ENVIRONMENTAL IMPACT ASSESSMENT REPORT

PROPOSED VISTA PARK EXT 3, BLOEMFONTEIN,

FREE STATE PROVINCE

FSDETEA Ref: EMS/9(i).11(i)(vi),18(i),5,15/13/09
NEAS Ref: FSP/EIA/0000282/2013

Prepared for:

Calgro M3 Holdings Limited
33 Ballyclare Drive
Ballywoods Office Park
Cedarwood House, 1st floor
Bryanston, Sandton

Prepared by:

Prism Environmental Management Services cc
P.O. Box 1401
Wilgeheuwel
Johannesburg
1736
Tel: 011 475 0210
Fax: 086 601 4800
E-Mail: prism@prismems.co.za
Web: www.prismems.co.za

PRISM
Environmental Management Services

PROJECT DETAILS

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Title	:	Environmental Impact Assessment (EIA) Process
		Environmental Impact Assessment Report (EIAR): Proposed Vista Park Ext. 3, Bloemfontein, Free State Province
		Vista Park Ext. 3
Authors	:	Prism Environmental Management Services cc
		Mr D. Botha (M.A. Env.Man., PHED)
Co-authors	:	Mr A. Koning (B-Tech: Nat. Con.)
		Ms E. Botha
Sub-Consultants	:	Bigen Africa
		CTE Consulting
		G&A Heritage
		CHB
		Prism EMS cc
		Mariteng Management Solutions
Applicant	:	Calgro M3 Developments (Pty) Ltd
Report Status	:	EIAR for public review
Review Period	:	15 August 2013 to 25 September 2013 (40 days)

When used as a reference, this report should be cited as:

Prism Environmental Management Services cc (2013) Environmental Impact Assessment Report: EIA Report for public review: Proposed Vista Park Ext. 3 (21243-VistaParkExt.3-EIAR_1.3D).

DOCUMENT PROGRESS

Proposed Vista Park Ext. 3, Bloemfontein, Free State Province

Distribution List

Date	Report Reference number	Document Distribution	Number of Copies
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Amendments to document

Date	Report Reference number		Description of amendment

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INVITATION TO COMMENT ON DRAFT ENVIRONMENTAL IMPACT ASSESSMENT

This Environmental Impact Assessment Report (EIAR) has been made available for public review at the following places, which are in the vicinity of the proposed project area from 15 August 2013 to 25 September 2013 :

- Prism Environmental Management Services cc
  - Offices and
  - Download from:
    FTP Server – contact our office for a registered download link.

All comments in writing must be submitted to: *Comments can be made as written submission via fax, post or e-mail.*
Free State Department of Economic Development, Tourism and Environmental Affairs (FSDETEA) Environmental Impact Management Sub - Directorate c/o Ms M.P. Gunundu Private Bag X20801 Bloemfontein 9300 Fountain Towers Building 1st Floor c/o Zastron & Markgraaf Streets Bloemfontein 9300 Tel: 051 400 4794 Fax: 051 400 4842 E-mail: lekgarit@dteea.fs.gov.za Cc: mkhosana@detea.fs.gov.za
and must be copied to:
Prism Environmental Management Services cc c/o Mr D. Botha P.O. Box 1401 Wilgeheuwel, 1736 www.prismems.co.za prism@prismems.co.za
The due date for comments on the EIAR for public review is: 25 September 2013

EXECUTIVE SUMMARY

INTRODUCTION

Calgro M3 Developments (Pty) Ltd is proposing the development of an integrated residential township on a Portion of the Remainder of the farm Bloemfontein no. 654 – I.Q. (Refer to Figure 1). The Portion of the Remainder of the farm Bloemfontein no. 654 – I.Q. is situated between Church street and Ferreira road and south and adjacent to Vereeniging drive (M10) (Refer to Figure 2). The site falls within the jurisdiction area of the Mangaung Metropolitan Municipality. The project is referred to as Vista Park Ext. 3

The proposed development site measures approximately 131ha (Refer to Appendix A1). The route alignment proposed for the proposed services installation will extend beyond the development site (Refer to Appendix A2). The upgrade of George Lubbe Street also falls outside the development site (Refer to Appendix A2).

An application for Environmental Authorisation was lodged with the Free State Department of Economic Development, Tourism and Environmental Affairs (FSDETEA). FSDETEA has issued reference number EMS/9(i).11(i)(vi),18(i),5,15/13/09, NEAS Ref: FSP/EIA/0000282/2013, for the project.

This Environmental Impact Assessment Report (EIAR) consists of six chapters, which include:

CHAPTER 1 - INTRODUCTION

CHAPTER 2 - DESCRIPTION OF THE PROPOSED PROJECT

CHAPTER 3 – THE EIA PHASE

CHAPTER 4 – DESCRIPTION OF THE RECEIVING ENVIRONMENT

CHAPTER 5 – DESCRIPTION OF THE ENVIRONMENTAL ISSUES AND POTENTIAL IMPACTS

CHAPTER 6 - CONCLUSION

THE ENVIRONMENTAL IMPACT ASSESSMENT PRACTITIONER

Prism Environmental Management Services cc has been appointed as the independent environmental consultants to conduct the Scoping Report and Environmental Impact Assessment process for the proposed development of Vista Park Ext. 3

in terms of the National Environmental Management Act (Act No. 107 of 1998) as amended and the Environmental Impact Assessment Regulations (2010).

Prism EMS is a specialist environmental consulting firm providing broad environmental management services, including Environmental Impact Assessments (EIA), environmental planning, environmental compliance monitoring and environmental specialist services.

The Prism EMS team has extensive experience in environmental impact assessment and management. The team has conducted a diverse range of impact assessments for a wide range of projects throughout South-Africa.

The Principle Environmental Assessment Practitioner (EAP), and support team responsible for this project is:

- De Wet Botha *(M.A. Env. Man.)(PHED)*
- Milton Milaras *(BSc. Hon. Env. Man.)*
- Elsje Botha
- Alvar Koning *(B-Tech Nat. Con.)*

Sub-Consultants

- Engineering – Bigen Africa
- Town Planning – CTE Consulting
- Heritage Impact Assessment – G&A Heritage Consultants
- Geotechnical Investigation – CHB
- Aquatic & Ecological Specialist Assessments – Prism EMS cc
- Traffic Impact Assessment – Mariteng Management Solutions

PROJECT ALTERNATIVES

Services Installation and Road Upgrade Alternatives

Services installation and road upgrade alternatives will be evaluated for the project. These alternatives are mainly linked to the linear bulk services to be installed and the upgrade of George Lubbe Street.

Layout Alternatives

Layout alternatives will be evaluated for the project.

The "No-Go" Alternative

The "No-Go" alternative will also be assessed. This option will reflect the impacts on the environment should this project not go-ahead.

APPROACH OF THE EIA PHASE

An Environmental Impact Assessment (EIA) process refers to that process (dictated by NEMA in the EIA Regulations) which involves the identification of, and assessment of direct, indirect and cumulative environmental impacts associated with a proposed activity. The EIA process comprises two main phases:

1. Scoping Phase and
2. EIA Phase.

The EIA process concludes in the submission of an EIA Report (including an Environmental Management Programme ((EMPr)) and Specialist reports) to the competent authority (Free State Department of Economic Development, Tourism and Environmental Affairs (FSDETEA) for this application) for decision-making.

CONCLUSION

The Environmental Impact Assessment Report (EIAR) for the proposed Vista Park Ext. 3 is undertaken in accordance with the EIA Regulations published in Government Notice 33306 of 18 June 2010, in terms of Section 24(5) of the National Environmental Management Act (NEMA; Act No 107 of 1998).

The conclusions and recommendations of this EIAR are the results of desk-top evaluations of impacts identified, on-site inspections by EAP and specialists, and the parallel process of public participation. The Public Participation Process (PPP) is conducted as per the requirements of the EIA regulations.

This EIA Report was aimed at detailing the nature and extent of this development, identifying potential issues associated with the proposed activities, and defining the extent of impacts perceived. This was achieved through an evaluation of the proposed activities, involving the applicant (Calgro M3), specialist consultants and a consultation process with key stakeholders and interested and affected parties (I&APs). In accordance with the requirements of the EIA Regulations, feasible project specific alternatives (including the “No-Go” option) have been identified and considered within the EIA process.

WAY FORWARD

- Environmental Impact Assessment (EIA) circulated for public review
- Incorporation of comments on Environmental Impact Assessment (EIA)
- Finalise Environmental Impact Assessment (EIA) Report
- Submit Environmental Impact Assessment (EIA) Report to Department of Environmental Affairs (DEA) for approval
- On approval circulate Environmental Authorisation (EA) to Interested and Affected Parties (I&APs)

ABBREVIATIONS

BID	Background Information Document
DEA	Department of Environmental Affairs
DSR	Draft Scoping Report (DSR)
DWA	Department of Water Affairs (DWA)
EAPASA	Environmental Assessment Practitioners Association of South Africa (EAPASA)
ECO	Environmental Control Officer (ECO)
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme (EMPr)
FSDETEA	Free State Department of Economic Development, Tourism and Environmental Affairs (FSDETEA)
GDARD	Gauteng Department of Agriculture and Rural Development (GDARD)
GIS	Geographic Information System (GIS)
GP	Gauteng Province
IAIAsa	International Association for Impact Assessment (South Africa)
IDP	Integrated Development Plan (IDP)
I&AP's	Interested and Affected Parties (I&AP's)
Mℓ	Million litre
MMM	Mangaung Metropolitan Municipality
NDA	National Department of Agriculture
NEM:WA	National Environmental Management: Waste Act (NEM:WA)
NEMA	National Environmental Management Act (NEMA)
NHRA	National Heritage Resource Act (NHRA)
NWA	National Water Act (NWA)
PoS	Plan of Study (PoS)
PPP	Public Participation Process (PPP)
SAHRA	South African Heritage Resource Agency (SAHRA)

SANRAL	South African National Roads Agency Limited
SDF	Spatial Development Framework (SDF)
SR	Scoping Report
TIA	Traffic Impact Assessment
UJ	University of Johannesburg (UJ)
WTP	Water Treatment Plant/s
WUL	Water Use Licence (WUL)
WULA	Water Use Licence Application (WULA)

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CHAPTER 1 - INTRODUCTION

1 INTRODUCTION

Calgro M3 Development is proposing the development of an integrated residential township on a Portion of the Remainder of the farm Bloemfontein no. 654 – I.Q. (Refer to Figure 1). The Portion of the Remainder of the farm Bloemfontein no. 654 – I.Q. is situated between Church street and Ferreira road and south and adjacent to Vereeniging drive (M10) (Refer to Figure 2). The site falls within the jurisdiction area of the Mangaung Metropolitan Municipality (MMM). The project is referred to as Vista Park Ext. 3

The proposed development site measures approximately 131ha (Refer to Appendix A1). The route alignment proposed for the proposed services installation will extend beyond the development site (Refer to Appendix A2). The upgrade of George Lubbe Street is also outside the development site (Refer to Appendix A2).

