Project Ref: 2012/Phase 2/BAR-MP Draft

PHASE 2 - PLANNING REPORT
DRAFT BASIC ASSESSMENT REPORT
MPUMALANGA

November 2012

Environmental Affairs
Water Affairs
Agriculture, Forestry and Fisheries

SANBI
Biodiversity for Life

EXPANDED PUBLIC WORKS PROGRAMME
CONTRIBUTING TO A NATION AT WORK

Aurecon Ref: 6535/107406

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CONTEXT OF THIS BASIC ASSESSMENT REPORT

The environmental assessment process undertaken to date has culminated in the production of a Draft Basic Assessment Report (BAR) and associated Draft Rehabilitation Plan, which provide detailed information relevant to the project in the Mpumalanga Province.

In order to guide and focus the reader, the Table below indicates where in the Draft Phase 2 reports (the BAR and/ or the Rehabilitation Plan) the requisite information as outlined in the National Environmental Management Act (No. 107 of 1998) (NEMA), as amended, can be found. General information detail is provided in the provincial BAR and indicated below, while project specific information required in terms of NEMA is provided in the relevant project specific Draft Rehabilitation Plan. As a result, the Table below has been included at the front of each Rehabilitation Plan to guide the reader as to where project specific information can be found as required by NEMA.

Table 1: Information requirements of the BAR as outlined in NEMA

REGULATION	CONTENT AS REQUIRED BY NEMA	SECTION / ANNEXURE[1]
23 (2) (a)	(i) Details of the EAP who prepared the report; and	***Introduction - BAR***
	(ii) Details of the expertise of the EAP to carry out basic assessment procedures;	***Introduction - BAR***
23 (2) (b)	A description of the proposed activity;	***Section B - BAR*** ***Rehab Plan***
23 (2) (c)	A description of the property on which the activity is to be undertaken and the location of the activity on the property,	***Rehab Plan***
23 (2) (d)	A description of the environment that may be affected by the proposed activity and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity;	***Rehab Plan***
23 (2) (e)	An identification of all legislation and guidelines that have been considered in the preparation of the basic assessment report;	***Section B – BAR*** ***Rehab Plan***
23 (2) (f)	Details of the public participation process conducted in terms of regulation 22(a) in connection with the application, including –	***Section D - BAR***
	(i) The steps that were taken to notify potentially interested and affected parties of the proposed application;	***Section D - BAR***
	(ii) Proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the proposed application have been displayed, placed or given;	***Appendix E - BAR***
	(iii) A list of all persons, organisations and organs of state that were registered in terms of Regulation 57 as interested and affected parties in relation to the application;	***Appendix E - BAR***

[1] Note: BAR refers to the 2012 Mpumalanga BAR; Rehab plan refers to the 2012 Wakkerstroom Rehabilitation Plan

REGULATION	CONTENT AS REQUIRED BY NEMA	SECTION / ANNEXURE[1]
	(iv) A summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues;	***Appendix E - BAR***
23 (2) (g)	A description of the need and desirability of the proposed activity and any identified alternatives to the proposed activity that are feasible and reasonable, including advantages and disadvantages that the proposed activity or alternatives will have on the environment and on the community that may be affected by the activity;	***Executive summary Section B - BAR***
23 (2) (h)	A description and assessment of the significance of any environmental impacts, including cumulative impacts, that may occur as a result of the undertaking of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the undertaking of the activity;	***Section E - BAR***
23 (2) (i)	Any environmental management and mitigation measures proposed by the EAP;	***Section E - BAR***
23 (2) (j)	Any inputs made by specialists to the extent that may be necessary; and	***Wetland assessment attached to Rehab Plan***
23 (2) (k)	Any specific information required by the competent authority.	**-**
23 (3) (a)	A BAR must take into account any relevant guidelines; and;	***Section B - BAR***
23 (3) (b)	A BAR must take into account any practices that have been developed by the competent authority in respect of the kind of activity which is the subject of the application.	**-**

Please note: This Basic Assessment Report must be read in conjunction with the Draft Wakkerstroom Rehabilitation Plans.

EAP competency

The basic assessment process has been undertaken by the following Environmental Assessment Practitioners (EAPs):

Ms Claire Blanché

Ms Claire Blanché is an Environmental Scientist with eleven years' experience in the research and consultancy sectors. She has a Master Degree in the field of Environment and Development, with specialisations in Water Resource and Catchment Management.

Dr Jenny Youthed

Jenny holds a PhD in Geography from Unisa, with the focus of her thesis being on assessing and managing compliance with conditions of environmental authorization. She has 14 years' experience in the integrated environmental management field, 10 of which were with the EIA section of the competent environmental authority in the Eastern Cape. She thus has experience in assessing applications for environmental authorisation and setting conditions

for authorisation. She also has experience in conducting basic assessments and EIAs; compiling environmental management plans; undertaking environmental audits and providing input into environmental planning documents.

WORKING FOR WETLANDS REHABILITATION PROJECT IN THE MPUMALANGA PROVINCE: DRAFT BASIC ASSESSMENT REPORT

Summary Document

The South African National Biodiversity Institute (SANBI) appointed Aurecon South Africa (Pty) Ltd to undertake the project activities and associated reporting required for the various phases of the rehabilitation planning cycle. These include Phase 1 Reports, the wetland rehabilitation plans as well as the BARs required for each project area within four provinces. Refer to Figure 1 below that graphically depicts the entire 24 month planning and implementation process which begins in Phase 1 and ends in Phase 3. Phase 1 and 2 are undertaken in the first twelve months and Phase 3 in the second twelve months.

Objectives of the Working for Wetlands Programme

Working for Wetlands (WfWetlands) is a government funded programme that started in 2001 with a R20 million budget that was implemented across 14 projects. The programme is managed by SANBI and is currently implemented across 35 projects countrywide with a budget of R83 million. Being part of the Expanded Public Works Programme (EPWP), more than 1 500 local people are recruited to work in projects on limited term contracts. Typical activities undertaken within the projects include:

- constructing structures (gabions, berms, weirs) in wetlands;
- removing invasive alien plants from the wetland and immediate catchment;
- plugging artificial drainage channels in the wetland;
- raising awareness of wetlands among workers, landowners and the general public;
- providing adult basic education and training, and technical skills; and
- developing management plans for the rehabilitated wetlands.

The two main objectives of the programme are **wetland conservation** in South Africa and **poverty reduction** through **job creation** and **skills development** amongst **vulnerable** and **marginalised** groups.

Environmental legislation

EIA listed activities

The proposed project(s) triggers listed activities 11 and 18 of Regulation 544 and activities 13 and 16 or Regulation 546 of 18 June 2010of the National Environmental Management Act (No. 107 of 1998) (NEMA), as amended.

A Basic Assessment (BA) process must therefore be undertaken before the authorities, in this instance the national Department of Environmental Affairs (DEA), can make a decision

on whether the proposed activities and ultimately the proposed projects should be authorised.

Exemption from independence

The Public Participation process (PPP) was formally initiated with notifications to Interested and Affected Parties (I&APs) of the availability of this Draft BAR for comment on 5 December 2012. Adverts were also placed in *Die Burger* and *Sunday Times* on 1 and 2 December 2012, respectively. Aurecon applied for exemption from independence as its engineers are undertaking the design work for the interventions.

As part of the BA process, environmental (biophysical and socio-economic) impacts are identified and assessed to ascertain the consequences of the project on the environment and the people that live in it. Based on the findings from the impact assessment, specific mitigation measures are recommended to reduce the significance of negative impacts and enhance positive impacts (those that improve the integrity and health of an ecosystem or human health and well-being). The process also gives I&APs an opportunity to comment and to be kept informed about decisions that may impact them or the environment.

As planning continues over a 24 month period, prioritisation and planning (in terms of identifying which wetlands will be rehabilitated and how) is undertaken within the first 12 months, while the actual implementation (via the construction of the interventions) is undertaken within the second 12 months. Interventions may be postponed even if they have received environmental authorisation due to issues such as lack of budget, logistical problems in the area, and / or dramatic changes to the receiving environment (flooding etc.). In other words these structures would be 'banked' for implementation as/ when suitable or appropriate.

In terms of Section 39 of the National Water Act (No. 36 of 1998), a General Authorisation (GA) has been granted for certain activities that are listed under the NWA that usually require a Water Use Licence. Such a GA exists for wetland rehabilitation as long as the activities are for **conservation purposes**. As some of the rehabilitation activities entail '*impeding or diverting the flow of water in a watercourse*' and / or '*altering the bed, banks, course or characteristics of a watercourse,* a number of GAs have been registered with the Department of Water Affairs (DWA) for structures that would ordinarily require a Water Use Licence. For each planning cycle the proposed rehabilitation work will be submitted to DWA, the requisite approval sought and project monitoring reported as required.

Phase 1, 2, and 3 explained

The purpose of **Phase 1** and the associated reporting is to identify within a province:

1. which are the priority catchments and associated wetlands / sites within which rehabilitation work needs to be undertaken; and to
2. identify key stakeholders who would review and comment on the detailed planning (Phase 2) reports.

As part of Phase 1, the Engineers peg / set-out the previous year's interventions that had been authorised by DEA. Refer to Figure 1 below that graphically depicts the entire 24 month planning process which begins in Phase 1 and ends in Phase 3.

Wetland ecologist working in the Mpumalanga wetlands.

Regular monitoring and evaluation (M&E) of the interventions is undertaken to establish the effectiveness of the structure in rehabilitating the identified wetland. This baseline data is also included in the Phase 2 reporting. BARs are compiled as separate documents (one for each province), while the Rehabilitation Plans are compiled for each project and are attached as an Appendix to the provincial BAR and submitted to DEA for their environmental authorisation decision. Summaries of the wetland prioritisation, problems and rehabilitation objectives are included in the rehabilitation plans.

As part of Phase 2, a maintenance inventory is undertaken by the PC, in consultation with the Engineer of any existing interventions that are damaged and/ or failing and thus requires maintenance.

Upon approval of the wetland rehabilitation plan by DEA, DWA, and the directly affected landowners, the work detailed for the project will be implemented within a year with on-going monitoring being undertaken thereafter. This occurs within **Phase 3** of the project cycle. The Rehabilitation Plans are considered to be the primary working document for the implementation of the project via the construction / undertaking of interventions[2] listed in the Plan. Seventeen implementing agents (IAs) are currently employed and are responsible for employing contractors and their teams (workers) to construct the interventions detailed in each of the Rehabilitation plans.

[2] This could include soft options such as alien clearing, eco-logs, gabion structures as well as hard structures for example weirs

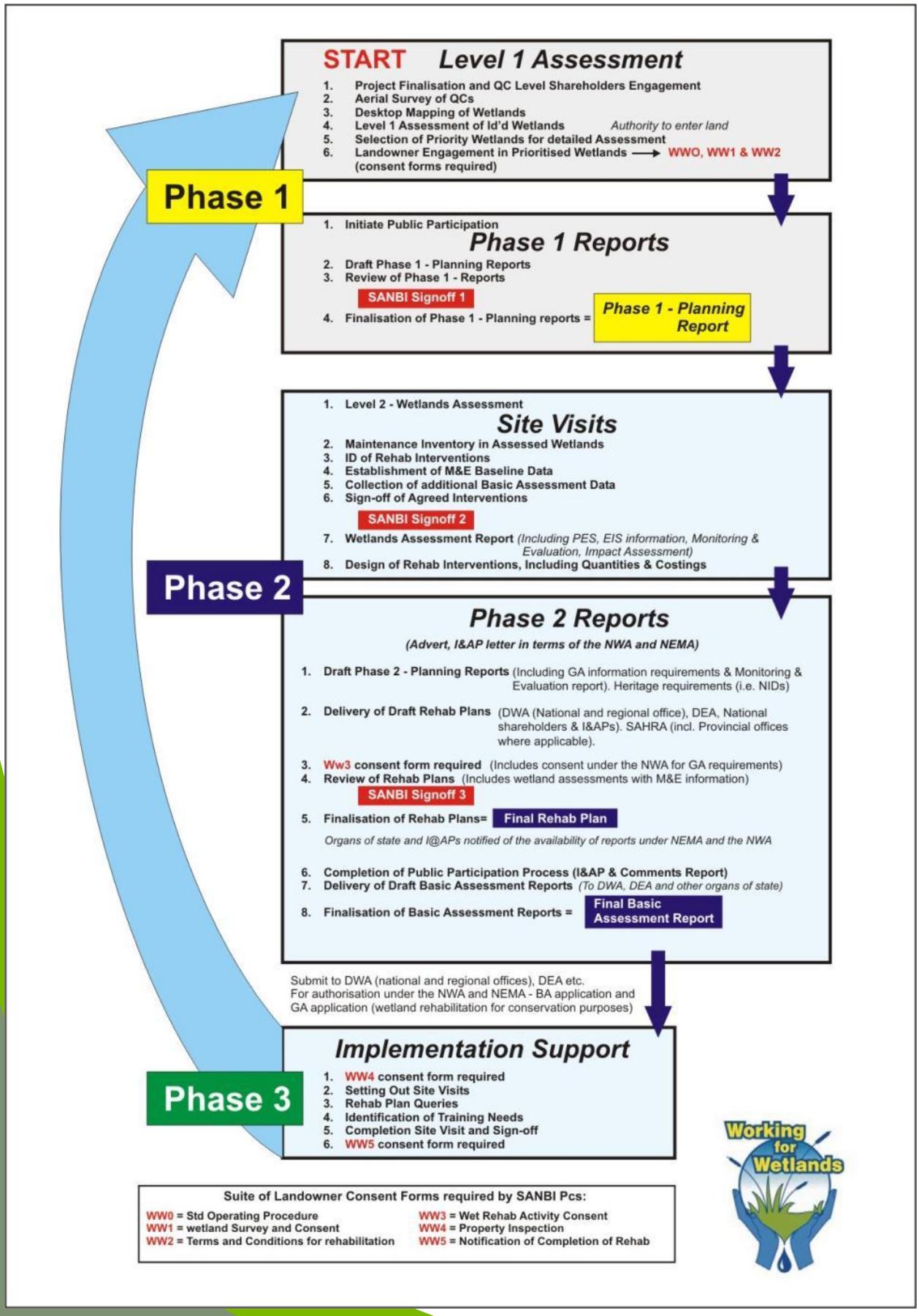

Figure 1: The Working for Wetlands planning process (Phase 1 to Phase 3)


A buttress weir being built and a site being prepared by the Implementing agents

Wetland Assessments

Time and resources required for detailed assessments of the wetlands is limited, and thus using the WET-Tools methodology, a rapid procedure was adopted to assist the project team in systematically carrying out the assessments under constraints. The assessments entailed the following steps:

1. Assessment of the impacts and threats within each wetland system via establishing the current 'health' of the wetland;
2. Establishment of rehabilitation objectives and the selection of appropriate interventions to achieve the identified rehabilitation objectives; and finally; and
3. Assessment of the likely contribution of rehabilitation interventions to the wetland health and ecosystem delivery via determining the spatial area likely to be affected by the proposed intervention(s) and assessing the benefits to the health and / or eco-system services of the specific wetland i.e. the difference between the current health and the projected health of the wetland with and without the intervention(s).

Screening process – Alternative

While on-site during Phase 2, the project team identify and locate the interventions that would meet the rehabilitation objectives as well as the programme's overall objectives (wetland conservation in South Africa and poverty reduction through job creation). The project team discuss and evaluate the potential intervention options; and factoring in environmental, social, and economic considerations into their discussions, they agree on the most appropriate intervention that would meet the rehabilitation objectives for the wetland.

Increased labour requirement for the Working for Wetlands Programme

As a result of changes to the donor fund requirements, an increase in the labour percentage requirement for the WfWetlands programme has been experienced since 2010. The project team were thus required to investigate more labour intensive intervention options for wetland rehabilitation. These included soft engineering options such as berms, eco-logs, as well as alien clearing.

This resulted in the project team having to investigate other wetland areas in order to meet the requirements. Consequently, some of the wetlands prioritised during 2012 in the Phase 1 reporting would not be rehabilitated during this planning cycle (due to the large amount of hard engineering required which was less labour intensive), while new additional wetlands were identified during the Phase 2 site visits as their rehabilitation requirements contributed towards meeting the increased labour component for the programme.

Rehabilitation work within floodplain systems

Based on lessons learnt and project team discussions had during the National Prioritisation workshop in November 2010 SANBI took an in-principle decision regarding work within floodplain systems.

Recognising the ecosystem services provided by floodplain wetlands and the extent to which they have been transformed, SANBI do not intend to stop undertaking rehabilitation work in floodplains entirely. Instead, SANBI propose to adopt an approach to the rehabilitation of floodplain areas that takes into account the following guiding principles:

1. As a general rule, avoid constructing hard interventions within an active floodplain channel; and rather
2. explore rehabilitation opportunities on the floodplain surface using smaller (possibly more) softer engineering options outside of the main channel.

When rehabilitation within a floodplain setting is being contemplated, it will be necessary to allocate additional planning resources, including the necessary specialist expertise towards ensuring an adequate understanding of the system and appropriate design of interventions.

Intervention design

After appropriate interventions have been decided upon by the project team, GPS coordinates and digital photographs are taken for record purposes. Appropriate dimensions of the locations are recorded in order to design and calculate quantities for the interventions. At the end of the site visit a location layout of the agreed interventions and rehabilitation objectives is agreed upon by the project team. Based on certain criteria and data measurements (water volumes, flow rates, and soil types); the availability of materials such as rock; labour intensive targets; maintenance requirements etc., the interventions are then

designed. Bills of quantity are calculated for the designs and cost estimates made. Maintenance requirements for existing interventions in the assessed wetlands are similarly detailed and costs calculated. The engineer also reviews and, if necessary, adjusts any previously planned interventions that are included into the historical rehabilitation plans.

Maintenance and amendments to authorized interventions

Based on discussions with DEA, it was agreed that variations and deviations (in design or location) to the already authorised intervention(s) could be made via written notification to DEA which would include a motivation, supporting information, and the proposed changes clearly detailed. The DEA have formalised this approach by including a condition in the WfWetlands EA whereby any changes to, or deviations from, the project description require written approval from DEA. The proposed changes (type, design, location), motivation, as well as other project-related information (redesigns, site photographs etc.) are provided to DEA. Anticipated reasons for the changes could include modifications to the aquatic system as a result of unforeseen circumstances such as flooding, fires etc., savings to the project budget, improved rehabilitation and/ or enhanced protection from erosion etc.

As per the definition of maintenance[3], modifications would be made to existing (built) interventions as long as the changes occur within the same footprint, location etc. DEA would be informed of the changes in writing.

For a list of interventions requiring redesign, maintenance and or new structures, please refer to the summary in **Table 5** below.

Maintenance The replacement, repair or the reconstruction of an existing structure within the same footprint, in the same location, having the same capacity and performing the same function as the previous structure ('like for like').

Monitoring and Evaluation

During the Phase 2 site visits, baseline monitoring is carried out prior to the rehabilitation of the wetland to provide comparable data for monitoring at a later stage (once the intervention(s) have been constructed). Monitoring and Evaluation (M&E) is thus a vital component of the project as it allows for the evaluation of the performance of the interventions in successfully rehabilitating the affected wetland. Baseline M&E data (fixed point photography, GPS co-ordinates, water quality measurements etc.) as well as information for the BAR is collected during the Phase 2 site visits.

[3] **Maintenance:** The replacement, repair or the reconstruction of an existing structure within the same footprint, in the same location, having the same capacity and performing the same function as the previous structure ('like for like').

Based on WET-Rehab Evaluate tool, protocols for data collection for monitoring purposes have been developed, which includes compulsory collection of certain data[4], while other data collection for monitoring would be considered to be optional[5] depending on the importance of the wetland, costs of rehabilitation undertaken etc.

Upon completion of the interventions within a wetland, the Engineer would revisit the site to sign-off on the interventions based on what was detailed in the rehabilitation plan; while the Wetland ecologist would assess the effectiveness of the intervention(s) in achieving the specified objectives and contributing towards the rehabilitation strategy. Appropriate corrective action would be specified if either of the project team members were unsatisfied with the intervention's effectiveness in terms of achieving the objectives and long-term stability. Ideally an annual M&E report would be compiled by the project team; however, this process is still being established and would require additional funding.

Future planning for the project areas

Table 2: Summary of possible budget allocations per project for the next 5 years in Mpumalanga

	2009-10	New project name	2010-11	2011-12	2012-13	2013-14	Tot for 5 years per Province
Draaikraal	R 920 000	Steelpoort project	R 1 674 540	R 1 758 267	R 1 846 180	R 1 938 490	R 8 709 877
Verloren Valei	R 572 400						-
Steenkampsberg	R 1 080 000	Inkomati Project	R 1 674 540	R 1 758 267	R 1 846 180	R 1 938 490	R 8 297 477
Save the Sand	R 1 132 000	Lowveld Project	R 1 674 540	R 1 758 267	R 1 846 180	R 1 938 490	R 9 429 477
Sterkspruit	R 1 080 000						-
Upper Usutu	R 682 014	Highveld Project	R 1 432 500	R 1 504 125	R 1 579 331	R 1 658 300	R 7 538 284
Nooitgedacht	R 682 014						-
Wakkerstroom	R 1 364 029	Wakkerstroom Project	R 1 432 500	R 1 504 125	R1 633 725	R 1 658 300	R 7 538 285
Total for year	**R 7 512 458**		**R 7 888 620**	**R 8 283 051**	**R 8 697 202**	**R 9 132 070**	**R 41 513 400**

Key project objectives include:

- Deactivation of head-cuts,
- restoration of hydrological integrity; e.g. rising the general water table or redistribution of water across wetland area;
- Recreation of wetland habitat;
- Biodiversity enhancement; and
- Job creation and social upliftment.

[4] Maintenance inventory, rehabilitation effectiveness, fixed point photography/ site photographs, and wetland assessments.
[5] Sediment and erosion control, hydrology, vegetation and water quality

Summary of the Final BAR findings

Wetlands that were prioritised during Phase 1 and visited during Phase 2 are located within the following quaternary catchments- refer to **Figure 2** below.

