FEASIBILITY OF INTERSTATE TRANSFER OF WATER

CONSULTANT BRIEF AND CALL FOR TENDERS

1. INTRODUCTION

This project brief sets out the requirements for a desk top consulting assignment aimed at identifying and defining issues associated with sourcing water from the Northern Rivers region of NSW and transferring the water to urban areas of South East Queensland. The project will contribute information and ideas to address the water shortage problems facing south east Queensland.

With a focus on the Tweed, Brunswick, Clarence, Richmond and Wilson River catchments, the project purpose is to identify options for sourcing and storing water in these catchments for transfer to Queensland in sufficient quantity to meet its needs within the sustainable yield of these rivers and without detrimentally affecting the supply and quality of water to current and future recipients in NSW. The study is to consider the economic viability of any proposed options. It is expected that the study described in this Consultant Brief will provide information to the Australian Government, the Queensland Government and the NSW Government as solutions to water shortages are developed.

The project will be coordinated by the Australian Government through the National Water Commission who will liaise closely with both the Queensland and NSW Governments. Information required to undertake this project that is currently held by the two State Governments will be made available to the consultant.

2. BACKGROUND AND CONTEXT

The South East Queensland (SEQ) region is experiencing the compound effects of drought and a booming population together with the prospect of continuing irregular rainfall. Annual population increase in SEQ is between 50,000 and 60,000.

The drought has strained current water supplies. Some dam levels are currently or recently have been at record low levels with inflows to the Wivenhoe, Somerset and North Pine Dam system in recent years being less than the average annual supply from those dams.

The five largest sources of urban water supply in SEQ are the:

- Wivenhoe, Somerset, North Pine dams;
- Hinze, Little Nerang dams;
- Baroon Pocket Dam;
- Cressbrook, Perseverance, Cooby dams; and
- North Stradbroke Island groundwater bore system.

The five systems represent about 95% of total available urban water supply in SEQ.

As part of a long term strategy for water supply for SEQ, the Queensland Government has initiated a range of solutions. These include the building of a water grid, construction of a

desalination plant, developing concepts to construct new dams, designing a water recycling project for industrial users and reducing demand by imposing water use restrictions.

It is anticipated that an additional 300,000 megalitres per annum will be required by 2050 to meet the water needs of SEQ.

In contrast in North Eastern NSW a number of high volume rivers flow eastward into the Pacific Ocean. The Clarence River discharges over 5 million megalitres of water each year. Flood events are relatively frequent and often severe, especially in and around Lismore.

2.1 WATER MANAGEMENT

Water storages in the Tweed, Richmond and Wilson Rivers are relatively small. On the Tweed, Clarrie Hall Dam has a capacity of 16,000 Ml, on the Wilson, Rocky Creek Dam has a capacity of 14,000 Ml and on the Richmond, Toonumbar Dam has a capacity of 11,000 Ml.

Water is supplied from these storages to feed town water supply systems, irrigated agriculture, and stock and domestic users. Water is also released for environmental flow purposes.

A major study of the Clarence River was undertaken for the NSW Government by the Healthy Rivers Commission.

2.2 ASSOCIATED PROJECTS

Queensland

Desalination Plant

The Queensland Government and the Gold Coast City Council are developing a 125 megalitre per day desalination plant at Tugan on the Gold Coast. The plant is expected to be operational by the end of 2008.

New Dams

The Queensland Government has announced that it will build the Traveston Crossing Dam in the Mary River. This new dam is expected to be completed by the end of 2011 and have a storage capacity of 180,000 megalitres and provide a yield of 70,000 megalitres per year.

The Queensland Government has also announced that it will construct a new dam at Wyaralong on the Teviot Brook. This dam will be completed by 2011 and will provide 21,000 megalitres per year.

These yields are less than the historical no failure yield an provide an allowance for climate variability.

SEQ Water Grid

The water grid will provide a network of two-way pipelines to connect all water storages in the region. The grid will be able to move water from dams that are full and transport it to areas that are much drier. The grid will connect to the new desalination plant.

Recycled water to Industry

The proposed Western Corridor Recycled Water Scheme will provide recycled water to Tarong and Swanbank power stations. It can potentially substitute up to 230 megalitres a day of existing potable supplies, which could then be used for residential and business needs.

New South Wales

Clarence River.

For many years there have been calls to redirect water from the Clarence River to the Murray Darling system. In 1999, the Healthy Rivers Commission of NSW released their *"Independent Inquiry into the Clarence River System"* report that did not make specific recommendations regarding inland diversions. The NSW Government had earlier announced that it would not approve such a project for environmental reasons and because any available supplies would be needed locally.

