



**ENVIRONMENTAL MANAGEMENT PROGRAMME
FOR THE
MOOI-MGENI TRANSFER SCHEME – PHASE 2 (MMTS-2)**

**A plan of action to establish offset areas to compensate for
the loss of biodiversity and habitat, and for the
management of such areas during the operational phase of
MMTS-2**

Document Revision 1

10 January 2012

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PREFACE

This Environmental Management Plan (EMP) comprises two sections:

- Project Description and the Environmental Management Philosophy; and
- A plan of action to establish offset areas to compensate for the loss of biodiversity and habitat, and for the management of such areas during the operation phase on MMTS-2.

Project Description and the Environmental Management Philosophy

This section is common to all EMPs, and provides the context for the individual EMP, which is focussed on a specific activity/phase of construction. This section, which has been approved as part of the Spring Grove Dam Wall EMP, provides the context, and describes the overall project description and the environmental management philosophy that TCTA has adopted, in order to ensure efficient and effective environmental management during the implementation of this project.

The RoD requires a suite of Construction EMPs to be prepared (3.2.4.1.1):

- a) Spring Grove Dam Impoundment.
- b) Spring Grove Dam Wall.
- c) Roads realignment and flood protection of affected sections of the Loteni Road (P27 – 30).
- d) The Quarry (if developed). *As commercial sources are to be utilised for quarry material, a Traffic Management Plan has been prepared for the transport of aggregate, as per the requirements of the DEA (letter, dated 3 May 2011).*
- e) Services relocation and decommissioning.
- f) Mooi River gauging weir.
- g) Mooi River fish barrier.
- h) Mpofana River gauging weir.
- i) Mpofana River outfall works, and j) Pipeline from Spring Grove to the Mpofana River outfall works, including the new break pressure tank on Gowrie Farm. *As the appeal from the Mziki Homeowners Association was upheld by the Minister of Justice and Constitutional Development, the water transfer scheme is subject to a new environmental authorisation process and these two EMPs will not form part of the suite of EMPs.*
- k) A detailed search, rescue and relocation plan for all red data, protected and endangered species, medicinal plants, heritage resources and graves.
- l) A detailed plan for the rehabilitation of off-site wetlands in the Mooi and Mgeni catchments to mitigate the loss in wetland function and habitat.
- m) A detailed plan of action to establish offset areas to compensate for the loss of biodiversity and habitat, and for the management of such areas during the operational phase of the MMTS-2.
- n) A detailed translocation plan for the red data species found at Inchbrakie Falls to the Reekie Lynn Falls.
- o) A detailed relocation plan for people living in the dam basin.

This document serves to present a plan of action to establish offset areas to compensate for the loss of biodiversity and habitat, and for the management of such areas during the operational phase of the MMTS-2.

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1. OVERVIEW

1.1 Background

A Record of Decision (RoD) was issued on the 15 June 2009, authorizing the construction of the Spring Gove Dam. The conditions of the RoD include requirements for *a detailed plan of action to establish offset areas to compensate for the loss of biodiversity and habitat, and for the management of such areas during the operational phase of the MMTS-2.*

In order to satisfy the condition, TCTA has embarked on a planning process to identify suitable areas in which to establish offsets, and to draw up more detailed plans for particular areas as required. This Plan sets out the sequence of steps to be undertaken, and specific deliverables of each step, to establish the detailed plans as required by the RoD conditions.

1.2 Approach to EMP

Although the RoD covers the rehabilitation of off-site wetlands as a separate requirement from the establishment of offset areas to compensate for the loss of biodiversity, both conditions of the RoD involve what is referred to as 'biodiversity offsets'; off-site wetland rehabilitation constitutes one activity option to deliver a biodiversity offset. **This EMP is submitted as a separate document to fulfil the requirement of the Record of Decision Section 3.2.4.1.1 (m).**

TCTA acknowledges and recognizes the principle of compensation for the significant impact and loss of wetland and other habitat resulting from the Spring Grove Dam, and is committed to including offsets as part of project implementation. TCTA takes cognizance of international good practice in biodiversity offsets and recognized offset principles; namely 'no net loss' with respect to species composition, habitat structure, ecosystem function and people's use and cultural values associated with that biodiversity. Moreover, TCTA recognizes that a principal objective of biodiversity offsets is to make a material contribution to achieving conservation plans and associated targets. However, TCTA recognizes that at a landscape scale, even given the achievement of these outcomes, there would be an unavoidable overall reduction in the total area of affected habitat.

