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2015

ENVIRONMENTAL SCOPING REPORT

FOR THE PROPOSED HIGH DENSITY
RESIDENTIAL TOWNSHIP "TANGANANI
EXTENSION 7", TO BE LOCATED ON A PART
OF PORTION 119 OF THE FARM DIEPSLOOT
388 JR, CITY OF JOHANNESBURG
MUNICIPALITY, GAUTENG

GDARD REF: GAUT 002/14-15/0264

PREPARED BY:
**SEEDCRACKER ENVIRONMENTAL
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PREPARED FOR:
**THE GAUTENG DEPARTMENT OF HUMAN
SETTLEMENTS**



GAUTENG PROVINCE
HUMAN SETTLEMENTS
REPUBLIC OF SOUTH AFRICA



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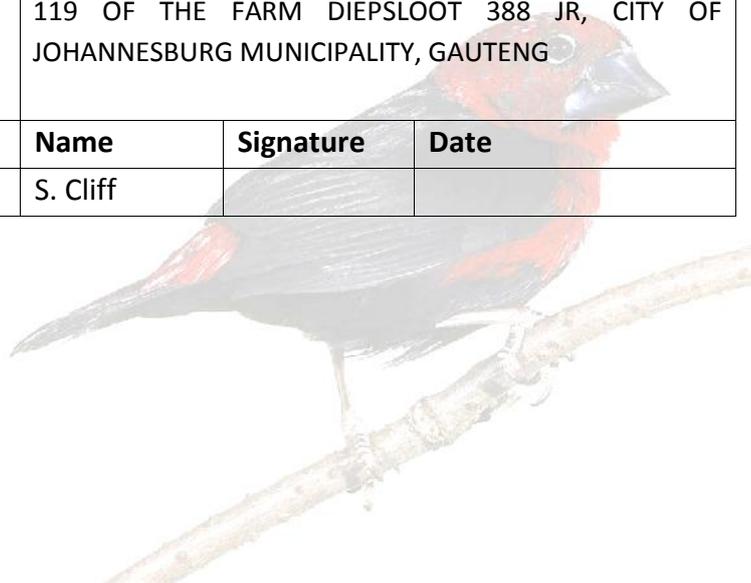


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LIST OF ABBREVIATIONS

DSR	-	Draft Scoping Report
DWA	-	Department of Water Affairs
EAP	-	Environmental Assessment Practitioner
ECA	-	Environment Conservation Act, 1989 (Act No. 73 of 1989)
EIA	-	Environmental Impact Assessment
EIAR	-	Environmental Impact Assessment report
EMPr	-	Environmental Management Programme
FSR	-	Final Scoping Report
GDARD	-	Gauteng Department of Agriculture and Rural Development
GDoLG&H	-	Gauteng Department of Local Government & Housing
HIA	-	Heritage Impact Assessment
I&APs	-	Interested and Affected Parties
IEM	-	Integrated Environmental Management
NEMA	-	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NWA	-	National Water Act (Act 36 of 1998)



NWMA	-	National Waste Management Strategy of South Africa (1999)
PPP	-	Public Participation Process
PoSf	-	EIA Plan of Study for Environmental Impact Assessment
SAHRA	-	South African Heritage Resources Agency
SEC	-	Seedcracker Environmental Consulting CC
TIA	-	Traffic Impact Assessment

GLOSSARY OF TERM

Affected environment : Those parts of the socio-economic and biophysical environment impacted on by the development.

Affected public: Groups, organizations, and/or individuals who believe that an action might affect them.

Alternative proposal: A possible course of action, in place of another, that would meet the same purpose and need. Alternative proposals can refer to any of the following but are not necessarily limited thereto:

- alternative sites for development
- alternative projects for a particular site
- alternative site layouts
- alternative designs
- alternative processes
- alternative materials

Anthropogenic: Change induced by humans intervention.

Applicant: Any person who applies for an authorisation to undertake an activity or to cause such activity to be undertaken as contemplated in Section 22(1) of the Environment Conservation Act, 1989 (Act No. 73 of 1989).

Authorities: The national, provincial or local authorities, which have a decision-making role or interest in the proposal or activity. The term includes the lead authority as well as other authorities.

Baseline: Conditions that currently exist. Also called "existing conditions."

Baseline information: Information derived from data which: * Records the existing elements and trends in the environment; and * Records the characteristics of a given project proposal.



“best practical environmental option” – means the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term.

“contaminated” – the presence in or under any land, site, buildings or structures of a substance or micro-organism above the concentration that is normally present in or under that land, which substance or micro-organism directly or indirectly affects or may affect the quality of soil or the environment adversely.

“cumulative impact” – in relation to an activity, means 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 activities or undertakings in the area.

“development footprint” – in respect of land means any evidence of physical alteration as a result of the undertaking of any activity.

“disposal” – means the burial, deposit, discharge, abandoning, dumping, placing or release of any waste into or onto any land.

Decision-maker: The person(s) entrusted with the responsibility for allocating resources or granting approval to a proposal.

Decision-making: The sequence of steps, actions or procedures that result in decisions, at any stage of a proposal.

“environmental impact assessment” – means a systematic process of identifying, assessing and reporting environmental impacts associated with an activity and includes basic assessment and scoping and an environmental impact report.

Environment: The surroundings within which humans exist and that are made up of - i. the land, water and atmosphere of the earth; ii. micro-organisms, plant and animal life; iii. any part or combination of (i) and (ii) and the interrelationships among and between them; and iv. the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being. This includes the economic, cultural, historical, and political circumstances, conditions and objects that affect the existence and development of an individual, organism or group.

Environmental Assessment (EA): The generic term for all forms of environmental assessment for projects, plans, programmes or policies. This includes methods/tools such as EIA, strategic environmental assessment, sustainability assessment and risk assessment.

Environmental consultant / Assessment Practitioner: Individuals or firms who act in an independent and unbiased manner to provide information for decision-making.



Environmental Impact Assessment (EIA): A public process, which is used to identify, predict and assess the potential environmental impacts of a proposed project on the environment. The EIA is used to inform decision-making.

Fatal flaw: Any problem, issue or conflict (real or perceived) that could result in proposals being rejected or stopped.

“general waste” – means waste that does not pose an immediate hazard or threat to health or to the environment, and includes domestic waste, building and demolition waste, business waste and inert waste.

“hazardous waste” – means any waste that contains organic or inorganic elements or compounds that may owing to inherent physical, chemical or toxicological characteristics of that waste have a detrimental impact on health or the environment.

“independent” – In relation to an EAP or a person compiling a specialist report or undertaking a specialised process or appointed as a member of an appeal panel, means – That such EAP or person has no business, financial, personal or other interest in the activity, application or appeal in respect of which that EAP or person is appointed in terms of these Regulations other than fair remuneration work performed in connection with that activity, application or appeal; or that there are no circumstances that may compromise the objectivity of that EAP or person in performing such work.

Impact: The positive or negative effects on human well-being and/or on the environment.

Ecology: The study of the inter relationships between organisms and their environments.

Interested and affected parties (I&APs): Individuals, communities or groups, other than the proponent or the authorities, whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. These may include local communities, investors, business associations, trade unions, customers, consumers and environmental interest groups. The principle that environmental consultants and stakeholder engagement practitioners should be independent and unbiased excludes these groups from being considered stakeholders.

Lead authority: The environmental authority at the national, provincial or local level entrusted in terms of legislation, with the responsibility for granting approval to a proposal or allocating resources and for directing or coordinating the assessment of a proposal that affects a number of authorities.

Mitigate: The implementation of practical measures to reduce adverse impacts.



Proponent: Any individual, government department, authority, industry or association proposing an activity (e.g. project, programme or policy).

“plan of study for environmental impact assessment” – means a document contemplated in regulation 28(1)(l), which forms part of a scoping report and sets out how and environmental impact assessment must be conducted.

Role-players: The stakeholders who play a role in the environmental decision-making process. This role is determined by the level of engagement and the objectives set at the outset of the process.

Scoping: The process of determining the spatial and temporal boundaries (i.e. extent) and key issues to be addressed in an environmental assessment. The main purpose of scoping is to focus the environmental assessment on a manageable number of important questions. Scoping should also ensure that only significant issues and reasonable alternatives are examined.

Stakeholders: A sub-group of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term therefore includes the proponent, authorities (both the lead authority and other authorities) and all interested and affected parties (I&APs). The principle that environmental consultants and stakeholder engagement practitioners should be independent and unbiased excludes these groups from being considered stakeholders.

Stakeholder engagement: The process of engagement between stakeholders (the proponent, authorities and I&APs) during the planning, assessment, implementation and/or management of proposals or activities. The level of stakeholder engagement varies depending on the nature of the proposal or activity as well as the level of commitment by stakeholders to the process. Stakeholder engagement can therefore be described by a spectrum or continuum of increasing levels of engagement in the decision making process. The term is considered to be more appropriate than the term “public participation”.

Study area: Refers to the entire study area encompassing the total area as indicated on the study area map.

“Significant impact” – means an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment.

Visual impact: Changes to the visual character of available views resulting from the development that include: obstruction of existing views; removal of screening elements thereby exposing viewers to unsightly views; the introduction of new elements into the viewshed experienced by visual receptors and intrusion of foreign elements into the viewshed of landscape features thereby detracting from the visual amenity of the area.

“Waste” – means any substance, whether or not that substance can be reduced, re-used, recycled



and recovered- (a) That is surplus, unwanted, rejected, discarded, abandoned or disposed of; (b) Which the generator has no further use of for the purpose production; (c) That must be treated or disposed of; (d) That is identified as a waste by the Minister by notice in a Gazette and includes waste generated by the mining, medical or other sector, but- (e) A by-product in not considered waste; and (f) Any portion of waste, once reused, recycled and recovered, ceases to be waste.

“Waste disposal facility” – means any site or premises used for the accumulation of waste with the purpose of disposing of that waste at that site or on that premise.

“waste management activity” – means any activity listed in Schedule 1 or published by notice in the *Gazette* under section 19 of NEM:WA, and includes – (a) The importation and exportation of waste; (b) The generation of waste, including the undertaking of any activity or process that is likely to result in the generation of waste; (c) The accumulation and storage of waste; (d) The collection and handling of waste; (e) The reduction, re-use, recycling and recovery of waste; (f) The trading of waste; (g) The transportation of waste; (h) The transfer of waste; and (i) The disposal of waste.

“Waste management license” – means a license issued in terms of section 49 of NEM:WA.

“Waste minimisation programme” – means a programme that is intended to promote the reduced generation and disposal of waste.



A 1 Background

The Applicant; *The Gauteng Department of Human Settlement*; proposes the establishment of a high density residential township including erven for high density residential units (100 units per hectare), a school, roads and public open space (wetland system). The study area is located on Part of portion 119 of the Farm Diepsloot 388 JR, Gauteng. The township will be referred to as *Tanganani Extension 7*.

The applicant has appointed Seedcracker Environmental Consulting CC (SEC), an independent Environmental Assessment Practitioner, to conduct the Scoping and Environmental Impact Assessment, including the Public Participation Process, for the proposed development. SEC meets the requirements as an independent EAP in terms of the EIA Regulations of 2014.

An EIA application for the very same township, was similarly initiated with the public in 2013 by *JW Environmental Solutions (Pty) Ltd*. The project was registered with GDARD, and a scoping phase public participation process was conducted with the community. The 2013 EIA application was halted by various issues, and hence, the 2013 EIA application was closed.

SEC has subsequently been appointed to resubmit an application for environmental authorisation to the approving authority –Gauteng Department of Agriculture and Rural Development (GDARD) for "*The Tanganani X 7 Township*". This was completed in February 2015. This EIA application is presently being advertised (March – April 2015) to the public, adjacent property owners, local authorities, and other interested parties such as Ward Councillors and Residents Associations. SEC has compiled this Scoping Report, and will conduct the remainder of the EIA process for this application, until the approving authority has delivered their final decision on this application.

A 2 The Environmental Impact Assessment process

The EIA process is intended to improve and facilitate environmental protection. It informs the decision making processes by which provincial authorities or 'competent authorities', determine whether certain projects should go ahead. The EIA process ultimately provides these bodies with written reports about the project's effects on the environment that are likely to be significant (the environmental impact assessment report), together with the comments of the public, specialist technical and ecological studies, and statutory environmental organisations.

The primary legislation regulating Environmental Impact Assessment (EIA) within South Africa is the National Environmental Management Act ("NEMA" Act 107 of 1998). When NEMA was promulgated, provision was made for the Minister of Environmental Affairs and Tourism ("the Minister") to identify *activities which may not commence prior to*



authorisation from either the Minister or the provincial Member of the Executive Council (“the MEC”). In addition to this, NEMA also provided for the formulation of regulations in respect of such authorisations.

The EIA Regulations (2014) allow for a Basic Assessment process for activities with limited environmental impact (listed in GN R.983, 2014); and a more thorough “multi - tiered” approach to activities with greater environmental impact (listed in GN R.984, 2014). The multi tiered approach includes both (i) Scoping and (ii) EIA processes. See figure 1 for this illustration.

The EIA process addresses the impacts associated with the project, and provides an assessment of the project in terms of the biophysical, social and economic environments to assist both the environmental authorities and the applicant, in making decisions regarding implementation of the proposed project.

The EIA process makes sure that *environmental issues* are raised when a project or plan is first discussed, and that all concerns are addressed as a project gains momentum through to implementation.

Recommendations made by the EIA may necessitate the redesign of some project components, require further studies, and suggest changes which alter the economic viability of the project or cause a delay in project implementation. To be of most benefit it is essential that an environmental assessment is carried out to determine significant impacts *early in the project cycle*, so that recommendations can be built into the design and cost-benefit analysis without causing major delays or increased design costs. To be most effective, once implementation has commenced, the EIA should lead to a mechanism whereby adequate monitoring is undertaken to realize environmental management. An important output from the EIA process should be the delineation of enabling mechanisms for such effective management.

The EIA process being conducted for the “*Tanganani X 7 high density residential township*” application, will address the impacts associated with the project, and provide an assessment of the project in terms of the biophysical and social environments to assist both the environmental authorities (in this case GDARD) and the applicant, in making decisions regarding implementation of the proposed project. The work will be undertaken in compliance with the National Environmental Management Act (Act No. 107 of 1998) (NEMA), and the EIA Regulations of December 2014. Guideline documents and other relevant legislation have also been studied to guide the environmental process for the new township application.



The EIA conducted for the proposed *Tanganani X 7* high density residential township will consist of three phases:

1. *The Scoping Phase*: The applicant must submit a report detailing the scoping phase of the application (Scoping Report), and set out the terms of reference for the EIA process (Plan of Study for EIA);
2. *The Impact Assessment Phase*: The Scoping Report is followed by a report detailing the EIA phase (EIR); and
3. *The Decision-Making Phase* by the authorities (GDARD): The competent authority will issue a final decision subsequent to their review of the EIR.

A 3 Understanding the First Step: *The Scoping Phase*

Scoping occurs early in the project cycle at the same time as outline planning and pre-feasibility studies for a particular project. *Scoping is the process of identifying the key environmental issues, and is perhaps the most important step in an EIA.* Scoping is important for two reasons. First, so that problems can be pinpointed early allowing mitigating design changes to be made before expensive detailed work is carried out. Second, to ensure that detailed prediction work is only carried out for important issues.

At this stage the option exists for cancelling or drastically revising the project should major environmental problems be identified. Once this stage has passed, the opportunity for major changes to the project is restricted.

A major activity of scoping is to identify *key interest groups*, both governmental and non-governmental, and to establish good lines of communication. People who are affected by the project need to hear about it as soon as possible. Their knowledge and perspectives may have a major bearing on the focus of the EIA. Rapid rural appraisal techniques provide a means of assessing the needs and views of the affected population.

The main EIA techniques used in scoping are *baseline studies, literature review, checklists, matrices* and *public comment / knowledge*. These techniques collect and present knowledge and information in a straightforward way so that logical decisions can be made about which impacts are most significant.

A 4 Purpose and structure of the Scoping report

The main aim of the *Scoping Phase* of the project is to *identify and define the issues that need to be addressed in the Impact Assessment Phase.* Input from the technical team, the authorities, specialists and Interested and Affected Parties (I&APs) are considered and integrated in defining



these key issues. This report fulfils the requirement of the EIA Regulations (2014) for the documentation of the scoping phase. The Scoping Report was compiled in accordance with Section 21(3) of NEMA's 2014 EIA Regulation (GN R. 982), and consists of the following:

Section A	Introduction	Provides an overview of the application to date
Section B	Details of EAP	Presents information regarding the EAP involved in the proposed project.
Section C	Legal Framework	Provides an overview of the integrated environmental authorisation process to be followed as well as information on the various legislative frameworks under which the proposed project's environmental authorisation application is legislated.
Section D	Project Motivation	Presents the need and desirability of the proposed project
Section E	Project Description	Provides detailed information regarding the proposed project and associated required infrastructure
Section F	Project Alternatives	Details the alternatives that were considered during the Scoping Phase and provides details on the options are the preferred in terms of the proposed project and which will be further investigated during the EIA Phase.
Section G	Receiving Environment	Provides the baseline information of the biophysical and social environments being impacted by the development proposal
Section H	Public Participation Process	Provides an overview of the Public Participation Process for the Scoping Phase of the project, and describes the process and activities that will be undertaken during the EIA Phase in terms of public participation.
Section I	Plan of Study for EIA	Details the plan of study and specialist investigations that will be undertaken during the EIA Phase.
Section J	Declaration	Provides the declaration of the EAP.
Section K	Conclusion	Provides a summary of the document and the concluding remarks of the EAP.

The purpose of the Scoping Report is to document the outcome of the Scoping Phase of the project. The Scoping phase includes the necessary investigations to assess the suitability of the identified site and its surrounding environment, for the development proposal. The scoping exercise describes the "status quo" of the bio-physical, social, economical and cultural environment, and identifies the anticipated environmental aspects associated with the proposed development.

The table below provides a summary of the legislated requirements in terms of a Scoping Report as stipulated in Section 21(3) of the EIA Regulations of December 2014. Cross references are provided in terms of the relevant section within this Scoping Report where the NEMA and Scoping Report requirements have been addressed.



