



Hon. Dr Judy Edwards, MLA
MINISTER FOR THE ENVIRONMENT AND HERITAGE

Dear Minister

RELOCATION OF THE CEDRIC STREET WETLAND – EXTENSION OF TIME LIMIT (ASSESSMENT NO. 1449)

Thank you for your letter of 8 August 2002 seeking advice in regard to the request by the proponent for an additional extension of the approval period beyond that allowed for under Condition 9 of Statement 522 for the Cedric Street Wetland Relocation Project. The advice set out below constitutes a report pursuant to Section 46 of the *Environmental Protection Act 1986* (EP Act). This report will be made publicly available.

The project which allows for the re-creation of a series of wetlands to replace the ecological, hydrological and social functions currently associated with the Cedric Street Wetland was originally approved in April 1993. It has since been the subject of a review under Section 46 of the EP Act. The review was for an extension of the approval period and was granted on 17 September 1999 (Statement 522) for an additional two years. As the proposal has not yet been implemented, the proponent is seeking to further extend the time limit for commencement in accordance with Condition 9-4.

Condition 9-4 of Statement 522 states that the Minister may grant an extension not exceeding two years for the substantial commencement of the proposal where the environmental parameters have not changed significantly. In this case, the environmental parameters of the proposal have not changed significantly.

The Environmental Protection Authority (EPA) has concluded that a two year extension should be allowed. The effect of the attached recommended conditions would be to extend the approval to 17 September 2003.

Given the history of this proposal and the fact that a two year extension has previously been granted, any further extension of the approval period beyond 17 September 2003 should be considered as a new proposal and may be referred to the EPA pursuant to Section 38 of the EP Act.

Assessment of this proposal under Section 46 of the EP Act also allows the EPA the opportunity to amend other environmental conditions in addition to the time limit condition. In view of the known acid sulfate soils (ASS) issues in the Stirling area, the EPA considers that a condition which provides for the investigation and management of potential ASS in areas where the proponent may propose wetlands, should be introduced into the Statement of Conditions

(Condition 11). The recommended condition is consistent with the EPA's Draft Guidance on Acid Sulfate Soils (April, 2002).

The proponent has advised that the Telford Crescent sumpland has been identified as one suitable replacement site to meet, in part, the intent of Statement 522 to create a series of wetlands. Recent advice from the proponent indicates that the enhancement of the Telford Crescent sumpland will not require excavation and deepening and therefore potential ASS that are highly likely to occur in the area are not proposed to be disturbed.

The EPA acknowledges that in avoiding the potential environmental impacts associated with disturbing acid sulfate soils, the proposed Telford Crescent sumpland is unlikely to achieve the criteria of 1000 square metres of open surface water on the first day of December (Condition 3). The criteria specified in the conditions originated from the *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992* (Lakes EPP). The EPA is mindful of the review of the Lakes EPP which acknowledges that sumplands and damplands are currently not protected under the existing Policy. The review of the policy proposes that the new Lakes EPP should protect the environmental functions and values of all wetlands on the Swan Coastal Plain. The consideration of issues beyond the scope of the existing Lakes EPP is therefore highly desirable.

Schedule 1 of Statement 522 requires the re-creation of a series of wetlands (six or seven) to be incorporated into the existing Osborne Park Branch Drain. It is understood that this was the basis of a previous mitigation strategy. However, that mitigation strategy did not proceed because suitable land was not available. The requirement for the wetland mitigation to be located within the Stirling Regional Centre creates significant limitation in the area available for any wetland replacement project. Therefore, it is proposed that Schedule 1 be amended.

The Telford Crescent sumpland, is proposed to have the functions and values that the Cedric Street Wetland historically had. The enhancement of the Telford Crescent sumpland is considered to be consistent with the intent of the Ministerial statement and the review of the EPP.

A Lake Management Plan and the specific details of the how the functions of the existing Cedric Street Wetland will be incorporated into the proposed Telford Crescent Wetland will be addressed in the Environmental Management Programme required under the existing conditions.

