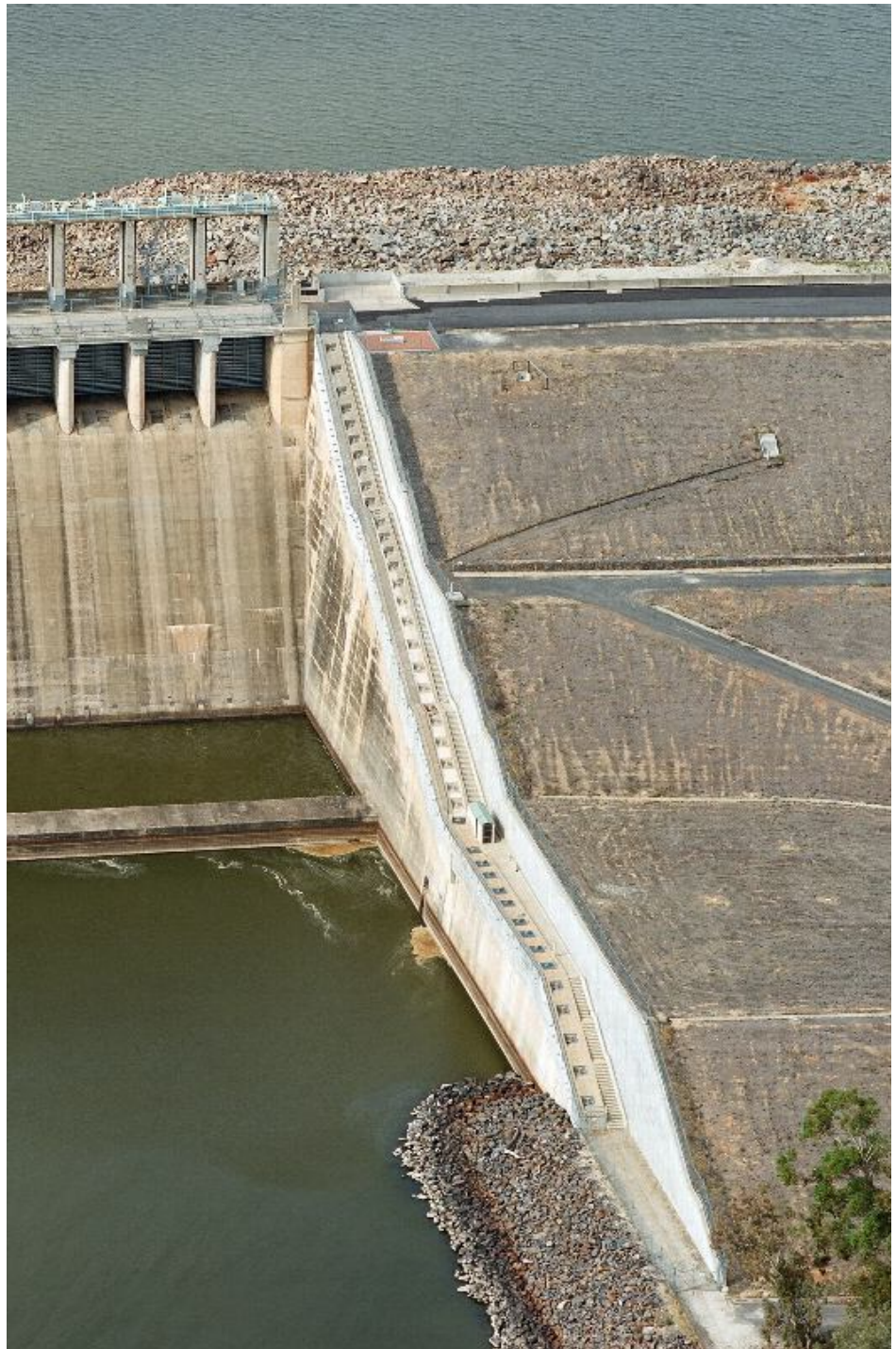


**TENDER DOCUMENT
FOR
HUME DAM REMEDIAL WORKS
SOUTHERN TRAINING WALL BUTTRESS WORKS
DETAILED DESIGN**

**Contract Number:
SWC Doc 09/18**

**Tender Closing
Date:
7th December 2009**

**State Water Corporation
Major Projects Branch
Parramatta
NSW 2150**



Contents

Conditions of Tendering.....	1
Description of the Services.....	1
Contact person.....	1
Goods and Services Tax.....	1
NSW Government Code of Practice for Procurement.....	1
Submission of Tender.....	1
Alternative Tenders.....	3
Assessment and Acceptance of Tenders.....	3
Acceptable Legal Entities	4
Financial Capacity.....	4
Disclosure of tendering and contract information.....	5
Consultant Performance	5
Multiple Use of Contract Material	5
Tender Schedules.....	6
Tender Form.....	7
Schedule of Prices - Lump Sums.....	8
Hourly Rates for Variations	10
Outline Services Delivery Plan.....	11
Schedule of Information on Quality Management System.....	12
Schedule of Similar Consultancy Projects.....	13
Schedule of Key Personnel	14
Conditions of Agreement.....	15
Operative Clauses	15
Agreement Information.....	26
The Services.....	28

Attachments (Drawings and Documents)

Reference	Title
Tender Drawings	
STW-03	Option 3 – Upstream and Downstream Buttress
Figure 1	Location of Proposed Drill Holes
Reference Drawings	
107/1233Z	Hume Dam – Southern Junction Upgrading – General Arrangement
107/1235	Hume Dam – Southern Junction Upgrading – General Arrangement
Reference Documents	
	Hume Dam – Southern Training Wall Works – Concept Design Summary

Conditions of Tendering

These Conditions of Tendering do not form part of the Agreement.

Description of the Services

A concept design has been developed on behalf of State Water Corporation for the Hume Dam Remedial Works – Southern Training Wall Works. This concept design requires refinement, detailed design and input into the construction specification for the purpose of engaging a construction contractor. The Services to be provided under this Agreement include, but are not limited to, the following:

- Detailed Design Drawings and complete Construction Tender Documents for the purpose of constructing a mass concrete buttress to the Southern Training Wall at Hume Dam. Work to include detailed geotechnical investigation to determine foundation arrangement for lower section of the proposed buttress.
- Detailed Design Report

Refer to The Services for a comprehensive description of the services to be provided.

Contact person

Refer requests for information about the Tender to:

Name:	Phil Farnik
Position:	Project Manager – Hume Dam Remedial Works
Agency or firm:	State Water Corporation
Telephone number:	(02) 9354 1002
Facsimile number:	(02) 9354 1104
e-mail address:	Phil.Farnik@statewater.com.au

Goods and Services Tax

Fees, rates and other amounts in this Tender must include GST if it is payable.

NSW Government Code of Practice for Procurement

Tenderers must comply with the NSW Government [Code of Practice for Procurement](#), which is available at:

www.treasury.nsw.gov.au/procurement/cpfp_ig

Lodgement of a tender is evidence of the Tenderer's agreement to comply with the Code for the duration of any contract awarded as a result of the tender process. If a tenderer fails to comply with the Code, the Principal may take the failure into account when considering this or any subsequent tender from the tenderer, and may pass over such the tender.

Submission of Tender

Documents to be submitted

The following documents need to be completed and submitted by the Tenderer:

- Tender Forms
- Other Tender Schedules

Submit all information called for in the tender documents.

Where any alternative tender is offered, submit alternative Tender Schedules describing where the alternative tender(s) differ from the conforming tender. Identify each schedule and the alternative to which it applies.

Where applicable, refer to each Addendum and state that the Tender allows for the instructions given in the Addendum.

General information about your firm, such as brochures and the firm's history, is not required with the Tender.

Submission procedure

Submit the Tender Form, Tender Schedules marked "Submit with the Tender Form" and other required documents or information by the date given, by the following method:

- eTendering,

If more than one tender submission is made, mark each submission clearly as to whether it is a copy, an alternative tender, or whether the submission supersedes another submission.

Submit when requested, by the date, time and method stipulated in the request, Tender Schedules marked "Submit when requested" and any other information required to allow further consideration of the Tender. Failure to meet this requirement may result in the Tender being rejected.

eTendering

The NSW Government electronic Tendering system has the capacity to allow viewing of documents, downloading or ordering of Requests for Tender (RFT) and submission of tenders.

Tenderers are to obtain RFT and submit tenders through the eTendering website at <https://tenders.nsw.gov.au/nsw/index.shtml>.

Two envelope system

The Tender must submitted be in two separate files. The first file is for Tender Schedules and other documents containing non-price elements. The second file is for the Tender Form and other Tender Schedules containing price elements. Each file must have a cover sheet with the appropriate identifier:

- " Hume Dam Remedial Works – Detailed Design of Southern Training Wall Works. – Contract No. SWC Doc 09/18 - Envelope 1: Non-price data"
- "Hume Dam Remedial Works – Detailed Design of Southern Training Wall Works. - Contract No. SWC Doc 09/18 - Envelope 2: Price data"

Each separate file may be more than one file zipped and named appropriately. The separate files may be lodged together or in separate actions.

Legal status

Tenders submitted electronically will be treated in accordance with the *Electronic Transactions Act 2000* (NSW), and given no lesser level of confidentiality, probity and attention than tenders submitted by other means.

Tenderers, by electronically submitting a tender, are taken to have accepted any conditions shown on the NSW Government eTendering web site.

The Principal may decline to consider for acceptance, tenders that cannot be effectively evaluated because they are incomplete or corrupt.

Electronic format for submissions

Tenders submitted electronically must be in a file format that can be read, formatted, displayed and printed by Microsoft Word 97, or any format required by the RFT.

File compression

Tenderers may compress electronic tenders in any format that can be decompressed by WinZip. Tenderers must not submit self-extracting (*.exe) zip files.

Change of Tender Form text

Tenderers must not change existing text in electronic tender forms other than to insert required information.

Late Tenders

In accordance with the NSW Government Code of Practice for Procurement, late tenders will not be accepted, except where the integrity and competitiveness of the tendering process will not be compromised.