Since the studies informing the EIA were undertaken from 2002 to 2006, there have been changes in both the baseline environment to be affected by the Spring Grove Dam and in the thinking on biodiversity offsets that must be considered in the Plan. With regard to the latter, the Business and Biodiversity Offsets Programme has developed a range of guidance on offsets, the International Finance Corporation (IFC) has revised its Performance Standards to incorporate specific offset requirements for different categories of natural habitat, KwaZulu-Natal province has developed Norms and Standards for Biodiversity Offsets and SANBI has commissioned a study to prepare a framework for wetland offset design and implementation. These changes make it essential to revisit - and revise, where appropriate -

the methodologies, findings and recommendations contained in the 2004 and 2006 wetland rehabilitation bridging study and ecological assessment respectively.

TCTA also recognizes the following points regarding offsets:

- Achieving effective offsets, particularly where rehabilitation is applied, is a long term process that will extend beyond its short-term involvement in the project; namely, during the construction phase of the dam. TCTA will therefore require the involvement of other role-players in the longer term implementation, monitoring and management of the offsets;
- Although there are draft Norms and Standards in KwaZulu-Natal on biodiversity offsets, there are few examples of offsets in South Africa, particularly at the scale required for this project. This project could, therefore, set a valuable precedent for future offset performance; and,
- Different stakeholders are likely to have diverse opinions and sensitivities about the concept and science of biodiversity offsets.

In view of the above points, engagement with stakeholders will form an important component of the Plan; arriving at appropriate offsets needs input from parties that have an interest in, are affected by, or could contribute to the success of the offsets. The steps in this Plan make provision for their values and priorities to be taken into account, and to seek potential collaboration, synergies and partnerships. A Working Group will be set up as a forum to invite input and discuss the approach to identifying, designing and implementing the wetland rehabilitation and offsets.

The requirement to have an approved EMP has driven the development of this particular document, however, in the case of biodiversity offsets, developing an EMP is not a simple process. As has been described above, it is envisaged that the implementation of the plan will be an iterative process, with high levels of consultation and continued refinements as the process unfolds. What is provided here is a programme of steps for the development of detailed biodiversity offset plans, recognising that the outcomes of each of the steps may result in a modification to the following step. It is crucial to recognise the principle of adaptive environmental management in this process.

Adaptive environmental management recognises that some strategies, however well formulated, may simply not work in practice and need to be adapted as a function of the new learning that emerges from the weaknesses and potential failures of that strategy. Adaptive environmental management implies that each step in the process is carefully reviewed before moving onto the next step, and where changes are suggested in that review that these are brought to bear on the remaining parts of the process. This is particularly relevant in the case of offsets which are a relatively new concept within the integrated environmental management field and around which there is much scepticism and limited practical precedent. It is for this reason that the process has been divided into phases with points of

consultation built into each phase. This provides for regular review of the progress against the overall objectives and guiding principles.

2. RECORD OF DECISION (ROD) CONDITIONS

Condition 3.2.4.3 of the RoD states – “All EMPs contemplated in Clauses 3.2.4.1 must include but not be limited to the following:

- a) Mitigation measures for construction activities recommended in the Environmental Impact Report (dated January 2000).
- b) Rehabilitation measures for areas to be disturbed during the construction of the project.
- c) Siting and management of construction camps outside proclaimed areas.
- d) Access roads to individual construction sites.
- e) Access roads to individual construction sites.
- f) Plant search and rescue before the commencement of any construction activity.
- g) Implementation of measures aimed at controlling invasive plant species must be implemented. The pipeline route alignment and construction sites must be monitored for re-growth of invasive vegetative material at least twice a year for a period of up to two years after the completion of this development.
- h) Protection of the heritage resources likely to be impacted by construction of the dam and appurtenant structures authorised in this ROD.
- i) Waste avoidance and minimisation during construction.
- j) Management of traffic during the construction of the dam and appurtenant structures authorised in this ROD”.

