



CHAPTER 16

DELIVERY MODEL ANALYSIS

Nullinga Dam and Other Options Preliminary Business Case



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16 DELIVERY MODEL ANALYSIS

CHAPTER SUMMARY AND CONCLUSIONS

- Delivery model analysis was only undertaken on Option 4: Nullinga Dam for agricultural use, as Option 2: Improve MDWSS rules and operation is proposed to be carried out by government and SunWater as a reform process, and Option 3: Modernise MDWSS and convert losses is proposed to be carried out by SunWater internally as a number of smaller projects.
- Potentially disaggregating Option 4 into smaller packages was determined not to be a significant consideration for a project of this size at the PBC stage.
- Value for Money objectives were weighted as 55 per cent for quality and 45 per cent for cost.
- The delivery model assessment concluded that the Early Contractor Involvement (ECI) delivery model provided the highest contribution (84.5) to the evaluation criteria closely followed by Design and Construct (81).
- The qualitative Value for Money assessment identified that there is no commercially viable non-traditional (PPP) delivery model for Option 4 given that design, operation and potentially also maintenance of a new dam is likely to be delivered by SunWater.
- Market Sounding identified that industry participants would be interested in Option 4 and would be open to participating in an Early Contractor Involvement process.
- Market Sounding indicated that a single package Design and Construct model was preferred and a PPP delivery model was not suitable for Option 4.
- After considering the outcomes of the preliminary delivery model assessment and market sounding, key stakeholders and advisors formed the view that the preferred model from Option 4 was Design and Construct or Early Contractor Involvement (or potentially Early Tenderer Involvement [ETI]).

16.1 Purpose

The purpose of this chapter is to conduct a preliminary assessment on a range of delivery models, identify a preferred traditional delivery model and then compare it to non-traditional delivery models to understand how the State can achieve the most value for money (VfM), through cost and quality of outcomes, while meeting the identified need.

This chapter primarily concentrates on Option 4: Nullinga Dam for agricultural use, as Option 2: Improve MDWSS rules and operation is proposed to be carried out by government and SunWater as a reform process, and Option 3: Modernise MDWSS and convert losses is proposed to be carried out by SunWater internally as a number of smaller projects.

16.2 Delivery Model Categories

Traditional and non-traditional delivery models have different forms, advantages/disadvantages, risk profiles and implementation considerations for the State.

16.2.1 Traditional Delivery Models

Under all traditional delivery models, funding is provided by the public sector, demand risk is retained by the public sector and the asset is transferred to the State at the end of the construction period. A key



differentiator between traditional delivery models is the allocation of risk at key stages in the project lifecycle. There are a range of models available, each of which present opportunities and risks to the State.

16.2.2 Public Private Partnership (PPP) Delivery Model

The National PPP Guidelines require PPPs to be considered as a delivery option where the capital value of a project exceeds \$50 million.

A PPP is typically a long-term service contract between the public and private sectors where the State pays the private sector (typically a consortium) a service fee to deliver infrastructure and related services over an agreed project term. The private sector consortium typically designs, builds and finances the facility, and maintains and/or operates it to specified standards. PPPs typically make the private sector parties who build public infrastructure financially responsible for its condition and performance throughout the asset’s lifetime.

PPPs can deliver VfM when there is good opportunity for risk transfer, opportunities for whole of life costing and innovation, potentially higher asset utilisation and good opportunity for integration of design, construction and operations.

PPPs also have the potential to provide a greater degree of time/whole of asset cost certainty than ‘traditional’ delivery approaches.

16.3 Assessment Process

The evaluation of traditional and non-traditional delivery models focussed on their ability to achieve the two key VfM determinants being cost and quality (of outcomes). The evaluation was conducted using the following process:

- Delivery Model Workshop to establish assessment criteria, consider packaging opportunities and assess a range of traditional and non-traditional delivery models against the criteria
- Market Sounding with appropriate industry participants to seek market feedback on packaging, preferred delivery model and market appetite
- Refinement of the delivery model strategy taking into account market feedback.

16.4 Delivery Model Assessment

Key stakeholders and advisors attended a Delivery Model Workshop to conduct the preliminary assessment of both traditional and non-traditional delivery models. The sections below record the outcomes of that process.

16.4.1 Project Characteristics, Objectives, Constraints and Risks

Workshop participants reviewed the background to the PBC, the PBC objectives, the shortlisted options and the risk register. This identified a number of constraints and opportunities as outlined in the table below.

