July 2014

GOVERNMENT OF WESTERN AUSTRALIA

NEW PERTH STADIUM

Construction Environmental Management Framework

REPORT

Report Number. 117643077-037-R-Rev2

Distribution:

1 Electronic Copy - Public Transport Authority
1 Electronic Copy - Department of Treasury Strategic Projects
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1.0 INTRODUCTION

1.1 Overview

This Construction Environmental Management Framework (CEMF) has been prepared for the new Perth Stadium project (the Project) as part of an Environmental Management Strategy to guide the Department of Treasury Strategic Projects (SP) in establishing and maintaining appropriate controls to manage potential environmental and social impacts during the Project.

The Project is to design, construct, operate and maintain a new Perth Stadium (the Stadium) contained within a "Sports Precinct" located at Burswood Peninsula, Western Australia. The "Sports Precinct", referred to throughout this document, is described in the New Perth Stadium Master Plan (Strategic Projects, 2012) as including:

- A 60 000 seat Stadium with an east-west orientated pitch measuring 165 m × 130 m. The Stadium will incorporate an external elevated plaza up to 30 m wide.
- An upgraded Belmont Park rail station with dual access to transport for up to 28 000 patrons within an hour after an event. The upgraded facility will include rail forecourts to allow queuing.
- An on-street bus hub facility.
- A pedestrian bridge linking the Stadium with Nelson Avenue in East Perth.
- A parkland for community sports and temporary car parking on event days north of the stadium.
- An underpass under Victoria Park Drive.
- The retention of the existing Swan River-fed Lake as major feature of the Sports Precinct.
- Footpaths/cycle networks linking the Stadium with Windan Bridge and East Perth train station.
- The supply of additional water, power and gas utilities to service the Stadium. Sources are available in the vicinity and are generally aligned along Victoria Park Drive.

For planning purposes the Project is to be delivered in three parts:

- **Part 1**: the construction of the Stadium and associated Sports Precinct. This will be undertaken in two phases:
  - Construction Phase, which includes:
    - Preconstruction Site Works (PCS Works) - The objective of the PCS Works is to prepare some parts of the site in advance of the main construction contract so that long term ground movements in those designated areas are within prescribed limits and to facilitate timely construction of the Stadium and associated works. This will necessitate ground treatment such as surcharge, dynamic compaction and/or stone columns so that upon completion of the PCS Works, construction of the Stadium can commence without undue delay caused by site preparation works.
    - Stadium Construction Works (Stadium Works) - Includes the construction of the Stadium, its plaza and associated infrastructure on the PCS Works site and will necessitate the use of deep piles to support the Stadium structure. Construction of surrounding infrastructure, such as pedestrian access ways, roads, bridges, services and site rehabilitation will also be undertaken during the Stadium Works.
  - Operating Phase: the commissioning of the internal fit-out of the Stadium facilities will be undertaken and ongoing environmental monitoring of the site and management of site facilities will continue during this phase.

- **Part 2**: the construction of the transport infrastructure including the rail realignment, road upgrades to Victoria Park Drive and the Belmont Park Train Station upgrades.
- **Part 3**: the construction of the new pedestrian bridge over the Swan River.

Delivery of the Project, including Parts 1, 2 and 3 has potential environmental and social impacts and has required referral to the Environmental Protection Authority (EPA) in accordance with Section 38 of the *Environmental Protection Act 1986* (EP Act). Referral applications have been lodged for Parts 1, 2 and 3, with the EPA determining that the proposals did not require formal assessment.

Delivery of the two phases within Part 1 of the Project is required by 2018. This requires that the PCS Works commence by mid-2013 to allow Stadium Works of the Stadium to commence in 2014, facilitating completion by 2018.

1.2 Scope

The scope of this CEMF is concerned with the Construction Phase of Part 1 of the Project (aka PCS Works and Stadium Works). It focuses on the development of the Sports Precinct including the:

- Stadium and its plaza
- Bus hub
- Pedestrian access ways and the Stadium ring road
- Parklands.

This CEMF excludes the following components which are discussed in separate documentation:

- Swan River pedestrian bridge
- Train station
- Rail realignment
- Road upgrades to Victoria Park Drive.

1.3 Objective

This CEMF has been drafted by Golder Associates (Golder) in consultation with SP and forms part of the Environmental Management Strategy (see Section 4.0 for more detail) developed for the Project. The objective of the CEMF is to articulate:

- The Environmental Management Strategy
- Applicable legislation
- Environmental management objectives
- Environmental commitments
- Reporting requirements.
- Environmental incident management
- Auditing procedures.

This CEMF has been prepared by SP with input from relevant regulatory agencies and is to be implemented by SP and every Lead Contractor and subcontractor working on-site. References in this CEMF to the Lead Contractor(s) being responsible for certain tasks also extend to subcontractors where engaged by the Lead Contractor(s).

1.4 Project Location and History

The Project will be located on the northern nine holes of the Burswood Park Golf Course and the State Tennis Centre located on the Burswood Peninsula in Perth Western Australia, as shown in Figure 1. The Project area is shown in Figure 2 and highlighted by the solid red border and will be referred to as the "Project area" throughout this document. The Project area is bounded by the Swan River to the west; the Graham Farmer Freeway to the north and east; and the Burswood Park Golf Course to the south.

Included within the Project area are the Sports Precinct, which includes the Stadium structure, bus hub, pedestrian access ways and other associated infrastructure. The pedestrian bridge, train station and road upgrades are, for the most part, contained outside the Project area and are discussed in separate documentation.

An environmental Preliminary Site Investigation (PSI) conducted in accordance with the Department of Environment and Conservation ((DEC) now Department of Environment Regulation (DER)) Contaminated Sites Management Series Guidelines has identified that the Project area is historically the location of a waste disposal site. It is considered that the Project area has been impacted as a result of previous use as a landfill facility. Further, leachate and landfill gas may have generated over time and be contained beneath the ground surface. An environmental Detailed Site Investigation (DSI) has been completed in accordance with the DER Contaminated Sites Management Series Guidelines (Golder, 2013b). The DSI reported elevated concentrations of contaminants in soil, groundwater, sediment and surface water, as well as concentrations of ground gases (methane and carbon dioxide). Soil and groundwater contaminant concentrations and ground gases will require management during construction works.

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CLIENT	Public Transport Authority
DOCUMENT	117643077-037-R-Rev2
DATE	08 Oct 2012
COMPILED	GGW/SL
APPROVED	IYK

0 100 200 300 400
metres

SCALE (at A4) 1:10,000

NOTES
Coordinate System: PCG94

LEGEND
Project area

New Perth Stadium
CEMF

REGIONAL LOCATION

FIGURE 1

File Location: G:\Spatial_Information_Group\GIS_WORKSPACE_AUSTRALIA\01_WA\M6100_BURSWOOD\117643077\Projects\R37\117643077-037-R-F001-Rev2.mxd

Golder Associates

CLIENT	Public Transport Authority
DOCUMENT	117643077-037-R-Rev2
DATE	05 Jul 2013
COMPILED	GGW/SL/SAR
APPROVED	IYK

0 100 200 300 400
metres

SCALE (at A4) 1:10,000

NOTES
Coordinate System: PCG94

LEGEND
Project area
Concept design (Oct 2012)

New Perth Stadium
CEMF

PROJECT LAYOUT

FIGURE 2

File Location: G:\Spatial_Information_Group\GIS_WORKSPACE_AUSTRALIA\01_WA\M6100_BURSWOOD\117643077\Projects\R37\117643077-037-R-F002-Rev2.mxd

2.0 PROJECT SCOPE

2.1 Preconstruction Site Works

PCS Works are necessary to prepare the site for construction and in particular, to treat the underlying ground conditions which currently give rise to differential settlement across the site. The main components of the PCS Works are site preparation and ground improvement.

2.1.1 Site Preparation

The site preparation works have been identified as those that do not require specific ground improvement:

- Fencing the site.
- Providing access into the site and hard standing areas.
- Altering existing golf course services (e.g. reticulation) so that any existing, remaining vegetation can be maintained.
- Removing and storing trees/logs for rehabilitation, if required.
- Draining the existing irrigation lake (the Irrigation Lake on Figure 2).
- Undertaking general earthworks including shaping and contouring existing landscape to specific levels. The Stadium needs to be above the 100 year flood level which the Department of Water has estimated at Reduced Levels (RL) 3.2 m Australian Height Datum (AHD). A topographical survey of the site indicates that much of the existing landscape is already above this level but some ground work involving shaping and contouring of the land will be required to attain a level of RL 3.5 m AHD across the Stadium site.