Alternative Tenders

You must submit a Tender that fully complies with the Agreement's specifications without any conditions or qualifications attached. You may also submit alternative Tenders. Tenderers are encouraged to submit alternative tenders of shorter duration. If so, you must fully describe and price any conditions, qualifications, or departures from the specification for the alternative Tender. The financial and non-financial benefits to the Principal will be considered in assessing the alternative Tenders in addition to the "criteria for assessment" indicated below.

Assessment and Acceptance of Tenders

The criteria for assessment and their weightings are:

- Price (weighting 60%)
 - Fee
 - Rates for variations
- Non-price (weighting 40%)

The non-price items that will be assessed are:

- a) Demonstrated experience in work of similar nature to this Agreement undertaken by the Consultant's Key Personnel proposed for use in this Agreement. In addition the Tenderer shall provide a signed undertaking from a Senior Executive (or equivalent) stating that the key personnel offered will remain available for the duration of the Agreement to ensure timely completion of the Services unless equivalent are otherwise approved by the Principal
- b) Key personnel proposed to undertake the works in a timely manner while working together in partnership with the Client and relevant stakeholders;
- c) Proposed service delivery methodology.

Assessment of the Tenderers capability will be based on information provided in the Tender Schedules. At the discretion of the Principal, Tenderers may be interviewed and referees contacted to clarify and confirm their submission.

Tenders considered unsatisfactory for any of the criteria will not be considered further.

Tenderers must have a quality management system certified as meeting the requirements of AS/NZS ISO 9001: 2000 or ISO 9001: 2000.

Any Tender may be rejected if it does not comply with any requirement of the Tender Document, or if it contains provisions not required or allowed by the Tender Document.

Tenderers must not consider that their Tender has been accepted unless and until they receive written notice of acceptance, either delivered or transmitted by fax to the Tenderer's fax number.

Service Delivery Plan and Statement of Undertaking

The Consultant will be required to provide:

- A Services Delivery Plan detailing the timeframes for undertaking designs, production of drawings and technical specification. This Plan is a more detailed version of the Outline Services Delivery Plan submitted with the tender. The Principal endorsed version of the Services Delivery Plan will be the basis for monitoring progress and is to be updated/statused by the Consultant and provided 1 week prior to each monthly review meeting along with the monthly progress report (see below).
- The Principal reserves the right to attend the Consultant's office to review progress and the allocation of resources.
- A signed undertaking from the Chief Executive Officer (or equivalent) stating that:
 - the resources offered are, and will remain available for the duration of the Agreement to ensure timely completion of the Services unless equivalent are otherwise approved by the Principal;
 - no other impediment is known or can reasonably be foreseen that would prevent the timely completion of the project as per the Contract Schedule Item 5; and
 - a monthly progress report will be provided and countersigned by the Chief Executive Officer or equivalent confirming the resources required for timely completion of Services under the Agreement have been provided.

Acceptable Legal Entities

The Principal contracts only with recognised and acceptable legal entities with appropriate financial assets and current professional indemnity insurance cover. Tenders will not be considered from entities such as business names.

Tenderers may be required to provide evidence of their legal entity, by submitting a copy of an official document such as:

- Company registration and names of office bearers issued by the Australian Securities and Investments Commission, or
- A statement confirming the legal entity signed by a practicing solicitor.

If requested to do this, submit the information within three working days of receiving the request.

Financial Capacity

Tenderers must have sufficient financial capacity to perform the services required under the Agreement. Tenderers do not need to provide financial statements.

If requested to do so, Tenderers must provide a statement from a qualified accountant certifying that the Tenderer has met:

- all of its statutory obligations including payment of pay as you go taxation instalments, PAYG withholding tax, GST Business Activity Statements, Superannuation Guarantee payments and payment of payroll tax, if applicable; and
- other obligations including payment of rentals and interest, as well as payment of sub-contractors, sub Consultants and suppliers within acceptable business credit periods.

Disclosure of tendering and contract information

Details of this tender and contract awarded as a result of this tender process may be disclosed in accordance with the: *Freedom of Information (Open Government – Disclosure of contracts) Act 2006*, Premier's Memorandum 2007-01 and NSW Government Tendering Guidelines.

Consultant Performance

During the consultancy Agreement, the Consultant's performance is monitored in accordance with the [Performance management system guidelines](#). Unsatisfactory performance is taken into account when considering future opportunities for consultant Agreements for NSW Government Agencies.

Multiple Use of Contract Material

The contract material may be adapted or changed by the Principal for the purpose of construction of similar facilities on the same or a different site. Refer to Clause 7.3 of the Conditions of Agreement.

Tender Schedules

The following Tender Schedules must be completed and submitted as part of the tender:

Envelope 1 (Non-Price Schedules)

- Outline Service Delivery Plan
- Schedule of Information on Quality Management System
- Schedule of Similar Consultancy Projects
- Schedule of Key Personnel including a declaration from Senior Executive confirming availability of key personnel offered.

Envelope 2 (Price Schedules)

- Tender Form
- Schedule of Prices – Lump Sum
- Hourly Rates for Variations

Tender Form

(SUBMIT WITH TENDER IN ENVELOPE 2)

Tenderer's details

Name:
(in block letters)
ABN

Address:
.....

Telephone
number:

Facsimile
number:

e-mail address:
hereby tender(s) to perform the services for

Tender details

Agreement Name: Hume Dam Remedial Works –Southern Training
Wall Buttress Works - Detailed Design

Contract Number: **Contract No. SWC Doc 09/18**

in accordance with this specification:

For the Fee, being the lump sum of:

.....
(\$.....) including GST.

Date:	
Signed for the Tenderer by: <i>(Authorised Officer)</i>	
In the Office Bearer capacity of:	
Name <i>(in block letters)</i> :	

Schedule of Prices - Lump Sums

(SUBMIT WITH TENDER FORM IN ENVELOPE 2)

Insert the amount allowed for each of the following items.

All amounts must include an amount for GST.

1.0 WORK PACKAGE 1

Item No.	Description	Amount \$Aust (inc GST)
1	Break-up of Lump Sum tendered price:	
1.1	On-site project initiation workshop – Table 3.1	\$
1.2	Design Review Workshop – Table 3.1	\$
1.3	On submission of draft drawings, draft technical specification and draft design report and completion of Design Review Workshop 2	\$
1.4	On submission of 90% complete drawings, technical specification, schedule 2, design report and schedule of quantities	\$
1.5	On completion of ECI workshops and submission of final construction drawings, technical specification & schedules, design report	\$
Total Work Package 1 – Transfer to Table 4		\$

2.0 WORK PACKAGE 2

Item No.	Description	Amount \$Aust (inc GST)
2	Break-up of Lump Sum tendered price:	
2.1	Geotechnical investigation of foundation conditions of proposed buttress downstream of the dissipator. Includes all costs	\$
2.2	Provision of Draft & Final Geotechnical Reports	\$
2.3	Provision of preliminary design for Downstream Buttress based on foundation investigation.	\$
Total Work Package 2 - Transfer to Table 4		\$

Date:	
Signed for the Tenderer by: <i>(Authorised Officer)</i>	
In the Office Bearer capacity of:	
Name <i>(in block letters)</i> :	

3.0 WORK PACKAGE 3

Item No.	Description	Amount \$Aust (inc GST)
3	Break-up of Lump Sum tendered price:	
3.1	Design Review Workshop – Table 3.3	Included in item 1.1 of Table 3.1
3.2	On submission of draft drawings, draft technical specification and draft design report and completion of Design Review Workshop 2	\$
3.3	On submission of 90% complete drawings, technical specification, schedules, design report	\$
3.4	On completion of ECI workshops and submission of final construction drawings, technical specification & schedules, design report	
Total Work Package 3 - Transfer to Table 4		\$

Table 4 - Summary

Total Work Package 1 \$

Total Work Package 2 \$

Total Work Package 3 \$

**Total of tendered Lump Sum
(Transfer to Tender Form)** **\$**

Date:	
Signed for the Tenderer by: <i>(Authorised Officer)</i>	
In the Office Bearer capacity of:	
Name <i>(in block letters)</i> :	

Hourly Rates for Variations

(SUBMIT WITH TENDER IN ENVELOPE 2)

Role	Name	Hourly rate (inc GST)

Date:	
Signed for the Tenderer by: <i>(Authorised Officer)</i>	
In the Office Bearer capacity of:	
Name <i>(in block letters)</i> :	

Outline Services Delivery Plan

(SUBMIT WITH TENDER IN ENVELOPE 1)

Prepare an Outline Services Delivery Plan for the Services. The Outline Services Delivery Plan will be taken into account when assessing the Proposal. The Services Delivery Plan must be developed within the time specified in Item 4 of the Agreement Information.

The Outline Services Delivery Plan must include, as a minimum:

- .1 An outline program for the Services showing key activities, the time allowed for each key activity, and milestones or points at which reviews of the work are planned.
- .2 Key personnel proposed to perform the Services (including sub-Consultants).
- .3 The project roles, responsibilities and authorities of these key personnel.
- .4 An outline of design reviews, verification methods, any internal reviews and Principal reviews proposed.
- .5 An outline of the expected inputs to be supplied by the Principal.
- .6 Proposed deliverables to satisfy the Conditions of Agreement, for each phase of the Services.
- .7 Information on the proposed Consultant's and proposed sub-Consultants' key personnel, including:
 - .1 name and title;
 - .2 role in performing the Services;
 - .3 qualifications and recent relevant experience; and
 - .4 expected timing and duration of involvement in the Services.
- .8 Method of evaluation, review and management of sub-Consultants.
- .9 Services organisation chart (showing major interfaces) for the key personnel.
- .10 Procedures, checklists and office standards proposed for the engagement.
- .11 Relevant regulatory requirements peculiar to the engagement, including building codes, standards, regulations and design codes.
- .12 The activities to be completed for each phase of the work, provision for their checking/verification and sign-off, and clear references to the associated records that will be produced, including and design/detailing elements that are proposed for completion after letting the contract(s) and the design work assumed to be completed by the contractor(s) all in accordance with the provisions of the Contract.
- .13 Description of design/quality, environmental and safety management proposed.