Table 1 Constraints and Opportunities

| CONSTRAINTS | OPPORTUNITIES |
|--|--|
| SunWater’s strong preference is to be the operator of any new dam | Market for civil works is highly competitive |
| Need to adhere to Australian National Committee on Large Dams (ANCOLD) standards | Strong SunWater dam design engineering team |



| CONSTRAINTS | OPPORTUNITIES |
|---|--|
| There is no precedent bulk water PPP asset | Innovative design and savings in construction costs through early contractor involvement |
| The solution must interface with the Mareeba-Dimbulah Water Supply Scheme (MDWSS) | Transfer of some or all subsurface and weather risks to the contractor |
| Multiple contracting parties in dam projects increases complexity and can potentially ‘blur’ allocation of responsibilities | |

Workshop participants also identified that a preliminary delivery model assessment was not required for options 2 and 3 for the following reasons:

- Option 2: Improve MDWSS rules and operation – It was proposed that this option would be carried out by government (DEWS) and SunWater where appropriate.
- Option 3: Modernise MDWSS and convert losses – SunWater have indicated that the activities proposed in Option 3 would be carried out internally by SunWater as a number of smaller projects.

The following analysis therefore focusses on assessment of potential delivery models for Option 4.

16.4.2 Precedent Delivery Models

Dam construction in Australia was at its peak from the 1960s to the 1980s and slowed significantly in the 1990s. The delivery model analysis has considered recent dam projects in Queensland (due to the planned location of the Nullinga Dam) and Tasmania (due to the high number of recent dam projects there relative to the remainder of Australia).

16.4.2.1 Queensland

The most recent dam project actively considered in Queensland was the Connors River Dam project. Although the project did not proceed, the project’s proponent (SunWater) did complete the procurement of contractors.

Connors River Dam was to be a 373,662 ML dam which transported water via a 133 kilometre pipeline to Moranbah primarily servicing coal mines (and associated communities) in Central Queensland's coal basins. It was designed to be a roller-compacted concrete dam, including a central spillway and aquatic fauna transfer device. It also involved a pipeline, associated infrastructure, upgrade of access roads and the commissioning of temporary resource extraction areas.

SunWater chose to use a competitive Early Tenderer Involvement (ETI) process to select the preferred tenderers to work with SunWater to finalise design, approvals and property requirements for the projects. Private sector contractors were required for both the dam and pipeline construction.

SunWater have indicated that the ETI model allowed contractors to build efficiency and innovation into the final design. The ETI model is similar to the ECI model, save that the project owner (i.e. SunWater) retains the Designer and the Tenderers have no design responsibility. The project owner’s design is at a much more mature stage and does not require the same degree of design development as is the case when an ECI model is used. Tenderers participate in value engineering and refinement of the project owner’s design and often appoint their own sub-design consultants to provide assurance or alternatives.



16.4.2.2 Tasmania

Six dam projects have been successfully delivered in Tasmania since 2006 with another three projects in construction. The table below provides an overview of the largest of those dams and the delivery model used.

Table 2 Overview of Large Dams and Delivery Models in Tasmania

| DAM NAME | LOCATION | EMBANKMENT VOLUME (M3) | BUILT | DELIVERY MODEL | TYPE | BUILT TO BUDGET |
|-------------|------------------|------------------------|-------|----------------|-------------|-----------------|
| Meander Dam | Meander | 86,000 | 2006 | D&C lump sum | RCC | ✓ |
| Milford | Conara South Esk | 330,000 | 2012 | D&C lump sum | Zoned Earth | ✓ |
| Dunns Creek | Upper Ringarooma | 700,000 | 2014 | D&C lump sum | Zoned Earth | ✓ |
| Carpenters | South Riana | 160,000 | 2015 | D&C lump sum | Zoned Earth | ✓ |

16.4.3 Cost and Quality Criteria

Workshop participants were asked to consider what aspects of Option 4 were most important in the achievement of project objectives. Responses are summarised below:

- Interface—the quality of the interface with SunWater and the existing scheme is seen as very important
- Transfer of risk—ability to transfer key construction and maintenance risks
- Time to deliver—the time taken to deliver an operational asset is important to address market expectations
- Cost—minimising the cost to government (capex and lifecycle) is also very important
- Contractor capability—the project requires contractors who have a history of successful delivery and an adequate level of technical experience which will result in a dam that can operate in a safe but reliable manner
- Costs of the transaction—costs associated with developing and completing the transaction were seen as potentially prohibitive
- Innovation, flexibility and policy alignment were discussed but not considered significant issues for this project in comparison to the matters listed above.