2.1.2 Ground Treatment

Some areas of the site will require the design and construction of ground improvement in order to meet specific long-term ground movement environmental conditions. It will be necessary to carry out ground improvement to control the ground movements that would otherwise occur due to past and future loading of the refuse layer, the underlying river mud and the paleochannel which traverses the site.

Those areas identified for the design and construction of ground improvement works include the:

- Pitch
- Area external to the plaza
- Irrigation Lake beneath the Stadium site
- Perimeter road around the Stadium
- Pedestrian assembly areas
- Northern parkland/public open space
- Pathways to rail stations and pedestrian bridges.

2.1.3 Ground Improvement Methods Considered

A commentary on potential ground improvement methods is included in Golder Associates (2012). The improvement methods considered during the conceptual design study for the areas are outlined below.

2.1.3.1 Compaction of Uncontrolled Fill

Dynamic or Impact Compaction

Dynamic or impact compaction would be used to compact the uncontrolled fill material and cause collapse of items such as car bodies within the fill. A variety of methods of compaction can be used, however for the purpose of this report, dynamic compaction is assumed.

Dynamic compaction typically consists of a large weight (approximately 12 to 20 tonnes) that is lifted (generally 10 m to 40 m) and dropped onto the ground repetitively and repeated on a grid pattern. This equipment could treat material up to about 15 m to 20 m deep.

2.1.3.2 Treatment of Swan River Alluvium Surcharge plus Wick Drains

Surcharging consists of placement of fill to a higher level than final finished surface level, such that the applied loading exceeds the in-service loading. Following adequate time to allow for consolidation settlement of the weak ground below the fill to occur, the excess surcharge fill is removed down to the finished level.

Surcharge plus wick drains have been adopted for the purposes of this report.

2.1.3.3 Stone Columns

Stone columns are vertical columns of about 1 m diameter comprised of densely compacted coarse aggregate (nominally about 50 mm size) installed on a regular grid pattern, extending through the compressible layer to increase the average strength and stiffness of the ground and possibly also provide drainage to accelerate primary consolidation settlement. The aggregate is compacted in place using a vibratory tool.

2.2 Stadium Construction Works

The Stadium Works will commence following completion of the PCS Works, however, may occur in parallel, with the Stadium structure being the main element of the Construction Phase. The development loads associated with the Stadium structure itself are significant and will require to be supported through the use of piles which transfer these loads to stronger materials beneath the Swan River Alluvium (SRA) layer. This method involves the installation of piles (e.g. driven precast concrete piles) to a firm bearing stratum below the SRA, followed by construction of a reinforced concrete slab to span between the piles.

2.3 Operation

The Operating Phase of Part 1 of the Project involves the transition of the Stadium from construction to operation and being opened to the public. The Operating Phase will include the commissioning of the internal fit-out of the Stadium facilities and ongoing environmental management of the Sports Precinct by the Operating Phase Lead Contractor.

3.0 APPLICABLE LEGISLATION AND STANDARDS

SP is responsible for obtaining the approvals expressly stated to be its responsibility in Table 1. The Lead Contractor(s) will be responsible for identifying and obtaining all other approvals, licences and permits required to deliver each phase of the Project. Table 1 is an indicative list only, it is not exhaustive, and the Lead Contractor(s) must identify and obtain all other required approvals, licences and permits.

Table 1: Summary of Current and Potential Approval Requirements for the Project

Project Element	Legislation	Decision Making Authority	Application/approval	Responsibility
Project approval	*Environmental Protection Act 1986 (EP Act)*	Minister for the Environment (on advice from the OEPA)	Section 38 Referral under Part IV of the EP Act.	Strategic Projects (SP)
Project approval to take action	*Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act)	Commonwealth Minister for the Environment, or Department of the Environment (DoE) under delegation	EPBC Act Referral of a Proposed Action	SP
Contaminated Sites	*Contaminated Sites Act 2003*	DER	Auditors Report for Reclassification	SP
Indigenous heritage	*Aboriginal Heritage Act 1972*	Minister for Aboriginal Affairs, Department of Aboriginal Affairs	Section 18 Approval	SP
Vegetation clearing	*EP Act*	DER	Vegetation clearing permit application	SP
Project Works Plan and CEMP	*Public Works Act 1902*	Department of Treasury, Strategic Projects on behalf of Minister for Works	D and C Contract	Lead Contractor(s)
Approval to work within road reserves	*Road Traffic Code 2000/ Road Traffic Act 1974*	Main Roads Western Australia (MRWA)	Application to undertake works and a Traffic Management Plan	Lead Contractor(s)
Swan River	*Swan and Canning Rivers Management Act 2006*	Swan River Trust	Development Approval or Permits to undertake works that may interfere with Swan River bed and banks.	Lead Contractor(s)
Dewatering	*Rights in Water and Irrigation Act 1914*	Department of Water (DoW)	5C Licence to Take Water	Lead Contractor(s)
Install bores	*Rights in Water and Irrigation Act 1914*	DoW	2D Licence to construct a bore	Lead Contractor(s)
Discharge groundwater to stormwater system	*Swan and Canning Rivers Management Act 2006/Regulations Rights in Water and Irrigation Act 1914*	DoW/SRT/DER	Application to discharge to stormwater system	Lead Contractor(s)
Discharge groundwater to sewer	*Metropolitan Water Supply, Sewage & Drainage Act 1909*	Water Corporation	Application to discharge to sewer	Lead Contractor(s)

Project Element	Legislation	Decision Making Authority	Application/approval	Responsibility
Noise	*Environmental Protection (Noise) Regulations 1997*	DER	Approval of a noise management plan for out of hours work	Lead Contractor(s)
Storage/transport/ handling of dangerous goods	*Dangerous Goods Safety Act 2004*	Department of Mines and Petroleum (DMP)	Application for a storage, transport and handling of dangerous goods licence	Lead Contractor(s)
Controlled waste management	*Environmental Protection (Controlled Waste) Regulations 2004*	DER	Application to transport controlled wastes	Lead Contractor(s)
Ablution facilities	*Metropolitan Water Supply, Sewage and Drainage Act 1909*	DoW	Application to temporarily discharge ablution and associated toilet facilities waste to sewer	Lead Contractor(s)

4.0 ENVIRONMENTAL MANAGEMENT STRATEGY

4.1 Overview

The Environmental Management Strategy for the Project (which considers both environmental and social factors) is outlined in a series of environmental management plans (EMPs) which recognise the current environmental conditions of the site and specify management and mitigation measures for potential environmental impacts (which also considers social impacts). The Environmental Management Strategy objectives are to:

- Minimise and manage the environmental and social impacts arising from Project works.
- Manage contamination through monitoring of groundwater, surface water, soil, air and gas during the Construction Phase of the Project and into the Operating Phase.
- Implement environmental management practices to manage environmental and social impacts resulting from the Project.
- Manage emissions (including air and noise) so they do not adversely affect environment values or the health, welfare and amenity of people and land uses.
- Compliance with conditions set on the Project, if any, and applicable legislation and guidelines produced by the relevant regulatory agencies.

The Environmental Management Strategy illustrated in Figure 3 identifies the Project's environmental objectives and details the environmental commitments, management and mitigation measures; and monitoring procedures necessary to manage the Project's environmental impacts and meet the stated objectives.

SP is responsible for preparing the majority of the listed Environmental Management Strategy documents in consultation with the regulatory agencies. The Lead Contractor(s) are responsible for implementation (including monitoring) of the EMPs, which will be overseen and enforced by SP and the future Stadium Governance Body through the Contract of Award applicable to each phase of work. This approach reduces the risk that preparation and implementation of the required EMPs will not be adequately undertaken.

The Environmental Management Strategy for the Project, outlined in Figure 3 is made up of the following documents:

- Construction Environmental Management Framework (CEMF) (this document)
- Operational Environmental Management Framework (OEMF)
- Project Environmental Management Plan (Project EMP) including environmental management, mitigation and monitoring measures
- Environmental Sub-Management Plans for the Project's key environmental issues
- Lead Contractor(s)' Construction Environmental Management Plan (CEMP)
- Lead Contractor(s)' Operational Environmental Management Plan (OEMP).

These documents will be implemented to facilitate management of potential environmental impacts resulting from Project works.

