

Water Source Operations and Management (WSOM)

Consulting Spend Context

The resourcing strategy for WSOM is to have resources operating regionally to deliver operational requirements, coupled with components of regulatory and functional requirements being managed across the whole organisation to optimise efficient operation and sharing of resources. Being a highly specialised field, resources are limited to some extent by availability of trained persons in hydrology, dam operations and dam safety. Although most operational activities are carried out in-house, consultants are utilised for most major studies and investigations, and also where expertise or resources are not available in-house.

The table below outlines the breakdown of consultancy expenditure for FY14A and budget for FY15 Q1, itemised to natural account level:

| OPS Catch - WSOM | FY14A | FY15 Q1 | Change |
|---|----------------|------------------|----------------|
| 522206 - Consultancy - Dam Safety Moni | 86,036 | 790,000 | 703,964 |
| 522207 - Consultancy - Others | 1,625 | - | (1,625) |
| 522209 - Consultancy - Information Tech | - | 75,000 | 75,000 |
| 522211 - Consultancy - Safety | - | 1,000 | 1,000 |
| 522213 - Consultancy - Engineering | 501,560 | 550,000 | 48,440 |
| 522220 - Consultancy - Project Management | 20,123 | 115,000 | 94,877 |
| 522255 - Consult-Env - Modelling and optimisation | - | 100,000 | 100,000 |
| 522256 - Consult-Env - Hazard Id. & risk assessment | 133,671 | - | (133,671) |
| Total | 743,015 | 1,631,000 | 887,985 |

Given the nature of the work, a zero base is typically used to develop the WSOM consultancy budget and the budget will differ from year to year. The budget is not based on historical actual expenditure, hence it is not appropriate to merely explain the change in quantum of consultancy spend. A breakdown of the projects in FY14 and FY15 is detailed below.

Consultancy engagements for WSOM, are planned pieces of work, on a year to year basis to deliver on requirements under dam safety and flood management legislation. General requirements and responsibilities are set out in the dam safety licence conditions and dam safety management guidelines.

Seqwater procurement processes are followed for the engagement of any consultants, and the majority of engagements are specialised consultancies primarily undertaking work across the areas of geology, civil engineering, structural engineering, hydrology and hydraulics.

The WSOM budget, is also required to remain flexible to accommodate changes in priorities. Seqwater is required from time to time to undertake additional work to assist and advise Government, implement Government directives and manage emergent events. In these circumstances the work program for WSOM is reviewed and reprioritised throughout the year, in order to deliver on the required outcomes.

For example, the FY15 budget includes an allowance for the Wivenhoe Somerset Dam Optimisation Study (WSDOS). This work emanated from Commission of Inquiry (Col- 2011 Flood) findings and Government directives. The scope of works for these studies is directly dependant on directions from Government that follow extensive public consultation that form components of the studies. Complementary work impacting on Seqwater's work scope is also being undertaken by other government agencies and stakeholders and as such accurately estimating budgetary requirements in advance is difficult. However Seqwater's extensive experience in these types of projects has enabled a reasonable upper bound estimate constrained by existing forecasts to be made. Seqwater is seeking to deliver to Government within existing forecasts by reprioritising expenditure.

FY14 actual and FY15 forecast WSOM consulting spends are outlined below to contextualise spend and justify the budget increase for FY15.

FY14 Consultancy Costs

Actual FY14 WSOM consulting spend is summarised below:

| Summary of FY14 Consultancies | FY14A |
|---|----------------|
| <i>Dam Safety Monitoring and Flood Management services</i> <ul style="list-style-type: none">• Consultancies associated with land surveys, deformation survey and model reviews.• Software on-going service, maintenance and improvements.• Works associated with Emergency Action Plans | 107,784 |
| <i>Failure Impact Assessments</i> Cooloolabin, Wappa and Enoggera Dams | 133,671 |
| <i>Consultancy Engineering services</i> <ul style="list-style-type: none">• Engagement of Flood Operations Engineers• Brisbane River Dam Hydrology & Operations Alternatives Study & Expert Panel• Dam Optimisation Study | 501,560 |
| | 743,015 |

Core (on-going) activities (major spend items or critical risks) are discussed below.

Dam Safety Monitoring

A number of regular activities are required under Dam Safety Monitoring including, deformation surveys and land surveys which are required for compliance with dam safety conditions. Currently Seqwater does not have in-house capability to undertake deformation surveys and the service is provided through the engagement of external surveyors. It is essential to monitor dams to confirm their structural stability.

Flood Management Services

Requirement for ongoing software services, maintenance and improvements is also an ongoing budget requirement. The FEWS platform is the basis of all our flood data collection and modelling systems used during flood events. This system will require upgrading and improvement as part of the continual improvement of flood operations to meet standards and expectations.