Phase 2 site visits were undertaken for the following projects:

- Goedgevonden (Wakkerstroom): 14 August 2012
- Paardeplaats (Wakkerstroom): 15 August 2012

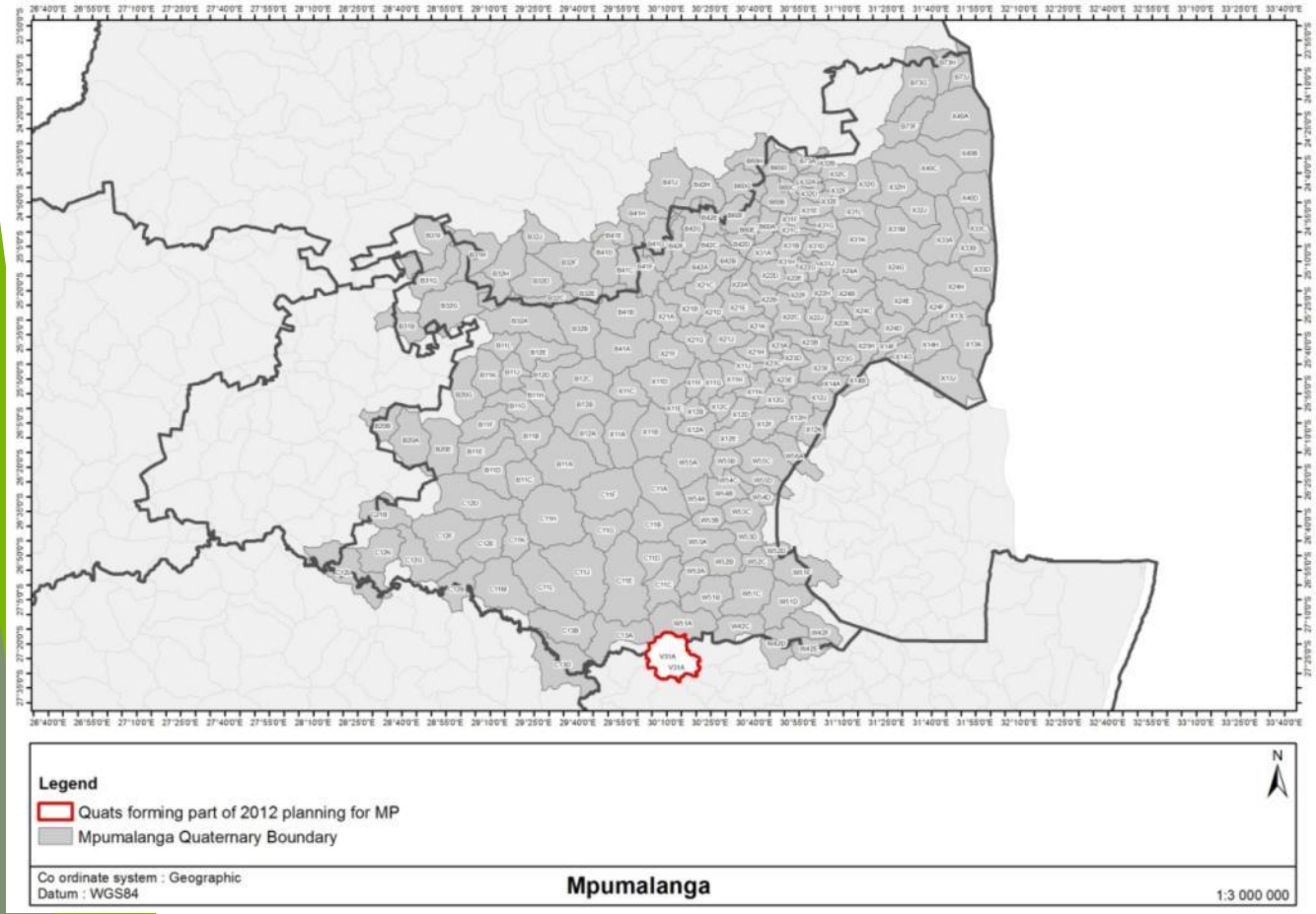

Figure 2: Quaternary catchments that were visited during the Phase 2 site visits for the Mpumalanga Province

Within the Mpumalanga Province, work for the 2012/2013 planning cycle will include the following:

WAKKERSTROOM – W42C

Goedgevonden:
The Wakkerstroom wetland rehabilitation project was historically located in the V31A and W42C quaternary catchments near the town of Wakkerstroom and Luneburg in the Mpumalanga province. After work in the Wakkerstroom wetlands was completed, the focus shifted to the Goedgevonden wetland (W42C) near Luneburg. The aim of the wetland

rehabilitation has been the stabilisation of active erosion and the deactivation of drainage canals and furrows resulting in the desiccation of the identified wetland systems. In 2011 work was also extended on the farm Goedgevonden to include alien clearing, follow up spraying of alien vegetation and the re-seeding of areas previously cleared by the landowner

The 2012/2013 planning cycle addresses the last interventions needed in the Goedgevonden wetland and future planning cycles will identify new wetlands and properties in the catchment area.

Paardeplaats:
Work on the farm Paardeplaats commenced in 2011 and included alien clearing, follow up spraying of alien vegetation and the re-seeding of areas previously cleared by the landowner.

The 2012/2013 planning cycle extended work on the farm to include the rehabilitation and stabilisation of an eroded dirt road, the decommissioning of a highly degraded dirt road, stabilisation of headcut erosion, rehabilitation of gullies and rehabilitation of a hillside seep area.

The project as a whole has further been aligned with the extent of the National Grasslands Biodiversity Programme's (NGBP) demonstration area in the Wakkerstroom/Luneburg area. Both Goedgevonden and Paardeplaats fall within the newly proclaimed Kwa Mandlangampisi Protected Environment. The project area does extend into KwaZulu-Natal, but the focus of the wetland rehabilitation is the wetlands and tributaries within the Mpumalanga province.

The Wakkerstroom project area in the W42C catchment occurs within the upper reaches of the KwaNtombe River, which is considered to be an important water resource within the region. A range of wetland types, characteristic of the region, are represented in the area, including permanent and seasonal marshes, peatlands and seepage areas. The wetlands within the area are considered to be important from a water quantity and quality perspective, especially due to their position in the upper reaches of the river.

A review of the Mpumalanga Biodiversity Conservation Plan (MBCP) highlights that the majority of the Wakkerstroom project area is considered as 'Irreplaceable' in terms of its contribution towards aquatic biodiversity and terrestrial biodiversity. The rehabilitation of the wetlands within the catchment is likely to contribute towards the maintenance of the aquatic and terrestrial biodiversity of the region. The Wakkerstroom wetland is also considered to be regionally important in terms of the maintenance of biological diversity, with the reserve supporting a number of Red Data species, mostly bird species**.**

Figure 3: Goedgevonden wetland (left-hand image) and Paardeplaats seep area (right-hand image)

The rehabilitation of the Goedgevonden wetland would involve the following interventions *inter alia*:

- Gabion and concrete weir
- Gabion diversion walls
- Earthen diversion berms
- Concrete diversion berm
- Reno Matrass
- Earthworks

Rehabilitation activities on the farm Paardeplaats would involve the following interventions *inter alia*:

- Concrete road strips
- Gabion diversion wall
- Earthen diversion berms
- Rock packs
- Surface cross drains

The number, type, scale and location of each of these interventions would vary according to the nature and magnitude of the problem and the state of the receiving environment.

The list of interventions which form part of this Basic Assessment process is summarised in **Table 3** below. The engineering designs for each of these interventions are included in the Final Wakkerstroom Rehabilitation Plan which forms part of the BAR.

Summary of the potential impacts identified

Table 3:Summary of impacts

***Construction Phase*: Description of Impact**	***Significance of Impact***		
	Preferred Alternative		
	No Mitigation	***With mitigation***	***No Go***
Job creation	Medium (+)	High (+)	Medium (-)
Increased awareness of wetland importance	Medium (+)	High (+)	Medium (-)
Fire risk	High (-)	Low (-)	Neutral
Nuisance impacts	Low (-)	Very Low (-)	Neutral
Heritage impacts	Very Low (-)	Neutral	Neutral
Worker safety	Medium (-)	Low (-)	Neutral
Flora & Fauna	Medium (-)	Low (-)	Medium (-)
Aquatic eco-system impacts	Medium (-)	Low (-)	Medium (-)
Sourcing borrow material	Medium (-)	Low (-)	Neutral
Work within conservation areas	Medium (-)	Low (-)	Neutral
Disturbance of wetland soil profile	Medium (-)	Low (-)	Neutral
***Operational Phase*: Description of Impact**			
Changes in land use	Low (+)	Medium (+)	
	Medium (-)	Low (-)	Low (-)
Reduced water storage and treatment costs	Medium (+)	Medium (+)	Low (-)
Employment	Medium (+)	Medium (+)	Medium (-)
Ecosystem functioning	Medium (+)	Medium (+)	High (-)
Flora and Fauna	Medium (+)	Medium (+)	Medium (-)
Reduced soil erosion	Medium (+)	Medium (+)	Medium (-)
Public safety	Medium (-)	Low (-)	Neutral

Key mitigation measures recommended

A summary of the key mitigation measures recommended to reduce the significance of the potential negative impacts and enhance potential positive impacts is provided in Table 3 below.

Table 4: Key mitigation measures recommended for potential operational phase impacts

Construction phase impacts
Impacts on aquatic ecosystems
Implement and enforce the CEMP
Impacts on flora & fauna
Consult the Crane Working Group with regards to identified wattled crane breeding sites and crowned crane foraging areas.
Implement and enforce the CEMP
Impacts on heritage resources
Contact the provincial heritage resource agency should any artefact be found or cultural use of a wetland be noted
Nuisance impacts
Workers to be given environmental awareness "toolbox talks"
Implement and enforce the CEMP
Liaise with landowner
Socio-economic impacts
Draw labour from the local community
Workers to be aware of fire risks and contingency plans
Operational phase impacts
Impact on flora and fauna
Consult with the Crane Working Group with respect to power line electrocutions
Consult Crane Working Group with respect to best practice relating to periodic burning of wetland.

Regarding the construction phase impacts, the standard Construction Phase Environmental Management Programme (CEMP) (included as **Appendix G** of the BAR) and must be on site and complied with during the construction phase.

Need and desirability

Wetlands play a critical role in improving the ecological health of an ecosystem by performing many functions that include flood control, water purification, sediment and nutrient retention and export, recharge of groundwater, as well as acting as vital habitats for diverse plant and animal species. Wetlands are thus considered to be extremely important in preserving biodiversity and are regarded as fundamental to the sustainable management of South Africa's water resources.

Wetlands also function as valuable open spaces and create recreational opportunities for people that include hiking, fishing, boating, and bird-watching. Many wetlands also have cultural and spiritual significance for the communities living nearby. Commercially, products such as reeds and peat, are also harvested from wetlands. Wetlands are thus considered to be critically important ecosystems as they provide both direct and indirect benefits to the environment and society.

Extensive damage to wetlands has occurred as a result of poor land use practices which has resulted in erosion and further degradation to aquatic ecosystems. Without the implementation of the planned rehabilitation activities (the **'no-go'** option or retaining the status quo), the programme's objectives would not be realized; and the loss of wetland habitat and its associated eco-system services would be significantly greater. The strategic importance of the WfWetlands programme is clear as evidenced by the distinct positive impacts associated with the programme which has resulted in a ***net benefit / gain*** as wetland health and integrity is improved and the associated eco-services enhanced. Overall the cumulative impact of wetland rehabilitation would thus be positive (refer to the summary of potential impacts identified above) to both human beings and the environment, now and in the future. Based on the above information, it is clear that rehabilitating wetlands is considered to be the '***best practicable environmental option***' as a result of the positive impact that the programme has on both the natural and socio-economic environment.

Figure 4: Commercial products made by locals from reeds harvested from wetlands

Conclusions and recommendations

The potential impacts associated with the rehabilitation of various wetlands within the Mpumalanga Province would result in impacts (both biophysical and social) that would positively affect the area and result in a net environmental gain for the project. These include:

- Job creation and skills transfer for local communities;
- Increased habitat for conservation worthy species (Oribi, Wattled, Grey Crowned and Blue Cranes);
- Improvements in wetland functioning and area; and
- Improved water quality and quantity downstream.

Based on the above, the EAP (Aurecon) is of the opinion that the proposed wetland rehabilitation activities being applied for should be authorised, as the substantial benefits (both biophysical and socio-economic) substantially outweigh the minimal localised negative impacts that have been identified. Furthermore, the proposed activities undoubtedly meet the principles prescribed in NEMA.

Public Participation Process and Way Forward

Public participation is an important part of the BA process, as it allows I&APs opportunity to obtain information about the proposed project and to provide input and raise any concerns at defined stages throughout the project.

The Public Participation process (PPP) was formally initiated with notifications to I&APs of the availability of this Draft BAR for comment on 5 December 2012. Adverts were also placed in *Die Burger* and *Sunday Times* on 1 and 2 December 2012, respectively. As part of the PPP, SANBI's Provincial Coordinators have been engaging with the directly affected landowners, while posters (in the key languages spoken in the Province) were erected at strategic locations in/ near the prioritised wetland(s).

As part of the 40 day public comment period on the draft Phase 2 reports, registered I&APs were sent copies of this Summary document, a letter notifying them of the public comment period as well as a response form. Based on the comments received, the draft reports will be updated. The final reports will then be made available for a 21 day comment period.

The Draft BAR for the proposed wetland rehabilitation activities for the Mpumalanga Province has been made available for review from Monday, 5 December 2012 for a 40 day comment period. SANBI's PC's and implementers have hard copies of the Phase 2 Reporting for their Province. Should you wish to review the report, please contact Franci Gresse to have this arranged. The Reports are also available for download from the Aurecon website (**http://www.aurecongroup.com** - follow the public participation links). I&APs have until **Monday, 4 February 2013** to submit comment on the Draft BAR.

After the 40 day public comment period, any I&AP comments received on the final BAR will be submitted directly to DEA for their consideration during the decision making phase. Once DEA have made their decision on the proposed project, all registered I&APs on the project database will be notified of the outcome of the decision within twelve (12) calendar days of the date of the decision. If no appeals are received and the landowner(s) have signed (i.e. approved) the proposed rehabilitation work detailed in the Final Rehabilitation Plans, the interventions will be constructed from April 2013 until March 2014.

Should you wish to raise any issues, concerns and/or suggestions, and/ or register as an I&AP, please contact Franci Gresse at Tel: 021 526 6022, Fax: 021 526 9500, Mail: PO Box 494, Cape Town, 8000 or Email: franci.gresse@aurecongroup.com on/before **Monday, 4 February 2013.**

List of Acronyms

BAR	Basic Assessment Report
CEMP	Construction phase Environmental Management Programme
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DWA	Department of Water Affairs
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EPWP	Expanded Public Works Programme
GA	General authorisation in terms of the NWA
IA	Implementing Agent
I&APs	Interested and Affected Parties
M&E	Monitoring and evaluation
NEMA	National Environmental Management Act (Act 107 of 1998)
NWA	National Water Act (Act 36 of 1998)
PC	Provincial Coordinator
SANBI	South African National Biodiversity Institute

Table 5: Summary of the interventions included as part of this Basic Assessment process

Descriptive name	Old intervention number (if applicable)	New Intervention number	Proposed action	Reference document
NEW				
Goedgevonden				
Earthen Diversion Berm	W42C-01-027	W42C-01-203-00	Construct an earthen diversion berm to divert all flows out of the eastern channel.	Wakkerstroom Final Rehab Plan
Earthen Diversion Berm	W42C-01-028	W42C-01-204-00	Construct an earthen diversion berm to divert all flows out of the eastern channel	Wakkerstroom Final Rehab Plan
Reno Matrass	N/A	W42C-01-205-00	Construct a reno mattress in-channel protection structure to set the base level of the eastern channel.	Wakkerstroom Final Rehab Plan
Gabion Weir	N/A	W42C-01-206-00	Construct a gabion weir to divert flow out of the western channel onto the western parts of the wetland.	Wakkerstroom Final Rehab Plan
Gabion Diversion Wall	N/A	W42C-01-207-00	Construct a gabion diversion berm to divert flow out of the eastern channel	Wakkerstroom Final Rehab Plan
Earthen Diversion Berm	N/A	W42C-01-208-00	Construct an earthen diversion berm to divert all flows out of the eastern channel onto the eastern parts of the wetland.	Wakkerstroom Final Rehab Plan
Concrete Diversion Berm	N/A	W42C-01-209-00	Construct a concrete diversion berm to divert flow out of the eastern channel onto the eastern parts of the wetland.	Wakkerstroom Final Rehab Plan

Descriptive name	Old intervention number (if applicable)	New Intervention number	Proposed action	Reference document
Paardeplaats				
Gabions Diversion Wall and Earthen Berms with seeding and biojute	N/A	W42C-02-208-00	Decommission and rehabilitate old road	Wakkerstroom Final Rehab Plan
Concrete strips and gabion protection	N/A	W42C-02-209-00	Protection of road through construction of concrete strips and gabion cut off wall	Wakkerstroom Final Rehab Plan
Revegetation of hillslope	N/A	W42C-02-210-00	Contouring, reseeding	Wakkerstroom Final Rehab Plan
Rockpacks	N/A	W42C-02-211-00	Rock packs to control erosion next to road	Wakkerstroom Final Rehab Plan
Rockpacks	N/A	W42C-02-212-00	Rock packs to control erosion next to road	Wakkerstroom Final Rehab Plan
Surface cross drain	N/A	W42C-02-213-00	Construction of surface cross-drains	Wakkerstroom Final Rehab Plan
Revegetation	N/A	W42C-02-214-00	Contouring, reseeding	Wakkerstroom Final Rehab Plan
Rockpacks	N/A	W42C-02-215-00	Rock packs	Wakkerstroom Final Rehab Plan
Gully stabilisation	N/A	W42C-02-216-00	Rock packs and gabion diversion walls	Wakkerstroom Final Rehab Plan
Surface cross drains, gabion diversion walls and earthen berms	N/A	W42C-02-217-00	Deactivate old road and protect new road	Wakkerstroom Final Rehab Plan

Descriptive name	Old intervention number (if applicable)	New Intervention number	Proposed action	Reference document
Concrete strips and backfill trench	N/A	W42C-02-218-00	Protect sensitive area	Wakkerstroom Final Rehab Plan
Concrete weir	N/A	W42C-02-219-00		Wakkerstroom Final Rehab Plan
Surface Cross Drain	N/A	W42C-02-220-00	Construction of surface cross-drains	Wakkerstroom Final Rehab Plan
Surface Cross Drain	N/A	W42C-02-221-00	Construction of surface cross-drains	Wakkerstroom Final Rehab Plan
Surface Cross Drain	N/A	W42C-02-222-00	Construction of surface cross-drains	Wakkerstroom Final Rehab Plan
Surface Cross Drain	N/A	W42C-02-223-00	Construction of surface cross-drains	Wakkerstroom Final Rehab Plan
Surface Cross Drain	N/A	W42C-02-224-00	Construction of surface cross-drains	Wakkerstroom Final Rehab Plan
Surface Cross Drain	N/A	W42C-02-225-00	Construction of surface cross-drains	Wakkerstroom Final Rehab Plan
Surface Cross Drain	N/A	W42C-02-226-00	Construction of surface cross-drains	Wakkerstroom Final Rehab Plan
Surface Cross Drain	N/A		Construction of surface cross-drains	
MAINTENANCE				
Excavation	V31A-01-014	V31A-01-201-01	Excavate existing channel to spread a portion of the flows into the wetland area southwest of main channel	

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

(For official use only)

File Reference Number:	
Application Number:	
Date Received:	

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **1 September 2012**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	YES	NO

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

Rehabilitation activities will be focussed in this next planning cycle in Wakkerstroom (W42C).

A. Wetland Problems

The **Wakkerstroom** project historically occurred in close proximity to the town, but has, after completion of these earlier interventions, moved to the Luneburg valley. Due to implementation problems experienced in the previous year a number of approved interventions were not implemented and thus there is only one additional intervention (earthen berms) for this year. Alien clearing has also been added since the area falls within the National Grasslands Biodiversity Programme (NGBP) and the newly proclaimed KwaMandlangampisi Protected Environment.

The **Goedgevonden wetland (W42C)** is generally an unchannelled valley-bottom wetland that is characterised by soils with high organic matter content. The Goedgevonden wetland forms part of a large valley-bottom wetland system, with pristine peatlands 700m upstream of the Goedgevonden wetland, The system is considered critical in terms of habitat provision for wetland-dependant species, including Wattled Crane. The Goedgevonden wetland has been subjected to a number of impacts associated with the modification of the system's hydrology, which was likely to have been initiated to allow livestock access for grazing within the valley bottom. The confinement of flow within drainage channels and the straightening of channels in the lower reaches of the wetland system have resulted in the incision of the channels, especially the channel taking flows from the southern tributary. The incision of the channels has resulted in further impact on the system's hydrology, with the desiccation of the adjacent wetland habitat. The alteration of the system's hydrology has resulted in a change in the wetland vegetation, with more terrestrial and ruderal species present within the wetland. The primary objective of the rehabilitation (predominantly concrete weirs and some earthen and gabion structures) is to deactivate the incised drainage canals that were historically excavated throughout the length of the wetland unit. The secondary objective is to stabilise the incision of the channel and deactivate the head-cut erosion identified within the wetland system (by means of a gabion weir.

The **Paardeplaats seep** have been impacted upon by historical activities, including *inter alia*:

- construction of an access road through the wetland;
- the diversion of flow by a trench adjacent to the road; and
- partial flooding or impoundment of flow by the existing road.

The upper portion of the wetland has been subjected to a number of impacts associated with the modification of the system's hydrology, which was likely to have been initiated to allow access across the wetland. The problems identified within the wetland system can be addressed with the implementation of rehabilitation activities, which would include the deactivation of the headcut and trench, and the installation of concrete road strips.

B. Wetland Rehabilitation Objectives

The rehabilitation objectives for the Goedgevonden wetland include:

a) Stabilisation of head-cuts in wetlands - Prevention of further erosion;
b) Securing the integrity of the wetland area;
c) Improving the value of the wetland for biodiversity conservation and the provision of natural resources;
d) Re-instating near natural hydrological conditions wherever possible; and
e) Raising the water table in order to rehydrate drained wetland areas and limit the chance of lateral head-cut formation.
f) Removal of berms and blocking of drains that affect flow patterns within a wetland.
g) Removal of all alien vegetation from a wetland and its immediate catchment.
h) Removal of debris dams on channels in catchments where this large woody debris was formerly scarce or absent.

Furthermore the wetland is likely to be of high importance for the conservation of biodiversity both regionally and nationally. For example, the Vulnerable Grey Crowned Cranes (*Balearica regulorum*) and Critically Endangered Wattled Cranes (*Bugeranus carunculatus*) are known to occur within wetlands in this catchment. Biodiversity conservation and the promotion of wetland habitat would thus also be important rehabilitation objectives.

The rehabilitation objectives for the Paardeplaats seep include:

- reduce the threat to the seep/wetland area by headcut erosion;
- promote diffuse flow;
- reduce further impacts from the road; and
- protect the wetland from cattle using it as a water point.

C. Other rehabilitation objectives:

Other rehabilitation objectives on Paardeplaats include:

- deactivate headcut erosion,
- stabilise hillslope erosion and erosion gullies,
- protect sensitive wet areas from degradation by traffic and livestock;
- close and deactivate old roads and protect the steep sections of the existing roads with surface cross drains.

In order to achieve the above mentioned objectives, a number of interventions are being proposed, including weirs, earthen and concrete diversion berms, gabions and surface cross drains. During the site visits, the project team discussed and evaluated potential intervention options while taking into account environmental, social and economic considerations, as well as the rehabilitation objectives identified for the wetland. This screening process was undertaken to ensure that the most suitable intervention was identified, developed and assessed for each rehabilitation site.

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN R.544, 545 and 546	Description of project activity
GN R.544, Item 11: *The construction of: (i) canals; (ii) channels; (iii) bridges; (iv) dams; (v) weirs; (vi) bulk storm water outlet structures; (vii) marinas; (viii) jetties exceeding 50m^2; (ix) slipways exceeding 50m^2 in size; (x) buildings exceeding 50m^2 in size; or (xi) infrastructure or structures covering 50m^2 or more where such construction occurs within a watercourse or within 32m of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.*	The construction of weirs (concrete or gabions) within a watercourse (wetland).
GN R.544, Item 18: *The infilling or depositing of any material of more than 5m^3 into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5m^3 from: (i) a watercourse; (ii) the sea; (iii) the seashore; (iv) the littoral active zone, an estuary or a distance of 100m inland of the high-water mark of the sea or an estuary, whichever distance is the greater - but excluding where such infilling, depositing, dredging, excavation, removal or moving; (a) is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or (b) occurs behind the development setback line.*	The potential wetland rehabilitation work will involve excavating and / or infilling of material exceeding 5m^3 in stream channel and wetland i.e. watercourse
GN R.546, Item 13: *The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation…* *(a) Critical biodiversity areas and ecological support areas as identified in systematic biodiversity plans adopted by the competent authority.* *(b) National Protected Area Expansion Strategy Focus areas.* *(c) In Eastern Cape, Free State, KwaZulu-Natal, Limpopo,* ***Mpumalanga,*** *Northern Cape and Western Cape: i. In an estuary; ii. Outside urban areas, the following: (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas; (cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (dd) Sites or areas identified in terms of an International Convention; (ee) Core areas in biosphere reserves; (ff) Areas within 10km from national parks or world heritage sites or 5km from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; (gg) Areas seawards of the development setback line or within 1km from the high-water mark of the sea if no such development setback line is determined.*	The proposed rehabilitation work could potentially involve the cumulative clearance of an area of 1 hectare or more of indigenous vegetation within a critical biodiversity area to allow the establishment of gabions and earthen diversion berms.
GN R.546, Item 16: *The construction of: (i) jetties exceeding 10m^2 in size; (ii)*	The construction of a weir (concrete or

slipways exceeding 10 m^2 in size; (iii) buildings with a footprint exceeding 10 m^2 in size; or (iv) infrastructure covering 10 m^2 or more where such construction occurs within a watercourse or within 32m of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line. *(a) In Eastern Cape, Free State, KwaZulu-Natal, Limpopo,* ***Mpumalanga*** *and Northern Cape: i. In an estuary; ii. Outside urban areas, in: (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas; (cc) World Heritage Sites; (dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (ee) Sites or areas identified in terms of an International Convention; (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (gg) Core areas in biosphere reserves; (hh) Areas within 10km from national parks or world heritage sites or 5km from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; (ii) Areas seawards of the development setback line or within 1km from the high-water mark of the sea if no such development setback line is determined.*	gabions) concrete strips and gabion wall within a watercourse/wetland within a critical biodiversity area.