Recommendations

Subject to your acceptance of the above, I recommend that Schedule 1 and Ministerial Condition 9 of Statement 522 be amended and a new condition pertaining to ASS be introduced as follows:

Schedule 1

Reference to the requirements for the creation of a series of (six or seven) wetlands to be removed.

Condition 9 (Commencement)


Condition 9 is deleted and is replaced by a brief condition which requires the proponent to substantially commence the proposal by 17 September 2003. This provides adequate opportunity to substantially commence the proposal.

Condition 11 (Acid Sulfate Soils)

A new condition is introduced to provide for the investigation and management of potential Acid Sulfate Soils prior to ground disturbing activities associated with any wetland creation proposals required by Statement 522.

The recommended conditions and amendments to Schedule 1 are in Attachment 1.

Yours sincerely



Bernard Bowen
CHAIRMAN

enc

26 SEP 2002

RECOMMENDED ENVIRONMENTAL CONDITIONS
STATEMENT TO AMEND CONDITIONS APPLYING TO A PROPOSAL
(PURSUANT TO THE PROVISIONS OF SECTION 46 OF THE
ENVIRONMENTAL PROTECTION ACT 1986)

RELOCATION OF THE CEDRIC STREET WETLAND, CITY OF STIRLING

Proponent: City of Stirling

Proponent Address: Civic Place, STIRLING WA 6021

Assessment Number: 1449

Previous Assessment Numbers: 729 and 1209

Previous Statement Numbers: Statement No. 314 published on 19 April 1993; and
Statement No. 522 published on 17 September 1999.

Report of the Environmental Protection Authority: Bulletin 1066

Previous Reports of the Environmental Protection Authority: Bulletins 658 and 935.

The implementation of the proposal to which the above reports of the Environmental Protection Authority relate is subject to the conditions and procedures contained in Ministerial Statement No. 522 (17 September 1999), as amended by the following:

Condition 9 (Commencement) of Statement No. 522 is deleted and the following condition is inserted:

- 9-1 If the proponent has not substantially commenced the proposal by 17 September 2003, then the approval to implement the proposal as granted in the statement published on 19 April 1993 shall lapse and be void. The Minister for the Environment and Heritage will determine any question as to whether the proposal has been substantially commenced.

The following condition is inserted immediately following condition 10 (Compliance Auditing) of Statement No. 522:

11 Acid Sulfate Soils Investigation and Management Plan

11-1 Prior to any ground-disturbing activities associated with the re-creation of wetlands, the proponent shall prepare an Acid Sulfate Soils Investigations and Management Plan to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

The objectives of the plan are:

- to ensure that any ground-disturbing activities that may disturb acid sulfate soils and/or contaminated waters are planned and managed to avoid adverse effects on the natural and built environment, human activities and health.

The plan shall address:

1. identification of acid sulfate soils in and near areas proposed to be disturbed; and
2. planning of wetland replacement projects to avoid disturbing acid sulfate soils in the first instance.

The plan shall also address the following in the event that the disturbance of acid sulfate soils is unavoidable:

3. details of the potential on-site and off-site effects of the disturbance of the acid sulfate soils and/or groundwater levels;
4. details of how drainage, dewatering or soil extraction will be undertaken to minimise environmental impacts;
5. details of how any acid leachate generated as a result of ground-disturbing activities will be managed;
6. management of areas, both on and off-site, used to store or treat extracted soil;
7. a comprehensive surface and ground water quality monitoring programme both on and off-site, if applicable;
8. establishment of agreed performance criteria and objectives in relation to environmental and social impacts; and
9. contingency measures and procedures in the event that the agreed performance criteria are not met.

11-2 The proponent shall implement the Acid Sulfate Soils Investigation and Management Plan required by condition 11-1, to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority.

The revised Schedule 1 is attached.

Schedule 1

The Proposal (Assessment No. 1449)

The objective of the proposal is the recreation of a wetland or wetlands to be incorporated into the existing Osborne Park Branch Drain. It is considered that the wetland/s will replace and, in most cases, greatly improve upon the ecological, hydrological and social functions currently associated with the Cedric Street wetland.