4.2 Environmental Management Frameworks

The purpose of the EMFs is to outline the Project's Environmental Management Strategy, environmental objectives and environmental commitments for each phase.

The EMFs have been developed by Golder in consultation with SP. The content of the EMFs is used to develop the environmental management and mitigation measures, and monitoring procedures for the Project within the Project EMP.

4.3 Project Environmental Management Plan

The Project EMP is the overarching document in the Environmental Management Strategy for the Project and its purpose is to describe the:

- Potential Environmental Impacts
- Environmental management and mitigation measures
- Environmental monitoring procedures
- Applicable standards, guidelines and legislation
- Limits and targets for all work occurring during the Project
- Reporting and audit schedule
- Other relevant environmental management mechanisms.

The Project EMP defines the Environmental Sub-Management Plans required to be prepared by SP to meet specific environmental management of and appropriate compliance with any conditions, licences, permits, consents and approvals.

The Project EMP was drafted by Golder in consultation with SP and to the satisfaction of the relevant regulatory agencies based on the content of the EMFs and will be finalised based on the findings of the DSI.

The Project EMP is to be implemented by each Lead Contractor working on-site during the Construction Phase and Operating Phase.

4.4 Environmental Sub-Management Plans

The purpose of the Environmental Sub-Management Plans is to act as standalone documents specifying the management of particular issues including:

- Dewatering of groundwater
- Contaminated media (soil, air, water), including Acid Sulfate Soil.

Like the Project EMP, the Lead Contractor(s) will be required to implement each of the Environmental Sub-Management Plans, which will be prepared in liaison with the relevant regulatory agencies and may be submitted with any required licence or permit applications required.

4.5 Lead Contractor's Construction Environmental Management Plan

The purpose of the Lead Contractor's CEMP is to detail how the Lead Contractor(s) will comply with the content of the EMFs, the Project EMP and the Environmental Sub-Management Plans. The Lead Contractor's CEMP will be prepared based on the content of the EMPs, Project EMP and the Environmental Sub-Management Plans.

Lead Contractor(s) will be contractually required to prepare a CEMP through which they will commit to managing the environmental factors relevant to their specific construction activities.

The CEMP will specify:

- The implementation process for each of the environmental management and mitigation measures, and monitoring procedures detailed in the Project EMP and the Environmental Sub-Management Plans
- Auditing of management and mitigation measures
- Training (see Section 10.0)
- Data collection
- Reporting and other procedures.

As part of the CEMP, the Lead Contractor(s) are to comply with conditions, licences, permits, consents and approvals relating to the Project. The CEMP will also detail the Lead Contractor(s)' environmental management strategy which is required to be consistent with SP's Environmental Management Strategy and environmental policy.

The CEMP will be required to be approved by SP before any form of work begins on-site and will be contractually binding under the *Public Works Act 1902.*

4.6 Lead Contractor's Operational Environmental Management Plan

The purpose of the OEMP is to detail how the Operating Phase Lead Contractor will comply with the content of the EMFs, the Project EMP and the relevant Environmental Sub-Management Plans and will be prepared based on the content of these documents.

The Stadium Governance body will be a State Government agency (such as Burswood Park Board or a newly established board) and it will be responsible for enforcing and auditing the implementation of the Operating Phase Lead Contractor's OEMP. It is likely the Stadium Governance body will engage a private sector operator to operate the Stadium (and possibly the Sports Precinct). The Stadium Works Lead Contractor will transition to the Operating Phase Lead Contractor and will be responsible for maintaining the Stadium and Sports Precinct. The Operating Phase Lead Contractor will be contractually required to prepare and implement the OEMP through which they will commit to managing the relevant environmental factors for their specific operational activities.

The OEMP will specify:

- The implementation process for each of the environmental management and mitigation measures; and monitoring procedures detailed in the Project EMP and the Environmental Sub-Management Plans
- Data collection
- Reporting and other procedures.

As part of the OEMP, the Lead Contractors are to comply with conditions, licences, permits, consents and approvals relating to the Project. The OEMP will also detail the Lead Contractor's environmental management strategy which will be required to be consistent with SP's Environmental Management Strategy and environmental policy.

The OEMP will be required to be approved by SP before any form of work begins on-site during the Construction Phase (including commissioning).

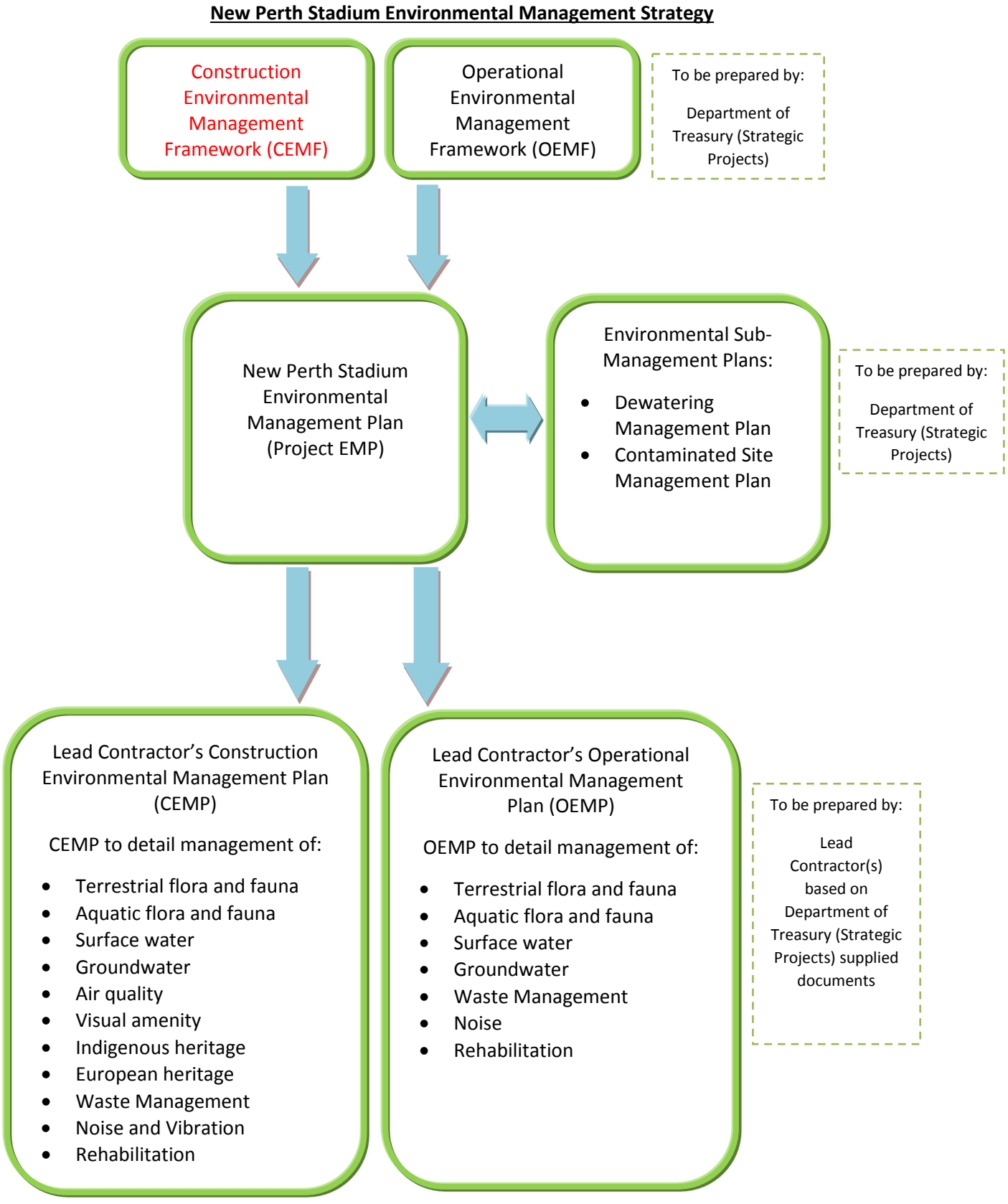

Figure 3: Environmental Management Strategy Structure

5.0 CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT

5.1 Project Environmental Objectives and Environmental Commitments

Table 2 details the Project's environmental objectives and environmental commitments and have been developed by SP based on:

- The outcomes of Project baseline environmental studies completed to date
- Environmental factors concerned with the Project
- Applicable legislation and standards
- Potential environmental and social impacts.