Signed for the Tenderer by: (Authorised Officer)	Date:
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Schedule of Information on Quality Management System

(SUBMIT WITH TENDER IN ENVELOPE 1)

Current status of quality management system
<ul style="list-style-type: none">○ Does the Tenderer have a third party certified quality management system to AS/NZS ISO Standard 9001:2000?<ul style="list-style-type: none"><input type="checkbox"/> Yes, or<input type="checkbox"/> No <p>If "Yes":</p> <ul style="list-style-type: none">○ Name of certifying third party:○ Date of last internal audit:○ Date of last external audit:○ Attach a copy of the internal audit log.

Signed for the Tenderer by: (<i>Authorised Officer</i>)	Date:
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Schedule of Similar Consultancy Projects

(SUBMIT WITH TENDER IN ENVELOPE 1)

Project	Client	Type of Consultancy Work Performed	Client Contact (Name / Phone Number)

Signed for the Tenderer by:
(*Authorised Officer*)

Date:

Schedule of Key Personnel

(SUBMIT WITH TENDER IN ENVELOPE 1)

The Tenderer shall include a declaration from a Senior Executive confirming the availability of key personnel offered.

Name	Proposed Duties

List the name and proposed duties of all personnel proposed to contribute to the work covered by this tender document.

The Tenderer shall also provide a spreadsheet containing a detailed breakdown of the activities and proposed man-hours for all personnel proposed to undertake work under this agreement in the Outline Services Delivery Plan

Signed for the Tenderer by:
(*Authorised Officer*)

Date:

Conditions of Agreement

Operative Clauses

1 DEFINITIONS

Agreement means the contract between the Consultant and the Principal constituted by the Agreement Documents, which supersedes all understandings, representations and communications between the parties related to the subject matter of the Agreement made before the Date of Agreement.

Agreement Documents means:

- .1 Conditions of Agreement;
- .2 Agreement Information;
- .3 The Services;
- .4 Appendices;
- .5 Drawings and documents;
- .6 Letter of Award and any other documents listed therein.

Business Day means any day other than a Saturday, Sunday, public holiday or 27, 28, 29, 30 or 31 December.

Contract Material means all material brought or required to be brought into existence as part of, or for the purpose of, performing the Services, including but not limited to documents, equipment, information and data stored by any means.

Date of Agreement means the date of the Letter of Award.

Fee means the fee described in Clause 5.

Intellectual Property means all rights in copyright, patents, registered and unregistered trademarks, registered designs, trade secrets, and all other rights of intellectual property defined in Article 2 of the Convention Establishing the World Intellectual Property Organisation of July 1967.

Letter of Award means a letter from the Principal to the Consultant awarding the contract to the Consultant.

Services means the services described in The Services.

Principal means the entity named in Item 1 of the Agreement Information.

Consultant means the entity named in Item 2 of the Agreement Information.

2 ENGAGEMENT

- .1 The Principal engages the Consultant in the capacity set out in Item 3 of the Agreement Information to perform the Services, and the Consultant accepts the engagement and undertakes to perform the Services, on the terms set out in this Agreement.

3 CONSULTANT'S OBLIGATIONS

Professional Standard of Care

- .1 The Consultant must perform the Services to that standard of care and skill to be expected of a Consultant who regularly acts in the capacity in which the

Consultant is engaged and who possesses the knowledge, skill and experience of a Consultant qualified to act in that capacity.

Knowledge of Requirements of the Principal

- .2 The Consultant must use all reasonable efforts to inform itself of the requirements of the Principal and must regularly consult with the Principal during the performance of the Services.

Personnel

- .3 The Consultant must;
 - .1 ensure that all personnel engaged by it in connection with the Services are appropriately qualified, competent and experienced in the provision of the type of services required by the Principal;
 - .2 engage persons named by the Consultant and agreed by the Principal to carry out the services nominated.
- .4 The Consultant's responsibility for the performance of the Services and for the work and performance of its personnel is not altered in any way by Clause 3.3 or by anything done in accordance with Clause 3.3.

Discrepancies In Information

- .5 If the Consultant considers that information, documents and other particulars made available to it are inadequate or contain errors or ambiguities, the Consultant must give written notice as soon as practicable to the Principal detailing the errors or ambiguities.

Program or Plan

- .6 The Consultant must, by the time specified in Item 4 of the Agreement Information, submit to the Principal a program or plan for the performance and completion of the Services within the time specified in Item 5 of the Agreement Information. The Principal endorsed services delivery plan is to be updated by the Consultant and submitted with the monthly progress reports.

Timely Provision of Services

- .7 The Consultant must perform the Services expeditiously and in accordance with the program.

Change of Scope or Timing

- .8 As soon as practicable after becoming aware of any matter which is likely to change or which has changed the scope or timing of the Services, the Consultant must give written notice to the Principal detailing the circumstances and extent or likely extent of the change or delay and whether the Consultant will be proposing a Variation in accordance with Clause 6.

Alterations to Approved Documents

- .9 The Consultant must not make any substantial alteration to, addition to or omission from the plans, drawings, layouts, designs, specifications or other material previously approved, without the prior written approval of the Principal.

Principal's Materials

- .10 The Consultant must protect and keep safe and secure all materials and documentation provided by the Principal to the Consultant.
- .11 Upon discharge of this Agreement by performance or termination, the Consultant must promptly return to the Principal those materials and documentation.

Co-operation by the Consultant

- .12 The Consultant must liaise, co-operate and confer with others as directed by the Principal.

Obtain All Necessary Approvals

- .13 The Consultant must obtain all approvals, authorities, licences and permits which are required from governmental, municipal or other responsible authorities for the lawful implementation and completion of the Services, except where obtained by the Principal as set out in Item 6 of the Agreement Information.

Consultant's Relationship with the Principal

- .14 The Consultant must not act outside the scope of the authority conferred on it by this Agreement and must not bind the Principal in any way or hold itself out as having any authority to do so, except where authorised by this Agreement.

Confidentiality

- .15 The Consultant and its employees or agents must not without the prior written consent of the Principal disclose any information in connection with the Services or this Agreement to any person not a party to this Agreement other than:
- .1 as necessary to perform the Services; or
 - .2 with respect to any matter already within public knowledge.

Consultant's Representative

- .16 The person named in Item 7 of the Agreement Information will be responsible on behalf of the Consultant for all aspects of the Services and has the legal power to bind the Consultant in respect of any matters arising in connection with the Services. Any substituted representative must be notified promptly in writing to the Principal.

Additional Services

- .17 The Consultant may, at its own cost, obtain advice, services or assistance from others in connection with the Services, but will not be reimbursed those costs unless those costs are listed in the Agreement Information and the Consultant has obtained the prior written consent of the Principal to incur them.

Subcontracting and Assignment

- .18 The Consultant must not assign or subcontract any part of the Services without the prior written approval of the Principal.
- .19 An approval given by the Principal permitting the Consultant to subcontract any portion of the Services does not relieve the Consultant from its obligations and liabilities pursuant to this Agreement.

Statutory Requirements

- .20 The Consultant must ensure that all work done in connection with the Services complies with the requirements of all applicable legislation, codes and Authorities' requirements and all relevant Australian standards applicable to the Services.

Conflict of Interest

- .21 The Consultant warrants that it has no conflict of interest at the date of this Agreement.
- .22 The Consultant must immediately inform the Principal in writing upon becoming aware of the existence, or possibility, of a conflict of interest.

Security of Premises

- .23 The Consultant must comply with all directions, procedures and policies relating to occupational health, safety and security pertaining to the Principal's premises and facilities, when using them.

Access to Consultant's Premises

- .24 The Consultant must, upon reasonable notice, permit the Principal access to the Consultant's premises in order for the Principal to inspect, discuss and assess anything in connection with the Services.

Insurances

- .25 The Consultant must provide the Principal with proof of all insurance required to be maintained by the Consultant under this Agreement.

4 PRINCIPAL'S OBLIGATIONS

Provide Information

- .1 The Principal will as soon as practicable, or as required by this Agreement, make available to the Consultant all relevant instructions, information, documentation or data or any other material required for the performance of the Services.

Appoint a Representative

- .2 The person named in Item 8 of the Agreement Information, or any other person the Principal nominates in writing, will act as the Principal's Representative and will have authority to act on behalf of the Principal for all purposes in connection with this Agreement.

5 PAYMENT

Payment

- .1 In consideration of the provision of the Services the Principal will pay the Consultant the Fee calculated in the manner provided in Item 9 of the Agreement Information, subject to the conditions of this Agreement.

Right of Set-Off

- .2 The Principal may deduct from amounts otherwise payable to the Consultant any amount due from the Consultant to the Principal in connection with the Services.

Effect of Payment of the Fee

- .3 Payment, in part or in total, of the Fee set out in Item 9 of the Agreement Information does not constitute an acceptance by the Principal of the Services and does not amount to a waiver of any right or action which the Principal may have at any time against the Consultant.

Reimbursable Expenses

- .4 The Principal will reimburse the Consultant the reasonable costs, expenses, fees or charges incurred by the Consultant limited to those items set out in Item 10 of the Agreement Information, provided that in all cases the Consultant has first obtained the Principal's prior written approval to incur or pay those costs, expenses, fees or charges.

Timing of Payment

- .5 At the times specified in Item 11 of the Agreement Information, and upon Termination pursuant to Clause 11, the Consultant must lodge with the Principal

- a payment claim for the Services performed (and for approved reimbursable expenses, if any, incurred) during that period.
- .6 Within 10 Business Days after receipt of the Consultant's payment claim, the Principal will provide to the Consultant a payment schedule identifying the payment claim to which it relates and stating the payment, if any, which the Principal will be making. Reasons will be given if the amount is less than that claimed.
 - .7 The Principal will pay the Consultant the amount due within 20 Business Days after receiving the Consultant's payment claim.
 - .8 Payment by the Principal will be made by Electronic Funds Transfer to a bank, building society or credit union account nominated by the Consultant. No payment will be due to the Consultant until details of the nominated account (name of financial institution, account name and account number) are notified in writing to the Principal. The Consultant shall promptly notify the Principal in writing of any change to the nominated account but the Principal will not be responsible for any payments made into a previously nominated account prior to notification of such change being received by the Principal.

