



Ekurhuleni
METROPOLITAN MUNICIPALITY

Office of the Head of Department
Disaster & Emergency
Management Services
3 Hawley Road
Bedfordview
P O Box 145
Germiston 1400

COMMENTS

Tel: (011) 999 – 0193
Fax: (011) 874 – 5164
Enquiries: S DU RAND

Date: 07 April 2017

To: CITY PLANNING DEPARTMENT
BOKSBURG SERVICE DELIVERY CENTRE
Att: ZUNAID OSMAN
Ref: 15/3/3/69/25

Re: PROPOSED SUNWARD PARK EXTENSION 25 TOWNSHIP; SITUATED ON THE REMAINING EXTENT OF THE FARM LEEUWPOORT 113-IR, BOKSBURG

DEMS has no objection to the proposal as lodged by the Applicant; and notwithstanding any other information pertaining to the application that may become available or made known after our scrutiny of the submitted application; and in cognizance of any other condition so imposed by the municipality; approval of the application is subject to the following imposed conditions:

- A) The Applicant in formalizing any submissions for approval should this proposal go ahead; must
- (i) Ensure full compliance with the National Building Regulations and Building Standards Act (Act no. 103 of 1977) as it pertains to the various fire protection and public safety requirements and specifically the Fire Protection Regulations as contained in Part T;
 - (ii) Ensure full compliance with the Emergency Services Bylaws as it applies Water Supply for Firefighting Purposes and in all cases to any other component of the same bylaw as it applies to the development or re-development of townships including any other clause that may applicable before and after such development;
 - (iii) Where any construction activities occur following formal approval of building plans; such activities that may involve the storage, handling and use of flammable liquids and/or solids must comply with the relevant provisions of the Emergency Services Bylaw and any other related code or regulation so enforced by the Fire Service Authority; and

- (iv) Where such development meets the requirement of designated premises as described in the Emergency Service Bylaw; full compliance will be expected with such requirements.
- (v) in the event that any risk area developed or redeveloped in such a manner that the risk area falls into the high risk category, adapt the water reticulation accordingly without delay.
- (vi) GPS location of hydrants and visible marking of hydrants.
- (vii) Distance and comments from the existing MHI in the area.

B) The following points are noted for further consideration of the application. (*DEPENDS ON APPLICABILITY*)

- (i) That the proposed development is categorized as Category (**Risk C**) Fire Risk and will be outside the **10-minute** attendance time radius of the fire service response coverage for that category of risk until such time emergency services presence is provided for area concerned; OR

Table 2 – Attendance times at fires

1	2	3	4
Risk category	Maximum call receipt and turn-out time Min	Maximum appliance travel time Min	Maximum attendance time Min
A	3	5	8
B	3	7	10
C	3	10	13
D	3	20	23
E	Within requirement of appropriate risk category		

1. Fire-risk Categories:

A fire area should be divided into sub-areas which fall into one of the following fire-risk categories.

1.1. **Category C:** Residential areas of conventional construction.

- (ii) Any other consideration that should be stated upfront indicating that we have applied our minds in the review of the application.

Kind regards,



S SIBANDE
ACTING HEAD OF DEPARTMENT:
Disaster & Emergency Management Services Department



 Date

Existing zoning	Property size	Coverage	Height	F.A.R.	Density
"Undetermined"	122,6 hectares	N/A	N/A	N/A	N/A

Proposed zoning	Property size	Coverage	Height	F.A.R.	Density
"Residential 1"; "Residential 4"; "Special"; "Public Services"; "Community Facility"; "Transportation"; "Public Open Space"	See Table 7 on Page 5 of Memo	See Tables 1 to 6 on Pages 2 to 4 of Memo	See Tables 1 to 6 on Pages 2 to 4 of Memo	See Tables 1 to 6 on Pages 2 to 4 of Memo	See Tables 1 to 6 on Pages 2 to 4 of Memo

PLEASE NOTE that the submission of a Site Development Plan (SDP), as a condition of approval for this application, **is required**.

With reference to the above-mentioned application/proposal, I wish to comment as follows:
(Insert or Attach comments)

PROPOSED SUNWARD PARK EXTENSION 25 TOWNSHIP: SITUATED ON THE REMAINING EXTENT OF THE FARM LEEUWPOORT 113-IR, BOKSBURG.

File No.: 15/3/3/69/25

Energy and Electricity Department has no objections.

EMM has already applied for new intake Substation to supply the above mentioned development.

DIRECTORATE: Energy and Electricity

SECTION: Planning and Construction

NAME: S. Nkanyani

SIGNATURE: [Signature]

DATE: 08/04/2017

Leonie Gerber (Boksburg)

From: Renate Hooper (Boksburg)
Sent: Wednesday, April 19, 2017 3:47 PM
To: Leonie Gerber (Boksburg); Zunaid Osman (Boksburg)
Cc: Phillip Campher (Boksburg); Khensani Maredi (Boksburg)
Subject: FW: Reminder: Sunward Park Ext 25
Attachments: Sunward Park Ext 25 Original Appl.pdf; SunwardPark25_Lay.pdf

Good afternoon

This Department has no objection to the proposed Sunward Park ext 25, provided that all Environmental Health legislation is complied with.

With kind regards

Renate Hooper
Environmental Health Practitioner

Health and Social Development



Telephone : +27 (0)11 999 5769
Facsimilie : +27 (0)11 892 0536
E-mail : Renate.Hooper@ekurhuleni.gov.za
Website : www.ekurhuleni.gov.za
Postal : P O Box 215, Boksburg, 1460
Physical : Environmental Health Building, Krynauw rd, Boksburg

From: Khensani Maredi (Boksburg)
Sent: Wednesday, April 19, 2017 3:18 PM
To: Renate Hooper (Boksburg) <Renate.Hooper@ekurhuleni.gov.za>
Subject: FW: Reminder: Sunward Park Ext 25

From: Khensani Maredi (Boksburg)
Sent: 18 April 2017 02:28 PM
To: Renate Hooper (Boksburg) <Renate.Hooper@ekurhuleni.gov.za>
Subject: FW: Reminder: Sunward Park Ext 25

From: Phillip Campher (Boksburg)
Sent: 18 April 2017 02:07 PM
To: Khensani Maredi (Boksburg) <Khensani.Maredi@ekurhuleni.gov.za>
Subject: FW: Reminder: Sunward Park Ext 25

Leonie Gerber (Boksburg)

From: Jaco Burger
Sent: Tuesday, April 18, 2017 2:37 PM
To: Leonie Gerber (Boksburg)
Subject: RE: Reminder: Sunward Park Ext 25

Leonie

Although Metro Parks have no objection to the application, Metro Parks would like to insist on the following two points in regards to Public Open Spaces:

- Metro Parks strongly insist that no area smaller than 5 000m² for a public open space.
- World Urban Parks international median for park provision of 14.2 hectares per 1,000 residents. Of this 6.6 hectares per 1,000 residents is maintained urban parkland, with the balance being natural/conservation area

According to World Urban Parks - the new international organisation representing urban parks, open space and the recreation sector:

Open space per 1,000 residents.

The international median for park provision in 2014 was 14.2 hectares per 1,000 residents. Of this 6.6 hectares per 1,000 residents is maintained urban parkland, with the balance being natural/conservation areas.

Given the increasing evidence that parks benefit city health, sustainability and liveability, agencies with parkland at the lower end of the range may be able to use international data to gain recognition that their city is falling behind other similar cities and has potential to further enhance the city economy, reduce health costs, and create a cleaner environment through greater open space investment.

These standards can also be applied across a city. For example, some studies have shown that low-income neighbourhoods have less access to parks and green space than high-income neighbourhoods and that this can partially explain the often significant difference in life span of residents between neighbourhoods.

How much parkland is reasonable may depend on factors such as population growth, the quality of the city's geography and the desirability of integrated and connected green space, such as rivers and streams, but comparison to similar cities is a good start.

City planning is increasingly taking a long-term view, projecting populations and needs over 10, 20 and sometimes 50 years. A city that has 14 hectares per 1,000 residents now may see that fall to seven hectares in 50 years if the population is projected to double. The time to deal with this issue is now, while land is still available or relatively affordable. It does not have to be immediately developed and can be leased for other purposes such as horticulture, or as unmaintained natural open space.

The second option is to develop existing parkland to increase the capacity of use. This does not always address the need for sufficient access to parkland in neighbourhoods where there are few parks, although there are many creative areas, such as roof gardens and partnerships with other organisations to reclaim streets or broker community access to schools etc. Development can be a good option to save for the future when open space is no longer available or affordable.

Jaco Burger
Metro Parks & Cemeteries



Telephone : +27 (0) 11 999 5926/5254
Email : Jaco.burger@ekurhuleni.gov.za

From: Leonie Gerber (Boksburg)
Sent: Tuesday, April 18, 2017 1:59 PM
To: Johann Marx (Germiston); Mafusi Motaung; Prisca V. Malamule; Toffee Ramokone Mogoerane; Phillip Campher (Boksburg); Edmund Van Wyk; Jaco Burger; Hlawulani Ngobeni; Cecilia Rakgoale; Keleabetswe Lekalakala; Roelof Barnard (Vosloorus); Lidia Joubert roomdg 25; Bruce Reid (DA); Uyanda L. Langa; Pilusa P. Mashamaite
Cc: 'danie@urbandynamics.co.za'; Lene du Plooy
Subject: Reminder: Sunward Park Ext 25

Good afternoon,

Kindly note herewith a reminder of comments outstanding for the ***Proposed Leeuwpoort South (Human Settlement) Development known as Sunward Park Ext 25***, circulated 14/03/2017.

It would be greatly appreciated if your departmental comments could be forwarded soonest.

Kind Regards

Leonie Gerber
City Planning
Boksburg CCA

Room 246, 2nd floor
Boksburg Civic Centre
c/o Trichardt Road & Market Street
Boksburg

Tel: 011 999 5808
Fax: 086 632 9960
E-mail: Leonie.Gerber@ekurhuleni.gov.za



Memorandum



Ekurhuleni
METROPOLITAN MUNICIPALITY

TO	CITY PLANNING BOKSBURG: AREA MANAGER	HEAD OFFICE Transport, Planning & Provision 6 th Floor Kempton Park Civic Centre Cnr Pretoria Rd & CR Swart Dr KEMPTON PARK 1619 Private Bag X017 KEMPTON PARK 1620 Tel : +(2711) 999-3661 Fax : +(2711) 975-6545 www.ekurhuleni.com
ATTN	Z Osman	
TEL	(011) 999 6252	
EMAIL	zunaid.osman@ekurhuleni.gov.za	
FROM	Lungile Gamede	
ENQ	Lungile Gamede	
TEL	011 999 4438	
REF	15/3/3/69/25 (LG 04.10/2017)	
DATE	6 April 2017	

APPLICATION FOR TOWNSHIP ESTABLISHMENT: SUNWARD PARK EXTENSION 25

Your memorandum ref: 15/3/3/69/25 dated 16 March 2017 received by this Department on 24 March 2017 has reference.

1. This Department does not have an objection for township establishment to be known as Sunward Park Extension 25.
2. A paved sidewalk must be provided along the property boundary fronting onto the public road in order to facilitate pedestrian movements.
3. The proposed township will generate high transport users i.e. public transport, private motorists and non-motorized transport therefore a transport study must be submitted to this Department for comments and/or approval before the development can be proceeded with.
4. The proposed location of the proposed transportation erf on Agulas Road is not supported as it is too close to the intersection.
5. The development of the proposed transportation erf must be to the account of the applicant as it will benefit the township.
6. Building lines as per Gautrans standards must be honoured.
7. The township must be fenced along K132 to ensure that pedestrians and motorists do not cross mid-block.
8. The access and future road network must be discussed with the Roads Department.

9. Further consultation is recommended with the Transport Planning & Provision Department in order to ensure that this application aligns with the EMM current and future transport policies and strategies.

Yours Sincerely



.....
UYANDA LANGA
DH: TRANSPORT PLANNING DIVISION
TRANSPORT PLANNING AND PROVISION DEPARTMENT

Existing zoning	Property size	Coverage	Height	F.A.R.	Density
"Undetermined"	112,6 hectares	N/A	N/A	N/A	N/A

Proposed zoning	Property size	Coverage	Height	F.A.R.	Density
"Residential 1"; "Residential 4"; "Public Services"; "Community Facility"; "Transportation"; "Public Open Space"	See Table 9 on Page 5 of Memo	See Tables 1 to 8 on Pages 2 to 4 of Memo	See Tables 1 to 8 on Pages 2 to 4 of Memo	See Tables 1 to 8 on Pages 2 to 4 of Memo	See Tables 1 to 8 on Pages 2 to 4 of Memo

PLEASE NOTE that the submission of a Site Development Plan (SDP), as a condition of approval for this application, **is required**.


With reference to the above-mentioned application/proposal, I wish to comment as follows:
(Insert or Attach comments)

PROPOSED SUNWARD PARK EXTENSION 26 TOWNSHIP: SITUATED ON THE REMAINING EXTENT OF THE FARM LEEUWPOORT 113-IR, BOKSBURG.

File No.: 15/3/3/69/26

Energy and Electricity Department has no objection.

EMM has already applied for a new Substation to supply the above mentioned project Township.

DIRECTORATE: Energy and Electricity
SECTION: Planning and Construction
NAME: S. Mlangeni
SIGNATURE: 
DATE: 03/04/2017

Leonie Gerber (Boksburg)

From: Jaco Burger
Sent: Tuesday, April 18, 2017 2:37 PM
To: Leonie Gerber (Boksburg)
Subject: RE: Reminder: Sunward Park Ext 26

Leonie

Although Metro Parks have no objection to the application, Metro Parks would like to insist on the following two points in regards to Public Open Spaces:

- Metro Parks strongly insist that no area smaller than 5 000m² for a public open space.
- World Urban Parks international median for park provision of 14.2 hectares per 1,000 residents. Of this 6.6 hectares per 1,000 residents is maintained urban parkland, with the balance being natural/conservation area

According to World Urban Parks - the new international organisation representing urban parks, open space and the recreation sector:

Open space per 1,000 residents.

The international median for park provision in 2014 was 14.2 hectares per 1,000 residents. Of this 6.6 hectares per 1,000 residents is maintained urban parkland, with the balance being natural/conservation areas.

Given the increasing evidence that parks benefit city health, sustainability and liveability, agencies with parkland at the lower end of the range may be able to use international data to gain recognition that their city is falling behind other similar cities and has potential to further enhance the city economy, reduce health costs, and create a cleaner environment through greater open space investment.

These standards can also be applied across a city. For example, some studies have shown that low-income neighbourhoods have less access to parks and green space than high-income neighbourhoods and that this can partially explain the often significant difference in life span of residents between neighbourhoods.

How much parkland is reasonable may depend on factors such as population growth, the quality of the city's geography and the desirability of integrated and connected green space, such as rivers and streams, but comparison to similar cities is a good start.

City planning is increasingly taking a long-term view, projecting populations and needs over 10, 20 and sometimes 50 years. A city that has 14 hectares per 1,000 residents now may see that fall to seven hectares in 50 years if the population is projected to double. The time to deal with this issue is now, while land is still available or relatively affordable. It does not have to be immediately developed and can be leased for other purposes such as horticulture, or as unmaintained natural open space.

The second option is to develop existing parkland to increase the capacity of use. This does not always address the need for sufficient access to parkland in neighbourhoods where there are few parks, although there are many creative areas, such as roof gardens and partnerships with other organisations to reclaim streets or broker community access to schools etc. Development can be a good option to save for the future when open space is no longer available or affordable.

Jaco Burger
Metro Parks & Cemeteries



Telephone : +27 (0) 11 999 5926/5254
Email : Jaco.burger@ekurhuleni.gov.za

From: Leonie Gerber (Boksburg)
Sent: Tuesday, April 18, 2017 2:01 PM
To: Johann Marx (Germiston); Mafusi Motaung; Prisca V. Malamule; Toffee Ramokone Mogoerane; Phillip Campher (Boksburg); Edmund Van Wyk; Jaco Burger; Hlawulani Ngobeni; Cecilia Rakgoale; Keleabetswe Lekalakala; Roelof Barnard (Vosloorus); Dimakatso Maboko; Lidia Joubert roomdg 25; Bruce Reid (DA); Uyanda L. Langa; Pilusa P. Mashamaite
Cc: Zunaid Osman (Boksburg); 'danie@urbandynamics.co.za'
Subject: Reminder: Sunward Park Ext 26

Good afternoon,

Kindly note herewith a reminder of comments outstanding for the ***Proposed Leeuwpoort South (Human Settlement) Development known as Sunward Park Ext 26***, circulated 14/03/2017.

It would be greatly appreciated if your departmental comments could be forwarded soonest.

Kind Regards

**Leonie Gerber
City Planning
Boksburg CCA**

**Room 246, 2nd floor
Boksburg Civic Centre
c/o Trichardt Road & Market Street
Boksburg**

**Tel: 011 999 5808
Fax: 086 632 9960
E-mail: Leonie.Gerber@ekurhuleni.gov.za**



Memorandum



Ekurhuleni
METROPOLITAN MUNICIPALITY

TO	CITY PLANNING BOKSBURG: AREA MANAGER	HEAD OFFICE Transport, Planning & Provision 6 th Floor Kempton Park Civic Centre Cnr Pretoria Rd & CR Swart Dr KEMPTON PARK 1619 Private Bag X017 KEMPTON PARK 1620 Tel : +(2711) 999-3661 Fax : +(2711) 975-6545 www.ekurhuleni.com
ATTN	Z Osman	
TEL	(011) 999 6252	
EMAIL	zunaid.osman@ekurhuleni.gov.za	
FROM	Lungile Gamede	
ENQ	Lungile Gamede	
TEL	011 999 4438	
REF	15/3/3/69/26 (LG 04.11/2017)	
DATE	6 April 2017	

APPLICATION FOR TOWNSHIP ESTABLISHMENT SUNWARD PARK EXTENSION 26

Your memorandum ref: 15/3/3/69/26 dated 16 March 2017 received by this Department on 24 March 2017 has reference.

1. This Department does not have an objection for township establishment to be known as Sunward Park Extension 26.
2. A paved sidewalk must be provided along the property boundary fronting onto the public road in order to facilitate pedestrian movements.
3. The proposed township will generate high transport users i.e. public transport, private motorists and non-motorized transport therefore of a transport study must be submitted to this Department for comments and/or approval before the development can be proceeded with.
4. The proposed location of the transportation erven on Agulas Road are not supported as they are too close to the intersections.
5. The development of the proposed transportation erven must be to the account of the applicant as they will benefit the township.
6. Fencing off of the railway should be done for safety purposes.
7. The township must be fenced off along K165 and K132 in order to ensure that pedestriains and motorists do not cross mid-block.
8. Building lines as per Gautrans standard must be honoured.
9. The access and future road network must be discussed with the Roads Department.

10. Further consultation is recommended with the Transport Planning & Provision Department in order to ensure that this application aligns with the EMM current and future transport policies and strategies.

Yours Sincerely



.....
UYANDA LANGA
DH: TRANSPORT PLANNING DIVISION
TRANSPORT PLANNING AND PROVISION DEPARTMENT

Existing zoning	Property size	Coverage	Height	F.A.R.	Density
"Undetermined"	155,7 hectares	N/A	N/A	N/A	N/A

Proposed zoning	Property size	Coverage	Height	F.A.R.	Density
"Residential 1"; "Residential 4"; "Public Services"; "Community Facility"; "Transportation"; "Public Open Space"; "Business 2"; "Special"	See Table 11 on Page 6 of Memo	See Tables 1 to 10 on Pages 2 to 5 of Memo	See Tables 1 to 10 on Pages 2 to 5 of Memo	See Tables 1 to 10 on Pages 2 to 5 of Memo	See Tables 1 to 10 on Pages 2 to 5 of Memo

● **PLEASE NOTE** that the submission of a Site Development Plan (SDP), as a condition of approval for this application, **is required.**

With reference to the above-mentioned application/proposal, I wish to comment as follows:
(Insert or Attach comments)

PROPOSED SUNWARD PARK EXTENSION 27 TOWNSHIP: SITUATED ON THE REMAINING EXTENT OF THE FARM LEEUWPOORT 113-IR, BOKSBURG.

File No.: 15/3/3/69/27

Energy and Electricity Department has no objections.

● *EMM has already applied for new substation to supply the abovementioned development with Eskom.*

DIRECTORATE: *Energy and Electricity*
SECTION: *Planning and Construction*
NAME: *S. N. Kanyani*
SIGNATURE: *[Signature]*
DATE: *03/04/2017*

Leonie Gerber (Boksburg)

From: Jaco Burger
Sent: Tuesday, April 18, 2017 2:37 PM
To: Leonie Gerber (Boksburg)
Subject: RE: Reminder: Sunward Park Ext 27

Leonie

Although Metro Parks have no objection to the application, Metro Parks would like to insist on the following two points in regards to Public Open Spaces:

- Metro Parks strongly insist that no area smaller than 5 000m² for a public open space.
- World Urban Parks international median for park provision of 14.2 hectares per 1,000 residents. Of this 6.6 hectares per 1,000 residents is maintained urban parkland, with the balance being natural/conservation area

According to World Urban Parks - the new international organisation representing urban parks, open space and the recreation sector:

Open space per 1,000 residents.

The international median for park provision in 2014 was 14.2 hectares per 1,000 residents. Of this 6.6 hectares per 1,000 residents is maintained urban parkland, with the balance being natural/conservation areas.

Given the increasing evidence that parks benefit city health, sustainability and liveability, agencies with parkland at the lower end of the range may be able to use international data to gain recognition that their city is falling behind other similar cities and has potential to further enhance the city economy, reduce health costs, and create a cleaner environment through greater open space investment.

These standards can also be applied across a city. For example, some studies have shown that low-income neighbourhoods have less access to parks and green space than high-income neighbourhoods and that this can partially explain the often significant difference in life span of residents between neighbourhoods.

How much parkland is reasonable may depend on factors such as population growth, the quality of the city's geography and the desirability of integrated and connected green space, such as rivers and streams, but comparison to similar cities is a good start.

City planning is increasingly taking a long-term view, projecting populations and needs over 10, 20 and sometimes 50 years. A city that has 14 hectares per 1,000 residents now may see that fall to seven hectares in 50 years if the population is projected to double. The time to deal with this issue is now, while land is still available or relatively affordable. It does not have to be immediately developed and can be leased for other purposes such as horticulture, or as unmaintained natural open space.

The second option is to develop existing parkland to increase the capacity of use. This does not always address the need for sufficient access to parkland in neighbourhoods where there are few parks, although there are many creative areas, such as roof gardens and partnerships with other organisations to reclaim streets or broker community access to schools etc. Development can be a good option to save for the future when open space is no longer available or affordable.

Jaco Burger
Metro Parks & Cemeteries



Telephone : +27 (0) 11 999 5926/5254
Email : Jaco.burger@ekurhuleni.gov.za

From: Leonie Gerber (Boksburg)
Sent: Tuesday, April 18, 2017 2:05 PM
To: Johann Marx (Germiston); Mafusi Motaung; Prisca V. Malamule; Toffee Ramokone Mogoerane; Phillip Campher (Boksburg); Edmund Van Wyk; Jaco Burger; Hlawulani Ngobeni; Cecilia Rakgoale; Keleabetswe Lekalakala; Roelof Barnard (Vosloorus); Dimakatso Maboko; Lidia Joubert roomdg 25; Bruce Reid (DA); Uyanda L. Langa; Pilusa P. Mashamaite
Cc: 'danie@urbandynamics.co.za'; Zunaïd Osman (Boksburg)
Subject: Reminder: Sunward Park Ext 27

Good afternoon,

Kindly note herewith a reminder of comments outstanding for the ***Proposed Leeuwpoort South (Human Settlement) Development known as Sunward Park Ext 27***, circulated 14/03/2017.

It would be greatly appreciated if your departmental comments could be forwarded soonest.

Kind Regards

Leonie Gerber
City Planning
Boksburg CCA

Room 246, 2nd floor
Boksburg Civic Centre
c/o Trichardt Road & Market Street
Boksburg

Tel: 011 999 5808
Fax: 086 632 9960
E-mail: Leonie.Gerber@ekurhuleni.gov.za



Memorandum



Ekurhuleni
METROPOLITAN MUNICIPALITY

TO	CITY PLANNING BOKSBURG: AREA MANAGER	HEAD OFFICE Transport, Planning & Provision 6 th Floor Kempton Park Civic Centre Cnr Pretoria Rd & CR Swart Dr KEMPTON PARK 1619 Private Bag X017 KEMPTON PARK 1620 Tel : +(2711) 999-3661 Fax : +(2711) 975-6545 www.ekurhuleni.com
ATTN	Z Osman	
TEL	(011) 999 6252	
EMAIL	zunaid.osman@ekurhuleni.gov.za	
FROM	Lungile Gamede	
ENQ	Lungile Gamede	
TEL	011 999 4438	
REF	15/3/3/69/27 (LG 04.12/2017)	
DATE	6 April 2017	

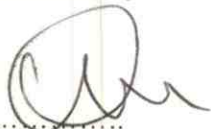
APPLICATION FOR TOWNSHIP ESTABLISHMENT SUNWARD PARK EXTENSION 27

Your memorandum ref: 15/3/3/69/27 dated 16 March 2017 received by this Department on 24 March 2017 has reference.

1. This Department does not have an objection for township establishment to be known as Sunward Park Extension 27.
2. A paved sidewalk must be provided along the property boundary fronting onto the public road in order to facilitate pedestrian movements.
3. The proposed township will generate high transport users i.e. public transport, private motorists and non-motorized transport therefore a transport study must be submitted to this Department for comments and/or approval before the development can be proceeded with.
4. The proposed location of the transportation erf on Matthews Drive is not supported as it is too close to the roundabout.
5. The development of the proposed transportation erven must be to the account of the applicant as they will benefit the township.
6. The township must be fenced off along K165 and K132 in order to ensure that the pedestrians and motorists do not cross the road midblock.
7. Fencing off of the railway must be done for safety purposes.
8. Building lines as per Gautrans standard must be honoured.
9. The access and future road network must be discussed with the Roads Department.

10. Further consultation is recommended with the Transport Planning & Provision Department in order to ensure that this application aligns with the EMM current and future transport policies and strategies.

Yours Sincerely



.....
UYANDA LANGA
DH: TRANSPORT PLANNING DIVISION
TRANSPORT PLANNING AND PROVISION DEPARTMENT

Existing zoning	Property size	Coverage	Height	F.A.R.	Density
"Undetermined"	90,7 hectares	N/A	N/A	N/A	N/A

Proposed zoning	Property size	Coverage	Height	F.A.R.	Density
"Residential 1"; "Residential 4"; "Public Services"; "Community Facility"; "Transportation"; "Public Open Space"; "Business 2"; "Special"	See Table 11 on Page 6 of Memo	See Tables 1 to 10 on Pages 2 to 5 of Memo	See Tables 1 to 10 on Pages 2 to 5 of Memo	See Tables 1 to 10 on Pages 2 to 5 of Memo	See Tables 1 to 10 on Pages 2 to 5 of Memo

PLEASE NOTE that the submission of a Site Development Plan (SDP), as a condition of approval for this application, **is required**.

With reference to the above-mentioned application/proposal, I wish to comment as follows:
(Insert or Attach comments)

PROPOSED SUNWARD PARK EXTENSION 28 TOWNSHIP: SITUATED ON THE REMAINING EXTENT OF THE FARM LEEUWPOORT 113-IR, BOKSBURG.

File No.: 15/3/3/69/28

Energy and Electricity Department has no objections.

EMM is already applied for Substation to supply the above mentioned development of

ESKOM.

DIRECTORATE: Energy and Electricity

SECTION: Planning and Construction

NAME: S. Nkanyani

SIGNATURE: 

DATE: 29/03/2017

Leonie Gerber (Boksburg)

From: Jaco Burger
Sent: Tuesday, April 18, 2017 2:38 PM
To: Leonie Gerber (Boksburg)
Subject: RE: Reminder: Sunward Park Ext 28

Leonie

Although Metro Parks have no objection to the application, Metro Parks would like to insist on the following two points in regards to Public Open Spaces:

- Metro Parks strongly insist that no area smaller than 5 000m² for a public open space.
- World Urban Parks international median for park provision of 14.2 hectares per 1,000 residents. Of this 6.6 hectares per 1,000 residents is maintained urban parkland, with the balance being natural/conservation area

According to World Urban Parks - the new international organisation representing urban parks, open space and the recreation sector:

Open space per 1,000 residents.

The international median for park provision in 2014 was 14.2 hectares per 1,000 residents. Of this 6.6 hectares per 1,000 residents is maintained urban parkland, with the balance being natural/conservation areas.

Given the increasing evidence that parks benefit city health, sustainability and liveability, agencies with parkland at the lower end of the range may be able to use international data to gain recognition that their city is falling behind other similar cities and has potential to further enhance the city economy, reduce health costs, and create a cleaner environment through greater open space investment.

These standards can also be applied across a city. For example, some studies have shown that low-income neighbourhoods have less access to parks and green space than high-income neighbourhoods and that this can partially explain the often significant difference in life span of residents between neighbourhoods.

How much parkland is reasonable may depend on factors such as population growth, the quality of the city's geography and the desirability of integrated and connected green space, such as rivers and streams, but comparison to similar cities is a good start.

City planning is increasingly taking a long-term view, projecting populations and needs over 10, 20 and sometimes 50 years. A city that has 14 hectares per 1,000 residents now may see that fall to seven hectares in 50 years if the population is projected to double. The time to deal with this issue is now, while land is still available or relatively affordable. It does not have to be immediately developed and can be leased for other purposes such as horticulture, or as unmaintained natural open space.

The second option is to develop existing parkland to increase the capacity of use. This does not always address the need for sufficient access to parkland in neighbourhoods where there are few parks, although there are many creative areas, such as roof gardens and partnerships with other organisations to reclaim streets or broker community access to schools etc. Development can be a good option to save for the future when open space is no longer available or affordable.

Jaco Burger
Metro Parks & Cemeteries



Telephone : +27 (0) 11 999 5926/5254
Email : Jaco.burger@ekurhuleni.gov.za

From: Leonie Gerber (Boksburg)
Sent: Tuesday, April 18, 2017 2:10 PM
To: Johann Marx (Germiston); Mafusi Motaung; Prisca V. Malamule; Toffee Ramokone Mogoerane; Phillip Campher (Boksburg); Edmund Van Wyk; Jaco Burger; Hlawulani Ngobeni; Cecilia Rakgoale; Keleabetswe Lekalakala; Roelof Barnard (Vosloorus); Dimakatso Maboko; Lidia Joubert roomdg 25; Uyanda L. Langa; Pilusa P. Mashamaite
Cc: 'danie@urbandynamics.co.za'; Zunaid Osman (Boksburg)
Subject: Reminder: Sunward Park Ext 28

Good afternoon,

Kindly note herewith a reminder of comments outstanding for the ***Proposed Leeuwpoot South (Human Settlement) Development known as Sunward Park Ext 28***, circulated 20/03/2017.

It would be greatly appreciated if your departmental comments could be forwarded soonest.

Kind Regards

Leonie Gerber
City Planning
Boksburg CCA

Room 246, 2nd floor
Boksburg Civic Centre
c/o Trichardt Road & Market Street
Boksburg

Tel: 011 999 5808
Fax: 086 632 9960
E-mail: Leonie.Gerber@ekurhuleni.gov.za



Memorandum



Ekurhuleni
METROPOLITAN MUNICIPALITY

TO	CITY PLANNING BOKSBURG: AREA MANAGER	HEAD OFFICE Transport, Planning & Provision 6 th Floor Kempton Park Civic Centre Cnr Pretoria Rd & CR Swart Dr KEMPTON PARK 1619 Private Bag X017 KEMPTON PARK 1620 Tel : +(2711) 999-3661 Fax : +(2711) 975-6545 www.ekurhuleni.com
ATTN	Z Osman	
TEL	(011) 999 6252	
EMAIL	zunaid.osman@ekurhuleni.gov.za	
FROM	Lungile Gamede	
ENQ	Lungile Gamede	
TEL	011 999 4438	
REF	15/3/3/69/28 (LG 04.13/2017)	
DATE	6 April 2017	

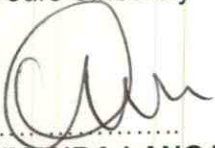
APPLICATION FOR TOWNSHIP ESTABLISHMENT SUNWARD PARK EXTENSION 28

Your memorandum ref: 15/3/3/69/28 dated 16 March 2017 received by this Department on 24 March 2017 has reference.

1. This Department does not have an objection for township establishment to be known as Sunward Park Extension 28.
2. A paved sidewalk must be provided along the property boundary fronting onto the public road in order to facilitate pedestrian movements.
3. The proposed township will generate high transport users i.e. public transport, private motorists and non-motorized transport therefore of a transport study must be submitted to this Department for comments and/or approval before the development can be proceeded with.
4. The proposed location of the transportation erven along Melkbos Street is not supported as it is too close to the roundabout.
5. The township must be fenced off along K165 in order to ensure that pedestrians and motorists do not cross the road midblock.
6. The development of the proposed transportation erven must be to the account of the applicant as they will benefit the township.
7. Building lines as per Gautrans standard must be honoured.
8. The access and future road network must be discussed with the Roads Department.

9. Further consultation is recommended with the Transport Planning & Provision Department in order to ensure that this application aligns with the EMM current and future transport policies and strategies.

Yours Sincerely



UYANDA LANGA
DH: TRANSPORT PLANNING DIVISION
TRANSPORT PLANNING AND PROVISION DEPARTMENT

Existing zoning	Property size	Coverage	Height	F.A.R.	Density
"Undetermined"	134,8 hectares	N/A	N/A	N/A	N/A

Proposed zoning	Property size	Coverage	Height	F.A.R.	Density
"Residential 1"; "Residential 4"; "Public Services"; "Community Facility"; "Transportation"; "Public Open Space"; "Special"	See Table 8 on Page 5 of Memo	See Tables 1 to 7 on Pages 2 to 4 of Memo	See Tables 1 to 7 on Pages 2 to 4 of Memo	See Tables 1 to 7 on Pages 2 to 4 of Memo	See Tables 1 to 7 on Pages 2 to 4 of Memo

PLEASE NOTE that the submission of a Site Development Plan (SDP), as a condition of approval for this application, **is required**.

With reference to the above-mentioned application/proposal, I wish to comment as follows:
(Insert or Attach comments)

PROPOSED SUNWARD PARK EXTENSION 29 TOWNSHIP: SITUATED ON THE REMAINING EXTENT OF THE FARM LEEUWPOORT 113-IR, BOKSBURG.

File No.: 15/3/3/69/29


Energy and Electricity Department has no objections.

EMM is already applied for Subtron to supply the above mentioned development at Eskom

DIRECTORATE: Energy and Electricity

SECTION: Planning and Constructions

NAME: S. Nkanyani

SIGNATURE: 

DATE: 29/03/2017

Leonie Gerber (Boksburg)

From: Jaco Burger
Sent: Tuesday, April 18, 2017 2:38 PM
To: Leonie Gerber (Boksburg)
Subject: RE: Reminder: Sunward Park Ext 29

Leonie

Although Metro Parks have no objection to the application, Metro Parks would like to insist on the following two points in regards to Public Open Spaces:

- Metro Parks strongly insist that no area smaller than 5 000m² for a public open space.
- World Urban Parks international median for park provision of 14.2 hectares per 1,000 residents. Of this 6.6 hectares per 1,000 residents is maintained urban parkland, with the balance being natural/conservation area

According to World Urban Parks - the new international organisation representing urban parks, open space and the recreation sector:

Open space per 1,000 residents.

The international median for park provision in 2014 was 14.2 hectares per 1,000 residents. Of this 6.6 hectares per 1,000 residents is maintained urban parkland, with the balance being natural/conservation areas.

Given the increasing evidence that parks benefit city health, sustainability and liveability, agencies with parkland at the lower end of the range may be able to use international data to gain recognition that their city is falling behind other similar cities and has potential to further enhance the city economy, reduce health costs, and create a cleaner environment through greater open space investment.

These standards can also be applied across a city. For example, some studies have shown that low-income neighbourhoods have less access to parks and green space than high-income neighbourhoods and that this can partially explain the often significant difference in life span of residents between neighbourhoods.

How much parkland is reasonable may depend on factors such as population growth, the quality of the city's geography and the desirability of integrated and connected green space, such as rivers and streams, but comparison to similar cities is a good start.

City planning is increasingly taking a long-term view, projecting populations and needs over 10, 20 and sometimes 50 years. A city that has 14 hectares per 1,000 residents now may see that fall to seven hectares in 50 years if the population is projected to double. The time to deal with this issue is now, while land is still available or relatively affordable. It does not have to be immediately developed and can be leased for other purposes such as horticulture, or as unmaintained natural open space.

The second option is to develop existing parkland to increase the capacity of use. This does not always address the need for sufficient access to parkland in neighbourhoods where there are few parks, although there are many creative areas, such as roof gardens and partnerships with other organisations to reclaim streets or broker community access to schools etc. Development can be a good option to save for the future when open space is no longer available or affordable.

Jaco Burger
Metro Parks & Cemeteries



Telephone : +27 (0) 11 999 5926/5254
Email : Jaco.burger@ekurhuleni.gov.za

From: Leonie Gerber (Boksburg)

Sent: Tuesday, April 18, 2017 2:14 PM

To: Johann Marx (Germiston); Mafusi Motaung; Prisca V. Malamule; Toffee Ramokone Mogoerane; Phillip Campher (Boksburg); Edmund Van Wyk; Jaco Burger; Hlawulani Ngobeni; Cecilia Rakgoale; Keleabetswe Lekalakala; Roelof Barnard (Vosloorus); Dimakatso Maboko; Lidia Joubert roomdg 25; Uyanda L. Langa; Pilusa P. Mashamaite

Cc: 'danie@urbandynamics.co.za'; Zunaid Osman (Boksburg)

Subject: Reminder: Sunward Park Ext 29

Good afternoon,

Kindly note herewith a reminder of comments outstanding for the ***Proposed Leeuwoort South (Human Settlement) Development known as Sunward Park Ext 29***, circulated 20/03/2017.

It would be greatly appreciated if your departmental comments could be forwarded soonest.

Kind Regards

Leonie Gerber
City Planning
Boksburg CCA

Room 246, 2nd floor
Boksburg Civic Centre
c/o Trichardt Road & Market Street
Boksburg

Tel: 011 999 5808

Fax: 086 632 9960

E-mail: Leonie.Gerber@ekurhuleni.gov.za



Memorandum



Ekurhuleni
METROPOLITAN MUNICIPALITY

TO	CITY PLANNING BOKSBURG: AREA MANAGER	HEAD OFFICE Transport, Planning & Provision 6 th Floor Kempton Park Civic Centre Cnr Pretoria Rd & CR Swart Dr KEMPTON PARK 1619 Private Bag X017 KEMPTON PARK 1620 Tel : +(2711) 999-3661 Fax : +(2711) 975-6545 www.ekurhuleni.com
ATTN	Z Osman	
TEL	(011) 999 6252	
EMAIL	zunaid.osman@ekurhuleni.gov.za	
FROM	Lungile Gamede	
ENQ	Lungile Gamede	
TEL	011 999 4438	
REF	15/3/3/69/29 (LG 04.14/2017)	
DATE	6 April 2017	


APPLICATION FOR TOWNSHIP ESTABLISHMENT SUNWARD PARK EXTENSION 29

Your memorandum ref: 15/3/3/69/29 dated 16 March 2017 received by this Department on 24 March 2017 has reference.

1. This Department does not have an objection for township establishment to be known as Sunward Park Extension 29.
2. A paved sidewalk must be provided along the property boundary fronting onto the public road in order to facilitate pedestrian movements.
3. The proposed township will generate high transport users i.e. public transport, private motorists and non-motorized transport therefore a transport study must be submitted to this Department for comments and/or approval before the development can be proceeded with.
4. The proposed location of the transportation erf on Matthews Street is not supported as it is too close to the roundabout.
5. The township must be fenced off along K155, K132 and PWV15 in order to ensure that pedestrians and motorists do not cross the roads midblock.
6. The development of the proposed transportation erf must be to the account of the applicant as they will benefit the township.
7. Building lines as per Gautrans standard must be honoured.
8. The access and future road network must be discussed with the Roads Department.

9. Further consultation is recommended with the Transport Planning & Provision Department in order to ensure that this application aligns with the EMM current and future transport policies and strategies.

Yours Sincerely



UYANDA LANGA
DH: TRANSPORT PLANNING DIVISION
TRANSPORT PLANNING AND PROVISION DEPARTMENT

**ANNEXURE D8
ELECTRICAL SERVICES
REPORT**



LEEUPPOORT DEVELOPMENT COMPANY (PTY) LTD

*Leeuwpoort Development North & South
Developments*

2590-00-00/2590-00-01

PRELIMINARY ENGINEERING DESIGN REPORT

DECEMBER 2016

PREPARED FOR:



LEEUPPOORT DEVELOPMENT COMPANY

Allan Cormack Street, The Innovation Hub, Pretoria
PO Box 29, Innovation Hub, 0087
Tel : +27(0)12 842 8700
Fax: +27(0)12 843 9000/9001
E-mail: pottie.potgieter@bigenafrica.com

PREPARED BY:



BIGEN AFRICA SERVICES (PTY) LTD

Compiled by : Thandiswa Mathibela

Allan Cormack Street, The Innovation Hub, Pretoria
PO Box 29, Innovation Hub, 0087
Tel : +27(0)12 842 8863
Cell : +27 73 275 9003
Fax: +27(0)12 843 9000/9001
E-mail: Thandi.mathibela@bigenafrica.com



Leeuwpoot Development Company Ltd

LEEUWPOORT NORTH & SOUTH DEVELOPMENTS

PRELIMINARY ENGINEERING DESIGN REPORT

CONTENTS LIST

CONTENTS LIST i

EXECUTIVE SUMMARY 2

LEEUWPOORT NORTH DEVELOPMENT 5

1. Introduction..... 6

2. Purpose of the Report 6

3. Locality 6

3.1 Local Supply Authority 6

4. Topography 7

5. Project Brief..... 7

5.1 Township Layout 9

6. Statutory Requirements 9

6.1 Standards 9

6.2 Servitude and Way-leave Agreements 10

6.3 Environmental Considerations 11

6.4 Performance and Operability Requirements 12

7. Design Factors for Consideration..... 12

8. Electrical Design Philosophy 14

8.3 Project Design Level 17

8.4 Proposed Electrical Infrastructure 17

9. Drawings 21

10. Project Phasing 21

LEEUWPOORT SOUTH DEVELOPMENT 22

1. Introduction..... 23

2. Purpose of the Report 23

3. Locality 23

3.1 Local Supply Authority 23

4. Topography 24

5. Project Brief..... 24

5.1 Township Layout 25

6. Statutory Requirements 26

6.1 Standards 26



6.2	Servitude and Way-leave Agreements	27
6.3	Environmental Considerations	28
6.4	Performance and Operability Requirements	29
7.	Design Factors for Consideration.....	29
8.	Electrical Design Philosophy	31
8.3	Project Design Level	33
8.4	Proposed Electrical Infrastructure	33
9.	Drawings	37
10	Project Phasing	38

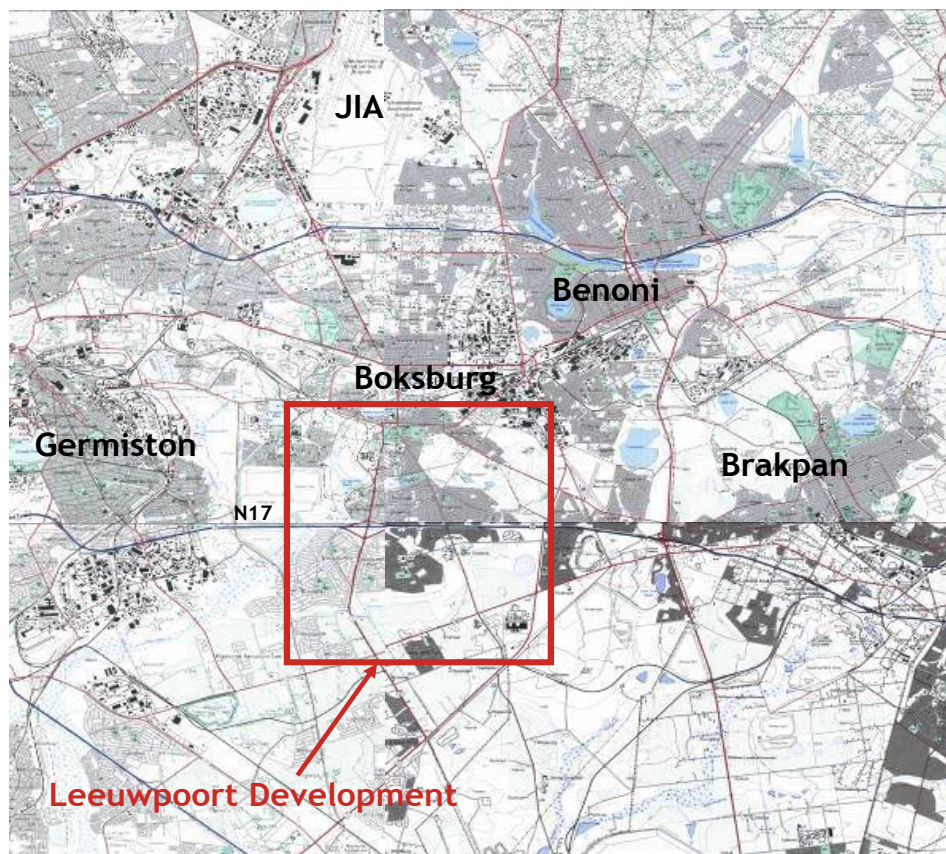
Leeuwpoot Development Company Ltd

LEEUWPOORT NORTH & SOUTH DEVELOPMENTS

PRELIMINARY ENGINEERING DESIGN REPORT

EXECUTIVE SUMMARY

The Ekurhuleni Metropolitan Municipality (“EMM”) requested tenders during June 2004 for the development of the Leeuwpoot project. The Leeuwpoot development consists of land owned by EMM. The total project comprises approximately 1 300 Ha. The project is located south of Boksburg as indicated in the figure below.



The development consists of 8 land parcels with a scope of approximately **18923** building opportunities with a composition of subsidised, institutional and bonded housing. The scope of the development will further include ancillary land uses (commercial, etc.) and external

infrastructure requirements. Infrastructure is planned in accordance with the design norms and standards of Ekurhuleni Metropolitan Municipality.

Investigations to date show that regional water, sewerage and electrical infrastructure do not have sufficient capacity to accommodate the anticipated demands and discharges of the overall development, but some portions can be accommodated within the existing capacity.

Ekurhuleni Metropolitan Municipality holds the licence for the distribution of electricity in the mentioned area. Eskom provides bulk supply to the municipality from 88kV infrastructure. The electricity supply to all the pockets will be provided from newly created bulk and link infrastructure fed from the existing electrical infrastructure in the EMM supply area.

Accessibility to the development is very good, but several existing servitudes, planned roads, and rail lines affect the proposed development. The preliminary traffic impact study conducted, highlighted the need for the upgrading of existing roads infrastructure as part of the development.

The estimated total capital cost for the electrical scope of the project will be **R775 899 479.89**, of which **R217 803 060.14** is estimated for the Leeuwpoot North project and **R558 096 419.75** is estimated for South.

Leeuwpoot North Electrical Cost Estimate Summary			
Bulk/Link	Construction Value	Professional Fee	Total
Substation upgrade	R 27 090 664.00	R 2 438 159.76	R 29 528 823.76
Switching station	R 16 671 000.00	R 1 583 745.00	R 18 254 745.00
North link cables	R 18 756 000.00	R 1 763 064.00	R 20 519 064.00
Internal link between townships	R 58 780 000.00	R 5 263 400.00	R 64 043 400.00
Sub Total North	R 121 297 664.00	R 11 048 368.76	R 132 346 032.76
Internals			
Phase 1	R 1 367 706.00	R 142 241.42	R 1 509 947.42
Phase 2	R 32 937 656.00	R 2 733 825.45	R 35 671 481.45
Phase 3	R 21 870 604.00	R 1 902 742.55	R 23 773 346.55
Phase 4	R 9 717 123.00	R 923 126.69	R 10 640 249.69
Phase 5	R 8 864 503.00	R 850 992.29	R 9 715 495.29
Phase 6	R 3 752 495.00	R 394 011.98	R 4 146 506.98

Sub Total North	R 78 510 087.00	R 6 946 940.38	R 85 457 027.38
Total North			R 217 803 060.14
Leeuwpoot South Electrical Cost Estimate Summary			
Bulk/Link			
Substation primary plant	R 93 560 688.20	R 7 297 733.68	R 100 858 421.88
Substation secondary plant	R 40 097 437.80	R 5 453 251.54	R 45 550 689.34
Switching station	R 25 606 660.00	R 2 330 206.06	R 27 936 866.06
Link between townships	R 196 400 000.00	R 16 059 060.00	R 212 459 060.00
Sub Total South	R 355 664 786.00	R 31 140 251.28	R 386 805 037.28
Internals			
South			
Phase 1	R 31 182 770.00	R 2 525 804.37	R 33 708 574.37
Phase 2	R 22 123 081.00	R 1 814 092.64	R 23 937 173.64
Phase 3	R 43 102 575.00	R 3 362 000.85	R 46 464 575.85
Phase 4	R 37 999 718.00	R 3 001 977.72	R 41 001 695.72
Phase 5	R 13 727 257.00	R 1 221 725.87	R 14 948 982.87
Phase 6	R 10 312 562.00	R 917 818.02	R 11 230 380.02
Sub Total South	R 158 447 963.00	R 12 843 419.47	R 171 291 382.47
Total South			R 558 096 419.75



Leeuwpoot Development Company Ltd

LEEUWPOORT NORTH & SOUTH DEVELOPMENTS

PRELIMINARY ENGINEERING DESIGN REPORT

SECTION 1

Leeuwpoot North Development

1. Introduction

Leeuwpoot North Development will comprise of **5252** residential units, community facilities, schools, businesses, industrial stands and public transport facilities.

2. Purpose of the Report

The report outlines the required electrical services, the applicable design standards and guidelines and the level of service to be provided for the development.

3. Locality

The study area is located about 2 km west of Boksburg civic centre. Access to the site is off an existing south street, north of the development.



Figure 3.1: Google Earth Image – Leeuwpoot North

3.1 Local Supply Authority

The electrical supply authority for the area is Ekurhuleni Metropolitan Municipality.

4. Topography

The Northern Development Area is characterized by several forms of mining infrastructure including a railway line, water pipes, sewer lines, telephone and electrical lines as well as various forms of outbuildings. An existing open mining shaft (Central Shaft) is still evident towards the north of the development area, whilst the remaining parts have primarily been used for residential purposes and other land uses incidental thereto.

The Northern Portion Reiger Park Extension 19 & Parkdene Extension 7 constitute 135 ha of the development.



Figure 4.1: Topographic View – Leeuwpoot North

5 Project Brief

The land earmarked for this development, will be mainly used for residential purposes with associated land uses such as business, community facilities and public open spaces which will be incorporated.

The table below is an indication of the planned land uses for the development.

REIGER PARK EXTENSION 19			
Zoning	Description	Size (Hectares)	Number of stands/Units Rev Sept 2016
Reiger Park			
Residential 3	200m ² FLISP stands (50du/ha)	4.6782	184
Residential 3	112m ² Subsidised stands	2.3485	151
Residential 4	FLISP units 180 u/ha	2.5563	459
Residential 4	FLISP Units 160u/ha	0.9083	145
Residential 4	RDP Units 160 u/ha	1.3861	220
Residential 4	RDP Units 120u/ha	4.0291	483
Primary School		2.7826	1
Community Facility		0.6918	1
Transportation		0.3589	2
Public open space	Park	4.9079	8
Roads		11.3265	

Table 5.1: Land use Table - Reiger Park Ext-19

PARKDENE EXTENSION 7			
Zoning	Description	Size (Hectares)	Number of stands/Units Sept 2016
Parkdene Extension 7			
Residential 3	200m ² bonded stands	6.2452	275
Residential 3	112m ² Subsidised stands	3.5611	273
Residential 4	FLISP Units 120u/ha	2.2953	274
Residential 4	RDP Units 160u/ha	1.8153	289
Residential 4	RDP Units 180u/ha	3.7697	675
Residential 4	FLISP Units 160u/ha	4.1109	657
Residential 4	FLISP Units 180u/ha	5.5177	992
Residential 4	FLISP Units 120u/ha	1.4592	175
Special	Community facilities	1.7559	1
Industrial 2	Industrial 2	2.949	4
Business 2	Shops,restaurants,medical consulting rooms, etc	0.4842	1
Secondary School	Sec School	4.6319	1
Primary School	Prim School	3.2175	1
Community Facility	Community facilities	1.4234	3
Public transport	Transportation	0.456	
Park	POS	29.766	
Roads	R & S	16.355	

Table 5.2: Land use Table - Parkdene Ext-7

5.1 Township Layout

A township layout plan is attached in the Appendix.

6. Statutory Requirements

The requirements of the Occupational Health and Safety Act, Act 85 of 1993, (OHS Act) and all subsequent amendments and regulations shall be observed and adhered to except where exemption has been obtained from the Chief Factories Inspector. If any text or drawings in this standard are in conflict with the OHS Act and no exemption has been obtained, the OHS Act requirements shall take precedence over the standard.

The requirements of SANS 10198-1: (The selection, handling and installation of electric power cables of rating not exceeding 33 kV Part 1: Definitions and statutory requirements) shall be observed and adhered to except where exemption has been obtained from the relevant authority.

Other statutory bodies from which permission may have to be obtained are:

- Provincial and/or metropolitan roads agencies;
- Telkom, MTN, Neotel, Dark Fibre Africa, etc;
- Dept. of Water and Forestry;
- Dept. of Environmental Affairs and Tourism;
- Local metropolitan / municipal town councils; and
- Any other statutory body that may be considered a stakeholder.

Applications to the water and local authorities shall be made in accordance with 34-820 and 34-822.

6.1 Standards

The requirements for medium-voltage mini-substations for systems with nominal voltages of 11 kV and 22 kV in this specification are based on NRS 004 / SANS 1029, Mini-substations for rated A.C voltages up to and including 24 kV.

The relevant updated standards that shall then be used are listed as below:

DGL 34-619, Distribution Standard – Part 1: Network planning guideline for lines and cables.
DSP 34-1080 (DSP 0003), Distribution Standard – Part 4: Specification for earth fault indicators used for MV cable network

DSP 34-1622, Distribution Standard – Part 22: Accessories for medium-voltage power cables with rated voltages from 11 kV to 33 kV.
DSP 34-1658 (DISSCAAP9), Distribution Standard – Part 4: Corrosion protection specification for distribution outdoor equipment manufactured from steel.
DSP 34-253, Distribution Standard Part 15: Distribution specification for electrical terminal blocks.
DSP 34-462, Distribution Standard Part 15: Standard design for distribution protection schemes.
DST 34-06, Distribution Standard – Part 22: Medium voltage services to large power users.
DST 34-1175, Distribution Standard – Part 22: Cables Section 0: General information and requirements for medium voltage cable systems.
DST 34-1175: General information and requirements for MV cable systems
DST 34-1176: General information and requirements for LV cable systems
DST 34-542, Distribution Standard – Part 1: Planning: Distribution voltage regulation and apportionment limits.
IEC 60287-1-1, Electric cables - Calculation of the current rating, Part 1-1: Current rating equations (100 % load factor) and calculation of losses – General.
IEC 60853-1, Calculation of the cyclic and emergency current rating of cables. Part 1: Cyclic rating factor for cables up to and including 18/30 (36) kV.
IEC 60853-2, Calculation of the cyclic and emergency current rating of cables, Part 2: Cyclic rating of cables greater than 18/30 (36) kV and emergency ratings for cables of all voltages.
NRS 012 / SANS 876, Cable terminations and live conductors within air-filled enclosures (insulation coordination) for rated a.c. voltages from 7.2 kV and up to and including 36 kV.
NRS 012, Cable terminations and live conductors within air-filled enclosures (insulation co-ordination) for rated a.c. voltages from 7.2 kV and up to and including 36 kV.
NRS 053: Edition 2, Accessories for medium-voltage power cables (3.8/6.6 kV to 19/33 kV).
SANS 10142, The Wiring of Premises - LV Installations
SANS 1019, Standard voltages, currents and insulation levels for electricity supply.
SANS 121 / ISO 1461, Hot-dip galvanized coatings on fabricated iron and steel articles – Specifications and test methods.
SANS 1339, Electric cables – Cross-linked polyethylene (XLPE)-insulated cables for voltages from 3.8/6.6 kV up to 19/33 kV.
SANS 60529, Degrees of protection provided by enclosures (IP Code).

Table 6.1: Applicable Standards

6.2 Servitude and Way-leave Agreements

- The special requirements of municipal wayleaves shall be considered.
- Secondary and mini-substation cable feeders that traverse private property shall have registered wayleave agreements signed with the property owner.
- LV feeder cables that traverse private property shall have wayleave agreements signed with the property owner.

- Wayleaves for cables installed within private property shall be registered for a minimum width of 1 m on both sides of the outer most cables in the servitude.
- A 6 x 3m servitude to be registered in Eskom's name for the Miniature substation position for installation.
- In the event that Eskom's rights (wayleaves) may be encroached upon and / or services /assets placed at risk, the requirements of DST 34-827 shall be followed.

6.3 Environmental Considerations

The requirements of the National Environmental Management Act, 1998 (Act 107 of 1998) and Eskom's environmental directives, policies and procedures shall be observed and adhered to except where exemption has been obtained from the relevant authority.

An environmental assessment has been carried out in accordance with the requirements of DST 34-926.

6.3.1 EMP Compliance

The following are required for the compliance with the EMP:

- Environmental Training to be given to all resources working on project to understand what the possible environmental impacts will be. This training to be given by contractor to their people.
- An Environmental Register is to be kept on site at all times.
- The EMP must be available at all time on the construction site.

6.3.2 Environmental Summary

Construction considerations

Self-Build Project

- An ECO(Environment Control Officer) will need to be appointed by the developer in order to ensure compliance to items listed in the EMP

Water Management

- Water for construction activities to be sourced from a legal municipal source,

Hazardous Substances

- Disposal has to be done correctly according to all standards and legislation;

Waste Management

- General waste must be disposed of at a registered site,
- Relevant sorting bins to be provided and sorted waste to be taken to appropriate RRR (Reduce Reuse Recycle) centres for disposal,

Social Considerations

- Please notify all landowners that are directly influenced by the project.

Transportation

- Necessary permits and vehicle signage to be obtained to ensure legal compliance for the transportation of workers as well as the transportation of heavy machinery, and hazardous substances. Proper approved “people carriers” shall be used to transport workers.

Fire Management

- No fires to be made on site under any circumstances.

Rehabilitation

- Full site rehabilitation to be done

Design considerations

- Cutting of the trees to be avoided as there may be protected trees, should they need to be removed or trimmed a tree cutting permit will have to be applied for from the Department of Agriculture, Forestry and Fisheries (D.A.F.F)

6.4 Performance and Operability Requirements

Cable systems shall be planned and designed to ensure that the desired network performance is achievable. The designed network will be simulated using Reticmaster software to optimize the conductor and ensure the cables are rated to withstand fault levels and voltage drops are within the stipulated $\pm 5\%$ from Miniature substation to customers’ point of connection.

6.4.1 Plant location

The location of plant, e.g. sub-switching stations and mini-substations shall be decided upon considering the following factors:

- Vehicular and pedestrian traffic
- Environmental impact
- Water run-off & Pollution
- Accessibility for ease of operation and maintenance
- Location of other underground services, for example Telkom, water etc.

7. Design Factors for Consideration

The following are a few important factors for consideration when networks are designed:

- The economic level classification of the community to be serviced with electricity in accordance to SABS0142.

Number	Community Income Classification Level	Connected Load /House KVA	ADMD/ House KVA	ADMD/ House For 1000 Houses KVA
A	Extra Low	3.080	1.540	0.51 - 1.50
B	Low	6.570	4.470	1.50 - 2.20
C	Middle	10.250	6.610	2.20 - 2.90
D	Middle/High	13.450	8.710	2.90 - 4.62
E	High	19.180	13.860	4.62 - 5.60
F	Extra High	22.590	16.790	5.60 - Up

Table 7: Typical Design Load Parameters for Domestic Consumers

- The number of years that the level of design must provide reliable and safe electrical services, for example 5; 10; 15; 20, 25 etc. years.
- The number of customers effected in case of equipment failure in each part of the network.
- The average switching back time in case of equipment failure.
- Alternative supplies available based on the number of customers that will be affected in case of infrastructure failures or when maintenance is carried out.
- Compliance to the requirements and regulations of the National Energy Regulator of South Africa (NERSA).
- Safety to residents as well as to electrical operational personnel.

8. Electrical Design Philosophy

8.1 Existing Infrastructure

There is a 2 x 20MVA 88/11kV Substation on the western side of the development approximately 3km from the development with a maximum load demand of 9MVA. The name of the substation is Central Vertical substation. The available capacity at Central Vertical Substation is +/- 11MVA.

There are no existing link lines/cables available at the moment.

The existing nearby area network is underground electrification.

8.2 Future Demand and Design guidelines/parameters

The main objective from an operational point of view is to reduce the number of customers affected in case of equipment failure and/or when maintenance is carried out.

Demand forecasts were calculated in order to assess the capacity requirements for the bulk services to supply the proposed development.

The design of the bulk, link and internal reticulation required for the development will have to accommodate the ultimate demands anticipated.

The design demands used for the developments are mostly derived from the existing developments in Ekurhuleni.

Description	Minimum Unit Demand (kVA/Unit)
Low – Middle income group	2.4
Middle income group	3.5
High income group	5

Table 8.2: EMM Design Parameters

REIGER PARK EXTENSION 19						
Zoning	Description	Size (Hectares)	Number of stands/Units	ADMD for Residential stands	ADMD 0.08 KVA/m2 (Industrial/Business)	TOTAL DEMAND (KVA)
Reiger Park						
Residential 3	200m ² FLISP stands (50du/ha)	4.6782	184	3.5		644
Residential 3	112m ² Subsidised stands	2.3485	151	3.5		528.5
Residential 4	FLISP units 180 u/ha	2.5563	459	3.5		1606.5
Residential 4	FLISP Units 160u/ha	0.9083	145	3.5		507.5
Residential 4	RDP Units 160 u/ha	1.3861	220	3.5		770
Residential 4	RDP Units 120u/ha	4.0291	483	3.5		1690.5
Primary School		2.7826			0.08	1113.04
Community Facility		0.6918			0.08	332.064
Transportation		0.3589				
Public open space		4.9079				
Roads		11.3265				
Total						7192kVA

Table 8.2-1: Leeuwpoot North Load Demand Forecast – Reiger Park Ext 19

PARKDENE EXTENSION 7						
Zoning	Description	Size (Hectares)	Number of stands/Units	ADMD for Residential stands	ADMD 0.08 KVA/m2 (Industrial/ Business)	TOTAL DEMAND (KVA)
PARKDENE EXTENSION 7						
Residential 3	200m ² bonded stands	6.2452	275	3.5		963
Residential 3	112m ² Subsidised stands	3.5611	273	3.5		955.5
Residential 4	FLISP Units 120u/ha	2.2953	274	3.5		959
Residential 4	RDP Units 160u/ha	1.8153	289	3.5		1011.5
Residential 4	RDP Units 180u/ha	3.7697	675			2362.5
Residential 4	FLISP Units 160u/ha	4.1109	657	3.5		2300
Residential 4	FLISP Units 180u/ha	5.5177	992	3.5		3472
Residential 4	FLISP Units 120u/ha	1.4592	175	3.5		613
Special	Community facilities	1.7559	1		0.08	843
Industrial 2	Industrial 2	2.949	4		0.08	1651
Business 2	shops, restaurants, medical consulting rooms, etc	0.4842	1		0.08	232
Secondary School	Sec School	4.6319	1		0.08	1853
Primary School	Prim School	3.2175	1		0.08	1287
Community Facility	Community facilities	1.4234	3		0.08	683
Public transport	Transportation	0.456				
Park	POS	29.766				
Roads	R & S	16.355				
TOTAL						19185KVA

Table 8.2-2: Leeuwpoot North Load Demand Forecast – Parkdene Extension 7

All units will be assumed to have a demand of 3.5kVA and the estimated number of units is 5252 excluding community facilities and business areas. Therefore the estimated demand for

residential units is about **18.4MVA**, and about **26.4MVA** when including the business stands and community facilities.

8.3 Project Design Level

Although the current 11kV supply design makes no provision to provide capacity for any form of suburb extensions, the following has been considered:

- Extension of the 11kV infrastructure for future development.
- Feeder ring configurations.
- Feeder electrical loading.

8.4 Proposed Electrical Infrastructure

All the internal designs will be completed according to Ekurhuleni standards as the internal network will be handed over to them on completion.

8.4.1 Medium Voltage Bulk Supply

The MV supply to the area will be supplied from Central Vertical 88/11 kV substation.

At Central Vertical Substation the following upgrades shall be done;

- Install 6 x New feeder panels
- Install 2 x New Incomer panels
- Upgrade the existing 2 X 20MVA transformers to 2 x 40MVA Transformers.

8.4.2 Medium Voltage Bulk Link Supply

The medium voltage network will be an 11kV underground network feeding to a centralised switching station within the development. PILC cables will be used as per EMM requirements. A 300mm² 3 Core PILC screened conductor is proposed for the MV bulk link load distribution. The maximum supply capacity of a 300mm² 3 Core PILC screened conductor is 440A or 7.5MVA at 11kV and 0.9 power factor. Four cables will be installed to have a 22.5MVA firm capacity of the switching station.

The following scope will be applicable relating to bulk link requirements;

- Install 4 x 300mm² 3 Core PILC Cu screened cables (Table 19) from Central Vertical Substation to the new 24 MVA firm capacity Switching Station within the development.
- Install a fibre cable with the MV cable from central vertical substation to the new switching station.
- A new 22 MVA firm capacity Switching station must be built.

See figure below for the proposed link route from the Central Vertical substation to the new switching station.



Table 8.4.2: Proposed Link Cable Route

8.4.3 Internal Medium Voltage Reticulation

MV Cabling:

The medium voltage network will be an 11kV underground network feeding a configuration of 315kVA and 500kVA miniature substations.

Due to spacing limitations at the switching station, the miniature substations will be connected via a 185mm² screened PILC Cu cable ring networks instead of the commonly used 120mm² screened PILC Cu cable ring networks.

The maximum supply capacity of a 120mm² 3 Core PILC screened conductor is 270A or 4.6MVA at 11kV and 0.9 power factor.

With the use of a 185mm² 3 Core PILC screened conductor which has a current rating of 340A, 5.8MVA load transfer can be achieved by a single ring network. To achieve a load demand of 26.4MVA which includes business stands, 5 rings will have to be created. This will result in 10 outgoing feeder panels at the switching station.

Miniature Substations:

The miniature substations shall be a Type-B only and comply in every aspect with the latest edition of SABS 1874, NRS 006, SABS 1029, SABS 1030 and NRS 004-1. The miniature substation shall be mounted on the side of the road. The earthing of the miniature substation shall be achieved through use of earth rod.

8.4.4 Low Voltage Reticulation

For the residential land portions, the low voltage network will be underground cable supplied from the different miniature substations. Miniature substation positions will be where practically possible placed centrally in each mini sub area of supply and in such a way that LV cables can be reticulated in at least three directions. The supply voltage will be 400/230V with a regulation of +/-10%. The economic apportionment of voltage drop, to meet the statutory limits of 230V \pm 10%, is to design approximately 8% voltage drop on the LV distributor, including the service connection. This relates to a \pm 6% allowable design voltage drop on the LV feeder up to the consumer connection point at the stand boundary.

The internal low voltage reticulation will be fed from the miniature substations up to 4 or 8 way metering kiosk.

The size of the LV feeder cable from the miniature substations will be determined at the final design stage. PILC cables shall be used for all LV installations. The following sizes of cables will be applicable;

- 70mm²
- 95mm²
- 120mm²

The following specification will be applicable to the LV designs;

- 500kVA and 315kVA Type B miniature substation will be used throughout the township.
- 4 and 8- way metering kiosks shall be used.
- Mini subs will be loaded at 80% of rated capacity
- ADMD is 3.5kVA per customer
- Res 4 stands and business stands will have a dedicated RMU.

8.4.5 Service Connections

Each stand will be connected through an underground 16mm² cable with 2 X 1,5mm communication cores for communication between active and passive parts of the split metering system (16 mm² SWA with 2 by communication).

All underground road crossings will be through sleeves. All sleeves shall be corrugated polyethylene type and 110mm in diameter.

8.4.6 Street and Area Lighting

The street lighting will be a separate network with control gear. The proposed streetlights will be standard street light fittings with 0.5 to 1.0m outreach, installed at a 7m mounting height on steel galvanized poles or on the LV conductor structures. Luminaires will typically be provided with 70W HPS lamps. The street lighting will be fed from controllers installed near the miniature substations or pole distribution boxes. Streetlights will be supplied from an overhead 25mm² 2C ABC conductors.

8.4.7 Metering

Metering for street lighting will be in a secure kiosk outside mini sub, while the street lighting control box will be mounted on the nearest pole away from the secure metering kiosk.

The metering philosophy and requirements shall be in accordance with DST 34-305.

Meter kiosks shall be installed at least 0.5 m from the erf boundary and at least 1 m from the road kerbing. Meter kiosks shall be installed on the common boundary between adjacent customer properties.

8.4.8 Other Design Requirements

Labelling Requirements shall conform to the EMM standards.

Decommissioning requirements (if applicable) as well as estimated material list and costs shall be provided.

Execution of work with minimum inconvenience to customers.

9. Drawings

A full set of drawings shall be submitted indicating the proposed layout of medium voltage structures (Substations and switching stations), medium voltage cables, low voltage, street light reticulation and no of sleeves and their positions. These drawings shall be submitted for approval before any work commence.

10 Project Phasing

The phasing, construction and commissioning of this project will be coordinated and aligned with EMM Electrical Department.

A phasing plan has been included in the Annexures.

Leeuwpoot Development Company.

LEEUWPOORT NORTH & SOUTH DEVELOPMENTS

PRELIMINARY ENGINEERING DESIGN REPORT

SECTION 2

Leeuwpoot South Development

1. Introduction

Leeuwpoot South Development will comprise of **13671** residential units, community facilities, schools, businesses, industrial stands and public transport facilities.

2. Purpose of the Report

The report outlines the required electrical services, the applicable design standards and guidelines and the level of service to be provided for the development.

3. Locality

The study area is located north of North Boundary Road and west of Barry Marais road. Access to the site is off an existing North Boundary road, south of the development.

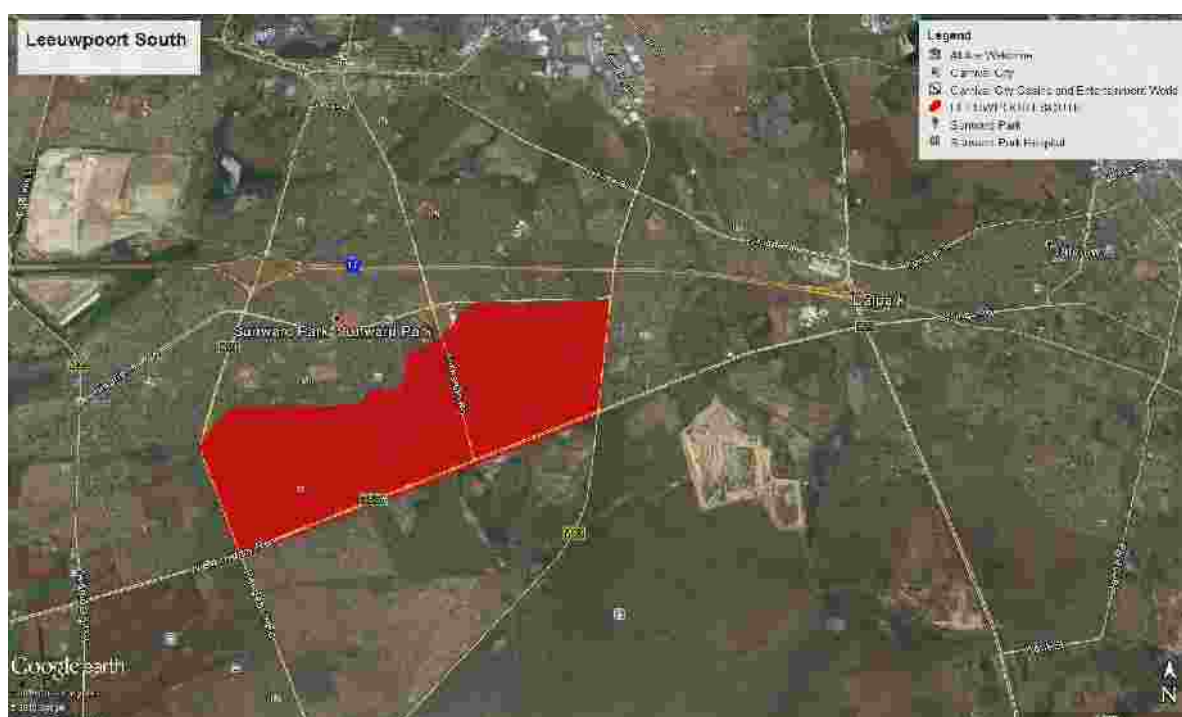


Figure 3.1: Google Earth Image – Leeuwpoot South

3.1 Local Supply Authority

The electrical supply authority for the area is Ekurhuleni Metropolitan Municipality.

4. Topography

The majority of the land falls towards the south, with natural floodplains traversing the site. The lowest point in the study area of the first phase is located on the south boundary, while the highest point is located on the northern boundary of the surveyed area of the first phase.

The Southern Development Area is predominantly vacant, however, a large number of municipal, mining, other overhead, as well as underground infrastructure intersect the land. In addition to these, one of ERPM's mines (Far East Vertical Shaft) is situated directly to the north of the site.

Leeuwpoot South constitutes 757 ha of the development. The number of townships for Leeuwpoot South will be determined later.

The development area has natural watercourses within the site.

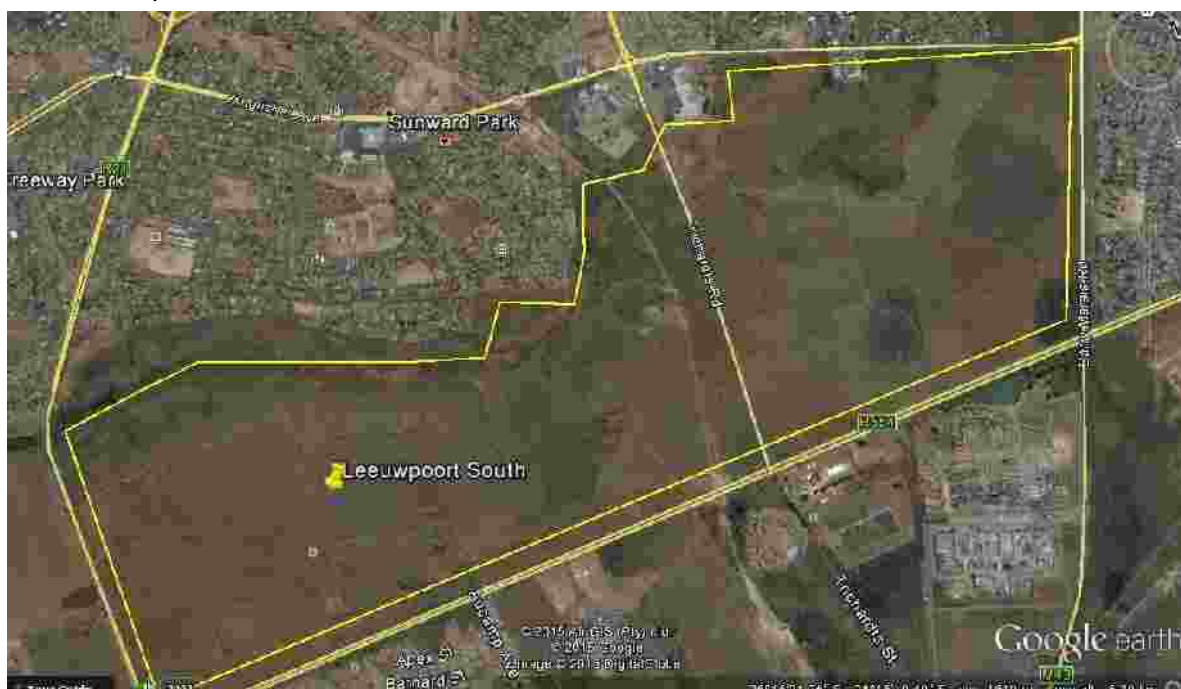


Figure 4.1: Topographic View – Leeuwpoot South

5 Project Brief

The land earmarked for this development, will be mainly used for residential purposes with associated land uses such as business, community facilities and public open spaces which will be incorporated.

The table below is an indication of the planned land uses for the development.

LEEUWPOORT SOUTH			
Zoning	Description	Size (Hectares)	Number of stands/Units
LEEUWPOORT SOUTH			
Residential 1	Bonded 400m ²	69.93	1 554
Residential 1	Bonded 500m ²	6.59	103
Residential 1	FLISP 300m ²	47.92	1 576
Residential 1	Subsidy 300m ²	7.66	244
Residential 3	FLISP 220m ²	32.80	1339
Residential 3	FSH 200m ²	28.28	1 289
Residential 4	Subsidy 120u/ha	23.97	2 876
Residential 4	Subsidy 160u/ha	2.94	468
Residential 4	FLISP 160u/ha	17.78	2 845
Residential 4	FLISP 120u/ha	1.72	206
Residential 4	Bonded 160u/ha	7.32	1 171
Business 2	shops, restaurants, etc.	18.90	8
Business 3	Offices	2.94	2
Special	Clinic	1.11	1
Special	Retirement Village	19.22	532
Community Facility	COMMUNITY	5.82	5
Primary School	SCHOOL	13.82	4
Secondary School	SCHOOL	20.85	4
Park		190.43	71
Undetermined		11.80	
Public transport		13.70	
Special	Gate Houses	0.11	21
Roads		194.62	

Table 5.1: Land use Table- Leeuwpoot South

5.1 Township Layout

A township layout plan is attached in the Appendix.

6. Statutory Requirements

The requirements of the Occupational Health and Safety Act, Act 85 of 1993, (OHS Act) and all subsequent amendments and regulations shall be observed and adhered to except where exemption has been obtained from the Chief Factories Inspector. If any text or drawings in this standard are in conflict with the OHS Act and no exemption has been obtained, the OHS Act requirements shall take precedence over the standard.

The requirements of SANS 10198-1: (The selection, handling and installation of electric power cables of rating not exceeding 33 kV Part 1: Definitions and statutory requirements) shall be observed and adhered to except where exemption has been obtained from the relevant authority.

Other statutory bodies from which permission may have to be obtained are:

- Provincial and/or metropolitan roads agencies;
- Telkom, MTN, Neotel, Dark Fibre Africa, etc;
- Dept. of Water and Forestry;
- Dept. of Environmental Affairs and Tourism;
- Local metropolitan / municipal town councils; and
- Any other statutory body that may be considered a stakeholder.

Applications to the water and local authorities shall be made in accordance with 34-820 and 34-822.

6.1 Standards

The requirements for medium-voltage mini-substations for systems with nominal voltages of 11 kV and 22 kV in this specification are based on NRS 004 / SANS 1029, Mini-substations for rated A.C voltages up to and including 24 kV.

The relevant updated standards that shall then be used are listed as below:

DGL 34-619, Distribution Standard – Part 1: Network planning guideline for lines and cables.
DSP 34-1080 (DSP 0003), Distribution Standard – Part 4: Specification for earth fault indicators used for MV cable network
DSP 34-1622, Distribution Standard – Part 22: Accessories for medium-voltage power cables with rated voltages from 11 kV to 33 kV.
DSP 34-1658 (DISSCAAP9), Distribution Standard – Part 4: Corrosion protection specification for distribution outdoor equipment manufactured from steel.
DSP 34-253, Distribution Standard Part 15: Distribution specification for electrical terminal blocks.
DSP 34-462, Distribution Standard Part 15: Standard design for distribution protection schemes.

DST 34-06, Distribution Standard – Part 22: Medium voltage services to large power users.
DST 34-1175, Distribution Standard – Part 22: Cables Section 0: General information and requirements for medium voltage cable systems.
DST 34-1175: General information and requirements for MV cable systems
DST 34-1176: General information and requirements for LV cable systems
DST 34-542, Distribution Standard – Part 1: Planning: Distribution voltage regulation and apportionment limits.
IEC 60287-1-1, Electric cables - Calculation of the current rating, Part 1-1: Current rating equations (100 % load factor) and calculation of losses – General.
IEC 60853-1, Calculation of the cyclic and emergency current rating of cables. Part 1: Cyclic rating factor for cables up to and including 18/30 (36) kV.
IEC 60853-2, Calculation of the cyclic and emergency current rating of cables, Part 2: Cyclic rating of cables greater than 18/30 (36) kV and emergency ratings for cables of all voltages.
NRS 012 / SANS 876, Cable terminations and live conductors within air-filled enclosures (insulation coordination) for rated a.c. voltages from 7.2 kV and up to and including 36 kV.
NRS 012, Cable terminations and live conductors within air-filled enclosures (insulation coordination) for rated a.c. voltages from 7.2 kV and up to and including 36 kV.
NRS 053: Edition 2, Accessories for medium-voltage power cables (3.8/6.6 kV to 19/33 kV).
SANS 10142, The Wiring of Premises - LV Installations
SANS 1019, Standard voltages, currents and insulation levels for electricity supply.
SANS 121 / ISO 1461, Hot-dip galvanized coatings on fabricated iron and steel articles – Specifications and test methods.
SANS 1339, Electric cables – Cross-linked polyethylene (XLPE)-insulated cables for voltages from 3.8/6.6 kV up to 19/33 kV.
SANS 60529, Degrees of protection provided by enclosures (IP Code).

Table 6.1: Applicable Standards

6.2 Servitude and Way-leave Agreements

- The special requirements of municipal wayleaves shall be considered.
- Secondary and mini-substation cable feeders that traverse private property shall have registered wayleave agreements signed with the property owner.
- LV feeder cables that traverse private property shall have wayleave agreements signed with the property owner.
- Wayleaves for cables installed within private property shall be registered for a minimum width of 1 m on both sides of the outer most cables in the servitude.
- A 6 x 3m servitude to be registered in Eskom's name for the Miniature substation position for installation.
- In the event that Eskom's rights (wayleaves) may be encroached upon and / or services /assets placed at risk, the requirements of DST 34-827 shall be followed.

6.3 Environmental Considerations

The requirements of the National Environmental Management Act, 1998 (Act 107 of 1998) and Eskom's environmental directives, policies and procedures shall be observed and adhered to except where exemption has been obtained from the relevant authority.

An environmental assessment has been carried out in accordance with the requirements of DST 34-926.

6.3.1 EMP Compliance

The following are required for the compliance with the EMP:

- Environmental Training to be given to all resources working on project to understand what the possible environmental impacts will be. This training to be given by contractor to their people.
- An Environmental Register is to be kept on site at all times.
- The EMP must be available at all time on the construction site.

6.3.2 Environmental Summary

Construction considerations

Self-Build Project

- An ECO(Environment Control Officer) will need to be appointed by the developer in order to ensure compliance to items listed in the EMP

Water Management

- Water for construction activities to be sourced from a legal municipal source,

Hazardous Substances

- Disposal has to be done correctly according to all standards and legislation;

Waste Management

- General waste must be disposed of at a registered site,
- Relevant sorting bins to be provided and sorted waste to be taken to appropriate RRR (Reduce Reuse Recycle) centres for disposal,

Social Considerations

- Please notify all landowners that are directly influenced by the project.

Transportation

- Necessary permits and vehicle signage to be obtained to ensure legal compliance for the transportation of workers as well as the transportation of heavy machinery, and hazardous substances. Proper approved "people carriers" shall be used to transport workers.

Fire Management

- No fires to be made on site under any circumstances.

Rehabilitation

- Full site rehabilitation to be done

Design considerations

- Cutting of the trees to be avoided as there may be protected trees, should they need to be removed or trimmed a tree cutting permit will have to be applied for from the Department of Agriculture, Forestry and Fisheries (D.A.F.F)

6.4 Performance and Operability Requirements

Cable systems shall be planned and designed to ensure that the desired network performance is achievable. The designed network will be simulated using Reticmaster software to optimize the conductor and ensure the cables are rated to withstand fault levels and voltage drops are within the stipulated $\pm 5\%$ from Miniature substation to customers' point of connection.

6.4.1 Plant location

The location of plant, e.g. sub-switching stations and mini-substations shall be decided upon considering the following factors:

- Vehicular and pedestrian traffic
- Environmental impact
- Water run-off & Pollution
- Accessibility for ease of operation and maintenance
- Location of other underground services, for example Telkom, water etc.

7. Design Factors for Consideration

The following are a few important factors for consideration when networks are designed:

- The economic level classification of the community to be serviced with electricity in accordance to SABS0142.

Number	Community Income Classification Level	Connected Load /House KVA	ADMD/ House KVA	ADMD/ House For 1000 Houses KVA
A	Extra Low	3.080	1.540	0.51 - 1.50
B	Low	6.570	4.470	1.50 - 2.20
C	Middle	10.250	6.610	2.20 - 2.90
D	Middle/High	13.450	8.710	2.90 - 4.62
E	High	19.180	13.860	4.62 - 5.60
F	Extra High	22.590	16.790	5.60 - Up

Table 7: Typical Design Load Parameters for Domestic Consumers

- The number of years that the level of design must provide reliable and safe electrical services, for example 5; 10; 15; 20, 25 etc. years.
- The number of customers effected in case of equipment failure in each part of the network.
- The average switching back time in case of equipment failure.
- Alternative supplies available based on the number of customers that will be affected in case of infrastructure failures or when maintenance is carried out.
- Compliance to the requirements and regulations of the National Energy Regulator of South Africa (NERSA).
- Safety to residents as well as to electrical operational personnel.

8. Electrical Design Philosophy

8.1 Existing Infrastructure

There's a nearby substation which is 2km from the development. The name of the substation is Fortman substation. Fortman substation supplies switching station S13 which is situated at corner Ronderbuilt and North Boundary Road of the development. S13 has an available capacity of 6MVA.