The Project environmental objectives and commitments in Table 2 were developed to meet the Environmental Management Strategy objectives and are to be implemented by SP throughout the Project.

Table 2: SP's Environmental Objectives and Environmental Commitments for the Project

Environmental Factor	Applicable Legislation	Environmental Objective	Environmental Commitments
Environmental management	■ *Environmental Protection Act 1986* ■ *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* ■ *Environmental Protection Regulations 1987* ■ *Environmental Protection and Biodiversity Conservation Act 1999* ■ *Wildlife Conservation Act 1950* ■ *Swan and Canning Rivers Management Act 2006* ■ *Rights in Water and Irrigation Act 1914* ■ *Contaminated Sites Act 2003* ■ *Environmental Protection (NEPM-NPI) Regulations 1998* ■ *Environmental Protection (Unauthorised Discharges) Regulations 2004* ■ *Environmental Protection (Noise) Regulations 1997*	■ Minimise and manage the environmental and social impacts arising from Project works. ■ Minimise and manage impacts to the Swan River and other ecosystems surrounding the Project area. ■ Manage contamination through appropriate means including monitoring of groundwater, surface water, soil, air and gas during the Construction Phase of the Project and into the Operating Phase. ■ Undertake and manage rehabilitation of the Project as per the Rehabilitation Management Plan. ■ Minimise and manage impacts to Indigenous or otherwise protected fauna that may visit the site, including protection of the remaining fauna habitats. ■ Promote a stable vegetation community with local species through rehabilitation. ■ Implement leading practice environmental management practices to minimise and manage environmental and social impacts resulting from the Project. ■ Minimise and manage emissions (including air and noise) so they do not adversely affect environment values or the health, welfare and amenity of people and land uses. ■ Protect Indigenous and European heritage sites from impacts during the Construction Phase of the Project. ■ Minimisation of waste through the adoption of best practice waste reduction and disposal procedures consistent with the EPA waste hierarchy. ■ Compliance with all conditions set on the Project, if any, and applicable legislation and guidelines produced by the relevant regulatory agencies.	■ Adopt an Environmental Management Strategy which establishes a suite of environmental management frameworks and plans to be implemented by the Lead Contractor(s) and the Stadium Governance body including: ▪ A Project EMP that as a minimum includes: – Environmental issues – Environmental and social receptors – Potential environmental and social impacts – Project roles and responsibilities – Standards, guidelines and legislation – Limits and targets – Environmental management and risk mitigation measures – Monitoring procedures – Incident management – Training – Auditing procedure – Reporting procedure – Environmental management document review procedure ▪ Environmental Sub Management Plans for the Project to ensure specific environmental management of and appropriate compliance with any conditions, licences, permits, consents and approvals. Ensure that the Environmental Sub-Management Plans are implemented site-wide by each Lead Contractor. ■ Ensure Lead Contractor(s) prepare suitable phase specific CEMPs/OEMPs that address potential phase specific environmental and social impacts. ■ Ensure monitoring procedures are conducted by the Lead Contractor(s) as per the methodology detailed in the Project EMP and CEMP/OEMP and ensure all data is provided to SP and the Stadium Governance body (where applicable). ■ Prepare and implement a clearing procedure within the Project EMP to ensure all work areas are approved for clearing, prior to disturbance including: ▪ Checks that ensure the clearing is in the correct area ▪ The area has been subject to an ethnographic and archaeological survey ▪ Any requirements for rehabilitation are taken into account. ▪ Relevant fauna checks are carried out. ■ Ensure the public and stakeholders have a process to ask questions and report concerns on the Project as per the consultation strategy. ■ Complete Indigenous stakeholder engagement and consultation, including having a representative of the Noongar people present during any disturbance, if requested. ■ Identify if any of the two non-Indigenous heritage sites or if any other surrounding buildings (heritage and otherwise) require building surveys (including but not limited to dilapidation) to be carried out. SP will record the findings from these. If required, SP will also set up vibration monitors near sensitive buildings. ■ Advise the Lead Contractor(s) to make changes to their CEMPs/OEMP if results from specialist studies or monitoring determine the requirement for specific remediation. ■ Ensure the Stadium Works Lead Contractor and the Operating Phase Lead Contractor develop and implement an appropriate Rehabilitation Management Plan as a standalone document for the Project, based on the content of the Project EMP and EMFs; including offset options. The Rehabilitation Management Plan is to be prepared in liaison with SRT and DER. ■ Manage the Project to effectively implement the environmental commitments to achieve the environmental objectives.

Environmental Factor	Applicable Legislation	Environmental Objective	Environmental Commitments
Contamination	■ *Contaminated Sites Act 2003* ■ *Environmental Protection Act 1986*	■ Manage contaminated sites to minimise impact on sensitive receptors and the environment. ■ Minimise and manage the environmental impact arising from Project works. ■ Manage instances where unknown contaminated soil or water source is encountered during Project works.	■ Development of a Project-wide Contaminated Site Management Plan that addresses: ▪ Documentation of the training requirements of all personnel, PPE requirements and health and safety issues ▪ Procedures and processes for reducing impact from contamination (e.g. dust control, containment of impacted water, etc.) ▪ Preparation and implementation of a Materials Tracking System (MTS) for fill movement and importation ▪ Remediation requirements of contaminated material identified during the DSI ▪ Outline of remedial goals and targets ▪ Management of remediation ▪ Validation requirements (these will be revised based on the outcomes of the DSI) ▪ Unexpected finds protocol and management (including waste classification, laboratory testing requirements, analysis requirements and approval from Lead Environmental Consultant/Technical Advisor prior to transportation to disposal facility) ▪ Disposal locations and transportation requirements ▪ State reporting requirements and obligations ▪ Roles and responsibilities of site personnel particularly with regard to reporting and managing contamination. ▪ Monitoring procedures. ■ The Contaminated Site Management Plan will be prepared to the satisfaction of the DER Accredited Contaminated Sites Auditor and in liaison with the relevant regulatory agencies.
Acid Sulfate Soils	■ *Contaminated Sites Act 2003* ■ *Environmental Protection Act 1986*	■ Minimise disturbance to Acid Sulfate Soils (ASS) during all phases of the Project to prevent land and water contamination where ground disturbance works are in an area where ASS have been identified or are suspected.	■ Development of a Project-wide Acid Sulfate Soil Management Plan that addresses: ▪ Locations of ASS material ▪ Remediation requirements for ASS (e.g. liming rates) ▪ Management of remediation (bund construction, procedures, processes) ▪ Validation testing and requirements for remediated ASS ▪ Leachate water management ▪ Audit requirements ▪ Monitoring procedures ▪ Roles and responsibilities of site personnel particularly with regard to reporting and managing ASS ▪ The ASS Management Plan will need to accompany any applications for a Section 5C ‘licence to take water’. ■ The Acid Sulfate Soil Management Plan will be prepared in liaison with the relevant regulatory agencies. ■ As of April 2013, the Acid Sulfate Soil Management Plan has been incorporated into the Project-wide Contaminated Site Management Plan.
Dewatering management	■ *Environmental Protection Act 1986* ■ *Rights in Water and Irrigation Act 1914*	■ Manage dewatering, including surcharged groundwater, groundwater treatment and disposal during all phases of the Project to minimise impacts to groundwater and surface water quality and quantity if ground disturbance works result in or require dewatering.	■ Development of a Project-wide Dewatering Management Plan that addresses: ▪ Estimated volumes of displaced groundwater ▪ Groundwater quality ▪ Groundwater treatment methods ▪ Groundwater disposal methods (i.e. to sewer) ▪ Monitoring requirements (frequency and analytes) ▪ Preservation of baseline groundwater quality ▪ Reporting requirements. ■ The Dewatering Management Plan will be prepared in liaison with the relevant regulatory agencies and will accompany the Lead Contractor(s)’ application for a Section 5C ‘Licence to Take Water’ under the *Rights in Water and Irrigation Act 1914*.

5.2 Lead Contractor(s)' Environmental Objectives and Environmental Commitments

An EMF has been developed for each phase of the Project; this EMF is for the Construction Phase (aka PCS Works and Stadium Works). As stated previously, this EMF will be used to develop the Project EMP. The Lead Contractor(s) engaged for the Construction Phase of the Project will then be required to prepare a CEMP applicable to their specific works and operations based on the content of this CEMF and the Project EMP. The CEMP developed by the Lead Contractor(s) will as a minimum, detail the following to achieve the commitments and objectives listed in the CEMF, Project EMP and Environmental Sub-Management Plans:

- Processes
- Management and mitigation measures for a series of environmental factors
- Monitoring procedures
- Auditing procedures
- Data collection
- Reporting procedures.