The workshop then prioritised the list above, categorised them against the two value for money objectives, being (1) cost and (2) quality of outcomes, and applied weightings for all criteria as follows:

Table 3 Cost and Quality Criteria—Weightings

| COST (45%) | QUALITY (55%) |
|---------------------------|------------------------------|
| Whole of Asset Cost (30%) | SunWater Interface (30%) |
| Risk Transfer (10%) | Market Expertise (15%) |
| Transaction Costs (5%) | Timeliness of delivery (10%) |



Value for money objectives relating to quality were considered to be of higher importance than cost due to the importance of the interface with the existing scheme and the need to have a safe dam.

16.4.4 Packaging

Packaging involves the disaggregation of project components into distinct contracting or works packages. This can provide a range of opportunities and challenges for the procuring entity. The approach taken (consolidated project or disaggregated packages) can impact upon decisions made by both public and private sector entities during business case, procurement, construction and operational phases.

Participants formed the view that while it was possible to anticipate likely packages for Option 4 e.g. dam design, hydrology, road diversions and construction, it would be prudent to assume that only two packages (completion of the dam design and the construction of the dam) were relevant at the PBC stage. It was assumed that operation of the completed dam will be the responsibility of SunWater.

16.5 Assessment of Traditional Delivery Models

Workshop participants considered a range of traditional delivery models which included:

- Competitive Alliance (CA)
- Early Contractor Involvement (ECI)
- Managing Contractor (MC)
- Construction Only (CO)
- Design and Construct (D&C)
- Design, Construct and Maintain (DCM), and
- Design, Construct, Maintain and Operate (DCMO)
- Design, Construct , Finance, Maintain and Operate (DCFMO).

This long list was filtered into a short list by eliminating delivery models that didn't allow SunWater to operate the completed asset (so DCMO and DCFMO were not given any further detailed consideration).

The following table summarises the assumed allocation of responsibilities for various project functions to government or the private sector under each of the shortlisted options.

Table 4 Summary of Allocation of Responsibilities to Government and the Private Sector

| FUNCTION | CA | ECI | MC | CO | D&C | DCM |
|------------------|------------|------------|------------|------|------|------|
| Ownership | Gov | Gov | Gov | Gov | Gov | Gov |
| Design | Priv | Priv & Gov | Priv | Gov | Priv | Priv |
| Funding | Gov | Gov | Gov | Gov | Gov | Gov |
| Supply & Install | Priv | Priv | Priv | Priv | Priv | Priv |
| Interface Mgmt | Gov & Priv | Gov | Gov & Priv | Gov | Gov | Gov |
| Maintenance | Gov | Gov | Gov | Gov | Gov | Priv |
| Operations | Gov | Gov | Gov | Gov | Gov | Gov |



16.5.1 Competitive Alliance

The workshop assessed the Competitive Alliance delivery model against the value for money objectives. A summary of assessment outcomes is provided in Table 5.

Table 5 Competitive Alliance Delivery Model Assessment

| QUALITY (55%) | | | |
|---------------------------|--------|--------------------|---|
| CRITERION | SCORE | WEIGHTED SCORE (%) | COMMENT |
| SunWater Interface (30%) | 80/100 | 24 | Collaborative approach should allow detailed consideration of existing scheme interface requirements with all alliance members. |
| Market Expertise (15%) | 70/100 | 10.5 | Limited experience with successful dam alliances, but early access to market expertise in a collaborative environment would allow for innovation. |
| Timeliness (10%) | 70/100 | 7 | Performance based remuneration encourages behaviour which will help meet timelines. |
| COST (45%) | | | |
| CRITERION | SCORE | WEIGHTED SCORE (%) | COMMENT |
| Whole of Asset Cost (30%) | 20/100 | 6 | Opportunities to collaboratively explore options to reduce whole of life costs of the asset, but project owner bears risk of costs overruns in construction |
| Risk Transfer (10%) | 10/100 | 1 | Limited opportunity to transfer risks given that SunWater would be working collaboratively with the Contractor |
| Transaction Cost (5%) | 20/100 | 1 | Transaction costs generally higher for Alliancing (including requirements for ongoing administration of alliance structures) |

The total weighted score for Competitive Alliance was **49.5**.