Emergency Action Planning

FY14 also required the production of Dam failure Impact Assessments and Dam Break Studies as part of the Emergency Action Plan (EAP) process associated with new state legislation. This will be an ongoing requirement for Seqwater Dams as standards improve for emergency action planning for flood events and dam safety.

Flood Operations Engineers

The feasibility of having appropriately skilled internal resources available to meet the staffing requirements of the Flood Operations Centre has been assessed as being economically unviable in the short term, and as such the role of the Senior Flood Operations Engineer is supplemented by external resources, with the view in the longer term to reduce the reliance on external resources through upskilling internal resources and succession planning. Given the specialised nature of the roles it is anticipated that there will be a requirement to retain these specialist external resources into the future.

In recent times there has also been a need for an expert independent review of much of Seqwater's work, and an Expert Panel is engaged from time to time to review the technical work undertaken by Seqwater. It is anticipated that this need will continue into the future.

FY15 Consultancy Costs

Forecast FY15 Q1 WSOM consulting spend comprises the following allocation:

| Outline of FY15 Consultancies | FY15 budget |
|--|--------------------|
| <i>Consultancy Engineering services</i> | 300,000 |
| <ul style="list-style-type: none"> • Engagement of Flood Operations Engineers | |
| <i>Dam Safety Monitoring and Flood Management services</i> | 145,000 |
| <ul style="list-style-type: none"> • Consultancies associated with deformation surveys • Software on-going service, maintenance and improvements | |
| Wivenhoe Dam and Somerset Dam – Flood Upgrade Operations Feasibility Study | 675,000 |
| Somerset Dam Geology Study | 80,000 |
| Flood Storage Infrastructure Study (FSIS) (Proposed reallocation of funds to accommodate – refer below) | 431,000 |
| Total | 1,631,000 |

Core activities (major spend items or critical risks) are discussed below.

As explained above the following consultancy requirements are ongoing and required to meet the legislative and regulatory requirements associated with operating 26 large, high and extreme hazard dams, providing flood mitigation services to Ipswich and Brisbane, and undertaking planning for major flood emergencies including potential dam failures:

- Dam Safety Monitoring.
- Flood Management Services.
- Emergency Action Planning.
- Flood operations Engineers.

The following consultancy requirements are not ongoing and are associated with a specific Government initiative to improve flood mitigation in Brisbane and Ipswich. This initiative has arisen from the Wivenhoe and Somerset Dams Optimisation Study which was generated from the 2011 Flood Commission of Inquiry.

Wivenhoe Dam and Somerset Dam – Flood Upgrade Operations Feasibility Study (Project scope attached)

To date, contracts have been awarded totalling \$797k, with scope amendments resulting in a reduction of costs to \$675k for the initial pieces of work. This work was mandated by Government as a requirement as part of Seqwater's contribution to the implementation of the Col recommendations.

Somerset Dam Geology Study (Project scope attached)

This study will develop a geotechnical model of the foundations and environs for Somerset Dam. This work is a priority and has to be completed immediately as part of the Flood Storage Infrastructure Study (FSIS) (see below).

The remaining FY15 consultancy budget (\$431k) was programmed to deliver on the outcomes of the Portfolio Risk Assessment (Dams PRA), Optimisation Studies and dam safety regulations and licences, and modelling and analysis associated with the current Class Action. These funds have been redirected to fund the FSIS.

The total cost for the FY15 and FY16 FSIS work could be well in excess of \$1M. A Cabinet submission will be prepared by DEWS and Seqwater to recover Seqwater and DEWS expenditures on these activities; however the outcome is as yet unknown. Given the timelines for the delivery of these studies, it is necessary that work commences immediately, hence the reprioritisation of planned projects.

Flood Storage Infrastructure Study (FSIS)

The Government has directed that Seqwater has responsibility for carrying out certain parts of the delivery of the FSIS. At this stage, it is proposed that Seqwater will lead the work required on the raising of Wivenhoe Dam and the Investigation into a new dam at Linville.

A project plan is currently being developed by DEWS and Seqwater, and Seqwater has sought a formal letter from Government outlining this advice and required timelines (expected around February 2015). The initial study work has to be completed and delivered to Cabinet by December 2015 with most of the work being delivered by October 2015.

Initial work expected includes:

- Extending the study on Wivenhoe – Flood Upgrade Options Feasibility Study.
- Initiate environmental/social scanning
- Scope and initiate geotechnical investigations into the new proposed Linville Dam site.

Long-Term Forecast (post FY15)

Given the Flood Storage Infrastructure Study will cross into FY16 Seqwater forecasts similar levels of WSOM Team consulting expenditure for FY15 and FY16 will be required however thereafter this should reduce (in real terms) to FY14 levels to deliver on normal compliance and management requirements.

Additionally, the potential requirement for Seqwater to accept additional responsibilities in the form of communications associated with the Emergency Action Plans (EAP's), and the changes in communication protocols for ungated dams has not been quantified and has also not been included in future operating cost forecasts at this stage.