Conditions Precedent

- .9 The Consultant will not be entitled to a payment in response to a payment claim for the Services performed under this Agreement until it has submitted:
 - .1 the program in accordance with Clause 3.6;
 - .2 proof of insurance in accordance with Clause 3.25; and
 - .3 a signed and completed 'Subcontractor's Statement regarding Workers Compensation, Pay-roll Tax and Remuneration' (Subcontractor's Statement). For the purposes of the Subcontractor's Statement the Consultant may be both a 'subcontractor' (to the Principal) and a 'principal contractor' (to the Consultant's subConsultants). The form may be downloaded from the Office of State Revenue website at:
http://www.osr.nsw.gov.au/pls/portal/docs/page/downloads/other/subcontractor_statement.doc; and
 - .4 a Workers Compensation Insurance Certificate of Currency.

Pay as You Go

- .10 If the Consultant does not quote its ABN in its Tender or on its claims or invoices, or otherwise advise the Principal of its ABN relating to the service, the Principal will withhold tax from payments in accordance with the *A New Tax System (Pay As You Go) Act 1999* (Cwlth).

6 VARIATIONS

Proposed Variation

- .1 The Principal may instruct variations in writing and the Consultant must comply with these instructions.
- .2 The Consultant must take all reasonable steps to minimise the effects of variation work on the time to complete the Services.
- .3 Unless the Principal instructs the Consultant to proceed, the Consultant must not begin to carry out a variation until the parties have resolved price and time implications (including delay costs) by agreement or determination under Clause 12.
- .4 When requested by the Principal, the Consultant must within the time specified in the request, advise the Principal of its price (including any delay costs) for a

proposed variation and its effect on the time to complete the Services, or on any other matter specified in the request.

- .5 If the parties agree that a variation applies they must endeavour to agree in writing on its price and effect on the time to complete the Services. Failing agreement on price or time, or that a variation applies, the provisions of Clause 12 apply.
- .6 The Fee must be adjusted to account for the price of a variation.
- .7 If the Consultant considers that a variation applies but the Principal has not instructed a variation, the Consultant must make its claim for a variation within 5 Business Days from the start of the event giving rise to the variation, or from the time when the event should have become known to the Consultant with reasonable diligence on its part.
- .8 Variations instructed by the Principal must be generally consistent with or of a similar nature to the type of work included in the Services.

Valuation

- .9 Unless otherwise agreed, the price of a variation will be determined using the hourly rates set out in Hourly Rates for Variations - Tender Schedules, where included. If Hourly Rates for Variations - Tender Schedules is not included or does not include hourly rates relevant to the variation, reasonable rates and prices apply.

7 COPYRIGHT AND INTELLECTUAL PROPERTY

Vesting

- .1 Subject to Clause 7.2, title to and Intellectual Property in or in relation to Contract Material (other than the Contract Material listed in Item 13 of the Agreement Information) vests upon its creation in the Principal. The Consultant must, upon request by the Principal, do all things necessary to vest that title or that Intellectual Property in the Principal.
- .2 If title to Intellectual Property in or in relation to Contract Material is not capable of being vested in the Principal under Clause 7.1 because the Consultant itself does not own that Intellectual Property, the Consultant must ensure that the Principal is irrevocably licensed (whether by sub-licence from the Consultant or direct licence from the owner) to use that Contract Material or Intellectual Property.
- .3 The Principal indemnifies the Consultant against any costs, claims, actions or expenses incurred by the Consultant as a result of any reproduction, adaptation or commercialisation by the Principal of any Intellectual Property or Contract Material vested in the Principal under Clause 7.
- .4 The Consultant indemnifies the Principal against any claims, actions, and loss or damage arising out of any infringement of Intellectual Property rights by the Consultant, its officers, employees, agents or subcontractors in connection with the performance of the Services or the use by the Principal of the Contract Material for any purpose reasonably contemplated under the agreement.

Delivery

- .5 On, or as soon as practicable after, the expiration or earlier termination of this Agreement, the Consultant must deliver to the Principal all Contract Material.

Limitations

- .6 The Consultant must ensure the Contract Material is used, copied, supplied or reproduced only for the purposes of this Agreement unless it has obtained the prior written approval of the Principal to do otherwise. While the Principal will

not unreasonably withhold approval, it may attach any terms and conditions it considers appropriate.

8 INDEMNITY – PEOPLE AND PROPERTY

- .1 The Consultant indemnifies the Principal from and against all actions, claims, costs, expenses and damages (including the costs of defending or settling any action or claim) in respect of:
 - .1 loss of or damage to property of the Principal; or
 - .2 personal injury (including death) to any person or loss of or damage to any property,
arising out of or by reason of anything done or omitted intentionally or negligently by the Consultant in respect of the Services.
- .2 The Consultant's liability to indemnify the Principal is reduced proportionally to the extent that an act or omission of the Principal or employees or agents (other than the Consultant) of the Principal may have contributed to the injury, damage or loss.
- .3 The liability of the Consultant under Clause 8 may be limited if the Consultant is a member of an occupational association with an approved Scheme under the *Professional Standards Act, 1994* (NSW).

9 INSURANCE

Professional Indemnity Insurance

- .1 The Consultant must have insurance covering liability for errors in provision of the Services. The insurance must be with an insurer approved by the Principal (which approval will not be unreasonably withheld) and provide coverage for an amount not less than the amount shown in Item 14 of the Agreement Information.

Workers' Compensation

- .2 The Consultant must ensure that an insurance policy is effected prior to commencing performance of the Services and remains current for the duration of this Agreement, covering liability for death of or injury to persons employed by the Consultant and related liability as required or under the *Workers' Compensation Act 1987* (NSW).

Public Liability

- .3 The Consultant must obtain and maintain a public liability policy of insurance to cover loss or damage to property or injury or death to persons arising out of or in connection with carrying out the Services.
- .4 The policy must be:
 - .1 with an insurer and under conditions approved by the Principal (which approval will not be unreasonably withheld);
 - .2 obtained prior to commencing the carrying out of the Services;
 - .3 maintained for the duration of the Agreement; and
 - .4 for an amount not less than that stated in Item 15 of the Agreement Information in respect of any single occurrence.
- .5 The policy must cover the Consultant, the Principal, the Principal's Representative and all sub-Consultants employed from time to time for or in relation to the Agreement and the Services for their respective rights and interests and cover their liabilities to third parties.

.6 The policy must also provide that:

- .1 in so far as the policy covers more than one insured party, all insuring agreements and endorsements (with the exception of limits of liability) will operate in the same manner as if there were a separate policy of insurance covering each named insured party;
- .2 the insurer waives all rights, remedies or relief to which it might become entitled by subrogation against any of the parties covered as an insured party;
- .3 failure by any insured party to observe and fulfil the terms of the policy will not prejudice the insurance in regard to any other insured parties;
- .4 any non-disclosure by one insured party does not prejudice the right of any other insured party to claim on the policy; and
- .5 a notice to the insurer by one insured party will be deemed to be notice by all insured parties.

10 INSPECTION OF RECORDS

Records

- .1 The Consultant must keep proper accounts, records (including information stored by computer and other devices) and time sheets in accordance with accounting principles generally applied in commercial practice in respect of its time charge billing, its reimbursable expenditure and fees and reimbursements payable to others engaged pursuant to this Agreement.

Access

- .2 The Consultant must, within a reasonable time of any request, give the Principal access to, or verified copies of, any information which may be reasonably required to enable any claim to be substantiated and verified.

11 TERMINATION

Termination by the Principal other than for Default by the Consultant

- .1 The Principal may terminate the whole or any part of the performance of the Services at any time, by written notice addressed to the Consultant.
- .2 The Consultant must, after receipt of a notice under this Clause:
 - .1 cease work on the terminated Services within the time specified in the notice; and
 - .2 comply with any reasonable directions given by the Principal in relation to performance of the Agreement.
- .3 As soon as practicable after ceasing work under Clause 11.2, the Consultant must lodge with the Principal a statement of the amount of the Fee (and any approved reimbursable expenses) claimed by the Consultant to be payable for Services performed to the earlier of:
 - .1 the date of cessation of the terminated Services; and
 - .2 the date by which the Consultant was required to cease work on those Services.

The statement must be accompanied by supporting information as reasonably required by the Principal.

Termination by the Principal for Default by the Consultant

- .4 If the Consultant:

- .1 becomes bankrupt, or insolvent, or enters into a scheme or arrangement with its creditors;
 - .2 fails to carry out the Services with due diligence and competence;
 - .3 without reasonable cause suspends the carrying out of the Services; or
 - .4 commits a substantial breach of this Agreement,
- the Principal may:
- .5 in the case of the default specified in Clause 11.4.1, forthwith terminate this Agreement by written notice addressed to the Consultant; and
 - .6 in the case of any other specified default, terminate this Agreement by written notice addressed to the Consultant if the Consultant fails to remedy the default within 14 days from the date of service of a notice by the Principal on the Consultant specifying the relevant default.

Termination by the Consultant

- .5 If the Principal fails to pay the Consultant any amount in accordance with this Agreement which is not in dispute, or commits a fundamental breach of the Agreement, the Consultant may give notice requiring the Principal to remedy the default within 10 Business Days after receiving the notice.
- .6 If the Principal fails to remedy the default, or fails to propose steps reasonably acceptable to the Consultant to do so, the Consultant may issue a notice terminating the Agreement.
- .7 The Principal must pay the amounts prescribed in the clause "Adjustment of the Fee on Termination".