The above conditions are specific to the construction related EMPs, which have all addressed the requirements of Clause 3.2.4.1. This EMP focuses the plan of action to establish offset areas to compensate for the loss of biodiversity and habitat, and for the management of such areas during the operation phase on MMTS-2.

The conditions below are however, accepted as such:

- k) “Once accepted by the Department, the EMPs will be regarded as dynamic documents. However, any changes to the EMPs must be submitted to the Department for acceptance before changes are effected. Such a submission to the Department must be accompanied by recommendations of the EMC.
- l) Compliance with the approved EMPs must form part of the project documentation of all contractor(s) and subcontractor(s) working on projects and must be endorsed”.

3. PLAN OF ACTION TO ESTABLISH OFFSET AREAS TO COMPENSATE FOR THE LOSS OF BIODIVERSITY AND HABITAT

This implementation of this EMP will be undertaken jointly with the EMP for rehabilitation of wetlands, as the rehabilitation of wetlands to mitigate against wetland function and habitat also constitute an offset for the loss of habitat as a result of the Spring Grove Dam.

ACTION	PERSON(S)	TIMING	DELIVERABLE
PHASE 1: DETERMINE RESIDUAL IMPACTS AND IDENTIFY OFFSET OPTIONS [MONTHS 1-9]			
<p>1. Draft clear objectives and outcomes for biodiversity offsets. The RoD requirements, project context and the suite of available policies on offsets will be considered in order that the objectives and outcomes are appropriate and defensible.</p>	SB, DC	Jun 2012	Clear objectives and outcomes drafted
<p>2. Establish an Offsets Working Group, and elect a chair</p> <ul style="list-style-type: none"> • Identify a Chair and contact person of the proposed Working Group • Approach key parties to invite them to participate in a Working Group: eThekweni, Umgeni Water, EKZNW, provincial environmental authority (DAEARD), Working for Wetlands, KZN Wetlands Forum, Crane Foundation, EWT Oribi Working Group, conservancy bodies, landowners' and farmers' associations, CREW, Regional Catchment Manager (DWA), catchment management forums, district and local municipalities, national DAFF, WESSA, SANBI, Mondi Wetlands Programme, etc. • Draft covering letter, requesting asking for suggestions about any other groups who should be represented on the Working Group • Draft ToR for members, for their comment and acceptance <ul style="list-style-type: none"> ○ Provide input to planning the design and implementation of offsets ○ Assist in evaluating proposals to give assurance that outcomes would be achieved and would be sufficient to fulfil TCTA's obligations • Send formal letter of invitation and draft ToR to those parties willing to participate in Working Group 	<p>TCTA, DC, SB</p> <p>DC</p>	Jun /Jul 2012	Working Group established, with clear Terms of Reference.

ACTION	PERSON(S)	TIMING	DELIVERABLE
<p>3. Check and confirm, from a 'good practice' perspective, that the proposed approach for arriving at biodiversity offsets would satisfy TCTA's obligations.</p> <ul style="list-style-type: none"> • It is important when finding suitable offsets, that: <ul style="list-style-type: none"> ○ the same measures are used to evaluate gains and losses ○ 'like for like or better' rule must be satisfied ○ offset action should preferably be close to impact area/within affected catchment, particularly with regard to delivering ecosystem services [could look further afield to meet conservation targets if appropriate] ○ consideration is given to priority areas for biodiversity (terrestrial, freshwater ecosystem) conservation, and conservation targets ○ measures would deliver 'additional' conservation gains (i.e. would not have happened without the offset and are not already legally required) – <i>in particular, need to decide if alien invasive species removal would qualify as a legitimate rehabilitation measure/ offset</i> • Measuring losses and gains in terrestrial biodiversity (drawing on KZN Norms and Standards document, 2011 NBA, BBOP) Consideration should be given to: <ul style="list-style-type: none"> ○ Area and condition of impacted habitat ○ Multipliers for risk of failure, time lags, conservation targets (ratios as per Norms and Standards) ○ Species-based approaches (as relevant) ○ Scope of improved management (e.g. restoration, re-introduction of 	<p>SB, DC, in collaboration with BBOP, SANBI's wetland offset project team</p>	<p>Jun/Jul 2012</p>	<p>Confirmation that proposed approach and methodology would meet 'good practice' standards</p>