Legal and Regulatory Requirement	SR Cross Reference
(a) Details of EAP– (i) the EAP who prepared the report; and (ii) the expertise of the EAP, including a curriculum vitae;	Section B
(b) The location of the activity, including – (i) the 21 digit Surveyor General code of each cadastral and parcel; (ii) where available, the physical address and farm name; (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Section E
(c) A plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is – (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or (ii) on the land where the property has not been defined, the coordinates within the which the activity is to be undertaken;	Figure 4
(d) A description of the scope of the proposed activity, including – (i) all listed and specified activities triggered; (ii) a description of the activities to be undertaken, including associated structures and infrastructure;	Section C
(e) A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process;	Section C
(f) A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Section D
(h) A full description of the process followed to reach the proposed preferred activity, site and location within the site, including – (i) details of all the alternatives considered; (ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; (iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration an probability of the impacts, including the degree to which these impacts– (aa) can be reversed;	Section F



<p>(bb) may cause irreplaceable loss of resources; and</p> <p>(cc) can be avoided, managed or mitigated;</p> <p>(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;</p> <p>(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;</p> <p>(viii) the possible mitigation measures that could be applied and level of residual risk;</p> <p>(ix) the outcome of the site selection matrix;</p> <p>(x) if no alternatives, including locations for the activity were investigated, the motivation for not considering such and</p> <p>(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;</p>	
<p>(i) A plan of study for undertaking the environmental impact assessment process to be undertaken, including –</p> <p>(i) a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;</p> <p>(ii) a description of the aspects to be assessed as part of the environmental impact assessment process;</p> <p>(iii) aspects to be assessed by specialists;</p> <p>(iv) a description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;</p> <p>(v) a description of the proposed method of assessing duration and significance;</p> <p>(vi) an indication of the stages at which the competent authority will be consulted;</p> <p>(vii) particulars of the public participation process that will be conducted during the environmental impact assessment process; and</p> <p>(viii) a description of the tasks that will be undertaken as part of the environmental impact assessment process;</p> <p>(ix) identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.</p>	Section I
<p>(j) An undertaking under oath or affirmation by the EAP in relation to –</p> <p>(i) the correctness of the information provided in the report;</p> <p>(ii) the inclusion of comments and inputs from stakeholders and interested and affected parties; and</p> <p>(iii) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;</p>	Section J
<p>(k) An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment;</p>	Section J
<p>(l) Where applicable, any specific information required by the competent authority; and</p>	Section J
<p>(m) Any other matter required in terms of section 24(4)(a) and (b) of the Act.</p>	Section J



An integral part of the scoping phase is the initial public participation process. This process ensures that all possible interested and affected parties (I&APs) are informed of the proposed activity and are provided with an opportunity to comment. This report is available to the IAP's till the 28th April 2015.

A 5 Assumptions and Limitations

This report is based on currently available information and, as a result, the following limitations and assumptions are implicit –

- The report is based on the *project description* provided by VBH Townplanning. The proposed township development proposal may still undergo further iterations and refinements before the development proposal can be regarded as definitive. A project description based on the final development proposal will be provided in the EIA Phase;
- Descriptions of the biophysical and social environments are based on specialist fieldwork and investigations, engineering team reports, previous discussions with the neighbouring property community and owners (2013 EIA conducted by JW environmental solutions PTY LTD), available literature and GIS support tools. More information will be provided in the EIA phase based on the outcomes of the specialist studies and public involvement.
- This Scoping Report has identified the potential environmental impacts associated with the proposed township application. However, the scope of impacts presented in this report could change, should new information become available during the EIA Phase, or additional information is provided to the EAP.

In undertaking this investigation and compiling the Scoping Report, the following has been *assumed*:

- The information provided by the applicant and professional team (Town Planner, Civil Engineers, Ecological Specialist, etc.) is accurate and unbiased.



B 1 DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

As per the requirements of the National Environmental Management Act: NEMA, 1998 (Act No. 107 of 1998), (NEMA) and the Environmental Impact Assessment Regulations, December 2014, the following information is pertinent with regards to the Environmental Assessment Practitioner (EAP) that has been appointed for the Environmental Assessment Phase, for the proposed new *Tanganani X 7* high density residential township.

Contact Details of Seedcracker Environmental Consulting CC:

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In terms of the EIA Regulations (2014), an EAP is an individual responsible for the planning, management and coordination of environmental impact assessments, strategic environmental assessments, environmental management programmes or any other appropriate environmental management instruments introduced through regulations. The EAP must be *independent, objective* and have *expertise* in conducting environmental impact assessments. Such expertise should include knowledge of all relevant legislation and of any guidelines that have relevance to the proposed activity.

An EAP or person compiling a specialist report or undertaking a specialised process appointed, must perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant and disclose to the applicant and competent authority all material information in the possession of the EAP or person compiling a specialist report or undertaking specialised process, that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority in terms of these regulation; or the objectivity of any report, plan or document to be prepared by the EAP or person compiling a specialist report or undertaking a specialised process, in terms of these regulations for submission to the competent authority.



In fulfilment of this requirement, the author of this report (Stephanie Cliff), and the founding member of Seedcracker Environmental Consulting CC (SEC), has the following expertise in the field of Environmental Management:

- BSc Animal Science (Hons).
- BSc Wildlife Management (Hons).
- 12 years experience in the Environmental Impact Assessment field
- Founding member of the EAPASA accreditation board
- Member of IAIA SA
- Member of the Conservation & Environmental Management Forum
- Registered with Environment South Africa & Cameron Cross Environmental Attorneys CCI Industry News and Legislation updates

Stephanie Cliff established Seedcracker Environmental Consulting in February 2008. Her introduction (in 2003) and subsequent involvement in all fields of environmental and social management have been in leadership positions. Stephanie has considerable experience in the management and co-ordination of all aspects of the Environmental Impact Assessment (EIA) processes.

Stephanie has gained advanced knowledge of Integrated Environmental management (IEM) tools and principles, the principles and fundamental criteria of the Environmental Conservation Act, the principles and fundamental criteria of the National Environmental Management Act (NEMA), provincial policies and regulations including draft and future legislation.

EAPSA Registration

The Environmental Assessment Practitioners Association of South Africa was launched on 7 April 2011, when 802 individuals resolved, as founding members, to form the organisation. Messrs Stephanie Cliff Seedcracker Environmental Consulting CC was present at this launch, and is subsequently registered as founding members.

The Board of EAPASA has applied to the Minister of Environmental Affairs to be recognised as a Registration Authority in terms of Section 24H of the National Environmental Management Amendment Act (NEMA), Act 107 of 1998. This registration has not yet occurred, which means that to date, Certification as an EAP with the Board remains *voluntary*, and in no way eliminates qualified professionals in the field of Environmental Management, from delivering professional consultation to the built environment field.

An *Interim Certification Board* (ICB) is in place - to provide an operating structure for the certification of Environmental Assessment Practitioners. Prior to establishing the Interim Certification Board, there was no means of certification available for environmental practitioners who do not have a natural science background. To this end, Messrs Stephanie Cliff has an Honours degree in BSc



Natural Sciences. As such, Messrs Stephanie Cliff subscribes to upholding professional standards and quality environmental assessment work.

B 1 Independence

The requirement for independence of the environmental consultant is aimed at reducing the potential for bias in the environmental process. Neither SEC nor any of its sub-consultants have any interests in secondary or downstream developments that may arise out of the authorisation of the proposed project. Furthermore, SEC is bound by the codes of conduct for EAPSA, and upon registering the project, has signed a declaration affirming the following:

- SEC will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- SEC declares that there are no circumstances that may compromise its objectivity in performing such work;
- SEC has expertise in conducting environmental impact assessments, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- SEC will comply with the Act, regulations and all other applicable legislation;
- SEC has no, and will not engage in, conflicting interests in the undertaking of the activity;
- SEC undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- SEC will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- SEC will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- SEC will keep a register of all interested and affected parties that participated in a public participation process; and
- SEC will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- all the particulars furnished by me in this report are true and correct;
- SEC will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations.



C 1 LEGAL FRAMEWORK

C.1 National Legislation

The **national legislation** listed here is applicable to the proposed development and the requirements and obligations therein have been considered during the scoping process:

Environmental Assessment

National Environmental Management Act, Act 107 of 1998: The Environmental Impact Assessment Regulations 2014: The NEMA EIA 2014 regulations and the listing notices thereto, replace the National Environmental Management Act (NEMA) EIA regulations of 2010 and its associated listing notices.

In terms of the EIA Regulations (GN R. 983, 984 and 985) of December 2014, a number of listed activities, as summarised in the table below, have been identified that may be triggered by the proposed project, and which will subsequently require environmental authorisation from GDARD:

R 983, 4 Dec 2014	9	<i>The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water-</i> <i>(i) with an internal diameter of 0,36 metres or more;</i> <i>(ii) with a peak throughput of 120 litres per second or more;</i> <i>excluding where-</i> <i>(a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve; or</i> <i>(b) where such development will occur within an urban area.</i>
	10	<i>The development and related operation of infrastructure exceeding 1000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes (i) with an internal diameter of 0,36 metres or more; or</i> <i>(ii) with a peak throughput of 120 litres per second or more;</i> <i>excluding where-</i> <i>(a) such infrastructure is for bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve; or</i> <i>(b) where such development will occur within an urban area.</i>
	12	<i>The development of-</i> <i>(i) canals exceeding 100 square metres in size;</i> <i>(ii) channels exceeding 100 square metres in size;</i> <i>(iii) bridges exceeding 100 square metres in size;</i> <i>(iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size;</i> <i>(v) weirs, where the weir, including infrastructure and water</i>



		<p>surface area, exceeds 100 square metres in size;</p> <p>(vi) bulk storm water outlet structures exceeding 100 square metres in size;</p> <p>(vii) marinas exceeding 100 square metres in size;</p> <p>(viii) jetties exceeding 100 square metres in size;</p> <p>(ix) slipways exceeding 100 square metres in size;</p> <p>(x) buildings exceeding 100 square metres in size;</p> <p>(xi) boardwalks exceeding 100 square metres in size; or</p> <p>(xii) infrastructure or structures with a physical footprint of 100 square metres or more;</p> <p>where such development occurs-</p> <p>(a) within a watercourse;</p> <p>(b) in front of a development setback; or</p> <p>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; -</p> <p>excluding-</p> <p>(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</p> <p>(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;</p> <p>(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;</p> <p>(dd) where such development occurs within an urban area; or</p> <p>(ee) where such development occurs within existing roads or road reserves.</p>
	13	The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.
R 984, 4 Dec 2014	15	The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.
R 985, 4 Dec 2014	4	The development of a road wider than 4 metres with a reserve less than 13,5 metres.
	14	The development of ((i) canals exceeding 10 square metres in size ; (ii) channels exceeding 10 square metres in size; bridges exceeding 10 square metres in size; (iv) dams, where the dam, including infrastructure and water surface area exceeds 10 square metres in size; (v) weirs, where the weir, including infrastructure and water surface area exceeds 10 square metres in size; (vi) bulk storm water outlet structures exceeding 10 square metres in size; (vii) marinas exceeding 10



		<p>square metres in size; (viii) jetties exceeding 10 square metres in size; (ix) slipways exceeding 10 square metres in size; (x) buildings exceeding 10 square metres in size; (xi) boardwalks exceeding 10 square metres in size; or (xii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development Occurs (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of the a watercourse;</p>
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- ***These activities may not commence until Environmental Authorisation has been received from the approving authority - GDARD. The applicant is therefore initially required to submit a report detailing the scoping phase (Scoping Report), and set out the terms of reference for the EIA process (Plan of Study for EIA). This is then followed by a report detailing the EIA phase (EIR). The competent authority will issue a final decision subsequent to their review of the EIR.***

Biophysical environment

- **National Environmental Management: Biodiversity Act, 2004** (Act No. 10 of 2004), The purpose of the Biodiversity Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed. In terms of the Biodiversity Act, the developer has a responsibility for:
 - ▶ The conservation of endangered ecosystems and restriction of activities according to the categorisation of the area (not just by listed activity as specified in the EIA regulations).
 - ▶ Application of appropriate environmental management tools in order to ensure integrated environmental management of activities thereby ensuring that all developments within the area are in line with ecological sustainable development and protection of biodiversity.
 - ▶ Limit further loss of biodiversity and conserve endangered ecosystems.

According to the National List of Threatened Terrestrial Ecosystems (2011), the majority of the study area falls within the remaining extent of the Egoli Granite Grassland vegetation type, which is listed as an Endangered ecosystem.

- **National Spatial Biodiversity Assessment**, The National Spatial Biodiversity Assessment (NSBA) classifies areas as worthy of protection based on its biophysical characteristics, which are ranked according to priority levels.



According to the NBA, the study area is not located within a formally or informally protected area and falls within an area classified as poorly protected.

Waste

National Environmental Management Waste Act (NEMWA), 2008 (Act No. 59 of 2008), R718: The NEM: Waste Act (NEMWA) was accented to on 10 March 2009 and came into effect on 01 July 2009. This Act repeals the sections in the Environment Conservation Act, Act 73 of 1989. The Act was established to regulate waste management for the protection of human health and the environment.

NEMWA seeks to reform the law on waste management by making provision for various measures for the prevention of pollution and ecological degradation, as well as ecologically sustainable development in order to protect health and the environment through waste management. The objectives of NEMWA include minimising the consumption of natural resources; avoiding and minimising the generation of waste; reducing, re-using, recycling and recovering waste; treating and safely disposing of waste as a last resort; promoting and ensuring the effective delivery of waste services; remediating land where contamination presents or may present a significant risk of harm to health or the environment; and achieving integrated waste management reporting and planning.

The proposed project does not include an activity listed under NEMWA, and therefore does not require a waste management licence.

- **National Waste Act, 2008** (Act No. 59 of 2008): National Domestic Waste Collection Standards. This legislation aims to enforce an integrated approach to waste management, with emphasis on prevention and reduction of waste at source and, where this is not possible, to encourage reuse and recycling in preference to disposal.

Water

- **National Water Act, 1998**, Act 36 of 1998: The act defines certain environmental elements, such as water courses and riparian habitats, and activities, such as waste. It also states that any act or omission, which pollutes or is likely to pollute a water resource is an offence and it indicates what activities are also subject to license applications that must be considered during the environmental authorisation process.

Section 21 of the National Water Act, 1998 (Act 36 of 1998) lists activities that require a license or registration if permissible under General Authorisation. The proposed Project will require new authorisations in terms of the following water uses that will be triggered: Section 21 (c) and (i): Impeding or diverting the flow of water in a watercourse and altering the beds, banks,



course or characteristics of a water course: This water use will be triggered by possible stormwater management measures, ie. Stormwater discharge into the wetland system, on site attenuation ponds, etc.

A specialist will be appointed at a later stage, to undertake an Integrated Water Use Licence Application in terms of the water uses associated with the project, for submission to the Department of Water and Sanitation, as well as undertake the associated stakeholder engagement process in compliance with the requirements of NWA.

Section 19 of the National Water Act, Act 36 of 1998 and Section 28 of the National Environmental Management Act, Act 107 of 1998 imposes a duty of care on all responsible persons whose operations has the potential to cause water pollution or environmental degradation to take reasonable measures to prevent it from occurring, continuing or recurring.

- **Water Services Act, 1997, Act 108 of 1997:** Sets requirements for entering into services agreements with the water services provider and determination of the capacity of the services provider to accommodate the proposed development.

The DWA shall receive a copy of this draft scoping report, for their review and input. This input will assist with the EIA phase of the development.

Air Quality

- **National Environmental Management: Air Quality Act, Act 39 of 2004 and the Atmospheric Pollution Prevention Act, Act 45 of 1965:** The National Environment Management: Air Quality Act (No.39 of 2004) provides the basis for the management of air pollution in South Africa. The remaining provisions of NEMAQA came into effect on 1 April 2010 in terms of GN 220 of 26 March 2010. Section 21 of the Act enables the Minister to publish a list of activities which result in atmospheric emissions for which an atmospheric emission licence is required. Such a list and associated emissions standards have been published in GN 248 (in GG 33075) also commenced with effect from 01 April 2010.

The emission of dust is addressed in Government Notice No.1210 (in GG 32816), which sets National Ambient Air Quality Standards in terms of Section 9(1) of the Air Quality Act. Dust is addressed in terms of the standards set for the emission of particulate matter (PM₁₀) in Regulation 3.1 of GN1210. Part 6 of the Air Quality Act addresses measures in respect of dust. Section 32 enables the Minister to prescribe measures for the control of dust in specified places or areas.



Heritage resources

- **National Heritage Resources, Act, 1999, Act 25 of 1999:** Sets requirements for assessment of impacts on the cultural and heritage assets, the processes to be followed in notifying the competent authority and the elements of a report on the assessment.

The protection of archaeological and palaeontological resources is the responsibility of a provincial heritage resources authority (SAHRA) and all archaeological objects, palaeontological material and meteorites are the property of the State. *“Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority”.*

A Cultural heritage Survey has been conducted for the site. Please see Appendix C1 for this specialist report. The findings of this report include the following:

Stone Age & Iron Age settlements: No Stone Age or Iron Age settlements, structures, features or artefacts were recorded during the survey.

Historical structures: A single mud-stone multi-room house was recorded. The structure is sufficiently recorded and no further action is required.

It should be kept in mind that archaeological deposits usually occur below ground level. Should archaeological artefacts or skeletal material be revealed in the area during construction activities, such activities should be halted, and a university or museum notified in order for an investigation and evaluation of the find(s) to take place (*cf.* NHRA (Act No. 25 of 1999), Section 36 (6)).

Workers health and well-being

- **Occupational Health and Safety Act, 1993, Act 85 of 1993:** The objective of this Act is to provide for the health and safety of persons at work. The considerations of the Act must be incorporated into the construction phase environmental management plan during the EIA process.

Authorisations required in summary

1. The **Scoping and EIA** will be conducted according to Section 26 up to Section 37 of NEMA 1998 published in Government Notice Regulation (GNR) No. 543 on 18 June 2010. Competent Authority – GDARD.



C.2 Provincial Policies

The **provincial policies** and guidelines listed here are applicable to the proposed development and the requirements and obligations therein have been considered during the Scoping process:

Gauteng Conservation-Plan 3.3 (2011)

The Gauteng C-Plan has indicates that:

- The study area falls within the Gauteng Urban Edge (2010). Development within the Urban Edge is desirable and encouraged, provided that the development is not detrimental to the receiving environment;
- The study area contains areas of conservation importance in terms of wetland and river buffer areas;
- The study area is located within a Critical Biodiversity Area (CBA), with sections adjacent to the existing road network also falling within Ecological Support Areas (ESAs). CBAs are areas containing Irreplaceable, Important or Protected Areas, while ESAs are areas that are essential for the maintenance and generation of biodiversity in sensitive areas as identified for the province; and
- The CBA associated with the study area is shown to contain areas indicated as “Important”.

A Fauna, Flora and Wetland Ecological Study *has been* completed for the study site. This study has determined the present township layout. See Appendix C2 for the full Ecological Study.

Sustainable Development Criteria for Built Environment Projects requiring Environmental Impact Assessments in Gauteng, 2009

This document has been developed by the Gauteng Department of Agriculture and Rural Development to ensure that *sustainable development* is integrated in to planning and design of built environment projects requiring Environmental Impact Assessments (EIAs) in Gauteng. The document defines sustainable development and outlines the implications of this for the built environment. It also provides objectives and criteria for sustainable built environments that can be used by developers of built environment project that require EIAs.