There are no existing link lines/cables available at the moment.

The existing nearby area network is underground electrification.

8.2 Future Demand and Design guidelines/parameters

The main objective from an operational point of view is to reduce the number of customers affected in case of equipment failure and/or when maintenance is carried out.

Demand forecasts were calculated in order to assess the capacity requirements for the bulk services to supply the proposed development.

The design demands used for the developments are mostly derived from the existing developments in Ekurhuleni.

Description	Minimum Unit Demand (kVA/Unit)
Low income group	3.5
Middle income group	3.5
High income group	5

Table 8.2: EMM Design Parameters

LEEUWPOORT SOUTH						
Zoning	Description	Size (Hectares)	Number of stands/Units	ADMD for Residential stands	ADMD KVA/m2 (Industrial/Business)	TOTAL ADMD (KVA)
LEEUWPOORT SOUTH						
Residential 1	Bonded 400m ²	69.93	1 554	4		6216.00
Residential 1	Bonded 500m ²	6.59	103	5		515.00
Residential 1	FLISP 300m ²	47.92	1 576	3.5		5516.00
Residential 1	Subsidy 300m ²	7.66	244	3.5		854.00
Residential 3	FLISP 220m ²	32.80	1339	3.5		4686.50
Residential 3	FSH 200m ²	28.28	1 289	3.5		4511.50
Residential 4	Subsidy 120u/ha	23.97	2 876	3.5		10066.00
Residential 4	Subsidy 160u/ha	2.94	468	3.5		1638.00
Residential 4	FLISP 160u/ha	17.78	2 845	3.5		9957.50
Residential 4	FLISP 120u/ha	1.72	206	3.5		721.00
Residential 4	Bonded 160u/ha	7.32	1 171	3.5		4098.50
Business 2	shops, restaurants, etc.	18.90	8		0.08	9073.06
Business 3	Offices	2.94	2		0.08	1648.53
Special	Clinic	1.11	1		0.08	708.29
Special	Retirement Village	19.22	532	4		2128.00
Community Facility	COMMUNITY	5.82	5		0.08	2795.04
Primary School	SCHOOL	13.82	4		0.08	5527.68
Secondary School	SCHOOL	20.85	4		0.08	8338.76
Park		190.43	71			0.00
Undetermined		11.80				0.00
Public transport		13.70				0.00
Special	Gate Houses	0.11	21	3.5		73.50
Roads		194.62				0.00
TOTAL						79073KVA

Table 8.2-1: Leeuwpoot South Load Demand Forecast – Reiger Park Extension

19

All units will be assumed to have a demand of 3.5kVA and the estimated number of units is 13671 excluding community facilities and business areas. Therefore the estimated demand for residential units is about **47.8MVA**, and about **79MVA** when including the business stands and community facilities.

8.3 Project Design Level

Although the current 11kV supply design makes no provision to provide capacity for any form of suburb extensions, the following has been considered:

- Extension of the 11kV infrastructure for future development.
- Feeder ring configurations.
- Feeder electrical loading.

8.4 Proposed Electrical Infrastructure

All the internal designs will be completed according to Ekurhuleni standards as the internal network will be handed over to them on completion.

8.4.1 Medium Voltage Bulk Supply

The MV supply to the development will be supplied from a new 88/11kV Helderwyk substation that will be built with this project. The MV bulk supply for this project will be separated into two phases. Phase 1 of the project will entail the establishment of temporary supply to the development to cater for the first few phases of the project while the substation is being built. Phase 2 will comprise the provision of permanent supply.

Temporary supply:

At Sub 13 the following upgrades shall be done;

- Install 1 x feeder panel

Permanent supply:

A new 88/11kV 80 MVA Helderwyk Substation shall be built at the identified position as seen in the drawing below. The Substation HV yard will be managed by Eskom and the MV yard including step down transformers will be managed by EMM. The planned capacity for the substation is a firm 120MVA comprising of 4 X 40MVA transformers although the. Initial installation will be just 2 X 40MVA transformers.



Table 8.4.1: Proposed 88/11kV Substation Position

8.4.2 Medium Voltage Bulk Link Supply

The medium voltage network will be an 11kV underground network feeding two centralised switching stations within the development. PILC cables will be used as per EMM requirements. A 300mm² 3 Core PILC screened conductor is proposed for the MV bulk link load distribution. The maximum supply capacity of a 300mm² 3 Core PILC screened conductor is 440A or 7.5MVA at 11kV and 0.9 power factor.

2 X 40MVA switching stations are proposed for the development. Each switching station will have 6 X Incomer cables to achieve a 40MVA firm capacity.

The following scope will be applicable relating to bulk link requirements;

- 2 x 40 MVA Switching station must be built at strategic positions within the development.
- Link cables from Helderwyk Substation shall be built to the various switching station.
- There will also be a link cable from S13 to switching station 1 to transfer the available 6MVA capacity to Leeuwpoot South development.
-

8.4.3 Internal Medium Voltage Reticulation

The medium voltage network will be an 11kV underground network feeding a configuration of 315kVA and 500kVA miniature substations.

MV Cabling:

Due to spacing limitations at the switching station, the miniature substations will be connected via a 185mm² screened PILC Cu cable ring networks instead of the commonly used 120mm² screened PILC Cu cable ring networks.

The maximum supply capacity of a 120mm² 3 Core PILC screened conductor is 270A or 4.6MVA at 11kV and 0.9 power factor.

With the use of a 185mm² 3 Core PILC screened conductor which has a current rating of 340A, 5.8MVA load transfer can be achieved by a single ring network. To accommodate a load demand of 40MVA 7 rings will have to be created. This will result in 14 outgoing feeder panels at each switching station.

Miniature Substations:

The miniature substations shall be a Type-B only and comply in every aspect with the latest edition of SABS 1874, NRS 006, SABS 1029, SABS 1030 and NRS 004-1. The miniature substation shall be mounted on the side of the road. The earthing of the miniature substation shall be achieved through use of earth rod.

8.4.4 Low Voltage Reticulation

For the residential land portions, the low voltage network will be underground cable supplied from the different miniature substations. Miniature substation positions will be where practically possible placed centrally in each mini sub area of supply and in such a way that LV

cables can be reticulated in at least three directions. The supply voltage will be 400/230V with a regulation of +/-10%. The economic apportionment of voltage drop, to meet the statutory limits of 230V \pm 10%, is to design approximately 8% voltage drop on the LV distributor, including the service connection. This relates to a \pm 6% allowable design voltage drop on the LV feeder up to the consumer connection point at the stand boundary.

The internal low voltage reticulation will be fed from the miniature substations up to 4 or 8 way metering kiosk. The size of the LV feeder cable from the miniature substations will be determined at the final design stage. PILC cables shall be used for all LV installations. The following sizes of cables will be applicable;

- 70mm²
- 95mm²
- 120mm²

The following specification will be applicable to the LV designs;

- 500kVA and 315kVA Type B miniature substation will be used throughout the township.
- 4 and 8- way metering kiosks shall be used.
- Mini subs will be loaded at 80% of rated capacity
- ADMD is 3.5kVA per customer
- Res 4 stands and business stands will have a dedicated RMU.

8.4.5 Service Connections

Each stand will be connected through an underground 16mm² cable with 2 X 1,5mm communication cores for communication between active and passive parts of the split metering system (16 mm² SWA with 2 by communication).

All underground road crossings will be through sleeves. All sleeves shall be corrugated polyethylene type and 110mm in diameter.

8.4.6 Street and Area Lighting

The street lighting will be a separate network with control gear. The proposed streetlights will be standard street light fittings with 0.5 to 1.0m outreach, installed at a 7m mounting height on steel galvanized poles or on the LV conductor structures. Luminaires will typically be provided with 70W HPS lamps. The street lighting will be fed from controllers installed near the miniature substations or pole distribution boxes. Streetlights will be supplied from an overhead 25mm² 2C ABC conductors.

8.4.7 Metering

Metering for street lighting will be in a secure kiosk outside mini sub, while the street lighting control box will be mounted on the nearest pole away from the secure metering kiosk.

The metering philosophy and requirements shall be in accordance with DST 34-305.

Meter kiosks shall be installed at least 0.5 m from the erf boundary and at least 1 m from the road kerbing. Meter kiosks shall be installed on the common boundary between adjacent customer properties.

8.4.8 Other Design Requirements

Labelling Requirements shall conform to the EMM standards.

Decommissioning requirements (if applicable) as well as estimated material list and costs shall be provided.

Execution of work with minimum inconvenience to customers.

9. Drawings

A full set of drawings shall be submitted indicating the proposed layout of medium voltage structures (Substations and switching stations), medium voltage cables, low voltage, street light reticulation and no of sleeves and their positions. These drawings shall be submitted for approval before any work commence.

10 Project Phasing

The phasing, construction and commissioning of this project will be coordinated and aligned with EMM Electrical Department.

A phasing plan has been included in the Annexures.

Leeuwpoot Development Company Ltd

LEEUWPOORT SOUTH DEVELOPMENT

PRELIMINARY ENGINEERING DESIGN REPORT

ANNEXURES

RETICMASTER FILES

Leeuwpoot Development Company Ltd

LEEUWPOORT SOUTH DEVELOPMENT

PRELIMINARY ENGINEERING DESIGN REPORT

ANNEXURES

Lux Levels

Leeuwpoot Development Company Ltd

LEEUWPOORT SOUTH DEVELOPMENT

PRELIMINARY ENGINEERING DESIGN REPORT

ANNEXURES

Drawings

Leeuwpoot Development Company Ltd

LEEUWPOORT SOUTH DEVELOPMENT

PRELIMINARY ENGINEERING DESIGN REPORT

ANNEXURES

Phasing Plan

Leeuwpoot Development Company Ltd

LEEUWPOORT SOUTH DEVELOPMENT

PRELIMINARY ENGINEERING DESIGN REPORT

ANNEXURES

Proposed Phasing Plan for Phase 1

Leeuwpoot Development Company Ltd

LEEUWPOORT SOUTH DEVELOPMENT

PRELIMINARY ENGINEERING DESIGN REPORT

ANNEXURES

Other

ANNEXURE D9
TRAFFIC IMPACT ASSESSMENT



INNOVATIVE
TRANSPORT
SOLUTIONS



Transport Impact Assessment

Proposed mixed use development, Sunward Park X24-X29, Region D.

March 2017

29 De Havilland Crescent

Pro Park

Building 1

Persequor Park

0020

Tel: +27 (012) 349 1664

Fax: +27(012) 349 1665

e-mail: gauteng@itsglobal.co.za

Title: Transport Impact Assessment – Proposed Sunward Park X24-X29,
Region D.

Client: Leeupoort South Pty (Ltd), Bigen Africa Pty(Ltd)

Authorities: Ekurhuleni Metropolitan Municipality
Gauteng Provincial Department of Roads and Transport

Project Team: Lufuno Ndou
Lesego Mahlo
Elma Human

Reviewed by: Johan Brink Pr Eng

Project Director: Jan Coetzee Pr Eng

Project nr: ITS 3694.4

Date: March 2017

Report Status: Final

TRANSPORT IMPACT ASSESSMENT
PROPOSED SUNWARD PARK X24-X29
TABLE OF CONTENTS

Contents

1	INTRODUCTION	1
2	DEVELOPMENT LAND USE	1
3	ROAD AND RAIL NETWORK.....	2
4	ACCESS TO THE DEVELOPMENT.....	2
4.1	<i>ACCESS INTERSECTIONS.....</i>	<i>2</i>
5	PUBLIC AND NON MOTORISED TRANSPORT	4
5.1	<i>EXPECTED PASSENGER TRIPS.....</i>	<i>4</i>
5.2	<i>PUBLIC TRANSPORT</i>	<i>4</i>
5.3	<i>NON-MOTORISED TRANSPORT.....</i>	<i>5</i>
5.4	<i>RAILWAY.....</i>	<i>5</i>
6	BACKGROUND TRAFFIC	5
6.1	<i>BASE YEAR TRAFFIC VOLUMES</i>	<i>5</i>
6.2	<i>ASSESSMENT YEARS.....</i>	<i>6</i>
6.3	<i>DEVELOPMENT TRIP GENERATION.....</i>	<i>6</i>
6.4	<i>DEVELOPMENT TRIP DISTRIBUTION AND TRIP ASSIGNMENT</i>	<i>11</i>
6.5	<i>LATENT RIGHTS.....</i>	<i>11</i>
7	CAPACITY ANALYSES	11
7.1	<i>INTERSECTION ANALYSES</i>	<i>11</i>
7.2	<i>LINK CAPACITY ANALYSES.....</i>	<i>12</i>
8	PROPOSED ROAD UPGRADES	13
8.1	<i>EXTERNAL UPGRADES.....</i>	<i>13</i>
9	CONCLUSION AND RECOMMENDATIONS.....	15
10	REFERENCES	17

TRANSPORT IMPACT ASSESSMENT

PROPOSED SUNWARD PARK X24-X29

1 INTRODUCTION

The proposed **Sunward Park X24-X29** mixed use development is situated on the remainder of the Farm Leeuwpoot 113-IR, within the Ekurhuleni Metropolitan Municipality (EMM) and is approximately 770ha in size. The locality of the development is shown in **Appendix B, Figure B1**.

This **Transport Impact Assessment (TIA)** will investigate the following:

- Accesses to the proposed development,
- The impact of the development on the surrounding road network,
- Upgrades required to accommodate the additional traffic generated by the proposed development,
- Public transport demand and associated requirements, and
- Improvement of facilities that will accommodate the Non-Motorised Transport demand.

2 DEVELOPMENT LAND USE

The TIA was based on the land use shown in **Table 1**. Refer to **Appendix B, Figure B2** for the development layout plan.

TABLE 1: PROPOSED LAND USE

No	Zoning	Land Use	Extent
1	Residential 1-4	Residential	15 529 d/u
2	Special	Community Facilities, Clinic, Retirement Village	639 d/u and 8 880 m ²
3	Schools	Primary and Secondary School	10 200 pupils
4	Business 2	Residential units and Business Centre Park	2 024 d/u and 23 040 m ²
5	Special	Retail	18 852 m ²
The development has made provision for roads, transportation facilities, public space and public facilities.			

3 ROAD AND RAIL NETWORK

The following roads as shown in **Table 2** are of significance to this development, and will be impacted on by the development traffic. Refer to **Appendix B, Figure B3** for the EMM Roads Master Plan.

TABLE 2: ROAD AND RAIL NETWORK

No	Road Name	Description
1	N17	Class 1 National Road
2	K131 (R21) - Rondebult Rd	Class 2 Major Arterial linking the N12 to the north and the N17 to the south
3	K132 – North Boundary Rd	Class 2 road that provides east - west movement to Brakpan, Springs and Aldore
4	K165	Class 2 road, that provides a north - south movement
5	K155 Barry Marais Rd	Class 2 road that provides a north - south movement linking Boksburg to Benoni
6	Kingfisher Ave	Class 3 road that provides an east - west movement.
7	PRASA Railway line	The presence of a railway line servitude divides the development in the eastern and western segments. Limited internal linkage is possible across the servitude. Although in cut, the grade separation should be implemented at junctions.

4 ACCESS TO THE DEVELOPMENT

The proposed development will have regional access from the N17, K131 (R21- Rondebult Rd), the K132 (North Boundary Rd), the K155 (Barry Marais Rd) and Trichardts Road. The northern portion of Trichardts Rd is proposed to be realigned and connected to the proposed K165.

4.1 ACCESS INTERSECTIONS

The proposed development will have direct access from the K131 (R21- Rondebult Rd), the K132 (North Boundary Rd), the proposed K165 and other Local streets such as Kingfisher Ave, Aquarius Rd and Uiterkyk Rd. Refer to **Appendix B Figure B2** for the site Development Plan.

4.1.1 Access on K131 (R21- Rondebult Rd)

The proposed access on Rondebult Rd is from the existing Rondebult Road / Agulhas Rd intersection.

- The intersection is traffic signal controlled.
- The first internal intersection from the proposed access intersection is approximately 150m away.
- This intersection will be utilized both by motorized and non-motorised transport as it leads to a proposed BRT route road.

4.1.2 Access on Kingfisher Ave

There are two access intersections proposed on Kingfisher Avenue. The first access is existing and the second is a proposed new access.

- The two intersections are proposed to be traffic signal controlled.
- The Kingfisher Ave / Access Road 1 intersection spacing (currently Two-way T-junction and full intersection in future):
 - The intersection is approximately 500m west of Kingfisher Ave / Kobus Durand St,
 - It is proposed approximately 125m east of Kingfisher Ave / Sunward Park Extension 8 intersection.
 - The proposed access intersections meet the minimum intersection spacing.
- The Kingfisher Ave / Access Road 2 intersection spacing (Two-way T-junction):
 - It is proposed approximately 240m west of Kingfisher Ave / K155 (Barry Marais Road),
 - It is proposed approximately 370m east of Kingfisher Ave / Kobus Durand St.

4.1.3 Access on K132 (North Boundary Rd)

There are five access intersections proposed on the K132 (North Boundary Rd). Three of the five access intersections are already in existence and two will be a new intersections.

- The intersections will be traffic signal controlled.
- All the proposed access intersections meet the minimum intersection spacing requirements.

4.1.4 Access on Aquarius Rd and Uiterkyk Rd.

- There is one access intersection proposed on Uiterkyk Rd. The intersection is proposed to be traffic circle controlled.

The distances between the intersections are within the minimum requirements of the Gauteng Provincial Department of Roads and Transport. The geometry and intersection control of the existing intersections within the development boundaries, are schematically shown in **Appendix E, Figure E1** and the proposed intersection geometry is schematically shown in **Appendix E, Figure E3 and E4**.

5 PUBLIC AND NON MOTORISED TRANSPORT

Given the residential nature of the proposed development, it is likely that a significant number of the residents at the proposed development will make use of public transport. It is therefore necessary that the development make provision for public transport facilities to accommodate the development's demand.

5.1 EXPECTED PASSENGER TRIPS

It is estimated (City of Cape Town, 2001) that the proposed development will generate approximately 286 public transport vehicular trips or 1 791 person trips during the morning and afternoon peak hours respectively. This estimation is based on the following assumptions:

- 1.4 workers per household
- Peak hour demand: 65%
- Primary modal split: 85:15 (Public:Private)
- Secondary modal split: 40:30:30 (bus:mini-bus taxi:walk) - note that the proportion of people walking includes rail commuters
- Vehicle occupancy: 25 persons/bus and 14 persons/ mini-bus taxi

5.2 PUBLIC TRANSPORT

The development has made provision for various transport facilities within the development shaded grey on the site development plan show in **Appendix B, Figure B2**.

The K131 (R21- Rondebult Rd) west of the development, Kingfisher Road north of the development and K155 Barry Marais Rd to the east of the development serves as public transport routes currently utilised by mini-bus taxi (MBT) and buses. Refer to **Appendix B, Figure B4** for EMM Public Transport Plan.

The K131 (R21- Rondebult Rd) and K132 (North Boundary Rd) forms part of the Harambee Integrated Rapid Public Transport Network (IRPTN) Phase 1 trunk route between Tembisa in the

North to Vosloorus in the South. The K131 (R21- Rondebult Rd) will be used for Phase 1C of the network which runs from Boksburg to Vosloorus, refer to the Harambee IRPTN plan shown in **Appendix B, Figure B5**. The implementation timeframe for the Harambee IRTP Phase 1C was confirmed to be after the horizon year of this development.

It is proposed that public transport lay-bys be provided downstream of the major road approaches of access intersections on the following roads:

- K131
- K165
- K132

This includes a bus / MBT lay-by to occupy at least one bus / two taxis per lay-by. The existing and proposed public transport facilities will serve the proposed Sunward Park X24-X29 and it is concluded that the additional 286 public transport vehicle trips will be accommodated by the existing and proposed public transport facilities in the area. The proposed public transport facilities will improve the accessibility of the public transport vehicles by the residents of proposed development.

5.3 NON-MOTORISED TRANSPORT

From Section 5.1, it is expected that the development will generate approximately 1 791 public transport person trips which are mostly preceded by walking. The topography of the area is relatively flat.

It is proposed that a pedestrian side walk of at least 2.5m wide be provided on the boundaries of the development and on the internal Class 3 (25m reserve) leading to the nearest external public transport facilities. These sidewalks must connect with the internal road sidewalks.

5.4 RAILWAY

A railway servitude is planned through the development, the time line of this project is not yet determined. Provision for commuter transfer facilities has been made in the development plan and a transport node will be established for future needs.

6 BACKGROUND TRAFFIC

The existing traffic volumes and available information supplement to the capacity of the existing road network is provided in Section 6.1 to 6.3.

6.1 BASE YEAR TRAFFIC VOLUMES

The base year traffic volumes were determined by manual traffic counts, which were conducted on **Wednesday, 6th of April 2016** at intersections in the vicinity of the study area. The counts

were conducted during the AM (06:00 - 08:00) and PM (16:30 – 19:30) peak periods and are shown in **Appendix D, Figure D1.1 and D1.2.**

6.2 ASSESSMENT YEARS

It is planned to develop the entire development over ten years. The following traffic scenarios are therefore assessed:

- **Base Year 2016:** The base year background traffic volume counts were counted on the existing road network.
- **Horizon year 2021:** Assuming that 50% of the development will be completed within 5 years.
- **Horizon year 2026:** Assuming that 100% of the development will be completed after 10 years.

A traffic growth rate of **3% per annum** was applied to estimate the 2026 background traffic demand.

6.3 DEVELOPMENT TRIP GENERATION

The EMM Roads and Stormwater Department has recently approved traffic impact studies for low cost housing where the Committee of Transport Officials (COTO) trip rates were used with adjustment factors to cater for low car ownership and mixed land use. For standardization, the vehicle trip rates used for Residential (subsidised and flisp) units, Schools and Shopping Centre land uses were received from the Department.

Residential (bonded) units, business centre park, retirement village and clinic rates were not provided, therefore the (COTO Technical Methods for Highways (THM 17) Volume 1 “South African Trip Data Manual”) was used to determine the trips that the aforementioned land uses will generate. A combined trip adjustment factor of mixed land use and low vehicle ownership was applied, as it is expected that the development will generate a significant number of public transport and non-motorised users. The proposed development is expected to generate 6 444vph during the AM peak hour and 6 453vph during the PM peak hour, as shown in **Tables 3 and 4.**

TABLE 3: AM PEAK HOUR TRIP GENERATION TABLE

Land Use	Area of Stand (ha)	FAR	Size	Units	Trip Rate (vph) / unit	Trip Adjustment factor	Directional Split		In (vph)	Out (vph)	Total new trips (vph)
							%In	%Out			
Sunward Park Extension 24											
Residential 1 (Bonded)			332	dwellings	1.00	49%	25%	75%	42	127	169
Residential 1 (Flisp)			124	dwellings	0.31	0%	25%	75%	9	28	38
Residential 4 (Flisp +Subsidised)			1296	dwellings	0.25	0%	25%	75%	81	244	325
Business 2 (Residential Units)			2024	dwellings	0.31	0%	25%	75%	155	465	619
Primary and Secondary School	14.9		2300	pupils	0.07	0%	50%	50%	78	78	156
									366	942	1308
Sunward Park Extension 25											
Residential 1 (Bonded)			457	dwellings	1.00	49%	25%	75%	58	175	233
Residential 1 (Flisp)			690	dwellings	0.31	0%	25%	75%	53	158	211
Residential 4 (Flisp)			737	dwellings	0.25	0%	25%	75%	46	139	185
Primary School	3.95		1100	Pupils	0.07	0%	50%	50%	40	40	79
Secondary School	5.51		1200	pupils	0.03	0%	50%	50%	20	20	41
									217	532	749
Sunward Park Extension 26											
Residential 1 (Subsidised)			628	dwellings	0.30	0%	25%	75%	48	144	192
Residential 4 (Bonded)			915	dwellings	0.65	58%	25%	75%	63	190	253
Residential 4 (Flisp + Subsidised)			2327	dwellings	0.25	0%	25%	75%	146	438	584
Primary School	3.4		1100	pupils	0.07	0%	50%	50%	40	40	79
									297	811	1108
Sunward Park Extension 27											
Residential 1 (Flisp + Subsidised)			1 627	dwellings	0.31	0%	25%	75%	124	373	498
Residential 4 (Flisp + Subsidised)			3138	dwellings	0.25	0%	25%	75%	197	591	788
Retail	3.142	0.6	18852	GLA/m ²	0.45	0%	65%	35%	55	30	85
Business 2 (Business Centre Park)	1.61	0.6	9660	m ²	1.50	28%	85%	15%	89	16	105
Primary School	3.41		1100	pupils	0.07	0%	50%	50%	40	40	79
									505	1049	1554

Land Use	Area of Stand (ha)	FAR	Size	Units	Trip Rate (vph) / unit	Trip Adjustment factor	Directional Split		In (vph)	Out (vph)	Total new trips (vph)
							%In	%Out			
Sunward Park Extension 28											
Residential 1 (Bonded)			279	dwellings	1.00	49%	25%	75%	36	107	143
Residential 1 (Flisp)			460	dwellings	0.31	0%	25%	75%	35	106	141
Residential 4 (Bonded)			918	dwellings	0.65	58%	25%	75%	63	190	254
Primary School	3.9		1100	pupils	0.07	0%	50%	50%	40	40	79
Secondary School	4.39		1200	pupils	0.03	0%	50%	50%	20	20	41
Retirement Village	6.94		277	dwellings	0.35	58%	40%	60%	16	25	41
Clinic	1.11	0.8	8880	m ²	6.00	58%	60%	40%	136	91	226
Business 2 (Business Centre Park)	2.23	0.6	13380	m ²	1.50	28%	85%	15%	123	22	145
									470	600	1070
Sunward Park Extension 29											
Residential 1			338	dwellings	1.00	49%	25%	75%	43	129	172
Residential 4			1263	dwellings	0.65	58%	25%	75%	87	262	349
Retirement Village			362	dwellings	0.35	58%	40%	60%	22	32	54
Primary School	4.2		1100	pupils	0.07	0%	50%	50%	40	40	79
									191	463	654
Total AM peak hour trips									2047	4397	6444

TABLE 4: PM PEAK HOUR TRIP GENERATION TABLE

Land Use	Area of Stand (ha)	FAR	Size	Units	Trip Rate (vph) / unit	Trip Adjustment factor	Directional Split		In (vph)	Out (vph)	Total new trips (vph)
							%In	%Out			
Sunward Park Extension 24											
Residential 1 (Bonded)			332	dwellings	1.00	49%	70%	30%	119	51	169
Residential 1 (Flisp)			124	dwellings	0.31	0%	70%	30%	27	11	38
Residential 4 (Flisp +Subsidised)			1296	dwellings	0.25	0%	70%	30%	228	98	325
Business 2 (Residential Units)			2024	dwellings	0.31	0%	70%	30%	434	186	619
Primary and Secondary School	14.9		2300	pupils	0.02	0%	50%	50%	26	26	53
									833	372	1205
Sunward Park Extension 24											
Residential 1 (Bonded)			332	dwellings	1.00	49%	70%	30%	119	51	169
Residential 1 (Flisp)			124	dwellings	0.31	0%	70%	30%	27	11	38
Residential 4 (Flisp +Subsidised)			1296	dwellings	0.25	0%	70%	30%	228	98	325
Business 2 (Residential Units)			2024	dwellings	0.31	0%	70%	30%	434	186	619
Primary and Secondary School	14.9		2300	pupils	0.02	0%	50%	50%	26	26	53
									833	372	1205
Sunward Park Extension 25											
Residential 1 (Bonded)			457	dwellings	1.00	49%	70%	30%	163	70	233
Residential 1 (Flisp)			690	dwellings	0.31	0%	70%	30%	148	63	211
Residential 4 (Flisp)			737	dwellings	0.25	0%	70%	30%	129	55	185
Primary School	3.95		1100	Pupils	0.03	0%	50%	50%	14	14	29
Secondary School	5.51		1200	pupils	0.02	0%	50%	50%	13	13	25
									467	216	683
Sunward Park Extension 26											
Residential 1 (Subsidised)			628	dwellings	0.31	0%	70%	30%	135	58	192
Residential 4 (Bonded)			915	dwellings	0.65	58%	70%	30%	177	76	253
Residential 4 (Flisp + Subsidised)			2327	dwellings	0.25	0%	70%	30%	409	175	584
Primary School	3.4		1100	pupils	0.03	0%	50%	50%	14	14	29
									735	323	1058

Land Use	Area of Stand (ha)	FAR	Size	Units	Trip Rate (vph) / unit	Trip Adjustment factor	Directional Split		In (vph)	Out (vph)	Total new trips (vph)
							%In	%Out			
Sunward Park Extension 26											
Residential 1 (Subsidised)			628	dwellings	0.31	0%	70%	30%	135	58	192
Residential 4 (Bonded)			915	dwellings	0.65	58%	70%	30%	177	76	253
Residential 4 (Flisp + Subsidised)			2327	dwellings	0.25	0%	70%	30%	409	175	584
Primary School	3.4		1100	pupils	0.03	0%	50%	50%	14	14	29
									735	323	1058
Sunward Park Extension 27											
Residential 1 (Flisp + Subsidised)			1 627	dwellings	0.31	0%	70%	30%	349	149	498
Residential 4 (Flisp + Subsidised)			3138	dwellings	0.25	0%	70%	30%	551	236	787
Retail	3.142	0.6	18852	m ²	2.56	0%	50%	50%	241	241	482
Business 2 (Business Centre Park)	1.61	0.6	9660	m ²	1.50	28%	20%	80%	21	84	105
Primary School	3.41		1100	pupils	0.03	0%	50%	50%	14	14	29
									1176	725	1900
Sunward Park Extension 28											
Residential 1 (Bonded)			279	dwellings	1.00	49%	70%	30%	100	43	142
Residential 1 (Flisp)			460	dwellings	0.31	0%	70%	30%	99	42	141
Residential 4 (Bonded)			918	dwellings	0.65	58%	70%	30%	178	76	254
Primary School	3.9		1100	pupils	0.03	0%	50%	50%	14	14	29
Secondary School	4.39		1200	pupils	0.02	0%	50%	50%	13	13	25
Retirement Village	6.94		277	dwellings	0.35	58%	50%	50%	21	21	41
Clinic	1.11	0.8	8880	m ²	6.00	58%	40%	60%	91	136	226
Business 2 (Business Centre Park)	2.23	0.6	13380	m ²	1.50	28%	50%	50%	73	73	145
									586	417	1003
Sunward Park Extension 29											
Residential 1			338	dwellings	1.00	49%	25%	75%	43	129	172
Residential 4			1263	dwellings	0.65	58%	25%	75%	87	262	349
Retirement Village			362	dwellings	0.35	58%	50%	50%	27	27	54
Primary School	4.2		1100	pupils	0.03	0%	50%	50%	14	14	29
									172	432	604
Total AM peak hour trips											6453

6.4 DEVELOPMENT TRIP DISTRIBUTION AND TRIP ASSIGNMENT

The trip distribution for the study area was based on the origin and destination of the expected trips and location of employment opportunities. It is expected that 50% of the trips will travel to Germiston, Johannesburg and Sandton to the west, 15% to Boksburg, Benoni, Brakpan and Springs to the north-east, 25% to Kempton Park, Centurion and Pretoria to the north, and 10% towards the south to Alberton, Aldore and Johannesburg South. Refer to **Appendix C, Figure C1**.

The expected development trip assignment for the AM and PM peak hours, are shown in **Appendix C, Figure C2**.

6.5 LATENT RIGHTS

Developments considered as latent rights are shown in **Appendix C, Figure C3** and the generated volumes summarised in **Tables 5** for the AM and PM peak hours respectively.

TABLE 5: SUMMARY OF THE AM AND PM PEAK HOUR LATENT RIGHTS TRIP GENERATION VOLUMES

No.	Development	Land Use	Trip Generation		Total (vph)
			In (vph)	Out (vph)	
AM PEAK HOUR VOLUMES					
1	Windmill Park Ext 29 & 30	Residential	155	340	495
2		Total	155	340	495
PM PEAK HOUR VOLUMES					
1	Windmill Park Ext 29 & 30	Residential	280	130	410
2		Total	280	130	410

The expected trip generation by these development were included in the future background traffic scenario analyses.

7 CAPACITY ANALYSES

Intersection capacity and link capacity analysis were done to determine the capacity on the existing roads, so that necessary upgrades can be conducted wherein there isn't capacity. Traffix 8.0 was used to determine the intersection capacity and a mathematical calculation was used to determine the link capacity.

7.1 INTERSECTION ANALYSES

The proposed development consists of 6 extensions that will be developed in approximately 10 years. The first three extensions will be completed within the first 5 years, wherein it is assumed that 50% of the development rights will be exercised. The second phase is assumed to be completed within the remaining 5 years.

Four scenarios were analysed as listed in **Table 6**. Further refer to:

- **Appendix A, Table A1 and A2** for results of the capacity analysis.
- **Appendix A, Table A3** for a description of the proposed upgrades.

TABLE 6: LIST OF SCENARIO'S ANALYSED

No	Scenario	Description
1	Scenario 1 AM & PM Peak Hour <i>Volume Figure D1.1 and D1.2</i> <i>Geometry Figure E1</i>	2016 existing traffic volumes.
2	Scenario 2 AM & PM Peak Hour <i>Volume Figure D2.1 and D2.2</i> <i>Geometry Figure E2</i>	2021 background traffic volumes (2016 traffic grown with 3% per annum) + latent rights traffic demand (including upgrades committed by latent development studies).
3	Scenario 3U AM & PM Peak Hour <i>Volume Figure D3.1 and D3.2</i> <i>Geometry Figure E3</i>	2021 background traffic + Ext 24 – Ext 29 (50%) development traffic demand.
4	Scenario 4U AM & PM Peak Hour <i>Volume Figure D4.1 and D4.2</i> <i>Geometry Figure E4</i>	2026 background traffic + latent rights traffic + Ext 24 – Ext 29 (100%) development traffic with upgraded geometry .

7.2 LINK CAPACITY ANALYSES

A link capacity analysis was done for K131 (R21- Rondebult Rd), K132 (North Boundary Rd) and Kingfisher Ave to assess the spare capacity on the link roads between the analysed intersections. The link capacity was determined by dividing the peak hour demand by a lane capacity of 1 500 vph. The volume/capacity ratio provides a reasonable estimate of the spare capacity on the link.

It is evident from the analysis that the existing link capacity on the K131 (R21- Rondebult Rd) is not adequate to accommodate the existing and future traffic demand. There is a need to construct one lane per direction from K131 (R21- Rondebult Rd) / N17 North Terminal intersection to K131 (R21- Rondebult Rd)/ K132 (North Boundary Rd) intersection which is approximately 4km. There is spare capacity on K132 (North Boundary Rd) and Kingfisher Ave to accommodate the existing and future traffic demand.

The construction of the proposed lanes will help release pressure on the intersections analysed as there will be an additional stacking / queuing distance.

Refer to **Appendix A, Table A4** for the AM peak hour link capacity analysis

8 PROPOSED ROAD UPGRADES

The following upgrades are necessary to accommodate the proposed development traffic on the road network.

8.1 EXTERNAL UPGRADES

8.1.1 Public Transport and non-motorised transport facilities

- It is proposed that provision for public transport bays made downstream of the development accesses' intersections as discussed in Section 5.2 above.
- The proposed public transport bays must be served with adequate sidewalks leading to and from the development. The paved pedestrian and cycle way should be at least 2.5m wide but preferably 3m.

8.1.2 Intersection Upgrades

Refer to **Appendix A, Table A3** for upgrades required to accommodate the development traffic demand, further refer to **Appendix E, Figure E2 to E4** for upgrades required to accommodate the background, latent rights and development traffic demand.

The larger area upgrades accommodate the traffic demand except for intersection 2 and 3 which still operate over capacity even with the proposed upgrades. These intersections cannot be upgraded any further due to safety reasons and space constraints. The following measures are proposed:

- K131 (R21- Rondebult Road): Constructing three lanes per direction between the N17 and K132 (North Boundary Rd).
- K131 (R21- Rondebult Rd) / Kingfisher Ave: The following options can be considered for the intersection to operate below capacity. Land expropriation will required done to accommodate one of the following alternatives at acceptable Level of Service:
 1. Quarter link
 2. Narrow diamond
 3. Narrow single point
 4. Clover stack

Refer to **Appendix F, Figure F1 to F3**. These option will have to be discussed and agreed upon with the authorities.

- A north-south link across the N17 can be considered on Mathews Dr to help alleviate directional traffic on the K131 (R21- Rondebult Rd).

- N17 southern terminal: On ramp loop westbound. Refer to **Appendix F, Figure F4**.

8.1.3 Link Upgrades

There is a need to construct one lane per direction from K131 (R21- Rondebult Rd) / N17 North Terminal intersection to K131 (R21- Rondebult Rd)/ K132 (North Boundary Rd) intersection which is approximately 4km. Refer to **Appendix A, Table A4** for the AM peak hour link capacity analysis

8.1.4 Construction of a section of the proposed K165

- The K165 road reserve will replace Trichardts Road in future. It is thus proposed that the section of K165 between Kingfisher Avenue and K132 be constructed as part of the development upgrades.

9 CONCLUSION AND RECOMMENDATIONS

A mixed development is proposed on the remainder of the Farm Leeuwpoot 113-IR.

1. The development generate substantial additional traffic, namely 6500 vph during the AM and PM peak hours.
2. As indicated in the capacity analysis, upgrades are necessary to accommodate the existing traffic demand and the approved land use rights in the area. The following intersections require upgrades to accommodate the background and latent rights traffic (As shown in Figure E2):
 - a) N17 / K131 western terminal
 - b) N17 / K131 eastern terminal
 - c) K131 (R21- Rondebult Rd) / Kingfisher Ave
 - d) Kingfisher Ave / K 155 Barry Marais Road
 - e) Kingfisher Ave / Heidelberg Road
 - f) K132 (North Boundary Road) / Aucamp Street
 - g) K131 (R21- Rondebult Road) / North Boundary Road
 - h) K131 (R21- Rondebult Road) / Agulhas Road
 - i) K131 (R21- Rondebult Road) / Uiterkyk Road
3. The responsibility for these road upgrades have not been finalized and will require further discussions with the roads authorities in finalizing the upgrades in the area. From a technical traffic engineering point of view, the above upgrades provide a base line of what is required to make the existing traffic work at an acceptable level of service.
4. To determine a first phase of road upgrades, a scenario was analysed where it is assumed that 50% of the development will be in place. From the capacity analysis, it was determined that to accommodate 50% of the development traffic, the following upgrades will be necessary, over and above the upgrades required for the existing traffic (shown in Figure E3):
 - a) K131 (R21- Rondebult Rd) / N17 Northern Terminal
 - b) K131 (R21- Rondebult Rd) / Kingfisher Ave
 - c) Kingfisher Ave / Heidelberg Rd
 - d) K132 (North Boundary Rd) / Aucamp St
 - e) K131 (R21- Rondebult Rd) / Agulhas Rd
 - f) K131 (R21- Rondebult Rd) / Uiterkyk Rd
 - g) Uiterkyk Rd / Cresta Road
 - h) Uiterkyk Rd / Duiker Road
 - i) Uiterkyk Rd / Aquarius Road
 - j) K132 (N Boundary Rd) / Access 4

5. It should be noted that intersection 3 still has v/c larger than 1 despite the proposed road upgrades. This intersection was already upgraded to its practical maximum and will require road network improvements (such as an additional interchange on the N17 or an additional K route) to redistribute the traffic. The other alternative is to do a form of grade separation at this intersection, but limited road reserve is available and it will require land expropriation. The responsibility for these road upgrades are complex and will require additional discussions and negotiations with the various road authorities.
6. With the full development, road upgrades are proposed at the following intersections (shown in Figure E4):
 - a) K131 (R21- Rondebult Rd) / N17 Northern Terminal
 - b) K131 (R21- Rondebult Rd) / N17 Southern Terminal
 - c) K131 (R21- Rondebult Rd) / Kingfisher Ave
 - d) Kingfisher Ave / Aquarius Rd
 - e) Kingfisher Ave / Trichardts Rd
 - f) Kingfisher Ave / Barry Marais Rd
 - g) Kingfisher Ave / Heidelberg Rd
 - h) K132 (N Boundary Rd) / Keurboom St
 - i) K131 (R21- Rondebult Rd) / N Boundary Rd
 - j) K131 (R21- Rondebult Rd) / Agulhas Rd
 - k) K131 (R21- Rondebult Rd) / Uiterkyk Rd
 - l) Kingfisher Ave / Access 1
 - m) Kingfisher Ave / Access 2
 - n) K132 (North Boundary Rd) / Access 3
 - o) K132 (North Boundary Rd) / K165
7. As indicated in the results of the capacity analysis, intersection 3 will still be over capacity, and as mentioned before it will require a network upgrade or grade separation.
8. In addition to the above intersection upgrades, it will be required to add additional lanes on a section of K131.
9. Recommendations are also made in terms of the provision of lay bys' for road based public transport, which will be provided on the Class 2 and 3 road network.
10. This traffic study provide the traffic engineering analysis to assess what will be required to accommodate the development traffic.

It is recommended that the next stage of the traffic study be to negotiate the phasing and extent of the proposed road upgrades which will be the responsibility of the development.

10 REFERENCES

The following references were used in the compilation of this report:

- National Research Council. Highway Capacity Manual, Transportation Research Board, Washington DC, 2000.
- Committee of Transport Officials (COTO) Technical Methods for Highways (TMH 17) Volume 1 "South African Trip Data Manual, September 2013.
- COTO, South African Road Classification and Access Management Manual (TRH 26), V1, August 2012.
- South African Road Traffic Signal Manual, V3.
- City of Cape Town, guidelines for the Public Transport Component of Transport Impact Assessments, Draft, December 2001.

Appendix A
TABLES

TABLE A1: SUMMARY OF WEEKDAY AM PEAK HOUR CAPACITY ANALYSIS RESULTS

No	Intersection	Scenario 1: 2016 Background Traffic Demand			Scenario 2: 2021 Background Traffic + Latent Rights (Proposed Upgrades)			Scenario 3: 2021 Background Traffic + Latent Rights + Ext 24 -Ext 26 (50%) Development Traffic			Scenario 3 Upgraded: 2021 Background Traffic + Latent Rights + Ext 24 - Ext 26 (50%) Development Traffic			Scenario 4: 2026 Background Traffic + Latent Rights +Ext 24 - Ext 29 (100%) Development Traffic			Scenario 4 Upgraded: 2026 Background Traffic + Latent Rights + Ext 24 - Ext 29 (100%) Development Traffic		
		LOS	Del (s)	v/c	LOS	Del (s)	v/c	LOS	Del (s)	v/c	LOS	Del (s)	v/c	LOS	Del (s)	v/c	LOS	Del (s)	v/c
		Figure E1			Figure E2			Figure E2			Figure E3			Figure E3			Figure E4		
1	K131 (R21- Rondebult Rd) / N17 Northern Terminal	F	>50	>0,95	B	14	0.77	D	41	0.99	B	18	0.90	F	48	1.02	D	43	0.83
2	K131 (R21- Rondebult Rd) / N17 Southern Terminal	F	>50	>0,95	C	34	0.58	F	94	0.73	D	40	0.63	F	153	0.70	F	163	0.7
3	K131 (R21- Rondebult Rd) / King Fisher Ave	D	38	0.91	D	41	0.9	F	175	1.19	F	93	1.04	F	188	1.18	E	65	1.17
4	Kingfisher Ave / Cresta Rd	F	>50		F	>50	>0,95	F	2245		No Upgrades			F			No Upgrades		
5	Kingfisher Ave / Duiker Rd	C	20	0.62	C	22	0.67	C	26	0.79	No Upgrades			D	37	0.91	No Upgrades		
6	Kingfisher Ave / Aquaris Rd	C	30	0.78	C	34	0.85	D	41	0.90	No Upgrades			F	185	1.18	D	42	0.9
7	Kingfisher Ave / Trichardts Rd	D	41	0.78	D	42	0.84	D	42	0.84	No Upgrades			F	583	1.31	D	38	0.85
8	Kingfisher Ave / Barry Marais Rd	C	28	0.63	C	28	0.39	C	28	0.39	No Upgrades			D	45	0.7	C	26	0.58
9	Kingfisher Ave / Heidelberg Rd	F	>50	>0,95	A	10	0.58	C	30	0.88	No Upgrades			F	88	0.98	D	41	0.93
10	K132 (N Boundary Rd) / Kuerboom St	C	22	0.70	C	21	0.57	C	21	0.57	No Upgrades			F	83	0.8	C	24	64
11	K132 (N Boundary Rd) / Trichardts Rd	C	22	0.70	C	21	0.71	C	21	0.71	No Upgrades			C	27	0.86	No Upgrades		
12	K132 (N Boundary Rd) / Aucamp St	F	>50		C	22	0.72	C	26	0.85	No Upgrades			D	38	0.94	No Upgrades		

No	Intersection	Scenario 1: 2016 Background Traffic Demand			Scenario 2: 2021 Background Traffic + Latent Rights (Proposed Upgrades)			Scenario 3: 2021 Background Traffic + Latent Rights + Ext 24 - Ext 26 (50%) Development Traffic			Scenario 3 Upgraded: 2021 Background Traffic + Latent Rights + Ext 24 - Ext 26 (50%) Development Traffic			Scenario 4: 2026 Background Traffic + Latent Rights + Ext 24 - Ext 29 (100%) Development Traffic			Scenario 4 Upgraded: 2026 Background Traffic + Latent Rights + Ext 24 - Ext 29 (100%) Development Traffic		
		LOS	Del (s)	v/c	LOS	Del (s)	v/c	LOS	Del (s)	v/c	LOS	Del (s)	v/c	LOS	Del (s)	v/c	LOS	Del (s)	v/c
		Figure E1			Figure E2			Figure E2			Figure E3			Figure E3			Figure E4		
13	K131 (R21- Rondebult Rd) / N Boundary Rd	F	>50	>0,95	C	29	0.85	C	25	0.83	No Upgrades			E	63	0.93	D	44	0.94
14	K131 (R21- Rondebult Rd) / Agulhas Rd	F	>50	>0,95	B	15	0.8	D	42	0.90	No Upgrades			F	101	1.00	C	29	0.85
15	K131 (R21- Rondebult Rd) / Uiterkyk Rd	F	>50	>0,95	C	30	0.60	D	46	1.01	C	34	0.84	F	141	1.12	C	32	0.89
16	Uiterkyk Rd / Cresta Road	C	17	0.77	C	24	0.87	F	120		A	8		A	8		No Upgrades		
17	Uiterkyk Rd / Duiker Road	A	9	0.33	A	9	0.36	D	3		A	6		A	6		No Upgrades		
18	Uiterkyk Rd / Aquaris Road	A	8	0.24	A	9	0.27	F			A	3		A	3		No Upgrades		
19	Kingfisher Ave / Access 1													A	8	0.57	No Upgrades		
20	Kingfisher Ave / Access 2													B	17	0.64	No Upgrades		
21	K132 (N Boundary Rd) / Access 3													B	13	0.81	No Upgrades		
22	K132 (N Boundary Rd) / K165													C	20	0.74	No Upgrades		
23	K132 (N Boundary Rd) / Access 4							A	8	0.82	No Upgrades			B	13	0.94	No Upgrades		

TABLE A2: SUMMARY OF WEEKDAY PM PEAK HOUR CAPACITY ANALYSIS RESULTS

No	Intersection	Scenario 1: 2016 Background Traffic Demand			Scenario 2: 2021 Background Traffic + Latent Rights (Proposed Upgrades)			Scenario 3: 2021 Background Traffic + Latent Rights + Ext 24 - Ext 26 (50%) Development Traffic			Scenario 3 Upgraded: 2021 Background Traffic + Latent Rights + Ext 24 - Ext 26 (50%) Development Traffic			Scenario 4: 2026 Background Traffic + Latent Rights +Ext 24 - Ext 29 (100%) Development Traffic			Scenario 4 Upgraded: 2026 Background Traffic + Latent Rights + Ext 24 - Ext 29 (100%) Development Traffic		
		LOS	Del (s)	v/c	LOS	Del (s)	v/c	LOS	Del (s)	v/c	LOS	Del (s)	v/c	LOS	Del (s)	v/c	LOS	Del (s)	v/c
		Figure E1			Figure E2			Figure E2			Figure E3			Figure E3			Figure E4		
1	K131 (R21- Rondebult Rd) / N17 Northern Terminal	F	>50	>0,95	C	22	0.73	D	43	0.97	C	28	0.86	D	40	0.96	D	39	0.94
2	K131 (R21- Rondebult Rd) / N17 Southern Terminal	B	16	0.74	B	20	0.7	C	21	0.88	No Upgrades			C	33	0.99	B	16	0.72
3	K131 (R21- Rondebult Rd) / King Fisher Ave	C	35	0.72	C	34	0.75	F	169	1.15	D	38	0.83	F	98	1.00	D	39	0.91
4	Kingfisher Ave / Cresta Rd	F	>50		F	>50		F	309		No Upgrades			F			No Upgrades		
5	Kingfisher Ave / Duiker Rd	B	16	0.76	B	19	0.88	C	23	0.95	No Upgrades			C	33	0.86	No Upgrades		
6	Kingfisher Ave / Aquaris Rd	C	29	0.67	C	31	0.73	D	37	0.87	No Upgrades			D	48	0.95	D	43	0.85
7	Kingfisher Ave / Trichardts Rd	D	35	0.77	D	38	0.82	D	37	0.82	No Upgrades			F	447	1.23	D	43	0.90
8	Kingfisher Ave / Barry Marais Rd	E	>50	>0,95	C	31	0.64	C	34	0.72	No Upgrades			F	96	0.95	C	34	0.80
9	Kingfisher Ave / Heidelberg Rd	B	17	0.76	B	19	0.70	B	17	0.76	No Upgrades			B	18	0.77	C	32	0.89
10	K132 (N Boundary Rd) / Keurboom St	B	18	0.63	B	19	0.55	B	19	0.55	No Upgrades			C	26	0.81	C	22	0.78
11	K132 (N Boundary Rd) / Trichardts Rd	C	28	0.77	C	29	0.84	C	29	0.84	No Upgrades			B	13	0.68	No Upgrades		
12	K132 (N Boundary Rd) / Aucamp St	F	>50		B	16	0.68	B	11	0.74	No Upgrades			C	24	0.84	No Upgrades		
13	K131 (R21- Rondebult Rd) / N Boundary Rd	C	30	0.95	C	23	0.63	C	25	0.82	No Upgrades			D	42	0.88	C	26	0.83
14	K131 (R21- Rondebult Rd) / Agulhas Rd	A	5	0.62	A	6	0.69	C	27	0.66	No Upgrades			C	30	0.75	B	18	0.57

No	Intersection	Scenario 1: 2016 Background Traffic Demand			Scenario 2: 2021 Background Traffic + Latent Rights (Proposed Upgrades)			Scenario 3: 2021 Background Traffic + Latent Rights + Ext 24 - Ext 26 (50%) Development Traffic			Scenario 3 Upgraded: 2021 Background Traffic + Latent Rights + Ext 24 - Ext 26 (50%) Development Traffic			Scenario 4: 2026 Background Traffic + Latent Rights +Ext 24 - Ext 29 (100%) Development Traffic			Scenario 4 Upgraded: 2026 Background Traffic + Latent Rights + Ext 24 - Ext 29 (100%) Development Traffic		
		LOS	Del (s)	v/c	LOS	Del (s)	v/c	LOS	Del (s)	v/c	LOS	Del (s)	v/c	LOS	Del (s)	v/c	LOS	Del (s)	v/c
		Figure E1			Figure E2			Figure E2			Figure E3			Figure E3			Figure E4		
15	K131 (R21- Rondebult Rd) / Uiterkyk Rd	B	19	0.56	C	21	0.52	C	26	0.81	C	26	0.81	D	40	0.9	C	24	0.83
16	Uiterkyk Rd / Cresta Road	A	10	0.45	B	10	0.5	E	2		A	6		A	7		No Upgrades		
17	Uiterkyk Rd / Duiker Road	A	9	0.23	A	9	0.26	E	6		A	5		A	5		No Upgrades		
18	Uiterkyk Rd / Aquaris Road	A	8	0.17	A	9	0.19	F			A	2		A	4		No Upgrades		
19	Kingfisher Ave / Access 1													A	6	0.71	No Upgrades		
20	Kingfisher Ave / Access 2													B	17	0.82	No Upgrades		
21	K132 (N Boundary Rd) / Access 3													B	17	0.82	No Upgrades		
22	K132 (N Boundary Rd) / K165													C	29	0.86	No Upgrades		
23	K132 (N Boundary Rd) / Access 4													A	3	0.67	No Upgrades		

TABLE A3: PROPOSED UPGRADES AS PART OF THE DEVELOPMENT'S RESPONSIBILITY

No	Intersection	Approach	Item	Improvement Required
1	Intersection 1 : K131 (R21-Rondebult Rd) / N17 Northern Terminal	Southern	1.1	Construction of an additional through lane
		Eastern	1.2	Construction of an additional right turn lane
2	Intersection 2 : K131 (R21-Rondebult Rd) / N17 Southern Terminal	Northern	2.1	Construction of an additional through lane
3	Intersection 3 : K131 (R21-Rondebult Rd) / Kingfisher Ave	Northern	3.1	Construction of an additional through lane
		Southern	3.2	Construction of an additional through lane
		Eastern	3.3	Construction of a right turn lane
4	Intersection 6 : Kingfisher Ave / Aquarius Rd	Northern	4.1	Construction of a right turn lane
		Western	4.2	Construction of a left turn lane
		Southern	4.3	Construction of an additional right turn lane
5	Intersection 7 : Kingfisher Ave / Trichardts Rd	Northern	5.1	Construction of an additional right turn lane
		Western	5.2	Construction of an additional through lane
		Southern	5.3	Construction of two additional through lanes
		Eastern	5,4	Construction of a left turn lane
			5.5	Construction of an additional right turn lane
6	Intersection 8 : Kingfisher Ave / Barry Marais Rd	Northern	6.1	Construction of an additional right turn lane
		Western	6.2	Construction of a slip island
7	Intersection 9: Kingfisher Ave / Heidelberg Rd		7.1	Construction of an additional through lane
		Southern	7.2	Construction of an additional through lane
8	Intersection10: K132 (North Boundary Rd / Keurboom St	Northern	8.1	Construction of an additional right turn lane

No	Intersection	Approach	Item	Improvement Required
9	Intersection 12: K132 (North Boundary Rd / Aucamp Ave)	Northern	9.1	Construction of a shared through and left turn lane
			9.2	Construction of two right turn lanes
		Western	9.3	Construction of a left turn lane
		Eastern	9.4	Construction of a right turn lane
10	Intersection 13: K131 (R21-Rondebult Rd) / N Boundary Rd	Northern	10.1	Construction of an additional through lane
			10.2	Construction of an additional right turn lane
		Western	10.3	Construction of an additional right turn lane
11	Intersection 14: K131 (R21-Rondebult Rd) / Agulhas Rd	Northern	11.1	Construction of a right turn lane
			11.2	Construction of an additional through lane
			11.3	Construction of a left slip turn lane
		Western	11.4	Construction of a right turn lane
		Southern	11.5	Construction of an additional through lane
			11.6	Construction of a right turn lane
		Eastern	11.7	Construction of a shared through and left turn lane
			11.8	Construction of two right turn lanes
12	Intersection 15: K131 (R21-Rondebult Rd) / Uiterkyk Rd	Northern	12.1	Construction of a left turn lane
			12.2	Construction of an additional right turn lane
		Western	12.3	Construction of a right turn lane
		Southern	12.4	Construction of an additional through lane
		Eastern	12.5	Construction of an additional right turn lane
13	Intersection 16: Uiterkyk Rd / Cresta Rd	All Approaches	13.1	Convert to a traffic circle controlled intersection
14	Intersection 17: Uiterkyk Rd / Duiker Rd	All Approaches	14.1	Convert to a traffic circle controlled intersection
15	Intersection 18: Uiterkyk Rd / Access Rd	Southern	15.1	Construction of a right turn lane
		All Approaches	15.2	Convert to a traffic circle controlled intersection

No	Intersection	Approach	Item	Improvement Required
16	Intersection 19: Kingfisher Ave / Access Rd 1	Southern	16.1	Constructing of a shared left and right turn lane
		Western	16.2	Construction of a right turn lane
		Eastern	16.3	Construction of an additional through lane
			16.4	Construction of a left turn lane
		All Approaches	16.5	Errect a traffic signal
17	Intersection 20: Kingfisher Ave / Access Rd 2	Southern	17.1	Constructing of a shared left and right turn lane
		Western	17.2	Construction of a right turn lane
		Eastern	17.3	Construction of an additional through lane
			17.4	Construction of a left turn lane
		All Approaches	17.5	Errect a traffic signal
18	Intersection 21: K132 (North Boundary Rd) / Access Rd 3	Northen	18.1	Constructing of a shared left and right turn lane
		Eastern	18.2	Construction of a right turn lane
		Western	18.3	Construction of a left turn lane
		All Approaches	18.4	Errect a traffic signal
19	Intersection 22: K132 (North Boundary Rd / K165	Northen	19.1	Construction of two right turn lanes
			19.2	Constructing of a left turn lane
		Eastern	19.3	Construction of two right turn lanes
		Western	19.4	Construction of a left turn lane
		All Approaches	19.5	Errect a traffic signal
20	Intersection 23: K132 (North Boundary Rd /Access Rd 3	Northen	20.1	Construction of right turn lane
			20.2	Constructing of a left turn lane
		Eastern	20.3	Construction of a right turn lane
		Western	20.4	Construction of a left turn lane
		All Approaches	20.5	Errect a traffic signal

TABLE A4: AM PEAK HOUR LINK CAPACITY ANALYSIS

No	Road	Direction and lane Reruirements	2016 AM peak Hour Traffic Volumes			2021 AM Background + Latent Rights Volumes			AM Development Traffic			2026 AM Background + Latent Rights + Dev Volumes		
			Background Traffic	Existing nr. of lanes per direction	Available spare capacity per lane	Background Traffic	Existing nr. of lanes per direction	Available spare capacity per lane	Background Traffic	Existing nr. of lanes per direction	Available spare capacity per lane	Background Traffic	Existing nr. of lanes per direction	Available spare capacity per lane
1	Rondebut Rd before Rondebut / N17 North Terminal intersection	Northbound	2460	2	0,13	2850	2	0,00	245	2	0,87	3550	2	-0,23
		Southbound	2585	2	0,09	3000	2	-0,05	95	2	0,92	3570	2	-0,24
2	Rondebut Rd between Rondebut /N17 North Terminal and Rondebut /N17 South Terminal intersection	Northbound	2085	2	0,26	2425	2	0,14	520	2	0,78	3330	2	-0,16
		Southbound	2310	2	0,18	2660	2	0,06	285	2	0,86	3365	2	-0,17
3	Rondebut Rd between Rondebut /N17 South Terminal and Rondebut / Kingfisher Ave intersection	Northbound	3030	2	-0,06	3450	2	-0,20	1010	2	0,61	5015	2	-0,72
		Southbound	1325	2	0,51	1550	2	0,43	385	2	0,82	2180	2	0,22
4	Kingfisher Ave between Rondebut /Kingfisher Ave and Kingfisher Ave / Cresta Rd intersection	Eastbound	1045	2	0,60	1215	2	0,55	100	2	0,92	1505	2	0,45
		Westbound	1655	2	0,40	1615	2	0,41	275	2	0,86	2365	2	0,16
5	Kingfisher Ave between Kingfisher Ave / Cresta Rd and Kingfisher Ave / Dukker Rd intersection	Eastbound	930	2	0,64	905	2	0,65	100	2	0,92	1160	2	0,56
		Westbound	1275	2	0,53	1520	2	0,44	275	2	0,86	2040	2	0,27
6	Kingfisher Ave between Kingfisher Ave / Aquarius Rd and Kingfisher Ave / Dukker Rd intersection	Eastbound	875	2	0,66	1045	2	0,60	100	2	0,92	1280	2	0,52
		Westbound	1210	2	0,55	1415	2	0,48	275	2	0,86	1915	2	0,31

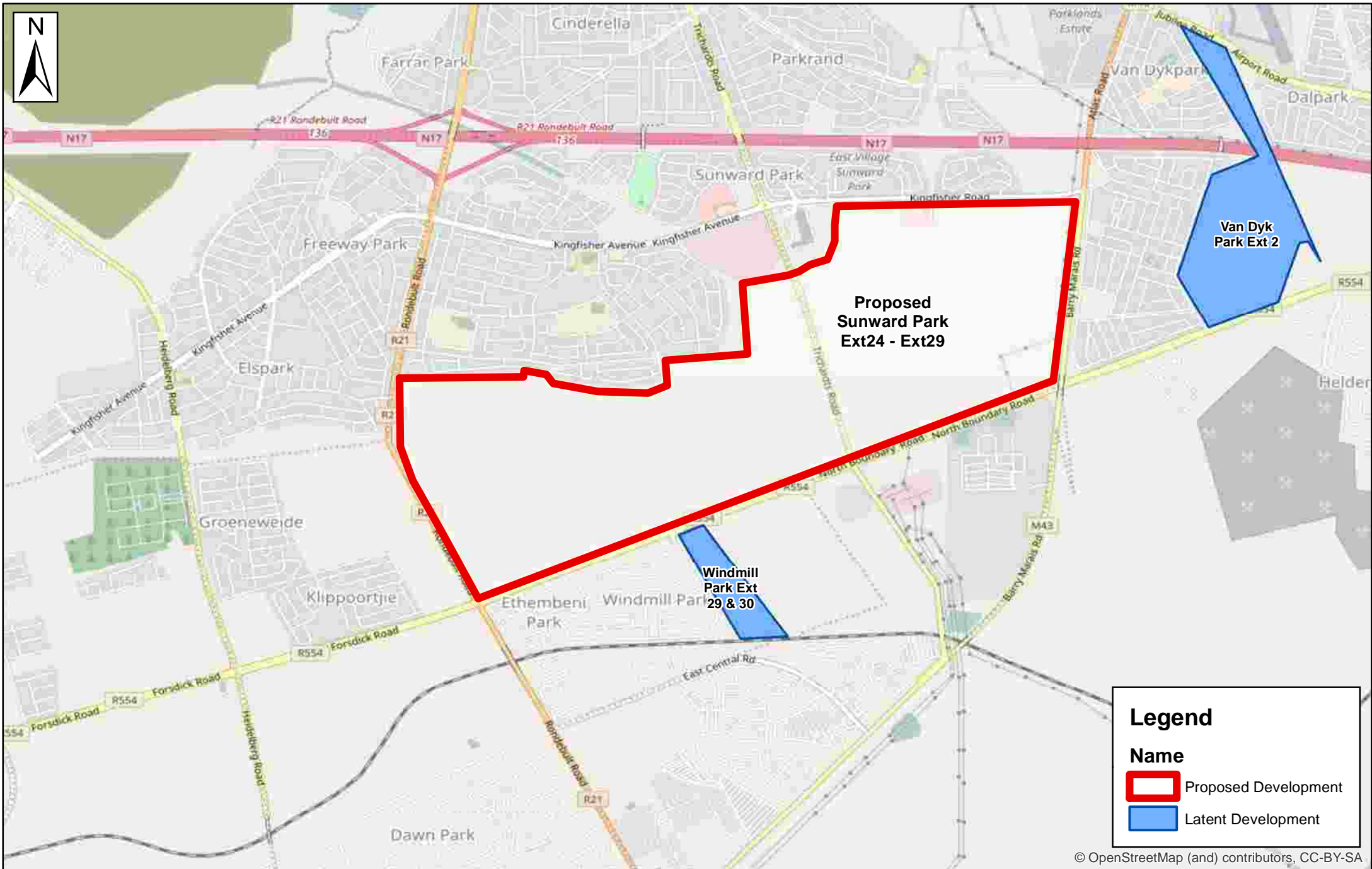
No	Road	Direction and lane Reuirements	2016 AM peak Hour Traffic Volumes			2021 AM Background + Latent Rights Volumes			AM Development Traffic			2026 AM Background + Latent Rights + Dev Volumes		
			Background Traffic	Existing nr. of lanes per direction	Available spare capacity per lane	Background Traffic	Existing nr. of lanes per direction	Available spare capacity per lane	Background Traffic	Existing nr. of lanes per direction	Available spare capacity per lane	Background Traffic	Existing nr. of lanes per direction	Available spare capacity per lane
7	Kingfisher Ave between Kingfisher Ave / Aquarius Rd and Kingfisher Ave / Trichards Rd intersection	Eastbound	975	2	0,63	1660	2	0,40	0	2	0,95	1970	2	0,29
		Westbound	695	2	0,72	1855	2	0,33	0	2	0,95	2150	2	0,23
8	Kingfisher Ave between Kingfisher Ave / Trichards Rd and Kingfisher Ave / Barry Marais Rd intersection	Eastbound	470	2	0,79	330	2	0,84	295	2	0,85	670	2	0,73
		Westbound	1060	2	0,60	970	2	0,63	555	2	0,77	1675	2	0,39
9	N Boundary Rd before N Boudary Rd / Keurboom St intersection	Eastbound	925	2	0,64	1435	2	0,47	440	2	0,80	1720	2	0,38
		Westbound	1250	2	0,53	1445	2	0,47	210	2	0,88	1905	2	0,32
10	N Boundary Rd between N Boudary Rd / Keurboom St and N boundary Rd / Trichards Rd intersection	Eastbound	1100	2	0,58	1325	2	0,51	670	2	0,73	2205	2	0,22
		Westbound	1330	2	0,51	1245	2	0,54	160	2	0,90	1605	2	0,42
11	N Boundary Rd between N Boudary Rd / Aucamp Ave and N boundary Rd / Trichards Rd intersection	Eastbound	1265	2	0,53	1515	2	0,45	220	2	0,88	1810	2	0,35
		Westbound	1235	2	0,54	1130	2	0,57	115	2	0,91	1430	2	0,47
12	N Boundary Rd between N Boudary Rd / Aucamp Ave and N boundary Rd / Rondebult Rd intersection	Eastbound	995	2	0,62	1180	2	0,56	250	2	0,87	1635	2	0,41
		Westbound	1215	2	0,55	2010	2	0,28	865	2	0,66	3185	2	-0,11
13	Rondebult Rd between Rondebult / N Boundary Rd and Rondebult / Anghulus intersection	Northbound	1475	1	-0,03	1730	1	-0,20	0	1	0,95	2035	1	-0,41
		Southbound	725	1	0,47	850	1	0,38	0	1	0,95	985	1	0,29

No	Road	Direction and lane Reuirements	2016 AM peak Hour Traffic Volumes			2021 AM Background + Latent Rights Volumes			AM Development Traffic			2026 AM Background + Latent Rights + Dev Volumes		
			Background Traffic	Existing nr. of lanes per direction	Available spare capacity per lane	Background Traffic	Existing nr. of lanes per direction	Available spare capacity per lane	Background Traffic	Existing nr. of lanes per direction	Available spare capacity per lane	Background Traffic	Existing nr. of lanes per direction	Available spare capacity per lane
14	Rondebult Rd between Rondebult / Uiterkyk Rd and Rondebult / Anghulus intersection	Northbound	1490	1	-0,04	1730	1	-0,20	940	1	0,32	2940	1	-1,01
		Southbound	675	1	0,50	1720	1	-0,20	365	1	0,71	1495	1	-0,05
15	Rondebult Rd between Rondebult / Uiterkyk Rd and Rondebult / Kingfisher Ave intersection	Northbound	975	1	0,30	1150	1	0,18	450	1	0,65	2480	1	-0,70
		Southbound	535	1	0,59	1120	1	0,20	1155	1	0,18	1855	1	-0,29
16	Kingfisher Ave before Kingfisher Ave / Heidelberg Rd intersection	Eastbound	680	1	0,50	2205	1	-0,52	165	1	0,84	2725	1	-0,87
		Westbound	1145	1	0,19	1230	1	0,13	420	1	0,67	1965	1	-0,36
17	Note 1: Lanes required to accommodate the demand on the roads, are based on a lane capacity of: 1 500 vph per lane													

Appendix B, C, D, E and F
Figures

LIST OF FIGURES

Appendix B: General		
Figure B1		Locality Plan
Figure B2		Site Development Plan
Figure B3		Ekurhuleni Roads Master Plan
Figure B4		Ekurhuleni Public Transport Plan
Figure B5		BRT Phasing
Appendix C: Trip Distribution + Trip Assignment		
Figure C1		Trip Distribution - Development
Figure C2		AM and PM Peak Hour Trip Assignment – Development
Figure C3		AM and PM Peak Hour Trip Assignment – Latent Rights
Appendix D: Traffic Demand		
Figure D1.1	Sc 1	2016 AM Peak Hour Existing Traffic Volumes
Figure D1.2	Sc 1	2016 PM Peak Hour Existing Traffic Volumes
Figure D2.1	Sc 2U	2021 AM Peak Hour Volume + Latent Rights Traffic Demand (geometry as committed by approved latent development + upgrades required to accommodate the 2021 background traffic)
Figure D2.2	Sc 2U	2021 AM Peak Hour Volume + Latent Rights Traffic Demand (geometry as committed by approved latent development + upgrades required to accommodate the 2021 background traffic)
Figure D3.1	Sc 3U	2021 AM Peak Hour Volume + Latent Rights + 50 % Development
Figure D3.2	Sc 3U	2021 PM Peak Hour Volume + Latent Rights + 50 % Development
Figure D4.1	Sc 4U	2026 AM Peak Hour Volume + Latent Rights + 100 % Development
Figure D4.2	Sc 4U	2026 PM Peak Hour Volume + Latent Rights + 100 % Development
Appendix E: Geometry		
Figure E1	Sc 1	Existing geometry
Figure E2	Sc 2	Upgraded Geometry committed by latent Developments + required to accommodate the 2021 background traffic
Figure E3	Sc 3U	Upgrades for 2021 Background Traffic + Latent rights + 50 % Development
Figure E4	Sc 4U	Upgrades for 2021 Background Traffic + Latent rights + 100 % Development
Appendix F: Proposed Geometric Layout		
Figure F1		Quarter link on Intersection 3: K131 (R21- Rondebult Rd) / Kingfisher Ave
Figure F2		Clover stack on Intersection 3: K131 (R21- Rondebult Rd) / Kingfisher Ave
Figure F3		Narrow diamond on Intersection 3: K131 (R21- Rondebult Rd) / Kingfisher Ave
Figure F4		On ramp loop westbound on Intersection 2: K131 (R21- Rondebult Rd) / N17 Southern Terminal



© OpenStreetMap (and) contributors, CC-BY-SA

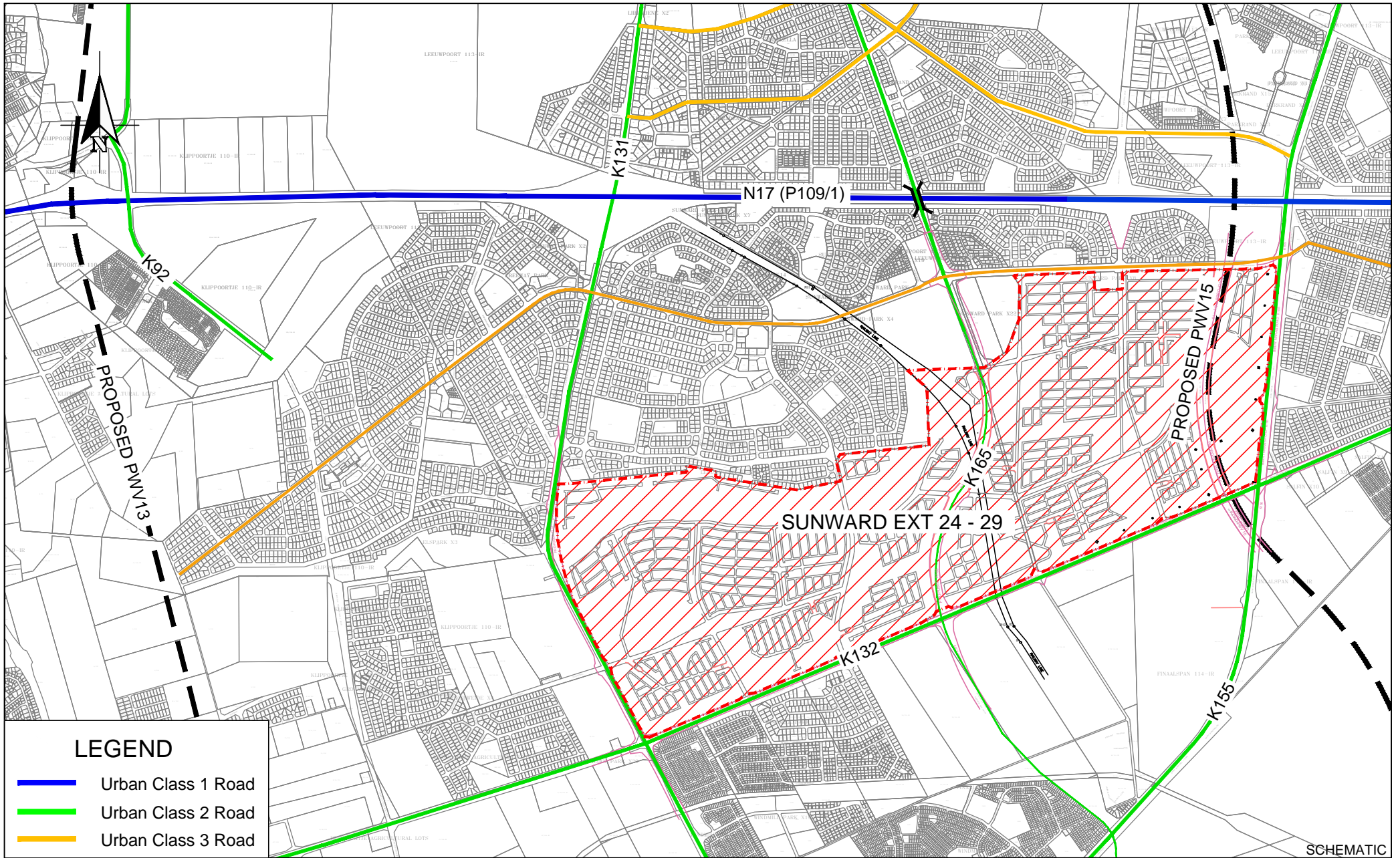
3694.4/Fig 1



PROJECT:
SUNWARD PARK EXT24 - EXT29 TIA

FIGURE:
LOCALITY MAP

NO:
1



LEGEND

- Urban Class 1 Road
- Urban Class 2 Road
- Urban Class 3 Road

SCHEMATIC
3694.4/Fig B3



PROJECT:

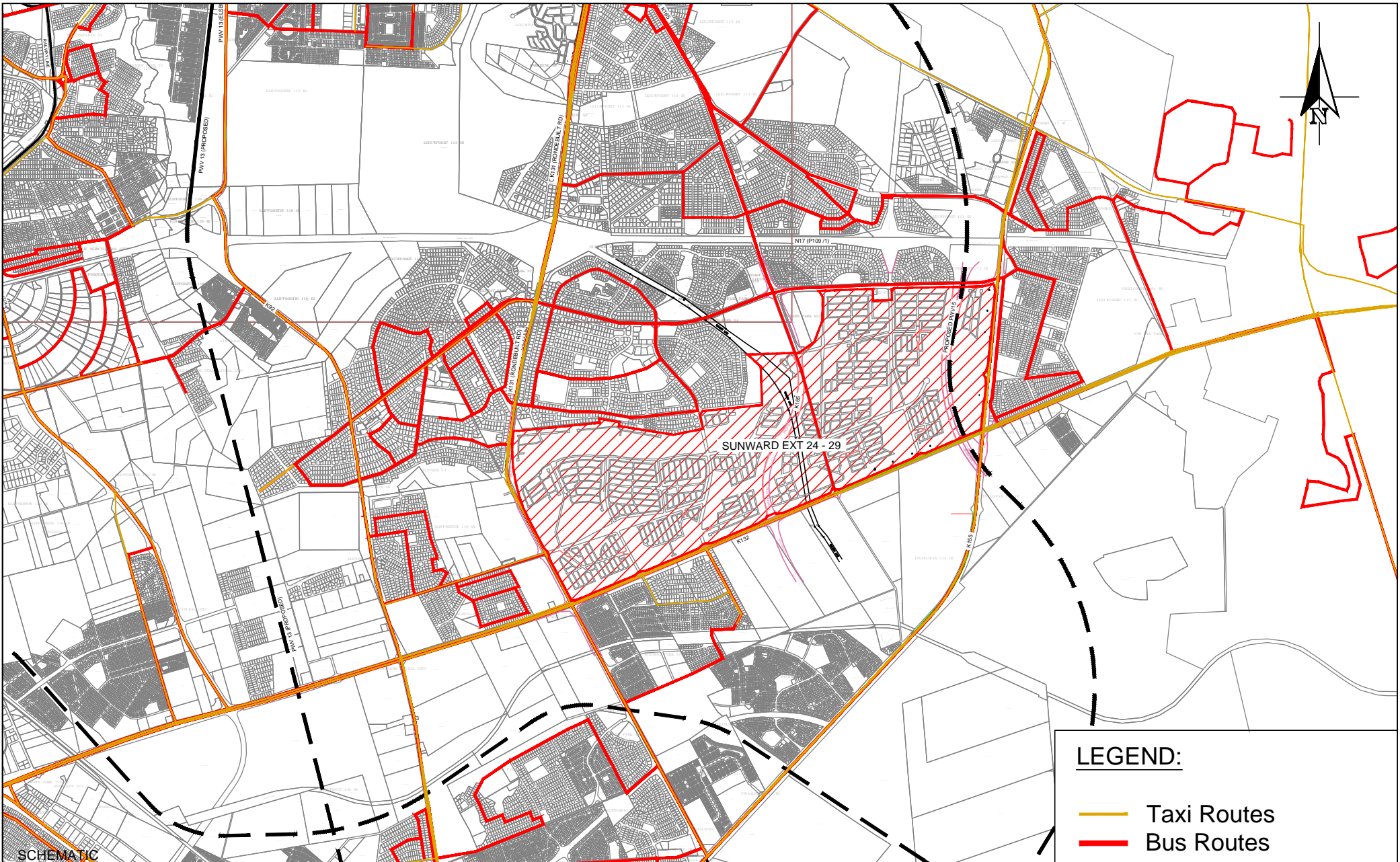
SUNWARD PARK EXT 24 - 29 TIA

FIGURE:

EKURHULENI ROADS MASTER PLAN

NUMBER:

B3



SCHEMATIC



PROJECT:

SUNWARD PARK EXT 24 - 29 TIA

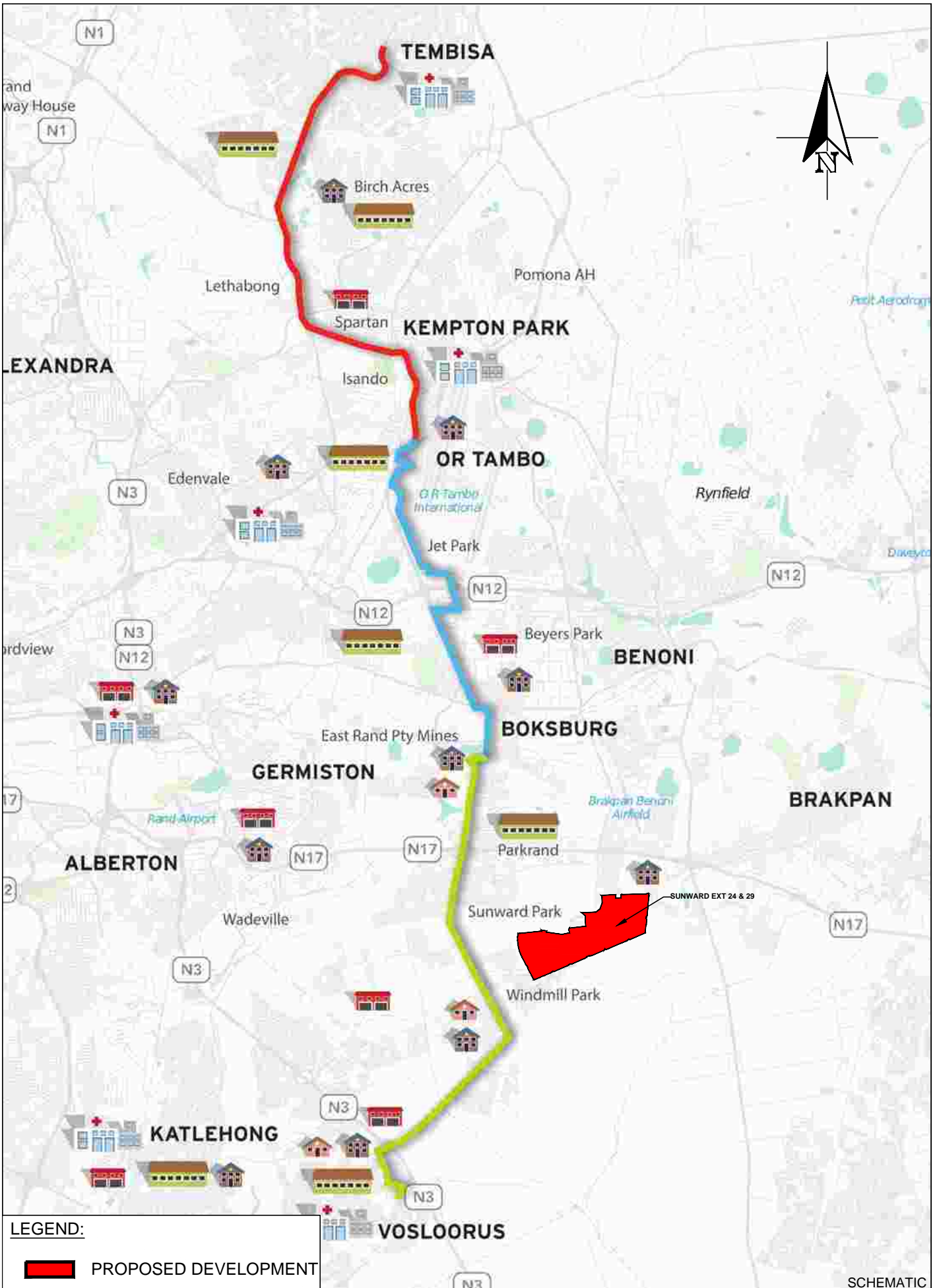
FIGURE:

EKURHULENI PUBLIC TRANSPORT PLAN

3694.4/Fig B4

NUMBER:

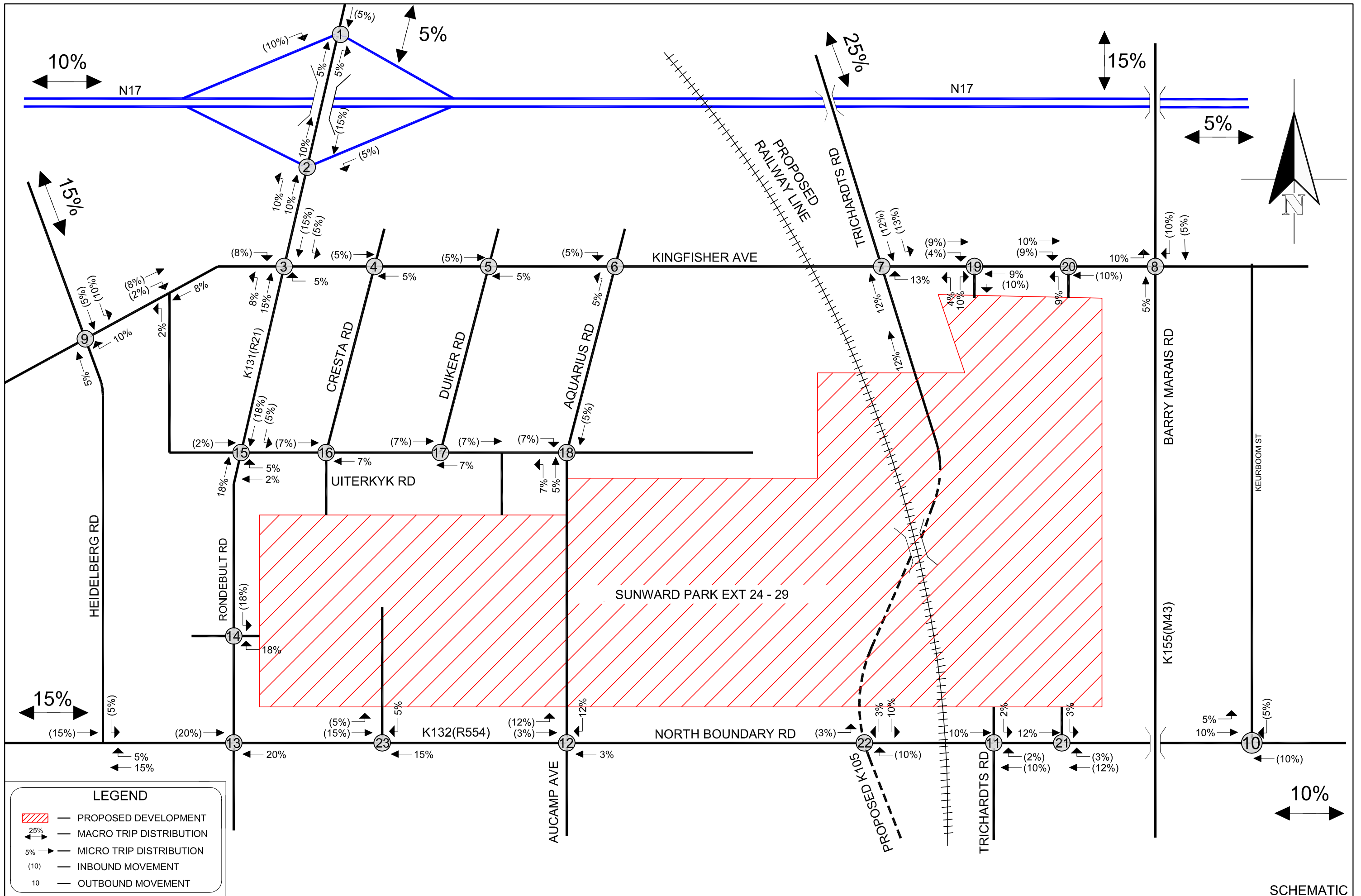
B4



PROJECT: SUNWARD PARK EXT 24 - 29 TIA

PROJECT: BRT PHASES

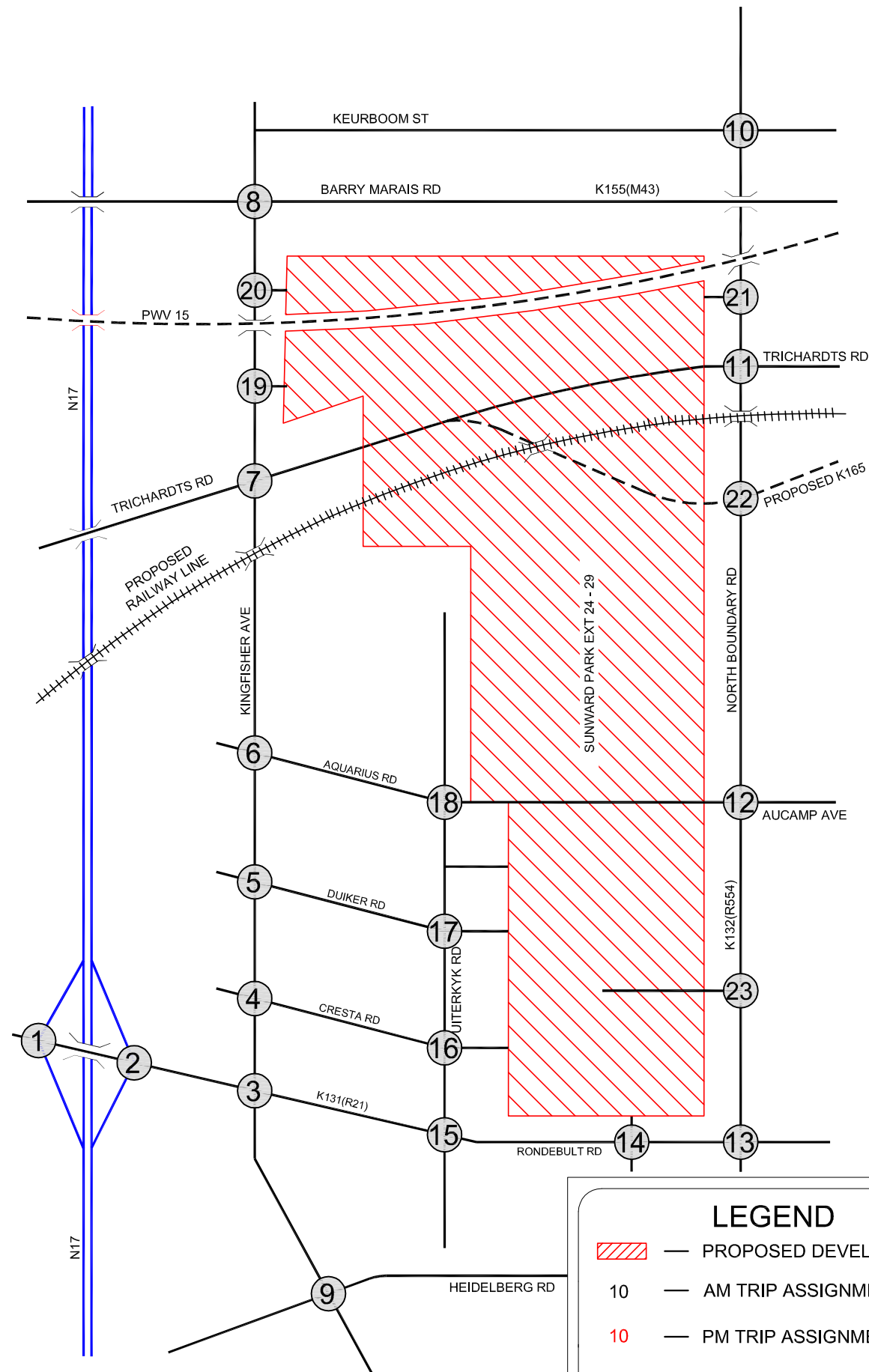
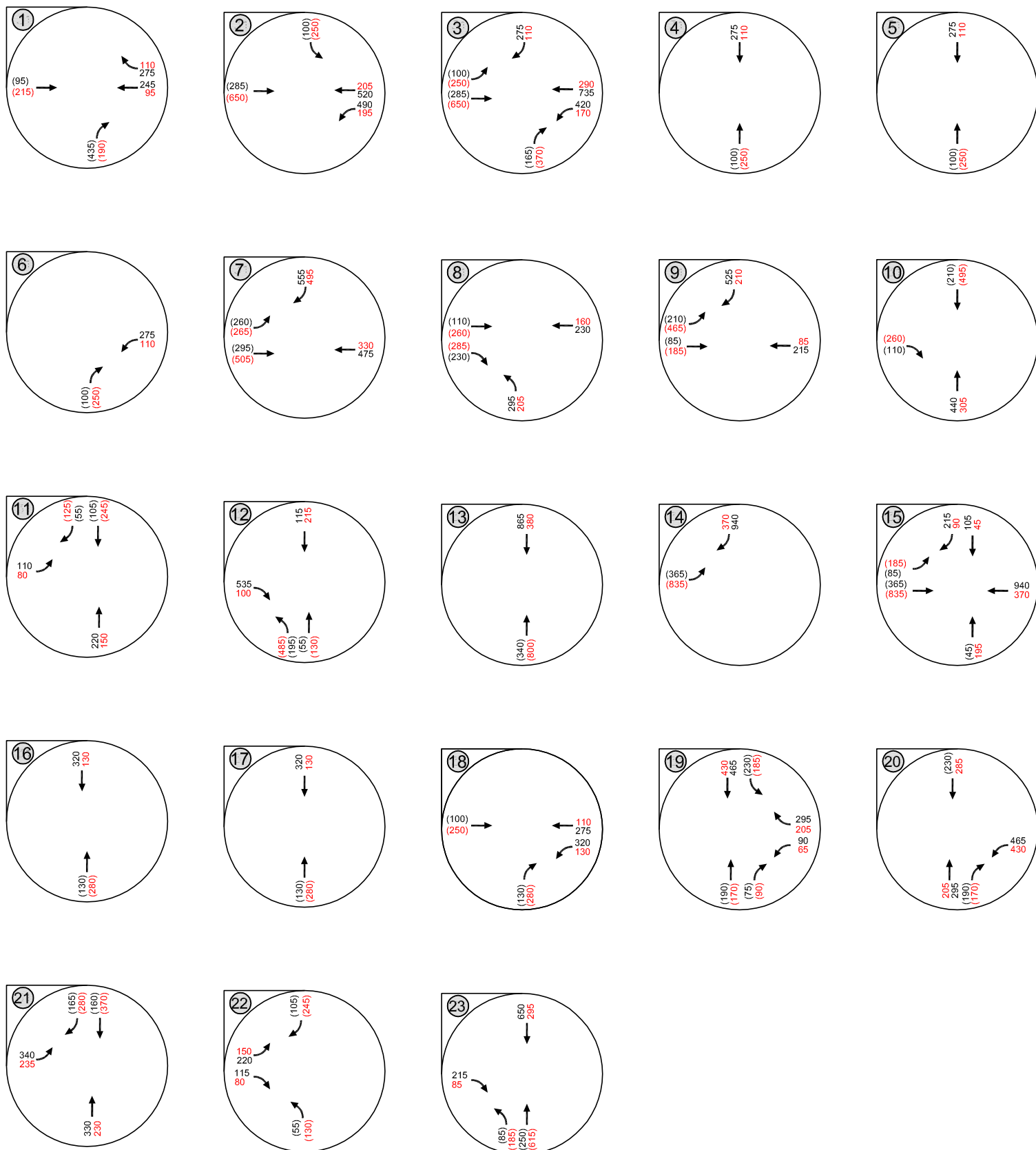
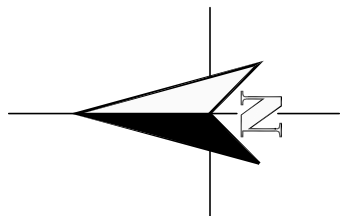
NUMBER: B5



SCHMATIC

3694.4/Fig C1





LEGEND

- PROPOSED DEVELOPMENT
- 10 — AM TRIP ASSIGNMENT
- 10 — PM TRIP ASSIGNMENT
- (10) — INBOUND MOVEMENT
- 10 — OUTBOUND MOVEMENT

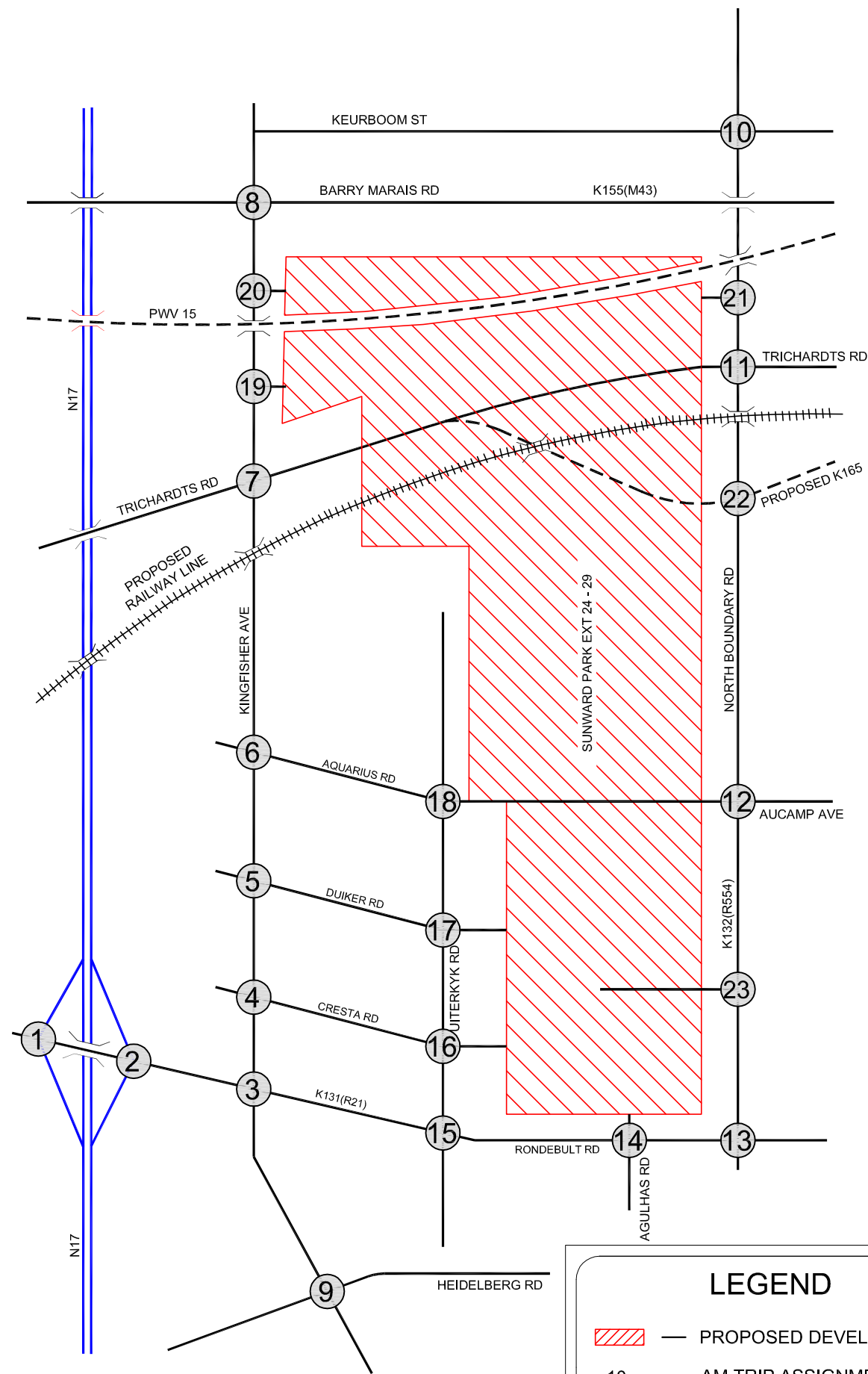
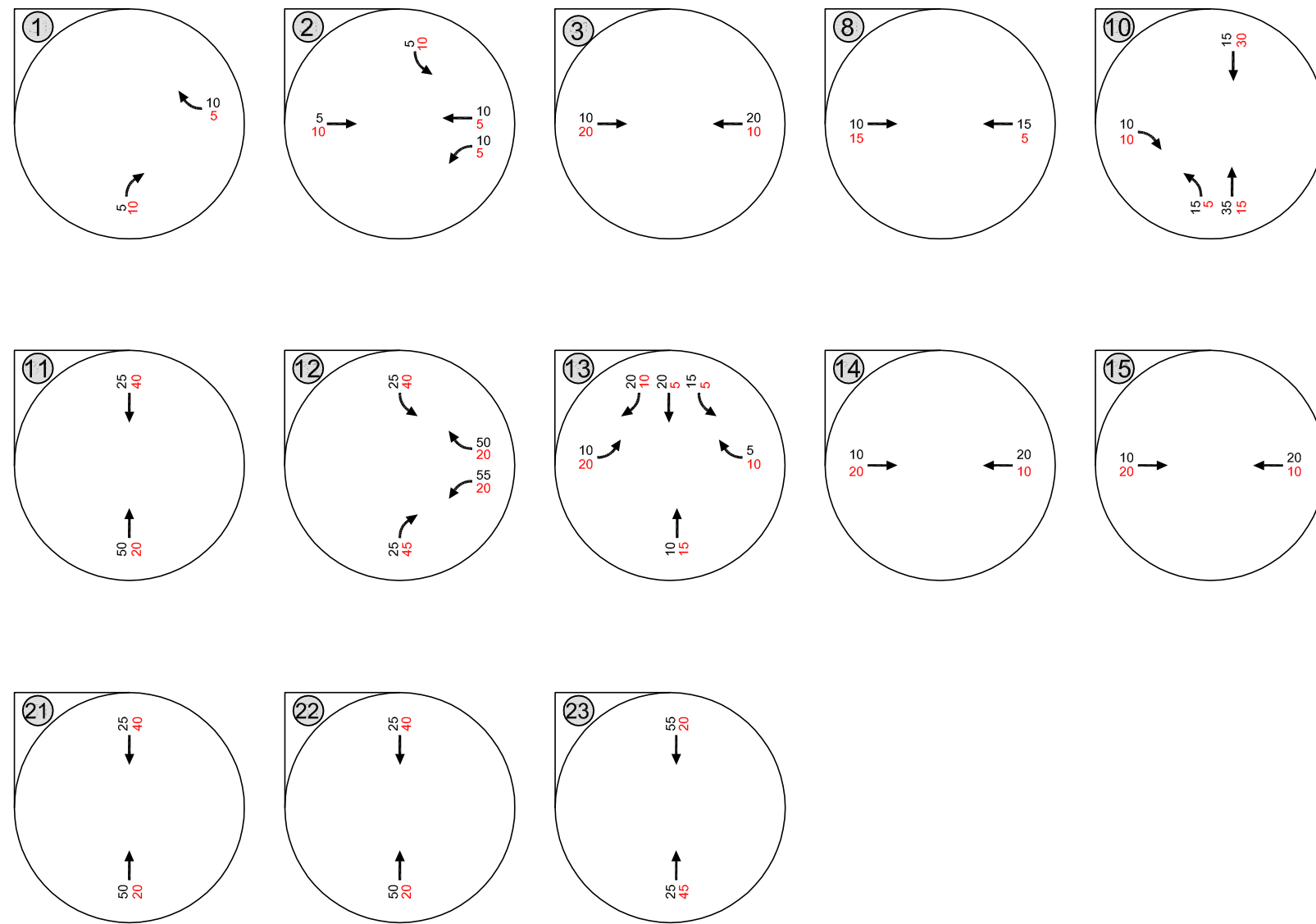
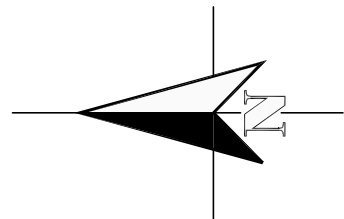
SCHEMATIC



PROJECT: SUNWARD PARK EXT 24 - EXT 29 TIA

FIGURE: AM AND PM PEAK HOUR TRIP ASSIGNMENT - DEVELOPMENT

3694.4/Fig C2.2
NUMBER: C2



LEGEND

- PROPOSED DEVELOPMENT
- 10 — AM TRIP ASSIGNMENT
- 10 — PM TRIP ASSIGNMENT

SCHEMATIC



PROJECT:

SUNWARD PARK EXT 24 - EXT 29 TIA

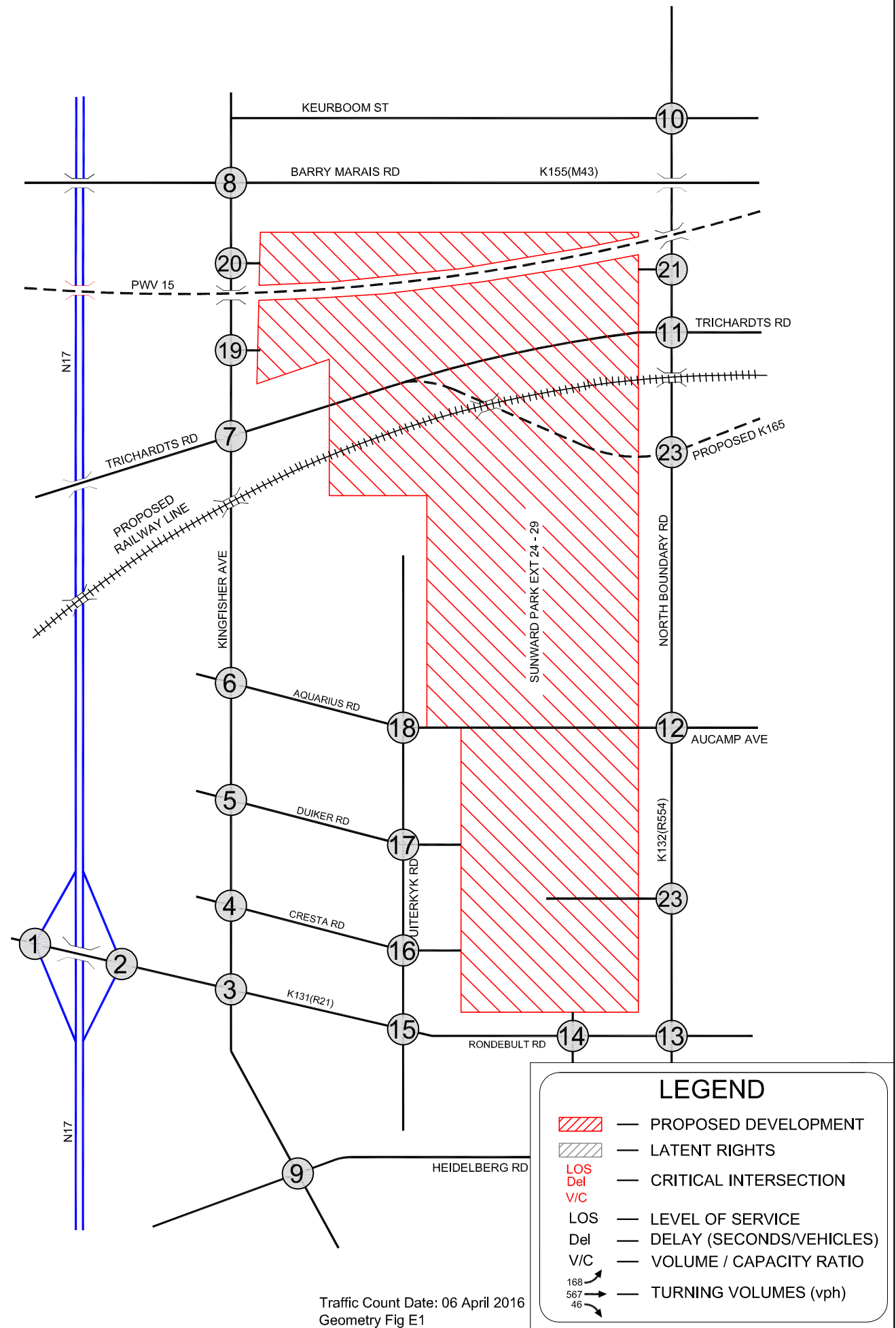
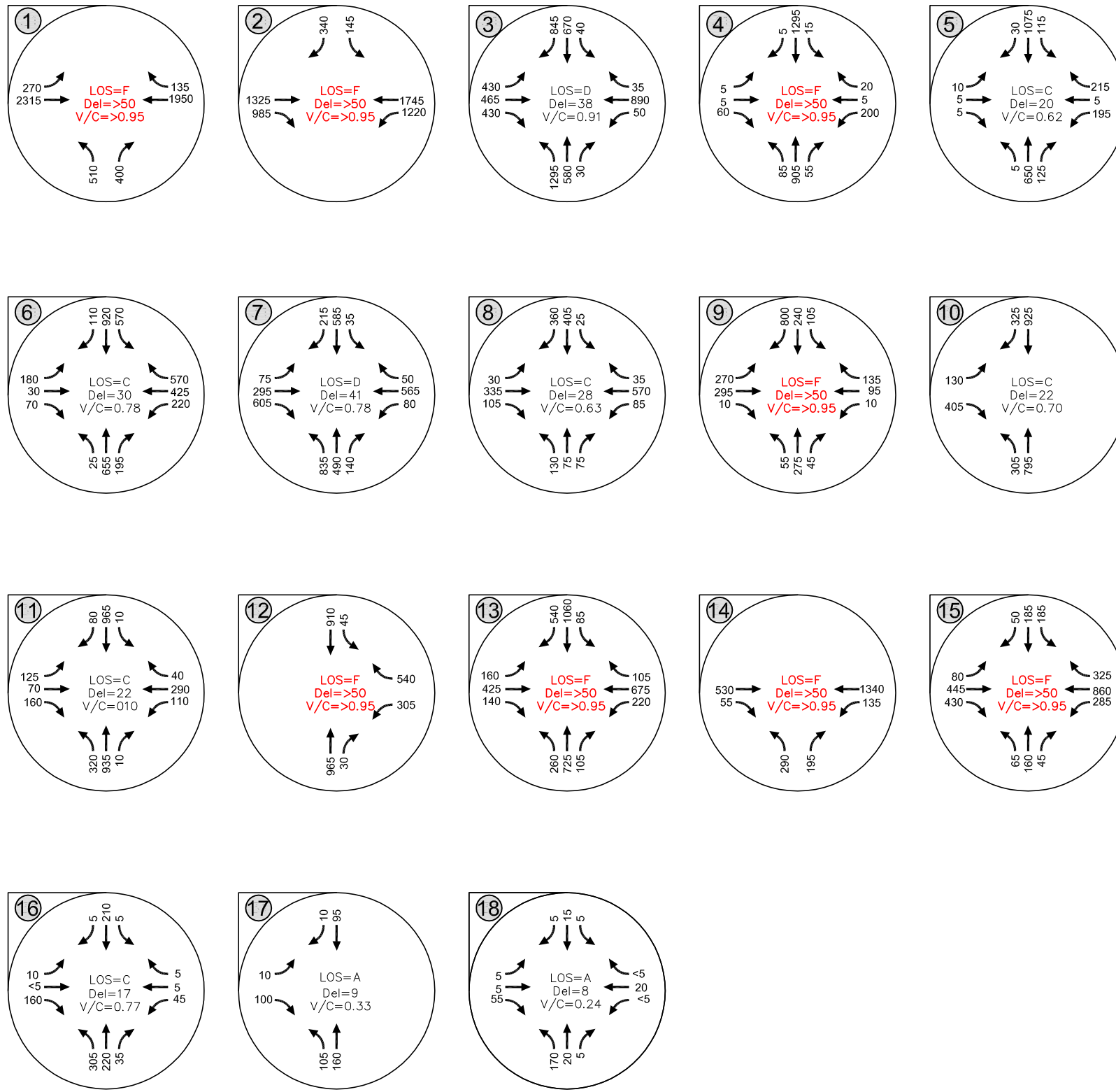
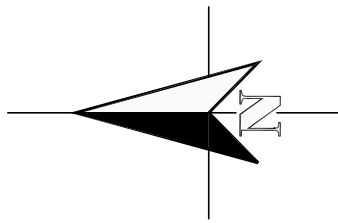
FIGURE:

AM AND PM PEAK HOUR TRIP ASSIGNMENT - LATENT RIGHTS

3694.4/Fig C3

NUMBER:

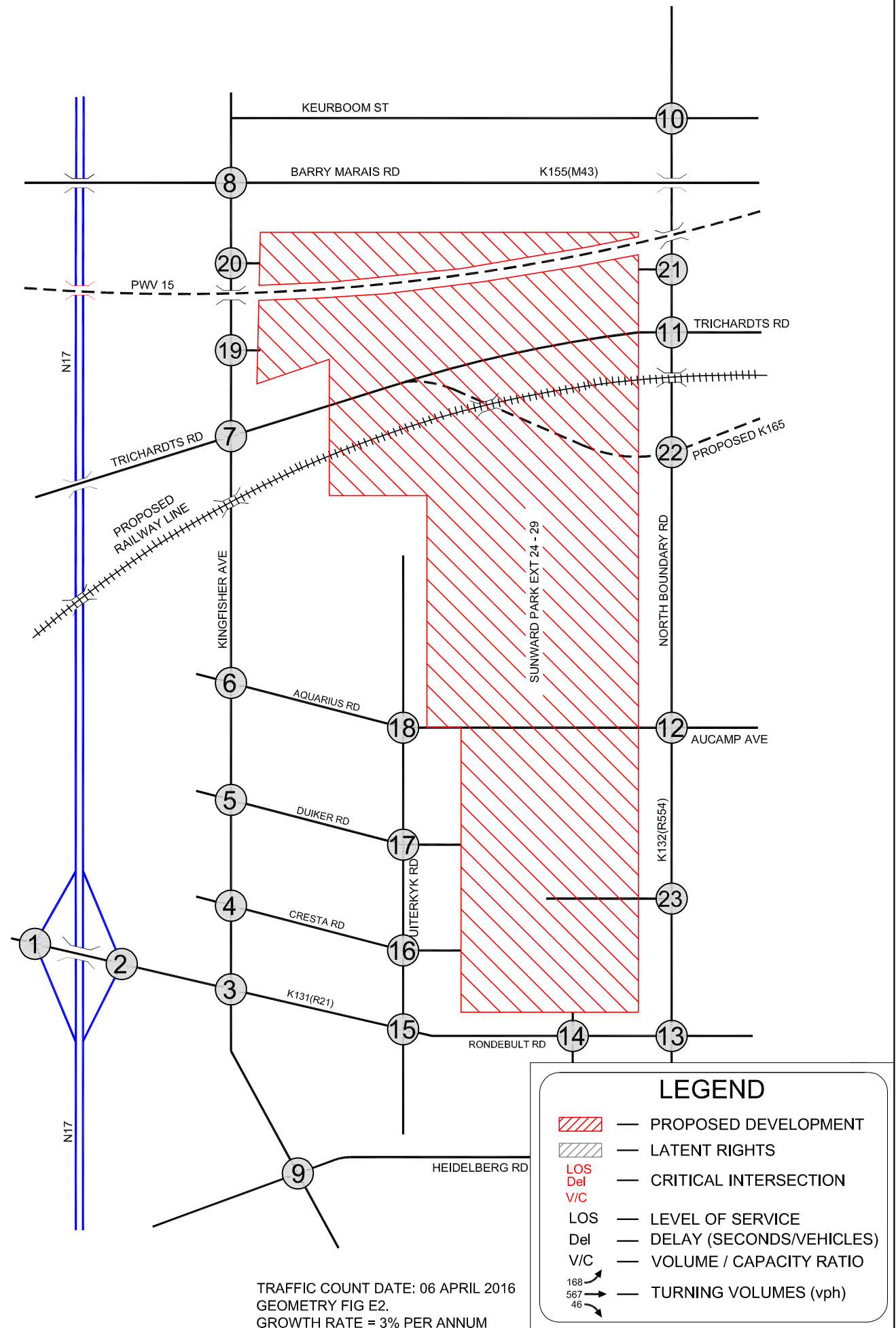
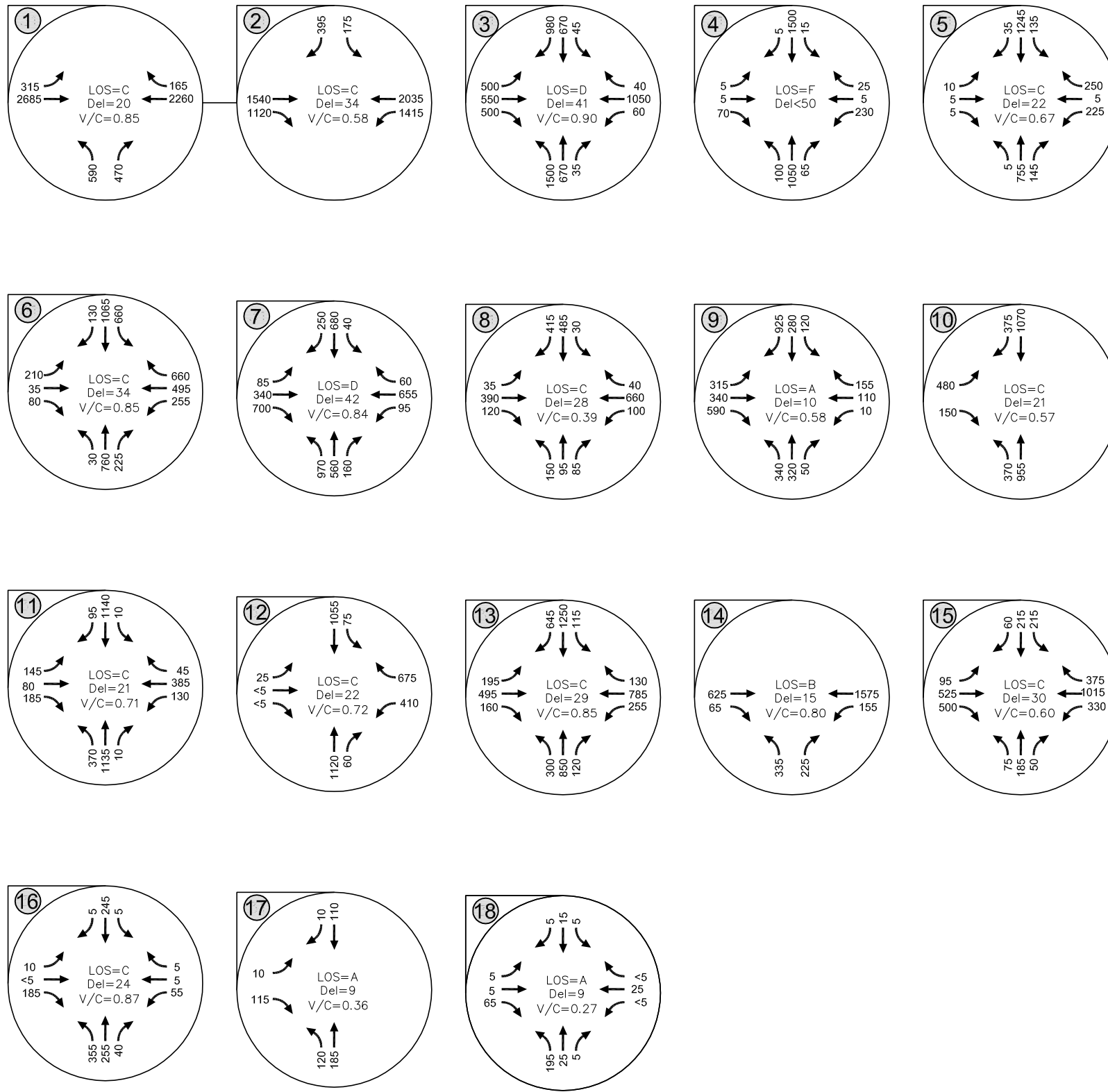
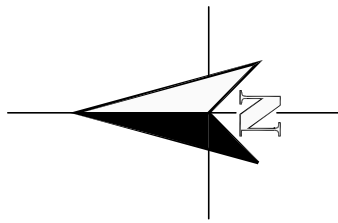
C3

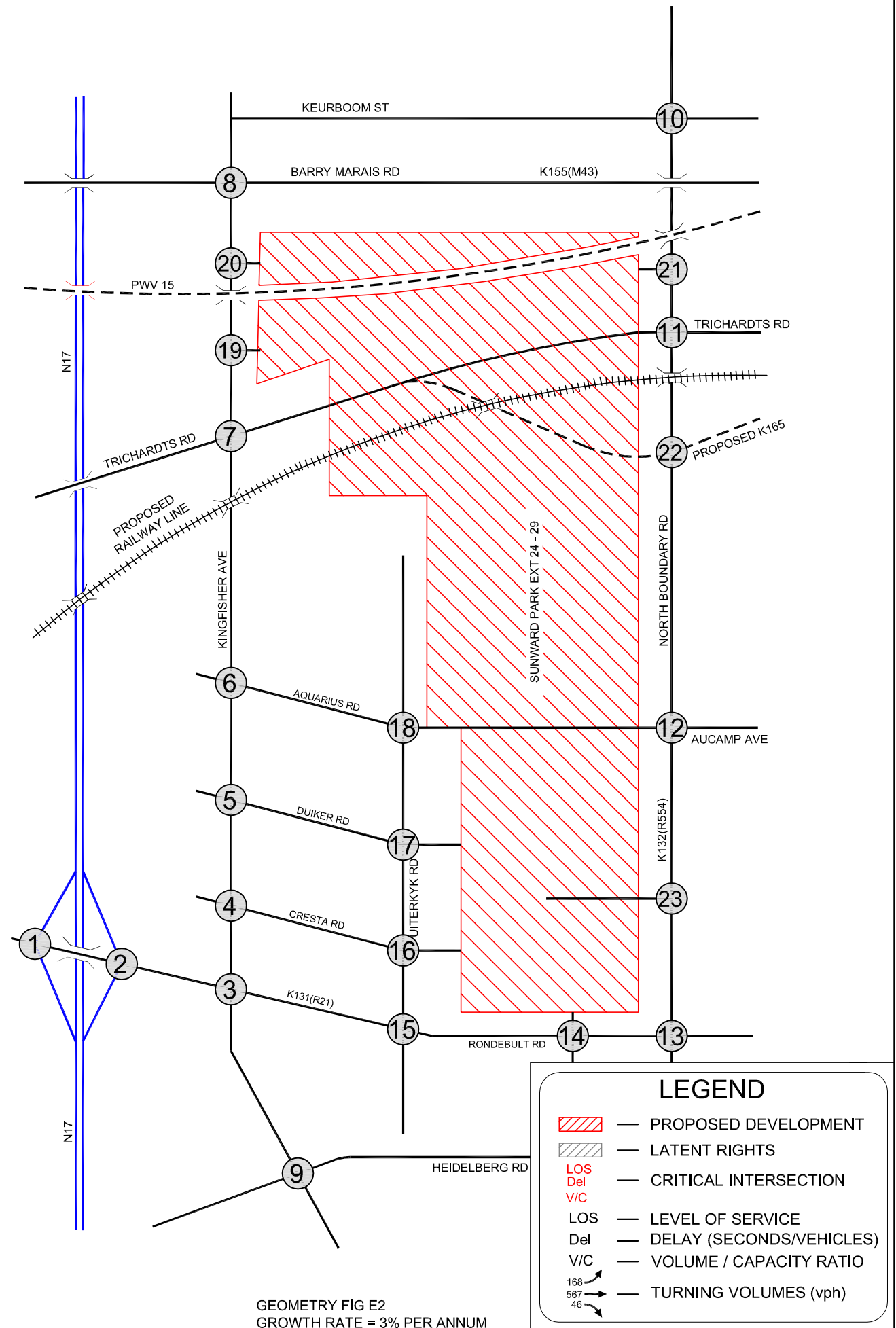
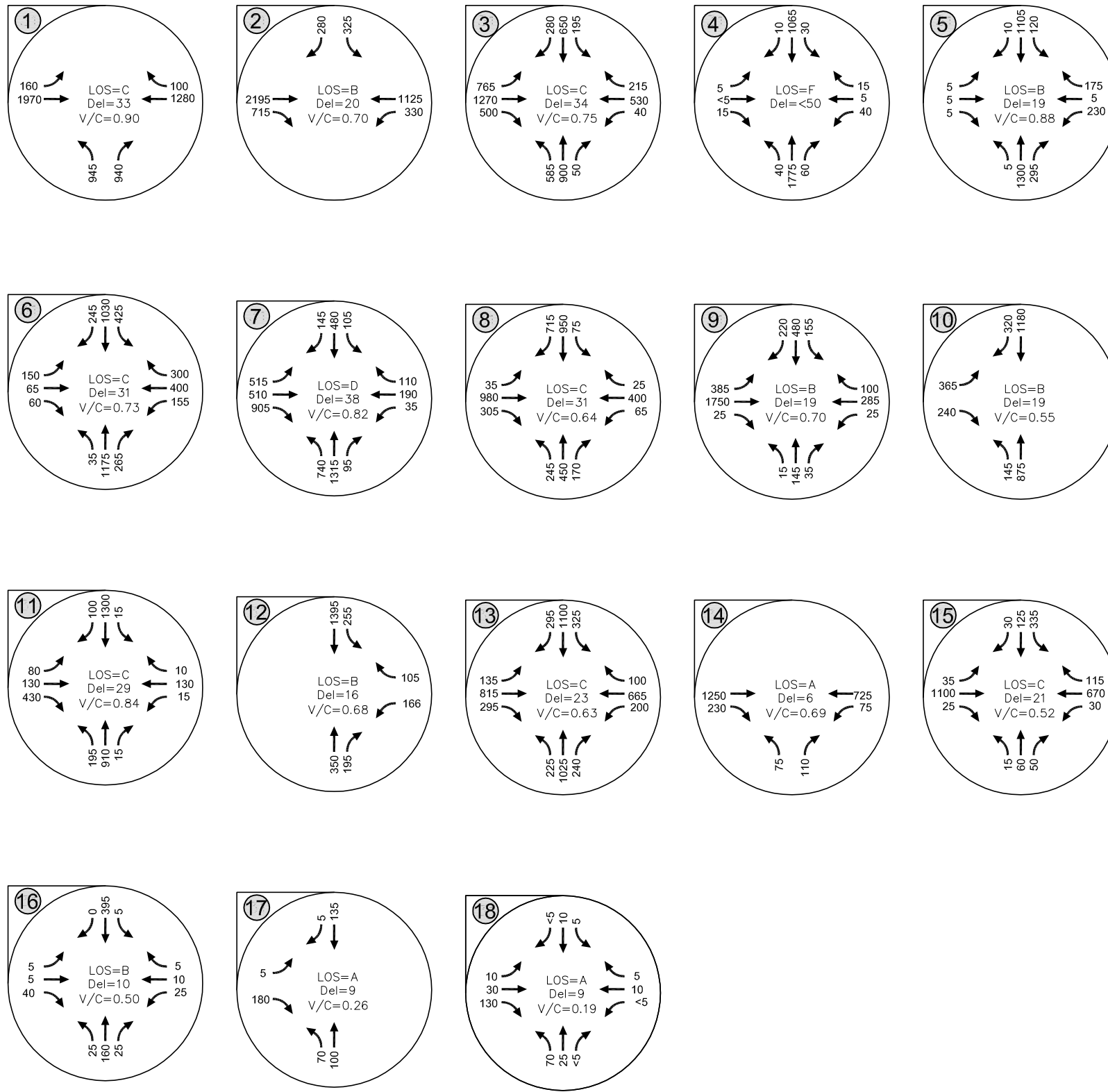
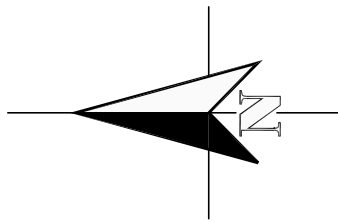


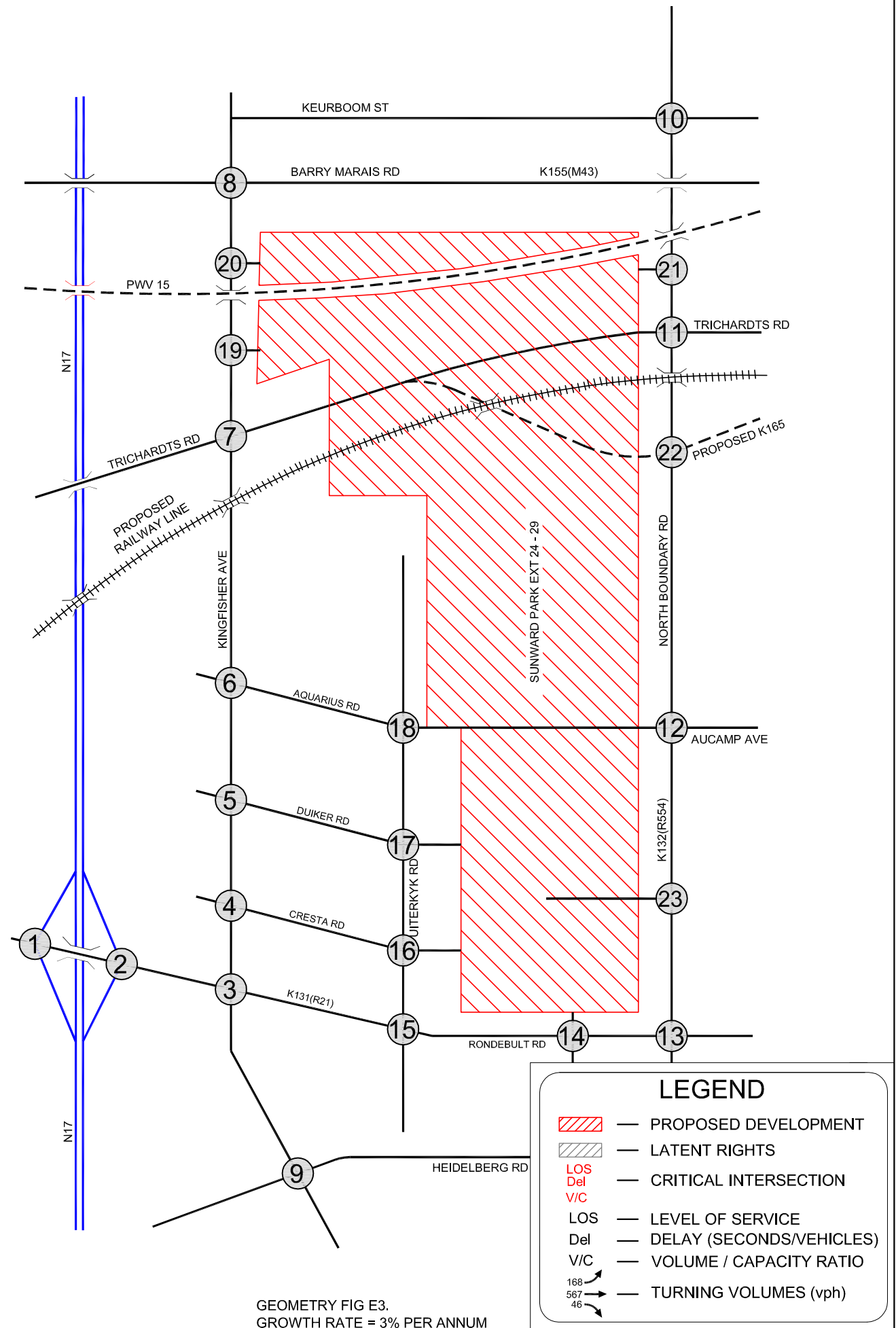
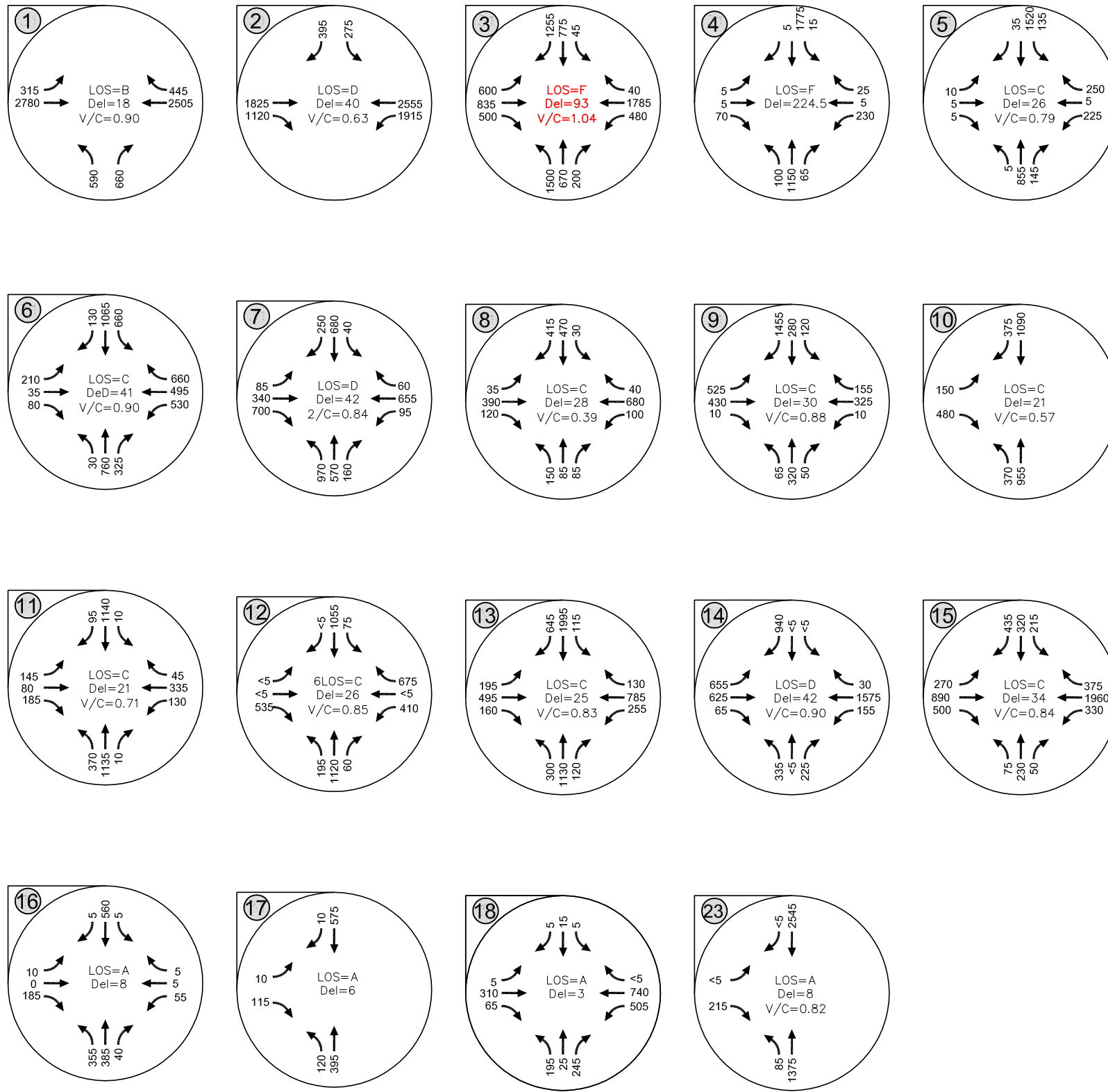
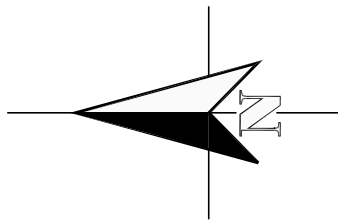
SCHEMATIC



3694.4/Fig D1.1





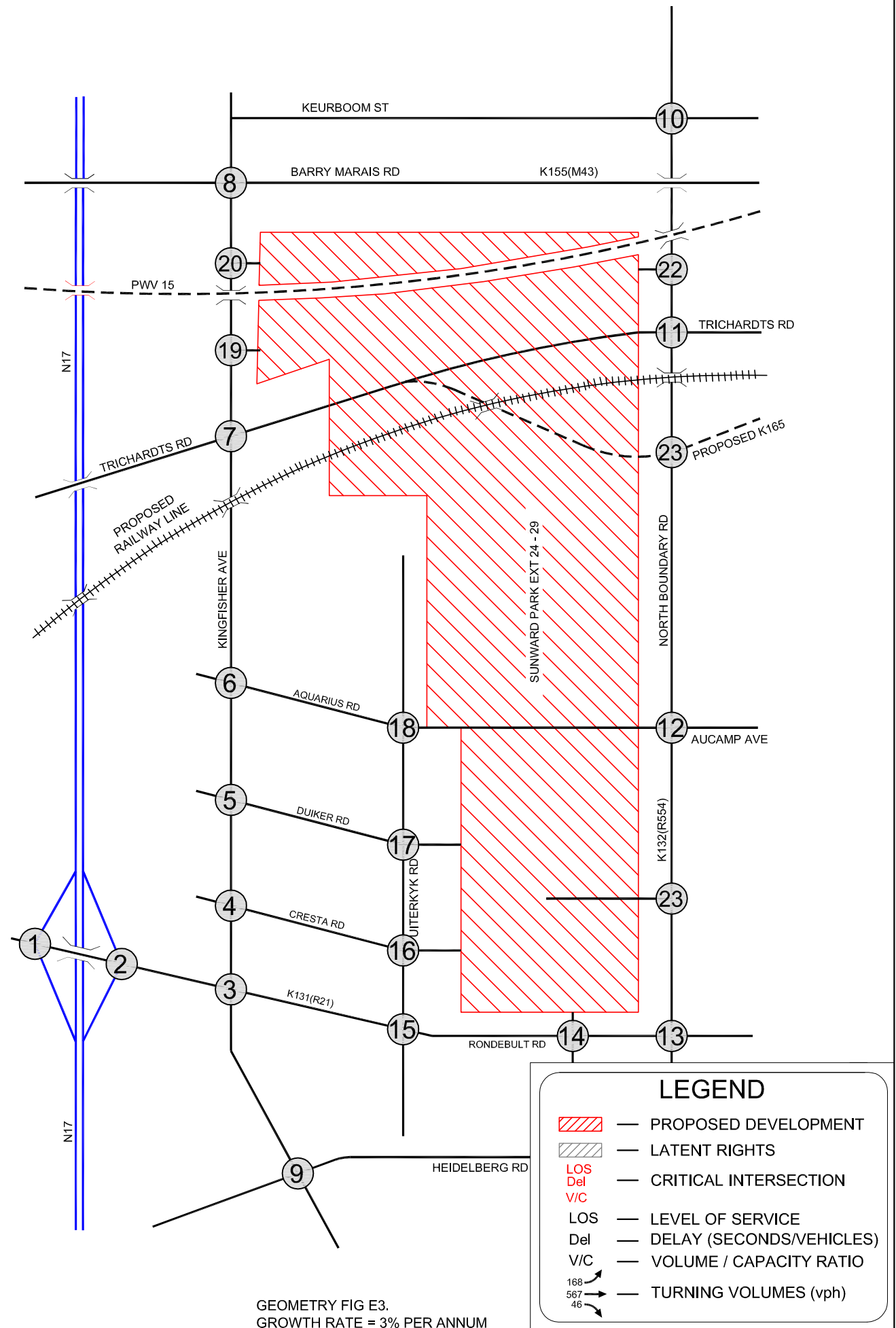
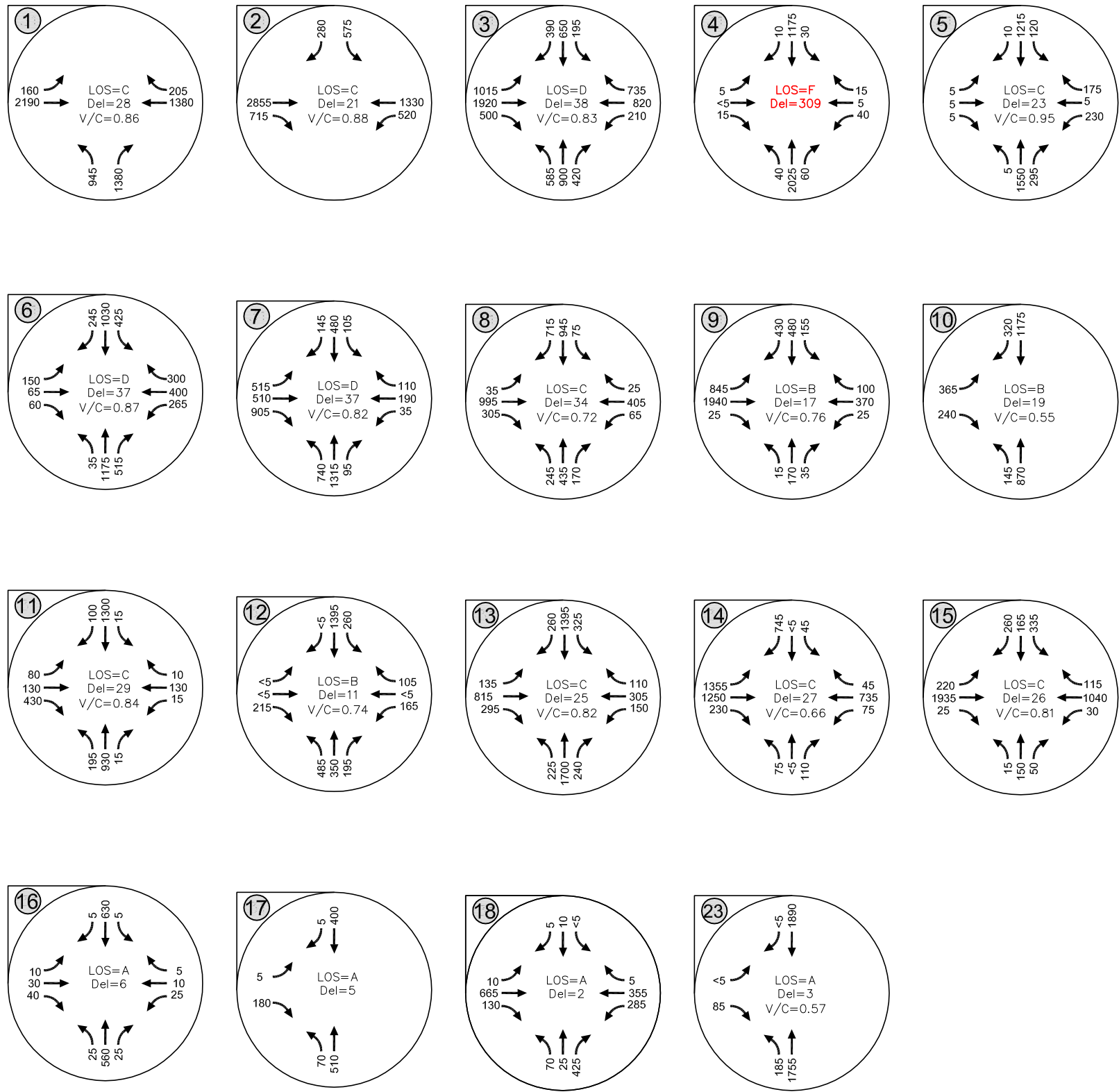
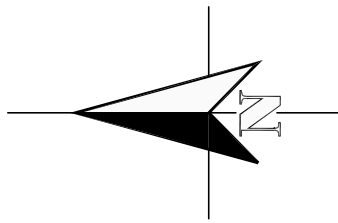


LEGEND

- PROPOSED DEVELOPMENT
- LATENT RIGHTS
- LOS
Del
V/C
- LOS — LEVEL OF SERVICE
- Del — DELAY (SECONDS/VEHICLES)
- V/C — VOLUME / CAPACITY RATIO
- 168
567
46
- TURNING VOLUMES (vph)
- CRITICAL INTERSECTION

SCHEMATIC

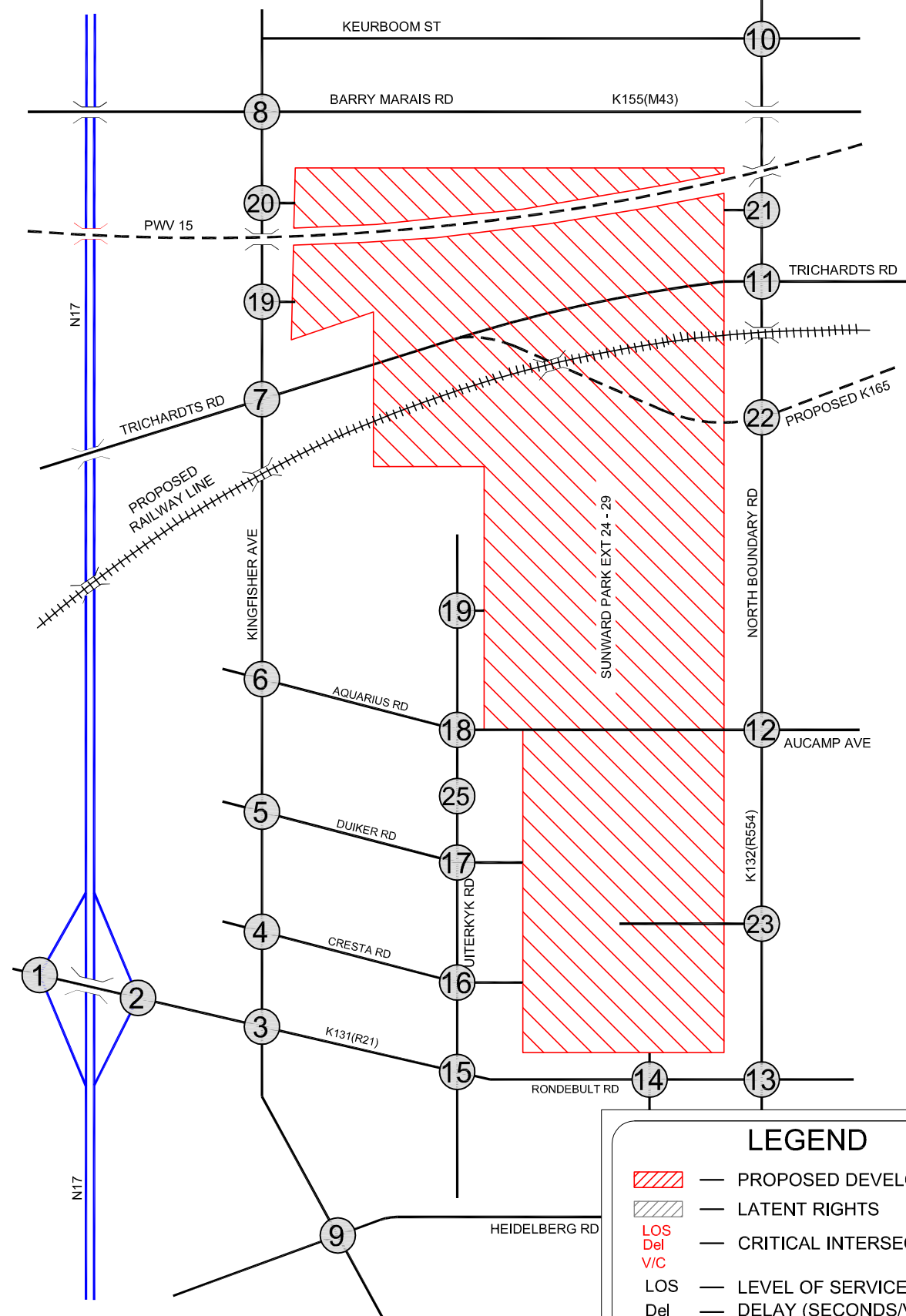
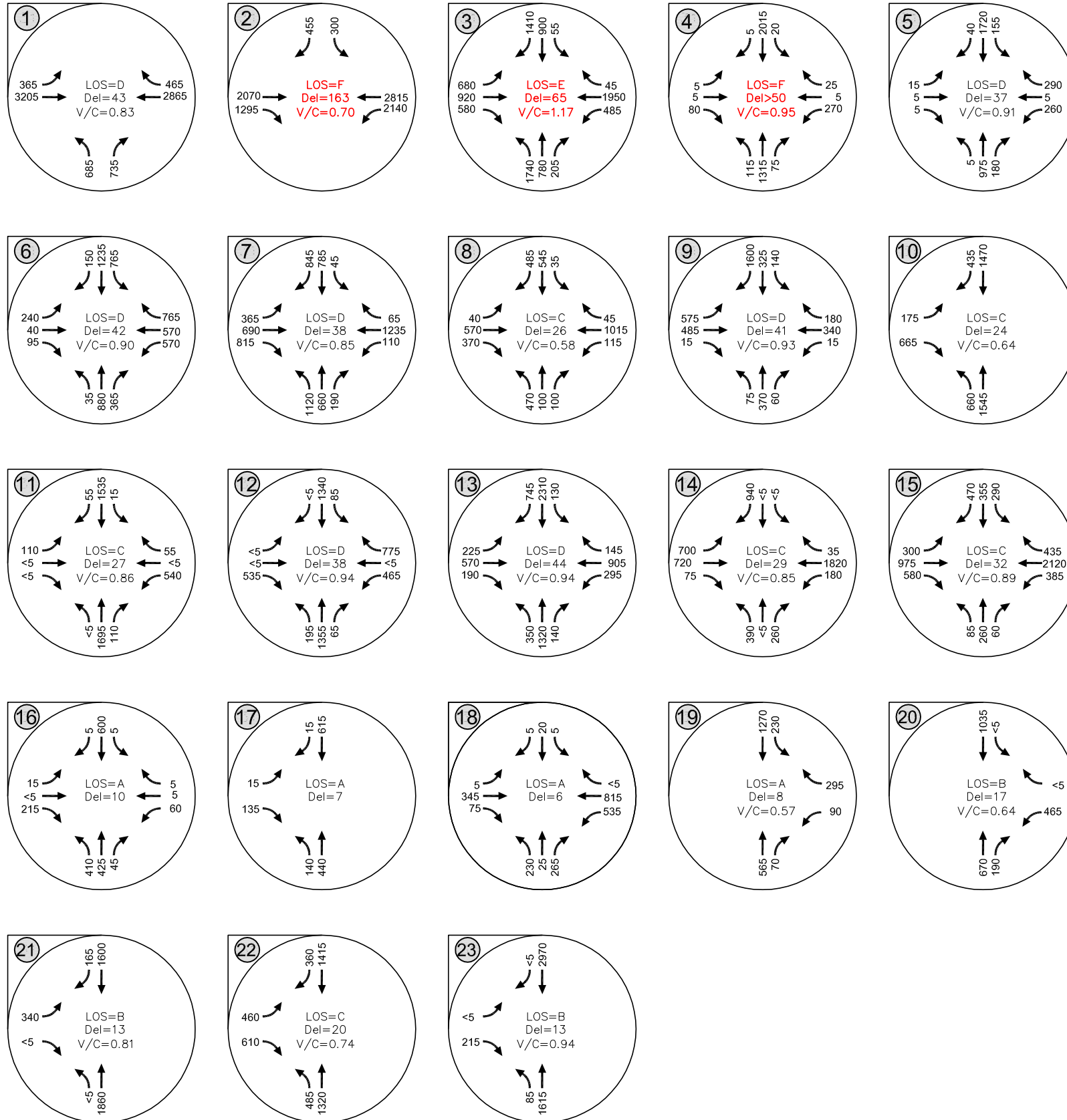
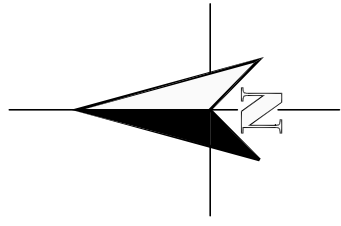




GEOMETRY FIG E3.
GROWTH RATE = 3% PER ANNUM

LEGEND

- PROPOSED DEVELOPMENT
- LATENT RIGHTS
- LOS — LEVEL OF SERVICE
- Del — DELAY (SECONDS/VEHICLES)
- V/C — VOLUME / CAPACITY RATIO
- CRITICAL INTERSECTION
- TURNING VOLUMES (vph)

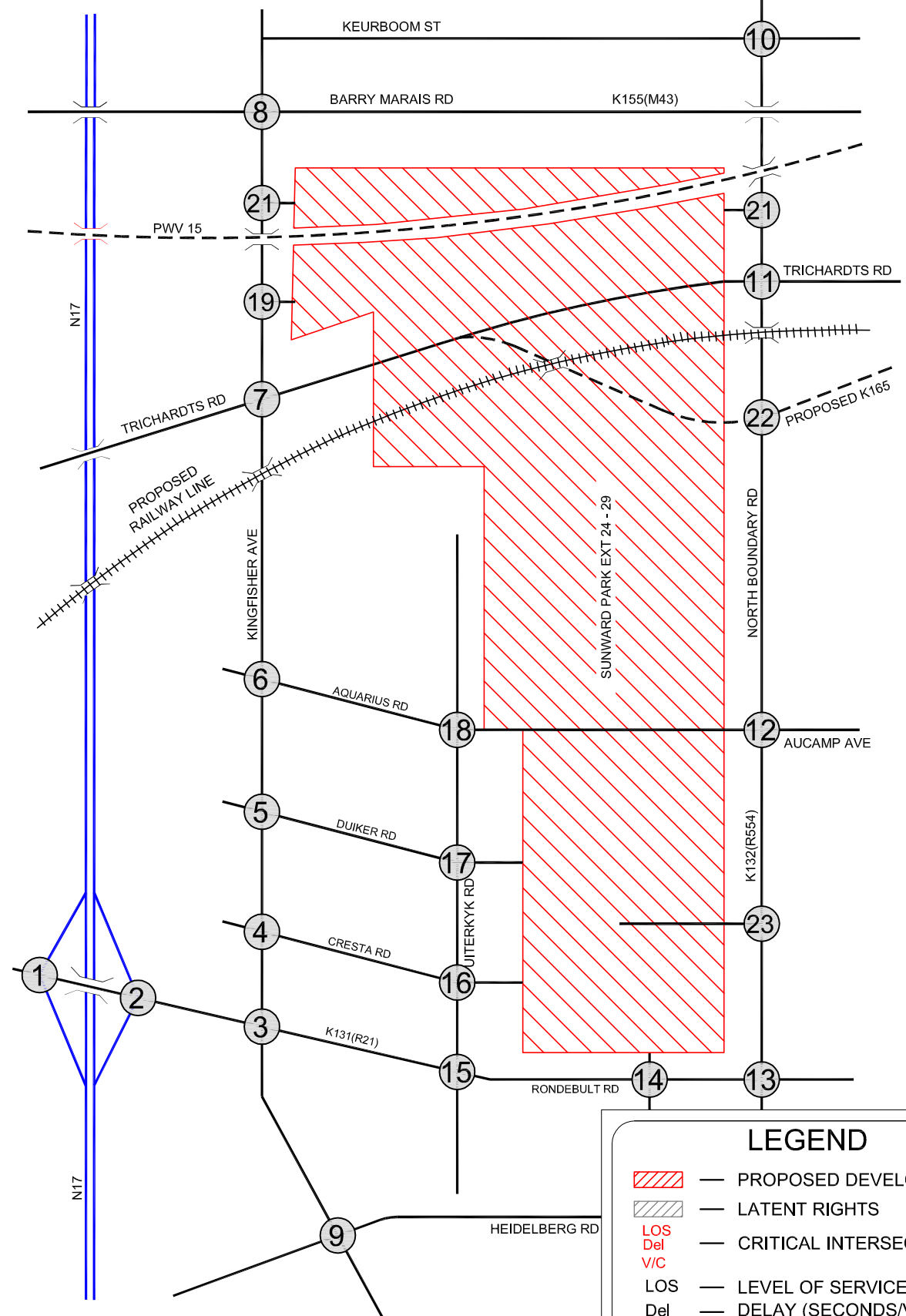
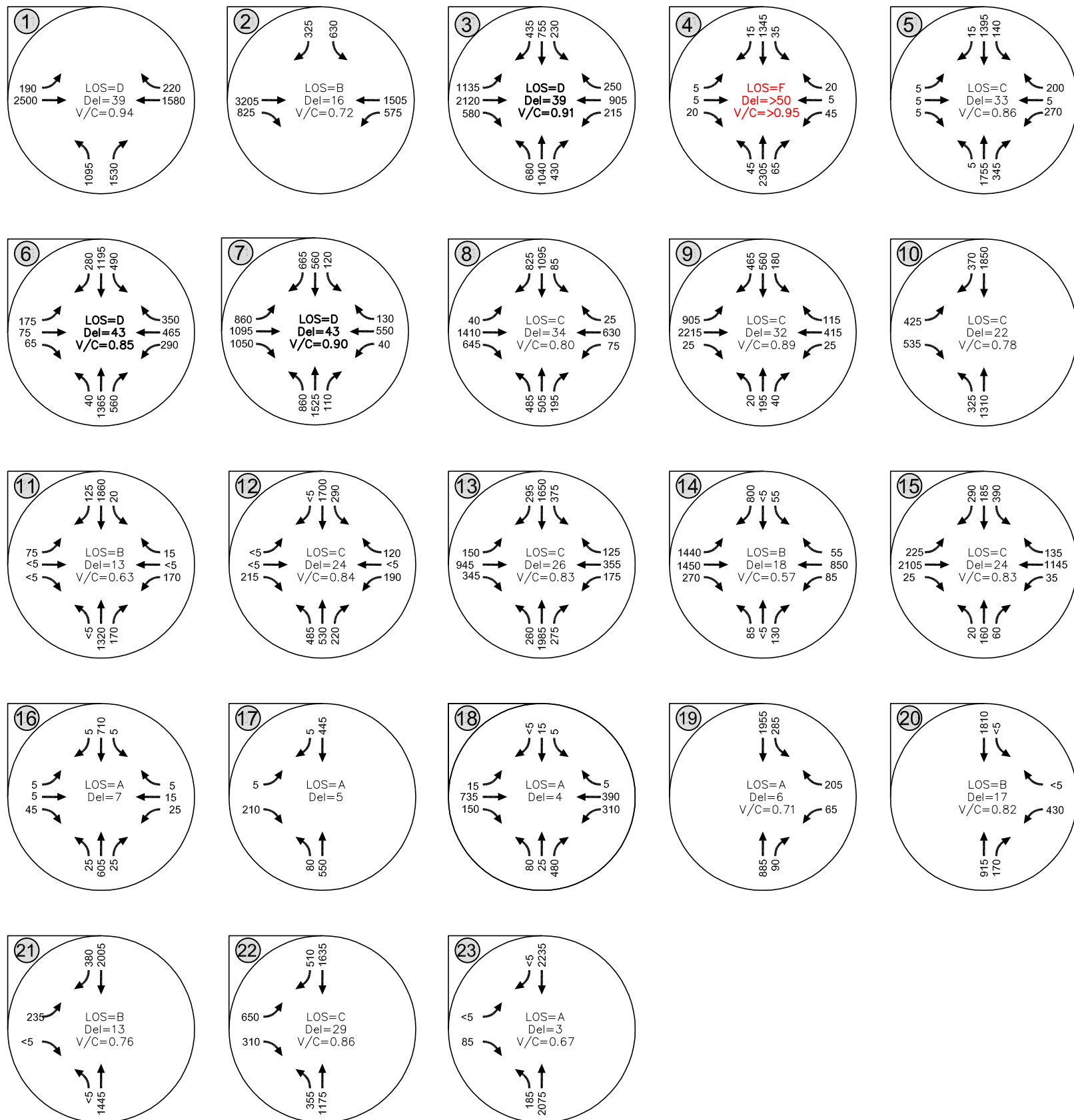
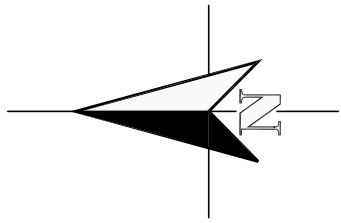


GEOMETRY FIG E4.
GROWTH RATE = 3% PER ANNUM

LEGEND

- PROPOSED DEVELOPMENT
- LATENT RIGHTS
- LOS — CRITICAL INTERSECTION
- Del — LEVEL OF SERVICE
- V/C — DELAY (SECONDS/VEHICLES)
- LOS — LEVEL OF SERVICE
- Del — DELAY (SECONDS/VEHICLES)
- V/C — VOLUME / CAPACITY RATIO
- TURNING VOLUMES (vph)





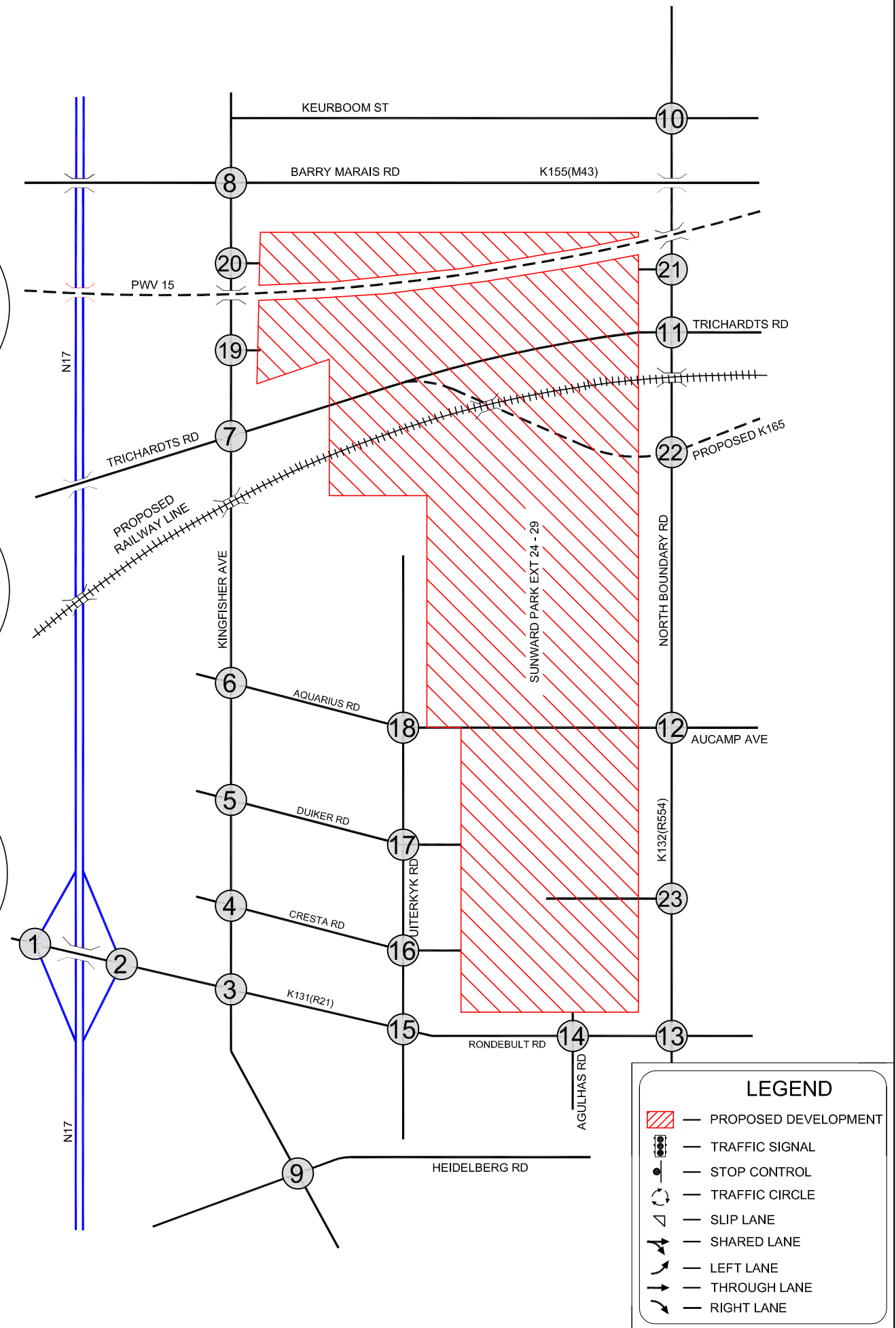
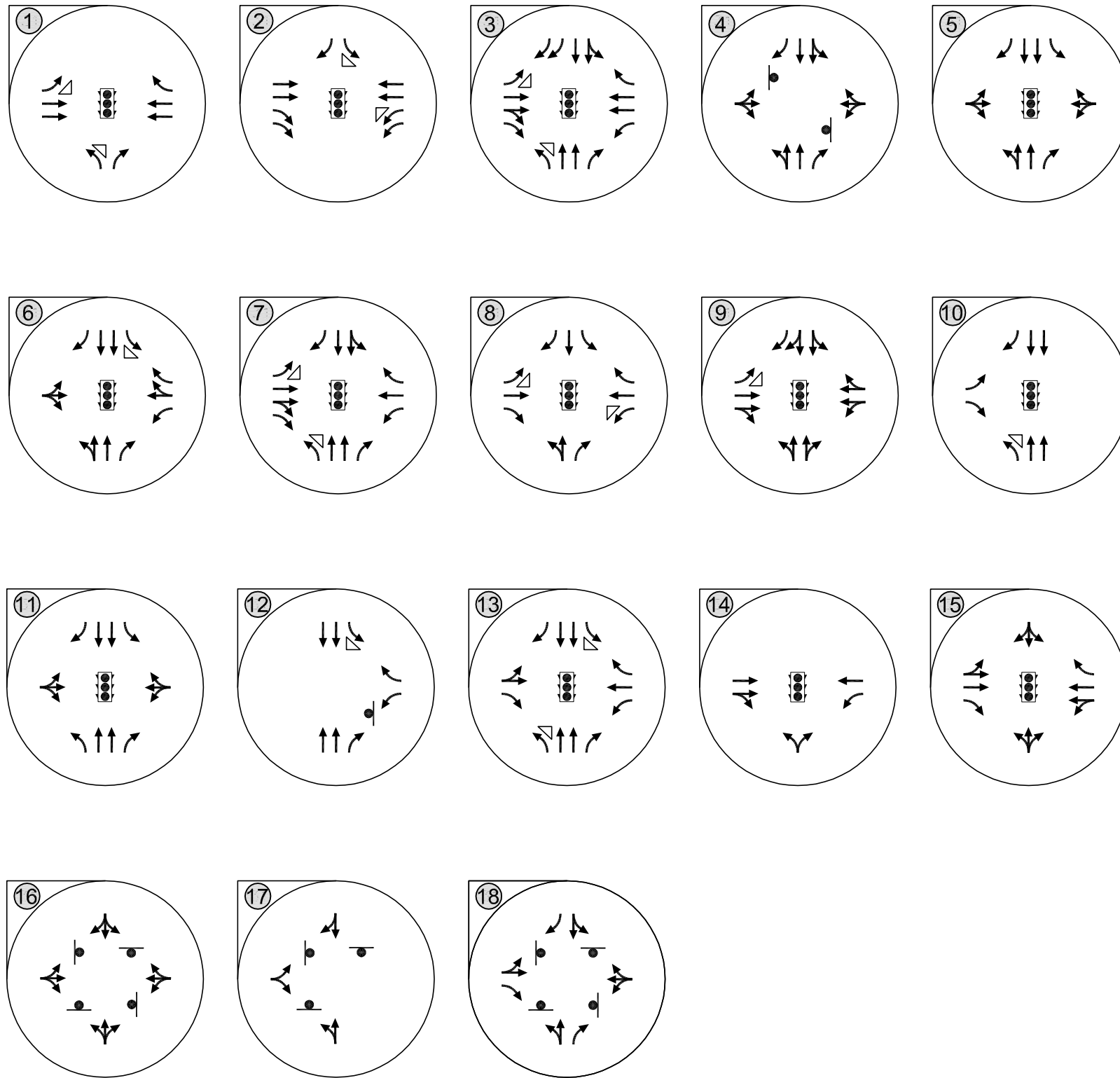
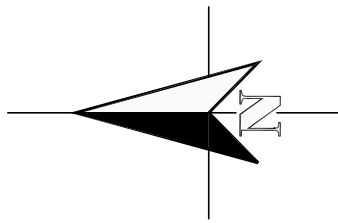
GEOMETRY FIG E4.
GROWTH RATE = 3% PER ANNUM

LEGEND

- PROPOSED DEVELOPMENT
- LATENT RIGHTS
- CRITICAL INTERSECTION
- LOS — LEVEL OF SERVICE
- Del — DELAY (SECONDS/VEHICLES)
- V/C — VOLUME / CAPACITY RATIO
- TURNING VOLUMES (vph)

SCHEMATIC





LEGEND	
	PROPOSED DEVELOPMENT
	TRAFFIC SIGNAL
	STOP CONTROL
	TRAFFIC CIRCLE
	SLIP LANE
	SHARED LANE
	LEFT LANE
	THROUGH LANE
	RIGHT LANE

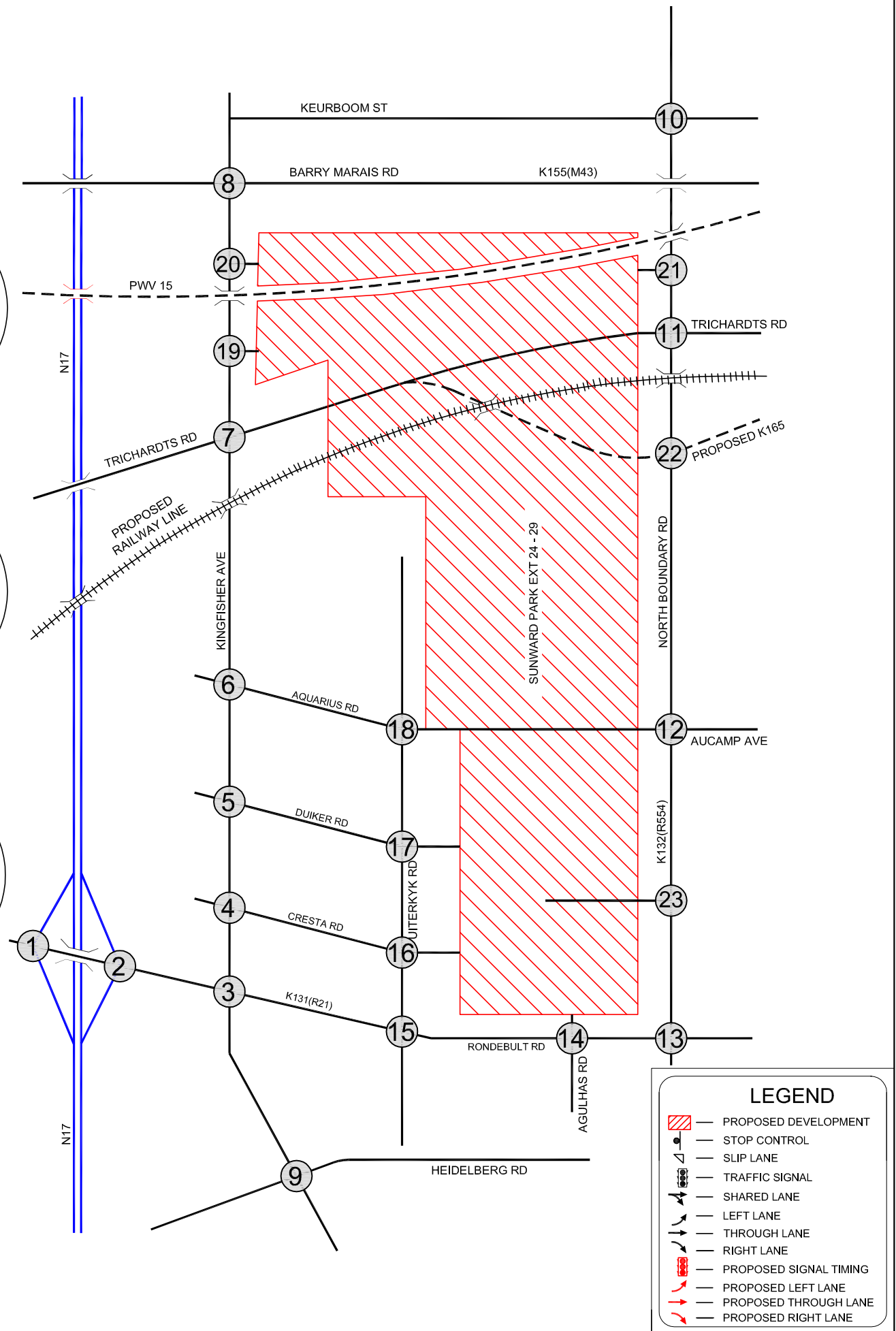
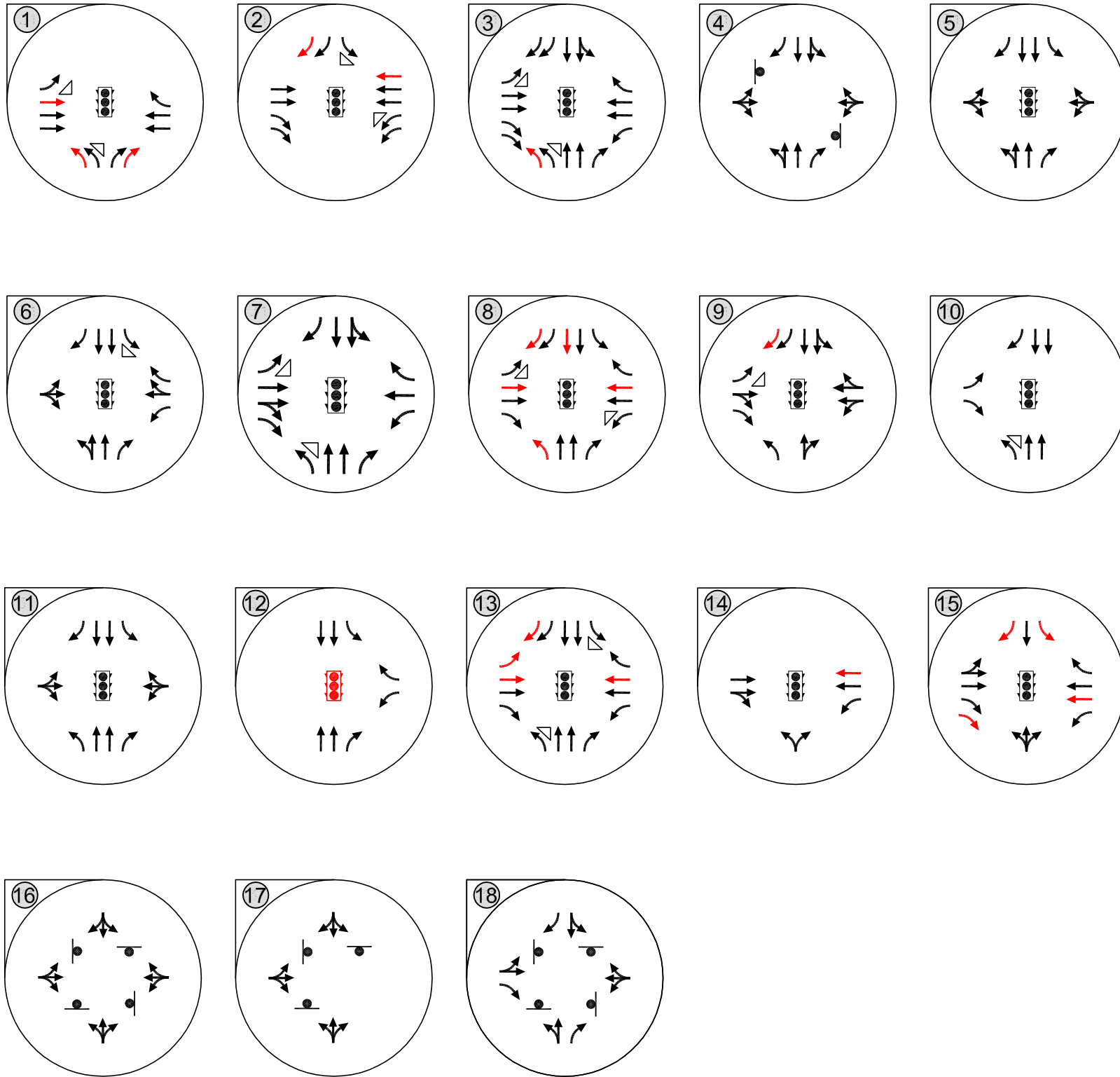
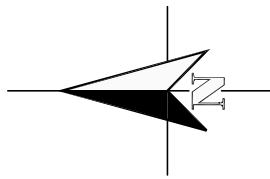
SCHEMATIC