ACTION	PERSON(S)	TIMING	DELIVERABLE
<p>previously occurring species of value)</p> <ul style="list-style-type: none"> ○ Scope for averted risk or loss. 			
<p>4. Update the baseline information on which a measure of residual negative impact on biodiversity is based</p> <p><i>For wetlands and riverine/ riparian systems</i></p> <ul style="list-style-type: none"> ● Confirm extent, status and delineation of wetlands in the catchment – apply WET-Health and WET-Eco-services. ● Decide on scope of residual impacts to be covered <ul style="list-style-type: none"> ○ Footprint impacts of dam (yes) ○ Determine the conservation and NFEPA status of affected wetland, river systems and riverine vegetation types, and thus significance of impacts ○ Any significant downstream impacts on either the Mooi or Mpofana Rivers and associated habitat (use values, biodiversity values) ○ Inchbrakie Falls (ecosystem service; cultural) ● Liaise with Search and Rescue team and evaluate findings with regard to the need for offset measures to target particular wetland or riverine/ riparian –dependent species [depending largely on whether or not vegetation type would act as reliable surrogate of that species’ habitat, and proposed wetland rehabilitation measures would suffice for that species] <p><i>For terrestrial biodiversity</i></p> <ul style="list-style-type: none"> ● Check/ update and confirm mapping of vegetation types to be affected ● Decide on scope of residual impacts to be covered <ul style="list-style-type: none"> ○ Footprint impacts of dam (yes) 	<p>DC and assistant to undertake work; SB to advise/ oversee</p> <p>To liaise with BBOP, SANBI wetlands offset project team, EKZNW, SANBI</p>	<p>Jun – Aug 2012</p>	<p>Baseline information updated and reliable; accurate measure of residual impacts determined.</p>

ACTION	PERSON(S)	TIMING	DELIVERABLE
<ul style="list-style-type: none"> ✓ Check that intrinsic as well as any use and cultural values have been addressed ✓ Confirm the extent and condition of vegetation types affected ✓ Determine the value of the affected habitat for those threatened species of plant or animal (e.g. Oribi, Wattled and other Cranes) known to occur on the dam site [% of range, specific habitat requirements in offset, area required] ✓ Liaise with Search and Rescue team and evaluate findings with regard to the need for offset measures to target particular species of concern [depending largely on whether or not vegetation type would act as reliable surrogate of that species' habitat, and proposed offsets would suffice for that species] ✓ Determine the current conservation status of affected biodiversity in light of the province's conservation information (C Plan and other sources), taking into account both pattern and process considerations, and identify the key biodiversity components that would provide the basis for designing appropriate and sufficient offsets. This step must be done in close collaboration with the provincial conservation authorities. 			
<p>5. First workshop with Working Group to seek agreement on</p> <ul style="list-style-type: none"> a) Representation on Working Group b) Terms of Reference of Working Group c) Approach proposed (outcomes based) d) Possible rehabilitation and/ or offset options e) Potential synergies and partnerships f) Communication (e.g. website, etc.) g) Criteria and data to be used to prioritization of offset sites. h) Next meeting and its purpose 	TCTA, SB, DC	Aug 2012	Working Group support for representation, Terms of Reference and broad approach
<p>6. Investigate biodiversity offset sites</p>	DC to undertake work, SB to	Sept/Oct 2012	Candidate sites for offsets identified

ACTION	PERSON(S)	TIMING	DELIVERABLE
<p><i>For wetlands and riverine/ riparian systems</i></p> <p>Identify potential sites in the Mooi, Mgeni and Little Mooi catchments, drawing on NFEPA information and provincial conservation priorities</p> <ul style="list-style-type: none"> ○ Identify landowners ○ Check for existing servitudes or other title deed restrictions ○ Check that there are no development/ mining rights, or other planned infrastructure development, on candidate sites <p><i>For terrestrial systems</i></p> <ul style="list-style-type: none"> ● Identify potential sites giving due consideration to stewardship programme and biodiversity planning priorities (C-Plan, Protected Area expansion plan) <ul style="list-style-type: none"> ○ Identify landowners ○ Check for existing servitudes or other title deed restrictions ○ Check that there are no development/ mining rights, or other planned infrastructure development, on candidate sites 	advise/ oversee		
<p>7. Determine a measure of the size and type of offsets required</p> <ul style="list-style-type: none"> ● Apply the most appropriate methodologies (3. above) ● Take into account ‘multipliers’ needed to ensure that conservation targets are not undermined, and the likely time lag between achieving offset and the impacts of the dam¹ as well as risks of failure ● Evaluate whether or not offsets would provide equivalent ecosystem services to those lost as a result of the dam; if not, identify the need for additional measures (protection, composite offsets, trading up) 	DC to undertake work SB to advise/ oversee	Aug – Oct 2012	Measure of offsets required determined