The environmental context, legislation and potential future measures to reduce carbon measures make it clear that the built environment must change to support **sustainable development** and has a very significant role to play. In order to develop practical measures that should be integrated into the built environment it is useful to set out built environment or development objectives that, together, would support sustainable development. These objectives are set out below and form the starting point for the sections in this document which provide more detailed criteria.



Land Use and Integrated Development: Development should be integrated with existing and planned infrastructure and land uses to ensure efficient systems and balanced land use.

Biodiversity: Development should be located where damage to natural environments and ecosystems is minimised. It should ensure that existing natural environments are conserved and take opportunities to strengthen this.

Agriculture and Landscaping: Development should be located where they will not lead to a loss of agricultural land. Landscaping and agriculture should be developed and managed to minimise negative impacts and local food production should be supported.

Water, Sewage and Storm Water Runoff: Development should minimise the consumption of municipal potable water and production of waste into municipal sewage systems. Increased storm water runoff and water pollution should be avoided.

Materials and Construction: Development should minimise the negative environmental impacts of construction and the consumption of resources. Positive social and economic impacts of construction and resource use should be maximised.

Energy, Mechanical and Electrical Systems: Development should minimise the use of non-renewable energy and maximise use of renewable energy sources.

Waste and Pollution: Development should minimise the amount of waste diverted to land fill. Pollution should also be avoided.

Local Economic Development: Development should support diverse productive local economies that create work and sustainable enterprises.

Transport: Development should reduce the reliance on cars and ensure that low energy environmentally friendly forms of transport are encouraged.

Health and Well Being: Development should support the health and well being of people on site and in neighbouring communities.

Education: Development should support education and ongoing learning of people on site and in neighbouring communities.

Housing: Development should support Inclusionary Housing and ensure that people who work on site do not have to travel long distances to access affordable housing.

Inclusion and Social Cohesion: Development should support social cohesion and benefit the full diversity of the population.



Management and Monitoring: Sustainable development targets that reflect the South African context should be set for the development and operation of the development. Management and monitoring should be carried out to ensure that these are achieved.

The Tanganani X 7 Township development proposal accommodates these built project objectives.

City of Johannesburg and Integrated Development Plan 2011/2012

"The IDP integrates city-wide planning with the planning of national and provincial government; highlights the major plans of the municipality; and allows for extensive community consultation to form a critical component of all local planning processes. It serves as a bridge between the City's long-term strategic planning and its annual operational plans and allows the City to outline specific programmes and projects on a medium-term basis, intended to achieve the long term goals of the City. In addition, it ensures that there is continuity in development within the municipality as the City strives to achieve its long-term objectives. The IDP also assists the City to strategically allocate resources in pursuit of set development objectives."

This IDP was consulted in order determine / confirm whether the proposed development is in line with medium term planning of the Local Authority. The following is a list of goals contained with the IDP which bear relevance to the proposal and site in question:

Housing

"Long term goals include:

- On a progressive basis, all residents living in inadequate housing to access affordable, safe and decent accommodation.
- Meet housing needs at all levels of the housing ladder through direct delivery or facilitation (partnerships with private sector, financial institutions, community organisations);
- Quality of the City's existing and future housing stock is enhanced and maintained;
- Increased sustainability and liveability of all residential communities; and
- Access to adequate accommodation that is suitable, relevant, appropriately located, affordable, and fiscally sustainable.

Public safety

Long-term goals include:

- A safe and secure urban environment;
- A city free of fears of crime and violence;
- Effective regulation of road-traffic in the interests of road-safety across the city; and
- A proactive and effective emergency response and disaster management capability.

Spatial form and Urban Management

Long-term goals include:

- A city with an urban form that is efficient, sustainable, and accessible;



- A city with quality urban environments, providing for integrated and sustainable settlements and well-designed urban spaces;
- An appropriate and efficient land use management system that facilitates investment and continuous regeneration;
- Effective urban management to ensure maintenance of appropriate standards of safety, cleanliness and orderliness across the city; and
- An efficient and effective spatial information service that meets the standards of a WorldClass African City.

Transportation

Long-term goals include:

- Improved access for residents to employment, education, recreation and markets, through strategic transport infrastructure and operations well aligned with the City's Spatial Development Framework; and
- Development and maintenance of a world-class road, traffic-signalling and stormwater infrastructure network across the city.

Environmental management

Long-term goals include:

- Environmental Regulation, Policy and Information Management;
- Respond to impacts of climate change;
- Sustainable management of the city's waste streams;
- Protection of river ecosystems and water conservation;
- Biodiversity conservation and management of environmental heritage;
- Respond to air pollution; and
- Environmental Awareness and Capacity Development.

High Priority Growth Management Areas

These areas are divided into (i) marginalised areas (Alexandra, **Diepsloot**, Ivory Park, Orange Farm and surrounds and Soweto) and (ii) areas located in the public transportation management areas (Gautrain stations, BRT stations, PRASAS railway stations). These areas will become the focus for infrastructure upgrading and provision in the short to medium-term.

City of Tshwane Metropolitan Municipality Integrated Development Plan 2010 to 2011

Areas located directly adjacent to the study area include the Timsrand A.H. and Laezonia A.H. These Agricultural Holdings are located within the City of Tshwane Metropolitan Municipality. The SDF for this Municipal area has been studied, and it defines the Timsrand A.H. and Laezonia A.H. as rural areas that are to remain unchanged. Therefore, the City of Tshwane Metropolitan Municipality has proposed a land use management area in contrast to that proposed by the City of Johannesburg. As occurred in the previous EIA announcement (2013, JW environmental solutions) it is expected that the same objections will be received from residents in the Timsrand and Laezonia A.H. area.



Regional Spatial Development Framework -Region A

"The Regional Spatial Development Framework (RSDF), together with the Spatial Development Framework (SDF), represents the prevailing spatial planning policy within the City of Johannesburg. These spatial planning policy documents are prepared and adopted in terms of the Municipal Systems Act, Act 32 of 2000 as an integral component of the City's Integrated Development Plan (IDP)."

The RSDF was studied in order to indicate whether or not the proposed development is in line with the Local Authorities planning policies for the area; and supports the need and desirability of the project. The following goals and desires outlined in the Regional Spatial Development Framework for Region A have relevance to the Tanganani x 7 development proposal:

Water

"The region generally has adequate bulk water supply, but an additional reservoir is needed for the Diepsloot area".

Electricity

Eskom, which supplies the rest of the area, especially the areas in Diepsloot, Ivory park and Kaalfontein. The status of electricity capacity in the Eskom supplied areas remains unconfirmed. There is a high rate of development that is currently being experienced for which the networks in many of the rural or low-density agricultural areas were not designed to cater. Although legal connections were provided for the new houses built in Diepsloot, a high number of illegal connections still exist in this area, which raises concerns from both a safety perspective and from an investment return perspective. In areas such as Diepsloot and Extension less than 25% of power capacity is reached, this means more work still needs to be done to service these areas.

Sewer

The main outfall has spare capacity to serve approximately 400 000 extra people. The northwest half of the Region is mostly without any waterborne sanitation, both bulk and reticulation. The western part of the Region lies within the Northern Drainage Basin and is served by the Northern Wastewater Treatment Works, which has spare capacity to serve an approximate additional 1 075 000 persons. The controlling factor is this catchment area is the Diepsloot Outfall which can serve an approximate additional 1,000,000 people.

Stormwater Drainage

The marginalised areas, such as Diepsloot and the informal settlements are experiencing serious problems with stormwater runoff, causing flooding and erosion due to the lack of adequate control measures.



Key issues

There is a need to address the stark contrast in terms of service delivery between the communities in the north-west (Diepsloot and Zevefontein informal settlements) and southwest which includes some of the most affluent residential areas (Dainfern, Fourways) of the Region and areas in the east (Ivory Park, Kaalfontein and Rabie Ridge) and the Midrand area.

The majority of issues facing the Region are related to the mushrooming of informal settlements, attracted by the largely non-urban nature of the Region, and made up of a mixture of:

- People seeking economic opportunities in a *bona fide* manner.
- Illegal immigrants
- A substantial criminal element using the settlements as conveniently obscure bases.
- The mix of these elements combined with the inadequacy of services available, results in chaotic social dynamics.

Efforts in Diepsloot and the surrounding area, should be focused on the upgrading of social and physical infrastructure as a catalyst for economic development, proper land invasion management and implementation of current housing programmes. The capacity of social facilities needs to be improved in order to cater for the increased residential densification and intensification of non-residential developments in the Region so as to ensure that citizens have access to a safe and healthy urban environment.

Planning policy

The proposed new township is within the Urban Development Boundary in the Regional Spatial Development Framework for Region A and is earmarked for further residential development as "Diepsloot East" and is also identified as a potential Urban Extension Area.

City of Johannesburg State of Environment Report (SoER) 2008

The State of Environment Report provides Environmental industries with important information regarding Environmental trends and issues of an area. The SoER was consulted in the compilation of this report.

The State of the Environment Report, 2008, indicates that approximately 20 482.08 hectares of the municipal area can be considered to have high conservation importance. Approximately 17,674.35 hectares can be considered to have medium conservation importance. The remaining extent of the municipal area (approximately 76.58% or 125,938.52 hectares of the total municipal area) is considered to have low or no conservational importance.

Approximately 81.4% of proclaimed nature reserves, 16.9% of municipal nature reserves, 51.9% of municipal open space, and 59.7% of public open space fall into areas of high biodiversity



conservation importance. Approximately 8,370 hectares of the municipal area are formally protected (SANBI: Formal Protected Areas - GIS).

Approximately 78% of red data taxa within the Gauteng Province are present in informal and formal protected areas. This being said, only 16% of biodiversity is adequately protected, and 20% is not protected at all within the Gauteng province. The conservation of sensitive habitats upon which threatened taxa rely, and connectivity between conservation efforts is required in order to maintain species richness within the Gauteng province (SoER, 2008).

C.3 National Guidelines

*The **National Guidelines** listed below are applicable to the proposed development and the requirements and obligations therein have been considered throughout the scoping process:*

National Spatial Development Perspective

The National Spatial Development Perspective aims to *influence the development path of Cities over the next 20 years*. One of the fundamentals of the City Strategy is the *restructuring of the urban environment in such a way that people's lives are improved through better and more equal access to economic and social opportunities*. This implies a focussed approach to development around areas with opportunity, not only for economic development, but also for residential development.

Some of the issues related to densification that are clearly highlighted by the National Spatial Development Perspective are:

- Create places of opportunity that will support wide range of **densification** in places that benefit from access to concentrated public investment in services and infrastructure
- Create **economic opportunities** at important interchanges and nodes receiving clusters of social facilities and allow higher density residential development to grow around these places.
- Present alternatives to people whereby the advantages that different places can offer are optimised.

The development proposal for the Tanganani X 7 township, complies with a number of the outlined critical factors. The proposed Township is aimed at providing housing opportunities to at least 3000 families in an affordable manner, within a well designed mixed use township. The development framework will be designed to meet the needs of the community for housing, convenience, education, social and healthcare amenities.



- DEA&DP (2010) Guideline on Alternatives, EIA Guideline and Information Document Series. Western Cape Department of Environmental Affairs & Development Planning (DEA&DP).
- DEA&DP (2010) Guideline on Public Participation, EIA Guideline and Information Document Series. Western Cape Department of Environmental Affairs & Development Planning (DEA&DP).
- DEA&DP (2010) Guideline on Need and Desirability, EIA Guideline and Information Document Series. Western Cape Department of Environmental Affairs & Development Planning (DEA&DP).
- DEA(2010) Sector Guidelines for the EIA regulations - Final Draft. National Department of Environmental Affairs (DEA).
- GDARD (2010) Sustainable Development Criteria for Built Environment Projects requiring Environmental Impact Assessments in Gauteng. Gauteng Department of Agriculture and Rural Development (GDARD).
- Government of South Africa (2009) National Protected Area Expansion Strategy for South Africa 2008.
- NEMA. 2012. Public Participation in the Environmental Impact Assessment Process.
- DWA Best Practice Guidelines including:
 - G1: Storm Water Management;
 - G4: Impact Prediction;
 - H2: Pollution Prevention and Minimisation of Impacts



D NEED AND DESIRABILITY

The proponent wishes to attain the following goals associated with the Tanganani X 7 Township:

- Provide formal alternative housing for inhabitants of informal settlements;
- Provide commercial and retail space as required by the RSDF;
- Provide Institutional land uses such as Schools and Hospitals for use by inhabitants of surrounding areas; and
- Ensure proper access to services for inhabitants of the proposal.

There are areas in the RSDF Region A where there is entrenched poverty such as Diepsloot and Ivory Park, Kaalfontein and Rabie Ridge. These communities require on-going revitalisation, development and support.

The need for low-incoming housing opportunities to assist the poor out of poverty and cater for the informal settlement in the Region is a critical issue. The need for low-incoming housing engages directly with meeting the challenge of poverty and ensuring that vulnerability, inequality and social exclusion are addressed. Furthermore, the incorporation of lower-income housing typologies into the broader urban fabric will directly address the existing apartheid urban form while providing a range of different housing types for different economic needs within the same township.

The site is located in an area where there is a strong demand for affordable housing. The proposed development will assist to alleviate the housing shortage in this area.





E. LOCALITY AND NATURE OF ACTIVITY

SECTION E LOCALITY AND NATURE OF ACTIVITY

E 1 Project Locality and Extent

The study area is situated immediately to the south of the N14 roadway, where it intersects the R511, with the R511 traversing the study area in a north-south direction and Summit Road traversing the study in an east-west direction. The site measures 73.25 hectares in extent. Please see Figure 2 for the locality map.

E 2 Site Description and Surrounding Land Uses

The study site is described as portion 119 (a portion of portion 2) of the farm Diepsloot 388-JR. the GPS co-ordinates of the centre of the site are: 25° 55.035' S and 28° 01.750' E. The study area is located within an area characterised by dense urbanisation and residential development to the southwest, with mining activities present further towards the west and smallholdings present to the northwest and east. Open veld areas are characteristic of the study area itself and areas towards the north and south. The high-density Diepsloot West residential development is located to the southwest of the study area and smallholdings are located to the north and east. The proposed high density Diepsloot East Township is located directly south of the study site. See Figure 2.

E 3 Project Description

The Applicant; The Gauteng Department of Human Settlement; proposes the establishment of a high density residential township including erven for high density residential units (100 units per hectare), a school, roads and public open space (defined by the wetland system on site). The township will be referred to as *Tanganani Extension 7*.

The township land use rights were ***previously approved as follows*** (in terms of the Peri-Urban Areas Town Planning Scheme, 1975):

- Erven 1 to 25: Special for dwelling units and non-residential uses that allow work from home (excluding heavy machinery and uses that generate noise and odours) subject to the approval of the Council

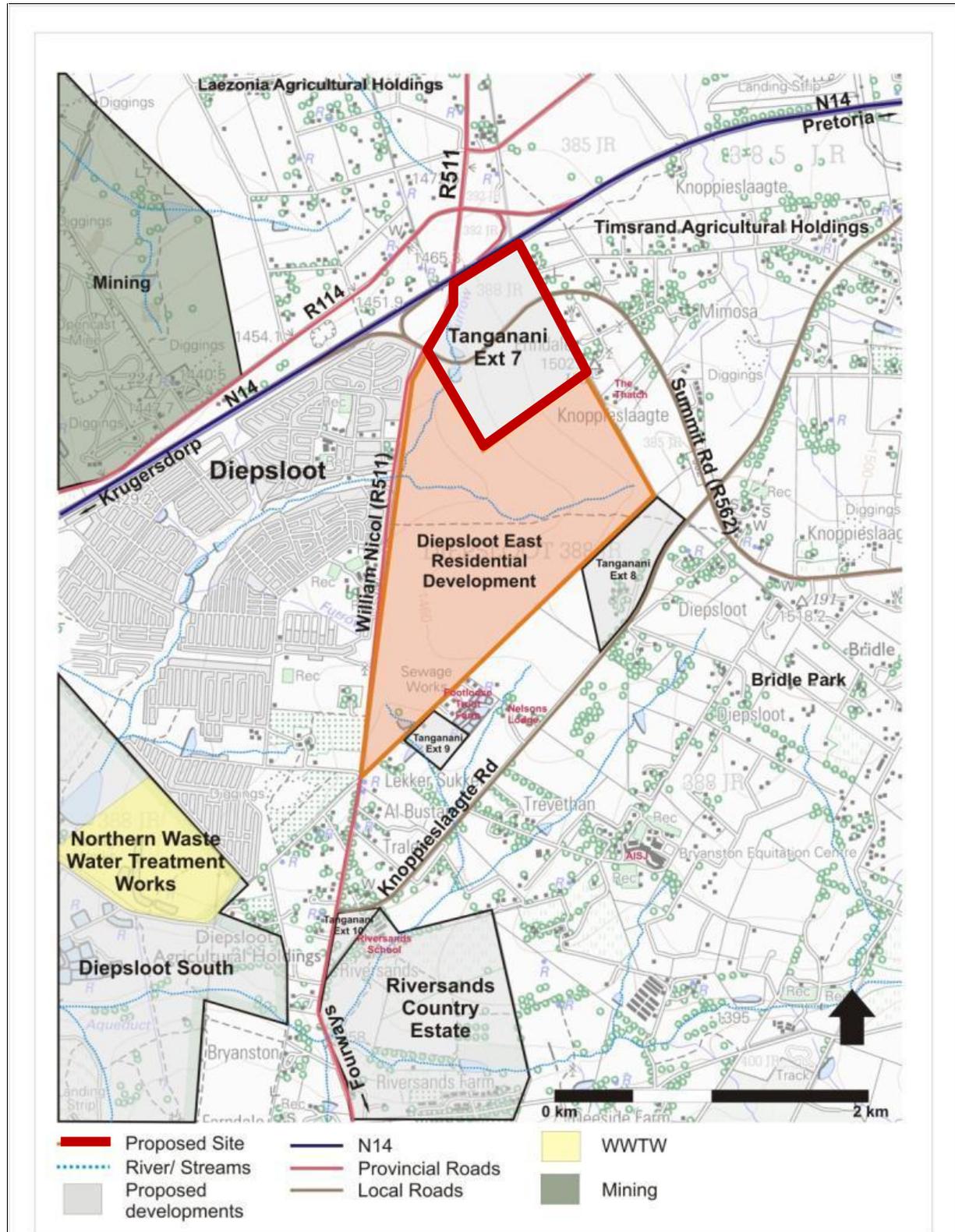
FAR: 1.3 to 2.65

Height: 3 storeys

Density: 60 to 106 dwelling units per hectare



Figure 2: Locality Map of study area



- Erven 26 to 29, 31 to 34, 36 to 38 and 40: Special for dwelling units and non-residential uses such as shops, offices, banks, medical and professional suites, restaurants, take-away restaurants, coffee shops, hairdresser, laundry, butchery, bakery, fish monger, florist, institutions and such uses as with the consent of the Council.