Consultant's Continuing Liability

- .8 Termination by the Principal or Consultant or completion of the Services will not release the Consultant from liability in respect of any breach, or non-performance, of any obligation pursuant to this Agreement.

Effect of Termination

- .9 Termination of this Agreement by either party is without prejudice to any accrued rights or remedies of each party.

Adjustment of the Fee on Termination

- .10 If any of the Services are terminated pursuant to Clause 11.1, the Principal will pay the Consultant a reasonable amount for the Services performed by the Consultant to the date of termination and a further amount calculated in the manner set out in Item 16 of the Agreement Information, as adjusted by any additions or deductions in accordance with this Agreement in full and final satisfaction of any claim the Consultant has or may have.
- .11 If this Agreement is terminated pursuant to Clause 11.4, the Principal will pay the Consultant a reasonable amount for the Services performed by the Consultant to the date of termination, together with any adjustments and deductions for loss or damage suffered, or reasonably likely to be suffered by the Principal as a consequence of breach by the Consultant. The Principal may recover any short-fall from the Consultant as a debt due and payable.
- .12 If this Agreement is terminated pursuant to Clause 11.6, the Principal will pay the Consultant a reasonable amount for the Services performed by the Consultant to the date of termination together with the amount calculated in the manner set out in Item 16 of the Agreement Information in full and final satisfaction of any claim the Consultant has or may have.

12 DISPUTE RESOLUTION

Nomination

- .1 The Consultant and the Principal will endeavour to resolve any dispute speedily by negotiation. If a dispute between the Consultant and the Principal is not resolved by negotiation, then before either party has recourse to litigation, the party must submit the dispute to expert determination. If the Consultant and the Principal do not agree upon an independent expert ("Expert"), either may request the Chief Executive Officer of the Australian Commercial Disputes Centre to nominate an Expert.

Submissions

- .2 Within 14 days of acceptance by the Expert of the appointment, the claimant will submit in writing to the Expert the claim and all the evidence which the claimant wishes the Expert to take into account. Within 28 days thereafter the other party will submit in writing to the Expert that party's response to the claim, particulars of any counterclaim and all the evidence which that party wishes the Expert to take into account.

Procedure

- .3 Copies of documents sent to the Expert must be sent to the other party at the same time. The Expert may meet with the parties jointly but not separately and may ask questions of the parties which must be answered orally or in writing as requested by the Expert.

Determination

- .4 As soon as possible the Expert must give the parties the Expert's determination in writing as to:
- .1 the respective rights and entitlements of the parties, and
 - .2 the amount or service if any which the Expert considers is due from one party to the other.
- .5 The determination of the Expert shall be made as an Expert and not as an Arbitrator and shall be final and binding on the parties except where the Expert's determination relating to a dispute is that one party shall pay to the other an amount, or carry out work, in excess of \$100,000. Such determination shall not be final and binding, provided either party gives notice to the other party of its dissatisfaction within 28 days of the determination being given.

Liability

- .6 The Expert will not be liable to the parties for negligence in the conduct of the determination.

Costs

- .7 The Principal and the Consultant will be jointly and severally liable to the Expert for the fees of the Expert. As between themselves, the Principal and the Consultant will each bear half the Expert's fee and each will bear their own costs of the determination.

Continuing Performance

- .8 Each party must continue to perform its obligations under this Agreement, notwithstanding the existence of a dispute.

13 NOTICES

- .1 Any notice given under this Agreement:

- .1 must be in writing addressed to the intended recipient at the address shown in Item 17 of the Agreement Information or the address last notified by the intended recipient to the sender;
 - .2 must be signed by an authorised officer of the sender; and
 - .3 will be taken to have been given or made (in the case of delivery in person or by fax, cable or post) when delivered, received or left at the specified address.
- .2 If delivery or receipt of a notice occurs on a day on which business is not generally carried on in the place to which the communication is sent or later than 4.00 pm (local time), it will be taken to have occurred at the commencement of business on the next Business Day in that place.

14 COMMUNICATION

- .1 The parties agree and consent that notices and communications may be by electronic communication in accordance with the *Electronic Transactions Act 2000* (NSW).

Agreement Information

Item 1 - The Principal: (Cl. 1)	State Water Corporation ABN 21 147 934 787
Item 2 - The Consultant: (Cl. 1).	As nominated in the Consultant's Tender and accepted by the Principal if applicable.
Item 3 - Capacity in which the Consultant is engaged: (Cl. 2).	Expert in dam engineering (including analysis, design, documentation and management of the design process).
Item 4 - Time by which Consultant must provide program or plan: (Cl. 3.6)	7 calendar days from date of Letter of Award
Item 5 - Time to complete Services: (Cl. 3.6) (<i>Refer The Services</i>)	Work Package 1 - 24 weeks from date of Letter of Award Work Package 2 - 20 weeks from date of Letter of Award Work Package 3 - 24 weeks from date of acceptance of preliminary design from Work Package 2
Item 6 - Approvals obtained by Principal: (Cl 3.13)	Nil
Item 7 - Consultant's Representative: (Cl. 3.16)	As nominated in the Project Manager's Tender and accepted by the Principal.
Item 8 - Principal's Representative: (Cl. 4.2)	Project Manager – Hume Dam for all clauses except Clause 12. For Clause 12 – Manager Major Projects
Item 9 - the Fee: (Cl. 5.1)	The Fee shall be a schedule of lump sum items as accepted by the Principal.
Item 10 - Reimbursable Expenses: (Cl. 5.4)	Not Applicable
Item 11 - Claim timetable: (Cl. 5.5) (PP1 – Progress Payment 1)	<u>Work Package 1</u> PP1 – Completion of project initiation workshop & design review workshop 1 PP2 – Submission of draft drawings, draft technical specification and draft design report and completion of Design Review Workshop 2 PP3 – Submission of 90% complete drawings, technical specification, schedule 2, design report and schedule of quantities. PP4 – Completion of ECI workshops and submission of final construction drawings, technical specification & schedules, design report.

	<p><u>Work Package 2</u> PP5 – Completion of site investigation work PP6 – Submission of Geotechnical Reports PP7 – Submission of Preliminary design for downstream buttress based on foundation investigations</p> <p><u>Work Package 3</u> PP8 – Submission of draft drawings, draft technical specification and draft design report and completion of Design Review Workshops PP9 – Submission of 90% complete drawings, technical specification, schedule 2, design report and schedule of quantities. PP10 – Completion of ECI workshops and submission of final construction drawings, technical specification & schedules, design report</p>
Item 12 - Payment timetable: (Cl. 5.6, 5.7 and 5.8)	Payment will be made within 30 Business Days subject to Clause 10.2.
Item 13 - Intellectual property not vesting in the Principal: (Cl. 7.1)	Nil
Item 14 - Quantum of professional indemnity insurance: (Cl. 9.1)	<p>\$5,000,000</p> <p>or;</p> <p>Where the Consultant is a complying member of an approved Professional Standards Scheme, the quantum of professional indemnity insurance required to be held by the member in accordance with that Scheme.</p>
Item 15 - Quantum of public liability insurance: (Cl. 9.5.4)	\$10,000,000
Item 16 - Percentage on termination: (Cl. 11.8 and 11.10)	Nil
Item 17 - Notices: (Cl. 13)	
<p>For notices to the Principal, the address of the intended recipient is;</p> <p>For notices to the Consultant, the address of the intended recipient is;</p>	<p>Name: Phil Farnik Address: Address: Level 8, 2-10 Wentworth Street Parramatta, NSW 2150 Facsimile: (02) 9354 1102</p> <p>Name: As nominated in the Consultant's Tender and accepted by the Principal. Address: As nominated in the Consultant's Tender and accepted by the Principal. Facsimile: As nominated in the Consultant's Tender and accepted by the Principal.</p>

The Services

The Services to be undertaken under this agreement are outlined in this section; however, the Consultant shall make their own deductions and conclusions in regard to the existing site conditions and their implications on the Agreement.

1 Description of Services

Agreement name: Hume Dam Remedial Works – Detailed Design of Southern Training Wall Works.

The Services under this Agreement include:

1.1 Complete and Submit Detailed Design and Undertake Foundation Investigation

The Consultant shall complete the detailed design for the Works based on the buttress option recommended in the concept design contained in the Hume Dam Remedial Works –Southern Training Wall (STW) Concept Design – report prepared by URS Australia Pty Ltd, 24th August 2009.

The proposed remedial works at the Southern Training Wall consists of constructing a mass concrete buttress on the spillway side of the downstream section of the Wall. The downstream STW monoliths have been grouped into two portions, upper section and lower section. The division between the two sections coincides with the downstream end of the spillway stilling basin concrete apron at wall offset (O/S) 65.9m.

The two sections are shown in Drawing STW-03 of the concept report. The works to be undertaken in this contract shall be undertaken in three (3) separable work packages; WP1 covers the detailed design of the upper section buttress, WP2 covers the foundation investigation and preliminary design for the lower section buttress, and WP3 covers the detailed design of the lower section buttress.

1.1.1 General Design Considerations

While undertaking the detailed design, matters that need to be considered include but not limited to:

- The preparation of Designs/Construction Drawings shall be to a high professional standard that will allow the works to be priced and constructed without the need for further design work to be undertaken.
- Design Loading – the STW/Buttress shall be analysed to safely accommodate, as a minimum the following loading conditions:
 - Usual – normal loads;
 - Unusual – construction, flooding etc; and
 - Extreme – seismic (including for allowance for liquefaction of the STW backfill and alluvium materials), maximum design flood etc.
- Existing Post Tensioned Anchors to the STW - Following the construction of the buttress, the existing horizontal post-tensioned anchors would be decommissioned and left in place. De-stressing of the anchors after construction of the buttress wall provides a means of transferring the loads from the horizontal anchors to the buttress. The contractor shall propose a method for safely de-stressing these existing anchors.