An application for Environmental Authorisation is lodged with the Free State Department of Economic Development, Tourism and Environmental Affairs (FSDETEA). FSDETEA has issued reference number, EMS/9(i).11(i)(vi),18(i),5,15/13/09, NEAS Ref: FSP/EIA/0000282/2013, for the project.

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CHAPTER 6 - CONCLUSION

**Note that all plans are duplicated in Appendix A at higher resolution and size for further investigation.*

1.1 PROJECT LOCATION

The Portion of the Remainder of the farm Bloemfontein no. 654 – I.Q. is earmarked to be developed as Vista Park Ext. 3. (Refer to Figure 1). The route alignment proposed for the proposed bulk services as well as George Lubbe Street upgrade will extend beyond the development site to Bloemfontein Ext 165 (Refer to Appendix A2).

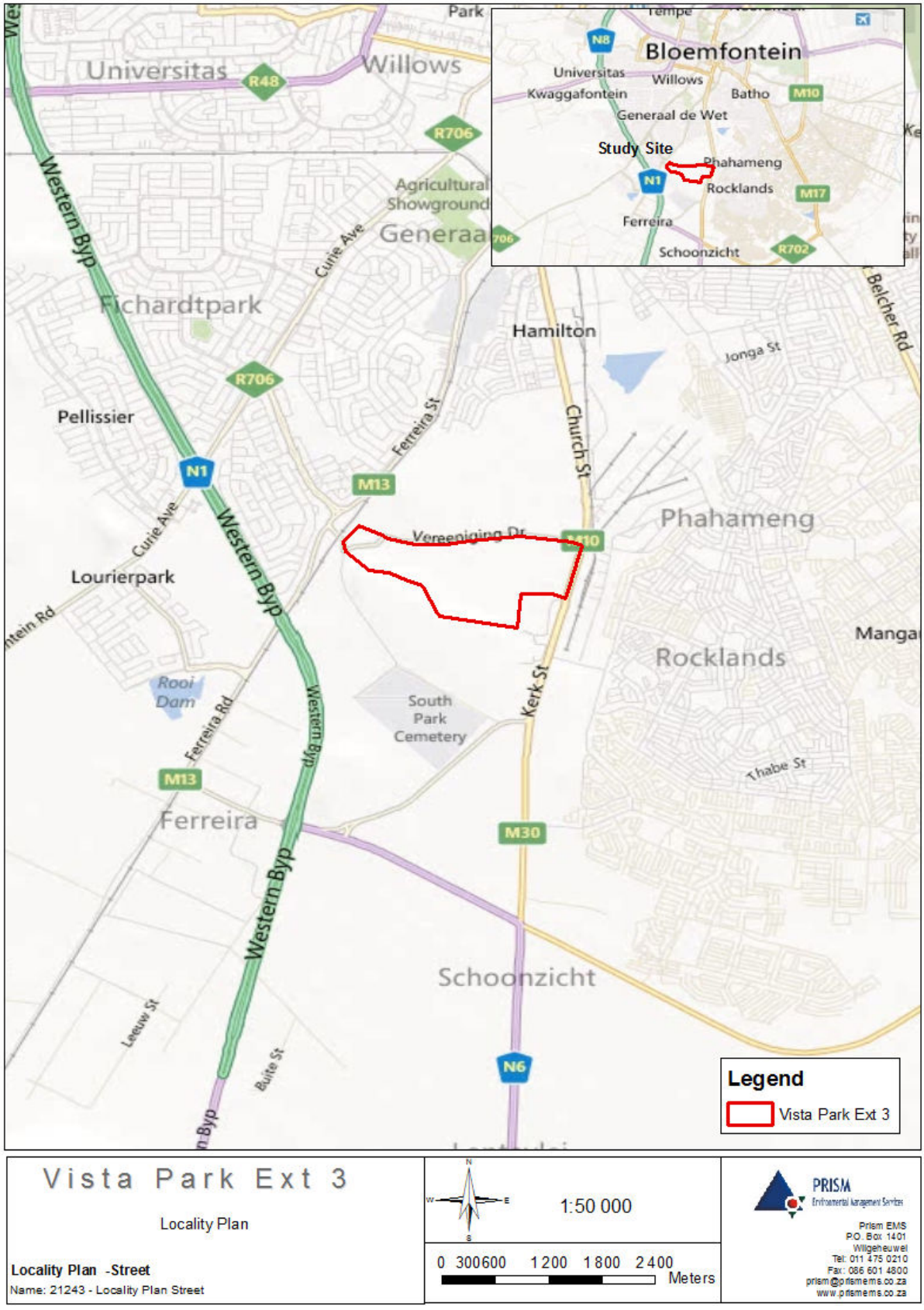

Figure 1: Locality Plan

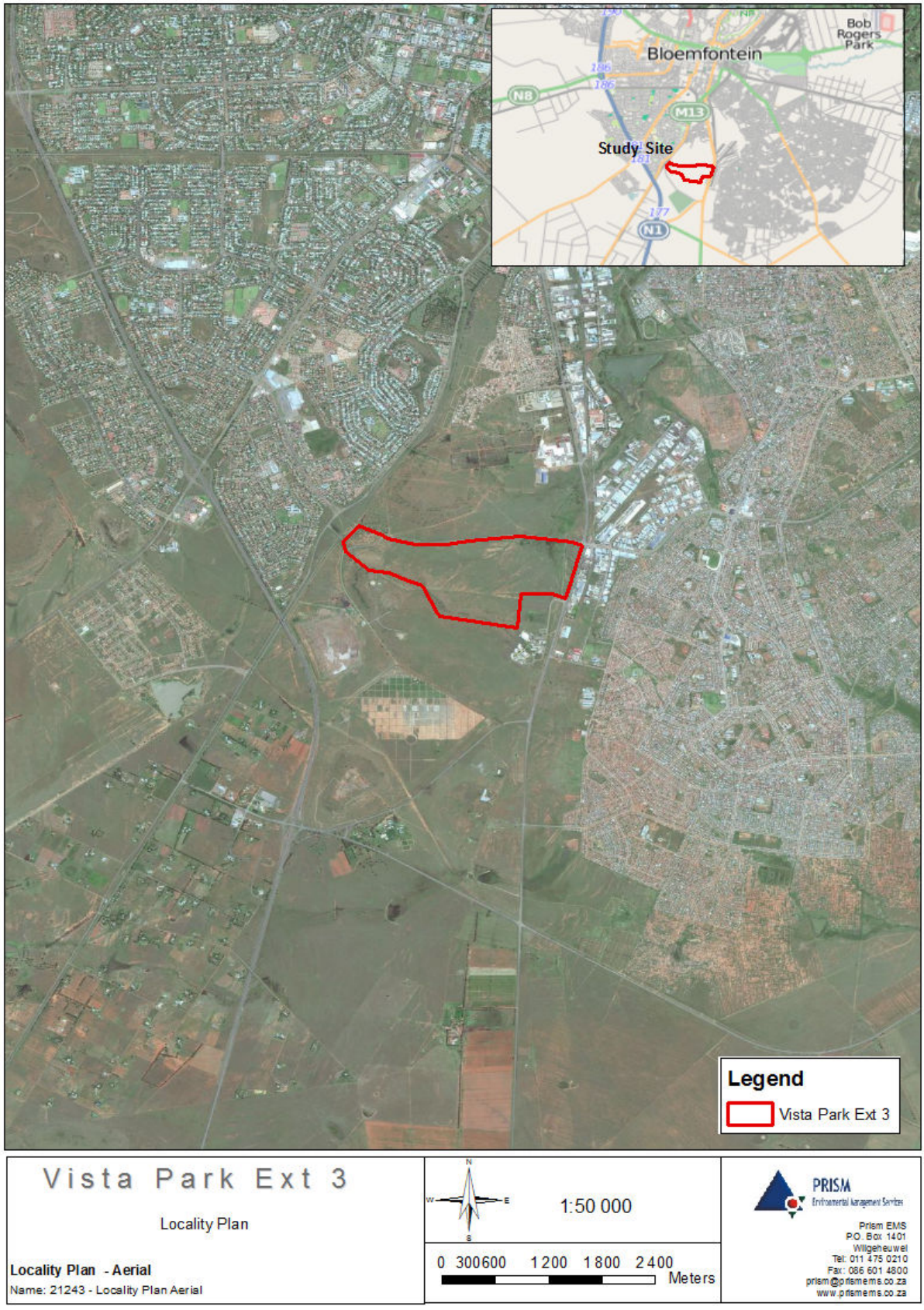

Figure 2: Locality Plan on Aerial Photo

1.2 PURPOSE OF THE PROPOSED PROJECT

The aim of the development is to establish a residential township on the mentioned property. The township, to be developed as an Integrated Residential Housing project, will consisting of RDP/BNG housing, GAP Housing, Student Housing and Affordable Housing opportunities (CTE Consulting; 2013).

The Mangaung Metropolitan Municipality (MMM) invited tenders under tender reference number: ED9 2011/2012 from interested parties to undertake the development to be known as Vista Park Extension 3. The Developer was successful with its bid to undertake the Development (CTE Consulting; 2013).

The Developer was appointed by the MMM to undertake the development as defined by the tender documentation and stipulated below:

- It is expected of the bidder to plan, survey and develop this area;
- Town planning of the area should have the following components:
    1. Social Housing
    2. Subsidized housing ±300m2/erf
    3. Bonded Group Housing ±50m2 building;
    4. Bonded single Residential Housing 400m2 – 700m2
    5. Neighbourhood Centre(s) ±10 000m2;
    6. Community facilities; and
    7. Regional Hospital (6ha) to be developed by the Provincial Government.
- Take note:
    - 30% of single residential sites will be reserved for disposal by the MMM
    - 30% of General Residential sites will be reserved for social housing project to be implemented by MMM.

(CTE Consulting; 2013)

Refer to Appendix F.

1.3 PROJECT ALTERNATIVES

1.3.1 Layout Alternative

A layout alternative will also be evaluated for the project. This alternative is mainly linked to the positioning of the District Hospital and other developments within the township.