2. FEASIBLE AND REASONABLE ALTERNATIVES

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Regulation 22(2)(h) of GN R.543. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

Alternative 1 (preferred alternative)
As a result of the Phase 1 planning and Phase 2 screening process undertaken on site with the project team (consisting of the wetland ecologist, EAP, engineer and SANBI's Provincial Coordinator), coupled with the requirement of meeting the wetland rehabilitation and the overall the programme's objectives[6], possible site alternatives were considered and screened out during in-field discussions. For a detailed discussion whereby the various alternatives are discussed and screened out, refer to the 2012 Wakkerstroom Rehabilitation Plan. Each of the interventions and their associated location are therefore based on expert opinion from both the wetland specialist and engineer and are thus considered to be the most suitable and effective locations to achieve the rehabilitation objectives for the wetland.

Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

Alternative:	**Latitude (S):**	**Longitude (E):**
Alternative S1 (preferred)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S2 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S3 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A.

[6] Wetland conservation and poverty reduction through job creation and skills development amongst vulnerable and marginalised groups

b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Please refer Section A(2)(a) of this document, as well as the 2012 Draft Wakkerstroom Rehabilitation Plan for more information on alternatives.		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

c) Technology alternatives

Alternative 1 (preferred alternative)
Please refer Section A(2)(a) of this document, as well as the 2012 Draft Wakkerstroom Rehabilitation Plan for more information on alternatives.
Alternative 2
Alternative 3

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternative 1 (preferred alternative)
The consideration of activity alternatives was a rigorous exercise which involved consideration of various factors such as: • **Environmental Criteria** – hydrology, geology and soils, seasonal influences and site-specific constraints; • **Engineering Criteria** – bio-physical aspects, risk and liability, construction material selection; • **Social Criteria** – labour quota requirements, health and safety, availability of materials, skills levels and opportunity for skills development; and • **Wetland Rehabilitation Criteria** – stabilisation of headcuts and erosion gullies, elevation of water table, sediment trapping, eradication of problem species (among others). Interventions and key motivations considered for Mpumalanga projects were as follows: • Concrete weirs – availability of appropriate foundation material, high water flows in catchment, opportunity for skills development, robust structure required, lifting of water table and allowing storm flows to spread across the wetland while maintaining flows within the channel. In case of Wakkerstroom an impermeable structure was needed and a gabion wall was therefore not considered. (See Section 6.4.12 of the 2012 Draft Wakkerstroom Rehab Plan.) • Gabion weirs – stone gabion baskets would perform a similar function to the concrete weirs, in trapping sediment, but will allow for a measure of water to pass through, unlike concrete. Some negative aspects associated with gabions: rock is not always readily available, they are vulnerable to vandalism and corrosive elements in some waters; and trampling by cattle and humans (this can be alleviated by concrete capping the gabions). (See Section 5.9.4 and 6.4.1 of the 2012 Wakkerstroom Rehab Plan.) • Earth Berms – due to the higher labour requirement this has received extensive consideration and is thus used in most project sites to varying degrees. It is usually considered suitable in low flow areas; it can be susceptible to cattle trampling, but if properly vegetated or capped with rocks then it can be more resilient. (See Sections 5.9.1, 5.9.2, 5.9.6, 6.4.1 and 6.4.10 of the 2012 Wakkerstroom Rehab Plan.) • Earthworks – this is usually used in areas which have been impacted by ridge/furrow farming and involves cutting the "ridges" and filling the "furrows" wherever possible. In the case of the Wakkerstroom Rehab Plan, this involves the excavation of a road which was constructed across the eastern channel of the Goedgevonden wetland and the backfilling of a trench which was excavated by the farmer to drain a hillside seep area. (See Section 5.9.3 and 6.4.11 of the 2012 Wakkerstroom Rehab Plan.)

Alternative 2
Alternative 3

e) No-go alternative

If the no-go alternative is pursued, the wetland would continue to deteriorate, resulting in an overall negative impact on the aquatic and terrestrial ecosystems. These impacts will especially be visible in the long-term as rehabilitation activities will not take place and the existing problems (such as erosion) in the wetland will continue. Over time these existing problems are likely to have a greater negative impact than the short-term and fairly minor construction related impacts. Please also refer to Section D for the impact assessment of the no-go alternative.

Paragraphs 3 – 13 below should be completed for each alternative.

3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	**Size of the activity:**
Alternative A1[7] (preferred activity alternative) Alternative A2 (if any) Alternative A3 (if any)	Please refer to the relevant wetland section in the Draft Wakkerstroom Rehabilitation Plan.

or, for linear activities:

Alternative:	**Length of the activity:**
Alternative A1 (preferred activity alternative) Alternative A2 (if any) Alternative A3 (if any)	Please refer to the relevant wetland section in the Draft Wakkerstroom Rehabilitation Plan.

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:	**Size of the site/servitude:**
Alternative A1 (preferred activity alternative) Alternative A2 (if any) Alternative A3 (if any)	Please refer to the relevant wetland section in the Draft Wakkerstroom Rehabilitation Plan.

[7] "Alternative A.." refer to activity, process, technology or other alternatives.

4. SITE ACCESS

Does ready access to the site exist?	**YES**	~~NO~~
If NO, what is the distance over which a new access road will be built		m

Describe the type of access road planned:

Please note that although easy access to a point of all of the wetlands exists, some sections of the various wetlands will require that temporary access routes be created. These routes would be "created" simply by driving a small utility vehicle (i.e. bakkie) over the grass and will not be permanent nor require the removal of any vegetation. The location of these routes will depend on a number of factors including landowner requirements and the time of year and recent weather conditions (i.e. how wet or dry the area is). For this reason it is not possible to specify exactly where routes are needed or where they will be located, however they will be temporary and seldom more than a few hundred metres long. They are noted here for the sake of completeness.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s;)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;

- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report**.** It must be supplemented with additional photographs of relevant features on the site, if applicable.

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?	**YES**	~~NO~~	Please explain
The property is zoned for agricultural purposes and the proposed wetland rehabilitation project will assist with the protection of agricultural and water resources.			

2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	**YES**	~~NO~~	Please explain
According to the Mpumalanga Provincial Government Five Year Review (2004-208), seven LandCare projects were undertaken and are considered to be significant initiatives. The main focus of this project is on soil care, water care and land management. Furthermore, information sessions were also held on water, wetlands, biodiversity conservation, etc. to facilitate environmental awareness and sustainable practices. Therefore the proposed rehabilitation project is considered to be in line with the Mpumalanga Provincial Government's objectives.			
(b) Urban edge / Edge of Built environment for the area	YES	NO	Please explain
N/A – The properties fall outside the urban edge.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	**YES**	~~NO~~	Please explain
The Pixley ka Seme Local Municipality's SDF and IDP (2011-2012) specifically identifies the Wakkerstroom Wetland complex as a very important local and nationally wetland system of which a section has been declared a protected area. Furthermore, the area around the wetland contains the headwaters for three of the Province's major river systems and is considered to be vital part of the Vaal and Pongola catchments. Also, the IDP states that the Picley ka Seme Municipality (via the Gert Sibande District Municipality) aims to support all projects that protects and promote biodiversity, rehabilitate and revive local streams, wetlands and rivers and conserve the environment. Therefore, the proposed rehabilitation project is considered to be in line with the objectives and aims of the local and district municipalities.			
(d) Approved Structure Plan of the Municipality	YES	NO	Please explain
N/A – Only structures for rehabilitation purposes will be implemented.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	**YES**	~~NO~~	Please explain
The proposed project aims to rehabilitate degraded and eroded wetland systems to improve and protect aquatic ecosystems and biodiversity. In other words, the project would enhance existing environmental management priorities for the area.			
(f) Any other Plans (e.g. Guide Plan)	**YES**	~~NO~~	Please explain
A review of the Mpumalanga Biodiversity Conservation Plan (MBCP) highlights that a significant portion of the project area is considered 'Irreplaceable' in terms of its contribution towards aquatic biodiversity and terrestrial biodiversity. The rehabilitation of the wetlands within the area is therefore likely to contribute towards the maintenance of the aquatic and terrestrial biodiversity of the region.			

3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	**YES**	~~NO~~	Please explain
Rehabilitation and protection of the Wakkerstroom wetland system is considered to be of vital importance and should thus be undertaken on an on-going base. The proposed rehabilitation project is thus considered to be in line with the priorities of the IDP.			
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	**YES**	~~NO~~	Please explain
The WfWetlands project is part of the Expanded Public Works Programme (EPWP) and more than 1 500 local people are recruited to work in projects on limited term contracts across the country.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES	NO	Please explain
N/A – No services will be required to undertake the rehabilitation work.			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES	NO	Please explain
N/A – The proposed rehabilitation project does not have any infrastructure requirements.			
7. Is this project part of a national programme to address an issue of national concern or importance?	**YES**	~~NO~~	Please explain
WfWetlands is a government programme (similar to Working for Water, Working on Fire and LandCare) managed by the South African National Biodiversity Institute (SANBI) on behalf of the national government departments of Environmental Affairs (DEA), Water Affairs (DWA), and Agriculture, Forestry and Fisheries (DAFF), and forms part of the Expanded Public Works Programme (EPWP).			
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	**YES**	~~NO~~	Please explain
The activities applied for are for the rehabilitation of degraded and threatened wetland systems.			

9. Is the development the best practicable environmental option for this land/site?	**YES**	~~NO~~	Please explain
Without the implementation of the planned rehabilitation activities, the programme's objectives[8] would not be realized; and the loss of wetland habitat and its associated eco-system services would be significantly greater. The strategic importance of the WfWetlands programme is clear as evidenced by the distinct positive impacts associated with the programme which has resulted in a ***net benefit/ gain*** as wetland health and integrity is improved and the associated eco-services enhanced. Overall the cumulative impact of wetland rehabilitation would thus be positive to both human beings and the environment, now and in the future. Based on the above information, it is clear that rehabilitating wetlands is considered to be the '***best practicable environmental option***' as a result of the positive impact that the programme has on both the natural and socio-economic environment.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	**YES**	~~NO~~	Please explain
The proposed interventions aim to improve the ecological and hydrological functioning and state of the wetland within which rehabilitation is undertaken. Also see the above response.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES	NO	Please explain
N/A – The WfWetlands programme is implemented in a phased approach. Wetland rehabilitation work in a new area will set a precedent for future rehabilitation work in that area. In instances where rehabilitation work has already been undertaken in the area, a precedent has already been set.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	~~YES~~	**NO**	Please explain
Rehabilitation work will improve the ecological and hydrological functioning and state of the wetland.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	~~YES~~	**NO**	Please explain
The proposed rehabilitation work will be undertaken outside the urban edge on agricultural land.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	~~YES~~	**NO**	Please explain
Wetland rehabilitation work is not included in any of the 17 SIPS.			
15. What will the benefits be to society in general and to the local communities?			Please explain
The two main objectives of the programme are wetland conservation in South Africa and poverty reduction through job creation and skills development amongst vulnerable and marginalised groups. Furthermore, many wetlands have cultural and spiritual significance for the communities living nearby. Commercially, products such as reeds and peat are also harvested from wetlands. Wetlands play a critical role in improving the ecological health of an ecosystem by performing many functions that include flood control, water purification, sediment and nutrient retention and export, recharge of groundwater as well as acting as vital habitats for diverse plant and animal species. Wetlands are thus considered to be extremely important in preserving biodiversity and are regarded as fundamental to the sustainable management of South Africa's water resources.			

[8] Wetland conservation and poverty reduction through job creation and skills development amongst vulnerable and marginalised groups.

Wetlands also function as valuable open spaces and create recreational opportunities for people that include hiking, fishing, boating and bird-watching. Wetlands are thus considered to be critically important ecosystems as they provide both direct and indirect benefits to the environment and society.

Without the implementation of the planned rehabilitation activities, the programme's objectives would not be realized; and the loss of wetland habitat and its associated eco-system services would be significantly greater. In addition to rehabilitating wetlands, the WfWetlands programme aims to reduce poverty through job creation and skills development amongst vulnerable and marginalised groups. The programme forms part of the Expanded Public Works Programme, which seeks to draw significant numbers of unemployed into the productive sector of the economy, gaining skills while they work and increasing their capacity to earn income. Projects are thus focused on rehabilitation, conservation and the appropriate use of wetlands in a way that attempts to maximize employment creation, support for small business and the transfer of skills to the unemployed and poor.

16. Any other need and desirability considerations related to the proposed activity?	Please explain

Overall the cumulative impact of wetland rehabilitation would be positive to both human beings and the environment, now and in the future. Based on the above information, it is clear that rehabilitating wetlands is considered to be the 'best practicable environmental option' as a result of the positive impact that the programme has on both the natural and socio-economic environment.

17. How does the project fit into the National Development Plan for 2030?	Please explain

Yes. Given the programme's linked wetland conservation to sustainable economic development approach, WfWetlands forms part of the EPWP, which seeks to draw significant numbers of unemployed into the productive sector of the economy. These individuals gain skills while they work thus increasing their capacity to earn an income.

18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.

The vision of WfWetalnds is to facilitate the protection, conservation, rehabilitation and sustainable use of wetlands in South Africa, in accordance with national policies and commitment to international conventions and regional relationships, including Section 23 of NEMA. The proposed rehabilitation activities are therefore in line with the principles of NEMA (in particular: people and their needs – particularly women and children – are placed at the forefront of development via the EPWP; the development can be considered to be socially, environmentally and economically sustainable; the environmental impacts of the activity are not unfairly distributed and the potential environmental impacts have been assessed and evaluated). Please refer to the relevant Rehabilitation Plan for more information on the WfWetlands programme and its objectives.

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

WfWetlands aim to facilitate the protection, conservation, rehabilitation and sustainable use of wetlands in South Africa in accordance with national policies and commitment to international conventions and regional relationships. More specifically the WfWetlands programme is in line with Principle 4(r) of Section 2 which notes the requirement of specific management and planning procedures to deal with sensitive and vulnerable ecosystems such as wetlands.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
The Constitution of South Africa (Act 108)	WfWetlands is a rehabilitation programme that aims to protect and conserve South Africa's wetland ecosystems. As such the listed legislation, policies and guidelines are of relevance to the project.	National Government	1996
National Environmental Management Act (107)		Department of Environmental Affairs	1998
National Environmental Management Act (Act 107), Amendment Act		Department of Environmental Affairs	1998
The National Water Act (Act 36)		Department of Water Affairs	1998
Conservation of Agricultural Resources Act (Act 43)		Department of Agriculture, Forestry & Fisheries	1983
Natural Heritage Resources Act (Act 25)		National Heritage Resources Agency	1999
World Heritage Conventions Act (Act 49)		Department of Environmental Affairs	1999
The National Environmental Management: Biodiversity Act (Act 10)		Department of Environmental Affairs	2004
National Environmental Management: Protected Areas Act (Act 57)		Department of Environmental Affairs	2003
The Mountain Catchments Areas Act (Act 63)		Department of Water Affairs	1970
EIA Guideline Series, in particular: o Guideline 3 – General Guide to the Environmental Impact Assessment Regulations, 2006 (DEAT 2006) o Guideline 4 – Public Participation in support of the EIA regulations, 2006 (DEAT 2006) o Guideline 5 – Assessment of Alternatives and Impacts, 2006 (DEAT 2006)		Department of Environmental Affairs	
MTPA Biodiversity Conservation Plan		Department of Economic Development & Environmental Affairs/ Mpumalanga Tourism and Parks Agency	
International Conventions, in particular:			

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
○ The Ramsar Convention ○ Convention on Biological Diversity ○ United Nations Conventions to Combat Desertification ○ New Partnership for Africa's Development (NEPAD) ○ The World Summit on Sustainable Development (WSSD)			

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	~~YES~~	**NO**
If YES, what estimated quantity will be produced per month?		m^3
How will the construction solid waste be disposed of (describe)?		

Where will the construction solid waste be disposed of (describe)?

Limited quantities of construction waste such as empty cement bags and litter may be generated. These wastes are typically collected on site and would be disposed of as per the WfWetlands Construction Environmental Management Programme (CEMP) (**Annexure D** of the BAR).

Material that is excavated during construction or which results from the breaking down of old structures is typically re-used on site in the construction and long-term stabilization of other interventions on site. For example, rubble from an old structure is typically used to provide backfill.

Ablution waste is usually handled through the provision of chemical toilet facilities or pit latrines (where no chemical toilet hire facilities exist). Chemical toilet waste is regularly removed by the toilet hire company and disposed of at a waste water treatment works. Toilet facilities are located out of wet areas and in line with the WfWetlands best management practices.

Please note that strict audits are carried out to ensure that the project Implementers do not generate unnecessary waste.

Will the activity produce solid waste during its operational phase?	~~YES~~	**NO**
If YES, what estimated quantity will be produced per month?		m^3
How will the solid waste be disposed of (describe)?		

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?	~~YES~~	**NO**

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?	~~YES~~	**NO**

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	~~YES~~	**NO**
If YES, what estimated quantity will be produced per month?		m^3
Will the activity produce any effluent that will be treated and/or disposed of on site?	~~YES~~	**NO**

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?	~~YES~~	**NO**

If YES, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		**Cell:**	
E-mail:		**Fax:**	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?	~~YES~~	**NO**
If YES, is it controlled by any legislation of any sphere of government?	YES	NO

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?	~~YES~~	**NO**

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise?	~~YES~~	**NO**
If YES, is it controlled by any legislation of any sphere of government?	YES	NO

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the noise in terms of type and level:

Noise generation would be limited to the workers interactions and activities; limited noise may result from concrete mixers or pumps if utilized.

13. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal	Water board	Groundwater	River, stream, dam or lake	Other	The activity will not use water
Water use would mainly consist of drinking water for the construction team and would be brought in daily. Concrete structures would however require minimal water during the construction phase for batching.					

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:	13728 litres	
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	~~YES~~	**NO**

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

In terms of Section 39 of the National Water Act (No. 36 of 1998) (NWA), a General Authorisation (GA) has been granted for certain activities that are listed under the NWA that usually require a Water Use License. Such a GA exists for wetland rehabilitation as long as the activities are for conservation purposes. As some of the rehabilitation activities entail 'impeding or diverting the flow of water in a watercourse' and/ or 'altering the bed, banks, course or characteristics of a watercourse, a number of GAs have been registered with the Department of Water Affairs (DWA) for structures that would ordinarily require a Water Use License. For each planning cycle the proposed rehabilitation work will be submitted to DWA, the requisite approval sought and project monitoring reported as required.

14. ENERGY EFFICIENCY

Describe the design measures, if any, which have been taken to ensure that the activity is energy efficient:

Manual labour would be used during the construction phase, with material and labourers being brought to site each day. Energy would thus only be required in the form of vehicle/machine (limited) fuel.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

N/A

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Please refer to the relevant section in the Draft Wakkerstroom Rehabilitation Plan.

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A):

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? YES NO

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	
District Municipality	
Local Municipality	
Ward Number(s)	
Farm name and number	
Portion number	
SG Code	

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required? YES NO

1. GRADIENT OF THE SITE

Please refer to the relevant section in the Draft Wakkerstroom Rehabilitation Plan.

2. LOCATION IN LANDSCAPE

Please refer to the relevant section in the Draft Wakkerstroom Rehabilitation Plan.

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Please refer to the relevant section in the Draft Wakkerstroom Rehabilitation Plan.

4. GROUNDCOVER

Please refer to the relevant section in the Draft Wakkerstroom Rehabilitation Plan.

5. SURFACE WATER

Please refer to the relevant section in the Draft Wakkerstroom Rehabilitation Plan.

6. LAND USE CHARACTER OF SURROUNDING AREA

Please refer to the relevant section in the Draft Wakkerstroom Rehabilitation Plan.

7. CULTURAL/HISTORICAL FEATURES

Please refer to the relevant section in the Draft Wakkerstroom Rehabilitation Plan.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

Pixley ka Seme Local Municipality: 49.58%

Economic profile of local municipality:

Approximately 44% of the Pixley ka Seme Local Municipality's population is employed – mainly in the domestic sector. Furthermore, 68.54% of the population have an income below minimum living standards. This situation is of great concern to the Municipality

and highlights the need for skills and capacity development to ensure economic growth and development within the municipal area.

Level of education:

No schooling: 9 229; **Higher Diploma:** 281; **Grade 12/St 10/ Form 5:** 9 574

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 7 805 705	
What is the expected yearly income that will be generated by or as a result of the activity?	None	
Will the activity contribute to service infrastructure?	~~YES~~	**NO**
Is the activity a public amenity?	~~YES~~	**NO**
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	~ 120*	
What is the expected value of the employment opportunities during the development and construction phase?	TBC	
What percentage of this will accrue to previously disadvantaged individuals?	~70%	
How many permanent new employment opportunities will be created during the operational phase of the activity?	None	
What is the expected current value of the employment opportunities during the first 10 years?	None	
What percentage of this will accrue to previously disadvantaged individuals?	N/A	

*** Employment opportunities are only created during the construction phase and for many of the projects there are already teams (team size averages around 20-35 individuals) working on them and therefore there aren't new work opportunities as such. However, Working for Wetland principles ensure that a very large percentage of those employed are from local communities.**

9. BIODIVERSITY

Please refer to the relevant section in the Draft Wakkerstroom Rehabilitation Plan.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Adverts were placed in *The Sunday Times* (in English) and in *Die Rapport* (in Afrikaans).	
Date published	1 and 2 December 2012	
Site notice position	**Latitude**	**Longitude**
	To be provided in Final BAR	
Date placed	5 December 2012	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.543.