Water Management Planning

Macro water sharing plans that provide details of water flows, classifications and daily access rules have been developed for rivers throughout the region.

3. STUDY PURPOSE AND OBJECTIVES

The Australian Government wishes to ensure that all efficient and cost effective water supply options are considered for Australia's major urban areas, regardless of state boundaries.

The purpose and fundamental objective of this desk top study is to determine if there is underutilised water resources in north eastern NSW, and the feasibility of its transfer to south east Queensland, and if so the relative costs and benefits of such a scheme.

Within this overall purpose, the following sub-objectives are important:

- To supply a large quantity of water (at least 50,000 Ml);
- To protect the environment and riverine ecology; and
- To protect water quality and water security for existing water users.

The Consultant will be required to undertake a feasibility analysis in order to determine the quantity of water available to be sustainably extracted and the best transport option to South

East Queensland. The program of interventions must be capable of implementation within five years of approval, and without compromising accepted principles for sustainable water resource management, water allocation, and protection of riverine ecology.

4. PROJECT BRIEF

The main tasks to be undertaken in relation to the broad levels of analysis described above are:

Stage 1. Determine the future water needs of South East Queensland

The Queensland Government has released a range of documentation about water demand and water supply options for SEQ. The consultant would be required to analyse these documents to determine the volume of water that is required over and above existing sources for SEQ.

Stage 2. Determine the volume of water that could be extracted in North Eastern NSW that could be supplied to South East Queensland.

The consultant would be required to determine the volume of water that is available in NE NSW that is not likely to be required for demand in the NE NSW region, and how that water could be captured and stored. This assessment shall incorporate the "levels of service" and risk based assessment methodology advocated by the Water Services Association. This is in recognition that traditional approaches to assess yields are not appropriate for large urbanised centres. The consultant shall consult the Queensland Government on its intended application of this methodology.

If new storages would be required the consultant is required to identify potential sites, issues that may affect development of the storages, the likely cost of building storages and the annual volume of water that could be supplied each year.

Stage 3. Determine the Transport Options

Should the consultant identify available water in NE NSW, the consultant will also be required to identify cost effective options for delivering that water to SE Queensland. The consultant would be required to identify pipelines required and all costs associated with transporting the water to join into the SE Queensland water grid. These costings are to include capital and construction costs, pumping costs and energy costs. The consultant shall comment on the efficacy and cost implications of delivering the supplies to population centres as compared to options.

Stage 4 Estimate of the costs required for the capture, storage and transport of water from North Eastern NSW to South East Queensland

This stage requires completion of an analysis of a proposed scheme. The analysis will cover, as a minimum:

- A detailed financial analysis of:
    - Capital expenditure, including any compensation payments; and.
    - Recurrent and operating costs.

- A detailed discussion of:
    - The implications for the supply infrastructure program proposed by the Queensland Government taking into account prospective project timelines and projects that are necessary to ensure supplies through the current drought.
    - Security and reliability of supply.
    - Water quality impacts, including downstream salinity and potable supply.
- Identification of:
    - Cultural heritage impacts;
    - Impacts on NE NSW users;
    - Environment and riverine ecology impacts.
- Other relevant costs and benefits.

The outcome of this work will be a detailed analysis of the full costs and benefits of a proposed scheme. First round impacts from the proposal should be considered. Non-market costs and benefits should be identified where possible.

Stage 5 Comparison with other water supply options for South East Queensland

Compare the benefits/cost analysis to other water supply options that have been identified for South East Queensland. This comparison should include capital and operating expenses.

5. PROJECT STRUCTURE AND DELIVERABLES

The study will be directed by a Steering Committee that includes representatives of the Australian Government, the NSW Government and the Queensland Government, with day to day management by a Client Project Manager assigned from the National Water Commission. The Steering Committee will agree to any final report prior to publication or public release.

The Consultant undertaking the study must provide the following outcomes:

- A detailed Project Plan for completing the study;
- Monthly written progress reports and verbal presentations to the Steering Committee.
- Formal reports to appropriately complete the work involved in Stages 1, 2, 3, 4, and 5 of the study.
- An overall study of the feasibility of capturing, storing and transporting water from North Eastern NSW to South East Queensland compared with other water supply options for South East Queensland.

The work shall be completed in two phases. The first shall be completed at a level of detail to identify whether the study is worth completing. The next phase is to proceed only if the initial findings indicate that the work should proceed further. The Consultant shall indicate in the proposed Project Plan how this is to be achieved.

6. TIMEFRAME

The Contract is to be let by December 2006 and completed by Monday 29 January 2007.