- Mass Concrete The buttress is proposed to be constructed of mass concrete. The contractor shall specify any detailed requirements for heating or cooling of the concrete if required to mitigate the issue of heat rise and cracking of the concrete, all of which are subject to the results of mix design and materials assessments;
- Mix Design - The detailed design shall include a concrete mix design that takes into consideration, as a minimum:
 - placement temperatures, structural and thermal analysis and durability and crack prevention requirements etc.
 - concrete strength, short term and 90 day strength to be confirmed.
 - aggregate size,
 - cement and Flyash content, and
 - maximum water cement ratio.
- Composite Action – the detailed design of the mass concrete buttress shall ensure that composite action is achieved between the new buttress concrete and the existing STW concrete.
- The detailed design of the buttress shall include provisions for drainage outlets for the existing STW cobble drainage layer that is located on the embankment side of the STW and also for the proposed SSJ filter drainage works.

The Consultant shall ensure that the detailed design and the construction drawings have taken the following issues, as a minimum, into consideration:

- a) all existing site conditions, access issues etc;
- b) constructability issues. The Consultant shall critically evaluate and further develop the construction techniques outlined in the concept design and if necessary altering some of the construction techniques;
- c) dam safety during construction. The Consultant shall develop protocols to ensure the integrity of the dam during construction, and to have contingency plans to re-establish the integrity of the southern training wall if required. These should be pertinent to both the Contractor and the Principal;
- d) availability of construction material from local suppliers;
- e) construction methodology to reflect the fact that the proposed buttress shall be constructed adjacent to the existing downstream southern training wall;
- f) the geotechnical conditions behind the downstream section of the existing southern training wall (refer to URS Report 2009 – Hume Dam Remedial Works – Geotechnical Investigation); and
- g) environmental issues – the contract documents to reflect the fact that the proposed buttress shall be constructed adjacent to the existing downstream southern training wall within the waterway of the Murray River. The detailed design shall address issues identified in the Review of Environmental Factors assessment report.

The Consultant report shall include in their monthly progress report a section titled "Design Optimisation" - where the Consultant will show the effort taken to optimise the concept design details.

The Consultant shall progressively submit and complete the detailed design (including associated documentation) as per Clause 3 "Services Delivery and Program".

1.1.2 Work Package 1 (WP1) – Upper Section Buttress - Detailed Design

The buttress to the upper section would be founded on the existing concrete stilling basin apron, which was deepened near the STW. Drawings and photographs from the original construction show that the stilling basin floor concrete is very thick adjacent to the STW and

hence should provide a suitable foundation for the new buttress. The Contractor (Designers) should confirm from the available information.

The work shall include but not limited to;

- Review all available information and outcomes from previous studies including but not limited to WAE drawings and photographs from the original construction and previous upgrade works, design and construction reports for previous upgrade works, previous geotechnical investigations, bathymetric survey and STW Upgrade Concept Design Report.
- Preparation of a detailed design criteria report. The design criteria report shall clearly identify the design criteria and design standards that are to be adopted for the project. This report will be provided to State Water's independent expert reviewer for comment.
- Undertake 3D Computational Fluid Dynamics (CFD) modelling shall be carried out as part of the detailed design studies. CFD shall evaluate the effect of the shape and extent of the proposed upper section buttress has on the spillway hydraulics for discharges from Gate Bay No. 29. If required, the profile of the buttress shall be modified to improve the hydraulics of the spillway discharges.
- Carry out Finite Element Modelling of the STW buttress to evaluate the stresses under the various design loading conditions (construction, static, flood and earthquake design loadings). This should include consideration of the thermal effects during construction of the buttress, redistribution of stresses within the STW due to construction of the buttress and release of the horizontal anchor loads, and non-linear behaviour under earthquake loading.
- Consider possible refinements and optimisation of the geometry of the buttress.
- Develop a detailed design of the upper section buttress. The detailed design shall include, but not limited to:-
 1. Geometry and set out of the buttress
 2. Consideration of bonding new and old concrete to ensure composite action.
 3. Compatibility with the lower section of the buttress.
 4. Provisions for drainage outlets for the existing STW cobble drainage layer that is located on the embankment side of the STW and also for the proposed SSJ filter drainage works.
 5. Detailing of surface preparation, waterstops, reinforcement, construction and contraction joints (if applicable).
 6. Method of decommissioning the existing horizontal anchors.
 7. Method of dewatering and coffer dam details
 8. Addressing issues identified in the Review of Environmental Factors report
- Prepare complete tender documents including tender schedules, Conditions of Contract (based on GC21), construction drawings, technical specifications and schedule of quantities for the works.
- Attend and present designs to State Water and their reviewers at Design Review meetings as per the Service Deliverables and Program.
- Prepare a detailed cost estimate for the works. The cost estimate must clearly define rates, quantity, allowances, contingencies, etc.
- Preparation of a detailed design report for the works.

1.1.3 Work Package 2 (WP2) – Foundation Investigation and Preliminary Design for Lower Section

The work to be carried out in this separable work package includes geotechnical investigations in the downstream channel area near the STW and the development of a preliminary design for the buttress for the lower section.

The following clauses provide a recommended minimum scope for geotechnical investigations. These are based on preferred concept design of the STW upgrade comprising a mass concrete buttress either founded directly on the weathered or fresh rock, or alternatively supported by pile foundations.

The works in this portion shall be in accordance with the requirements set out in Clause 1.1.1 of The Services, included above.

Aims of the Proposed Investigation

Geotechnical investigations are required in the downstream channel area near the STW for the design of foundations for the proposed STW buttress. The information will be used for;

- Selecting the preferred method for supporting the buttress over the lower section of the wall (downstream of the stilling basin apron). This could involve founding the buttress directly on rock or supported on piles taken down to rock.
- Develop a preliminary design of the lower section buttress works to be reviewed by State Water's Expert Review Panel.
- Developing an interpreted geological model of the proposed STW buttress works.
- Characterising the rock mass for the design of the buttress along the lower section of the wall (i.e. downstream of the stilling basin apron). The relevant rock mass parameters are shear strength, stiffness and erosion resistance (from spillway releases).
- Characterising the subsurface conditions for assessing constructability issues – temporary safe batter slopes for excavations, excavation characteristics (open excavation or piling), groundwater control, etc).
- Evaluate suitable founding depths for the buttress (mass concrete footing or piles).
- Evaluate subsurface conditions for selecting suitable founding depths for the coffer dam (in terms of strength, stiffness, permeability, piping resistance, etc).

Minimum Scope of Geotechnical Investigations

It is the Consultants responsibility to obtain all necessary environmental approvals to undertake the geotechnical investigation works, which shall include but not be limited to the preparation of an Environmental Management Plan (EMP). The EMP shall be prepared before any site work can proceed. The EMP shall provide an environmental impact assessment and define any mitigation measures that may be necessary for all of the activities associated with the proposed investigation. The proposed investigation should be carried out in such a way that any disturbance to the existing environment is minimised.

A Safe Work Method Statement to cover all site investigation activities shall be prepared before any site work can proceed.

Drilling Investigation

The minimum scope of works comprises geotechnical investigations in the downstream stilling basin area of the Hume Dam concrete dam structure adjacent to the Southern Training Wall.

Six (6) vertical diamond cored boreholes are proposed. The locations of the boreholes are shown in Figure 1.

Drilling shall be conducted using a HQ sized triple-tube wireline recovery system. A down hole imaging system will be used to record fracture geometry and orientation in three of the bore holes (STW-B1, STW-B2 and STW-B3). All six locations are over water, and it is anticipated that a barge mounted drill rig or jack up rig will be required. The provision of all access requirements for the drilling equipment shall be the responsibility of the Consultant and their subcontractors.

The drilling contractor shall be an experienced geotechnical driller, able to provide appropriate equipment to complete the specified cored holes over water. All investigations

are to be supervised full time by an experienced engineering geologist or geotechnical engineer.

The core shall be logged by an experienced engineering geologist in accordance with AS 1726 (1993), and the core systematically photographed. The core shall be boxed and labelled in a such manner to allow the long term storage at the dam.

The details of the drilling investigation are presented in Table 1.

Table 1 Drill Hole Specifications

Drill Hole No.	Hole Orientation	Approximate Off Set - D/s of centreline	Depth of Core Hole Below River Bed Level (Approx RL150.6m)	Comment
STW-B1	Vertical	O/S 70m	30 m	Below footprint of proposed buttress,
STW-B2	Vertical	O/S 90m	30 m	Below footprint of proposed buttress
STW-B3	Vertical	O/S 110m	30 m	Below footprint of proposed buttress
STW-B4	Vertical	suit layout	6 m	Suit possible Coffe dam alignment
STW-B5	Vertical	suit layout	6 m	Suit possible Coffe dam alignment
STW-B6	Vertical	suit layout	6 m	Suit possible Coffe dam alignment

Notes for Table 1:

1. The estimated river bed level is RL150-151 based on 2007 sounding survey downstream of dissipator, (State Water Plan No. D07/0170)
2. Normal Tailwater Level varie sand depends on discharge from the dam. Average is RL155.8m.

Drilling methods shall be as follows;

- In overburden soils (fill/alluvium/residual soils) – wash boring or hollow flight auger drilling with SPT's every 1m depth interval.
- In rock – HQ sized triple-tube diamond core drilling. Coring is to commence when Extremely Weathered rock is encountered.

Laboratory Testing

Unconfined Compressive Strength (UCS) testing of selected rock core samples. Allow for a minimum of 9 tests (3 tests each in drill holes STW-B1, STW-B2 and STW-B3).