I&APs were registered when they responded to the advertisements and site notice boards during the 2010/11 and 2011/12 public participation processes for the WfWetlands programme. New I&APs responding to advertisements and site notices for the 2012/13 cycle will also be registered on the project's database. Furthermore, proactive identification of I&APs was done via scrutiny of previous BAR processes and identifying potentially interested and/or affected parties based on previous experience with BAR processes. An Issues Register will be maintained to record any comments received from I&APs and the responses given to these comments. The Issues Register, along with copies of written submissions, will be included in Appendix E3.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2)(b) of GN R.543:

TITLE	INITIAL/NAME	SURNAME	ORGANISATION	Telephone	EMAIL
Mr	Gavin	Cowden	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)	013 7594187	Gcowden@mpg.gov.za
Mr	Jannsen	Davies	Mpumalanga Tourism & Parks Agency (MTPA)	013 759 5310 / 77	daviesathome@icon.co.za
Dr	Almari	de Lange	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)	013 766 6119	adelange@mpg.gov.za
Ms	Mbali Marcia	Dlamini	Department Agriculture Forestry and Fisheries (DAFF)	013 759 7319	dlaminim@dwa.gov.za
Mrs	Valerie	Du Plessis	Department Agriculture Forestry and Fisheries (DAFF)	012 336 8679	DEI@dwaf.gov.za
Mr	Martin	Fuwela	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)	017 811 2326	-
Mr	Hein	Geldenhuys	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)	013 235 2641	lenviro@telkomsa.net
Mrs	Marina	Geldenhuys	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)	013 235 2641	mgeldenhuys@telkomsa.net
Mr	Richard	Green	Department Agriculture Forestry and Fisheries (DAFF)	013 759 7308	greenr@dwaf.gov.za
Ms	Tania	Henning	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)	017 811 4830	taniahenning@mtnloaded.co.za
Mr	Brian	Jackson	Inkomati Catchment Management Agency (ICMA)	013 753 9000	jacksonb@inkomaticma.co.za
Mr	Sampie	Shabangu	DWA: Licensing		shabangus2@dwa.gov.za
Mr	Themba	Khoza	Department Agriculture Forestry and Fisheries (DAFF)	013 759 7435	KhozaB@dwaf.gov.za

TITLE	INITIAL/NAME	SURNAME	ORGANISATION	Telephone	EMAIL
Mr	David	Kleyn	Department Agriculture Forestry and Fisheries (DAFF)	012 319 7560	davidkl@nda.agric.za
Mr	Frans	Krige	Mpumalanga Tourism and Parks Agency (MTPA)	013 254 0279	franskrige@telkomsa.net
	Louis	Loock	Mpumalanga Tourism and Parks Agency (MTPA)	013 759 5399	louis@mtpa.co.za
Mr	Altus	Lotter	MDEDET		GLotter@mpg.gov.za
Mr	Surgeon	Marebane	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)	017 811 3954	stmarebane@mpg.gov.za
	Selby	Lukhele	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)		lukhelesa@mpg.gov.za
Mrs	Robyn	Beeching	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)	013 759 4024	rluyt@mpg.gov.za
	Buyi	Mabaso	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)	013 759 4074	mabasoBM@mpg.gov.za
Ms	Pheko	Mabena	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)	013 690 1269	pmmabena@wit.mpu.gov.za
Mr	Stanford	Macevele	Department of Water Affairs (DWA)	093 22061	MaceveleS@dwa.gov.za
Ms	Busi	Mahlangu	Department of Water Affairs (DWA)	013 759 7317	mahlangul@dwa.gov.za
Ms	Andiswa	Makam	Department of Water Affairs (DWA)	015 759 7460	MakamA@dwa.gov.za
	Tshepiso	Makola	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)	013 690 1279	thmorokang@wit.mpu.gov.za.za
Mr	Hannes	Marais	Mpumalanga Tourism and Parks Agency (MTPA)	083 579 2469	hannesmarais@vodamail.co.za
Mr	Frans	Mashabela	Department Agriculture Forestry and Fisheries (DAFF)	013 754 0730	FransMas@nda.agric.za
	Kurisani	Mashava	Department of Water Affairs (DWA)	013 759 7518	MashavaK@dwa.gov.za
Mr	Kenneth	Mavhunga	Department of Agriculture, Forestry and Fisheries (DAFF)	013 759 7440 / 7300	MavhungaK@dwaf.gov.za
Mr	Paul	Meulenbeld	DWA: Gauteng S Water Quality	012 336 7663	meulenbeldp@dwa.gov.za
	Bheki	Mndawe	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)		bemndawe@mpg.gov.za
Ms	Mary	Mogale	Department of Agriculture, Forestry & Fisheries (DAFF)	013 754 0728	MaryM@daff.gov.za
	Shobate	Mohlahlana	Department Agriculture Forestry and Fisheries (DAFF) : Landcare Programme		shobathem@nda.agric.za
Mr	Brian	Morris	Mpumalanga Tourism and Parks Agency (MTPA)	013 759 5478	enviroteq@gmail.com
	Nocawe	Mthombothi	DEDET		nocawe@mpg.gov.za
Miss	Ronell	Niemand	Mpumalanga Tourism and Parks Agency (MTPA)	013 759 5530	ronell@mtpa.co.za
Mr	Thya	Pather	DWA		thya@dwa.gov.za
	Love	Shabane	DAFF	013 754 0734	LoveS@nda.agric.za
	Rhandzu	Shivambu	Mpumalanga Department of Agriculture, Rural Development & Land Administration (MDARDLA)	013 759 4158	shivambumg@gmail.com
Ms	Lynette Sibongile	Van Damme	SAHRA	012 462 4502	svandamme@sahra.org.za
	Dan'sile	Cindi	Dept. Agriculture, Forestry & Fisheries - LUSM	013 754 0701/27	DansileS@nda.agric.za
Mr	Hennie	Laas	Mpumalanga Landbou / Agriculture		mp.landbou@mweb.co.za
Mr	Johann	Van Aswegen	Department Agriculture Forestry and Fisheries (DAFF)	013 932 2042	VaswegJ@dwaf.gov.za

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

Proof of I&AP and key stakeholder notifications will be provided in Appendix E2 of the Final BAR.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
To date no comments have been received from I&APs. However, an Issues Register will be maintained to record any comments received from I&APs and the responses given to these comments. The Issues Register, along with copies of written submissions, will be included in Appendix E3.	

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

Please refer to the response under Section C(3).

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

TITLE	INITIAL/ NAME	SURNAME	ORGANISATION	Address 1	City / Town	Postal Code	Telephone	Cellphone	Fax	EMAIL
Ms	Jackie	Jay	Department of Water Affairs	Private Bag X313	Pretoria	0001	(012) 336 7443		(012) 336 7575	jayj@dwa.gov.za
Mr	David	Kleyn	Department of Agriculture Forestry & Fisheries	Private bag X120	Pretoria	0001		082 789 6915		DavidKl@nda.agric.za
Mr	Christo	Marais	Department of Water Affairs	14 Loop Street	Cape Town	8000	(021) 441 2727			chris@dwa.gov.za
Ms	Kerryn	Morrison	Endangered Wildlife Trust	Private Bag X11	Parkview	2122				kerryn@ewt.org.za
Ms	Naomi	Fourie	Department of Water Affairs	Private Bag X313	Pretoria	0001	(012) 336 7443			FourieNaomi@dwa.gov.za
Ms	Valerie	du Plessis	Department of Water Affairs	Private Bag X313	Pretoria	0001	(013) 336 7443			DuPlessisV@dwa.gov.za
Mr	Guy	Preston	Department of Water Affairs	14 Loop Street	Cape Town	8000		083 325 8700		GPreston@dwa.gov.za
Ms	Fulufhelo	Mafelatshuma	Department of Water Affairs : RQS	Private Bag X313	Pretoria	0001				MafelatshumaF@dwa.gov.za
Ms	Wilma	Lutsch	Department of Environmental Affairs	Private Bag X 447	Pretoria	0001	(012) 310 3694		(012) 320 7026	wlutsch@environment.gov.za
Mr	Bonani	Madikizela	Water Research Commission	Private Bag X03	Gezina	0031				bonanim@wrc.org.za
Mr	Tambubzani	Mulaudzi	Department of Environmental Affairs: Directorate: Sensitive Environments	Private Bag x 447	Pretoria	0001	(012) 310 3144		(012) 320 7539	tambum@environment.gov.za
Ms	Linda	Poll-Jonker	Department of Environmental Affairs	Private Bag x 447	Pretoria	0001	(012) 395 1767		(012) 320 7539	LPoll-Jonker@environment.gov.za

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

Please Note: Alternative sites were screened out during the planning and prioritisation process and will therefore not be assessed in further detail. Refer to the alternatives discussion in the Draft Wakkerstroom Rehabilitation Plan.

A) Construction Phase

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
GN R.544, Item 11 & 18 GN R.546, Item 13 & 16	***Direct impacts:***		
	JOB CREATION One of the primary objectives of the WfWetlands programme is to create jobs and to teach transferrable skills to unemployed members of the local community so that they can be drawn into the permanent job market.	***Without mitigation:*** Medium (+) ***With mitigation:*** High (+)	• Ensure that the required Project workers are sourced from local communities and that maximum employment numbers are maintained throughout the Project duration. • Project implementers to support local businesses (e.g. local quarry owners to obtain rock for gabions) where possible.

Activity	Impact summary	Significance	Proposed mitigation
	FIRE RISK Construction usually takes place in the dry winter months when the danger of veld fires is highest. There is a possibility that construction workers could light a fire on site that could become out of control. The risk of this happening is assessed to be low, although the significance in terms of the economic damage that could be caused (especially in a commercial forestry area) is high. Adequate site supervision would considerably mitigate this impact.	***Without mitigation:*** High (-) ***With mitigation:*** Low (-)	• Ensure that workers are aware of the potential for fires and the damage that could be caused. • Ensure that a fire response procedure is in place and that all dry season work is organized in liaison with the landowners so that it fits into their firebreak/fire protection programme.
	NUISANCE IMPACTS Construction can result in nuisance impacts, particularly for land-owners. These impacts include: • Noise from construction activities, personnel and vehicles. • An increase in the amount of litter being generated. • Dust. • Security concerns such as theft or leaving gates open. • Non-use of sanitation facilities. • Temporary loss of access to areas due to construction activities. Given the isolated working environment (i.e. far from communities and public routes), the relatively few number of people on site and constant supervision by the project implementer, the above impacts are likely to be of low magnitude.	***Without mitigation:*** Low (-) ***With mitigation:*** Very Low (-)	• All site workers to undergo environmental induction training ("toolbox talks") before undertaking work so that they are aware of the various environmental requirements. • Landowners should be consulted regarding the placement of stockpile sites and toilets as well as access routes. • Ensure that closed gates are kept closed. When in doubt, the landowner should be consulted. • Follow CEMP with regards to sanitation facilities, waste management, noise and site management • Utilise local labour wherever possible to reduce potential friction within the community caused by bringing outside personnel in. • Ensure that all workers wear the yellow/blue attire indicative of WfWetlands personnel so that they are not mistaken for trespassers.

Activity	Impact summary	Significance	Proposed mitigation
	HERITAGE IMPACTS No significant heritage resources within the wetlands were identified during the desktop research, I&AP interactions or site visit for the project. Given the low likelihood of heritage sites being disturbed and provided that construction is immediately stopped should a heritage resource be encountered then the magnitude of this impact should be zero.	***Without mitigation:*** Very Low (-) ***With mitigation:*** Neutral (-)	• Should any artefact or suspected artefact (including fossils and grave sites), or any site of cultural significance be encountered during construction, then the Contractor must immediately stop work in the vicinity of the artefact and alert the relevant authorities. The area around the discovery shall be cordoned off until such time that work is authorised to proceed.
	WORKER SAFETY Alien clearing requires very specific training and involves high risk equipment such as chainsaws. It sometimes involves large trees and therefore extreme caution needs to be exercised.	***Without mitigation:*** Medium (-) ***With mitigation:*** Low (-)	• All site workers to undergo specific safety training before undertaking this work so that they are aware of the various risks and measures to be taken in emergency situations. • Follow CEMP with regards to Occupational Health and Safety requirements
	FLORA & FAUNA **Habitat disturbance** Habitat disturbance during the construction stage is typically temporary. In addition most species are relatively tolerant of disturbance and will be able to utilise the similar alternative habitat available in the study area. The area of habitat loss is also likely to be small and limited to the immediate surroundings of the intervention being constructed. **Disturbance of fauna during the breeding season** Construction of the interventions for this project takes place during winter (the dry period) which is when wattle cranes breed. Construction	***Without mitigation:*** Medium (-) ***With mitigation:*** Low (-)	• There are tree ferns within the channel which will require permits prior to being moved. It is important to involve the MTPA in this process. • Before moving onto site the project manager or implementer must liaise with the Endangered Wildlife Trust: Crane Working Group to determine if wattled cranes are known to be breeding in the project area. If cranes have been observed as being present then the advice of the Crane Working Group as to how best to proceed should be sought and discussed with the SANBI provincial co-ordinator. • Implement the provisions of the CEMP regarding stockpiling borrowed material and rehabilitation after construction

Activity	Impact summary	Significance	Proposed mitigation
	activities could potentially result in disturbance to breeding pairs, possibly causing them to leave their nest site. Given the critically endangered status of these birds, this impact could be significant. It can however be almost completely mitigated by liaising with the Crane Working Group whose local representatives can advise on areas where breeding has been observed and where construction activities should not occur. **Alien species invasion** A potential construction-related impact on vegetation is the possibility of an increase in alien invasive species due to disturbance and weed seeds being brought in with borrow and construction material. **Poaching** Poaching by the construction teams is possible, but can be mitigated by the fact that the teams are not resident on site and are closely supervised.		
	AQUATIC ECO-SYSTEM IMPACTS **Temporary alteration to stream flow patterns** Construction must often take place in areas that are permanently wet. This requires that water be diverted away from working areas, leading to temporary alterations in the current drainage characteristics. Water diversion is typically done using sand bags to slow/block flow and then a pump to remove water and discharge it further downstream. This can result in a slight drying in	***Without mitigation:*** Medium (-) ***With mitigation:*** Low (-)	• Implement the provisions of the CEMP regarding stockpile location and site management. • If sandbags are used to temporarily divert water then these bags should be in good condition. • Sand/earth to fill the bags should come from and be returned to existing excavation points. • Soil used in interventions must be stabilised as per the engineer's recommendations to

Activity	Impact summary	Significance	Proposed mitigation
	the working areas and may affect aquatic organisms. This will however be of a temporary nature and is unlikely to significantly alter flow patterns. **Sedimentation** Construction activities can result in additional sediment ending up in the water course (e.g. due to earthworks or breakage of sandbags used to divert water away from working areas). Sediment can result in silt build-up downstream, increase the turbidity of the water and result in habitat changes. However, as wetlands are typically low-energy systems, much of the excess sediment is likely to be trapped before it is washed far downstream. Also, given the limited nature of the earthworks, sedimentation is not anticipated to occur to a significant degree. **Pollution of water-courses** Construction activities close to a water-course/wetland carry the attendant risk that construction-related pollutants could end up in the wetland system. Typical pollutants include hydrocarbons (e.g. from fuel leaks, shutter oil and lubricating fluid spills), litter, cement and contaminated wash-down water. **Disturbance of wetland vegetation and stream banks** Some disturbance to stream banks and wetland vegetation will be inevitable in order to construct the proposed interventions. This impact generally occurs on a small scale and		counteract the dispersive tendencies. • Water abstracted above the General Authorization limits must be authorized by DWAF prior to such abstraction taking place.

Activity	Impact summary	Significance	Proposed mitigation
	can be mitigated via good management practices		
	Disturbance of wetland soil profile	***Without mitigation: Medium (-)*** ***With Mitigation:*** ***Low (-)***	• Work only in low rainfall periods, • Prevent compaction of soil • Prevent draining, drying and desiccation of soil • Use the general CEMP of the WfWetlands manual for working within wetlands • Do not bring in any foreign vegetable matter (e.g. mulch) into the wetland area (especially from alien species). • Store soils of different layers in different spots (stockpile soils according to the different soil layers as per the soil profile), in order not to mix layers of profile • Cover with mulch or cloth (geotextile) and keep at least 40% moisture. If possible, stockpile soils in piles as high as possible (to retain moisture).
	Sourcing borrow material Borrow material (earth and rocks) is not always sufficiently available on site, and has to be sourced elsewhere. This can have a negative biophysical impact to the area where it is sourced. The quantities required are not such that they require a borrow pit licence. Costs increase the further one gets from site and therefore borrow material is sourced as close to site as possible. Sources include existing borrow areas on neighbouring farms, decommissioned dam walls, man-made berms which are no longer required.	***Without mitigation:*** Medium (-) ***With mitigation:*** Low (-)	• Implement the provisions of the CEMP. • Any quantities in excess of the minimum requirements for a borrow pit licence will require authorisation through DME. • Borrow areas will need to be properly re-sloped and re-vegetated after use.

Activity	Impact summary	Significance	Proposed mitigation
	Work within conservation areas A number of the projects fall within conservation areas which requires a more astute attitude on the part of the implementers to the surrounding environment and the possible negative impacts they can have on it.	***Without mitigation:*** Medium (-) ***With mitigation:*** Low (-)	• Close co-operation is required with the conservation authorities. Any specific requirements need to be included in the documentation. • Implement the provisions of the CEMP.
	Indirect impacts:		
	JOB CREATION The potential impact of this is significant and has a number of **indirect positive impacts** such as improvement in quality of life of the workers, increased spending in the local economy and the support of small business in the local area.	***Without mitigation:*** Medium (+) ***With mitigation:*** High (+)	• Ensure that the required Project workers are sourced from local communities and that maximum employment numbers are maintained throughout the Project duration. • Project implementers to support local businesses (e.g. local quarry owners to obtain rock for gabions) where possible.
	INCREASED AWARENESS OF WETLAND IMPORTANCE As an **indirect impact** there is likely to be some increased awareness amongst the construction teams and land-owners regarding wetland ecology and the importance of rehabilitation.	***Without mitigation:*** Medium (+) ***With mitigation:*** High (+)	• Encourage landowners to become more aware of, and educated in, the ecological values and sensitivity of the wetland environments. • Consider the erection of a SANBI/WfWetlands information signs to describe, and increase awareness of, the activities and the 'ecological' investment taking place in the Project areas
	Cumulative impacts:		
	Job Creation Cumulatively, the impact of the WfWetlands projects is judged to be of high positive significance. The programme has a budget of over R75 million, has created in the region of 1500 jobs and transferred skills to numerous previously unskilled persons.	***Without mitigation:*** Medium (+) ***With mitigation:*** High (+)	• Ensure that the required Project workers are sourced from local communities and that maximum employment numbers are maintained throughout the Project duration. • Project implementers to support local businesses (e.g. local quarry owners to obtain rock for gabions) where possible.

Activity	Impact summary	Significance	Proposed mitigation
	Increased Awareness Of Wetland Importance And Biodiversity The programme is creating increased awareness amongst the construction teams and land-owners regarding wetland ecology, the importance of rehabilitation and the importance of protecting biodiversity. *Please also refer to the cumulative impact section under operational phase impacts.*	***Without mitigation:*** Medium (+) ***With mitigation:*** High (+)	• Encourage landowners to become more aware of, and educated in, the ecological values and sensitivity of the wetland environments. • Consider the erection of a SANBI/WfWetlands information signs to describe, and increase awareness of, the activities and the 'ecological' investment taking place in the Project areas
No-go option			
	Direct, Indirect and Cumulative impacts:		
	Aquatic ecosystem If the no-go alternative is pursued, then the construction-related impacts will not be realised. However, the overall impact of the no go option on the aquatic ecosystem is likely to be negative, especially in the long-term as rehabilitation activities will not take place and the existing problems (such as erosion) in the wetland will continue. Over time these existing problems are likely to have a greater negative impact than the short-term and fairly minor construction related impacts. Although the no-go option is likely to have significant long-term negative consequences, only the expected impact of the no-go in the short term (i.e. construction-related time frame) has been assessed in this section so as to facilitate comparison between the no-go and preferred alternative during the construction period. The longer term impact of the no-go is assessed in the operational phase.	**Very Low (-)**	***Note:*** If the no go alternative is pursued, then the operational-related impacts will not be realised. However, the overall impact of the no go option on the aquatic ecosystem is likely to be negative, especially in the long-term as rehabilitation activities will not take place and the existing problems (such as erosion) in the wetland will continue. Over time these existing problems are likely to have a greater negative impact than the short-term and fairly minor construction related impacts.

Activity	Impact summary	Significance	Proposed mitigation
	Heritage The no-go alternative is unlikely to have a significant impact – either positive or negative – due to the low likelihood of disturbance to heritage resources.	**Neutral**	
	Nuisance impacts Pursuing the no-go alternative will mean that the nuisance impacts associated with construction will not be realised.	**Neutral**	
	Socio-economic Pursuing the no-go alternative in this case will mean that the positive socio-economic benefits of job creation, skills transfer and support of the local economy will not be realised.	**Medium (-)**	

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.543 must be included as Appendix F.

B) Operational Phase

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
GN R.544, Item 11 & 18 GN R.546, Item 13 & 16	***Direct & Indirect impacts:***		
	Changes in land use The increase in wetland area may have both positive and negative impacts for landowners. Wetlands are often utilised for winter grazing and an increase in wetland area will thus improve grazing conditions for the farmer. However the increase in wet areas may also make previously accessible areas inaccessible	***Without mitigation:*** Low (+) Medium (-) ***With mitigation:*** Medium (+)	• Ensure good access for landowners in the form of crossing points • Provision of watering points for stock to minimise extensive trampling in the wetlands (especially in the wetter times of year)

Activity	Impact summary	Significance	Proposed mitigation
	for farming purposes. The extent and magnitude of this impact will depend to a large degree on how much value each individual landowner places on wetland conservation. It is however assumed that if the landowner is willing to allow wetland rehabilitation to take place on their property that they see the value in the WfWetlands programme and are willing to accept the increase in wetland area.	Low (-)	
	Reduced water storage and treatment costs Wetlands can offer valuable stream flow regulation and filtration services. By restoring wetland area it is likely that downstream users will benefit by having a more reliable and possibly cleaner source of water. In addition, by addressing erosion, wetland rehabilitation can decrease the amount of sediment downstream. This can help to reduce water treatment costs for downstream users and will also reduce the sedimentation of downstream water storage facilities such as dams.	***Without mitigation:*** Medium (+) ***With mitigation:*** Medium (+)	
	Reduced soil erosion (Paardeplaats) By reducing exposed ground surfaces and surface runoff velocity, the sediment load in surface runoff is reduced, thereby contributing to better water quality in the sub-catchment area.	***Without mitigation:*** *Medium (+)* ***With mitigation:*** *Medium (+)*	

Activity	Impact summary	Significance	Proposed mitigation
	Employment Ideally, the skills learned by the project team during the construction phase – such as how to work with concrete, build gabions etc – can be used to assist them to find permanent employment.	***Without mitigation:*** Medium (+) ***With mitigation:*** Medium (+)	
	Burning regimes in wetland areas Wetlands are considered high risk areas for runaway fires and therefore some farmers use the wetland areas as firebreaks to protect the rest of their property, with the result that the entire wetland is burnt every year. If burnt at the wrong time it could have very negative impacts on endangered fauna (particularly the breeding cranes) and flora. Wetlands do require burning, but in a responsible manner.	***Without mitigation:*** High (-) ***With mitigation:*** Low (-)	• It is preferred that wetlands only get burnt every second year at the least, however, if this is not possible the optimum time is after Aug – end Sept. (Flora need opportunity to seed, and Cranes need an opportunity to breed).
	Cumulative impacts:		
	ECOSYSTEM FUNCTIONING **Restoring wetland corridors** In areas where wetlands have been artificially drained, restoration can result in the re-wetting of areas and link up previously wet areas, thus creating and extending a network of wetland areas. These wetland corridors can provide valuable refuges for wetland species and allow for greater ecosystem connectivity. **Changes in water quality and quantity** More natural stream flow patterns within the wetland, as well as an improvement in water quality and quantity (due to improved ecosystem services) can be expected after	***Without mitigation:*** High (+) ***With mitigation:*** High (+)	***Note:*** The interventions identified for the proposed rehabilitation project were identified during a screening process that was undertaken to ensure that the most suitable intervention was identified, developed and assessed for each rehabilitation site. During this screening process the project team also took into account environmental, social and economic considerations, as well as the rehabilitation objectives identified for the wetland. Should these interventions not be implemented, the current rate of degradation at the assessed wetlands would continue and in some cases even result in the permanent loss of the integrity and functioning of these systems. It would also not be

Activity	Impact summary	Significance	Proposed mitigation
	rehabilitation. This improvement in water quality and a more reliable supply of water is particularly important given the water scarcity that faces South Africa.		possible to achieve the rehabilitation objectives identified for the wetlands (also see the Wakkerstroom Rehabilitation Plan). Without the implementation of wetland rehabilitation as part of the WfWetlands project, the overall programme objectives[9] and the EPWP requirements would not be realised.
	FLORA & FAUNA **Increased habitat** Increasing the wetland area through rehabilitation will result in an increase in habitat for wetland-dependent species. This is a positive impact, especially in light of the fact that a number of the Mpumalanga wetlands are utilised by the vulnerable and endangered species. **Increased biodiversity** A large proportion of the natural vegetation in the greater area has already been lost to forestry and agriculture. Restoring wetland habitat will help to increase the species richness of the overall area by encouraging the re-establishment of wetland species. **Obstruction of movement of aquatic biota** The potential for the proposed interventions to hinder the movement of aquatic species such as fish was considered and the following noted: o Records from the South African Institute for Aquatic Biodiversity (SAIAB) do not indicate the presence of any red data fish species in the affected systems. o The overall impact of the structures on	***Without mitigation:*** Medium (+) ***With mitigation:*** Medium (+)	

[9] Wetland conservation and poverty reduction through job creation and skills

Activity	Impact summary	Significance	Proposed mitigation
	aquatic biota is expected to be positive due the increase in quality and quantity of habitat. ○ The interventions may help to contain the spread of alien exotic fish Based on the above, fish ladders were not considered critical and were thus not designed for this system. **Change in species composition** In wetlands that have been subject to desiccation, plants that are tolerant of drier conditions are likely to have become established. With the restoration of the wetland, these species are likely to be replaced with wetland-adapted vegetation. This change in composition reflects a shift back to historical species composition and is thus considered positive.		
No-go option			
	Direct, Indirect and Cumulative impacts:		
	Ecosystem functioning Pursuing the no-go option would result in the current negative ecosystem impacts continuing. These impacts include desiccation, erosion, channel incision etc.	**Medium (-)**	***Note:*** If the no go alternative is pursued, then the operational-related impacts will not be realised. However, the overall impact of the no go option on the aquatic ecosystem is likely to be negative, especially in the long-term as rehabilitation activities will not take place and the existing problems (such as erosion) in the wetland will continue. Over time these existing problems are likely to have a greater negative impact than the short-term and fairly minor construction related impacts.
	Fauna & Flora The no go alternative would mean that the positive impacts identified above would not be realised. Continued wetland degradation and habitat loss is likely to result in exponential increase in the significance of the no go alternative, leading to an eventual loss of biodiversity and disruption of floral and faunal ecosystems. In addition, it would also negatively	**Medium (-)**	

Activity	Impact summary	Significance	Proposed mitigation
	affect the achievement of conservation objectives for the area.		
	Socio-economic The no go alternative would mean that the positive impacts identified above would not be realised.	**Low (-)**	

C) Decommissioning and Closure Phase

There were no anticipated situations were any decommissioning would be required.