Table 3 outlines the EPA's environmental objectives, the Lead Contractors' environmental objectives and the environmental commitments for each environmental factor of the Construction Phase of the Project.

- EPA's environmental objectives are based on the content of the document Guide to EIA Environmental Principles, Factors and Objectives (EPA, 2009).
- Lead Contractor's environmental objectives are based on SP's environmental objectives as per Table 2 and the EPA's environmental objectives.
- Environmental commitments are written as outputs or targets that must be met rather than detailing the methods to meet the commitments (which will be covered in the Project EMP) and are designed to meet the environmental objectives of the Project. The environmental commitments have been prepared based on regulatory requirements; baseline studies completed and consultation with the working groups and regulatory stakeholders. The environmental commitments will be used contractually to ensure the highest commitment by the Lead Contactor(s) to ensure the highest standard of environmental management.

The information developed in Table 3 was based on a Project risk assessment carried out to assess potential environmental impacts of the Construction Phase of the Project. The risk assessment was based on the proposed PCS Works and Stadium Works methods, results of baseline environmental studies (e.g. flora and fauna) and the proximity and type of sensitive receptors.

Specific risk assessments will be carried out by the Lead Contractor(s) to identify specific predicted environmental impacts of the Construction Phase of the Project. Outcomes of the specific risk assessments and the information in the Project EMP and Environmental Sub-Management Plans will be used to develop the content of the CEMP. The Lead Contractor(s) will be required to prepare and maintain an aspects and impacts register as part of their CEMP.

The Lead Contractor may elect to amend the environmental objectives and commitments to reflect legislative and wider obligations. These departures are to be documented in the Lead Contractor's CEMP and approved by SP.

Table 3: Project Applicable Legislation, EPA Environmental Objectives, Project Environmental Objectives and Project Environmental Commitments for the Lead Contractor

Environmental Factor	Applicable Legislation	EPA Environmental Objective	Project Environmental Objective	Environmental Commitments
Environmental management	■ *Environmental Protection Act 1986* ■ *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* ■ *Environmental Protection Regulations 1987* ■ *Environmental Protection and Biodiversity Conservation Act 1999* ■ *Wildlife Conservation Act 1950* ■ *Swan and Canning Rivers Management Act 2006* ■ *Rights in Water and Irrigation Act 1914* ■ *Contaminated Sites Act 2003* ■ *Environmental Protection (NEPM-NPI) Regulations 1998* ■ *Environmental Protection (Unauthorised Discharges) Regulations 2004* ■ *Environmental Protection (Noise) Regulations 1997*	To address each of the following principles (set out in section 4A of the EP Act and expanded upon in EPA Position Statement No. 7): ■ The precautionary principle ■ The principle of intergenerational equity ■ The principle of the conservation of biological diversity and ecological integrity ■ Principles relating to improved valuation, pricing and incentive mechanisms ■ The principle of waste minimisation (EPA, 2010)	■ Minimise and manage environmental impacts occurring from the Construction Phase. ■ Comply with SP's Environmental Objectives for the Project as per Table 2.	■ Lead Contractor(s) to prepare suitable phase specific CEMPs that address potential phase specific environmental and social impacts based on the content of this EMF, the Project EMP and Environmental Sub-Management Plans, that, as a minimum, includes: ▪ A description of each activity and relevant environmental factors ▪ Specific environmental commitments (based on this table) ▪ Specific management plan or procedures for each environmental factor (based on this table) ▪ A description of the applicable legislation ▪ An aspects and impacts register ▪ Incident response procedure ▪ Description of roles and responsibilities for staff and subcontractors ▪ Timing of construction activities ▪ Implementation of the Project EMP and Environmental Sub-Management Plans ▪ Monitoring requirements ▪ Auditing of the successful implementation of the Project EMP ▪ Environmental Sub-Management Plans and CEMP ▪ Compliance tracking and corrective actions ▪ Reporting requirements ▪ Training requirements. ▪ Review of the CEMP and aspects and impacts register. ■ Obtain any environmental licences for the Project not already obtained by SP required to complete the Construction Phase works. ■ Manage Project operations and activities to effectively adhere to the environmental commitments and Project Environmental Management Strategy documents to achieve the Project environmental objectives.
Terrestrial flora and fauna	■ *Environmental Protection Act 1986* ■ *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* ■ *Environmental Protection Regulations 1987* ■ *Environmental Protection and Biodiversity Conservation Act 1999* ■ *Wildlife Conservation Act 1950*	■ To maintain the abundance, diversity, geographic distribution and productivity of flora and fauna species and ecosystem levels through the avoidance or management of adverse impacts, and for an improvement in knowledge (EPA, 2010).	■ Minimise and manage impacts on flora and vegetation not cleared for site works. ■ Minimise and manage impacts to Indigenous or otherwise protected fauna that may visit the site, including the protection of remaining native fauna habitats. ■ Minimise the area of ground disturbance. ■ Promote the growth of local species and a stable vegetation community through rehabilitation and maintenance of preserved areas.	■ Comply with the terrestrial flora and fauna management section of the Project EMP. ■ Construct a fence around the Project area to keep activities and vehicle movements within a designated area and discourage fauna from entering. Ensure this fence can remain in place for the duration of the Project until operation. ■ Stage flora and vegetation clearing where practicable. ■ Manage the preservation of the riparian flora and vegetation in the Swan River buffer zone between the Swan River and the River-fed Lake to minimise erosion, maintain bank stability and maintain some habitat for terrestrial and aquatic fauna. ■ Develop and implement management and mitigation measures that apply to specific operations to minimise impacts to terrestrial flora and fauna as per the Project EMP. ■ Develop and implement terrestrial flora and fauna monitoring procedures to monitor for any adverse impacts to terrestrial flora and fauna as per the Project EMP.

Environmental Factor	Applicable Legislation	EPA Environmental Objective	Project Environmental Objective	Environmental Commitments
Aquatic flora and fauna	■ *Environmental Protection Act 1986* ■ *Environmental Protection Regulations 1987* ■ *Environmental Protection and Biodiversity Conservation Act 1999* ■ *Wildlife Conservation Act 1950*	■ To maintain the abundance, diversity, geographic distribution and productivity of flora and fauna species and ecosystem levels through the avoidance or management of adverse impacts, and for an improvement in knowledge (OEPA, 2010). ■ Wetlands (including rivers): to maintain the integrity, ecological functions and environmental values of wetlands (OEPA, 2010). ■ Surface water and groundwater: to maintain the quantity of water so that existing and potential environmental values, including ecosystem maintenance, are protected (OEPA, 2010).	■ Minimise and manage the impacts to aquatic fauna and flora located around the Project area and within Lakes 1 and 2 and the Swan River. ■ Minimise and manage the impacts on aquatic vegetation not requiring clearing for site works.	■ Comply with the aquatic flora and fauna management section of the Project EMP. ■ Stage flora and vegetation clearing where practicable. ■ Manage the preservation of the riparian flora and vegetation in the Swan River buffer zone between the Swan River and the River-fed Lake to minimise erosion, maintain bank stability and maintain some habitat for terrestrial and aquatic fauna. ■ Retain and manage the River-fed Lake in the northern corner of the Project area to maintain a lake environment for fish and avian breeding to take place. ■ Develop and implement a catch and re-location program for conservation significant aquatic fauna (if any) inhabiting the Irrigation Lake. This should occur prior to the removal, clearance or disturbance of the Irrigation Lake and focus on trapping aquatic fauna thought to inhabit the area as outlined in the Bamford Survey (2012) and the Golder Aquatic Fauna Survey (to be completed in 2012). ■ Develop and implement management and mitigation measures that apply to specific operations to minimise impacts to aquatic flora and fauna as per the Project EMP. ■ Develop and implement aquatic flora and fauna monitoring procedures to monitor for any adverse impacts to aquatic flora and fauna as per the Project EMP.
Surface water (including the Swan River)	■ *Swan and Canning Rivers Management Act 2006* ■ *Environmental Protection Act 1986* ■ *Environmental Protection Regulations 1987* ■ *Rights in Water and Irrigation Act 1914* ■ *Contaminated Sites Act 2003*	■ To maintain the quantity of water so that existing and potential environmental values, including ecosystem maintenance, are protected.	■ Protect the ecosystem surrounding the Project area. ■ Emissions are to not adversely affect environment values or the health, welfare and amenity of people and land uses by meeting statutory requirements and acceptable standards. ■ Minimise and manage potential impacts to the quality of surface water and groundwater resources caused by the Construction Phase. ■ Maximise the efficient use of water for the Project and ensure the continued use of water resources.	■ Comply with the surface water management section of the Project EMP and relevant surface water management sections of the Environmental Sub-Management Plans. ■ Manage the preservation of the riparian flora and vegetation in the Swan River buffer zone between the Swan River and the River-fed Lake to minimise erosion, maintain bank stability and maintain some habitat for terrestrial and aquatic fauna. ■ Retain and manage the River-fed Lake in the northern corner of the Project area to maintain a lake environment for fish and avian breeding to take place. ■ Develop and implement management and mitigation measures that apply to specific operations to minimise impacts to surface water as per the Project EMP. ■ Development and implementation of surface water monitoring procedures to monitor for any adverse impacts on the Swan River and the River-fed Lake as per the Project EMP and relevant Environmental Sub-Management Plans. ■ Design and implementation of an appropriate stormwater capture and disposal procedure.