The water surface area expressed by each wetland will be at least 1,000 square metres as at the first week of summer of any year. This is consistent with wetland criteria proposed in the Environmental Protection Authority's Draft Environmental Protection (Swan Coastal Plain Lakes) Policy 1992.

The proposed replacement wetland/s have the potential to possess the following natural and human use benefits:

- 1 a greater diversity of wetland types;
- 2 providing a variety of waterbird habitats (open water roosting, feeding, breeding and loafing sites);
- 3 creating landscape features which can be utilised for public enjoyment; and
- 4 nutrient stripping sites which will improve the water quality of the Osborne Park Branch drain.

Table 1 - Key Proposal Characteristics (Assessment No. 1449)

Element	Description
Objective	Re-creation of a wetland or wetlands within the boundaries of the Stirling Regional Centre and incorporating the existing Osborne Park Branch Drain which will replace and, in most cases, greatly improve upon the ecological, hydrological and social functions currently associated with the Cedric Street wetland and the dampland to the south of the wetland.
Conceptual design	The water surface area expressed by the wetland/s will be at least 1,000 square metres as at the first week of summer of any year. This is consistent with wetland criteria proposed in the EPA's Draft Environmental Protection (Swan Coastal Plain Lakes) Policy 1992.
Functions	<p>The proposed replacement wetlands to have the potential for the following natural and human use benefits:</p> <ol style="list-style-type: none"> 1 a greater diversity of wetland types; 2 providing a variety of waterbird habitats (open water roosting, feeding, breeding and loafing sites); 3 creating landscape features which can be utilised for public enjoyment; 4 nutrient stripping sites which will improve the water quality of the Osborne Park Branch drain.
Management	Commitment to Environmental Management Plan incorporating environmental objectives, monitoring, specific construction details of replacement wetland and management responsibilities.
Time limit	Proposal to be substantially commenced within two years.



Statement No.

MINISTER FOR THE ENVIRONMENT;
LABOUR RELATIONS

000522

STATEMENT TO AMEND CONDITIONS APPLYING TO A PROPOSAL
(PURSUANT TO THE PROVISIONS OF SECTION 46 OF THE
ENVIRONMENTAL PROTECTION ACT 1986)

RELOCATION OF THE CEDRIC STREET WETLAND, CITY OF STIRLING

Proposal: To create a series of interconnected wetlands within the boundaries of the Stirling Regional Centre and to incorporate the existing Osborne Park Branch Drain which will replace the ecological, hydrological and social functions of the Cedric Street wetland and the dampland to the south of the wetland, as documented in schedule 1 of this statement.

Proponent: City of Stirling

Proponent Address: Civic Place, STIRLING WA 6021

Assessment Number: 1209

Previous Assessment Number: 729

Previous Statement Number: Statement No. 314 published on 19 April 1993

Report of the Environmental Protection Authority: Bulletin 935

Previous Report of the Environmental Protection Authority: Bulletin 658

The implementation of the proposal to which the above reports of the Environmental Protection Authority relate is now subject to the following conditions and procedures which replace all previous conditions and procedures:

1 Implementation

1-1 Subject to these conditions and procedures, the proponent shall implement the proposal as documented in schedule 1 of this statement.

1-2 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment determines, on advice of the Environmental Protection Authority, is substantial, the proponent shall refer the matter to the Environmental Protection Authority.

Published on
17 SEP 1999

- 1-3 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment determines, on advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

2 Proponent Commitments

- 2-1 The proponent shall implement the consolidated environmental management commitments documented in schedule 2 of this statement.
- 2-2 The proponent shall implement subsequent environmental management commitments which the proponent makes as part of the fulfilment of conditions and procedures in this statement.