1.3.2 Route and design Alternative

Alternatives in respect of bulk services and the upgrade of George Lubbe Street will also be evaluated for the project. This alternative is mainly linked to the alignment and routes planned for services installation.

1.3.3 The "No-Go" Alternative

The "No-Go" alternative will also be assessed. This option will reflect the impacts on the environment should this project not go-ahead.

1.4 REQUIREMENT FOR AN ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

1.4.1 National Environmental Management Act (NEMA)

Environmental authorisation is required as the activities are listed under the National Environmental Management Act (NEMA) (1998) and listed in Government Notice No. R. 544 and 545 of 2010 (Activity List 1 and 2) of the Environmental Impact Assessment Regulations (2010), including, but not limited to the following:

List 1:

9. Construction of infrastructure to service the proposed township to include bulk transportation of water, sewage and stormwater (i) with an internal diameter of 0,36 meters or more.

11. Construction of (i) a canal and (vi) bulk stormwater outlets within a watercourse or within 32m of a watercourse, measured from the edge of the watercourse

18. The infilling or depositing of any material of more than 5 cubic meters into, or the dredging, excavation, removal or moving of soil, sand etc from (i) a watercourse.

List 2:

5. Construction of facilities and/or infrastructure requiring permitting/licensing for generation or release of emissions, pollutant or effluent.

15. Physical alteration of undeveloped land where area to be transformed is 20 ha or more (approximately 131ha)

1.4.2 National Environmental Management: Waste Act (NEM:WA)

The proposed construction is also listed in Government Notice No. R 718 of 2009 of the National Environmental Management: Waste Act (2009) Category A, as follows:

Storage of Waste

2. The storage, including the temporary storage of hazardous waste at a facility that has the capacity to store in excess of 35m³ of hazardous waste at any one time. Excluding the storage of hazardous waste in lagoons.

A combined application will be lodged for the authorisation of the proposed activities in the form of a full Environmental Impact Assessment (EIA) process.

1.4.3 National Water Act (NWA)

A Water Use Licence Application (WULA) is also required in terms of Section 21 of the National Water Act (NWA).

21 (c) impeding of diverting the flow of water in a watercourse; and

21 (i) altering the bed, banks, course or characteristics of a watercourse.

A Water Use License Application (WULA) will be submitted to Department of Water Affairs (DWA).

1.5 THE ENVIRONMENTAL IMPACT ASSESSMENT PRACTITIONER

Prism Environmental Management Services cc has been appointed as the independent environmental consultants to conduct the Scoping Report and Environmental Impact Assessment process for the proposed development, in terms of the National Environmental Management Act (Act No. 107 of 1998) as amended and the Environmental Impact Assessment Regulations (2010).

Prism EMS is a specialist environmental consulting firm providing broad environmental management services, including Environmental Impact Assessments (EIA), environmental planning, and environmental compliance monitoring and environmental specialist services.

The Prism EMS team has extensive experience in environmental impact assessment and management. The team has conducted a diverse range of impact assessments for a wide range of projects throughout South-Africa.

The Principle Environmental Assessment Practitioner (EAP), and support team responsible for this project include:

De Wet Botha holds a Master's Degree in Environmental Management from the University of Johannesburg (UJ) (former RAU). He has 10 years' experience consulting in the environmental field. De Wet is a founder member of EAPASA and member of IAIAsa and Gauteng Wetland Forum. His key focus is on strategic environmental assessment and advice, management and coordination of environmental impacts assessments and projects. The integration of environmental specialist studies into Environmental Impact Assessment (EIA)'s and management plans also forms part of his role. He has extensive knowledge and experience in the aquatic field, in specific wetland assessments as well as associated water use licensing. He is currently working on several Environmental Impact Assessment (EIA)s and acts in an advisory role on major projects. He also forms part of the specialist aquatic team.

Milton Milaras holds an Honours Degree in Environmental Management from the University of Johannesburg (UJ) (former RAU). He has 6 years' experience consulting in the environmental field. His key focus is on environmental assessment and monitoring, management and coordination of environmental management objectives. He has extensive knowledge and experience in the mining industry, as well as water use licensing. He is currently working on several Environmental Impact Assessment (EIA)s and acts as environmental auditor on construction projects. He also forms part of the public participation team.

Elsje Botha has 4 years' experience as town planning assistant and 5 years' experience as environmental project manager in assist to the EAP. She has a legal academic background. Her key role on this project is project administration. She also forms part of the public participation team.

Alvar Koning has 8 years' experience as aquatic scientist. He holds a B-Tech. degree in Nature Conservation and is currently completing his M-Tech. degree in Nature Conservation as well as his Master degree in Aquatic Health (UJ). He is also SASS 5 accredited. His key role on this project is aquatic specialist and advisor to the EAP.

The curriculum vitae for the Prism EMS project team is attached under Appendix B.

1.5.1 Sub-Consultants

- Engineering – Bigen Africa
- Town Planning – CTE Consulting
- Heritage Impact Assessment – G&A Heritage Consultants
- Geotechnical Investigation– CHB
- Aquatic & Ecological Specialist Assessments – Prism EMS cc
- Traffic Impact Assessment – Mariteng Management Solutions

**Curriculum Vitae available on request.*

CHAPTER 2 - DESCRIPTION OF THE PROPOSED PROJECT

2 THE PROPOSED PROJECT

Calgro M3 Developments (Pty) Ltd is proposing the development of an integrated residential township on a Portion of the Remainder of the farm Bloemfontein no. 654 – I.Q. (Refer to Figure 1) to be known as Vista Park Ext. 3

This application is for the authorisation of the listed activities pertaining to the development of Vista Park Ext. 3. The application will be evaluated by the Free State Department of Economic Development, Tourism and Environmental Affairs (FSDETEA).

Alternatives, including route alternatives and layout alternatives are being considered for the proposal. It is the intention of Calgro M3 Developments (Pty) Ltd to develop a residential township on the mentioned property. The township is to be developed as an Integrated Residential Housing project and will consist of RDP/BNG housing, GAP Housing, Student Housing and Affordable Housing opportunities (CTE Consulting; 2013).

Furthermore, the application is made in respect of the bulk services installations and connections that will extend beyond the development site boundaries as well as the upgrade of George Lubbe Road (Refer to Appendix A2).

2.1 ERVEN AND ZONING

The township consists of 1273 erven in total and is to be developed in phases (CTE Consulting; 2013).

Erven 1 to 1179	:	Single Residential 1 (1179 erven)
Erven 1180 to 1193	:	Access Purposes (14 erven)
Erven 1194 to 1231	:	General Residential 1 (38 erven)
Erven 1232 to 1234	:	Educational (3 erven)
Erven 1235 to 1239	:	Business (5 erven)
Erven 1240 to 1243	:	Worship (4 erven)
Erven 1244 to 1247	:	Crèche (4 erven)
Erven 1248 to 1265	:	Public Open Space (18 erven)
Erven 1266 to 1272	:	Municipal Purposes (7 erven)
Erf 1273	:	Medical Use Zone (1 erf)

(CTE Consulting; 2013)

Refer to Appendix F.

2.2 THE PREFERRED OPTION

The preferred option for Calgro M3 Developments (Pty) Ltd is the development of the Vista Park Ext. 3 as per the layout- and services plan attached in Appendix A1 and Appendix A2.

2.3 PROJECT ALTERNATIVES

2.3.1 Layout Alternative

A layout alternative will also be evaluated for the project. This alternative is mainly linked to the positioning of the Provincial Hospital and other developments within the township (Appendix A3).

2.3.2 Route and design Alternative

Alternatives in respect of bulk services and the upgrade of George Lubbe Street will also be evaluated for the project. This alternative is mainly linked to the alignment and routes planned for services installation.

2.3.3 The "No-Go" Alternative

The "No-Go" alternative will also be assessed. This option will reflect the impacts on the environment should this project not go-ahead.

CHAPTER 3 – THE EIA PHASE

3 APPROACH OF THE EIA PHASE

An Environmental Impact Assessment (EIA) process refers to that process (dictated by NEMA in the EIA Regulations) which involves the identification of and assessment of direct, indirect, and cumulative environmental impacts associated with a proposed activity. The EIA process comprises two main phases:

1. Scoping Phase and
2. EIA Phase.

The EIA process concludes in the submission of an EIA Report (including an Environmental Management Programme (EMPr)) to the competent authority (Free State Department of Economic Development, Tourism and Environmental Affairs (FSDETEA) for this application) for decision-making. The EIA process is illustrated below:

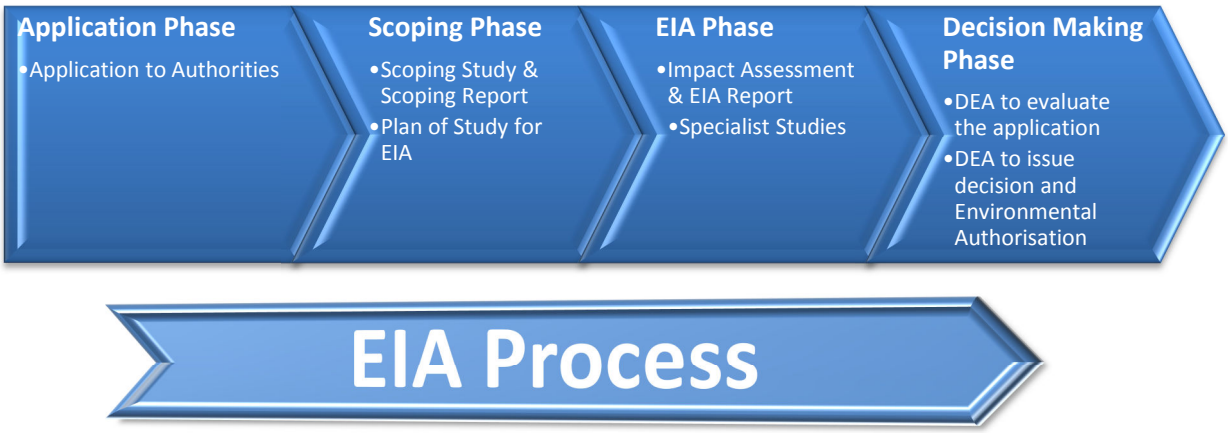

Figure 3: Phases of the Environmental Impact Assessment (EIA) process

The Scoping Phase for the proposed Vista Park Ext. 3

was undertaken in accordance with the EIA Regulations published in Government Notice 33306 of 18 June 2010 (as amended), in terms of Section 24(5) of the National Environmental Management Act (National Environmental Management Act (NEMA)) (Act No 107 of 1998). In accordance with these Regulations, this scoping process was aimed at identifying potential issues associated with the proposed activity, and defining the extent of studies required within the EIA.