FAR: 1.0 for dwelling units and an additional 0.25 for non-residential uses

Height: 6 storeys

Density: 197 dwelling units per hectare

- Erven 30, 35 and 39: Institutional for schools
- Erven 45 to 47: Public Open Space
- Erven 41 to 44: Special for private parking

See Figure 3 for the 2013 township layout, to which the above rights referred.

The layout has subsequently been amended to take into account **new wetland delineation results**. (See Section G of this report). The new wetland delineation and buffer zones are far wider than what were initially determined on the previously-approved layout plan. Figure 3. The wetland area has been reserved for Public Open Space.

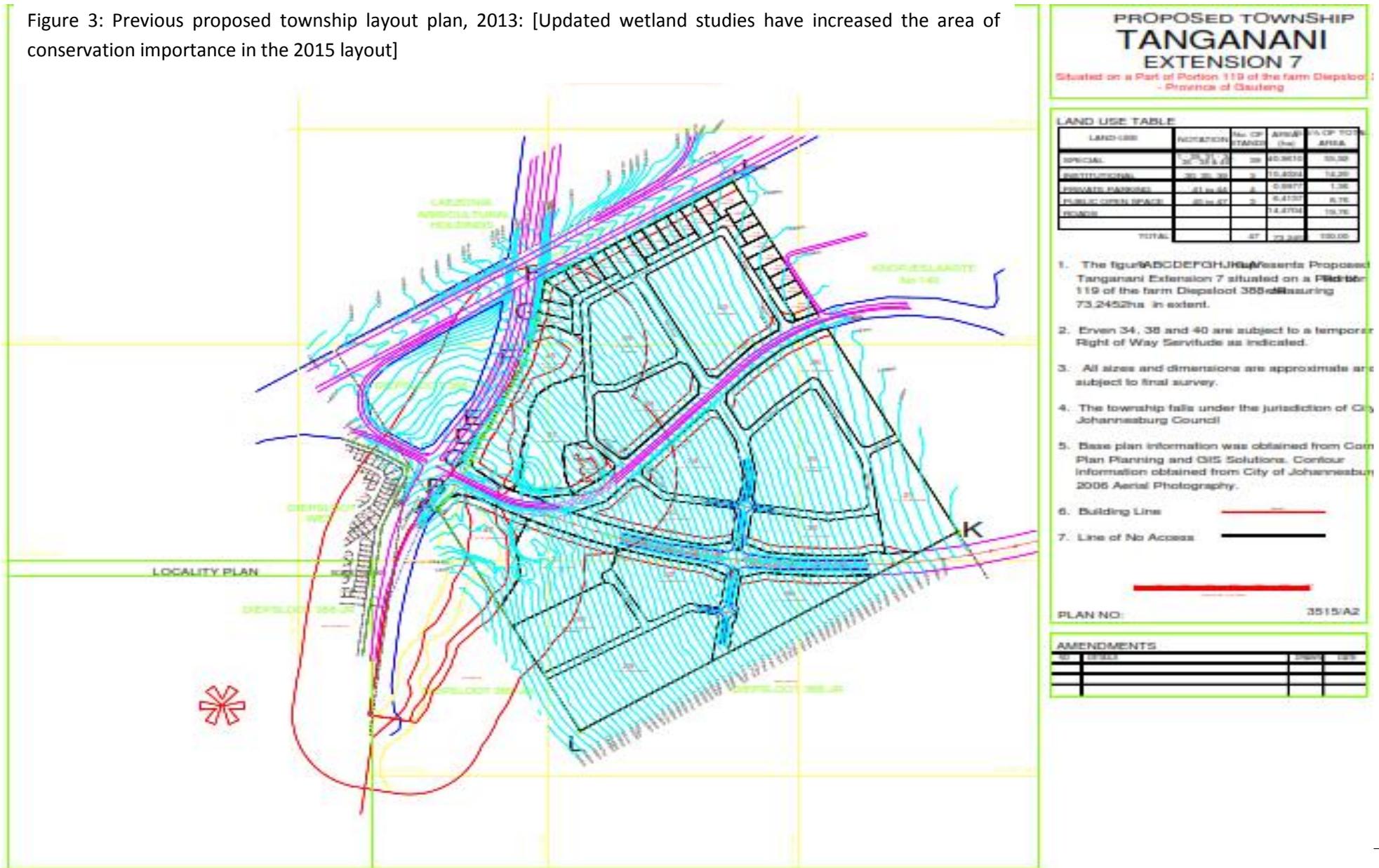
In addition, the site is affected by a number of existing and proposed provincial roads. These include William Nicol Drive (K46), Summit Road, and the proposed K47. These high order roads are subject to access limitations, and the connecting links required to provide accessibility to the developable areas are restricted to certain approved access points off them. This network has been designed to link to the proposed road network in the township of Tanganani Extension 14 / Diepsloot East, in the south. The space occupied by these roads is roughly 11.26ha, an unusually high proportion of the developable area. The primary roads have a fragmenting impact on the developable area, creating three cells for development, one north of Summit Road, one between Summit Road and the proposed K27, and one south of the proposed K27. The suitability of these cells for conventional one-dwelling-per-erf development is limited, as the building lines along the primary roads are 16m and the residential densities achieved will be relatively low once a finer grid of local roads is introduced.

This, and the scarcity of residential land (now reduced to 19.55ha), favours a higher density approach to housing where the residential focus and liveability will be on the proposed large sites with shared communal space and parking areas. The importance of adequate design to achieve a balance between buildings and facilities will be greater as the densities increase.

The new township rights applied for, is to establish a Special zoning for **dwelling units**, subject to the following development controls::



Figure 3: Previous proposed township layout plan, 2013: [Updated wetland studies have increased the area of conservation importance in the 2015 layout]



Height: 4 storeys

Density: 100 dwelling units per hectare

F.AR. As per site development plan

Coverage: As per site development plan

Parking: As per site development plan

Building lines: As per site development plan; 16m on provincial and Summit Roads

For the ~~school~~ site, it is proposed that the following controls apply:

Zoning: Special for educational purposes and dwelling units (should the erf not be developed for school purposes by the Gauteng Department of Education):

Height: 2 storeys for education

4 storeys for dwelling units

Density: 100 dwelling units per hectare

F.AR. 0.3 for educational

As per site development plan

Coverage: 40% for educational

As per site development plan

Parking: As per site development plan

Building lines: As per site development plan; 16m on provincial and Summit Roads

See Figure 4 for the present proposed township layout plan. The proposed housing typology will consist of 3 to 4 storey walk-ups at densities of approximately 100 units per hectare. The proposed zoning provides for flexibility in achieving this density in a planned community environment, including a small business component. Public Open Space erven will protect the wetland areas, and a school is proposed on the southern side of the township.

E 5 Municipal Services Required

Blackhead Consulting (Pty) Ltd was appointed by the Client, Gauteng Department of Human Settlements, as the Civil Consulting Engineers for the compilation of an Engineering Scheme Report for the Tanganani x 7 township. Blackhead Consulting (Pty) Ltd compiled the said report in February 2014, based on the previous approved land use rights. The purpose of the report was to establish the civil services and material and design standards for the proposed development as required by the Johannesburg Water (JW), a utility of the City of Johannesburg (CoJ). See appendix C3. The results of this study are as follows:

Water Reticulation

Existing Water Services

GLS Consulting, the Master Planners appointed by Johannesburg Water, compiled a water master plan for the Blue Hills and Diepsloot Water Sub-Districts for Johannesburg Water (JW) in December 2009.



This report and the latest hydraulic models (2013-02) formed the basis of the water impact study undertaken for the proposed development.

The development is also located within the future Diepsloot West sewer basin for which GLS compiled a Sewer Network Analysis Report in October 2008 (Report No. JWAT-C-0155-00-01-2008) following which JW appointed GLS to revise the Diepsloot West master plan to incorporate the proposed Diepsloot East development and changes to the COJ urban development boundary which then included the Diepsloot Corridor area. The report submitted to JW was dated 16 March 2009.

GLS Consulting updated the above-mentioned models and master plans with the latest as-built information and water demands which formed the basis of the 2014 Blackhead investigation, which included:

- Consideration of the latest cadastral layout for Diepsloot East and adjacent future developments as well as future PWV servitudes, ESKOM servitudes and proposed road layouts;
- An update of the water master to include the option for supplying the high-lying parts surrounding the proposed Diepsloot Reservoir from a proposed tower and not directly from the Rand Water R33 pipeline in order to improve redundancy and meet the RW Water Supply Abstraction Requirements.

The water demand for the proposed development, assuming a unit demand for each of the proposed zoning areas mentioned above as per the JW Design Guidelines, is estimated to be 6 717 kl/d. This demand translates into a peak demand of 310 l/s assuming a peak factor of 4 to be applicable. This peak demand was used in the hydraulic analysis undertaken.

Figure TG_W1 and TG_W2 of Appendix C3 has reference.

Current Scenario:

The proposed development is currently located adjacent to the Diepsloot West water sub-district which is currently supplied via a 600 mm dia JW bulk pipeline directly from the Rand Water R33 pipeline which terminates at RW connection RW5590.

It should be noted that the Diepsloot Township has experienced major densification in the past 3 years with typically up to 4 structures per stand. This has resulted in a significant increase in water demand increasing from 13 100 kl/d for the year ending September 2009 to 20 500 kl/d currently. This has resulted in the areas on the upper reaches of the valley experiencing low peak pressures.

The existing Diepsloot Township system cannot currently supply a peak hour demand of 4 x AADD (as required by the JW Design Guidelines), but only a peak hour demand of about 2.5 x AADD, which is not unrealistic given the current nature of the development. However, as the actual peak hour



demand factor is unknown, the actual peak pressures could vary considerably as well as the actual pipe velocities in the 600 mm dia bulk main supplying Diepsloot.

The proposed Diepsloot East Developments form part of the proposed Diepsloot Reservoir and the proposed Diepsloot Tower water sub-districts as indicated on Figure TG_W2, appendix C3. The construction of the Diepsloot Reservoir as well as the bulk supply pipes to the future Dainfern Reservoir is currently in the planning phase in-line with the current master plan. Therefore, it has been assumed for the Diepsloot East developments that the proposed Diepsloot Reservoir and Tower **will be constructed**. However, as an alternative to the previous master plan, the construction of a Tower is proposed to supply the high-lying parts of the Diepsloot East and adjacent future developments.

Therefore, a new 375 mm dia bulk main and 1 600 kl Tower will be required to supply the portion of the Diepsloot East development located north of the greenbelt as well as the future area to the west from Diepsloot East.

A 315 mm dia connection to the existing 600 mm dia JW pipeline in the vicinity of point A (Figure TG_W2, appendix C3 has reference) is proposed to supply the Diepsloot East development located south of the greenbelt. The existing system analysis (assuming a peak hour factor = 2.5 for the existing Diepsloot Township), including the additional peak demand for the proposed Diepsloot East development (assuming a peak hour factor = 4), indicates that the peak pressure at point A would then be 50 m with the minimum pressure in the high-lying parts of the development only 20 m, which is below the minimum pressure criteria of 25 m as per JW Design Guidelines.

Therefore, a secondary 315 mm dia supply pipe (Item BH13.2) is required, following route X1-X2-X3 as indicated on Figure TG_W1 appendix C3, to establish a ring feed between the proposed Dainfern bulk pipeline and the existing 600 mm dia Diepsloot bulk supply pipeline. The first section of this pipeline must be a 500 mm Ø pipe. The minimum pressure at the highest point of the Diepsloot East development will then be 33 m, which is acceptable.

The above analysis, including the demand of Diepsloot East, indicates that the velocity in the existing 600 mm dia JW pipeline upstream of point A will then be 1,9 m/s, which is acceptable.

It is proposed to supply the proposed hospital through a 250 mm dia connection to the 600 mm dia JW pipeline also connecting at point A, which means it will also form part of the proposed Diepsloot Reservoir supply area and not the tower zone.

As mentioned previously, low pressures currently occur in the high-lying parts of the Diepsloot Township. The additional demand from the Diepsloot East at point A will make matters worse. Therefore, it is proposed to install a 200 mm dia pipeline as well as a PR and close off three pipes to establish the proposed Diepsloot Reservoir Diepsloot East PRV2 sub-district, which is in-line with the master plan and will eliminate pressure problems in this area.



Duncan Hulley of Johannesburg Water has indicated that the reservoir sites are in the process of being expropriated, and construction of the reservoirs should commence in the near future.

Sewer Reticulation

Existing Sewer Reticulation

There is an existing sewer network in the Diepsloot township to the west of the proposed development. There is no sewer reticulation on the proposed study site.

Proposed Sewer Reticulation

The total estimated peak daily dry weather flow (PDDWF) for the proposed development is 4 550 kl/d. 4.2 Existing Sewer System Capacity and Connection Point

Figure TG_S1 of Appendix C3 has reference. The proposed development is located to the east of Diepsloot West within a portion of the Diepsloot West Basin which is currently undeveloped. Therefore, the existing Diepsloot West master plan was updated using the information provided including the proposed development layout. This also constitutes an update of the previous impact investigation undertaken for JW dated 16 March 2009.

Due to the topography of the area it is proposed that the northern portion of the development connect to the planned 200 mm/315 mm dia outfall at positions A and B. Furthermore, it is proposed that the southern portion of the development connect to the existing sewer reticulation system at "position C", Figure TG_S1 of Appendix C3 has reference.

The future system analysis indicates that the *existing system does not have sufficient capacity* to accommodate the planned development and as a result *a number of upgrades will be required*. Appendix C3 has reference.

It should be noted that there is an existing pump station on the Diepsloot West outfall located within the Northern WTW site, which needs to accommodate the additional 15 l/s from the Diepsloot East Development draining through point C. The detail of this pump station is unknown, which requires further investigation to confirm if spare capacity is available. JW Operations could not supply the information to GLS.

Duncan Hulley of Johannesburg Water has indicated that a contractor is due to be appointed by Johannesburg Water to upgrade the main sewers, and construction of the sewers should commence shortly.

An updated and amended services report will be required for the EIA report, to align the services design with the new layout, and any updated master planning developments.



Stormwater

Existing System

A small river runs to the south of the site. The whole site, as well as some of the surrounding land, drains towards it. There is no existing stormwater system on the site.

Proposed Stormwater System

It is a requirement of the Johannesburg Roads Agency that the stormwater for all new developments be attenuated. Provision has been made for one large attenuation site in the south west corner of the property. In the detail design phase, the option of attenuation on each individual site will be investigated as opposed to the one facility.

The attenuation requirement is that the 1 in 20 post-development runoff be attenuated to be equal to or less than the 1 in 20 year pre-development runoff.

An updated and amended storm water management report will be required for the EIA report, to align the stormwater system design with the new layout, and any updated master planning developments.

E 6 Floodlines

The site is affected by a 1:100 year floodline. This floodline has been determined and indicated on the present proposed township layout plan, Figure 4.

E 7 Roads and Access

The traffic impact study was undertaken by Mr. Louis du Toit of Mariteng Management Solutions, in August 2010. See Appendix C4. This study was based on the previous approved land use rights as applied for by GIP Con PTY LTD, which included 7 851 "Residential" dwelling units, including schools and institutional facilities. It was expected that the development would generate more than 150 peak hour trips.

Based on the findings of the study, substantial road upgrades are required to the road network. This includes the upgrade of the following intersections:

1. R511 & N14 Northern Terminal – Stop control with priority on the R511.
2. R511 & N14 Southern Terminal/R562 - Signalised control intersection.
3. R511 & Diepsloot Access North - Signalised control intersection.
4. R511 & Diepsloot Access South - Signalised control intersection.
5. R562 & Knoppieslaagte Road - Stop control with priority on the R562, as well as the single lane sections between the respective intersections,



6. The upgrade of the N14/Road 795 intersection,
7. The construction of the Road795/Access Road.

The findings of the traffic report acknowledges that south of the proposed K54/R511 intersection, the R511 will still operate close or at capacity. Widening of the R511 to a 4-lane single carriageway, between the N14/Southern Terminal intersection and the proposed K54/R511 intersection will be required to accommodate the new development.

The access to the development will be provided from road 795, and in future from the new alignment of the future K27. The K27 cannot be constructed as part of this application due to the alignment requirements. The proposed intersection along both roads will operate at acceptable Levels Of Service provided the recommended intersection layout is constructed as part of the development.

E 8 Public Transport provision

A taxi terminal is to be provided within the boundaries of the development. In addition to this taxis stops should be provided as follows:

- Along the new 30m link road, downstream of all the intersections planned along the link road.
- On either side of road 795, downstream of the new intersection serving Tanganani Extension 7.
- On either side of the R511, downstream of the intersection with road 795.

The following sidewalk management plan should be included in the development of the township:

1.5m sidewalks along side of all roads planned within a 16.0m road reserve.

E 9 Solid Waste Management

A Waste Management Plan (WMP) for the proposed Tanganani X 7 Township will be compiled in the EIA phase. Standard guidelines for waste management include:

Construction Phase: During the construction phase of the development a recycling programme should be implemented to ensure that the generation of waste that is being disposed of is, minimised. It is suggested that two areas be demarcated for waste disposal. One area will include all waste that *cannot* be recycled while the other area will include all *recyclable* waste. It is also



suggested that the recyclable waste be sorted into different categories such as paper, plastic, glass & tin/ metal and that the appropriate independently appointed parties pick up the recyclable items.

Operational Phase: During the operational phase of the development, it will not be possible to regulate a recycling programme. It is suggested that recycling programmes be implemented at the public facilities, such as schools, and community facilities.



F 1 INVESTIGATION OF ALTERNATIVES

One of the objectives of an EIA is to investigate alternatives to the proposed project. The IEM procedure stipulates that the environmental investigation needs to consider feasible alternatives for any proposed development. Therefore, a number of possible proposals or alternatives for accomplishing the same objectives should be identified and investigated. In order to ensure that the proposed development enables sustainable development, *feasible* alternatives must be explored.

The identification, description, evaluation and comparison of alternatives are important for ensuring a sound environmental scoping process. Alternatives should be considered as a *norm* within the Environmental Process. The alternatives considered for the proposed Tanganani X 7 Residential Township application includes land use alternatives (including the No-go option), and layout alternatives.

The various alternatives will be assessed in the EIAR, in terms of environmental, social and technical feasibility.

F 2 Land Use Alternatives

F 2.1 Mixed use township (*Proposal and Preferred Alternative*)

The present proposed township layout will consist of residential, retail, and educational land uses. Included in the proposed housing township, are large pockets of green public open spaces.