3 Lakes Environmental Protection Policy

- 3-1 The proponent shall ensure that each lake created under the Lake Relocation Plan (see condition 6) complies with the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 selection criteria.
- 3-2 The proponent shall design and construct each lake created under the Lake Relocation Plan so that it has a surface water area of not less than 1000 square metres on the first day of December each year, except under exceptional drought conditions.
- 3-3 Within one month following the completion of the construction phase of the Lake Relocation Plan, the proponent shall nominate for inclusion in and protection under the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 each lake created under that Plan.

4 Rare Flora

- 4-1 At a seasonally appropriate time prior to the commencement of any construction which may impact on the Cedric Street Wetland or its fringing vegetation, the proponent shall conduct a survey to determine the occurrence and distribution of rare sedges, to the requirements of the Environmental Protection Authority on advice of the Department of Conservation and Land Management.

5 Environmental Management Programme

- 5-1 Prior to the commencement of any construction which may impact on the Cedric Street Wetland or its fringing vegetation, the proponent shall prepare, with the benefit of community input, an Environmental Management Programme which indicates how the existing ecological, hydrological and social values of the Cedric Street Wetland are to be incorporated into any lake to be constructed within the Stirling Regional Centre to the requirements of the Environment Protection Authority on advice of the Department of Conservation and Land Management, the Department of Environmental Protection and the Water and Rivers Commission.
- 5-2 The proponent shall include in the Environmental Management Programme required by condition 5-1 the Lake Relocation Plan and the Lake Management Plan required by conditions 6 and 7, respectively.
- 5-3 The proponent shall implement the Environmental Management Programme required by condition 5-1.

6 Lake Relocation Plan

- 6-1 Prior to the commencement of any construction which may impact on the Cedric Street Wetland or its fringing vegetation, the proponent shall prepare a Lake Relocation Plan to the requirements of the Environment Protection Authority on advice of the Department of Conservation and Land Management, the Department of Environmental Protection and the Water and Rivers Commission.

This plan shall include the following:

1. location, morphology and visual impact of replacement lake(s);
2. the ecological, hydrological and human use objectives of the replacement lake(s), and how these objectives are to be met through design and management;
3. detailed design plans, including habitat maps;
4. detailed biological specifications, including flora and fauna selections and landscape design;
5. timing of transference of biological material from the Cedric Street Wetland;
6. likely seasonal water level regimes; and
7. the distribution of rare plant and animal species occurring within the Cedric Street Wetland and details of their relocation.

- 6-2 The proponent shall implement the Lake Relocation Plan required by condition 6-1.

7 Lake Management Plan

- 7-1 Prior to the commencement of any construction which may impact on the Cedric Street Wetland or its fringing vegetation, the proponent shall prepare a Lake Management Plan to the requirements of the Environment Protection Authority on advice of the Department of Conservation and Land Management, the Department of Environmental Protection and the Water and Rivers Commission.

This plan shall include the following:

1. vegetation monitoring;
2. fauna monitoring;
3. habitat monitoring;
4. lake water level monitoring;
5. human use monitoring;
6. water quality monitoring (including inflows and outflows);
7. lake management strategies (including scope for mid-course corrections in response to unforeseen circumstances);
8. weed, pest and rubbish control; and
9. future reporting of results.

- 7-2 The proponent shall implement the Lake Management Plan required by condition 7-1.

8 Proponent

- 8-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the Environmental Protection Act 1986 is responsible for the implementation of the proposal until such time as the Minister for the Environment has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person in respect of the proposal.

8-2 Any request for the exercise of that power of the Minister referred to in condition 8-1 shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the proposal in accordance with the conditions and procedures set out in the statement.

8-3 The proponent shall notify the Department of Environmental Protection of any change of proponent contact name and address within 30 days of such change.

9 Commencement

9-1 The proponent shall provide evidence to the Minister for the Environment within two years of the date of this statement that the proposal has been substantially commenced.

9-2 Where the proposal has not been substantially commenced within two years of the date of this statement, the approval to implement the proposal as granted in statement no. 314 (19 April 1993) shall lapse and be void. The Minister for the Environment will determine any question as to whether the proposal has been substantially commenced.