It was achieved through an assessment of the proposed activities involving desktop studies, specialist scans, as well as a consultation process with key stakeholders (including relevant government authorities) and interested and affected parties (I&APs).

The Environmental Impact Assessment (EIA) Phase for the proposed Vista Park Ext. 3 is undertaken in accordance with the EIA Regulations as stated above.

In accordance with these Regulations, this EIA process is aimed at identifying and assessing the potential impacts associated with the proposed activity. The EIA process culminates in the submission of an EIA Report. This report includes:

- General discussions on the application
- Impacts assessment
- Specialist reports to assist in the impact assessment and mitigation
- An Environmental Management Programme (EMPr) to mitigate against impacts

This chapter serves as a *précis* of the process followed during the EIA Phase of the EIA process.

3.1 SCOPING PHASE

The Scoping Phase aimed to:

- Identify and evaluate potential environmental (biophysical and social) impacts and benefits of all phases of the proposed construction (including design, construction, operation and decommissioning phases) within the broader study area through a desktop review and assessment of existing baseline data and specialist assessments.
- Classify potentially sensitive environmental features and areas on the site to inform the initial planning phase.
- Define the scope of studies to be undertaken within the EIA process.
- Provide the authorities with adequate information in order to make a decision regarding the scope of issues to be addressed in the EIA process, as well as the scope and extent of specialist studies that will be undertaken as part of the EIA Phase of the process.

The objectives of this Scoping Phase aligned with the above, was to:

- Verify the scope and nature of the proposed activities.
- Clarify the reasonable and feasible project specific alternatives to be considered through the EIA process.
    - Including the “No Go” option.
- Identify and evaluate key environmental issues/impacts associated with the proposed activities, and through a process of broad-based consultation with stakeholders and desk-top specialist studies, identify those issues to be addressed in more detail in the Impact Assessment Phase of the EIA process.
- Identify and evaluate potentially sensitive environmental features and areas which should be considered in the planning phase.
- Conduct a transparent Public Participation Process (PPP) and facilitate the inclusion of stakeholders’ concerns regarding the proposed project into the decision making process.

The Scoping Phase was undertaken in accordance with the EIA Regulations in terms of National Environmental Management Act (NEMA) (1998). Key tasks undertaken within the scoping phase included:

- Consultation with relevant decision making and regulating authorities (National-, Provincial- and Local authorities).

- Submission of a completed, integrated application, form for authorisation in the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), the Environmental Impact Assessment ("EIA") Regulations, 2010, the National Environmental Management: Waste Act, 1998 (Act No. 59 of 2008) ("NEMWA") and the Schedule contained in Government Notice 718, published on 3 July 2009 in terms of section 19 of NEMWA, to the competent authority (FSDETEA).
- Undertaking a Public Participation Process (PPP) throughout the Scoping process in accordance with Chapter 6 of Government Notice No R543 of 2010 in order to identify issues and concerns associated with the proposed project.
- Preparation of a Comments and Response Report detailing key issues raised by I&APs as part of the EIA Process (in accordance with Regulation 57 of Government Notice No R543 of 2010).
- Undertaking of initial independent specialist studies in accordance with Regulation 32 of Government Notice No R543 of 2010.
- Preparation of a Scoping Report and Plan of Study for EIA in accordance with the requirements of the Regulation 28 Government Notice No R543 of 2010.

The said key tasks were completed and the Scoping Report was reviewed and approved by Free State Department of Economic Development, Tourism and Environmental Affairs (FSDETEA) on 6 August 2013 (Refer to Appendix C).

3.2 OBJECTIVES OF THE EIA PHASE

The EIA Phase aims to:

- Provide an overall assessment of the social and biophysical environments affected by the proposed alternatives put forward as part of the project.
- Assess potential significant impacts associated with the proposed activity.
- Comparatively assess any identified and feasible alternatives put forward as part of the project.
- Identify and recommend appropriate mitigation measures for the potentially significant environmental impacts.
- Conduct a transparent Public Participation Process (PPP) and facilitate the inclusion of stakeholders' concerns regarding the proposed project into the decision making process.

The EIA addresses potential environmental impacts and benefits associated with all phases of the project including design, construction, operation, and decommissioning, and aims to provide the environmental authorities with sufficient information to make an informed decision regarding the proposed project.

3.3 OVERVIEW OF THE EIA PHASE

The EIA Phase was undertaken in accordance with the EIA Regulations in terms of National Environmental Management Act (NEMA) (1998). Key tasks undertaken within the EIA phase included:

- Consultation with relevant decision making and regulating authorities (National-, Provincial- and Local authorities).
- Undertaking a Public Participation Process (PPP) throughout the EIA process in accordance with Regulation 54 of the Government Notice No R543 of 2010 in order to identify issues and concerns associated with the proposed project.
- Preparation of a Comments and Response Report detailing key issues raised by I&APs as part of the EIA Process (in accordance with Regulation 57 of Government Notice No R543 of 2010).
- Undertaking of independent specialist studies in accordance with Regulation 32 of Government Notice No R543 of 2010.
- Preparation of an EIA Report in accordance with the requirements of the Regulation 31 Government Notice No R543 of 2010.

The said key tasks are discussed in detail below.

3.3.1 Authority Consultation

The application is made for the development of Vista Park Ext. 3 and associated infrastructure. This development will *inter alia* trigger listed activities as per the National Environmental Management Act, 1998 and the Environmental Impact Regulations, 2010 due to the proposed development of a township and the construction and installation of services affecting aquatic resources.

An application was lodged with the Free State Department of Economic Development, Tourism and Environmental Affairs (FSDETEA) and same was accepted by FSDETEA (Refer to Appendix C). The following reference number was allocated to the application, EMS/9(i).11(i)(vi),18(i),5,15/13/09, NEAS Ref: FSP/EIA/0000282/2013.

Consultation with Organs of State that may have jurisdiction over the project, including:

- Provincial and local government departments (including South African Heritage Resources Agency, Department of Water Affairs, etc.).
- Government Structures (including local Government).

3.3.2 Public Participation Process

A Public Participation Process (PPP) was conducted throughout the Scoping process in accordance with Chapter 6 of Government Notice No R543 of 2010 in order to identify issues and concerns associated with the proposed project.

Continuation of this process was facilitated during the EIA phase. Information containing all relevant facts in respect of the proposed project was made available to potential stakeholders and I&APs. Participation by potential I&APs was facilitated in such a manner that all potential stakeholders and I&APs were provided with a reasonable opportunity to comment on the proposed project. Comment

received from stakeholders and I&APs will be recorded and incorporated into the EIA process (Refer to Appendix E).

3.3.2.1 I&AP Identification, Registration and Database Generation

The first step in the PPP was to identify relevant stakeholders and interested and affected parties (I&APs) (Refer to Appendix E). This process was undertaken through existing contacts and databases, recording responses to site notices and newspaper advertisements, as well as through the process of networking (Refer to Appendix E). Stakeholder groups identified include:

- Provincial and local government departments (including FSDETEA, DWA, etc.)
- Government Structures (SAHRA, Local Government, etc.)
- Mangaung Metropolitan Municipality
- Potentially affected and neighbouring landowners and tenants;
- Industry and businesses; and
- CBOs and other NGOs.

All relevant stakeholder and I&APs information have been recorded within a database of affected parties (Refer to Appendix E). While I&APs have been encouraged to register their interest in the project from the start of the process, the identification and registration of I&APs will be on-going for the duration of the EIA process. The project database will be updated periodically, and will act as a record of the parties involved in the PPP.

3.3.2.2 Notification of Environmental Impact Assessment Process

In order to notify and inform the public of the proposed activities and invite members of the public to register as interested and affected parties (I&APs), the project and EIA process was again advertised in the following newspaper:

- Volksblad (15 August 2013)

Site advertisements were placed at several locations on route (fence and/or boundaries) and in public places in accordance with the requirements of the EIA Regulations (Refer to Appendix E).

In addition to the above advertisements and notices, key stakeholders and registered I&APs were notified in writing of the commencement of the EIA phase (Refer to Appendix E).

Proof of Site Notice and Advertisement will be included in the final Environmental Impact Assessment Report for review by the relevant authority.

3.3.2.3 Public Consultation

The aim of the PPP was primarily to ensure that:

- All potential stakeholders and I&APs are identified and consulted with;
- Information containing all relevant details in respect of the application is made available to potential stakeholders and I&APs;
- Conduct a transparent PPP and facilitate the inclusion of stakeholders' concerns regarding the proposed activities into the decision making process; and
- Comment received from stakeholders and I&APs is recorded.

Through consultation with key stakeholders and I&APs, issues for inclusion within the EIA will be identified and confirmed. In order to accommodate the varying needs of stakeholders and I&APs within the study area, as well as capture their views, issues and concerns regarding the project, various opportunities have been provided for I&APs to have their issues noted.

3.3.2.3.1 Identification and Recording of Issues and Concerns

All comments received from stakeholders and I&APs on the proposed project will be included in the final EIA Report for review by FSDETEA. A Comments and Response Report will be compiled to include all comments received during the EIA phase of the process, including those received in the public review period of the EIA Report (Refer to Appendix E).

3.3.2.4 Public Review of EIA Report

This is the current stage of the EIA Phase. The EIA Report has been made available for public review from 15 August 2013 to 25 September 2013 at the following locations:

- The offices of Prism Environmental Management Services cc
    - Hard copy
    - Digital copy on request via FTP server

3.3.2.5 Final Environmental Impact Assessment Report (EIAR)

The final stage in the EIA Phase will entail the capturing of responses from stakeholders and I&APs on the EIA Report in order to finalise this report. FSDETEA will be tasked to evaluate and to issue a decision on the application and the EIAR.

CHAPTER 4 – DESCRIPTION OF THE RECEIVING ENVIRONMENT

4 DESCRIPTION OF THE RECEIVING ENVIRONMENT

This section of the Environmental Impact Assessment Report (EIAR) provides a description of the environment that may be affected by the proposed Vista Park Ext. 3

The information provided will assist the reader in understanding the receiving environment within which the proposed activity will be installed. Features of the biophysical, social and economic environment that could directly or indirectly be affected by, or could affect, the proposed development have been described. This information has been sourced from both existing information available for the area as well as collected field data, and aims to provide the context within which this EIA is being conducted.

More specific and detailed description of the environment is provided for in the specialist reports prepared in assist to the EIA (Refer to Appendix F).