¹ Time lags and risks of failure will vary depending on the specific rehabilitation/ offset measure and site, but a broad indication at this stage would be useful to obtain an idea of the probable size of area required.

ACTION	PERSON(S)	TIMING	DELIVERABLE
<p>8. Workshop on financial, legal mechanisms for delivering offsets. To involve those with experience and insights into opportunities and options, and potential partners (e.g. Working for Water, Working on Wetlands, other local organizations active in conservation, relevant local authorities – eThekweni, Umgeni Water, National Department of Agriculture Forestry and Fisheries), and to draw on inputs from landowners’ and farmers’ associations in the area</p> <ul style="list-style-type: none"> • Identify those legal and financial mechanisms most appropriate for biodiversity offsets, to ensure their success in the long term and to restrict/ compensate use that could jeopardise outcomes • Consider possible Payment for Ecosystem Services models (including compensation to landowners [opportunity costs of restoring wetlands, conserving areas on their farms; in-kind compensation, opportunity costs of changing land/ wetland use covered, etc.] – to promote acceptability/ workability • Explore and reach ‘in principle’ agreement with Working for Wetlands about rehabilitating wetlands on behalf of TCTA • Explore possible partnerships, synergies with existing initiatives (LandCare AreaWide Planning, Crane Foundation, Ezemvelo KZN Wildlife, etc.) ‘stewardship plus’ options, and work towards ‘in principle’ agreement about undertaking offset work • Evaluate different options, scope and application in different contexts • Determine additional research needs to give clarity on options. 	DC, SB, TCTA	Oct 2012	<p>Suite of potential options identified, with advantages, disadvantages and most appropriate applications determined</p> <p>Need for additional research or information identified</p>
<p>9. Initial discussions with landowners’ associations, farmers’ associations to gauge willingness to participate, and to identify key issues affecting their position</p>	DC, SB	Oct 2012	Key issues of landowners and farmers identified in relation to offsets
<p>10. Second Working Group meeting to discuss offset options, criteria for prioritizing these options and draft prioritization/ plan of action</p>	DC, SB, TCTA	Nov 2012	Working Group informed about offset options, and support

ACTION	PERSON(S)	TIMING	DELIVERABLE
<p>Draft criteria for prioritization to include:</p> <ul style="list-style-type: none"> • Contribution to conservation priorities (C Plan, PA expansion, NFEPA river/ wetlands and/ or wetland clusters) • Potential contribution of candidate site to required offset • Meet multiple objectives: wetland rehabilitation work and terrestrial offsets achievable on the same site(s) • Landscape context: fewer consolidated sites rather than many fragments, potential linkages to improve connectivity • Potential to expand or consolidate protected area(s) • Risk of failure of possible offsets • Level of external threat to success • Likely time lag to achieve gains/ offset outcome • Likely costs • Likely impact on agricultural production, livelihoods • Likely need to satisfy other legal authorisations (cost and time implications) 			<p>obtained for prioritization of these options</p>
<p>11. Speak to individual landowners of potential rehabilitation/ offset sites in order of priority about access to land/ wetlands to undertake evaluation.</p>	<p>DC</p>	<p>Oct 2012</p>	<p>Agreement reached with landowner to allow investigation of offset on property, and permission granted for access</p>