9-3 The proponent shall make application to the Minister for the Environment for any extension of approval for the substantial commencement of the proposal beyond two years from the date of this statement, at least six months prior to the expiration of the two year period commencing on the date of this statement.

9-4 Where the proponent demonstrates to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority that the environmental parameters of the proposal have not changed significantly, then the Minister may grant an extension not exceeding two years for the substantial commencement of the proposal.

10 Compliance Auditing

10-1 The proponent shall submit periodic Performance and Compliance Reports, in accordance with an audit program prepared in consultation between the proponent and the Department of Environmental Protection.

10-2 Unless otherwise specified, the Chief Executive Officer of the Department of Environmental Protection is responsible for assessing compliance with the conditions, procedures and commitments contained in this statement and for issuing formal, written advice that the requirements have been met.

10-3 Where compliance with any condition, procedure or commitment is in dispute, the matter will be determined by the Minister for the Environment.

Note

1 Monitoring and reporting requirements under condition 7 may be reviewed by the Environmental Protection Authority after submission of the sixth annual monitoring report.


CHERYL EDWARDES (Mrs) MLA
MINISTER FOR THE ENVIRONMENT

17 SEP 1999

Schedule 1

The Proposal (1209)

The objective of the proposal is the recreation of a series of wetlands to be incorporated into the existing Osborne Park Branch Drain. It is considered that the wetland series will replace and, in most cases, greatly improve upon the ecological, hydrological and social functions currently associated with the Cedric Street wetland.

Conceptually this will be achieved by the creation of six or seven wetlands which will all be capable of sustaining a viable wetland ecosystem. The water surface area expressed by each wetland will be at least 1,000 square metres as at the first week of summer of any year. This is consistent with wetland criteria proposed in the Environmental Protection Authority's Draft Environmental Protection (Swan Coastal Plain Lakes) Policy 1992.

The proposed replacement wetlands have the potential to possess the following natural and human use benefits:

- 1 a greater diversity of wetland types;
- 2 providing a variety of waterbird habitats (open water roosting, feeding, breeding and loafing sites);
- 3 creating landscape features which can be utilised for public enjoyment; and
- 4 nutrient stripping sites which will improve the water quality of the Osborne Park Branch drain.

Key Characteristics Table (1209)

Element	Description
Objective	Re-creation of a series of wetlands within the boundaries of the <u>Stirling Regional Centre</u> and incorporating the existing Osborne Park Branch Drain which will replace and, in most cases, greatly improve upon the ecological, hydrological and social functions currently associated with the Cedric Street wetland and the dampland to the south of the wetland.
Conceptual design	To be achieved by the creation of six or seven wetlands which will all be capable of sustaining a viable wetland ecosystem. The water surface area expressed by each wetland will be at least 1,000 square metres as at the first week of summer of any year. This is consistent with wetland criteria proposed in the EPA's Draft Environmental Protection (Swan Coastal Plain Lakes) Policy 1992.
Functions	<p>The proposed replacement wetlands to have the potential for the following natural and human use benefits:</p> <ol style="list-style-type: none"> 1 a greater diversity of wetland types; 2 providing a variety of waterbird habitats (open water roosting, feeding, breeding and loafing sites); 3 creating landscape features which can be utilised for public enjoyment; 4 nutrient stripping sites which will improve the water quality of the Osborne Park Branch drain.
Management	Commitment to Environmental Management Plan incorporating environmental objectives, monitoring, specific construction details of replacement wetland and management responsibilities.
Time limit	Proposal to be substantially commenced within two years.

