Attachment 1: Project Brief and Schedule

Wheatbelt Wetlands Assessment

Version 2: Updated May 2007.

Background

Evaluating the biological impacts of discharging saline and possibly acidic water from Wheatbelt drainage schemes into wetlands is difficult. This project further develops the processes that the Drainage Impacts Working Group under the State Wetlands Coordinating Committee proposed in their Framework for Evaluation of Drainage Proposals 2003. This Wetlands Assessment project is part of a larger program managed by the Department of Water (DoW): "Wheatbelt Drainage Evaluation – Framework for Implementation" (WDE). The WDE is funded by the Australian and West Australian governments through the National Action Plan on Salinity and Water Quality.

Objectives

1. By January 2008, complete an objective and transparent assessment, at a scale of 1:100 000, of the condition of the basin wetlands in the Wheatbelt that are most likely to receive drainage water, and assign them to three broad categories (near natural, significant anthropogenic disturbance & considerable anthropogenic disturbance).
2. By January 2008, complete an objective and transparent assessment, at a scale of 1:250 000, of the condition of all remaining basin wetlands in the Wheatbelt, and assign them to three broad categories ('near natural', 'significant anthropogenic disturbance' & 'considerable anthropogenic disturbance').
3. By June 2008, produce a cost-effective protocol to evaluate the biological and ecological values of, and effect of drainage on Wheatbelt wetlands that have undergone 'significant anthropogenic disturbance'.

Prioritised areas

The following areas have been prioritised for inclusion in the project and for evaluation at a scale of 1:100 000. These areas were identified by staff in the Salinity Program of the Department of Water (K. McIntosh, pers. comm.) and are also indicated on the map in Appendix A. They are listed and are indicated in the order of priority below:

1. Avon North-East (Yilgarn Catchment);
2. Yarra Yarra Lakes system
3. Yenyening Lakes system;
4. Lockhart system;
5. Blackwood River Catchment;
6. Mortlock river Catchment;
7. Dalyup, Lort and Young River Catchments including (South Coast);
8. Eastern parts of the Moore river system.

Project Description

This project will involve 3 stages:

Description of activity	Phase	Expected date of completion	Links to other projects	Deliverables
1. Compilation of wetland inventory and delineation, classification and evaluation of wetlands in terms of integrity in relation to their ecological conservation values.	1	June 2007	Avon Wetland Baselining wetland component (Dr Lien Sim) State wetlands database	1:100 000 corrected map of basin type wetlands in prioritised areas. 1:250 000 corrected map of wetlands outside prioritised areas. Classifying Preliminary evaluation framework systems indicating Category 1 (near natural wetlands), Category 2 (significant anthropogenic disturbance) and Category 3 (considerable anthropogenic disturbance)
2. Field verification of values and first stage correction and calibration of models produced in Stage 1.	1	November/ December 2007	Avon Wetland Baselining wetland component (Dr Lien Sim) State wetlands database	Corrected Activity 1 outputs. List of wetlands that may be able to receive drainage water. List of wetlands of high conservation value not suitable to receive drainage water. List of wetlands that will require additional surveys before they are declared suitable to receive drainage water
3. Guidelines and protocols for undertaking detailed on-ground assessments for downstream impacts and wetland values	2	June 2008	EEI & WDE	Guideline document to enable users to assess the suitability of wetlands to receive drainage waters. The document will be- aimed at implementation level for use by extension officers for Category 2 wetlands

Stages 1 and 2 duplicates the initial requirements of the Avon wetland baselining project, coordinated by Dr Lien Sim. To avoid duplication, and improve efficiency, the two projects will amalgamate efforts. Dr Sim will be responsible for developing the predictive modelling tool in order to initially assign identified wetlands into 3 broad value classes (the evaluation process) for the entire Wheatbelt (including the Avon). This will be done as a remote sensing exercise by measuring and predicting attributes such as wetland vegetation changes, on the wetland fringe and using the indicator results to predict wetland disturbance and conservation values. As the basis for this process, a remotely-sensed wetted extent layer will be produced from Landsat imagery and used to map the location of wetlands within the study area. John Lizamore will take responsibility for refining and augmenting the remote sensing this wetland layer at a scale of 1:100 000 for the prioritised areas in the Wheatbelt. Ben Smith will take responsibility for refining and augmenting the remote sensing this wetland layer for the Avon catchment NRM region outside the prioritised areas to a scale of 1:100 000. Due to budget and time constraints, areas in the Wheatbelt falling outside of both the prioritised areas and the Avon catchment NRM region will only be done at a scale of 1:250 000.