4.1 DEVELOPMENT SITE

4.1.1 Proposed Vista Park Ext. 3

Vista Park Ext. 3 is proposed to be developed on a Portion of the Remainder of the farm Bloemfontein no. 654 – I.Q. The facility will include *inter alia*:

The township consists of 1273 erven in total and is to be developed in phases (CTE Consulting; 2013).

Erven 1 to 1179	:	Single Residential 1 (1179 erven)
Erven 1180 to 1193	:	Access Purposes (14 erven)
Erven 1194 to 1231	:	General Residential 1 (38 erven)
Erven 1232 to 1234	:	Educational (3 erven)
Erven 1235 to 1239	:	Business (5 erven)
Erven 1240 to 1243	:	Worship (4 erven)
Erven 1244 to 1247	:	Creche (4 erven)
Erven 1248 to 1265	:	Public Open Space (18 erven)
Erven 1266 to 1272	:	Municipal Purposes (7 erven)
Erf 1273	:	Medical Use Zone (1 erf)

(CTE Consulting; 2013)

Refer to Appendix F.

4.1.2 Services Installation and Road Upgrades

Services installation and road upgrades will be evaluated for the project. These installations and upgrades will possibly affect wetland areas. These areas have been assessed within the Specialist Aquatic Assessment prepared by Prism EMS cc. Refer to Annexure F.

4.1.3 Medical Use Zone (1 erf)

In respect of this proposed erf: a district hospital is planned for this erf. The construction part of the development of this facility is covered under this application. An additional application will be made in terms of the National Environmental Management Waste Act (NEM:WA) to obtain authorisation for the operational phase of the facility. This application will be lodged with the National Department of Environmental Affairs (DEA).

It must be noted that original planning included an incinerator on site. However, design now excludes an incinerator. Hazardous waste will be stored on site (by means of acceptable and approved health management practices) within managed, contained areas and removed by licenced contractors to registered sites on a daily basis.

The facility is planned to contain 350 beds and related facilities, including a mortuary, kitchen, bulk stores for linen etc., and a maintenance area to take care of garden services and other general maintenance issues in and around the hospital. Sufficient parking for visitors and staff is provided and landscaped gardens in open plan areas are proposed. It should also be noted that housing for nursing staff is included in the development plan, and will provide affordable housing to staff close to their place of work.

Refer to Annexure H for design drawings of the proposed hospital layout.

4.2 PHYSICAL ENVIRONMENT

4.2.1 Existing Landuse and Landcover

The property is currently vacant with the exception of an electrical sub-station on the south eastern side of the property (CTE Consulting; 2013).

4.2.1.1 Surrounding Land Use

The surrounding land use structure is as follows:

- North : Vacant land, further north dwelling units
- East : Industrial, Hamilton DC, dwelling units;
- South : University of the Free State South Campus and South Park landfill site,
- West : Railway line and further west Uitsig, Fauna and Fleurdal extensions

(CTE Consulting; 2013).

4.2.1.2 Existing Zoning

In terms of the Bloemfontein Town Planning Scheme No.1 of 1954, the current zoning of the property is Undetermined (CTE Consulting; 2013).

4.2.1.3 Surrounding Zoning

In terms of the Bloemfontein Town Planning Scheme No.1 of 1954, the surrounding property zonings are as follows:

- North : Undetermined
- East : Industrial
- South : Municipal Purposes
- West : Railway and Residential

(CTE Consulting; 2013).

4.2.2 Climatic Conditions

Bloemfontein normally receives about 407mm of rain per year, with most rainfall occurring mainly during summer. The chart below (lower left) shows the average rainfall values for Bloemfontein per month. It receives the lowest rainfall (2mm) in June and the highest (68mm) in January. The monthly distribution of average daily maximum temperatures (centre chart below) shows that the average midday temperatures for Bloemfontein range from 16°C in June to 29.2°C in January. The region is the coldest during July when the mercury drops to 0°C on average during the night. Consult the chart below (lower right) for an indication of the monthly variation of average minimum daily temperatures (SA-Explore; 2013).

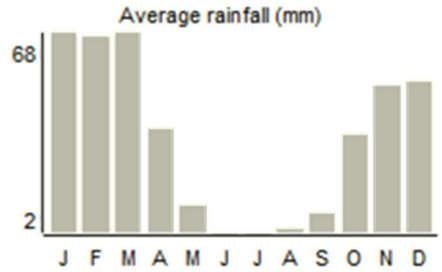

Figure 4: Average Rainfall (mm)

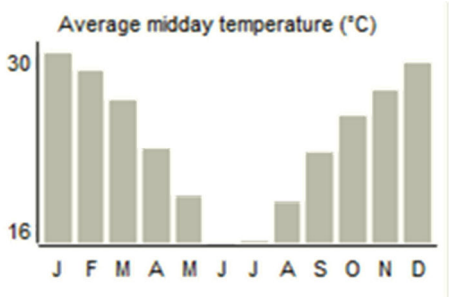

Figure 5: Average Midday Temperature (°C)

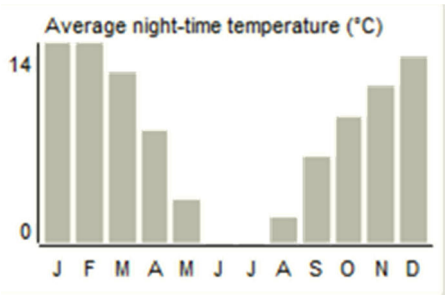

Figure 6: Average Night-time Temperature (°C)

4.2.3 Infrastructure

The development will require the installation of infrastructure. The majority of these are the essential services as discussed in point 4.1.2 above. Storm-water infrastructure will also be facilitated.

4.2.4 Bio-Physical Characteristics

4.2.4.1 Topography

The property has an average gradient of approximately 1:40 sloping from east to west.

No area has a gradient greater than 1:35 and therefore no problems are foreseen from a design and planning point of view.

4.2.4.2 Geology and Soils

The geological map (provided by the Council of Geosciences) indicates that the site is underlain by mudrock and subordinate sandstone of the Adelaide group (CHB; 2012).

4.2.4.3 Ecology

As most of the development site is affected by historical activities and is also highly traversed, the site does not hold significant ecological value. The site is semi-degraded and suffers from erosion and gully formation in certain areas. A wetland system is found on site.

The Ecology, and specifically Fauna and Flora was assessed and reported on, within the Specialist Ecological Assessment, included under cover of Annexure F.

4.2.4.3.1 Flora

4.2.4.3.1.1 Regional Flora

The site is situated at the Grassland Biome which is represented for most of the site by Bloemfontein Dry Grassland vegetation type and at the rocky ridge that enters the southern part of the site, Winburg Grassy Shrubland (Mucina & Rutherford, 2006). Climate is characterized by summer rainfall, mean annual precipitation between 450-500 mm and a high incidence of frost in winter (Mucina & Rutherford, 2006) (Ecological Assessment, 2013).

4.2.4.3.1.2 Flora on site

Extinct, threatened, near threatened and other plant species of high conservation priority in Free State Province were investigated. None of the plant species of particular conservation priority appear to occur at the site (Ecological Assessment, 2013).

4.2.4.3.2 Fauna

4.2.4.3.2.1 Mammals

The possible presence or absence of threatened mammal species and near threatened mammal species at the site was investigated. Because the site falls outside reserves, large threatened species such as the black rhinoceros (*Diceros bicornis*) are obviously not present. No smaller mammals of particular high conservation significance are likely to be found on the site either (Ecological Assessment, 2013).

4.2.4.3.2.2 Avi-faunal

The possible presence or absence of threatened bird species and near threatened bird species (globally and nationally) was investigated at the site. The site does not appear to form part of any habitat of particular importance for any threatened bird species or any bird species of particular conservation importance (Ecological Assessment, 2013).

4.2.4.3.2.3 Reptiles

The possible presence or absence of threatened and near threatened reptile species on the site was investigated. There appears to be no threat to any reptile species of particular high conservation importance if the site is developed (Ecological Assessment, 2013).

4.2.4.3.2.4 Amphibians

No frog species that occur in the Free State are red listed as threatened species or near threatened species at present. There appears to be no threat to any amphibian species of particular high conservation importance if the site is developed (Ecological Assessment, 2013).

4.2.4.3.3 Invertebrates

4.2.4.3.3.1 Butterflies

Threatened butterfly species in South Africa can be regarded as bio-indicators of rare ecosystems; however, there appears to be no threat to any threatened, near threatened or particularly rare butterfly species if the site is developed (Ecological Assessment, 2013).

4.2.4.3.4 Aquatic Resources

One wetland unit was identified on site, during site surveys conducted in February 2013. The wetland was classified as being a Hillslope Seepage Wetland. Refer to Figure 7 for the locality and delineation of the wetland on site. Also, refer to the detailed Wetland Delineation and Impact Assessment under cover of Annexure F to this document.

Monitoring programmes can measure the success of mitigation implementations, monitor unforeseen impacts and can be used as a feedback system to adjust or correct management of the wetlands. The following monitoring programmes are recommended:

- An wetland bio-monitoring programme should be developed based on the points used in the baseline assessment on a bi-annual basis and any feedback from the monitoring programme should be used to measure and mitigate further negative impacts, if found;

- The mitigations for the proposed development should be implemented, managed and monitored according to the recommendations made in the report under each Key Effect; and

- Based on the results presented in the document, the proposed development will not have a detrimental effect on the aquatic ecosystem.

A water use license should be investigated specifically when any development or associated infrastructure will impact on the wetland or control area (Wetland Delineation and Impact Assessment, 2013).