16.5.2 Early Contractor Involvement (ECI)

The workshop assessed the ECI delivery model against the value for money objectives. A summary of assessment outcomes is provided in Table 6.

Table 6 Early Contractor Involvement Delivery Model Assessment

| QUALITY (55%) | | | |
|--------------------------|--------|--------------------|--|
| CRITERION | SCORE | WEIGHTED SCORE (%) | COMMENT |
| SunWater Interface (30%) | 80/100 | 24 | Early involvement would allow the contractor to understand the existing scheme and factor those considerations into the design and SunWater operating requirements |
| Market Expertise (15%) | 80/100 | 12 | Participants felt that the market was well developed when operating under this delivery model |
| Timeliness (10%) | 80/100 | 8 | Shorter tender period would enable an operational asset to be delivered more efficiently |



| COST (45%) | | | |
|---------------------------|---------|--------------------|---|
| CRITERION | SCORE | WEIGHTED SCORE (%) | COMMENT |
| Whole of Asset Cost (30%) | 90/100 | 27 | Better design and construction would lead to reduced whole of asset costs |
| Risk Transfer (10%) | 100/100 | 10 | Enables government to allocate an optimal level of risk before construction commences |
| Transaction Cost (5%) | 70/100 | 3.5 | It is in the best interests of both government and the contractor to reduce transaction costs |

The total weighted score for Early Contractor Involvement was **84.5**.

Stakeholder experience indicates that this delivery model could minimise the cost of design and construction in a market that has insufficient work but may increase costs in an active market. An ECI model is often recommended where the proponent does not have an in-house design engineering team with strong design capability.

It is considered that SunWater does possess a strong dams engineering design capability. If SunWater confirms that this is the case, and will have a developed design available prior to tender, the Design and Construct (or perhaps ETI) approach would be a preferable delivery model.

16.5.3 Managing Contractor (MC)

The workshop assessed the MC delivery model against the value for money objectives. A summary of assessment outcomes is provided in Table 7.

Table 7 Managing Contractor Delivery Model Assessment

| QUALITY (55%) | | | |
|--------------------------|--------|--------------------|---|
| CRITERION | SCORE | WEIGHTED SCORE (%) | COMMENT |
| SunWater Interface (30%) | 80/100 | 24 | Would allow SunWater to retain control over the initial design but early engagement of the Managing Contractor in developing the design allows constructability issues and whole of life considerations to be addressed early |
| Market Expertise (15%) | 40/100 | 6 | Limited precedents of this model being used in Queensland for water infrastructure |
| Timeliness (10%) | 70/100 | 7 | Allows early involvement of all project participants |



| COST (45%) | | | |
|---------------------------|---------|--------------------|--|
| CRITERION | SCORE | WEIGHTED SCORE (%) | COMMENT |
| Whole of Asset Cost (30%) | 60/100 | 18 | Whole of Asset Cost not the main focus within a MC model but can be kept to an acceptable level |
| Risk Transfer (10%) | 100/100 | 10 | The State would be able to transfer delivery risk (design & construction) onto the managing contractor |
| Transaction Cost (5%) | 20/100 | 1 | High upfront transaction costs for this model, which is not well understood by likely tenderers in the Queensland market |

The total weighted score for Managing Contractor was **66**.

16.5.4 Construction Only (CO)

The workshop assessed the CO delivery model against the value for money objectives. A summary of assessment outcomes is provided in Table 8.

Table 8 Construction Only Delivery Model Assessment

| QUALITY (55%) | | | |
|---------------------------|--------|--------------------|--|
| CRITERION | SCORE | WEIGHTED SCORE (%) | COMMENT |
| SunWater Interface (30%) | 90/100 | 27 | High design input from SunWater will assist interface challenges |
| Market Expertise (15%) | 90/100 | 13.5 | Very simple tender for the market to understand, competitive market exists |
| Timeliness (10%) | 60/100 | 6 | Longer lead times for procurement processes which increases overall time |
| COST (45%) | | | |
| CRITERION | SCORE | WEIGHTED SCORE (%) | COMMENT |
| Whole of Asset Cost (30%) | 60/100 | 18 | Early effort on design will assist in reducing whole of life costs but limited opportunity for Contractor to value add with costs efficiencies |
| Risk Transfer (10%) | 70/100 | 7 | State able to transfer some risks but would retain all design risk |
| Transaction Cost (5%) | 90/100 | 4.5 | Simple tender and transaction process reducing transaction costs |

The total weighted score for Construction Only was **76**.