PROJECT: SUNWARD PARK EXT 24 - 29 TIA

FIGURE: EXISTING GEOMETRY (SCENARIO 1)

NUMBER: 3694.4/Fig E1
E1



SCHEMATIC



PROJECT:

SUNWARD PARK EXT 24 - EXT 29 TIA

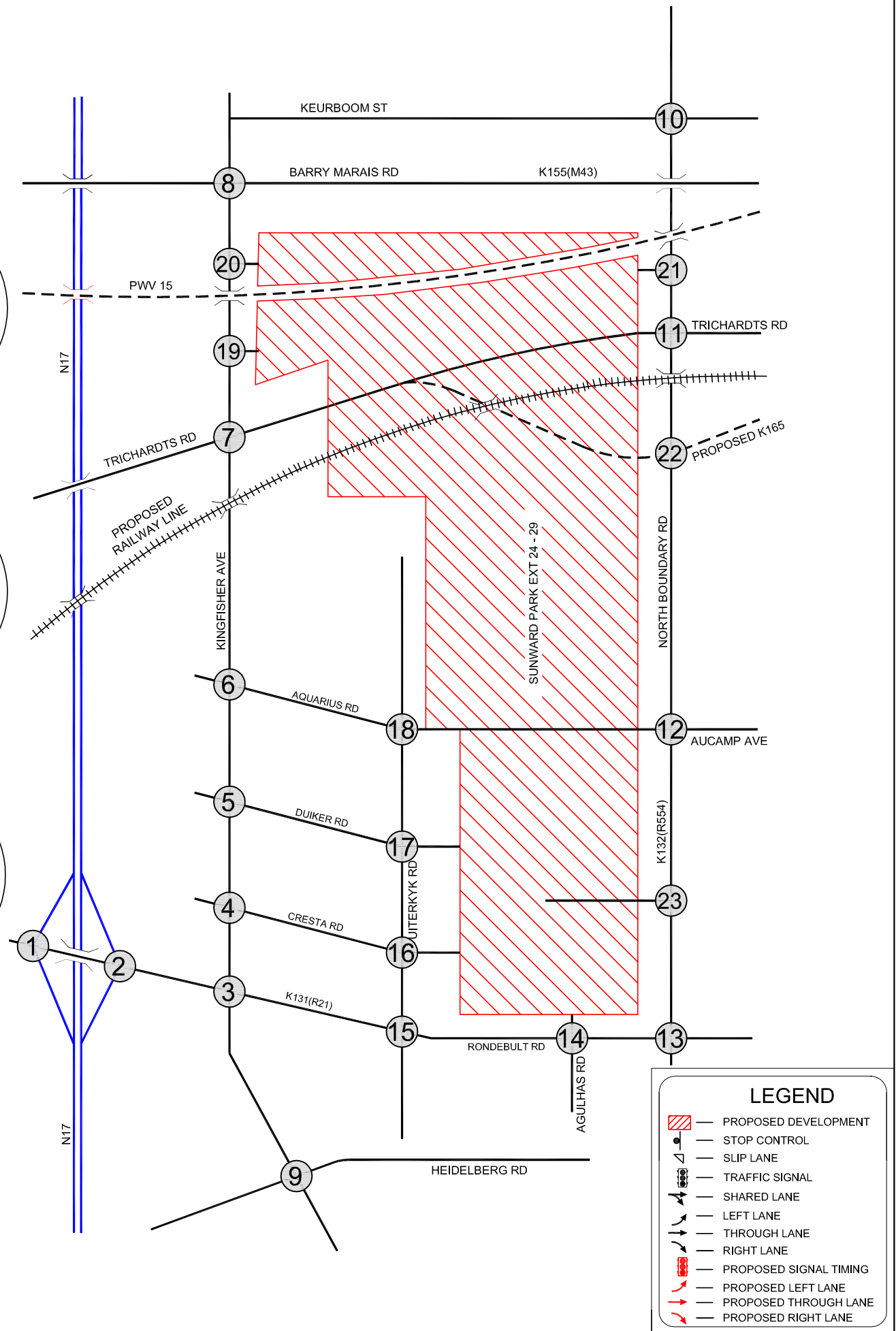
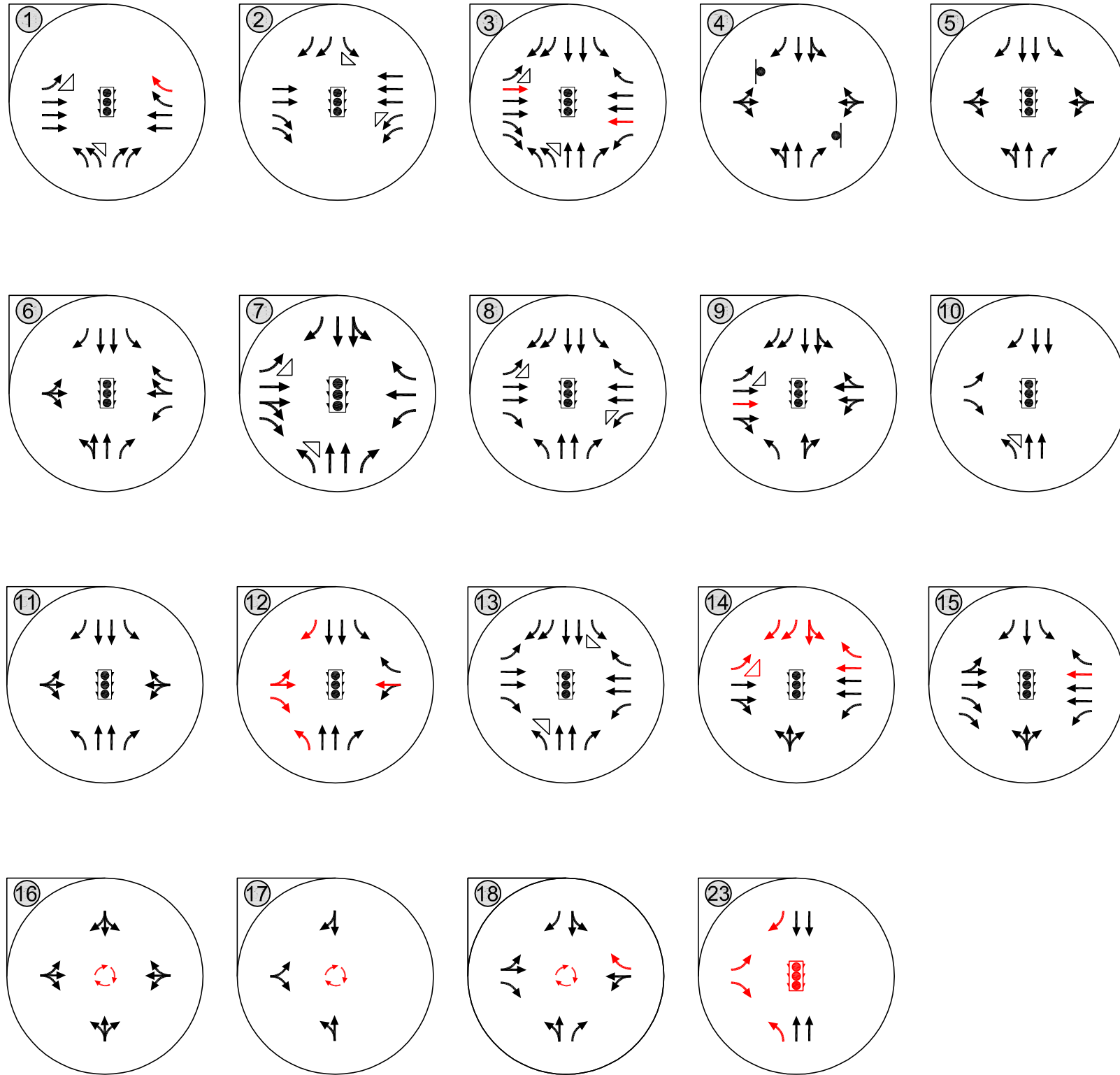
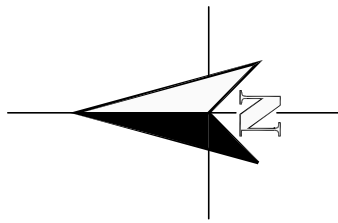
FIGURE:

PROPOSED UPGRADES FOR 2021 BACKGROUND TRAFFIC
+ LATENT RIGHTS (SCENARIO 2)

3694.4/Fig E2

NUMBER:

E2



LEGEND	
	PROPOSED DEVELOPMENT
	STOP CONTROL
	SLIP LANE
	TRAFFIC SIGNAL
	SHARED LANE
	LEFT LANE
	THROUGH LANE
	RIGHT LANE
	PROPOSED SIGNAL TIMING
	PROPOSED LEFT LANE
	PROPOSED THROUGH LANE
	PROPOSED RIGHT LANE

SCHEMATIC



PROJECT:

SUNWARD PARK EXT 24 - EXT 29 TIA

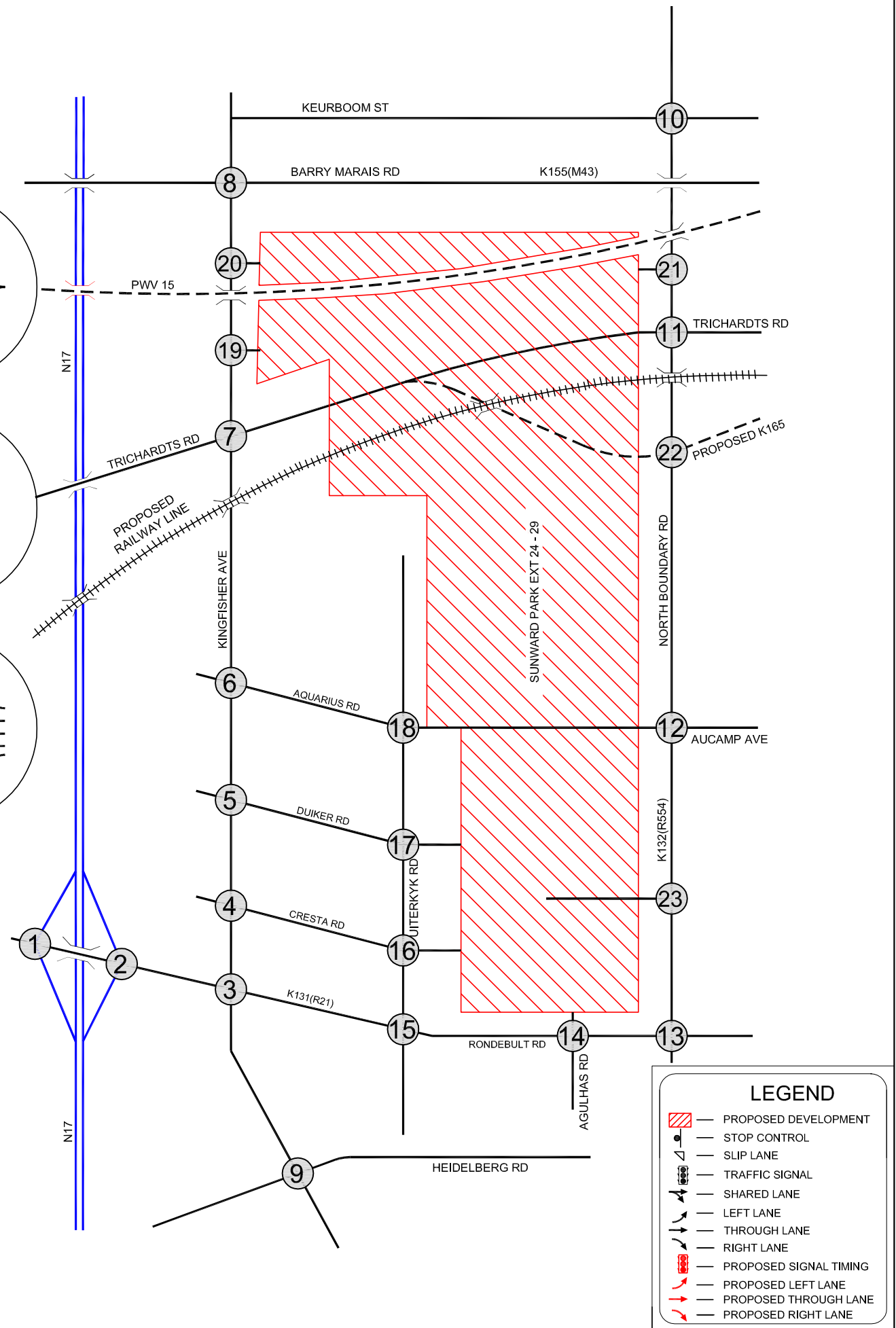
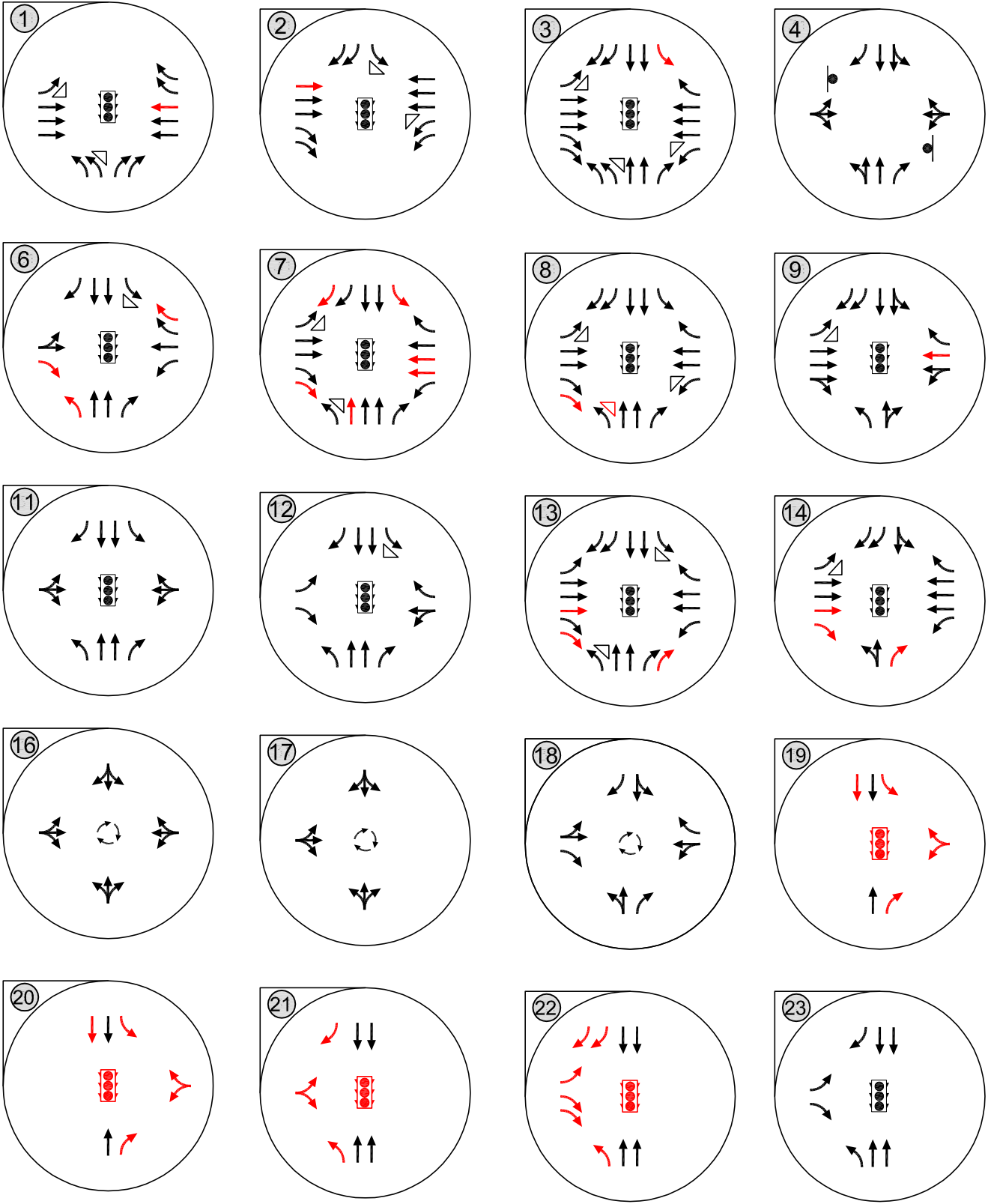
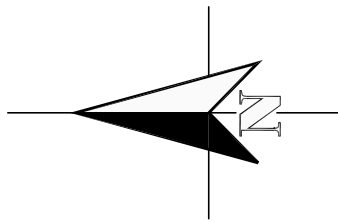
FIGURE:

PROPOSED UPGRADES FOR 2021 BACKGROUND TRAFFIC + LATENT RIGHTS + 50% DEVELOPMENT EXT 24 - EXT 26 (SCENARIO 3)

3694.4/Fig E3

NUMBER:

E3



SCHEMATIC

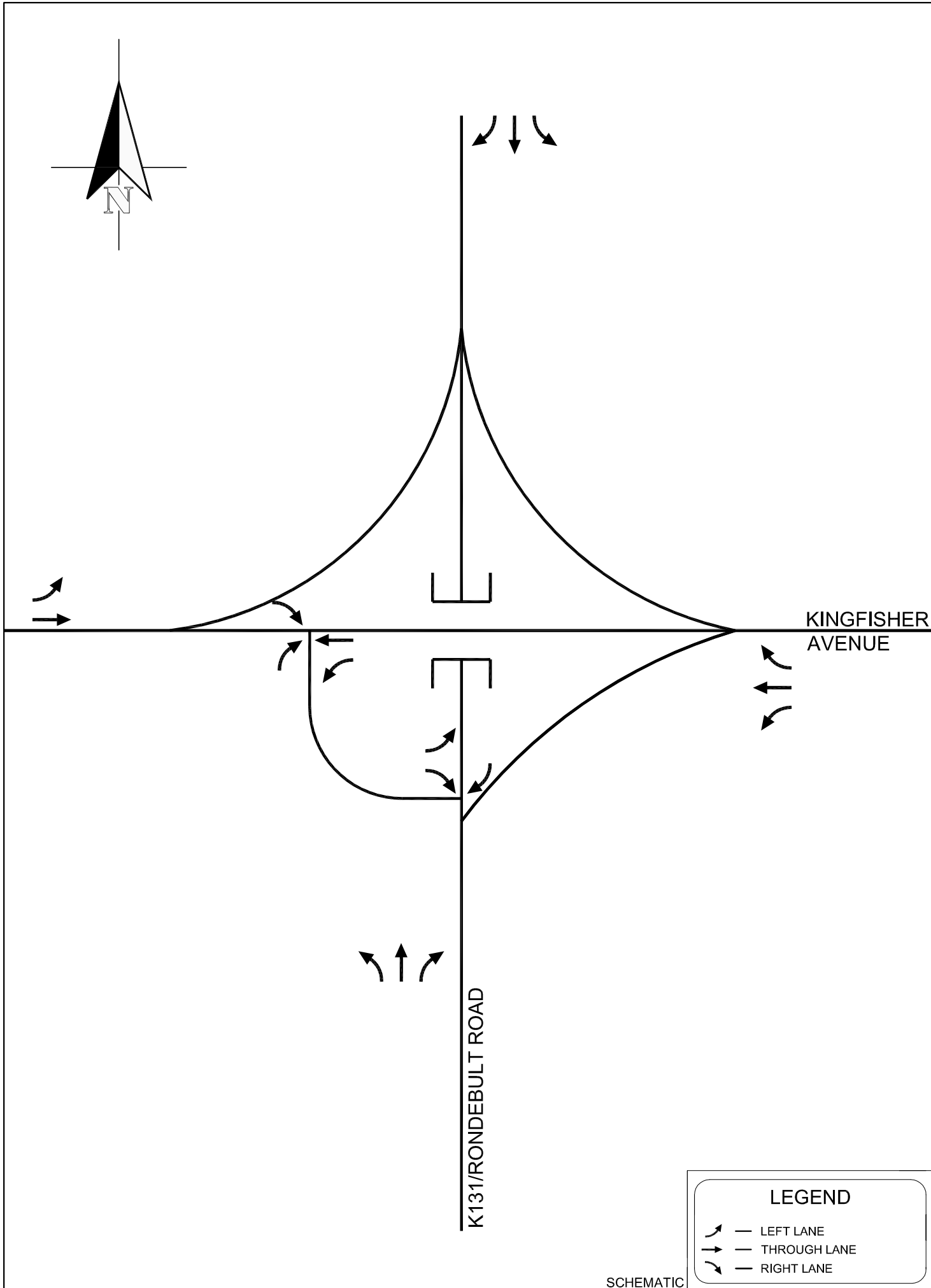


PROJECT: SUNWARD PARK EXT 24 - EXT 29 TIA

FIGURE: PROPOSED UPGRADES FOR 2026 BACKGROUND TRAFFIC + LATENT RIGHTS + 100% DEVELOPMENT EXT 24 - EXT 29 (SCENARIO 4)

NUMBER: E4



3694.4/Fig E4



KINGFISHER AVENUE

K131/RONDEBULT ROAD

LEGEND

-  — LEFT LANE
-  — THROUGH LANE
-  — RIGHT LANE

SCHEMATIC

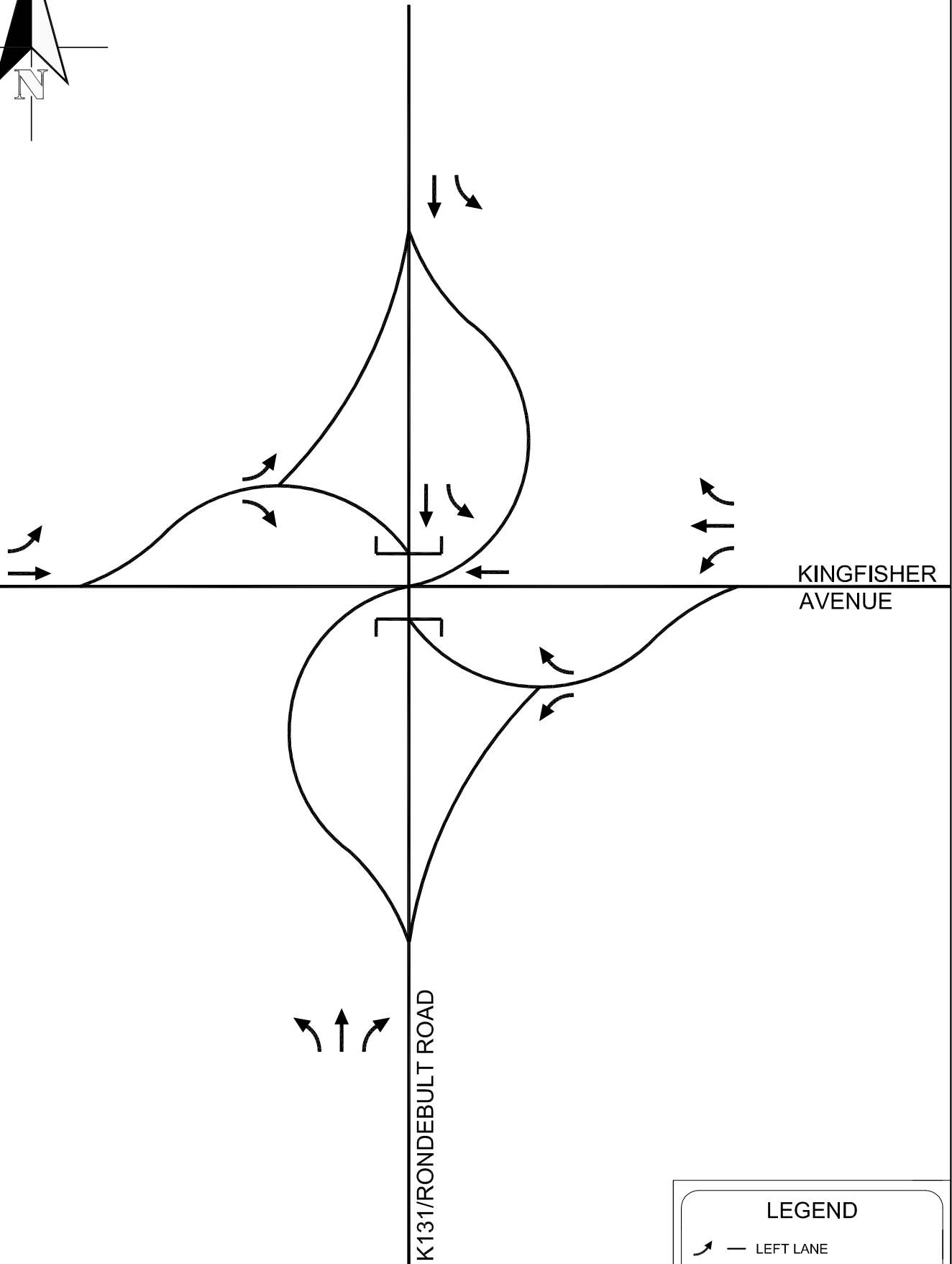
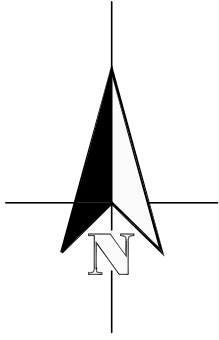


PROJECT: SUNWARD PARK EXT 24 - EXT 29 TIA

DRAWING: PROPOSED GEOMETRIC LAYOUT

NUMBER: F1

3694.4/GL F1



SCHMATIC

LEGEND

- LEFT LANE
- THROUGH LANE
- RIGHT LANE

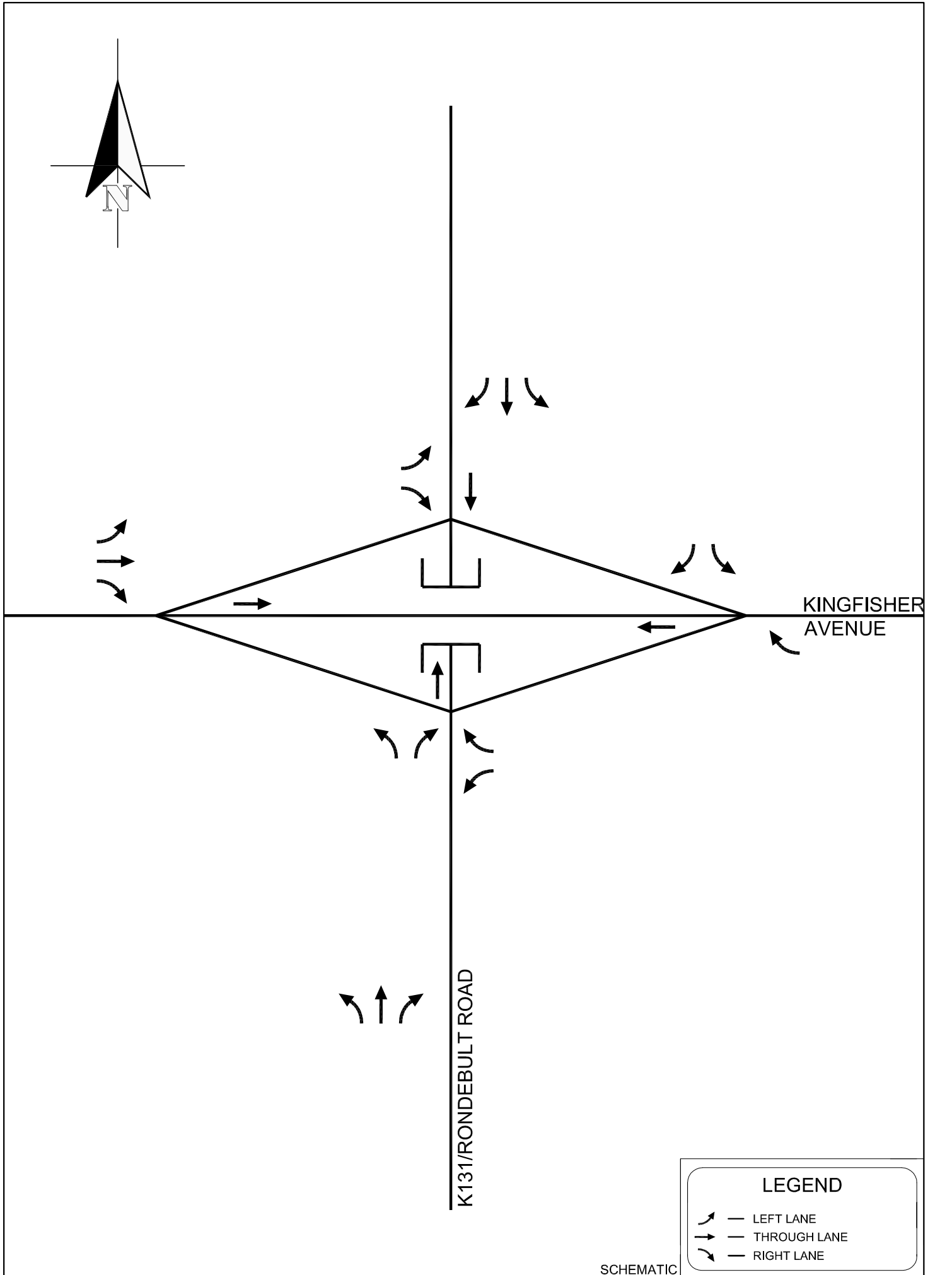
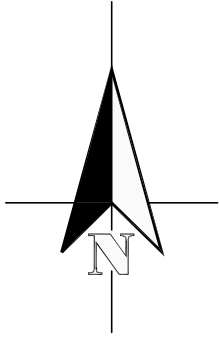


PROJECT:
SUNWARD PARK EXT 24 - EXT 29 TIA

DRAWING:
PROPOSED GEOMETRIC LAYOUT




NUMBER:
F2

3694.4/GL F2



SCHEMATIC

LEGEND

-  — LEFT LANE
-  — THROUGH LANE
-  — RIGHT LANE

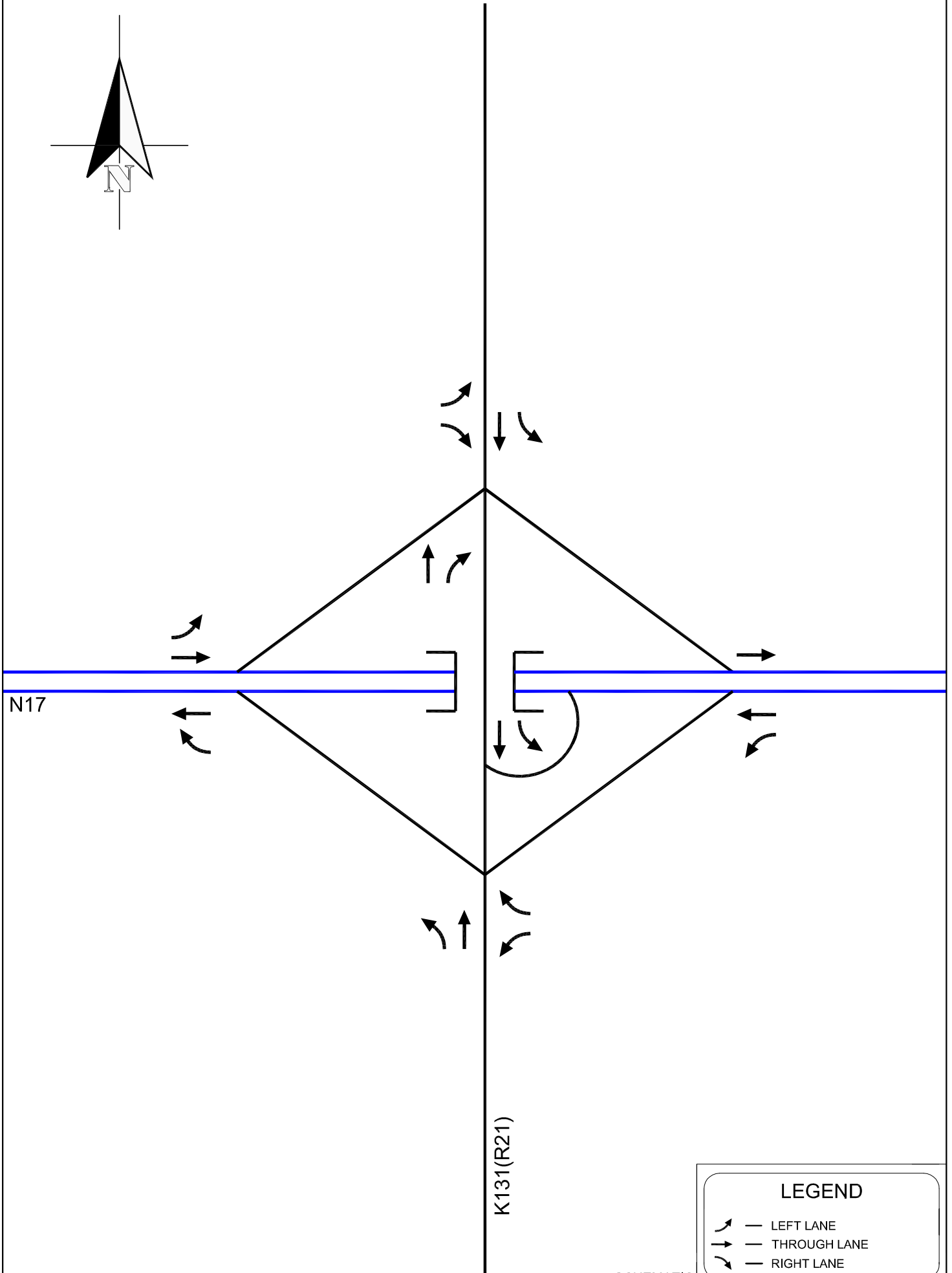
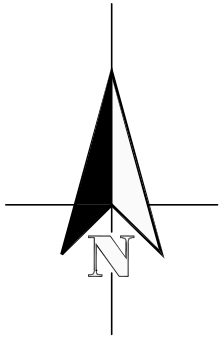


PROJECT:
SUNWARD PARK EXT 24 - EXT 29 TIA




DRAWING:
PROPOSED GEOMETRIC LAYOUT

NUMBER:
F3

3694.4/GL F3



LEGEND

-  — LEFT LANE
-  — THROUGH LANE
-  — RIGHT LANE

SCHEMATIC

3694.4/GL F4



PROJECT:
SUNWARD PARK EXT 24 - EXT 29 TIA

DRAWING:
PROPOSED GEOMETRIC LAYOUT

NUMBER:
F4

ANNEXURE D10
SOCIAL AND FINANCIAL
IMPACT

ANNEXURE D10a

MARKET STUDY



Leeuwpoot Mixed Use Development

MARKET RESEARCH FINDINGS & RECOMMENDATIONS

December 2016

DEMACON Market Studies
PO BOX 95530
WATERKLOOF
0145
Tel: +27 12 460 7009
Fax: +27 12 346 5883
Cell: +27 82 898 8667
E-mail: hein@demacon.co.za



Demacon is a member of

SOUTH AFRICAN PROPERTY OWNERS ASSOCIATION (SAPOA)



SOUTH AFRICAN COUNCIL OF SHOPPING CENTRES (SACSC)



The information contained in this report has been compiled with the utmost care and accuracy within the parameters specified in this document. Any decision based on the contents of this report is, however, the sole responsibility of the decision maker.

Enquiries:

Hein du Toit

+27 12 460 7009 (t)

+27 12 346 5883 (f)

+27 82 8988 667

hein@demacon.co.za

www.demacon.co.za

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
PROJECT BRIEF.....	1
BACKGROUND	1
DEVELOPMENT SITE ASSESSMENT	3
KEY ECONOMIC INDICATORS.....	4
DEMOGRAPHIC MARKET OVERVIEW.....	5
RESIDENTIAL MARKET	6
OFFICE MARKET	8
RETAIL MARKET	8
TRADE / AUTOMOTIVE MARKET	10
INDUSTRIAL MARKET	11
PRIVATE HEALTHCARE MARKET	12
PRIVATE SCHOOL MARKET	13
SOCIAL & ANCILLARY LAND USES	14
ECONOMIC IMPACT ASSESSMENT	15
DEVELOPMENT PROSPECTS 2016-2026.....	15
CHAPTER 1: INTRODUCTION & LOCATION ANALYSIS.....	17
1.1 PROJECT BRIEF	17
1.2 REPORT STRUCTURE.....	17
1.3 BACKGROUND	17
1.4 SUMMARY.....	26
CHAPTER 2: POLICY ANALYSIS & SITE ASSESSMENT.....	27
2.1 INTRODUCTION.....	27
2.2 POLICY ANALYSIS OF RELEVANT GOVERNMENT POLICIES.....	27
2.3 DEVELOPMENT SITE ASSESSMENT	38
2.4 DEVELOPMENT SITE ASSESSMENT	41
CHAPTER 3: LOCAL SOCIO-ECONOMIC INDICATORS	42
3.1 INTRODUCTION.....	42
3.2 KEY ECONOMIC INDICATORS.....	42
3.3 DEMOGRAPHIC MARKET OVERVIEW	43
CHAPTER 4: RESIDENTIAL MARKET ANALYSIS.....	51
4.1 INTRODUCTION.....	51
4.2 HOUSING NEED IN EKURHULENI MM REGION F	52
4.3 LOCAL RESIDENTIAL MARKET ACTIVITY	54
4.4 DEMAND POTENTIAL CALCULATIONS	63
4.5 SUMMARY.....	69
CHAPTER 5: OFFICE MARKET ANALYSIS	70
5.1 BACKGROUND	70
5.2 OFFICE RENTAL RATES	71
5.3 OFFICE VACANCY RATES	75
5.4 OFFICE MARKET SUPPLY.....	77
5.5 GAP ANALYSIS	78
5.6 OFFICE MARKET DEMAND	79
5.7 SUMMARY.....	79
CHAPTER 6: RETAIL MARKET ANALYSIS	81
6.1 INTRODUCTION.....	81
6.2 RETAIL SUPPLY.....	83
6.3 GAP ANALYSIS.....	86
6.4 RETAIL DEMAND	87
6.5 SUMMARY: CENTRE RECOMMENDATIONS	88

CHAPTER 7: TRADE / AUTOMOTIVE MARKET ANALYSIS	90
7.1 INTRODUCTION.....	90
7.2 GAP ANALYSIS.....	91
7.3 DEMAND MODELLING.....	91
7.4 SUMMARY.....	92
CHAPTER 8: INDUSTRIAL MARKET ANALYSIS	93
8.1 BACKGROUND.....	93
8.2 MARKET AREA ANALYSIS.....	93
8.3 GAP ANALYSIS.....	97
8.4 DEMAND ESTIMATIONS.....	98
8.5 SUMMARY.....	98
CHAPTER 9: PRIVATE HEALTHCARE MARKET ANALYSIS	100
9.1 BACKGROUND.....	100
9.2 TRADE AREA HOSPITAL SUPPLY.....	100
9.3 GAP ANALYSIS.....	107
9.4 DEMAND ESTIMATIONS.....	107
9.5 SUMMARY.....	109
CHAPTER 10: PRIVATE SCHOOL MARKET ANALYSIS	110
10.1 INTRODUCTION.....	110
10.2 PRIVATE SCHOOL SUPPLY.....	111
10.3 GAP ANALYSIS.....	112
10.4 DEMAND POTENTIAL.....	112
10.5 SUMMARY.....	113
CHAPTER 11: SOCIAL & ANCILLARY LAND USES	114
CHAPTER 12: ECONOMIC IMPACT ASSESSMENT	119
12.1 INTRODUCTION.....	119
12.2 LEEUWPOORT MIXED USE DEVELOPMENT CONCEPT.....	119
12.3 CONSTRUCTION PHASE IMPACTS.....	119
12.4 OPERATIONAL PHASE IMPACTS.....	121
12.5 SYNTHESIS.....	124
CHAPTER 13: DEVELOPMENT PROSPECTS 2016 - 2026	126

EXECUTIVE SUMMARY

PROJECT BRIEF

Demacon Market Studies were commissioned by **Leeuwoort Developments (Pty) Ltd** to perform specialist market research to determine the viability of developing respectively residential, warehousing and distribution, office as well as retail facilities on various portions (**Reiger Park Ext 19, Parkdene Ext 7, and Leeuwoort South**). The Leeuwoort development is located south and central of Boksburg and forms part of the Ekurhuleni Metropolitan Municipality, Gauteng Province.

The purpose of the study would be to inform relevant parties with regard to the **full and optimum development potential of the precinct**, in order to inform strategic planning, investment and marketing decisions.

BACKGROUND

The proposed Leeuwoort mixed use development is composed of three townships. The northern portions of the mixed use development are situated near Boksburg CBD / Cinderella in the Ekurhuleni Municipal area, whereas the southern portions are situated near the south Sunward Park extensions.

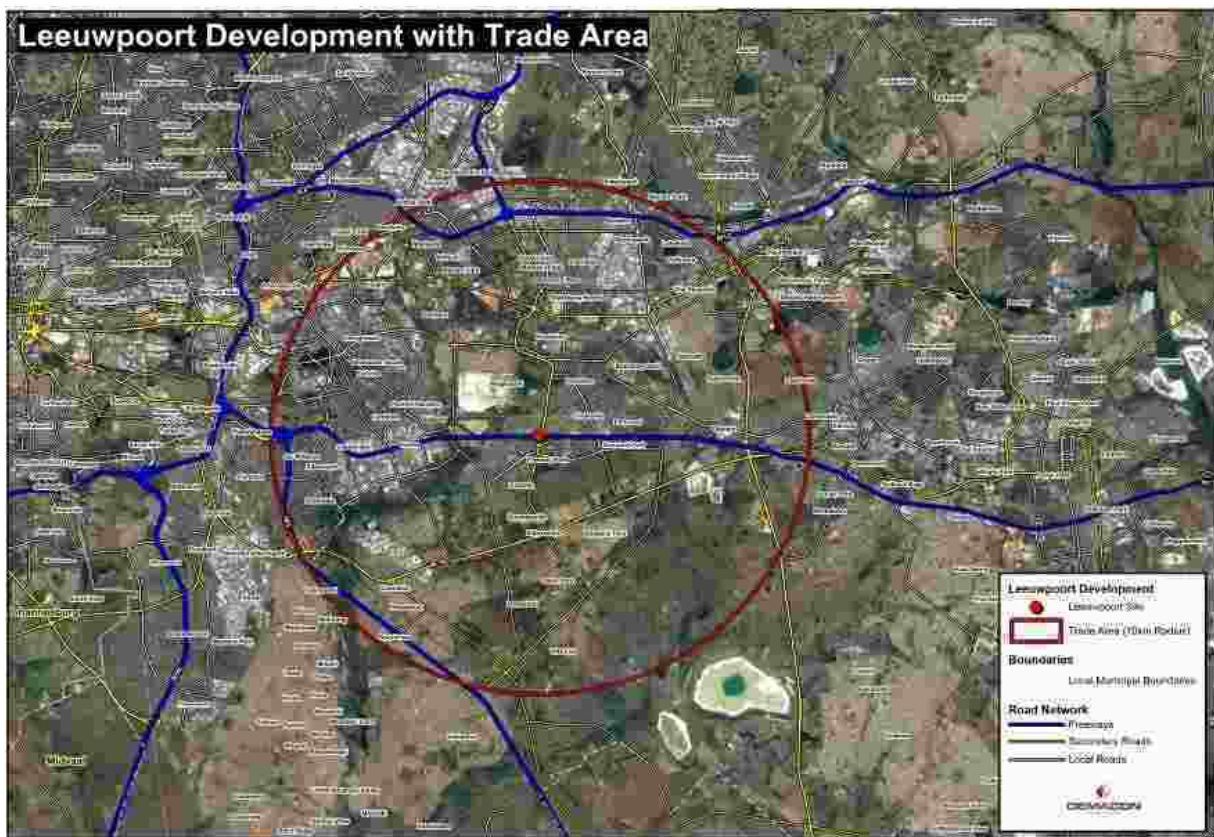
The Leeuwoort mixed use development (872.9 ha developable in total) is composed from three townships, namely:

- ✓ Reiger Park Ext 19 (34.6 ha developable)
- ✓ Parkdene Ext 7 (88.8ha developable)
- ✓ Leeuwoort South (766.8 ha developable), consisting of:
 - Phase 1 (99.9 ha)
 - Phase 2 (165.4 ha)
 - Phase 3 (113.5 ha)
 - Phase 4 (151.1 ha)
 - Phase 5 (90.7 ha)
 - Phase 6 (132.7 ha)

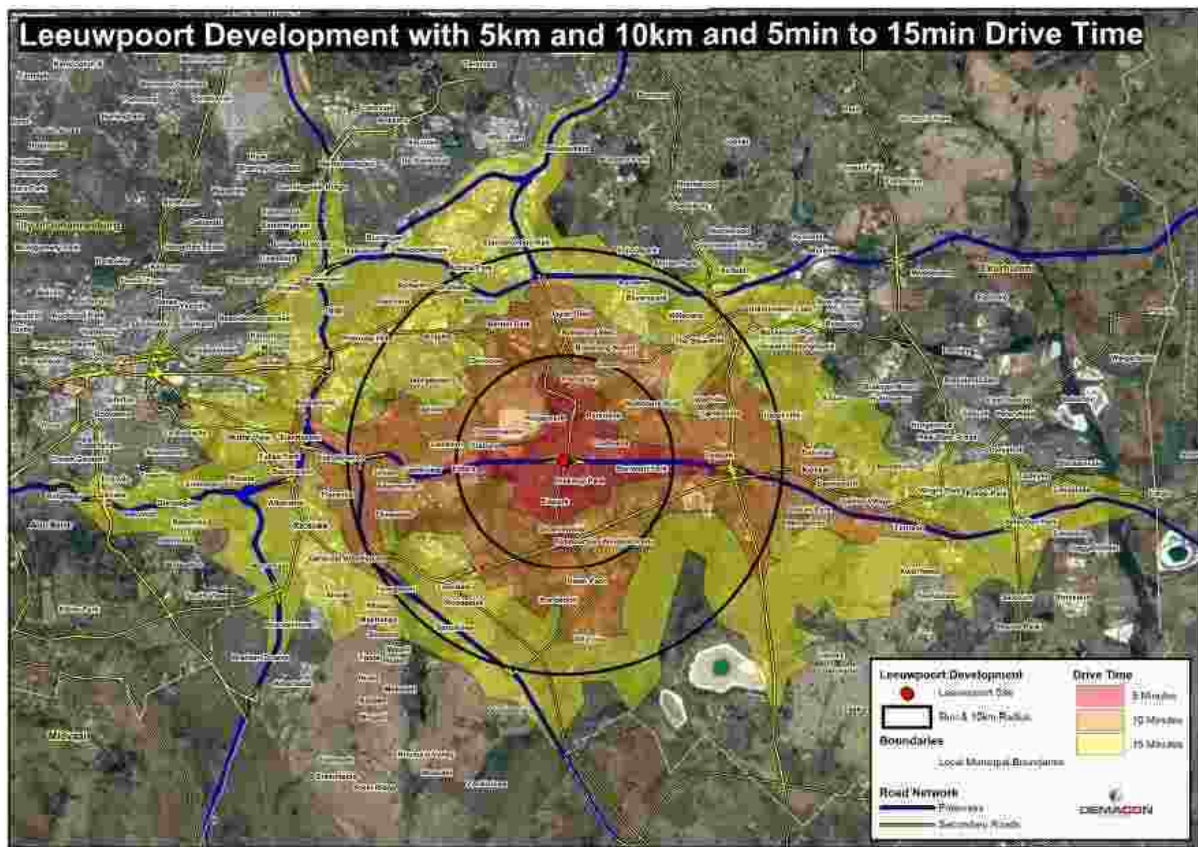
Map 1: Delineation of the mixed use development focus area



Map 2: Trade area of the Leeuwpoot development



Map 3: Drive time polygons around the Leeuwpoot development



DEVELOPMENT SITE ASSESSMENT

In summary, the Leeuwpoot development seems aligned with the development guidelines provided by the relevant development policies.

A summary of the site assessment results are presented below:

Table 1: Summary of site assessment results

Proposed Land Use	Percentage
Retail / Trade / Automotive	77.1%
Industrial	76.3%
Private school	74.9%
Private medical	74.8%
Residential	74.7%
Office	72.3%

* Note: 80%+ indicates an exceptional site rating; a site rating of 70 – 80% is high and indicates that most important fundamentals for a successful mixed use development is in place; a rating of 60 – 70% indicates some critical factors may be lacking but could possibly be addressed; projects with a sub 60% rating are not recommended for consideration.

All of the land uses investigated rated **over 70.0%**, giving a **high site rating** for each land use in the Leeuwpoot development.

The economic indicators of an area form the basis for current demand for residential and commercial product offering and also serve as drivers for future growth in demand. Therefore the

subsequent chapter provides an overview of the local economy in which the proposed development will be located.

KEY ECONOMIC INDICATORS

A summary of key economic indicators relevant to the market area are indicated in the table below:

Table 2: Key Economic Indicators of the Market Area

Variable	Market Characteristics
Size of the Economy (2015)	<ul style="list-style-type: none"> ✓ The Boksburg Sub Region contributes 9.2% towards Ekurhuleni Metro economy.
Economic Growth Performance – Time Period 1995 - 2015	<p><u>Ekurhuleni Metro Economy</u></p> <ul style="list-style-type: none"> ✓ Growth in the Metro economy has averaged (per annum) as follows: <ol style="list-style-type: none"> 1. 1995 – 2015: 3.3% 2. 2000 – 2015: 3.2% 3. 2005 – 2015: 2.7% 4. 2010 – 2015: 2.2% <p><u>Boksburg Sub-Regional Economy</u></p> <ul style="list-style-type: none"> ✓ Growth in the sub-regional economy has averaged (per annum) as follows: <ol style="list-style-type: none"> 1. 1995 – 2015: 2.7% 2. 2000 – 2015: 2.5% 3. 2005 – 2015: 1.9% 4. 2010 – 2015: 1.4%
Dominant Economic Contributions (2015)	<p><u>Boksburg Sub-Regional Economy</u></p> <ul style="list-style-type: none"> ✓ Finance & Business Services (23.2%) ✓ Community & Social Services (20.0%) ✓ Manufacturing (16.8%) and ✓ Trade (14.3%).
Trade Sector Performance (1995– 2015)	<ul style="list-style-type: none"> ✓ The wholesale and retail trade sector of the Sub-Region reached an average annual growth as follows: <ul style="list-style-type: none"> ○ 2000 – 2015: 3.2% ○ 2005 – 2015: 2.7% ○ 2010 – 2015: 2.2% ✓ The catering and accommodation sector reached an average annual growth as follows: <ul style="list-style-type: none"> ○ 2000 – 2015: 4.8% ○ 2005 – 2015: 3.9% ○ 2010 – 2015: 1.5%

Variable	Market Characteristics
Final Consumption Expenditure & Disposable Income (1995– 2015)	<ul style="list-style-type: none"> ✓ Final consumption expenditure of the Boksburg Sub-economy obtained an average annual growth rate as follows: <ul style="list-style-type: none"> ○ 2000 – 2015: 3.2% ○ 2005 – 2015: 2.7% ○ 2010 – 2015: 2.2% ✓ Disposable income of the Sub-economy obtained an average annual growth rate as follows: <ul style="list-style-type: none"> ○ 2000 – 2015: 4.8% ○ 2005 – 2015: 3.9% ○ 2010 – 2015: 1.5%

DEMOGRAPHIC MARKET OVERVIEW

Table 3 provides the demographic market summary of the market area as it is informed by SACSC criteria, which is guided by a **10 - 15 minutes’ drive time**, an approximation of a 10 km radius that form the basis of the regional precinct.

Table 3: Key socio-economic indicators of the market area

Variable	Market Characteristics
Population (Total)	✓ 578 742 people
Household (Total)	✓ 197 747 households
Household Size	✓ 2.9 people/ household
Age profile	<ul style="list-style-type: none"> ✓ 0 – 14 years: 21.9% ✓ 15 – 19 years: 45.6% ✓ 20 – 34 years: 26.2% ✓ 35 – 64 years: 31.3% ✓ 65 years +: 4.0%
Highest level of education (aged 20 and older)	<ul style="list-style-type: none"> ✓ Grade 12: 38.5% ✓ Some Secondary: 35.0% ✓ Higher: 15.6% ✓ Some Primary: 5.7% ✓ Complete Primary – 2.9% ✓ None: 2.2%
Level of employment	<ul style="list-style-type: none"> ✓ Economically active: 76.1% ✓ Employed: 74.5% ✓ Unemployed: 25.5%
Dwelling types	<ul style="list-style-type: none"> ✓ House or brick structure – 46.3% ✓ Informal dwelling/shack <u>not</u> in a back yard – 23.4 % ✓ Informal dwelling/shack in a back yard – 8.9% ✓ Flat or apartment in a block of flats – 7.4%
Tenure status	<ul style="list-style-type: none"> ✓ Rented tenure – 32.5% ✓ Owned but not yet paid off – 27.9%

Variable	Market Characteristics
	<ul style="list-style-type: none"> ✓ Owned and fully paid off – 25.1% ✓ Occupied rent free – 11.6%
Weighted Average household income (2013)	<p><u>All LSM's:</u></p> <ul style="list-style-type: none"> ✓ R196 556 per annum ✓ R16 380 per month <p><u>LSM 4 – 10+ households:</u></p> <ul style="list-style-type: none"> ✓ R246 839 per annum ✓ R20 570 per month
LSM Profile	<ul style="list-style-type: none"> ✓ LSM 1 -3: 21.5% ✓ LSM 4 – 9: 77.3% ✓ LSM 4 – 10+: 78.5%

Source: Demacon Ex. 2011 Census, 2016

Approximately **578 742** individuals and **197 747** households reside within the market area. The average household size amounts to approximately **2.9** individuals per household.

Of the total population in the market area, **76.1%** are within the economically active market segment, of which **74.5%** of this segment is formally employed.

Furthermore, it is evident that the largest proportion (**46.3%**) of the market area occupies a house or brick structure on a separate stand of yard.

The market area is characterised as a **lower to middle income** area. The target market (LSM 4 to 10+) households in the market area earns **R20 570 monthly** and **R246 839 annually** and represents **78.5%** of the market.

RESIDENTIAL MARKET

The demand potential calculations for bonded/FLISP, subsidy, and social housing in the following sections.

□ GAP ANALYSIS

Development Type	Effective Market Gap	Development Prospects
Bonded/FLISP housing	Yes	High
Subsidy housing	Yes	High
Social housing	Yes	High

In terms of its location, the area could potentially cater to the needs of the low to high-medium income residential market, especially in terms of medium to higher density units.

- ✓ Given the nodal configuration, a combination of lower density (25 u / ha) freestanding and medium density walk-ups (3-4 storeys) at a density of 80-100 u/ha could be considered.
- ✓ In the interest of financial & economic sustainability, the optimum number of subsidy units would be 1552 units.

Table 4: Proposed bonded/FLISP unit distribution and pricing

Unit type	Unit size	Project distribution	Number of units	Price range
1 bedroom (FLISP / Gap)	48m ² - 65m ²	30.5%	261	R240 000 – R350 000
2 bedroom (FLISP / Gap)	65m ² - 110m ²	23.5%	226	R350 000 – R600 000
3 bedroom	110m ² - 200m ²	22.1%	172	R600 000 – R1.5 million
4 bedroom	200m ² +	16.1%	95	R1.5million – R3million+

In terms of Table 4, the 1 and 2 bedroom bonded/FLISP units could largely take the form of walk-up units. Of the 3 bedroom units, a portion of the 22.1% could take the form of walk-ups, while the remainder of the 3 bedroom units, as well as the 4 bedroom units, could be free-standing houses on a stand.

Table 5: Proposed social housing unit distribution and pricing

Unit type	Unit size	Project distribution	Number of units	Monthly rental range
1 bedroom	48m ² - 65m ²	24.4%	2 066	R500 – R1 000
2 bedroom	65m ² - 110m ²	39.4%	3 332	R1 000 – R2 000
3 bedroom	110m ² - 200m ²	36.2%	3 057	R2 000 – R2 500

OFFICE MARKET

Market research indicates a market gap for low-rise, medium-density offices in the Leeuwpoot area, focusing predominantly on providing services to the local community, to be developed over the medium to longer term.

□ GAP ANALYSIS

Development Type	Effective Market Gap	Development Prospects
Low-rise medium-density offices	Yes	Moderate

Table 6: 10 year office space demand potential

Variables	Rand per annum / m ²
Capital Investment (2016 constant values)	R 371 841 570
Optimum size (GLA – 2026)	18 592 m²
Employment (on-site)	930
Parking bays	744
Parking infrastructure & landscaping cost (2016 constant values)	R 34 358 161.02
OPME	2022+

- ✓ Market demand for office floor space in Boksburg Region, increases cumulatively from 67 899m² GLA in 2021 to 133 531m² GLA in 2031.
- ✓ The precinct could attract over the short to medium term **18 592 m²**.
- ✓ **Low-rise, medium-density office configurations** can be considered a fit for the development.
- ✓ **Parking** could be configured at 4 parking bays per 100m².
- ✓ Given the profile of the precinct, it can be expected that **office space** will become an increasingly important component of the development, especially in terms of providing office space for **local entrepreneurs**.

RETAIL MARKET

Total retail GLA within the primary trade area equals approximately **532 794m² GLA**. The proposed retail GLA for the primary trade area is **39 500m² GLA**.

A number of smaller convenience type retail facilities are being considered in the Dalview, Dalpark and surrounding market area. Further to the above, the EMM is also in the process of planning and implementing a variety of human settlements projects in and around Van Dyk Park.

Market research estimations indicate a retail opportunity package in the Leeuwpoot area, including:

- ✓ A regional shopping centre offering to service all three portions of the proposed Leeuwpoot development, and
- ✓ Two convenience retail centre offerings to be located on the eastern and western portions of the Leeuwpoot South township.

□ GAP ANALYSIS

Development Type	Effective Market Gap	Development Prospects
Regional Retail offering	Yes	Moderate
Convenience Retail offering	Yes	High

Table 7: Regional retail opportunity project summary

Project summary REGIONAL RETAIL OPPORTUNITY	
Average and actual share values	7.5%
Total annual growth in market demand (sqm/a)	11 347
Centre share of growth (sqm/a)	851
Point of market entry	2026+
Additional growth in demand for centre (sqm)	5 106
Retail GLA at OPME	46 235
Services GLA at OPME	11 559
Cinemas & entertainment	2 500
OPME Centre size (sqm)	65 400 m² GLA
On-site job creation	2 180
Retail Sales potential (R 2016 value)	1 913 008 961
Total capital investment (R 2016 value)	1 242 592 036
Additional Parking bays required	3 924
Parking infrastructure & landscaping cost	93 390 601

Table 8: Convenience retail opportunity project summary

Project summary CONVENIENCE RETAIL OPPORTUNITY	
Average and actual share values	17.5%
Total annual growth in market demand (sqm/a)	1 501
Centre share of growth (sqm/a)	263
Point of market entry	2020+
Additional growth in demand for centre (sqm)	2 365
Retail GLA at OPME	15 064
Services GLA at OPME	3 766
Cinemas & entertainment	-
OPME Centre size (sqm)	21 195m² GLA
On-site job creation	706
Retail Sales potential (R 2016 value)	R 619 969 653
Total capital investment (R 2016 value)	R 402 700 337
Additional Parking bays required	1 272
Parking infrastructure & landscaping cost	R 30 266 110

In the context of the market demand estimations, the optimum destination retail offering in the precinct could measure up to:

- ✓ In the context of residual nodal capacity calculations, indications suggest, that the optimum retail potential for the **development** measures **65 400m² GLA** for the regional retail opportunity.
- ✓ For the two convenience retail opportunities, the retail potential measures **21 195m² GLA** in total, to be split into two convenience centres sized **10 000 – 11 000m² GLA** each.
- ✓ The optimum point of market entry should be **2020+** for the **convenience retail** centres sized **10 000 – 11 000m² GLA** each and **2026+** for the **regional retail** node.

TRADE / AUTOMOTIVE MARKET

In terms of the local economy, research indicate that between 1996 and 2013 the **personal transport equipment** sector for Boksburg had an **annual growth rate of 4.1% per annum**. In the context of the consistently increasing household expenditure on the personal transport equipment over the past two decades, the Leeuwoort development would become increasingly appealing to automotive retailers.

❑ GAP ANALYSIS

Development Type	Effective Market Cap	Development Prospects
Automotive dealerships	Yes	Moderate to High
Motor-related dealerships	Yes	Moderate to High
Fitment centres	Yes	Moderate to High

Demacon’s Demand Modelling results illustrate that the consumer market can sustain **1 to 2** automotive dealership / motor related / fitment centre / ancillary services of approximately **4 221m²** with the optimum point of market entry beyond **2022+**:

Table 9: Recommended Sizes

Recommended Sizes	Rand per annum / m ²
Capital investment (2016 constant values)	R 80 194 939
Employment opportunities	141
Parking	169
Parking infrastructure & landscaping cost (2026 constant values)	R 4 018 188
Point of market entry	2022+
Size of development (sqm) (up to 2026)	4 221m²

- ✓ Market demand for **automotive floor space** increases cumulatively from **12 197m²** in 2021 up to **27 805m²** GLA in 2031.
- ✓ Proposed size of development over the short to medium term amounts to approximately **4 221m²**.
- ✓ The proposed **4 221m²** translates into approximately **one to two** automotive dealership(s) and ancillary fitment centre, workshop, etc.
- ✓ This floor space could include dealerships, automotive workshops, speciality shops and any other automotive related activities.

INDUSTRIAL MARKET

The market research indicates the potential for industrial land uses in the Leeuwpoot development.

The recommended industrial sizes, sales price and rental prices are given below:

Table 10: Industrial Sizes / Prices

Variables	Rand per square metre / square metre
Recommended Stand Prices	R1 000 per m ² – R2 000 per m ² Average of R1 650 per m ²
Recommended Stand Sizing	30% - up to 1000m ² 53% - 1000m ² to 5 000m ² 15% - 5000m ² to 10 000m ² 2% - 10 000m ² +
Recommended Gross Industrial Rentals (excl VAT)	R20 per m ² – R60 per m ²

Table 11: Recommended sizes

Recommended sizes	Rand (R') / m ²
Capital investment (2016 constant values)	R 351 623 601
Employment opportunities	457
Parking	502
Parking infrastructure & landscaping cost (2016 constant values)	R 11 251 955
Optimum point of market entry	2018+
Size of Industrial (sqm)	25 116m²

- ✓ The total development potential of Boksburg Sub-Region up to 2021 amounts to approximately **22.33 ha**.
- ✓ In terms of the Leeuwoort development, a development potential for industrial / commercial uses amounts to **25 116m²** in 2026. (5.02ha)
- ✓ Optimum point of market entry could be developed in **2018+**.
- ✓ The recommended type of development: **Light industrial / commercial uses, including mini-units.**

PRIVATE HEALTHCARE MARKET

The levels of private healthcare insurance in the trade area are comparatively high – 26.1%.

The Leeuwoort development trade area has 7 private hospitals and 3 public hospitals. Located directly outside the Leeuwoort development trade area, are 7 private hospitals.

Public hospitals of note within or directly adjacent to the trade area:

- ✓ Bertha Gxowa (Germiston) Hospital, Germiston (230 beds)
- ✓ Tambo Memorial Hospital, Boksburg (540 beds)
- ✓ Natspruit / Thelle Mogoerane Hospital (821 beds)

However, public medical facilities do not present significant competition to the private medical market. As such, demand estimations are based on private hospital supply within or directly adjacent the Leeuwoort trade area.

❑ **GAP ANALYSIS**

Development Type	Effective Market Gap	Development Prospects
Private Hospital	Yes	Moderate to High

The trade area demand estimations indicate the viability for a private medical facility in the Leeuwpoot trade area.

- ✓ Given the rate of market growth, market potential for a new private hospital at the specific location amounts to **280 beds in 2016** increasing cumulatively to **413 beds in 2026**.
- ✓ Based on the current location and the nature of the proposed development a private hospital development of **145 - 165 beds** can be developed over the coming 10 years.
- ✓ Optimum point of market entry: **2019+**
- ✓ The facility could be sized approximately 11 600m².

PRIVATE SCHOOL MARKET

Demacon’s Demand Modelling results illustrate that the market can sustain a private school for **1 684 to 2 104** pupils (2021) increasing to **1 684 to 2 104** at full capacity (2026). The optimum point of market entry should be **2020+**.

❑ **GAP ANALYSIS**

Development Type	Effective Market Gap	Development Prospects
Private School	Yes	High

It is determined that there is a market gap for a private school and development prospects are rated as high. Potential will increase as residential growth takes place over the medium to longer term.

Table 12: Market shares (minimum and maximum)

Private School Attendance	2016	2021	2026	Percentage
Ages 5 - 9	505 – 632	539 – 674	575 – 719	34.1%
Ages 10 - 14	444 – 555	474 – 592	505 – 632	30.0%
Ages 15 - 19	530 – 663	566 – 707	603 – 754	35.8%
Total (Pupils)	1 480 – 1 849	1 578 – 1 973	1 684 – 2 104	100.0%

Source: Demacon, 2016

Development Implications

- ✓ It can be concluded that there is demand for a combined private school as part of the larger precinct.
- ✓ Potential exists for the development of a facility catering for **1 578 to 1 973** pupils (2021) increasing to **1 684 to 2 104** pupils at full capacity (2026).
- ✓ It is recommended that the facility should be developed in phases as demand increases.
- ✓ The optimum point of market entry should be **2020+**.

SOCIAL & ANCILLARY LAND USES

From the social facility modelling, it is evident that there is a gap for several facilities in the primary trade area.

Table 13: Social Amenities Market Gap – (Project Specific)

	Parameter per facility	Total increase 2016-2026	Number of project-linked units
Crèche	2 400	5,5	6
Primary School	7 000	1,9	2
Secondary School	12 500	1,0	1
Clinic	24 000	0,5	1
Day-Hospital	100 000	0,1	-
Community Hospital	300 000	0,0	-
Library	20 000	0,7	1
Community Centre	10 000	1,3	1
Sports Stadium	200 000	0,1	-
Post Office	10 000	1,3	1
Police Station	60 000	0,2	-
Fire Station	60 000	0,2	-
Municipal Offices	100 000	0,1	-
Sport Fields	60 000	0,2	-

Source: Demacon ex. CSIR, 2016

The table above indicates that the social amenities that are feasible, necessary and compatible with the site configuration are:

- ✓ 6 crèches
- ✓ 2 primary schools
- ✓ 1 secondary school
- ✓ 1 clinic

- ✓ 1 library
- ✓ 1 community centre
- ✓ 1 post office

The development of other amenities would depend on future population growth in the market area – current demand thresholds can sustain additional amenities.

ECONOMIC IMPACT ASSESSMENT

The purpose of this section is to assess the anticipated economic impact that could be generated by the proposed Leeuwpoot Mixed Use Development. Capital investment and operational expenditure that could be associated with the proposed development are used as basis to quantify the potential impact that could result from the proposed Leeuwpoot Mixed Use Development on the local, metropolitan and provincial economies.

The proposed Leeuwpoot development could also contribute the following in terms of payable property rates per annum:

Table 14: Forecast Future Additional Property Rates Payable per Land Use

Land Use	Size	Capital Investment (Buildings)	Total Capital Investment (incl. Buildings, Land & Infrastructure)	Percentage	Property Rates Per Annum	Property Rates Percentage	Residential Property Rates Percentage	Non-Residential Property Rates Percentage
Residential (Bonded Units)	3 103 units	R1 861 800 000	R2 047 980 000	25,0%	R17 054 088	26,2%	26,2%	-
Residential (Social Units)	8 454 units	R2 434 752 000	R2 678 227 200	32,7%	-	0,0%	0,0%	-
Residential (Subsidy Units)	1 552 units	R272 376 000	R299 613 600	3,7%	-	0,0%	0,0%	-
Retail	86 595m ²	R1 558 710 000	R1 714 581 000	20,9%	R28 555 567	43,9%	-	43,9%
Trade / Automotive	4 221m ²	R63 315 000	R69 646 500	0,9%	R1 159 931	1,8%	-	1,8%
Offices	18 592m ²	R371 840 000	R409 024 000	5,0%	R6 812 109	10,5%	-	10,5%
Industrial	25 116m ²	R326 508 000	R359 158 800	4,4%	R7 477 033	11,5%	-	11,5%
Private Combined School	10 487m ²	R67 641 150	R74 405 265	0,9%	R154 898	0,2%	-	0,2%
Private Hospital	165 beds	R165 000 000	R181 500 000	2,2%	R3 022 800	4,7%	-	4,7%
Social Facilities	32 226m ²	R322 260 000	R354 486 000	4,3%	R737 975	1,1%	-	1,1%
TOTAL	-	R7 444 202 150	R8 188 622 365	100,0%	R64 974 402	100,0%	26,2%	73,8%

Source: Demacon Estimates, 2016

If the **proposed Leeuwpoot Mixed Use Development were not to occur**, the economic **benefits** in terms of additional business sales, GGP, employment, as well as property rates, would be **lost to the local, metropolitan and provincial economies**.

DEVELOPMENT PROSPECTS 2016-2026

In summary, the development prospects for the Leeuwpoot development over a 10 year planning horizon (2016 to 2026) can be summarised as follows:

Table 16: Summary of demand potential development prospects 2016 - 2026

Land use	Number of units / beds / keys	m ² GLA
Residential (bonded)	3 103 units	1 551 500
Residential (subsidy)	1 522 units	388 000
Residential (Social)	8 454 units	845 400
Retail	3 centres	86 595
Automotive	As per architectural design	4 221
Offices	As per architectural design	18 592
Industrial / Warehousing	As per architectural design	25 116
Private Hospital	165 beds	11 602
Private Combined School	1 school	10 487
Crèche	6 crèches	710
Education - Primary School (Public)	2 primary schools	9 364
Education - Secondary School (Public)	1 secondary school	10 487
Clinic (Public)	1 clinic	1 092
Library	1 library	85
Community Centre	1 community centre	6 555
Post Office	1 post office	3 933

Development prospects for the 10 year planning horizon are given as follows:

Table 17: Forecast take-up for the Leeuwpoot development (10 year planning horizon 2016-2026)

Land use	2026 (ha)	Surplus buffer (20 - 30%) (ha)	Internal Circulation Roads (ha)	Composition (%)
Residential (bonded)	155,15	201,70	242,03	46,5%
Residential (subsidy)	38,80	50,44	60,53	11,6%
Residential (Social)	84,54	109,90	131,88	25,3%
Retail	24,74	32,16	38,60	7,4%
Trade / Automotive	1,06	1,37	1,65	0,3%
Offices	2,32	3,02	3,63	0,7%
Industrial / Warehousing	5,02	6,53	7,84	1,5%
Private Hospital	1,93	2,51	3,02	0,6%
Education - Private combined school	5,24	6,82	8,18	1,6%
Crèche	0,36	0,46	0,55	0,1%
Education - Primary School (Public)	4,68	6,09	7,30	1,4%
Education - Secondary School (Public)	5,24	6,82	8,18	1,6%
Clinic (Public)	0,18	0,24	0,28	0,1%
Library	0,04	0,06	0,07	0,01%
Community Centre	3,28	4,26	5,11	1,0%
Post Office	0,98	1,28	1,53	0,3%
Cumulative - hectare Take-up (ha)	333,58	433,65	520,38	100,00%

To conclude, from the land use table, the demand for the project amounts to approximately **520.38 ha** over the next 10 years, compared to the current developable area available (599.6 ha).

CHAPTER 1: INTRODUCTION & LOCATION ANALYSIS

1.1 PROJECT BRIEF

Demacon Market Studies were commissioned by **Leeuwoort Developments (Pty) Ltd** to perform specialist market research to determine the viability of developing respectively residential, warehousing and distribution, office as well as retail facilities on various portions (**Reiger Park Ext 19, Parkdene Ext 7, and Leeuwoort South**). The Leeuwoort development is located south and central of Boksburg and forms part of the Ekurhuleni Metropolitan Municipality, Gauteng Province.

The purpose of the study would be to inform relevant parties with regard to the **full and optimum development potential of the precinct**, in order to inform strategic planning, investment and marketing decisions.

1.2 REPORT STRUCTURE

This executive report is structured according to the following chapters:

- Chapter 2: Policy analysis & Location analysis
- Chapter 3: Local socio-economic indicators
- Chapter 4: Residential market analysis
- Chapter 5: Office market analysis
- Chapter 6: Retail market analysis
- Chapter 7: Trade / automotive market analysis
- Chapter 8: Industrial market analysis
- Chapter 9: Private medical market analysis
- Chapter 10: Private school market analysis
- Chapter 11: Social & ancillary facilities
- Chapter 12: Economic impact assessment
- Chapter 13: Development prospects 2016 - 2026

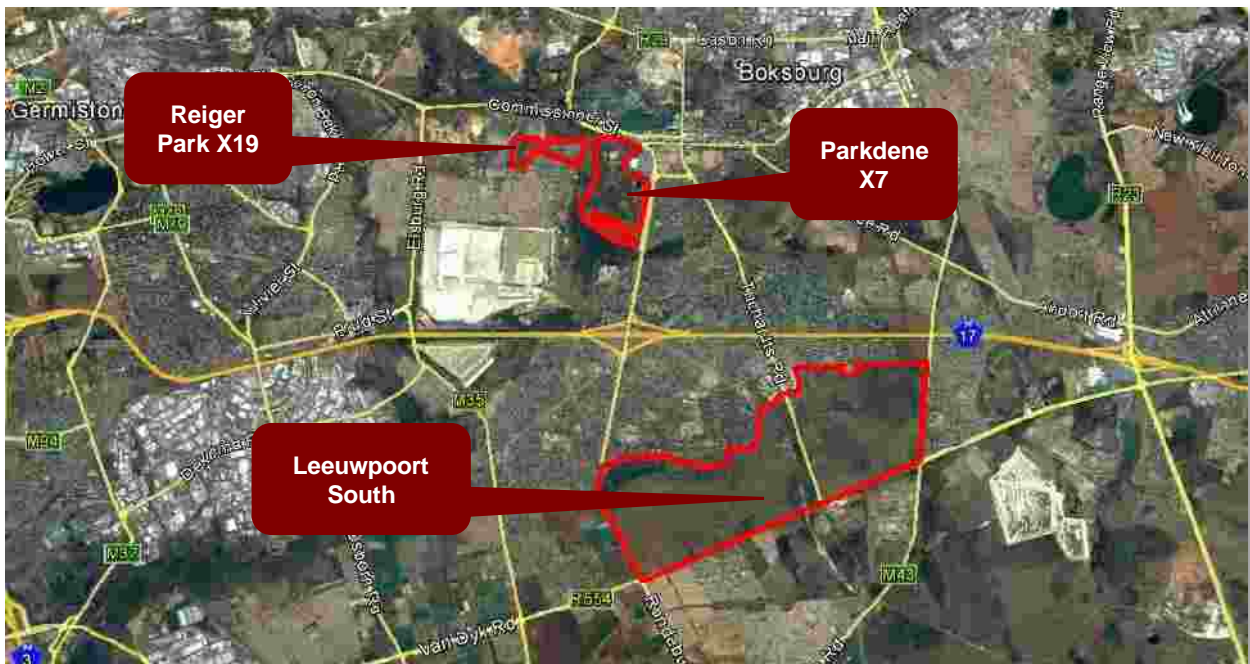
1.3 BACKGROUND

The proposed Leeuwoort mixed use development is composed of three townships. The northern portions of the mixed use development are situated near Boksburg CBD / Cinderella in the Ekurhuleni Municipal area, whereas the southern portions are situated near the south Sunward Park extensions.

The Leeuwpoot mixed use development (872.9 ha developable in total) is composed from three townships, namely:

- ✓ Reiger Park Ext 19 (34.6 ha developable)
- ✓ Parkdene Ext 7 (88.8ha developable)
- ✓ Leeuwpoot South (766.8 ha developable), consisting of:
 - Phase 1 (99.9 ha)
 - Phase 2 (165.4 ha)
 - Phase 3 (113.5 ha)
 - Phase 4 (151.1 ha)
 - Phase 5 (90.7 ha)
 - Phase 6 (132.7 ha)

Map 1.3: Delineation of the mixed use development focus area



A breakdown of the proposed development is given per township layout in the following table and maps:

Table 1.3: Land use composition of the various townships of the Leeuwpoot mixed use development

LAND USE		NORTH						SOUTH												TOTAL			
		REIGER PARK		PARKDENE		TOTAL		PHASE 1		PHASE 2		PHASE 3		PHASE 4		PHASE 5		PHASE 6				TOTAL	
		Units	Area	Units	Area	Units	Area	Units	Area	Units	Area	Units	Area	Units	Area	Units	Area	Units	Area			Units	Area
RETAIL BONDED HOUSING																							
Residential 1	Bonded - 400m ²	0	-	0	-	0	-	330	14.7	457	22.2	0	-	0	-	363	16.2	404	18.5	1 554	71.7	1 554	71.7
	Bonded - 700m ²	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
	FLISP - 300m ²	0	-	0	-	0	-	204	7.1	621	17.9	281	9.3	0	-	470	15.3	0	-	1 576	49.5	1 576	49.5
	Bonded - 500m ²	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	103	6.6	103	6.6	103	6.6
Residential 3	FLISP - 220m ²	184	4.7	0	-	184	4.7	0	-	333	10.6	0	-	1 006	22.2	0	-	0	-	1 339	32.8	1 523	37.5
	Bonded - 200m ²	0	-	275	6.3	275	6.3	0	-	0	-	0	-	0	-	0	-	0	-	0	-	275	6.3
Residential 4	Bonded - 160u/ha	0	-	0	-	0	-	0	-	0	-	871	5.4	0	-	300	1.9	0	-	1 171	7.3	1 171	7.3
	Bonded - 130u/ha	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
	Bonded - 120u/ha	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
Total:		184	4.7	275	6.3	459	10.9	534	21.8	1 411	50.6	1 152	14.7	1 006	22.2	1 133	33.4	507	25.1	5 743	167.9	6 202	178.9
RETAIL SUBSIDISED HOUSING																							
Residential 4	Subsidised - 180u/ha	0	-	675	3.8	675	3.8	0	-	0	-	0	-	0	-	0	-	0	-	0	-	675	3.8
Residential 1	Subsidised - 300m ²	0	-	0	-	0	-	244	7.7	0	-	0	-	0	-	0	-	0	-	244	7.7	244	7.7
Residential 3	Subsidised - 200m ²	483	4.0	0	-	483	4.0	323	8.0	0	-	248	5.2	718	15.5	0	-	0	-	1 289	28.7	1 772	32.7
	Subsidised - 112m ²	151	2.4	273	3.6	424	5.9	0	-	0	-	0	-	0	-	0	-	0	-	0	-	424	5.9
Residential 4	Subsidised - 120u/ha	0	-	0	-	0	-	1 238	10.3	730	6.1	907	7.6	0	-	0	-	0	-	2 875	24.0	2 875	24.0
	Subsidised - 160u/ha	220	1.4	289	1.8	509	3.2	0	-	0	-	0	-	468	2.9	0	-	0	-	468	2.9	977	6.1
Total:		854	6.4	1 237	7.3	2 091	13.7	1 805	26.0	730	6.1	1 155	12.8	1 186	15.5	0	-	0	-	4 876	60.3	6 967	74.0
WHOLESALE HOUSING																							
Residential 4	FLISP Social - 180u/ha	459	2.6	992	5.5	1 451	8.1	0	-	0	-	0	-	0	-	0	-	0	-	0	-	1 451	8.1
	FLISP Social - 160u/ha	145	0.9	657	4.1	802	5.0	0	-	0	-	1 374	8.6	1 470	9.2	0	-	0	-	2 844	17.8	3 646	22.8
	FLISP Social (Retail) - 120u/ha	0	-	175	1.5	175	1.5	0	-	0	-	0	-	0	-	0	-	0	-	0	-	175	1.5
	FLISP Social - 120u/ha	0	-	274	2.3	274	2.3	0	-	0	-	206	1.7	0	-	0	-	0	-	206	1.7	480	4.0
Total:		604	3.5	2 098	13.4	2 702	16.9	0	-	0	-	1 580	10.3	1 470	9.2	0	-	0	-	3 050	19.5	5 752	36.4
NON-RESIDENTIAL LAND USES																							
Special	Community Facilities	0	-	0	1.8	0	1.8	0	-	0	1.5	0	0.0	0	0.0	0	0.0	0	0.0	0	1.6	0	3.3
	Clinic	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	1.1	0	-	0	1.1	0	1.1
	Retirement Village	0	-	0	-	0	-	0	-	0	-	0	-	0	-	278	6.9	254	12.4	532	19.2	532	19.2
Community Facility	Primary School	0	2.8	0	3.2	0	6.0	0	-	0	3.4	0	3.6	0	2.9	0	3.9	0	-	0	13.8	0	19.8
	Secondary School	0	-	0	4.6	0	4.6	0	10.8	0	-	0	-	0	-	0	4.8	0	5.3	0	20.8	0	25.5
	Community Facility	0	0.7	0	1.4	0	2.1	0	-	0	-	0	-	0	1.1	0	1.1	0	2.1	0	4.4	0	6.5
Industrial 2		0	-	0	2.9	0	2.9	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	2.9
Business 2		0	-	0	0.5	0	0.5	0	2.6	0	-	0	-	0	13.8	0	2.2	0	-	0	18.6	0	19.0
Business 3	Offices	0	-	0	-	0	-	0	-	0	-	0	-	0	2.9	0	-	0	-	0	2.9	0	2.9
Transportation		0	0.4	0	0.5	0	0.8	0	-	0	-	0	7.7	0	5.0	0	-	0	-	0	12.7	0	13.5
Public Open Space		0	4.9	0	29.8	0	34.7	0	11.9	0	82.6	0	47.2	0	30.4	0	15.8	0	54.5	0	242.4	0	277.1
Undetermined	Not Developable	0	1.2	0	4.4	0	5.5	0	11.8	0	-	0	-	0	1.8	0	-	0	-	0	13.6	0	19.1
Provincial Road		0	4.9	0	3.0	0	7.9	0	6.2	0	5.6	0	2.0	0	15.5	0	3.4	0	24.7	0	57.3	0	65.2
Streets		0	6.4	0	14.2	0	20.6	0	20.7	0	15.6	0	15.2	0	32.4	0	18.1	0	8.6	0	110.6	0	131.2
Undevelopable areas		0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
Total:		0	21.2	0	66.2	0	87.5	0	63.9	0	108.7	0	75.7	0	105.9	278	57.2	254	107.6	532	519.1	532	606.5
TOTAL:		1 038	35.8	1 512	93.2	2 550	129.0	2 339	111.7	2 141	165.4	2 307	113.5	2 192	152.9	1 411	90.7	761	132.7	11 151	766.8	19 453	895.8

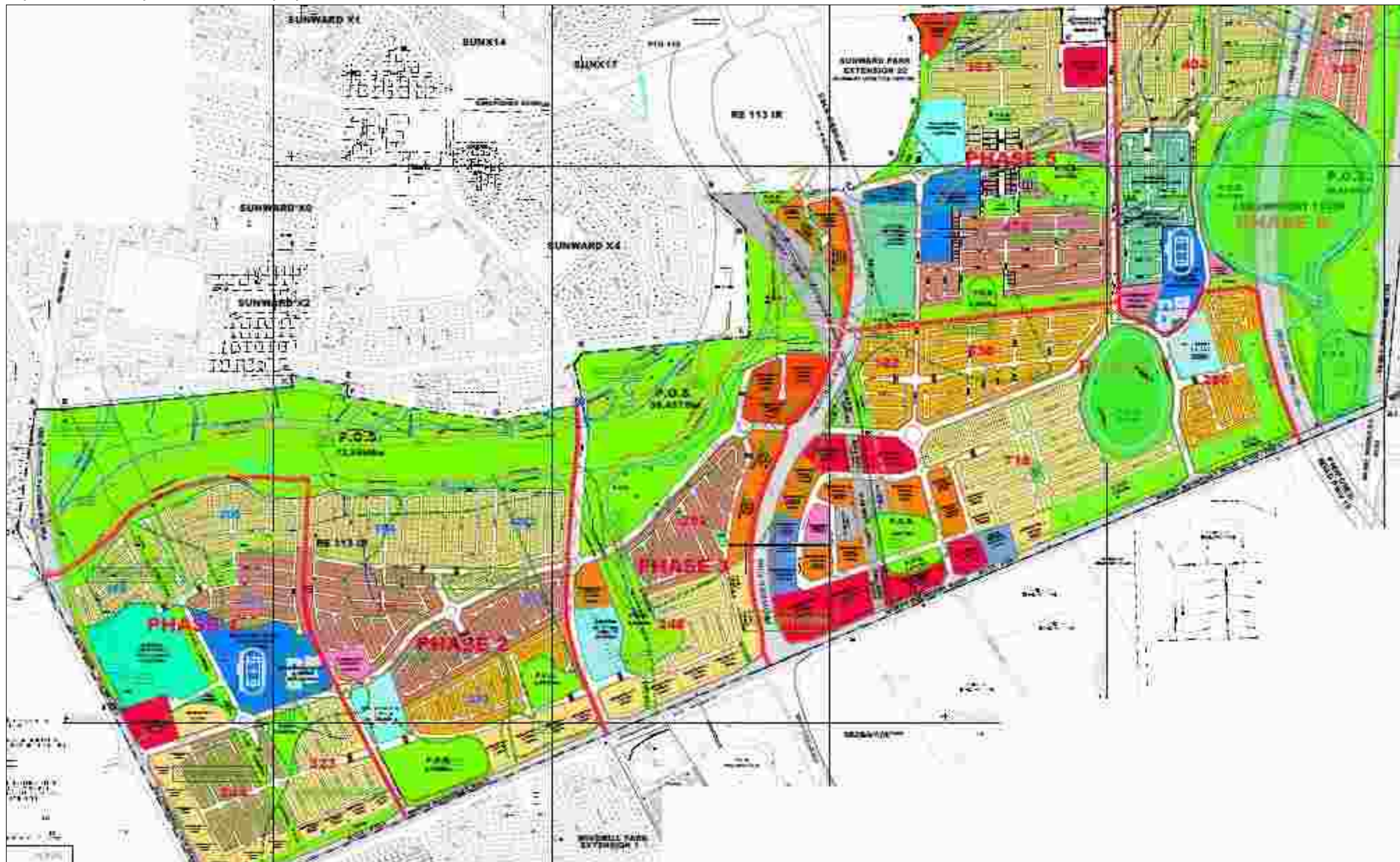
Source: Leeuwpoot Developments, 2016

Map 1.3: Reiger Park Ext 19 township layout



Source: Urban Dynamics Gauteng Inc.