Environmental Factor	Applicable Legislation	EPA Environmental Objective	Project Environmental Objective	Environmental Commitments
Groundwater	■ *Environmental Protection Act 1986* ■ *Environmental Protection Regulations 1987* ■ *Rights in Water Irrigation Act 1913* ■ *Contaminated Sites Act 2003*	■ To maintain the quantity of water so that existing and potential environmental values, including ecosystem maintenance are protected.	■ Maintain and protect the quality, levels and useability of the groundwater within the underlying groundwater system. ■ Ensure that emissions do not adversely affect environment values or the health, welfare and amenity of people and land uses by meeting statutory requirements and acceptable standards. ■ Minimise and manage potential impacts to the quality of surface water and groundwater resources caused by the Construction Phase. ■ Maximise the efficient use of water for the Project.	■ Comply with the groundwater management section of the Project EMP and relevant groundwater management sections of the Environmental Sub-Management Plans. ■ Develop and implement management and mitigation measures that apply to specific operations to minimise impacts to groundwater as per the Project EMP. ■ Development and implementation of groundwater monitoring procedures to monitor for any adverse impacts on the Swan River, the River-fed Lake and aquifers as per the Project EMP and relevant Environmental Sub-Management Plans. ■ Design and implementation of an appropriate stormwater capture and disposal procedure. ■ Obtain a dewatering licence where required during the Project Construction Phase.
Air Quality	■ *Environmental Protection Act 1986* ■ *Environmental Protection (NEPM-NPI) Regulations 1998* ■ *Environmental Protection (Unauthorised Discharges) Regulations 2004* ■ *A guideline for managing the impacts of dust and associated contaminants from land development sites, contaminated sites remediation and other related activities 2011* ■ *DRAFT - A guideline for the development and implementation of a dust management program 2008*	■ Ensure that atmospheric emissions (dust) do not impact on environmental values or the health, welfare and amenity of people and land uses by meeting statutory requirements and acceptable standards.	■ Protect the local air quality. ■ Manage the ambient air in the vicinity of the works, noting the protection of site workers will be addressed as part of separate occupational health and safety management (OHS) plans. ■ Use all reasonable and practicable measures to minimise airborne dust and actively reduce greenhouse gas emissions.	■ Comply with the air quality management section of the Project EMP and the Environmental Sub-Management Plans where applicable. ■ Develop and implement management measures that reduce dust emissions during the Construction Phase e.g. dust suppression, monitoring unfavourable weather conditions, and staged clearing as per the Project EMP. ■ Develop and implement air quality monitoring procedures (including requirements for both public and occupational monitoring) to monitor for any adverse impacts to air quality as per the Project EMPs and relevant Environmental Sub-Management Plans. ■ Develop and implement landfill gas monitoring procedures if identified to be an issue in the DSI as per the Project EMP and Contaminated Site Management Plan. ■ Install a weather station and monitor weather conditions to ensure unfavourable works (e.g. causing excessive dust and/or odours) are undertaken during suitable weather conditions, ensuring that odours are kept away from residents and other users of the surrounding area.
Noise and Vibration	■ *Environmental Protection (Noise) Regulations 1997* ■ *Environmental Protection Act 1986*	■ To protect the amenity of nearby residents from noise impacts resulting from activities associated with the proposal by ensuring the noise levels meet statutory requirements and acceptable standards.	■ That noise emissions do not impact on environmental values or the health, welfare and amenity of the population and land uses. ■ That noise emissions, both individually and cumulatively, comply with the relevant statutory requirements. ■ Design and procurement activities incorporate measures for minimising noise emissions during construction and operation. ■ That all reasonable and practicable measures are undertaken during construction and operations to minimise noise emissions.	■ Comply with the noise and vibration management section of the Project EMP. ■ Develop and implement management measures that reduce noise emissions during the Construction Phase. ■ Develop and implement noise and vibration monitoring procedures to monitor for any adverse noise and vibration impacts as per the Project EMP. ■ Prepare a separate Noise Management Plan if out of normal work hours are proposed to the satisfaction of the relevant local council.

Environmental Factor	Applicable Legislation	EPA Environmental Objective	Project Environmental Objective	Environmental Commitments
Visual Amenity	■ N/A	■ To ensure that aesthetic values are considered and measures are adopted to reduce visual impacts on the landscape as low as reasonably practicable.	■ Minimise and manage impacts to the visual amenity of the Swan River, Burswood Park recreational area and the Burswood Peninsula.	■ Comply with the visual amenity management section of the Project EMP. ■ Develop and implement visual amenity management and mitigation measures to apply to specific operations that comply with the content of the Project EMP. ■ Install appropriate fencing to block some of the Construction Phase activities from view by residents, Swan River users and other patrons to the Burswood Peninsula. Fencing will also assist in controlling dust movement off-site. ■ Development and implementation of visual amenity monitoring procedures as per the Project EMP.
Indigenous and European Heritage	■ *Aboriginal Heritage Act 1972* ■ *Native Title Act 1993.* ■ *Heritage of Western Australia Act 1990*	■ To ensure that changes to the biophysical environment do not adversely affect historical and cultural associations and comply with relevant heritage legislation.	■ Meet statutory obligations in relation to the management of Indigenous and European heritage. ■ Implement where practicable the recommendations made by the Indigenous groups of the area in relation to cultural heritage management. ■ Minimise and manage impacts to the Indigenous and European heritage environment through responsible heritage management. ■ Provide a plan through which the Government of Western Australia will achieve its vision of best practice heritage management. ■ Changes to the biophysical environment do not adversely affect historical and cultural associations and comply with relevant heritage legislation. ■ Emissions do not adversely affect environment values or the health, welfare and amenity of people and land uses by meeting statutory requirements and acceptable standards. ■ Existing and planned recreational uses are not compromised.	■ Comply with the cultural heritage management section of the Project EMP. ■ Develop and implement European and Indigenous heritage management and mitigation measures to apply to specific operations that comply with relevant legislation and any conditions applied to the Project by the Department of Aboriginal Affairs through Section 18 approval as per the Project EMP. ■ Develop and implement European and Indigenous heritage monitoring procedures to monitor for any adverse impacts to cultural heritage sites as per the Project EMP and the relevant Environmental Sub-Management Plans.
Waste Management	■ *Environmental Protection (Controlled Waste) Regulations 2004* ■ *Environmental Protection (Unauthorised Discharges) Regulations 2004* ■ *Contaminated Sites Act 2003* ■ *Environmental Protection (Unauthorised Discharges) Regulations 2004* ■ *Environmental Protection Act 1986*	The environmental objective adopted for the Project relating to solid and liquid waste is to ensure that wastes do not adversely affect the health, welfare and amenity of people and land uses, and that they are managed in accordance with the waste hierarchy outlined in DER policy – Review of Waste Classification and Waste Definitions DEC, 1996 (as amended).	■ Minimise and manage generation of waste from the Construction Phase of the Project by reducing waste streams and recycling material where possible. ■ Dispose of waste in an environmentally acceptable manner and consistent with the requirements of DER and the EPA waste hierarchy.	■ Comply with the waste management sections of the Project EMP and Environmental Sub-Management Plans, where applicable. ■ Develop and implement waste management and mitigation measures to apply to specific operations as per the Project EMP that includes as a minimum: ▪ Minimisation of waste through the adoption of best practice waste reduction and disposal procedures consistent with the EPA waste hierarchy: – Waste avoidance and/or reduction – Waste reuse, recycling and reclamation – Waste treatment – Provision and location of spill kits. ▪ Spill clean-up procedures, including the preferred remediation process for all contaminated material on-site, including diesel, used preconstruction water, stormwater. ▪ Testing and treatment of any cut and fill material in accordance with regulator guidelines and the requirements in the Contaminated Site Management Plan. ▪ Disposal of waste, including any cut and fill material deemed unsuitable for reuse on-site, in accordance with relevant guidelines, in particular, Landfill Waste Classification and Waste Definitions. ■ Development and implementation of waste monitoring procedures as per the Project EMP.