Stakeholder experience indicates that the State will have to pay a premium to transfer (or retain the risk and allow variations) for any unexpected/unidentified geotechnical or foundation conditions (latent conditions) not fully described in the design documentation as well as the time and cost risks of any subsequent changes in design that are required to meet performance outcomes.

16.5.5 Design and Construct (D&C)

The workshop assessed the D&C delivery model against the value for money objectives. A summary of assessment outcomes is provided in Table 9.

Table 9 Design and Construct Delivery Model Assessment

| QUALITY (55%) | | | |
|---------------------------|---------|--------------------|---|
| CRITERION | SCORE | WEIGHTED SCORE (%) | COMMENT |
| SunWater Interface (30%) | 70/100 | 21 | State would carry the risk of poor interface planning/design |
| Market Expertise (15%) | 90/100 | 13.5 | Simple model that is well understood by the market |
| Timeliness (10%) | 80/100 | 8 | Time certainty is high due to performance warranties and guarantees |
| COST (45%) | | | |
| CRITERION | SCORE | WEIGHTED SCORE (%) | COMMENT |
| Whole of Asset Cost (30%) | 80/100 | 24 | State able to manage whole of asset costs but not always a focus for the D&C contractor |
| Risk Transfer (10%) | 100/100 | 10 | All design and construction risks included in a lump sum contract |
| Transaction Cost (5%) | 90/100 | 4.5 | Simple transaction that is well understood by the State and contractors |

The total weighted score for Design and Construct was **81**.

Stakeholder experience indicates that a D&C delivery model allows the State to have a well advanced preliminary design with performance specifications, but also allows the successful D&C contractor to innovate and prepare a detailed design that meets the performance specifications and allows the construction role to be profitable. The D&C delivery model would require SunWater to have a strong internal design engineering team.

Stakeholder experience indicates that even when the winning bid is above the project budget, the two parties can work towards achieving a bid price that would allow the project to proceed.

The D&C delivery model was preferred by some stakeholders involved in the delivery model workshop.

16.5.6 Design, Construct and Maintain (DCM)

The workshop assessed the DCM delivery model against the value for money objectives. A summary of assessment outcomes is provided in Table 10.



Table 10 Design, Construct Maintain Delivery Model Assessment

| QUALITY (55%) | | | |
|---------------------------|---------|--------------------|--|
| CRITERION | SCORE | WEIGHTED SCORE (%) | COMMENT |
| SunWater Interface (30%) | 50/100 | 15 | State would carry the risk of poor interface planning/design |
| Market Expertise (15%) | 30/100 | 4.5 | Packaging design, construct and maintenance may limit the pool of experienced contractors |
| Timeliness (10%) | 70/100 | 7 | The addition of maintenance into the transaction will require more complex documentation and interaction with bidders. This may increase the time period to commencement of an operational asset |
| COST (45%) | | | |
| CRITERION | SCORE | WEIGHTED SCORE (%) | COMMENT |
| Whole of Asset Cost (30%) | 65/100 | 19.5 | Contractor would maintain the asset. Low level of cost certainty for SunWater and might not be as efficient compared to SunWater maintaining the asset. |
| Risk Transfer (10%) | 100/100 | 10 | All design, construction and maintenance risks included in a lump sum contract |
| Transaction Cost (5%) | 40/100 | 2 | The addition of maintenance may increase transaction costs. |

The total weighted score for Design, Construct and Maintain was **58**.

16.5.7 PPP Delivery Model

PPPs typically make the private sector parties who build public infrastructure financially responsible for its condition and performance throughout the asset’s lifetime. PPPs are often used where the State is seeking the whole-of-life innovation and efficiencies that the private sector can deliver in the design, construction and operating phases of the project.

The National PPP Guidelines require PPPs to be considered as a delivery option where the capital value of a project exceeds \$50 million.