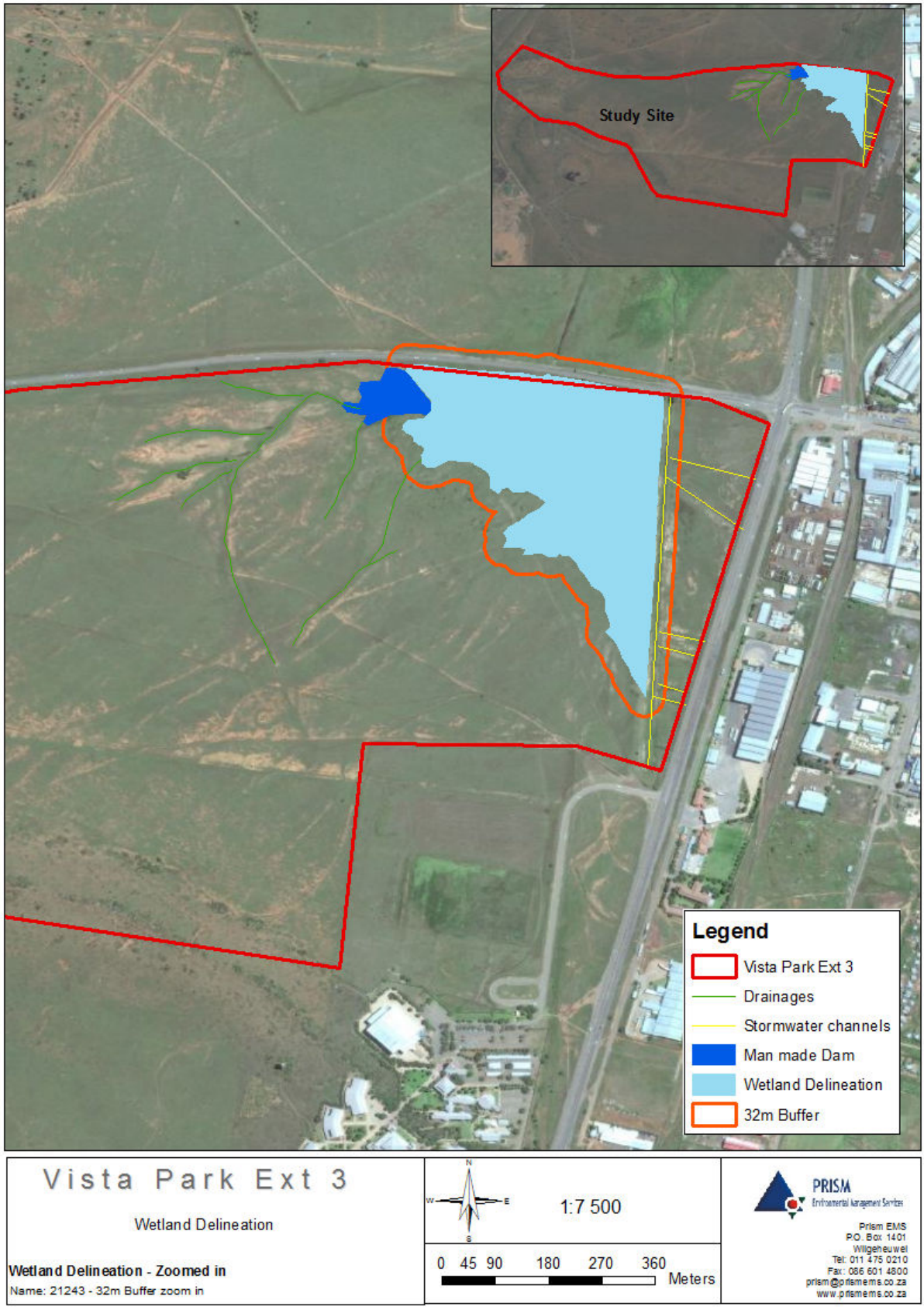

Figure 7: Wetland Area affected by the proposed development of Vista Park Ext. 3

4.3 SOCIAL ENVIRONMENT

4.3.1 Cultural and Heritage Characteristics

A Phase 1 Heritage Impact Assessment study was conducted on the subject site. This study focuses on the planned development of the Vista Park Extension 3 development proposed for a Portion of the Remainder of the farm Bloemfontein 654 I.Q. Refer to the Phase 1 Heritage Impact Assessment in Appendix F.

The purpose of the heritage impact assessment is to outline the cultural heritage sensitivity of the proposed development area and to advise on mitigation should any heritage sites or landscapes be affected.

The 1913 British Military Map of the area showed the possible location of a rifle range (possibly military) within the study area. The feature does however not have any tangible components, and as such, cannot be described as a discrete site.

No culturally sensitive landscape types could be identified within any of the study areas.

The location of the rifle range should be noted, however since there is no tangible remains on the ground, any mitigation will be impossible and as a result no further work is necessary (G&A Heritage, 2013).

The specialist HIA has been submitted to SAHRA for review. Comment is still awaited at this stage, but will be submitted with the final EIA for review by FSDETEA.

4.3.2 Air Quality and the South Park Landfill Site

The South Park Landfill site is situated south west of the site earmarked for the development of Vista Park Ext. 3. A desktop investigation of the site was conducted and the potential air quality impact from the landfill site, on the proposed Development, was discussed (Annexure F).

Identified disturbances include:

- Odour
- Landfill Gas Emissions
    - Greenhouse Gases
    - Non-methane Organic Compounds
    - Volatile Organic Compound and
    - Hydrogen Sulphide
- Dust

A buffer zone of 500m is proposed around a landfill site of this nature. A small portion of the site falls within this 500m buffer zone and as such, ambient air quality monitoring is proposed by the specialist, to quantify potential human health impacts (Rayten Engineering, 2013).

It is important to note that this portion of the site specifically has been earmarked for Public Open Space to accommodate the ridge found along the southern boundary of the site. Please refer to Annexure A for the proposed layout plan. The ridge area to the north of the landfill and to the south of the development is a further shield to the development. The prevailing wind direction is east-west along the ridge which further decreases the risk to the township.

4.3.3 Demographic and Socio-Economic Information

4.3.3.1 Population Size, Distribution and Growth

'[The Mangaung Municipality will be] using some of the land parcels particularly VISTA area for dealing with inherited spatial distortions" (Mangaung Municipality Integrated Development Plan (IDP), 2013-2014).

The proposed development of Vista Park Ext. 3 will aim to align with Mangaungs' Integrated Development Plan (IDP), specifically referring to 'integrated human settlements'. The strategy encompassed in the Mangaung IDP has two core objectives, namely:

- To improve and develop integrated human settlements by means of:
  - Transforming dormitory suburbs into areas that support a greater mix of land use, offer a range of amenities and are socially mixed facilities;
  - Putting in place policy and spatial planning frameworks that will facilitate the development of integrated human settlements; and
  - Developing and implementing an incremental housing programme

- The delivery of housing opportunities by means of:
  - Developing of new housing opportunities;
  - Increasing the rental stock through social housing partnerships;
  - Redressing land ownership inequities by providing housing based on restitution claim settlements;
  - Facilitating GAP Housing programmes
  - Developing and maintaining zoned public open spaces, cemeteries, resorts and beaches.

4.3.3.2 Strategic Development Framework

"Like many other municipalities across the country, Mangaung is faced with the challenges of service delivery backlog in areas such as housing, water, sanitation and unemployment. Our SDF has identified several interventions, like identifying pockets of land in **Vista Park**, Cecilia Park, at the airport, and Hillside View to accommodate the rising demand for housing." (Mangaung Municipality Press Release, http://www.localgovernment.co.za/features/view/8, 2012)

The development of Vista Park Ext. 3 will give effect to the Mangaung Municipality's SDF, in that it will:

- Consolidate, protect and improve access to natural and support resources;
- Promote efficient access to locations;
- Propose sustainable and accessible economic opportunities;
- Improve the existing environmental opportunities through consolidation and maintenance to maximise benefits; and
- Integrate human settlements.

4.3.3.2.1 Good urban services Infrastructure

"The primary task of a municipality, beyond and above its developmental mandate is the provision of basic services to its intended clients, being households, business and service providers." (Mangaung Municipality IDP, 2013-2014)

The upgrade of roads and installation of essential services to the proposed development of Vista Park Ext. 3, will be directly in line with the findings and goals set by the Mangaung IDP.

CHAPTER 5 – DESCRIPTION OF THE ENVIRONMENTAL ISSUES AND POTENTIAL IMPACTS

5 ENVIRONMENTAL ISSUES AND POTENTIAL IMPACTS

5.1 SCOPING PHASE COMPLETED

The potential impacts of the proposed development (i.e. construction phase) are identified, shortly described and evaluated in this chapter. The majority of the environmental impacts are expected to occur during the construction phase when installation of the pipeline will take place.

Environmental issues associated with construction activities of the proposed Vista Park Ext. 3 development include, among others:

Impact on:

- Bio-Physical Environment
    - Ecology
        - Flora
        - Fauna
            - Avi-faunal
            - Mammal
            - Reptiles
            - Amphibians
            - Butterflies
    - Aquatic Resources
        - Wetland
    - Geology and soils
- Social Environment
    - Traffic Impact
    - Air Quality

Table 2, Table 3 and Table 4 provide a summary of the findings of the scoping study undertaken. The detailed assessment as part of the Environmental Impact Assessment (EIA) is based on these key items identified.

Table 1: Evaluation of potential impacts associated with the Construction Phase

Evaluation of potential impacts associated with the Construction Phase
Impacts on Bio-Physical Environment
Construction related activities which could impact on the Bio-Physical Environment include:
Land clearing
Construction of access roads
Establishment of stockpiling and spoil areas
Chemical contamination of the soil by construction vehicles and machinery
Operation of temporary construction camps and storage of materials required for construction
Storage of pipe sections
The identified potential impacts include:
Loss or fragmentation of natural habitat for flora and fauna
Loss of individuals of threatened or protected flora and fauna
Loss or damage to aquatic resources
Loss or damage to cultural en historical resources
Impacts on Social Environment
Construction related activities which could impact on the Social Environment include:
Land clearing
Construction of access roads
Vehicular movement
Establishment of stockpiling and spoil areas
Operation of temporary construction camps and storage of materials required for construction
Storage of pipe sections
Noise, Visual Etc.
The identified potential impacts include:
General disturbance (Noise, visual etc.)
Traffic disturbance
Loss of operation time and linked financial impacts

Table 2: Summary of potential impacts (Bio-Physical Environment)

Impacts on Bio-Physical Environment			
Issue	**Nature of Impact**	**Extent of Impact**	**Study to be undertaken for EIA**
Loss or fragmentation of natural habitat for flora and fauna	Negative change in conservation status of habitat; Increased vulnerability of remaining portions to future disturbance; General loss of habitat for sensitive species; Loss in variation within sensitive habitats due to loss of portions thereof; General reduction in biodiversity; Increased fragmentation (depending on location of impact); Disturbance to processes maintaining biodiversity and ecosystem goods and services; Loss of ecosystem goods and services.	Local	Ecological Assessment
Loss or damage to aquatic resources	The construction and installation of services in close proximity to wetlands. Release of stormwater into the aquatic resource.	Local	Aquatic Assessment; Water Use Licence (WUL)
Loss or damage to cultural en historical resources	Possible cultural or heritage items will be encountered. Buildings or other structures older than 60 years might also be affected.	Local	Heritage Impact Assessment

Table 3: Summary of potential impacts (Social Environment)

Impacts on Social Environment			
Issue	**Nature of Impact**	**Extent of Impact**	**Study to be undertaken for EIA.**
General disturbance (Noise, visual etc.)	The general disturbance and disruption of everyday social activities could be affected.	Local	No specialist input required. Focus must be placed on incorporation in EMPr
Traffic disturbance	Likely impacts on traffic flow. Traffic disruption due to heavy construction vehicle movement.	Local	Traffic Impact Assessment

5.2 AIMS OF THE EIA PHASE

The EIA Phase will aim to achieve the following:

- Provide an overall impact assessment of the biophysical and social environment affected by the proposed activities.
- Assess potentially significant impacts (direct, indirect and cumulative, where required) associated with the proposed development of Vista Park Ext. 3.
- Identify and recommend appropriate mitigation measures for potentially significant environmental impacts.
- Undertake a comprehensive Public Participation Process (PPP) to ensure that interested and affected parties (I&APs) are afforded the opportunity to participate, and that their issues and concerns are recorded.