Geotechnical Reporting

A geotechnical investigation report shall be prepared containing, but not limited to, the following information:

- Summary of local and regional geology;
- Scope and methodology of investigations;
- Sampling and testing undertaken;
- Results of all testing;
- Core hole geotechnical logs (in a suitable computer logging software format);
- Photographic record of core hole rock core;

- Development of a geotechnical model of the STW area (linked to existing model prepared for the No.1 embankment) and the proposed sites for the buttress and coffer dam. This is to be based on existing information and results of the geotechnical investigations and include geotechnical long sections and cross sections;
- An assessment of site conditions, including:
 - Interpreted rock mass conditions
 - Foundation conditions and treatment
 - Excavation requirements
 - Excavation stability
 - Recommended rock mass parameters for design – strength, stiffness, erodibility

The following information shall be made available to the Consultant:

- Reports on previous geotechnical investigations
- Bathymetric survey of area downstream of the dissipator
- Historical photographs during construction of the dam
- As-constructed drawings of the downstream portion of the STW

Preliminary Design and Drawings

The Consultant shall further develop the design of the lower section of the buttress, with the principal aim of identifying the preferred method of founding of the buttress to take forward into detailed design (Work Package 3). The preliminary design shall include as a minimum consideration of the following;

- Consideration of the findings of the geotechnical investigations on the foundation conditions for support of the buttress.
- Design calculations and analysis to determine the sizing and extent of the alternative foundation methods;
- Consideration of construction issues, including method of dewatering, access for construction of the buttress, effects of excavations on the stability of the STW, excavation support requirements, methods of excavation, flood risks during construction and coffer dam requirements.
- Preliminary cost estimates for alternatives.
- Drawings which show the key features and dimensions of the preliminary design alternatives.
- Selection of a preferred option for the lower section.

Selection of the preferred method for the lower section of the buttress shall include consideration of capital and operational costs, construction risks, dam safety risks (both during construction and long term), OH&S of construction staff, and environmental impacts.

The Contractor shall prepare a report on the Preliminary Design and full layout drawings showing the extent of the proposed work for the lower buttress section.

1.1.4 Work Package 3 (WP3) - Lower Section Buttress - Detailed Design

The detailed design of the lower buttress section shall not commence until SWC's Expert Review Panel has endorsed the preliminary design that has been developed in Separable Portion 2. The layout and arrangement shall be consistent with the upper section buttress.

The works in this portion shall be in accordance with the relevant requirements set out in Clause 1.1.1 and 1.1.2 of The Services, included above.

1.2 Tender Documents for Construction Contract

For the works as designed, the Consultant shall produce the complete GC21 tender documents including but not limited to technical specification, Tender Schedule 2 and documentation of Application of Schedule 2 in "Preliminaries" for work packages 1 & 3. The

technical specification must take into consideration the site specific conditions, preliminary works and the actual works involved. The need for the technical specification to be compatible with GC21 is paramount. The Consultant shall allow for reviews of the technical specification by State Water as per Clause 3 “Services Delivery and Program”.

1.3 Attend Design Review Workshop

The Consultant shall attend and participate in the Design Review Workshops as outlined in Clause 3 “Services Deliverables and Program”.

The Principal may elect to engage an independent expert to advise State Water and to attend the Design Review Workshops.

1.4 Confirm adequacy of Principal Provided Information

As outlined in Clause 3 “Services Delivery and Program” the Consultant shall review the information provided (including survey and geotechnical investigations) and advise the Principal of any shortfalls. If considered warranted, the Principal will arrange for this information to be provided at the earliest possible time at no cost to the Consultant.

1.5 Complete and Submit Documentation Required for Construction

The Consultant shall complete detailed engineering construction drawings and the technical documentation stated in Clause 1.2.

1.6 Schedule of Quantities

The Consultant shall prepare and submit at the 90% and final stages, a detailed engineering schedule including all quantities based on the detailed designs and the construction drawings. This schedule is a separate document to that referred to as Tender Schedule 2 (For GC21).

The Consultant is not required to prepare the pre-construction estimate, however relevant personnel will be required to attend an estimate review workshop to be organised by State Water after completion of designs. Payment will be as a variation to this contract.

1.7 Complete and Submit Design Report

The Consultant shall prepare and submit a Draft, 90% complete and Final Detailed Design Report containing all design details. The Principal will be submitting the final detailed design report to the Dams Safety Committee for endorsement.

1.8 Early Contractor Involvement (ECI) Workshops & Follow Up Work

The Consultant shall attend and participate in the two ECI Workshops proposed at the 90% design and technical documentation stage as outlined in Clause 3 “Services Deliverables and Program”.

The ECI workshops will include prospective construction Tenderers and may involve discussion on design details, constructability and other matters relating to the design undertaken under this Agreement. The Consultant is required to answer any such questions and provide design advice or design alternatives at these meetings. The Consultant’s Design Manager shall prepare for and attend the two, one day workshops. State Water may request the Consultant’s Design Manager to be accompanied by relevant technical experts. The Consultant shall make these personnel available if requested by the Principal. These experts will be paid for as a variation.

Any responses required from the Consultant as a result of the Workshops shall be paid for as a variation to this contract; however, finalisation of the documentation shall be allowed for in the Tender Price and will be covered by payment Number PP4 and PP10 under Item 11 – Agreement Information.

2 Statement of Purpose

The engineering construction drawings and full suite of tender documents prepared under this Agreement will be used by the Principal in a Hume Dam Spillway Southern Training Wall construction contract based on GC21 General Conditions of Contract.

This statement of purpose is not intended to be an exhaustive list of the purposes required by this Agreement.

3 Service Deliverables and Program

The service and deliverables program is outlined in the below tables

Table 3.1 – Work Package No.1 – Except where noted otherwise

Item	Service Deliverables	Maximum time from the date of Letter of Award
1	On-site Project Initiation Workshop (familiarisation with the works and confirm adequacy of Principal provided information). Relevant to all Work Packages.	3 weeks
2	Provide written progress report detailing status and resources etc. Progress review meetings, when required, are to be held at the Consultant's offices. To be held within 5 days of submission of the progress report.	Reports Monthly - Commencing at week 4
3	Design Review Workshop (See: Note 1 below) Submit for joint review initial general arrangement drawings and detail design methodology and key design criteria (Meeting at State Water Corporation Parramatta Office)	6 weeks
4	Submit: <ul style="list-style-type: none"> Draft Construction Drawings, Technical Specification, Draft Design Report 	13 weeks
5	Submit: <ul style="list-style-type: none"> 90% Complete Construction Drawings, Technical Specification & Tender Schedule, Design Report, Schedule of Quantities 	18 weeks
6	Early Contractor Involvement (ECI) Workshop No.1 with Construction Contract Tenderers (State Water Corporation Hume Dam Office)	16 weeks - To be confirmed by SWC
7	Early Contractor Involvement (ECI) Workshop No.2 with Construction Contract Tenderers (State Water Corporation Parramatta Office)	20 weeks - To be confirmed by SWC
8	Submit: <ul style="list-style-type: none"> Final Construction Drawings, Complete set of Contract Documents and Final Design Report 	24 weeks

Table 3.2 – Work Package No.2

Item	Service Deliverables	Maximum time from the date of Letter of Award
1	Provision of following: Environmental approvals, EMP, Works Method Statements - (See Note 3)	6 weeks
2	Possession of Site – on completion, and acceptance by SWC, of all activities in item 1	Completion of item 1 (see note 3)
3	Provide written progress report detailing status and resources etc. Progress review meetings are to be held at the Consultant's offices. To be held within 5 days of submission of the progress report.	Monthly - Commencing at week 8
4	Submit Draft geotechnical Report	12 weeks
5	Submit Draft Preliminary Design Report for lower buttress and Final Geotechnical Report	16 weeks
6	Attend Design Review Workshop 2 (see WP1) – discuss prelim design for lower buttress	18 weeks
7	Submit Final Preliminary Design for Lower Buttress	20 weeks

TABLE 3.3 – WORK PACKAGE NO.3

Item	Service Deliverables	Maximum time from the date of acceptance of prelim design from WP 2
1	On-site Design Review Workshop (familiarisation with the works and confirm adequacy of Principal provided information).	See item 1 Table 3.1
2	Provide written progress reports detailing status and resources etc. Progress review meetings, when required, are to be held at the Consultant's offices. To be held within 5 days of submission of the progress report.	Reports Monthly - Commencing week 8
3	Design Review Workshop (See: Notes below) Submit for joint review initial general arrangement drawings and detail design methodology and key design criteria (Meeting at State Water Corporation Parramatta Office)	5 weeks
4	Submit: <ul style="list-style-type: none"> Draft Construction Drawings, Technical Specification, Draft Design Report 	13 weeks
5	Submit: <ul style="list-style-type: none"> 90% Complete Construction Drawings, Technical Specification & Tender Schedule, Design Report, Schedule of Quantities 	18 weeks
6	Early Contractor Involvement (ECI) Workshop No.1 with Construction Contract Tenderers (State Water Corporation Hume Dam Office)	16 weeks - To be confirmed by SWC
7	Early Contractor Involvement (ECI) Workshop No.2 with Construction Contract Tenderers (State Water Corporation Parramatta Office)	20 weeks - To be confirmed by SWC
8	Submit: <ul style="list-style-type: none"> Final Construction Drawings, Complete set of Contract Documents and Final Design Report, 	24 weeks

Notes:

- Design Review Workshops will be arranged by State Water and will be held at State Water Corporation Offices at Parramatta.
- The Consultant's scope includes on-going consultation and discussion between the Consultant, State Water personnel and independent expert Consultants as required.
- Failure to provide within the specified time frame shall not be grounds for automatic extension of time

4 Schedule of Rates and Lump Sum Items

The Consultant shall prepare a Schedule of Rates and Lump Sum Items (Construction Tender Schedule 2) based on the detailed designs and construction drawings. As a minimum, the schedule must contain establishment /disestablishment, dewatering/flood protection works, environmental management related works and all other works to be constructed. Where all aspects of the works are accurately defined in scope and quantum, Lump Sum items are to be used. Schedule of Rates are to be used elsewhere. The Consultant must discuss and obtain agreement from State Water on the final allocation of Schedule of Rates and Lump Sum Items.