PPPs can deliver VfM when there is good opportunity for risk transfer, opportunities for whole of life costing and innovation, potentially higher asset utilisation and good opportunity for integration of design, construction and operations. The delivery model workshop considered the following non-traditional delivery models:

- Build, Own, Operate, Transfer (BOOT)
- Availability Payment Model
- Hybrid Model
- Design, Build, Finance (DBF)



The view of delivery model workshop participants was that BOOT, Availability Payment and Hybrid models would not be commercially viable as the State would own the asset, SunWater would prefer to undertake the design and SunWater would operate (and most likely maintain) the asset.

The assessment in Table 11 was completed on the DBF non-traditional delivery model for completeness.

Table 11 PPP Delivery Model Assessment

| QUALITY (55%) | | | |
|---------------------------|--------|--------------------|---|
| CRITERION | SCORE | WEIGHTED SCORE (%) | COMMENT |
| SunWater Interface (30%) | 20/100 | 6 | Reduced opportunity for SunWater involvement and ability to ensure that interfaces are efficient |
| Market Expertise (15%) | 20/100 | 3 | Limited precedent PPP dam projects and no obvious market participants |
| Timeliness (10%) | 40/100 | 4 | Transaction duration may increase time to achieve an operational asset |
| COST (45%) | | | |
| CRITERION | SCORE | WEIGHTED SCORE (%) | COMMENT |
| Whole of Asset Cost (30%) | 80/100 | 24 | NA for this project as SunWater would seek to carry out O&M activity. Under alternate circumstances, the contractor/proponent is incentivised to maintain the asset to appropriate levels |
| Risk Transfer (10%) | 60/100 | 6 | Good opportunity for the State to transfer risk to the party best able to manage that risk |
| Transaction Cost (5%) | 20/100 | 1 | Contractor will be motivated to price risk into their bid. High transaction costs associated with a PPP transaction |

The total weighted score for Design, Build, Finance was **44**.

16.6 Value for Money Assessment

The value for money assessment at the preliminary business case stage requires qualitative consideration of the potential for the Queensland Government to achieve value for money by delivering a project under a PPP arrangement with private finance rather than traditional delivery.

Table 12 summarises the qualitative value for money assessment consistent with the Building Queensland Business Case Development Framework Preliminary Business Case guidance material.

Table 12 Qualitative Value for Money Assessment

| DRIVER | SCORE | DESCRIPTION |
|-----------------|--------|---|
| Project Scale | Low | Option 4 proposes a small Nullinga Dam |
| Risk Allocation | Medium | Opportunity for the State to transfer risk to the proponent |



| | | |
|----------------------------|--|---|
| Whole of Life Costing | Medium | Proponent is incentivised to adhere to agreed costing levels |
| Innovation | Low | SunWater would prefer to complete most of the design |
| Improved Asset Utilisation | Low | Low opportunity to improve the proposed asset |
| Economies of Scale | Low | Low opportunity to achieve better economies of scale |
| Competitive Process | Low | Competitive bidding process may generate VfM but there are no obvious market participants |
| Overall Assessment | There is a low possibility of a PPP providing value for money. | |

Analysis has concluded that a non-traditional delivery model would not be commercially viable for Option 4.

16.7 Preliminary Market Sounding

The Building Queensland Business Case Development Framework requires a preliminary business case to undertake preliminary market sounding. The market sounding process aims to seek market feedback on the project to enable a procurement strategy to be developed that will generate market interest, deliver value for money and appropriately allocate and manage risk. This includes obtaining feedback from contractors on:

- package structure
- delivery model
- early works scope and staging
- interface with existing operations
- procurement timetable
- market trends and characteristics.

16.7.1 Objectives of Market Sounding

The primary objectives of market sounding are to:

- attract a wide range of market participants to the project and thereby create greater competition
- optimise packaging and procurement options in a way that is most likely to address that market’s issues
- build market feedback into the proposed procurement strategy, including appetite for the procurement options available
- provide a formal mechanism of documenting the market’s views on commercial issues.

Secondary objectives of the market sounding process include:

- informing the market of the status of the project, including key features and potential timeframes
- investigating the feasibility of the project and interest from potential financial advisers/arrangers which can be fed into the value for money assessment.



16.7.2 Market Sounding Methodology

Preliminary market sounding should, where possible, try and avoid increasing the market's expectations about the likelihood of the project proceeding due to the number of variables that may influence project outcomes between this stage and the procurement/delivery stages.