2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative A (preferred alternative)

IMPACT SUMMARY TABLE

High negative	**Red**
Medium negative	**Green**
Low negative	**Blue**
Very Low	**Light Blue**
Neutral	
Positive impact	**Yellow**

***Construction Phase*: Description of Impact**	***Significance of Impact***		
	Preferred Alternative		
	No Mitigation	***With mitigation***	***No Go***
Job creation	**Medium (+)**	**High (+)**	**Medium (-)**
Increased awareness of wetland importance	**Medium (+)**	**High (+)**	**Medium (-)**
Fire risk	**High (-)**	**Low (-)**	**Neutral**
Nuisance impacts	**Low (-)**	**Very Low (-)**	**Neutral**
Heritage impacts	**Very Low (-)**	**Neutral**	**Neutral**
Worker safety	**Medium (-)**	**Low (-)**	**Neutral**
Flora & Fauna	**Medium (-)**	**Low (-)**	**Medium (-)**
Aquatic eco-system impacts	**Medium (-)**	**Low (-)**	**Medium (-)**
Sourcing borrow material	**Medium (-)**	**Low (-)**	**Neutral**
Work within conservation areas	**Medium (-)**	**Low (-)**	**Neutral**
Disturbance of wetland soil profile	**Medium (-)**	**Low (-)**	**Neutral**
***Operational Phase*: Description of Impact**			
Changes in land use	**Low (+)**	**Medium (+)**	
	Medium (-)	**Low (-)**	**Low (-)**
Reduced water storage and treatment costs	**Medium (+)**	**Medium (+)**	**Low (-)**
Employment	**Medium (+)**	**Medium (+)**	**Medium (-)**
Ecosystem functioning	**Medium (+)**	**Medium (+)**	**High (-)**

Flora and Fauna	**Medium (+)**	**Medium (+)**	**Medium (-)**
Reduced soil erosion	**Medium (+)**	**Medium (+)**	**Medium (-)**
Public safety	**Medium (-)**	**Low (-)**	**Neutral**

Based on the above, it is the opinion of the EAP that the positive long-term bio-physical and socio-economic aspects of the project as a whole greatly outweigh the minor negative construction related impacts, particularly since effective mitigation measures to reduce the negative impacts exist. There are no indications to suggest that the preferred alternative will have a significant detrimental impact on the environment. Instead, a long-term positive impact is anticipated. This is discussed in further detail below:

CONSTRUCTION PHASE:

It is most likely that all identified construction related impacts would be limited to the duration of this phase. Impacts on the bio-physical environment are generally considered to be of **Medium (-)** to **Low (-)** significance, which can be reduced to **Low (-)** and **Very Low (-)** with the implementation of appropriate mitigation measures. Construction related impacts can generally be very effectively managed through the implementation and regular auditing of a CEMP. The impact on the socio-economic environment is expected to be **Medium** to **High (+)** due largely to the creation of jobs and up-skilling of local workers.

OPERATIONAL PHASE:

Potential Operational Phase related impacts for both the bio-physical and socio-economic environments are generally considered to be of **Medium to High (+)** significance. These positive impacts are expected to arise due to the following:

- Improved wetland habitat for red data species
- Improved wetland services (which has benefits for downstream as well as local users)
- Empowering of local community

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	YES ✓	NO

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

Based on the information provided in this report, the outcome of the impact assessment and the supporting documentation it is the recommendation of the EAP that authorization be granted for the following reasons:

- The proposed rehabilitation activities are likely to have significant positive bio-physical and socio-economic benefits, not just for the local community for the country as a whole.
- Effective mitigation measures exist to manage the limited negative impacts that were identified.
- The proposed rehabilitation activities are in line with the principles of NEMA (in particular: people and their needs – particularly women and children – are placed at the forefront of development via the EPWP; the development can be considered to be socially, environmentally and economically sustainable; the environmental impacts of the activity are not unfairly distributed and the potential environmental impacts have been assessed and evaluated).
- The WfWetlands programme is an important part of the government's EPWP and given that the impacts of the proposed activities are not likely to be detrimental to the environment, this programme should be supported in the spirit of co-operative governance.

It is recommended that the following conditions should be included by the Department of Environmental Affairs in the Environmental Authorisation (should a positive decision be reached):

a) Mitigation measures listed in this BAR, as well as those indicated in the Final Mpumalanga Rehabilitation Plans, should be referenced as conditions of approval.
b) Construction activities must take place in accordance to the requirements of the attached CEMP, which also includes general requirements from the WfWetlands Best Management Practices Plan.
c) Regular auditing of the CEMP must take place as per the audit checklist in the Final Mpumalanga Rehabilitation Plans.

With regards to the auditing and associated reporting to the authorities during the construction phase, since the programme includes comprehensive project management and monthly sites visits by the SANBI Provincial Co-ordinator (PC) the requirements for the CEMP have been worked into the Programme's Project Inspection Report which is completed monthly by the SANBI PC. The WfWetlands Programme is responsible for ensuring the compliance of it by the contracted implementers and therefore any non-compliance identified is dealt with on site by the SANBI PC directly. It is therefore

recommended that a consolidated Environmental Project Inspection Report be submitted to DEA for each project on a bi-annual basis. This report would document any environmental non-compliance and corrective actions so that consideration can be given to these aspects in the following application for Environmental Authorisation.

Is an EMPr attached?	**YES**	~~NO~~

The EMPr must be attached as Appendix G.
The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

_____
NAME OF EAP

_____ _____
SIGNATURE OF EAP DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Refer to the locality maps and the wetland desktop maps included in the Draft Wakkerstroom Rehabilitation Plan.

Appendix B: Photographs

Refer to the site photographs included in the Draft Wakkerstroom Rehabilitation Plan.

Appendix C: Facility illustration(s)

Refer to the design drawings of each intervention included in the Draft Wakkerstroom Rehabilitation Plan.

Appendix D: Specialist reports (including terms of reference)

All rehabilitation plans include specialist wetland assessment and specialist engineering input.

Appendix E: Public Participation

E_1 – Adverts and Posters E_2 – Letters to I&AP's E_3 – Comments and Response report E_4 – Record of Commenting Authorities contacted E_5 – I&AP database E_6 – Record of meetings and minutes

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Refer to the Construction Phase EMP included in the Draft Wakkerstroom Rehabilitation Plan.

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information

H_1 –Wetland forum minutes

SECTION F: APPENDICES

The following appendices must be attached as appropriate:

Appendix A: Maps

Refer to the locality maps and the wetland desktop maps included in the Draft Wakkerstroom Rehabilitation Plan.

Appendix B: Photographs

Refer to the site photographs included in the Draft Wakkerstroom Rehabilitation Plan.

Appendix C: Facility illustration(s)

Refer to the design drawings of each intervention included in the Draft Wakkerstroom Rehabilitation Plan.

Appendix D: Specialist reports (including terms of reference)

The rehabilitation plan includes specialist wetland assessments and specialist engineering input.

Appendix E: Public Participation Process

E_1 – Proof of adverts & notices
E_2 – Stakeholder & I&AP Notifications
E_3 – CRR *(no comments received to date)*
E_4 – Notification of Authorities and Organs of State *(to be included in Final BAR)*
E_5 – Database
E_6 – Record of meetings & minutes *(no meetings to date)*

WORKING FOR WETLANDS PROGRAMME
ENVIRONMENTAL IMPACT ASSESSMENT (EIA) - WETLAND REHABILITATION PROJECTS IN SOUTH AFRICA

PUBLIC PARTICIPATION: BASIC ASSESSMENT PROCESS

DEA REFERENCE NUMBERS:
MPUMALANGA Province Wetlands rehabilitation projects: 14/12/16/3/3/1/760
LIMPOPO Province Wetlands rehabilitation projects: 14/12/16/3/3/1/761
KZN Province Wetlands rehabilitation projects: 14/12/16/3/3/1/762
GAUTENG Province Wetlands rehabilitation projects: 14/12/16/3/3/1/759

NEAS REFERENCE NUMBERS:
MPUMALANGA Province Wetlands rehabilitation projects: DEA/EIA/0001565/2012
LIMPOPO Province Wetlands rehabilitation projects: DEA/EIA/0001566/2012
KZN Province Wetlands rehabilitation projects: DEA/EIA/0001567/2012
GAUTENG Province Wetlands rehabilitation projects: DEA/EIA/0001564/2012

The South African National Biodiversity Institute's (SANBI) Working for Wetlands Programme intends to rehabilitate a number of degraded wetlands within four Provinces of South Africa. Aurecon has been appointed to undertake the planning as well as the requisite environmental authorisation and water licence process(es) (GA) for the project.

Wetland rehabilitation involves the construction of a variety of interventions that could include gabion, and concrete structures; as well as soft options such as re-vegetation and/ or alien removal. The number, type, scale and location of each of these interventions within the wetlands would vary according to the nature and magnitude of the problem and the state of the receiving environment.

The programme is listed in terms of the National Environmental Management Act (NEMA) (Act No. 107 of 1998) and therefore requires authorisation from the competent authority, *viz.* the Department of Environmental Affairs (DEA) via the EIA process (GN R543 of 18 June 2010). The proposed project(s) triggers one or more of the following activities 11 and 18 of GN 544 and 13 and 16 of GN 546 of 18 June 2010 of the NEMA.
Aurecon applied for exemption from independence as their engineers are undertaking the design work for the interventions. An application to DEA is being considered.
In terms of Section 39 of the National Water Act (NWA), a General authorisation (GA) has been granted for certain activities that are listed under the NWA (Act No. 36 of 1998) that usually require a Water Use Licence; as long as these activities are undertaken for wetland rehabilitation and the primary purpose of the rehabilitation is for conservation purposes. Applications for a GA will be submitted to the competent authority, *viz.* the Department of Water Affairs.
Notice is hereby given of a public participation process in terms of the NEMA EIA Regulations (2010) and the NWA (1998).

Public Participation
Draft Basic Assessment Reports for the five affected Provinces is available to I&APs for public comment until **4 February 2012**. All reports are available for download from www.aurecongroup.com - click on the "**South Africa**", "***Public Participation"***, "***Environmental Projects***" and finally the "***SANBI Working for Wetlands***" project.

If you would like to raise any issues, concerns and/ or suggestions, request further information, and/ or would like to register as an interested and/ or affected party, please contact **Franci Gresse** on 021 526 6022, franci.gresse@aurecongroup.com, Fax: (021) 526 9500 or P.O. Box 494, Cape Town, 8000.

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EXPANDED PUBLIC WORKS PROGRAMME

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WERK-VIR-VLEILANDE-PROGRAM
OMGEWINGSINVLOEDBEPALING (OIB) VIR VLEILAND- REHABILITASIE PROJEKTE IN SUID-AFRIKA

PROSES VAN DEELNAME: BASIESE EVALUERINGSPROSES

NOS -VERWYSINGSNOMMERS:
MPUMALANGA Provinsie Vleiland-rehabilitasieprojek: 14/12/16/3/3/1/760
LIMPOPO Provinsie Vleiland-rehabilitasieprojek: 14/12/16/3/3/1/761
KZN Provinsie Vleiland-rehabilitasieprojek: 14/12/16/3/3/1/762
GAUTENG Provinsie Vleiland-rehabilitasieprojek: 14/12/16/3/3/1/759

NOS -VERWYSINGSNOMMERS:
MPUMALANGA Provinsie Vleiland-rehabilitasieprojek: DEA/EIA/0001565/2012
LIMPOPO Provinsie Vleiland-rehabilitasieprojek: DEA/EIA/0001566/2012
KZN Provinsie Vleiland-rehabilitasieprojek: DEA/EIA/0001567/2012
GAUTENG Provinsie Vleiland-rehabilitasieprojek: DEA/EIA/0001564/2012

Die Suid-Afrikaanse Nasionale Biodiversiteit-instituut (SANBI) se Werk-vir-Vleilande-program beoog om 'n aantal afgetakelde vleilande in vier provinsies van Suid-Afrika te rehabiliteer. Aurecon is aangestel om die beplanning en die vereiste omgewingsmagtiging- en waterlisensieproses(se) vir die projek te onderneem.

Die rehabilitasie van vleilande behels die konstruksie van 'n verskeidenheid intervensies, wat "gabion"-strukture (bv. keermure / omleidingsmure) en betonstrukture (bv. keerwalle); asook sagte opsies soos herplanting en/of die verwydering van indringers kan insluit. Die aantal, tipe, omvang en ligging van elkeen van hierdie intervensies in die vleilande sal varieer na gelang van die natuur en omvang van die probleem en die toestand van die betrokke omgewing.

Die program is gelys ingevolge die Wet Op Nasionale Omgewingsbestuurs (WNOB) (Wet nr. 107 van 1998) en die magtiging van die bevoegde owerheid, naamlik die Departement van Omgewingsake (DOS), word by wyse van die Omgewingsinvloedbepalingproses (OIB-proses) (GK R543 of 18 June 2010) vereis. Die voorgestelde projek(te) gee aanleiding tot een of meer van die volgende aktiwiteite: 11 en 18 van GK 544 en 13 en 16 van GK546 van 18 Junie 2010 van die WNOB.
Aurecon het aansoek gedoen om vrystelling van onafhanklikheid, aangesien sy ingenieurs die ontwerpwerk vir die intervensies gaan onderneem. Die aansoek word tans deur die DOS oorweeg.
Ingevolge Artikel 39 van die Nasionale Waterwet (NWW), is 'n Algemene Magtiging (AM) uitgereik vir sekere aktiwiteite wat onder die NWW (Wetnr. 36 van 1998) aangedui word en wat gewoonlik 'n Watergebruikslisensie vereis, mits hierdie aktiwiteite vir vleilandrehabilitasie onderneem word en die primêre doel van die rehabilitasie vir die doeleindes van bewaring is. Aansoeke vir 'n AM sal aan die bevoegde owerheid, naamlik die Departement van Waterwese, voorgelê word.
Kennis word hiermee gegee van 'n proses van openbare deelname ingevolge WNOB se OIB-regulasies (2010) en die NWW (1998).

Openbare Deelname
Die Basiese Omgewingsinvloedbepalingverslae vir die vier geaffekteerde Provinsies is beskikbaar aan alle Belanghebbende wn/of geaffekteerde partye (B&GPe) vir publieke kommentaar tot **4 Februarie 2013**. Alle verslae sal beskikbaar wees op die webwerf **www.aurecongroup.com** - kliek op "**Suid-Afrika**", "***Openbare Deelname"***, "***Omgewingsprojekte***" en dan uiteindelik op die "***SANBI Werk-vir-Vleilande***"-projek.

Indien u enige kwessies, kwellinge en/of voorstelle wil opper, verdere inligting verlang en/of as 'n B&GPe wil registreer, kontak asseblief vir **Franci Gresse** by 021 526 6022, franci.gresse@aurecongroup.com , Faks: (021) 526 9500 of Posbus 494, Kaapstad, 8000.

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WORKING FOR WETLANDS PROGRAMME
ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR WETLAND REHABILITATION PROJECTS IN SOUTH AFRICA

PUBLIC PARTICIPATION: BASIC ASSESSMENT PROCESS

DEA REFERENCE NUMBERS:
14/12/16/3/3/1/760 Mpumalanga Province Wetlands rehabilitation projects

NEAS REFERENCE NUMBERS:
DEA/EIA/0001565/2012 Mpumalanga Province Wetlands rehabilitation projects

The South African National Biodiversity Institute's (SANBI) Working for Wetlands Programme intends to rehabilitate a number of degraded wetlands within four Provinces of South Africa. Aurecon has been appointed to undertake the planning as well as the requisite environmental authorisation and water licence (GA) process(es) for the project.

Working for Wetlands is a national poverty alleviation programme that is part of the Government's Expanded Public Works Programme (EPWP). The two main objectives of the Working for Wetlands Programme are wetland conservation and rehabilitation coupled with poverty reduction through job creation and skills development amongst vulnerable and marginalised groups.

Wetland rehabilitation involves the construction of a variety of interventions that could include gabion structures (e.g. retaining/ diversion walls), concrete structures (e.g. weirs), earthen structures (e.g. berms or sloping); as well as soft options such as re-vegetation and/ or alien removal, and/or eco-logs. The number, type, scale and location of each of these interventions within the wetlands would vary according to the nature and magnitude of the problem and the state of the receiving environment.

Rehabilitation activities are to occur in the following wetland project areas in Mpumalanga:
- Wakkerstroom

The programme is listed in terms of the National Environmental Management Act (NEMA) (Act No. 107 of 1998) and therefore requires authorisation from the competent authority, *viz.* the Department of Environmental Affairs (DEA) via the EIA process (GN R543 of 18 June 2010). The proposed project(s) triggers one or more of the following activities 11 and 18 of GN 544 and 13 and 16 of GN 546 of 18 June 2010 of the NEMA

Aurecon applied for exemption from independence as their engineers are undertaking the design work for the interventions. An application to DEA is being considered.

In terms of Section 39 of the National Water Act (NWA), a General authorisation (GA) has been granted for certain activities that are listed under the NWA (Act No. 36 of 1998) that usually require a Water Use Licence; as long as these activities are undertaken for wetland rehabilitation and the primary purpose of the rehabilitation is for conservation purposes. Applications for a GA will be submitted to the competent authority, *viz.* the Department of Water Affairs.

Notice is hereby given of a public participation process in terms of the NEMA EIA Regulations (2010) and the NWA (1998).

Working for Wetlands has received environmental authorisation from DEA for activities planned for specific project areas for five Provinces for the 2012/2013 financial year. For the 2013/2014 financial year, some of these activities will be carried over, and in some of the existing project areas, new wetlands and/ or new interventions have been proposed. Basic Assessments have been undertaken for new wetlands and/ or new interventions. A Basic Assessment Report will be submitted to DEA for four affected Provinces. In order to prevent the duplication of basic assessment studies, activities would continue in existing authorised project areas. DEA has however requested that annual updates of the basic assessments be produced. Where new project areas are proposed, new basic assessment reports will be produced. These updated BARs are now available for public comment. Registered I&APs will be notified of the availability of the Reports.

Public Participation
Basic Assessment Reports for this Province are available for public comment. All reports are available for download from www.aurecongroup.com - click on the "**South Africa**", "***Public Participation"***, "***Environmental Projects***" and finally the "***SANBI Working for Wetlands***" project.

If you would like to raise any issues, concerns and/ or suggestions, request further information, and/ or would like to register as an interested and/ or affected party, please contact **Franci Gresse** on 021 526 6022, franci.gresse@aurecongroup.com, Fax: (021) 526 9500 or P.O. Box 494, Cape Town, 8000.

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SANBI
Biodiversity for Life

EXPANDED PUBLIC WORKS PROGRAMME

aurecon

PO Box 494,
Cape Town
8000
Email: Claire.blanche@aurecongroup.com

30 November 2012

Dear Sir / Madam,

WORKING FOR WETLANDS REHABILITATION PROJECT

DEA REFERENCE NUMBERS:
MPUMALANGA Province Wetlands rehabilitation projects: 14/12/16/3/3/1/760
LIMPOPO Province Wetlands rehabilitation projects: 14/12/16/3/3/1/761
KZN Province Wetlands rehabilitation projects: 14/12/16/3/3/1/762
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GAUTENG Province Wetlands rehabilitation projects: DEA/EIA/0001564/2012

40 DAY COMMENT PERIOD ON DRAFT REPORTS

This letter is available in any of the official languages on written request.

BACKGROUND INFORMATION

Aurecon South Africa (Pty) Ltd was appointed by the South African National Biodiversity Institute (SANBI) to undertake the various project activities and associated reporting required for the various phases of the wetland rehabilitation planning cycle. These include both Phase 1 & 2 Reports, the Wetland Rehabilitation Plans as well as the Basic Assessment Reports required for each project area within the nine provinces.

As part of the planning process, the Phase 1 reports prioritised the wetlands to be visited for Phase 2. The field work was subsequently undertaken by the project team (consisting of the Environmental Practitioner, the Engineer, the Wetland ecologist as well as the Working for Wetland's Provincial Coordinator) whereby the selected wetland sites were visited and the rehabilitation measures for each of the wetland sites agreed. This information has been included in the Phase 2 reporting in the form of a Wetland Rehabilitation plan (written for each project) and the draft Basic Assessment Report (BAR) which has been compiled for each of the affected Provinces, for the upcoming planning cycle (2013/2014).

LEGAL PROCESSES UNDER THE NATIONAL WATER ACT (NO. 36 OF 1998) AND THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT (NO. 107 OF 1998)

In terms of Section 39 of the National Water Act (NWA), a General authorisation (GA) is granted for certain activities that are listed under the NWA (Act No. 36 of 1998) that usually require a Water Use

Licence. Government Notice (G.N.) 1198 of 18 December 2009 introduced a GA for activities undertaken for the rehabilitation of wetlands for conservation purposes. Applications for a GA will be submitted to the competent authority, *viz*. the Department of Water Affairs simultaneously with the other authorisations required for this work.

EIA listed activities

The programme is listed in terms of the National Environmental Management Act (NEMA) (Act No. 107 of 1998) and therefore requires authorisation from the competent authority, viz. the Department of Environmental Affairs (DEA) via the Environmental Impact Assessment (EIA) process (GN R543 of 18 June 2010). The proposed rehabilitation project triggers the following listed activities:

- 11 and 18 of Listing Notice 1 in Government Notice R. 544, 2010; and
- 13 and 16 of Listing Notice 3 in Government Notice R. 546, 2010.

Accordingly, the EIA application form notes all triggered 2010 listed activities.

EXEMPTION FROM INDEPENDENCE

Aurecon applied for exemption from independence as its engineers are undertaking the design work for the interventions. DEA is currently considering the request.

PUBLIC PARTICIPATION PROCESS AND WAY FORWARD

This letter, a national advertisement in the *Sunday Times* and *Die Rapport* on 1 and 2 December 2012; along with site notices (in at least two official languages), forms the official notification of the Public Participation process (PPP) for the 2013/2014 planning cycle. The draft rehabilitation plans (written for each project) and the draft Basic Assessment Report (BAR) (compiled for each Province) has been made available for public comment.

Please find enclosed a copy of the Summary document which provides an overview of the Working for Wetlands programme, as well as highlights the key findings for each project located within the affected Province. A response form has also been provided whereby Interested and Affected Parties (I&APs) can provide written comment on the proposed wetland rehabilitation measures and associated projects.

The Draft BAR as well as the Draft Rehabilitation plans for the proposed wetland rehabilitation activities for each affected Province (four in total) have been made available for a 40 day review period from **Wednesday, 5 December 2012**. The SANBI PC and implementer have hard copies of the Phase 2 Reporting for their Province. Should you wish to review the report, please contact Franci Gresse to have this arranged. The draft Reports have also been made available for download from the Aurecon website (http://www.aurecongroup.com - - click on the "**South Africa**", "***Public Participation"***, "***Environmental Projects***" and finally the "***SANBI Working for Wetlands***" project). I&APs have until **4 February 2013** to submit comments on the draft Phase 2 reports. Electronic copies of the Phase 2 reporting will also made available on written request.