Although the emphasis is on housing, complimentary land uses have been included in the township. People want easy access to job opportunities shops, banking facilities, clinics, etc. and want their living environment, such as residential townships to be placed at strategic positions with good access routes in close proximity to these amenities. The same applies for their place of work. People wish to have their place of work in close proximity to their homes.

A mixed land use development is *socially responsible* based on the following:

- It covers the mixed and lower income bracket by providing a higher density housing option;
- The development will inevitably support the use of public transport;
- The development will include supporting social infrastructure (schools), as well as some retail or commercial activities;



- The layout of the development must respond to the future road planning for the area, to facilitate and maximise pedestrianisation and public transport.
- Commercial erven can accommodate a shopping centre, to service the existing formalised and informal settlements in the area. The commercial node will:
 - Promote entrepreneurial services and products;
 - Be within walking distance to places of refreshment and trade for residents;
 - Provide Job opportunities; and
 - Improve neighbourhood quality.

F 2.2 Single land use: Housing only

By providing only one land use type (ie, housing), mixed income development and social integration across race and income levels, *cannot be achieved*.

A Commercial node on site is commonly utilised as a “Multi Purpose Community Centre/Rural Service Centre” which is defined as “a focal point at which a range of essential services can be obtained by people living in its vicinity”. In turn, a commercial node acts as a pool of human and physical resources from which the inputs necessary for development can be distributed efficiently, and from which a community can draw to promote their development”.

By restricting a township to one land use only, the above benefits to the local community, and subsequent council area, cannot be realised, and hence, is not a preferred land use option.

F 2.3 No-Go Alternative analysis

The EIA phase requires that all development alternatives be included into the investigation process. The No-Go option will be comparatively assessed against the above mentioned alternatives during the EIA phase, and will act as a baseline against which all the other development alternatives are measured. The no-go alternative will entail leaving the site in its present state, where disturbed ecological and hydrological ecosystems exist.

F 3 Layout Alternatives

Alternative Site layouts (one or more) have been developed for the proposed Tanganani X 7 Township. The development of these layouts was based on the following criteria:

- Layout relative to existing infrastructure, such as access roads; servitudes, etc. and
- Topographical constraints, including ecological sensitivities and hydrological systems.

The current layout plan is the product of the appointed Urban planner. The present layout plan has been informed by wetland investigations only. The full scope of traffic, biological, socio-economic and engineering studies is required to finalise the layout. The alternative site layouts will be developed during the EIA Phase, and will be presented and assessed in the Draft EIAR.





G. RECEIVING ENVIRONMENT

G 1 DESCRIPTION OF THE RECEIVING ENVIRONMENT

This chapter provides a description of the receiving environment within the study area. Three components to the environment are recognised:

- Physical Environment;
- Biological Environment; and
- Socio-Economic Environment.

The description of the study area and its environment is provided to assist the reader in understanding the possible effects of the proposed project on the environment. Aspects of the biophysical (biological / ecological), and social environment that could be effected by, or could affect, the proposed project are described. The information aims to provide the overall context within which this EIA is being conducted.

G 1 Description of baseline information

The baseline environment (or prevalent environmental status) of the project represents the current prevailing environmental conditions and existing levels of pollution or degradation prior to the proposed development. The baseline information is therefore indicative of the *current environmental status*. Baseline information was gathered through visual inspections of the site and its surroundings, desktop studies as well as Geographical Information Tools.

The baseline description provides an indication of:

- Current environmental conditions;
- Current levels of disturbance / degradation; and
- Environmental and social sensitivity / tolerance to change.

The baseline information serves as a reference point to scientifically measure or professionally judge the future changes to the environment based on impacts associated with the proposed project.



G 2 Site description and characteristics

The study area is located within an area characterised by transformed open veld, current and historic agriculture and rural urbanisation. With the extent of vegetation transformation taking place in the area due to the above mentioned activities, significant local and regional loss of biodiversity has taken place.

G 3 BIOPHYSICAL ENVIRONMENT

G 3.1 General Climatic conditions

The project area falls within the Highveld Climatic Zone. The average annual precipitation ranges from 500mm to 700mm (WRC, 1994). Rainfall is generally in the form of thunderstorms. These can be of high intensity with lightening and strong gusty south-westerly winds. Hail frequency is high, tending to occur 4-7 times per season. Over the last seven year period, 1989 recorded the highest rainfall in a year with 630mm while the lowest of 429mm was recorded in 1985. The majority of the rainfall is during the summer months of October to March at which time approximately 90% of the annual rainfall occurs.

Temperatures in this climatic zone are generally mild, but low minima can be experienced in winter due to clear night skies. Temperatures in the region tend to be warm to mild, with average maximum temperature of 27.90 C and an average minimum temperature of 11.80C. Frost characteristically occurs in the winter months. Generally winds are light, but south-westerly winds associated with thunderstorms are typically strong and gusty

G 3.2 Geology and Geotechnical Suitability

Africa Exposed Consulting Engineering Geologists conducted the geotechnical investigation for the Tanganani X proposed development. The objectives of the geotechnical investigation were to give information and recommendations on the following issues:

- Recommendations on the most suitable foundations for new structures;
- Recommendations on the suitability of in situ material for road and pavement construction, terraces and general earthworks;
- Presence of groundwater and the recommendations on how to deal with it during construction and operation of the development; and,
- Comments of any geotechnical features that may influence the construction and operation of the development.

Site Geology

The site geology is underlain by coarse gritty quartzite of the Langlaagte Quartzite formation, Johannesburg Subgroup, Central Rand Group, Witwatersrand Supergroup. Large portions of the site are underlain by poor selected fill to a depth of 2,4 m thick with a loose to very loose consistency and consist of abundant fragment in a matrix of ash. Natural occurring transported soils were identified below the fill. This hillwash consists of fine colluvial sands and



clayey silts of alluvial origin that occur to a depth of up to 2,0 m below ground level. The area on the western side of the site is underlain by a wetland, which has been altered and modified by development in the vicinity. The transported soils are underlain by residual silty sandy soils which are derived from the in situ decomposition of the quartz bedrock. The upper horizons which include the imported fill and the transported soils, including the pebble marker that occurs at an average depth of 1,0 m, will be collapsible and compressible and the underlying residual quartzite that occurs beyond this depth will be marginally compressible.

Foundation Solutions

The foundation solution for each of the zones:

Zone S1

The foundation solution for heavy structures in this zone should be founded on deep pads or strip footings that can be placed on the dense to very dense residual quartzite or the very soft rock quartzite at an average depth of 1,2 m below the current ground level. Bearing pressures have to be limited to 150 kPa. The foundation solution for light structures can be placed on modified normal strip footings. The external and internal walls of the structures must be founded on reinforced strip footings that can be placed at an average depth of 0,8 m below ground level. The foundations must be reinforced and construction may proceed with brick force included between each course in the plinth wall for a minimum of 6 courses. Articulation joints must be included at all external and internal doors and openings. Particular attention must be placed on drainage precautions and ensuring the competence of water bearing services. Bed preparation must be done by the removal of in situ soils to a depth of 450 mm and replaced in 150 mm thick layers with the same excavated material, compacted to 93% of Mod AASHTO. Bearing pressures to be limited to 50 kPa.

Under individual footings the in situ soils have to be removed to a depth 1,5 times the foundation width or to a competent horizon. Excavated material must be replaced in 150 mm thick layers with the same excavated material which is compacted to 93% Mod AASHTO. Bearing pressures have to be limited to 80 kPa.

Zone C2

For modified normal strip footings all the external and internal walls are founded on reinforced strip footings placed at an average depth of 0,8 m below ground level. The foundations must be reinforced and construction may proceed with brick force included between each course in the plinth wall for 6 courses. For the surface bed preparation, the in situ soils must be removed for 450 mm, and replaced in 150 mm thick layers with inert material, compacted to a minimum density of 93% of Mod AASHTO. The allowable bearing pressures not to exceed 50 kPa.

Under individual footings the in situ soils have to be removed to a depth of 1,5 times the foundation width or to a competent horizon. Excavated material must be replaced in 150



mm thick layers and compacted to 93% Mod AASHTO density. For the surface bed preparation, the in situ material must be removed for 450 mm, replaced in 150 mm layers and compacted to 93% Mod AASHTO density. The allowable bearing pressures not to exceed 80 kPa.

It is imperative that good site drainage is provided around individual structures and no excess moisture should accumulate adjacent to foundations.

Zone P (marshy)

Shallow groundwater seepage and the presence of hydrophilic plants indicate a shallow and permanent perched water table. The soils are loose, silty and clayey sand, rich in organic matter and of lacustrine origin. It is recommended that no structures are constructed within this zone, but be developed as open recreational areas.

Zone P (uncontrolled fill)

A large portion of the south-eastern side of the site was previously used as a disposal area for ash and domestic waste. The ash is very loose to loose with a thickness in excess of 2,5 m and significant consolidation can occur.

Structures in this zone must be founded on piles.

G 3.2.1 Additional geotechnical studies to be conducted during the EIA phase

- **None**

G 3.3 Hydrology

Scientific Aquatic Services (SAS) was appointed to conduct a floral, faunal and wetland ecological assessment as part of the Environmental Impact Assessment (EIA) and authorisation process for the proposed Tanganani Extension 7 residential development. See Appendix C2 for this study. A wetland delineation study has been undertaken during the Scoping phase of the application. The results of this study have determined the township layout plan.

The study area contains one wetland system, comprising two hydrogeomorphic types which have been identified as two HGM Units, namely a channelled valley bottom wetland and a hillslope seepage wetland (Figure 5).

From the wetland function and eco services provision assessment, it was found that both the channelled valley bottom wetland and the hillslope seep wetland provide an Intermediate level of ecological service provision. The channelled valley bottom wetland has the greatest value in flood attenuation and erosion control. The channelled valley bottom wetland is



characterised by less active deposition of sediment, with its channelled nature indicating that sediment loss and export is the dominant process.

Some sediment trapping does however also occur. This specifically occurs in the vicinity of the artificial dams within the channel which are dominated by *Typha capensis* and *Phragmites australis*, floral species which grow dense in high sediment environments and further contribute towards sediment accumulation. Under intermediate flow conditions, however, the channelled valley bottom wetland is expected to contribute sediment to downstream reaches. The channelled valley bottom wetland contributes toward flood attenuation when flows overtop the channel bank and spread out beyond the channel width, with the surface roughness provided by the vegetation further slowing down the flood flows.

In terms of the improvement of water quality, some nitrate and toxicant removal would be expected, particularly from the water being delivered from the adjacent hillslope seepage wetland areas. Within the study area, the channelled valley bottom wetland also contributes to biodiversity support and provides movement corridors for smaller faunal species through landscape extensively transformed by historical cultivation activities.

From the assessment, it was found that the hillslope seepage wetland within the study area plays the most important role in improvement of water quality through removing excess nutrients and inorganic pollutants produced by agriculture and surrounding developments such as roadways.

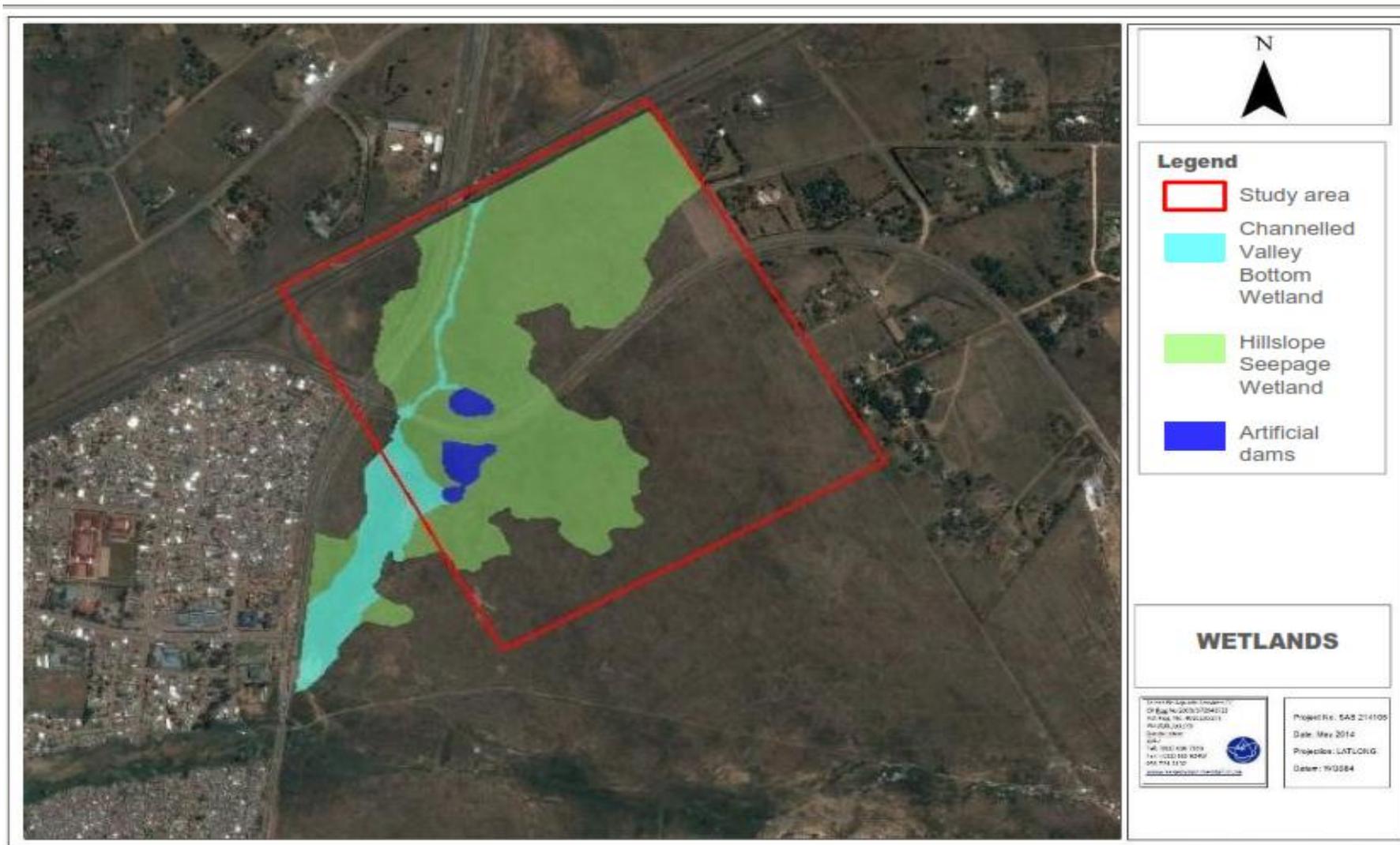
The hillslope seepage wetland within the study area is expected to contribute to some surface flow attenuation early in the season until the soils are saturated, after which its contribution to flood attenuation is likely to be limited.

G 3.3.1 Additional hydrological studies to be conducted during the EIA phase

- **None**



Figure 5: Wetlands present on site



G 4 Topography

The site is located on a plain. The highest point on the site is approximately 1500 metres above sea level and the lowest point on the site is approximately 1445 metres above sea level.

G 5 Terrestrial Ecology

Scientific Aquatic Services (SAS) was appointed to conduct a floral, faunal and wetland ecological assessment as part of the Environmental Impact Assessment (EIA) and authorisation process for the proposed Tanganani Extension 7 residential development. See Appendix C2 for this study.

The findings of this investigation are as follows:

Floral assessment

- Two habitat units have been identified within the study area during the field assessment, namely the Anthropogenic *Hyparrhenia*-dominated Grassland Habitat Unit and the Wetland Habitat Unit;
- The Anthropogenic *Hyparrhenia*-dominated Grassland Habitat Unit has been significantly impacted by historical disturbance in the form of crop cultivation, which has resulted in the development of secondary grassland within this habitat unit, dominated by *Hyparrhenia hirta*. Bredenkamp *et al.* (2006) describes this vegetation community as disturbed Egoli Granite Grassland with low floral species diversity and as being of low ecological sensitivity;
- The Wetland Habitat Unit consists of a channelled valley bottom wetland containing a number of associated man-made dams, which traverses the central portion of the study area, in a northsouth direction, as well as a significant area comprising a hillslope seepage wetland. This habitat unit provides habitat for a diverse vegetation assemblage, with *Habenaria nyikana*, an orchid species restricted to the Wetland Habitat Unit, encountered here. A number of artificial drainage channels are also present which serves to convey stormwater from the adjacent roadways;
- Transformed areas include existing roadways traversing the study area, which provide no floral habitat and it therefore not assessed in detail;
- During the field assessment, it was found that alien floral species encroachment is not a significant issue within the study area. The majority of alien floral species occur within the vicinity of the constructed dams within the channelled valley bottom wetland. Overall a low diversity and abundance of alien species are present within the remainder of the study area. It should however be noted that a number of Category 1b alien species are present, which require management;



- Medicinal floral species identified within the study area occur within both the Anthropogenic
- *Hyparrhenia*-dominated Grassland and the Wetland Habitat Units. Of these medicinal species encountered, only one species, listed by the South African National Biodiversity Institute (SANBI) as „Declining“, is considered to be of conservation concern;
- Of the 19 SANBI RDL floral species listed for the Quarter Degree Square (QDS) 2528CC, one species, namely *Hypoxis heremocallidea* was positively identified during the field assessment, occurring within both habitat units in low abundance. In addition to *H. heremocallidea*, only *Boophane disticha* has a Probability of Occurrence (POC) of more than 40% within the study area.
- The majority of the RDL floral species listed are unlikely to occur within or in the vicinity of the study area, due to overall lack of suitable habitat for the majority of these species and high levels of disturbance and anthropogenic activity within the area;
- Should any *H. heremocallidea* or *B. disticha* be encountered within the development footprint areas these species should be rescued and relocated to suitable similar habitat, such as the wetland buffer zone, which is to be excluded from the proposed development. Alternatively, these species could be used to form part of the landscape design within the proposed development.