Map 1.4: Leeuwpoot South township layout



Source: Urban Dynamics Gauteng Inc.

Map 1.5: Parkdene Ext 7 township layout



Source: Urban Dynamics Gauteng Inc.

The Leeuwpoot mixed use development is composed from three townships, with a land use breakdown as follows:

Reiger Park Ext 19 (37.118 ha)

Residential 3	FLISP / 220m ²	184 units
Residential 3	Subsidised / 200m ²	483 units
Residential 3	Subsidised / 112m ²	151 units
Residential 4	Subsidised / 160 u/ha	220 units
Residential 4	FLISP Social / 180 u/ha	459 units
Residential 4	FLISP Social / 160 u/ha	145 units
Primary School		1 erf / 2.8 ha
Community Facility		1 erf / 0.7 ha
Transportation		1 erf / 0.4 ha
Public Open Space		1 erf / 4.9 ha
Total bonded units:		0 units
Total FLISP units:		184 units
Total subsidised units:		854 units
Total social units:		604 units
Total housing units:		1 642 units

Parkdene Ext 7 (95.0112 ha)

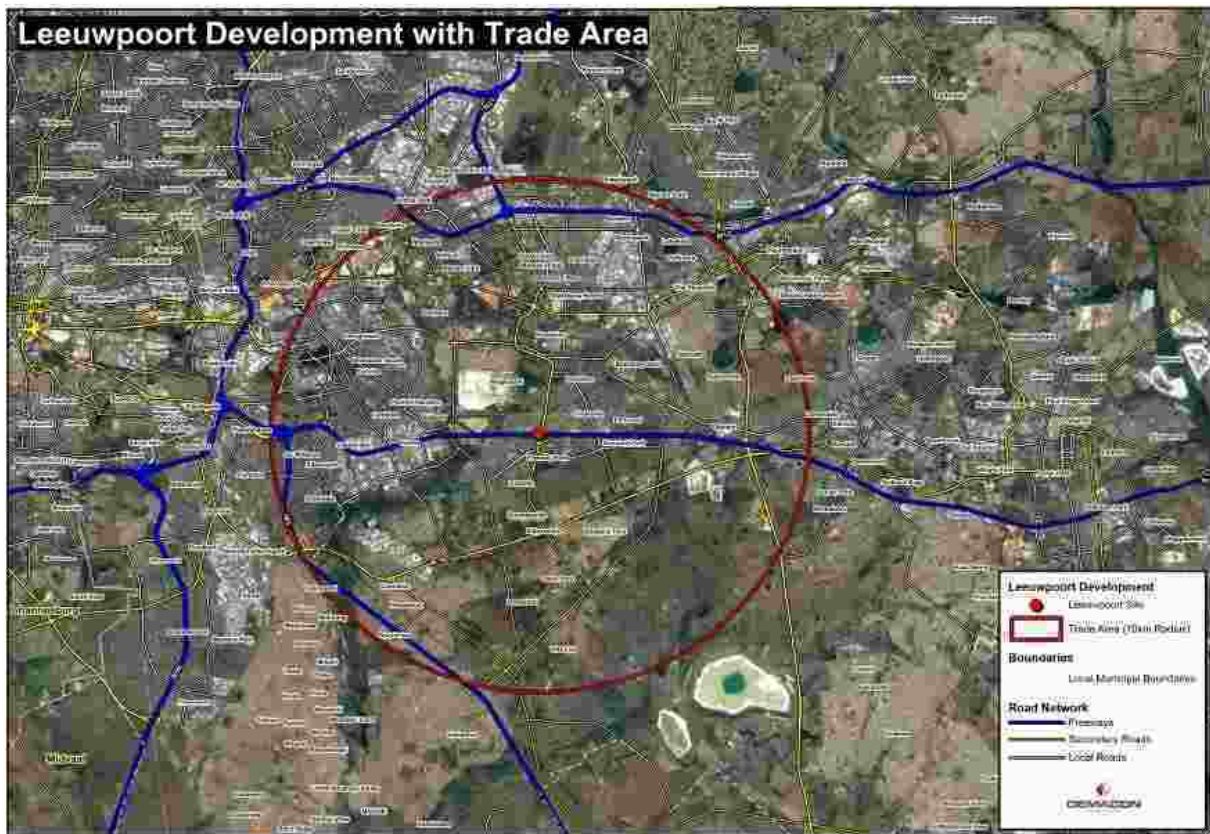
Residential 3	Bonded / 200m ²	275 units
Residential 4	Subsidised / 180 u/ha	675 units
Residential 3	Subsidised / 112m ²	273 units
Residential 4	Subsidised / 160 u/ha	289 units
Residential 4	FLISP Social / 180 u/ha	992 units
Residential 4	FLISP Social / 160 u/ha	657 units
Residential 4	FLISP Social (retail) – 120 u/ha	175 units
Residential 4	FLISP Social – 120 u/ha	274 units
Community facilities		1 erf / 1.8 ha
Primary school		1 erf / 3.2 ha
Secondary school		1 erf / 4.6 ha
Community facility		1 erf / 1.4 ha
Industrial 2		1 erf / 2.9 ha
Business 2		1 erf / 0.5 ha
Transportation		1 erf / 0.5 ha
Public Open Space		1 erf / 29.8 ha
Total bonded units:		275 units
Total FLISP units:		0 units
Total subsidised units:		1 237 units
Total social units:		2 098 units
Total housing units:		3 610 units

Leeuwpoot South (all phases) (766.8 ha)

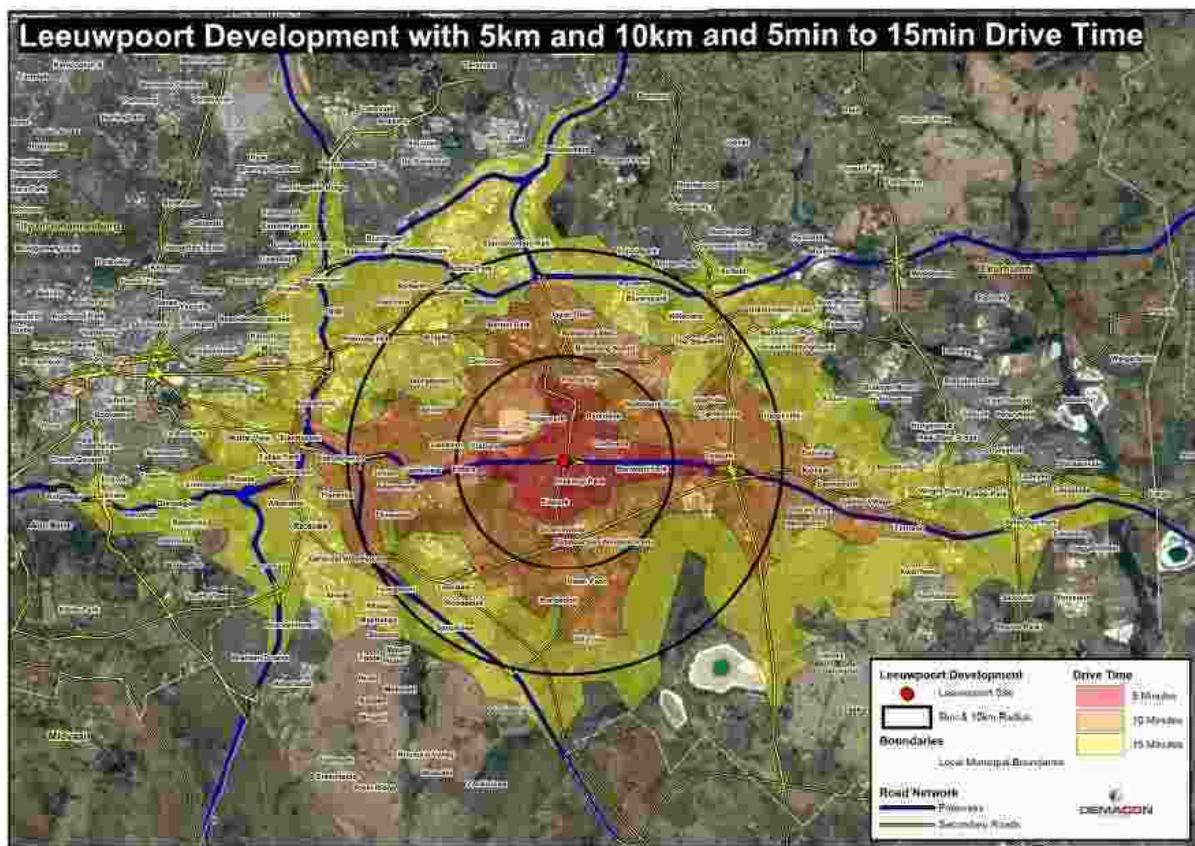
Residential 1	Bonded – 400m ²	1 554 units
Residential 1	FLISP – 300m ²	1 576 units
Residential 1	Bonded – 500m ²	103 units
Residential 3	FLISP – 220m ²	1 523 units
Residential 3	FLISP – 200m ²	275 units
Residential 4	Bonded – 160 u/ha	1 171 units
Residential 4	Subsidised – 180 u/ha	675 units
Residential 1	Subsidised – 300m m ²	244 units
Residential 3	Subsidised - 200m ²	1 772 units
Residential 3	Subsidised - 112 m ²	424 units
Residential 4	Subsidised – 120 u/ha	2 875 units
Residential 4	Subsidised – 160 u/ha	977 units
Residential 4	FLISP Social – 180 u/ha	1 451 units
Residential 4	FLISP Social – 160 u/ha	3 646 units
Residential 4	FLISP Social (retail) – 120 u/ha	175 units
Residential 4	FLISP Social – 120 u/ha	480 units
Community Facilities		1 erf / 3.3 ha
Clinic		1 erf / 1.1 ha
Retirement Village		532 units / 19.2 ha
Primary school		1 erf / 19.8 ha
Secondary school		1 erf / 25.5 ha
Community facility		1 erf / 6.5 ha
Industrial 2		1 erf / 2.9 ha
Business 2		1 erf / 19.0 ha
Business 3		1 erf / 2.9 ha
Transportation		1 erf / 13.5 ha
Public Open Space		1 erf / 277.1 ha
Total bonded units:		2 828 units
Total FLISP units:		3 374 units
Total subsidised units:		6 967 units
Total social units:		5 752 units
Total housing units:		18 921 units

Given the location of the Leeuwpoot development, a trade area for research purposes was identified, a 10km radius around the sites (approximately 10 to 15 minute drive time) (Map 1.6 & 1.7).

Map 1.6: Trade area of the Leeuwpoot development



Map 1.7: Drive time polygons around the Leeuwpoot development



1.4 SUMMARY

In summary, the Leeuwpoot mixed use development is composed of three townships. The northern portions of the mixed use development are situated near Boksburg CBD / Cinderella in the Ekurhuleni Municipal area, whereas the southern portions are situated near the south Sunward Park extensions.

The Leeuwpoot mixed use development (872.9 ha developable in total) is composed from three townships, namely:

- ✓ Reiger Park Ext 19 (34.6 ha developable)
- ✓ Parkdene Ext 7 (88.8ha developable)
- ✓ Leeuwpoot South (766.8 ha developable), consisting of:
 - Phase 1 (99.9 ha)
 - Phase 2 (165.4 ha)
 - Phase 3 (113.5 ha)
 - Phase 4 (151.1 ha)
 - Phase 5 (90.7 ha)
 - Phase 6 (132.7 ha)

The following chapter provides an overview of the relevant development policies as they relate to the development, as well as the location assessment of the site in terms of various land uses.

CHAPTER 2: POLICY ANALYSIS & SITE ASSESSMENT

2.1 INTRODUCTION

In the context of emerging market dynamics, the nodal assessment rated high for commercial and residential uses, which bodes high for precinct development and densification over time. The Leeuwpoot project is located in Boksburg and is partially located in Region A (northern sections of the development) and Regions E and F (southern sections of the development) of the City of Ekurhuleni Metropolitan Municipality. However, the greater section of the Leeuwpoot development is located in in **Region F**.

As such, the policy implications for the Leeuwpoot development of various government policies are investigated in this chapter.

2.2 POLICY ANALYSIS OF RELEVANT GOVERNMENT POLICIES

Policies from various levels of government are investigated. A concise overview and policy implications for the project is presented in the following table:

Table 2.1: Strategic alignment of policies in terms of the Leeuwpoot development

POLICY	PURPOSE / STRATEGIC FOCUS	PROJECT IMPLICATIONS
NATIONAL		
<p>National Development Plan (NDP)</p>	<p>The NDP provides a framework for the development of the national space economy.</p> <p>The NDP focuses on enabling sustainable and inclusive development. The plan seeks to eliminate poverty and reduce inequality by providing South Africans with a secure foundation from which they can expand their capabilities and improve their life opportunities.</p> <p>The NDP accentuates the importance of access to basic electricity, water and sanitation, and public transport. The NDP furthermore indicates that development should be transport orientated and that development should be more environmentally sustainable. A definite shift should be made towards a green economy with a low-carbon footprint, efficient use of energy, increasing contribution of renewable energy to electricity generation, water conservation and demand management.</p> <p>According to the NDP the creation of “human settlements” as opposed to “housing only” is paramount. This includes improving education, promoting health, ensuring social protection, and building safer communities. Projects should ensure compliance with strengthened environment requirements in building regulations and implement a waste-management system.</p>	<p>The Leeuwpoot development is aligned with the basic principles of human settlement developments. As educational sites are provided by the development, the project will potentially align with the NDP aspirations concerning education. Save for infrastructure development, no explicit undertakings have been given in respect of the green economy. Ideally strategies should be formulated to ensure closer alignment with the principles and pre-scripts of the green economy.</p> <p>The project ensures integration between economic activity and employment areas. It ensures a decent standard of living which relates to housing, water, sanitation, employment and other elements identified in the NDP.</p>
<p>“Breaking New Ground” (BNG) – A comprehensive plan for the development of Sustainable Human Settlements, 2004</p>	<p>“Breaking New Ground”, first tabled in 2004, remains the national government’s policy framework for housing. The framework provides for several programmes which were formulated as strategic objectives.</p> <p>BNG is ultimately a comprehensive plan for the development of integrated sustainable human settlements.</p> <p>At the core of the BNG is supporting the entire residential property market by expanding the scope of the housing mandate, shifting from product uniformity, enhancing the role of the private sector and creating linkages between the primary and secondary residential property market.</p>	<p>In essence, the BNG seeks to promote mixed use and mixed residential typology development.</p> <p>It will be important to ensure that the location, size and configuration of the commercial site(s) are aligned with market principles</p> <ul style="list-style-type: none"> • The project will accelerate housing delivery • Through the project, the municipality utilises housing provision as a major job creation strategy • The project creates access to housing • The project promotes social cohesion

POLICY	PURPOSE / STRATEGIC FOCUS	PROJECT IMPLICATIONS
	<p>According to the BNG, informal settlement eradication is crucial. This should go hand in hand with densification and integration through spatial planning and the appropriate location of new housing projects.</p> <p>The BNG focuses on the development of social and economic infrastructure.</p>	<ul style="list-style-type: none"> • The delivery of services will improve the quality of life • The project moves away from providing basic shelter only – it creates a sustainable human settlement • The project supports the eradication of informal settlements
<p>Integrated Urban Development Framework (IUDF)</p>	<p>Minister of Cooperative Governance and Traditional Affairs, Des van Rooyen states that the IUDF is a response to our urbanisation trends and the directive by the National Development Plan (NDP) to develop an urban development policy that will cater for the increasing numbers by ensuring proper planning and necessary infrastructure to support this growth.¹</p> <p>The IUDF is a policy framework to guide the development of inclusive, resilient and liveable urban settlements and it seeks to foster a shared understanding across government and society about how best to manage urbanisation and achieve the goals of economic development, job creation and improved living conditions in South African cities.</p> <p>The key outcome of the IUDF is spatial transformation and the strategic goals inform the priority objectives of the nine policy levers, which are premised on the understanding that (1) integrated urban planning forms the basis for achieving integrated urban development, which follows a specific sequence of urban policy actions: (2) integrated transport that informs (3) targeted investments into integrated human settlements, underpinned by (4) integrated infrastructure network systems and (5) efficient land governance, which all together can trigger (6) economic diversification and inclusion, and (7) empowered communities; all of the above will demand (8) effective governance and (9) financial reform to enable and sustain these policy actions.</p>	<p>The project contains sites for intermodal facilities and is thus aligned with the IUDF’s vision on integrated transport networks systems as part of human settlements.</p> <p>The project aligns with IUDF principle of contributing to creating a compact, coordinated and connected city, using urban planning strategies to yield desirable social, economic and environmental outcomes, as envisioned in the NDP.</p> <p>The Leeuwpoot development will contribute to the creation of sustainable human settlements as identified in the IUDF Policy Lever 3 – a variety of housing opportunities will be created with access to social and associated amenities, as well as access to employment opportunities.</p>



¹ http://markswilling.co.za/wp-content/uploads/2016/06/IUDF-2016_WEB.pdf Access 15 August 2016

POLICY	PURPOSE / STRATEGIC FOCUS	PROJECT IMPLICATIONS
<p>Outcome 8: Sustainable human settlements and improved quality of household life</p>	<p>To address the challenges of informal settlements and backyard shacks, the NDP proposes an urban development strategy comprising both economic and institutional reforms. Progress needs to be made towards breaking apartheid spatial patterns and integrating residential and commercial hubs in our cities and towns. To achieve the vision of sustainable human settlements and an improved quality of household life, the priorities for 2014-2019 include:</p> <p>Adequate housing and improved quality living environments, with 1.495 million more households living in new or improved housing conditions by 2019</p> <p>A functional and equitable residential property market with a target of 110 000 new housing units delivered in the affordable gap market by 2019</p> <p>Enhanced institutional capabilities for effective coordination of spatial investment decisions, with a target of 49 municipalities assigned or accredited with the housing function</p> <p>The title deeds for all 563 000 new subsidy units as well the backlog of 900 000 title deeds in the integrated residential housing programme will be transferred over the next five years</p> <p>Informal settlement upgrading will be expanded to cover 750 000 households, ensuring basic services and infrastructure in some 2 200 informal settlements.</p> <p>Improved linkages are needed between human settlements planning, economic and commercial development and spatial planning frameworks to guide investment decisions and promote more integrated and better located human settlements. Residential development accompanied by local economic development and job creation will contribute to growth in property markets and more equitable distribution of its benefits.</p>	<p>The development is aligned with the goals set out by Outcome 8:</p> <ul style="list-style-type: none"> • The development will create better living environments for people currently living in informal dwellings – provided the Department of Education and Department of Health develop the respective sites • The development will contribute 17.2% to the 110 000 new housing units to be delivered by 2019 <p>It is of paramount importance that the development close out entails the delivery of title deeds to all households.</p> <p>To create a more integrated human settlement, the development should incorporate adequate ancillary uses.</p>

POLICY	PURPOSE / STRATEGIC FOCUS	PROJECT IMPLICATIONS
<p>Outcome 9: Responsive, accountable, effective and efficient local government</p>	<p>Basic services have been extended to millions of households. Yet municipal performance is far from optimal. Neglect of routine maintenance threatens the sustainability of services. Additionally, whilst the metropolitan municipalities have made significant progress in addressing service delivery backlogs, even these advances are obscured by overwhelming challenges related to the fast pace of urbanisation and in-migration. There has been a decline in public trust in municipalities, which have sometimes failed to manage resources efficiently, maintain basic municipal services and collect revenue. Causes include weak leadership or political interference in operations, vacancies in critical posts, poor financial management, lack of transparency and accountability, and weak and ineffective platforms for public participation and communication with communities.</p> <p>The central focus of the 2014-2019 MTSF is on ensuring sustainable and reliable access to basic services, particularly in weaker municipalities which have the highest unmet demand for basic services. The NDP proposes that by 2030 the proportion of people with access to the electricity grid should rise to at least 90%, with non-grid options available for the remainder of households. Full access to affordable and reliable water and sanitation is envisaged before 2030. Where municipalities lack technical capacity, regional utilities or alternative institutional mechanisms should be used so that basic services are not compromised.</p> <p>Key targets for the MTSF include:</p> <ul style="list-style-type: none"> • Increase in the percentage of households with access to a functional water service from 85% in 2013 to 90% by 2019. • Increase in the percentage of households with access to a functional sanitation service from 84% in 2013 to 90% by 2019, including elimination of bucket sanitation in the formal areas. • 1.4 million additional households to be connected to the grid between 2014 and 2019, and 105 000 additional non-grid connections. • Income support to the unemployed through expansion of the Community Work Programme to reach 1 million participants in 2019. 	<p>The project is an embodiment of the EMM desire to respond to Outcome 9 as it actively seeks to implement Alliance Extension 9.</p> <p>Outcome 9 furthermore stresses the importance of routine maintenance to ensure the sustainability of services – it is important that the development has a maintenance plan in place post installation.</p>

POLICY	PURPOSE / STRATEGIC FOCUS	PROJECT IMPLICATIONS
	<ul style="list-style-type: none"> An increase in the level of public trust and confidence in local government from 51% in 2012 to 65% in 2019, as measured by the IPSOS survey. An improvement in overall municipal audit outcomes, with at least 75% of municipalities receiving unqualified audits by 2019. Citizen participation in local government processes will continue to be promoted. Cooperative governance arrangements will be strengthened to better support and empower municipalities. A long-term approach will be taken to skills development and capacity building for the local government sector. Institutional problems will be addressed to improve the quality of municipal administrative and management practices including human resources and recruitment practices, supply chain and financial management, and anticorruption initiatives. 	
<p>National Infrastructure Plan²</p>	<p>The NIP was adopted in 2012 and the plan aims transform the economic landscape while simultaneously creating significant numbers of new jobs, and to strengthen the delivery of basic services.</p> <p>Eighteen (18) Strategic Integrated Projects (SIPs) were identified which cover social and economic infrastructure across all nine provinces (with an emphasis on lagging regions). The SIPs include catalytic projects that can fast-track development and growth. The work done as part of the SIP projects is being aligned with key crosscutting areas i.e. human settlement planning and skills development.</p> <p>SIP 6: Integrated municipal infrastructure project Develop national capacity to assist the 23 districts with the fewest resources (19 million people) to address all the maintenance backlogs and upgrades required in water, electricity and sanitation bulk infrastructure. The road maintenance programme will enhance service delivery capacity thereby impacting positively on the population.</p> <p>SIP 7: Integrated urban space and public transport programme</p>	<p>The SIPs that have relevance to the Leeuwpoot development is:</p> <ul style="list-style-type: none"> SIP 6: Integrated municipal infrastructure project. The purpose of SIP 6 is to develop national capacity to assist with addressing maintenance backlogs and upgrades required in water, electricity and sanitation bulk infrastructure SIP 7: Integrated urban space and public transport programme. The project needs to aim for better opportunities relating to public transport. <p>The EMM, through its internal engineering departments as well as ongoing liaison with Eskom ensures alignment with the NIP.</p>

² Ekurhuleni Metropolitan Spatial Development Framework, 2015

POLICY	PURPOSE / STRATEGIC FOCUS	PROJECT IMPLICATIONS
	<p>Coordinate planning and implementation of public transport, human settlement, economic and social infrastructure and location decisions into sustainable urban settlements connected by densified transport corridors. This will focus on the 12 largest urban centres of the country, including all the metros in South Africa. Significant work is underway on urban transport integration.</p>	
PROVINCIAL		
<p>Ten Pillar Programme of Transformation, Modernisation and Reindustrialisation</p>	<p>To make Gauteng an integrated city-region characterised by social cohesion and economic inclusion, the Gauteng Province has adopted the following ten pillars of radical transformation:</p> <ul style="list-style-type: none"> • radical economic transformation; • decisive spatial transformation; • accelerated social transformation; • transformation of the state and governance; • modernisation of the public service; • modernisation of the economy; • modernisation of human settlements and urban development; • modernisation of public transport infrastructure; • re-industrialisation of Gauteng Province; and • taking the lead in Africa's new industrial revolution. 	<p>The development is situated in the midst of a high concentration of mining and industrial activities and, as such, could fulfil an important role in providing labour to these areas.</p>
<p>Gauteng Spatial Development Framework 2030 (GSDF)</p>	<p>The GSDF seeks to promote urban densification and infill development and furthermore seeks to curb unnecessary urban sprawl.</p> <p>The GSDF is premised on building Gauteng as a sustainable city region that is shaped by infrastructure led investment, and is based on public transport specifically rail as the backbone of accessibility in the future. As an integrated approach to spatial development for 2055, the GSDF contributes to reducing the cost of doing business in the GCR by indicating where resources should be spent and the nature and type of infrastructure investment that can create a more equitable society. This will allow the GCR to become more efficient in doing business by providing an</p>	<p>The development adheres to the GSDF by focusing on infrastructure led investment.</p> <p>The Leeuwpoot development is located on undeveloped land in an urbanised section of the East Rand and, as such, actively promotes infill and densification</p>

POLICY	PURPOSE / STRATEGIC FOCUS	PROJECT IMPLICATIONS
	<p>enabling environment that supports economic growth through coordinated and structured investment spending.³</p>	
MUNICIPAL		
<p>Ekurhuleni Growth and Development Strategy (GDS)</p>	<p>The GDS provides a framework and point of reference for all the EMM plans, policies and strategies in various areas of operation. The GDS is a strategy for all sectors of society and is intended to build a common vision and purpose between government, the private sector and civil society.</p> <p>The mission of the GDS is that: “Ekurhuleni provides sustainable and people centred developmental services that are affordable, appropriate and of high quality.” The GDS aims to focus on social, environmental and economic regeneration as guided by the Batho Pele (people first) principles.</p> <p>The broad development strategies and targets contained in the GDS will be further contextualised in the IDP and the various sectoral strategies and policies.⁴</p> <p>The sustainable city trajectory lies at the heart of the GDS. This trajectory will be managed through five themes:</p> <ul style="list-style-type: none"> • Re-urbanise • Re-industrialise • Re-generate • Re-mobilise • Re-govern. <p>A key focus area of the GDS is to demarcate the urban edge and focus on infill and densification to prevent urban sprawl.</p>	<p>The project helps to redirect the prevailing pattern of outward urban growth and expansion inwards. The project is furthermore in line with the infill and densification focus of the GDS.</p> <p>The development and upgrading of roads is paramount to the GDS. The upgrading of services is another aspect of the GDS adhered to by the project – the township areas and informal settlements will receive the bulk of the capital budget until equity regarding services is achieved.</p>



³ <http://www.gautengonline.gov.za/Documents/GSDF%202030.pdf> Access 1 July 2016

⁴ Ekurhuleni Growth and Development Strategy 2055

POLICY	PURPOSE / STRATEGIC FOCUS	PROJECT IMPLICATIONS
<p>Ekurhuleni Metropolitan Spatial Development Framework, 2015 (MSDF)</p>	<p>The MSDF provides a clear indication of the broad land-use pattern to be developed in Ekurhuleni to achieve sustainable spatial development and to thus overcome the spatial imbalances of the past. The spatial objectives identified in the MSDF adhered to in the project are:</p> <ul style="list-style-type: none"> • Create a single, uniform identity for EMM; • Develop a well-defined system of activity nodes; • Promote the development of a sustainable compact urban structure; • Create a sustainable and functional open space network; • Optimise job creation capacity of the formal economy; • Integrate the disadvantaged communities into the urban fabric; • Promote sustainable livelihoods development; • Promote sustainable development; and • Optimise the comparative advantages of EMM. <p>To achieve more sustainable and functional city building within the metropolitan context the following spatial development guidelines are to be followed:</p> <ul style="list-style-type: none"> • Principles of sustainable neighbourhood development: The following five principles of sustainable neighbourhood development have been identified: a) adequate spaces for streets and efficient street network; b) high density; c) mixed land use; d) social mix; and e) limited land use specialisation. • Densification: In order to achieve a more compact city the approach to densification is to optimise walkability and the use of public transport. Densification is promoted at and around a) existing (rail) and future (BRT and rail) public transport routes; b) social facilities; and c) business nodes. • Corridors: ‘Beads-on-a-string’ development is the preferred model for corridor development. • Transit-oriented development: By optimising the use of land around transit stations, the principles of smart growth are followed and a “triple bottom line” approach can help Ekurhuleni achieve some of its environmental, economic and social objectives. 	<p>In terms of the MSDF, the area is broadly identified for industrial development. The MSDF promotes integrated development which, in essence, supports the development of housing opportunities in proximity to commercial land uses and therefore employment opportunities.</p> <p>The project adhered to the guidelines provided regarding a more sustainable and functional city</p> <ul style="list-style-type: none"> • The project provides adequate space for streets • The project focuses on affordable residential options, thus providing the opportunity to integrate disadvantaged communities • The project has a high density component • The project has a variety of land uses • The project promotes densification

POLICY	PURPOSE / STRATEGIC FOCUS	PROJECT IMPLICATIONS
<p>Ekurhuleni Capital Investment Framework (CIF), 2012 and 2016</p>	<p>The CIF geographic priority areas are geared toward guiding the spatial prioritization of departmental projects with the objective to achieve targeted investment into specific areas in order to promote spatial transformation. The geographic priority areas is made up of the spatial structuring elements outlined within the 2015 approved MSDF, and comprises of 3 priority areas and is aligned to the development trajectory set out in the Growth Development Strategy in terms of achieving a ‘Delivering City’ with a 3 year implementation horizon (Priority area 1), a ‘Capable City’ with a 10 year implementation horizon (Priority area 2), and a ‘Sustainable City’ with a 20 year and beyond implementation horizon (Priority area 3).</p> <p>The CIF identified the following priorities:</p> <ul style="list-style-type: none"> • Economic growth • Job creation • Revenue generation • Sustainability • Urban restructuring • Densification • Budget must follow spatial rationale • Spatial and sectoral integration • Spatial and sectoral prioritisation • Investment confidence • Area based interventions. 	<p>The development is in line with the CIF – the site is located within Priority Area 1 and, as such, is identified as a short term priority.</p> <p>The development adheres to the principles of economic growth, job creation, sustainability, urban restructuring, densification, spatial and sectoral integration, spatial and sectoral prioritisation. The development should, however ensure investment confidence. Investment confidence will in turn lead to the possible sale of commercial / business stands that will generate additional revenue.</p>
<p>Region F Spatial Development Framework</p>	<p>The development of the RSDF for Region F is guided by the vision of the EMM and the concept developed for the Ekurhuleni metropolitan municipality. The purpose of the concept is not only to guide the future development of the Metropolitan area, but to ensure integration of Regions B – F. This draft concept consists of focal features, including:</p> <ul style="list-style-type: none"> • a strong core relating to the proposed aerotropolis at ORTIA; • anchor nodes at Sentrarand, Carnival City precinct and Tambo Springs; 	<p>The location of the Leeuwpoot development is ideal for a mixed use and mixed typology development with a focus on high density residential units close to a major access corridor (N17).</p> <p>It will contribute to the provision of residential accommodation within the region through the provision of sufficient engineering services and would contribute to the maintenance role expected of this region should an adequate maintenance plan be sit in place.</p>

POLICY	PURPOSE / STRATEGIC FOCUS	PROJECT IMPLICATIONS
	<ul style="list-style-type: none"> Promotion of viable east-west linkages by means of the N17 and N12 highways; development of major north-south linkages/corridors, including a separate road-based freight route; upgrading and expansion of the railway system; extensive agricultural development; and a compact urban development footprint. <p>The role of Region F is to:</p> <ul style="list-style-type: none"> retain the existing industrial development in the region through the maintenance and improvement of the existing road and service infrastructure in the area. support the promotion of new development areas in suitably located areas close to the main access corridors. enhance the provision of residential accommodation within the region through the provision of sufficient engineering services and the retention and maintenance of existing residential development. 	<p>In addition, the Leeuwpoot development is located in the Tri-Cities Economic Development Region of the Aerotropolis Economic Development Regions, meaning that new and planned developments should focus on:</p> <ul style="list-style-type: none"> Retail (primary focus) Professional services & public administration (primary focus) Aerospace manufacturing & aviation (primary focus) Tourism & culture (additional focus) Education & skills training (additional focus) and Natural resources & energy (additional focus)
<p>EMM Mayoral Speech, August 2016</p>	<p>In the newly elected mayor's inaugural speech, Honourable Mzwandile Masina committed to the construction of 100 000 housing units and the provision of 59 000 serviced stands</p>	<p>In the context of the housing backlog, coupled with the Aug 2016 mayoral speech, the Leeuwpoot development will contribute 18.9% to the construction target and 32.1% to the serviced stands target.</p>
<p>EMM Sustainable Human Settlements Development Plan 2014 - 2019</p>	<p>The SHSDP <u>aims</u> to build diversity and mobility through re-engineering their housing process principles through certain <u>goals</u>, <u>objectives</u>, and <u>actions</u>.</p> <p>The SHSDP aligned itself with the planned mega-projects in the region. Leeuwpoot falls within the Southern Development Cluster, together with:</p> <ul style="list-style-type: none"> The Germiston urban renewal housing programme (including social housing, Balmoral Ext 4 and Ext 5, Dukathole, Goodhope & Kutalo/Robert Strachen) Zwartkoppies Palmietfontein Rietspruit/Rietfontein, Palmridge Ext 10 & Ext 11 	<p>In terms of the SHDP, the implication of this policy for the Leeuwpoot development is that – as a mega-project – it has the ability to contribute positively to the SHSDP's development aim and goals for the provision of sustainable human settlements in Ekurhuleni. The township proposal is therefore in line both with the mega-development project plan and the SHSDP's development principles for the provision of human settlements.</p>

2.3 DEVELOPMENT SITE ASSESSMENT

The Demacon model is pragmatic and is based on the assignment of values to various location factors. Firstly, the site was evaluated on a ten-point scale, with ten being the highest. Secondly, weights were attached to these factors, in order of importance (1 to 5, with 5 being the most important). In the context of preceding citywide and local analyses, Demacon was requested to rate a number of potential sites for future investment purposes.

Subsequently, the development area was evaluated on a ten-point scale, with ten being the highest. These datasets were utilised to calculate an overall site rating for the three sites, presented below:

Table 2.2: Retail / trade / automotive site assessment

Location Factors	Grade 1-10	Weight 1-5	Points
Consumer Volumes	8	5	40
Income / LSM profile	7	5	35
Population Growth	7	4	28
Visibility	8	4	32
Accessibility	8	4	32
Functional & Complimentary Uses	8	3	24
Effective Market Gap	8	4	32
Proximity to Intermodal Facilities, e.g. BRT Route, Taxi / Bus terminus	8	3	24
Address Value	7	4	28
Availability of Land	8	4	32
Future Expansion Potential	8	4	32
Directional Growth of Area	8	4	32
Proximity to Labour	8	3	24
Proximity to Suppliers	8	3	24
Perceived Level of Security	7	4	28
Total			447
Score			77.1%

Source: Demacon site assessment modelling, 2016

* Note: 80%+ indicates an exceptional site rating; a site rating of 70 – 80% is high and indicates that most important fundamentals for a successful mixed use development is in place; a rating of 60 – 70% indicates some critical factors may be lacking but could possibly be addressed; projects with a sub 60% rating are not recommended for consideration.

Table 2.3: Office site assessment

Location Factors	Grade 1-10	Weight 1-5	Points
Accessibility	8	3	24
Visibility	8	5	40
Address Value	6	4	24
Moderate to Higher LSM Profile	6	4	24
Proximity to Educated Labour Force	7	4	28
Established Office Address / Monitored Node	5	4	20
Functional and Complimentary Uses	8	4	32
Emerging Commercial Node	7	4	28
Proximity to Freeways / Major Provincial Routes	8	4	32
Proximity to Intermodal Facilities, e.g. BRT, Rail/Taxi/Bus terminus	8	3	24
Availability of Land	8	3	24
Future Expansion Potential	8	3	24
Perceived Level of Security	7	4	28
Directional Growth of Area	8	3	24
Total			376
Score			72.3%

Source: Demacon site assessment modelling, 2016

* Note: 80%+ indicates an exceptional site rating; a site rating of 70 – 80% is high and indicates that most important fundamentals for a successful mixed use development is in place; a rating of 60 – 70% indicates some critical factors may be lacking but could possibly be addressed; projects with a sub 60% rating are not recommended for consideration.

Table 2.4: Residential site assessment

	Grade 1-10	Weight 1-5	Points
Perceived Level of Safety and Security	7	5	35
Area Price Profile	7	4	28
Address Value	7	4	28
LSM Profile	7	5	35
Perceived Quality of Residential Environment	7	4	28
Tempo of Residential Growth	7	5	35
Within direction of Current & Future Growth	8	5	40
Perceived investment value	7	4	28
Access to main roads	8	3	24
Proximity to work place	8	3	24
Proximity to schools	8	4	32
Proximity to retail facilities	8	4	32
Proximity to social amenities	8	3	24
Proximity to public transport	8	3	24
Availability of Land	8	3	24
Total			441
Score			74.7%

Source: Demacon site assessment modelling, 2016

* Note: 80%+ indicates an exceptional site rating; a site rating of 70 – 80% is high and indicates that most important fundamentals for a successful mixed use development is in place; a rating of 60 – 70% indicates some critical factors may be lacking but could possibly be addressed; projects with a sub 60% rating are not recommended for consideration.

Table 2.5: Private medical facility site assessment

Location Factors	Grade 1-10	Weight 1-5	Points
Visibility	8	4	32
Local Accessibility	8	4	32
Regional Accessibility	8	4	32
LSM Profile	7	5	35
Level of Private Healthcare Insurance	7	5	35
Moderate to Higher Population Growth	7	3	21
Absence of Competitive Products / Market Gap	7	4	28
Proximity to Skilled and Semi-Skilled Labour Force	7	3	21
Perceived Level of Security	7	4	28
Located in Direct Line of Growth	8	3	24
Availability of Land	8	4	32
Future Expansion Potential	8	3	24
Total			344
Score			74.8%

Source: Demacon site assessment modelling, 2016

* Note: 80%+ indicates an exceptional site rating; a site rating of 70 – 80% is high and indicates that most important fundamentals for a successful mixed use development is in place; a rating of 60 – 70% indicates some critical factors may be lacking but could possibly be addressed; projects with a sub 60% rating are not recommended for consideration.

Table 2.6: Private school site assessment

Location Factors	Grade 1-10	Weight 1-5	Points
Accessibility	8	4	32
LSM Profile	7	4	28
Direct Proximity to Middle to High Income Suburbs	7	4	28
Moderate to Large Segment of Population aged below 18 years	8	5	40
Moderate to High Population Growth	7	4	28
Proximity to Captive Market	8	4	32
Absence of Competitive Products	8	3	24
Perceived Level of Security	7	4	28
Address Value	7	4	28
Proximity to Retail Facilities	8	3	24
Total			292
Score			74.9%

Source: Demacon site assessment modelling, 2016

* Note: 80%+ indicates an exceptional site rating; a site rating of 70 – 80% is high and indicates that most important fundamentals for a successful mixed use development is in place; a rating of 60 – 70% indicates some critical factors may be lacking but could possibly be addressed; projects with a sub 60% rating are not recommended for consideration.

Table 2.6: Industrial use site assessment

Location Factors	Grade 1-10	Weight 1-5	Points
Proximity to airport/inland port/harbour	7	4	28
Proximity to industrial cluster	8	4	32
Proximity to main roads/freeways	8	5	40
Access/ centrality to regional market	8	5	40
Address value	7	4	28
Income level and income growth	7	1	7
Access/centrality to distribution network	7	4	28
Proximity to labour	8	4	32
Market gap/limited competition	7	3	21
Town planning rights, infrastructure etc. in place	7	5	35
Directional Growth of the area	8	4	32
Functionality and complimentary uses	8	3	24
Land availability	8	5	40
Land cost	8	5	40
Total			427
Score			76.3%

Source: Demacon site assessment modelling, 2016

* Note: 80%+ indicates an exceptional site rating; a site rating of 70 – 80% is high and indicates that most important fundamentals for a successful mixed use development is in place; a rating of 60 – 70% indicates some critical factors may be lacking but could possibly be addressed; projects with a sub 60% rating are not recommended for consideration.

2.4 DEVELOPMENT SITE ASSESSMENT

In summary, the Leeuwpoot development seems aligned with the development guidelines provided by the relevant development policies.

A summary of the site assessment results are presented below:

Table 2.3: Summary of site assessment results

Proposed Land Use	Percentage
Retail / Trade / Automotive	77.1%
Industrial	76.3%
Private school	74.9%
Private medical	74.8%
Residential	74.7%
Office	72.3%

* Note: 80%+ indicates an exceptional site rating; a site rating of 70 – 80% is high and indicates that most important fundamentals for a successful mixed use development is in place; a rating of 60 – 70% indicates some critical factors may be lacking but could possibly be addressed; projects with a sub 60% rating are not recommended for consideration.

All of the land uses investigated rated **over 70.0%**, giving a **high site rating** for each land use in the Leeuwpoot development.

The economic indicators of an area form the basis for current demand for residential and commercial product offering and also serve as drivers for future growth in demand. Therefore the subsequent chapter provides an overview of the local economy in which the proposed development will be located.

CHAPTER 3: LOCAL SOCIO-ECONOMIC INDICATORS

3.1 INTRODUCTION

The purpose of this chapter is to give a brief outline the salient socio-economic features of the market area economy (reference is made to the **Boksburg area** in terms of selected time series economic indicators; most notably the economic profile and growth trends within the local economy.

3.2 KEY ECONOMIC INDICATORS

A summary of key economic indicators relevant to the market area are indicated in the table below:

Table 3.1: Key Economic Indicators of the Market Area

Variable	Market Characteristics
Size of the Economy (2015)	<ul style="list-style-type: none"> ✓ The Boksburg Sub Region contributes 9.2% towards Ekurhuleni Metro economy.
Economic Growth Performance – Time Period 1995 - 2015	<p><u>Ekurhuleni Metro Economy</u></p> <ul style="list-style-type: none"> ✓ Growth in the Metro economy has averaged (per annum) as follows: <ol style="list-style-type: none"> 1. 1995 – 2015: 3.3% 2. 2000 – 2015: 3.2% 3. 2005 – 2015: 2.7% 4. 2010 – 2015: 2.2% <p><u>Boksburg Sub-Regional Economy</u></p> <ul style="list-style-type: none"> ✓ Growth in the sub-regional economy has averaged has averaged (per annum) as follows: <ol style="list-style-type: none"> 1. 1995 – 2015: 2.7% 2. 2000 – 2015: 2.5% 3. 2005 – 2015: 1.9% 4. 2010 – 2015: 1.4%
Dominant Economic Contributions (2015)	<p><u>Boksburg Sub-Regional Economy</u></p> <ul style="list-style-type: none"> ✓ Finance & Business Services (23.2%) ✓ Community & Social Services (20.0%) ✓ Manufacturing (16.8%) and ✓ Trade (14.3%).

Variable	Market Characteristics
<p>Trade Sector Performance (1995– 2015)</p>	<ul style="list-style-type: none"> ✓ The wholesale and retail trade sector of the Sub-Region reached an average annual growth as follows: <ul style="list-style-type: none"> ○ 2000 – 2015: 3.2% ○ 2005 – 2015: 2.7% ○ 2010 – 2015: 2.2% ✓ The catering and accommodation sector reached an average annual growth as follows: <ul style="list-style-type: none"> ○ 2000 – 2015: 4.8% ○ 2005 – 2015: 3.9% ○ 2010 – 2015: 1.5%
<p>Final Consumption Expenditure & Disposable Income (1995– 2015)</p>	<ul style="list-style-type: none"> ✓ Final consumption expenditure of the Boksburg Sub-economy obtained an average annual growth rate as follows: <ul style="list-style-type: none"> ○ 2000 – 2015: 3.2% ○ 2005 – 2015: 2.7% ○ 2010 – 2015: 2.2% ✓ Disposable income of the Sub-economy obtained an average annual growth rate as follows: <ul style="list-style-type: none"> ○ 2000 – 2015: 4.8% ○ 2005 – 2015: 3.9% ○ 2010 – 2015: 1.5%

3.3 DEMOGRAPHIC MARKET OVERVIEW

Table 3.2 provides the demographic market summary of the market area as it is informed by SACSC criteria, which is guided by a **10 - 15 minutes’ drive time**, an approximation of a 10 km radius that form the basis of the regional precinct (Map 3).

It should also be noted that the Leeuwkuil development is located in close proximity to the **planned PWV 13 and PWV 15 routes** (Map 3.1). These routes will increase the connectivity and accessibility of the Leeuwpoot development, and as such increase its long term viability.

Map 3.1: Proposed PWV routes

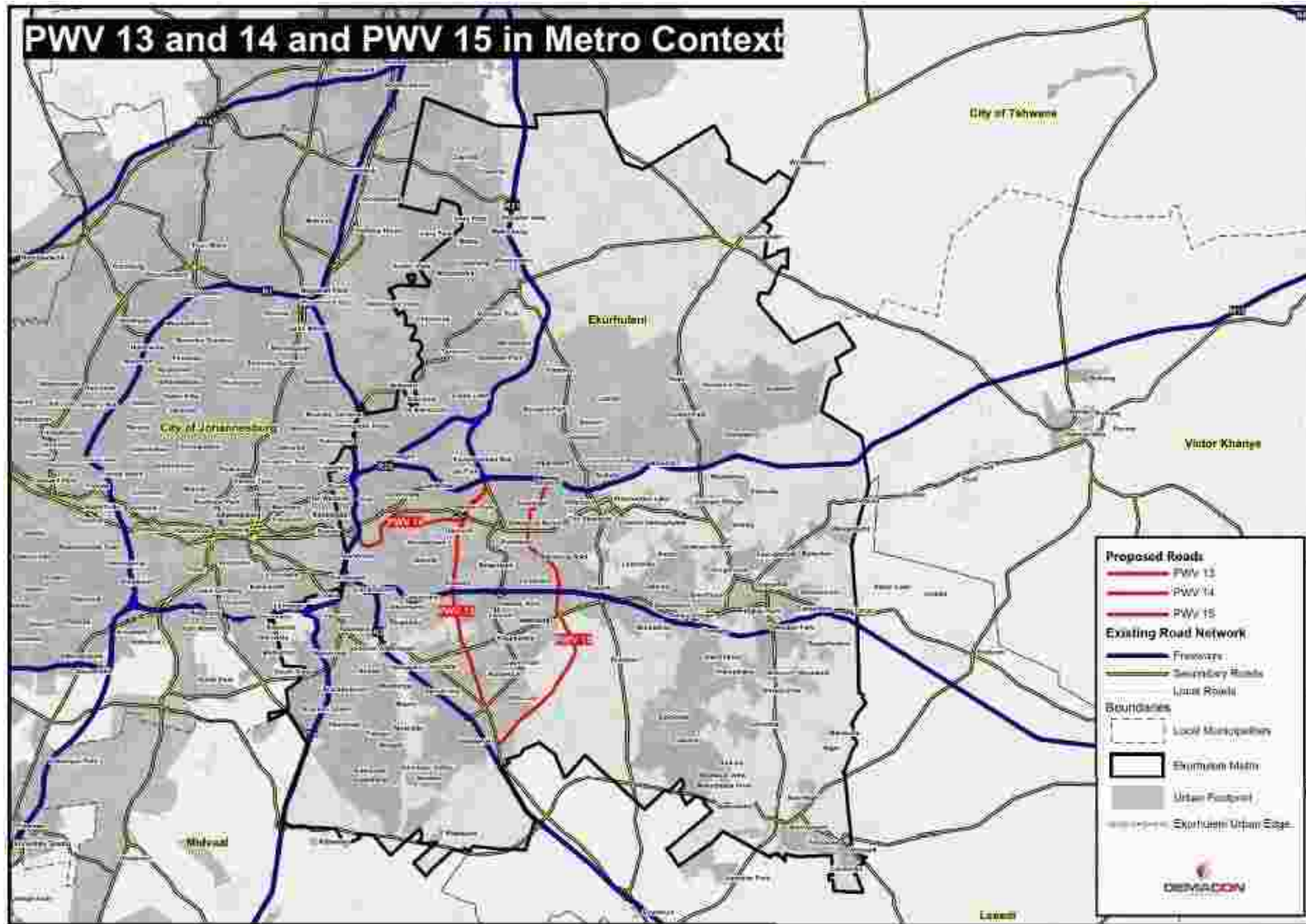
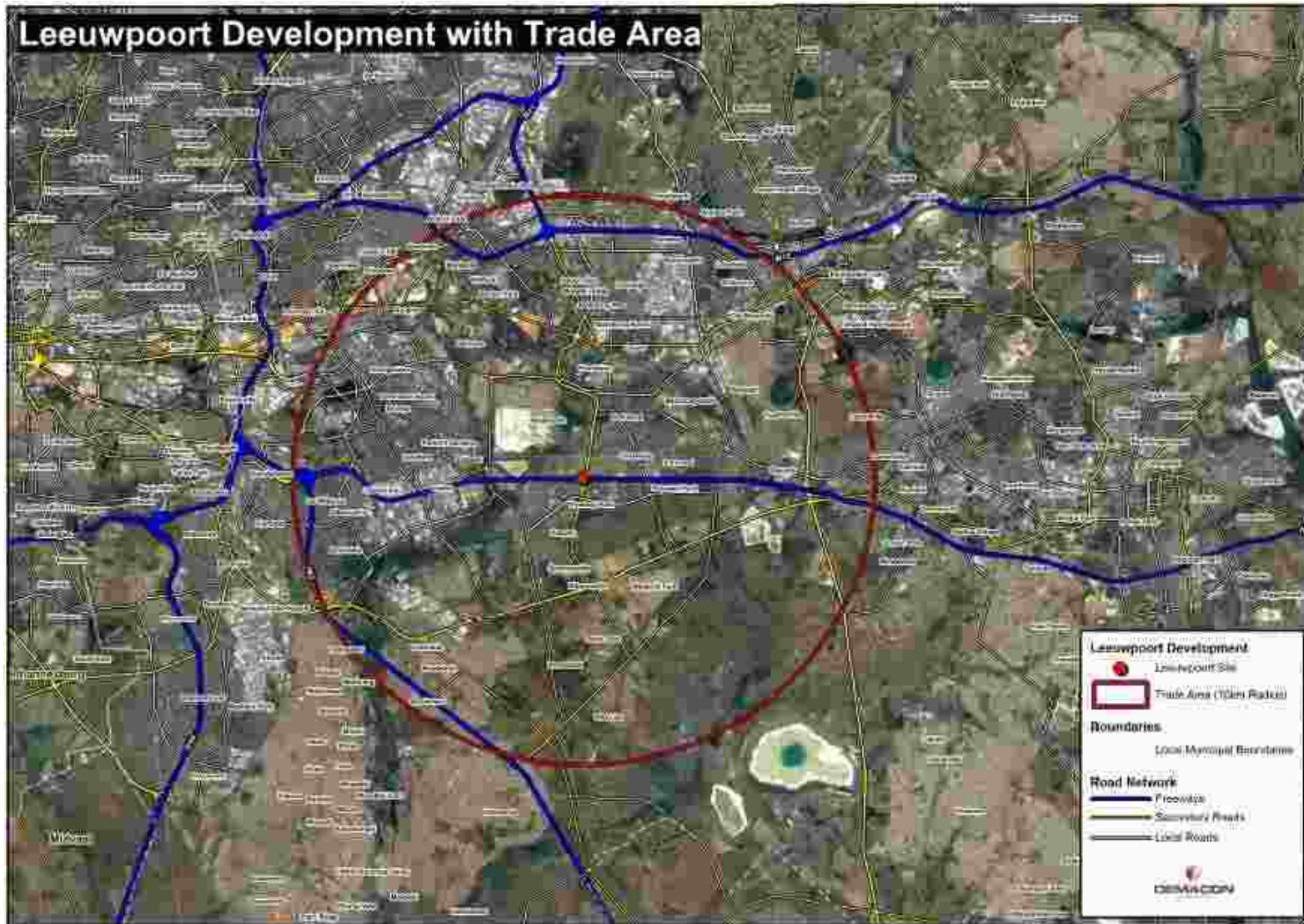


Table 3.2: Key socio-economic indicators of the market area

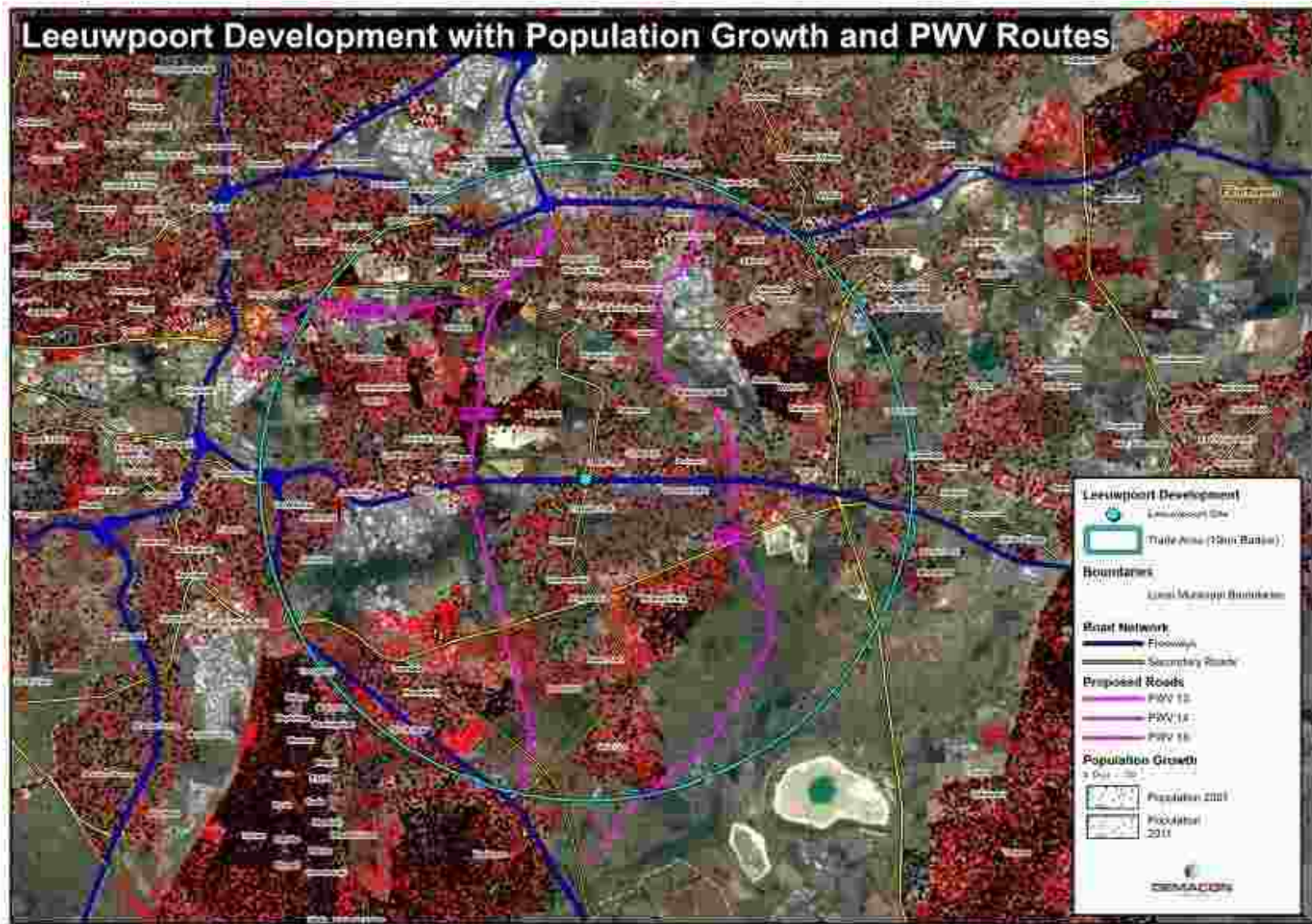
Variable	Market Characteristics
Population (Total)	✓ 578 742 people
Household (Total)	✓ 197 747 households
Household Size	✓ 2.9 people/ household
Age profile	<ul style="list-style-type: none"> ✓ 0 – 14 years: 21.9% ✓ 15 – 19 years: 45.6% ✓ 20 – 34 years: 26.2% ✓ 35 – 64 years: 31.3% ✓ 65 years +: 4.0%
Highest level of education (aged 20 and older)	<ul style="list-style-type: none"> ✓ Grade 12: 38.5% ✓ Some Secondary: 35.0% ✓ Higher: 15.6% ✓ Some Primary: 5.7% ✓ Complete Primary – 2.9% ✓ None: 2.2%
Level of employment	<ul style="list-style-type: none"> ✓ Economically active: 76.1% ✓ Employed: 74.5% ✓ Unemployed: 25.5%
Dwelling types	<ul style="list-style-type: none"> ✓ House or brick structure – 46.3% ✓ Informal dwelling/shack <u>not</u> in a back yard – 23.4 % ✓ Informal dwelling/shack in a back yard – 8.9% ✓ Flat or apartment in a block of flats – 7.4%
Tenure status	<ul style="list-style-type: none"> ✓ Rented tenure – 32.5% ✓ Owned but not yet paid off – 27.9% ✓ Owned and fully paid off – 25.1% ✓ Occupied rent free – 11.6%
Weighted Average household income (2013)	<p><u>All LSM's:</u></p> <ul style="list-style-type: none"> ✓ R196 556 per annum ✓ R16 380 per month <p><u>LSM 4 – 10+ households:</u></p> <ul style="list-style-type: none"> ✓ R246 839 per annum ✓ R20 570 per month
LSM Profile	<ul style="list-style-type: none"> ✓ LSM 1 -3: 21.5% ✓ LSM 4 – 9: 77.3% ✓ LSM 4 – 10+: 78.5%

Source: Demacon Ex. 2011 Census, 2016

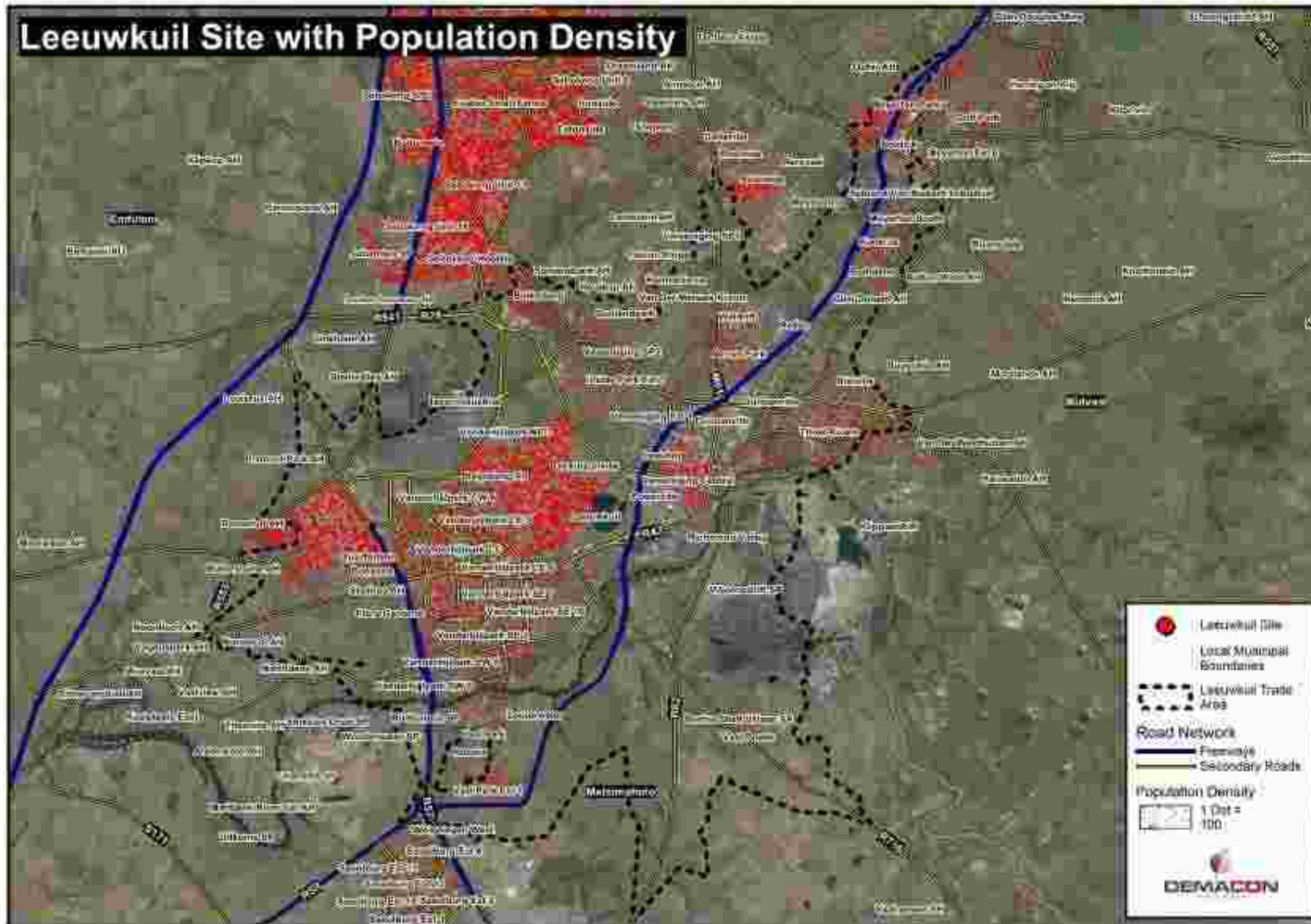
Map 3.2: Leeuwpoot development trade area



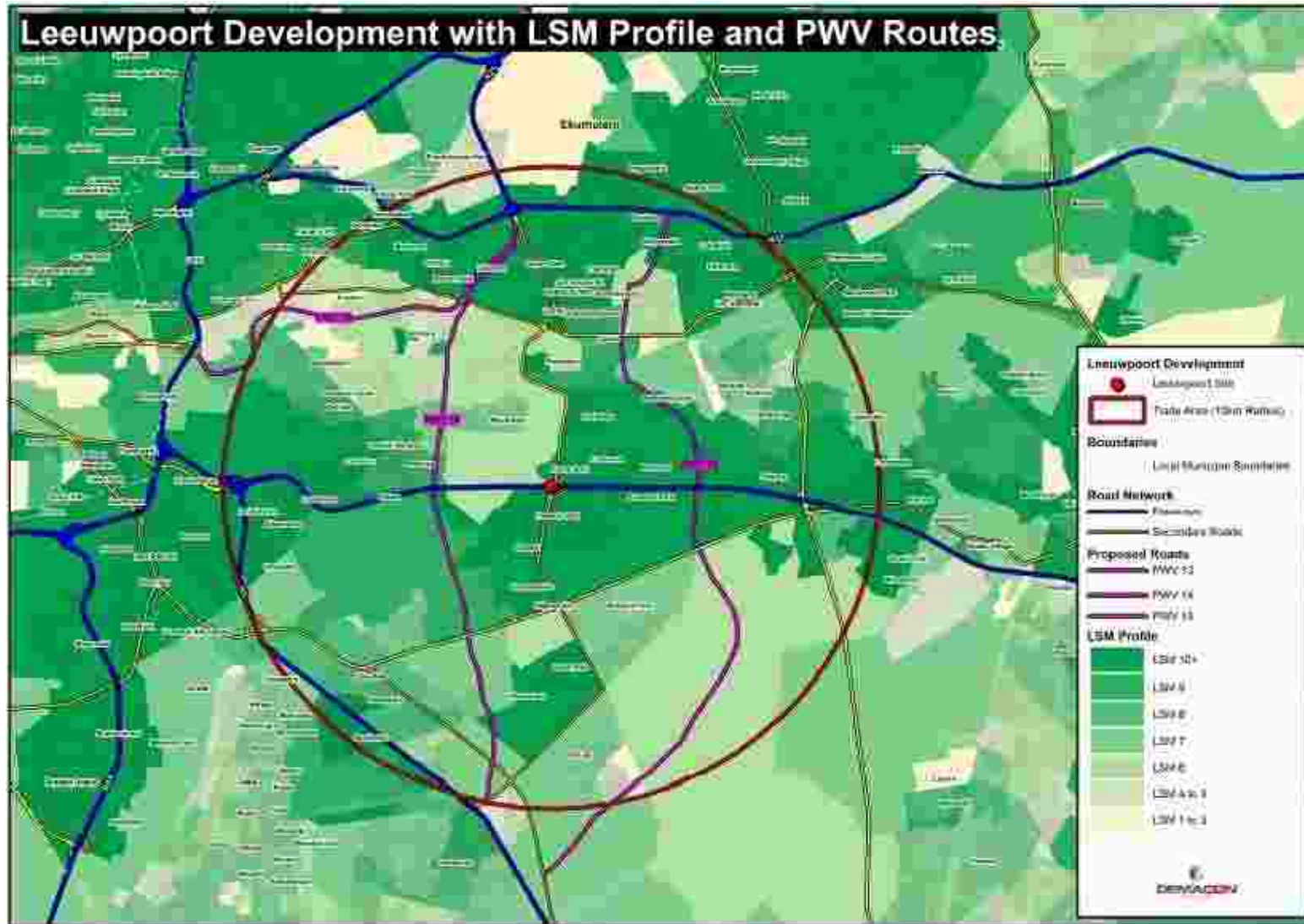
Map 3.3: Population growth



Map 3.4: Population density



Map 3.5: LSM map of trade area



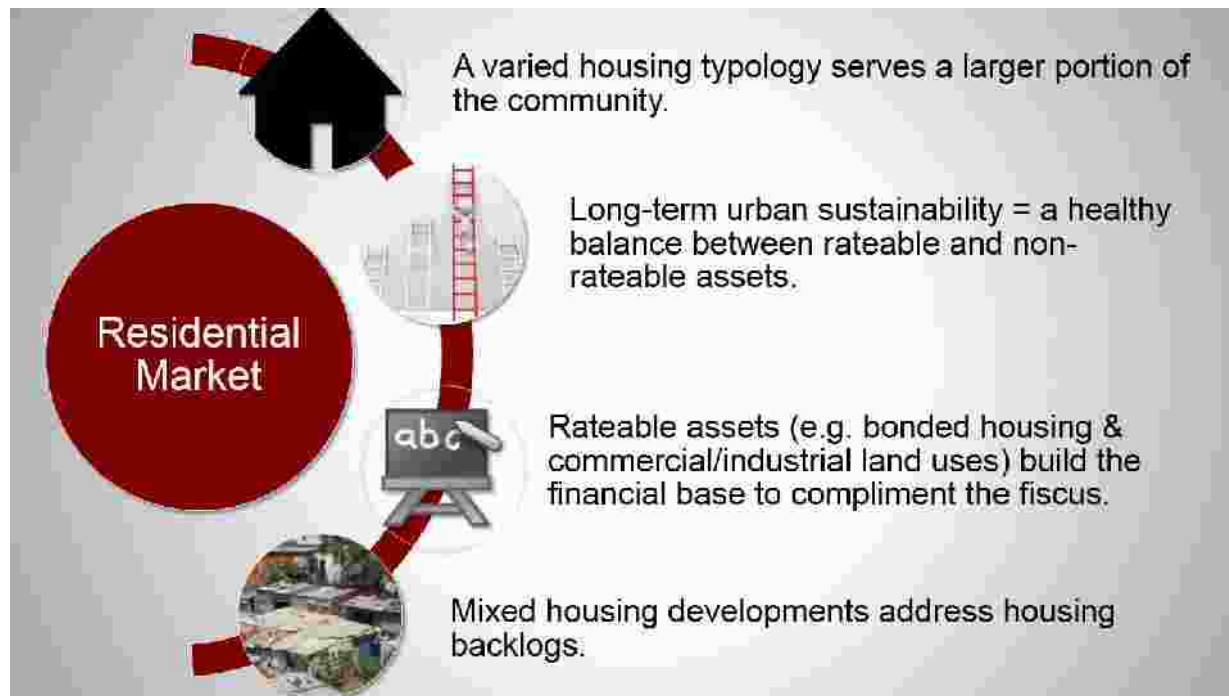
Approximately **578 742** individuals and **197 747** households reside within the market area. The average household size amounts to approximately **2.9** individuals per household.

Of the total population in the market area, **76.1%** are within the economically active market segment, of which **74.5%** of this segment is formally employed.

Furthermore, it is evident that the largest proportion (**46.3%**) of the market area occupies a house or brick structure on a separate stand of yard.

The market area is characterised as a **lower to middle income** area. The target market (LSM 4 to 10+) households in the market area earns **R20 570 monthly** and **R246 839 annually** and represents **78.5%** of the market.

CHAPTER 4: RESIDENTIAL MARKET ANALYSIS



4.1 INTRODUCTION

The increasing momentum in the affordable housing market in South Africa is evidence of robust growth in an otherwise largely flat residential sector.

For 2016, the Banking Association of SA calculated the upper-income limit of the affordable housing market as R20 800 per month. This segment is served by housing in the range of R300 000– R600 000. In the past year, affordable housing prices have risen by close to 10 percent, effortlessly outdoing the rest of the property market.

The supply shortfall is likely to persist, as there is huge pent-up demand in the market due to housing backlog, now calculated to stand at 2,1 million units (Department of Human Settlements, 2016).

Nationally, year-on-year nominal price growth of 5,7% was recorded in middle-segment housing in May, slightly down from 6,1% in April. Year-to-date price growth up to May came to about 6% y/y. Some negligent real price deflation of 0,1% year-on-year (y/y) was evident in April on the back of a consumer price inflation rate of 6,2% y/y in the month. Current trends in house prices are believed to be the result of a fair amount of financial pressure experienced by homebuyers on the back of tough macroeconomic conditions, which have the effect of an increasingly strong focus on the affordability of housing and mortgage finance.

The average nominal value of homes in each of the middle-segment categories was as follows in May 2016:

- ✓ Small homes (80m²-140m²): R947 000
- ✓ Medium-sized homes (141m²-220 m²): R1 282 000

- ✓ Large homes (221m²-400m²): R2 010 000.

The above national house price trends belie the performance and the significance of the entry level, affordable bonded housing market in which developers of certain well-located projects continue to record surprisingly high sales / take-up rates.

4.2 HOUSING NEED IN EKURHULENI MM REGION F

Population profile

Table 4.1 indicates the population and household dynamics of Region F. The population and household growth rates used to determine the current population and household numbers was based on the average short term (2006 to 2011) growth rates of the different main places within the region.

Table 4.1: Region F population and household dynamics, 2015

	Population Total	Household Total	Household Size
2011	972 484	297 577	3.3
2015	1 040 032	314 741	3.3

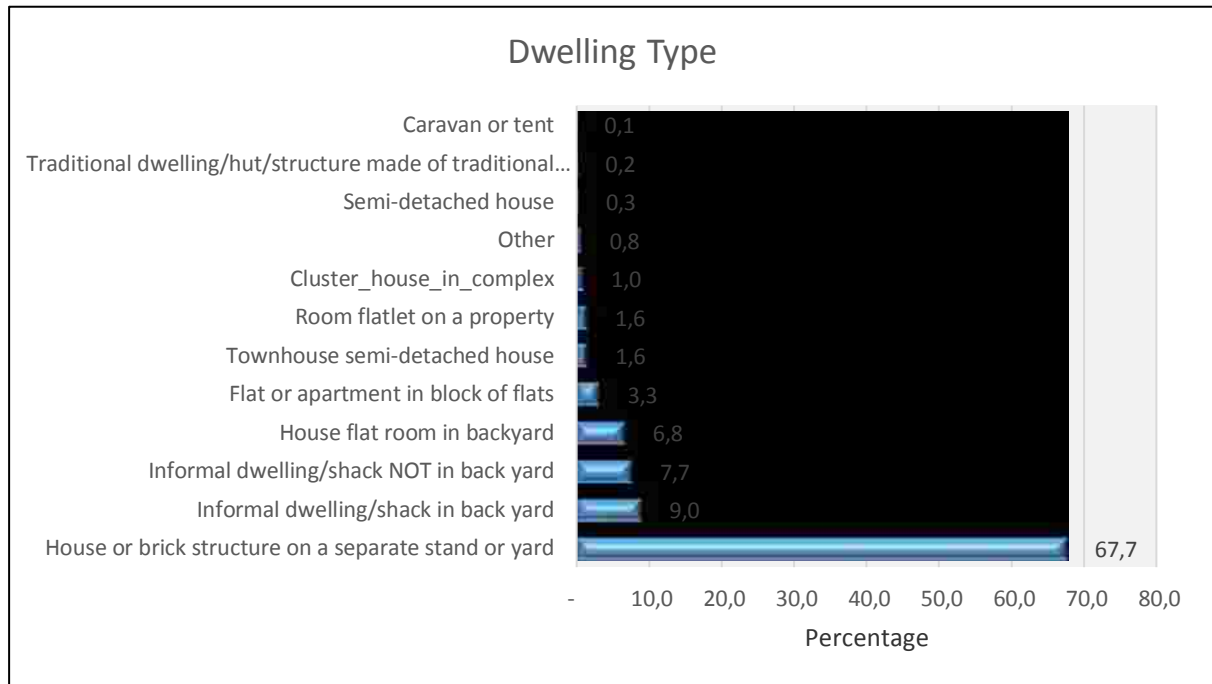
Source: Demacon ex. Stats SA, 2015

Findings: (Table 4.1)

- ✓ The total population increased from 972 484 people (2011) to **1 040 032 people (2015)** at a growth rate of approximately 1.69%.
- ✓ The total number of households increased from 297 577 households (2011) to **318 741 households (2015)** at a growth rate of approximately 1.41%.
- ✓ The average household size is **3.3** people per household.

Figure 4.1 indicates the percentage of households in Region F according to dwelling type. The most prominent dwelling type in Region F is a house or brick structure on a separate stand or yard followed by informal dwelling/shack in back yard. The amount of households living in informal dwellings amounts to 52 562 – a proportionally larger figure as the EMM housing backlog figure depicted in Table 4.2.

Figure 4.1: Region F Dwelling Type



Source: Demacon ex. Stats SA, 2015

Residential demand modelling

Housing demand can be divided into two components: **immediate demand** as defined by the **backlog** and **future increases in demand** based on **population growth forecasts**.

HOUSING BACKLOG

Region F has a housing backlog of **33 985 units** of which the majority are located to the south and south-east of the Katorus complex. This also represents about **15%** of the total demand in the CoE.

Table 4.2: Region F housing backlog

	Number	Percentage of Ekurhuleni
Number of settlements	28	
Informal units	23 993	15%
Waiting list units	9 992	22%
Total units	33 985	16%

Source: The EMM Housing Migration Matrix, July 2011

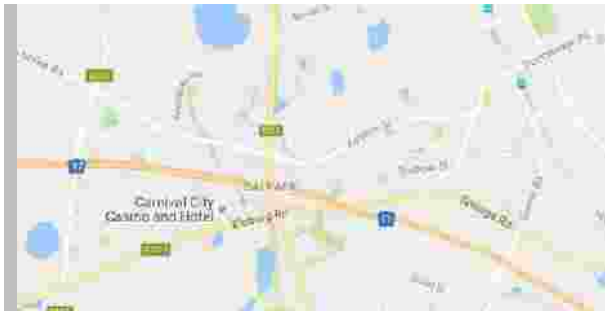
Table 4.2 illustrates an immediate housing backlog demand for approximately 33 985 units. In addition to these units, immigration and natural population growth will continue to fuel housing demand into the future.

4.3 LOCAL RESIDENTIAL MARKET ACTIVITY

The following section provides the property activity in the surrounding market, summarised in terms of bedroom units, quantity, average prices and classification.

4.3.1 Residential supply

New and proposed residential developments in the Leeuwpoot area are indicated below.



<http://www.property24.com/for-sale/dalpark/brakpan/gauteng/2226/103802523>

1. Dalpark mixed-use development

Location: Dalpark
Size: 490ha / 4 111 residential units, including schools, hospitals, shopping centres, libraries, etc.



<http://www.property24.com/new-developments/dawn-park/boksburg/gauteng/dawn-park-ext-51/1926/1183>

2. Dawn Park X51

Location: Dawn Park, East Rand
Unit type: Free-standing houses (5 different designs)
Number of units: 57 units
Pricing: from R615 955
Unit size: 41m² - 78m²
Erf size: 250m² - 675²
Number of bedrooms: 2 – 3 bedrooms



<http://www.property24.com/new-developments/dawn-park/boksburg/gauteng/chelsea/1926/778>

3. Chelsea

Location: Dawn Park, Boksburg
Number of units: 50 units
Unit type: townhouses
Number of bedrooms: 2 – 3 bedrooms
Unit size: 50m² - 60m²
Unit price: R445 000 – R595 000



<http://www.property24.com/new-developments/dawn-park/boksburg/gauteng/lemonwood/1926/1241>

4. Lemonwood

Location: Dawn Park X38, Boksburg
Unit type: sectional-title semi houses
Number of units: 69 units
Number of bedrooms: 2 – 3 bedrooms;
loft apartments
Unit price: R396 000 – R629 000
Unit size: 42m² - 70m²



<http://www.property24.com/for-sale/dawn-park/boksburg/gauteng/1926/102947518>

5. Dawn Park X43

Location: Dawn Park, Boksburg
Unit type: free-standing houses
Unit price: R685 000 – R1 450 000
Number of bedrooms: 4 bedrooms



<http://www.property24.com/new-developments/comet/boksburg/gauteng/golden-oaks/1925/723>

6. Golden Oaks

Location: Comet, Boksburg
Number of units: 50 units
Unit type: sectional title apartments
Unit price: R499 000 – R510 000
Number of bedrooms: 2 bedrooms
Unit size: 62m²



<http://www.property24.com/new-developments/boksburg/boksburg/gauteng/witfield-ridge/1905/1052>

7. Witfield Ridge 1

Location: Witfield, Boksburg
Unit type: townhouses in a security estate
Number of units: 114 units
Number of bedrooms: 2 – 3 bedrooms
Unit price: R580 000 – R675 000
Unit size: 62m² - 70m²



<http://www.property24.com/new-developments/boksburg/boksburg/gauteng/witfield-ridge/1905/1171>

8. Witfield Ridge 2

Location: Witfield, Boksburg
Unit type: houses in a security estate
Number of units: 94 units
Number of bedrooms: 3 bedrooms
Unit price: R650 000 – R705 000
Unit size: 62m² - 70m²



<http://www.property24.com/new-developments/ravenswood/boksburg/gauteng/villa-chante/1964/1153>

9. Villa Chanté

Location: Ravenswood
Unit type: houses in a security estate
Number of units: 27 units
Number of bedrooms: 2 – 3 bedrooms
Unit price: R963 900 – R1 182 600
Unit size: 91m² - 109m²



<http://www.property24.com/new-developments/boksburg/boksburg/gauteng/caymin-crescent/1905/1152>

10. Caymin Crescent

Location: Jansenpark, Boksburg
Unit type: cluster houses
Number of units: 53 units
Number of bedrooms: 3 bedrooms
Unit price: R1 568 854 – R1 892 278
Unit size: 153m² - 175m²
Erf size: 359m² - 563m²



<http://www.property24.com/new-developments/boksburg/boksburg/gauteng/royal-reef-west/1905/843>

11. Royal Reef West

Location: Rosedene, Boksburg
Unit type: walk-up units
Number of units: 256 units
Number of bedrooms: 3 bedrooms
Unit price: R545 400– R1 133 600
Unit size: 54m² - 109m²



<http://www.property24.com/new-developments/east-rand/boksburg/gauteng/windmill-park/1931/345>

12. Windmill Park

Location: Rondebult, Windmill Park
Unit type: entry-level free-standing houses
Number of units: 621 units
Number of bedrooms: 2 – 3 bedrooms
Unit size: 40m² – 70m²
Unit price: R439 000 – R605 026



<http://www.privateproperty.co.za/developments/Eveleigh/eveleigh-heights/X5077.htm>

13. Eveleigh Heights

Location: Eveleigh, Boksburg
Unit type: apartments
Number of units: 240 units
Unit prices: R899 000 – R1 199 000
Unit size: 79m² – 101m²



<http://www.privateproperty.co.za/developments/Lakefield/racecourse-view/X4600.htm>

14. Racecourse View

Location: Lakefield, Benoni
Unit type: townhouses
Unit price: R490 000
Number of bedrooms: 2 bedrooms
Unit size: 47m²



<http://www.privateproperty.co.za/developments/Cason/elgin-place/X4922.htm>

15. Elgin Place

Location: Cason, Benoni
Development type: duplex units
Number of units: 16 units
Number of bedrooms: 1 – 2 bedrooms
Unit price: R595 000



<http://www.privateproperty.co.za/developments/Comet/kings-gate-security-complex/X4915.htm>

16. King's Gate Security Complex

Location: Comet
Development type: security estate
Unit types: 19 upmarket townhouses; 15 simplexes; 44 full title stands
Number of units: 78 units
Unit price: R1 020 000 – R1 115 000
Number of bedrooms: 2 bedrooms



<http://www.salempark.co.za/>

17. Salem Park

Location: Sunward Park
Development type: retirement village
Number of units: 53 units
Unit price: from R1 287 000
Unit size: 85m² – 93m²
Number of bedrooms: 2 bedrooms

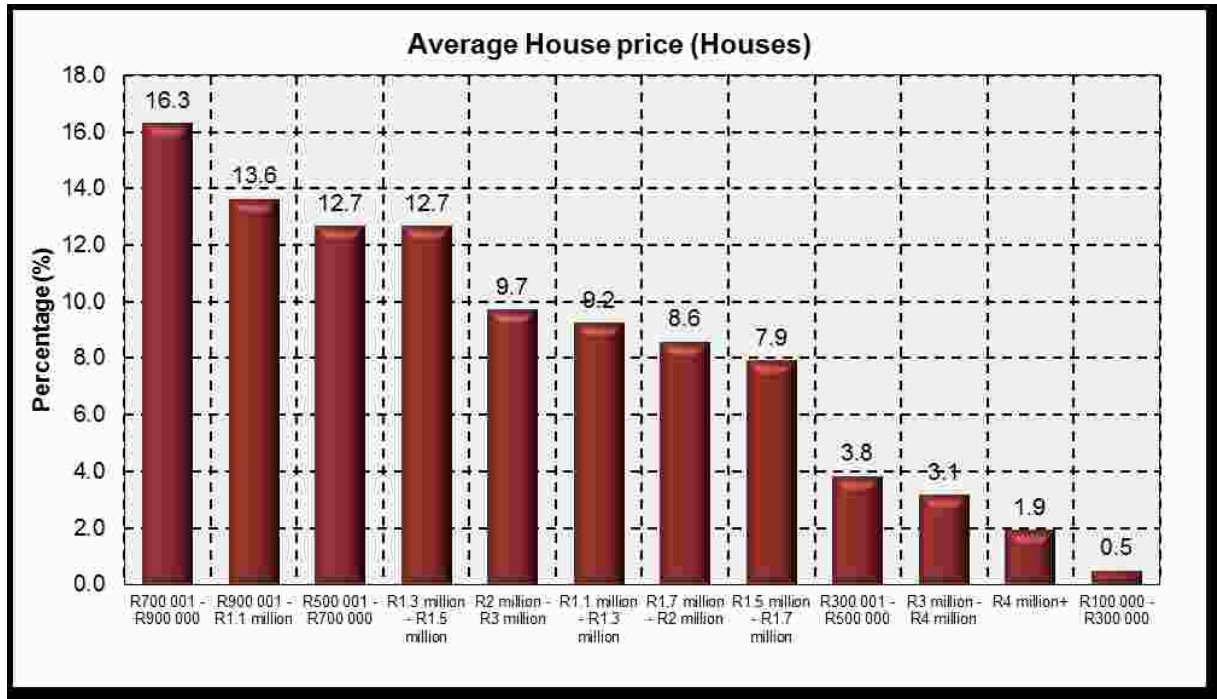
Map 4.1: Location of new developments in terms of the Leeuwpoot development



4.3.2 House price investigation

An investigation into average property prices for houses and townhouses/apartments were also conducted. As seen from the following figure, the average house price for **houses** in the market are in the region of **R700 001 – R900 000** (16.3%), 13.6% of houses in the region of **R900 001 – R1.1million**, 12.7% in the region of **R500 001 – R700 000**, and 12.7% in the region of **R1.3million – R1.5 million**.