7. PROPOSAL REQUIREMENTS

7.1 Details of Consultant/s

The proposal should provide details of the consultant organisation/s, including name, legal status, capacity, scope of activities, operating locations, and principals.

7.2 Relevant Experience

The proposal must establish the tenderer's specific experience in major rural water management planning and, in particular, in projects in which storage and transfer of water is a central objective. It is important to demonstrate the capacity:

- to both determine and evaluate water storage and transfer options; and
- to undertake strategic assessments involving economic, environmental and social factors.

The proposal should list relevant clients and provide names and telephone numbers of executive level people in client firms who can be contacted for reference checks.

7.3 Study Methodology

The proposal must include a comprehensive statement of the methodology proposed to undertake the assignment. The NSW and Queensland Government's will make available to interested consultants relevant reports to assist in preparing Tenders.

7.4 Key Personnel

The proposal must nominate key personnel who will be engaged in the study and should provide a commitment to maintaining continuing availability of key personnel throughout the project.

7.5 Project Management

The proposal must describe how the Consultant proposes to organise, undertake and complete the study. The scheme proposed in the tender must be suitable to be carried through to the start-up Project Plan once the contact is awarded. The proposal should include an estimate of hours planned for each level of personnel involved for each stage and a statement of total hours proposed.

7.6 Fees

This is to be a fixed fee project broken up in two phases recognising that the second may not proceed. The proposal should include total lump sum fee and details of all consultancy fees, taxes, admin expenses, out of pocket expenses, travel expenses, and any other relevant fees.

Charge out rates and estimated hours should also be provided for each consultant to be assigned to the study.

No additional fees or expenses will be payable other than set out in the proposal unless specifically agreed in writing before any expenditure is committed.

7.7 Payment Terms

Payment of fees against approved invoices will be made on the following terms:

a. Completion of a satisfactory report and review at the end of Phase 1.

b. No more than two further progress payments will be made, at appropriate points during Phase 2 on the basis of satisfactory completion of the assignment to key trigger points.

c. A final payment will be made on full completion of the project.

7.8 Conditions of Engagement

The project's performance will be governed by the Commission's conditions of engagement set out in the attached Consultancy Agreement. Tenderers should indicate their willingness to accept and execute the Agreement.

7.9 Insurance

The amount cover in respect to each and every occurrence referred to in clause 15 of the Consultancy Agreement shall be as follows:

a)	Professional Indemnity	-	$ 5,000,000
b)	Public Liability	-	$20,000,000

7.10 Declaration of Interests

A statement is to be included in the proposal outlining any current or potential conflict of interest in undertaking this project.

8. AGENCY ASSISTANCE

Documents that can be referred to include:

Queensland Government water initiatives, August 2006 (www.nrm.qld.gov.au/water), and

Water for South East Queensland - A long-term solution, August 2006

9. CONSULTANT SELECTION PROCESS

A formal selection process will be followed, in which all proposals will be considered by the Steering Committee and short-listed candidates will be given the opportunity to make a brief presentation to the Steering Committee in support of their submission (if needed).

The following Selection Criteria will be used in assessing proposals. Note that precedence does not indicate weighting.

a. Quality and relevance of experience in water management planning, project innovation, and complex assessment of competing options.

b. The methodology proposed to undertake the assignment and conformance with the requirements of the consultant brief.

c. Record of performance as assessed by reference checks.

d. The depth and balance of skills of the proposed consulting team.

e. Proposed overall fixed fees and charge-out rates.

The National Water Commission reserves the right to decline all tenders in the event that no satisfactory proposal is submitted.

The Commission also reserves the right to approve the inclusion in the Consultant Team of any subcontractors the lead consultant may propose to engage.

10. COPYRIGHT

The property and copyright in all study materials developed for or included in the reports produced for this study shall vest in the Australian Government. In this contract the term *study materials* refers to all reports, technical information, plans and any computer models developed for the project.

11. LODGEMENT OF PROPOSALS

Proposals must be lodged by 2:00pm on Wednesday 15 November 2006, at the National Water Commission Tender Box located on 3rd Floor
95 Northbourne Avenue, CANBERRA ACT 2601.

Each submission should include five (5) copies of the proposal and any supporting material.

Proposals should be addressed as follows:

TENDER FOR NSW/QLD WATER TRANSFER PROJECT
Attention: Murray Radcliffe
National Water Commission
C/- Tender Box
95 Northbourne Avenue,
Canberra ACT 2601

11.1 Further Technical Information

During the tender period it is acceptable for interested Consultants to contact the National Water Commission in order to discuss the proposal requirements set out at Section 7 above, or the level of agency assistance available. Proponents should contact Murray Radcliffe at Telephone (02) 6102 6067.