Proponent's Environmental Management Commitments

30 April 1999

**RELOCATION OF THE CEDRIC
STREET WETLAND, CITY OF
STIRLING (729/1209)**

CITY OF STIRLING

Table 1. Pre-operational Management Commitments for Relocation of the Cedric Street Wetland (1209)

No	Topic	Commitment	Objective	Action	Timing	Advising Agency	Measurement/ Compliance Criteria
1	General	Develop an Environmental Management Plan (EMP).	To manage environmental issues identified in the Relocation of the Cedric Street Wetland Report.	Document management policy including an EMP to include: <ul style="list-style-type: none"> • Wetland design; • Precise location of wetlands; • Performance criteria; • Performance monitoring; • Management and maintenance of replacement wetlands; and • Corrections/contingency plans. 	Prior to relocation of remnant wetland	DEP	Submission of EMP documents to DEP.
2	General	Implement the EMP.	To manage environmental issues identified in the Relocation of the Cedric Street Wetland Report.	Implement the requirements of the EMP.	Ongoing	DEP	Annual reports to DEP
3	Water Resources	Investigate groundwater and hydraulic requirements of scheme	To assess groundwater and hydraulic levels.	Conduct detailed engineering surveys.	Prior to relocation of remnant wetland	DEP, WRC	Submission of hydrological and hydraulic investigations report to DEP.
4	Water Resources	Undertake detailed analysis of water levels downstream.	To anticipate the water levels which are expected to vary according to final land use proposed upstream.	Assessment of flow rates and water levels of the Osborne Park Branch Drain.	Prior to relocation of remnant wetland	DEP, WRC	Submission of hydrological and hydraulic investigations report to DEP.
5	Terrestrial	Undertake investigations to fully identify native mammals in the area.	To ensure the preservation of native mammals utilising the wetland environment.	A detailed survey and trapping exercise will be undertaken in order to determine the possibility of the Southern Brown Bandicoot or other native mammals in the area.	Prior to relocation of remnant wetland	DEP	Submission of survey report to DEP.
6	Biophysical	Develop landscaping plans.	To design an appropriate replacement wetland environment.	Landscape Plans will be formulated and incorporated into the EMP to obtain satisfactory approval by the EPA.	Prior to relocation of remnant wetland	DEP	Submission of survey report and plans to DEP.
7	Biophysical	Implement landscaping plans.	To design an appropriate replacement wetland environment.	Implement requirements of landscaping plans.	On going	DEP	Annual reports to DEP

Table 1. Pre-operational Management Commitments for Relocation of the Cedric Street Wetland (1209) (Cont\)

No	Topic	Commitment	Objective	Action	Timing	Advising Agency	Measurement/ Compliance Criteria
8	Biophysical	Undertake relocation of vegetation species.	To ensure the preservation of vegetation in the wetland environment.	Identification of vegetation species that needs to be relocated from Cedric Street Wetland. Investigations into feasible transplanting methods.	Prior to relocation of remnant wetland	DEP	Submission of relocation plan, as part of EMP, to DEP.
9	Biophysical	Undertake appropriate analysis of peat reserves.	To estimate the adequacy of peat reserves necessary for wetland to be created.	Quantitative analysis of the peat reserves.	Prior to relocation of remnant wetland	DEP	Report to be detailed as part of EMP, and submit to the DEP.
10	Biophysical	Stipulate optimal period for regrowth of wetland macrophytes.	To ensure the most beneficial timing of earthworks and vegetation relocation/establishment as part of the wetland replacement proposal.	Precise determination of most beneficial timing of earthworks and vegetation relocation establishment as part of the wetland replacement proposal.	Prior to relocation of remnant wetland	DEP	Reporting in EMP for presentation to DEP.
11	Hydrological	Provide detailed plans of proposed development.	To ensure that wetland relocation is done concisely and efficiently.	Clear definition of the number, location, area and other aspects of wetland design.	Prior to relocation of remnant wetland	DEP, WRC	Reporting in EMP for presentation to DEP.
12	Hydrological	Provide detailed plans of proposed development.	To minimise potential impacts on remnant vegetation types.	Utilise cleared, low lying sites which possess minimal potential impacts on remnant vegetation types.	Prior to relocation of remnant wetland	DEP, City of Stirling, WRC	Liaison with DEP officers and City of Stirling Staff.
13	Hydrological	Negotiate replacement of wetlands within the Stirling Regional Centre.	To minimise any environmental losses incurred.	Consultation with relevant authorities to negotiate the location of the replacement wetlands.	Prior to relocation of remnant wetland	DEP, WRC, City of Stirling	Liaison with DEP officers and City of Stirling Staff.
14	Hydrological	Implement a water sensitive design approach to the scheme.	To maximise environmental opportunities of the proposal.	Adopt principles as per WRC guidelines.	Prior to relocation of remnant wetland	DEP, WRC	Inclusion of report in EMP for presentation to DEP.