ACTION	PERSON(S)	TIMING	DELIVERABLE
<p>12. Ground truthing and evaluation of candidate offset sites to determine potential gains through rehabilitation and/ or averted risk. Beware of ‘double counting’ where e.g. wetland sites include grassland.</p> <p><i>For terrestrial systems</i></p> <ul style="list-style-type: none"> • Calculate the potential contribution of these sites to providing the required offset • Identify and evaluate uncertainties, risks and likely time lags in achieving the offsets, and adjust the contribution/ likely area required accordingly • Continue evaluation until there is assurance that the required areas would be sufficient to constitute an acceptable offset [iterative process]. 	<p>DC to undertake work, SB to advise/ oversee.</p> <p>May need to involve members of the Search and Rescue team for specialist input</p>	<p>Nov 2012 - Jan 2013</p>	<p>Potential contribution of specific offset sites, determined</p>
<p>13. Determine suite of offset sites required to fulfill conditions of RoD, desired outcomes</p> <ul style="list-style-type: none"> • Synthesize findings of previous step and compile list of sites and actions required. • Determine any offset/ wetland rehabilitation requirements that are unlikely to be met or achieved, giving reasons and potential solutions 	<p>DC to undertake work, SB to advise/ oversee</p>	<p>Feb 2013</p>	<p>Offset sites required to meet obligations and outcomes, identified</p>
PHASE 2: DETAILED INVESTIGATION OF CANDIDATE OFFSET SITES			
<p>14. Identify additional expertise needed for financial and legal input (e.g. input from DWA)</p>	<p>SB, DC, TCTA</p>	<p>Feb – Mar 2013</p>	<p>Additional expertise appointed as appropriate</p>
<p>15. Third Working Group meeting to discuss findings</p> <ul style="list-style-type: none"> • selection of wetland rehabilitation and offset sites 	<p>DC, SB, TCTA</p>	<p>Feb – Mar 2013</p>	<p>Working Group informed about proposed package of</p>

ACTION	PERSON(S)	TIMING	DELIVERABLE
<ul style="list-style-type: none"> proposed arrangements for implementation likely costs and their allocation role of the Working Group in implementation (including monitoring and evaluation) 			offset areas, and mechanisms for implementation
<p>16. Negotiate with landowners regarding potential legal, financial arrangements</p> <p>To include consideration of:</p> <ul style="list-style-type: none"> Opportunity costs (related, e.g., to land value, loss of agricultural production) and due compensation Legal implications (e.g. servitudes, legal agreements, formal NEMPAA status) Possible stewardship options Financial implications and arrangements 	TCTA, DC	Apr – May 2013	The necessary legal and financial requirements identified to enter into contractual arrangements with landowners
<p>17. Determine costs to secure contractual arrangements with landowners and/ or other parties, and the allocation of these costs</p> <ul style="list-style-type: none"> Following on from earlier negotiations with landowners, calculate costs (legal, administrative, surveying, other) Determine costs associated with managing rehabilitation and offsets, and contracting relevant stakeholders e.g. Working for Wetlands, Crane Foundation, Stewardship Programme (legal, administrative, escalation) 	TCTA, DC, SB	May – Jun 2013	Cost implications and allocations determined
PHASE 3: FINALIZE OFFSET SELECTION AND PREPARE DETAILED OFFSET PLANS			
<p>18. Prepare detailed offset plans in discussion with implementing parties, specifying</p> <ul style="list-style-type: none"> targets/ outcomes required [habitat condition, species, WetHealth scores, WetEcos scores] by when: clear milestones and timelines for progress what needs to be done and how how often 	<p>DC to undertake work, SB to advise/ review</p> <p>To liaise with BBOP, SANBI's</p>	Aug – Dec 2013	Explicit programme of work drawn up to implement offsets on particular sites

ACTION	PERSON(S)	TIMING	DELIVERABLE
<ul style="list-style-type: none"> • by whom • for how long. 	wetland offset team		
<p>19. Prepare Terms of Reference and a programme of work for an independent wetland/terrestrial ecologist(s) to conduct periodic compliance/ performance monitoring and reporting of performance during the implementation stage, and advise on amendments/ adaptations to offset management as appropriate.</p> <ul style="list-style-type: none"> • monitoring and evaluation against targets/ outcomes, using specific indicators • identification of problem areas in making progress towards outcomes, explore reasons for these problems • recommendations for changes to management as needed, if progress towards outcomes is unsatisfactory • reporting and communication of monitoring and evaluation, performance 	DC, SB	Aug – Dec 2013	Explicit programme of work drawn up to implement offsets on particular sites
<p>20. Prepare Terms of Reference and a programme of work for an appropriate party (Regional Catchment Manager?) to evaluate overall performance, to capture and communicate ‘lessons learned’ to improve future efforts [typically over a 5 year period]</p>	DC, SB	Aug – Dec 2013	Explicit programme of work drawn up to enable lessons to be learned from offset efforts in relation to achieving outcomes
<p>21. Finalise and submit detailed biodiversity offset plans for the selected sites</p>	DC, SB, TCTA	Aug – Dec 2013	Detailed and site-specific plans submitted to DEA in final compliance with conditions of RoD
<p>22. Draw up Business Plan and Implementation Contracts with relevant parties (e.g. WfWet, other third parties).</p>	TCTA	Aug – Dec 2013	Contracts for implementation finalized