The Environmental Impact Assessment (EIA) will address potential environmental impacts and benefits (direct, indirect and cumulative impacts) associated with all phases of the project including pre-construction, construction, operation and decommissioning phases, and will aim to provide the environmental authorities with sufficient information to make an informed decision regarding the proposed project.

5.3 AUTHORITY CONSULTATION

An application has been lodged with the Free State Department of Economic Development, Tourism and Environmental Affairs (FSDETEA) and same was accepted by the Department. The following reference number was allocated to the application: EMS/9(i).11(i)(vi),18(i),5,15/13/09

: NEAS Ref: FSP/EIA/0000282/2013

. The Scoping Report was subsequently submitted to the FSDETEA and same was approved on 6 August 2013 (Refer to Appendix C).

Consultation with the regulating authorities (DEA, DWA and FSDETEA) is undertaken and will continue throughout the EIA process.

5.4 METHODOLOGY

An assessment of the potential impacts of the proposed construction of the Vista Park Ext. 3 development was based on existing information and Specialist Assessments of various aspects.

The potential impacts will be assessed based on:

5.4.1 Nature

This is an appraisal of the type of effect the activity would have on the affected environment. This description includes what is being affected and how (Refer to Table 4).

5.4.2 Extent

This indicates the spatial area that may be affected by the impact, and further describes the possibility that adjoining areas may be impacted upon (Refer to Table 4).

5.4.3 Duration

This refers to the period of time that the impact may be operative for (i.e. the lifetime of the impact) (Refer to Table 4).

5.4.4 Severity

This indicates whether the impact is likely to be destructive or have a lesser effect (Refer to Table 4).

5.4.5 Probability

This refers to the likelihood of the impact actually occurring (Refer to Table 4).

5.4.6 Significance

The overall significance of the impact can be determined based on a synthesis of information from the parameters tabulated above. The significance of an impact can be described as:

- NONE: No impact foreseen.
- INSIGNIFICANT: A insignificant impact, no mitigatory measures required.
- VERY LOW: A negligible impact, no to minimal mitigatory measures required.
- LOW: A low impact, minimal mitigatory measures required.
- LOW to MEDIUM: Low to moderate impact. Mitigatory measures required. It will not have an influence on the decision.
- MEDIUM: Moderate impact. Mitigation required. Possible influence on decision without mitigation.
- MEDIUM to HIGH: Moderate to severe impact. Specific and comprehensive mitigatory measures required. May influence the decision to go ahead with the project without mitigation.
- HIGH: Severe impact. Specific and comprehensive mitigatory measures required. It will influence the decision to go ahead with the project if no suitable mitigation could be implemented.
- VERY HIGH: Severe impact. It will influence the decision to go ahead with the project and alternative activities should be identified for Proposal.
- CRITICAL: Extremely severe impact. It will influence the decision to go ahead with the project and alternative activities must be identified for Proposal. Mitigation not possible.

Table 4: Impact assessment described

	DEFINITIONS				
Nature	**Indication whether the impact is adverse (negative) or beneficial (positive). + ve (positive - a 'benefit'); - ve (negative - a 'cost')**				
PARAMETER	**QUANTIFICATION**				
	RANKING				
Extent	**None**	**Site**	**Local**	**Regional**	**National**
		Confined to the study area or part thereof	Within the adjacent suburbs of the proposed township development	Within the Municipal Borders	Beyond the Free State Province Borders
Duration	**None**	**Short-term**	**Medium-term**	**Long-term**	**Permanent**
		0-12 months	1-5 years	5-20 years	20+ years
Severity	**None**	**Very Low**	**Low**	**Medium**	**High**
		0-25%	25-50%	50-75%	75-100%
Probability	**None**	**Unlikely**	**Possible**	**Probable/ Likely**	**Definite**
		0-10% chance	10-50% chance	50-90% chance	>90% chance

5.4.7 Cumulative effect

It is important to assess the natural environment using a systems approach that will consider the cumulative impact of various actions. Cumulative impact refers to the impact on the environment, which results from the incremental impact of the actions when added to other past, present and reasonably foreseeable future actions regardless of what agencies or persons undertake such actions. Cumulative impacts can result from individually minor but collectively significant actions or activities taking place over a period of time. Cumulative effects can take place so frequently in time that the effects cannot be assimilated by the environment.

5.4.8 Mitigation

An Environmental Management Programme (EMPr) will be developed based on the findings of the Environmental Impact Assessment (EIA). The EMPr will be developed as site specific mitigation measure for significant impacts.

5.5 ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

5.5.1 Physical Impacts

Loss of Flora and an Increase in Invasives

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Site	Short-Term	Low	Probable	**Low-Medium**	-ve	Medium
	1	1	2	3			
Key mitigation measures:							
Only vegetation in areas of work may be removed (i.e. construction area, site camp, access roads etc.) Same should be phased as work progresses and topsoil layer must be stockpiled to preserve seed banks for re-instatement. Mitigation measures as per the Ecological Study, Aquatic Study and EMPr to be implemented.							
With Mitigation	Site	Short-Term	Very Low	Possible	**Low**	-ve	High
	1	1	1	2			

Loss of Fauna

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Site	Short-Term	Low	Probable	**Low-Medium**	-ve	Medium
	1	1	2	3			
Key mitigation measures:							
Only vegetation in areas of work may be removed (i.e. pipeline reserves, site camp, access roads etc.) Same should be phased as work progresses and topsoil layer must be stockpiled to preserve seed banks for re-instatement. Areas must be cordonded off to protect fauna from ingress into working areas. Mitigation measures as per the Ecological Study, Aquatic Study and EMPr to be implemented.							
With Mitigation	Site	Short-Term	Very Low	Possible	**Low**	-ve	High
	1	1	1	2			

Degradation of Ecological Systems

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Site	Short-Term	Low	Probable	**Low-Medium**	-ve	Medium
	1	1	2	3			
Key mitigation measures:							
Only vegetation in areas of work may be removed (i.e. pipeline reserves, site camp, access roads etc.) Same should be phased as work progresses and topsoil layer must be stockpiled to preserve seed banks for re-instatement. Areas must be cordonded off to protect fauna from ingress into working areas. Mitigation measures as per the Ecological Study, Aquatic Study and EMPr to be implemented.							
With Mitigation	Site	Short-Term	Very Low	Possible	**Low**	-ve	High
	1	1	1	2			

Degradation of Aquatic Ecological Systems

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Local	Medium-Term	Low	Probable	**Medium**	-ve	Medium
	2	2	2	3			
Key mitigation measures:							
Avoid the wetland area as far as possible. Only essential construction may take place. Clearing of vegetation in the wetland zone to be kept to a minimum, and to be done only immediately prior to construction. Mitigation measures to be implemented as per the Aquatic Ecological Assessment, and strictly controlled and audited.							
With Mitigation	Local	Short-Term	Very Low	Possible	**Low-Medium**	-ve	Medium
	2	1	1	2			

Pollution of Ground Water and Lessening of Groundwater Recharge

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Local	Short-Term	Low	Unlikely	**Low-Medium**	-ve	Medium
	2	1	2	1			
Key mitigation measures:							
Measures will be implemented to ensure that no hydrocarbons and/or other pollutant liquids are spilt, and if so, they are contained and a clean-up protocol followed.							
With Mitigation	Local	Short-Term	Very Low	Unlikely	**Low**	-ve	High
	2	1	1	1			

Alteration of Topography

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Site	Short-Term	Low	Probable	**Low-Medium**	-ve	Medium
	1	1	2	3			
Key mitigation measures:							
Alteration of the topography of the site will be caused by the excavation of cut and fill sections. Same will be managed and pre-planned. The alteration will form part of the development design and will be mitigated by means of architectural and engineering design.							
With Mitigation	Site	Short-Term	Very Low	Possible	**Low**	-ve	Medium
	1	1	1	2			

Soil Erosion and Soil Pollution

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Site	Short-Term	Low	Possible	**Low-Medium**	-ve	Medium
	1	1	2	2			
Key mitigation measures:							
Implementation of measures to control soil erosion and the prevention and containment of hydrocarbons and other liquid pollutants.							
With Mitigation	Site	Short-Term	Very Low	Unlikely	**Low**	-ve	High
	1	1	1	1			

Soil Erosion and Soil Pollution along the Wetland

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Site	Short-Term	Low	Possible	**Low-Medium**	-ve	Medium
	1	1	2	2			
Key mitigation measures:							
Mitigation measures as per the Aquatic and Ecological Assessment will be implemented and enforced by the EMPr. All pollutant liquids and other material will be strictly contained and if a spill occurs, the spill will be contained and a clean-up protocol followed.							
With Mitigation	Site	Short-Term	Very Low	Possible	**Low**	-ve	Medium
	1	1	1	2			

Decrease in the Land Use Capability

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Site	Long-Term	Medium	Probable	**Medium-High**	+ ve	Medium
	1	3	3	3			
Key mitigation measures:							
No mitigation required							
With Mitigation	Site	Long-Term	Medium	Probable	**Medium-High**	+ ve	Medium
	1	3	3	3			

5.5.2 Socio-Cultural and Economic Impacts

Loss of Sense of Place, Increase in Visual Impact

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Site	Short-Term	Very Low	Unlikely	**Low**	-ve	Medium
	1	1	1	1			
Key mitigation measures:							
Construction activities and the movement of large construction vehicles will occur during set time periods. A construction camp will be built to house all vehicles and materials.							
With Mitigation	Site	Short-Term	Very Low	Unlikely	**Low**	-ve	Medium
	1	1	1	1			