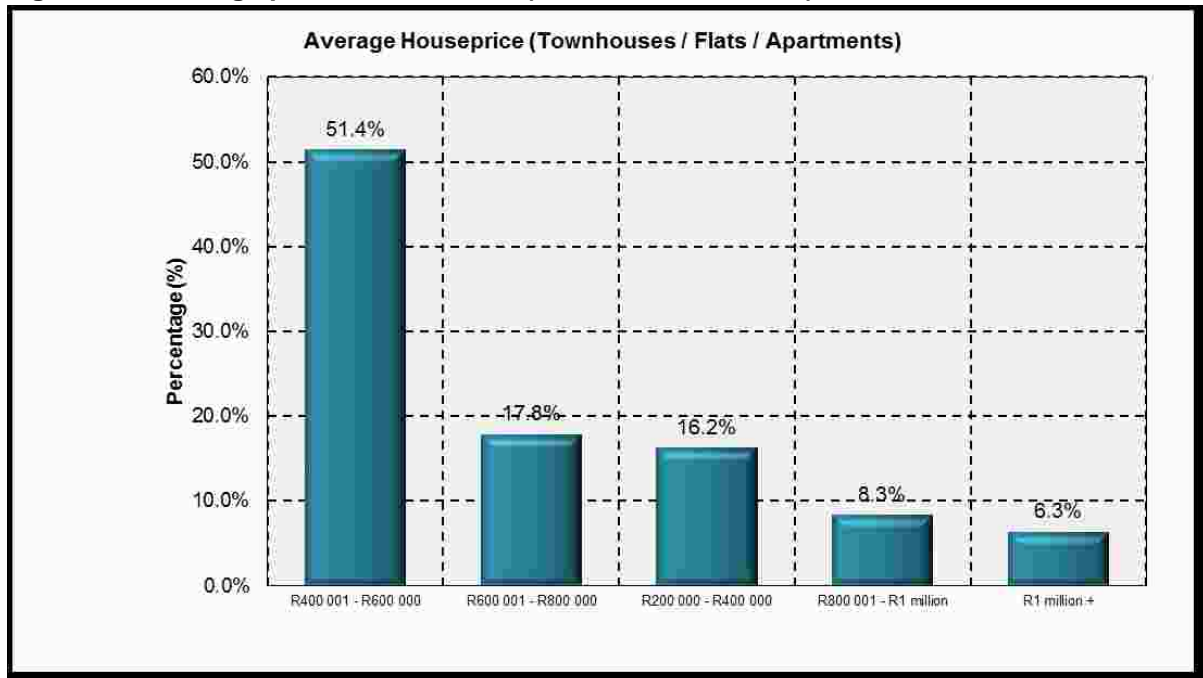
Figure 4.1: Average house price concentration



Source: Demacon composite, 2016

The average house price for **flats / townhouses** are in the region of **R400 001 to R600 000** (51.4%), 17.8% in the region of **R600 001 – R800 000** price range, and 16.2% within **R200 000 – R400 000**.

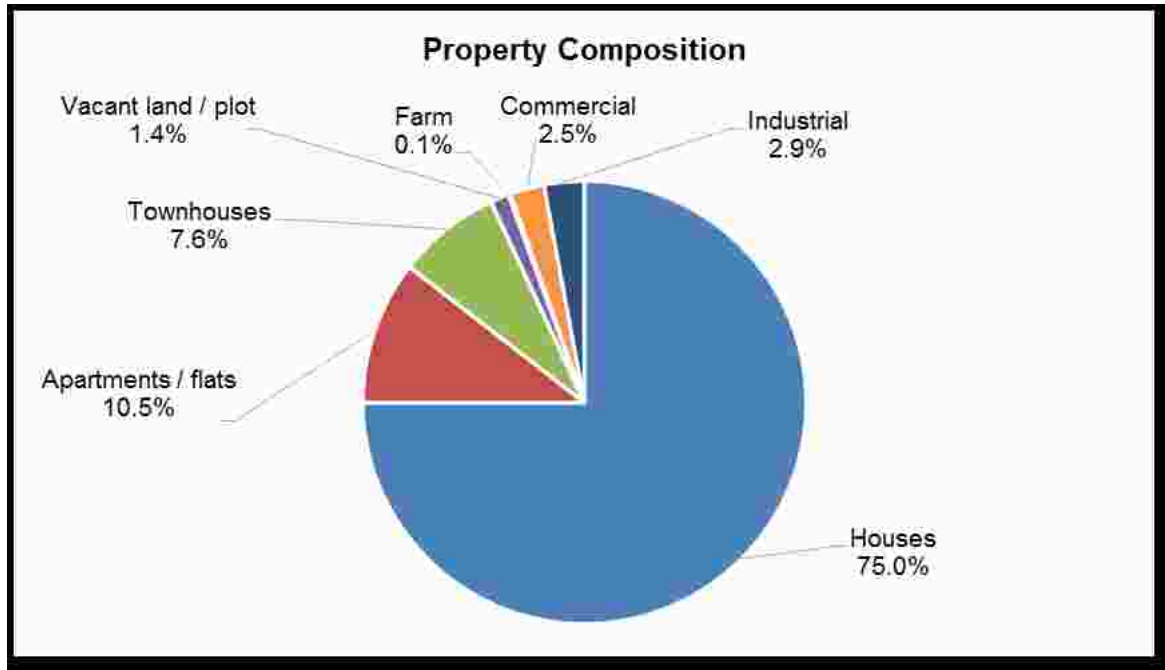
Figure 4.2: Average price concentration (flats and townhouses)



Source: Demacon composite, 2016

In terms of properties for sale in the trade area, the composition from the property survey indicates that the majority of properties for sale are houses (75.0%), apartments/flats (10.5%), and townhouses (7.6%).

Figure 4.3: Property for sale composition



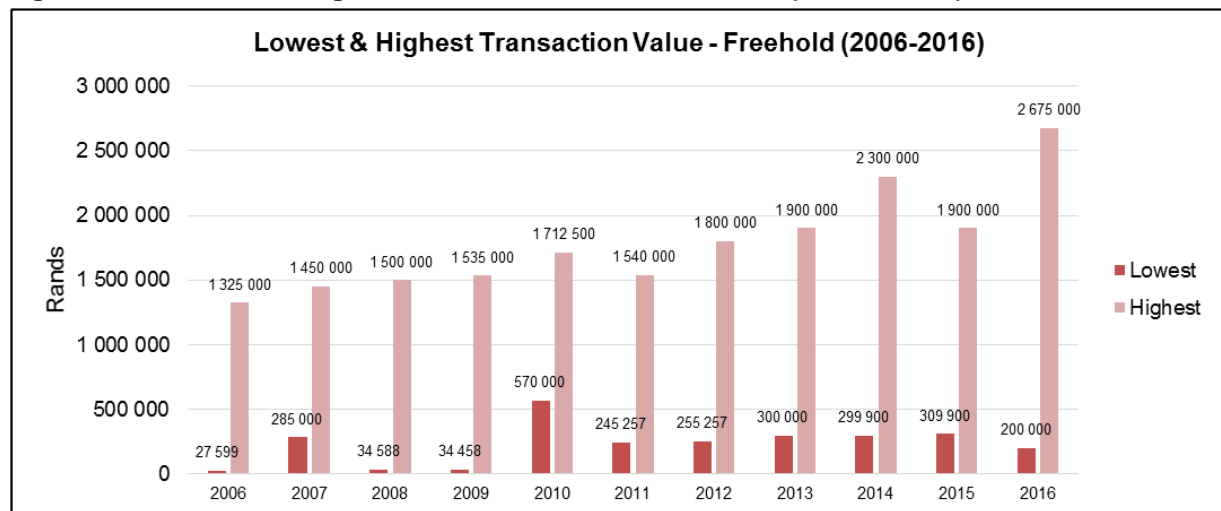
Source: Demacon compilation, 2016

Real market values were used to investigate the transaction values and frequencies of the closest suburbs to the Leeuwpoot development, namely:

- ✓ Cinderella
- ✓ Farrar Park
- ✓ Libradene
- ✓ Reiger Park
- ✓ Sunward Park and
- ✓ Windmill Park

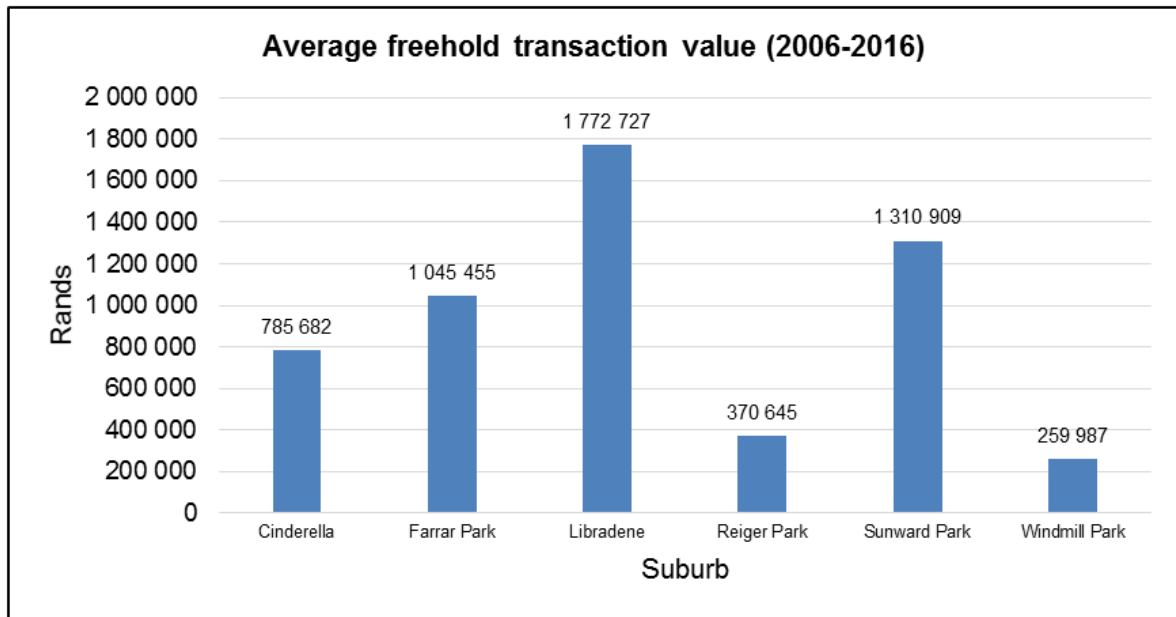
The following figures indicate the transaction values and frequencies of these suburbs:

Figure 4.4: Lowest and Highest Transaction Value – Freehold (2006 to 2016)



Source: Demacon ex. Deeds Data, 2016

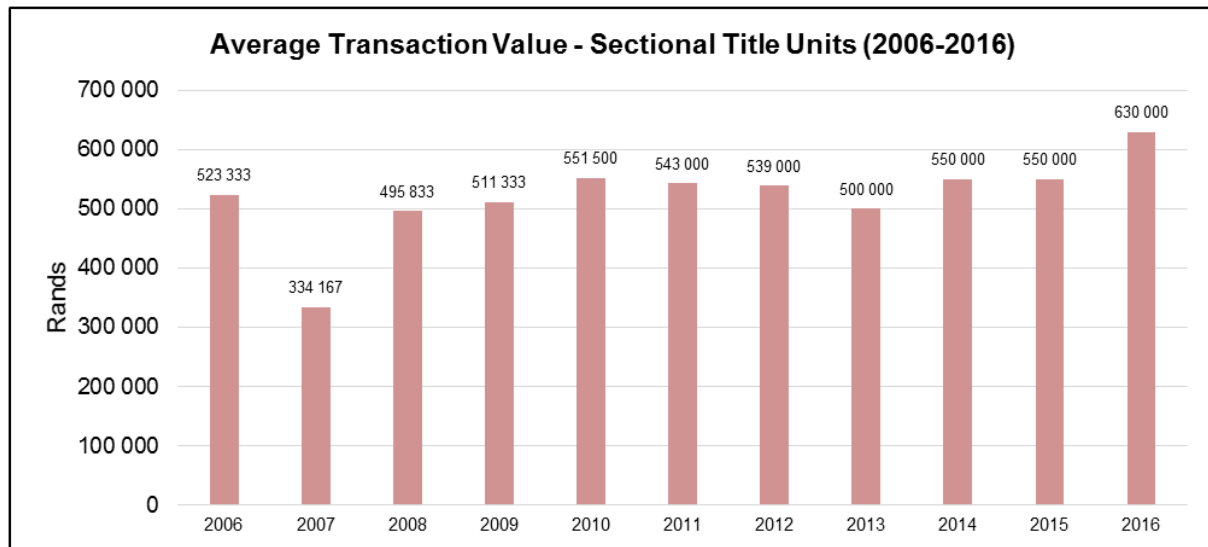
Figure 4.5: Average Transaction Value per Suburb – Freehold (2006 versus 2016)



Source: Demacon ex. Deeds Data, 2016

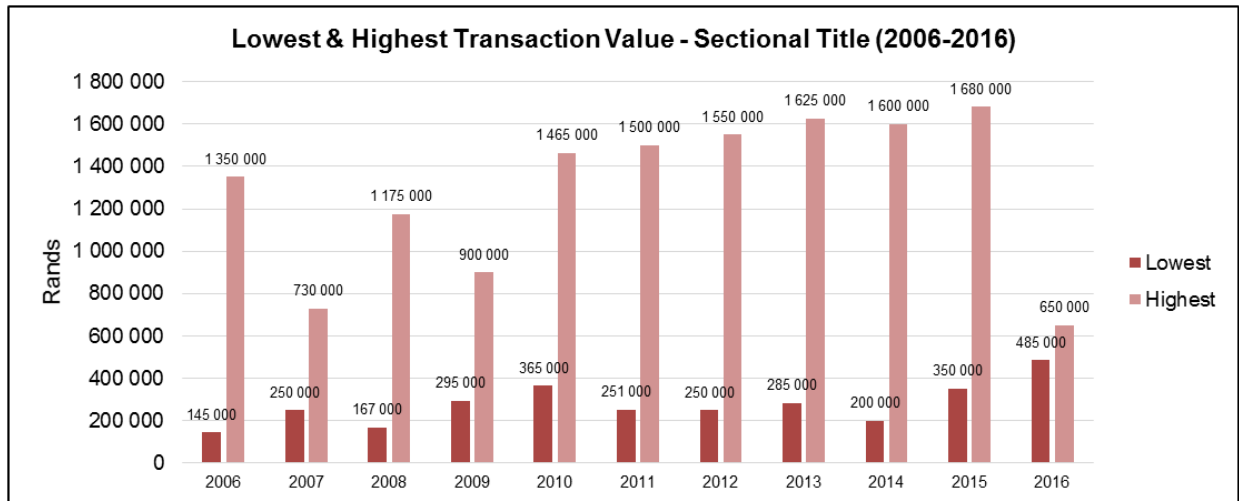
- ✓ Evidently, the highest priced suburbs are Libradene and Sunward Park.
- ✓ The lowest priced suburbs are Windmill Park and Reiger Park.

Figure 4.6: Average Transaction Value – Sectional Title (2006 versus 2016)



Source: Demacon ex. Deeds Data, 2016

Figure 4.7: Lowest and Highest Transaction Value per Suburb – Sectional Title (2006 to 2016)



Source: Demacon ex. Deeds Data, 2016

4.3.3 Gap analysis

The residential market analysis indicates the existence of bonded/FLISP, subsidy and social housing development opportunities.

□ GAP ANALYSIS

Development Type	Effective Market Gap	Development Prospects
Bonded/FLISP housing	Yes	High
Subsidy housing	Yes	High
Social housing	Yes	High

4.4 DEMAND POTENTIAL CALCULATIONS

The demand potential calculations for bonded/FLISP, subsidy, and social housing in the following sections.

4.4.1 Projected housing demand: bonded/FLISP & subsidised housing

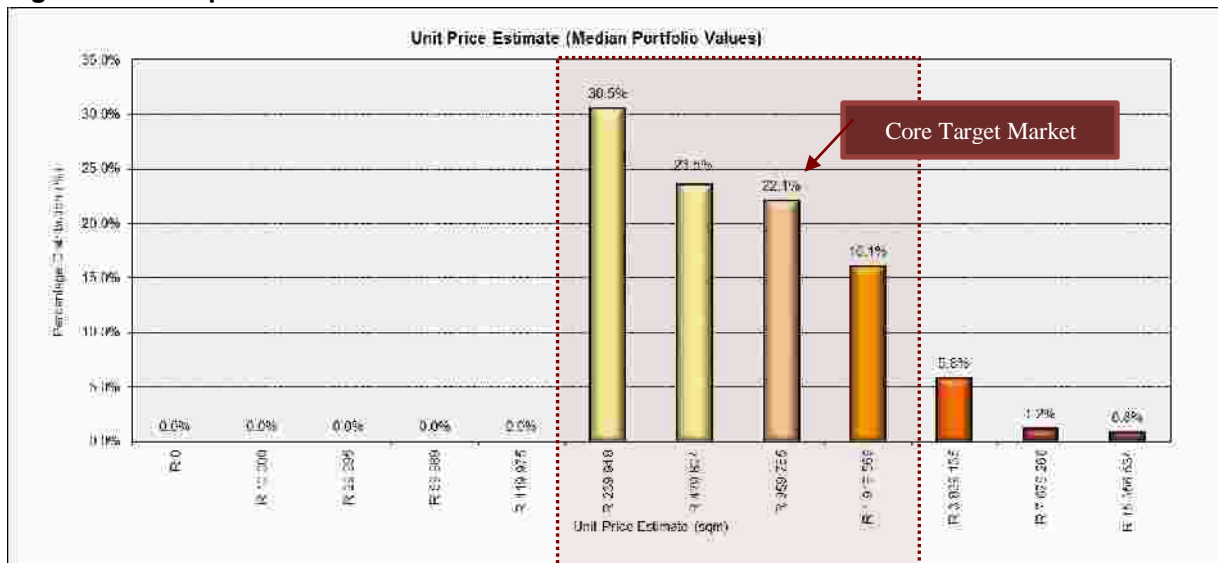
The following table summarises the residential market, estimating the development potential of a residential development in the market. In order to reach this objective, the supply and demand for residential facilities within the market area are identified and assessed in light of current trends. Table 4.1 provides a demand and take-up assessment for the market area.

Table 4.1: Summary of the residential composition (target market)

Income (Midpoint)	House Price (Midpoint)	Assumed Capacity (3 103)	Distribution (%)	Classification
R 62 061,31	R 239 948	948	27.5%	FLISP / GAP
R 124 122,09	R 479 894	729	31.0%	FLISP / GAP
R 248 243,64	R 959 785	686	25.0%	Middle to higher income
R 496 486,73	R 1 919 569	499	19.0%	Middle to higher income
R 992 972,93	R 3 839 135	180	13.5%	Higher income
R1 985 945,32	R 7 678 268	36	6.0%	Higher income
R3 971 890,10	R 15 356 534	25	3.0%	Higher income

➤ Unit Price Estimate (Median Portfolio Values)

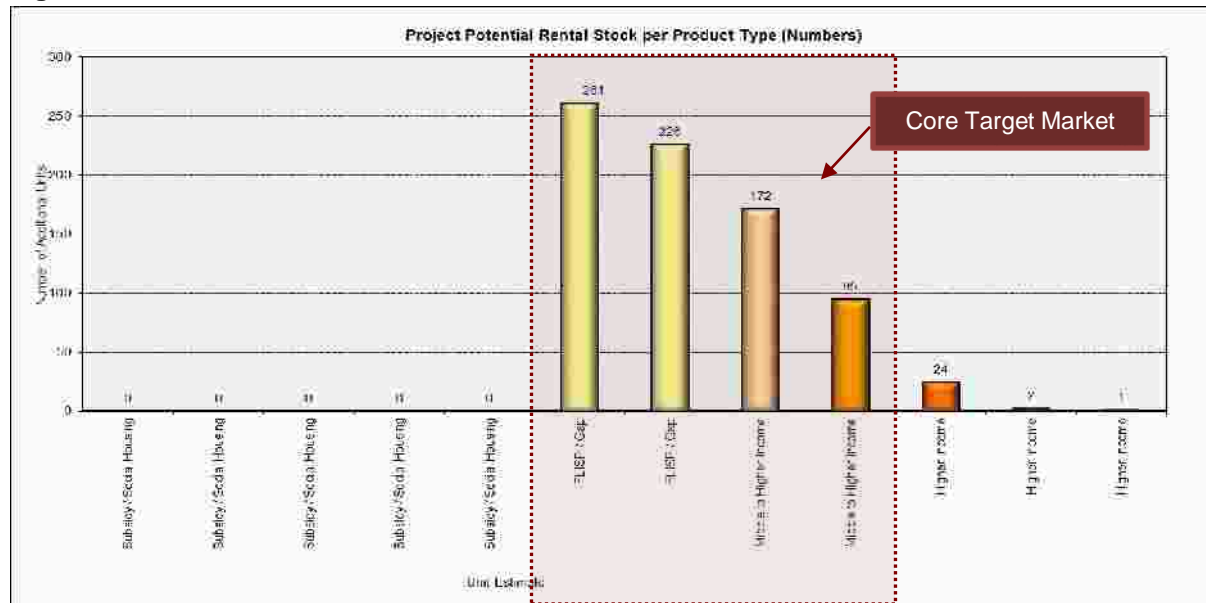
Figure 4.8: Unit price estimation



Source: Demacon, Modelling 2016

➤ Potential Rental Stock per Product Type (numbers)

Figure 4.9: Rental Stock



Source: Demacon, Modelling 2016

Table 4.2: Summary of Bonded/ FLISP & Subsidy Housing Market Prospects

TOTAL MARKET		
A	Additional HH: base yr + 5yrs	9 706
B	Annualised Market growth (full housing spectrum)	1 941
C	Bonded & Credit linked	47.7%
D	Bonded & Credit Linked take-up per annum	926
E	Annual secondary market contribution (units / annum)	Min 622
F		Max 1 243
G	Total annual Bonded & Credit Linked demand	Min 1 547
H		Max 2 169
PROJECT SPECIFIC		
I	Nodal Bonded & Credit Linked Units	3 103
J	Forecast market share of total market sales	Min 15%
K		Max 20%
L	Project forecast total annual take-up rate (units / annum)	Min 232
M		Max 434
N	Years to 80% take-up (bonded & credit linked units)	Min 7.2
O		Max 13.4
		Avg 10.3
	First Phase	1 000
	FLISP & Bonded	3 103 67%
	Subsidy Housing	1 552 33%
	Precinct composition (10 year planning horizon)	4 655 100%

Source: Demacon, Modelling 2016

Explanatory Notes:

A = increase in demand for new rental units, 2016 – 2021

B = Annualised market growth, i.e. of A/5

D = B x C

E & F = Annual secondary market contribution (i.e. the contribution made by re-sales in the target affordability income brackets)

G & H = Annual new entry-level to executive flat/ apartment demand; D + E and D + F

I = Project entry-level to executive flat/ apartment units

J & K = assumed market share of market area

L = G x J

M = H x K

N = I / L

O = I / M

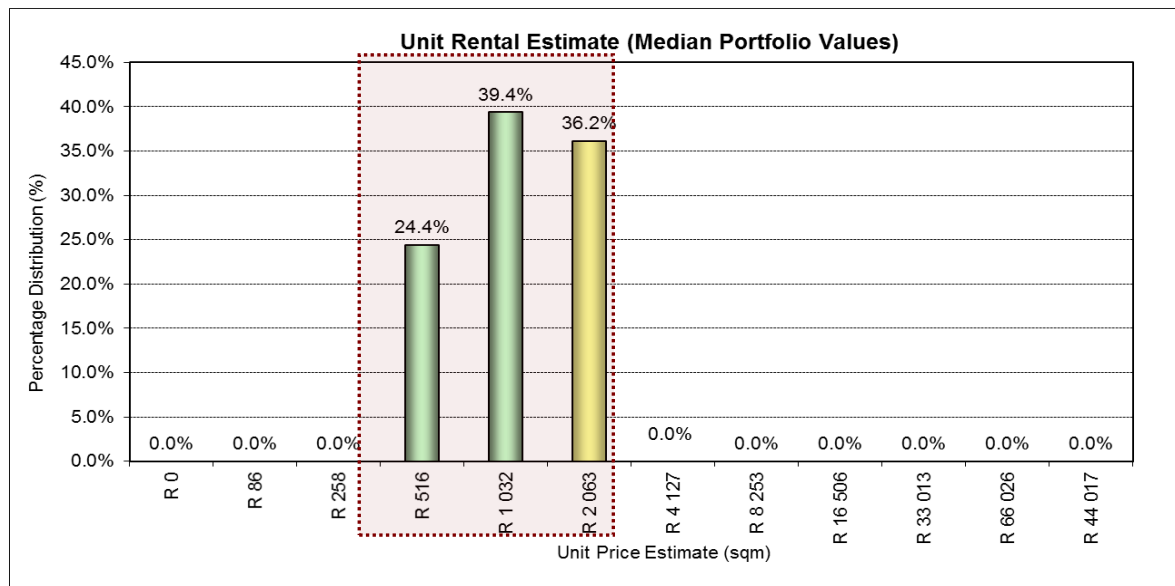
Findings:

- ✓ The modelling portrays demand and take-up based on market growth trends.
- ✓ The table shows two sections, 1) total market and 2) project specific. Between 2016 and 2026 an estimated **9 706** new households will seek accommodation in the target geographic market area, resulting in an annual growth in demand of approximately **1 941** units per annum (across the housing spectrum, from entry level economic freestanding houses, sectional title town houses to full title cluster units and freestanding full title homes).
- ✓ Under present market conditions, the credit linked and bonded unit segment amounts to approximately 47.7% of the market and the project will yield a potential take-up rate of up to **926** units per annum over the short to medium term.
- ✓ The nodal prospects include **bonded & FLISP units (3 103 units)**, as well as **1 552 subsidy housing units**.
- ✓ The **first phase** could include 1 000 units.
- ✓ Given the nodal configuration, a combination of lower density (25 u / ha) freestanding and medium density walk-ups (3-4 storeys) at a density of 80-100 u/ha could be considered.
- ✓ In the interest of financial & economic sustainability, the optimum number of subsidy units would be 1552 units.

4.4.2 Projected housing demand: social housing

➤ **Unit Price Estimate (Median Portfolio Values)**

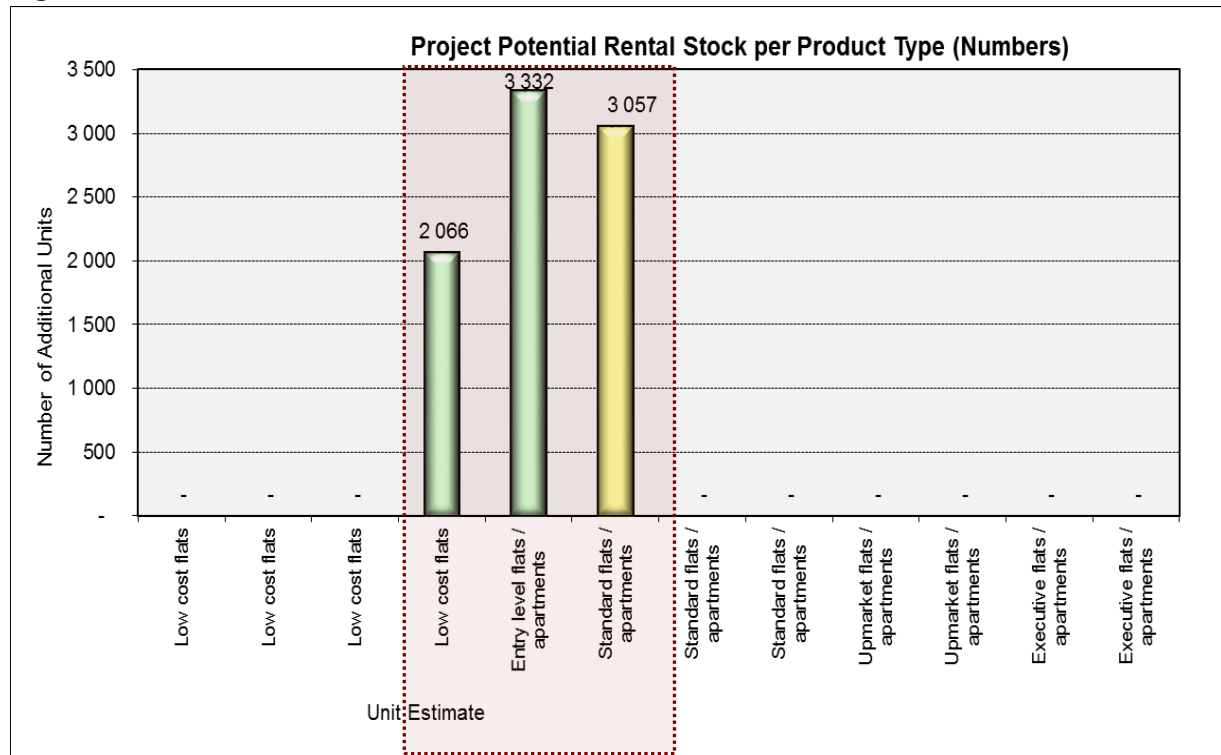
Figure 4.10: Unit price estimation



Source: Demacon, Modelling 2016

➤ **Potential Rental Stock per Product Type (numbers)**

Figure 4.11: Rental Stock



Source: Demacon, Modelling 2016

Project Size and Forecast Take-Up of Social Housing

The following table indicates the current market performance and the market share that the precinct could attract.

Table 4.3: Summary of Social Housing Market Prospects

TOTAL MARKET			
A	Additional HH: base yr + 5yrs		9 706
B	Annualised Market growth (full housing spectrum)		1 941
C	Social housing Segment		40.3%
D	Entry-level to <u>social housing unit</u> take-up per annum		782
E	Annual secondary market contribution (units / annum)	Min	525
F		Max	1 050
G	Total entry level to social housing market take-up	Min	1 307
H		Max	1 832
PROJECT SPECIFIC			
I	Project entry-level to social housing units		8 454
J	Forecast market share of total market sales	Min	20%
K		Max	25%
L	Project forecast total annual take-up rate (units / annum)	Min	261
M		Max	458
N	Years to 80% take-up (social housing units)	Min	18.5
O		Max	32.3
		Avg	9 706
	Ideal first phase		750

Source: Demacon, Modelling 2016

Explanatory Notes:

A = increase in demand for new rental units, 2016 – 2021

B = Annualised market growth, i.e. of A/5

D = B x C

E & F = Annual secondary market contribution (i.e. the contribution made by re-sales in the target affordability income brackets)

G & H = Annual new entry-level to executive flat/ apartment demand; D + E and D + F

I = Project entry-level to executive flat/ apartment units

J & K = assumed market share of market area

L = G x J

M = H x K

N = I / L

O = I / M

Findings:

- ✓ Under present market conditions, the social housing component amounts to approximately 40.3% of the market and the project will yield a potential take-up rate of **1 307** to **1 832** units over a 5 year period.
- ✓ The development projects prospects include **social housing units (8 454 units)**, of which **750 social housing units** could be developed for the **first phase**.
- ✓ Given the development configuration, a medium to higher density configuration would be advisable – 100 to 120 units per hectare, which would translate into a 4 storey walk-ups. Project financial viability and ultimate building density configuration will hinge on construction costs implications in relation to subsidy considerations.
- ✓ Walk-ups of 3 – 4 storey height could be considered.

4.5 SUMMARY

In terms of its location, the area could potentially cater to the needs of the low to high-medium income residential market, especially in terms of medium to higher density units.

- ✓ Given the nodal configuration, a combination of lower density (25 u / ha) freestanding and medium density walk-ups (3-4 storeys) at a density of 80-100 u/ha could be considered.
- ✓ In the interest of financial & economic sustainability, the optimum number of subsidy units would be 1552 units.

Table 4.4: Proposed bonded/FLISP unit distribution and pricing

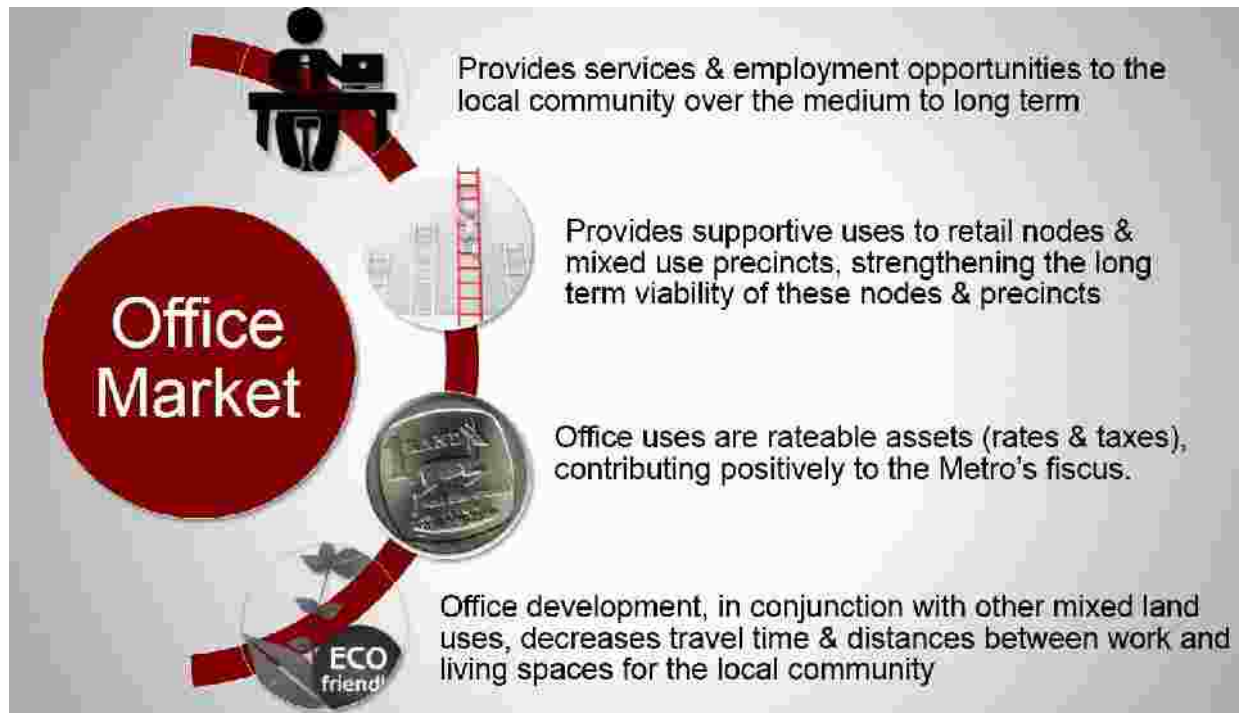
Unit type	Unit size	Project distribution	Number of units	Price range
1 bedroom (FLISP / Gap)	48m ² - 65m ²	30.5%	261	R240 000 – R350 000
2 bedroom (FLISP / Gap)	65m ² - 110m ²	23.5%	226	R350 000 – R600 000
3 bedroom	110m ² - 200m ²	22.1%	172	R600 000 – R1.5 million
4 bedroom	200m ² +	16.1%	95	R1.5million – R3million+

In terms of Table 4.4, the 1 and 2 bedroom bonded/FLISP units could largely take the form of walk-up units. Of the 3 bedroom units, a portion of the 22.1% could take the form of walk-ups, while the remainder of the 3 bedroom units, as well as the 4 bedroom units, could be free-standing houses on a stand.

Table 4.5: Proposed social housing unit distribution and pricing

Unit type	Unit size	Project distribution	Number of units	Monthly rental range
1 bedroom	48m ² - 65m ²	24.4%	2 066	R500 – R1 000
2 bedroom	65m ² - 110m ²	39.4%	3 332	R1 000 – R2 000
3 bedroom	110m ² - 200m ²	36.2%	3 057	R2 000 – R2 500

CHAPTER 5: OFFICE MARKET ANALYSIS



5.1 BACKGROUND

On a **national** level, research on the contribution of the business sector to the South African economy indicate steady growth, from 16% in 1994 to 22% in 2015, resulting in a doubling of office space in metropolitan areas (SAMCO, 2016).

SAMCO (2016) estimates office development activity at its highest point, even exceeding the highs of 1998 and 2007. By March 2016, developments under construction totalled 854 000m², after trending upward slowly since 2010. Most of the office growth can be attributed to new company head offices.

In terms of the **East Rand**, demand for quality commercial property in the East Rand has been strong, with property funds investing in the area (Asset Property Group, SAMCO, 2016). The most notable new developments (commercial & industrial) in the East Rand include:

- ✓ Old Mutual: 10 000m² in Jetpark
- ✓ Redefine: 24 000m² in Isando
- ✓ Growthpoint: 7 000 – 10 000m² in Isando
- ✓ JT Ross: 5 000m² in Pomona
- ✓ Private developer: 11 000m² in Pomona
- ✓ Improvon: continues to be confident with speculative developments in Longmeadow (Westlake), developing over 40 000m² in the past 12 months in the East Rand
- ✓ Fortress Property Fund continues to invest in the East Rand – 30 000m² in Linbro Park, 21 000m² in Longmeadow, and massive developments in Isando, Raceway & Pomona.

In general, the activity on the East Rand is considered good and demand strong for both tenants & purchasers.

5.2 OFFICE RENTAL RATES

The pioneer office rentals on a national level are given in Table 5.1.

Table 5.1: Pioneer office rentals nationally

Highest gross nominal market rental rates achieved: Rands/rentable m ² , gross leases (excl VAT) during 2016:1Q			
	Pioneer	Normal grade A	Difference %
Johannesburg dec.	193	124	56%
Pretoria dec.	152	122	25%
Durban dec.	170	117	45%
Cape Town dec.	145	123	18%

Source: SAPOA, 2016:2Q

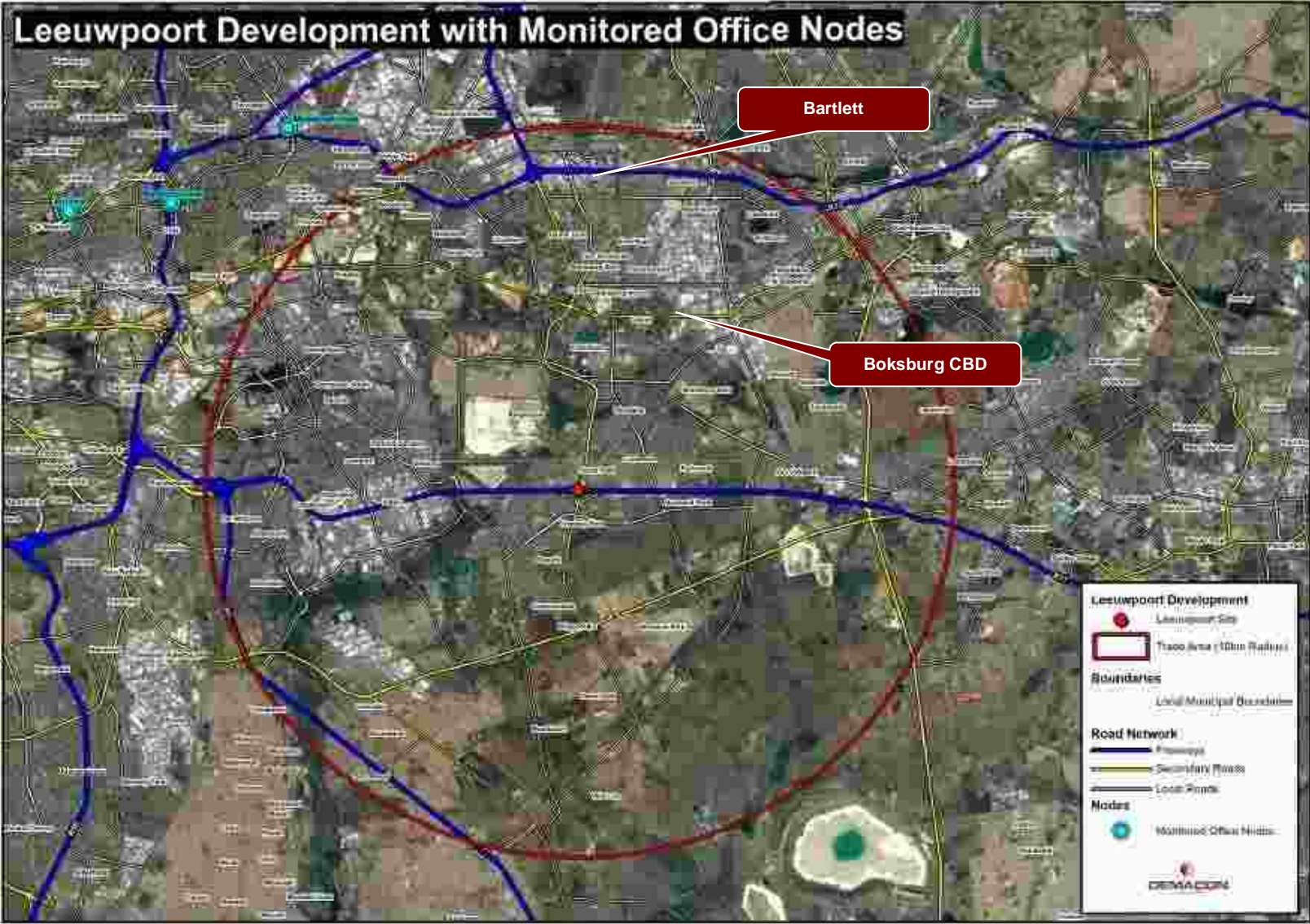
As can be seen from the location of Monitored Office Nodes on Map 5.1, **no monitored office nodes** are located in the Leeuwpoot trade area. The closest monitored office nodes are **Meadowbrook Node, Bedfordview** and **Bruma**. These will be used as points of reference for the Leeuwpoot office market (depending on data availability).

Other **notable office nodes** (not monitored) in close proximity to the Leeuwpoot development are:

- ✓ Boksburg CBD and
- ✓ Bartlett

Data on these two non-monitored nodes will also be provided, subject to availability.

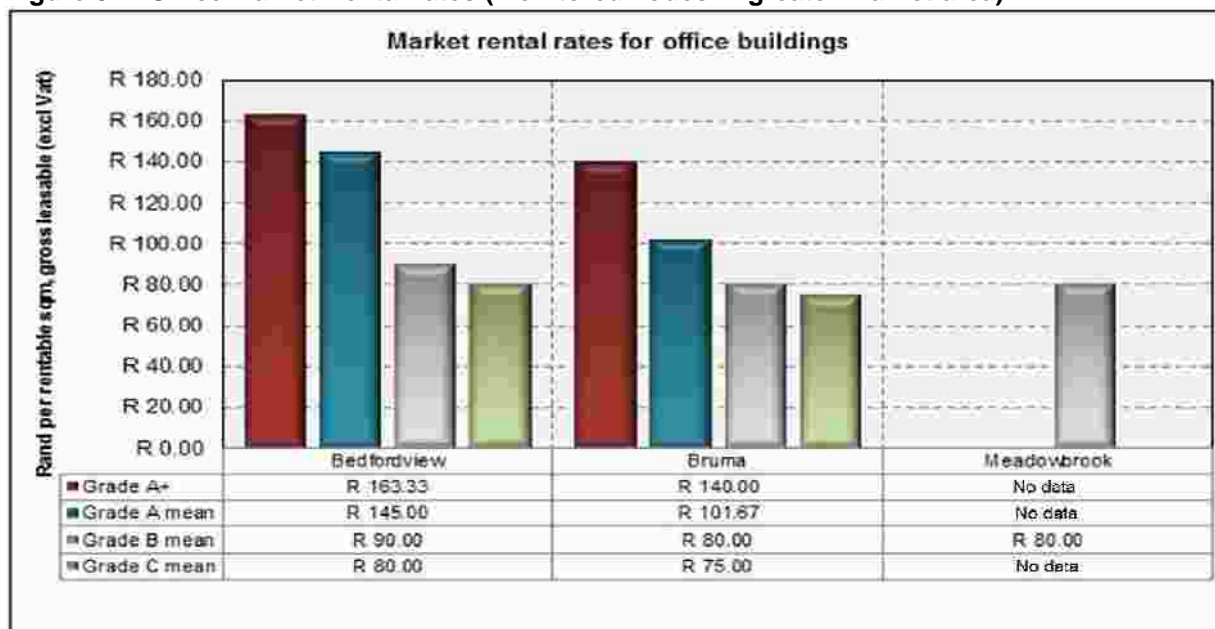
Map 5.1: Leeuwpoot in terms of the closest Monitored and Non-monitored Office Nodes



5.2.1 Monitored office nodes

The office market rental rates for the monitored office nodes closest to the market area are illustrated below:

Figure 5.1: Office Market Rental rates (monitored nodes in greater market area)



Source: Demacon ex. Sapoa, 2016

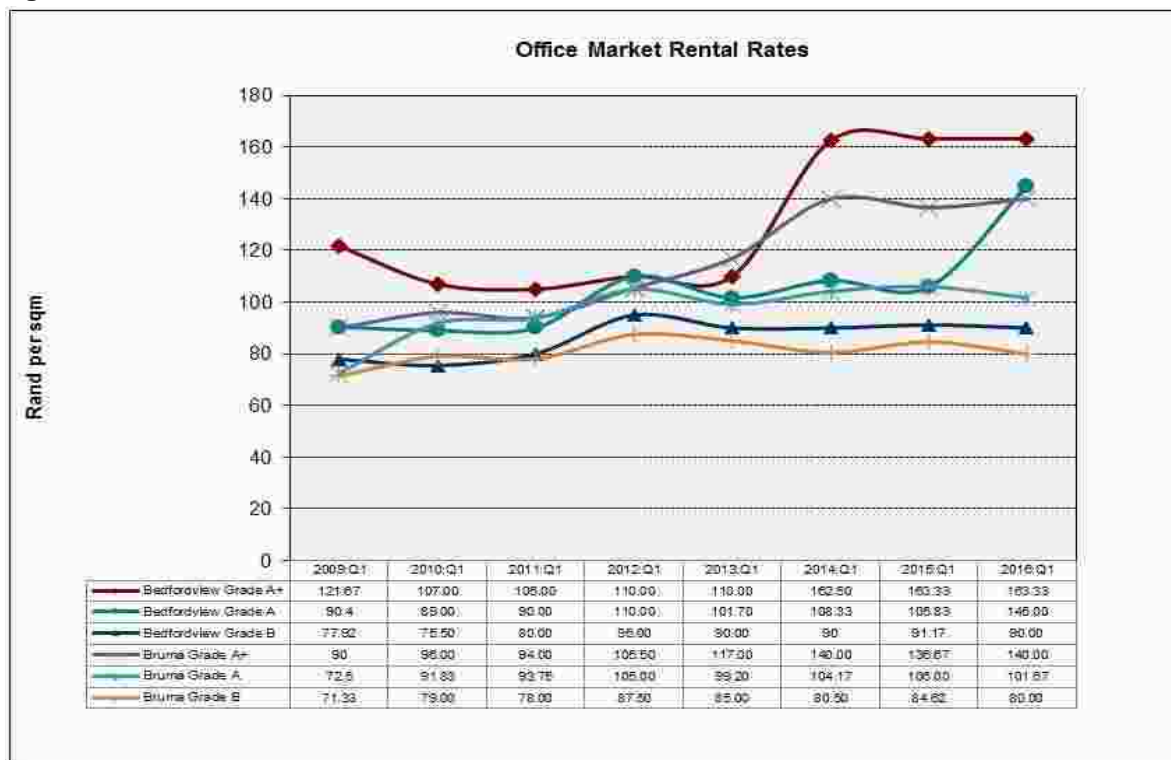
Table 5.2: Market Rental Rates (monitored nodes in greater market area)

	Grade A+	Grade A mean	Grade B	Grade C
Bedfordview	R 163.33	R 145.00	R 90.00	R 80.00
Bruma	R 140.00	R 101.67	R 80.00	R 75.00
Meadowbrook	No data	No data	R 80.00	No data

Source: Demacon ex SAPOA Reports, 2016

The office rentals for the monitored office nodes closest to Leeuwpoot are indicated in the figure on the following page.

Figure 5.2: Office rental rates 2010-2015



*Meadowbrook Monitored Office Node – no data available.

Source: Demacon ex. Sapoa, 2016

The most recent market research data indicate that the Bedfordview monitored office node achieved higher rental rates over the past five year period.

5.2.2 Non-monitored office nodes

The office rental rates for the other office developments in the trade area are summarised in the following table:

Table 5.3: Non-monitored office rates

Location	Minimum size (m ²)	Maximum size (m ²)	Average size (m ²)	Minimum rent (R/m ²)	Maximum rent (R/m ²)	Average rent (R/m ²)
Bardene	80	900	325	11	100	65
Bartlett	261	394	330	50	100	80
Boksburg	12	420	293	45	130	62
Dunmadeley	105	152	125	80	115	92
Farrar Park	68	297	183	64	96	80
Hughes	95	418	257	65	85	75
Jansenpark	152	4 007	991	76	120	97
Libradene	86	136	111	88	93	90

Source: Demacon composite, 2016

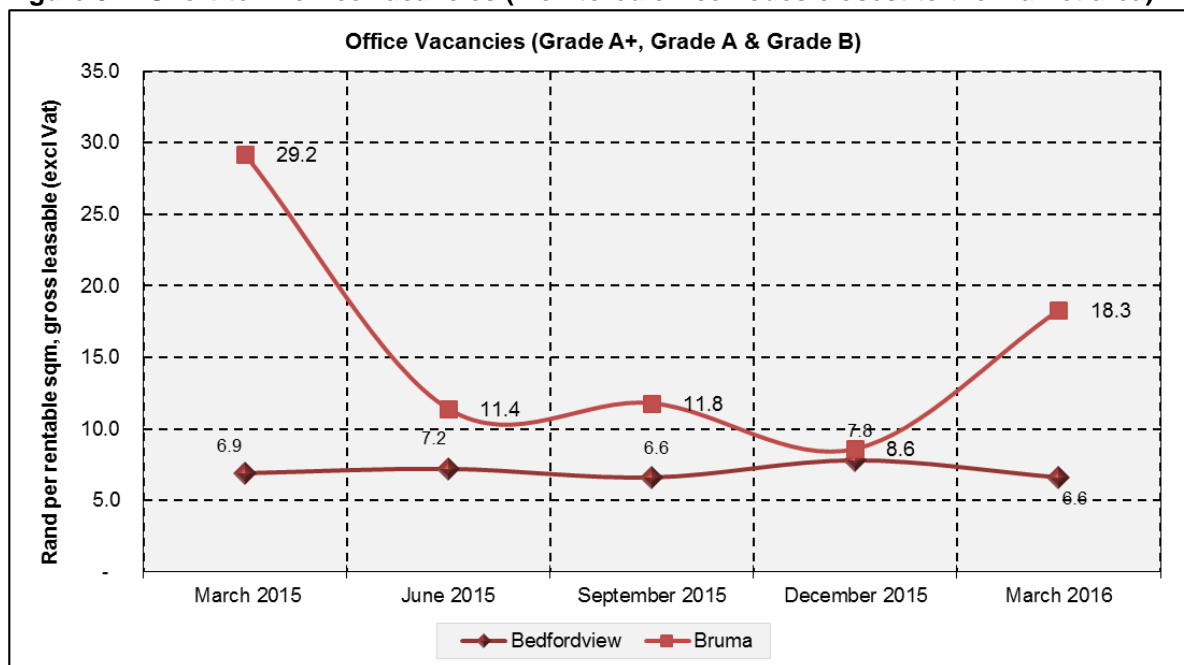
From the above table, it can be seen that:

- ✓ The average office size in **Bartlett** is **325m²**, rent priced on average at **R80/m²**
- ✓ The average office size in **Boksburg** is **293m²**, rent priced on average at **R62/m²**

5.3 OFFICE VACANCY RATES

The office vacancy rates for the monitored office nodes closest to the Leeuwpoot development are indicated below.

Figure 5.4: Short-term office vacancies (monitored office nodes closest to the market area)



*Meadowbrook Monitored Office Node – no data available.

Source: Demacon ex SAPOA Reports 2016

The short term vacancy rate reflected for the Bedfordview monitored office node is relatively low, while that of the Bruma monitored office node fluctuates over the short term, in all probability due to the addition of new office stock in the node that creates a temporary increased vacancy rate (Table 5.3)

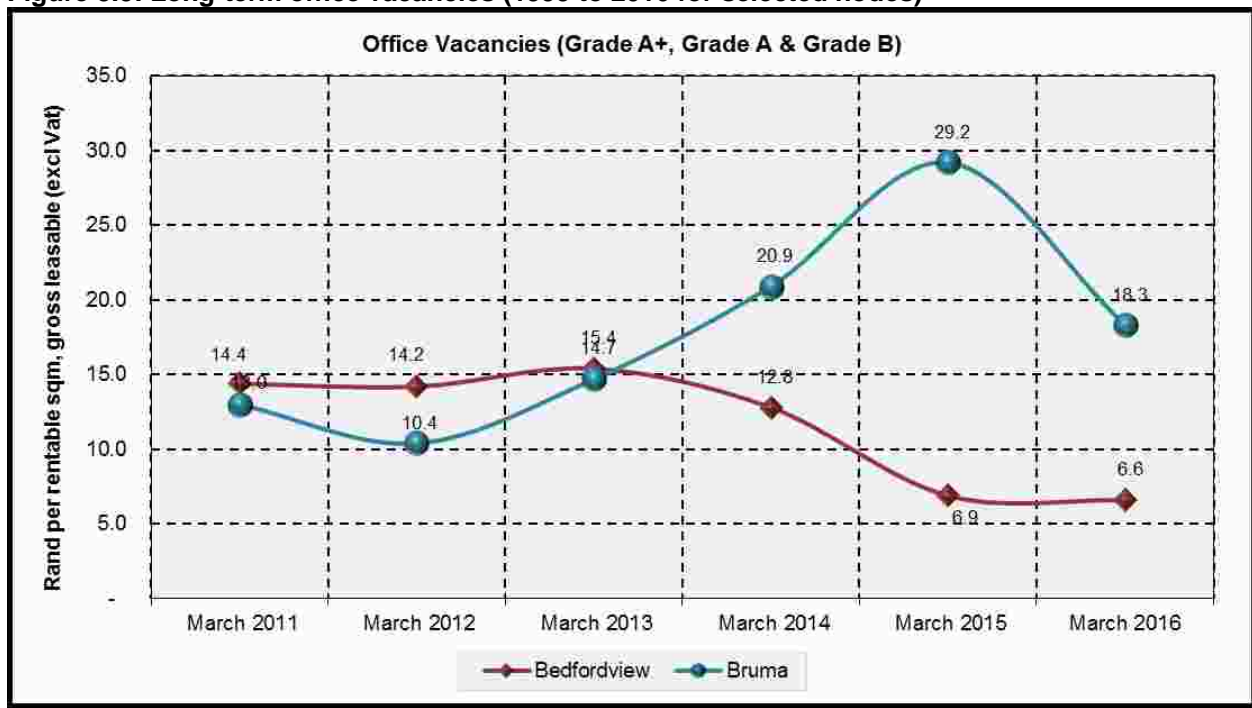
Table 5.3: Office vacancy (monitored office nodes closest to the market area)

	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16
Bedfordview	6.9	7.2	6.6	7.8	6.6
Bruma	29.2	11.4	11.8	8.6	18.3
Meadowbrook	No data	No data	No data	No data	No data

*Meadowbrook Monitored Office Node – no data available.

Source: Demacon ex SAPOA Reports 2016

Figure 5.5: Long-term office vacancies (1999 to 2016 for selected nodes)



*Meadowbrook Monitored Office Node – no data available.

Source: SAPOA 2011-2016

In terms of **long term vacancy rate**, the following patterns can be discerned:

- ✓ The vacancy rate for the Bedfordview monitored office node has decreased in the five year period represented in the graph, indicating a healthy uptake of office stock in the node.
- ✓ The Bruma monitored node shows an increased vacancy rate between March 2013 and March 2015, which could represent vacancy levels based on a mixture of existing office stock upgrade or the addition of new office stock to the node, especially when seen in the light of the rapid decrease in the vacancy rate between March 2015 and March 2016.

5.4 OFFICE MARKET SUPPLY

Office stock for Bedfordview stayed relatively stable between March 2015 and March 2016, while its vacancy rates increased slightly, indicating possibly the need to upgrade some of the older office stock in the node.

For Bruma, the Office stock decreased substantially between March 2015 and March 2016, causing the vacancy rate to decrease due to limited office availability in the node.

In terms of new office developments, the only **new office development** in the greater Leeuwpoot area of note is **Benvista Office Park**:

- **Location:** Edgar Rd, Boksburg
- In close location to East Rand Mall
- **Development type:** A-grade, secure, upmarket, professional office space
- **Market focus:** consulting businesses, medical suites, marketing & advertising agencies, photographic & design studios, health & beauty clinics, architects, legal practices, industry associations, and educational facilities.
- **Lease space:** 110m² or 220m² and parking
- **Rent:** R80/m² to R100/m²

Map 5.2: Location of Benvista Office Park



Source: *Benvista Office Park, 2016*

BENVISTA OFFICE PARK



Location:	Edgar Rd, Boksburg
Development grade:	A-grade
Development type:	Secure, upmarket, professional office space
Market focus:	Consulting businesses, medical suites, marketing & advertising agencies, photographic & design studios, health & beauty clinics, architects, legal practices, industry associations, and educational facilities.
Lease space:	110m ² or 220m ²
Parking:	Yes
Rent:	R80/m ² to R100/m ²

5.5 GAP ANALYSIS

Market research indicates a market gap for low-rise, medium-density offices in the Leeuwpoot area, focusing predominantly on providing services to the local community, to be developed over the medium to longer term.

□ GAP ANALYSIS

Development Type	Effective Market Gap	Development Prospects
Low-rise medium-density offices	Yes	Moderate

5.6 OFFICE MARKET DEMAND

The following table provides a synthesis of space demand modelling results of the finance and insurance and the business services sectors, also the recommended optimum size of the proposed office opportunity.

Table 5.4: Synthesis of Space Demand Modelling Results – m² GLA

Cumulative Additional Space Demand	Up to 2021	2026	2031
Finance & Insurance (<i>sqm GLA</i>)		10 106	14 941
Business services (<i>sqm GLA</i>)		96 134	118 590
TOTAL: Boksburg Region		106 240	133 531
Total: Minimum share	10 185	15 936	20 030
Total: Maximum share	13 580	21 248	26 706
Average*	11 882	18 592	23 368

* Note: the nodal shares and the average figures are cumulative

Table 5.5: 10 year office space demand potential

Variables	Rand per annum / m ²
Capital Investment (2016 constant values)	R 371 841 570
Optimum size (GLA – 2026)	18 592 m²
Employment (on-site)	930
Parking bays	744
Parking infrastructure & landscaping cost (2016 constant values)	R 34 358 161.02
OPME	2022+

- ✓ Market demand for office floor space in Boksburg Region, increases cumulatively from 67 899m² GLA in 2021 to 133 531m² GLA in 2031.
- ✓ The precinct could attract over the short to medium term **18 592 m²**.
- ✓ **Low-rise, medium-density office configurations** can be considered a fit for the development.
- ✓ **Parking** could be configured at 4 parking bays per 100m².
- ✓ Given the profile of the precinct, it can be expected that **office space** will become an increasingly important component of the development, especially in terms of providing office space for **local entrepreneurs**.

5.7 SUMMARY

In terms of the **East Rand**, demand for quality commercial property in the East Rand has been strong, with property funds investing in the area (Asset Property Group, SAMCO, 2016). In general, the activity on the East Rand is considered good and demand strong for both tenants & purchasers.

Market demand estimations indicate the viability of **low-rise, medium-density office configurations** and can be summarised as follows:

- ✓ The precinct could attract over the short to medium term **18 592 m²**.
- ✓ **Low-rise, medium-density office configurations** can be considered a fit for the development.
- ✓ **Parking** could be configured at 4 parking bays per 100m².
- ✓ Given the profile of the precinct, it can be expected that **office space** will become an increasingly important component of the development, especially in terms of providing office space for **local entrepreneurs**.

CHAPTER 6: RETAIL MARKET ANALYSIS



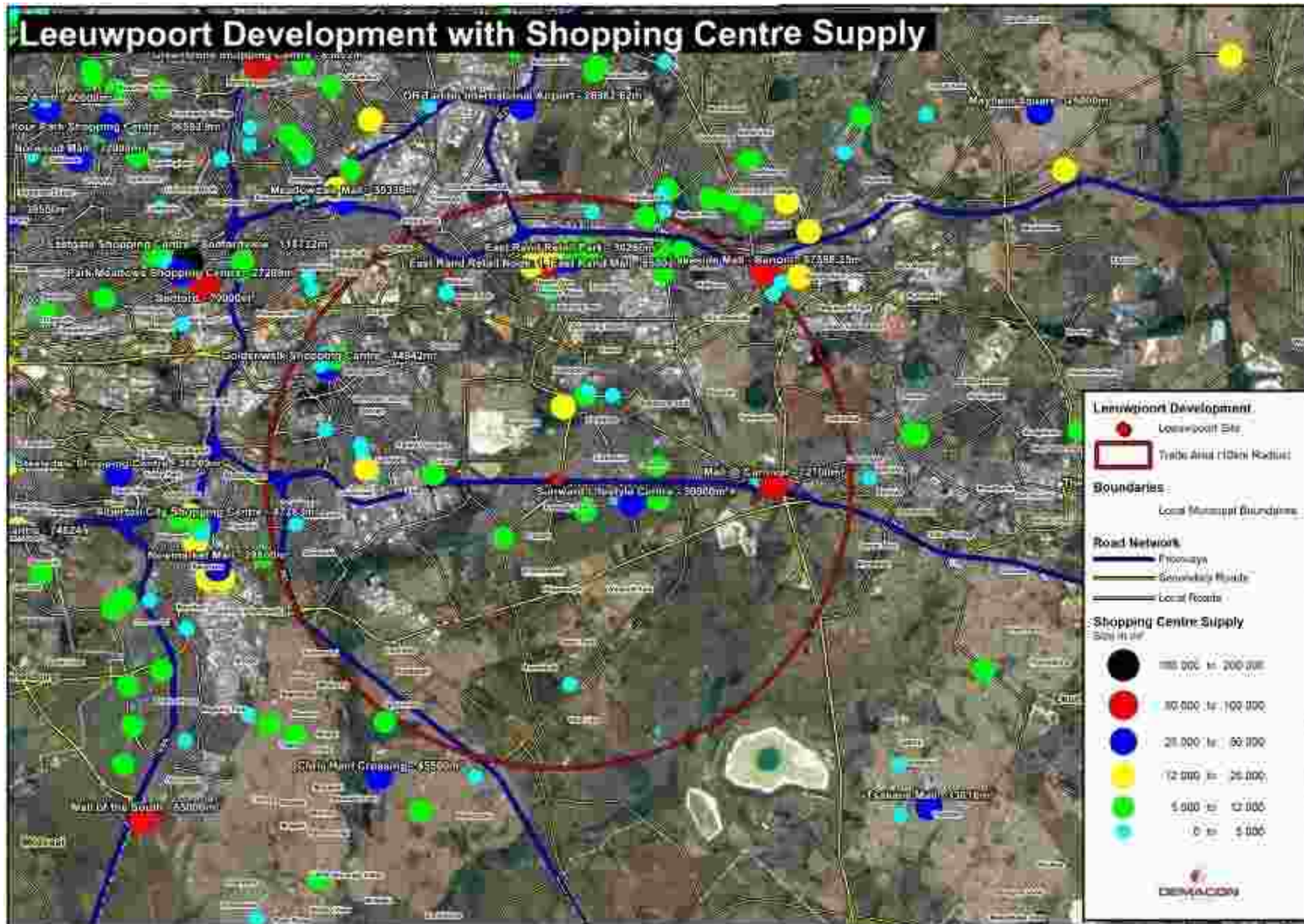
6.1 INTRODUCTION

The development and overall sustainability of a retail facility relies strongly on its location. The following **location requirements** determine the success of a retail facility:

- ✓ **Sufficient buying power** – this refers to the disposable income per household in the catchment area of a retail facility, which is available to be spent at the specific retail facility.
- ✓ **Competition** – this plays an important role in the location of a retail facility. The sustainability and viability of a retail facility is higher with no competition than in an area with competition.
- ✓ **Competitive shopping / clustering** – this refers to the location of similar retail facilities in close proximity of each other. The result is lower prices as well as the improvement of services and products to the benefit of the consumer.
- ✓ **Accessibility** – the accessibility of a retail location to the labour force as well as consumers is an important locational factor in the development of retail facilities.
- ✓ **Land** – land as a locational factor refers to the market value of land or the lease value of structures. Lower values provide better development opportunities.
- ✓ **Role and function in shopping centre hierarchy** – retail facilities in a given geographical area are ranked in a hierarchy that services a given portion of the consumer population, according to each centre's unique size, composition, role and function.

The retail demand estimations were informed by, *inter alia*, discussions with owners of existing retail assets in the area who have expressed a desire to expand such assets on account of current positive trading statistics. Such trading statistics are always a positive consideration which has provided useful to inform future development plans.

Map 6.1: Retail supply within the trade area of the Leeuwpoot development



6.2 RETAIL SUPPLY

The existing retail supply is indicated in the following map and tables:

Table 6.1: Retail supply within the market area

Shopping Centre	Street Address	Classification	Size (GLA m ²)	Year Developed	Last Refurbished	No of shops	Main Anchors
Mall @ Carnival	Cnr Airport & Heidelberg Roads, Dalpark Ext 5, Brakpan	Major Regional Centre	72 700	2005	2011	220	Pick n Pay , Edgars, Woolworths full line, CheckersHyper, Game, Dis-Chem, HiFi Corp, Ster-Kinekor
East Rand Retail Node: 1. East Rand Mall	Bentel Avenue, Boksburg North	Part of Super Regional Node	65 000	1992	2016	175	Edgars, Woolworths, Mr Price, Ster-Kinekor
East Rand Retail Node: 2. East Rand Galleria	Cnr Rietfontein & North Rand Roads, Jansen Park, Boksburg	Part of Super Regional Node	50 604	1967	1998	78	Pick n Pay Hypermarket, Game, Toys R Us, Russells
Goldenwalk Shopping Centre	Victoria Street, Germiston	Minor Regional Centre	44 942	1985	2008	125	Shoprite, Pick n Pay, Woolworths, Jet Mart, Mr Price Weekend, Edgars, Truworths, Jet , Foschini
East Rand Retail Park	North Rand Road between Trichardt Road & 1st Street, Boksburg North	Minor Regional Centre	30 260	2005	2009	24	Mr Price Home, Hi-Fi Corporation, Dis-Chem, Mr Price Sport, DionWired, Homecorp, Mr Price Sports, @Home LivingSpace, House & Home, Incredible Connection
Sunward Lifestyle Centre	Cnr Kingfisher & Trichardt Streets, Sunward Park, Boksburg	Large Community Centre	30 000	2013		27	Checkers (Blue Label), Food Lover's Market, Fast Food outlets
K90 Shopping Centre	Cnr North Rand & Rondebult Roads. Jansen Park, Boksburg	Value Centre	25 000	1997	2010	48	Standard Bank, Volpes, Meat World, Bride & Co, School & Leisure
The Towers	Cnr Bentel & North Rand Roads, Boksburg North	Community Centre	17 100	1979	2012	38	Pick n Pay Family, Furniture City, Liquor City, Wetherleys, Green & Richards, African Bank
CheckersHyper Centre - Boksburg	Cnr Leeuwpoot & Rondebult Roads, Parkdene, Boksburg	Hyper Centre	15 136	1997		26	CheckersHyper
Lambton Centre	Cnr Doak Street, Webber & Beacons Roads, Lambton, Germiston	Neighbourhood Centre	13 630	1982	2007	37	Spar, Woolworths, Builders Express, Ackermans, Standard Bank
East Rand Value Mall	Cnr of Rietfontein & Madeley Roads, Hughes, Boksburg	Value Centre	13 480	1996	2007	16	Sportsman's Warehouse, Baby City, Westpack
Sunward Park Shopping Centre	Cnr of Kingfisher Avenue & Duiker Road, Sunward Park, Boksburg	Neighbourhood Centre	11 763	1984		34	Pick n Pay, Spar, Clicks, Ackermans
Palms Value Centre	Cnr North Rand Road & First Street, Boksburg North	Value Centre	10 547	2002	2011	13	Superspar, Meltz, Cashbuild
El Ridge Corner	Cnr Elizabeth & Ridge Roads, Bartlett, Boksburg	Neighbourhood Centre	8 500	2009		35	Woolworths, Checkers, Clicks, PNA, Liquor City

Shopping Centre	Street Address	Classification	Size (GLA m ²)	Year Developed	Last Refurbished	No of shops	Main Anchors
Parkrand Piazza	Van Wyk Louw Drive, Parkrand, Boksburg	Neighbourhood Centre	8 500	2000		52	Superspar, Woolworths Foods, Mica, Clicks
Station Bazaar Shopping Centre	Railway Street, Georgetown, Germiston	Neighbourhood Centre	8 300	1991	2014	64	Pep, Tab
Lakefield Square	Lakefield Square, Lakefield, Benoni	Neighbourhood Centre	8 000	1999	2003	26	Pick n Pay Mini
Oriental City - Atlas	Cnr Great North Rand & Atlas Roads, Beyers Park, Benoni	Specialty Centre	8 000	2009		5	Jida Trading, The Fashion World, Chinese Shops
Sunward Palms Shopping Centre	Kingfisher Avenue, Sunward Park, Boksburg	Specialty Centre	6 963	2004	2014	17	Virgin Active, Fast Food outlets, Spa, Many vacancies
Town Centre - Boksburg	Cnr Commissioner & Eloff Streets, Boksburg	CBD/Town Centre	6 815	1973	1993	5	Edgars, Standard Bank
Key Largo	Cnr North Rand Road & Trichardt Street, Bardene, Boksburg	Neighbourhood Centre	6 779	1998		15	News Café, Jimmy's Killer Prawns, Bimbos, Steers
Elsburg Shopping Centre	Cnr Voortrekker and Naauf Streets, Elsburg, Germiston	Neighbourhood Centre	6 500	0		16	Spar, Pep Stores
Cleo's - Germiston	Cnr Kingfisher Avenue & Heidelberg Road, Klippoortjie, Germiston	Neighbourhood Centre	6 000	1989	1995	16	Pick n Pay
Westwood Village	Cnr Phillips & Atlas Roads, Beyers Park, Boksburg	Local Convenience Centre	5 450	1995	2012	29	Superspar, Adegas, Nando's, Steers, Blockbusters, Pizza Perfect, HBZ Bank
The Square - Boksburg	Cnr Rietfontein & Rigg Roads, Jansen Park, Boksburg	Local Convenience Centre	5 200	2003		22	Superspar, Cash Crusaders, Wimpy, Jack's Paint & Hardware, Post Office, Execuspecs
Kingfisher Corner Shopping Centre	Cnr Kingfisher Avenue & Nicholson Street, Sunward Park, Boksburg	Local Convenience Centre	4 925	2003		29	Woolworths, DIY Hardware
Kingfisher Square	Cnr Gannet Street & Heidelberg Road, Elspark, Germiston	Local Convenience Centre	4 500	1995	1999	14	Pick n Pay Family
Lambton Square	Cnr Webber Road & Piercy Avenue, Lambton, Germiston	Local Convenience Centre	4 482	1999		13	Pick n Pay
Market Superspar - Benoni	Cnr Tom Jones Street & Ampthill Avenue, Benoni	CBD/Town Centre	4 000	1960	2000	6	Spar
Witfield Square	Cnr Robert & Main Streets, Witfield, Boksburg	Local Convenience Centre	3 800	2006		10	Superspar, Pep, Diskom, Post Office
28° North	Cnr Webber Road & Dook Avenue, Hazelpark, Germiston	Local Convenience Centre	3 580	2006		13	Pick n Pay

Shopping Centre	Street Address	Classification	Size (GLA m ²)	Year Developed	Last Refurbished	No of shops	Main Anchors
Rangeview Shopping Centre	Cnr Rangeview Road & Airport Road, Dalpark Ext 11, Brakpan	Local Convenience Centre	3 099	0		28	Postnet, Small shops
Shoprite Centre - Boksburg	Commissioner Street, Boksburg	CBD/Town Centre	3 034	1980		2	Shoprite, Ellerines
Boksburg Spar Centre	Cnr Kruger & Commissioner Streets, Boksburg	CBD/Town Centre	3 000	1993	2003	6	Spar
Dawn Park Centre	Cnr Hassink Highway & Galahad Way, Dawn Park, Boksburg	Local Convenience Centre	3 000	0		5	Liquor City, Surgery, Convenience Store
Webber Crossing	Cnr 4th Avenue & Webber Road, Lambton, Germiston	Local Convenience Centre	2 109	1990		9	City Pets CC
Northpoint Centre	Cnr Trichardts Road & Findel Street, Impala Park, Boksburg	Local Convenience Centre	1 839	1982	2011	7	Spar, North Point Liquors, Mad Pizza
Albemarle Shopping Centre	Cnr Hatfield Road & Onyx Place, Albemarle, Germiston	Local Convenience Centre	1 760	1983	2007	12	Pharmacy & Butcher / Deli
Mauriso Court	Knox Street, Germiston	CBD/Town Centre	1 529	0		5	Small Shops
CNA Centre	Cnr Eloff & Market Streets, Germiston	CBD/Town Centre	1 004	1965		5	A & M Discounters
President Arcade	Meyer Street, Germiston	Local Convenience Centre	990	1980		10	BFS Loans, Amigos Restaurant
The Lakes Shopping Centre	Cnr William Hills Avenue & Lake Road, Denlee Ext 6, Germiston	Local Convenience Centre	974	0	2011	7	Mercantile Bank
TOTAL:			532 794				

Source: Demacon, ex SACSC, 2016

Table 6.2: Proposed retail supply within the market area

Shopping Centre	Size & hierarchy (m ² GLA)	Year of development	Address
Makro – Carnival City	20 000	2016	N17 & North Boundary Rd, Carnival City, Brakpan
Dawn Park Shopping Centre	11 500	April 2017	Dawn Park, Boksburg
The Orion Retail Centre	8 000	2017	R24 & N12 (429 Rietfontein Interchange), Bartlett AH, Boksburg
TOTAL:	39 500m² GLA		

Source: Demacon, ex SACSC, 2016

Findings: (Tables 6.1 & 6.2)

- ✓ Total retail GLA within the primary trade area equals approximately **532 794m² GLA**.
- ✓ The proposed retail GLA for the primary trade area is **39 500m² GLA**.
- ✓ A number of smaller convenience type retail facilities are being considered in the Dalview, Dalpark and surrounding market area.
- ✓ Further to the above, the EMM is also in the process of planning and implementing a variety of human settlements projects in and around Van Dyk Park.

6.3 GAP ANALYSIS

Market research estimations indicate a retail opportunity package in the Leeuwpoot area, including:

- ✓ A regional shopping centre offering to service all three portions of the proposed Leeuwpoot development, and
- ✓ Two convenience retail centre offerings to be located on the eastern and western portions of the Leeuwpoot South township.

□ GAP ANALYSIS

Development Type	Effective Market Gap	Development Prospects
Regional Retail offering	Yes	Moderate
Convenience Retail offering	Yes	High

6.4 RETAIL DEMAND

The findings of the retail chapter are integrated into an empirical assessment of retail market potential. Demacon's Retail Demand Modelling results illustrate that the consumer market can sustain a **regional retail node (medium to longer term prospect)**, complimented by **2 convenience retail centres (short to medium term prospect)**, one located to the **east** of the **Leeuwpoot South** development site and one to the **west** of the **Leeuwpoot South** development.

A summary of the total retail market demand for both types of centres are presented below.

Table 6.3: Summary of Total Retail Market Demand, 2016, 2021 and 2026

LSM 4-10+			
REGIONAL RETAIL OPPORTUNITY			
Retail Expenditure	2016 Rand/annum	2021 Rand/annum	2026 Rand/annum
Primary market	R 16 975 571 679	R 21 715 279 195	R 27 778 348 762
Retail Demand	2016 m ² GLA	2021 m ² GLA	2026 m ² GLA
Primary market	548 385	605 118	667 721
CONVENIENCE RETAIL OPPORTUNITY			
Retail Expenditure	2016 Rand/annum	2021 Rand/annum	2026 Rand/annum
Primary market	R 2 246 334 400	R 2 873 527 889	R 3 675 838 527
Retail Demand	2016 m ² GLA	2021 m ² GLA	2026 m ² GLA
Primary market	72 566	80 074	88 358

In the context of the market demand estimations, the optimum destination retail offering in the precinct could measure up to:

- ✓ **65 400m² GLA** for the regional retail opportunity (OPME 2026+)
- ✓ **21 195m² GLA** for the two convenience retail opportunities – i.e. ±10 597m² GLA each (OPME 2020+)

Table 6.4: Regional retail opportunity project summary

Project summary REGIONAL RETAIL OPPORTUNITY	
Average and actual share values	7.5%
Total annual growth in market demand (sqm/a)	11 347
Centre share of growth (sqm/a)	851
Point of market entry	2026+
Additional growth in demand for centre (sqm)	5 106
Retail GLA at OPME	46 235
Services GLA at OPME	11 559
Cinemas & entertainment	2 500
OPME Centre size (sqm)	65 400 m² GLA
On-site job creation	2 180
Retail Sales potential (R 2016 value)	1 913 008 961
Total capital investment (R 2016 value)	1 242 592 036
Additional Parking bays required	3 924
Parking infrastructure & landscaping cost	93 390 601

Table 6.5: Convenience retail opportunity project summary

Project summary CONVENIENCE RETAIL OPPORTUNITY	
Average and actual share values	17.5%
Total annual growth in market demand (sqm/a)	1 501
Centre share of growth (sqm/a)	263
Point of market entry	2020+
Additional growth in demand for centre (sqm)	2 365
Retail GLA at OPME	15 064
Services GLA at OPME	3 766
Cinemas & entertainment	-
OPME Centre size (sqm)	21 195m² GLA
On-site job creation	706
Retail Sales potential (R 2016 value)	R 619 969 653
Total capital investment (R 2016 value)	R 402 700 337
Additional Parking bays required	1 272
Parking infrastructure & landscaping cost	R 30 266 110

6.5 SUMMARY: CENTRE RECOMMENDATIONS

The retail opportunities are summarised below:

Centre size and recommendations: (Table 6.4 & 6.5)

- ✓ In the context of residual nodal capacity calculations, indications suggest, that the optimum retail potential for the **development** measures **65 400m² GLA** for the regional retail opportunity.
- ✓ For the two convenience retail opportunities, the retail potential measures **21 195m² GLA** in total, to be split into two convenience centres sized **10 000 – 11 000m² GLA** each.
- ✓ The optimum point of market entry should be **2020+** for the **convenience retail** centres sized **10 000 – 11 000m² GLA** each and **2026+** for the **regional retail** node.

- ✓ The precinct should be able to achieve an annual sales potential of approximately
 - **R19.1 billion** for the regional retail opportunity and
 - **R6.2 billion** for the convenience retail opportunity.
- ✓ The above calculations are, for purposes of marketability, based on LSM segments 4 – 10+, but do not preclude LSM 1 – 3 market segments, but actual spend would not preclude support from the LSM 1-3 market segments. Hence the aforementioned market potential estimations are deemed to be a conservative baseline estimate. Ultimate sales will in all probability exceed these values (with ease).
- ✓ Permanent on-site jobs of approximately **±2 180** could be created by the regional retail opportunity, and **±706** for the convenience retail opportunity.

Based on the demand modelling results, the following table indicates a probable, optimum demand-based spread to which nodal supply could / should respond. (Table 6.6)

Table 6.6: Ideal tenant mix apportionment at optimum point of market entry

Retail Category	Min Demand (m ²)
REGIONAL RETAIL OPPORTUNITY	
Groceries	27 041
Clothing, shoes, accessories	12 714
Furniture and home ware	3 730
Hardware goods	1 370
Gifts, books and confectionary	2 520
Specialty / value goods	817
Restaurants, entertainment	9 440
Personal care	2 969
Other personal goods & services	4 796
Total	65 400
CONVENIENCE RETAIL OPPORTUNITY	
Groceries	8 764
Clothing, shoes, accessories	4 120
Furniture and home ware	1 209
Hardware goods	444
Gifts, books and confectionary	817
Specialty / value goods	265
Restaurants, entertainment	3 059
Personal care	962
Other personal goods & services	1 554
Total	21 195

Source: Demacon Retail Demand Model, 2016

The challenge will be to find a **balance** between **market demand** (as revealed by consumer income and spending patterns) and **tenant demand** (i.e. the expressed desire by tenants to occupy space in the centre) and **investor demand** (i.e. the need for capital growth).

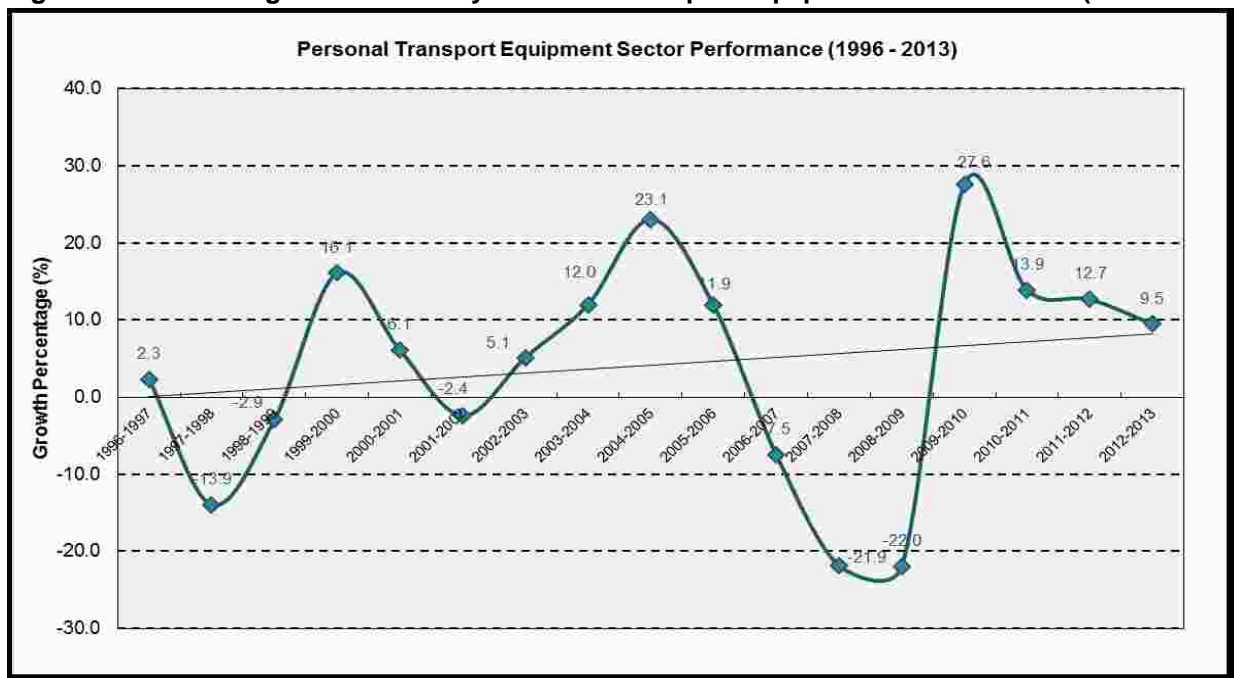
CHAPTER 7: TRADE / AUTOMOTIVE MARKET ANALYSIS



7.1 INTRODUCTION

In terms of the local economy, research indicate that between 1996 and 2013 the **personal transport equipment** sector for Boksburg had an **annual growth rate of 4.1% per annum**. (Figure 7.1)

Figure 7.1: Boksburg Local Economy Personal Transport Equipment Sector Growth (1996 – 2013)



Source: Demacon ex. StatsSA, 2016

In the context of the consistently increasing household expenditure on the personal transport equipment over the past two decades, the Leeuwpoot development would become increasingly appealing to automotive retailers.

7.2 GAP ANALYSIS

Demacon's Demand Modelling results illustrate that the consumer market can sustain **1 to 2** automotive dealership / motor related / fitment centre / ancillary services of approximately **4 221m²** with the optimum point of market entry beyond **2022+**.

□ GAP ANALYSIS

Development Type	Effective Market Cap	Development Prospects
Automotive dealerships	Yes	Moderate to High
Motor-related dealerships	Yes	Moderate to High
Fitment centres	Yes	Moderate to High

7.3 DEMAND MODELLING

The following tables indicate the space demand modelling results of the trade sector.