Table 1. Pre-operational Management Commitments for Relocation of the Cedric Street Wetland (1209) (Cont)

No	Topic	Commitment	Objective	Action	Timing	Advising Agency	Measurement/ Compliance Criteria
15	Hydrological	Develop a management and maintenance system for the wetlands.	To ensure smooth running of the wetland system.	Provide management and maintenance of the proposed wetland series during the construction phase and for a further two years after practical completion of the wetland project. After this period, the City of Stirling will undertake the role of long term managers of the wetland system.	Prior to relocation of remnant wetland	DEP, WRC	Submission of EMP to DEP.
16	Hydrological	Implement the management and maintenance system for the wetlands.	To ensure smooth running of the wetland system.	Implement requirements of the management and maintenance system for the wetlands for a further two years after practical completion of the wetland project. After this period, the City of Stirling will undertake the role of long term managers of the wetland system.	After relocation of remnant wetland	DEP, WRC	Annual reports to DEP.
17	Community awareness	Establish an appropriate system to allow awareness of environmental goals and objectives.	To achieve a uniform and consistent understanding of the objectives outlined in the CER amongst all parties.	Educate prospective companies, contractors and subcontractors involved in the construction and establishment of wetlands on the environmental goals and objectives of the proposal as outlined in the CER.	Prior to relocation of remnant wetland	DEP	Positive feedback from community members in regard to the project.

Table 2. Operational Management Commitments for Relocation of the Cedric Street Wetland (1209)

	Topic	Commitment	Objective	Action	Timing	Advising Agency	Measurement/ Compliance Criteria
18	General	Develop an effective EMP for the operations phase.	To develop and build on the existing EMP.	Incorporate a set of criteria for further development of ecosystem performance.	During construction of recreated wetland habitat	DEP	Submission of revised feedback to DEP officers.
19	General	Implement the EMP for the operations phase.	To develop and build on the existing EMP.	Implement requirements of the EMP.	During operation of recreated wetland habitat	DEP	Annual reports to DEP.
20	Terrestrial	Design an intensive procedure to encourage native vegetation growth.	To maximise the establishment of native vegetation and minimise areas of open ground where Typha are likely to invade.	Adopt an intensive transplanting/planting/ seeding operation for each wetland.	During construction of recreated wetland habitat	DEP	Success of indigenous plant growth and effectiveness of weed control techniques.
21	Terrestrial	Implement the intensive procedure to encourage native vegetation growth.	To maximise the establishment of native vegetation and minimise areas of open ground where Typha are likely to invade.	Implement the intensive transplanting/planting/ seeding operation for each wetland.	During operation of recreated wetland habitat	DEP	Annual reports to DEP.
22	Hydrological	Design necessary drainage systems for wetland waterbody.	To settle out any particulates/sediments associated with stormwater drainage prior to entry into the wetland waterbody.	Sediment basins will be constructed alongside replacement wetlands.	During construction and operation of recreated wetland habitat	DEP, WRC	Periodic monitoring of sedimentation basin to establish effective functioning.
23	Hydrological	Monitor earthworks, drainage provisions and wetland storage capacities.	To ensure the Osborne Park Branch Drain will not be adversely affected by the proposal.	Identify limit of construction by line-pegging. Provide adequate storage within the basin to allow for a minimum of 1 in 10 ARI event.	During construction and operation of recreated wetland habitat	DEP, WRC	Approval and implementation of adequate monitoring program by DEP.
24	Hydrological	Segregate wetland excavation activities from the water course of the Osborne Park Branch Drain.	To mitigate water quality impacts such as increased turbidity and siltation of main drainage channel.	Identify limits of construction and erect barriers/screens to prevent dust and soil from entering the drain.	During construction and operation of recreated wetland habitat	DEP, WRC	Provision of adequate management strategy to DEP.
25	Hydrological	Restrict access to newly created wetlands.	To encourage successful establishment of wetlands.	Provide fencing on a permanent basis where appropriate, providing it does not impede upon the various functional objectives contained in the CER.	During construction and operation of recreated wetland habitat	DEP, WRC	Erection of fencing.