Stage 2 will involve verifying the accuracy of the predictive model developed by Dr Sim, using field and aerial data, as well as further refining and augmenting cleaning and correction of the spatial wetlands layer. Findings will be documented to indicate the accuracy of the compiled spatial layer (Stage 1) and whether the data is of an acceptable accuracy. This will also include recommendations for future enhancement of the accuracy of the data-layer.

The objective of Stage 3 will be to develop the most cost and time-effective indicators of wetland condition and change so that a rapid assessment approach to evaluating downstream impacts and impacts on identified stakeholders from drainage proposals can be used. The stage will involve working with a hydrologist in developing protocols to assess these impacts by assessing the connection between hydrological parameters of water regime and the change in ecological function of wetlands. This would involve the assessment of using attributes such as vegetation condition, using both fringing and sub-merged/emergent macrophytes and benthic mats. The approach would also assess the usefulness of developing indicator macroinvertebrate and wetland fauna screens.

Geographic boundary

The study area is the area known as the Western Australian Wheatbelt. As there may be some differences in opinion about the area considered to constitute the Wheatbelt region, the geographic boundary has been fixed in consultation with Department of Water and is indicated in the map in Appendix A.

Linkages with Other Activities

In addition to its close links with the Avon Baselining project, the Wheatbelt Wetlands Assessment project links with the other projects within the WDE and the EEI programs, particularly in phase two where EEI sites will be targeted to test the wetlands classification methodology from phase one. The project also links into the State Wetlands Database, with the indicative assessment levels for wetlands being available on-line through the database as well as in hard copy. Mapping in the State Wetlands Database will be used to identify the wetlands to be classified in terms of assessment level likely to be required.

The development of suitable indicators of wetland condition will also be linked to the various wetland monitoring programs around WA that are coordinated through the Wetlands Status Working group (sub-committee of the Wetlands Coordinating Committee), the NRM Wetlands Group and the National Wetlands Indicators project.

Project Management and Reporting

The Coordinator of Wetland Conservation within DEC will manage the project. A project advisory group (PAG) to the project will be established with representation from the DoW, DEC and an independent wetland scientist. Close collaboration will be maintained with the EEI and WDE programs via the DoW Team Leader – Salinity Engineering, who will also be represented on the PAG.

Milestone reporting will be as requested from the DoW on a quarterly schedule beginning October 2006 and a final draft report in June 2008. Annual and final reporting will also be forwarded to the State Wetlands Coordinating Committee and the EEI steering committee.

Time Budget

Component	Days 06/07	Days 07/08	Days Total	Comment
PHASE 1 Wetland Condition Assessment				
- Project Manager	40	180	220	85% Level 4, $15,000 car, accommodation, computer, $10,000 operating
- Communication	8	32	40	15% Level 4, $2,000 car, accommodation, computer, $1,000 operating
- GIS consultation	20	20	40	15% Level 5.
- GIS technicians	120		120	2 people, Level 2-4, 3 months
- Field evaluation by Expert Panel	2	4	6	
	190	236	426	
PHASE 2 Drainage Evaluation				
- Project Manager	0	220	220	85 % of Level 4, $15,000 car, accommodation, computer, $10,000 operating
- Communication	0	40	40	15% Level 4, $2,000 car, accommodation, computer, $1,000 operating
- GIS consultation	20	20	40	15% Level 5.
- Field evaluation by Expert Panel	0	6	6	
	20	286	266	
TOTAL	**210**	**522**	**692**	

Payment Schedule

Due Date	Scheduled Payment ($ GST Exclusive)	Reporting requirements and payments pre-requisites
1 Feb 2007	50,000	Research Agreement by both DoW and DEC, technical officer in position
23 April 2007	40,000	On selection of 2 suitable GIS technicians to assist Project manager in short term
1 May 2007	50,000	On receipt of quarterly report to DoW for the period to 30 March 2007
1 June 2007	50,000	On receipt of a brief progress report for the period to 30 April 2007
1 November 2007	50,000	On receipt a progress report for the period to 30 October 2007
1 April 2008	40,000	On completion of project work and receipt of progress report for the quarter to 30 March 2008.
1 June 2008	10,000	On receipt of draft final report. An audited financial statement to be submitted within 3 months of the project completion date.
Total Funding	290,000	