Table 7.1: Synthesis of Space Demand Modelling Results (nodal potential) – m² GLA (constant values)

Cumulative Additional Space Demand	Up to 2021	2026	2031
Wholesale & Retail Trade (<i>sqm GLA</i>)	33 607	55 527	75 784
Catering & Accommodation (<i>sqm GLA</i>)	11 590	18 315	21 504
TOTAL: Boksburg Region	45 197	73 842	97 289
At 28.58% automotive	12 917	21 104	27 805
Minimum Project Share	1 938	3 166	4 171
Maximum Project Share	2 583	4 221	5 561
Dealerships	0.4	0.7	0.9

Table 7.2: Recommended Sizes

Recommended Sizes	Rand per annum / m²
Capital investment (2016 constant values)	R 80 194 939
Employment opportunities	141
Parking	169
Parking infrastructure & landscaping cost (2026 constant values)	R 4 018 188
Point of market entry	2022+
Size of development (sqm) (up to 2026)	4 221m²

The following is evident from the above table:

- ✓ Trade sector market demand of **Boksburg** Region increases cumulatively from 45 197m² GLA in 2021 to 73 842m² GLA in 2026 and 97 289m² in 2031.
- ✓ Market demand for **automotive floor space** increases cumulatively from **12 197m²** in 2021 up to **27 805m²** GLA in 2031.
- ✓ Proposed size of development over the short to medium term amounts to approximately **4 221m²**.
- ✓ The proposed **4 221m²** translates into approximately **one to two** automotive dealership(s) and ancillary fitment centre, workshop, etc.
- ✓ This floor space could include dealerships, automotive workshops, speciality shops and any other automotive related activities.
- ✓ Optimum point of market entry: **2022+**

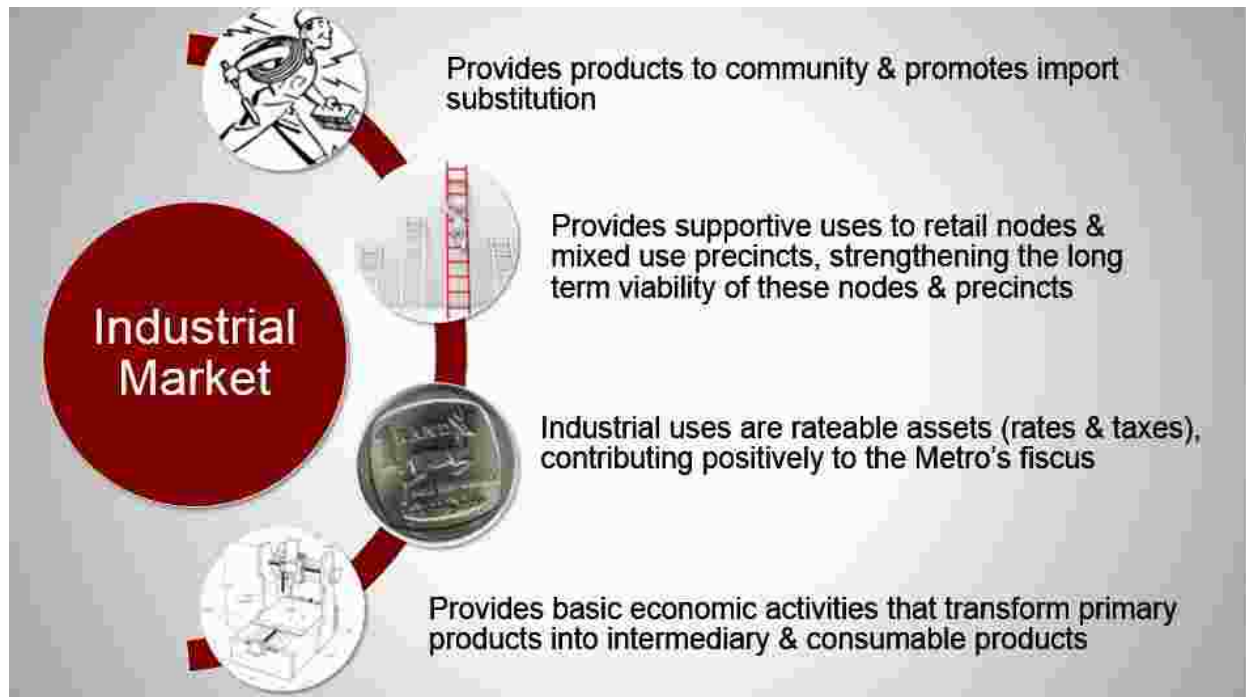
7.4 SUMMARY

In terms of the local economy, research indicate that between 1996 and 2013 the **personal transport equipment** sector for Boksburg had an **annual growth rate of 4.1% per annum**. In the context of the consistently increasing household expenditure on the personal transport equipment over the past two decades, the Leeuwpoot development would become increasingly appealing to automotive retailers.

Demacon's Demand Modelling results illustrate that the consumer market can sustain **1 to 2** automotive dealership / motor related / fitment centre / ancillary services of approximately **4 221m²** with the optimum point of market entry beyond **2022+**:

- ✓ Market demand for **automotive floor space** increases cumulatively from **12 197m²** in 2021 up to **27 805m²** GLA in 2031.
- ✓ Proposed size of development over the short to medium term amounts to approximately **4 221m²**.
- ✓ The proposed **4 221m²** translates into approximately **one to two** automotive dealership(s) and ancillary fitment centre, workshop, etc.
- ✓ This floor space could include dealerships, automotive workshops, speciality shops and any other automotive related activities.

CHAPTER 8: INDUSTRIAL MARKET ANALYSIS



8.1 BACKGROUND

The location of industrial activities in and around the trade area is indicated in Map 8.1. As can be seen, the area is characterised by an observable number of industrial activity nodes around the Leeuwpoot area.

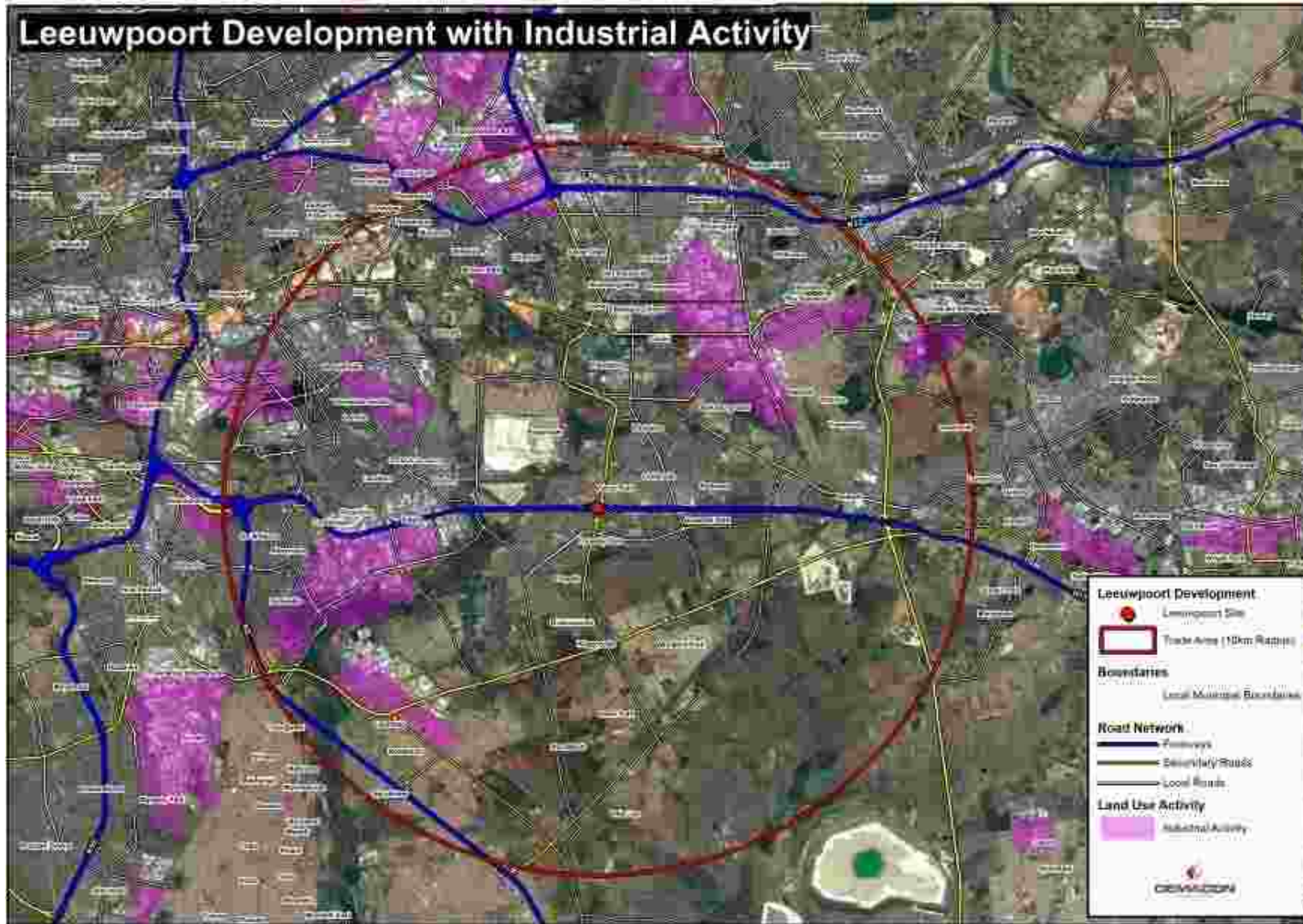
Considering the Leeuwpoot development, only the Parkdene Ext 7 layout contains industrial land uses. (Map 8.2)

The area presented for industrial uses in this layout amounts to **2.95 ha** in **stand size** (not GLA), amounting to 3.1% of the total layout size.

8.2 MARKET AREA ANALYSIS

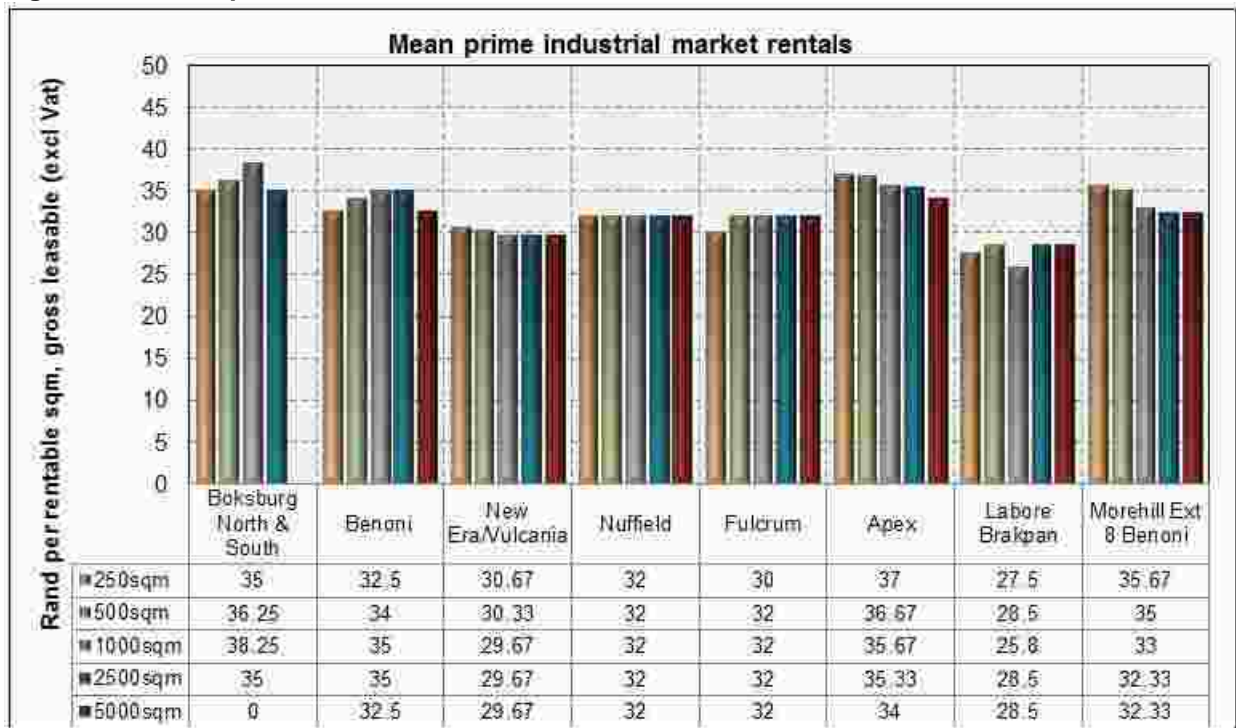
Though the Leeuwpoot development is not a monitored industrial node, it is located in the greater Far East Rand monitored industrial nodes area. These monitored industrial nodes give a greater perspective on the industrial market around the market area.

Map 8.1: Industrial land uses in and around the trade area



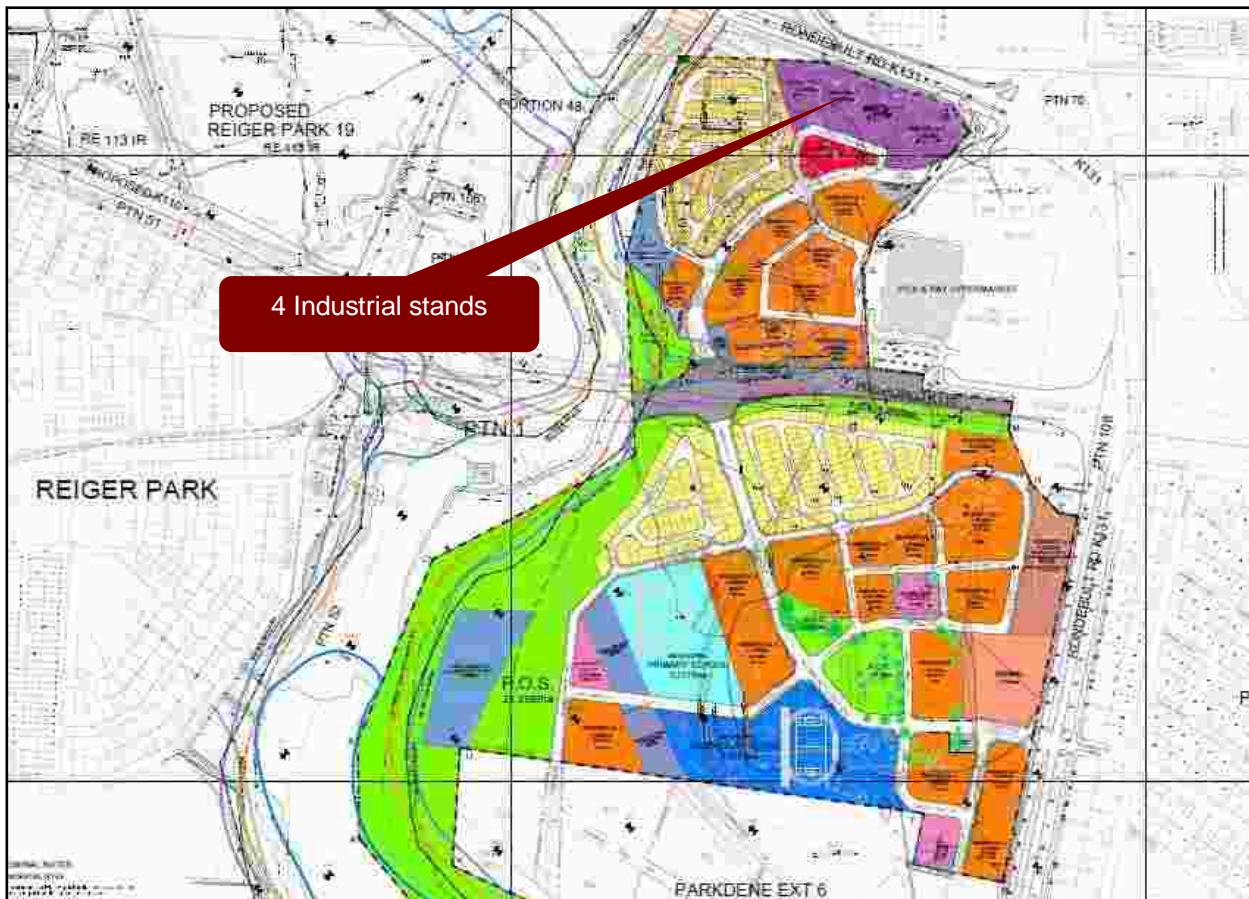
✓ Industrial market rentals

Figure 8.1: Mean prime industrial market rentals



Source: Demacon ex, SAPOA 2016:Q2

Map 8.2: Industrial land uses in Parkdene Ext 7



Source: Urban Dynamics Gauteng Inc.

Industrial market rentals in the greater market area are indicated below:

Table 8.1: Industrial rental distribution in the greater market area

Location	Minimum rent (R/m ²)	Maximum rent (R/m ²)	Average rent (R/m ²)	Minimum size (m ² GLA)	Maximum size (m ² GLA)	Average size (m ² GLA)
Ga-Rankuwa Industrial	17	40	19	200	151 200	3 080
Klerksoord	21	50	31	150	3 500	849
Rossllyn	15	99	34	135	6 500	1 175
Rossllyn Industrial Park	550	550	550	2 500	8 000	5 250

Source: Demacon composite, 2016

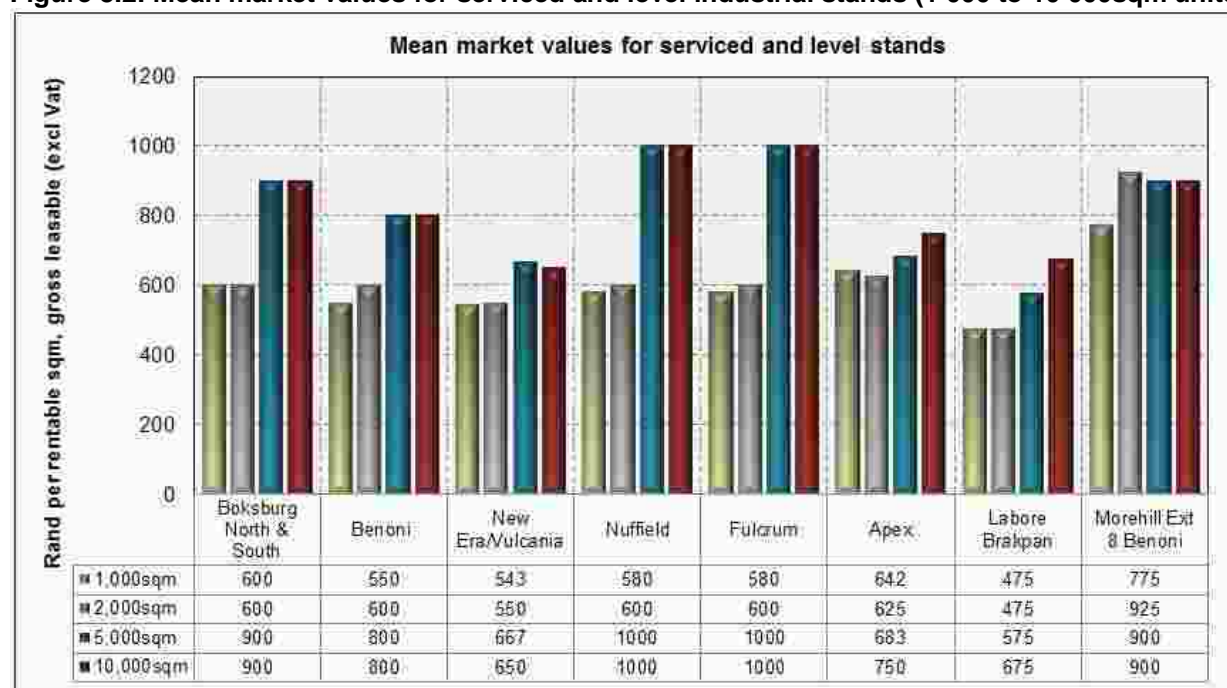
Table 8.2: Mean prime industrial market rentals

Location	200m ² - 500m ² Rent: (R/m ²)	501m ² - 1 000m ² Rent: (R/m ²)	1 001m ² - 2 500m ² Rent: (R/m ²)	2 501m ² - 5 000m ² Rent: (R/m ²)
Ga-Rankuwa Industrial	16.91	16.91	16.91	16.91
Klerksoord	33.50	29.15	24.79	21.00
Rossllyn	42.05	32.60	27.50	22.12
Rossllyn Industrial Park	None	None	550.00	550.00

Source: Demacon composite, 2016

✓ **Industrial market values for serviced and level industrial stands**

Figure 8.2: Mean market values for serviced and level industrial stands (1 000 to 10 000sqm units)

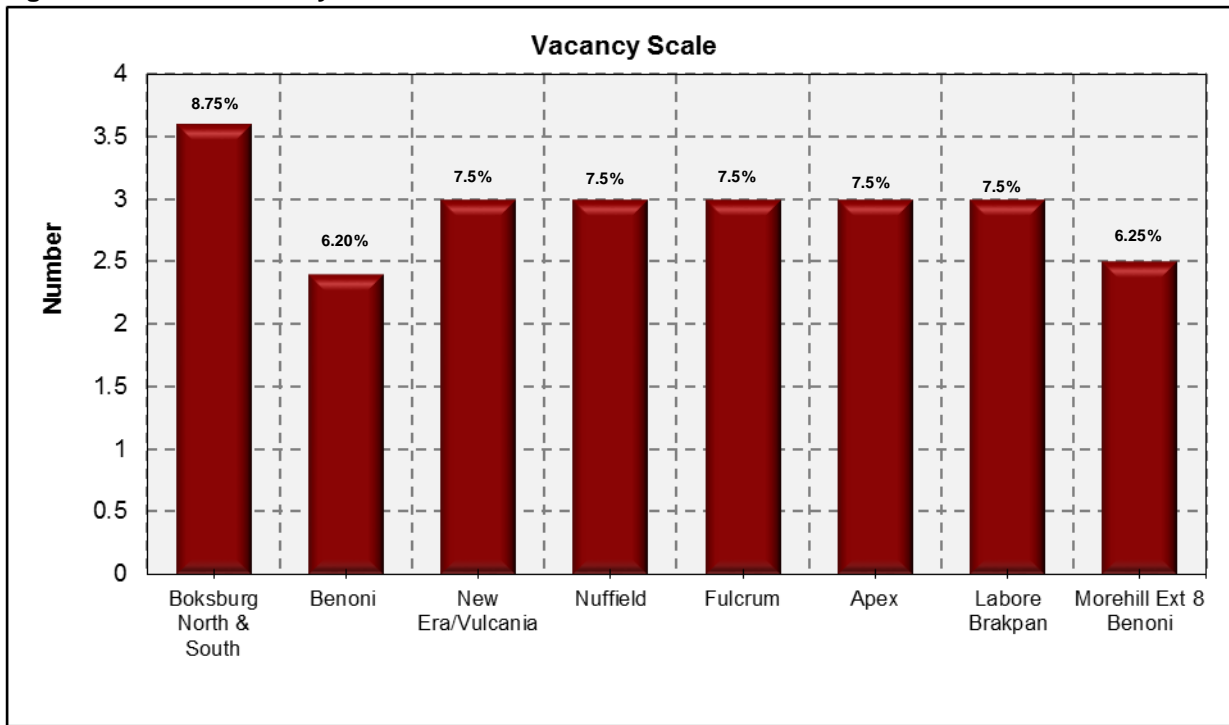


Source: Demacon ex, SAPOA 2016:Q2

✓ **Industrial occupational rates**

Occupational rates for the following monitored industrial nodes are presented below:

Figure 8.3: Nodal vacancy rates



Source: Demacon ex, SAPOA 2016:Q2

Vacancy rates for the monitored office nodes are observable, with Boksburg North & South the highest at 8.75%.

□ **RECOMMENDED SIZES / PRICES**

The recommended industrial sizes, sales price and rental prices are given below:

Table 8.3: Industrial Sizes / Prices

Variables	Rand per square metre / square metre
Recommended Stand Prices	R1 000 per m ² – R2 000 per m ² Average of R1 650 per m ²
Recommended Stand Sizing	30% - up to 1000m ² 53% - 1000m ² to 5 000m ² 15% - 5000m ² to 10 000m ² 2% - 10 000m ² +
Recommended Gross Industrial Rentals (excl VAT)	R20 per m ² – R60 per m ²

8.3 GAP ANALYSIS

The market research indicates the potential for industrial land uses in the Leeuwpoot development.

❑ **GAP ANALYSIS**



8.4 DEMAND ESTIMATIONS

The following table provides an indication of overall the market capacity for industrial uses.

Table 8.4: Recommended sizes

Recommended sizes	Rand (R') / m ²
Capital investment (2016 constant values)	R 351 623 601
Employment opportunities	457
Parking	502
Parking infrastructure & landscaping cost (2016 constant values)	R 11 251 955
Optimum point of market entry	2018+
Size of Industrial (sqm)	25 116m²

- ✓ The total development potential of Boksburg Sub-Region up to 2021 amounts to approximately **22.33 ha**.
- ✓ In terms of the Leeuwpoot development, a development potential for industrial / commercial uses amounts to **25 116m²** in 2026. (5.02ha)
- ✓ Optimum point of market entry could be developed in **2018+**.
- ✓ The recommended type of development: **Light industrial / commercial uses, including mini-units**.

8.5 SUMMARY

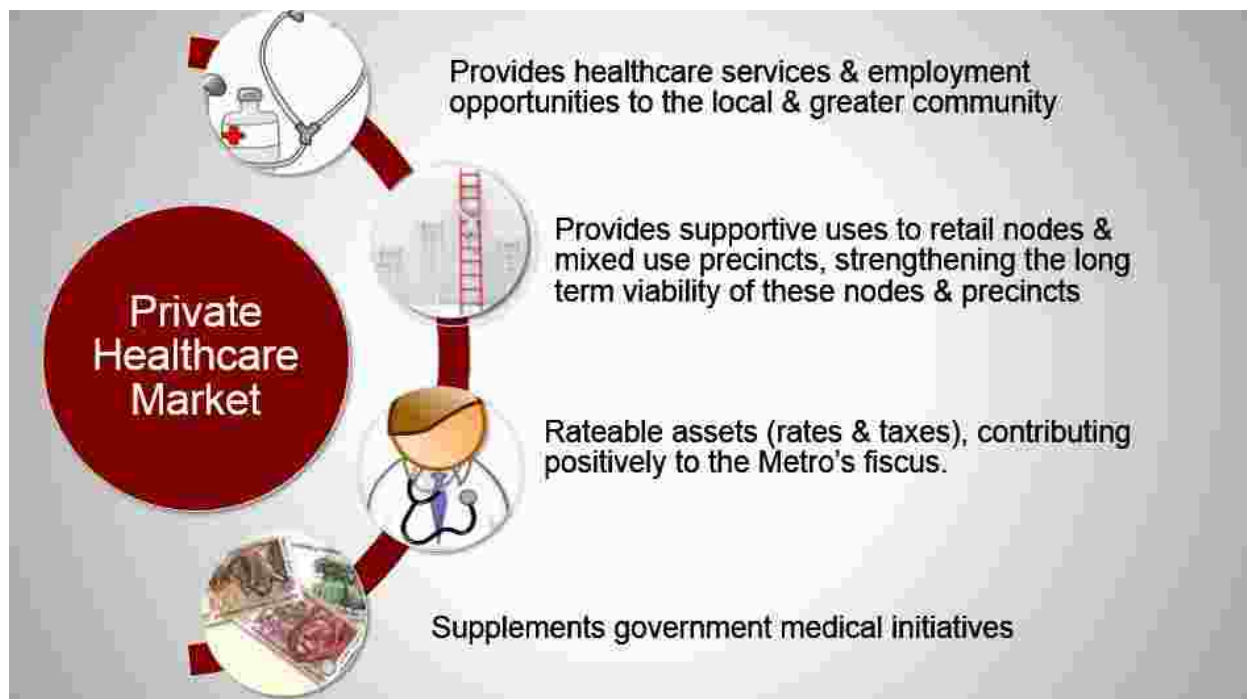
The market research indicates the potential for industrial land uses in the Leeuwpoot development. The recommended industrial sizes, sales price and rental prices are given below:

Table 8.5: Industrial Sizes / Prices

Variables	Rand per square metre / square metre
Recommended Stand Prices	R1 000 per m ² – R2 000 per m ² Average of R1 650 per m ²
Recommended Stand Sizing	30% - up to 1000m ² 53% - 1000m ² to 5 000m ² 15% - 5000m ² to 10 000m ² 2% - 10 000m ² +
Recommended Gross Industrial Rentals (excl VAT)	R20 per m ² – R60 per m ²

- ✓ The total development potential of Boksburg Sub-Region up to 2021 amounts to approximately **22.33 ha**.
- ✓ In terms of the Leeuwpoot development, a development potential for industrial / commercial uses amounts to **25 116m²** in 2026. (5.02ha)
- ✓ Optimum point of market entry could be developed in **2018+**.
- ✓ The recommended type of development: **Light industrial / commercial uses, including mini-units.**

CHAPTER 9: PRIVATE HEALTHCARE MARKET ANALYSIS



9.1 BACKGROUND

The levels of private healthcare insurance in the trade area are comparatively high – 26.1%.

The Leeuwpoot development trade area has 7 private hospitals and 3 public hospitals. Located directly outside the Leeuwpoot development trade area, are 7 private hospitals. (Map 9.1)

9.2 TRADE AREA HOSPITAL SUPPLY

Public hospitals of note within or directly adjacent to the trade area:

- ✓ Bertha Gxowa (Germiston) Hospital, Germiston (230 beds)
- ✓ Tambo Memorial Hospital, Boksburg (540 beds)
- ✓ Natalspruit / Thelle Mogoerane Hospital (821 beds)

However, public medical facilities do not present significant competition to the private medical market. As such, demand estimations are based on private hospital supply within or directly adjacent the Leeuwpoot trade area.

Map 9.1: Medical supply in trade area

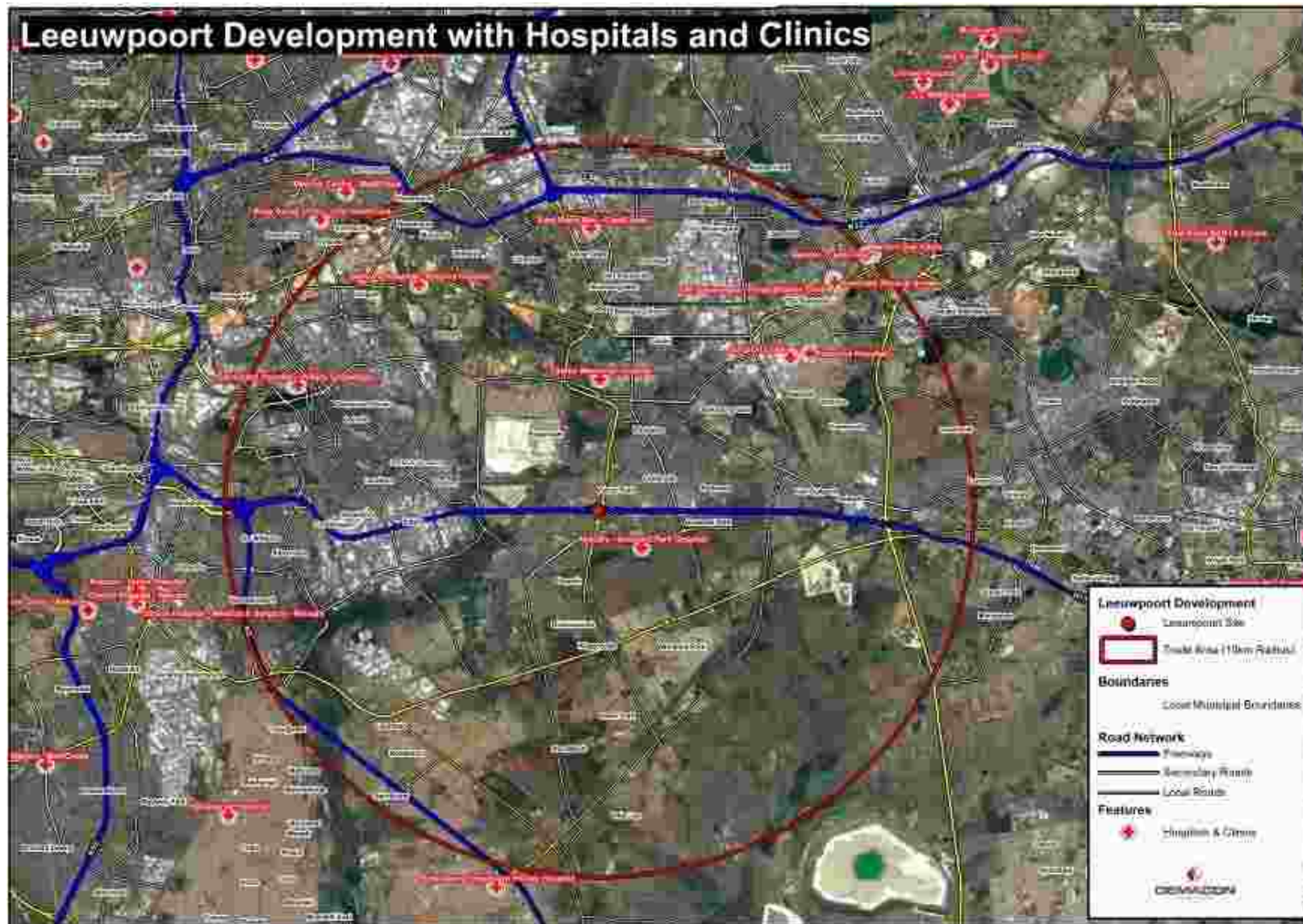


Table 9.2: Private hospital supply in the trade area

Within 10km trade area																			
	<p><u>Life The Glynnwood</u></p> <p>Address: 33 – 35 Harrison St, Benoni</p> <p>Services offered:</p> <table border="0"> <tr> <td>Cardiology</td> <td>Dentistry</td> </tr> <tr> <td>Renal dialysis</td> <td>Clinical psychology</td> </tr> <tr> <td>Dermatology</td> <td>ENT surgery</td> </tr> <tr> <td>Gynaecology</td> <td>Internal medicine</td> </tr> <tr> <td>Obstetrics</td> <td>Oncology</td> </tr> <tr> <td>Ophthalmology</td> <td>Neurosurgery</td> </tr> <tr> <td>Neurology</td> <td>Paediatrics</td> </tr> <tr> <td>Pathology</td> <td>Psychiatry</td> </tr> <tr> <td>Radiology</td> <td>Urology</td> </tr> </table> <p>Laparoscopic surgery Cardiothoracic surgery Maxillofacial & oral surgery Orthopaedic surgery Plastic & reconstructive surgery</p> <p>Number of beds: 323 beds</p>	Cardiology	Dentistry	Renal dialysis	Clinical psychology	Dermatology	ENT surgery	Gynaecology	Internal medicine	Obstetrics	Oncology	Ophthalmology	Neurosurgery	Neurology	Paediatrics	Pathology	Psychiatry	Radiology	Urology
Cardiology	Dentistry																		
Renal dialysis	Clinical psychology																		
Dermatology	ENT surgery																		
Gynaecology	Internal medicine																		
Obstetrics	Oncology																		
Ophthalmology	Neurosurgery																		
Neurology	Paediatrics																		
Pathology	Psychiatry																		
Radiology	Urology																		
	<p><u>Netcare Optiklin Eye Hospital</u></p> <p>Address: 104 Klein St, Benoni</p> <p>Services offered:</p> <p>Ophthalmic surgery Cataract, vitreo-retinal & glaucoma surgery Ocular diagnosis & treatment A & B scan OCT Corneal cross linking IOL master Therapeutic laser surgery Refractive laser surgery Fluorescein angiography Fundus photography OPD scan</p> <p>Number of beds: 14 beds</p>																		



Sunward Park Hospital

Address: Cnr Kingfisher Ave & Aquarius Rd & Bert Lacey Dr, Boksburg

Services offered:

- | | |
|-------------------------------|-----------------|
| Anaesthesiology | Cardiology |
| Dentistry | Dermatology |
| ENT Surgery | GP |
| Gynaecology | Obstetrics |
| Ophthalmology | Paediatrics |
| Pathology | Plastic surgery |
| Radiology | Urology |
| Cardiac & thoracic surgery | |
| Maxillo-facial & oral surgery | |
| Orthopaedic surgery | |

Number of beds: 214 beds

Lakeview Hospital



Address: 1 Mowbray Ave, Benoni

Services offered:

- | | |
|--------------------|-----------------|
| Dermatology | Paediatrics |
| GP | Cardiothoracic |
| ENT | Neurosurgery |
| Orthopaedics | Ophthalmology |
| Dentistry | Dialysis Centre |
| Paediatric surgery | |

Number of beds: n.a.

Sunshine Hospital

(previously Actonville Hospital)



Address: 1 Mowbray Ave, Benoni

Services offered:

- Radiology
- General surgery
- Paediatrics
- Obstetrics & maternity unit
- ICU
- Physiatric unit

Number of beds: 188 beds



Botshelong Empilweni Private Hospital

Address: 9 Sam Sekoati Ave, Vosloorus

Services offered:

Dietetics	ENT Surgery
Gynaecology	Obstetrics
Neuro surgery	Ophthalmology
Paediatrics	Pathology
Physiotherapy	Podiatry
Psychiatry	Psychology
Radiology	Social Work
Urology	Surgery

Cardiothoracic surgery
 Maxillo-facial & oral surgery
 Occupational therapy
 Orthopaedic surgery
 Speech & hearing therapy

Number of beds: 104 beds



Care Cure Rynmed Clinic


Address: Cnr Pretoria & Parker St, Rynfield, Benoni

Services offered:

Occupational therapy	Biokineticist
Physiotherapy	Speech therapy
Dietician	Pathology
Radiology	Psychology
Psychiatry	

Number of beds: 20 beds

Outside of 10km trade area



Life Dalview Clinic

Address: 11 Hendrik Potgieter Rd, Brakpan

Services offered:

Dentistry	ENT surgery
Specialist surgery	Internal medicine
Maternity unit	Paediatrics
Pathology	Psychology
Radiology	Urology
Orthopaedic surgery	

Number of beds: 96 beds



Netcare N17 Hospital

Address: 7 Tonk Meter Dr, Springs

Services offered:

- Cardiologist
- ENT Surgery
- Obstetrics
- Pathology
- Radiology
- Urology
- Cardiac & thoracic surgery
- Maxillo-facial & oral surgery
- Paediatric surgery
- Dermatologist
- Gynaecology
- Paediatrics
- Psychiatry
- Surgery

Number of beds: 175 beds



Netcare Clinton Hospital

Address: 62 Clinton Rd, Jhb

Services offered:

- Anaesthesiology
- Dentistry
- ENT surgery
- GP
- Obstetrics
- Neurosurgery
- Paediatrics
- Plastic surgery
- Radiology
- Cardiology
- Dermatology
- Gastroenterology
- Gynaecology
- Nephrology
- Ophthalmology
- Pathology
- Psychiatry
- Orthopaedic surgery
- Radiation Oncology
- Paediatric surgery
- Maxillo-facial & oral surgery
- Paediatric cardiology
- Paediatric pulmonology

Number of beds: 166 beds



Netcare Union Hospital

Address: 47 Ring Rd W, Jhb

Services offered:

- Cardiology
- ENT Surgery
- GP
- Nephrology
- Neurosurgery
- Ophthalmology
- Plastic surgery
- Urology
- Cardiac & thoracic surgery
- Emergency medicine
- Maxillo-facial & oral surgery
- Orthopaedic surgery
- Haematological pathology
- Microbiological pathology
- Dermatology
- Gastroenterology
- Gynaecology
- Obstetrics
- Nuclear medicine
- Pathology
- Radiology
- Vascular surgery

Number of beds: 222 beds



Netcare Linmed Hospital

Address: 5 Hull Rd, Benoni

Services offered:

- | | |
|-------------------------------|--------------------|
| Anaesthesiology | Cardiology |
| ENT surgery | GP |
| Gynaecology | Obstetrics |
| Neurology | Neurosurgery |
| Ophthalmology | Paediatric surgery |
| Radiology | Urology |
| Orthopaedic surgery | Radiation oncology |
| Maxillo-facial & oral surgery | |
| Paediatric pulmonology | |

Number of beds: 203 beds

Life Roseacres Clinic

Address: Cnr Castor Rd & St. Josephs St, Germiston

Services offered:

- | | |
|-------------------------------|-----------------|
| ENT Surgery | General surgery |
| Obstetrics | Gynaecology |
| Internal medicine | Oncology |
| Paediatrics | Pathology |
| Psychiatry | Urology |
| Maxillo-facial & oral surgery | |
| Ophthalmic surgery | |
| Orthopaedic surgery | |
| Paediatric neurology | |

Number of beds: 128 beds

Life Bedford Gardens Hospital

Address: 7 Leicester Rd, Bedfordview

Services offered:

- | | |
|----------------------------------|---------------------|
| Cardiology | Dentistry |
| Dermatology | ENT surgery |
| Eye surgery | Gastroenterology |
| General surgery | Gynaecology |
| Neurosurgery | Neurology |
| Obstetrics | Ophthalmology |
| Orthodontics | Paediatrics |
| Psychiatry | Pathology |
| Radiology | Rheumatology |
| Urology | Thoracic surgery |
| Internal Medicine | Electrophysiology |
| Nuclear medicine | Paediatric surgery |
| Maxillo-facial surgery | Orthopaedic surgery |
| Advanced laparoscopic surgery | |
| Advanced arthroscopic surgery | |
| Plastic & reconstructive surgery | |

Number of beds: 144 beds



A private healthcare facility constitutes a good fit for nodal development and in the context of private healthcare entities actively searching for new investment opportunities, also in township economies, a private healthcare offering could create productive investment in the precinct.

9.3 GAP ANALYSIS

The trade area demand estimations indicate the viability for a private medical facility in the Leeuwpoot trade area.

□ GAP ANALYSIS

Development Type	Effective Market Gap	Development Prospects
Private Hospital	Yes	Moderate to High

9.4 DEMAND ESTIMATIONS

The Demacon market potential model is based on the 2016 medically insured population and annual growth rates over a ten year forecast period. The **residual / net demand technique** provides an indication of overall market capacity, whereas the **share technique** provides a more accurate estimation of the number of sustainable / viable beds in demand for the particular private hospital under consideration. Table 9.1 indicates the market potential for a private medical facility.

Table 9.1: Market Potential & Growth Forecast Model (Private Facility)

MARKET DEMAND (LSM 4 - 10+)			
PRIMARY DEMAND	2016	2021	2026
2016 Medically insured population (people)	151 065	161 143	171 893
Additional insured lives per annum		2 016	2 150
Population growth rate (% / annum - compound growth)	1.30%	1.30%	1.30%
beds / 1000 population medically insured (private beds)	4.8	4.8	4.8
Private beds in demand (LSM 4-10+)	725	773	825
SECONDARY DEMAND			
Injection	25%	25%	25%
Secondary demand	50 355	53 714	57 297
Private beds in demand (LSM 4-10+)	242	258	275
TOTAL MARKET DEMAND			
Number of beds (private beds)	967	1 031	1 100
MARKET SUPPLY (EFFECTIVE COMPETITIVE SUPPLY - adjusted for trade area overlap)			
Life The Glynnwood	113	113	113
Optiklin Eye Hospital	4	4	4
Sunward Park Hospital	193	193	193
Sunshine Hospital	132	132	132
Life Dalview Clinic	29	29	29
Netcare N17 Hospital	9	9	9
Netcare Clinton Hospital	50	50	50
Netcare Union Hospital	67	67	67
Netcare Linmed Hospital	20	20	20
Life Roseacres Clinic	32	32	32
Botshelong Empilweni Private Hospital	31	31	31
Care Cure Rynmed Clinic	1	1	1
Life Bedford Gardens	7	7	7
EFFECTIVE COMPETITIVE SUPPLY			
Total competing beds in primary market	687	687	687
MARKET POTENTIAL			
Net effective demand (residual market capacity - additional beds)	280	344	413
Market share (% market share of total beds for facility)	15.00%	15.00%	15.00%
Market potential (total number of viable beds for facility)	145	155	165
Total Trade Area Beds, including new development	832	842	852
Total additional area requirement (sqm hospital floor space)	10 877	11 602	12 376
Model Calibration & Sensitivity			
<i>Beds / 1000 total population as benchmark:</i>			
Population ('000)	151.1	161.1	171.9
Average (Private beds per 1000 population)	4.80	4.80	4.80
Study area beds per 1000 total population (as per Demacon Model)	0.96	0.96	0.96
Model accuracy (over / under estimation)	20.0%	20.0%	20.0%

¹ Adjusted for trade area overlap

Interpretation:

<100% = Conservative market potential estimation

>100% = Liberal market potential estimation (likely to produce oversupply in market)

¹ Supply is based on a 10km radius

Market Potential and Growth Forecast Model (Table 9.1)

- ✓ The table illustrates that there are approximately **151 065 medically insured persons** in the primary market area from a total estimate population of 278 742 - a total of **26.1%** of the market population.
- ✓ For demand modelling purposes, the number of private beds catering required to the needs of the medically insured segment of the market is 4.8 private beds per 1 000 medically insured persons.
- ✓ The above with a 25% secondary market injection yields a demand for **428 private beds** in the market area (2016), increasing to **560** in 2026.
- ✓ Given the rate of market growth, market potential for a new private hospital at the specific location amounts to **280 beds in 2016** increasing cumulatively to **413 beds in 2026**.
- ✓ Based on the current location and the nature of the proposed development a private hospital development of **145 - 165 beds** can be developed over the coming 10 years.
- ✓ Optimum point of market entry: **2019+**
- ✓ The facility could be sized approximately 11 600m².

9.5 SUMMARY

The levels of private healthcare insurance in the trade area are comparatively high – 26.1%.

The Leeuwpoot development trade area has 7 private hospitals and 3 public hospitals. Located directly outside the Leeuwpoot development trade area, are 7 private hospitals.

Public hospitals of note within or directly adjacent to the trade area:

- ✓ Bertha Gxowa (Germiston) Hospital, Germiston (230 beds)
- ✓ Tambo Memorial Hospital, Boksburg (540 beds)
- ✓ Natalspruit / Thelle Mogoerane Hospital (821 beds)

However, public medical facilities do not present significant competition to the private medical market. As such, demand estimations are based on private hospital supply within or directly adjacent the Leeuwpoot trade area.

The trade area demand estimations indicate the viability for a private medical facility in the Leeuwpoot trade area:

- ✓ Given the rate of market growth, market potential for a new private hospital at the specific location amounts to **280 beds in 2016** increasing cumulatively to **413 beds in 2026**.
- ✓ Based on the current location and the nature of the proposed development a private hospital development of **145 - 165 beds** can be developed over the coming 10 years.
- ✓ Optimum point of market entry: **2019+**
- ✓ The facility could be sized approximately 11 600m².

CHAPTER 10: PRIVATE SCHOOL MARKET ANALYSIS



10.1 INTRODUCTION

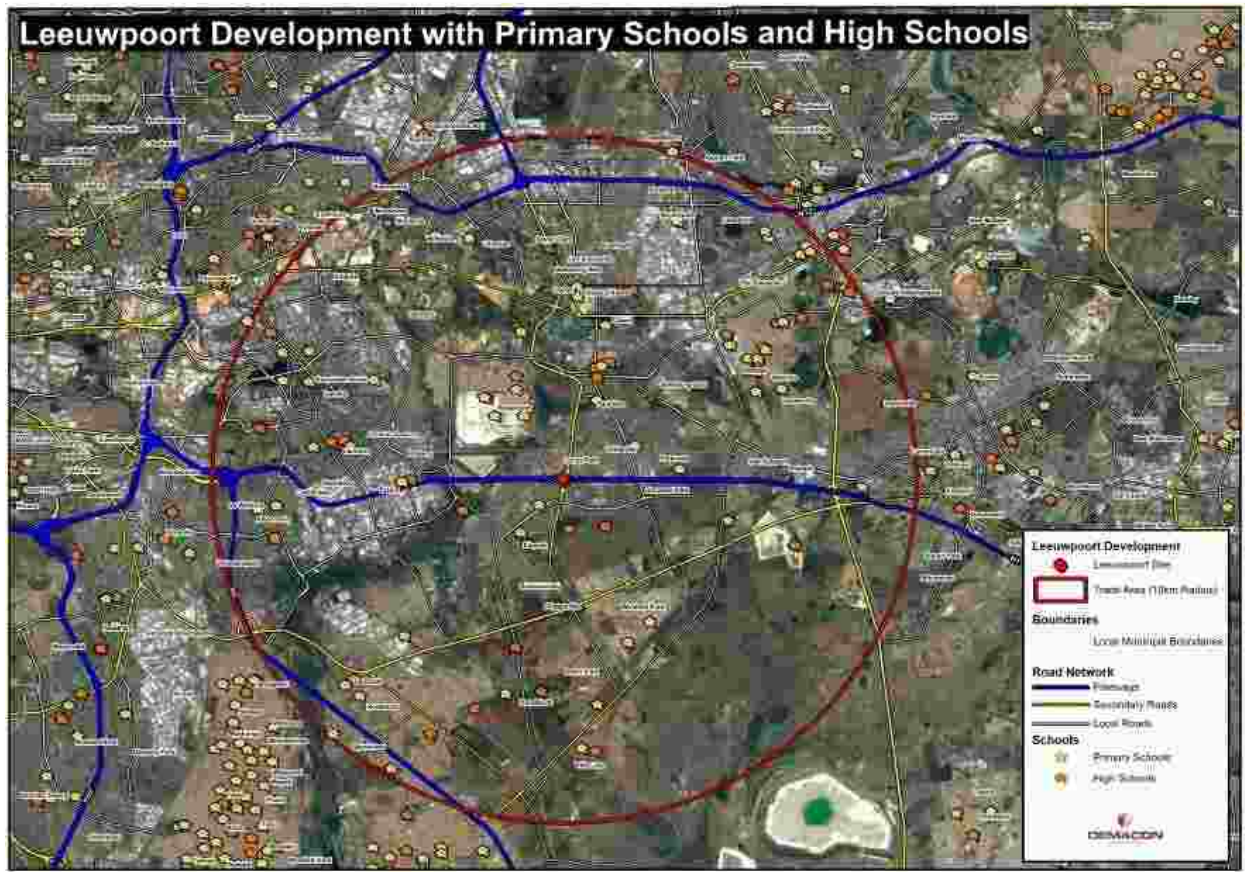
In terms of the South African Schools Act (SASA) in 1996 a national schooling system was introduced and recognised two categories of schools: public and independent. Public schools are state controlled and independent schools are privately governed.

Within the public school category, SASA created a sub-category of “public schools on private property” comprising state schools on private land owned by religious bodies, farmers, mines and forestry companies. All private schools were included in the independent school category.

The South African definition of independent (private) schools is a narrow one compared to other developing countries, especially as it does not include the “public schools on private property”.

In terms of Section 29 of the Constitution of South Africa, everyone has the right to establish, at his or her own expense, independent educational institutions. These institutions may not discriminate on the basis of race, must be registered with the state, and must maintain standards not inferior to those of comparable public institutions. State subsidies to independent institutions are permitted, but not guaranteed. Most independent schools are community schools. Another large category is not-for-profit religious schools: Christian, Muslim, Hindu and Jewish. There is a growing category of secular independent schools, which may be either not-for-profit or for-profit.

Map 10.1: School (private & public) supply in the trade area



10.2 PRIVATE SCHOOL SUPPLY

There are 12 private schools in the primary trade area:

Table 10.1: Private school supply in the trade area

School	Address	Type of institution
St Catherine's School	31 Piercy Ave Parkhill Gardens, Germiston	Independent Catholic CO-ED pre-primary, primary & high school
Curro Helderwyk	46 Tandelberg St, Brakpan	Private pre-primary, primary & high school
St Dominic's Catholic School for Girls	Kruger St, Boksburg	Independent Catholic pre-primary, primary & high school
Christian's Brothers' College	Konig Rd, Boksburg	Independent Catholic pre-primary, primary & high school
Emaromeni Primary Private School	Birmingham Rd, Benoni	Independent Catholic primary school
Falcon Educational College	191 Westcentral Ave, Dawn Park, Boksburg	Independent secondary school
Balmoral College	27 Magnet Rd, Witfield, Boksburg	Independent school
SA International College of Education	Germiston	Private secondary school
Boksburg Christian Academy	Comet, Boksburg	Independent Christian-based school
Benoni Muslim School	10 Chat St, Benoni	Independent Muslim-based school
Woodlands International College	145 Leith Rd, Boksburg	Private pre-primary, primary & high school
Lambton Christian School	Germiston	Private Christian-based pre-primary, primary & high school

Source: Demacon composite, 2016

10.3 GAP ANALYSIS

Market demand estimations indicate potential for the Leeuwpoot development to include a private school component.

□ GAP ANALYSIS

Development Type	Effective Market Gap	Development Prospects
Private School	Yes	High

It is determined that there is a market gap for a private school and development prospects are rated as high. Potential will increase as residential growth takes place over the medium to longer term.

10.4 DEMAND POTENTIAL

The following tables summarises the findings pertaining to the education demand modelling and results for private school demand.

Demacon's Demand Modelling results illustrate that the market can sustain an integrated private school consisting of the following:

Table 10.2: Market Area

Market Area		2016	2021	2026
Total number of people		578 742	617 351	658 536
Ages 5 - 9	7.3%	42 104	44 913	47 909
Ages 10 - 14	6.4%	37 001	39 470	42 103
Ages 15 - 19	7.6%	44 189	47 137	50 281
		123 294	131 519	140 293

Source: Demacon, 2016

Table 10.3: Private school attendance

Private School Attendance	2016	2021	2026	%
Ages 5 - 9	6 316	6 737	7 186	34.1%
Ages 10 - 14	5 550	5 920	6 315	30.0%
Ages 15 - 19	6 628	7 071	7 542	35.8%
Total (Pupils)	18 494	19 728	21 044	100.0%

Source: Demacon, 2016

Table 10.4: Market shares (minimum and maximum)

Private School Attendance	2016	2021	2026	Percentage
Ages 5 - 9	505 – 632	539 – 674	575 – 719	34.1%

Ages 10 - 14	444 – 555	474 – 592	505 – 632	30.0%
Ages 15 - 19	530 – 663	566 – 707	603 – 754	35.8%
Total (Pupils)	1 480 – 1 849	1 578 – 1 973	1 684 – 2 104	100.0%

Source: Demacon, 2016

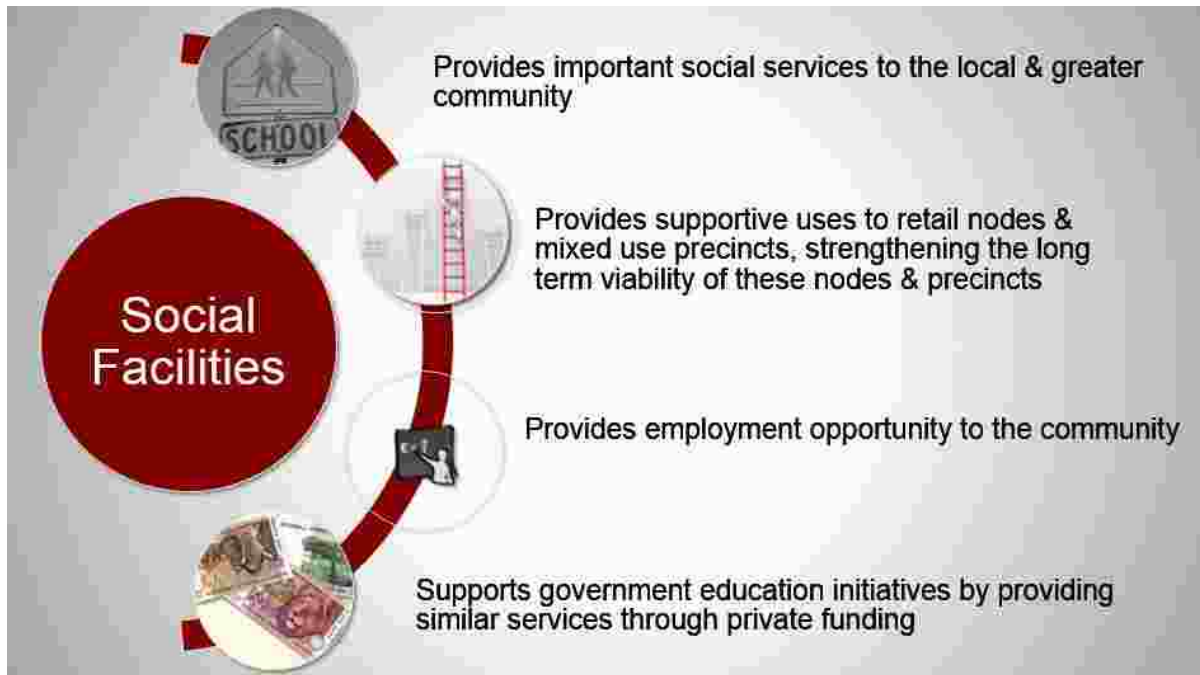
Development Implications

- ✓ It can be concluded that there is demand for a combined private school as part of the larger precinct.
- ✓ Potential exists for the development of a facility catering for **1 578 to 1 973** pupils (2021) increasing to **1 684 to 2 104** pupils at full capacity (2026).
- ✓ It is recommended that the facility should be developed in phases as demand increases.
- ✓ The optimum point of market entry should be **2020+**.

10.5 SUMMARY

Demacon's Demand Modelling results illustrate that the market can sustain a private school for **1 684 to 2 104** pupils (2021) increasing to **1 684 to 2 104** at full capacity (2026). The optimum point of market entry should be **2020+**.

CHAPTER 11: SOCIAL & ANCILLARY LAND USES



11.1 INTRODUCTION

This chapter focuses on the social facilities within the market area with the objective of estimating the development potential for social facilities within the designated area. In order to reach this objective, the supply and demand within the market area should be identified and assessed in light of current trends.

11.2 SOCIAL FACILITIES GUIDELINES

11.2.1 SOCIAL FACILITY DEMAND GUIDELINES

This section provides guidelines on the planning of public facilities within residential settlements.

Public facilities are defined as those basic services, which cannot be supplied directly to the individual dwelling unit and as a result are utilised away from the individual residential dwelling unit within the public environment. Public facilities satisfy specific individual or community needs, including safety and security, communication, recreation, sport, education, health, public administration, religious, cultural and social.

Public facilities quantitative guidelines:

Public facilities can be classified as higher-order, middle-order, lower-order and mobile, depending on the size of the area that they serve.

- ✓ **Higher-order public facilities:** these facilities generally serve the entire region, metropolitan area or city (eg. Hospitals and universities), and are not provided for in the layout planning process for single residential settlements.
- ✓ **Middle-order public facilities:** these are facilities, which serve a number of diverse and different communities (eg. High schools and clinics). These facilities are essential to individual residential settlements, but the facilities serve a threshold population, which exceeds an individual settlement, and therefore are supported by a number of settlements.
- ✓ **Lower-order public facilities:** these are facilities, which are utilised by a single or a limited number of residential communities (eg. A crèche or pre-primary school), a
- ✓ **Mobile public facilities:** these area facilities, which move from one location to another, serving a large number of communities. Many problems with regard to the spatial location of public facilities are increasingly being solved through the use of mobile public facilities, such as clinics, post offices and public telephones. Through mobile facilities, the ideal of allocating scarce resources, whilst at the same time serving the greatest number of people, can be achieved.

Table indicates the quantitative guidelines for social services

Table 11.1: Quantitative Guidelines for Social Service Facilities

Facility	Location	Access	Size and Dimensions
Crèche / Nursery School	Community specific facilities which should be walking distance of residential units can be clustered with pre-primary schools, primary schools, community centres etc.	Maximum travel time: 10 minutes Maximum walking distance: 750m	Minimum size of facility: 130m ²
Primary School	Should be located within easy reach of the local areas which it is intended to serve – needs to be located close to public transport route and can be combined with a number of other facilities	Maximum travel time: 20 minutes Maximum walking distance: 1,5km	Minimum size of facility: 2.4ha
High School	School should be situated on a major transport route with public transport stops	Maximum travel time: 30 minutes Maximum walking distance: 2.25km	Minimum size for facility: 4.6ha
Clinic	Should be located close to public transport stops but need not be located along a major route	Maximum walking distance: 2km	0.1ha per 5 000 people 0.2ha per 10 000 people 0.5ha per 20 000 people 1ha per 40 000 people 1.5ha per 60 000 to 80 000 people
Libraries	Should be easily accessible, preferably on main thoroughfare convenient to main traffic and transportation routes	Maximum travel time: 20 to 30 minutes Maximum walking distance: 1.5km to 2.3km	Minimum size for facility: 130m ²
Community Centres	Provides a variety of services to a number of residential	Maximum travel time: 20 to 30 minutes	Minimum size of facility: 5 000m ²

Facility	Location	Access	Size and Dimensions
	communities – should be easily accessible to these communities	Maximum walking distance: 1.5km to 2.25km	
Religious	Churches can be clustered with other public facilities in order to promote multi-functionality.	Maximum travel time: 20 minutes Maximum walking distance: 1.5km	Site can range from 150m ² to 3 000m ²
Municipal Offices / Pay Points	Require high levels of exposure and must be easily accessible by public transport	Maximum travel time: 30 minutes	Minimum size for facility: 3 000m ²
Post offices	Needs to be visible and accessible and located along activity routes within easy walking distance of public transport stops	Maximum travel time: 30 to 40 minutes Maximum walking distance: 2km	Minimum size for facility: 500m ²
Police Station	Should be located central to all the communities which they are required to serve and should be on a main thoroughfare	Maximum travel time: 20 minutes Maximum walking distance: 1.5km	Varies between 0.1ha to 1 ha
Fire Stations	Should be located on higher-order multifunctional routes	Not generally planned within a residential community	Average erf size of 1.2ha
Children's Home	Regional facility and would be provided in terms of a development framework based on statistics regarding homeless children	Not applicable to the planning of residential settlements	Average erf size: 2ha
Community Information Centres	Should be easily accessible and visible to as many people as possible	Maximum walking distance: 1km	Need not be bigger than 100m ²

With the above guidelines for social facilities, the existing market supply and market gap for the area can be determined. From the table it is also evident that social facilities should be located within a convenient distance from residents who should be able to easily access these facilities. Since the majority of residents are of lower income households, walking is the most preferred and convenient manner of accessing social facilities and hence these facilities should be within a comfortable walking distance.

11.2.2 SOCIAL FACILITY SUPPLY WITHIN THE MARKET TRADE AREA

Table 11.2 illustrates the existing social facilities in the market area.

Table 11.2: Social facility supply in the primary market area

Fire stations	Police stations
Boksburg Central Fire Station	Germiston SAPS
Germiston Central Fire Station	Alrode SAPS
Primrose Fire Station	Tokoza SAPS

Alberton Fire Station	Vosloorus SAPS
Thokoza Fire Station	Boksburg North SAPS
Brakpan Fire Station	Dawn Park SAPS
	Brakpan SAPS
	Elsburg SAPS
	Boksburg Central SAPS
Post Office	Post Office
Bedford Centre Post Office	Germiston Central Post Office – Webber Rd
Germiston South Post Office	Elsburg Post Office
Boksburg East Post Office	Boksburg North Post Office
Sunward Park Post Office	Cinda Park Post Office
Dalview Post Office	

From Table 11.2 it is evident that several social facilities exist within the market area. Given the large amount of residential units planned for the area, demand for numerous social facilities will have to be addressed. The following section identifies social facility shortfalls / market gaps within the primary trade area.

11.3 SOCIAL FACILITY MARKET DEMAND ESTIMATIONS

This section provides the results for the demand in social facilities in the market area. The social following facilities were included in the modelling:

It is important to remember that these are guidelines and it is not always feasible to address the entire market gap although the analysis remains useful to identify social facility shortfalls.

Table 11.3 shows the social facility market gap for the project.

Table 11.3: Social Amenities Market Gap – (Project Specific)

	Parameter per facility	Total increase 2016-2026	Number of project-linked units
Crèche	2 400	5,5	6
Primary School	7 000	1,9	2
Secondary School	12 500	1,0	1
Clinic	24 000	0,5	1
Day-Hospital	100 000	0,1	-
Community Hospital	300 000	0,0	-
Library	20 000	0,7	1
Community Centre	10 000	1,3	1
Sports Stadium	200 000	0,1	-
Post Office	10 000	1,3	1
Police Station	60 000	0,2	-
Fire Station	60 000	0,2	-
Municipal Offices	100 000	0,1	-
Sport Fields	60 000	0,2	-

Source: Demacon ex. CSIR, 2016

11.4 SYNTHESIS

Chapter 11 provided an empirical assessment of the development potential of a range of community and social facilities. This is supported by a gap analysis of social facilities. These assessments provide a useful indication of possible future developments within the area.

From the social facility modelling, it is evident that there is a gap for several facilities in the primary trade area. The table above indicates that the social amenities that are feasible, necessary and compatible with the site configuration are:

- ✓ 6 crèches
- ✓ 2 primary schools
- ✓ 1 secondary school
- ✓ 1 clinic
- ✓ 1 library
- ✓ 1 community centre
- ✓ 1 post office

The development of other amenities would depend on future population growth in the market area – current demand thresholds can sustain additional amenities.

CHAPTER 12: ECONOMIC IMPACT ASSESSMENT

12.1 INTRODUCTION

The purpose of this chapter is to assess the anticipated economic impact that could be generated by the proposed Leeuwpoot Mixed Use Development. Capital investment and operational expenditure that could be associated with the proposed development are used as basis to quantify the potential impact that could result from the proposed Leeuwpoot Mixed Use Development on the local, metropolitan and provincial economies.

The impact refers to the ripple effect throughout the economy caused by investment in a specific economic sector. This impact stretches beyond the jobs and income generated by the original project. In order to estimate the total economic impact the input-output model is employed.

The following section provides an overview of the proposed Leeuwpoot mixed use development concept.

12.2 LEEUWPOORT MIXED USE DEVELOPMENT CONCEPT

Table 12.1 summarises the development concept that is associated with the proposed Leeuwpoot mixed use development, serving as basis for the quantitative assessment of the economic impacts of the proposed project.

Table 12.1: Leeuwpoot Mixed Use Development Concept

Land Use	Proposed Size
Residential (Bonded Units)	3 103 units
Residential (Social Units)	8 454 units
Residential (Subsidy Units)	1 552 units
Retail	86 595m ²
Trade / Automotive	4 221m ²
Offices	18 592m ²
Industrial	25 116m ²
Private Combined School	10 487m ²
Private Hospital	165 beds
Social Facilities	32 226m ²

Source: Demacon Estimates, 2016

The following sections summarise the construction and operational phase impacts that could potentially arise from the development of the Leeuwpoot development.

12.3 CONSTRUCTION PHASE IMPACTS

This section indicates the anticipated impacts (direct, indirect and induced) that could result from the construction phase of the Leeuwpoot Mixed Use Development. It is important to note that these impacts are **once off and not sustained annual impacts**. The impacts will fade away after the construction of the project.

The following table provides an illustration of the anticipated **additional business sales** generated by each proposed land use during the construction phase of the proposed Leeuwpoot development.

Table 12.2: Construction Phase - Additional Business Sales per Land Use (2016 NPV)

ADDITIONAL BUSINESS SALES	DIRECT IMPACT	INDIRECT IMPACT	INDUCED IMPACT	TOTAL IMPACT	PERCENTAGE SHARE
Residential (Bonded Units)	2 988 751 000	557 935 000	1 173 066 000	4 719 752 000	25,0%
Residential (Social Units)	3 908 512 000	729 635 000	1 534 066 000	6 172 213 000	32,7%
Residential (Subsidy Units)	437 246 000	81 624 000	171 616 000	690 486 000	3,7%
Retail	2 502 200 000	467 107 000	982 098 000	3 951 405 000	20,9%
Trade / Automotive	101 640 000	18 974 000	39 893 000	160 507 000	0,9%
Offices	596 916 000	111 431 000	234 285 000	942 632 000	5,0%
Industrial	524 144 000	97 846 000	205 723 000	827 713 000	4,4%
Private Combined School	108 584 000	20 270 000	42 619 000	171 473 000	0,9%
Private Hospital	264 875 000	49 446 000	103 962 000	418 283 000	2,2%
Social Facilities	517 325 000	96 573 000	203 047 000	816 945 000	4,3%
TOTAL (RAND)	11 950 193 000	2 230 841 000	4 690 375 000	18 871 409 000	100,0%

Source: Demacon Estimates, 2016

The following table provides an illustration of the anticipated **additional GGP** generated by each proposed land use during the construction phase of the proposed Leeuwpoot development.

Table 12.3: Construction Phase - Additional GGP per Land Use (2016 NPV)

ADDITIONAL GGP	DIRECT IMPACT	INDIRECT IMPACT	INDUCED IMPACT	TOTAL IMPACT	PERCENTAGE SHARE
Residential (Bonded Units)	930 380 000	217 698 000	520 236 000	1 668 314 000	25,0%
Residential (Social Units)	1 216 696 000	284 693 000	680 334 000	2 181 723 000	32,7%
Residential (Subsidy Units)	136 112 000	31 849 000	76 109 000	244 070 000	3,7%
Retail	778 920 000	182 258 000	435 545 000	1 396 723 000	20,9%
Trade / Automotive	31 640 000	7 403 000	17 692 000	56 735 000	0,9%
Offices	185 816 000	43 479 000	103 902 000	333 197 000	5,0%
Industrial	163 163 000	38 178 000	91 235 000	292 576 000	4,4%
Private Combined School	33 802 000	7 909 000	18 901 000	60 612 000	0,9%
Private Hospital	82 454 000	19 293 000	46 105 000	147 852 000	2,2%
Social Facilities	161 040 000	37 682 000	90 048 000	288 770 000	4,3%
TOTAL (RAND)	3 720 023 000	870 442 000	2 080 107 000	6 670 572 000	100,0%

Source: Demacon Estimates, 2016

The following table provides an illustration of the anticipated **additional employment opportunities** generated by each proposed land use during the construction phase of the proposed Leeuwpoot development.

Table 12.4: Construction Phase - Additional Employment per Land Use (2016 NPV)

ADDITIONAL EMPLOYMENT	DIRECT IMPACT	INDIRECT IMPACT	INDUCED IMPACT	TOTAL IMPACT	PERCENTAGE SHARE
Residential (Bonded Units)	6 700	1 200	3 200	11 100	25,0%
Residential (Social Units)	8 800	1 500	4 200	14 500	32,7%
Residential (Subsidy Units)	1 000	200	500	1 700	3,8%
Retail	5 600	1 000	2 700	9 300	21,0%
Trade / Automotive	200	40	100	340	0,8%
Offices	1 300	200	600	2 100	4,7%
Industrial	1 200	200	600	2 000	4,5%
Private Combined School	200	40	100	340	0,8%
Private Hospital	596	105	282	983	2,2%
Social Facilities	1 200	200	600	2 000	4,5%
TOTAL (JOBS)	26 796	4 685	12 882	44 363	100,0%

Source: Demacon Estimates, 2016

The following table provides a synthesis of the abovementioned impacts, in terms of additional business sales, additional GGP as well as additional employment, with regard to the entire proposed Leeuwpoot development.

Table 12.5: Impact of Proposed Leeuwpoot Development – Construction Phase

VARIABLE	DIRECT IMPACT	INDIRECT IMPACT	INDUCED IMPACT	TOTAL IMPACT
Additional Business Sales	11 950 193 000	2 230 841 000	4 690 375 000	18 871 409 000
Additional GGP	3 720 023 000	870 442 000	2 080 107 000	6 670 572 000
Additional Employment	26 796	4 685	12 882	44 363



VARIABLE	CAPITAL EXPENDITURE	TOTAL IMPACT
Additional Business Sales	R8.2 billion	R18.9 billion
Additional GGP		R6.7 billion
Additional Employment		44 363 jobs

Table 12.5 illustrates that the envisaged total investment in construction costs of approximately R8.2 billion, could create an additional R18.9 billion in new business sales, R6.7 billion in additional GGP, as well as an additional 44 363 once-off employment opportunities. Total impact includes direct, indirect as well as induced effects.

The following section provides an overview of the anticipated impact of the proposed Leeuwpoot development, during its operational phase.

12.4 OPERATIONAL PHASE IMPACTS

The subsequent paragraphs indicate the anticipated sustained impacts (direct, indirect and induced) that could result during the operational phase of the Leeuwpoot Mixed Use Development, **once the project is fully operational (i.e. sustained annual impacts)**.

The following table provides an illustration of the anticipated **additional business sales** generated by each proposed land use during the operational phase of the proposed Leeuwpoot development.

Table 12.6: Operational Phase - Additional Business Sales per Land Use
(Sustained Annually)

ADDITIONAL BUSINESS SALES	DIRECT IMPACT	INDIRECT IMPACT	INDUCED IMPACT	TOTAL IMPACT	PERCENTAGE SHARE
Residential (Bonded Units)	105 673 000	18 824 000	55 951 000	180 448 000	2,0%
Residential (Social Units)	64 778 000	11 539 000	34 298 000	110 615 000	1,2%
Residential (Subsidy Units)	3 964 000	706 000	2 099 000	6 769 000	0,1%
Retail	3 614 817 000	631 775 000	2 144 896 000	6 391 488 000	72,1%
Trade / Automotive	132 151 000	23 096 000	78 413 000	233 660 000	2,6%
Offices	263 813 000	46 994 000	139 683 000	450 490 000	5,1%
Industrial	430 925 000	33 071 000	179 213 000	643 209 000	7,3%
Private Combined School	66 162 000	8 216 000	51 390 000	125 768 000	1,4%
Private Hospital	251 476 000	57 824 000	116 596 000	425 896 000	4,8%
Social Facilities	171 478 000	30 546 000	90 794 000	292 818 000	3,3%
TOTAL (RAND)	5 105 237 000	862 591 000	2 893 333 000	8 861 161 000	100,0%

Source: Demacon Estimates, 2016

The following table provides an illustration of the anticipated **additional GGP** generated by each proposed land use during the operational phase of the proposed Leeuwpoot development.

Table 12.7: Operational Phase - Additional GGP per Land Use (Sustained Annually)

ADDITIONAL GGP	DIRECT IMPACT	INDIRECT IMPACT	INDUCED IMPACT	TOTAL IMPACT	PERCENTAGE SHARE
Residential (Bonded Units)	52 503 000	8 706 000	24 913 000	86 122 000	2,0%
Residential (Social Units)	32 185 000	5 337 000	15 272 000	52 794 000	1,2%
Residential (Subsidy Units)	1 970 000	327 000	935 000	3 232 000	0,1%
Retail	1 927 111 000	287 872 000	955 631 000	3 170 614 000	74,0%
Trade / Automotive	70 452 000	10 524 000	34 936 000	115 912 000	2,7%
Offices	131 075 000	21 734 000	62 196 000	215 005 000	5,0%
Industrial	169 239 000	14 030 000	79 062 000	262 331 000	6,1%
Private Combined School	41 942 000	3 613 000	22 907 000	68 462 000	1,6%
Private Hospital	92 305 000	26 182 000	51 894 000	170 381 000	4,0%
Social Facilities	85 198 000	14 127 000	40 427 000	139 752 000	3,3%
TOTAL (RAND)	2 603 980 000	392 452 000	1 288 173 000	4 284 605 000	100,0%

Source: Demacon Estimates, 2016

The following table provides an illustration of the anticipated **additional employment opportunities** generated by each proposed land use during the operational phase of the proposed Leeuwpoot development.

Table 12.8: Operational Phase - Additional Employment per Land Use (Sustained Annually)

ADDITIONAL EMPLOYMENT	DIRECT IMPACT	INDIRECT IMPACT	INDUCED IMPACT	TOTAL IMPACT	PERCENTAGE SHARE
Residential (Bonded Units)	110	40	150	300	2,0%
Residential (Social Units)	69	24	93	186	1,2%
Residential (Subsidy Units)	4	1	10	15	0,1%
Retail	4 140	1 300	5 830	11 270	73,4%
Trade / Automotive	150	50	210	410	2,7%
Offices	280	100	380	760	5,0%
Industrial	180	70	490	740	4,8%
Private Combined School	440	20	140	600	3,9%
Private Hospital	130	130	320	580	3,8%
Social Facilities	180	60	250	490	3,2%
TOTAL (JOBS)	5 683	1 795	7 873	15 351	100,0%

Source: Demacon Estimates, 2016

The following table provides a synthesis of the abovementioned impacts, in terms of additional business sales, additional GGP as well as additional employment, with regard to the entire proposed Leeuwpoot development.

Table 12.9: Impact of Proposed Leeuwpoot Development – Operational Phase

VARIABLE	DIRECT IMPACT	INDIRECT IMPACT	INDUCED IMPACT	TOTAL IMPACT
Additional Business Sales	5 105 237 000	862 591 000	2 893 333 000	8 861 161 000
Additional GGP	2 603 980 000	392 452 000	1 288 173 000	4 284 605 000
Additional Employment	5 683	1 795	7 873	15 351



VARIABLE	OPERATIONAL EXPENDITURE	TOTAL IMPACT
Additional Business Sales	R3.7 billion	R8.9 billion
Additional GGP		R4.3 billion
Additional Employment		15 351 jobs

Table 12.9 illustrates that the estimated total annual operational expenditure of approximately R3.7 billion, could create an additional R8.9 billion in new business sales, R4.3 billion in additional GGP, as well as 15 351 sustained employment opportunities. Total impact includes direct, indirect as well as induced effects.

The following section provides a concise synthesis of preceding sections, pertaining to the anticipated impact of the proposed Leeuwpoot development during both the construction and operational phases.

12.5 SYNTHESIS

This section described the potential economic impact that the proposed Leeuwpoot development could induce on the local, metropolitan and provincial economies and communities during both the construction and operational phases.

Table 12.10 summarises the findings of the Economic Impact Assessment as described in preceding sections.

Table 12.10: Synthesis of Impact Modelling Results of Leeuwpoot Development

VARIABLE	INPUT VALUE	TOTAL IMPACT
Construction Phase (Once-off)		
Additional Business Sales	R8.2 billion	R18.9 billion
Additional GGP		R6.7 billion
Additional Employment		44 363 jobs
Operational Phase (Sustained Annually)		
Additional Business Sales	R3.7 billion	R8.9 billion
Additional GGP		R4.3 billion
Additional Employment		15 351 jobs

Source: Demacon Estimates, 2016

The proposed Leeuwpoot development could also contribute the following in terms of payable property rates per annum (refer to Table 12.11 - overleaf).

Table 12.11: Forecast Future Additional Property Rates Payable per Land Use

Land Use	Size	Capital Investment (Buildings)	Total Capital Investment (incl. Buildings, Land & Infrastructure)	Percentage	Property Rates Per Annum	Property Rates Percentage	Residential Property Rates Percentage	Non-Residential Property Rates Percentage
Residential (Bonded Units)	3 103 units	R1 861 800 000	R2 047 980 000	25,0%	R17 054 088	26,2%	26,2%	-
Residential (Social Units)	8 454 units	R2 434 752 000	R2 678 227 200	32,7%	-	0,0%	0,0%	-
Residential (Subsidy Units)	1 552 units	R272 376 000	R299 613 600	3,7%	-	0,0%	0,0%	-
Retail	86 595m ²	R1 558 710 000	R1 714 581 000	20,9%	R28 555 567	43,9%	-	43,9%
Trade / Automotive	4 221m ²	R63 315 000	R69 646 500	0,9%	R1 159 931	1,8%	-	1,8%
Offices	18 592m ²	R371 840 000	R409 024 000	5,0%	R6 812 109	10,5%	-	10,5%
Industrial	25 116m ²	R326 508 000	R359 158 800	4,4%	R7 477 033	11,5%	-	11,5%
Private Combined School	10 487m ²	R67 641 150	R74 405 265	0,9%	R154 898	0,2%	-	0,2%
Private Hospital	165 beds	R165 000 000	R181 500 000	2,2%	R3 022 800	4,7%	-	4,7%
Social Facilities	32 226m ²	R322 260 000	R354 486 000	4,3%	R737 975	1,1%	-	1,1%
TOTAL	-	R7 444 202 150	R8 188 622 365	100,0%	R64 974 402	100,0%	26,2%	73,8%

Source: Demacon Estimates, 2016

If the **proposed Leeuwpoot Mixed Use Development were not to occur**, the economic **benefits** in terms of additional business sales, GGP, employment, as well as property rates, would be **lost to the local, metropolitan and provincial economies**.

CHAPTER 13: DEVELOPMENT PROSPECTS 2016 - 2026

In summary, the development prospects for the Leeuwpoot development over a 10 year planning horizon (2016 to 2026) can be summarised as follows:

Table 13.1: Summary of demand potential development prospects 2016 - 2026

Land use	Number of units / beds / keys	m ² GLA
Residential (bonded)	3 103 units	1 551 500
Residential (subsidy)	1 522 units	388 000
Residential (Social)	8 454 units	845 400
Retail	3 centres	86 595
Automotive	As per architectural design	4 221
Offices	As per architectural design	18 592
Industrial / Warehousing	As per architectural design	25 116
Private Hospital	165 beds	11 602
Private Combined School	1 school	10 487
Crèche	6 crèches	710
Education - Primary School (Public)	2 primary schools	9 364
Education - Secondary School (Public)	1 secondary school	10 487
Clinic (Public)	1 clinic	1 092
Library	1 library	85
Community Centre	1 community centre	6 555
Post Office	1 post office	3 933

Development prospects for the 10 year planning horizon are given as follows:

Table 13.2: Forecast take-up for the Leeuwpoot development (10 year planning horizon 2016-2026)

Land use	2026 (ha)	Surplus buffer (20 - 30%) (ha)	Internal Circulation Roads (ha)	Composition (%)
Residential (bonded)	155,15	201,70	242,03	46,5%
Residential (subsidy)	38,80	50,44	60,53	11,6%
Residential (Social)	84,54	109,90	131,88	25,3%
Retail	24,74	32,16	38,60	7,4%
Trade / Automotive	1,06	1,37	1,65	0,3%
Offices	2,32	3,02	3,63	0,7%
Industrial / Warehousing	5,02	6,53	7,84	1,5%
Private Hospital	1,93	2,51	3,02	0,6%
Education - Private combined school	5,24	6,82	8,18	1,6%
Crèche	0,36	0,46	0,55	0,1%
Education - Primary School (Public)	4,68	6,09	7,30	1,4%
Education - Secondary School (Public)	5,24	6,82	8,18	1,6%
Clinic (Public)	0,18	0,24	0,28	0,1%
Library	0,04	0,06	0,07	0,01%
Community Centre	3,28	4,26	5,11	1,0%
Post Office	0,98	1,28	1,53	0,3%
Cumulative - hectare Take-up (ha)	333,58	433,65	520,38	100,00%

To conclude, from the land use table, the demand for the project amounts to approximately **520.38 ha** over the next 10 years, compared to the current developable area available (599.6 ha).

ANNEXURE E:
PUBLIC PARTICIPATION

ANNEXURE E1:
PROOF OF SITE NOTICE

NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PHASE AND WATER USE LICENSE APPLICATION

Notice is hereby given that an application for an **Environmental Impact Assessment Process** in terms of the EIA Regulations, 2014 (Regulations in terms of Chapter 6 of the National Environmental Management Act, 1998, as amended) was lodged with the Gauteng Department of Agriculture and Rural Development. A **Water Use License Application (WULA)** in terms of the National Water Act, 1998 (Act No. 36 of 1998) will be submitted to the Department of Water and Sanitation.

Project & Property Description: The proposed project is for the establishment of a township to be known as **Leeuwpoot South (which will be phased and known as various extensions of Sunward Park)**. It aims to serve as a Mixed Use Development [Residential 1, Residential 3, Residential 4, Business 2, Business 3, Special (for clinic, retirement village and frail care, gate houses, and agriculture and other uses with consent), Public Services, Community Facility, Transportation, and Public Open Space] on a **part of the Remaining Extent of the Farm Leeuwpoot 113IR**.

Location: The proposed development is situated 6.5km south of the Boksburg CBD just south of Sunward Park. The R554 runs along the southern boundary of the proposed development, with the R21 running along the western boundary and the M43 running along the eastern boundary.

Listing Activities Applied for in terms of NEMA EIA Regulations, 4 December 2014:

GNR 983 (Listing Notice 1) – Activity 9, 10, 11, 12, 19, 22, 24, 26, 27, 28, 31 & 32.

GNR 984 (Listing Notice 2) – Activity 6 & 15.

GNR 985 (Listing Notice 3) – Activity 4, 12 & 14.

The aforementioned proposed activity requires an application in terms Section 21 of the National Water Act, 1998 (Act 36 of 1998) (NWA) for the following water uses:

- Section 21 (c): Impeding or diverting the flow of water in a watercourse;
- Section 21 (i): Altering the bed, banks, course or characteristics of a watercourse; and
- Possibly Section 21 (a): Abstraction of water; (b) Storage of water; and (j): Removing, discharging or disposing of water found underground.

Proponent: Leeuwpoot Development (Pty) Ltd in collaboration with Ekurhuleni Metropolitan Municipality.

Date of Notice: 22 March 2017 – 24 April 2017.

In order to ensure that you are identified as an Interested and/or Affected Party (I&AP) please submit your name, contact information and interest in the matter, in writing, to the contact person given below **within 30 days from the date of commencement of this Notice**.

The proposed development requires applications subject to an **Environmental Impact Assessment Process** and a **Water Use License Application**. All registered I&APs will be allowed 60 days to comment on the **Water Use License Application** and 30 days on the **Environmental Impact Assessment Report** upon release of the documentation.

Queries regarding this matter should be referred to:
Bokamoso Landscape Architects and Environmental Consultants CC

Public Participation registration and Enquiries: **Juanita De Beer**

Project & WULA Enquiries: **Adéle Drake**

Tel: (012) 346 3810

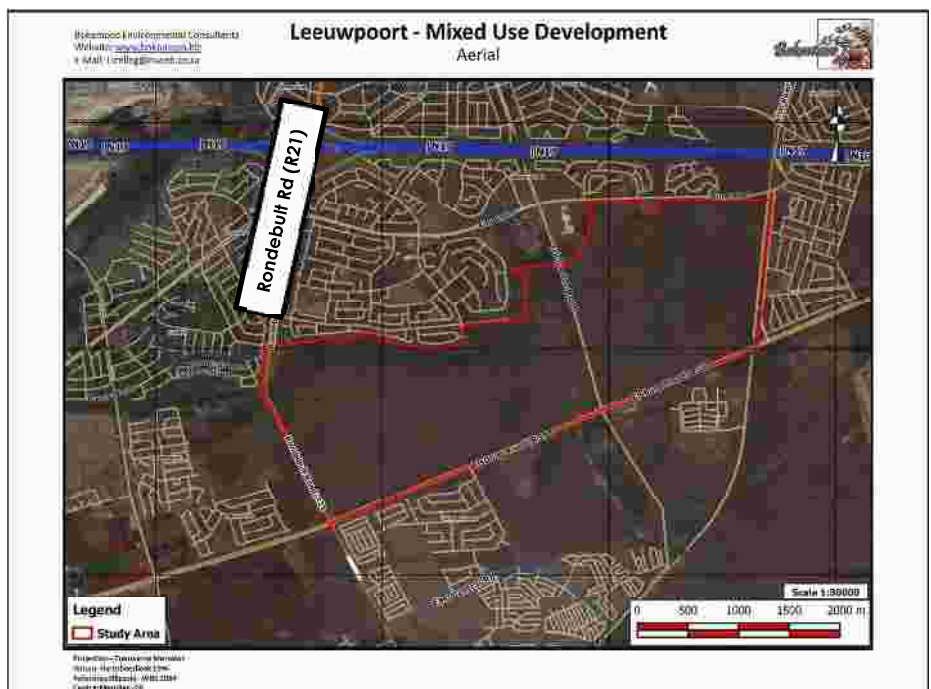
P.O. Box 11375

Maroelana 0161

Fax: (086) 570 5659

E-mail: reception@bokamoso.net

Website: www.bokamoso.net







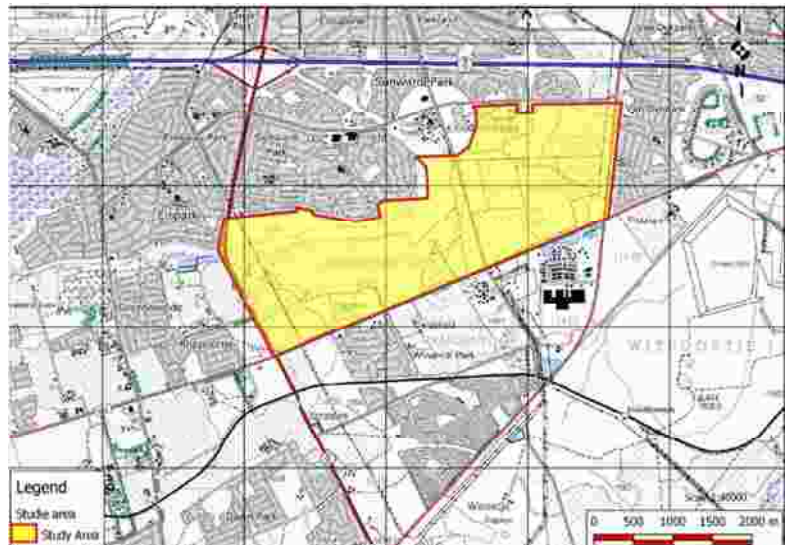




NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION AND WATER USE LICENSE APPLICATION

Notice is hereby given that an application for environmental authorization in terms of the EIA Regulations, 2014 (Regulations in terms of Chapter 6 of the National Environmental Management Act, 1998, as amended) will be lodged with the Gauteng Department of Agriculture and Rural Development. A Water Use License Applications (WULA) in terms of the National Water Act, 1998 (Act No. 36 of 1998) is also required.