Table 2. Operational Management Commitments for Relocation of the Cedric Street Wetland (1209) (Cont)

	Topic	Commitment	Objective	Action	Timing	Advising Agency	Measurement/ Compliance Criteria
2 6	Hydrological	Monitor the water quality of the Osborne Park Branch drain in the proximity of the outfall.	To assist in the effectiveness of nutrient/pollutant stripping functions of wetlands.	Establish sampling stations 100 metres upstream and 20 metres downstream of wetland outflow. Undertake baseline monitoring (2 intervals) prior to construction, followed by post construction monitoring up and downstream of outfall on a bimonthly basis for one year. Further monitoring requirements to be established at the end of this period.	During construction and operation of recreated wetland habitat	DEP, WRC	Submission of water quality monitoring reports for inspection to either City of Stirling or DEP.
2 7	Community awareness	Actively involve the City of Stirling in the initial stages of wetland creation	To ensure that the long term managers of the wetland system (City of Stirling) are well informed on the environmental goals of the wetlands.	Liaise with City of Stirling and Wetlands Advisory Committee during design phase.	During construction and operation of recreated wetland habitat	DEP, City of Stirling	Establishment of relations with custodians of the new wetland.
2 8	Community awareness	Conduct an education campaign and help community groups and schools become involved.	To increase public involvement in the wetland project.	Promotional talks by key City of Stirling staff to school groups. Display material around replacement wetland.	During construction and operation of recreated wetland habitat	DEP, City of Stirling	Development of community awareness programs.

Table 3. Post-operational Management Commitments for Relocation of the Cedric Street Wetland (1209)

	Topic	Commitment	Objective	Action	Timing	Advising Agency	Measurement/ Compliance Criteria
29	Community Liaison	Educate the managers of the wetlands (City of Stirling) and local community groups on land management practices.	To ensure the long term sustainability of the wetland environment.	Establishment of wetland working groups or equivalent.	Post construction of recreated wetland environments	DEP	A documented record of a series of wetland management meetings.
30	Hydrological	Control the proliferation of undesirable vegetation types (ie. the manual removal of Typha, Castor Oil plants, pampas grass, blackberry, etc.) in the relocated wetland.	To maintain a balance of native vegetation types.	Removal of existing weed species and planting of native vegetation to aid macrophyte establishment.	Post construction of recreated wetland environments	DEP, WRC	Submission of maintenance and monitoring plan as part of EMP to both City of Stirling and DEP.
31	Hydrological	Establish habitat types consistent with the range of waterbird activities.	To encourage the use of native fauna, particularly waterbirds.	Introduce hollow logs, nesting boxes and effective screening.	Post construction of recreated wetland environments	DEP, WRC	Monitoring of fauna use on a periodic basis.
32	Hydrological	Periodic maintenance of the proposed sediment basins.	To ensure maintenance of the drainage system.	Bimonthly inspection of sediment traps. Cleaning out as appropriate.	Post construction of recreated wetland environments	DEP, City of Stirling, WRC	Establishment and documentation of regular maintenance and monitoring schedule for associated sediment basins.
33	Hydrological	Use of street sweepers on wetland surface catchment roads	Reduce sediments prior to the first flush of winter rains (eg. March - April).	Advise appropriate department of schedule required for street cleaning operations.	Post construction of recreated wetland environments	DEP, City of Stirling, WRC	Incorporation of cleaning schedule in council's street cleaning program.

Abbreviations: DEP - Department of Environmental Protection

WRC - Water & Rivers Commission