Project Milestones – Expenditure

Milestone No.	Milestone	Completion Date	Expenditure Items	Total Expected Expenditure
1	Contract in place with DoW	30-Jun-06	nil	nil
2	Appoint Phase 1 staff – Technical officer/Project manager	01-Feb-07	Recruitment expenses, salaries, office equipment	2,000
3	Appoint GIS technical assistants	23 - Apr - 07	Salaries, GIS access costs	40,000
3	Population of ecological conservation value tables for identified wetlands	30-June-07	GIS access costs	5,000
4	Field verification of wetland classification and evaluation Financial Progress report 1	31-Oct- 07	Travel expenses, meeting costs	10,000
5	Complete the listing of ecological conservation value Tables for prioritized regions	31-Mar- 08	GIS access costs PM Salaries	5,000 118,000
6	Input final wetland ecological conservation value tables into State Wetlands Database and make available on-line	31-Mar- 08	GIS access costs	5,000
7	Conduct consultations with wetland ecologists and hydrologists for evaluation of wetlands downstream from selected drainage sites Financial progress report 2	28-Feb-08	Travel expenses, meeting costs	10,000
8	Testing of wetland classification in targeted wetlands downstream from selected drainage sites	31-Mar-08	Travel expenses, meeting costs	10,000
9	Complete Drainage Evaluation Protocols for small scale and Catchment Scale Drainage	30-Apr-08	Reporting costs PM Salaries	5,000 10,000
10	Input Into Regional Scale Drainage Evaluation	31-May-08	Consultancy, salaries, travel expenses, meeting costs	10,000
11	Contact consultancy to assist with peer review of draft report	31-May-08	Consultancy meeting costs, reporting costs	10,000
12	Demonstrated effectiveness of Drainage Evaluation Protocols for small scale and Catchment Scale Drainage schemes. Draft Report	29-Jun-08	PM Salaries	40,000
13	Final report published	31-July-08	PM Salaries	10,000
Total Expected Expenditure				**290,000**

Project Milestone Reporting

Milestone	Completion Date	Deliverables	Reporting
Contract in place with DoW	30-Jun-06	Contract with milestones of deliverables and reporting	Signed financial agreement
Appoint Phase 1 staff	01-Feb-07	Technical Officer, Wetland Evaluation in place	Noted in quarterly report, March 2007
Appoint GIS technical assistants	23-Apr-07	GIS technical assistants in place	Noted in quarterly report, July 2007
Population of ecological conservation value tables for identified wetlands	30-June-07	Populated wetland condition tables for 4 NRM regions	Noted in quarterly report, July 2007
Field verification of wetland classification and evaluation	31-Oct- 07	Field verified wetland condition value tables for 4 NRM regions	Noted in quarterly report, December 2007
Complete the listing of ecological conservation value tables for prioritized regions	31-Mar- 08	Endorsement of wetland value tables for 4 NRM regions by project advisory committee	Noted in quarterly report, March 2008
Input final ecological conservation value tables into State Wetlands Database and make available on-line	31-Mar- 08	Published wetland condition tables for 4 NRM regions	Noted in quarterly report, March 2008
Conduct consultations with wetland ecologists and hydrologists for evaluation of wetlands downstream from selected drainage sites	28-Feb-08	Sites for evaluation selected, evaluation parameters and condition indicators agreed	Noted in quarterly report, March 2008
Testing of wetland classification in targeted wetlands downstream from selected drainage sites	31-Mar-08	Wetlands receiving drainage classified under condition tables	Noted in quarterly report, March 2008
Complete Drainage Evaluation Protocols for small scale and Catchment Scale Drainage	30-Apr-08	Draft Drainage Evaluation Protocol for Catchment Scale Drainage endorsed by project advisory committee	Noted in quarterly report, July 2008
Input Into Regional Scale Drainage Evaluation	31-May-08	Final Drainage Evaluation Protocol for Catchment Scale Drainage	Noted in quarterly report, July 2008
Contact consultancy to assist with peer review of draft report	31-May-08	Peer review of draft report undertaken	Noted in quarterly report, July 2008
Demonstrated effectiveness of Drainage Evaluation Protocols for small scale and Catchment Scale Drainage schemes. Draft Report	29-Jun-08	Drainage Evaluation Protocols endorsed by Wetlands Coordinating Committee	Noted in quarterly report, July 2008
Final report published	31-July-08	Final Report.	Noted project completion and final report in quarterly and annual report.