5 Relevant information

The following relevant information, in addition to the attachments to this brief, can be made available to the Tenderers to assist in preparing their tender offers. This information will be available on request and can be viewed at State Waters Parramatta office:

Reference	Title
	Hume Dam Remedial Works – Southern Training Wall (STW) Concept Design (2009)
	Hume Dam Remedial Works – Geotechnical Investigation Vol 1 & 2 (2009)
	Historical Drawings and photographs
	Relevant Investigation Reports – Hume Dam (held in State Water Library)
	NSW Government GC21 General Condition of Contract
	Schedule of Rates and Lump Sum Items (For GC21)
	Preliminaries (For GC21)

It is noted that State Water does not represent that the provided information shows completely the existing conditions and does not warrant the correctness of the designation of naturally occurring conditions shown on the drawings, or in reports made available to the Consultant by State Water. The Consultant shall make his/her own deductions and conclusions in regard to the existing conditions and their implications on the proposed works.

The Consultant shall advise the Principal as soon as possible if any of the above information contains errors or requirements or provisions that are contrary to other requirements of this Agreement.

6 Meetings

In addition to Progress Review Meetings and the Design Review Workshops, meetings may be required between the Consultant and State Water Corporation for clarification / resolution of Service requirements etc. The Consultant shall attend the meetings nominated in the Program schedule. Additional meetings required by State Water, other than for clarification of services, that require the Consultant to visit the Parramatta office will be considered as a variation to the contract.

Progress Review Meetings, when required are to be held at the Consultants offices to discuss the progress of the works, review the status of the deliverables and discuss any current design issues. It is expected that these meetings will take up ½ day and the Consultant must allow for (as a minimum) the Project Manager and the Design Manager or equivalent to be present for the duration of the meeting. State Water will give one weeks notice that a meeting is required. The Consultant shall include for these meetings in their price.

7 Standards and guidelines

The works must be carried out in accordance with the relevant Australian Codes and Standards. Best engineering practice must be adopted in carrying out these works. Designs must be acceptable to the Dam Safety Committee.

8 Document format

The Consultant shall provide the documents at the following stages, in the following formats:

- **PRELIMINARY:**
 - 1 hard copy of each preliminary drawing (Size A3) for review plus electronic files in AUTOCAD and PDF formats.
- **DRAFTS:**
 - 1 hard copy of each draft drawing (Size A3) for review plus electronic files in AUTOCAD and PDF formats.
 - 1 hard copy of the draft technical specification and design report in A4 size plus electronic files for each in Microsoft Word 97 format and PDF formats.
 - 1 hard copy of the draft Schedule of Quantities in A4 size plus electronic files in Microsoft Excel 97 format and PDF formats.
- **90% COMPLETE:**
 - 1 hard copy of each 90% drawing (Size A3) for review plus electronic files in AUTOCAD and PDF formats.
 - 1 hard copy of the 90% technical specification (including Tender Schedules) and design report in A4 size plus electronic files for each in Microsoft Word 97 format and PDF formats.
 - 1 hard copy of the 90% Schedule of Quantities in A4 size plus electronic files in Microsoft Excel 97 format and PDF formats.
- **FINAL:**
 - 1 hard copy of each final drawing (Size A1) plus electronic files in AUTOCAD and PDF formats.
 - 1 hard copy of the final technical specification (including tender schedules) in A4 size plus and electronic file in Microsoft Word 97 format and PDF formats.
 - 5 hard copies of the final design report in A4 size (drawings in A3) plus an electronic file in Microsoft Word 97 format and PDF formats.
 - 5 hard copies of the final Schedule of Quantities in A4 size plus electronic files in Microsoft Excel 97 format and PDF formats.

9 Checking

Verification

Together with the design documents and the completed technical specification etc, provide:

- .1 a quality management activities list fully signed off by the key personnel nominated;
- .2 evidence to demonstrate that the design documents and the Tender Documents have been designed, checked, certified ok for construction and meet the requirements of the Agreement as amended by approved change requests.

Failure to comply

If the Principal considers that the Consultant has failed to comply with the requirements of the Agreement, despite the provision of evidence that the documentation has been checked and the Activities List signed off, the Principal may:

- .1 implement such checks that the Principal determines are required;
- .2 request the Consultant to amend the Agreement to meet the requirements of the Agreement; and
- .3 recover the cost to the Principal of implementing such checks against payment due to the Consultant.

10 Change requests

All changes, whether requested by the Principal, the Client or the Consultant, must be confirmed in writing to the Principal by the Consultant using a suitable Change Request Form. Where a change is requested orally by the Principal or by Client, the Consultant must seek written confirmation from the Principal using a Change Request Form. Keep a running log of all changes requested and confirmed. Advise the Principal of time and cost implications no later than 7 days after confirmation of a change request.

11 Submissions

Documentation shall be submitted progressively for comment by the Principal at the stages outlined in Item 3 "Services Deliverables and Program":

12 Quality Management System

Requirement

All services under the Agreement, including services by sub-Consultants and secondary Consultants, must be carried out under a quality management system certified as meeting the requirements of AS/NZS ISO 9001:2000 or ISO 9001:2000 except when the Principal has accepted a tender where the situation is otherwise.

Audits

The Principal may conduct audits of the Consultant's and sub-Consultants' quality management systems during the Agreement. These audits may be carried out by or on behalf of the Principal. Reasonable prior notification of the date and scope of an audit will be given.

13 Management Plans Generally

The Consultant must have a management system that is consistent with, and must develop, document, implement and maintain a Services-specific Services Delivery Plan that complies with AS/NZS ISO 9001:2000 or ISO 9001:2000. The Services Delivery Plan must cover any sub Consultants and address the management plans required of, and accepted from, any other relevant participants in the Services.

14 Services Delivery Plan

The Consultant must provide the Services Delivery Plan within the time specified in Item 4 of the Agreement Information, or as otherwise agreed by the Principal to suit the progressive implementation of the Services Delivery Plan with the Services. The Services Delivery Plan may be prepared in stages, but the relevant parts of the Plan must be submitted, considered by the Principal (allow 7 days from receipt by the Principal), and in place before related work commences.

The Consultant must incorporate relevant information provided with the Consultant's Tender into the Services Delivery Plan.

The Services Delivery Plan must also at least cover:

- .1 Sub-Consultants dealing with the interaction and integration of the Services with their activities;
- .2 documentation management and control, including CADD/drawings, and all the reports and other documents to be prepared for the Services;
- .3 design management;
- .4 time management, including program management;
- .5 cost control/reporting/recording;
- .6 stakeholder communication, consultation and liaison;
- .7 auditing and audit trails;
- .8 reporting and monitoring;
- .9 health and safety in design and with work site activities;
- .10 process control generally; and
- .11 other management required.

With each payment claim the Consultant must submit a description of changes proposed to the Services Delivery Plan, including an updated activities list showing any changes in the Services breakdown structure, the program, personnel and progress of the carrying out of the Services.

15 Occupational Health and Safety

Occupational Health and Safety management

The Consultant, the Services, and all related OHS management must address the requirement for:

- .1 safety with the management, maintenance, use and operation of the completed assets designed to be considered and addressed in their design; and
- .2 all design to minimise the risk to the health and welfare of construction, operation, maintenance and service workers, and all other users of the assets designed.

Periodically review and revise designs prepared to ensure that all reasonably foreseeable hazards and risks to health and safety, both in the execution of the design, and in the use, maintenance, repair, operation and demolition of the design product are identified, assessed and, where practicable, eliminated. Where it is not practicable to eliminate risks, to the extent practicable, effectively control the risks by design or, where this is not practicable, by operational requirements. Document and report on, as part of regular design reports, the review and the identification of hazards and controls, including any operational requirements.

Work site OHS

If the Consultant is required to visit, work, or control work on a work site, including a site controlled by others, the Consultant must:

- .1 make its own inspections of the site and identification of hazards arising from the work site;
- .2 assess the risk of harm to the health or safety of any person from any hazard identified under its control;

- .3 in assessing risks and hazards, take into account its own inspections and any hazard identification or risk assessment, elimination or control information provided to the Consultant;
- .4 review and comply with any risk assessment and any measures adopted to control risk advised to the Consultant by the Principal or others;
- .5 eliminate or control risks under its control to the health or safety of any person;
- .6 in any review, assessment and control of risks that it is required to make, take into account but not rely alone on any hazard identification or risk assessment, elimination or control information provided to the Consultant by the Principal or others;
- .7 not rely on the omission of any mention or detail of any hazard in the information provided by the Principal as evidence of the absence or limitation of any hazard;
- .8 comply with all authorised directions, procedures and policies pertaining to visiting, working or controlling work on the work site; and
- .9 document and implement a Safe Work Method Statement for the services in accordance with the “NSW Government OHS Management Systems Guidelines”.

If the Consultant and/or sub-Consultants carry out work on a work site the Consultant and sub-Consultants must document and implement Safe Work Method Statements in accordance with the NSW Government “OHS Management Systems: Guidelines”, except when the risks associated with the work are shown to the Principal to be low and covered by a Consultant Safe Work Method Statement, the sub-Consultants may implement the relative parts of that Statement.

The Consultant must submit the Consultant’s Safe Work Method Statements and any sub Consultant Safe Work Method Statements to the Principal before one week prior to the relevant work being carried out on the work site. Submit revisions to the Safe Work Method Statements to the Principal.

Designed Product OHS requirements

If the Services include design, the Consultant must ensure that all reasonably foreseeable hazards and risks to health and safety, both in the execution of the design, and in the subsequent use, maintenance, repair and demolition of the asset designed are identified, assessed, and where practicable, eliminated. Where it is not practicable to eliminate risks, the Consultant must, to the degree practicable, effectively control the risks by design or by identifying operational requirements.

In any review or assessment of risks that it is required to make, the Consultant must take into account, but not rely alone on, any hazard identification or risk assessment, elimination or control information provided to the Consultant by the Principal. The Consultant must not rely on the omission of any mention or detail of any hazard in the information provided by the Principal as evidence of the absence or limitation of any hazard.

The Consultant must include in the documentation all available information that is necessary to enable controllers of the designed product premises or employers using the designed product premises as a place of work, including, but not limited to contractors executing or constructing the designed product, to fulfil their responsibilities with respect to identifying hazards, assessing risks arising from those hazards, eliminating or controlling those risks, and providing information.