Faunal assessment

- No mammals were directly observed during the field assessment, however droppings of *Lepus saxatilis* (Scrub hare) were observed throughout the study area. This species is listed as Least Concern by the IUCN and is not considered as threatened within the Gauteng Province.
- No RDL or protected mammal species were encountered during the assessment, and none are expected to occur;
- No RDL avifaunal species were identified within the study area, and all avifaunal species identified within the study area are common species known to reside within or forage within the grassland habitat in the region from time to time and may therefore be either permanently or occasionally present within the study area. Sufficient suitable habitat for avifaunal species is present in the areas surrounding the study area should permanent residents of the study area be disturbed as a result of development activities. This combined with the exclusion of wetlands and associated buffer zones from development, will ensure that limited disturbance occurs to avifaunal species or their associated habitat within the area. Therefore, the proposed development is unlikely to pose a significant threat to the conservation of



RDL avifaunal species within the study area and region, provided that mitigation measures as presented in this report are adhered to;

- No reptile species were encountered during the assessment of the study area. The high levels of anthropogenic activities through past agricultural activities, as well as the close proximity to the urban areas will have limited many of the reptile species from utilising the study area as a permanent habitat. Only more common reptile species are likely to occur within the study area.
- The reptile species that may occur within the study area are likely to be restricted to the more common non-threatened species, and are mobile enough to migrate to more suitable refugia within areas surrounding the study area;
- One amphibian species, namely *Xenopus laevis* was directly observed within the Wetland Habitat Unit. It is expected that only commonly occurring amphibian species, most often found in grassland and areas within and directly surrounding water systems will utilise the study area for habitation. Therefore, by excluding the Wetland Habitat Unit from the proposed development, there would most likely be a minimal impact on the amphibian assemblages within the study area;
- The results from the invertebrate survey indicate that only invertebrate species more common to the area are presently found on the study area. No RDL invertebrate species were observed during the site visit, nor are they expected to occur on the study area due to the present anthropogenic activities and a lack of suitable habitat;
- Special emphasis was placed on locating any RDL Trapdoor Spiders and scorpions. None of the aforementioned RDL species or signs thereof were observed within the study area, and none are likely to occur. This is most likely due to the anthropogenic disturbances throughout the study area. Thus, the proposed township development is unlikely to contribute to a loss of arachnid diversity in the region;
- None of the RDL faunal species listed for the region had a POC of 60% or higher for the study area. Due to no RDL faunal species or signs thereof being identified within the study area and the lack of suitable habitat or known occurrences of RDL species, it can be surmised that the study area cannot be regarded as important in terms of RDL faunal species conservation.
- The proposed development activities will thus have a low impact on RDL faunal habitat and diversity within the study area and the surrounding region.

Based on the impact assessment, it is evident that there are a number of possible impacts on the floral, faunal and wetland ecology within the study area that may occur as a result of the proposed development. However, should mitigation measures as provided in the specialist report be implemented, all impacts can be reduced to low and very-low significance impacts.

G 6 Ecological Sensitivity of the Study Area

A sensitivity map for the study area was created through the interpretation of the findings during the field assessment, including habitat integrity analysis and floral and faunal diversity encountered. From the assessment, it is evident that a significant portion of the study area comprises the Anthropogenic *Hyparrhenia*-dominated Grassland Habitat Unit, which has been



transformed as a result of historical agricultural activities, which in turn had led to a decrease in floral and faunal species diversity and dominance by *Hyparrhenia hirta* within these areas. This habitat unit is considered to have low ecological sensitivity.

The Wetland Habitat Unit plays an important role in ecological functioning and provide good habitat and migratory/ dispersal potential for faunal and floral species. This habitat unit is thus considered to be of high ecological sensitivity and care should be taken to minimise the impact on these areas during the various development phases. The Gauteng Minimum Requirements for Biodiversity Assessments (2014) furthermore stipulates that wetlands located within the Urban Edge must be designated as sensitive, and a 30m buffer zone applied.

No tree species protected under the National Forests Act (no 84 of 1998) known to occur within the Gauteng Province, including *Acacia erioloba*, *Boscia albitrunca*, *Combretum imberbe*, *Pittosporum viridiflorum*, *Prunus africana*, *Sclerocarya birrea* subsp. *caffra* were noted within the study area. However, *Hypoxis hemerocallidea*, a forb listed as "Declining" by SANBI was noted throughout the study area in low abundance. Should these species be encountered within the proposed development footprint, it is recommended that it be relocated to the wetland buffer zone or similar habitat excluded from the proposed development. Apart from *H. hemerocallidea* and *Boophane disticha*, no other threatened floral species or suitable habitat that would support such species were identified during the assessment. All areas of increased ecological sensitivity were mapped and a sensitivity map was compiled, which is presented illustrated in Figure 6.

G 7 SOCIAL ENVIRONMENT

G 7.1 Socio-Economic Environment

The following information was obtained from the Integrated Development Plan for the City of Johannesburg Metropolitan Municipality for the period 2011 - 2012.

Population demographics

The Municipal area has a population of approximately 3.8 million people. The majority of these people are between the ages of 30 and 39. The 3.8 million people within the municipal area occupy approximately 1.3 million households. The inhabitants in this municipal area increase at approximately 1.3% per annum which translates to approximately 4.1 million residents by 2015. Accordingly, the number of households in the municipal area is expected to increase by approximately 200,000 from 1.3 to 1.5 million by 2015. An average of 3 persons per household is observed in the area.

The surrounding social environment is a mixture of high income, low density residential areas with a good social infrastructure; and a low income, high density township with a poor social infrastructure. To the west of the proposed site is the existing Diepsloot West Township. To the east of the proposed site are agricultural holdings which are mainly used for equestrian activities.



Figure 6: Ecological Sensitivity map of the site



Employment

90.1% of employed residence in the municipal area are formally employed with the remaining 9.9% being informal employment. Unemployment is a major concern within the municipal area with 21.8% of the population being unemployed (2009). High levels of unemployment contribute to increased levels of inequality and the Gini Coefficient for municipal area was 0.63 in 2009. 21.6% of the households within the municipal area lived below the poverty income level in 2008.

Although there are business properties surrounding the study site, there is a need for jobs / work within the Diepsloot Community. Businesses within the area include; south of the site is a construction business, car dealers, reptile shop and the Diepsloot Mall. There is also a Lodge to the east and a trout farm to the south east. Other activities in the area include the brick factory to the north of the site. The Diepsloot Mall is currently the only Mall within the area. There are smaller businesses within the Diepsloot West Township but these businesses are small businesses that are usually run from a house or from a vender along William Nicol Drive / R511. The residents from the Diepsloot West Township are also selling grass from the surrounding properties in order to get an income.

Most of the residents from Diepsloot travel a long distance to get to work as the bigger commercial areas and working opportunities are located closer to Fourways (approximately 9km south of Diepsloot), Kyalami (approximately 10km to the southeast of Diepsloot) and Midrand (Approximately 15km to the east of Diepsloot). There are unfortunately not a lot of job opportunities within the immediate vicinity of the proposed project.

The surrounding communities (Dainfern Home Owner Association and Kyalami Ridge RA) and conservancies (GECKO & Renosterspruit Conservancy) together with Seeds of Africa and the Noweto Chamber of Commerce and Industry are working on a project whereby they are looking at creating jobs or providing jobs for the local community which includes Diepsloot. The aim of the Noweto Chamber of Commerce and Industry is to have a register whereby people can register their skills or local business. This register can then be used to source local labourers should job opportunities be presented. This is however still in process and more information will be provided as soon as a business plan is available.

Crime

The general population have indicated that the perception of safety in the area has significantly declined in the past few years despite a decrease in violent and property related crimes from 2006 to 2008

Provision of services

The following chapter outlines service provision within the municipal area and is utilised as an indication of the municipalities ability to provide services for this proposal.

Water



96% of all households within the municipal area have access to basic water services (2009). The Blue Drop Certified Systems awarded the municipality with a 98.4% blue drop score indicating the high level of service provided by the municipality in this instance.

Electricity

91.2% of all households within the municipal area have access to electricity connections (2009). Electrical capacity remains a challenge in the area, however, figures show a decline in electricity outages in the last three years.

Sanitation and refuse removal

98% of households have access to proper sanitation, with 91.9% of households having refuse removed weekly.

Housing

Housing remains a concern in the area with 180 000 households within informal settlements. Densification has occurred within informal settlements with a lack of creation of new settlements.

Commercial and institutional services

The Regional Spatial Development Framework has indicated that the area in question is considered a moderate priority as it is a marginalised area. The RSDF indicates that the most prominent needs arising from these marginalised areas is employment opportunities, business sites and local retail. Lack thereof has caused large scale unregulated informal trade.

There is currently a lack of social facilities within the Diepsloot West Township. There is currently one shopping centre (Diepsloot Mall) that serves the Diepsloot, Bridal Park, Knoppieslaagte area. The closest shopping centre or commercial area is approximately 9km from Diepsloot. There are also not enough schools, sport fields and other community facilities within the area. There is a lack of health care within the area as the closest hospital is the Life Hospital in Fourways. There is no provision for primary health care like clinics within the area.

G 7.2 Resources

In accordance with Section 38 of the NHRA, an independent heritage consultant was appointed to conduct a Heritage Impact Assessment (HIA) to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the area where it is planned to develop the township. See Appendix C1 for this specialist report.

The findings of this report include the following:

Stone Age & Iron Age settlements: No Stone Age or Iron Age settlements, structures, features or artefacts were recorded during the survey.



Historical structures: A single mud-stone multi-room house was recorded. The structure is sufficiently recorded and no further action is required.

It should be kept in mind that archaeological deposits usually occur below ground level. Should archaeological artefacts or skeletal material be revealed in the area during construction activities, such activities should be halted, and a university or museum notified in order for an investigation and evaluation of the find(s) to take place (*cf.* NHRA (Act No. 25 of 1999), Section 36 (6)).



H 1 PUBLIC PARTICIPATION PROCESS (PPP)

Consultation with I&APs forms an essential component of an EIA process and enables directly affected landowners, neighbouring landowners, stakeholders, communities and interested parties to identify the issues and concerns relating to the proposed activity, which they feel should be addressed in the process.

The principles that govern communication with the public at large are best embodied in the principles of NEMA, South Africa's overarching environmental law. Public participation is an essential and regulatory requirement for an environmental authorisation process, and is guided by Regulations under the NEMA, specifically the EIA Regulations (GNR 982).

The objectives of stakeholder engagement are:

During Scoping

To provide sufficient and accessible information regarding the proposed project to stakeholders in an objective manner to enable them to:

- Raise issues of concern and suggestions for enhanced benefits;
- Verify that their issues have been recorded;
- Provide input into the terms of reference (TOR) for specialist studies, impact assessment and management planning; and
- Contribute relevant local and traditional knowledge to the environmental assessment.

During Impact Assessment

Verify that their issues have been considered in the environmental assessment; and, Comment on the findings of the environmental assessment.

During the Notification Phase

Advise stakeholders of the outcome, i.e. the authority decision, and how and by when the decision can be appealed.



H 1 Introduction

The purpose of the public participation process for the proposed development, is to *obtain information* through involving the community, adjacent property owners, Community Forums, Ward Councillors, and other interested and affected parties. The aim is for the interested and affected parties to recognise the positive and negative aspects that the proposed development is anticipated to offer their living environments. The negative aspects would serve as a basis for the project team to enact a change in the course of action either through mitigation of undesirable or unacceptable impacts, or through the introduction of alternatives.

H 2 Initiating the Public Participation Process

The approach adopted for the current investigation was to identify as many I&APs as possible initially, through a suite of activities, as follows:

- Placing advertisements in regional and local newspapers;
- Placing notice boards on site;
- Providing written notice and a Background Information Document (BID) to potential I&APs including adjacent land owners and property owners, municipal contacts, residents associations, NGO's, ward councillors and relevant authorities;
- Requesting potential I&APs to recommend other potential I&APs to include on the database.

Thereafter, the remainder of the communications will be focused on registered I&APs and on local advertising. Consequently, the initial advertising campaign was broad and thorough and invited the members of the public to register as I&APs.

H 3 Identification of stakeholders

The identification of Interested and Affected Parties (I&APs) was undertaken through the following:

- **Contacting IAP's through the distribution of the background Information Document (BID)**

A BID for the proposed project was compiled in English. The BID provided a background to the proposed project and highlighted the legal requirements and EIA process to be followed for the project. A Response Form was attached, inviting I&APs to provide comments on the proposed activities, to identify any further I&APs who should be consulted, and to register on the I&AP database. A copy of the BID is included in **Appendix B**.

Relevant government departments, municipal managers, Ward Councillor, and key stakeholders (adjacent property owners), were contacted to inform them of the proposed



project and to obtain their issues and comments in this regard. See **Appendix B** for the database informed of this application.

➤ **Newspaper advertisements**

The formal announcement of the project was done by placing an advertisement in the following local and regional publications:

- The Citizen, March 9 2015:

See **Appendix B** for the text of this advertisement.

The objective of the newspaper advertisement was to:

- Inform I&APs of the proposed project;
- Inform I&APs of the Scoping and EIA Application and the way in which I&APs could lodge any objections to the proposed development and provide comments; and
- Invite I&APs to become involved in the proposed project by registering as I&APs

➤ **Site Notices**

On-site notice boards were placed at highly visible locations on; and leading up to the site, at the start of the public participation process. The site notice contained information regarding the intended project, the applicant, locality description, property description, the public participation process and contact details of the environmental assessment practitioner. The content of the site notices is included in **Appendix B** as well as photographs of the site notices.

➤ **Knock and drop**

Seedcracker Environmental Consulting CC will personally visit the affected adjacent property owners, to create greater awareness for the project. Background Information Documents were provided to the IAP's, and proof of delivery of the BID was received.

H 4 Availability of the Scoping Report for public comment

The Scoping Report will be made available for public comment for a period of 30 days from Monday 9 March 2015 up to and including the 28th April 2015, at the following venues:

1. Diepsloot Public library
2. www.seedcracker.co.za

Stakeholders are invited to comment on the Scoping Report and proposed project by submitting their written comments on the comment form provided during this project announcement phase. Stakeholders are requested to submit their comments via telephone, email, fax, to:



MRS STEPHANIE CLIFF
SEEDCRACKER ENVIRONMENTAL CONSULTING
P O Box 12460 Clubview 0014
T: 012 654 5970 / 082 626 4117
F: 086 518 4885
E-mail: stephweb@mweb.co.za

IAP's may also request a telephonic consultation to discuss their comment on the Scoping Report. Comments and issues raised during the scoping phase on the proposed project or the Scoping Report will be captured in the Comments and Responds Report (CRR) to be submitted to the competent authorities along with the Scoping Report, on the 29th April 2015.

H 5 Public participation process to be undertaken for the remainder of the EIA process

The following section provides a summary of the public participation activities that will be conducted during the EIA Phase of the proposed project.

1. All comments received on the Scoping Report will be captured in the CRR which will be incorporated into the Scoping Report prior to the submission of the Scoping Report to the competent authorities for consideration;
2. Once the EIA/EMPr Report containing the findings of the specialist studies has been compiled by the EAP, the report and accompanying specialist reports will be made available for public review and comment for a period of at least 30 days.
3. Public feedback session relating to the outcomes of the EIA Phase and specialist studies may be undertaken during the EIA/EMPr Report's public review period;
4. All comments received from stakeholders will be added to the CRR and all documentations will be updated and finalised for the submission to GDARD for decision making purposes;
5. Once the environmental authorisation decision is received from the competent authorities, the decision will be communicated to all registered stakeholders as well as those that have participated in the study to date.





I 1 PLAN OF STUDY

This section contains details on the Plan of Study and assessment methodology that will be undertaken and implemented during the EIA Phase of the proposed project, including:

- the alternatives that will be assessed in further detail;
- the public participation that will be undertaken; and
- the specialist studies that will be conducted.

I 1.1 Alternatives to be considered during EIA phase

Based on the outcome of the alternatives considered during the pre-feasibility phase of this project, the following preferred options and potential viable alternatives relating to certain project aspects, will be further investigated during the EIA Phase:

1. Land use alternatives
2. Layout alternatives
3. No-Go alternative

I 1.2 Comparative Assessments of Alternatives

According to the DEA&DP (2010) Guideline on Alternatives, EIA Guideline and Information Document Series. Western Cape Department of Environmental Affairs & Development Planning (DEA&DP), key criteria when identifying and investigating alternatives are that they should be “feasible” and “reasonable”. The alternatives identified must serve to achieve the triple bottom-line of sustainability i.e. they must meet the social, economic and ecological needs of the public. The alternatives must also aim to address the key significant impacts of the proposed project by maximising benefits and avoiding or minimising the negative impacts. The primary objective must be to avoid all negative impacts, rather than to minimise them. Alternatives are defined in the NEMA EIA Regulations as “different means of meeting the general purpose and requirements of the activity”. The “feasibility” and “reasonability” of and the need for alternatives must be determined by considering, inter alia, (a) the general purpose and requirements of the activity, (b) need and desirability, (c) opportunity costs, (d) the need to avoid negative impact altogether, (e) the need to minimise unavoidable negative impacts, (f) the need to maximise benefits, and (g) the need for equitable distributional consequences.

The identified alternatives will be comparatively assessed in fulfilment with the above listed criteria, in the EIA report.



Environmental aspects to be assessed

Tables 1 - 3 provide a summary of the status of the identified issues per phase of the project, nature and status of the potential impacts that may be associated with the proposed project in terms of the said environmental aspect, a description of the impact which includes the recommendation in respect of specialist work to be undertaken if required. The listed potential anticipated impacts as summarised in the following Tables, were identified through the EAP's understanding of the project, previous work conducted on the same application (2013 EIA conducted by JW Environmental Solutions PTY LTD), and the specialist work completed for the application thus far.

During the EIA Phase, selected specialist investigations will be amended / updated, to accurately assess the anticipated impacts. Appropriate mitigation measures will be assigned to each identified potential impact by the specialist and the EAP, to avoid or minimise these impacts, and will be incorporated into the EIA/EMPr Report.