Environmental Factor	Applicable Legislation	EPA Environmental Objective	Project Environmental Objective	Environmental Commitments
Rehabilitation Management	■ N/A	■ To ensure, as far as practicable, that rehabilitation achieves a stable and functioning landform which is consistent with the surrounding landscape and other environmental values.	■ Undertake and manage rehabilitation of the Project as per the Rehabilitation Management Plan. ■ Minimise and manage impacts to Indigenous or otherwise protected fauna that are located on-site, including protection of the remaining fauna habitats. ■ Promote a stable vegetation community with local species through rehabilitation.	■ Comply with the rehabilitation management section of the Project EMP. ■ The Stadium Works Lead Contractor will develop and implement an appropriate standalone Rehabilitation Management Plan for the Project, based on the content of the Project EMP and in liaison with SRT and DER that includes as a minimum: ▪ Foreshore rehabilitation of the Swan River buffer zone and River-fed Lake. ▪ Rehabilitation of the north-west corner of the Project area using plant species attractive to Black Cockatoos where practicable. ▪ Landscaping over the remaining areas of the Sports Precinct.
Acid Sulfate Soils	■ *Contaminated Sites Act 2003* ■ *Environmental Protection Act 1986*	■ To maintain the integrity, ecological functions and environmental values of the soil and landform.	■ Manage Acid Sulfate Soils (ASS) during all phases of the Project if ground disturbance works are in an area where ASS have been identified or are suspected.	■ Comply with the ASS management section of the Contaminated Site Management Plan and Project EMP, where applicable. ■ Develop and implement ASS management and mitigation measures that apply to specific operations to minimise impacts to the local ecosystem, as per the Project EMP and Contaminated Site Management Plan. ■ Develop and implement ASS monitoring procedures as per the Project EMP and Contaminated Site Management Plan. ■ A separate phase specific ASS Management Plan may need to accompany any dewatering licence applications.
Contamination	■ *Contaminated Sites Act 2003* ■ *Environmental Protection Act 1986*		■ Manage contaminated sites to minimise impact on sensitive receptors and the environment during the Construction Phase of the Project. ■ Minimise and manage environmental impacts arising from the Construction Phase of the Project. ■ Manage any instances that unknown contaminated soil or water source is encountered during the Construction Phase of the Project.	■ Comply with the Contaminated Site Management Plan and Project EMP, where applicable. ■ Develop and implement contamination management and mitigation measures that apply to specific operations to minimise impacts to the local ecosystem, as per the Project EMP and Contaminated Site Management Plan. ■ Develop and implement contamination monitoring procedures as per the Project EMP and Contaminated Site Management Plan.
Dewatering Management	■ *Environmental Protection Act 1986* ■ *Rights in Water Irrigation Act 1913*	■ To ensure that emissions do not adversely affect environment values or the health, welfare and amenity of people and land uses by meeting statutory requirements and acceptable standards	■ Manage dewatering, including surcharged groundwater, groundwater treatment and disposal during all phases of the Project if ground disturbance works result in or require dewatering.	■ Comply with the Dewatering Management Plan and Project EMP, where applicable. ■ Develop and implement dewatering management and mitigation measures that apply to specific operations to minimise impacts to the local ecosystem, as per the Project EMP and Dewatering Management Plan. ■ Develop and implement dewatering monitoring procedures as per the Project EMP and Dewatering Management Plan. ■ Prepare phase specific Dewatering and Groundwater Management Plans, if required.

6.0 REHABILITATION MANAGEMENT PLAN

Rehabilitation of the Project will be a joint effort between Lead Contractor(s) of the Construction and Operating Phase, with each phase having a number of requirements to address. It is expected that during the Construction Phase appropriate clearing of flora and vegetation and the demarcation of designated preservation areas will be undertaken along with the rehabilitation of the Project leading into the Operating Phase. It is expected that the Operating Phase will be tasked with monitoring the rehabilitation undertaken by the Lead Contractor and undertaking maintenance where required.

Rehabilitation will be required within the landscaped areas, River-fed Lake, north-western area and sections of the Swan River foreshore. A Rehabilitation Management Plan will be prepared by the Stadium Works Lead Contractor. The role of the PCS Works Lead Contractor(s) in preparing the site for rehabilitation will be outlined in the Project EMP and contract documents.

The objectives of rehabilitation for the Project are to:

- Undertake and manage rehabilitation of the Project as per the Rehabilitation Management Plan to be prepared by the Stadium Works Lead Contractor.
- Minimise and manage impacts to Indigenous or otherwise protected fauna that may visit the site, including protection of the remaining fauna habitats.
- Promote a stable vegetation community with local species through rehabilitation.

The rehabilitated areas surrounding the infrastructure will be landscaped with the aim of maintaining the visual amenity of the area as well as creating a secure environment for patrons. Any plant species used will be local to the region, where practicable (i.e. there will be areas that are lawn-scaped).

The north-west corner of the Project area is to be rehabilitated to reflect the natural environmental state providing habitats for local fauna accessing the area. The objective will be to provide a habitat for migratory and threatened birds that accessed the area prior to development of the Project. Plant species that are attractive to Black Cockatoo species will be planted in this area.

The Project EMP details specific management and mitigation measures; and monitoring procedures to be incorporated as a minimum within the Rehabilitation Management Plan prepared by the Lead Contractor(s).

7.0 ENVIRONMENTAL MONITORING

Environmental monitoring will be required throughout the Construction Phase. The key monitoring areas and preliminary monitoring procedures are provided initially in the Project EMP and Environmental Sub-Management Plans. This information is provided to guide the Lead Contractor(s) in their development of detailed monitoring measures to be contained within their CEMP. All environmental monitoring procedures are to be developed by a suitably qualified environmental specialist and are required to take into account the results from the baseline environmental studies, the content of the DSI, the Project EMP, Environmental Sub-Management Plans and regulatory requirements or guidelines. Data from the baseline environmental studies will be made available to the Lead Contractor(s) as the studies are completed.

It will be the Lead Contractor's responsibility to conduct environmental monitoring by engaging a suitably qualified environmental representative. All environmental monitoring will be overseen by SP's Environmental Manager. The Lead Contractor(s) for each phase will liaise with each other to ensure monitoring conducted at each phase is comparable and compatible. SP may also monitor the site conditions (i.e. surface water, groundwater and landfill gas) to meet any obligations imposed under the *Contaminated Sites Act 2003* (dependent on the outcomes of the DSI).

8.0 ENVIRONMENTAL AUDITS

8.1 Contaminated Sites Auditor

A Contaminated Sites Auditor has been appointed for the Project. The Auditor's role is to review and provide feedback on the contamination investigation and management of the site in accordance with the *Contaminated Sites Act 2003*. All contamination non-conformance issues are to be reported to the Auditor. The Auditor will have the power to stop work on-site if the environment or sensitive receptors are at risk and can review parameters required to rectify the environmental non-conformance. Information (e.g. site records, registers, etc.) must be made available to the Contaminated Sites Auditor at his request.

8.2 Internal Audits and Inspections

The Lead Contractor's Environmental Representative, is to conduct daily and weekly inspections as outlined within the Project EMP.

A suitably qualified and experienced Environmental Auditor will be engaged by the Lead Contractor to conduct regular internal environmental audits during the Construction Phase of the Project as outlined within the Project EMP. The objective of the environmental audits is to assess the Lead Contractors' compliance with the Project EMP, Environmental Sub-Management Plans and CEMP. The results of the environmental audits will be recorded and any non-conformances identified against the Project EMP, Environmental Sub-Management Plans and CEMP, along with proposed corrective actions, will be reported to SP in the monthly environmental compliance report.