Decline in Safety and Security

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Site	Short-Term	Low	Possible	**Low-Medium**	-ve	Medium
	1	1	2	2			
Key mitigation measures:							
Security measures will be implemented to prevent security risk to surrounding properties (where applicable). Same will form part of the appointed contractors contract requirements.							
With Mitigation	Site	Short-Term	Very Low	Unlikely	**Low**	-ve	Medium
	1	1	1	1			

Increase in Noise Levels

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Local	Medium-Term	Low	Probable	**Medium**	-ve	Medium
	2	2	2	3			
Key mitigation measures:							
Construction activities and the movement of large construction vehicles will occur during set time periods so as not to disturb the local residents. No blasting on site is foreseen. Should blasting be required, it will be mitigated by means of chemical blasting.							
With Mitigation	Local	Short-Term	Very Low	Unlikely	**Low**	-ve	Medium
	2	1	1	1			

Disruption in Traffic

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Regional	Short-Term	Low	Possible	**Medium**	-ve	Medium
	3	1	2	2			
Key mitigation measures:							
A Traffic Impact Study has been conducted to assess traffic disruption. Feasible mitigation measures have been proposed to curb traffic disruption to a minimum.							
With Mitigation	Local	Short-Term	Very Low	Unlikely	**Low**	-ve	Medium
	2	1	1	1			

Loss of Cultural Sites

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Site	Short-Term	Very Low	Unlikely	**Low**	-ve	High
	1	1	1	1			
Key mitigation measures:							
No sites of cultural importance were found on the subject site. Should any items be discovered during the construction period. Same must be communicated to the ECO and action must be implemented as per the HIS, South African Heritage Resource Agency (SAHRA) approval and the EMPr.							
With Mitigation	Site	None	Very Low	Unlikely	**Very Low**	- ve	High
	1	0	1	1			

Loss of Historical of Pre-Historical Features

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Site	Short-Term	Very Low	Unlikely	**Low**	- ve	High
	1	1	1	1			
Key mitigation measures:							
No sites of historical importance were confirmed on the subject site. Should any items be discovered during the construction period. Same must be communicated to the ECO and action must be implemented as per the HIS, South African Heritage Resource Agency (SAHRA) approval and the EMPr.							
With Mitigation	Site	Short-Term	Very Low	Possible	**Low**	- ve	High
	1	1	1	2			

Decline/Increase in the Economy

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Local	Medium-Term	Medium	Probable	**Medium-High**	+ ve	High
	2	2	3	3			
Key mitigation measures:							
No mitigation required. It is envisaged that the construction phase of the activity would lead to job creation from within the immediate community. Long term job creation is also anticipated. Community benefit from improved service capacity is expected.							
With Mitigation	Local	Medium-Term	Medium	Definite	**Medium-High**	+ ve	High
	2	2	3	4			

Decline/Increase in the Property Value

	Extent	Duration	Severity	Probability	Significance	Nature	Confidence
Without Mitigation	Local	Medium-Term	Low	Possible	**Medium**	+ ve	Medium
	2	2	2	2			
Key mitigation measures:							
No mitigation required.							
With Mitigation	Local	Medium-Term	Low	Possible	**Medium**	+ ve	Medium
	2	2	2	2			

5.6 ENVIRONMENTAL IMPACT ASSESSMENT (EIA) STATEMENT

ALTERNATIVE 1 - DEVELOPMENT OF VISTA PARK EXT 3							
ENVIRONMENTAL IMPACT STATEMENT							
	Nature without Mitigation	Extent without Mitigation	Duration without Mitigation	Severity without Mitigation	Probability without Mitigation	Significance without Mitigation	Significance with Mitigation
Physical Impacts							
Loss of Flora and an Increase in Invasives	-ve	Site	Short-Term	Low	Probable	Low-Medium	Low
Loss of Fauna	-ve	Site	Short-Term	Low	Probable	Low-Medium	Low
Degradation of Ecological Systems	-ve	Site	Short-Term	Low	Probable	Low-Medium	Low
Degradation of Aquatic Ecological Systems	-ve	Local	Medium-Term	Low	Probable	Medium	Low-Medium
Pollution of Surface Water	-ve	Local	Short-Term	Low	Possible	Low-Medium	Low
Pollution of Ground Water and Lessening of Groundwater Recharge	-ve	Local	Short-Term	Low	Unlikely	Low-Medium	Low
Alteration of Topography	-ve	Site	Short-Term	Low	Probable	Low-Medium	Low
Soil Erosion and Soil Pollution	-ve	Site	Short-Term	Low	Possible	Low-Medium	Low
Soil Erosion and Soil Pollution along the Wetland	-ve	Site	Short-Term	Low	Possible	Low-Medium	Low
Decrease in the Land Use Capability	+ ve	Site	Long-Term	Medium	Probable	Medium-High	Medium-High
Socio-Cultural and Economic Impacts							
Loss of Sense of Place, Increase in Visual Impact	-ve	Site	Short-Term	Very Low	Unlikely	Low	Low
Decline in Safety and Security	-ve	Site	Short-Term	Low	Possible	Low-Medium	Low
Increase in Noise Levels	-ve	Local	Medium-Term	Low	Probable	Medium	Low
Disruption in Traffic	-ve	Regional	Short-Term	Low	Possible	Medium	Low
Loss of Cultural Sites	-ve	Site	Short-Term	Very Low	Unlikely	Low	Very Low
Loss of Historical of Pre-Historical Features	- ve	Site	Short-Term	Very Low	Unlikely	Low	Low
Decline/Increase in the Economy	+ ve	Local	Medium-Term	Medium	Probable	Medium-High	Medium-High
Decline/Increase in the Property Value	+ ve	Local	Medium-Term	Low	Possible	Medium	Medium

5.7 ASSESSMENT OF POTENTIAL CUMULATIVE IMPACTS

A cumulative impact, in relation to an activity, refers to the impact of an activity that in itself may not be significant, but may become significant when added to the existing and potential impacts eventuating from similar or diverse undertaking in the area. Repetition of the same activity in the near future could also be considered as cumulative.

The cumulative impacts that are perceived for the environment in the greater area are:

- Township developments in addition to Vista Park Ext. 3
- Additional Services installation
- Loss of natural and open space areas
    - Corridor destruction
    - Wetland areas
    - Ridge areas
- Traffic impact

These impacts can all be mitigated against by proper planning. This planning must focus on the macro scale to accommodate and absorb the cumulative impact of recurring activities in sensitive environments. Capacity planning for future activities must be entertained to mitigate against overloading of systems and infrastructure.

Open space and corridor planning must be approached in a manner that will allow for free flow in the ecological system.

5.8 ALTERNATIVES ASSESSED

5.8.1 Layout Alternative

The proposed township of Vista Park Ext. 3 is proposed to be developed on a Part of the Remainder of the farm Bloemfontein 654 I.Q. Township planning, specialist studies and consultation with various professionals, including engineers and the local municipality, has led to the presentation of the proposed layout as is presented by this application.

Alternative layouts were investigated during the process. Alternate layouts would have very similar impacts as the Proposal in the greater scheme of the area. It is with detailed assessment that one observes the direct and indirect impacts that these alternatives will have.

The proposed layout accommodates the wetland in the north-east corner of the subject site and the ridge found to the south-west of the site, thus, it is our opinion that the Proposed development layout is the best proposal for the layout of the development on the subject site.

The most viable alternative layout is presented in Appendix A3. The key issue and increased impact linked to this layout is identified as the impacts related to the aquatic resource and open space system.

5.8.2 Route and design Alternative

Alternative to road upgrade and route alignments were investigated. These were based mainly on the positioning of the 'Medical Zone' erf with the District Hospital proposed on same. Obviously, the hospital must be easily accessible from routes around the township. Final positioning of the erf directed the route alignment of roads, both access roads and design of internal roads within the township.

These alternate designs have very similar impacts to the Proposal, and as such, the Proposal with due consideration for the wetland area and access to the township from existing roads, is presented.

Several new township applications were recently submitted which have bearing on the findings of the Traffic Impact Assessment for the subject site. The cumulative effects are currently under discussion/negotiation and evaluation by the local and provincial roads authorities. This global evaluation approach will result in the minimal impact on a broad scale and will mitigate against cumulative impact.

5.8.3 The "No-Go" Option

The 'No-Go" alternative is the option of not developing Vista Park Ext. 3. The need for this township has been discussed above and the various land uses proposed to be included in the development, i.e. the district hospital and various residential developments, including GAP housing will only benefit the immediate community and provide job-opportunities to residents in the area. The residential feature of the development will also allow for the settlement of residents from outside the area (informal housing areas) in this structured, formalised township.

This alternative is thus not supported.

5.9 ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

An Environmental Management Programme (EMPr) was developed to mitigate against adverse environmental impacts. The EMPr is developed to address site specific issues and to facilitate management of the environment during the construction of the development (Refer to Appendix G).

CHAPTER 6 - CONCLUSION

6 CONCLUSION

Calgro M3 Development (Pty) Ltd is proposing the development of an integrated residential township on a Portion of the Remainder of the farm Bloemfontein no. 654 – I.Q. (Refer to Figure 1). The Portion of the Remainder of the farm Bloemfontein no. 654 – I.Q. is situated between Church street and Ferreira road and south and adjacent to Vereeniging drive (M10) (Refer to Figure 2). The site falls within the jurisdiction area of the Mangaung Metropolitan Municipality (MMM). The project is referred to as Vista Park Ext. 3

The proposed development site measures approximately 131ha. The route alignment proposed for the services installation will extend beyond the development. The upgrade of George Lubbe Street is also outside the development site.

The EIA Report for the proposed Vista Park Ext. 3 development is undertaken in accordance with the EIA Regulations published in Government Notice 33306 of 18 June 2010, in terms of Section 24(5) of the National Environmental Management Act (NEMA; Act No 107 of 1998).

This EIA Report was aimed at detailing the nature and extent of this development, identifying potential issues associated with the proposed activities, and defining the extent of impacts perceived. This was achieved through an evaluation of the proposed activities, involving the applicant (Calgro M3), specialist consultants and a consultation process with key stakeholders and interested and affected parties (I&APs). In accordance with the requirements of the EIA Regulations, feasible project specific alternatives (including the “No-Go” option) have been identified and considered within the EIA process.

6.1 WAY FORWARD

1. Environmental Impact Assessment (EIA) circulated for public review
2. Incorporation of comments on Environmental Impact Assessment (EIA)
3. Finalise Environmental Impact Assessment (EIA) Report
4. Submit Environmental Impact Assessment (EIA) Report to Department of Environmental Affairs (DEA) for approval
5. On approval circulate Environmental Authorisation (EA) to Interested and Affected Parties (I&AP’s)