Table 1: Issues and impacts identified in the planning & Design phase of the proposed new Tanganani X 7 Township

PLANNING AND DESIGN PHASE			
ISSUE	IMPACT	NATURE	DESCRIPTION OF IMPACT
Compliance with Environmental Legislation, guidelines, by laws and other applicable policies	Direct		The planning and design of the new high density residential township, should take into account, and comply with all relevant environmental legislation and policies as detailed in Section C of this report.
Climate	Direct	Potentially negative	The development must be planned for construction outside of summer months to avoid rain and wet conditions leading to erosion. Wet conditions may negatively impact on stormwater leaving the site, and impacting on the water quality of above and below ground water resources. During the dry, windy, winter months, <i>dust control</i> must be implemented as per mitigation measures provided in the EMPr.
Topography & Visual Aspects	Direct / Cumulative	Potentially negative	The removal of large tracts of vegetation can drastically alter the appearance and character of a community. Design and siting of the new high density residential township will result in an alteration of the landscape character and possibly, "sense of place" to adjacent property owners. Visual impacts are highly subjective in nature and perception. They may be mitigated to some extent through the use of sensitive design, selection of materials and landscaping. It is recommended for the EIA phase that the significance of these impacts must be determined, and mitigation measures must be proposed in the EMP.
Terrestrial Ecology	Direct / Indirect	Potentially negative	Site preparation and shaping activities will permanently remove vegetation cover, and transform the majority of the habitat over the development. The site is



Table 1: Issues and impacts identified in the planning & Design phase of the proposed new Tanganani X 7 Township

PLANNING AND DESIGN PHASE			
ISSUE	IMPACT	NATURE	DESCRIPTION OF IMPACT
			<p>greatly impacted on by adjacent informal settlement residents traversing across the site, and using the site for various uses. Trees have been harvested for wood, and mammal species once present on site, have been trapped and hunted.</p> <p>From the specialist ecological assessment conducted for the site, it is evident that a significant portion of the study area comprises the Anthropogenic <i>Hyparrhenia</i>-dominated Grassland Habitat Unit, which has been transformed as a result of historical agricultural activities, which in turn had led to a decrease in floral and faunal species diversity and dominance by <i>Hyparrhenia hirta</i> within these areas. This habitat unit is considered to have low ecological sensitivity.</p> <p>The Wetland Habitat Unit plays an important role in ecological functioning and provide good habitat and migratory/ dispersal potential for faunal and floral species. This habitat unit is thus considered to be of high ecological sensitivity and care should be taken to minimise the impact on these areas during the various development phases. The Gauteng Minimum Requirements for Biodiversity Assessments (2014) furthermore stipulates that wetlands located within the Urban Edge must be designated as sensitive, and a 30m buffer zone applied.</p> <p><i>Hypoxis hemerocallidea</i>, a forb listed as “Declining” by SANBI was noted throughout the study area in low abundance. Should these species be encountered within the proposed development footprint, it is recommended that it be relocated to the wetland buffer zone or similar habitat excluded from the proposed development. Apart from <i>H. hemerocallidea</i> and <i>Boopane disticha</i>, no</p>



Table 1: Issues and impacts identified in the planning & Design phase of the proposed new Tanganani X 7 Township

PLANNING AND DESIGN PHASE			
ISSUE	IMPACT	NATURE	DESCRIPTION OF IMPACT
			<p>other threatened floral species or suitable habitat that would support such species were identified during the assessment.</p> <p>All areas of increased ecological sensitivity have been mapped and a sensitivity map has been compiled, to which the present township layout plan responds.</p>
Cultural Heritage & Archaeology	Direct / Indirect	Potentially negative	In the absence of above ground historical structures or artefacts, the construction of the development could have a direct physical impact on any unearthed archaeological remains or other features of cultural heritage on the site.
Surface and Ground Water	Direct / Indirect	Potentially negative	<p>The likelihood of leakage related pollution effects occurring from (i) over burdened sewer pipes and treatment is works and (ii) contaminated stormwater runoff, is high – if the required municipal upgrades are not completed before the construction and habitation of the new township.</p> <p>The Timsrand Community Committee is heavily dependent on boreholes for water provision. The Timsrand Community Committee expressed their concern during the 2013 EIA process, that the proposal will contaminate groundwater resulting in the loss of this water resource which would render the community without water. Timsrand Community Committee is of the previously indicated that any changes in water volume/table and water quality would have devastating effects on the community.</p> <p>It is recommended for the EIA phase that the significance of these impacts must</p>



Table 1: Issues and impacts identified in the planning & Design phase of the proposed new Tanganani X 7 Township

PLANNING AND DESIGN PHASE			
ISSUE	IMPACT	NATURE	DESCRIPTION OF IMPACT
			be determined, and mitigation measures must be proposed in the EMP.
Bulk Services	Direct	Potentially negative	<p>The Integrated Development Plan and the Spatial Development Framework have outlined that water and electricity could be a concern in providing the proposal with sufficient services. Engineering investigation into the availability of such services has been undertaken.</p> <p>The availability of services has been confirmed at the onset of the application. Proof of municipal provision must be received for the EIA phase. The development must be designed to make maximum use of existing infrastructure such as roads, electrical connections and substations, etc. in order to minimize environmental disturbances created by construction.</p> <p>It is recommended for the EIA phase that the Blackhead Engineering Report dated February 2014 be updated and be brought in line with the new layout as dictated by the wetland investigations.</p>
Stormwater	Direct / Indirect & Cumulative	Potentially negative	<p>Infrastructure should be planned in such a way as to take increased stormwater runoff in consideration. Increased stormwater can cause severe damage in terms of erosion and pollution. Areas of ecological value such as wetlands, within and downstream of the site, could be sensitive to any alteration of localised drainage patterns. The introduction of roads and impermeable areas of hard standing could increase rates of run-off and therefore the risk of localized flooding and contamination.</p>



Table 1: Issues and impacts identified in the planning & Design phase of the proposed new Tanganani X 7 Township

PLANNING AND DESIGN PHASE			
ISSUE	IMPACT	NATURE	DESCRIPTION OF IMPACT
			Alternative site development design criteria or storm water management systems must be identified, if significant impacts on surface and ground water systems in the study area are anticipated. It is recommended for the EIA phase that the significance of these impacts must be determined, and mitigation measures must be proposed in the EMP.
Traffic	Direct	Potentially negative	<p>The impact of the development proposal on the traffic of the area, must be investigated in order to ensure that this proposal does not negatively impact on the surrounding environment.</p> <p>The August 2010 Mariteng Traffic Study identified a number of required road upgrades to support the high density township. It is recommended for the EIA phase that this report be updated to 2015 traffic counts, and the recommendations of this report must be confirmed.</p>
Air Quality	Direct / Indirect & Cumulative	Negative	<p><i>Air Quality</i> may be divided into physical and chemical aspects. The physical aspect comprises particulates, such as dust and smoke, blown from or released into the atmosphere by an activity. Chemical aspects comprise volatile and non-volatile chemical compounds (including odours) emitted into the atmosphere by activities or processes.</p> <p>It is recommended for the EIA phase that the significance of the impacts associated with residential land uses must be investigated, and mitigation measures must be proposed in the EMP.</p>



Table 1: Issues and impacts identified in the planning & Design phase of the proposed new Tanganani X 7 Township

PLANNING AND DESIGN PHASE			
ISSUE	IMPACT	NATURE	DESCRIPTION OF IMPACT
Socio Economic	Direct	Perceived Negative	<p>The outcome of the 2013 EIA process, indicated that the Timsrand Community Committee believe that the proposal does not reflect the nature of the receiving environment and will therefore result in a loss of sense of place. The Timsrand Community Committee is concerned that this loss in sense of place will result in a loss in property value.</p> <p>The Timsrand Community Committee are further concerned that the proposal will result in a loss of aesthetical value of the receiving environment.</p> <p>These impacts must be further investigated in the EIA.</p>



Table 2: Issues and impacts identified in the construction phase of the proposed new Tanganani x 7 Township

CONSTRUCTION PHASE			
ISSUE	IMPACT	NATURE	DESCRIPTION OF IMPACT
Topography & Visual Aspects	Direct / Indirect	Potentially negative	<p>Visual disturbance of the landscape during construction will be caused by the construction activity, and the presence and use of very large machinery. Construction related visual impacts are highly subjective in nature and perception. They may be mitigated to some extent through the use of sensitive design, selection of materials and landscaping.</p> <p>It is recommended for the EIA phase that the significance of these impacts must be determined, and mitigation measures must be proposed in the EMP.</p>
Terrestrial Ecology	Direct / Indirect	Potentially negative	<p>See Table 2 for further reference. Impacts on terrestrial ecology have been identified and incorporated into the township design. The identified ecological impacts and recommendations must be considered during the construction phase.</p> <p>It is recommended for the EIA phase, that the protection and maintenance of the delineated wetland be further elaborated upon, in terms of responsible parties, fencing, preventing illegal / informal settlements from occurring in this protected space, maintaining the open space to prevent littering, illegal dumping, and the like.</p>
Cultural heritage	& archaeology	Direct/Indirect Potentially	A specialist Heritage Impact Assessment has been conducted for the site. In the absence of above ground historical structures or artefacts, the construction of the development could have a direct physical impact on any unearthed archaeological remains or other features of cultural heritage on the site.



CONSTRUCTION PHASE

ISSUE	IMPACT	NATURE	DESCRIPTION OF IMPACT
Noise	Direct	Potentially Negative	<p>Construction activities are likely to result in increased noise and disturbance to the surrounding area. These levels may be expected to decrease somewhat post construction, but will remain altered from pre-construction levels throughout the operational lifetime of the project.</p> <p>Mitigation of these impacts is possible. through the following means: Ensuring that construction activities only take place during normal working hours. These measures must be addressed in the EIA and EMPR.</p> <p>It is recommended for the EIA phase that the design principles of the development must be undertaken in accordance with the relevant noise level standards and good engineering practices, to ensure that the noise produced by the development is within the legal statutory limits and does not create a disturbance for the current and future residents in the proximity of the site.</p>
Surface and Ground Water	Direct / Indirect	Potentially negative	<p>The construction of the development has the potential to affect water quality adversely within the streams on the site and further downstream. Sediment is especially likely to be created during the excavation of foundations, the laying of access tracks, digging of trenches, soil stripping and stockpiling to create temporary areas of hard-standing. Pollution could arise from the spillage or leaking of diesel, lubricant and cement.</p> <p>The Timsrand Community Committee is heavily dependent on boreholes for water provision. The Timsrand Community Committee expressed their concern during the</p>



CONSTRUCTION PHASE

ISSUE	IMPACT	NATURE	DESCRIPTION OF IMPACT
			<p>2013 EIA process, that the proposal will contaminate groundwater resulting in the loss of this water resource which would render the community without water. Timsrand Community Committee is of the previously indicated that any changes in water volume/table and water quality would have devastating effects on the community.</p> <p>It is recommended for the EIA phase that the impact of the proposal on the resident watercourse must be investigated in order to ensure that significant environmental degradation does not arise as a result of the continuation of this proposal, and that mitigation measures for the above anticipated impacts, must be provided in the EMPr.</p>
Traffic, road safety & material transport	Direct / Indirect	Potentially Negative	<p>Potential impacts are largely associated with the location of access to the site and, during construction, the movement of heavy vehicles and machinery on the smaller feeder roads located within the study area. It is possible that there could be a high number of heavy vehicle movements spread over the construction period. The average number of heavy vehicle movements per day might not be significant, but there could be peaks that might have a negative impact on or near the main roads serving the study area. Transporting materials and construction equipment to the site by long and/or slow moving vehicles could cause traffic congestion in the study area.</p> <p>Mitigation may be achieved through:</p> <ul style="list-style-type: none"> • Location of access points to and from the construction site so as to ensure



CONSTRUCTION PHASE

ISSUE	IMPACT	NATURE	DESCRIPTION OF IMPACT
			<p>that road traffic safety requirements are met;</p> <ul style="list-style-type: none"> Implementation of appropriate traffic control measures, both in the design and layout of access points and during construction thereof <p>It is recommended for the EIA phase that a construction traffic management plan be compiled.</p>
Waste and hazardous waste management	Direct / indirect / Cumulative	Potentially negative	<p>Any spills of contaminant are expected to have a negative environmental impact. Spills must be treated immediately as per recommendations to be provided in the EMPr. If left untreated, the hazardous spills may negatively impact on the ground water resource of the area.</p> <p>The Timsrand Community Committee is heavily dependent on boreholes for water provision. The Timsrand Community Committee expressed their concern during the 2013 EIA process, that the proposal will contaminate groundwater resulting in the loss of this water resource which would render the community without water. Timsrand Community Committee is of the previously indicated that any changes in water volume/table and water <i>quality</i> would have devastating effects on the community.</p>
Waste Management	Direct	Potentially positive / negative	<p><i>Waste Management</i> includes the management of both solid and liquid waste, or effluent, produced by a facility or an activity. Litter from construction activities, may be blown from the development site into the residential area. The following measures will aid in mitigation of this potential impact:</p>



CONSTRUCTION PHASE

ISSUE	IMPACT	NATURE	DESCRIPTION OF IMPACT
			<ul style="list-style-type: none"> • Ensuring that the design of the construction yard includes adequate facilities for the temporary storage of waste, in terms of volume, location and enclosure; • Ensuring that waste handling, storage and collection is undertaken in accordance with the relevant health and municipal legislation, practices and procedures; • Provision of adequate numbers of litter bins throughout the construction yard; and • Implementation of an appropriate collection and disposal strategy to ensure regular removal of waste to a permitted waste disposal facility. • Promoting the recycling of waste, with specialist service providers appointed to remove the waste from site. <p>It is recommended for the EIA phase that the significance of these impacts must be determined, and mitigation measures must be proposed in the EMP. A construction waste management plan must be detailed in the EIA report.</p>
Air Quality	Direct	Negative	Construction related air quality impacts relate to dust generation. It is recommended for the EIA phase that the significance of this impact must be determined, and mitigation measures must be proposed in the EMP.
Socio-economics	Direct / indirect	Potentially positive / negative	<p>Potential negative impacts include:</p> <ul style="list-style-type: none"> • An increase in opportunistic crime associated with an increase in the



CONSTRUCTION PHASE			
ISSUE	IMPACT	NATURE	DESCRIPTION OF IMPACT
			<p>number of non-residents passing through the neighbouring residential area in search of jobs.</p> <ul style="list-style-type: none"> • Anti-social behaviour associated with competition between entrepreneurs and wards for job opportunities. • Change in the social structure of the area. <p>Potential positive impacts include:</p> <p>During construction, the development could have a beneficial local economic effect, supporting companies manufacturing construction materials, and providing work for construction and haulage contractors, for example. Jobs may also be created for local communities. It could therefore have a beneficial social and economic impact in the area.</p> <ul style="list-style-type: none"> • Meeting the backlog of housing in the region; • Promotion and creation of a liveable city with high quality environments (Densification should bring about a positive change in the live - ability and urban structure of the city. Compact, well planned cities tend to be more liveable.) - Improving the Use of Public Transport and Facilitating Pedestrianisation; and - Employment opportunities. <p>The creation of commercial and retail nodes adjacent to housing projects will be</p>



CONSTRUCTION PHASE			
ISSUE	IMPACT	NATURE	DESCRIPTION OF IMPACT
			beneficial with regards to where people live and how close they are to work and convenience opportunities.

Table 3: Issues and impacts identified in the operational phase of the proposed new Tanganani x 7 Township

OPERATIONAL PHASE			
ISSUE	IMPACT	NATURE	DESCRIPTION OF IMPACT
Stormwater discharge	Direct / indirect / Cumulative	Potentially negative	The impermeable, hard surfaces associated with development, will result in increased storm water generation from the site. The storm water management plan proposed at the onset of this application, must be approved by the regulating authorities, and implemented on site. Attenuation ponds must be landscaped and engineered to ensure no drowning incidents. Discharge of the run off into the wetland and river systems, may not alter the flow or nature of the hydrological systems. Storm water infrastructure must be maintained and monitored to prevent blockages, etc.
Air Quality	Direct / Cumulative	Negative	During the operational phase of the development there is likely to be release of various house hold / domestic emissions only.
Surface and groundwater	Direct / indirect	Potentially negative	This issue is related to storm water management during the operational phase.



OPERATIONAL PHASE

ISSUE	IMPACT	NATURE	DESCRIPTION OF IMPACT
contamination			
Socio - Economic	Direct / indirect / Cumulative	Positive	<p>The Integrated Development Plan and the Spatial Development Framework outlined the need for formal housing in the Diepsloot area in particular. The Tanganani x 7 proposal will provide a number of residents in informal settlements with low-cost affordable housing.</p> <p>The proposal will include one school erf and will contribute to the services provided to the surrounding area. The Spatial Development Framework indicates that social services need to be upgraded in the area and new services provided. The Tanganani x 7 township fulfils these criteria.</p> <p>The Spatial Development Framework indicates that the marginalised areas such as Diepsloot must be revitalised with development and alternative housing. The Tanganani x 7 township will fulfil this need. The Spatial Development Framework outlines that development is necessary in the marginalised areas of the Region in order to ensure that inequality experienced between the affluent suburbs of the Region and the impoverished/marginalised suburbs is reduced. This proposal will provide impoverished people with formal housing and will decrease the inequality in living standard experienced in the Region. The significance of this impact must be investigated in the EIA.</p> <p>The Spatial Development Framework outlines that the informal settlements are utilised by criminals to evade capture by utilising the unordered and inaccessibility of such settlements to hide from authorities. This proposal will provide residents of</p>



OPERATIONAL PHASE

ISSUE	IMPACT	NATURE	DESCRIPTION OF IMPACT
			informal settlements with structured residential areas where each unit is clearly labelled and accessible allowing law enforcement access to residents and potential criminals.
Traffic and access	Direct / indirect	Potentially Positive	Any road network modifications which are provided to facilitate the new township development will have long lasting traffic <i>benefits</i> for the region.
Waste Management	Direct, Cumulative	Negative	<p>The proposal will generate significant amounts of waste due to the number of people who will be occupying structures proposed. The handling and disposal of this waste must be investigated the EIA in order to ensure that capacity to handle and dispose of this waste is available from the Relevant Authority.</p> <p>An operational waste management plan must be compiled and included in the EIA report.</p>
Visual Impact	Direct	Negative	Multiple storey high rise buildings will alter the present visual landscape of the study area. This visual impact must be further investigated in the EIA.



I 1.3 The EIA Phase

The EIA phase has four key elements, as follows:-

1. **Specialist Studies.** Specialist studies identified during the Scoping Phase, and any additional studies that may be required by the authorities, are undertaken as the initial phase of the EIA. The relevant specialists are appointed to undertake the various assessments. Specialists gather baseline information relevant to the study being undertaken and assess impacts associated with the development. Specialists also make recommendations to mitigate negative impacts and optimise benefits. The resulting information is synthesised into the Environmental Impact Report (EIR).
2. **Environmental Impact Report (EIR).** The main purpose of this report is to gather environmental information and evaluate the overall impacts associated with the project, to consider mitigation measures and alternative options, and make recommendations in choosing the best development alternative. The EIR also identifies mitigation measure/management recommendations to minimise negative impacts and enhance benefits. The EIR and associated reports are made available for public and authority review and comment. The availability of the report is advertised in the local newspaper and is situated at an easily accessible location.
3. **Comments Report.** The comments report compiles comments, issues and concerns raised by I&APs and the authorities during the review period, and also provides relevant responses to these comments.
4. **Environmental Management Programme (EMPr).** The EMPr provides guidelines to the proponent and the technical team on how to best implement the mitigation measure/management recommendations outline in the EIR during the construction and operational phase.
5. **Public Participation Process.** The Public Participation Process initiated during the Scoping Phase, is continued. Further opportunities are provided for I&APs to raise issues, concerns and comments regarding the proposed project. At this stage it is possible that some of the project details may have changed in response to the preliminary findings of the Scoping Report. I&APs and key stakeholders are given the opportunity to review the Draft EIR before it is submitted to the authorities for consideration. Comments on the Draft EIR are included and addressed in the Final EIR.