DC = Dave Cox SB = Susie Brownlie - See next section on information on resources.

4. PROJECT RESOURCES

Specialist Advisor - Susie Brownlie (de Villiers Brownlie Associates)

Susie Brownlie has a Master's degree in Environmental Studies from the University of Cape Town, awarded with distinction in 1982. She has worked in both the private and public sectors in the field of environmental assessment in England and South Africa for over 27 years. Susie is professionally registered as an environmental scientist and environmental assessment practitioner. She has been, and remains, active in a number of environmental forums in South Africa and internationally. The focus of Susie's work is in the conservation of biodiversity and important ecosystem services, and the integration of biodiversity considerations into spatial planning and environmental assessment at project and strategic levels. She has a particular interest in sustainability and, through appropriate planning and assessment, in striving for 'no net loss' of biodiversity through offsets, and halting the deterioration of valued ecosystem services.

Susie is well qualified for the specific role of specialist advisor given her following involvement in the development of Biodiversity offsets. Susie has been responsible for preparing the Western Cape and KwaZulu-Natal Biodiversity Offsets policy and guidelines, and more recently contributed to the development of Guidelines for Wetland Offsets for SANBI. Internationally, Susie is an editorial board member of the International Journal of Biodiversity and Conservation. She is also a member of the Advisory Committee for the Business and Biodiversity Offsets Programme, and co-chair of the Biodiversity and Ecology Section of IAIA.

Biodiversity and Wetland Offsets Manager - David Cox (Institute of Natural Resources)

David has a Master's degree in Environment & Development and 15 years' experience working across the full range of Integrated Environmental Management (IEM) tools. At a strategic level David has been involved in State of Environment Reporting (SoER), Strategic Environmental Assessment (SEA), due diligence and risk assessments. At a project level he has managed EIA for large scale projects and the development of associated Environmental Management and Biomonitoring programmes. He has a particular interest in and experience in sustainability assessment and integrating development and environmental planning at a strategic level. Another aspect of David's experience is within the area of Institutional Development and Governance, where he has worked with all spheres of government in improving institutional co-ordination, environmental governance and legal compliance.

A further focus of David's experience is in wetland offsets in which he has a long association with the Mooi-Mgeni Transfer Project. His master's thesis provide input to the pre-feasibility phase of MMTS and was titled: The Mooi-Mgeni Transfer Scheme: Developing a model for off-site mitigation of wetlands. David subsequently undertook the specialist wetland

assessment during the EIA and the initial offset planning as part of the bridging studies in 2004. He also investigated offset sites for the Mearns Dam. At a research level, David investigated a model for wetland banking in South Africa for SANBI and the Water Research Commission. Based on this experience, David has an intimate knowledge of the Mooi River and Mgeni Catchment, the MMTS project, the landowners and a comprehensive understanding of the principles and challenges of developing and implementing offsets.

5. CONCLUSION

As highlighted in Section 1.2. Approach to this EMP – that although the RoD covers the rehabilitation of off-site wetlands as a separate requirement from the establishment of offset areas to compensate for the loss of biodiversity, both conditions of the RoD involve what is referred to as ‘biodiversity offsets’; and off-site wetland rehabilitation constitutes one activity option to deliver a biodiversity offset.

This EMP outlines the detailed programme of activities to be undertaken in establishing offset areas to compensate for the loss of biodiversity and habitat, and for the management of such areas during the operation phase of MMTS-2. During this process, detailed biodiversity offset plans will be prepared for selected sites and submitted to DEA.