The methodology for market sounding involved the following:

- questionnaire development
- participant selection
- interviews (telephone)
- documentation and analysis.

16.7.3 Questionnaire Development

Key stakeholders and advisors considered a range of topics that need to be investigated during market sounding which resulted in the following list of questions to be asked of participants:

1. The State's preference is to undertake the majority of the design process in-house, therefore it would seek to procure the construction function. The State would consider Early Contractor Involvement. Would you be interested in participating in our preferred model?
2. Would a different delivery model be better suited for the proposed project and if so, why would it produce better value for money (cost and quality of outcomes) for the State?
3. Do you think the project could be effectively delivered better as a single contract or by multiple packages? Why?
4. Based on your experience, and from a funding and financing capacity perspective, what are the considerations and likelihood that the Project could deliver value for money to the State if it were delivered as a PPP?

16.7.4 Participant Selection

Key stakeholders and advisors identified a list of organisations that might be interested in participating in the market sounding process. The participants were identified on the basis of the following criteria:

- recent activity in Queensland
- appetite for construction projects of this size and location, and
- market knowledge.

Market sounding participants included seven organisations that have delivered similar scale construction projects in Queensland recently.

16.7.5 Market Feedback

All participants in the market sounding, except for two with a PPP focus, indicated that they would be interested in participating in the project under an ECI model. While all participants stated that they would participate under an ECI model, all indicated that a D&C model would be preferred as they thought it provided better value for money for the State.

Participants thought that the D&C model would still allow SunWater to influence the design but also provide the selected contractor with the opportunity to innovate during the detailed design process.



Participants highlighted that contractors would be prepared to assume latent condition risk, but only if given the opportunity to conduct an appropriate amount of geotechnical exploration during the tendering process.

All market sounding participants indicated that a dam project of this size should be delivered in a single contract (D&C). Participants acknowledged that hydrology and road diversions are sometimes packaged separately, but more informed feedback could be provided after considering a design.

All participants agreed that a PPP delivery model would not be appropriate for (a) a project of this size; and (b) a project where design and operations would remain with an entity such as SunWater.

16.8 Outcomes of the Preliminary Delivery Model Assessment

The delivery model workshop identified that packaging was not a significant consideration for a project of this size and the PBC stage.

Workshop participants agreed that Value for Money objectives should be weighted as 55 per cent for quality and 45 per cent for cost.

Table 13 presents a summary of scores assigned to delivery models by cost and quality criteria.

Table 13 Delivery Model Summary of Scores

| | WHOLE OF ASSET COST (30%) | RISK TRANSFER (10%) | TRANSACTION COST (5%) | TIMELINESS (10%) | MARKET EXPERTISE (15%) | SUNWATER INTERFACE (30%) | WEIGHTED SCORE |
|--------------------------------|---------------------------|---------------------|-----------------------|------------------|------------------------|--------------------------|----------------|
| Competitive Alliance | 20 | 10 | 20 | 70 | 70 | 80 | 49.5 |
| Early Contractor Involvement | 90 | 100 | 70 | 80 | 80 | 80 | 84.5 |
| Managing Contractor | 60 | 100 | 20 | 70 | 40 | 80 | 66 |
| Construction Only | 60 | 70 | 90 | 60 | 90 | 90 | 76 |
| Design and Construct | 80 | 100 | 90 | 80 | 90 | 70 | 81 |
| Design, Construct and Maintain | 65 | 100 | 40 | 70 | 30 | 50 | 57 |
| Design, Build, Finance | 80 | 60 | 20 | 40 | 20 | 20 | 44 |

The delivery model assessment concluded that the Early Contractor Involvement delivery model achieved the highest assessment score (84.5) against the evaluation criteria closely followed by Design and Construct (81).



The qualitative Value for Money assessment identified that there is no commercially viable non-traditional delivery model given that design, operations and maintenance is likely to be delivered by SunWater.

Market Sounding identified that participants would be interested in the project and in an Early Contractor Involvement model.

However, all participants indicated that they would prefer a Design and Construct model under a single package.

Market sounding participants also agreed that a PPP delivery model was not suitable for this project.

16.9 Recommendation

After considering the outcomes of the preliminary delivery model assessment and market sounding, key stakeholders and advisors formed the view that the preferred model was Design and Construct or Early Contractor Involvement (or potentially Early Tenderer Involvement).