I 1.4 Aims of the EIA

The EIA must achieve the following:

- Provide an overall assessment of the social and biophysical environments affected by the proposed project;



- Assess potentially significant impacts associated with the new high density township development, and provide a comparative assessment of the alternatives identified;
- Identify and recommend appropriate mitigation measures for potentially significant environmental impacts;
- Nominate a preferred alternative for consideration by the Approving Authorities in the decision making process; and
- Undertake a fully comprehensive public participation exercise to ensure that I&AP's are afforded the opportunity to participate, and that their issues and concerns are recorded.

I 1.5 Specialist Studies

The following Specialist Studies are proposed for the EIA Phase of the assessment:

- **Updated Traffic** Impact Assessment;
- **Updated and amended Engineering civil services study, including a detailed stormwater management plan;**
- Development of appropriate and practical **mitigation and management** measures for potentially significant environmental impacts for inclusion in the Environmental Management Plan.

The Terms of Reference for the civil engineering studies will be informed by the Civil Engineer. The significance of impacts will be assessed according to the methodology given in Section I 1.6 of this report. Specialists must address issues raised by I&APs in their reports, where relevant.

SEC shall integrate the findings of the specialist reports into the EIA report. The result of this integration and understanding of the cumulative impacts will provide the decision making authority (GDARD) with the information required to deliver an informed decision on the application.

I 1.7 Methodology for assessing the significance of impacts

The possible impacts of the project shall be described using specified criteria to describe the extent (spatial scale), duration, intensity and probability of occurring. These criteria would be used to ascertain the SIGNIFICANCE of the impact, firstly in the case of *no mitigation* and then with the most effective mitigation measure(s) in place.

There are different approaches that can be adopted to the undertaking of the assessment of impacts, but any approach should always be based on a methodology that includes:

- a clear process for impact identification, prediction and evaluation;



- specification of impact identification techniques;
- criteria for evaluating the significance of impacts;
- the design of mitigation measures to address impacts;
- defining types of impacts (direct, indirect or cumulative);
- specifying uncertainties; and
- the assessment of alternatives and impacts results in options that represent the minimum impact on the environment.

The potential environmental impacts of the proposed *Rust ter Vaal Extension 2 Mixed Use Township* project will be evaluated according to their *severity, duration, extent* and *significance* of the impact described below.

Significance of Impact

The significance of the impact has been determined through the following criteria:

- (a) *Nature of Impact*: This includes a brief description of how the proposed activity will impact on the environment. The nature of the impact is *described* as follows:

Nature	
	Description
Positive +	Impacts affect the environment in a positive manner, such that natural, cultural and/or social functions and processes are not affected or enhanced.
Negative – 	Impacts affect the environment in a negative manner, such that natural, cultural and/or social functions and processes are altered, destroyed, lost, etc.

- (b) *Extent*: This refers to the geographic area on which the activity will have an influence and can include the following extents:

Extent		
	Rating Value	Description
Project site	1	the immediate location of the activity
Study area	3	the proposed area and its immediate environs within a 5 km radius of the activity
Local	5	Local Municipality
Regional	6	Province
National	7	Country

- (c) *Duration*: This refers to the expected timeframe of an impact and can be expressed as:

Duration		
	Rating Value	Description
Short Term	2	0-5 years



Medium Term	4	5 – 15 years
Long Term	6	15 – 40 years
Permanent	8	40 + years, permanent and lasting change that will always be there

(c) *Likelihood*: This considers the likelihood of the impact occurring and should be described as:

Likelihood		
	Rating Value	Description
Improbable	2	where the impact is unlikely to occur
Probable	4	where there is a good probability, < 50 % chance, that the impact will occur
Highly Probable	6	where it is most likely, 50-90 % chance, that the impact will occur
Definite	9	where the impact will occur, > 90 % chance of occurring, regardless of any prevention measures

(d) *Severity Scale*: The severity is used to evaluate how severe negative impacts would be on the environment, and is described as follows:

Severity		
	Rating Value	Description
No effect	1	no impact by the proposed development
Low	3	short term impacts with mitigation being very easy, cheap, less time consuming or not necessary
Medium	4	medium term impacts that could be mitigated
High	5	long term impacts, an irreversible and permanent change that cannot be mitigated

Degree of confidence

It is necessary to indicate where the *degree of confidence* has been used, in determining the rating values of each criteria, *ie.* chosen value between 1 and 3, etc. The rating value used in the significance methodology has been *predicted, based on the availability of information, expertise of the EAP, specialist input, ground truths and authority support tools.*

Significance Rating Matrix

		Consequence											
		3	4	5	6	7	8	9	10	11	12	13	14
Likelihood	2	5	6	7	8	9	10	11	12	13	14	15	16
	3	6	7	8	9	10	11	12	13	14	15	16	17
	4	7	8	9	10	11	12	13	14	15	16	17	18
	5	8	9	10	11	12	13	14	15	16	17	18	19



	6	9	10	11	12	13	14	15	16	17	18	19	20
	7	10	11	12	13	14	15	16	17	18	19	20	21
	8	11	12	13	14	15	16	17	18	19	20	21	22
	9	12	13	14	15	16	17	18	19	20	21	22	23

The *significance of impacts* is determined based on the evaluation of an activity's impact in terms of; *consequence and likelihood*. Using the *sum of the evaluated ranking* criteria, and the matrix in Table 2, overall significance can be classified as follows:

Low	Where the impact <i>will not have</i> a significant influence on the environment. Management measures <i>can</i> be proposed to ensure that significance does not increase.	5 – 11
Medium	Where the impact <i>could have</i> a significant influence on the environment unless it is mitigated or managed.	12 – 17
High	Where the impact <i>will have</i> a significant influence on the environment regardless of any possible mitigation and hence must be either avoided or managed.	18 - 23

In addition, *comments from interested and affected parties (IAP)* will also influence the *ranking of impacts*. According to the NEMA, the applicant must consult with IAPs and record their comments and concerns. Although the significance ranking (as described above) may evaluate an impact to have a medium impact, the members of the public may consider the impact as having a high significance. The concerns raised by the public will then be indicated with the significance ranking with management measures being proposed and implemented to address all realistic concerns raised by IAPs. The additional criteria used in the evaluation of impacts for this application, is given below:

Additional criteria that influence the significance of an impact	Abbreviation used in Section G of this report
Cumulative impacts	Cml
Comments from interested and affected parties	IAP
Degree of confidence	Conf

Mitigation and monitoring

Where negative impacts are identified, mitigation measures (ways of reducing impacts) will be provided, and where positive impacts are identified, ways of enhancing these impacts will also be mentioned. Where no mitigation is feasible, this will be stated and the reasons given. Quantifiable standards against which the effectiveness of the mitigation can be measured have been set. This may include input into monitoring and management programmes included in the applications EMP.



I 1. 8 The assessment of cumulative impacts

A cumulative impact is defined as the cumulative effects of the interaction of individual impacts of development, or groups of impacts, on the environment. Cumulative impacts can be thought of as the additive and interactive effects of various projects and activities on an ecosystem over space and time. In other words, long-term changes in an ecosystem may occur not only as a result of a single action, but also due to the combined effects of successive actions.

Cumulative effects represent an ecosystem's *threshold level of tolerance to disturbance*. Ecological systems cannot always cope with human disturbances without fundamental functional or structural change. The environmental impacts of a number of individual projects can effectively 'nibble' away at an ecosystem's ability to function and to sustain viable wildlife populations. Beyond a certain threshold level of impact, one or more important ecosystem functions may cease. Further exceedances of an ecosystem's disturbance threshold may lead to a near-collapse of that ecosystem. In short, individually minor actions that are insignificant on their own can collectively result in significant impacts over a period of time.

The anticipated negative cumulative impacts resulting from the construction and implementation of the proposed new high density residential development, could occur through the following impacts:

I 1.8.1 Increased Storm water runoff

Source of the impact: Hard surfaces as a result of the proposed development of the new township.

I 1.8.2 Surface and ground water contamination

Source of the impact: Soil contamination, Ground water contamination; Impact on surface water contamination; during construction and operation activities.

Should there be a diesel spillage during construction, or leakages from unmaintained sewer pipes, these impacts will become very significant to the regional area

I 1.8.3 Air Quality pollution

Source of the impact: Dust creation during the dry months of construction activities, and Coal burning practices from low income households during operation.

I 1.8.4 Increased Traffic and pedestrian movement in the study area

I 1.8.5 Increased Pressure on service provision to the area

I 1.8.6 Encroachment of development into sensitive ecological systems, ie. wetland and riverine systems



How these cumulative impacts will affect the environment will be discussed and detailed in the EIA report. The EIA Report will assess the impacts of each of the construction and operation activities, as well as investigate the cumulative impacts the high density mixed land use township development will have on the receiving environment. The EIA report will identify measures to mitigate the significance of the impacts, and provide meaningful recommendations. The EIA report will also include an Environmental Management Programme (EMPr) which will contain detailed mitigation measures for the various phases of the project.

The assessment of cumulative impacts on a study area is complex. It is often difficult to determine at which point the accumulation of many small impacts reaches the point of an undesired or unintended cumulative impact that should be avoided or mitigated. There are often factors which are *uncertain* when potential cumulative impacts are identified.

Steps in Assessing Cumulative impacts

The assessment of cumulative impacts will not be done separately from the assessment of other impacts. Cumulative impacts however tend to have different time and space dimensions, and therefore require specific steps which may even mean that some of the actions in the assessment process that preceded general impact identification, may have to be revisited after potential cumulative impacts have been identified to ensure that the scope of the EIA process is adequate to deal with the identified cumulative impacts. Three general steps, which are discussed below, will be exercised during the EIA phase, and discussed in the EIR, to ensure the proper assessment of cumulative impacts.

1. Determining the extent of the cumulative impacts

To initiate the process of assessing cumulative impacts, it is necessary to determine what the *extent* of potential cumulative impacts will be. This can be done by adopting the following approach:

- Identify potentially significant cumulative impacts associated with the proposed activity;
- Establish the scope of the assessment;
- Identify other activities affecting the environmental resources of the area; and
- Define the goals of the assessment.

2. Describe the Affected Environment

- The identified external environmental resources must be characterised in terms of their response to change;
- Characterise the stresses affecting these environmental resources and their relation to regulatory thresholds; and
- Define a baseline condition that provides a measuring point for the environmental resources that will be impacted on.



3. Assess the cumulative impacts

The general methodology which is used for the assessment of cumulative impacts should comprise of the following:

- An identification of the important cause-and-impact relationships between proposed activity and the environmental resources;
- A determination of the magnitude and significance of cumulative impacts; and
- The modification, or addition, of alternatives to avoid, minimize or mitigate significant cumulative impacts.

I 1.9 PUBLIC PARTICIPATION DURING THE EIA PHASE

4. Stakeholder Engagement

Public and stakeholder involvement in the EIA process is widely recognised as being an *essential* component of the EIA process. The input and contribution added to the process, by public comment and involvement, leads to better and more acceptable decision-making. The involvement of interested parties, adjacent land owners, NGO bodies and others, can help to identify whether all impacts have been included and whether all risk groups have been identified.

- The engagement process will provide stakeholders with the opportunity to raise their issues and concerns and to interact on a one-on-one basis with the project team. *Phase 2* of the PPP will entail *inter alia* the following:
 - Update the existing stakeholder database, following the review of the draft scoping report by registered IAP's, and the review of the final scoping report by GDARD;
 - Announcement of the EIA phase of the project, which entails the following:
 - Distribution of Letters, notices, BIDs to all registered I&APs via email, fax or post;
 - Hosting Public Meetings (if necessary);
 - Integration of comments into a Comments and Response Report;

5. I&AP Communication

- *Registered* I&APs shall be informed of the approval or rejection of the scoping report, and will be encouraged to continue their active participation in the EIA process by staying involved in the process, and commenting on the scoping report approval conditions / requirements.
- Each issue, concern, question identified through communication with Seedcracker Environmental Consulting, will be included in the Comments Register and appropriately addressed.



6. I&APs Issues Identified during the Scoping Procedure

All the issues brought forward by the registered I&AP's will be investigated during the EIA phase of the project.

7. The Comments and Response Report (CRR)

2.1.1.1 Comments received from I&AP's following the review of the SR and during the EIA phase

The comments received from I&AP's will be captured and included in the PP report throughout the EIA process. The PP report will include all comments, concerns, questions and statements recorded by SEC, during the duration of the project. The name(s) of the person(s) who raised the issue will appear in the report. The CRR will form part of the EIA report. This report will be the updated version of the CRR already contained in this scoping report.

8. Public Review of the EIAR

- The EIAR will be published for public comments at the same locations as the scoping report. Hard copies of the report will also be provided to Provincial Authorities, ie DWA, Local Municipalities, etc. The review period of the EIAR will be communicated with the IAP's via fax & email.

I 1.10 ENVIRONMENTAL MANAGEMENT PROGRAMME

The purpose of monitoring is to compare predicted and actual impacts, particularly if the impacts are either very important, or the scale of the impact cannot be accurately predicted. The results of monitoring can be used to manage the environment, particularly to highlight problems early so that action can be taken. The range of parameters requiring monitoring may be broad or narrow and will be dictated by the 'prediction and mitigation' stage of the EIA. Typical areas of concern where monitoring is weak are: water quality, both inflow and outflow; stress in sensitive ecosystems; soil fertility, particularly salinization problems; water related health hazards; groundwater levels.

The information obtained from monitoring and management can be extremely useful for future EIAs, making them both more accurate and more efficient.

The EMP outlines the impacts and mitigation measures for the construction, operation and decommissioning phases of the project. The EMP will comprise of the following:

- **Summary of Impacts:** The predicted negative environmental impacts for which mitigation is required are summarized. Positive impacts requirement enhancement will also be listed.
- **Description of mitigation measures:** The EMP identifies feasible and cost effective mitigation measures to reduce significant negative environmental impacts to



acceptable and legal levels. Mitigation measures are described in detail. The technical aspects of implementing the mitigation measures are described.

- **Description of a monitoring programme:** Environmental performance monitoring will be designed to ensure that mitigation measures are implemented. The monitoring programme clearly indicates the linkages between impacts, indicators to be measured, measurement methods and definition of thresholds that will signal the need for corrective actions.
- The **Institutional arrangements** depict and define the responsibilities for mitigation and monitoring actions.
- **Legal enforceability:** The key legal considerations with respect to the EMP are:
 - Legal framework for environmental protection; and
 - Legal basis for mitigation.
- The Implementation schedule and reporting procedures that specify the timing, frequency, and duration of the mitigation measures.
- A description of requirements for record keeping, reporting, review, auditing and updating of the EMP will be provided.

1.11 MANAGING UNCERTAINTY

An EIA involves *prediction* and thus a certain degree of *uncertainty* is an integral part. There are two types of uncertainty associated with environmental impact assessments: that associated with the process and, that associated with predictions. With the former the uncertainty is whether the most important impacts have been identified or whether recommendations will be acted upon or ignored. For the latter, the uncertainty is in the accuracy of the findings. The main types of uncertainty and the ways in which they can be minimized are summarized as follows:

- **Uncertainty of prediction:** this is important at the data collection stage and the final certainty will only be resolved once implementation commences. Research can reduce the uncertainty;
- **Uncertainty of values:** this reflects the approach taken in the EIA process. Final certainty will be determined at the time decisions are made. Improved communications and extensive negotiations should reduce this uncertainty;



- **Uncertainty of related decision:** this affects the decision making element of the EIA process and final certainty will be determined by post evaluation. Improved coordination will reduce uncertainty.

The importance of *wide consultation* cannot be overemphasized in minimizing the risk of missing important impacts. The significance of impacts is subjective, but the value judgments required are best arrived at by consensus: public participation and consultation with a wide sector of the community will reduce uncertainty.

The accuracy of predictions is dependent on a variety of factors such as lack of data or lack of knowledge. Prediction capabilities are generally good in the physical and chemical sciences, moderate in ecological sciences and poor in social sciences.

The results of the EIA should indicate the level of uncertainty with the use of confidence limits and probability analyses wherever possible. Sensitivity analysis similar to that used in economic evaluation, could be used if adequate quantifiable data are available. A range of outcomes can be found by repeating predictions and adjusting key variables.

An EIA cannot give a precise picture of the future. The EIA enables uncertainty to be managed and, as such, is an aid to better decision making.



J DECLARATION

I, Stephanie Cliff, declare that I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public, and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;

I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application,

I will ensure that the plan of study for undertaking the environmental impact assessment will be clearly communicated with the interested and affected parties to ensure that everyone involved is aware and in agreement in terms of the plan of study,

I will ensure that all specific information required by the competent authority is included and addressed in the reports, and

I will ensure that any other matter required in terms of section 24(4)(a) and (b) of the Act is complied with.



K CONCLUSION

This purpose of this Scoping Report is to present:

- A brief description of the proposed project;
- The environmental authorisation process that will be required in terms of the proposed project;
- Alternatives that have been considered during the planning phase of the proposed project;
- Details of the public participation process during the project announcement, scoping and EIA phases of the project;
- A brief description of the environment in relation to the project area as well as the aspects that will require additional investigation in terms of the potential impacts that may be associated with the proposed project; and
- The methodology that will be used during the EIA Phase to assess the potential impacts that may be associated with the proposed project.

A comprehensive public involvement process will be implemented during Scoping Phase and maintained during the EIA Phase in order to ensure that all critical issues are identified through this environmental authorisation process in terms of the proposed project. In terms of the Scoping Phase, anticipated impacts have been identified through detailed specialist investigations and previous EIA's conducted for the township. Specialist investigations previously conducted will be updated and amended to be in line with the new development proposal and layout. These investigations and reporting of the findings will be undertaken during the EIA Phase and incorporated into the EIA/EMPr Report.

It is anticipated that the process followed during the detailed EIA phase will meet the requirements of the legislation to ensure that the regulatory authorities receive sufficient information to enable informed decision-making.





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SECTION M APPENDICES

Appendix A: Correspondence with Approving Authorities

Appendix B: Public Participation Process, including the Comments and Response Report

Appendix C: Specialist Reports

Copies of the specialist reports undertaken as part of the project design and development process, are included in Appendix C. This Appendix has been further subdivided according to the specific reports as follows:

Appendix C1: Heritage Impact Assessment

Appendix C2: Ecological Assessment

Appendix C3: Engineering Scheme Reports

Appendix C4: Traffic Impact Assessment

Appendix D: EAP CV



APPENDIX A: CORRESPONDENCE WITH AUTHORITIES



APPENDIX B: PUBLIC PARTICIPATION

PUBLIC PARTICIPATION APPENDICES:

IAP DATABASE



NEWSPAPER ADVERTISEMENT



BACKGROUND INFORMATION DOCUMENT



APPENDIX C: SPECIALIST STUDIES



C1: HERITAGE IMPACT ASSESSMENT



C2: ECOLOGICAL ASSESSMENT



C3: ENGINEERING SCHEME REPORTS



C4: TRAFFIC IMPACT ASSESSMENT



APPENDIX D: EAP CV