After the 40 day public comment period, the draft BAR as well as the draft Rehabilitation Plans will be updated via incorporating I&AP comments received on the reports. The updated, final Reports will then be submitted to DEA for their decision. Registered I&APs will simultaneously be afforded a further 21 days to provide comment on the Final BAR. Further comments received will be collated

by Aurecon and submitted to DEA. Once DEA have made their decision on the proposed project, all registered I&APs on the project database will be notified of the outcome of the decision within twelve (12) calendar days of the date of the decision. Should anyone (a member of public, registered I&AP or the Applicant) wish to appeal DEA's decision, a Notice of Intention to Appeal must be lodged with the Minister within twenty (20) calendar days of the date of the decision.

If no appeals are received and the landowner(s) have signed (i.e. approved) the proposed rehabilitation work detailed in the Final Rehabilitation plan, the interventions will be constructed from April 2013 until March 2014.

Should you wish to raise any issues, concerns and/or suggestions on the draft Phase 2 reports, and/or register as an I&AP, please contact Franci Gresse at Tel: (021) 526 6022; Fax: (021) 526 9500; Mail: PO Box 494, Cape Town, 8000; or Email: franci.gresse@aurecongrou.com or Claire.Blanche@aurecongroup.com; by **4 FEBRUARY 2013**.

Should you have any queries, please do not hesitate to contact us.

Yours sincerely
AURECON

CLAIRE BLANCHÉ *(Pr. Sci. Nat).*
Practitioner: Environmental & Advisory Services

Annexure A – Executive Summary

WORKING FOR WETLANDS REHABILITATION PROJECT IN THE MPUMALANGA PROVINCE: DRAFT BASIC ASSESSMENT REPORT

Summary Document

The South African National Biodiversity Institute (SANBI) appointed Aurecon South Africa (Pty) Ltd to undertake the project activities and associated reporting required for the various phases of the rehabilitation planning cycle. These include Phase 1 Reports, the wetland rehabilitation plans as well as the BARs required for each project area within four provinces. Refer to Figure 1 below that graphically depicts the entire 24 month planning and implementation process which begins in Phase 1 and ends in Phase 3. Phase 1 and 2 are undertaken in the first twelve months and Phase 3 in the second twelve months.

Objectives of the Working for Wetlands Programme

Working for Wetlands (WfWetlands) is a government funded programme that started in 2001 with a R20 million budget that was implemented across 14 projects. The programme is managed by SANBI and is currently implemented across 35 projects countrywide with a budget of R83 million. Being part of the Expanded Public Works Programme (EPWP), more than 1 500 local people are recruited to work in projects on limited term contracts. Typical activities undertaken within the projects include:

- constructing structures (gabions, berms, weirs) in wetlands;
- removing invasive alien plants from the wetland and immediate catchment;
- plugging artificial drainage channels in the wetland;
- raising awareness of wetlands among workers, landowners and the general public;
- providing adult basic education and training, and technical skills; and
- developing management plans for the rehabilitated wetlands.

The two main objectives of the programme are **wetland conservation** in South Africa and **poverty reduction** through **job creation** and **skills development** amongst **vulnerable** and **marginalised** groups.

Environmental legislation

EIA listed activities

The proposed project(s) triggers listed activities 11 and 18 of Regulation 544 and activities 13 and 16 or Regulation 546 of 18 June 2010of the National Environmental Management Act (No. 107 of 1998) (NEMA), as amended.

A Basic Assessment (BA) process must therefore be undertaken before the authorities, in this instance the national Department of Environmental Affairs (DEA), can make a decision

on whether the proposed activities and ultimately the proposed projects should be authorised.

Exemption from independence

The Public Participation process (PPP) was formally initiated with notifications to Interested and Affected Parties (I&APs) of the availability of this Draft BAR for comment on 5 December 2012. Adverts were also placed in *Die Burger* and *Sunday Times* on 1 and 2 December 2012, respectively. Aurecon applied for exemption from independence as its engineers are undertaking the design work for the interventions.

As part of the BA process, environmental (biophysical and socio-economic) impacts are identified and assessed to ascertain the consequences of the project on the environment and the people that live in it. Based on the findings from the impact assessment, specific mitigation measures are recommended to reduce the significance of negative impacts and enhance positive impacts (those that improve the integrity and health of an ecosystem or human health and well-being). The process also gives I&APs an opportunity to comment and to be kept informed about decisions that may impact them or the environment.

As planning continues over a 24 month period, prioritisation and planning (in terms of identifying which wetlands will be rehabilitated and how) is undertaken within the first 12 months, while the actual implementation (via the construction of the interventions) is undertaken within the second 12 months. Interventions may be postponed even if they have received environmental authorisation due to issues such as lack of budget, logistical problems in the area, and / or dramatic changes to the receiving environment (flooding etc.). In other words these structures would be 'banked' for implementation as/ when suitable or appropriate.

In terms of Section 39 of the National Water Act (No. 36 of 1998), a General Authorisation (GA) has been granted for certain activities that are listed under the NWA that usually require a Water Use Licence. Such a GA exists for wetland rehabilitation as long as the activities are for **conservation purposes**. As some of the rehabilitation activities entail '*impeding or diverting the flow of water in a watercourse*' and / or '*altering the bed, banks, course or characteristics of a watercourse,* a number of GAs have been registered with the Department of Water Affairs (DWA) for structures that would ordinarily require a Water Use Licence. For each planning cycle the proposed rehabilitation work will be submitted to DWA, the requisite approval sought and project monitoring reported as required.

Phase 1, 2, and 3 explained

The purpose of **Phase 1** and the associated reporting is to identify within a province:

1. which are the priority catchments and associated wetlands / sites within which rehabilitation work needs to be undertaken; and to
2. identify key stakeholders who would review and comment on the detailed planning (Phase 2) reports.

As part of Phase 1, the Engineers peg / set-out the previous year's interventions that had been authorised by DEA. Refer to Figure 1 below that graphically depicts the entire 24 month planning process which begins in Phase 1 and ends in Phase 3.

Wetland ecologist working in the Mpumalanga wetlands.

Regular monitoring and evaluation (M&E) of the interventions is undertaken to establish the effectiveness of the structure in rehabilitating the identified wetland. This baseline data is also included in the Phase 2 reporting. BARs are compiled as separate documents (one for each province), while the Rehabilitation Plans are compiled for each project and are attached as an Appendix to the provincial BAR and submitted to DEA for their environmental authorisation decision. Summaries of the wetland prioritisation, problems and rehabilitation objectives are included in the rehabilitation plans.

As part of Phase 2, a maintenance inventory is undertaken by the PC, in consultation with the Engineer of any existing interventions that are damaged and/ or failing and thus requires maintenance.

Upon approval of the wetland rehabilitation plan by DEA, DWA, and the directly affected landowners, the work detailed for the project will be implemented within a year with on-going monitoring being undertaken thereafter. This occurs within **Phase 3** of the project cycle. The Rehabilitation Plans are considered to be the primary working document for the implementation of the project via the construction / undertaking of interventions[2] listed in the Plan. Seventeen implementing agents (IAs) are currently employed and are responsible for employing contractors and their teams (workers) to construct the interventions detailed in each of the Rehabilitation plans.

[2] This could include soft options such as alien clearing, eco-logs, gabion structures as well as hard structures for example weirs

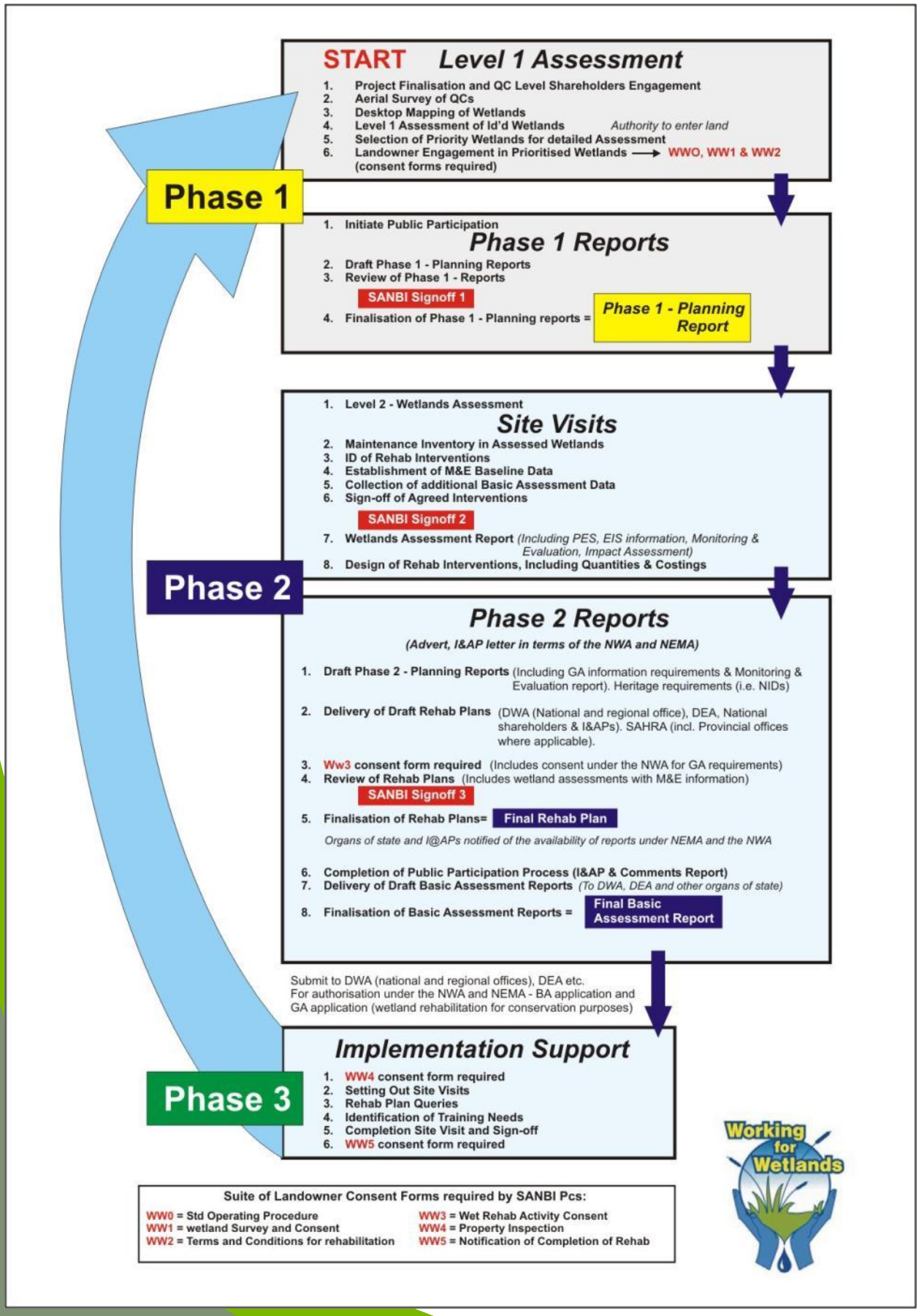

Figure 1: The Working for Wetlands planning process (Phase 1 to Phase 3)


A buttress weir being built and a site being prepared by the Implementing agents

Wetland Assessments

Time and resources required for detailed assessments of the wetlands is limited, and thus using the WET-Tools methodology, a rapid procedure was adopted to assist the project team in systematically carrying out the assessments under constraints. The assessments entailed the following steps:

1. Assessment of the impacts and threats within each wetland system via establishing the current 'health' of the wetland;
2. Establishment of rehabilitation objectives and the selection of appropriate interventions to achieve the identified rehabilitation objectives; and finally; and
3. Assessment of the likely contribution of rehabilitation interventions to the wetland health and ecosystem delivery via determining the spatial area likely to be affected by the proposed intervention(s) and assessing the benefits to the health and / or eco-system services of the specific wetland i.e. the difference between the current health and the projected health of the wetland with and without the intervention(s).

Screening process – Alternative

While on-site during Phase 2, the project team identify and locate the interventions that would meet the rehabilitation objectives as well as the programme's overall objectives (wetland conservation in South Africa and poverty reduction through job creation). The project team discuss and evaluate the potential intervention options; and factoring in environmental, social, and economic considerations into their discussions, they agree on the most appropriate intervention that would meet the rehabilitation objectives for the wetland.

Increased labour requirement for the Working for Wetlands Programme

As a result of changes to the donor fund requirements, an increase in the labour percentage requirement for the WfWetlands programme has been experienced since 2010. The project team were thus required to investigate more labour intensive intervention options for wetland rehabilitation. These included soft engineering options such as berms, eco-logs, as well as alien clearing.

This resulted in the project team having to investigate other wetland areas in order to meet the requirements. Consequently, some of the wetlands prioritised during 2012 in the Phase 1 reporting would not be rehabilitated during this planning cycle (due to the large amount of hard engineering required which was less labour intensive), while new additional wetlands were identified during the Phase 2 site visits as their rehabilitation requirements contributed towards meeting the increased labour component for the programme.

Rehabilitation work within floodplain systems

Based on lessons learnt and project team discussions had during the National Prioritisation workshop in November 2010 SANBI took an in-principle decision regarding work within floodplain systems.

Recognising the ecosystem services provided by floodplain wetlands and the extent to which they have been transformed, SANBI do not intend to stop undertaking rehabilitation work in floodplains entirely. Instead, SANBI propose to adopt an approach to the rehabilitation of floodplain areas that takes into account the following guiding principles:

1. As a general rule, avoid constructing hard interventions within an active floodplain channel; and rather
2. explore rehabilitation opportunities on the floodplain surface using smaller (possibly more) softer engineering options outside of the main channel.

When rehabilitation within a floodplain setting is being contemplated, it will be necessary to allocate additional planning resources, including the necessary specialist expertise towards ensuring an adequate understanding of the system and appropriate design of interventions.

Intervention design

After appropriate interventions have been decided upon by the project team, GPS coordinates and digital photographs are taken for record purposes. Appropriate dimensions of the locations are recorded in order to design and calculate quantities for the interventions. At the end of the site visit a location layout of the agreed interventions and rehabilitation objectives is agreed upon by the project team. Based on certain criteria and data measurements (water volumes, flow rates, and soil types); the availability of materials such as rock; labour intensive targets; maintenance requirements etc., the interventions are then

designed. Bills of quantity are calculated for the designs and cost estimates made. Maintenance requirements for existing interventions in the assessed wetlands are similarly detailed and costs calculated. The engineer also reviews and, if necessary, adjusts any previously planned interventions that are included into the historical rehabilitation plans.

Maintenance and amendments to authorized interventions

Based on discussions with DEA, it was agreed that variations and deviations (in design or location) to the already authorised intervention(s) could be made via written notification to DEA which would include a motivation, supporting information, and the proposed changes clearly detailed. The DEA have formalised this approach by including a condition in the WfWetlands EA whereby any changes to, or deviations from, the project description require written approval from DEA. The proposed changes (type, design, location), motivation, as well as other project-related information (redesigns, site photographs etc.) are provided to DEA. Anticipated reasons for the changes could include modifications to the aquatic system as a result of unforeseen circumstances such as flooding, fires etc., savings to the project budget, improved rehabilitation and/ or enhanced protection from erosion etc.

As per the definition of maintenance[3], modifications would be made to existing (built) interventions as long as the changes occur within the same footprint, location etc. DEA would be informed of the changes in writing.

For a list of interventions requiring redesign, maintenance and or new structures, please refer to the summary in **Table 5** below.

Maintenance The replacement, repair or the reconstruction of an existing structure within the same footprint, in the same location, having the same capacity and performing the same function as the previous structure ('like for like').

Monitoring and Evaluation

During the Phase 2 site visits, baseline monitoring is carried out prior to the rehabilitation of the wetland to provide comparable data for monitoring at a later stage (once the intervention(s) have been constructed). Monitoring and Evaluation (M&E) is thus a vital component of the project as it allows for the evaluation of the performance of the interventions in successfully rehabilitating the affected wetland. Baseline M&E data (fixed point photography, GPS co-ordinates, water quality measurements etc.) as well as information for the BAR is collected during the Phase 2 site visits.

[3] **Maintenance:** The replacement, repair or the reconstruction of an existing structure within the same footprint, in the same location, having the same capacity and performing the same function as the previous structure ('like for like').

Based on WET-Rehab Evaluate tool, protocols for data collection for monitoring purposes have been developed, which includes compulsory collection of certain data[4], while other data collection for monitoring would be considered to be optional[5] depending on the importance of the wetland, costs of rehabilitation undertaken etc.

Upon completion of the interventions within a wetland, the Engineer would revisit the site to sign-off on the interventions based on what was detailed in the rehabilitation plan; while the Wetland ecologist would assess the effectiveness of the intervention(s) in achieving the specified objectives and contributing towards the rehabilitation strategy. Appropriate corrective action would be specified if either of the project team members were unsatisfied with the intervention's effectiveness in terms of achieving the objectives and long-term stability. Ideally an annual M&E report would be compiled by the project team; however, this process is still being established and would require additional funding.

Future planning for the project areas

Table 2: Summary of possible budget allocations per project for the next 5 years in Mpumalanga

	2009-10	New project name	2010-11	2011-12	2012-13	2013-14	Tot for 5 years per Province
Draaikraal	R 920 000	Steelpoort project	R 1 674 540	R 1 758 267	R 1 846 180	R 1 938 490	R 8 709 877
Verloren Valei	R 572 400						-
Steenkampsberg	R 1 080 000	Inkomati Project	R 1 674 540	R 1 758 267	R 1 846 180	R 1 938 490	R 8 297 477
Save the Sand	R 1 132 000	Lowveld Project	R 1 674 540	R 1 758 267	R 1 846 180	R 1 938 490	R 9 429 477
Sterkspruit	R 1 080 000						-
Upper Usutu	R 682 014	Highveld Project	R 1 432 500	R 1 504 125	R 1 579 331	R 1 658 300	R 7 538 284
Nooitgedacht	R 682 014						-
Wakkerstroom	R 1 364 029	Wakkerstroom Project	R 1 432 500	R 1 504 125	R1 633 725	R 1 658 300	R 7 538 285
Total for year	**R 7 512 458**		**R 7 888 620**	**R 8 283 051**	**R 8 697 202**	**R 9 132 070**	**R 41 513 400**

Key project objectives include:

- Deactivation of head-cuts,
- restoration of hydrological integrity; e.g. rising the general water table or redistribution of water across wetland area;
- Recreation of wetland habitat;
- Biodiversity enhancement; and
- Job creation and social upliftment.

[4] Maintenance inventory, rehabilitation effectiveness, fixed point photography/ site photographs, and wetland assessments.
[5] Sediment and erosion control, hydrology, vegetation and water quality

Summary of the Final BAR findings

Wetlands that were prioritised during Phase 1 and visited during Phase 2 are located within the following quaternary catchments- refer to **Figure 2** below.

Phase 2 site visits were undertaken for the following projects:

- Goedgevonden (Wakkerstroom): 14 August 2012
- Paardeplaats (Wakkerstroom): 15 August 2012

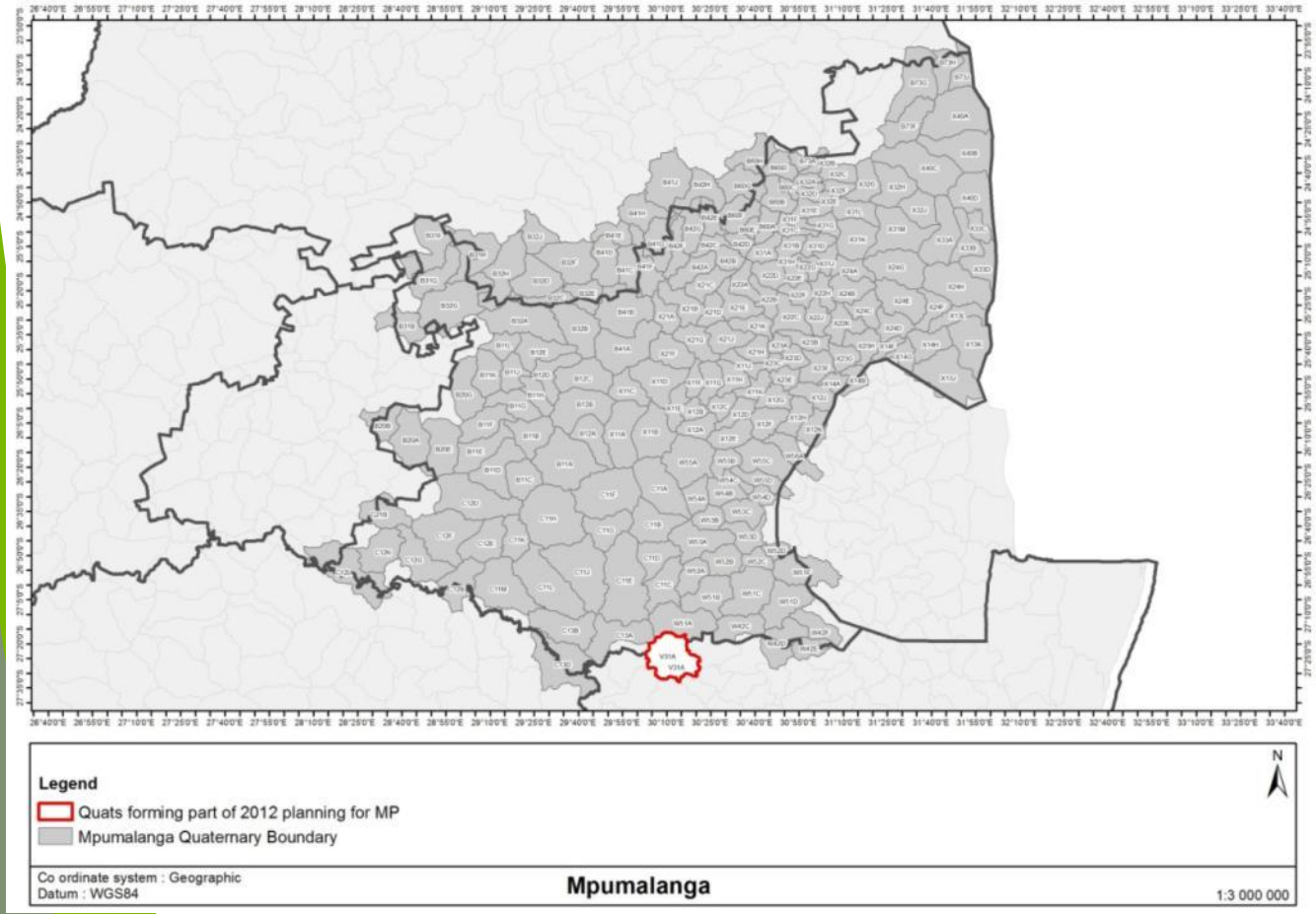

Figure 2: Quaternary catchments that were visited during the Phase 2 site visits for the Mpumalanga Province

Within the Mpumalanga Province, work for the 2012/2013 planning cycle will include the following:

WAKKERSTROOM – W42C

Goedgevonden:
The Wakkerstroom wetland rehabilitation project was historically located in the V31A and W42C quaternary catchments near the town of Wakkerstroom and Luneburg in the Mpumalanga province. After work in the Wakkerstroom wetlands was completed, the focus shifted to the Goedgevonden wetland (W42C) near Luneburg. The aim of the wetland

rehabilitation has been the stabilisation of active erosion and the deactivation of drainage canals and furrows resulting in the desiccation of the identified wetland systems. In 2011 work was also extended on the farm Goedgevonden to include alien clearing, follow up spraying of alien vegetation and the re-seeding of areas previously cleared by the landowner

The 2012/2013 planning cycle addresses the last interventions needed in the Goedgevonden wetland and future planning cycles will identify new wetlands and properties in the catchment area.

Paardeplaats:
Work on the farm Paardeplaats commenced in 2011 and included alien clearing, follow up spraying of alien vegetation and the re-seeding of areas previously cleared by the landowner.

The 2012/2013 planning cycle extended work on the farm to include the rehabilitation and stabilisation of an eroded dirt road, the decommissioning of a highly degraded dirt road, stabilisation of headcut erosion, rehabilitation of gullies and rehabilitation of a hillside seep area.