Project Description: The proposed project is for establishment of a township currently known as Leeuwpoot South (which will be phased and known as various extensions of Sunward Park) by Leeuwpoot Development (Pty) Ltd in collaboration with Ekurhuleni Metropolitan Municipality, south of Sunward Park, Boksburg, Ekurhuleni, Gauteng Province. It aims to serve as mixed use development, [(Residential 1, Residential 3, Residential 4, Business 2, Business 3, Special (for clinic, retirement village and frail care, gate houses, and agriculture and other uses with consent), Public Services, Community Facility, Transportation, and Public Open Space)], on a part of the remaining extent of the Farm Leeuwpoot 113 IR. The proposed development is 6.5km south of the Boksburg CBD just south of Sunward Park. The R 554 runs along the southern boundary of the proposed development, with the R 21 running along the western boundary and the M43 running along the eastern boundary.



Listing Activities Applied for: in terms of the NEMA EIA Regulations, 4 December 2014; GNR 983 (Listing Notice 1) Activity 9, 10, 11, 12, 19, 22, 24, 26, 27, 28, 31 & 32; GNR 984 (Listing Notice 2), Activity 4, 6, and 15; and GNR 985 (Listing Notice 3), Activity 12 & 14.

Water Uses applied for: Section 21 (c) and (i), and possibly (a), (b) and (j)

Date of Notice: 1 September 2016 – 30 September 2016

In order to ensure that you are identified as an Interested and/or Affected Party (I&AP) please submit your name, contact information and interest in the matter, in writing, to the contact person given above **within 30 days from start date of this Notice.**

The proposed development requires applications subject to a **Scoping and Environmental Impact Assessment Process** and a **Water Use License Application**. All registered I&APs will be allowed 60 days to comment on the **Water Use License Application** and 30 days on the **Scoping and Environmental Impact Assessment Process** upon release of the documentation.

Queries regarding this matter should be referred to:

Bokamoso Landscape Architects and Environmental Consultants CC

Public Participation registration and Enquiries: **Juanita De Beer**

Project Enquiries: **Anè Agenbacht**

P.O. Box 11375

Maroelana 0161

www.bokamoso.net

Tel: (012) 346 3810

Fax: (086) 570 5659

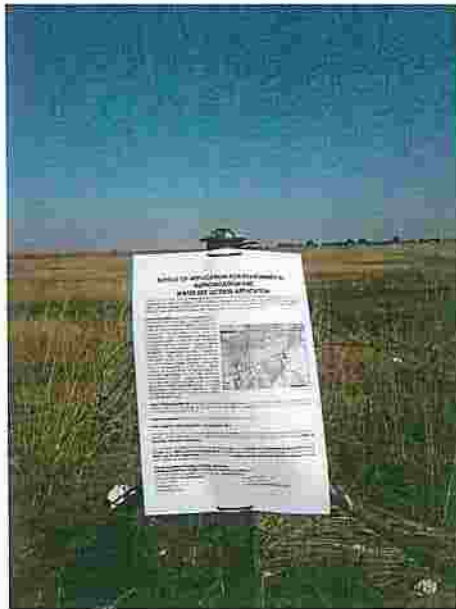
E-mail: reception@bokamoso.net







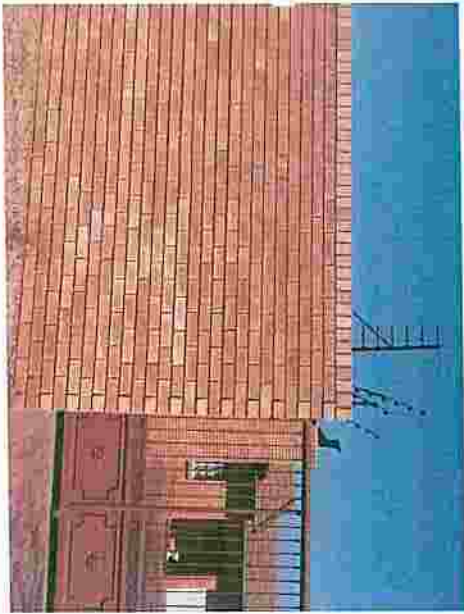










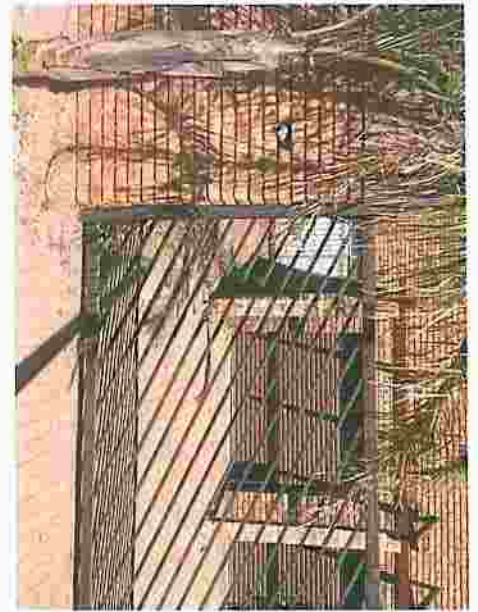
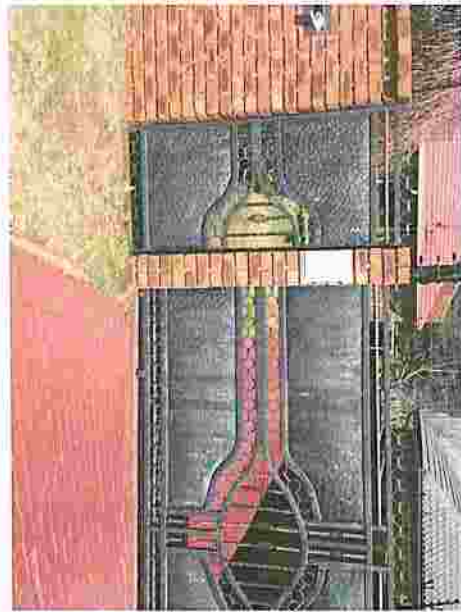


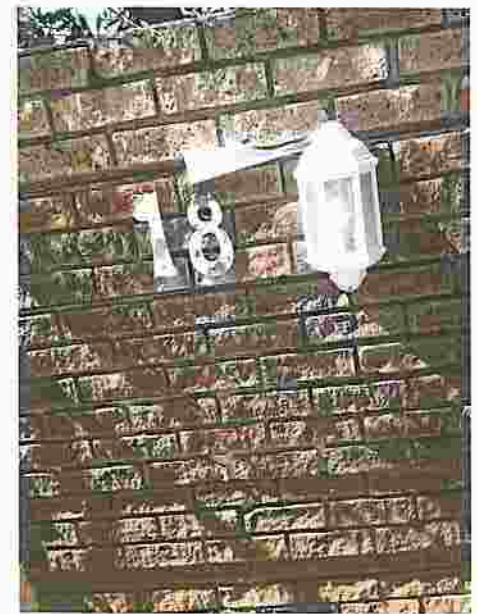




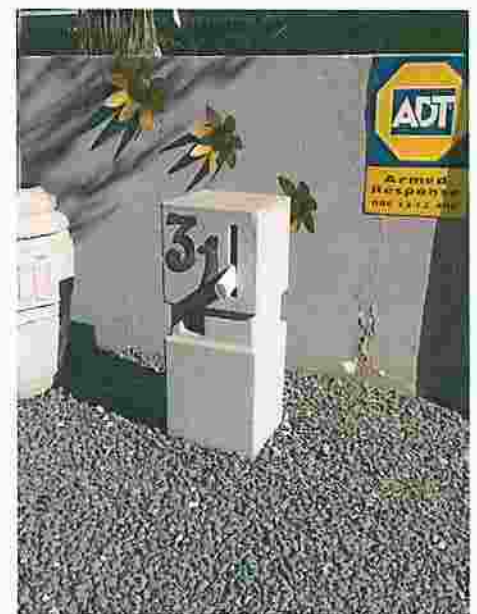






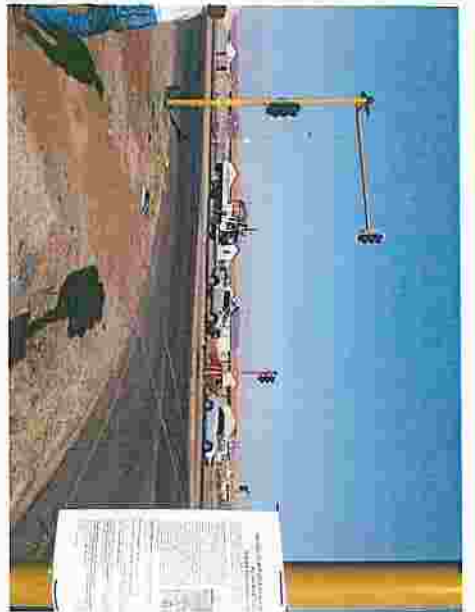






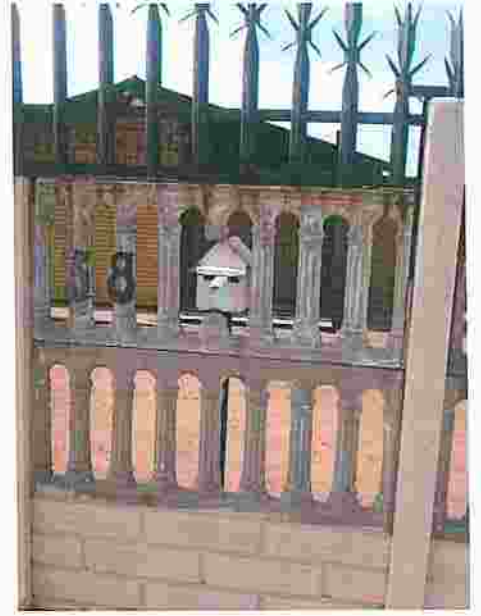




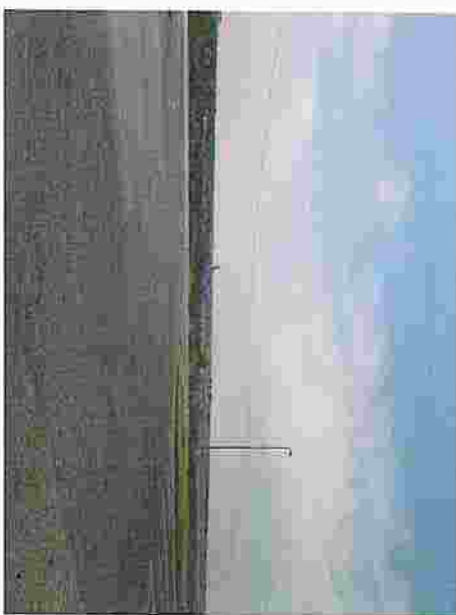






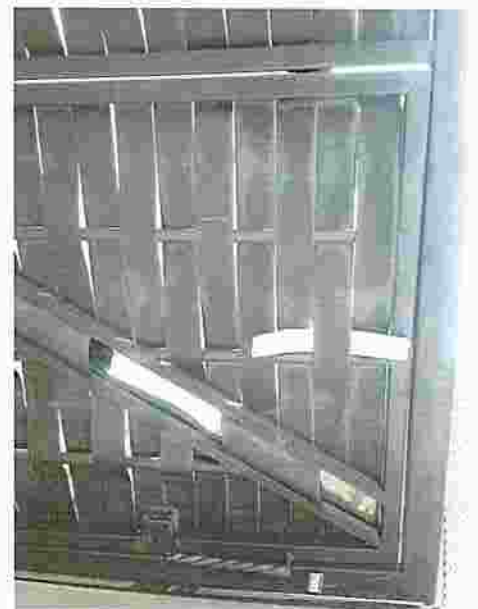
















ANNEXURE E2:
WRITTEN NOTICES/PUBLIC
NOTICE

NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PHASE AND WATER USE LICENSE APPLICATION

Notice is hereby given that an application for an **Environmental Impact Assessment Process** in terms of the EIA Regulations, 2014 (Regulations in terms of Chapter 6 of the National Environmental Management Act, 1998, as amended) was lodged with the Gauteng Department of Agriculture and Rural Development. A **Water Use License Application** (WULA) in terms of the National Water Act, 1998 (Act No. 36 of 1998) will be submitted to the Department of Water and Sanitation.

Project & Property Description: The proposed project is for the establishment of a township to be known as **Leeuwpoot South (which will be phased and known as various extensions of Sunward Park)**. It aims to serve as a Mixed Use Development [Residential 1, Residential 3, Residential 4, Business 2, Business 3, Special (for clinic, retirement village and frail care, gate houses, and agriculture and other uses with consent), Public Services, Community Facility, Transportation, and Public Open Space] on **a part of the Remaining Extent of the Farm Leeuwpoot 113IR.**

Location: The proposed development is situated 6.5km south of the Boksburg CBD just south of Sunward Park. The R554 runs along the southern boundary of the proposed development, with the R21 running along the western boundary and the M43 running along the eastern boundary.

Listing Activities Applied for in terms of NEMA EIA Regulations, 4 December 2014:

GNR 983 (Listing Notice 1) – Activity 9, 10, 11, 12, 19, 22, 24, 26, 27, 28, 31 & 32.
GNR 984 (Listing Notice 2) – Activity 6 & 15.
GNR 985 (Listing Notice 3) – Activity 4, 12 & 14.

The aforementioned proposed activity requires an application in terms Section 21 of the National Water Act, 1998 (Act 36 of 1998) (NWA) for the following water uses:

- Section 21 (c): Impeding or diverting the flow of water in a watercourse;
- Section 21 (i): Altering the bed, banks, course or characteristics of a watercourse; and
- Possibly Section 21 (a): Abstraction of water; (b) Storage of water; and (j): Removing, discharging or disposing of water found underground.



Proponent: Leeuwpoot Development (Pty) Ltd in collaboration with Ekurhuleni Metropolitan Municipality.

Date of Notice: 22 March 2017 – 24 April 2017.

In order to ensure that you are identified as an Interested and/or Affected Party (I&AP) please submit your name, contact information and interest in the matter, in writing, to the contact person given below **within 30 days from the date of commencement of this Notice.**

The proposed development requires applications subject to an **Environmental Impact Assessment Process** and a **Water Use License Application**. All registered I&APs will be allowed 60 days to comment on the **Water Use License Application** and 30 days on the **Environmental Impact Assessment Report** upon release of the documentation.

Queries regarding this matter should be referred to:

Bokamoso Landscape Architects and Environmental Consultants CC

Public Participation registration and Enquiries: **Juanita De Beer**

Project & WULA Enquiries: **Adèle Drake**

Tel: (012) 346 3810

P.O. Box 11375

Maroelana 0161

Fax: (086) 570 5659

E-mail: reception@bokamoso.net

Website: www.bokamoso.net

Review of the Final Scoping Report for the proposed Leeuwpoot South Mixed Use Development

A period of 30 days calendar days will be allowed for review and comments on the Final Scoping Report for the proposed Leeuwpoot South Mixed Use Development from **2 February 2017 – 6 March 2017**.

Your comments should be sent directly to our office at Bokamoso for Attention: Adèle Drake or Juanita De Beer (reception@bokamoso.net or fax: 086 570 5659).

A copy of the report will be available at:

Venue: Papachinos Restaurant

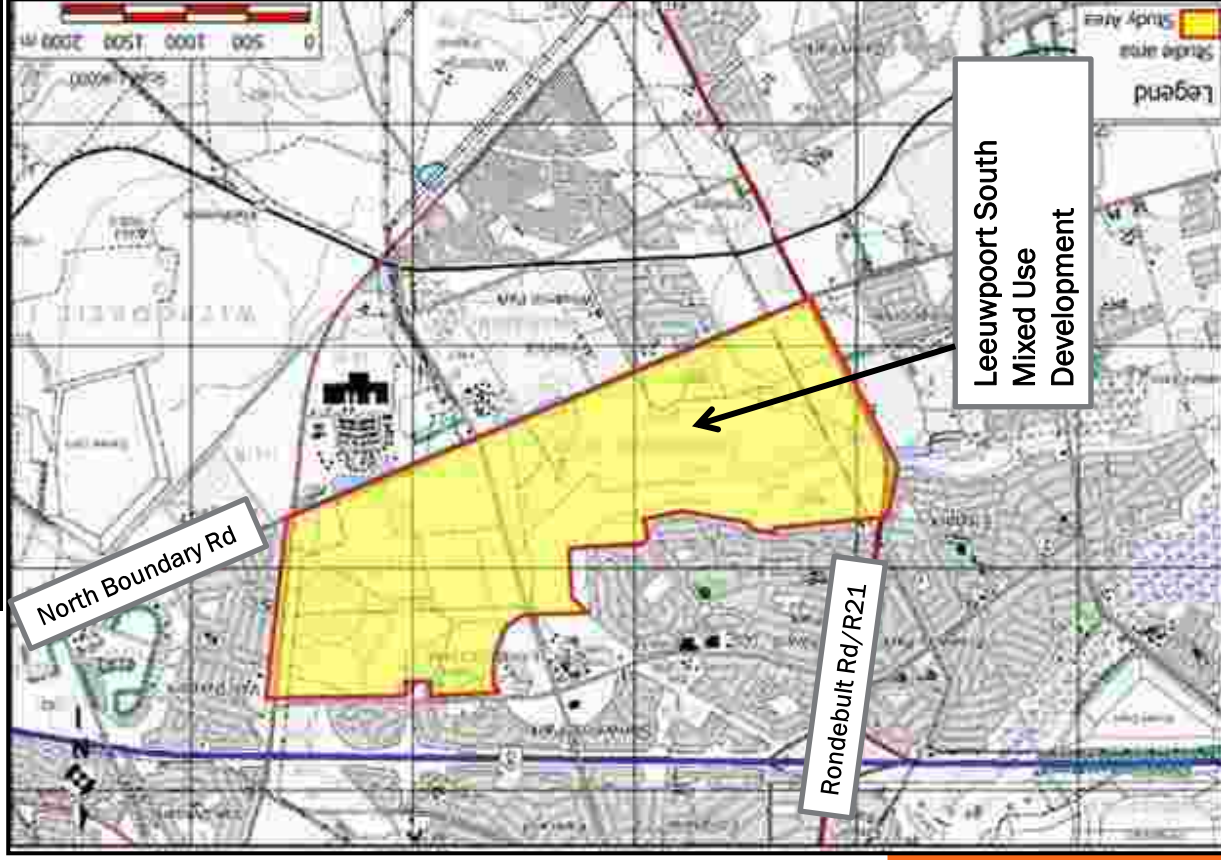
Attention: Robbie Berimbau (Owner)

Address: 261 Kingfisher Ave, Boksburg, 147

Tel: 011 913 2151

Date: 2 February 2017 – 6 March 2017

Also available on our Website: www.bokamoso.net



Please do not hesitate to contact us should you have any queries regarding the abovementioned development.

Contact person: **Juanita De Beer**

Tel: 012 346 3810 Fax: 086 570 5659

E-mail: reception@bokamoso.net



Review Register

**Final Scoping Report for the proposed
Leeuwpoort South Mixed Use Development**

Available: 2 February – 6 March 2017

**Please do not remove the
documents from the
premises!!**



Contact: Lizelle Gregory Email: reception@bokamoso.net

Tel: (012) 346 3810

Fax: (086) 570 5659

<p>Name: Ruan Janhls</p> <p>Address: DIGGERNIE STREET SUNWARD PARK</p>	<p>Tel:</p> <p>Cell: 078 459 6532</p> <p>Fax:</p> <p>Email: R.JANHLS@GMAIL.COM</p>	<p>Comments and Issues: NEGATIVE IMPACT ON PROPERTY VALUES OVER-POPULATED SUBURBS & INCREASED PRESSURE ON ROADWAY TRAFFIC</p>
<p>Name: MOKGADI KGOMO</p> <p>Address: 2 WENTE PLACE KINGFISHER PLACE, SUNWARD PARK</p>	<p>Tel:</p> <p>Cell: 071 854 7244</p> <p>Fax:</p> <p>Email: mkgomo@scs.gov.za</p>	<p>Comments and Issues: DEVELOPMENT HAS NEGATIVE IMPACT ON PROPERTY VALUE OF OUR AREA WE WANT HOUSES WITH R15000 MINIMUM VALUE</p>
<p>Name: ABULAWI KGOMO</p> <p>Address: 2 LENTE OORD STREET SUNWARD PARK KINGFISHER PLACE</p>	<p>Tel: 0</p> <p>Cell: 076 958 7127</p> <p>Fax:</p> <p>Email: henry.kgomo@scs.gov.za</p>	<p>Comments and Issues: The development will have negative social impact in the long run e.g. safety issues, health and education</p>
<p>Name: BATSCHAUWPAINE</p> <p>Address: SUNWARD PARK</p>	<p>Tel:</p> <p>Cell:</p> <p>Fax:</p> <p>Email:</p>	<p>Comments and Issues:</p>

<p>Name: M Venter Address: 18 Klarinet Road Sunward Park</p>	<p>Tel: Cell: 082 8801644 Fax: Email:</p>	<p>Comments and Issues: Huge impact on living conditions & safety. Invested in this area; will loose that investment. Not fair.</p>
<p>Name: Address:</p>	<p>Tel: Cell: Fax: Email:</p>	<p>Comments and Issues: Where was meeting 17 Jan held - NO NOTIFICATION &</p>
<p>Name: Address:</p>	<p>Tel: Cell: Fax: Email:</p>	<p>Comments and Issues: no opportunity to participate.</p>
<p>Name: Plakotaris Address: Uq. Vile D'Flay, 266 Kingfisher Ave Sunward Park</p>	<p>Tel: Cell: 08 2 894 1759 Fax: Email:</p>	<p>Comments and Issues: Depreciation of current Property value</p>

<p>Name: <u>Neil Makofas</u></p> <p>Address: <u>19ville de fleur</u> <u>Smywood Park</u></p>	<p>Tel:</p> <p>Cell: <u>0836589466</u></p> <p>Fax:</p> <p>Email: <u>neilmakofas@co.za</u></p>	<p>Comments and Issues:</p> <p><u>Revaluation of area</u></p>
<p>Name: <u>FRANCISCA BERNING</u></p> <p>Address: <u>46 Gerdaantken Rd.</u> <u>Smywood Park</u></p>	<p>Tel: <u>011 9131968</u></p> <p>Cell: <u>082 330 27 20</u></p> <p>Fax:</p> <p>Email: <u>f6ssnyetolkam.co.net</u></p>	<p>Comments and Issues: <u>July address</u></p> <p><u>you formally - How ever, producing</u> <u>allow report with a</u> <u>annexures and expect it</u></p>
<p>Name:</p> <p>Address:</p>	<p>Tel:</p> <p>Cell:</p> <p>Fax:</p> <p>Email:</p>	<p>Comments and Issues:</p> <p><u>the public to the travel</u> <u>through this - plus</u> <u>not fully informing the</u> <u>whole community -</u></p>
<p>Name:</p> <p>Address:</p>	<p>Tel:</p> <p>Cell:</p> <p>Fax:</p> <p>Email:</p>	<p>Comments and Issues:</p> <p><u>you only told the case and green</u> <u>to the property.</u> <u>Does not = community</u> <u>participation</u> <u>I would like you</u></p>

A preliminary review of your report - looks biased towards the development.

to put a web site up for the community

<p>Name: <i>L. A. WILLIAMS</i></p> <p>Address: <i>5 LEO ROAD SUNWARD PARK</i></p>	<p>Tel: <i>011 896 2692</i></p> <p>Cell: <i>082 5733 8944</i></p> <p>Fax: <i>011 9783 7859</i></p> <p>Email: <i>WILLIAMS@MWEB.CO.ZA</i></p>	<p>Comments and Issues: <i>ERURAHULEN HAS GOT 187 INFORMAL SETTLEMENTS I HAVE WITNESSED DEVELOPMENTS THAT HAVE BEEN CONSTRUCTED AND IN NO TIME EACH HOUSE HAS A SHACK NEXT TO IT OR AN OPEN GRAVEYARD. THIS IS GOING TO BE THE SAME.</i></p>
<p>Name:</p> <p>Address:</p>	<p>Tel:</p> <p>Cell:</p> <p>Fax:</p> <p>Email:</p>	<p>Comments and Issues:</p>
<p>Name:</p> <p>Address:</p>	<p>Tel:</p> <p>Cell:</p> <p>Fax:</p> <p>Email:</p>	<p>Comments and Issues:</p>
<p>Name:</p> <p>Address:</p>	<p>Tel:</p> <p>Cell:</p> <p>Fax:</p> <p>Email:</p>	<p>Comments and Issues:</p>

-Public Meeting-

For the proposed Leeuwpoot South Mixed Use Development

DATE: WEDNESDAY, 25 JANUARY 2017

PLACE: AGS NUWE LEWE CHURCH

TEL: 011 915 8835

ADDRESS: 47 MIMOSA STREET, VAN DYK PARK, 1459.

TIME: 18:30 – 20:00

**Contact Details of the Environmental Consultant:
Bokamoso Landscape Architects and Environmental
Consultants CC**

Tel: 012 346 3810

E-mail: reception@bokamoso.net

Contact person: Adéle Drake

Public Participation queries: Juanita De Beer

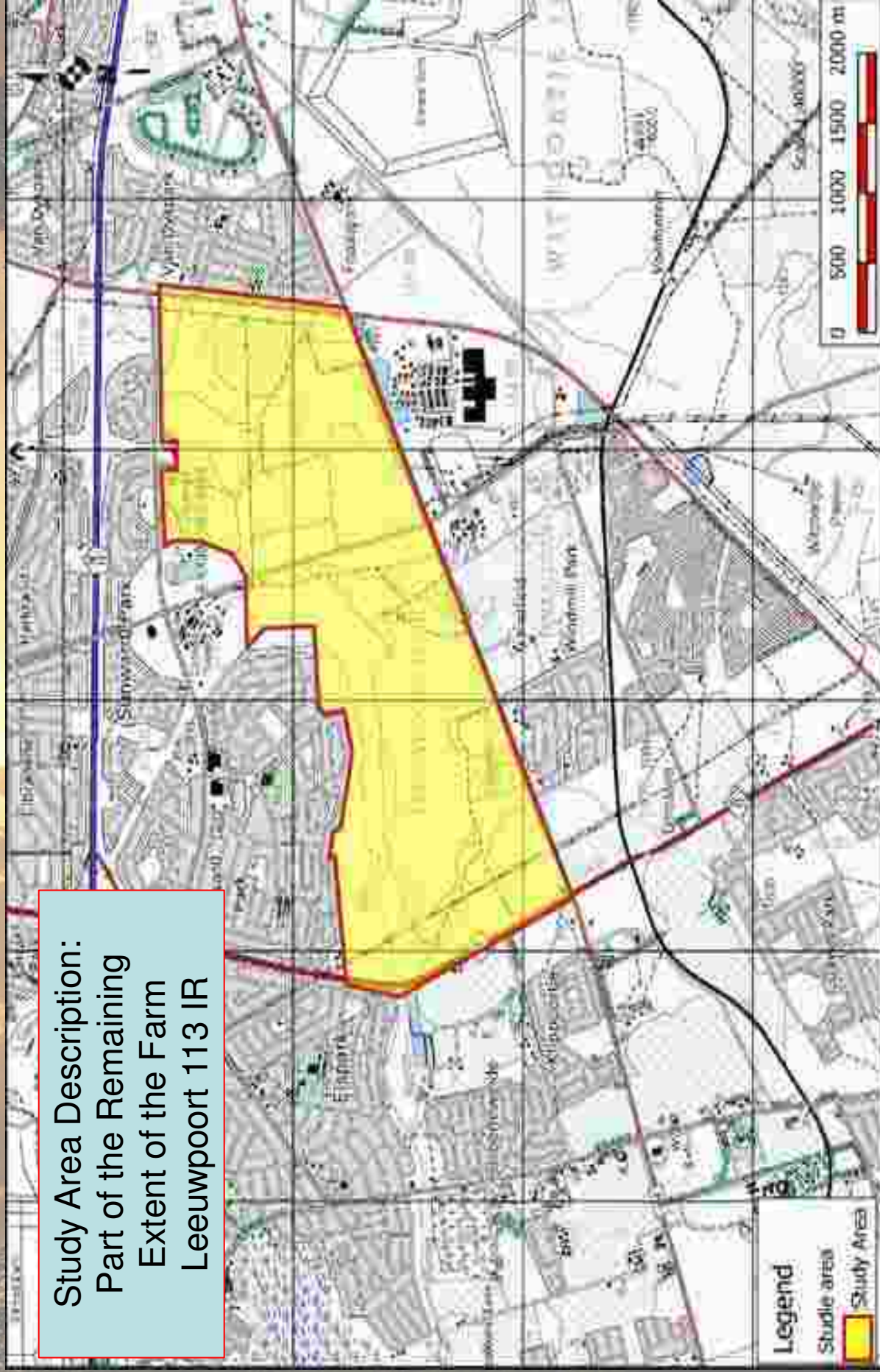


Leeuwpooft Mixed Use Development

**Scoping Phase Public Meeting
25 January 2017**



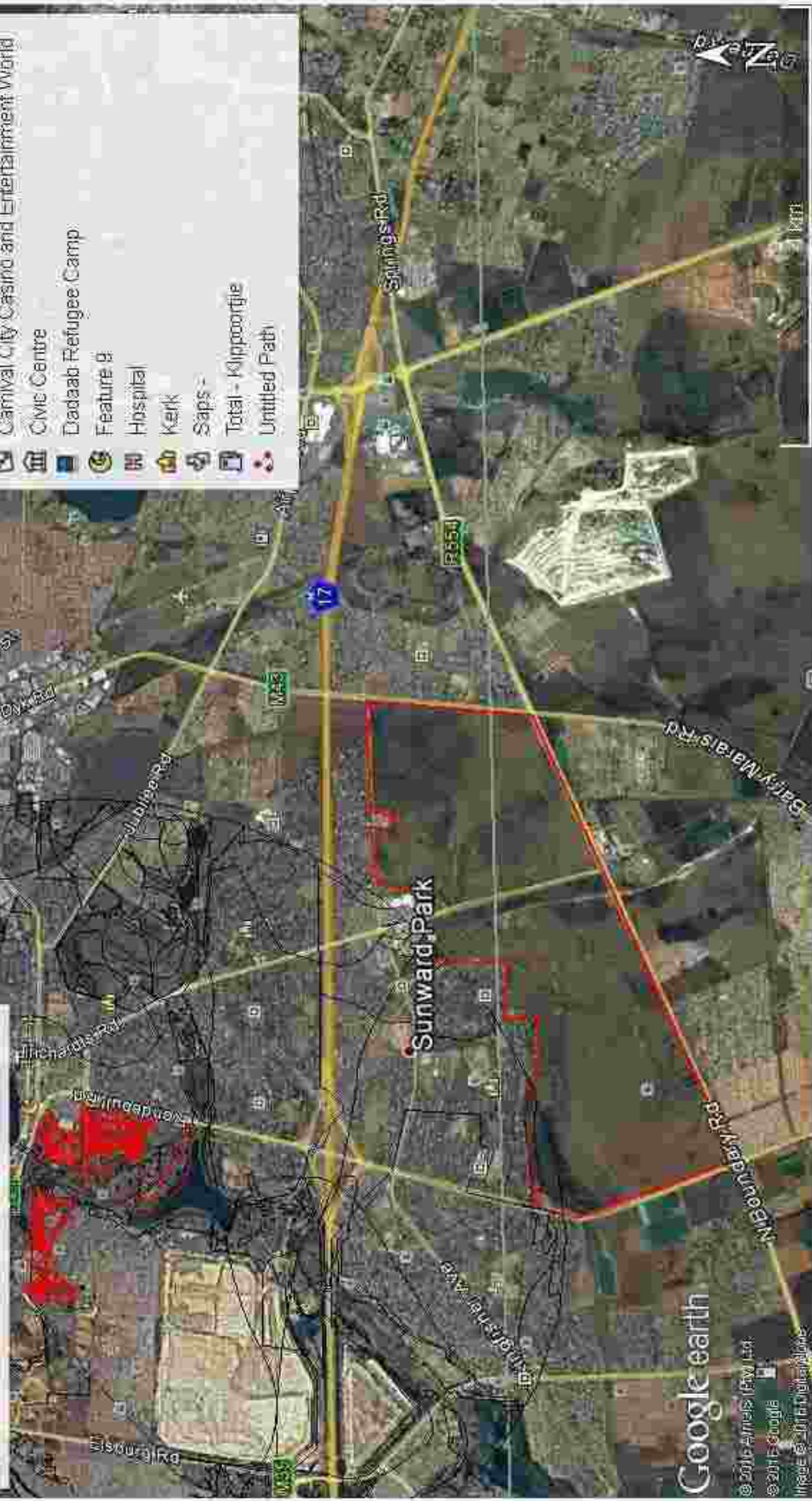
Study Area Description:
Part of the Remaining
Extent of the Farm
Leeuwpoort 113 IR



Leeuwpoot Regional Setting

Legend

- Brakpan Aerodrome
- Carnival City Casino and Entertainment World
- Civic Centre
- Dadaab Refugee Camp
- Feature 9
- Hospital
- Kerk
- Saps-
- Total - Klippoortjie
- Untitled Path



Google earth

© 2015 Apple / Faw Ltd.
© 2015 Google
Image © 2015 DigitalGlobe

Project Description

Leeuwpoot Development (Pty) Ltd in collaboration with Ekurhuleni Metropolitan Municipality is proposing the development of:

- a Mixed Use Development to be known as Leeuwpoot South Mixed Use Development catering for approximately 13,269 affordable residential units (subsidised, FLISP, bonded) and erven, and supportive land uses;
- 769 ha in extent on part of the remaining extent of the Farm Leeuwpoot 113 IR;
- comprising of the following land uses:
 - Residential 1 (2,092 bonded stands ranging from 400-700m²),
 - Residential 1 (1,988 FLISP stands 300m² in size)
 - Residential 3 (1,514 FLISP stands 220m² /46u/ha)
 - Residential 3 (1,743 subsidised stands 200m² / 50u/ha),
 - Residential 4 (21 stands for subsidies units / 120u/ha),
 - Residential 4 (21 stands for FLISP units / 160u/ha),
 - Residential 4 (5 stands for Bonded units / 180u/ha),
 - Business 2 (10 stand for shops and restaurants),
 - Business 3 (5 stands for offices),
 - Special (1 stand for a clinic),
 - Special (1 stand for a retirement village),
 - Special (2 stands for Agriculture and consent land use),
 - Special (11 stands for security gate houses),
 - Public Services (1 stand for electrical substation)
 - Community Facility (13 stands for community facilities, Primary Schools, and Secondary
 - Transportation (7 stands for railway line, station, and Taxi facilities),
 - Public Open Space (96 stands for parks),
 - and Streets.

Project Team

Bokamoso Environmental Consultants:

Lizelle Gregory – Principal

Adèle Drake - EAP

Juanita De Beer – Public Participation Consultant

Applicant:

Leeuwpoort Developments Pty Ltd – Developer:
Pottie Potgieter

Ekurhuleni Metropolitan Municipality – L
Quintin Du Buission



Purpose of meeting

1. Inform public of proposed development
2. Scoping Phase
 - to **identify issues and concerns** the public and stakeholders might have regarding the proposed development;
 - Include issues and concerns raised in Final Scoping Report;
 - Address issues and concerns raised, during the Environmental Impact Assessment Phase

Agenda

1. Welcoming and Introduction
2. Background Regarding the EIA Process
3. Importance of Public Participation
4. Notification of Interested and Affected Parties and Issues Register
5. Purpose of the Meeting
6. Description of Project
7. Preliminary Sensitivity Analysis
8. Preliminary Issues Identified
9. Way Forward
10. Questions, Comments & Issues

EIA Process – Scoping Process

STEPS IN THE EIA PROCESS

Contextualize Proposed Development

Pre-Application Planning and Assembly

Submit Application to GDARD

Conduct Public Participation

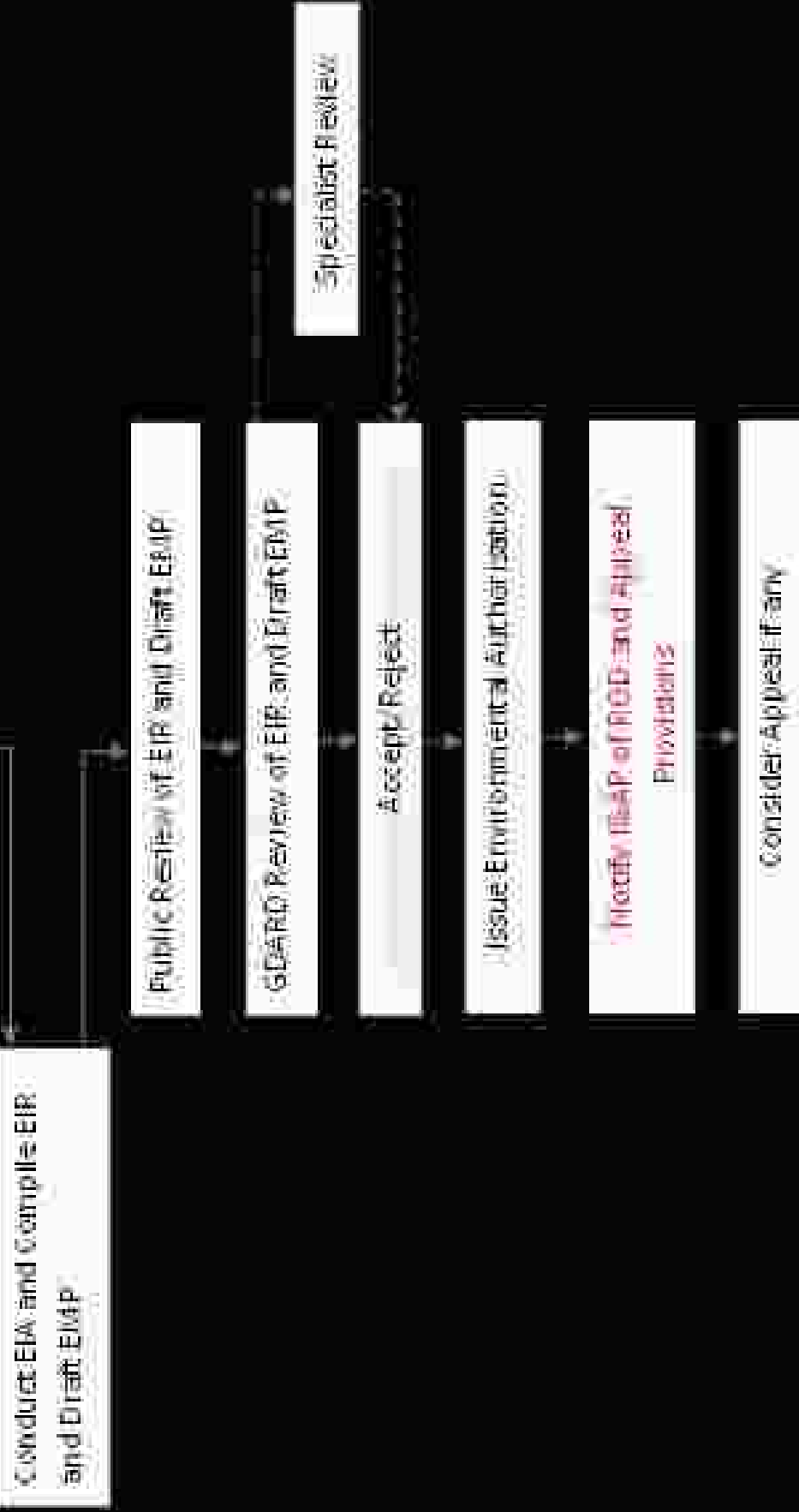
Compile Scoping Report and Plan of Study for EIA R

Public Review of Scoping and Plan of Study for EIA R

GDARD Review of Scoping and Plan of Study for EIA R

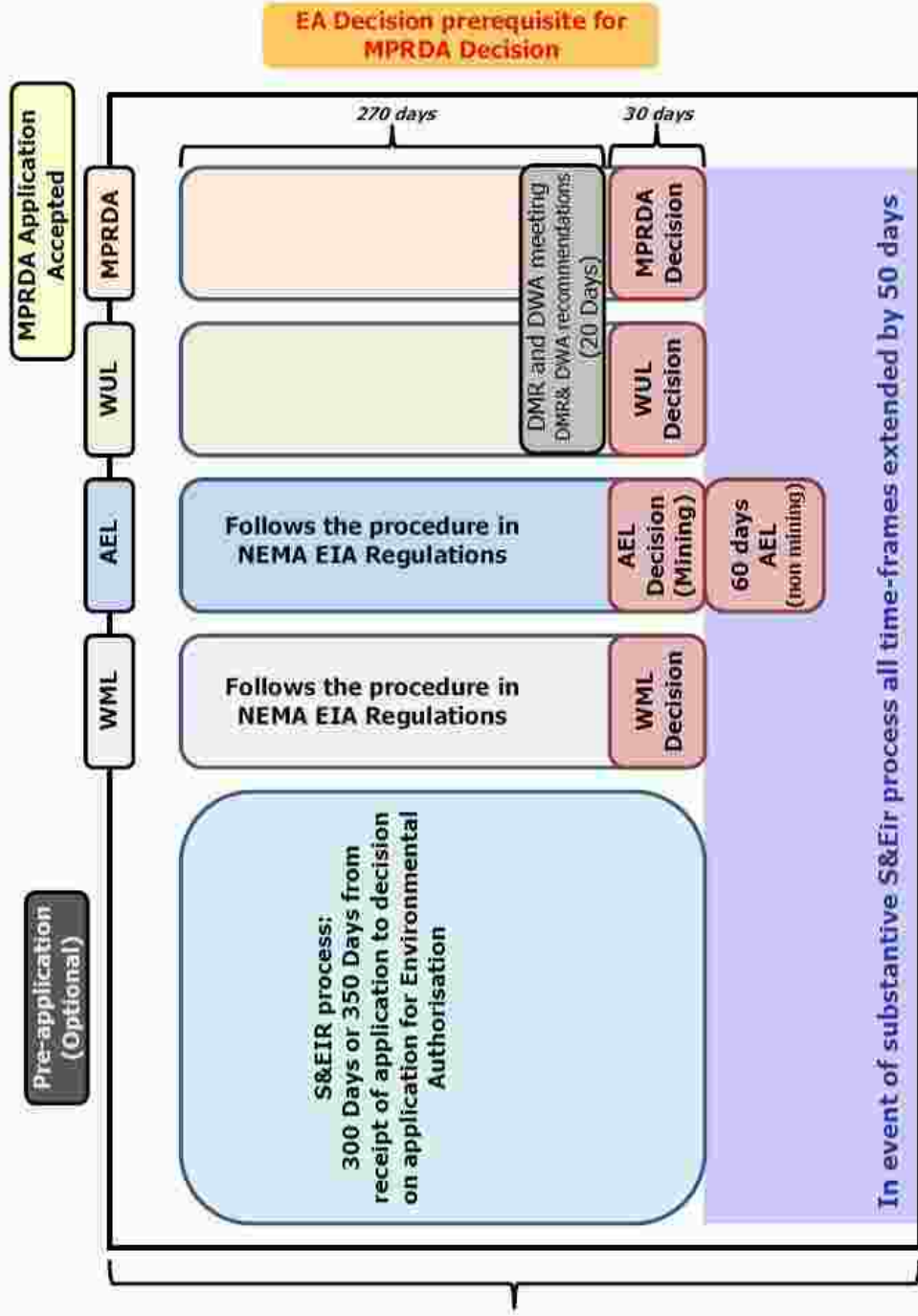
Accept/Reject

EIA Process – EIA Phase and Appeal



Background regarding other parallel Environmental related Application Processes that could be triggered

S&EI Process



EIA Process – Public and Competent Authority Involvement and Timeframes

1. Notify public of proposed project and invite to register as I&AP – 30 days
2. Compile Draft Scoping Report (DSR) and make available for 30 days to the public and stakeholder for review and submit DSR to competent authority (CA) - 40 days
3. Submit Final Scoping Report – 43 days
4. Compile Draft EIA Report and make available for 30 days for public and stakeholder review and submit DEIA to competent authority – 106 days
5. Compile Final EIA Report and submit to competent authority - 107 days
6. CA to inform applicant of decision – 14 days after reached

Importance of Public participation

The public participation process provides the following:

- An opportunity for Interested and Affected Parties (I&APs) to obtain clear accurate and comprehensible information about the proposed activity, its alternatives or the decision and the environmental impacts thereof;
- The opportunity for I&APs to indicate their viewpoints, issues and concerns regarding the activity, alternatives and/or decision;
- The opportunity for I&APs for suggesting ways of avoiding, reducing or mitigating negative impacts of an activity and for enhancing positive impacts;
- Enabling an applicant to incorporate the needs, preferences and values of affected parties into the activity;
- Opportunities to avoid and resolve disputes and reconcile conflicting interests; and
- Enhancing transparency and accountability in decision



Notification of I&APs

Stakeholders (I&AP's) were notified of the Scoping

Process through:

- Site notices were erected at prominent points on and around the study area on 1 September 2016;
- On 1 September 2016 public notices/flyers were distributed to the neighbouring properties and estates/developments that may be affected by the proposed development;
- Notices regarding the project were further e-mailed and faxed to a list of Interested & Affected Parties and the councillors in the area;
- An advertisement was placed in "Boksburg Advertiser News" newspaper on 9 September 2016;
- 76 Members of the public and stakeholders registered;
- Draft Scoping Report was available for public review from 15 November 2016

Notification of I&APs continued

The Following Institutions Identified by the EAP were also Notified:

Council of Geoscience;
Department of Mineral Resources;
Department of Energy;
National Nuclear Regulator;
Department of Human Settlements;
Department of Health;
Department of Public Works;
Department of Education;
Ekurhuleni Metropolitan Municipality;
ERWAT;
Department of Water & Sanitation;
Provincial Heritage Resources Agency
Gauteng;
Department of Agriculture Forestry and
Fisheries;

The Africa Evangelistic Mission;
Eskom;
Local Ward Councillor;
East Rand Proprietary Mines Limited;
Eskom;
Gauteng Department of Roads &
Transport;
SANRAL;
Transnet;
Spoornet;
Telkom;
SAPS;
Airports Corporation
Department
and
GDARD.



Public Participation during EIA Phase

1. Site notices to be erected	
2. Distribution of notices to surrounding land-owners and tenants	
3. Advertisement to be placed in the Boksburg Advertiser Newspaper	
4. EIA Public Meeting	
5. Draft EIA Report Available for Public and Authority Review	
6. Submission of Final EIA Report (will also be supplied to I&AP's)	

Project Description (Repeat)

Leeuwpoot Development (Pty) Ltd in collaboration with Ekurhuleni Metropolitan Municipality is proposing the development of:

- a Mixed Use Development to be known as Leeuwpoot South Mixed Use Development catering for approximately 13,269 affordable residential units (subsidised, FLISP, bonded) and erven, and supportive land uses;
- 769 ha in extent on part of the remaining extent of the Farm Leeuwpoot 113 IR;
- comprising of the following land uses:
 - Residential 1 (2,092 bonded stands ranging from 400-700m²),
 - Residential 1 (1,988 FLISP stands 300m² in size)
 - Residential 3 (1,514 FLISP stands 220m² /46u/ha)
 - Residential 3 (1,743 subsidised stands 200m² / 50u/ha),
 - Residential 4 (21 stands for subsidies units / 120u/ha),
 - Residential 4 (21 stands for FLISP units / 160u/ha),
 - Residential 4 (5 stands for Bonded units / 180u/ha),
 - Business 2 (10 stand for shops and restaurants),
 - Business 3 (5 stands for offices),
 - Special (1 stand for a clinic),
 - Special (1 stand for a retirement village),
 - Special (2 stands for Agriculture and consent land use),
 - Special (11 stands for security gate houses),
 - Public Services (1 stand for electrical substation)
 - Community Facility (13 stands for community facilities, Primary Schools, and Secondary
 - Transportation (7 stands for railway line, station, and Taxi facilities),
 - Public Open Space (96 stands for parks),
 - and Streets.

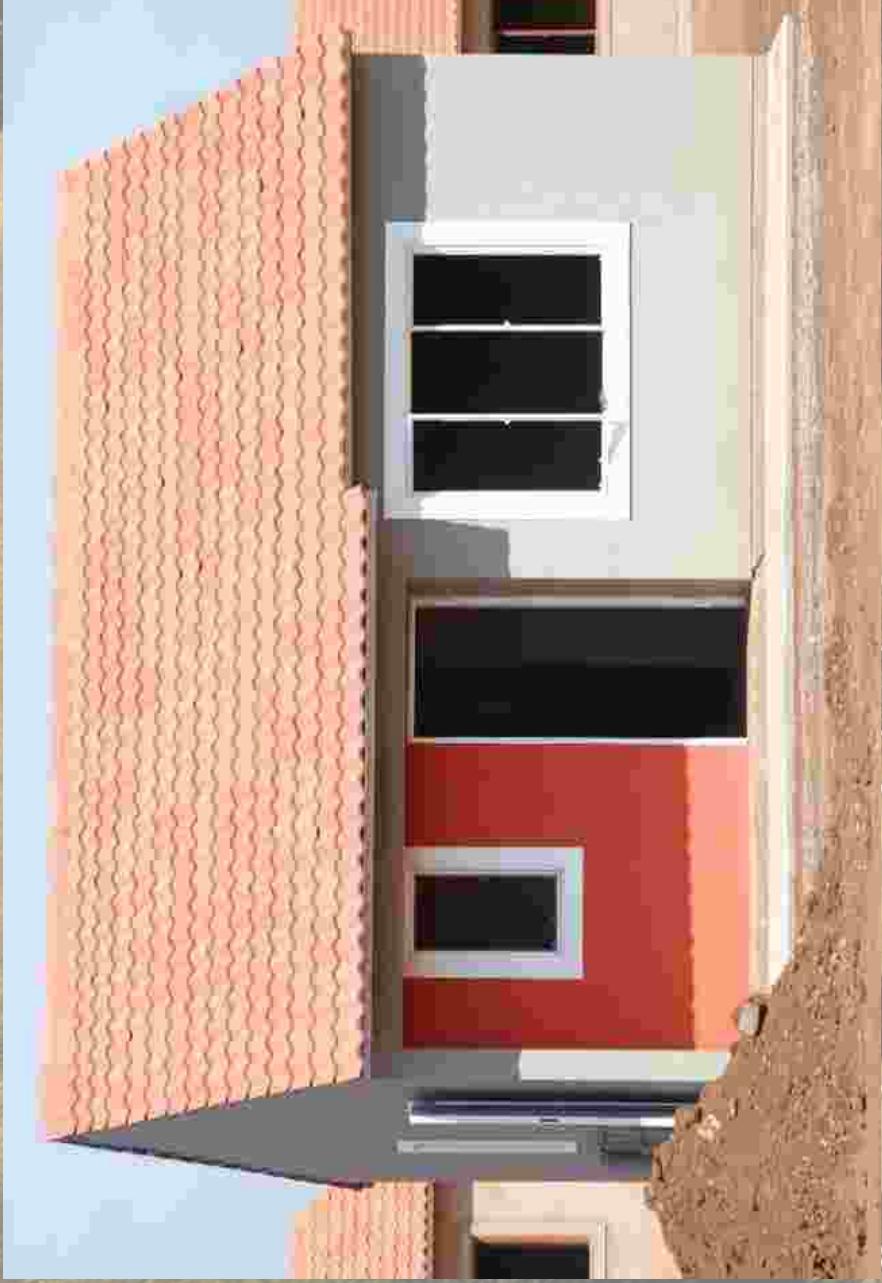
Housing Typologies:

Subsidised stands



Housing Typologies:

Subsidised stands



Housing Typologies:

Bonded stands



Housing Typologies:

Bonded stands



Housing Typologies:

Bonded stands



Housing Typologies:

Bonded stands

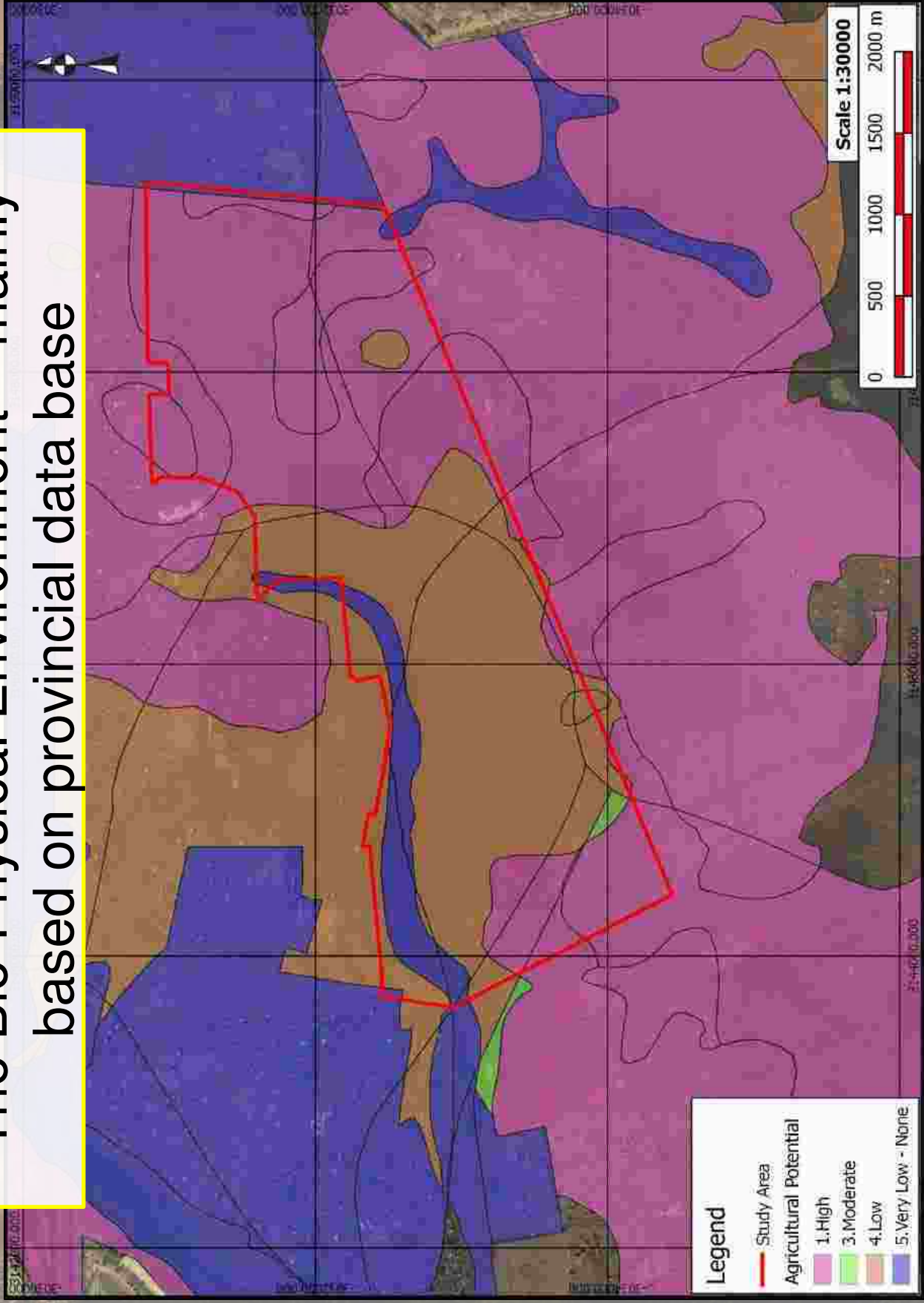


Housing Typologies:

“Residential 4” 3-storey units



The Bio-Physical Environment – mainly based on provincial data base



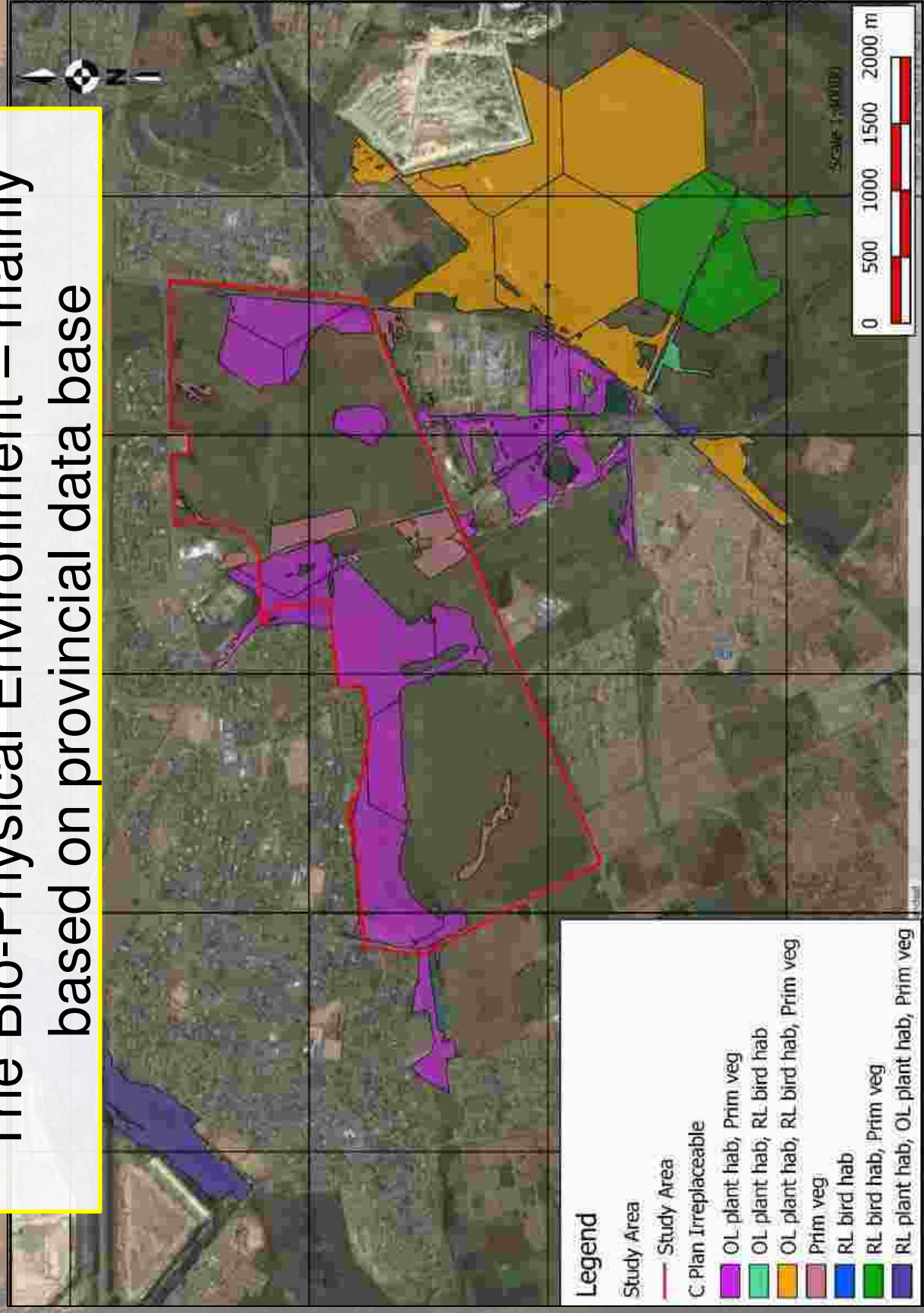
The Bio-Physical Environment – mainly based on provincial data base



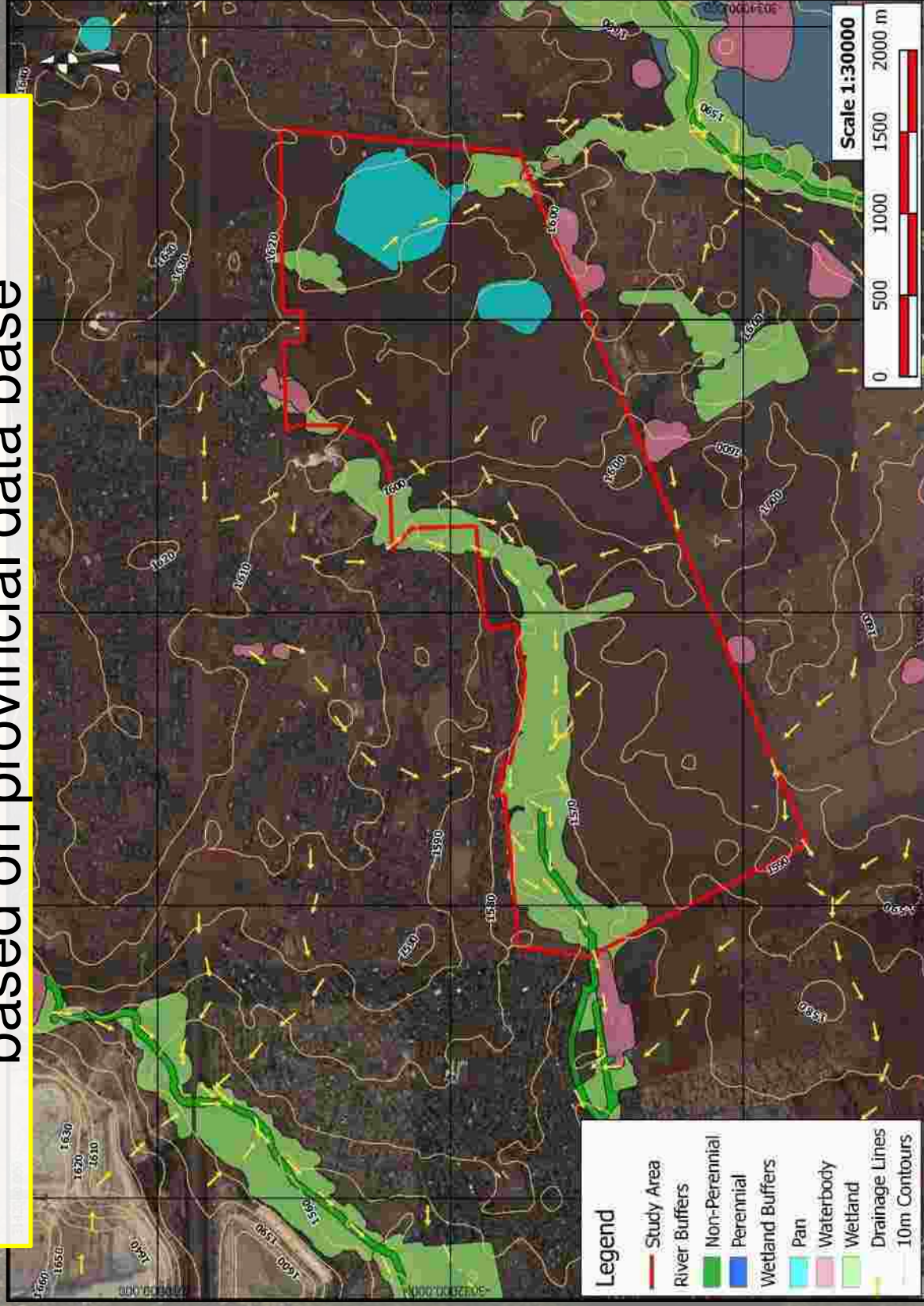
The Bio-Physical Environment – mainly based on provincial data base



The Bio-Physical Environment – mainly based on provincial data base



The Bio-Physical Environment – mainly based on provincial data base



The Bio-Physical Environment – mainly based on provincial data base



Preliminary Issues Identified

- Geology;
- Historic mining;
- Existing mining and prospecting rights;
- Watercourses and associated floodlines;
- Wetlands present on site and license required;
- Stormwater attenuation;
- Servitudes;
- Potential for protected fauna and flora occurring on site;
- Agricultural potential;
- Capacity of existing service infrastructure (roads/water/electricity);
- Noise impacts;
- Visual Impacts;
- Safety and Security;
- Education Facilities capacity to cater for additional children;
- Opportunity for local businesses to be involved in development;
- Type of housing and potential impact on surrounding areas;
- Provision of affordable housing; and
- Impact on road infrastructure;
- Infill development to prevent urban sprawl.



Way Forward

- **Include issues and concerns raised in Final Scoping Report;**
- **Submit Final SR and Plan of Study for EIA to competent authority for consideration;**
- **Competent authority approve/ reject SR and Plan of Study for EIA;**
- **If SR and Plan of Study for EIA is approved – Bokamoso will commence with the EIA Process;**
- **Compilation of specialist reports and addressing of issues and concerns raised, during the EIA Phase;**
- **Make Draft EIA Report available for Public and Stakeholder Review;**
- **2nd Public Participation Meeting;**
- **Address Issues And Concerns Raised In Final EIA Report;**
- **Finalise EIA Report And Submit To Competent Authority;**
- **Inform Public of Decision (Approval/Refusal) And Appeal Process.**

Questions Comments and Issues

**BOKAMOSO ENVIRONMENTAL
CONSULTANTS**



**Comments & Issues
Register**

Scoping Phase Public Meeting

Leeuwpoot South Mixed Use Development

Date: 25 January 2017



Contact: Lizelle Gregory Email: reception@bokamoso.net

Tel: (012) 346 3810

Fax: (086) 570 5659

<p>Name: Noen van mander Address: 7 Hamlet Place Sunward Park</p>	<p>Tel: 011 913 1826 Cell: 082 303 3133 Fax: Email: koosrae@gmail.com</p>	<p>Comments and Issues:</p>
<p>Name: Koos van mander Address: 7 Hamlet Place Sunward Park</p>	<p>Tel: 011 913 1826 Cell: 083 298 5983 Fax: Email: koosrae@gmail.com</p>	<p>Comments and Issues:</p>
<p>Name: Peter Betho Address: 5 Arnold deyl Str Kingfisher Place</p>	<p>Tel: 011 846 5832 Cell: 082 594 2425 Fax: Email: p.betho@ngbgbushenti.com</p>	<p>Comments and Issues:</p>
<p>Name: Oduyee Address: De Houtakker Broom E-wm + DMS</p>	<p>Tel: 011 909 7674 Cell: Fax: Email: gunda.duyee@f.co.za clw/duyee@gmail.com</p>	<p>Comments and Issues:</p>

<p>Name: <i>CAREME MCINTYRE</i></p> <p>Address: <i>21 TALING ROAD</i> <i>SUNWARD PARK</i></p>	<p>Tel: <i>011 896 4061</i></p> <p>Cell: <i>082 5790781</i></p> <p>Fax: <i>—</i></p> <p>Email: <i>mcintyre.g@gmail.com</i></p>	<p>Comments and Issues:</p>
<p>Name: <i>RICHARD + BEVERLY DUNGE</i></p> <p>Address: <i>62 SOMERBAM RD.</i> <i>EAST VILLAGE SUNWARD PARK</i></p>	<p>Tel: <i>011 8961126</i></p> <p>Cell: <i>0829000037</i></p> <p>Fax:</p> <p>Email:</p>	<p>Comments and Issues:</p>
<p>Name: <i>Holies Village Residents Assoc.</i></p> <p>Address: <i>P.O. Box 17144</i> <i>Sunward Park</i> <i>(G. F. Bruce Chairman)</i></p>	<p>Tel: <i>011 896 4329</i></p> <p>Cell: <i>082 5057131</i></p> <p>Fax:</p> <p>Email: <i>gfbuce48@gmail.com</i></p>	<p>Comments and Issues: <i>As per formal letter.</i></p>
<p>Name:</p> <p>Address:</p>	<p>Tel:</p> <p>Cell:</p> <p>Fax:</p> <p>Email:</p>	<p>Comments and Issues:</p>

Name: Cecilia Gouwey Address: 8 Nicholson Rd Sunward Park	Tel: Cell: 0824030888 Fax: Email: Manny1@pop.co.za	Comments and Issues: AGAINST THIS DEVELOPMENT
Name: BERNADINA GOUVEIA Address: 8 NICHOLSON ROAD SUNWARD PARK	Tel: Cell: 0843854404 Fax: Email: gouveia.bernadina@gmail.com	Comments and Issues: AGAINST THIS DEVELOPMENT
Name: JABULANI KGOORO Address: 2 LENTE OORD STREET KIWASHHEC PLACE	Tel: 076 9387127 Cell: Fax: Email: henry.kgomo@sunberg.gov.za	Comments and Issues: the Development
Name: Mokgadi kgomo Address: 2 LENTE OORD STR KINGFISHER PLACE SUNWARD PARK, 1459	Tel: Cell: 071 854 7244 Fax: Email: m.kgomo@sunb.gov.za	Comments and Issues: I AM TOTALLY AGAINST THIS DEVELOPMENT. I WANT NOTHING LESS THAN R750000 HOUSES BUILT AROUND OUR AREA

<p>Name: MARK Havett Address: 208 Uiterwijk SUNWAGS</p>	<p>Tel: Cell: 082 514 0673 Fax: Email: dianer@ebqwpw</p>	<p>Comments and Issues: Do we need to sell?</p>
<p>Name: BRUCE Address: 34 Telling Rd Sumner Park</p>	<p>Tel: Cell: Fax: Email: 082 505 7131</p>	<p>Comments and Issues:</p>
<p>Name: Paul & Merwyn Address: 14 CRADOCK STR FREEWAY PARK</p>	<p>Tel: 574 125 2477 Cell: Fax: Email:</p>	<p>Comments and Issues:</p>
<p>Name: Simon Mandel Address: 55 Sandstone Court W. Stage Simon@i-legays.com.au 0832463368</p>	<p>Tel: Cell: Fax: Email:</p>	<p>Comments and Issues:</p>

<p>Name: TREVOR MARITABANE Address: 42 KOBUS DURAND STR KINGFISHER PLACE SUNWARD PARK</p>	<p>Tel: Cell: 0822604122 Fax: Email: majukupa@yahoo.com</p>	<p>Comments and Issues:</p>
<p>Name: KATLEGO MASHABANE Address: 42 KOBUS DURAND STR KINGFISHER PLACE SUNWARD PARK</p>	<p>Tel: Cell: 072 426 1394 Fax: Email: katlego.kapatsi@histmashabane.com</p>	<p>Comments and Issues:</p>
<p>Name: IVA SPANG Address: LAERSKOOLO VAN DYK PARK</p>	<p>Tel: 011-915 3303/04 Cell: 083 2355 772 Fax: Email: FEINLETT@web.djmail.co.za</p>	<p>Comments and Issues:</p>
<p>Name: HENDRIK N. MARE Address: 44 GEBORANTE STR. SUNWARD - PARK Botsburg</p>	<p>Tel: 011 553 - 2000 Cell: 072 479 8336 Fax: Email: hmare@tshutor.co.za</p>	<p>Comments and Issues:</p>

<p>Name: HANNES TAUTE</p> <p>Address: 5 ARIE MEYER STR. KAMPFBUCH PLAZE</p>	<p>Tel: 011 8961572</p> <p>Cell: 0836073009</p> <p>Fax:</p> <p>Email: hannes.taute@connet.eu</p>	<p>Comments and Issues:</p>
<p>Name: ADRIANA DORGAN</p> <p>Address: 31 GEMINIS STR SUNWALD PARK 1470 E mail dorgan.adrian4@gmail 073 094 2791 - gmail</p>	<p>Tel: 011 913 4900</p> <p>Cell: 073 0942791</p> <p>Fax: 011 913 4900</p> <p>Email: dorgan.adrian4@gmail.com</p>	<p>Comments and Issues:</p>
<p>Name: East Wilkes</p> <p>Address: East Wilkes 266 Rindelcraft Rd Batesburg</p>	<p>Tel: 861 888877</p> <p>Cell: 0829406199</p> <p>Fax: 0866752511</p> <p>Email: psocm@marbills.com</p>	<p>Comments and Issues: Inform on nature of development. Mixed uses means nothing</p>
<p>Name: T. ROBERTSON</p> <p>Address: 208 WIERKYE SUNWALD</p>	<p>Tel: 011 306 0770</p> <p>Cell: 0824634309</p> <p>Fax:</p> <p>Email: dianer@elbqjio.com</p>	<p>Comments and Issues: DO WE NEED TO SELL OUR PROPERTY</p>

do: 29.

<p>Name: Michael Mackean</p> <p>Address: 65 HARRISON AVENUE SUNWARD PARK TWEEVEY REAL ESTATE</p> <p>Name: Gideon Heald</p> <p>Address: Constellation Str. nr Sunward Park</p>	<p>Tel: (011) 896-3770</p> <p>Cell: 082 883 9121</p> <p>Fax: 086 573 6604</p> <p>Email: michael@twaveyrealstate.co.za</p> <p>Tel:</p> <p>Cell: 082 889 4893</p> <p>Fax:</p> <p>Email: gideon.heald@icloud.com</p>	<p>Comments and Issues: Mike Goodwin in Advertiser and Notification with Rates and Taxing co.za</p> <p>Comments and Issues:</p>
<p>Name:</p> <p>Address:</p>	<p>Tel:</p> <p>Cell:</p> <p>Fax:</p> <p>Email:</p>	<p>Comments and Issues:</p>
<p>Name:</p> <p>Address:</p>	<p>Tel:</p> <p>Cell:</p> <p>Fax:</p> <p>Email:</p>	<p>Comments and Issues:</p>

<p>Name: COENIE VENTER Address: 13 ORION PLACE SUNWARD PARK</p>	<p>Tel: N.A. Cell: 0833992860 Fax: 0862127879 Email: ventercw@gmail.com</p>	<p>Comments and Issues:</p>
<p>Name: L.A. WILKINSON Address: 3 WED ROAD SUNWARD PARK</p>	<p>Tel: 011-8962692 Cell: 0825733894 Fax: 011 9133759 Email: leilwin@mweb.co.za</p>	<p>Comments and Issues: GROUND STABILITY ELECTRICAL, WATER SEWERAGE SUPPLY & ROUTED TRAFFIC IMPACT</p>
<p>Name: LES HOLCROFT Address: SARCO SOLUTIONS & c/o TRICHARDS AND NORTH BOUNDARY</p>	<p>Tel: Cell: 0826503480 Fax: Email: LESH@SARCO.CO.ZA</p>	<p>Comments and Issues:</p>
<p>Name: CAR. C. CRAWFORD Address: 541 LEON FERREIRA DR REKEL BARK</p>	<p>Tel: 011-999-5608 Cell: 0828718135 Fax: Email: ehan@westgate.co.za</p>	<p>Comments and Issues:</p>

<p>Name: <i>U.D.P. Register</i></p> <p>Address:</p> <p>.....</p> <p>.....</p>	<p>Tel: <i>012 843 9036</i></p> <p>Cell: <i>083 675 1338</i></p> <p>Fax:</p> <p>Email: <i>pottia.pdtg@etecbigena.co.za</i></p>	<p>Comments and Issues:</p> <p>.....</p> <p>.....</p>
<p>Name:</p> <p>Address:</p> <p>.....</p> <p>.....</p>	<p>Tel:</p> <p>Cell:</p> <p>Fax:</p> <p>Email:</p>	<p>Comments and Issues:</p> <p>.....</p> <p>.....</p>
<p>Name:</p> <p>Address:</p> <p>.....</p> <p>.....</p>	<p>Tel:</p> <p>Cell:</p> <p>Fax:</p> <p>Email:</p>	<p>Comments and Issues:</p> <p>.....</p> <p>.....</p>
<p>Name:</p> <p>Address:</p> <p>.....</p> <p>.....</p>	<p>Tel:</p> <p>Cell:</p> <p>Fax:</p> <p>Email:</p>	<p>Comments and Issues:</p> <p>.....</p> <p>.....</p>

<p>Name: <i>Tjando Wiese</i></p> <p>Address: <i>52 Oberon Rd Sunward Park</i></p>	<p>Tel: <i>011 913 0887</i></p> <p>Cell: <i>0784 502267</i></p> <p>Fax: <i>—</i></p> <p>Email: <i>twandaw@gmail.com</i></p>	<p>Comments and Issues:</p>
<p>Name: <i>Arthur Wiese</i></p> <p>Address: <i>52 Oberon Rd Sunward Park</i></p>	<p>Tel: <i>011 913 0887</i></p> <p>Cell: <i>082 720 7725</i></p> <p>Fax: <i>—</i></p> <p>Email: <i>adition@claims.co.za</i></p>	<p>Comments and Issues:</p>
<p>Name: <i>Linka van Rensburg</i></p> <p>Address: <i>9 Polkuz rd Sunward Park</i></p>	<p>Tel: <i>—</i></p> <p>Cell: <i>083-570-4791</i></p> <p>Fax: <i>—</i></p> <p>Email: <i>linka@vdmconsulting.co.za</i></p>	<p>Comments and Issues:</p> <p><i>for more people and more breathing</i></p>
<p>Name: <i>Dee (Nandi)</i></p> <p>Address: <i>58 Soona-bona Rd East Village Sunward Park</i></p>	<p>Tel: <i>—</i></p> <p>Cell: <i>082 413 4776</i></p> <p>Fax: <i>—</i></p> <p>Email: <i>john@citioptions.com</i></p>	<p>Comments and Issues:</p>

Leeuwpoot South Mixed Use Development Draft Scoping Report for Review

A period of 30 days will be allowed for review and comments on the Draft Scoping Report for the proposed Leeuwpoot South Mixed Use Development from 27 October 2016 – 28 November 2016. Your comments should be sent directly to Bokamoso Environmental Attention: Adele Drake or Juanita De Beer (reception@bokamoso.net or fax: 086 570 5659).

A copy of the report will be available at:

Venue: Papachinos Restaurant

Attention: Robbie Berimbau (Owner)

Address: 261 Kingfisher Ave, Boksburg, 147

Tel: 011 913 2151

Date: 27 October 2016 – 28 November 2016

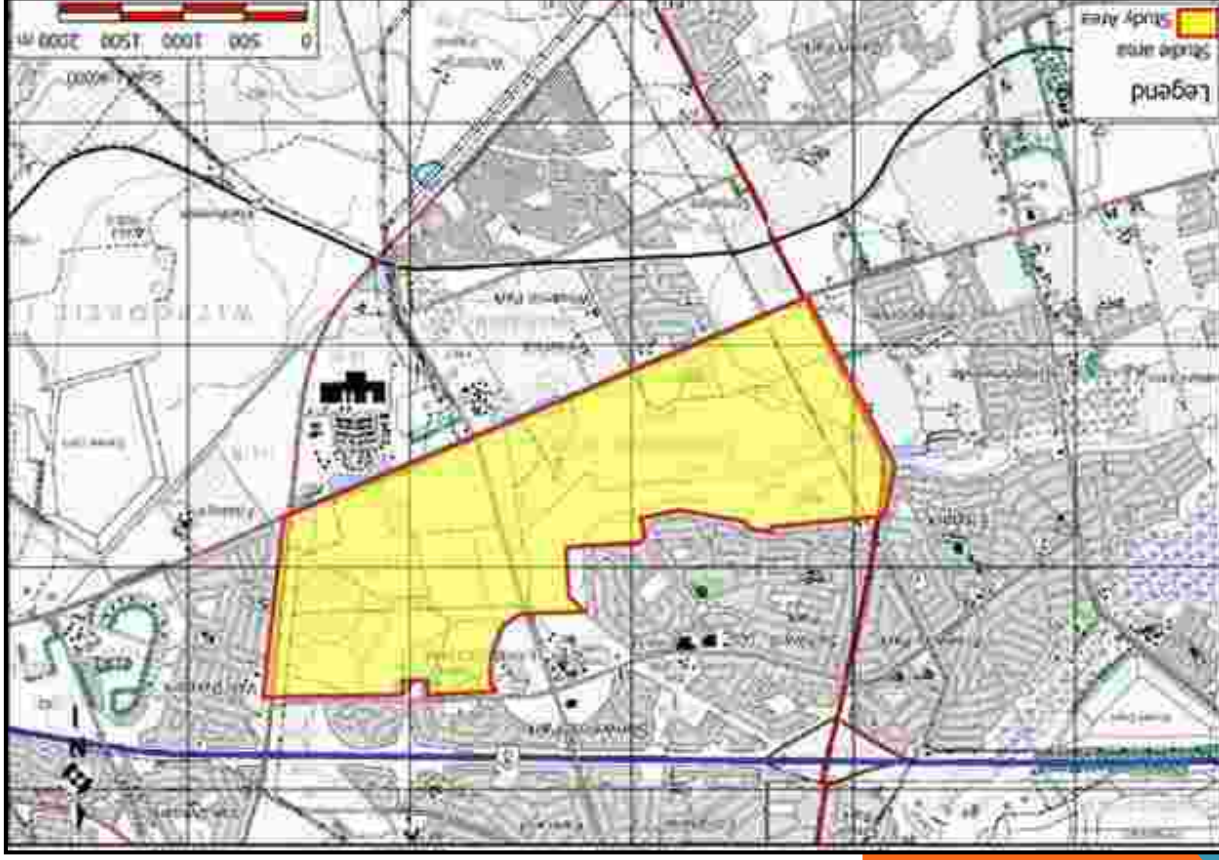
Also available on our Website: www.bokamoso.net

Please do not hesitate to contact us should you have any queries regarding the abovementioned development.

Contact person: **Juanita De Beer**

Tel: 012 346 3810 Fax: 086 570 5659

E-mail: reception@bokamoso.net



Review Register

**Draft Scoping Report for the
proposed Leeuwpoot South Mixed Use
Development**

Available: 27 October – 25 November 2016

**Please do not remove the
documents from the
premises!!**



Contact: Lizelle Gregory Email: reception@bokamoso.net

Tel: (012) 346 3810

Fax: (086) 570 5659

<p>Name: F. A. Mearns Address: Postnet Suite 49 Privateok X4 Elspeak 1410</p>	<p>Tel: 010 591 3450 Cell: 076 409 8125 Fax: 086-544-6627 Email: em-townplan@web.co.za</p>	<p>Comments and Issues: Noted: Satisfied as long as recommendations are upheld.</p>
<p>Name: EFRUGER Address: PO BOX 13712 NORTHMEAD 1511</p>	<p>Tel: Cell: 083 654 0803 Fax: Email: ETIBUNEFRUGER@COMPAQ.COM</p>	<p>Comments and Issues: ISSUENONE SUBJECT TO EIA. APPROVAL AND RECOMMENDATIONS FOLLOWED.</p>
<p>Name: MT MABHABANE Address: BOX 18341 SUNWARD PARK, UFA,</p>	<p>Tel: Cell: 0832604122 Fax: Email: majukapa@yahoo.com</p>	<p>Comments and Issues:</p>
<p>Name: L. A. WILLIAMS Address: P.O. BOX 17565 SUNWARD PARK, 1470 3 LEO ROAD SUNWARD PARK</p>	<p>Tel: (011) 8962692 Cell: 0825733894 Fax: (011) 913 3759 Email: wilbur@web.co.za</p>	<p>Comments and Issues: YOUR LAYOUT DIAGRAM OF THE PROPOSED TOWNSHIP IS NOT READABLE. NEED LARGER SCALE. I STILL BELIEVE YOU WILL HAVE TROUBLE WITH UNDERLYING DOMINATE ECONOMIC BENEFIT.</p>

<p>Name: P. BETHA</p> <p>Address: 5 Amandla Street, Kinrossier Place</p>	<p>Tel: 011 637 6021</p> <p>Cell: 052 894 2425</p> <p>Fax:</p> <p>Email: p.betha@englobalshanti.com</p>	<p>Comments and Issues: 1 The area map provided as Ann O. is not readable. Please provide a bigger version - At least A3.</p> <p>2 T, 337 new units, without the 47 high density areas, the current infrastructure, roads, water supply, schools already exist take the current load and the report is not clear on how this will be dealt with. Current infrastructure not as maintainable</p> <p>Comments and Issues:</p> <p>3 Will there be additional on/off ramps on the N11.</p> <p>4 How an economic study been done, i.e. will the rates & taxes to be levied be able to carry the burden of maintaining the development.</p> <p>5 Examples of work done by Bokamoso in Comments and Issues: Ann B show high value developments, this can create the wrong expectation what work have they done on the types of developments so envisaged.</p> <p>6 What are the plans to involve by the partner involved that this project will not be a big pool for corrupt activities.</p> <p>7 Funds available for the development</p> <p>Comments and Issues:</p> <p>or will funds earmarked for maintenance of current infrastructure be used.</p> <p>8 How will infrastructure development be planned with phases of development to ensure residents of the area is not "short changed". i.e. promises are made but never fulfilled, area is developed by infrastructure left as is.</p>
<p>Name:</p> <p>Address:</p>	<p>Tel:</p> <p>Cell:</p> <p>Fax:</p> <p>Email:</p>	
<p>Name:</p> <p>Address:</p>	<p>Tel:</p> <p>Cell:</p> <p>Fax:</p> <p>Email:</p>	
<p>Name:</p> <p>Address:</p>	<p>Tel:</p> <p>Cell:</p> <p>Fax:</p> <p>Email:</p>	