8.3 Independent External Audits

In accordance with *ISO 19011 Guidelines for Quality and/or Environmental Management Systems Auditing*, a regular auditing program will be implemented by SP. An audit program will be developed and undertaken by a qualified (e.g. RABQSA) Environmental Auditor (Lead or Principal Auditor level) to ensure the Lead Contractor(s)' compliance with the Project EMP, Environmental Sub-Management Plans and CEMP. The first audit for each phase will be conducted within three months of work commencing on-site. Depending on the results of this initial audit, external audits will then continue either biannually or annually.

9.0 REPORTING REQUIREMENTS

9.1 Project Compliance

Monthly compliance reports will be provided to SP by the Lead Contractor(s) covering as a minimum:

- Environmental activities
- Environmental monitoring results
- Compliance auditing and tracking
- Rehabilitation progress
- Public complaints
- Any exceedances and corrective actions
- Environmental incidents
- Non-conformances.

In addition to the monthly compliance reports, annual environmental compliance reports and completion reports will be completed by the Lead Contractor(s) and submitted to SP.

9.1.1 Compliance Tracking

A corrective actions and compliance tracking program will be developed by the Lead Contractor(s) to manage and track Project compliance with the conditions of environmental approval and commitments in the Project EMP, Environmental Sub-Management Plans and CEMP. The tracking document will be a standalone document and will be provided to SP as part of the monthly compliance reports.

9.2 Records of Environmental Activities

Environmental records will be maintained to demonstrate compliance with the Project EMP; the Environmental Sub-Management Plans and CEMP and will include:

- Monitoring results
- Inspection records
- Internal audit reports
- Compliance tracking reports
- Reports of pollution incidents, environmental non-conformances, complaints, action taken and follow-up actions
- Induction and training records.

This information will be provided in the monthly compliance reports to be provided to SP.

10.0 ENVIRONMENTAL TRAINING

The Lead Contractor(s) will develop and induct all staff and contractors onto the Project. The environmental component of the induction will include as a minimum:

- Environmental roles and responsibilities
- Environmental compliance
- Environmental incident response and reporting
- Environmental audits and inspection
- Environmental management
- Environmental monitoring
- Information regarding Project specific environmental factors (e.g. location of heritage site, Indigenous or otherwise protected fauna, etc.)
- Project communication.
- Complaints procedures.

Prior to the presentation of the induction, SP will review and approve the content to assess if it meets the commitments of this CEMF, the Project EMP, the Environmental Sub-Management Plans and the CEMP, as well as regulatory requirements. The Lead Contractor(s) shall ensure each person that will remain on-site for five days or more will undertake the induction, ensuring that their participation is recorded, and records are maintained. The Lead Contractor(s) will also develop a short team induction to cover all visitors attending site for less than five days. This induction process is in addition to, and complements the health and safety induction process (which is to be developed by the Lead Contractor).

11.0 EMERGENCY CONTACTS AND RESPONSE

The Lead Contractor(s) will be responsible for preparing an Emergency Response Procedure (independent of the CEMP). The Emergency Response Procedure will outline emergency and incident response procedures, situations where works should be promptly ceased and will establish an emergency contact number which can be telephoned 24 hours a day, seven days per week. The responsibility of manning this telephone number will be detailed in the Project EMP. The Emergency Response Procedure should detail, as a minimum:

- The on-site location of Material Safety Data Sheets (MSDS)
- The on-site location of spill kits
- Location of hazardous material storage areas and safe storage procedures
- The location of safety equipment such as fire extinguishers and first aid kits
- Emergency personnel and their roles
- Emergency response contact details
- Emergency incident reporting procedures
- Evacuation procedures
- Likely emergency scenarios and associated specific emergency plans.

11.1 Management of Non-conformances, Environmental Incidents and Public Complaints

Non-conformances, environmental incidents and public complaints will be managed by the Lead Contractor(s) responsible for each phase under the implementation of the Project EMP, Environmental Sub-Management Plans and CEMP. Procedures for managing non-compliance including the recording, reporting and implementation of mitigation measures or corrective action and responsible persons will be detailed further in the Project EMP, Environmental Sub-Management Plans and in the Lead Contractor(s)' CEMP.

12.0 PUBLIC COMMUNICATION

The stakeholder engagement strategy developed during the initial planning phase of the Project has focussed on information collation and dissemination and basically identifies two main groups of stakeholders: technical stakeholders and community stakeholders. A series of community information sessions will also be conducted within the Perth metropolitan area by the Stadium project team. This includes community engagement undertaken via the following approaches, which will also allow opportunity for the community to comment on the Project:

- Direct engagement with local residents
- Project website (www.newperthStadium.com.au)
- Monthly Project newsletter available on the website
- Email and telephone enquiries
- Media Statements
- Social media.

13.0 PHASE HANDOVER

An important element in the successful implementation of the EMFs is the handover between the Lead Contractor(s) of the PCS Works and Stadium Works and from the Construction Phase to the Operating Phase. The Lead Contractor(s) will contractually be required to prepare a Handover Management Plan (separate to the CEMP). As a minimum, the handover should cover:

- Monitoring data storage and system use
- Other data storage and system use
- Stakeholder consultation undertaken
- Environmental issues observed and management measures undertaken
- Risk management
- Rollover of environmental management and monitoring measures.

14.0 DOCUMENT REVIEW

The EMFs, the Project EMP, the Environmental Sub-Management Plans and the CEMP will be reviewed annually and following environmental incidents, or as necessary following implementation, to address procedural changes and confirm all documents are conforming to environmental objectives and approval requirements. The first review will be held three months after the commencement of work to ensure the EMFs, Project EMP, the Environmental Sub-Management Plans and the CEMP are applicable to actual Project operations. Other reviews will be undertaken under the following circumstances:

- When there is a change in the scope of the Project that requires changes/additions to environmental management or mitigation measures or monitoring procedures.
- Where unpredicted adverse environmental impact necessitates a change in environmental management or mitigation measures or monitoring procedures.
- Following the completion of environmental audits, as required.
- Where changes in environmental legislation have been made and are applicable and/or relevant to the Project.

15.0 REFERENCES

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EPA. (2009). Guide to EIA Environmental Principles, Factors and Objectives. Perth, Western Australia.

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Report Signature Page

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APPENDIX A

Glossary and Definitions

Project Glossary and Definitions

Term	Definition
AHD	Australian Height Datum
ASS	Acid Sulfate Soils
CEMF	Construction Environmental Management Framework
CEMP	Construction Environmental Management Plan
Construction Phase	The phase of the Project during which construction works, including Preconstruction Site Works will be undertaken.
DEC	Department of Environment and Conservation (now DER)
DER	Department of Environment Regulation
DoE	Department of the Environment
DoW	Department of Water
DSI	Detailed Site Investigation
EMFs	Environmental Management Frameworks
EMPs	Environmental Management Plans
EP Act	*Environmental Protection Act 1986*
EPA	Environmental Protection Authority
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*
Golder	Golder Associates
Irrigation Lake	The artificial irrigation lake in the centre of the Project area
Lead Contractor	Contractor engaged to undertake Construction Phase and/or Operating Phase works
MP	Management Plan
MRWA	Main Roads Western Australia
OEMF	Operational Environmental Management Framework
OEMP	Operational Environmental Management Plan
OEPA	Office of the Environmental Protection Authority
OHS	Occupational Health and Safety
Operating Phase	The phase of the Project during which operations will be undertaken.
Part 1	The construction of the Stadium including the Sports Precinct.
Part 2	The construction of the transport infrastructure including the rail station upgrade and the bridge over the Swan River.
PCS Works	Preconstruction Site Works
Project	The new Perth Stadium project
Project EMP	New Perth Stadium Environmental Management Plan
PSI	Preliminary Site Investigation
River-fed Lake	The lake connected to the Swan River to the west of the Project Area
RL	Reduced Levels
Stadium Works	Stadium Construction Works
SP	Department of Treasury Strategic Projects
Sports Precinct	The Stadium, rail station, bus hub, pedestrian access ways and other associated infrastructure
SRA	Swan River Alluvium
SRT	Swan River Trust
Stadium	The new Perth Stadium Structure
Stadium Governance body	Body engaged as the proponent to manage Stadium operations
Stadium Operator	Contractor engaged to undertake Stadium operations

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