The project as a whole has further been aligned with the extent of the National Grasslands Biodiversity Programme's (NGBP) demonstration area in the Wakkerstroom/Luneburg area. Both Goedgevonden and Paardeplaats fall within the newly proclaimed Kwa Mandlangampisi Protected Environment. The project area does extend into KwaZulu-Natal, but the focus of the wetland rehabilitation is the wetlands and tributaries within the Mpumalanga province.

The Wakkerstroom project area in the W42C catchment occurs within the upper reaches of the KwaNtombe River, which is considered to be an important water resource within the region. A range of wetland types, characteristic of the region, are represented in the area, including permanent and seasonal marshes, peatlands and seepage areas. The wetlands within the area are considered to be important from a water quantity and quality perspective, especially due to their position in the upper reaches of the river.

A review of the Mpumalanga Biodiversity Conservation Plan (MBCP) highlights that the majority of the Wakkerstroom project area is considered as 'Irreplaceable' in terms of its contribution towards aquatic biodiversity and terrestrial biodiversity. The rehabilitation of the wetlands within the catchment is likely to contribute towards the maintenance of the aquatic and terrestrial biodiversity of the region. The Wakkerstroom wetland is also considered to be regionally important in terms of the maintenance of biological diversity, with the reserve supporting a number of Red Data species, mostly bird species**.**

Figure 3: Goedgevonden wetland (left-hand image) and Paardeplaats seep area (right-hand image)

The rehabilitation of the Goedgevonden wetland would involve the following interventions *inter alia*:

- Gabion and concrete weir
- Gabion diversion walls
- Earthen diversion berms
- Concrete diversion berm
- Reno Matrass
- Earthworks

Rehabilitation activities on the farm Paardeplaats would involve the following interventions *inter alia*:

- Concrete road strips
- Gabion diversion wall
- Earthen diversion berms
- Rock packs
- Surface cross drains

The number, type, scale and location of each of these interventions would vary according to the nature and magnitude of the problem and the state of the receiving environment.

The list of interventions which form part of this Basic Assessment process is summarised in **Table 3** below. The engineering designs for each of these interventions are included in the Final Wakkerstroom Rehabilitation Plan which forms part of the BAR.

Summary of the potential impacts identified

Table 3:Summary of impacts

***Construction Phase*: Description of Impact**	***Significance of Impact***		
	Preferred Alternative		
	No Mitigation	***With mitigation***	***No Go***
Job creation	Medium (+)	High (+)	Medium (-)
Increased awareness of wetland importance	Medium (+)	High (+)	Medium (-)
Fire risk	High (-)	Low (-)	Neutral
Nuisance impacts	Low (-)	Very Low (-)	Neutral
Heritage impacts	Very Low (-)	Neutral	Neutral
Worker safety	Medium (-)	Low (-)	Neutral
Flora & Fauna	Medium (-)	Low (-)	Medium (-)
Aquatic eco-system impacts	Medium (-)	Low (-)	Medium (-)
Sourcing borrow material	Medium (-)	Low (-)	Neutral
Work within conservation areas	Medium (-)	Low (-)	Neutral
Disturbance of wetland soil profile	Medium (-)	Low (-)	Neutral
***Operational Phase*: Description of Impact**			
Changes in land use	Low (+)	Medium (+)	
	Medium (-)	Low (-)	Low (-)
Reduced water storage and treatment costs	Medium (+)	Medium (+)	Low (-)
Employment	Medium (+)	Medium (+)	Medium (-)
Ecosystem functioning	Medium (+)	Medium (+)	High (-)
Flora and Fauna	Medium (+)	Medium (+)	Medium (-)
Reduced soil erosion	Medium (+)	Medium (+)	Medium (-)
Public safety	Medium (-)	Low (-)	Neutral

Key mitigation measures recommended

A summary of the key mitigation measures recommended to reduce the significance of the potential negative impacts and enhance potential positive impacts is provided in Table 3 below.

Table 4: Key mitigation measures recommended for potential operational phase impacts

Construction phase impacts
Impacts on aquatic ecosystems
Implement and enforce the CEMP
Impacts on flora & fauna
Consult the Crane Working Group with regards to identified wattled crane breeding sites and crowned crane foraging areas.
Implement and enforce the CEMP
Impacts on heritage resources
Contact the provincial heritage resource agency should any artefact be found or cultural use of a wetland be noted
Nuisance impacts
Workers to be given environmental awareness "toolbox talks"
Implement and enforce the CEMP
Liaise with landowner
Socio-economic impacts
Draw labour from the local community
Workers to be aware of fire risks and contingency plans
Operational phase impacts
Impact on flora and fauna
Consult with the Crane Working Group with respect to power line electrocutions
Consult Crane Working Group with respect to best practice relating to periodic burning of wetland.

Regarding the construction phase impacts, the standard Construction Phase Environmental Management Programme (CEMP) (included as **Appendix G** of the BAR) and must be on site and complied with during the construction phase.

Need and desirability

Wetlands play a critical role in improving the ecological health of an ecosystem by performing many functions that include flood control, water purification, sediment and nutrient retention and export, recharge of groundwater, as well as acting as vital habitats for diverse plant and animal species. Wetlands are thus considered to be extremely important in preserving biodiversity and are regarded as fundamental to the sustainable management of South Africa's water resources.

Wetlands also function as valuable open spaces and create recreational opportunities for people that include hiking, fishing, boating, and bird-watching. Many wetlands also have cultural and spiritual significance for the communities living nearby. Commercially, products such as reeds and peat, are also harvested from wetlands. Wetlands are thus considered to be critically important ecosystems as they provide both direct and indirect benefits to the environment and society.

Extensive damage to wetlands has occurred as a result of poor land use practices which has resulted in erosion and further degradation to aquatic ecosystems. Without the implementation of the planned rehabilitation activities (the **'no-go'** option or retaining the status quo), the programme's objectives would not be realized; and the loss of wetland habitat and its associated eco-system services would be significantly greater. The strategic importance of the WfWetlands programme is clear as evidenced by the distinct positive impacts associated with the programme which has resulted in a ***net benefit / gain*** as wetland health and integrity is improved and the associated eco-services enhanced. Overall the cumulative impact of wetland rehabilitation would thus be positive (refer to the summary of potential impacts identified above) to both human beings and the environment, now and in the future. Based on the above information, it is clear that rehabilitating wetlands is considered to be the '***best practicable environmental option***' as a result of the positive impact that the programme has on both the natural and socio-economic environment.

Figure 4: Commercial products made by locals from reeds harvested from wetlands

Conclusions and recommendations

The potential impacts associated with the rehabilitation of various wetlands within the Mpumalanga Province would result in impacts (both biophysical and social) that would positively affect the area and result in a net environmental gain for the project. These include:

- Job creation and skills transfer for local communities;
- Increased habitat for conservation worthy species (Oribi, Wattled, Grey Crowned and Blue Cranes);
- Improvements in wetland functioning and area; and
- Improved water quality and quantity downstream.

Based on the above, the EAP (Aurecon) is of the opinion that the proposed wetland rehabilitation activities being applied for should be authorised, as the substantial benefits (both biophysical and socio-economic) substantially outweigh the minimal localised negative impacts that have been identified. Furthermore, the proposed activities undoubtedly meet the principles prescribed in NEMA.

Public Participation Process and Way Forward

Public participation is an important part of the BA process, as it allows I&APs opportunity to obtain information about the proposed project and to provide input and raise any concerns at defined stages throughout the project.

The Public Participation process (PPP) was formally initiated with notifications to I&APs of the availability of this Draft BAR for comment on 5 December 2012. Adverts were also placed in *Die Burger* and *Sunday Times* on 1 and 2 December 2012, respectively. As part of the PPP, SANBI's Provincial Coordinators have been engaging with the directly affected landowners, while posters (in the key languages spoken in the Province) were erected at strategic locations in/ near the prioritised wetland(s).

As part of the 40 day public comment period on the draft Phase 2 reports, registered I&APs were sent copies of this Summary document, a letter notifying them of the public comment period as well as a response form. Based on the comments received, the draft reports will be updated. The final reports will then be made available for a 21 day comment period.

The Draft BAR for the proposed wetland rehabilitation activities for the Mpumalanga Province has been made available for review from Monday, 5 December 2012 for a 40 day comment period. SANBI's PC's and implementers have hard copies of the Phase 2 Reporting for their Province. Should you wish to review the report, please contact Franci Gresse to have this arranged. The Reports are also available for download from the Aurecon website (**http://www.aurecongroup.com** - follow the public participation links). I&APs have until **Monday, 4 February 2013** to submit comment on the Draft BAR.

After the 40 day public comment period, any I&AP comments received on the final BAR will be submitted directly to DEA for their consideration during the decision making phase. Once DEA have made their decision on the proposed project, all registered I&APs on the project database will be notified of the outcome of the decision within twelve (12) calendar days of the date of the decision. If no appeals are received and the landowner(s) have signed (i.e. approved) the proposed rehabilitation work detailed in the Final Rehabilitation Plans, the interventions will be constructed from April 2013 until March 2014.

Should you wish to raise any issues, concerns and/or suggestions, and/ or register as an I&AP, please contact Franci Gresse at Tel: 021 526 6022, Fax: 021 526 9500, Mail: PO Box 494, Cape Town, 8000 or Email: franci.gresse@aurecongroup.com on/before **Monday, 4 February 2013.**

List of Acronyms

BAR	Basic Assessment Report
CEMP	Construction phase Environmental Management Programme
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DWA	Department of Water Affairs
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EPWP	Expanded Public Works Programme
GA	General authorisation in terms of the NWA
IA	Implementing Agent
I&APs	Interested and Affected Parties
M&E	Monitoring and evaluation
NEMA	National Environmental Management Act (Act 107 of 1998)
NWA	National Water Act (Act 36 of 1998)
PC	Provincial Coordinator
SANBI	South African National Biodiversity Institute

Table 5: Summary of the interventions included as part of this Basic Assessment process

Descriptive name	Old intervention number (if applicable)	New Intervention number	Proposed action	Reference document
NEW				
Goedgevonden				
Earthen Diversion Berm	W42C-01-027	W42C-01-203-00	Construct an earthen diversion berm to divert all flows out of the eastern channel.	Wakkerstroom Final Rehab Plan
Earthen Diversion Berm	W42C-01-028	W42C-01-204-00	Construct an earthen diversion berm to divert all flows out of the eastern channel	Wakkerstroom Final Rehab Plan
Reno Matrass	N/A	W42C-01-205-00	Construct a reno mattress in-channel protection structure to set the base level of the eastern channel.	Wakkerstroom Final Rehab Plan
Gabion Weir	N/A	W42C-01-206-00	Construct a gabion weir to divert flow out of the western channel onto the western parts of the wetland.	Wakkerstroom Final Rehab Plan
Gabion Diversion Wall	N/A	W42C-01-207-00	Construct a gabion diversion berm to divert flow out of the eastern channel	Wakkerstroom Final Rehab Plan
Earthen Diversion Berm	N/A	W42C-01-208-00	Construct an earthen diversion berm to divert all flows out of the eastern channel onto the eastern parts of the wetland.	Wakkerstroom Final Rehab Plan
Concrete Diversion Berm	N/A	W42C-01-209-00	Construct a concrete diversion berm to divert flow out of the eastern channel onto the eastern parts of the wetland.	Wakkerstroom Final Rehab Plan

Descriptive name	Old intervention number (if applicable)	New Intervention number	Proposed action	Reference document
Paardeplaats				
Gabions Diversion Wall and Earthen Berms with seeding and biojute	N/A	W42C-02-208-00	Decommission and rehabilitate old road	Wakkerstroom Final Rehab Plan
Concrete strips and gabion protection	N/A	W42C-02-209-00	Protection of road through construction of concrete strips and gabion cut off wall	Wakkerstroom Final Rehab Plan
Revegetation of hillslope	N/A	W42C-02-210-00	Contouring, reseeding	Wakkerstroom Final Rehab Plan
Rockpacks	N/A	W42C-02-211-00	Rock packs to control erosion next to road	Wakkerstroom Final Rehab Plan
Rockpacks	N/A	W42C-02-212-00	Rock packs to control erosion next to road	Wakkerstroom Final Rehab Plan
Surface cross drain	N/A	W42C-02-213-00	Construction of surface cross-drains	Wakkerstroom Final Rehab Plan
Revegetation	N/A	W42C-02-214-00	Contouring, reseeding	Wakkerstroom Final Rehab Plan
Rockpacks	N/A	W42C-02-215-00	Rock packs	Wakkerstroom Final Rehab Plan
Gully stabilisation	N/A	W42C-02-216-00	Rock packs and gabion diversion walls	Wakkerstroom Final Rehab Plan
Surface cross drains, gabion diversion walls and earthen berms	N/A	W42C-02-217-00	Deactivate old road and protect new road	Wakkerstroom Final Rehab Plan

Descriptive name	Old intervention number (if applicable)	New Intervention number	Proposed action	Reference document
Concrete strips and backfill trench	N/A	W42C-02-218-00	Protect sensitive area	Wakkerstroom Final Rehab Plan
Concrete weir	N/A	W42C-02-219-00		Wakkerstroom Final Rehab Plan
Surface Cross Drain	N/A	W42C-02-220-00	Construction of surface cross-drains	Wakkerstroom Final Rehab Plan
Surface Cross Drain	N/A	W42C-02-221-00	Construction of surface cross-drains	Wakkerstroom Final Rehab Plan
Surface Cross Drain	N/A	W42C-02-222-00	Construction of surface cross-drains	Wakkerstroom Final Rehab Plan
Surface Cross Drain	N/A	W42C-02-223-00	Construction of surface cross-drains	Wakkerstroom Final Rehab Plan
Surface Cross Drain	N/A	W42C-02-224-00	Construction of surface cross-drains	Wakkerstroom Final Rehab Plan
Surface Cross Drain	N/A	W42C-02-225-00	Construction of surface cross-drains	Wakkerstroom Final Rehab Plan
Surface Cross Drain	N/A	W42C-02-226-00	Construction of surface cross-drains	Wakkerstroom Final Rehab Plan
Surface Cross Drain	N/A		Construction of surface cross-drains	
MAINTENANCE				
Excavation	V31A-01-014	V31A-01-201-01	Excavate existing channel to spread a portion of the flows into the wetland area southwest of main channel	

Annexure B – Response Form

WORKING FOR WETLANDS REHABILITATION PROJECT IN THE LIMPOPO PROVINCE

DEA Reference No: 14/12/16/3/3/1/760 / NEAS Reference No: DEA/EIA/0001565/2012

Response Form for comment by Interested and Affected Parties

Please return this form to Aurecon on/ before 4 February 2013

Attention: Franci Gresse

Tel No: (021) 526 6022 Fax No: (021) 526 9500

Postal Address: PO Box 494, Cape Town, 8000

Email: franci.gresse@aurecongroup.com

REQUIRED INFORMATION

(Please note: the legislation governing EIA processes requires you to provide the following information). Should your details change during this process it is your responsibility to send us updated information.

1) Please provide your contact details:

NAME: .....

ORGANISATION (If applicable): .....

POSTAL ADDRESS: .....

..... **CODE:** .....

PHONE NUMBER: . ..... **FAX NUMBER:** .....

CELLPHONE NUMBER: ..... **EMAIL:** .....

2) How would you prefer to receive future project information?

Please tick ☑ the appropriate box ☐ Post ☐ Email ☐ Fax

3) Do you have any direct interest in the approval or refusal of the proposed project by the environmental authorities? Please tick ☑ the appropriate box/es below

BUSINESS/ FINANCIAL

Competing business ..... ☐ Yes ☐ No

Neighbouring business ..... ☐ Yes ☐ No

Potential employment opportunities ..... ☐ Yes ☐ No

Service provision (machinery etc) ..... ☐ Yes ☐ No

PERSONAL

Neighbour to proposed project site ..... ☐ Yes ☐ No

OTHER (please explain)

..... ☐ Yes ☐ No

.....

Please Turn Over…/

ADDITIONAL INFORMATION

4) Please list any other Interested and Affected Parties that should be contacted (with contact details if available):

Name/ Organisation	Postal and/ or email address	Tel No.	Fax No.

PLEASE LIST ANY COMMENTS, ISSUES OR CONCERNS THAT YOU MAY HAVE.
(These will be captured in a Comments and Responses Report in which responses will be provided. Feel free to submit additional pages if more space is required).

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Thank you for your time.

Mpumalanga IBAR DatabaseP Database
November 2012

TITLE	INITIAL/NAME	SURNAME	ORGANISATION
NATIONAL AUTHORITIES			
Ms	Jackie	Jay	Department of Water Affairs
Mr	David	Kleyn	Department of Agriculture Forestry & Fisheries
Mr	Christo	Marais	Department of Water Affairs
Ms	Kerryn	Morrison	Endangered Wildlife Trust
Ms	Naomi	Fourie	Department of Water Affairs
Ms	Valerie	du Plessis	Department of Water Affairs
Mr	Guy	Preston	Department of Water Affairs
Ms	Fulufhelo	Mafelatshuma	Department of Water Affairs : RQS
Ms	Wilma	Lutsch	Department of Environmental Affairs
Mr	Bonani	Madikizela	Water Research Commission
Mr	Tambubzani	Mulaudzi	Department of Environmental Affairs: Directorate: Sensitive Environments
Ms	Linda	Poll-Jonker	Department of Environmental Affairs
PROVINCIAL AUTHORITIES			
Mr	Gavin	Cowden	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)
Mr	Jannsen	Davies	Mpumalanga Tourism & Parks Agency (MTPA)
Dr	Almari	de Lange	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)
Ms	Mbali Marcia	Dlamini	Department Agriculture Forestry and Fisheries (DAFF)
Mrs	Valerie	Du Plessis	Department Agriculture Forestry and Fisheries (DAFF)
Mr	Martin	Fuwela	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)
Mr	Hein	Geldenhuys	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)
Mrs	Marina	Geldenhuys	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)
Mr	Richard	Green	Department Agriculture Forestry and Fisheries (DAFF)
Ms	Tania	Henning	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)
Mr	Brian	Jackson	Inkomati Catchment Management Agency (ICMA)
Mr	Sampie	Shabangu	DWA: Licensing
Mr	Themba	Khoza	Department Agriculture Forestry and Fisheries (DAFF)
Mr	David	Kleyn	Department Agriculture Forestry and Fisheries (DAFF)
Mr	Frans	Krige	Mpumalanga Tourism and Parks Agency (MTPA)
	Louis	Loock	Mpumalanga Tourism and Parks Agency (MTPA)
Mr	Altus	Lotter	MDEDET
Mr	Surgeon	Marebane	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)
	Selby	Lukhele	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)
Mrs	Robyn	Beeching	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)
	Buyi	Mabaso	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)
Ms	Pheko	Mabena	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)
Mr	Stanford	Macevele	Department of Water Affairs (DWA)
Ms	Busi	Mahlangu	Department of Water Affairs (DWA)
Ms	Andiswa	Makam	Department of Water Affairs (DWA)
	Tshepiso	Makola	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)
Mr	Hannes	Marais	Mpumalanga Tourism and Parks Agency (MTPA)
Mr	Frans	Mashabela	Department Agriculture Forestry and Fisheries (DAFF)
	Kurisani	Mashava	Department of Water Affairs (DWA)
Mr	Kenneth	Mavhunga	Department of Agriculture, Forestry and Fisheries (DAFF)
Mr	Paul	Meulenbeld	DWA: Gauteng S Water Quality
	Bheki	Mndawe	Mpumalanga Department of Economic Development Environment & Tourism (MDEDET)
Ms	Mary	Mogale	Department of Agriculture, Forestry & Fisheries (DAFF)
	Shobate	Mohlahlana	Department Agriculture Forestry and Fisheries (DAFF) : Landcare Programme
Mr	Brian	Morris	Mpumalanga Tourism and Parks Agency (MTPA)
	Nocawe	Mthombothi	DEDET
Miss	Ronell	Niemand	Mpumalanga Tourism and Parks Agency (MTPA)
Mr	Thya	Pather	DWA
	Love	Shabane	DAFF
	Rhandzu	Shivambu	Mpumalanga Department of Agriculture, Rural Development & Land Administration (MDARD
Ms	Lynette Sibongil	Van Damme	SAHRA
	Dan'sile	Cindi	Dept. Agriculture, Forestry & Fisheries - LUSM
Mr	Hennie	Laas	Mpumalanga Landbou / Agriculture
Mr	Johann	Van Aswegen	Department Agriculture Forestry and Fisheries (DAFF)

Mpumalanga IBAR DatabaseP Database
November 2012

TITLE	INITIAL/NAME	SURNAME	ORGANISATION
LANDOWNERS			
Ms	Rosmarie	Hinze	Farm 134 (Goedgevonden)
	Mpumalanga Tourism and Parks Ag		Farm 101 (Paardeplaats)
Mr	JH	Klingenberg	Farm 101 (Paardeplaats)
			Farm 121
WORKING FOR WETLANDS			
Ms	Nonzukiso	Mbona	SANBI
Mr	André	Beetge	SANBI: WfWet Provincial Coordinator
Mr	Umesh	Bahadur	South African National Biodiversity Institute
Ms	Anika	Govender	South African National Biodiversity Institute
Mr	Don	Cater	Eastern Wetland Rehabilitation
Mr	Stefan	Kruger	Eastern Wetland Rehabilitation
MUNICIPALITIES			
Mr	Johan	Du Plooy	Gert Sibande District Municipality
Mr	Dan	Hlanyane	Gert Sibande District Municipality
Mr	Leon	Grové	Pixley ka Seme Local Municipality
Ms	Kittie	Haupht	Pixley ka Seme Local Municipality
Mr	SN	Ndhlela	Pixley ka Seme Local Municipality
Mr	Stiaan	Van de Linde	Pixley ka Seme Local Municipality
WETLAND FORUM/OTHER			
Ms	Carolyn	Ah Shene-Verdoorn	Birdlife South Africa
Mr	Mark	Anderson	Birdlife South Africa
Miss	Esther	Appleyard	Eskom Holdings Limited
Mr	Lemson	Betha	Wildlife and Environment Society of SA (WESSA) - Gauteng
Mr	Greg	Beyers	Ajubatus Environmental Management (Pty) Ltd
Dr	Harry	Biggs	SANParks
Mr	Anton	Bothma	Eastern Wetland Rehabilitation (EWR)
Mr	Jan	Brink	Working For Water (W4W)
Mr	Angus	Burns	Enkangala Grasslands Project (EGT)
	Jannie	Coetsee	Regional Ecologist MTAP
Mr	Brent	Corcoran	WWF
Mr	Mandla	Dladla	Birdlife South Africa
	Adele	Drake	York Timbers
Mr	Derick	du Toit	Association for Water and Rural Development (AWARD)
Mr	Tony	Ferrar	Wildlife & Environment Society of South Africa (WESSA) - Lowveld
Mr	Chris	Foster	Komatiland Forests (KLF)
Miss	Ursula	Franke	Endangered Wildlife Trust (EWT) - SACWG (South African Crane Working Group)
Mr	David	Gaynor	Dullstroom Ratepayers Association
Mr	Peta	Hardy	Sappi Forests
Clr	James	Harris	Councillor (Govan Mbeki Local Municipality) / Olifants River Forum
Mr	Norman	Hayton	Friends of Witbank Nature Reserve
	Diketso	Khaile	Inkomati Catchment Management Agency (ICMA)
Ms	Thandeka	Khumalo	Endangered Wildlife Trust (EWT)
Mr	Vaughan	Koopman	Mondi Wetlands Project
Mr	Stefan	Kruger	Eastern Wetland Rehabilitation (EWR)
Mr	David	Lindley	Mondi Wetlands Project
Mr	Anton	Linström	Wet earth Eco-Specs (formerly with Mpumalanga Parks & Tourism Agency)
Ms	Eva	Lubede	Inkomati Catchment Management Agency
Ms	Sylvia	Machimana	Inkomati Catchment Management Agency
Mr	John	Magamezulu	Inkomati Catchment Management Agency
Mr	Patrick	Makwakwa	Inkomati Catchment Management Agency (ICMA)
Mr	Dave	Malloch-Brown	York Timbers
Mr	Daniel	Marnewick	Birdlife South Africa
	Pat	Martinson	Wildlife and Environment Society of SA / Friends of Witbank Nature Reserve
	Bekky	Mashego	Komatiland Forests (KLF)
	Bongani Vincent	Mashele	South African National Biodiversity Institute (SANBI)
	Nikki	McCartney	Birdlife South Africa
Ms	Kerryn	Morrison	International Crane Foundation / Endangered Wildife Trust Partnership
	Tsumbedzo	Mudalahothe	Sanbi-Grassland Programme
Mr	Sizile	Ndlovu	Inkomati Catchment Management Agency

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TITLE	INITIAL/NAME	SURNAME	ORGANISATION
	Xolani	Ngobeza	Birdlife South Africa
	Penny	Pistorius	WESSA Lowveld (Volunteer)
	Leigh	Potter	Endangered Wildlife Trust (EWT) - Threatened Grassland Species Programme
Ms	Glenn	Ramke	Endangered Wildlife Trust (EWT) - SACWG (South African Crane Working Group)
Mr	Marcus	Selepe	Inkomati Catchment Management Agency (ICMA)
Dr	Hanneline	Smit	Birdlife South Africa
Mr	Marius	Snyders	SANParks
Mr	Athol	Stark	Grass and Wetlands & Highveld Tourism
	Andre	Steenkamp	Birdlife SA - Wakkerstroom
Dr	Llew	Taylor	Taylor Environmental
Ms	Michelle	van der Merwe	Wetland Alliance for Training, Education and Research (WATER) (a project of WESSA)
Mr	Andre	van Tonder	Sappi Forests
	Elmien	Webb	Xstrata Coal South Africa
	Kim	Webb	WESSA
Mr	Ronald	Nenugwi	Working For Water (W4W)
Ms	Daleen	Strydom	Working For Water (W4W)
Mr	Dumisani	Nxumalo	Inkomati Catchment Management Agency (NCMA)

Appendix F: Impact Assessment Methodology

F_1 – Summary of Impact Assessment Methodology

Please also refer to Sections D and E of the Draft BAR for the assessment of potential impacts.

