

RR | **Roundabout, yield on all approaches**

Volume (evu/hr)

	from North					from South					from West					from East					intersection
	peds	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	**total**
AM			527	305	**832**		203	736		**939**		200		133	**333**						**2,104**
off																					
PM			812	240	**1,052**		160	594		**754**		301		200	**501**						**2,307**

Lanes

	L~	LSR	L~	LSR	L~	LSR	L~	LSR
# lanes		2.0		2.0		2.0		2.0

Control

from North				from South				from West				from East			
peds	left	str	right	*peds*	left	str	right	*peds*	left	str	right	*peds*	left	str	right
		yield	yield		yield	yield			yield		yield				

Southbound | Northbound | Eastbound | Westbound

VOLUME to CAPACITY (V/C)

A-B | C-D | E | F

LOS A<0.5, B<0.8, C<0.9, D<0.95, E<0.99

Ped LOS A<0.1, B<0.3, C<0.4, D<0.6, E<0.97, F=0.97+

	V/C from North					V/C from South					V/C from West					V/C from East					V/C	
	peds	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	max	**overall**
AM		0.33	0.33	0.33	**0.33**		0.44	0.44	0.44	**0.44**		0.25	0.25	0.25	**0.25**						0.44	0.37
off																						
PM		0.44	0.44	0.44	**0.44**		0.33	0.33	0.33	**0.33**		0.33	0.33	0.33	**0.33**						0.44	0.38

Average DELAY per vehicle (secs)

A-B | C-D | E | F

LOS A<10, B<15, C<25, D<35, E<50

Ped LOS A<10, B<15, C<25, D<35, E<50, F=50+

	delay from North					delay from South					delay from West					delay from East					delay / veh	
	peds	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	max	**overall**
AM			7.2	7.2	**7.2**		7.9	7.9		**7.9**		6.9		6.9	**6.9**						7.9	**7.5**
off																						
PM			7.9	7.9	**7.9**		7.2	7.2		**7.2**		7.2		7.2	**7.2**						7.9	**7.5**

Average QUEUE length (veh)

(= total delay veh-hrs / hr)

OK | WARN | POOR

Q <4 = OK, <10 = WARN, 10+ = POOR

	Q from North					Q from South					Q from West					Q from East					Queue	
	peds	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	*peds*	left	str	right	**L+S+R**	max	**total**
AM			1.1	0.6	**1.7**		0.4	1.6		**2.1**		0.4		0.3	**0.6**						1.6	**4.4**
off																						
PM			1.8	0.5	**2.3**		0.3	1.2		**1.5**		0.6		0.4	**1.0**						1.8	**4.8**

copyright:
Dr John Sampson

SANRAL

BUILDING SOUTH AFRICA THROUGH BETTER ROADS

Reference:	N11/2/3- R40/5-23	Fax Number:	+27 (0) 12 348 1680
Date:	6 December 2021	Direct Line:	**+27 (0) 12 426 6213**
Email:	vdlindei@nra.co.za	Website:	www.nra.co.za

Aidan Noble Consulting
9 River Glen
Perth Street
Buccleuch
2090

Attention: Aidan Noble

TRAFFIC IMPACT ASSESSMENTS FOR THE PROPOSED ACORN CITY TOWNSHIP ESTABLISHMENT

Your Traffic Impact Assessment in the above regard dated 2 October 2021, refers.

The South African National Roads Agency SOC Limited hereby, concurs with the contents and recommendations of the abovementioned assessment, subject to the following conditions:

1. SANRAL is hereby, in principle, in agreement with the location of the two proposed new intersections on R40, subject to the availability of sufficient sight distance (300m in both directions) being proven. SANRAL must however be convinced of the appropriate intersection control (roundabout, priority controlled or combination of both). The consideration hereof will depend on site specific circumstances, traffic volumes and turning movements, and SANRAL's design philosophy for the R40 and must be clarified, confirmed and agreed with SANRAL prior to submission of detailed design drawings for construction.

2. Note must be taken that the mentioned intersections must serve the surrounding areas and cannot be used to provide access exclusively to the development.

3. SANRAL agrees with the recommendation that a Site Traffic Assessment (STA) be prepared in support of the final stie development plan in order to, amongst others, determine the extent of the required internal road network and its connections to the surrounding areas. Such STA should also indicate how all other access (to both sides of road R40) in the vicinity of the development will be closed, physically removed, and consolidated with the approved intersections positions.

4. It must furthermore be noted that the access to a development is seen as an internal engineering service. The developer's fair and equitable contribution towards external engineering services should therefore be utilized to implement elements of the abovementioned road master plan with emphasis on the connections with the surrounding areas, to the satisfaction of the Municipality.

5. SANRAL must be provided with a copy of the township establishment application for approval in terms of Section 49 of the SANRAL Act, Act 7 of 1998. (Contact Person: Jan Oliver at oliverj@nra.co.za).

Yours faithfully

REGIONAL MANAGER: NORTHERN REGION