1. IMPACT ASSESSMENT METHODOLOGY

This section outlines the methodology used to assess the significance of the potential environmental impacts for the *WfWet* project as a whole. Wetland-specific impacts are noted where relevant. For each impact, the EXTENT (spatial scale), MAGNITUDE (size or degree scale) and DURATION (time scale) are considered. These criteria are used to ascertain the SIGNIFICANCE of the impact. Note that significance is assessed under the assumption that most of the best practicable mitigation measure(s) will be put into place. It is acknowledged that implementation of all of the recommended mitigation measures is unlikely.

Positive impacts are indicated by "+" and negative ones by "-".

CRITERIA	CATEGORY	DESCRIPTION
Extent or spatial influence of impact	**Regional**	Beyond a 20 km radius of the site
	Local	Within a 20 km radius of the centre of the site
	Site specific	On site or within 100 m of the site
Magnitude of impact (at the indicated spatial scale)	**High**	Natural and/ or social functions and/ or processes are *severely* altered
	Medium	Natural and/ or social functions and/ or processes are *notably* altered
	Low	Natural and/ or social functions and/ or processes are *slightly* altered
	Very Low	Natural and/ or social functions and/ or processes are *negligibly* altered
	Zero	Natural and/ or social functions and/ or processes remain *unaltered*
Duration of impact	**Construction period**	Up to 5 years
	Medium Term	Up to 10 years after construction
	Long Term	More than 10 years after construction

The SIGNIFICANCE of an impact is then derived by taking into account the temporal and spatial scales and magnitude. The means of arriving at the different significance ratings is explained in the following table.

SIGNIFICANCE RATINGS	LEVEL OF CRITERIA REQUIRED
High	• High magnitude with a regional extent and long term duration • High magnitude with either a regional extent and medium term duration or a local extent and long term duration • Medium magnitude with a regional extent and long term duration
Medium	• High magnitude with a local extent and medium term duration • High magnitude with a regional extent and construction period or a site specific extent and long term duration • High magnitude with either a local extent and construction period duration or a site specific extent and medium term duration • Medium magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Low magnitude with a regional extent and long term duration

SIGNIFICANCE RATINGS	LEVEL OF CRITERIA REQUIRED
Low	• High magnitude with a site specific extent and construction period duration • Medium magnitude with a site specific extent and construction period duration • Low magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Very low magnitude with a regional extent and long term duration
Very low	• Low magnitude with a site specific extent and construction period duration • Very low magnitude with any combination of extent and duration except regional and long term
Neutral	• Zero magnitude with any combination of extent and duration

Once the significance of an impact has been determined, the PROBABILITY of this impact occurring as well as the CONFIDENCE in the assessment of the impact would be determined using the rating systems outlined in the Tables below. It is important to note that the significance of an impact should always be considered in concert with the probability of that impact occurring. Lastly, the REVERSIBILITY of the impact is estimated using the rating system outlined in the final table.

Definition of probability ratings

PROBABILITY RATINGS	CRITERIA
Definite	Estimated greater than 95 % chance of the impact occurring.
Probable	Estimated 5 to 95 % chance of the impact occurring.
Unlikely	Estimated less than 5 % chance of the impact occurring.

Definition of confidence ratings

CONFIDENCE RATINGS	CRITERIA
Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

Definition of reversibility ratings

REVERSIBILITY RATINGS	CRITERIA
Irreversible	The activity will lead to an impact that is permanent.
Reversible	The impact is reversible, within a period of 10 years.

1.1 Subjectivity in assigning significance

Despite attempts at providing a completely objective and impartial assessment of the environmental implications of development activities, EIA processes can never escape the subjectivity inherent in attempting to define significance. The determination of the

significance of an impact depends on both the context (spatial scale and temporal duration) and intensity of that impact. Since the rationalisation of context and intensity will ultimately be prejudiced by the observer, there can be no wholly objective measure by which to judge the components of significance, let alone how they are integrated into a single comparable measure.

This notwithstanding, in order to facilitate informed decision-making, EIAs must endeavour to come to terms with the significance of the potential environmental impacts associated with particular development activities. Recognising this, we have attempted to address potential subjectivity in the current EIA process as follows:

- Being open about the difficulty of being completely objective in the determination of significance, as outlined above;
- Developing an explicit methodology for assigning significance to impacts and outlining this methodology in detail in the Plan of Study for EIA and in this EIR. Having an explicit methodology not only forces the assessor to come to terms with the various facets contributing towards the determination of significance, thereby avoiding arbitrary assignment, but also provides the reader of the EIR with a clear summary of how the assessor derived the assigned significance;
- Wherever possible, differentiating between the likely significance of potential environmental impacts as experienced by the various affected parties; and
- Utilising input from specialists, a team approach and internal review of the assessment to facilitate a more rigorous and defendable system.

Although these measures may not totally eliminate subjectivity, they provide an clear context within which to review the assessment of impacts.

1.2 Consideration of cumulative impacts

Section 2 of the National Environmental Management Act requires the consideration of cumulative impacts as part of any environmental assessment process. EIA's have traditionally, however, failed to come to terms with such impacts, largely as a result of the following considerations:

- Cumulative effects may be local, regional or global in scale and dealing with such impacts requires co-ordinated institutional arrangements; and
- EIA's are typically carried out on specific developments, whereas cumulative impacts result from broader biophysical, social and economic considerations, which typically cannot be addressed at the project level.

However, when assessing the significance of impacts in the next chapter, cumulative effects have been considered as far as possible.

Appendix G: Environmental Management Plan (EMP)

Refer to the Construction Phase EMP included in the Draft Wakkerstroom Rehabilitation Plan.

Appendix H: Details of EAP and expertise

Curriculum vitae: Ms M LOWIES

Name	:	**LOWIES, MARGARET**
Date of Birth	:	05 October 1987
Profession/Specialisation	:	Environmental Practitioner
Years with Firm	:	2
Nationality	:	South African
Years experience	:	2

Key qualifications

Miss Lowies has a B.Sc. Geography (Hons) degree. She has limited experience in the public participation process, compilation of social and labour plans and establishment of environmental forums for public participation purposes. She is currently specialising in water quality and water resource management.

Employment record

12/2010 - Date	Aurecon, Environmental Practitioner
06/2010 - 11/2010	Umsizi, Assistant Social Scientist

Experience record

Public Servant Association Social and Labour Plan (SLP) **(Eastern Cape , South Africa) 12/2010 - 02/2011.** The Social and Labour Plan was done in order to obtain a mining right conversion for the DMR for the Gonubie Sand Mine. Compilation of SLP and communication with DMR. Involved for 3 person-months. (Public Servant Association).

Augmentation of the Driftsands Collector Sewer **(Eastern Cape, South Africa) 12/2010 - Date.** *Environmental Assessment Practitioner.* The upgrade of the Driftsands collector sewer. Managing the EIA process and public participation. (Nelson Mandela Bay Municipality).

Driftsands WWTW upgrade **(Eastern Cape, South Africa) 12/2010.** *Environmental Control Officer.* The upgrade of the Driftsands (outside Port Elizabeth) WWTW. Includes both mechanical and civil upgrades. Responsible for monitoring compliance with the Environmental Management Plan (EMP) and Record of Decision (ROD). (Nelson Mandela Bay Municipality).

Construction of Graaff Reinet Solid Waste Site **(Eastern Cape, South Africa) 12/2010 - Date.** *Environmental Control Officer.* The construction of a new solid waste site outside Graaff Reinet. Responsible for monitoring compliance with the Environmental Management Plan (EMP) and Record of Decision (ROD). (Camdeboo Local Municipality).

Graaff Reinet Waste Water Treatment Works (WWTW) **(Eastern Cape, South Africa) 12/2010 - Date.** *Environmental Control Officer.* The upgrade of the Graaff Reinet WWTW including the upgrade of mechanical equipment and expansion of civil structures. Responsible for monitoring compliance with the Environmental Management Plan (EMP) and Record of Decision (ROD). (Camdeboo Local Municipality).

Upgrade of Brickfields Pre-Treatment Works **(Eastern Cape, South Africa) 12/2010 - Date.** *Environmental Assessment Practitioner.* The upgrade of all mechanical equipment and civil structures as well as the construction of a second holding pond. Responsible for the whole EIA process. (Nelson Mandela Bay Municipality).

Education

2010	:	BSc Geography (Hons) (in progress), University of Johannesburg, South Africa
2008	:	BSc (Geography and Environmental Management), University of Johannesburg, South Africa
0	:	MSc Geography, University of Johannesburg, South Africa

Languages

	Reading	Writing	Speaking
English	Excellent	Excellent	Good
Afrikaans	Excellent	Excellent	Excellent

Referees

Company	Contact Person	Telephone nr.
Umsizi	Mr JM Kilian	011 791 5526 / johnmark@umsizi.co.za
University of Johannesburg	Prof J T Harmse	011 559 2428 / tharmse@uj.ac.za

By my signature below I certify the correctness of the information above and my availability to undertake this assignment.

_____ _____

Signature of Staff Member Date

Appendix I: Specialist's declarations of interest

Please note that the Specialist's declarations of interest will be included in the Final BAR.

Appendix J: Other information

J_1 – Wetland forum minutes

Mpumalanga Wetland Forum Minutes of the Meeting

Held: 17 August 2012, 10h00

Venue: Middelpunt Farm, Belfast

Issues	Responsible Person
1. Welcome André Beetge welcomed everyone to the meeting and thanked Peter Arderne for providing the venue.	
2. Attendance *2.1 Present* See attached attendance register.	
2.2 Apologies Glenn Ramke Christie Garland André Steenkamp Anton Lindström Paul Meulenbeld Patrick Khoza Hennie Laas	
3. Acceptance of Agenda The agenda for the meeting was adopted.	
4. Minutes of Previous Meeting *4.1 Acceptance of Minutes of Previous Meeting* The following correction was made to the minutes of the previous meeting: Page 3 – correcting the name of Altus Lotter. The acceptance of the minutes was proposed by Peter Arderne and seconded by Ursula Franke.	
4.2 Action Items Actions arising from the previous minutes: 1. The updating of the database is ongoing. Members leaving the Forum should inform André Beetge in order for him to remove their details from the database. 2. Contributions to the MWF newsletter are ongoing. Anyone wishing to contribute should contact André Beetge and Charmaine Uys. It was suggested that Anton Lindström write an article regarding his involvement with the BHP Billiton mine in Middelburg. Hein Geldenhuys suggested that his department write an article about a project in KaNyamazane. Gavin Cowden also suggests that an update should be done and included in the next newsletter regarding the Section 49 application in Wakkerstroom. 3. The use of the MWF banners by Forum members remains ongoing. Should any	***ALL MEMBERS*** ***ALL MEMBERS*** ***Anton Lindström*** ***Hein Geldenhuys***

Issues	Responsible Person
forum member wish to use the MWF banners, please contact Gavin Cowden.	***ALL MEMBERS***
4. All MWF members should please register on the Wetland Portal of SA Discussion Forum.	***ALL MEMBERS***
5. MWF to contribute to the National Prosecuting Authorities Newletter.	***Paul Meulenbeld***
6. Hannes Marais from MTPA has developed a comprehensive field form that is compatible with the NWI field form. Hannes Marais to send the form to André Beetge.	***Hannes Marais & André Beetge***
7. According to Charlotte Nkosi there is a large environmental career guidance gap in schools in Mpumalanga and perhaps the WG could assist with identifying bursaries, internships and skills development programmes. This matter is still ongoing even though it was discussed at the WG meeting held in Ermelo in January.	***Charlotte Nkosi***
8. MWF members to please send through all EIAs received to Ursula Franke and copy André Beetge. Should you know if the EIA falls within a sensitive area please flag this for Ursula Franke and André Beetge with reasons as to why. Reports can be forwarded to Gavin and he will circulate it.	***ALL MEMBERS***
9. The MWF Wetland Inventory Working Group will compile a work plan explaining the links between national and provincial initiatives and the provincial database, future mapping plans and civil society education and awareness raised. The WG will then raise funds for database management. Hannes Marais & André Beetge will discuss this matter and also approach Mervyn Lotter for his involvement.	***André Beetge & Hannes Marais***
10. Regarding the mining applications for the Wakkerstroom area, there was a notice to declare the area in terms of Section 49, but since then nothing has happen. Any information regarding the declaration must please be forwarded to André Beetge & Ursula Franke. It was mentioned that another site visit would be held during the coming week with the regional head of DMR. Ursula Franke was asked to post an update on the situation on the Wetland's Portal.	***ALL MEMBERS*** ***Ursula Franke***
11. If members are posting topics for discussion on the portal, André Beetge should be copied so that he is aware of it and it can be highlighted to other members. The portal is also an opportunity to advertise for consultants/service providers of which there is only one advertisement at the moment.	***ALL MEMBERS***
12. Members are urged to report any destruction of wetlands and post photos as evidence on the wetland portal after which the discussion site on the portal should be used. All information and evidence regarding the destruction of wetlands should also be reported to the Monitoring & Compliance WG. It was also suggested that in the case of reporting such cases, members should use the reporting template that is available on the Wetland's Portal.	***ALL MEMBERS***
13. Members are requested to fill in the information they know/have on the Wetland Inventory Data forms.	***ALL MEMBERS***
14. Interested members can contact Ursula Franke regarding the Steenkampsberg Environmental Initiative as the next meeting is scheduled for 20 November 2012 at Middelpunt Farm.	***ALL MEMBERS***
15. Gavin Cowden will circulate the minutes of the planning session held at Loskop Dam. Task members are requested to become involved and indicate to which Portfolio they can be of assistance. This matter will be discussed in detail during the next AGM.	***Gavin Cowden*** ***ALL MEMBERS***

Issues	Responsible Person
16. Gavin Cowden has received the following quotations (from a Potchefstroom company) for the MWF caps and bumper stickers: • 50 Caps @ R60 each; • 100 Caps @ R56 each; • 200 Caps @ R51 each; • 70mm bumper sticker (200 units) @ R3 each; • 80mm bumper sticker (200 units) @ R3 each; • 90mm bumper sticker (200 units) @ R4 each. Gavin Cowden also indicated that he will try and get a quote from another company in order to compare the prices. It was decided by the forum that initially only 50 caps will be ordered and sold for R75 each. Initially 200 bumper stickers will be ordered and then sold for R5 each. A suggestion was made that the caps should be marketed on the Wetland's Portal. All efforts should be made to finalise the procurement of the caps and the stickers in time for the Wetland Indaba to be held in Limpopo from 15-19 October.	***Gavin Cowden***
17. André Beetge and Hannes Marais to assist Love Shabane with regards to a site along the Mbuzini road where soil degradation is taking place.	***André Beetge & Hannes Marais***
5. Feedback *5.1 Chrissiesmeer Crane Festival (Ursula Franke)* The festival was held from 6 – 7 July and attracted approximately 150 visitors. The highlights of the festival included 3 field trips to view the Grey Crowned Crane flock, Piet-Louis Grundling's talk on the Lakes District and the following field trip to Tevreden Pan. Other talks included a range of topics such as frogs, cranes and wildlife rehabilitation. Other field trips included stargazing, bird watching and a night drive where the shy Black-footed Cat was spotted. A Crane Fireplace Concert was held on the Friday evening with Warwick Tarboton as guest speaker and attracted some 240 guests – making it the biggest event held in Chrissiesmeer to date. Due to the huge success and positive feedback received another Crane Festival is on the cards for next year.	
5.2 Champagne Farm (André Beetge) André Beetge and Hannes Marais visited the Champagne Farm site together with Love Shabane. It is an old farm which is now in the process of getting back into production. The total area of the farm is approximately 400ha and the owners/farmers are trying to plant citrus on all 400ha. Upon the site visit it was discovered that the wetland has been drained/ripped. The owners are not happy due to the fact that the actual area suitable for production/planting of citrus is only 50ha. It was clear from historical photo's that unsuitable areas were planted in the past with citrus but the trees died because of it being to wet. It was made clear to the farmers, that should they continue to plant citrus in the wetland, history will repeat itself.	

Issues	Responsible Person
6. Working for Wetland Projects *6.1 Update on current projects (André Beetge)* All the Working for Wetland projects are currently working. André Beetge also announced that with immediate effect the Working for Wetlands Programme forms part of the Department of Environmental Affairs' Chief Directorate: Environmental Propgrammes and the programme as a whole is now reporting to Guy Preston (Deputy Director General) and Christo Marais (Chief Director).	
7. Items for Adoption *7.1 None*	
8. MWF Finances *8.1 Feedback from the Treasurer* The current saldo is R 4 226-73. The majority of these funds will be utilised for the procurement of the caps and bumper stickers.	
9. General *9.1 Chrissiesmeer Frog Night (Ursula Franke)* The Chrissiesmeer Frogging Night has been expanded into the Chrissiemeer Frog Festival. The festival will take place on 17 November 2012 from early to late. Forum members have been requested to diarise the date and provide assistance to Ursula Franke where possible. A variety of stalls and activities for old and young are being planned. Ursula enquired whether the MWF could man an information stall during the festival. Gavin Cowden & Daleen Strydom indicated their willingness to assist with the stall and putting up the banners. There will also be a talk, frog hunt and dinner with a cost of R180 per person. Ursula Franke is to send the details of the festival to Gavin Cowden. Gavin Cowden will forward the information to all forum members.	***ALL MEMBERS*** ***Gavin Cowden & Daleen Strydom***
9.2 Representation on the Mkhondo Forum (Joseph Mabunda) Joseph Mabunda attended the Mkhondo forum recently. The forum consists of stakeholders involved in the water sector. He requested that the MWF should start attending the Mkhondo forum on a regular basis. The MWF could be and important stakeholder with the Mkhondo forum because of all the mining issues within the Mkhondo District. Joseph Mabunda will send the dates and venues for the Mkhondo Forum meeting to André Beetge for circulation to all members.	***Joseph Mabunda*** ***André Beetge***
9.3 EnviroNews (Hein Geldenhuys) Hein Geldenhuys stated that if anybody needs a wetland PowerPoint presentation on short notice, they can contact him. His office also get the latest EnviroNews newsletter and anybody interested in receiving this newsletter can contact Hein so that he can distribute to those interested via e-mail. It was suggested that those who are interested in receiving the EnviroNews newsletter should send Hein an e-mail and state you are interested in receiving the newsletter. Gavin Cowden indicated that he will distribute an example to the forum members.	***ALL MEMBERS*** ***Gavin Cowden***

Issues	Responsible Person
9.4 Wetland Information requested by Eskom (Adeline Manake) Adeline Manake requested a status of wetlands report form the forum with regards to the location and status of the various wetlands within the province. André Beetge indicated that the forum can provide Eskom with a link to download the information. He also stated that Eskom can get the requested information from the SANBI website. Gavin Cowden also indicated that he will forward her the electronic links to access the information. André Beetge said that it would be good in she can feed into the WG dealing with the wetland inventory. Charmaine Uys said that Adeline should contact Mervyn Lotter from the MTPA for further information regarding the work done by MPTA on wetlands.	***Gavin Cowden***
9.5 eMakhazeni Environmental Management Framework (Chris Foster) Chris Foster enquired about the status of the eMakhazeni Environmental Management Framework (EMF). Gavin Cowden responded by saying that the framework has been gazetted. But as far as it being used to oppose planned land use, it does not appear to have any legal standing, however it does have to be considered in the decision making process. The legal standing of the document is still unclear and clarity needs to be given. Gavin Cowden indicated that he will try and find out exactly what the legal standing of the environmental framework is. In case Gavin Cowden does get new information regarding this, he will let Chris Foster know.	***Gavin Cowden***
9.6 Bird identification course in Chrissiesmeer (Ursula Franke) Ursula Franke announced that the bi-annual bird identification course will be held on 27 October 2012 in Chrissiesmeer. The training will focus on the identification of water birds and anybody interested in attending the course can contact Ursula Franke directly. Ursula also requested the MWF banners for the day. Ursula Franke will send the information regarding the course to Gavin Cowden and he will circulate it to the forum members. A maximum of 25 people for the course are accepted @ R120 for the day (incl. talks, birding trip and lunch).	***Ursula Franke*** ***Gavin Cowden***
10. Date and venue for the next meeting The next MWF meeting is being planned for 16 November 2012 and to be held at Loskop Dam. The meeting will also include the AGM and a bring & braai afterwards.	
11. Site Visit *11.1 Introduction – Hannes Marais* A wetland was visited on the farm Middelpunt where Hannes Marais gave a brief explanation regarding the delineation of wetlands and what to look for in the soil	

ATTENDANCE REGISTER

MWF Meeting held on Friday 17 August 2012 at Middelpunt Farm, Belfast at 10:00

Name	Organisation	Telephone	Fax No.	E-mail	Area of Expertise
Peter Arderne	FOSAF	083 457 7478	086 609 9064	mwardern@mweb.co.za	Fish
Gavin Cowden	DEDET	071 541 7783		GCowden@mpg.gov.za	Policies, Guidelines, N&S
Daleen Strydom	DEA-WfW	082 335 8122	086 613 6355	StrydomD2@dwa.gov.za	Aquatic Weeds
Ursula Franke	EWT	083 332 8859		ursulaf@ewt.org.za	Conservation
Hannes Marais	MTPA	082 774 3303		hanneswetlands@gmail.com	Wetlands
André Beetge	SANBI	084 240 2264		A.Beetge@sanbi.org.za	Rehabilitation
Hein Geldenhuys	DEDET	082 898 8192		lenviro@telkomsa.net	Environmental Education
Chris Foster	Komatiland Forests	083 677 0839		cfoster@klf.co.za	Forestry
Oupa Thela	EWR Projects	072 456 0933		oupa@wetlandrehab.co.za	Wetland Rehabilitation
Adeline Manake	Eskom - DX	082 808 4166	086 766 0253	manakea@eskom.co.za	Environmental Management
Charmaine Uys	BirdLife South Africa	082 265 2762		grasslands@birdlife.org.za	Conservation
Soko Mthobisi	DWA	082 658 5280	086 212 1144	sokom@dwa.gov.za	Fish & Macro-invertebrates
JH Mabunda	ICMA	078 456 3402		mabundaj@inkomaticma.co.za	Environment & Culture